

**BOARD OF REGENTS
BRIEFING PAPER**

1. AGENDA ITEM TITLE: University of Nevada, Reno - College of Business Building Third Party Development Project Phase One – Development Agreement, Ground Lease, Building Sublease, Associated Direct Agreements, Letter of Representations, and Related Disclosures

MEETING DATE: June 8 & 9, 2023

2. BACKGROUND & POLICY CONTEXT OF ISSUE:

In December 2014, the Board of Regents approved the University of Nevada, Reno Campus Master Plan for 2015-2024, which outlined the plans for future campus development. Since then, the University has been actively laying the groundwork for its southward expansion into what is now known as the Mathewson University Gateway (Gateway). After almost a decade of community outreach, planning, and property acquisition, the University completed its first project in the Gateway in January 2023, the University Gateway Parking Garage. The Garage project also provides an accessible corridor between main campus and the Gateway area; with the Garage opening, additional academic and related development can now occur on these parcels.

The first academic building prioritized for the Gateway, in phase one, is an approximately 128,000 sf UNR College of Business building as was presented to the Board of Regents Business Finance and Facilities Committee at its December 2021 meeting. At that meeting, the Board directed the University to evaluate a third-party development agreement structure for construction of the building. After a national public solicitation, the University selected Edgemoor Infrastructure and Real Estate (Edgemoor). At its September 2022 meeting, the Board approved the expenditure of up to \$5,056,000 from the University Capital Improvement Fee balance for design/professional services related to the College of Business building under a pre-development agreement with Edgemoor. The pre-development agreement also addressed adjoining sitework supporting this project, as well as preparatory pre-design work for a hotel/conference center.

Since last fall, Edgemoor, in conjunction with its architect LMN and a working group of campus stakeholders representing the College of Business, Facilities Services, and Central Administration have substantially completed the design and construction schematics for the new building. An overview of the completed design and site are included as Exhibit 1a. A detailed inventory of interior spaces is included in Exhibit 1b. With this design milestone now achieved, the project is ready for Board of Regents review and approval of certain documents necessary for the final phase of this project, including both construction and financing.

The Business building portion of the Gateway, which is the subject of this agenda item, is poised to immediately begin pre-construction activities upon approval of this agenda item, with an anticipated formal ground-breaking to occur in October 2023. Construction is anticipated to take two years, with building completion in time for the Fall 2025 semester. This phase of the project includes related necessary improvements to University Way and 9th street as well as completion of accessible corridors to the Gateway garage. It should be noted however that the second building of this phase, a hotel/conference center, is still under review and negotiation with Edgemoor and its hospitality development partner, Woodmont Lodging. The anticipated hotel/conference center, which was a part of the Edgemoor RFP response/proposal, will be the subject of a future Board of Regents agenda item and approval request, later this year.

This agenda item is a multi-part request for approval of a resolution and the documents associated with the College of Business building and related improvements.

National Campus and Community Development Corporation is a 501(c)(3) nonprofit entity organized to help public bodies throughout the country finance and develop projects, including through third-party development projects such as this. They will create a single member limited liability company organized under Nevada law, NCCD-UNR Properties LLC (NCCD), to facilitate financing for the College of Business building. Under the structure contemplated by these agreements, an overview of which is contained in the Executive Summary prepared by NSHE Special Real Estate Counsel Mike Wixom and UNR Associate General Counsel Bryan Wright (Exhibit 2a):

- 1) The University will lease the ground to an independent non-profit entity (NCCD);
- 2) NCCD will finance and build the building with Edgemoor, and NCCD will sublease the building back to the University;
- 3) The University will own the underlying real property and improvements (College of Business building) at all times, subject to NCCD's leasehold interest;
- 4) NCCD, as a special purpose 501(c)3 entity created specifically for this project, will be the entity that will borrow the proceeds to fund construction; the sublease will be an obligation of NSHE but the debt will not be an NSHE obligation.
- 5) The ground lease, and NCCD's leasehold interest in the project, will end after (i) 35 years, (ii) when the debt is fully extinguished, or (iii) upon a default under the ground lease (whichever event occurs first).

Please see Exhibit 2b which depicts the organizational structure of this transaction.

The requested motion includes several property, financing, and construction documents that structure the transaction. Please also refer to Exhibit 2a for an overview of each agreement.

1. Approval of a three-way Development Agreement with NCCD - UNR Properties LLC and UNR/Edgemoor Gateway Partners LLC (Exhibit 3a).
 - a. Section 3.1(f) contains an express delegation of authority, authorizing the Chancellor to execute amendments to the transaction documents which do not materially alter the economic or other substantive provisions thereof, to the extent requested by the bond issuer and/or bond trustee for purposes of issuing the bonds.
2. Approval of a Ground Lease with NCCD - UNR Properties LLC as the tenant (Exhibit 3b). The term of the Ground Lease is for 35 years, but it is also subject to termination by the University as soon as the associated debt borrowed by NCCD is retired (anticipated to be 30 years per Sublease term below).
 - a. Section 1.2.3 contains an express delegation of authority, authorizing the Chancellor to execute amendments to the ground lease, if necessary, to conform Attachments A-1, Legal Description of Site, and A-2, Site Map, to the finalized project boundaries.
 - b. Section 24.3 contains an express delegation of authority, authorizing the Chancellor to execute amendments to the ground lease to include provisions reasonably required by the holder of the leasehold deed of trust, for the purpose of implementing the mortgagee-protection provisions contained in the Ground Lease.
3. Approval of a Sublease Agreement with NCCD - UNR Properties LLC as the sublandlord and the University as the subtenant (Exhibit 3c). The term of the Sublease shall be for 30 years or retirement of the bond debt, whichever is first. Subject to future market conditions, the bond debt and sublease may be refinanced or paid off beginning in 2033. Annual lease payments

by the University shall not exceed \$10,250,000 and will begin in fiscal year 24.

- a. Section 1.2.3 contains an express delegation of authority, authorizing the Chancellor to execute amendments to the Sublease, if necessary, to conform Attachments A-1, Legal Description of Site, and A-2, Site Map, to the finalized project boundaries.
 - b. Section 2.2.4 contains an express delegation of authority, authorizing the Chancellor to execute amendments to the Sublease, if necessary, to conform Attachment B, Payment Schedule, to reflect the actual basic loan payments due from NCCD under the loan agreement once the bonds are issued.
4. Approval of three Direct Agreements that give the lender/trustee acting on behalf of the lender certain specific rights as they relate to the financing of this project, related to the Development Agreement (Exhibit 3d), the Ground Lease (Exhibit 3e) and the Sublease. (Exhibit 3f)
 5. Approval of a Resolution authorizing the Chancellor, or designee, after review by the NSHE Chief General Counsel, to approve and sign these and related documents required to close this transaction. (Exhibit 3g)
 6. Approval of Letter of Representations, which is a required part of the bond purchase agreement that NCCD will use in connection with its financing, and provides for the representations, warranties and agreements regarding material aspects of the University related to this transaction
 7. Approval of certain ancillary documents, such as certificates of incumbency and factual statements/affirmations, required from NSHE in connection with the financing. (Exhibit 3h)

While not part of the approval package, the University would like to memorialize for the record three additional topics related to this transaction.

8. The University, on behalf of the System, will issue a Notice of Non-Responsibility which protects the System, as the property owner, in the event any liens are filed against the property (located in the Development Agreement, Exhibit 3a).
9. The University, acting on the advice of NSHE's bond counsel Sherman & Howard, has put forward a number of representations that NCCD and others involved in the financing have and will continue to use in financing disclosures (Exhibit 4, available for review in the NSHE Board Office).
10. A representation that when the building is completed, the University, through a separate agreement with Edgemoor, intends to outsource the operations and maintenance of the College of Business building to a 3rd party provider, Johnson Controls International (JCI), for the term of the Sublease, and Edgemoor has utilized JCI's expertise in the design process to reduce total life-cycle costs. That operating budget and agreement is separate from this transaction.

Financial Considerations:

As noted above, while the debt belongs to NCCD, and is not debt of either NSHE or the University, the Sublease for the Business building will be an ongoing obligation of the University, and shall be disclosed on NSHE's financial statements as such. The University has been preparing for this anticipated obligation for several years and intends to use three funding sources that will be internally obligated for the Sublease. No General Fund appropriations are being utilized for the construction of

the project and no state operating budget funds will be used to pay the sublease payments. Exact annual costs were not available as of agenda submission deadlines and will not be known until the bond sale financing process is complete and the bonds are issued; however, with the construction estimations done to date the University is budgeting its financial projections and requested Board approvals on a not-to-exceed annual sublease payment of \$10,250,000. Please see Attachment B of the Sublease (Exhibit 3c) for the Pro Forma Projected Estimated Payments.

The three sources of sublease payments are discussed below. With no State funding in the construction of the Gateway project, sublease payments instead rely on the traditional sources of non-state capital funding including the existing and previously Board of Regents approved Capital Improvement Fee, philanthropy (including new naming opportunities and proceeds from prior donor gifts), and related income generated by the project itself. The actual payment distribution by source is anticipated to fluctuate annually based on factors such as investment returns, gift timing and enrollments.

1. Capital Improvement Fee – the primary source of Sublease funding will be the Capital Improvement Fee (*Handbook Title 4, Ch 10, Sect 12*), which is part of the existing Board approved registration fee paid by all students enrolling in for-credit courses. This will account for approximately one-half of the sublease payment and will be the ‘last dollar’ funding source, once other sources below are applied. It should be noted that in the interest of conservative projections, affordability from this source is based on current enrollments and current distributed fee amounts per credit hour – no prospective increases in either have been budgeted or obligated.
2. UNR Foundation Quasi-Endowment Income – the UNR Foundation is taking the lead on securing donations for naming opportunities consistent with the approach for traditional owned buildings. These include major naming opportunities like the building itself, the auditorium, multiple suites, centers, and classrooms/study spaces, as well as smaller study nooks, conference rooms, and other public spaces. However, because of the ground lease/sublease structure of this project, proceeds from philanthropy cannot be applied directly to construction. Instead, the UNR Foundation will hold these newly raised funds in its perpetual endowment and transfer the investment income to the University to be used exclusively towards funding payments for the Sublease. Similarly, the University has designated and transferred the proceeds of a historic gift made to the University several years ago to the UNR Foundation for a similar quasi-endowment and income distribution model. The combined value of expected new philanthropy from naming (est \$50-\$60m when complete) and the proceeds from existing gifts (\$50m as of April 2023) will provide a UNR Foundation quasi-endowment balance for this project of at least \$100,000,000 and is budgeted to generate a net \$4.1m in income annually. While not available at the time of agenda item submission deadlines, as an additional measure the UNR Foundation Executive Committee will be meeting in late May 2023 to consider options to provide a hold-harmless for the portion of the sublease payment tied to quasi-endowment earnings; an update will be provided by the UNR Foundation Chair once it is available. The building naming will be subject to future consideration and approval by the Board of Regents, consistent with the *NSHE Handbook*.
3. Ground lease and related revenue from the hotel/conference center – the anticipated business structure for this part of the project provides that the University will hold the ground lease for the privately operated Hotel/Conference Center and will apply the revenues from that portion of the parcel to the Business building Sublease. This agreement will be subject to a future Board of Regents approval, and it is conservatively budgeted at \$500k/year.

3. SPECIFIC ACTIONS BEING RECOMMENDED OR REQUESTED:

University of Nevada, Reno President Brian Sandoval requests Board approval of a resolution, approving and authorizing the Chancellor to execute, the following documents related to this transaction:

1. the Development Agreement;
2. the Ground Lease;
3. the Sublease;
4. the Direct Agreements;
5. the Letter of Representations for Bond Purchase Agreement, and
6. authorizing the Chancellor and University President, or their designees, to execute such certificates of incumbency; factual statements and affirmations, and other ancillary documents required from NSHE in connection with the underlying bond financing.

4. IMPETUS (WHY NOW?):

Since the initial presentation to the Board of Regents in December 2021, and the approval of funding for the pre-development agreement by the Board of Regents in September 2022, design work and construction documents are now completed and the College of Business building and associated improvements are ready to move into the construction phase. Approval now will enable the project to meet its target completion date of Fall, 2025.

5. CHECK THE NSHE STRATEGIC PLAN GOAL THAT IS SUPPORTED BY THIS REQUEST:

- Access (Increase access to higher education)**
- Success (Improve student success)**
- Close Institutional Performance Gaps**
- Workforce (Meet workforce needs in Nevada)**
- Research (Increase solutions-focused research)**
- Coordination, Accountability, and Transparency (Ensure system coordination, accountability, and transparency)**
- Not Applicable to NSHE Strategic Plan Goals**

6. INDICATE HOW THE PROPOSAL SUPPORTS THE SPECIFIC STRATEGIC PLAN GOAL

Development of the approximately 128,000 sf of space for the College of Business in the Mathewson University Gateway will contribute to each of NSHE's strategic goals. Notably, it will enhance student success by providing learning spaces that make use of best practices in pedagogy. It will enhance workforce development by giving students the opportunity to learn through direct use of current technology that is relevant to their discipline. The planned building will facilitate advancement of the University's research mission by being a compelling draw for outstanding faculty and graduate students. Finally, the facility will contribute toward closing achievement gaps by providing a planned and coordinated space for delivering academic advising and career counseling. The new facility will provide a cohesive sense of community, identity, and pride that will inspire all students to excel.

7. BULLET POINTS TO SUPPORT REQUEST/RECOMMENDATION:

- This request brings to completion a process started over a decade ago which included acquisition and clearing of 31 parcels in 19 separate transactions.

- The UNR College of Business has the largest enrollment of any college at UNR, but is space constrained. In order for the College of Business to continue its growth trend of 30% over the last decade, a new modern academic building is needed.
- The College of Business directly supports workforce needs with 70% of graduates staying in Nevada and 96% staying in the western region.
- The 3rd party development agreement model proposed now allows the building to be delivered in a more effective and efficient manner than a traditional capital project, trimming years off of the normal process.

8. POTENTIAL ARGUMENTS AGAINST THE REQUEST/RECOMMENDATION:

No arguments against this project have been brought forward to date.

9. ALTERNATIVE(S) TO WHAT IS BEING REQUESTED/RECOMMENDED:

Through the extensive due diligence completed by the internal and external development team, the University believes this is the most efficient and effective alternative available.

10. RECOMMENDATION FROM THE CHANCELLOR’S OFFICE:

The Chancellor supports this request.

11. COMPLIANCE WITH BOARD POLICY:

- Consistent With Current Board Policy: Title # _____ Chapter # _____ Section # _____
- Amends Current Board Policy: Title # _____ Chapter # _____ Section # _____
- Amends Current Procedures & Guidelines Manual: Chapter # _____ Section # _____
- Other: _____

X Fiscal Impact: Yes No _____

Explain: The cost of the Sublease presented in this agenda item will not exceed \$10,250,000 annually, and will be paid from Capital Improvement Fees, Quasi-Endowment income from the UNR Foundation, and revenues generated from the separate hotel/conference center development. No State funds will be used for the construction or sublease payment.

Exhibit 1a



MANZANITA BOWL

EAST 9TH STREET

PROPOSED HOTEL / CONFERENCE CENTER

SERVICE ACCESS

COLLEGE OF BUSINESS

FUTURE UNR BUILDING

UNR GARAGE

NORTH VIRGINIA ST.

HOTEL ENTRY

HOTEL DROP-OFF / PICK-UP

SERVICE ACCESS

COURTYARD

DROP-OFF / PICK-UP

UNIVERSITY WAY

FUTURE UNR BUILDING

ACCESSIBLE ROUTE

EAST 8TH STREET





 University of Nevada, Reno

 The College of Business
University of Nevada, Reno



 The College of Business
University of Nevada, Reno

The College of Business





Exhibit 1b

**Mathewson Gateway College of Business
Room and Space Matrix Interior Inventory**

- Student Spaces and Amenities:
 - 2nd Floor Café – Space Allotment for Chartwells
 - 1300 sf of “Study Niche” Spaces
- Building Support and Services:
 - 2 total Lactation Rooms
 - 5 total Gender-Neutral Bathrooms
- Administration:
 - Deans Suite on Level 5
 - Reception Area
 - Board Room
 - 2 Associate Deans Offices
 - 2 Director Offices
 - 8 Additional Workstations
 - Outside Terrace
 - Ozmen Center for Entrepreneurship on Level 2
 - Reception Area
 - Directors Office
 - 4 Workstations
 - Student Outreach Center on Level 2
 - 2 Director Offices
 - 6 Workstations
 - LABS/IT Support on Level 1
 - 1 Director Office
 - 6 Workstations
 - 1 Server Room Independent of Building Server
- Office and Workstation Spaces:
 - 1 Security Desk - UNRPD
 - 1 Building Manager Office
 - 4 Reception Desks
 - 67 Open Workstations
 - 113 Faculty/Staff Offices
 - 6 Department Chair offices
- Shared Spaces:
 - Medium Conference Room on Level 4
 - Large Conference Room on Level 4
 - Large Conference Room on Level 5
 - 2 Kitchen spaces on Level 4
- Instructional Spaces:
 - 300-seat Auditorium
 - 4 Flat Floor Classrooms
 - 4 Case Study Rooms
 - 36-seat Trading Lab
 - 80-seat Computer Lab
 - 56-seat Computer Lab
 - “Technology Suite” Conference Room
 - PhD Research Lab
 - 14 6-seat Team Rooms

Executive Summary

College of Business Building Third Party Development Project Phase One – Development Agreement, Ground Lease, Building Sublease, Associated Direct Agreements, and Related Disclosures – UNR

The purpose of this Executive Summary is to provide a concise overview of the documents to be executed in connection with the project described above.

COB Project Background:

The Board of Regents of the Nevada System of Higher Education, on behalf of the University of Nevada, Reno (the “University”) owns certain real property referred to as Phase I of the Mathewson University Gateway (the “Gateway”), comprising approximately 2.21 acres located on its Reno, Nevada campus (the “Campus”).

On or about December 16, 2021, as authorized by the Board of Regents, the University issued Request for Proposals 8752 (the “RFP”) seeking creative and innovative proposals to develop Phase I of the Gateway to include new construction of an approximately 125,000 square foot College of Business building (the “COB Project”) and a complementary private sector development on the portion of the Gateway not used by the College of Business.

After an extensive evaluation process the University entered into exclusive negotiations with UNR/Edgemoor Gateway Partners LLC, a Maryland limited liability company (“Developer”). The University and Developer thereafter entered into that certain Engagement Agreement dated August 17, 2022, pursuant to which the Developer and the University have agreed to negotiate documents for the development of the Gateway, subject to future approval by the Board of Regents.

University of Nevada, Reno President Brian Sandoval now requests Board approval of, and authorization to execute, the following documents related to this transaction:

1. Development Agreement;
2. Ground Lease;
3. Sublease; and
4. Direct Agreements.

Development Agreement:

The parties to the Development Agreement include the University, Developer, and NCCD – UNR Properties LLC (“NCCD”). NCCD is a Nevada limited liability company organized solely to support and facilitate the development, construction, and financing of the COB Project and related site improvements.

The Development Agreement sets forth the terms and conditions upon which the COB Project will be financed, built, and operated, subject to certain conditions precedent set forth in the Development Agreement, including (i) the University would grant a leasehold estate in the Site to NCCD pursuant to a long-term ground lease (the “Ground Lease”), (ii) the Developer would

design, develop, and construct the COB Improvements as specified by the University, and obtain COB Project approvals in connection therewith (the “Developer’s Work”), (iii) NCCD would secure financing to pay for the Developer’s Work, (iv) the University would sublease the Site and the COB Improvements from NCCD pursuant to a long-term sublease between NCCD, as sublandlord, and the University, as subtenant (the “Sublease”), and (v) the Developer will enter into the Design/Build Agreement (“Design/Build Agreement”) with the Design Builder with respect to the design and construction of the COB Project.

Capitalized terms not otherwise defined herein shall have the meaning for such terms set forth in the Development Agreement.

Development Agreement Key Terms:

1. Term (Section 1.5):

The term of the Development Agreement shall be from the Effective Date [the date of the Development Agreement] until Final Completion [defined in the Development Agreement] of the COB Project.

2. Documents Due from University at Commercial Close of Escrow (Section 2.6):

At the Commercial Close of Escrow the University shall execute and acknowledge, as necessary, and deposit with the Escrow Holder counterpart copies of the following: (1) the Ground Lease; (2) the Sublease; (3) an Affirmation Certificate with respect to the University’s representations and warranties under the Development Agreement; (4) Notice of Non-Responsibility; and (5) any other documents, instruments or instructions reasonably required to be delivered by the University to close the Commercial Escrow.

3. Taxes and Assessments (Section 2.8):

The University intends to use the Site and COB Project in furtherance of the educational, research, and public purposes of the University, and the University shall own the COB Improvements at all times. Accordingly, the Parties intend and expect that the COB Project will be exempt under Nevada law from Property and Possessory Interest Taxes.

....

If any obligation to pay a Property and Possessory Interest Taxes is imposed by any authority having jurisdiction upon any of the Parties in relation to the COB Project, the University shall be responsible for either authorizing payment of such tax from the Change Contingency or challenging the imposition of such tax.

4. COB Project Financing (Section 3.1):

Public money shall not be used to finance any part of the construction of the COB Project. Without limiting the foregoing, excluding the University’s obligations to make payments under the Sublease, any and all financing for the COB Project shall (i) not have the University

incurring any indebtedness, (ii) not rely upon the credit of the University, and (iii) be non-recourse to the University and the State of Nevada.

....

NCCD shall borrow funds raised by the issuance of certain lease revenue bonds with respect to the COB Project (the “Bonds”), including the Series 2023 Bonds [in an amount not to exceed \$165,000,000], pursuant to a Trust Indenture (“Indenture”), by and between National Finance Authority (“Issuer”) as issuer and U.S. Bank Trust Company, National Association as trustee (“Bond Trustee”) as trustee. NCCD shall use commercially reasonable efforts to cause sufficient Bonds to be issued by the Issuer to raise an amount not less than the sum of the full amount of the Schedule of Values including an allowance with the value of Four Million Five Hundred Thousand U.S. Dollars (\$4,500,000) (“Change Contingency”) to fund Change Events, if any; provided that such commercially reasonable efforts shall not require NCCD to agree to terms in the Loan Agreement, Indenture or other related documents that are not satisfactory to NCCD in its reasonable business judgment. The proceeds of such Bonds shall be loaned to NCCD pursuant to a Loan Agreement (“Loan Agreement”) by and between Issuer as lender, and NCCD as borrower, and a portion of the proceeds that is equal to the sum of the amount set forth on the Schedule of Values and the Change Contingency will be deposited into a certain account established pursuant to the Indenture (the “COB Project Fund”) and be disbursed to Developer in accordance with the Disbursement Agreement. The Base Sublease Payment provided for in the Sublease shall be the amounts periodically due and owing in connection with the Bonds. Each Party acknowledges and agrees that it has approved the Schedule of Values, Change Contingency, and COB Project Fund Amount set forth therein.

....

Developer may, at its sole and exclusive discretion, accept an invitation by the University to provide additional debt funding for the COB Project (“Developer Subordinated Debt Funding”) at any time prior to Final Completion to be used for any purpose for which the Project Fund may be used, which Developer Subordinated Debt Funding must be subordinate in priority and lien to the Series 2023 Bonds and any may be subordinate to any Additional Bonds (as defined below) issued on a senior lien basis under the Indenture (“Senior Lien Bonds”). The terms and conditions of any Developer Subordinated Debt Funding (“DSDF Terms”) must be agreed to by University and Developer in writing (which agreement may be withheld by either University or Developer for any reason); it being understood that neither University nor Developer shall have any obligation to cause a Developer Subordinated Debt Funding to occur.

....

After receiving the prior written consent of the Board of Regents of the Nevada System of Higher Education, which consent shall be given, denied, or condition in its absolute and exclusive discretion, the Parties may initiate the issuance and sale of additional bonds (“Additional Bonds”), if needed, in whole or in part, to finance Completion. Any Additional Bonds may be issued at parity with, or be subordinated to, the Series 2023 Bonds. In such an eventuality, the University and NCCD shall negotiate an appropriate increase in the rent paid under the Sublease to pay for the Additional Bonds and associated costs.

....

Notwithstanding any other provision of this Development Agreement to the contrary, the terms of the Indenture and the Loan Agreement are subject to University's prior written consent, which shall not be unreasonably withheld, conditioned, or delayed. For the avoidance of doubt, neither such consent nor any review or comments made by the University shall impose upon the University an obligation to make any principle or interest payments.

....

Each of the Parties hereto agrees to undertake such reasonable amendments to the Transaction Documents as are requested by the Issuer and/or the Bond Trustee for purposes of issuing the Bonds, which amendments do not materially alter the economic or other substantive provisions of the Transaction Documents. The Board of Regents of the Nevada System of Higher Education expressly delegate authority to the Chancellor of the Nevada System of Higher Education to execute amendments made pursuant to this Section 3.1(f).

5. Hazardous Materials (Section 4.2):

The Developer shall comply with all Hazardous Materials Laws applicable to the Site in performing Developer's Work. If any Hazardous Materials are discovered on the Site, Developer shall promptly perform all required and necessary remediation and other work needed to remove such Hazardous Materials from the Site and to properly dispose the same off-Site, all in accordance with applicable Laws, including Hazardous Materials Laws. So long as the discovered Hazardous Materials are not part of Developer Assumed Hazardous Materials Obligations (defined below), such discovery shall be deemed a Change Event.

6. Compliance with Laws (Section 4.3):

The Developer shall comply at all times throughout the Term, with respect to the COB Project and the Site, with: (i) all Laws; (ii) all requirements of all policies of insurance that may be applicable to the Site, the COB Improvements, and Developer's personal property; and (iii) all other applicable COB Project Requirements.

7. Indemnification (Section 4.4):

A. Developer shall Indemnify University and NCCD, and any of their respective Indemnified Parties from and against any Losses, but excluding Attorneys' Fees and Costs in actions brought by the University against the Developer, to the extent caused by any acts, omissions or breach of this Agreement by Developer, and any property damage, loss, destruction, personal or bodily injury, or death (each a "Claim") resulting from (a) use, occupancy, improvement, management or control of the Site or any portion thereof by any Developer Responsible Party; (b) Developer's and any Developer Responsible Party's work, activity, condition or occurrence in or about the Site; (c) any negligent act or omission of Developer, or any Developer Responsible Party; and (d) failure to design or construct the COB Project in compliance with all applicable Laws, including without limitation Hazardous Materials Laws and Disable Access Laws; provided, however, that Developer shall have no obligation to Indemnify any Indemnified Party to the extent a Claim arose from that Indemnified Party's (i) failure to comply

with its obligation under this Agreement, (ii) negligence, or (iii) willful act or omission of such Indemnified Party.

B. Except to the extent caused by the acts or omissions of any Indemnified Party, and solely to the extent limited in accordance with NRS 41.0305 to 41.039, inclusive, University agrees to approve a University Change Order for the payment to Developer of all Losses incurred by Developer to the extent caused by any acts, omissions or breach of this Agreement by University or any of its employees or Agents. University's obligations under this Section shall be limited in accordance with the provisions of NRS 41.035.

8. Developer's Construction Obligations (Section 5.2):

A. If the Financial Close of Escrow occurs, Developer shall construct or cause to be constructed the COB Improvements described in Attachment B on the Site, subject to the terms and conditions of the Development Agreement, in the manner set forth in this Article 5 prior to the applicable Target Completion Dates (as the same may be extended as provided in the Development Agreement) and in accordance with the COB Project Requirements. In the event the University's consent is required for an extension of the applicable Target Completion Date, and the applicable Target Completion Date is so extended, then the University shall not be deemed to be waiving any other rights under the Development Agreement or implying the extension of any other dates.

B. Substantial Completion (Schedule C) is scheduled for July 25, 2025.

C. The Developer shall perform Developer's Work in accordance with (i) the University of Nevada, Reno Adopted Standards attached hereto as Attachment 5.2(c), it being understood that any deviations from the Adopted Standards must be approved in writing by University; (ii) any applicable Standard of Care and in compliance with all Laws, including, without limitation Hazardous Materials Laws and Disabled Access Laws, (iii) as further provided in Section 4.3, all Regulatory Approvals; and (iv) the Final Construction Documents. All such requirements, together with the approved Final Construction Documents are referred to collectively as the "COB Project Requirements."

9. University's Right to Approve (Section 5.3):

The University may review, inspect, and approve all construction documents and construction works; provided, however, that such approval by University of any documents, services, or work shall not relieve Developer of responsibility for designing and constructing the COB Project in accordance with all applicable Laws and/or the applicable professional standards of care.

10. Prevailing Wage (Section 5.26):

Developer shall comply, and shall ensure that Design Builder and each subcontractor performing work related to the COB Project comply, with the prevailing wages requirements contained in Nevada Revised Statutes 338.020 through 338.090 with respect to all construction work associated with the COB Project. Without limiting the foregoing, Developer shall ensure that Design Builder and each subcontractor timely submit to University the reports required under NRS 338.070.

11. Non-Discrimination (Section 5.27):

In connection with the performance of its obligations under this Development Agreement, Developer agrees not to discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, sexual orientation, gender identity or expression, or age. Such agreement shall include, but not be limited to employment, upgrading, demotion or transfer, recruitment, or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. Developer further agrees to insert this provision in its contract with any contractor or subcontractor relating to this COB Project.

12. Separate Contracts (Section 5.28):

University reserves the right to award or enter into other contracts in connection with the development of the Gateway Project, specifically with respect to the Hotel Project or any tenant build-out work for the café within the COB Project. NCCD and Developer shall reasonably cooperate with the developer and/or contractor associated with such separately awarded work (each a “Separate Gateway Developer”) in such Separate Gateway Developer’s prosecution of their work, including by affording any Separate Gateway Developer a reasonable opportunity for the introduction and storage of their materials and equipment. University, the Separate Gateway Developer and Developer shall meet and confer before the start of the Separate Gateway Developer’s work, so as to minimize and avoid any interference with, or damage to, the work of Separate Gateway Developer or Developer.

13. Mechanic’s Liens (Section 7.2):

A. Developer and NCCD understand and agree that any and all improvements made to the Site must comply with Nevada’s construction lien laws, including without limitation NRS 108.2403.

....

B. Not less than ten (10) Business Days before Developer commences Developer’s Work on the Site, NCCD shall (i) notify or cause to be notified University in writing of (1) the expected date of commencement thereof, and (2) the name and contractor’s license number of the prime contractor performing the work, and (ii) provide to University evidence of NCCD’s compliance with NRS 108.2403. University shall have the right at any time and from time to time to post and maintain on the Site, and/or record, such notices as the University reasonably deems necessary to protect the Site and University from liens arising out of any work performed, materials furnished or obligations incurred by Developer or its Agents, including, without limitation, a Notice of Non-Responsibility substantially in the form attached hereto as Attachment 7.2(b).

C. Developer shall keep the Development Agreement, the Site, any COB Improvements thereon, free from any liens arising out of any work performed, materials furnished or obligations incurred by Developer or its Agents.

14. University Remedies for Late Completion (Section 9.3(d)):

A. If a Developer Event of Default occurs under Section 9.2(c), after taking into account the effect any Extension as permitted therein, (i) the Parties agree that the University is likely to sustain delay damages that are difficult to ascertain, and thus as compensation for such delay damages, the University shall be entitled to, as liquidated damages and in lieu of all other claims to daily delay damages, the applicable sums set for in Attachment 9.3(d) (such sums each, a “Delay Credit”) [\$5,000 per day for failure to timely achieve substantial completion, and \$1,000 per day for failure to timely achieve final completion], commencing on the applicable dates set forth in Attachment 9.3(d) and continuing on a daily basis through the applicable date for Completion, and (ii) if applicable, the University and NCCD shall also be entitled to terminate this Agreement in accordance with Section 9.3(a), in which event the University shall be entitled to (A) a Delay Credit for the delay, and (B) any other damages to which the University is entitled under applicable Law, subject to reasonable mitigation to the extent required by applicable Law.

B. The Parties hereby agree that the Delay Credits set forth above for delay are a reasonable estimate of the damages the University is likely to sustain as a result of any such delay. Developer shall pay any Delay Credits hereunder to the University, in cash or other immediately available funds, via wire transfer or otherwise as directed by the University within twenty-two (22) Business Days after the applicable date of Completion or Final Completion, as the case may be, such obligation to survive the expiration of the Term and the termination of this Agreement.

15. Return of Site (Section 9.9):

If the Development Agreement terminates after the Financial Close of Escrow and prior to Final Completion due to a Developer Event of Default, or pursuant to Section 10.1, Developer shall, at its sole expense, return the Site to NCCD and University in a safe and secure condition, and unless otherwise requested by the University or NCCD, shall remove all loose building materials and debris present at the Site resulting from the Developer’s Construction activities.

16. Plans and Data (Section 9.10):

If the Development Agreement is terminated before Final Completion, but after the Financial Close of Escrow, then provided that NCCD has paid the Developer all amounts then due to the Developer under this Agreement and/or the Disbursement Agreement, the Developer shall assign and deliver to the University any and all copies of reports in its possession regarding the Site and all properly sealed and certified Final Construction Documents in the possession of, or prepared for the Developer, to which the Developer has possession or control, or is reasonably able to gain possession, within sixty (60) days after such termination. The Developer shall include in all contracts and authorizations for services pertaining to the planning and design of the COB Improvements, an express agreement by the Person performing such services that the University may use such reports and/or sealed and certified Final Construction Documents as provided in this Section 9.10 without compensation or payment from the University in the event such reports and/or sealed and certified Final Construction Documents are delivered to the University under the provisions of this Section 9.10. The University may use any such sealed and certified Final Construction Documents and reports which have been issued in final form by the preparer for any purpose whatsoever relating to the Site, without cost or liability therefore to the Developer.

17. Supplier Diversity (Section 10.24):

Developer shall exercise good faith efforts to engage minority-owned, women-owned and other small disadvantaged business enterprises, as well as local businesses to perform some of the Developer's Work hereunder, and shall comply with University Regulations, as identified in Attachment 12-3, including without limitation Nevada System of Higher Education Handbook, Title 4, Chapter 10, Section 2: Supplier Diversity Spending and Inclusion Policy and Nevada System of Higher Education Procedures and Guidelines Manual, Chapter 5, Section 2(II): Tier 2 & Subcontractor Reporting Requirements; provided, however, this clause shall not prevent Developer from engaging an enterprise with whom Developer has a preferred supplier or strategic relationship.

18. Naming Rights (Section 10.25):

Subject to the Tax Agreement, all naming rights with regard to the COB Project or any part thereof, including without limitation the sole right to collect and retain any and all monies related thereto, shall belong to the University exclusively.

19. Sovereign Immunity (Section 10.26):

Nothing contained in this Development Agreement shall be construed to waive, limit or otherwise alter University's defense of sovereign immunity, which defense is hereby expressly reserved, nor to waive or limit the protections afforded to University under NRS 41.0305 to 41.039.

20. Contingent on Board of Regents' Approval (Section 10.28):

Effectiveness of this Development Agreement is contingent upon approval by the Board of Regents of the Nevada System of Higher Education in their sole and absolute discretion. If the Board of Regents, in their sole and absolute discretion, do not approve the terms hereof, this Development Agreement shall be deemed null and void without the necessity of further documentation and shall be deemed to be of no binding effect whatsoever.

Ground Lease:

The Ground Lease ("Ground Lease") is by and between the University (as "Landlord") and NCCD (as "Tenant").

The Ground Lease sets forth the terms and conditions upon which the University would grant a leasehold estate in the Site to NCCD, for purposes of securing the funding necessary to construct the COB Project. Concurrently with the execution of the Ground Lease, Tenant, as sublandlord, shall enter into that certain Sublease effective as of the Effective Date [the date of the Ground Lease] with the University, as subtenant, pursuant to which, the University shall sublease the Site and the Improvements in connection with the development of the Project pursuant to the Development Agreement. The land that is the subject of the Ground Lease is comprised of certain portions of the Property and is more particularly described on the attached Attachment A-1 and shown on the attached Attachment A-2 (collectively, the "Site").

Capitalized terms not otherwise defined herein shall have the meaning for such terms set forth in the Ground Lease.

Ground Lease Key Terms:

1. Lease Site Boundaries (Section 1.2):

The Landlord and Tenant agree that Attachment A-1 and Attachment A-2 may be amended from time to time to reflect the Site necessary for the development and operation of the Project upon written agreement of the parties hereto.

In addition, Landlord and Tenant hereby acknowledge and agree that as of the Effective Date [the date of the Ground Lease], the Premises do not include the portion of the Site consisting of the existing restaurant lease depicted on Attachment A-2; provided, however, upon termination of such restaurant lease, anticipated to occur on or about August 15, 2023, such portion of the Site comprised of the existing restaurant lease shall be deemed to be included in the Premises leased by Landlord to Tenant hereunder upon the date of such termination.

The Board of Regents of the Nevada System of Higher Education expressly delegate authority to the Chancellor of the Nevada System of Higher Education to execute amendments made pursuant to this Section 1.2.

2. Term (Section 1.5):

The term of the Ground Lease (“Term”) shall commence on the Effective Date and terminate at 11:59 p.m. local time on the date that is thirty-five (35) years thereafter, unless sooner terminated as expressly provided herein. The Ground Lease shall expire without further notice upon its expiration, and no holding over shall be permitted. Any holding over by Tenant after the expiration of the Ground Lease shall not constitute a renewal or extension nor shall it give Tenant any rights in or to the Premises or any part thereof. In addition, and notwithstanding anything to the contrary contained herein, the Ground Lease shall terminate prior to such thirty-five (35) year term on the date that the Bonds are no longer outstanding pursuant to the terms of the Indenture and all amounts due and payable by Tenant under the Loan Agreement are paid in full and discharged.

3. Payment of Rent (Section 2.2):

A. During the term of the Sublease, Fixed Rent shall be in the amount of One U.S. Dollar (\$1.00) per annum. Fixed Rent under this Section 2.2.1 shall be paid in advance in annual installments, commencing on the Effective Date and on each anniversary thereafter; provided, however, Tenant shall have the right to prepay Fixed Rent due and payable at any time to Landlord. The parties agree that the Fixed Rent payable under this Section 2.2.1 and performance of Tenant’s obligations under the Transaction Documents are good and sufficient consideration for the lease of the Premises hereunder.

B. In the event the Sublease terminates prior to the Ground Lease as provided therein, (i) commencing on first day following the effective date of the termination of the Sublease and continuing for twenty-four (24) months, Fixed Rent shall be in the amount of One U.S. Dollar

(\$1.00) per annum; and (ii) after the period established in Section 2.2.2(i), Fixed Rent shall be equal to Seventy-Five Thousand U.S. Dollars (\$75,000.00) per annum, provided that the Fixed Rent payable under this Section 2.2.2(ii) shall be increased on an annual basis commencing on the fifth (5th) annual anniversary by an amount equal to three percent (3%) of the Fixed Rent for the preceding year of the Term. Fixed Rent under this Section 2.2.2 shall be paid in advance in annual installments as provided for above; provided, however, Tenant shall have the right to prepay Fixed Rent due and payable at any time to Landlord.

4. Prohibited Uses (Section 3.2.2):

No portion of the Premises shall be utilized for the following (each a “Prohibited Use,” and collectively, the “Prohibited Uses”): (i) as an adult theater, adult bookstore, adult video store, or for any other form of adult entertainment; (ii) for the sale or rental of any pornographic or “adult” materials, except at incidental to the sale of “general audience” DVDs, games, magazines or books; (iii) for the sale, dispensing or use of marijuana or marijuana-infused products (as defined in Nevada Revised Statute 453A.112), whether for medicinal or other purposes; (iv) for the operation of any gaming activity (as defined in Chapter 463 of the Nevada Revised Statutes); (v) for purposes of marketing, offering, or making of any deferred deposit loans, high-interest loans, title loans, or check-cashing services (as those terms are defined in Chapter 604A of the Nevada Revised Statutes); (vi) for transacting as, or conducting the operation of, a pawnbroker (as defined in NRS 646.010); (vii) for any form of short or long term lodging, including without limitation as a hotel, motel, residence hall, or apartment complex; (viii) to administer, promote or conduct the operations of any postsecondary educational institution other than one operated by University; or (ix) any other use which is prohibited by written policy, whether presently existing or later adopted, of the Board of Regents of the Nevada System of Higher Education from occurring on property owned by the Nevada System of Higher Education.

5. Financing (Article 4):

Tenant shall be responsible for arranging the issuance of the Bonds and making a portion of the proceeds thereof available to Developer pursuant to the Disbursement Agreement and the Indenture. Landlord agrees to reasonably cooperate with the Tenant and to provide such reasonable assistance as the Tenant may need to facilitate the issuance of the Bonds. Any other financing which would encumber Tenant’s Interest or any amendment or renewal thereof during the Term, and any refinancing or refunding of any such financing, shall require the prior written approval of the Landlord in the Landlord’s sole and absolute discretion and in no event shall the documents evidencing any such financing encumber the interest of Landlord in this Ground Lease or its fee interest in the Site. Excluding the University’s obligations to make payments under the Sublease as Subtenant, (i) the University shall not incur or insure any indebtedness with respect to the Project, and (ii) any and all financing for the Project shall (A) not rely on the credit of the University, and (B) shall be non-recourse to the University and the State of Nevada. In connection with any refinancing of the Bonds permitted hereunder, the parties shall mutually agree to allocate any savings associated with any refinancing as may be appropriate to Landlord. Public money shall not be used to finance any part of the Project.

6. Taxes and Assessments (Section 5.1):

Landlord shall at all times be the owner of the Site and the Improvements leased to Tenant under this Ground Lease. In addition, Landlord and Tenant have determined that the use of the Premises pursuant to Article 3, above, is exclusively in furtherance of: (i) the educational and charitable purposes of Tenant, and (ii) the educational, research and public purposes of University. Accordingly, the parties intend and expect that the leasehold estate of Tenant created by this Ground Lease together with the Project, will be eligible for exemption under Nevada law from Property and Possessory Interest Taxes.

7. Compliance with Laws (Article 7):

Throughout the Term, and subject to the terms and conditions contained in the Development Agreement and the Sublease, Tenant shall, at its sole cost and expense, promptly comply with Applicable Law except as expressly provided herein. Notwithstanding the forgoing, to the extent the Sublease terminates due to an Event of Default by University as Subtenant under the Sublease prior to the Termination Date of this Ground Lease, Landlord shall be responsible for reimbursing Tenant upon demand for its costs and expenses incurred following such termination associated with causing the Premises to comply with Applicable Law.

8. Indemnification (Article 12):

A. Except to the extent caused by the acts or omissions of Tenant or any of the Tenant Indemnitees (defined below), and solely to the extent limited in accordance with NRS 41.0304 to 41.039, inclusive, Landlord, to the extent permitted by Applicable Law, hereby releases and agrees to indemnify, defend and hold harmless Tenant and all of its officers, employees, directors, agents, and consultants (hereinafter collectively referred to as the "Tenant Indemnitees") of and from any and all third-party claims, demands, liabilities, losses, costs, or expenses for any loss from bodily injury (including death), personal injury, property damage, expenses, taxes and attorneys' fees (collectively "Claims"), caused by, growing out of, or otherwise happening in connection with the negligent acts or omissions of Landlord or the Landlord Indemnitees (as defined below). Landlord will assert the defense of sovereign immunity as appropriate in all cases, including malpractice and indemnity actions. Landlord's indemnity obligation for actions sounding in tort is limited in accordance with the provisions of NRS 41.035.

B. Except to the extent caused by the acts or omissions of Landlord or any of the Landlord Indemnitees (defined below), Tenant to the extent permitted by Applicable Law, subject to Section 25.11, hereby releases and agrees to indemnify, defend and hold harmless Landlord and all of its regents, officers, employees, directors, agents, and consultants (hereinafter collectively referred to as the "Landlord Indemnitees") of and from any and all Claims, caused by, growing out of, or otherwise happening in connection with the negligent acts or omissions of Tenant or the Tenant Indemnitees.

9. No Early Termination (Section 20.1):

Notwithstanding anything to the contrary contained herein, in no event shall this Ground Lease be terminated for any reason whatsoever while the Sublease remains in effect or while any Bonds remain outstanding under the Indenture.

10. Leasehold Mortgage Permitted (Section 24.1):

Tenant shall have the right to place a leasehold mortgage or leasehold deed of trust (including the Leasehold Deed of Trust) on Tenant's Interest in this Ground Lease for the benefit of the beneficiary under the Leasehold Deed of Trust (together with any beneficiary under any replacements, amendments, or assignments of the Leasehold Deed of Trust, the "Beneficiary"), upon the condition that all rights acquired under such leasehold mortgage or leasehold deed of trust shall be, and such leasehold mortgage or leasehold deed of trust, as applicable, shall expressly state that it is, subject and subordinate to all of the rights and interests of Landlord hereunder and under the Sublease. The execution and delivery of a leasehold mortgage shall not be deemed to constitute an assignment or transfer of Tenant's leasehold interest nor shall the holder of a leasehold mortgage be deemed to be an assignee or transferee of this Ground Lease so as to require such holder to assume the performance of any of the terms, covenants or conditions on the part of Tenant to be performed hereunder. The respective rights and obligations of Landlord and any holder of a leasehold mortgage or beneficiary of a leasehold deed of trust, shall be as set forth in such leasehold mortgage or the Direct Agreement – Ground Lease, as applicable, which is incorporated herein to the extent applicable to this Lease.

11. Requested Amendments Related to Leasehold Deed of Trust (Section 24.3):

Landlord and Tenant agree to cooperate in including in this Ground Lease by suitable amendment from time to time any provision that may reasonably be requested by any proposed holder of a leasehold mortgage or leasehold deed of trust for the purpose of implementing the mortgagee-protection provisions contained in this Ground Lease, and Landlord and Tenant each agrees to execute and deliver any agreement necessary to effect any such amendment; provided, however, that any such amendment shall be in form and substance acceptable to Landlord and shall not in any way affect the Term or the Fixed Rent or other amounts payable by or to Landlord under this Ground Lease nor otherwise adversely affect any rights or benefits of Landlord under this Ground Lease. The Board of Regents of the Nevada System of Higher Education expressly delegate authority to the Chancellor of the Nevada System of Higher Education to execute amendments made pursuant to this Section 24.3.

12. Sovereign Immunity (Section 25.25):

Nothing contained in this Ground Lease shall be construed to waive or limit University's right to assert the defense of sovereign immunity, which defense is hereby expressly reserved, nor to waive or limit the protections afforded to University under NRS 41.0305 to 41.039.

13. Contingent on Board of Regents' Approval (Section 25.26):

Effectiveness of this Ground Lease is contingent upon approval by the Board of Regents of the Nevada System of Higher Education in their sole and absolute discretion. If the Board of Regents, in their sole and absolute discretion, do not approve the terms hereof, this Ground Lease shall be deemed null and void without the necessity of further documentation and shall be deemed to be of no binding effect whatsoever.

Sublease:

The Sublease Agreement (the “Sublease”) is by and between NCCD (as “Sublandlord”) and the University (as “Subtenant”).

The Sublease sets forth the terms and conditions upon which the Sublandlord is prepared to sublease the Site and the Improvements to the University, and the University is prepared to sublease the Site and the Improvements from Sublandlord, in connection with the development of the Project pursuant to the Development Agreement.

Capitalized terms not otherwise defined herein shall have the meaning for such terms set forth in the Sublease.

Sublease Key Terms:

1. Sublease Site Boundaries (Section 1.2):

Sublandlord and Subtenant acknowledge and agree that Attachment A-1 and Attachment A-2 shall be consistent with Attachment A-1 and Attachment A-2 to the Ground Lease and such Attachments may be amended from time to time to reflect the Site necessary for the development and operation of the Project upon written agreement of the parties hereto.

In addition, Sublandlord and Subtenant hereby acknowledge and agree that as of the Effective Date [the date of the Sublease] the Premises do not include the portion of the Site consisting of the existing restaurant lease depicted on Attachment A-2; provided, however, upon termination of such restaurant lease, anticipated to occur on or about August 15, 2023, such portion of the Site comprised of the existing restaurant lease shall be deemed to be included in the Premises leased by Sublandlord to Subtenant hereunder upon the date of such termination.

The Board of Regents of the Nevada System of Higher Education expressly delegate authority to the Chancellor of the Nevada System of Higher Education to execute amendments made pursuant to this Section 1.2.

2. Term (Section 1.5):

The term of the Sublease (“Term”) shall commence on the Effective Date and shall expire at 11:59 p.m. local time on the date that is thirty (30) years thereafter (the “Sublease Expiration Date”), unless sooner terminated in accordance with the provisions of the Sublease. Any holding over by Subtenant after expiration shall not constitute a renewal or extension nor shall it give Subtenant any rights in or to the Premises or any part thereof. In addition, and notwithstanding anything to the contrary contained herein, the Sublease shall terminate prior to such thirty (30) year term on the date that the Bonds are no longer outstanding pursuant to the terms of the Indenture and all amounts due and payable under Loan Agreement are paid in full and discharged.

3. Base Sublease Payments (Section 2.2.1):

During the Term, Subtenant shall pay to the Trustee, on behalf of and as assignee of the Sublandlord, a Base Sublease Payment on each Base Sublease Payment Date starting on the Base Sublease Payment Commencement Date. All such payments shall be fully credited to Subtenant's obligation to make the Base Sublease Payments hereunder. The Base Sublease Payments payable under this Sublease shall be comprised of separately stated principal and interest components in the amounts required to be paid by Sublandlord under the Lona Agreement and as set forth on the attached Attachment B, and shall be solely for the payment of the aggregate amount of the principal of, premium, if any, and interest on the Bonds, as and when due, until the principal of and interest on the Bonds shall have been fully paid or provision for the payment thereof shall have been made in accordance with the Indenture.

4. Administrative Expense Reimbursements (Section 2.2.2):

In addition to the Base Sublease Payments, during the Term, Subtenant shall pay to the Trustee, on behalf of and as assignee of the Sublandlord all additional amounts sufficient to pay all fees, expenses and other amounts payable to the Issuer and/or the Trustee under the Bond Documents, including without limitation all amounts payable by the Borrower pursuant to Section 5.02(b) of the Loan Agreement including the Authority Issuance Fee and the Authority Annual Fee (collectively, "Administrative Expense Reimbursements").

5. Rent Adjustments (Section 2.2.4):

Notwithstanding anything to the contrary contained in this Section 2.2, the parties recognize and agree that the payment schedule contained in Attachment B is a good faith estimate of the anticipated Basic Loan Payments due from Sublandlord under the Loan Agreement. The parties agree that Attachment B shall be amended as follows: (i) Following Financial Close of Escrow (as defined in the Development Agreement) to reflect the actual Basic Loan Payments due from Sublandlord under the Loan Agreement;

....

The Board of Regents of the Nevada System of Higher Education expressly delegate authority to the Chancellor of the Nevada System of Higher Education to execute amendments made pursuant to this Section 2.2.4.

6. NCCD Fees (Section 2.3.2):

As consideration for and in recognition of the assistance to be provided by Sublandlord to the University in facilitating the provision of the needed educational facility for the University's College of Business for its students, faculty, and staff and to otherwise assist to the University in furthering its educational, research, and public purposes, the University agrees to pay Sublandlord, or cause Sublandlord to be paid, as Additional Rent, (a) an origination fee equal to \$125,000 on the Base Sublease Payment Commencement Date (the "NCCD Origination Fee"), which fee shall be paid from the proceeds of the Bonds, and (b) (i) beginning in the first full month following the Base Sublease Payment Commencement Date until the Completion of the Project an amount equal to \$5,000 per month and (ii) beginning in the month after Completion of the Project, an amount

equal to, \$3,500 per month, which amount shall increase by three percent (3%) annually for the following ten (10) years with no annual increases occurring on the eleventh (11th) year or thereafter (the “NCCD Annual Fee”).

7. Permitted Use (Section 3.1):

University shall use the Premises for activities related to the University’s teaching, research, and outreach missions including, without limitation, traditional classrooms, lecture halls, fundraising activities, special events, community events, and research facilities, together with ancillary activities commonly associated with community outreach and the support of students and faculty in a higher education and research setting, and other legally permissible uses in accordance with the Bond Documents and Applicable Law.

8. Financing of Project (Article 4):

Any financing, other than financings related to the Bonds, which would encumber Sublandlord’s Interest in the Site or this Sublease, or any amendment, renewal, refinancing, or refunding of any such financing, shall be subject to the prior written approval of Subtenant, which approval Subtenant may grant or withhold at its sole and absolute discretion, and in no event shall the documents evidencing any such financing encumber the interest of Subtenant in this Sublease or its fee interest in the Site. Excluding Subtenant’s obligations to make payments under this Sublease or the Development Agreement, as applicable, (i) University shall not incur or insure any indebtedness with respect to the Project, and (ii) any and all financing for the Project shall (A) not rely on the credit of the University, and (B) shall be non-recourse to the University and the State of Nevada. In connection with any refinancing of the Bonds during the Term of the Sublease and as permitted hereunder, the parties shall mutually agree to allocate any savings associated with any refinancing as may be appropriate to Subtenant. Public money shall not be used to finance any part of the Project.

9. Taxes and Assessments (Section 5.1):

University, as Landlord under the Ground Lease, is at all times the owner of the Site and the Improvements. In addition, Sublandlord and Subtenant have determined that the use of the Premises pursuant to Article 3, above, is exclusively in furtherance of (i) the educational and charitable purposes of Sublandlord, and (ii) the educational, research and public purposes of University. Accordingly, the parties intend and expect that the subleasehold estate of Subtenant created by this Sublease together with the Premises, will be eligible for exemption under Nevada law from Property and Possessory Interest Taxes.

10. Financing Statements (Section 11.2):

Subtenant hereby authorizes Sublandlord to file one or more financing and/or continuation statements, and amendments thereto, relating to all or any part of the Assigned Agreements without the signature of Subtenant where permitted by Applicable Law. A photocopy or other reproduction of this Sublease or any financing statement covering the Transaction Documents or any part thereof shall be sufficient as a financing statement where permitted by Applicable Law.

11. Indemnification (Article 13):

A. Except to the extent caused by the acts or omissions of Sublandlord or any of the Sublandlord Indemnitees (defined below), and solely to the extent limited in accordance with NRS 41.0304 to 41.039, inclusive, Subtenant, to the extent permitted by Applicable Law, hereby releases and agrees to indemnify, defend and hold harmless Sublandlord and all of its officers, employees, directors, agents, and consultants (hereinafter collectively referred to as the "Sublandlord Indemnitees") of and from any and all third-party claims, demands, liabilities, losses, costs, or expenses for any loss from bodily injury (including death), personal injury, property damage, expenses, taxes and attorneys' fees (collectively "Claims"), caused by, growing out of, or otherwise happening in connection with the negligent acts or omissions of Subtenant or the Subtenant Indemnitees (as defined below). Subtenant will assert the defense of sovereign immunity as appropriate in all cases, including malpractice and indemnity actions. Subtenant's indemnity obligation for actions sounding in tort is limited in accordance with the provisions of NRS 41.035.

B. Except to the extent caused by the acts or omissions of Subtenant or any of the Subtenant Indemnitees (defined below), Sublandlord to the extent permitted by Applicable Law, subject to Section 24.12, hereby releases and agrees to indemnify, defend and hold harmless Subtenant and all of its regents, officers, employees, directors, agents, and consultants (hereinafter collectively referred to as the "Subtenant Indemnitees") of and from any and all Claims, caused by, growing out of, or otherwise happening in connection with the negligent acts or omissions of Sublandlord or the Sublandlord Indemnitees.

12. No Early Termination (Section 21.1):

Except as set forth in Section 21.2 and except as a result of an Event of Default under Section 20.1.8 which resulted in the termination of the Development Agreement, this Sublease shall not be terminated for any reason whatsoever by Subtenant until the principal of and premium, if any, and interest on the Bonds have been paid in full as provided in the Indenture, and all other liabilities of the Borrower accrued and to accrue under the Loan Agreement have been paid. Upon (i) the full payment and retirement of the Bonds, and all other liabilities of the Borrower accrued and to accrue under the Loan Agreement, or (ii) termination or expiration of the Ground Lease, the Term hereunder shall automatically end. It is acknowledged and agreed by the parties that this Sublease may be terminated by Sublandlord due to an Event of Default by Subtenant in accordance with Section 20.2 hereof; provided, however that the term of the Ground Lease shall not be affected, changed or otherwise impacted as a result of such termination by Sublandlord or termination by the Subtenant as a result of an Event of Default under Section 20.1.8 and the Ground Lease shall continue in full force and effect pursuant to the terms thereof.

13. Fiscal Fund-Out Termination (Section 21.2):

Notwithstanding any other provision, term or condition of this Sublease to the contrary, Subtenant, pursuant to Article 9, Section 3 of the Nevada Constitution, or any applicable law enacted by the Nevada legislature, may terminate this Sublease in the event any funding authority fails to appropriate funds to enable the obligations of this Sublease to be fulfilled. If for any reason Subtenant's funding from state and/or federal sources is not appropriated or is withdrawn, limited,

or impaired, such that sufficient funding is not available to meet its financial obligations under this Sublease, then Subtenant may terminate this Sublease without penalty (“Fiscal Fund-Out Termination”). Such termination shall be effective thirty (30) days after receipt by Sublandlord (who shall be obligated to provide a copy thereof to Trustee and the Issuer) of written notice from Subtenant to terminate pursuant to this Section 21.2. Subtenant shall not be considered in default of any provision, term or condition of this Sublease by terminating this Sublease pursuant to this Section 21.1. Upon any such Fiscal Fund-Out Termination, the Term of this Sublease shall terminate as provided herein; provided, however, the term of the Ground Lease shall not be affected, changed or otherwise impacted as a result of a Fiscal Fund-Out Termination and the Ground Lease shall continue in full force and effect.

14. Sovereign Immunity (Section 24.27):

Nothing contained in this Sublease shall be construed to waive or limit University’s right to assert the defense of sovereign immunity, which defense is hereby expressly reserved, nor to waive or limit the protections afforded to University under NRS 41.0305 to 41.039.

15. Contingent on Board of Regents’ Approval (Section 24.28):

Effectiveness of this Sublease is contingent upon approval by the Board of Regents of the Nevada System of Higher Education in their sole and absolute discretion. If the Board of Regents, in their sole and absolute discretion, do not approve the terms hereof, this Sublease shall be deemed null and void without the necessity of further documentation and shall be deemed to be of no binding effect whatsoever.

Direct Agreements (3):

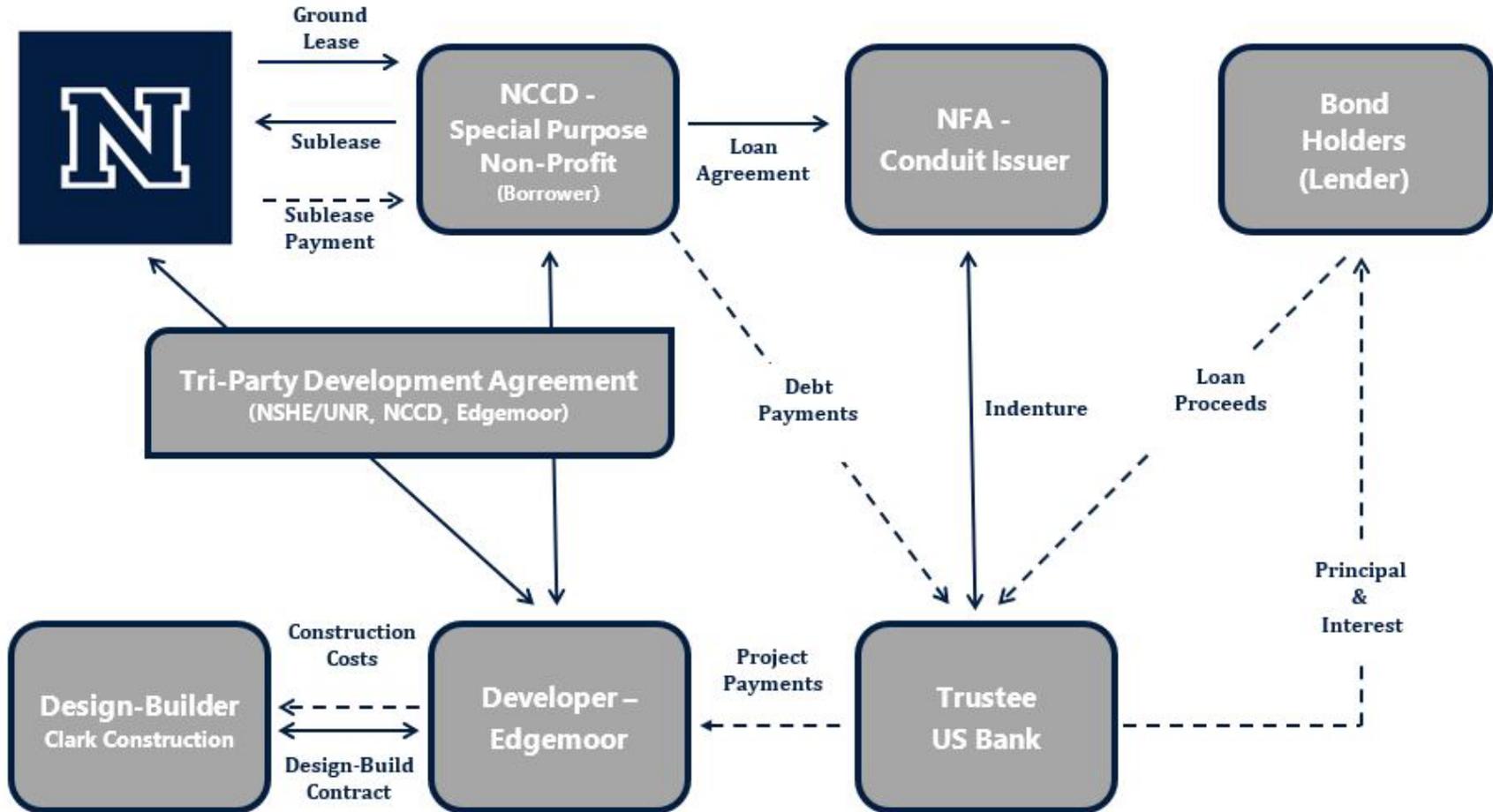
The Direct Agreements are three (3) agreements executed by and among the University, Trustee, Developer, and NCCD, as applicable, reflecting certain consents and the granting a security interest to the Trustee.

1. Under the Direct Agreement between the Trustee, NCCD, the University and the Developer with respect to the Development Agreement, NCCD, the University and the Developer agree to provide the Trustee with notice of a default under the Development Agreement, and a right to cure any such default.

2. Under the Direct Agreement between the Trustee, the University and NCCD, with respect to the Ground Lease, the University and NCCD agree to provide the Trustee with notice of a default under the Ground Lease, and an opportunity to cure.

3. Under the Direct Agreement between the Trustee, NCCD and the University with respect to the Sublease, NCCD and the University agree to provide the Trustee with notice of a default under the Sublease, and a right to cure any such default.

Transaction Structure



DEVELOPMENT AGREEMENT

By and Among

BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON
BEHALF OF THE UNIVERSITY OF NEVADA, RENO;

NCCD – UNR PROPERTIES LLC, a Nevada limited liability company;

and

UNR/EDGEMOOR GATEWAY PARTNERS LLC, a Maryland limited liability company

Dated as of _____, 2023

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DEVELOPMENT AGREEMENT

THIS DEVELOPMENT AGREEMENT (this “Agreement” or “Development Agreement”) is dated for reference purposes as of _____, 2023 (the “Effective Date”), and is entered into by and among the **Board of Regents of the Nevada System of Higher Education, on behalf of the University of Nevada, Reno** (the “University”), NCCD -UNR Properties LLC, a Nevada limited liability company (“NCCD”), and UNR/Edgemoor Gateway Partners LLC, a Maryland limited liability company (“Developer”).

RECITALS

THIS AGREEMENT is made with reference to the following facts and circumstances:

A. The University owns certain real property referred to as Phase I of the Mathewson University Gateway (the “Gateway”), comprising approximately 2.21 acres located on its Reno, Nevada campus (the “Campus”). The land that is the subject of this Agreement is comprised of certain portions of the Gateway and is shown on the attached Attachment A (collectively, the “Site”).

B. On or about December 16, 2021, the University issued Request for Proposals 8752 (the “RFP”) seeking creative and innovative proposals to develop the Gateway to include space for the University’s College of Business (the “COB Project”) and a complementary private sector development on the portion of the Gateway not used by the College of Business (the “Hotel Project”).

C. After an extensive evaluation process the University determined that Developer’s responses to the RFP warranted entering into exclusive negotiations with Developer.

D. The University and the Developer have entered into that certain Engagement Agreement dated August 17, 2022 (the “Engagement Agreement”), as the same may from time to time be amended, pursuant to which the Developer and the University have agreed to negotiate documents for the development of the Gateway Project.

E. The University intends that development of the Hotel Project shall be accomplished pursuant to a separate development agreement and related documents.

F. NCCD is a Nevada limited liability company organized to support and facilitate the development, construction, and financing of the COB Project.

G. NCCD desires to obtain a long-term ground leasehold interest in the Site in order to develop, construct, and operate the COB Project. NCCD agrees to negotiate in good faith and without undue delay any documents the University or Developer deem to be necessary for the development of the Site.

H. Upon completion of the COB Project, the University desires to occupy the COB Project under a long-term Sublease between NCCD and the University.

I. The Parties now desire to enter into this Agreement to set forth the actual terms and conditions upon which the COB Project will be financed, built, and operated, subject to certain conditions precedent set forth in this Agreement, including (i) the University would grant a leasehold estate in the Site to NCCD pursuant to a long-term ground lease (the “Ground Lease”), (ii) the Developer would design, develop, and construct the COB Improvements, and obtain COB Project approvals in connection therewith (the “Developer’s Work”), (iii) NCCD would secure financing to pay for the Developer’s Work, (iv) the University would sublease the Site and the COB Improvements from NCCD pursuant to a long-term sublease between NCCD, as sublessor, and the University, as sublessee (the “Sublease”), and (v) the Developer will enter into the Design/Build Agreement (“Design/Build Agreement” or “DBA”) with the Design Builder with respect to the design and construction of the COB Project.

J. The University and Developer intend to enter into a separate agreement pursuant to which Developer will perform certain ongoing maintenance and operation services in relation to the COB Improvements (the “O&M Agreement”).

AGREEMENT

ACCORDINGLY, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Parties agree as follows:

ARTICLE 1 - GENERAL: PARTIES, TERM, DEFINITIONS, GROUND LEASE, AND PAYMENTS.

1.1 The University. The University is an institution of higher education of the State of Nevada.

1.2 NCCD. NCCD is a Nevada limited liability company.

1.3 Developer. The Developer is a Maryland limited liability company.

1.4 Site. The Site is located in the City of Reno, Nevada, and is shown on the Site Map (Attachment A), which Site Map shall be subject to change from time to time during the Term upon Completion of the various COB Improvements to reflect the location and dimensions of the completed COB Improvements.

1.5 Term of this Agreement. Unless terminated sooner as provided for herein, the term of this Agreement (the “Term”) shall be from the Effective Date until Final Completion of the COB Project pursuant to Article 6 hereof.

1.6 Definitions; Recitals. Initially capitalized terms used in this Agreement are defined in Article 12 or have the meanings given them when first defined. The Recitals are incorporated into this Agreement by reference.

1.7 Certain Documents. If the conditions for the Commercial Close of Escrow as set forth in Article 2 of this Agreement are satisfied, then (A) the University will ground lease the Site to NCCD pursuant to the Ground Lease, which shall be substantially in the form attached hereto as Attachment 1.7.1, (B) NCCD will sublease the Site and COB Improvements to the University

pursuant to the Sublease, which shall be substantially in the form attached as Attachment 1.7.2, and (C) NCCD, Developer and Bond Trustee will enter into a disbursement agreement in the form of Attachment 1.7.3 hereto (the “Disbursement Agreement”) regarding the disbursement of the COB Project Fund Amount to finance the Developer’s Work for a firm fixed lump sum amount set forth in the Schedule of Values. Any changes to such documents, the forms of which are attached to this Agreement, shall require the written approval of all parties thereto.

1.8 Hierarchy; Termination; Survival. During the Term of this Agreement, this Agreement shall control in the event of any inconsistency between this Agreement and the Disbursement Agreement; provided the Disbursement Agreement will govern disbursement of the COB Project Fund Amount to finance the Developer’s Work, as more particularly described therein. From and after Completion of any particular COB Improvement(s), with respect to such COB Improvements, and from and after Final Completion, with respect to the entire COB Project, the Ground Lease, Sublease and the O&M Agreement, alone will govern the rights and obligations of the Parties with respect to use and occupancy of such COB Improvements, the COB Project, and the Site. In all events upon Developer’s Final Completion of the entire COB Project in accordance with the terms of Article 6, this Agreement will terminate in its entirety, except solely the following provisions, which, by their terms, expressly survive such Completion and Final Completion, as applicable: Sections 4.3(a), 4.3(b), 4.4, 5.1, 5.22, 5.23, 5.24(a), 5.26, 5.28(d), 5.29, 6.7, 6.8, 7.2, 9.3(d) (solely with respect to Delay Credits), 9.7, 9.8, 9.9, 9.10, 10.7, 10.11, 10.13, 10.15, 10.19, 10.25, 10.26, 11.1, 11.2 and 11.3, and the Developer’s obligation to complete any Deferred Items. The Completion and Final Completion of any particular Improvement or the entire COB Project will be determined as provided in Article 6 below.

ARTICLE 2 COMMERCIAL ESCROW AND COMMERCIAL CLOSING.

2.1 Execution of Transaction Documents. Subject to the other provisions of this Agreement, the University, NCCD and Developer each agree to execute on or before the Commercial Close of Escrow or Financial Close of Escrow, as applicable and subject to the terms hereof, to the extent each is a party thereto (a) the Ground Lease, (b) the Sublease, (c) the Disbursement Agreement, (d) the Joint Commercial Escrow Instructions, (e) the Joint Financial Escrow Instructions, (f) the Loan Agreement, (g) the Affirmation Certificates, (h) the Notice of Non-Responsibility, (i) O&M Agreement, (j) the Indenture, (k) Leasehold Dead of Trust, (l) the Subordinate Collateral Assignment Agreement, (m) the Security Agreement (n) the Tax Agreement, (o) the Direct Agreements and (p) the DBA (collectively the “Transaction Documents”).

2.2 Commercial Escrow. The Parties intend to consummate the Commercial Close of Escrow via an escrow (the “Commercial Escrow”) of the applicable Transaction Documents and all other appropriate documents, agreements, and instruments with legal counsel for the Developer, the law firm of Pillsbury Winthrop Shaw Pittman LLP (“Escrow Holder”), through its Washington D.C. office at the address set forth below in Section 10.2. The Commercial Escrow shall be conducted in accordance with the terms and conditions of this Agreement and the Joint Commercial Escrow Instructions. For all purposes of this Agreement, the “CCOE Target Date” shall mean June 30, 2023. Not more than three (3) Business Days prior to the CCOE Target Date, the Parties shall execute and deliver to the Escrow Holder joint escrow instructions for the

Commercial Close of Escrow in the form attached hereto as Attachment 2.2 (the “Joint Commercial Escrow Instructions”). Subject to Extension pursuant to Section 10.1, or mutual written agreement executed by the Parties in their sole and absolute discretion, extending the Commercial Closing Date and notwithstanding any other provision of this Agreement, if the Commercial Closing Date has not occurred by the date that is ninety (90) days from the Effective Date (the “Outside Commercial Close Date”) due to one or more reasons other than a Party’s failure to perform its obligations under this Agreement, then the University or the Developer shall have the right to terminate this Agreement, and upon such termination none of the Parties shall have any further obligations under this Agreement except as otherwise expressly provided in this Agreement.

2.3 University’s Conditions Precedent - Commercial Close of Escrow.

(a) The University’s Conditions Precedent. The following are conditions precedent to the University’s obligation to proceed with the Commercial Close of Escrow and Deliver the Site to NCCD:

(i) The Developer and NCCD shall have performed in all material respects all material obligations under this Agreement required to be performed on their respective parts before the Commercial Close of Escrow, and all of the Developer’s and NCCD’s representations and warranties made in Sections 11.1 and 11.3 of this Agreement, respectively, shall have been true and correct in all material respects when made and shall be true and correct in all material respects as of the Commercial Closing Date;

(ii) The University shall have approved, in its sole but reasonable discretion, any changes to the schedule of values attached as Attachment 2.3(a)(ii) (the “Schedule of Values”);

(iii) The Developer shall have furnished certificates of insurance or duplicate originals of insurance policies as required by Section 5.17;

(iv) The Transaction Documents to be executed by Developer and NCCD on or before the Commercial Close of Escrow shall have been approved, executed, and delivered to Escrow Holder; and

(v) There shall exist no action or proceeding before any court, tribunal, or other judicial, adjudicative, or legislative decision-making body, including any administrative appeal, by a third party which seeks to challenge this Agreement, the Ground Lease, the Sublease, or any other Transaction Document, the development of any portion of the COB Project, or the Bond Financing.

(b) Satisfaction of University’s Conditions Precedent. The conditions precedent set forth in Section 2.3(a) above are intended solely for the benefit of the University. If any such condition precedent is not satisfied on or before the CCOE Target Date, the University shall have the right in its sole discretion to (i) waive in writing the condition precedent in question and proceed with the Commercial Close of Escrow; (ii) postpone the Commercial Close of Escrow for the time period reasonably necessary for such condition to be satisfied, provided that, except

as expressly provided herein, in no event shall the Commercial Close of Escrow occur after the Outside Commercial Close Date; or (iii) terminate this Agreement.

2.4 Developer's Conditions Precedent - Commercial Close of Escrow.

(a) Developer's Conditions Precedent. The following are conditions precedent to the Developer's obligation to proceed with the Commercial Close of Escrow:

(i) The University and NCCD shall have performed in all material respects all their respective material obligations under this Agreement which the University or NCCD are required to perform before the Commercial Close of Escrow; and all of the University's and NCCD's representations and warranties made in Sections 11.2 and 11.3 of this Agreement, respectively, shall have been true and correct in all material respects when made and shall be true and correct in all material respects as of the Commercial Closing Date;

(ii) The Transaction Documents to be executed by the University and NCCD on or before the Commercial Close of Escrow shall have been executed and delivered to Escrow Holder;

(iii) There shall exist no action or proceeding before any court, tribunal, or other judicial, adjudicative, or legislative decision-making body, including any administrative appeal, by a third party which seeks to challenge this Agreement, the Ground Lease, the Sublease, or any other Transaction Document, the development of any portion of the COB Project, or the Bond Financing; and

(iv) Without limiting Section 2.4(a)(i) above, the University and/or NCCD, as applicable, shall have performed in all material respects to the Developer's reasonable satisfaction, their respective material obligations under Section 2.7, to the extent such material obligations are required to be completed prior to the Commercial Close of Escrow.

(b) Satisfaction of the Developer's Conditions Precedent. The conditions precedent set forth in Section 2.4(a) above are intended solely for the benefit of the Developer. If any such condition precedent is not satisfied on or before the CCOE Target Date, the Developer shall have the right in its sole discretion to (i) waive in writing the condition precedent in question and proceed with the Commercial Close of Escrow; (ii) postpone the Commercial Close of Escrow for the time period reasonably necessary for such condition to be satisfied, provided that, except as expressly provided herein, in no event shall the Commercial Close of Escrow occur after the Outside Commercial Close Date; or (iii) terminate this Agreement.

2.5 NCCD's Conditions Precedent - Commercial Close of Escrow.

(a) NCCD's Conditions Precedent. The following are conditions precedent to NCCD's obligation to accept Delivery of the Site from the University and to proceed with the Commercial Close of Escrow:

(i) Developer and the University shall have performed in all material respects all material obligations under this Agreement which the University or Developer are required to perform before the Commercial Close of Escrow and all Developer's representations

and warranties made in Section 11.1 of this Agreement shall have been true and correct in all material respects as of the Commercial Closing Date;

(ii) The Transaction Documents to be executed by the University and Developer on or before the Commercial Close of Escrow shall have been executed and delivered to Escrow Holder;

(iii) Each other condition for the benefit of the University as set forth in Section 2.3 shall have been satisfied or waived; and

(iv) There shall exist no action or proceeding before any court, tribunal, or other judicial, adjudicative, or legislative decision-making body, including any administrative appeal, by a third party which seeks to challenge any Transaction Document, or the Bond Financing.

(b) Satisfaction of NCCD's Conditions Precedent. The conditions precedent set forth in Section 2.5(a) above are intended solely for the benefit of NCCD. If any such condition precedent is not satisfied on or before the CCOE Target Date, NCCD shall have the right in its sole discretion to (i) waive in writing the condition precedent in question and proceed with the Commercial Close of Escrow; or (ii) postpone the Commercial Close of Escrow for the time period reasonably necessary for such condition to be satisfied, provided that, except as expressly provided herein, in no event shall the Commercial Close of Escrow occur after the Outside Commercial Close Date.

2.6 Commercial Escrow Closing.

(a) The Parties' Obligations to Close Commercial Escrow. Provided that the conditions precedent set forth in Sections 2.3, 2.4 and 2.5 have all been satisfied or expressly waived by the benefited Party on or before the Outside Commercial Close Date, the Parties shall instruct the Escrow Holder to close the Commercial Escrow, as set forth below. Upon the Commercial Close of Escrow, the University shall Deliver the Site to NCCD, and NCCD shall accept Delivery of the Site under the Ground Lease.

(b) Steps to Close Commercial Escrow. The Commercial Close of Escrow shall be completed as follows:

(i) On or before the Commercial Close of Escrow, the University shall execute and acknowledge, as necessary, and deposit with the Escrow Holder counterpart copies of the following: (1) the Ground Lease; (2) the Sublease; (3) an Affirmation Certificate with respect to the University's representations and warranties under this Agreement; (4) Notice of Non-Responsibility; and (5) any other documents, instruments or instructions reasonably required to be delivered by the University to close the Commercial Escrow.

(ii) On or before the Commercial Close of Escrow, NCCD shall execute and acknowledge, as necessary, and deposit with the Escrow Holder counterpart copies of the following: (1) the Ground Lease; (2) the Sublease; (3) the Disbursement Agreement (which NCCD shall also have caused to be executed by the Bond Trustee); (4) an Affirmation Certificate with respect to NCCD's representations and warranties under this Agreement; and (5) any other

documents, instruments or instructions reasonably required to be delivered by NCCD to close the Commercial Escrow.

(iii) On or before the Commercial Close of Escrow, the Developer shall execute and acknowledge, as necessary, and deposit with the Escrow Holder counterpart copies of the following: (1) the Disbursement Agreement; (2) an Affirmation Certificate with respect to the Developer's representations and warranties under this Agreement; (3) the DBA; and (4) any other documents, instruments or instructions reasonably required to be delivered by Developer to close the Commercial Escrow.

(iv) The Parties shall instruct the Escrow Holder to close the Commercial Escrow as provided in Section 2.2 and pursuant to the Joint Commercial Escrow Instructions. Upon the Commercial Close of Escrow, the Escrow Holder shall deliver to the Parties fully executed copies of the Transaction Documents.

(c) Waiver of Commercial Closing Conditions. Unless the Parties otherwise expressly agree at the time of Commercial Close of Escrow, if the Commercial Close of Escrow occurs, all unsatisfied conditions to the Commercial Close of Escrow shall be deemed waived by the Party benefited by such condition.

2.7 Condition of Title to the Site.

(a) Permitted Encumbrances. The University shall Deliver the Site to NCCD, under and subject to the provisions of the Ground Lease, for the term specified in the Ground Lease, free and clear of (i) possession by others (excluding Developer), and (ii), except for the Permitted Encumbrances, liens, encumbrances, covenants, assessments, easements, leases and taxes or any other title matters that would adversely affect the development of the COB Project or result in a lien on any portion of the COB Project. Developer and NCCD agree that the University shall have until August 30, 2023 to Deliver that portion of the Site currently under lease to Fast Foodies R14, a series of Fast Foodies, LLC (the "Holdover Portion"); provided, however, that the University's failure to timely deliver the Holdover Portion shall be a Change Event.

(b) Title Defect. If at the close of business on the day before the day scheduled for the Commercial Close of Escrow there remains (i) any lien, encumbrance, covenant, assessment, easement, lease, tax or other matter that is not a Permitted Encumbrance and that would adversely affect the development of the COB Project or result in a lien on any portion of the COB Project, or (ii) rights of possession other than those respecting the Holdover Portion or those of NCCD, the Developer, or the University, which would materially and adversely affect development of the COB Project (collectively, "Title Defect"), the Commercial Closing Date shall be extended for thirty (30) days. Thereafter, the University shall, not later than the day before the extended date for the Commercial Close of Escrow, using commercially reasonable efforts, satisfy or remove all Title Defects in a manner reasonably satisfactory to NCCD and Developer. Notwithstanding anything herein to the contrary, the University covenants and agrees to cure all Title Defects that can be cured simply by the payment of money on or before the Commercial Closing Date. It shall be a Change Event, if the University fails to timely satisfy or remove any Title Defect.

(c) Reservation of Mineral Rights by the University. The University shall retain all of the oil, gas and mineral rights of the Site without the right of surface entry.

2.8 Taxes and Assessments. The University intends to use the Site and COB Project in furtherance of the educational, research, and public purposes of the University, and the University shall own the COB Improvements at all times. Accordingly, the Parties intend and expect that the COB Project will be exempt under Nevada law from Property and Possessory Interest Taxes.

(a) It is agreed that Developer shall have no obligation to pay any Property and Possessory Interest Taxes arising from or relating to the COB Project, Gateway, or Site.

(b) If any obligation to pay a Property and Possessory Interest Taxes is imposed by any authority having jurisdiction upon any of the Parties in relation to the COB Project, the University shall be responsible for either authorizing payment of such tax from the Change Contingency or challenging the imposition of such tax.

(c) The obligation to pay any Property and Possessory Interest Taxes as between the University and NCCD shall be governed by the Ground Lease and Sublease.

ARTICLE 3 FINANCIAL ESCROW AND FINANCIAL CLOSING.

3.1 COB Project Financing.

(a) No Public Money. Public money shall not be used to finance any part of the construction of the COB Project. Without limiting the foregoing, excluding the University's obligations to make payments under the Sublease, any and all financing for the COB Project shall (i) not have the University incurring any indebtedness, (ii) not rely upon the credit of the University, and (iii) be non-recourse to the University and the State of Nevada.

(b) Financing.

(i) Bonds. NCCD shall borrow funds raised by the issuance of certain lease revenue bonds with respect to the COB Project (the "Bonds"), including the Series 2023 Bonds, pursuant to a Trust Indenture ("Indenture"), by and between National Finance Authority ("Issuer") as issuer and U.S. Bank Trust Company, National Association ("Bond Trustee") as trustee. NCCD shall use commercially reasonable efforts to cause sufficient Bonds to be issued by the Issuer to raise an amount not less than the sum of the full amount of the Schedule of Values including an allowance with the value of Four Million Five Hundred Thousand U.S. Dollars (\$4,500,000) ("Change Contingency") to fund Change Events, if any; provided that such commercially reasonable efforts shall not require NCCD to agree to terms in the Loan Agreement, Indenture or other related documents that are not satisfactory to NCCD in its reasonable business judgment. The proceeds of such Bonds shall be loaned to NCCD pursuant to a Loan Agreement ("Loan Agreement") by and between Issuer as lender, and NCCD as borrower, and a portion of the proceeds that is equal to the sum of the amount set forth on the Schedule of Values and the Change Contingency will be deposited into a certain account established pursuant to the Indenture (the "COB Project Fund") and be disbursed to Developer in accordance with the Disbursement Agreement. The Base Sublease Payment provided for in the Sublease shall be the amounts

periodically due and owing in connection with the Bonds. Each Party acknowledges and agrees that it has approved the Schedule of Values, Change Contingency, and COB Project Fund Amount set forth therein.

(ii) Developer Subordinated Debt Funding. Developer may, at its sole and exclusive discretion, accept an invitation by the University to provide additional debt funding for the COB Project (“Developer Subordinated Debt Funding”) at any time prior to Final Completion to be used for any purpose for which the Project Fund may be used, which Developer Subordinated Debt Funding must be subordinate in priority and lien to the Series 2023 Bonds and any may be subordinate to any Additional Bonds (as defined below) issued on a senior lien basis under the Indenture (“Senior Lien Bonds”). The terms and conditions of any Developer Subordinated Debt Funding (“DSDF Terms”) must be agreed to by University and Developer in writing (which agreement may be withheld by either University or Developer for any reason); it being understood that neither University nor Developer shall have any obligation to cause a Developer Subordinated Debt Funding to occur. NCCD shall cooperate with any Developer Subordinated Debt Funding, but any Developer Subordinated Debt Funding shall be subject to NCCD’s consent, which shall not be unreasonably withheld, conditioned, or delayed; provided, however, that any NCCD decision not to consent, which is based on advice of tax counsel shall be presumptively reasonable. DSDF Terms may provide for the repayment of any Developer Subordinated Debt Funding to be realized as part of the Developer’s role as Manager under the O&M Agreement and/or as the Developer under this Agreement. Notwithstanding anything to the contrary in this Section 3.1(b)(ii), no Developer Subordinated Debt Funding shall be undertaken on terms that (A) jeopardize NCCD’s classification as a disregarded entity for federal income tax purposes or jeopardize the status of its sole member, National Campus and Community Development Corporation, as a Tax-Exempt Organization (as defined in the Loan Agreement); (B) affect the issuance or status of any tax advantaged financing in place for the COB Project, including but not limited to the Series 2023A Bonds; or (C) cause a default of any Senior Lien Bonds under the Indenture or the Loan Agreement issued prior to the Developer Subordinated Debt Funding.

(iii) Additional Bond Funding. After receiving the prior written consent of the Board of Regents of the Nevada System of Higher Education, which consent shall be given, denied, or condition in its absolute and exclusive discretion, the Parties may initiate the issuance and sale of additional bonds (“Additional Bonds”), if needed, in whole or in part, to finance Completion. Any Additional Bonds may be issued at parity with, or be subordinated to, the Series 2023 Bonds. In such an eventuality, the University and NCCD shall negotiate an appropriate increase in the rent paid under the Sublease to pay for the Additional Bonds and associated costs.

(c) University’s Right to Prior Review and Consent. Notwithstanding any other provision of this Agreement to the contrary, the terms of the Indenture and the Loan Agreement are subject to University’s prior written consent, which shall not be unreasonably withheld, conditioned, or delayed. For the avoidance of doubt, neither such consent nor any review or comments made by the University shall impose upon the University an obligation to make any principle or interest payments.

(d) Cooperation of Parties. Each of the Parties hereto hereby covenants to cooperate in all reasonable respects in arranging for and causing the sale and issuance of the Bonds,

including without limitation the preparation of a description of such Party, the status of its organizational entity and the role of such Party in the transaction, information relating to such Party in connection with the preparation of any offering document(s) for the Bonds, information relating to the tax-exempt status of the Bonds (including the execution of the Tax Agreement and any other certificates required by Bond Counsel in connection with any tax-exemption of the interest on the Bonds), if applicable, and in providing certificates at the Financial Close of Escrow with respect to factual disclosures with respect to the disclosing Party itself and the COB Project in accordance with the applicable Laws.

(e) Further Covenants. From and after the Commercial Closing Date and Financial Closing Date, respectively, Developer and University shall provide such information about the COB Project and the performance of their respective obligations under the Transaction Documents as may be reasonably necessary or convenient for the Parties to comply with the requirements of any continuing disclosure agreement entered into pursuant to SEC Rule 15c2-12 or comparable applicable Laws. In addition, Developer agrees that it shall:

- (i) Not claim tax deductions for depreciation of the COB Project;
- (ii) Not treat itself as the “tax owner” on its books or records; and
- (iii) Not treat itself as the owner of the Bond proceeds for tax or accounting purposes.

(f) Revisions to Transaction Documents. Each of the Parties hereto agrees to undertake such reasonable amendments to the Transaction Documents as are requested by the Issuer and/or the Bond Trustee for purposes of issuing the Bonds, which amendments do not materially alter the economic or other substantive provisions of the Transaction Documents. The Board of Regents of the Nevada System of Higher Education expressly delegate authority to the Chancellor of the Nevada System of Higher Education to execute amendments made pursuant to this Section 3.1(f).

(g) Rights of the Bond Trustee Under the Direct Agreement. Each of the Parties hereto agree that its rights to enforce its remedies in the event of a Developer Event of Default, a University Event of Default or NCCD Event of Default, as applicable, are subject to the rights of the Bond Trustee under the Direct Agreement – Development Agreement by and among the University, NCCD, Bond Trustee, and the Developer.

3.2 Financial Escrow. The Parties intend to consummate the transactions relating to the Bond Financing (the “Financial Escrow”) via an escrow of the applicable Transaction Documents and all other appropriate documents, agreements and instruments with Escrow Holder, and in accordance with the terms and conditions of this Agreement, the Joint Financial Escrow Instructions, and all reasonable instructions of Bond Trustee. The “FCOE Target Date” shall mean June 30, 2023. At least five (5) Business Days prior to the FCOE Target Date, the Parties shall execute and deliver to Escrow Holder joint escrow instructions for the Financial Close of Escrow in the form attached hereto as Attachment 3.2 (the “Joint Financial Escrow Instructions”). Subject to Extension pursuant to Section 10.1, or mutual written agreement executed by the Parties in their sole and absolute discretion, extending the Outside Financial Closing Date, if the Financial Closing

Date, notwithstanding any other provision of this Agreement, has not occurred by the date that is ninety (90) days from the Effective Date (the “Outside Financial Close Date”), then the University or Developer shall have the right to terminate this Agreement, and upon such termination none of the Parties shall have any further obligations under this Agreement except as otherwise expressly provided in this Agreement. In the event of such termination (or any other post-Commercial Close of Escrow termination as a matter of right under this Agreement), each of the Parties shall execute and deliver such documents and take such acts as may be reasonably required to unwind the transactions effectuated in connection with the Commercial Close of Escrow.

3.3 University’s Conditions Precedent - Financial Close of Escrow.

(a) The University’s Conditions Precedent. The following are conditions precedent to the University’s obligation to proceed with the Financial Close of Escrow:

(i) The Commercial Close of Escrow shall have occurred, and from and after the Commercial Close of Escrow, the Developer and NCCD shall have continued to perform in all material respects all material obligations under this Agreement required to be performed on their respective parts before the Financial Close of Escrow, and all of the Developer’s and NCCD’s representations and warranties made in Sections 11.1 and 11.3 of this Agreement, respectively, shall have been true and correct in all material respects when made and shall be true and correct in all material respects as of the Financial Closing Date;

(ii) Any additional Transaction Documents to be executed by Developer and NCCD on or before the Financial Close of Escrow, which were not executed on or before the Commercial Close of Escrow, shall have been executed and delivered to Escrow Holder;

(iii) The proceeds of the Bond Financing shall have been delivered to the Bond Trustee, the COB Project Fund shall have been funded in the amount set forth in the Schedule of Values, and the Bond Trustee shall be committed to make the Initial Disbursement (as defined in the Disbursement Agreement) in accordance with the terms of the Indenture and Disbursement Agreement;

(iv) NCCD, the University, and the Developer shall have agreed on the amount of the Initial Disbursement; the conditions applicable to the Initial Disbursement (as set forth in the Disbursement Agreement) shall have been satisfied or waived by NCCD; and NCCD shall have submitted the Trustee Requisition (as defined in the Disbursement Agreement) for the Initial Disbursement;

(v) From and after the Commercial Close of Escrow, there shall not have occurred any action or proceeding before any court, tribunal, or other judicial, adjudicative or legislative decision-making body, including any administrative appeal, by a third party which seeks to challenge this Agreement, the Ground Lease, the Sublease, or any other Transaction Document, the Bond Financing, or the development of any portion of the COB Project; and

(vi) From and after the Commercial Close of Escrow, there shall not have occurred: (A) the discovery of any Differing Site Conditions, (B) the discovery of any Hazardous Materials on the Site in violation of any Hazardous Materials Laws, (C) a Release of Hazardous Materials on or affecting the Site, (D) the enactment of any Laws or any material

change in Laws adversely affecting the COB Project, or (E) any other event or circumstance; which, individually or in the aggregate, would materially impair any Party's ability to timely perform as required hereunder, including without limitation, Developer's ability to achieve timely Completion of any COB Project Improvement(s).

(b) Satisfaction of University's Conditions Precedent. The conditions precedent set forth in Section 3.3(a) above are intended solely for the benefit of the University. If any such condition precedent is not satisfied on or before the FCOE Target Date, the University shall have the right in its sole discretion to (i) waive in writing the condition precedent in question and proceed with the Financial Close of Escrow; (ii) postpone the Financial Close of Escrow for the time period reasonably necessary for such condition to be satisfied, provided that, except as expressly provided herein, in no event shall the Financial of Escrow occur after the Outside Financial Close Date; or (iii) terminate this Agreement.

3.4 Developer's Conditions Precedent - Financial Close of Escrow.

(a) Developer's Conditions Precedent. The following are conditions precedent to the Developer's obligation to proceed with the Financial Close of Escrow:

(i) The Commercial Close of Escrow shall have occurred, and from and after the Commercial Close of Escrow, the University and NCCD shall have continued to perform in all material respects all their respective material obligations under this Agreement which the University or NCCD are required to perform before the Financial Close of Escrow; and all of the University's and NCCD's representations and warranties made in Sections 11.2 and 11.3 this Agreement, respectively, shall have been true and correct in all material respects when made and shall be true and correct in all material respects as of the Financial Closing Date;

(ii) Any additional Transaction Documents to be executed by University and NCCD on or before the Financial Close of Escrow, which were not executed on or before the Commercial Close of Escrow, shall have been executed and delivered to Escrow Holder;

(iii) From and after the Commercial Close of Escrow, there shall not have occurred any action or proceeding before any court, tribunal, or other judicial, adjudicative or legislative decision-making body, including any administrative appeal, by a third party which seeks to challenge this Agreement, the Ground Lease, the Sublease, or any other Transaction Document, the Bond Financing, or the development of any portion of the COB Project;

(iv) The proceeds of the Bond Financing shall have been delivered to the Bond Trustee, the COB Project Fund shall have been funded in the amount set forth in the Schedule of Values, and Bond Trustee shall be committed to make the Initial Disbursement in accordance with the terms of the Disbursement Agreement;

(v) NCCD, the University, and the Developer shall have agreed on the amount of the Initial Disbursement; the conditions applicable to the Initial Disbursement (as set forth in the Disbursement Agreement) shall have been satisfied or waived by NCCD; and NCCD shall have submitted the Trustee Requisition (as defined in the Disbursement Agreement) for the Initial Disbursement; and

(vi) From and after the Commercial Close of Escrow, there shall not have occurred any event or circumstance which would, individually or in the aggregate, materially impair Developer's ability to timely perform as required hereunder, including without limitation, Developer's ability to achieve timely Completion of any COB Improvements, including: (A) the discovery of any Differing Site Conditions, (B) the discovery of any Hazardous Materials on the Site in violation of any Hazardous Materials Laws, (C) a Release of Hazardous Materials on or affecting the Site, (D) the enactment of any Laws or any material change in Laws. Notwithstanding, the conditions identified in this subsection (vii) shall not be grounds for the Developer to refuse to proceed with Financial Close of Escrow if either, (a) the University remedies the relevant condition or (b) the Developer has materially aggravated the effects of the condition and, absent that aggravation, the condition would not materially impair Developer's ability to timely perform as required hereunder.

(b) Satisfaction of the Developer's Conditions Precedent. The conditions precedent set forth in Section 3.4(a) above are intended solely for the benefit of the Developer. If any such condition precedent is not satisfied on or before the FCOE Target Date, the Developer shall have the right in its sole discretion to (i) waive in writing the condition precedent in question and proceed with the Financial Close of Escrow; (ii) postpone the Financial Close of Escrow for the time period reasonably necessary for such condition to be satisfied, provided that, except as expressly provided herein, in no event shall the Financial Close of Escrow occur after the Outside Financial Close Date; or (iii) terminate this Agreement.

3.5 NCCD's Conditions Precedent - Financial Close of Escrow.

(a) NCCD's Conditions Precedent. The following are conditions precedent to NCCD's obligation to accept Delivery of the Site from the University and to proceed with the Financial Close of Escrow:

(i) The Commercial Close of Escrow shall have occurred, and from and after the Commercial Close of Escrow, the Developer and University shall have continued to perform in all material respects all material obligations under this Agreement required to be performed on their respective parts before the Financial Close of Escrow, and all of the Developer's representations and warranties made in Section 11.1 of this Agreement shall have been true and correct in all material respects when made and shall be true and correct in all material respects as of the Financial Closing Date;

(ii) Any additional Transaction Documents to be executed by Developer and University on or before the Financial Close of Escrow, which were not executed on or before the Commercial Close of Escrow, shall have been executed and delivered to Escrow Holder;

(iii) From and after the Commercial Close of Escrow, there shall not have occurred any action or proceeding before any court, tribunal, or other judicial, adjudicative or legislative decision-making body, including any administrative appeal, by a third party which seeks to challenge this Agreement, the Ground Lease, the Sublease, or any other Transaction Document, the Bond Financing, or the development of any portion of the COB Project;

(iv) The proceeds of the Bond Financing shall have been delivered to the Bond Trustee, the COB Project Fund shall have been funded in the amount set forth in the Schedule of Values, and the Bond Trustee shall be committed to make the Initial Disbursement (as defined in the Disbursement Agreement) in accordance with the terms of the Indenture and Disbursement Agreement;

(v) NCCD, the University, and the Developer shall have agreed on the amount of the Initial Disbursement; the conditions applicable to the Initial Disbursement (as set forth in the Disbursement Agreement) shall have been satisfied or waived by NCCD; and NCCD shall have submitted the Trustee Requisition (as defined in the Disbursement Agreement) for the Initial Disbursement; and

(vi) NCCD shall not have incurred any liability, financial or otherwise, that would adversely (A) impact its ability to perform hereunder, (B) affect the Bond's rating, or (C) impact the University's title policy for the Gateway.

(b) Satisfaction of NCCD's Conditions Precedent. The conditions precedent set forth in Section 3.5(a) above are intended solely for the benefit of NCCD. If any such condition precedent is not satisfied on or before the FCOE Target Date, NCCD shall have the right in its sole discretion to (i) waive in writing the condition precedent in question and proceed with the Financial Close of Escrow; (ii) postpone the Financial Close of Escrow for the time period reasonably necessary for such condition to be satisfied, provided that, except as expressly provided herein, in no event shall the Financial Close of Escrow occur after the Outside Financial Close Date; or (iii) terminate this Agreement after affording the University and the Developer ninety (90) days to satisfy any outstanding condition.

3.6 Financial Escrow Closing.

(a) The Parties' Obligations to Close Financial Escrow. Provided that the conditions precedent set forth in Sections 3.3, 3.4 and 3.5 have all been satisfied or expressly waived by the benefited Party on or before the Outside Financial Close Date, the Parties shall instruct the Escrow Holder to close the Financial Escrow, as set forth below. Upon the Financial Close of Escrow, the Initial Disbursement shall be made to Developer in accordance with the terms of the Disbursement Agreement.

(b) Steps to Close Financial Escrow. The Financial Close of Escrow shall be completed as follows:

(i) On or before the Financial Close of Escrow, University, NCCD and Developer shall each have executed and acknowledged, as necessary, and shall have deposited with the Escrow Holder counterpart copies of any documents, instruments or instructions reasonably required to be delivered to close the Financial Escrow and to issue and deliver the Series 2023 Bonds;

(ii) The Parties shall instruct the Escrow Holder to close the Financial Escrow as provided in Section 3.2 and pursuant to the Joint Financial Escrow Instructions; and

(iii) The Initial Disbursement shall be paid to Developer in accordance with the Indenture and Disbursement Agreement.

(c) Waiver of Financial Closing Conditions. Unless the Parties otherwise expressly agree at the time of Financial Close of Escrow, if the Financial Close of Escrow occurs, all unsatisfied conditions to the Financial Close of Escrow shall be deemed waived by the Party benefited by such condition.

(d) Reimbursement for Certain Costs of Developer. In the event that the Financial Close of Escrow shall not occur and this Agreement is terminated for any reason other than a continuing Developer Event of Default, the University shall pay Developer an amount equal to the sum of (1) all unpaid amounts owed under the Engagement Agreement; (2) the amounts identified in Exhibit A to the Engagement Agreement as deferred compensation; and (3) documented Qualified Out-of-Pocket Costs (defined below) Developer incurred performing its obligations under this Development Agreement from and after the Effective Date until such termination. As of the Effective Date, the Qualified Out-of-Pocket Costs are set forth in Attachment 3.6(d). For purposes hereof, “Qualified Out-of-Pocket Costs” shall mean those expenditures that are incurred by the Developer after the Effective Date in discharge of its obligations under this Agreement which are reasonably approved by the University in advance of the expenditure for (i) architectural and engineering design professionals; (ii) Construction and any Developer’s Work related to the COB Project; (iii) Developer Assumed Regulatory Approvals and Permits; (iv) attorneys’ fees and costs (excluding those incurred as a result of any Dispute between the Parties); (v) those costs set forth on Attachment 3.6(d); (vi) Developer’s out-of-pocket costs incurred from and after the Commercial Closing Date and directly related to the Project that are documented by paid invoices; and (vii) Two Hundred Fifty Thousand U.S. Dollars (\$250,000) for Developer’s administrative costs.

ARTICLE 4

SITE CONDITION; INDEMNIFICATION; COMPLIANCE WITH LAWS.

4.1 Site Condition.

(a) Site Delivery. On the Commercial Close of Escrow, the University shall Deliver the Site to NCCD in the condition required under the Ground Lease, subject to any representations, warranties, and any limitations related thereto, set forth in the Ground Lease, and further subject to the Party’s obligations under this Agreement, including without limitation the University’s obligations under Section 4.3(b).

(b) Damage or Destruction.

(i) In the event of any damage or destruction of the Site occurring prior to Financial Close of Escrow, which the Parties reasonably determine would add less than \$25,000 to the cost of developing the COB Project, Developer, NCCD and the University shall proceed with the Financial Close of Escrow if the other closing conditions are satisfied. In such event, Developer shall remedy the damage or destruction and all proceeds of property insurance payable to the University or NCCD by reason of such damage or destruction, if any, whether under

insurance policies held by the University, NCCD or by Developer, or through self-insurance, shall be paid or rights to such proceeds assigned, as applicable, to Developer.

(ii) If any damage or destruction of the Site occurs prior to the Financial Close of Escrow, which is neither the Developer's responsibility under this Agreement nor aggravated by the acts or omissions of the Developer, and which the Parties reasonably determine would add \$25,000 or more to the cost of developing the COB Project, the University may elect to treat it as a Change Event. If the University declines to treat it as a Change Event, Developer may elect either (i) terminate this Agreement upon prompt written notice to the University, or (ii) to proceed with the Financial Close of Escrow. In the event of termination under this Section 4.1(b)(ii), all insurance proceeds payable to University or NCCD shall be retained by them. In the event the Parties proceed to the Financial Close of Escrow, Developer shall be deemed to have waived its termination right, and any available insurance proceeds payable by reason of such damage or destruction shall be paid or assigned to Developer in accordance with Section 4.1(b)(i) above.

(iii) If at any time between the Financial Close of Escrow and the end of the Term of this Agreement, a fire or other casualty damages or destroys the Site or COB Improvements, or any portion of the Site or COB Improvements, the Developer shall, at its sole cost and expense (subject to Attachment 5.17(b)(16)), restore the COB Improvements constructed by Developer as part of Developer's Work hereunder to their condition existing immediately prior to such casualty and proceed with the COB Project.

(iv) The provisions of this Agreement constitute an express agreement between Developer, the University and NCCD with respect to any casualty to all or any part of the COB Project, and any statute or regulation with respect to any rights or obligations concerning damage or destruction in the absence of an express agreement between the parties, and any other statute or regulation, now or hereafter in effect, shall to the extent permitted by Law have no application to this Agreement or any damage or destruction to all or any part of the COB Project.

4.2 Environmental Matters and Differing Site Conditions.

(a) Environmental Matters. The Developer shall comply with all Hazardous Materials Laws applicable to the Site in performing Developer's Work. If any Hazardous Materials are discovered on the Site, Developer shall promptly perform all required and necessary remediation and other work needed to remove such Hazardous Materials from the Site and to properly dispose the same off-Site, all in accordance with applicable Laws, including Hazardous Materials Laws. So long as the discovered Hazardous Materials are not part of Developer Assumed Hazardous Materials Obligations (defined below), such discovery shall be deemed a Change Event. Notwithstanding the foregoing, Developer shall be solely responsible for, and shall Indemnify the University from, any and all costs to bring the Site into compliance with Hazardous Materials Laws to the extent caused by Hazardous Materials brought by Developer or its contractors or subcontractors onto the Site or other University property in connection with the Developer's Work (collectively, the "Developer Assumed Hazardous Materials Obligations").

(b) Differing Site Conditions. Without limiting the foregoing, if any Differing Site Conditions are discovered on the Site, then the Developer shall promptly perform all required

and necessary work needed to correct such Differing Site Conditions in accordance with all applicable Laws, such discovery and necessary work shall be deemed a Change Event.

4.3 Compliance with Laws.

(a) Compliance with Laws. The Developer shall comply at all times throughout the Term, with respect to the COB Project and the Site, with: (i) all Laws; (ii) all requirements of all policies of insurance that may be applicable to the Site, the COB Improvements, and Developer's personal property; and (iii) all other applicable COB Project Requirements. Subject to the University's obligations in Section 5.22, including without limitation the provisions of Section 5.22(a)(i) regarding Change Events, the cost to comply with this Section 4.3(a) shall be allocated to the Developer. Notwithstanding anything herein to the contrary, the Parties acknowledge that the provisions of this Section 4.3(a) are not intended to modify the allocation of responsibilities contained herein, and in no event shall this Section 4.3(a) be interpreted such that the Developer will be obligated to perform obligations that are expressly allocated to the University or NCCD hereunder or in the Ground Lease or Sublease. The Developer shall, promptly upon request from time to time, provide the University with evidence of compliance with the Developer's obligations under this Section 4.3(a).

(b) Regulatory Approvals and Permits. The Developer, NCCD, and the University each understand that the construction of the COB Improvements on the Site and development of the COB Project may require certain Regulatory Approvals. Accordingly, Attachment 4.3(b) sets forth which of Developer or University shall be responsible for each such Regulatory Approval, provided however that Developer shall not be entitled to a Change Event if the cost of such Regulatory Approval exceeds the costs reflected in the Schedule of Values, as further provided in this Section 4.3(b). The Regulatory Approvals required to be obtained by the Developer are referred to hereunder as the "Developer Assumed Regulatory Approvals." The Regulatory Approvals required to be obtained by the University are referred to hereunder as the "University Assumed Regulatory Approvals." Throughout the process for obtaining any Regulatory Approval, the Developer and the University shall consult and coordinate with each other to obtain any required Regulatory Approvals and shall reasonably cooperate with each other. However, the Developer shall not agree to the imposition of obligations, conditions or restrictions in connection with its efforts to obtain a Permit from any regulatory agency if the University is required to be a co-permittee under such Permit or the conditions or restrictions could create any obligations on the part of the University whether on or off of the Site, unless in each instance the University has previously approved such conditions in writing and in the University's reasonable discretion. The University shall provide Developer with its approval or disapproval thereof in writing within ten (10) Business Days after receipt of Developer's written request. No such approval by the University shall limit the Developer's obligation to pay all the costs of complying with such conditions under this Section 4.3(b), to the extent required pursuant to this Agreement. Subject to the conditions of this Section 4.3(b), the University and/or NCCD shall join any application by the Developer for a required Regulatory Approval and in executing any such Permit issued in connection therewith where required, provided that neither the University nor NCCD shall have any obligation to join in any such application or sign any such Permit if such Party does not reasonably approve the conditions imposed by any other regulatory agency under such application/Permit if such approval is required as set forth above. Developer shall bear all costs associated with applying for and obtaining any necessary Developer Assumed Regulatory

Approvals described on Attachment 4.3(b). The cost of obtaining and complying with Regulatory Approvals shall be allocated between Developer and University as set forth in this Agreement. Each of the University and Developer shall have the right to appeal or contest any condition or Permit in any manner permitted by Law imposed upon any such Regulatory Approval required to be obtained by the University or Developer, as applicable. The University or Developer, as applicable, shall provide the other Party with prior notice of any such appeal or contest and keep the non-contesting Party informed of such proceedings. The Party responsible for obtaining a certain Regulatory Approval shall pay or discharge any fines, penalties or corrective actions imposed as a result of the failure of such Party to comply with the terms and conditions of any Regulatory Approval except to the extent such failure results from the acts or omissions of another Party. Without limiting any other provisions of this Agreement, it shall be a Change Event if the University fails to (i) timely obtain any University Assumed Regulatory Approval, or (ii) comply with the terms and conditions of any University Assumed Regulatory Approval. The University and Developer each agree to use diligent efforts to obtain any Regulatory Approval required to be obtained by such Party.

(c) No term or provision of this Agreement shall be construed to deem or require Developer to be the generator, shipper, arranger, and/or transporter of any Hazardous Materials disposed of from the COB Project or the Site or otherwise as part of the Developer's Work, including any Tanks or Tank Systems or parts thereof encountered during the Developer's Work; neither will Developer be required to take any action that would cause it to be listed or identified as the generator, shipper, arranger, or owner for the purposes of applying any statute, rule, guideline, or regulation.

4.4 Responsibility for Certain Losses.

(a) Developer's Responsibility. Developer shall Indemnify University and NCCD, and any of their respective Indemnified Parties from and against any Losses, but excluding Attorneys' Fees and Costs in actions brought by the University against the Developer, to the extent caused by any acts, omissions or breach of this Agreement by Developer, and any property damage, loss, destruction, personal or bodily injury, or death (each a "Claim") resulting from (a) use, occupancy, improvement, management or control of the Site or any portion thereof by any Developer Responsible Party; (b) Developer's and any Developer Responsible Party's work, activity, condition or occurrence in or about the Site; (c) any negligent act or omission of Developer, or any Developer Responsible Party; and (d) failure to design or construct the COB Project in compliance with all applicable Laws, including without limitation Hazardous Materials Laws and Disable Access Laws; provided, however, that Developer shall have no obligation to Indemnify any Indemnified Party to the extent a Claim arose from that Indemnified Party's (i) failure to comply with its obligation under this Agreement, (ii) negligence, or (iii) willful act or omission of such Indemnified Party.

(b) University's Responsibility. Except to the extent caused by the acts or omissions of any Indemnified Party, and solely to the extent limited in accordance with NRS 41.0305 to 41.039, inclusive, University agrees to approve a University Change Order for the payment to Developer of all Losses incurred by Developer to the extent caused by any acts, omissions or breach of this Agreement by University or any of its employees or Agents.

University's obligations under this Section shall be limited in accordance with the provisions of NRS 41.035.

(c) General Provisions Regarding Responsibility for Certain Losses.

(i) Costs. The foregoing allocation of responsibility for certain Losses shall include, without limitation, reasonable fees and costs of attorneys, consultants and experts, laboratory costs, and related costs, as well as the Indemnified Party's costs of investigating any Loss.

(ii) Immediate Obligation to Defend. A Party that is responsible to another Party pursuant to this Section 4.4 (each, a "Responsible Party") shall also pay for the Indemnified Party's defense even if such claims may be alleged to be groundless, fraudulent or false. The Indemnified Party against whom any claim is made which may be within the scope of the indemnity provisions of this Agreement shall provide notice to the Responsible Party of such claim within a reasonable time after learning of such claim, and thereafter shall cooperate with the Responsible Party in the defense of such claim; provided that any failure to provide such notice shall not affect Responsible Party's obligations under any such indemnity provisions except to the extent Responsible Party is prejudiced by such failure.

(iii) Not Limited by Insurance. Insurance may be used to satisfy a Party's obligation under this Section 4.4, but the insurance requirements and other provisions of this Agreement shall not limit a Responsible Party's obligations under this Agreement, the Ground Lease, or the Sublease.

(iv) Survival. Notwithstanding any other provision in this Agreement to the contrary, the obligations of any Party set forth in this Section 4.4 shall survive the expiration of the Term and any early termination of this Agreement.

(v) Additional Obligations. The rights and obligations under this Section 4.4 are in addition to, and in no way shall be construed to limit or replace, any other obligations or liabilities which the Responsible Party shall have to the other Parties under this Agreement, the Ground Lease, the Sublease, or applicable Laws.

(vi) Defense. The Responsible Party shall, at its option but subject to the reasonable consent and approval of the Indemnified Party, be entitled to control the defense, compromise, or settlement of any matter indemnified by it through counsel of the Responsible Party's own choice; provided, however, in all cases the Indemnified Party shall be entitled to participate in such defense, compromise, or settlement at its own expense. If the Responsible Party shall fail, however, within a reasonable time following notice from the Indemnified Party describing in reasonable detail the nature of the Responsible Party's failure to take reasonable and appropriate action to defend such suit or claim, the Indemnified Party shall have the right promptly to hire outside counsel to carry out such defense, the expense of which shall be due and payable to the Indemnified Party within thirty (30) days after receipt by the Responsible Party of each invoice therefor.

**ARTICLE 5
DEVELOPMENT OF THE SITE.**

5.1 Ownership of COB Improvements. Without regard to which Person constructs or causes the construction of any COB Improvement(s), the University shall own all COB Improvements as they are constructed, installed, erected, or placed on the Site.

5.2 Developer's Construction Obligations.

(a) Scope of Developer's Work; Schedule of Performance. If the Financial Close of Escrow occurs, Developer shall construct or cause to be constructed the COB Improvements described in Attachment B on the Site, subject to the terms and conditions of this Agreement, in the manner set forth in this Article 5 prior to the applicable Target Completion Dates (as the same may be extended as provided in this Agreement) and in accordance with the COB Project Requirements. In the event the University's consent is required for an extension of the applicable Target Completion Date, and the applicable Target Completion Date is so extended, then the University shall not be deemed to be waiving any other rights under this Agreement or implying the extension of any other dates.

(b) Costs; Private Development. Developer shall bear all of the cost of developing the Site and Construction of all COB Improvements, including, without limitation, any and all cost overruns, in accordance with the COB Project Requirements. Without limiting the foregoing, if the Financial Close of Escrow occurs, the Developer shall be responsible for performing all off and on-site Site preparation work necessary for Construction of the COB Improvements.

(c) Design and Construction in Accordance with COB Project Requirements. The Developer shall perform Developer's Work in accordance with (i) the University of Nevada, Reno Adopted Standards attached hereto as Attachment 5.2(c), it being understood that any deviations from the Adopted Standards must be approved in writing by University; (ii) any applicable Standard of Care and in compliance with all Laws, including, without limitation Hazardous Materials Laws and Disabled Access Laws, (iii) as further provided in Section 4.3, all Regulatory Approvals; and (iv) the Final Construction Documents. All such requirements, together with the approved Final Construction Documents are referred to collectively as the "COB Project Requirements."

5.3 University's Right to Approve. The University may review, inspect, and approve all construction documents and construction works; provided, however, that such approval by University of any documents, services, or work shall not relieve Developer of responsibility for designing and constructing the COB Project in accordance with all applicable Laws and/or the applicable professional standards of care.

5.4 Utilities and Access.

(a) Utilities. The Developer shall arrange for the construction of all off-Site utilities and improvements required in order for utilities to be made available to the COB Project. The Developer shall further construct all on-Site utilities shown on the Final Construction Documents. The Developer shall be permitted to use, at no additional cost to Developer, existing

University electricity, water and other utilities at the Site until Completion, with respect to any particular COB Improvements, and until Final Completion, with respect to the entire COB Project. Thereafter, electricity, water and other utilities shall be provided and the cost thereof paid in accordance with the Ground Lease and Sublease.

(b) Access to Site. University and NCCD, as ground lessee of the Site, hereby grant to Developer and its Agents a non-exclusive license, including, subject to the limitations contained in Section 5.28, below, the authority to deny Site access to third-parties, to come upon, access, and use the Site and other portions of the Campus depicted in Attachment A-2. Without limiting the foregoing, Developer shall be permitted space at the Site for parking, locating office trailers, and storage/staging areas, as depicted on Attachment A-2, for the purposes of performing the Developer's Work.

5.5 The Construction Documents for the COB Project.

(a) Definition of Construction Documents. The "Construction Documents" shall include the following:

(i) "Schematic Drawings" for the COB Project, which shall generally include, without limitation, the following:

(A) Perspective drawings sufficient to illustrate the COB Project.

(B) A site plan at appropriate scale showing relationships of the COB Improvements with their respective uses for illustrative purposes only, designating open spaces, walkways, loading areas, streets, parking, and adjacent uses. Adjacent existing and proposed streets and structures shall also be shown.

(C) Building plans, floor plans and elevations sufficient to describe the development proposal, the general architectural character, and the location and size of uses.

(D) Building sections showing height relationships of those areas noted above.

(ii) "Design Development Documents" in sufficient detail and completeness to show that the COB Project Improvements and the Construction thereof shall comply with the COB Project Requirements, and which shall include, without limitation:

(A) Site plan(s) at appropriate scale showing the building, streets, walks, and other open spaces. All land uses shall be designated. All Site development details and bounding streets, points of vehicular and pedestrian access shall be shown.

(B) All building plans and elevations at appropriate scale.

(C) Building sections showing typical cross sections at appropriate scale.

- (D) Floor plans.
- (E) Outline specifications for materials, finishes and methods of construction.
- (F) Interior and exterior signage plans.
- (G) Site and exterior and interior lighting plans.
- (H) Material and color samples.
- (I) Roof plans showing all mechanical and other equipment.

Subject to the provisions of this paragraph, those certain Design Development Documents described on Attachment 5.5(a)(ii) (the “Approved Design Documents”) have been accepted by the Developer, NCCD, and the University as of the Effective Date. The Developer, NCCD, and the University acknowledge and agree that the Approved Design Documents supersede, with respect to the applicable COB Improvements related thereto, any Schematic Drawings and all other prior and/or different Construction Documents related thereto, the RFP, and any formal and/or informal responses thereto, and all other documents related to the applicable COB Improvements related to such Approved Design Documents. In the event of any error in the Approved Design Documents due to a mutual mistake of Developer and the University, any such error shall be corrected in the Final Construction Documents prior to approval of the Final Construction Documents.

(iii) “Final Construction Documents” means the plans and specifications required under applicable building codes and Laws to be submitted with an application for the required Permits for the COB Project and to construct the COB Improvements and as approved by the University as provided below. Upon the approval of the Final Construction Documents in accordance with Section 5.13 below, the Final Construction Documents shall supersede and replace, in their entirety, the Schematic Drawings, Design Development Documents (including any Approved Design Documents), all other prior and/or different Construction Documents, the RFP, and any formal and/or informal responses thereto, and all other documents related to the COB Improvements, Developer’s Work and COB Project, and in the event of a conflict between the Final Construction Documents and any such other documents, the Final Construction Documents shall control.

(b) Exclusion. The Parties hereby acknowledge that the only construction contract currently contemplated is the certain DBA between Developer and the Design Builder.

5.6 Compliance with the Final Construction Documents. The Developer shall construct all COB Improvements in compliance with the COB Project Requirements and the Final Construction Documents. The University’s review of Final Construction Documents shall include a determination of consistency with the Schematic Drawings, Design Development Documents (including any Approved Design Documents), and the RFQ and RFP, as well as any formal and/or informal responses thereto.

5.7 Preparation of Final Construction Documents/Approval of Architect.

(a) Preparation by Licensed Architect. The Final Construction Documents shall be prepared by, signed and sealed by the Architect, who shall be duly licensed to practice architecture in and by the State of Nevada. The Architect shall coordinate the work of any associated design professionals, including engineers and landscape architects.

(b) Certifications by Licensed Engineers. A State licensed engineer shall review, certify, and seal all final plans as required by Law.

5.8 Submission of Construction Documents. The Developer shall prepare and submit the various Construction Documents to the University for review and approval by the University at the time or times established in the Schedule of Performance.

5.9 Scope of the University's Review of the Final Construction Documents.

(a) Scope of Review. The University's review and approval of the Final Construction Documents under this Agreement shall be deemed its agreement and approval that such Final Construction Documents reflect the full, complete, and final understanding and agreement of the Parties with respect to the COB Improvements and the scope of Developer's Work, and shall supersede, modify and replace in their entirety all Schematic Drawings, Design Development Documents (including any Approved Design Documents), and other Construction Documents, the RFP, and any formal and/or informal responses thereto, and all other documents related to the COB Improvements.

(b) Effect of Review. The University's review and approval or disapproval of the Final Construction Documents will be final and conclusive. If the University subsequently disapproves of or requires changes in, or in a manner that is inconsistent with the Approved Design Documents, it will be a Change Event.

(c) Limitation. Notwithstanding the foregoing, the Parties agree that the University's approval of any Construction Documents, including the Final Construction Documents, shall not be deemed a representation or warranty by the University that such Construction Documents are free of any defects, errors or omissions with respect to the design of the COB Improvements. Nor shall the University's approval of any Construction Documents, including the Final Construction Documents, relieve the Developer of its obligations hereunder for designing and constructing the COB Project in accordance with all applicable Laws and/or the applicable professional Standard of Care.

5.10 Scope of Developer Submission of the Final Construction Documents. The Final Construction Documents shall include all drawings, specifications and documents necessary for the COB Project Improvements to be constructed and completed in accordance with this Agreement.

5.11 Changes in Final Construction Documents.

(a) Approval of Changes in Required Elements. Changes may not be made in any Final Construction Documents as to substantial or material elements requiring the University's

approval as provided in this Article 5 (each a “Required Element”) without the University’s express written approval, in its reasonable discretion; provided, however, that if certain materials approved by the University are not timely available for construction, or are only available at a cost materially in excess of the amounts budgeted therefor, the Developer may substitute materials which are the architectural equivalent or of similar quality as to aesthetic appearance, all as determined by the University in the exercise of its reasonable discretion, provided that such changes are in compliance with all other COB Project Requirements.

(b) Response. All requests to change any Required Element shall be made in writing by the Developer to the University. The University shall approve or disapprove the Developer’s request as promptly as reasonably possible, but in no event later than fifteen (15) Business Days after receipt of Developer’s request. Disapproval of such request shall be accompanied by specific reasons for such disapproval.

5.12 Conflict Between the University’s Approval and Other Governmental Requirements.

(a) Approval by the University. The University shall not withhold its approval, where otherwise required under this Agreement, of elements of the Final Construction Documents required by any other governmental body with jurisdiction if all of the following have occurred:

(i) The University receives written notice of the required change;

(ii) The University is afforded at least ten (10) Business Days to discuss such element or change with the governmental body having jurisdiction of and requiring such element or change and with the Architect;

(iii) Developer shall use commercially reasonable efforts to cause its Architect to cooperate fully with the University and with any other governmental body having jurisdiction in seeking reasonable modifications of such requirement, or reasonable design modifications of the COB Improvements, or some combination of such modifications, all to the end that a design solution reasonably satisfactory to the University may be achieved despite the imposition of such requirement, provided such design solution does not materially delay the development of the COB Project; and

(iv) Any conditions imposed in connection with such requirements shall be subject to Section 4.3(b).

(b) Commercially Reasonable Efforts to Attempt to Resolve Disputes. The Developer and the University recognize that conflict may arise at or after the time of the preparation of the Final Construction Documents and may arise in connection with the issuance of Building Permit and other Permits. Accordingly, time is of the essence when such a conflict arises. Both the University and the Developer agree to use commercially reasonable efforts to expeditiously reach a mutually satisfactory solution.

5.13 Construction Document Review Procedures.

(a) Role of The University's Staff. The University shall appoint one or more individuals in writing to whom any items requiring the University's consent hereunder shall be submitted for approval (the "Authorized Individuals"). Only a signed authorization from any one of such Authorized Individuals shall be binding on the University. The University may, from time to time, replace and/or supplement any such appointed Authorized Individuals by written notice to Developer. The Authorized Individuals initially appointed to provide consent on behalf of the University under this Agreement are: (i) President, University of Nevada, Reno;(ii) Vice President, Administration and Finance; and (iii) Associate Vice President, Facilities Services.

(b) Method of the University's Action/Prior Approvals. The University shall approve, disapprove or conditionally approve the submitted Final Construction Documents, in writing, within the applicable time period set forth in Attachment 5.13(b), so long as such Final Construction Documents constitute, in the reasonable judgment of the University, a complete submittal of the applicable documents set forth in Attachment 5.13(b).

(c) Timing of the University's Disapproval/Conditional Approval and Developer Resubmission. If the University disapproves the Final Construction Documents, in whole or in part, the University in its written disapproval shall state the reason or reasons for such disapproval and may recommend changes and other recommendations. If the University conditionally approves any Final Construction Documents in whole or in part, the conditions shall be stated in writing and a time shall be stated for satisfying the conditions. The Developer shall make any resubmittals as expeditiously as possible. The Developer may continue making resubmissions until the approval of the submissions, provided that either the University or Developer may at any time submit any disagreements regarding the approval of the Final Construction Documents to resolution procedures contained in Section 10.13 below.

(d) Delayed Response. The University's failure to respond to Developer's request for consents or approvals upon the expiration of the time periods set forth in this Agreement shall be deemed an approval by the University; provided the Developer has first delivered to the University written notice of such expiration date (the "Approval Failure Notice"), and the University has failed to respond within three (3) Business Days after the later (the "Approval Cure Period") to occur of (i) the University's receipt of such Approval Failure Notice, or (ii) the expiration of such applicable time period. The Developer shall be entitled to send an Approval Failure Notice prior to the expiration of the initial applicable review period, however if it does so, then the University shall not be deemed to have failed in its obligation to timely respond pursuant to this paragraph unless its response is sent after the later of (A) the expiration of the initial applicable review period, and (B) the expiration of the Approval Cure Period.

5.14 Progress Meetings/Consultations. During the preparation of the Final Construction Documents, the University staff and the Developer agree to hold periodic progress meetings, as appropriate considering the Developer's progress, to coordinate the preparation of, submission to, and review of the Final Construction Documents by the University. The University staff and the Developer (and its applicable consultants) agree to communicate and consult informally as frequently as is reasonably necessary to assure that the formal submittal of any Final Construction Documents to the University can receive prompt and speedy consideration.

5.15 Construction Schedule. By signing this Agreement, Developer represents to the University and NCCD that the respective completion dates set forth in the Schedule of Performance, including without limitation the applicable Target Completion Dates, are reasonable for the Developer to perform all of the applicable obligations set forth therein, and that Developer is able to complete such obligations within the durations identified in the Schedule of Performance, including without limitation the Completion of the COB Project Improvements by the applicable Target Completion Dates.

(a) Start of Construction; Completion Dates. If the Financial Close of Escrow occurs, the Developer shall commence Construction of the COB Project within thirty (30) days of the Financial Close of Escrow.

(b) Updates and Changes to Schedule of Performance. The original Schedule of Performance attached hereto as Attachment C shall be updated by Developer as and when required pursuant to the terms and conditions contained in this Agreement, including without limitation those contained in Attachment C, and such updates shall be provided to the University for its review. If the University does not in good faith agree with the revised Schedule of Performance, the Developer and the University shall meet promptly and try to resolve the dispute, and if they are unable to agree, then either such Party may submit the dispute to resolution procedures contained in Section 10.13 below.

(c) Developer's Performance. Developer shall proceed expeditiously with adequate forces and shall perform all of its obligations hereunder within the respective times identified in the Schedule of Performance. If at any time the University determines in its reasonable discretion that the Developer's progress is such that Developer may not achieve Completion of the COB Project by the applicable Maximum Completion Date, the University shall notify Developer thereof, and Developer shall, within ten (10) business days of the University's request, provide the University with a schedule demonstrating either (i) that the Developer shall achieve such applicable Completion on or before the applicable Maximum Completion Date without the need to accelerate or modify the Construction schedule, or (ii) the measures Developer intends to take so that such applicable Completion is achieved by the applicable Maximum Completion Date (the "Proposed Recovery Schedule"). The University shall have seven (7) Business Days to approve or disapprove in writing such Proposed Recovery Schedule, and shall specify the reason for any objections and may present an alternative approach to any proposed actions. Developer shall have three (3) Business Days after receiving the University's response to propose a revised Proposed Recovery Schedule addressing the University's objections, which may incorporate the University's proposed alternatives, if any. The University shall have three (3) Business Days after receiving the revised Proposed Recovery Schedule to approve or reject the same in writing. If the University rejects the revised Proposed Recovery Schedule, any outstanding issues shall be subject to Section 10.13 below. Once a Proposed Recovery Schedule is finalized pursuant to the terms of this paragraph, then the Developer shall promptly implement such schedule at the Developer's sole cost and expense, except to the extent that such delay is due to (i) the wrongful acts or omissions of University or NCCD, or their respective Agents, (ii) a Change Event, or (iii) a delay entitling Developer to an Extension under Section 10.1 of this Agreement, in which case it shall be a Change Event, and the Developer shall be entitled to seek a University Change Order under the terms of Section 5.22, for the additional costs and expenses incurred by Developer in order to implement the Recovery Schedule.

5.16 Submittals after Completion/As-Built Documents. The Developer shall furnish to the University copies of as-built plans and specifications with respect to any particular COB Improvements within one hundred twenty (120) days after Completion of such COB Improvements. As used in this Section 5.16 “as-built plans and specifications” means as-built field plans prepared during the course of Construction.

5.17 Insurance Requirements.

(a) Before the Financial Closing Date. Before the Financial Close of Escrow on the Financial Closing Date, Developer shall procure and maintain, or caused to be procured and maintained, insurance coverage as required by the Engagement Agreement.

(b) After the Financial Closing Date. From and after the Financial Close of Escrow on the Financial Closing Date and during the Term of this Agreement, the requirement to maintain, or caused to be procured and maintained, insurance under this Agreement will be as set forth in Attachment 5.17(b).

5.18 Permit Approval Process. As further provided in Section 4.3(b), Developer has the sole responsibility for obtaining all necessary Permits for the COB Improvements except as set forth otherwise on Attachment 4.3(b), and Developer shall make application for such Permits for which Developer is responsible directly to the applicable regulatory agency. Upon any such submission, the Developer shall prosecute the application diligently to issuance.

5.19 Reports. During periods of Construction, the Developer shall submit monthly written progress reports to the University, in form and detail as may be reasonably required by the University.

5.20 The University’s and NCCD’s Rights of Access. The University and NCCD and their respective Agents will have the right of access to the Site, including, but not limited to, the inspection of the work being performed in constructing the COB Improvements, upon reasonable prior written notice to Developer during regular business hours; provided, however, the University and NCCD shall not interfere with Developer’s Construction activities during such site visits. Developer shall have the right to accompany the University and NCCD on any such Site visit and to require all visitors to comply with all safety requirements. The University and NCCD will provide the Developer promptly upon Developer’s written request with a copy of any final and complete written reports prepared by the University, NCCD or their respective Agents with respect to the Site under any such inspection, subject to withholding documents otherwise privileged or confidential, and without any representation or warranty by University or NCCD as to the truth or accuracy of the contents of such reports.

5.21 Construction Signs and Barriers. The Developer shall provide or shall cause to be provided construction barriers and construction signs as required by Laws and post the signs on the Site during the period of Construction. Developer may also post such construction signs as mutually and reasonably agreed upon by the Parties, identifying Developer, the COB Project, the provider of any financing or such other information as is customarily displayed at development sites. The size, design and location of such signs and the composition and appearance of any non-

moveable construction barriers shall be submitted to the University for approval before installation, which approval may not be withheld unreasonably.

5.22 Change Events and Change Orders.

(a) Change Events and University Change Orders.

(i) If the scope of Developer's Work, the cost of performing the Developer's Work, or the Schedule of Performance is changed by (1) a written request by the University; (2) the acts or omissions of a Person(s) for whom the Developer is not responsible hereunder; (3) changes in Laws; (4) impacts from Hazardous Materials for which the Developer is not responsible; (5) impacts from Differing Site Conditions; (6) the University's or NCCD's failure to comply with terms of this Agreement; (7) an interruption in Developer's ability to use existing University electricity, water and other utilities at the Site pursuant to Section 5.6(a) (except to the extent caused by the acts or omissions of a Developer Party); or (8) any other event designated in this Agreement as a Change Event (collectively "Change Events," and each a "Change Event"), then the Parties shall comply with the following provisions of this Section 5.22(a) with respect to the process the Parties will follow in determining whether a Change Event will result in an obligation by the University, and NCCD, if applicable, to issue a resulting change order for Developer's Work (each a "University Change Order").

(ii) Except as provided in Section 5.22(a)(iv), within fifteen (15) Business Days of any such Change Event, Developer shall obtain, as applicable, a cost proposal (including all resulting direct and indirect costs) and an estimate of any impact such Change Event may have on the Schedule of Performance (including the applicable Target Completion Dates). Developer shall provide the University and, in the appropriate case NCCD, with two (2) copies of the cost proposal (including a markup of five percent (5%) for Developer, the "Developer's Change Fees"), a time estimate, and, if applicable, all related plans, drawings, specifications and a narrative (each a "Change Request Supporting Materials"); provided, however, NCCD's approval of a University Change Order shall only be required if the proposed University Change Order would (A) negatively impact the sufficiency of funds remaining in the COB Project Fund to cause Final Completion of the COB Project, or (B) cause a change in any Target Completion Dates.

(iii) Within five (5) Business Days after receiving the Change Request Supporting Materials called for in Section 5.22(a)(ii), the University, and in the appropriate case NCCD, shall, by written notice to Developer, confirm whether, as applicable, Developer's request for a University Change Order is unconditionally approved or disapproved. In the event the University, and in the appropriate case NCCD, disapprove such items, the University, and in the appropriate case NCCD, as the case may be, shall state the specific reasons for such disapproval and the steps that can be taken to render such items acceptable. Within ten (10) Business Days after receiving written notice of such disapproval, Developer shall revise such items and submit them to the University, and in the appropriate case NCCD, for review. Such process shall continue until a University Change Order is ultimately approved by the University, and in the appropriate case NCCD, or Developer withdraws its request for a University Change Order. In the event the request for a University Change Order is ultimately accepted by University, and in the appropriate case NCCD, Developer shall prepare a written University Change Order for execution by the University, in the appropriate case NCCD, and Developer, and the Schedule of Performance and

the applicable Target Completion Dates shall be updated as agreed upon, and, if applicable, Developer shall promptly revise the Construction Documents and proceed with performance of a University Change Order. At any time during the review of Change Request Supporting Materials the Parties may meet to discuss the Change Event.

(iv) Within ten (10) Business Days, or as soon thereafter as is practicable, after a Change Event under Section 5.22(a)(i)(1), the Developer shall provide University with a proposal to prepare a schematic design and an early cost estimate before proceeding further with the evaluation of University's written request.

(A) If the University decides to proceed further with the written request, the Developer shall promptly provide the University with a complete proposal to implement the University's written request, and the process in Section 5.22(a)(ii) shall be followed.

(B) If the University elects not to proceed after Developer prepares a schematic design and early cost estimate under Section 5.22 (a)(iv) or with a University Change Order after the complete proposal has been prepared and submitted under Section 5.22(a)(iv)(A), the University shall issue a University Change Order to compensate Developer for all reasonable design costs, estimating costs, engineering costs, and administrative costs and expenses necessarily paid to third-parties by Developer as the result of the University's written request.

(v) In the event that the University, and in the appropriate case NCCD, has unconditionally approved a University Change Order increasing the cost of Construction, but the University is more than thirty (30) days delinquent in approving any undisputed payment under said University Change Order and such delinquency totals \$100,000 or more, then, provided Developer shall first provide written notice to University specifically referencing this Section 5.22(a)(v) and an opportunity to cure of not less than ten (10) Business Days, the Developer shall not be required to perform further University Change Order work until such time as payment is approved, in full, for such undisputed and outstanding University Change Order work.

(vi) In the event the Parties are unable to resolve any issues relating to a Change Event or an outstanding University Change Order, then the matter shall be subject to Section 10.13.

(b) Disbursements for University Change Orders. Disbursements for any University Change Orders shall come from budgeted COB Project funds, it being understood that the University shall not contribute any public money to finance any part of the COB Project.

(c) Developer Change Orders. The Developer may request (i) changes in the Construction of the COB Improvements consisting of additions, deletions, or other revisions, or (ii) changes and revisions to the Schedule of Performance (each a "Developer Change Order"). The Developer shall make such request in writing to University; and in the appropriate case to NCCD, it being understood that only when a Developer Change Order would (i) negatively impact the sufficiency of funds remaining in the COB Project Fund to cause Final Completion of the COB Project, or (ii) cause a change in either Target Completion Date, will the approval of NCCD be

required. Along with its request, Developer shall provide to University, and in the appropriate case NCCD, two (2) copies of a cost proposal (including all resulting direct and indirect costs) and estimate of any impact such proposed changes may have on the Schedule of Performance (including the Target Completion Dates, if applicable), as well as all related plans, drawings, and specifications (each a “Developer Change Request”).

(d) Within five (5) business after receiving the Developer Change Request the University, and in the appropriate case NCCD, will, by written notice to Developer, confirming whether such Developer Change Request is unconditionally approved or disapproved. The University, and in the appropriate case NCCD, agree to not unreasonably withhold approval provided that the need for the Developer Change Order is not the result, in whole or in part, of the Developer’s acts or omissions.

(i) In the event the University, and in the appropriate case NCCD, disapprove any such items, the University, and in the appropriate case NCCD, shall state the specific reasons for such disapproval and the steps, if any, that can be taken to render such items acceptable. Within ten (10) Business Days after receiving written notice of such disapproval, Developer shall revise such items and submit them to the University, and in the appropriate case NCCD, for review. Such process shall continue until such Developer Change Request is ultimately approved by the University, and in the appropriate case NCCD, or withdrawn by Developer. In the event the Developer Change Request is ultimately accepted by University, and in the appropriate case NCCD, Developer shall prepare a Developer Change Order for execution by the University, and in the appropriate case NCCD, and Developer, the Schedule of Performance shall be updated as agreed upon, and the Developer shall promptly revise the Construction Documents and proceed with performance of a Developer Change Order, provided that the Developer agrees to bear the entire amount of any increases in the cost of Construction to the extent incurred as the result of a Developer Change Order.

5.23 Warranties. Developer hereby warrants to the University that all materials and equipment furnished by the Developer as part of the COB Improvements shall be (i) new, (ii) of good and workmanlike quality, and (iii) in accordance with the Final Construction Documents and all other COB Project Requirements. Additionally, with respect to the COB Improvements, the Developer will obtain the warranties described on Attachment 5.23 (collectively the “Required Warranties”) naming and for the benefit of the Developer, the University, and NCCD. Prior to Completion, with respect to any particular COB Improvements, if there is a defect or condition with respect to such COB Improvements that is covered by a Required Warranty, NCCD and/or the University shall first provide written notice of such defect or condition to the Developer and permit the Developer a reasonable amount of time, not to exceed thirty (30) days, to pursue the repairing or correcting of such defect or condition under the applicable Required Warranty before the University or NCCD, as applicable, seeks performance under the applicable Required Warranty. After Completion, with respect to any Improvement and after Final Completion, with respect to the entire COB Project, the O&M Agreement shall govern with respect to the Required Warranties.

5.24 Collateral Assignment of the Design/Build Agreement.

(a) Pledge, Assignment, and Grant of Security. As additional security for Developer's performance of its obligations hereunder, pursuant to a Subordinate Collateral Assignment Agreement of the Design/Build Agreement in the form attached hereto as Attachment 5.24 and the Lender's Collateral Assignment Agreement (the "Subordinate Collateral Assignment Agreement"), and by execution hereof, Developer hereby collaterally assigns and pledges first to NCCD and the Bond Trustee and then to University, and hereby grants to NCCD and the Bond Trustee and then to University, a security interest in, all of Developer's right, title, and interest in and to the Design/Build Agreement, without representation or warranty as to the enforceability or priority of such pledge and assignment, including, without limitation: (i) all rights of Developer to receive moneys due and to become due under or pursuant to the Design/Build Agreement; (ii) all rights of Developer to receive proceeds of any insurance, indemnity, warranty, or guaranty with respect to the Design/Build Agreement; (iii) claims of Developer for damages arising out of or for breach of or default under the Design/Build Agreement; and (iv) the right of Developer to terminate any of the Design/Build Agreement, to perform thereunder, and to compel performance and otherwise exercise all remedies thereunder. The pledge and grant to NCCD and Bond Trustee shall have priority over the pledge and grant to the University, provided, however, that if NCCD and Bond Trustee do not timely and promptly exercise their rights and remedies in connection therewith, they shall be deemed waived, and the University shall have the sole right to exercise rights and remedies in connection with such pledge and grant. Notwithstanding the foregoing assignment, pledge and grant of security, so long as the University has not terminated this Agreement due to an Event of Default by Developer, the Developer shall be entitled to all of the benefit and right under the Design/Build Agreement. University, NCCD, and the Bond Trustee may perfect such pledge and grant by the filing of a Uniform Commercial Code financing statement in the appropriate jurisdiction, and both the University and NCCD acknowledge and agree that they may be required to subordinate such pledge and assignment in connection with the financing for the COB Project.

(b) Further Actions. Developer agrees that from time to time, at its sole expense but at no material cost to Developer, to promptly execute and deliver all further instruments and documents, and take all further action, that may be reasonably necessary, or that the Bond Trustee, NCCD, or University may reasonably request, in order to perfect and protect any pledge, assignment, or security interest granted or purported to be granted hereby or to enable the University, Bond Trustee, or NCCD to exercise and enforce its rights and remedies hereunder with respect to the Design/Build Agreement.

(c) Financing Statements. Developer hereby authorizes University to file one or more of University's own financing and/or continuation statements, and amendments thereto, relating to all or any part of the Design/Build Agreement without the signature of Developer where permitted by Law. A photocopy or other reproduction of this Agreement or any of the University's financing statement covering the Design/Build Agreement or any part thereof shall be sufficient as a financing statement where permitted by Law.

(d) University May Perform. If (i) Developer fails to perform any covenant or agreement contained in any Design/Build Agreement, beyond any applicable notice and cure periods in such Design/Build Agreement, (ii) such failure causes a stoppage of the Developer's

Work, and (iii) the Developer does not commence and diligently pursue the cure of such failure, then in addition to any other remedies that the University may have hereunder, the University may, but shall not be required to, itself perform, or cause the performance of, the Developer's obligations under the Design/Build Agreement, and all costs, fees, and expenses incurred by the University in connection therewith shall be payable by Developer to University immediately upon receipt of written demand therefor. However, if the Developer timely makes the payments to the University required by this subsection (d) and later establishes that any such costs, fees, or expenses were unreasonably incurred by the University, the unreasonable amounts shall be refunded to the Developer. In such event, Developer hereby irrevocably appoints University as Developer's attorney-in-fact, with full authority in the place and stead of Developer and in the name of Developer or otherwise, to take any action and to execute any instrument which University may deem reasonably necessary or advisable to accomplish the purposes of this Agreement, including, without limitation:

(i) To obtain any insurance required pursuant to any Design/Build Agreement in the event Developer shall fail to obtain such insurance;

(ii) To ask, demand, collect, sue for, recover, compromise, receive, and give acquittance and receipts for moneys due and to become due under or in connection with the Design/Build Agreement; and

(iii) To file any claims or take any action or institute any proceedings which University may deem necessary or desirable to enforce compliance with the terms and conditions of any Design/Build Agreement or the rights of University with respect to the Design/Build Agreement.

5.25 No Duty. The powers conferred on University hereunder are solely to protect its interest in the Design/Build Agreement and shall not impose any duty upon it to exercise any such powers. University shall have no duty to take any necessary steps to preserve rights against prior parties or any other rights pertaining to the Design/Build Agreement.

5.26 Prevailing Wage. Developer shall comply, and shall ensure that Design Builder and each subcontractor performing work related to the COB Project comply, with the prevailing wages requirements contained in Nevada Revised Statutes 338.020 through 338.090 with respect to all construction work associated with the COB Project. Without limiting the foregoing, Developer shall ensure that Design Builder and each subcontractor timely submit to University the reports required under NRS 338.070. All such certified payroll reports shall be electronically submitted to University by means of LCPTracker – Certified Payroll and Workforce Reporting Software (available at www.lcptracker.com) or equivalent software. Developer shall Indemnify University from and against any and all Losses to the extent arising Developer's failure to comply with this Section 5.26.

5.27 Non-Discrimination. In connection with the performance of its obligations under this Development Agreement, Developer agrees not to discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, sexual orientation, gender identity or expression, or age. Such agreement shall include, but not be limited to employment, upgrading, demotion or transfer, recruitment, or recruitment advertising, layoff or

termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. Developer further agrees to insert this provision in its contract with any contractor or subcontractor relating to this COB Project.

5.28 Separate Contracts.

(a) University reserves the right to award or enter into other contracts in connection with the development of the Gateway Project, specifically with respect to the Hotel Project or any tenant build-out work for the café within the COB Project. NCCD and Developer shall reasonably cooperate with the developer and/or contractor associated with such separately awarded work (each a “Separate Gateway Developer”) in such Separate Gateway Developer’s prosecution of their work, including by affording any Separate Gateway Developer a reasonable opportunity for the introduction and storage of their materials and equipment. University, the Separate Gateway Developer and Developer shall meet and confer before the start of the Separate Gateway Developer’s work, so as to minimize and avoid any interference with, or damage to, the work of Separate Gateway Developer or Developer.

(b) When appropriate, Developer, the University, and any Separate Gateway Developer shall negotiate in good faith an access and use agreement to govern the interface between Developer (and its contractors of any tier) and any Separate Gateway Developer (and its contractors of any tier). University shall require any Separate Gateway Developer to negotiate the terms of any such agreement in good faith. Any material breach of such an access and use agreement by a Separate Gateway Contractor shall be a Change Event under this Agreement.

(c) Subject to the terms of any access and use agreement, as referenced in Section 5.28(b), the University shall require the Separate Gateway Developer to not interfere with the progress of the COB Project. It shall be a Change Event if a Separate Gateway Developer delays or causes damage to the Developer’s Work.

(d) Developer shall not interfere with the progress of the work of any Separate Gateway Developer to the extent agreed to in any agreement made under Section 5.28(b). Should the Developer, Design Builder, or any subcontractors working thereunder, cause damage to the work or property of any Separate Gateway Developer. Developer shall make a good faith attempt to settle with the Separate Gateway Developer and shall in all cases Indemnify and defend the University from all claims brought by such Separate Gateway Developer relating thereto.

(e) If any part of Developer’s Work depends on the proper execution of the work of any Separate Gateway Developer, after at least ten (10) Business Days’ notice given by the Separate Gateway Developer to Developer that Separate Gateway Developer’s work is ready for such inspection, Developer shall inspect and promptly report to the University any patent failure by the Separate Gateway Developer to meet the requirements to receive the Developer’s Work; provided, however, that Developer shall have no obligation to employ any invasive or destructive methods to inspect the Separate Gateway Developer’s work. The Developer’s failure to so inspect and report a patent failure of the Separate Gateway Developer to meet the requirements to receive Developer’s Work shall constitute the Developer’s waiver of its right to a University Change Order related to the Separate Gateway Developer’s failure to properly perform such work.

5.29 Collateral Assignment of the Architect Agreement.

(a) Pledge, Assignment, and Grant of Security. As additional security for Developer's performance of its obligations hereunder, pursuant to a Collateral Assignment Agreement of the Architect Agreement in the form attached hereto as Attachment 5.29, and by execution hereof, Developer shall cause Design Builder to collaterally assign and pledge *first* to NCCD and the Bond Trustee, and *second* to University, and grant to University a security interest in, all of Design Builder's right, title, and interest in and to the Architect Agreement, without representation or warranty as to the enforceability or priority of such pledge and assignment, including, without limitation: (i) all rights of Design Builder to receive moneys due and to become due under or pursuant to the Architect Agreement; (ii) all rights of Design Builder to receive proceeds of any insurance, indemnity, warranty, or guaranty with respect to the Architect Agreement; (iii) claims of Design Builder for damages arising out of or for breach of or default under the Architect Agreement; and (iv) the right of Design Builder to terminate any of the Architect Agreement, to perform thereunder, and to compel performance and otherwise exercise all remedies thereunder. The pledge and grant to NCCD and Bond Trustee shall have priority over the pledge and grant to the University, provided, however, that if NCCD and Bond Trustee do not timely and promptly exercise their rights and remedies in connection therewith, they shall be deemed waived, and the University shall have the sole right to exercise rights and remedies in connection with such pledge and grant. Notwithstanding the foregoing assignment, pledge and grant of security, so long as the Design/Build Agreement has not been terminated, the Design Builder shall be entitled to all of the benefit and right under the Architect Agreement. NCCD, the Bond Trustee, and University may perfect such pledge and grant by the filing of one or more Uniform Commercial Code financing statements in the appropriate jurisdiction, and both the University and NCCD acknowledge and agree that they may be required to subordinate such pledge and assignment in connection with the financing for the COB Project.

(b) Further Actions. Developer agrees that from time to time, at its sole expense but at no material cost to Developer or Design Builder, to promptly execute and deliver, or cause Design Builder to promptly execute and deliver, all further instruments and documents, and take all further action, that may be reasonably necessary, or that Bond Trustee, NCCD, or the University may reasonably request, in order to perfect and protect any pledge, assignment, or security interest granted or purported to be granted hereby or to enable the Bond Trustee, NCCD, or University to exercise and enforce its rights and remedies hereunder with respect to the Architect Agreement.

**ARTICLE 6
DETERMINATION OF COMPLETION.**

6.1 Notice. The Developer shall give the University and NCCD at least thirty (30) days' prior written notice of the date upon which it expects to achieve Completion of the COB Project.

6.2 Definition of Completed.

(a) For purposes of this Agreement, the terms "Completed" or "Completion" means (i) the COB Project, or part thereof, can be utilized by NCCD for its intended use; (ii) receipt of an AIA Notice of Substantial Completion from the Architect (the "Architect's

Certificate”) certifying substantial completion of the applicable COB Improvements in accordance with the Final Construction Documents therefor, subject only to Developer’s completion of the Deferred Items under Section 6.3; (iii) the COB Project’s mechanical systems have been tested, balanced, and accepted as being substantially complete (including commissioning when applicable), (iv) the COB Project’s electrical and life safety systems have been tested and accepted as being substantially complete (including commissioning when applicable) and (v) issuance of a Certificate of Occupancy or a temporary Certificate of Occupancy from the Nevada Department of Administration, State Public Works Division (together, a “Certificate of Occupancy”), as applicable, for the applicable COB Improvements.

(b) Notwithstanding the foregoing, however, the COB Improvements will not be considered Completed if any one or more specifically identified item of Developer’s Work is incomplete or defective (including work identified in the final punch list) to the extent that such item or items of incomplete or defective Developer’s Work would in the judgment of a reasonable building owner prevent or interfere with occupancy for its full intended purpose based upon a reasonable analysis provided by University to Developer with sufficient detail such that Developer can correct such items of incomplete or defective Developer’s work.

(c) Except as otherwise provided in Section 6.2(b) above, if Developer has performed all obligations to satisfy the conditions set forth in Sections 6.2(a)(i) and 6.2(a)(ii), and any such condition is not satisfied as the result of the acts or omissions of the University, NCCD, or their respective Agents, then such condition or conditions shall be deemed to have been satisfied on the date such condition would have been satisfied, as reasonably determined by the Developer, but for the such act or omission.

(d) Promptly after Completion has occurred the Parties shall execute a Determination of Completion Certificate in the form attached hereto as Attachment 6.2 with respect to such COB Improvement(s).

6.3 Deferred Items. If at the time the applicable COB Improvement(s) would otherwise be Completed there remain uncompleted (a) customary punch list items, or (b) exterior finishes (to the extent the Parties agree that such finishes are likely to be modified, altered or damaged during the course of later construction of interior improvements) (collectively, “Deferred Items”), then although Completion shall be deemed to have occurred with respect to such COB Improvement(s), Developer shall (i) provide commercially reasonable security (or other assurances in form, substance and amount reasonably satisfactory to the University) that all the Deferred Items with respect to such COB Improvement(s) will be diligently pursued to completion, and (ii) diligently pursue completion of such Deferred Items. For purposes of this Section 6.3, security valued at one hundred fifty percent (150%) of the estimated cost to complete the Deferred Items shall be presumptively reasonable. If the Certificate of Occupancy issued pursuant to Section 6.2(a) above is only a temporary Certificate of Occupancy, the term Deferred Items shall also include any work needed for the issuance of a final Certificate of Occupancy. Deferred Items shall be determined separately and independently for each COB Improvement(s).

6.4 Specific Approvals Controlling. With respect to the determination of whether or not the applicable COB Improvements are Completed for purposes of this Agreement, the applicable Final Construction Documents for such COB Improvements will govern.

6.5 Termination of Agreement. With respect to any particular COB Improvements, issuance of the Architect's Certificate and Certificate of Occupancy (as applicable) with respect to such COB Improvements shall constitute conclusive evidence of the termination of this Agreement with respect to such COB Improvements (except that Developer must complete the Deferred Items and satisfy any obligations that expressly survive termination of this Agreement). At the request of the Developer, following the issuance of such items, the University and NCCD shall each execute such other documents, in form reasonably satisfactory to the Parties, as may be required by any Party to confirm the termination of this Agreement with respect to such COB Improvements, and following the issuance of all such items with respect to all COB Improvements comprising a portion of the COB Project, to execute such other documents, in form reasonably satisfactory to the Parties, as may be required by any Party to confirm the termination of this Agreement in its entirety.

6.6 Obligation to Achieve Final Completion. Subject to Extension, Developer shall achieve Final Completion not later than ninety (90) days after Completion, provided that Developer's obligation to achieve Final Completion is subject to material supply chain delays that cannot be reasonably mitigated by Developer.

6.7 Delay Credits. The imposition of Completion Delay Credits pursuant to Section 9.3, below, shall cease to be assessed on the date of Completion; provided, however, that Final Completion Delay Credits shall be assessed if Developer does not achieve Final Completion by the date established in Section 6.6.

6.8 Use or Occupancy. No use or occupancy of the COB Project, or any portion thereof, by University shall constitute acceptance of any COB Improvements that is not completed in accordance with the Final Construction Documents, nor shall it relieve Developer or any other party of full responsibility for correcting defective work or materials found at any time prior to completion of the entire COB Project or during any applicable warranty period.

ARTICLE 7 ENCUMBRANCES AND LIENS.

7.1 No Mortgage.

(a) No Mortgage of Fee. The Developer may not under any circumstance engage in any financing or other transaction creating any mortgage, lien or other encumbrance on any University or NCCD asset, or on the COB Improvements. No interest of the University or NCCD in the Site shall be subordinated under any circumstance whatsoever to any mortgage lien or other encumbrance not approved by the University.

(b) Contests. The University shall be permitted to contest the validity or amount of any tax, assessment, encumbrance or lien and to pursue any remedies associated with such contest; and Developer shall reasonably cooperate, at no cost to Developer unless caused by Developer, with any such contest brought by the University. Notwithstanding the foregoing, in no event shall Developer be obligated to pay any real property or possessory interest tax or assessment regardless of whether the same is caused by any act or omission of Developer.

7.2 Mechanics' Liens.

(a) Compliance with Nevada Lien Laws. Notwithstanding anything to the contrary contained herein Developer and NCCD understand and agree that any and all improvements made to the Site must comply with Nevada's construction lien laws, including without limitation NRS 108.2403. Without limiting the forgoing, NCCD acknowledges that NRS 108.2403 requires NCCD, before causing any work of improvement to be constructed, to record a notice of posted security with the Washoe County Recorder and either (i) establish a construction disbursement account in compliance with NRS 108.2403(1)(b)(1), or (ii) record a surety bond for the prime contractor performing the work in compliance with NRS 108.2403(1)(b)(2).

(b) University's Notice of Non-Responsibility. Not less than ten (10) Business Days before Developer commences Developer's Work on the Site, NCCD shall (i) notify or cause to be notified University in writing of (1) the expected date of commencement thereof, and (2) the name and contractor's license number of the prime contractor performing the work, and (ii) provide to University evidence of NCCD's compliance with NRS 108.2403. University shall have the right at any time and from time to time to post and maintain on the Site, and/or record, such notices as the University reasonably deems necessary to protect the Site and University from liens arising out of any work performed, materials furnished or obligations incurred by Developer or its Agents, including, without limitation, a Notice of Non-Responsibility substantially in the form attached hereto as Attachment 7.2(b).

(c) Developer's Obligation to Remove Liens. Developer shall keep this Agreement, the Site, any COB Improvements thereon, free from any liens arising out of any work performed, materials furnished or obligations incurred by Developer or its Agents. If Developer does not, within thirty (30) days following Developer's receipt of notice of the imposition of any such lien, cause the same to be released of record, post a bond or take such other action reasonably acceptable to the University and NCCD, it shall be a default under this Agreement subject to the provisions of Section 9.2 hereof, and the University and NCCD shall each have, in addition to all other remedies provided by this Agreement or by Law, the right but not the obligation to cause the same to be released by such commercially reasonable means as it shall deem proper, including without limitation, payment of the claim giving rise to such lien. All sums actually paid by the University or NCCD for such purpose, and all costs or expenses actually incurred by the University or NCCD in connection therewith, shall be payable to the University or NCCD, as the case may be, by Developer within thirty (30) days following written demand by such Party.

7.3 Performance and Payment Bonds. If required by Law, Developer shall provide, or cause to be provided, performance and payment bonds.

ARTICLE 8 ASSIGNMENT AND TRANSFER.

8.1 Prohibition Against Transfer or Significant Change. The Developer may not sell, convey, assign, transfer, alienate or otherwise dispose of all or any of its interest or rights in this Agreement or otherwise do any of the above or make any contract or agreement to do any of the same ("Transfer"), or permit a Significant Change to occur, without in each instance obtaining the prior written approval of the University. Such consent to a Transfer or Significant Change may be given, withheld, or conditioned in the University's sole and absolute discretion. Consent to any

one Transfer or Significant Change will not be a waiver of the requirement for such consent for each and every Transfer or Significant Change.

8.2 Effect of Violation.

(a) Event of Default. If Developer makes a Transfer or Significant Change in violation of Section 8.1, then either the University or NCCD may, in its sole discretion, either void the Transfer or Significant Change, or declare an Event of Default from and after the time of the Transfer or Significant Change.

(b) No Release of Obligations. Except by the specific written approval of the University which may give or withhold in its sole discretion, no Transfer or Significant Change will relieve Developer or any other Party from any obligations under this Agreement.

ARTICLE 9 DEFAULTS, REMEDIES AND TERMINATION.

9.1 Before Applicable Closing Date. If the Commercial Close of Escrow does not occur by the CCOE Target Date, or the Financial Close of Escrow does not occur by the FCOE Target Date (as each may be properly extended), any Party who has performed fully the acts to be performed by it before the Commercial Close of Escrow or Financial Close of Escrow, as applicable, or whose performance has been excused, may terminate this Agreement by written notice and demand the return of its money, papers or documents deposited in Escrow; provided, however, the other Party or Parties will have thirty (30) days after such notice to perform any acts required of it to permit the Commercial Close of Escrow or the Financial Close of Escrow, as applicable.

9.2 Developer Events of Default. The following constitute “Developer Events of Default” or a “Developer Event of Default”:

(a) The Developer fails to diligently prosecute the Construction of the COB Improvements pursuant to the COB Project Requirements on or before the required benchmark completion dates set forth in the Schedule of Performance (as the same shall be updated from time to time), where such failure continues for a period in excess of ten (10) Business Days from the date of written notice from the University; provided that a Developer Event of Default shall not be deemed to be occurring or to have occurred if the Developer is able to reasonably demonstrate within such ten (10) Business Day period that such failure shall not cause the Final Completion (except for Deferred Items, if any) to occur beyond the Final Maximum Completion Date, as extended in accordance with the terms of this Agreement;

(b) The Developer fails to commence Construction, or abandons or substantially suspends Construction for more than thirty (30) consecutive days except as permitted by this Agreement, and such failure, abandonment or suspension continues for a period in excess of: (i) ten (10) Business Days from the date of written notice from the University as to failure to commence Construction, or (ii) ten (10) Business Days from the date of written notice from the University as to abandonment or suspension of Construction;

(c) Subject to an Extension, the Developer fails to cause Completion of any COB Improvement(s) (except for Deferred Items, if any) to occur by the applicable Maximum Completion Date for such COB Improvement(s);

(d) The Developer fails to pay any amount required to be paid to the University or NCCD under this Agreement when due (with interest thereon at the rate of Prime Rate plus four percent (4%) per annum from the date Developer receives notice that such amount is past due to the date of payment) and such failure continues for ten (10) Business Days following written notice from the University or NCCD to the Developer;

(e) Subject only to an Extension pursuant to Section 10.1, the Developer does not submit such of the Construction Documents as are required to be submitted within the times provided in this Agreement, and the Developer does not cure such default within thirty (30) days after the date of written demand specifying the items missing or due by the University to the Developer, or, if such cure cannot reasonably be completed within such thirty (30) day period, if the Developer does not commence such cure, and having so commenced, does not prosecute such cure with diligence and dispatch to completion within a reasonable time thereafter;

(f) The Developer or Edgemoor Development LLC files a petition for relief, or an order for relief is entered against Developer or Edgemoor Development LLC, in any case under applicable bankruptcy or insolvency law, or any comparable law that is now or hereafter may be in effect, whether for liquidation or reorganization, which proceedings if filed against Developer or Edgemoor Development LLC are not dismissed or stayed within sixty (60) days;

(g) A writ of execution is levied on this Agreement which is not released within sixty (60) days, or a receiver, trustee or custodian is appointed to take custody of all or substantially all of the property of the Developer, which appointment is not dismissed within sixty (60) days;

(h) The Developer makes a general assignment for the benefit of its creditors;

(i) The Developer fails to maintain, or cause to be maintained, the insurance required pursuant to Section 5.17, or fails to deliver certificates, endorsements, and/or policies as required pursuant to that Section 5.17, and such failure continues for thirty (30) days following written notice from the University or NCCD to the Developer;

(j) Without limiting any other provisions of this Section 9.2, and subject to any Extension pursuant to Section 10.1, the representations, warranties and covenants of the Developer contained in this Agreement are materially false, or Developer violates any other material covenant, or fails to perform any other material obligation to be performed by the Developer under this Agreement, or any other Transaction Document, at the time such performance is due, and such violation or failures continues without cure for more than the lesser of thirty (30) days or the period, if any, necessary to prevent the University or NCCD from suffering irreparable harm, after written notice from the University specifying the nature of such violation or failure, or, if such cure cannot reasonably be completed within such thirty (30) day period, if Developer does not within such thirty (30) day period commence such cure, or having so commenced, does not prosecute such cure with diligence and dispatch to completion within a reasonable time thereafter,

but not to exceed ninety (90) days thereafter or the period, if any, necessary to prevent the University or NCCD from suffering irreparable harm;

(k) The Developer defaults under the Design/Build Agreement, beyond the applicable notice and cure periods, if any, in the Design/Build Agreement;

(l) The Developer fails to pay to the University any Delay Credit within ten (10) days after receiving written notice that such payment is past due; and

(m) The debarment or prohibition of the Developer from doing business with any federal, state, or local governmental authority.

9.3 Remedies of the University and/or NCCD. Upon the occurrence of any uncured Developer Event of Default, the University and NCCD shall each have the remedies set forth below:

(a) Termination. Subject to Sections 9.3(d) and 9.8(d) below, the University or NCCD may terminate this Agreement with written notice to Developer;

(b) Specific Performance. With respect to a Developer Event of Default occurring after the Financial Close of Escrow, either University, NCCD, or both may institute an action for specific performance;

(c) Other Remedies. Subject to Sections 9.3(d) and 9.8(d) below, each of the University and NCCD shall be entitled to all other remedies permitted by Law or at equity or under this Agreement, including, without limitation, damages; provided that the University's and NCCD's damages shall be limited to actual, direct damages, and with respect to a Developer Event of Default under Section 9.2(c), Developer's damages shall be limited to the remedy set forth in Section 9.3(d). In no event shall the University (except with respect to Developer's indemnification obligations for University's third-party related Losses under Section 4.4(a)) or NCCD be entitled to consequential, incidental, special or punitive damages (including but not limited to lost profits); and

(d) Remedy for Late Completion.

(i) If a Developer Event of Default occurs under Section 9.2(c), after taking into account the effect any Extension as permitted therein, (i) the Parties agree that the University is likely to sustain delay damages that are difficult to ascertain, and thus as compensation for such delay damages, the University shall be entitled to, as liquidated damages and in lieu of all other claims to daily delay damages, the applicable sums set forth in Attachment 9.3(d) (such sums each, a "Delay Credit"), commencing on the applicable dates set forth in Attachment 9.3(d) and continuing on a daily basis through the applicable date for Completion, and (ii) if applicable, the University and NCCD shall also be entitled to terminate this Agreement in accordance with Section 9.3(a), in which event the University shall be entitled to (A) a Delay Credit for the delay, and (B) any other damages to which the University is entitled under applicable Law, subject to reasonable mitigation to the extent required by applicable Law.

(ii) The Parties hereby agree that the Delay Credits set forth above for delay are a reasonable estimate of the damages the University is likely to sustain as a result of any such delay. Developer shall pay any Delay Credits hereunder to the University, in cash or other immediately available funds, via wire transfer or otherwise as directed by the University within twenty-two (22) Business Days after the applicable date of Completion or Final Completion, as the case may be, such obligation to survive the expiration of the Term and the termination of this Agreement.

9.4 University Events of Default. The following constitute “University Events of Default” or a “University Event of Default”:

(a) The conditions to the Commercial Close of Escrow in the University’s favor have been satisfied, or waived by the University, and the University fails to Deliver the Site to NCCD or the University fails to provide the Developer with sufficient access to the Site in order to perform the Developer’s Work in accordance with this Agreement, where such failure continues for a period of ten (10) Business Days from the date of written notice from Developer; and

(b) The representations, warranties and covenants of the University contained in this Agreement are materially false, or the University fails to perform any other material obligations and duties provided in this Agreement after the time for any cure or the expiration of any grace period specified therefor in this Agreement, or if no such time is specified, than the lesser of thirty (30) days or the period, if any, necessary to prevent the Developer from suffering irreparable harm, after written demand by Developer to the University, as the case may be, to perform such obligation and duty, or, in the case of a default not susceptible of cure within thirty (30) days, the University fails promptly to commence to cure such default and thereafter to prosecute diligently such cure to completion within a reasonable time thereafter, but not to exceed ninety (90) days thereafter or the period, if any, necessary to prevent the Developer from suffering irreparable harm.

(c) The University fails timely to approve, in the manner described herein, the payment of any amount required to be paid to Developer under this Agreement (with interest thereon at a rate equal to the lesser of the Prime Rate plus four percent (4%) per annum from the date the University receives notice that such approval is past due to the date of payment) and such failure continues for ten (10) Business Days following written notice from Developer to the University.

9.5 Remedies of the Developer. Upon the occurrence of a University Event of Default, the Developer shall have the remedies set forth below:

(a) Termination. Subject to Section 9.8(d) below, the Developer may terminate this Agreement upon sixty (60) days’ written notice to the University and NCCD specifying the default, but only if the Event of Default continues for ninety (90) days or more, and either (i) would make it impossible to achieve the Completion of any COB Improvement(s) by the applicable Target Completion Date for such COB Improvement(s) in accordance with the Schedule of Performance, as from time to time revised in accordance with this Agreement, or (ii) would deprive Developer of the material benefits of this Agreement;

(i) Provided, however, that regardless of fault involving the University, in the event the Developer has not been timely paid any undisputed amounts, the Developer may stop work after giving the University and NCCD seven (7) additional Business Days' prior written notice;

(b) Cessation. The Developer may cease performance of its Construction obligations hereunder until the University Event of Default has been cured;

(c) Specific Performance. With respect to a University Event of Default occurring after the Financial Close of Escrow, the Developer may institute an action for specific performance; and

(d) Other Remedies. Subject to Section 9.8(d) below, Developer shall be entitled to all other remedies permitted by Law or equity or under this Agreement, including, without limitation, damages; provided that Developer's damages shall be limited to actual, direct damages (which shall include, without limitation, actual documents and reasonable demobilization costs, amounts payable by Developer under the Design/Build Agreement and other reasonable costs related to such termination). In no event shall Developer be entitled to consequential, incidental, special, or punitive damages (except with respect to University's obligations for Developer's third-party related Losses under Section 4.4(b)), and provided further that in the event of a University Event of Default after the Commercial Close of Escrow but prior to the Financial Close of Escrow, Developer's remedies, including any damages, shall be limited to the recovery of Qualified Out-of-Pocket Costs payable pursuant to Section 3.6(d) hereof.

9.6 NCCD Events of Default. The following constitute "NCCD Events of Default" or a "NCCD Event of Default":

(a) The conditions to the Commercial Close of Escrow in NCCD's favor have been satisfied, or waived by NCCD, and NCCD fails to provide the Developer with sufficient access to the Site in order to perform the Developer's Work in accordance with this Agreement, where such failure continues for a period of ten (10) Business Days from the date of written notice from Developer or University;

(b) The representations, warranties and covenants of NCCD contained in this Agreement are materially false, or NCCD fails to perform any other material obligations and duties provided in this Agreement after the time for any cure or the expiration of any grace period specified therefor in this Agreement, or if no such time is specified, than the lesser of thirty (30) days or the period, if any, necessary to prevent the Developer or University, as applicable, from suffering irreparable harm, after written demand by Developer or University, as applicable, to NCCD, as the case may be, to perform such obligation and duty, or, in the case of a default not susceptible of cure within thirty (30) days, NCCD fails promptly to commence to cure such default and thereafter to prosecute diligently such cure to completion within a reasonable time thereafter, but not to exceed ninety (90) days thereafter or the period, if any, necessary to prevent the Developer or University, as applicable, from suffering irreparable harm;

(c) The NCCD fails timely to approve, in the manner described herein or in the Disbursement Agreement, the payment of any amount required to be paid to Developer (with

interest thereon at a rate equal to the lesser of the Prime Rate plus four percent (4%) per annum from the date NCCD receives notice that such amount is past due to the date of payment) and such failure continues for five (5) Business Days following written notice from Developer to NCCD and University; and

(d) NCCD defaults under the Disbursement Agreement beyond the applicable notice and cure periods, if any, contained therein.

9.7 Remedies of the University and/or Developer. Upon the occurrence of a NCCD Event of Default, the University and Developer shall each have the following remedies:

(a) Termination by University. Subject to Section 9.8(d) below, the University may terminate this Agreement with written notice to NCCD and Developer;

(b) Termination by Developer. Subject to Section 9.8(d) below, the Developer may terminate this Agreement upon sixty (60) days' written notice to NCCD and the University specifying the default, but only if the NCCD Event of Default continues for ninety (90) days or more and either (i) would make it impossible to achieve the Completion of any COB Improvement(s) by the applicable Target Completion Date for such COB Improvement(s) in accordance with the Schedule of Performance, as from time to time revised in accordance with this Agreement, or (ii) would deprive Developer of the material benefits of this Agreement;

(c) Cessation. The Developer may exercise its remedies set forth in the Disbursement Agreement. In connection with the exercise of such remedies, if the Developer ceases performance of its Construction obligations hereunder and then re-commences its Construction obligations, NCCD shall be liable to Developer for its actual documented and reasonable demobilization and remobilization costs, without markup;

(d) Specific Performance. With respect to a NCCD Event of Default occurring after the Financial Close of Escrow, either University, Developer, or both may institute an action for specific performance;

(e) Payment Default Under Disbursement Agreement. In the event a Disbursement owing to Developer in accordance with the Disbursement Agreement is not paid as and when required thereunder, then the Parties agree that University shall have the right, but not the obligation, to cure such non-payment. Notwithstanding the University's right to cure, in addition to Developer's other rights and remedies set forth in this Agreement and under applicable Laws, Developer shall have the following rights:

(i) If such non-payment (a) continues for more than seven (7) Business Days after written notice to NCCD and University; (b) is of an amount in excess of \$100,000; and (c) such unpaid amounts are not the subject of an Objection Statement under the Disbursement Agreement, then if Developer elects to demobilize Developer's Work, all dates specified for performance of any obligation of Developer on the Schedule for Performance that is impacted by the Developer's demobilization shall be extended by a period equal to the number of days required for Developer's Work to be remobilized. If Developer elects to demobilize Developer's Work pursuant to its rights set forth above, then Developer shall have the right to condition any remobilization upon payment in full of (1) all unpaid Disbursements then payable under the

Disbursement Agreement, together with all interest owing thereon pursuant to subclause (ii) below, and (2) all reasonable costs and expenses incurred and to be incurred by Developer resulting from such payment delay, including all costs and expenses resulting from demobilization and remobilization.

(ii) If a Disbursement is not paid in full on or prior to the applicable Disbursement Due Date, and such failure is caused by the failure of NCCD or any of its Agents, acting within the scope of its agency, to perform NCCD's obligations with respect to such Disbursement in accordance with the Disbursement Agreement, then the unpaid amount shall accrue interest, from the Disbursement Due Date until such amount is paid, at an annual rate equal to the lesser of the Prime Rate plus four percent (4%) per annum or the highest rate allowed under applicable Laws; and

(f) Other Remedies. Subject to Section 9.8(d) below, each of the University and Developer shall be entitled to all other remedies permitted by Law or equity or under this Agreement, including, without limitation, damages; provided that University's and Developer's damages shall be limited to actual, direct damages (which, in the case of Developer, shall include, without limitation, actual documents and reasonable demobilization costs, amounts payable by Developer under the Design/Build Agreement and other reasonable costs related to such termination). In no event shall University or Developer be entitled to consequential, incidental, special, or punitive damages, and provided further that in the event of a NCCD Event of Default after the Commercial Close of Escrow but prior to the Financial Close of Escrow, Developer's remedies, including any damages, shall be limited to the recovery of Qualified Out-of-Pocket Costs payable pursuant to Section 3.6(d) hereof.

9.8 General.

(a) Institution of Legal Actions. Subject to the rights and obligations of the Parties under Section 10.13 below and the other limitations contained in this Agreement, any Party may institute legal action to cure, correct, or remedy any default, to recover damages for any default or to obtain any other remedy consistent with the terms of this Agreement. Such legal actions may be instituted in the state or federal courts located in Washoe County, Reno, Nevada.

(b) Reserved.

(c) Rights and Remedies Are Cumulative. Except with respect to any rights and remedies expressly declared to be exclusive in this Agreement, the rights and remedies of the Parties to this Agreement, whether provided by Law, in equity or by this Agreement, are cumulative, and not in derogation of other rights and remedies found in this Agreement. The exercise by any Party of any one or more of such remedies will not preclude the exercise by it, at the same or a different time, of any other such remedies for the same default or breach or of any of its remedies for any other default or breach by another Party. No waiver made by any Party with respect to the performance, or manner or time of performance, or any obligation of the other Parties or any condition to their own obligations under this Agreement will be considered a waiver with respect to the particular obligations of the other Parties or condition to its own obligation beyond those expressly waived to the extent of such waiver, or a waiver in any respect in regard to any other rights of the Party making the waiver or any other obligations of the other Parties.

Notwithstanding anything to the contrary herein, neither NCCD nor the Developer shall have any rights to use, occupy, access, damage, diminish, or otherwise encumber the Site or any property of the University, except for those rights explicitly granted herein or in any other Transaction Documents.

(d) Non-liability of Parties' Officers and Employees, Etc. Excluding any criminal behavior, civil fraud, or liability created by the statutes or regulations of the State of Nevada, no member, officer, partner, agent, shareholder, director, or employee of the University, NCCD or the Developer will be personally liable to any other Party hereunder, or any successor in interest, as a result of an event of default by the University, NCCD or the Developer, as the case may be, or for any amount which may become due to the Developer, the University, NCCD, or any of their successors, as applicable, under, on account of, or with respect to such Party's obligations under this Agreement.

(e) Limitation of Liability for NCCD. It is expressly understood and agreed that notwithstanding anything in this Agreement to the contrary, the liability of NCCD hereunder (including, but not limited to, its indemnity obligations) and any recourse by the Developer and/or the University against NCCD (including, but not limited to, its indemnity obligations) shall be limited to the sum of an amount that is equal to the interest of NCCD in the Site and COB Improvements plus any Losses covered under available insurance.

9.9 Return of Site. If this Agreement terminates after the Financial Close of Escrow and prior to Final Completion due to a Developer Event of Default, or pursuant to Section 10.1, Developer shall, at its sole expense, return the Site to NCCD and University in a safe and secure condition, and unless otherwise requested by the University or NCCD, shall remove all loose building materials and debris present at the Site resulting from the Developer's Construction activities.

9.10 Plans and Data. If this Agreement is terminated before Final Completion, but after the Financial Close of Escrow, then provided that NCCD has paid the Developer all amounts then due to the Developer under this Agreement and/or the Disbursement Agreement, the Developer shall assign and deliver to the University any and all copies of reports in its possession regarding the Site and all properly sealed and certified Final Construction Documents in the possession of, or prepared for the Developer, to which the Developer has possession or control, or is reasonably able to gain possession, within sixty (60) days after such termination. The Developer shall include in all contracts and authorizations for services pertaining to the planning and design of the COB Improvements, an express agreement by the Person performing such services that the University may use such reports and/or sealed and certified Final Construction Documents as provided in this Section 9.10 without compensation or payment from the University in the event such reports and/or sealed and certified Final Construction Documents are delivered to the University under the provisions of this Section 9.10. The University may use any such sealed and certified Final Construction Documents and reports which have been issued in final form by the preparer for any purpose whatsoever relating to the Site, without cost or liability therefore to the Developer.

**ARTICLE 10
GENERAL PROVISIONS.**

10.1 Extension of Time for Performance of Developer's Work.

(a) Litigation Force Majeure. If any action or proceeding before any court, tribunal, or other judicial, adjudicative or legislative decision-making body, including any administrative appeal, is brought by a third party after the Effective Date, whether prior to or after the Outside Commercial Close Date or Outside Financial Close Date, which challenges the University's approval of this Agreement, the Ground Lease, the Sublease, or any other Transaction Documents (provided that the delayed Party provides prompt notice to the other Parties and proceeds with due diligence to defend such action or proceeding or take other appropriate measures to resolve any dispute that is the subject of such action or proceeding) (a "Litigation Force Majeure"), subject to the following sentence, the time or times for performance of the obligations of Developer or the University will be extended one (1) day for each day of delay for the period of the enforced delay (an "LFM Extension") except that the Commercial Close of Escrow and the Outside Commercial Close Date, and Financial Close of Escrow and the Outside Financial Close Date shall each be extended to the dates which are sixty (60) days following the date of final unappealable disposition of the legal action, subject to Section 10.1(c) below. The Parties shall each proceed with due diligence and shall cooperate with one another to defend the action or proceeding or take other measures to resolve the dispute that is the subject of such action or proceeding. If Litigation Force Majeure occurs, the Parties shall execute a mutually agreeable revised Schedule of Performance, including revised Target Completion Dates for the COB Improvement(s), as applicable, to the extent such Litigation Force Majeure causes an LFM Extension, and if the Parties are unable to agree upon such updated Schedule of Performance, whether Litigation Force Majeure occurred, or the extent of an LFM Extension, the matter shall be subject to Section 10.13 below. If, after the Financial Close of Escrow, an LFM Extension continues for ninety (90) consecutive days or more, each of the Developer and the University shall be entitled to terminate this Agreement upon written notice to the other (and NCCD), and upon such termination, none of the Parties shall have any further obligations under this Agreement except as otherwise expressly provided in this Agreement, including, without limitation, those described in Section 10.1(c).

(b) Other Delays.

(i) Subject to Section 10.1(b)(ii) below, for each day of delay for which Developer demonstrates that all of the conditions set forth below in this Section 10.1(b)(i) (the "Extension Conditions") have been met, the Target Completion Dates shall be extended:

(A) At the time that the event causing the delay commences, the Developer has substantially complied with all requirements set forth in Section 5.15(b);

(B) The delay is demonstrated by a critical path method analysis of the Schedule of Performance for the portion of the Developer's Work that is delayed as established by an analysis of the impact to the applicable critical path identified in the applicable Schedule of Performance;

(C) Within thirty (30) days after Developer obtains actual knowledge of the delay causing event, the Developer notifies the University of the event and the associated delay. In the event of a continuing delay for a single event, only one notice shall be required;

(D) The delay is caused by (i) Non-Litigation Force Majeure, (ii) a Change Event which is not the result of any Developer Event of Default; (iii) the University's decision by notice to Developer to suspend Construction, where such decision is not the result of any Developer Event of Default; or (iv) a University Event of Default; and

(E) Notwithstanding anything contained in this Section 10.1(b)(i) to the contrary, for delays related to adverse or inclement weather conditions, the Parties expressly agree that the Schedule of Performance includes adequate time to allow for delays on account of usual weather, considering the climatic conditions in Reno, Nevada ("Usual Weather Conditions"). No adjustment to the Target Completion Date(s) is allowed on account of Usual Weather Conditions. The Schedule of Performance shall include adequate float or allowance in the construction schedule to accommodate weather conditions that may be associated with weather-dependent work. An extension to the Target Completion Date(s) based upon abnormal or unusual weather delays will be considered only in a case where (a) an abnormal or unusual weather delay has directly affected the critical path identified in the approved Schedule of Performance, and (b) both the number of reasonably anticipatable days of adverse weather and the average precipitation in a given month have been exceeded in accordance with the table attached hereto as Attachment 10.1(b)(i).

(ii) If and only if a delay meets all Extension Conditions set forth above, and provided that such delay is not caused or aggravated by a Developer Event of Default, then a NLFM Extension will be deemed to have occurred for each day that Completion of the applicable COB Improvements is delayed beyond the applicable Target Completion Date(s), and the Schedule of Performance and applicable Target Completion Date(s) shall be adjusted, subject to the following:

(A) If for any reason one or more of the Extension Conditions is held legally unenforceable, then all remaining Extension Conditions must be met as a condition to obtaining a NLFM Extension; and

(B) The sole and exclusive remedy for any delays concurrently caused by acts or omissions that are attributable to both the Developer and the University shall be a time extension sufficient to render any additional delay not concurrent.

(iii) A waiver of, or failure by the University to enforce any requirement in Sections 10.1(b)(i) or (ii) above in connection with any or all past delays shall not constitute a waiver of and shall not preclude the University from enforcing such requirements in connection with any present or future delays. Developer agrees and understands that only the Authorized Individuals have the authority to approve any time extension, but only if such approval is given in writing.

(iv) If the Developer disputes the University's determination with respect to the satisfaction of any Extension Condition, or if the Parties are unable to agree upon (A) an updated Schedule of Performance and/or Target Completion Date, or (B) the extent of a NLFM Extension, then the matter shall be subject to Section 10.13 below.

(c) Outside Date for Extensions. Notwithstanding any other provision of this Section 10.1, or anything to the contrary in this Agreement, if (i) the number of days of any one or more LFM Extensions, or any combination of LFM Extension(s) and NLFM Extension(s), individually or in the aggregate, exceed three hundred sixty-five (365) days, or (ii) the number of days of any one or more NLFM Extensions, individually or in the aggregate, exceed ninety (90) days, then each of the University and the Developer shall have the right to terminate this Agreement with written notice to the other (and NCCD). Immediately upon the effective date of a termination under this Section 10.1(c), Developer shall cease any further Developer's Work unless expressly directed otherwise by the University in writing. In the event the University or the Developer exercises its termination rights under Section 10.1(a) or this Section 10.1(c), then the Developer shall be compensated from the Change Contingency for the unpaid cost of Construction and/or and COB Improvements in place as of the date of such termination to the extent such costs are not excluded from reimbursement under the terms of this Agreement or the Disbursement Agreement, but had not yet been paid to Developer pursuant to the Disbursement Agreement, including payment for all reasonable termination costs related to such termination incurred by Developer.

(d) Increased Costs Due to Extension. To the extent that the Developer is able to demonstrate that its costs incurred, or expected to be incurred, in connection with the performance of the Developer's Work have or will be increased as a result of an Extension, then the Schedule of Values shall be updated to account for such increased costs. In such event, Developer shall prepare an updated Schedule of Values and provide it to the University and NCCD along with a detailed written notice identifying such increased costs. University and NCCD shall, within ten (10) Business Days after receipt of such updated Schedule of Values approve or disapprove, in their reasonable discretion, the same in writing to Developer. If University or NCCD reasonably disapproves a proposed updated Schedule of Values, it shall provide Developer with a detailed written notice describing the basis for such disapproval, and if the parties are unable to resolve such disagreement within ten (10) Business Days after Developer's receipt of such notice of disapproval, the matter shall be subject to Section 10.13.

10.2 Notices.

(a) Manner of Delivery. Except as otherwise expressly provided in this Agreement, all notices, demands, approvals, consents and other formal communications between or among the Parties required or permitted under this Agreement shall be in writing and shall be deemed given and effective (i) upon the date of receipt if given by personal delivery (including nationally recognized express courier) on a Business Day (or the next Business Day if delivered personally on a day that is not a Business Day) or (ii) if mailed three (3) Business Days after deposit with the U.S. Postal Service for delivery by United States registered or certified mail, first class postage prepaid, to the Parties at their respective addresses for notice designated below. For convenience of the Parties, copies of notices may also be given by email delivery of documents in .PDF format; however, no Party may give official or binding notice by email alone.

(b) Request for Approval. In order for a request for any approval required under the terms of this Agreement to be effective, it shall be clearly marked “Request for Approval” and state (or be accompanied by a cover letter stating) substantially the following:

(i) the section of this Agreement under which the request is made and the action or response required;

(ii) if applicable, the period of time as stated in this Agreement within which the recipient of the notice shall respond; and

(iii) if applicable, that the failure to object to the notice within the stated time period will be deemed to be the equivalent of the recipient’s approval of or consent to the request for approval which is the subject matter of the notice.

In the event that a request for approval states a period of time for approval which is less than the time period provided for in this Agreement for such approval, the time period stated in this Agreement shall be the controlling time period. In no event shall a recipient’s approval of or consent to the subject matter of a notice be deemed to have been given by its failure to object to such notice if such notice (or the accompanying cover letter) does not comply with the requirements of this Section. Moreover, Section 10.2(b)(iii) shall not apply to any request that would (i) amend this Agreement, or (ii) was not delivered to the correct Party representative.

(c) Addresses for Notices. All notices shall be properly addressed and delivered to the Parties at the addresses set forth below or at such other addresses as either Party may designate by written notice given in the manner provided in this Section 10.2:

To the University University of Nevada, Reno
Attn: Vice President, Administration and Finance
1664 N. Virginia St./MS 003
Reno Nevada 89557-0003

AND

University of Nevada, Reno
Attn: Office of Community & Real Estate Management
1664 N. Virginia St./MS 243
Reno Nevada 89557-0243

With a copy to: University of Nevada, Reno
Attn: General Counsel
1664 N. Virginia St./MS 550
Reno Nevada 89557-0550

To NCCD: NCCD - UNR Properties LLC
Attn: President
2630 Exposition Boulevard, Suite 213
Austin, Texas 78703

Email: geden@nccdevelopment.org

With a copy to: Holland & Knight LLP
Gerald Mace
511 Union Street, Suite 2700
Nashville, Tennessee 37219
Email: gerald.mace@hkllaw.com

To Developer: UNR Edgemoor Gateway Partners LLC
7900 Westpark Drive
Suite T300
McLean, Virginia 22102
Attention: Geoffrey Stricker
Email: geoffrey.stricker@edgemoor.com

AND

UNR Edgemoor Gateway Partners LLC
7900 Westpark Drive
Suite T300
McLean, Virginia 22102
Attention: Frank Baltz
Email: frank.baltz@edgemoor.com

With a copy to: Andrew Argyris, Esq.
Senior Corporate Counsel
Clark Construction Group, LLC
180 Howard Street
Suite 1200
San Francisco, CA 9415
andrew.argyris@clarkconstruction.com

With a further copy to:

Pillsbury Winthrop Shaw Pittman LLP
1200 Seventeenth Street NW
Washington, DC 20036-3006
Attention: Jeffrey Gans, Esq.
Email: jeffrey.gans@pillsburylaw.com

10.3 Time of Performance.

(a) Expiration. All performance dates (including cure dates) expire at 5:00 p.m., Nevada time, on the performance or cure date.

(b) Weekends and Holidays. A performance date which falls on a Saturday, Sunday or federal or Nevada state holiday is deemed extended to the next working day.

(c) Days for Performance. All periods for performance specified in this Agreement in terms of days shall be calendar days, and not Business Days, unless otherwise expressly provided in this Agreement.

(d) Time of the Essence. Time is of the essence with respect to each required completion date in the Schedule of Performance and for timely performance under this Agreement, subject to the provisions of Section 10.1 relating to Extension.

10.4 Interpretation of Agreement.

(a) Exhibits. Whenever an “Attachment” is referenced, it means an attachment to this Agreement unless otherwise specifically identified. All such Attachments are incorporated in this Agreement by reference.

(b) Captions. Whenever a section, article or paragraph is referenced, it refers to this Agreement unless otherwise specifically identified. The captions preceding the articles and sections of this Agreement and in the table of contents have been inserted for convenience of reference only. Such captions shall not define or limit the scope or intent of any provision of this Agreement.

(c) Words of Inclusion. The use of the term “including,” “such as” or words of similar import when following any general term, statement or matter shall not be construed to limit such term, statement or matter to the specific items or matters, whether or not language of non-limitation is used with reference thereto. Rather, such terms shall be deemed to refer to all other items or matters that could reasonably fall within the broadest possible scope of such statement, term or matter.

(d) No Presumption Against Drafter. This Agreement has been negotiated at arm’s length and between Persons sophisticated and knowledgeable in the matters dealt with herein. In addition, each Party has been represented by experienced and knowledgeable legal counsel. Accordingly, this Agreement shall be interpreted to achieve the intents and purposes of the Parties, without any presumption against the Party responsible for drafting any part of this Agreement.

(e) Costs and Expenses. The Party on which any obligation is imposed in this Agreement shall be solely responsible for paying all costs and expenses incurred in the performance of such obligation, unless the provision imposing such obligation specifically provides to the contrary.

(f) Agreement References. Wherever reference is made to any provision, term or matter “in this Agreement,” “herein” or “hereof” or words of similar import, the reference shall be deemed to refer to any and all provisions of this Agreement reasonably related thereto in the context of such reference, unless such reference refers solely to a specific numbered or lettered article, section or paragraph of this Agreement or any specific subdivision of this Agreement.

(g) Approvals. Unless otherwise specifically stated in this Agreement, wherever a Party hereto has a right of approval or consent, such approval or consent shall not be unreasonably withheld, conditioned or delayed. Unless otherwise specifically stated in this

Agreement, wherever a Party has a right of approval or consent, and such approval or consent is not given within the time frames provided, such matter subject to approval or consent shall not be deemed approved.

10.5 Successors and Assigns. This Agreement is binding upon and will inure to the benefit of the successors and assigns of the Parties, subject to the limitations on assignment set forth in Article 8. Where the term “Developer,” “NCCD” or “University” is used in this Agreement, it means and includes their respective successors and permitted assigns.

10.6 No Third Party Beneficiaries. This Agreement is made and entered into for the sole protection and benefit of the Parties and their successors and permitted assigns, and, without limitation, this Agreement is not intended to create a public dedication of all or any portion of the Site or any surrounding property. No other Person shall have or acquire any right or action based upon any provisions of this Agreement.

10.7 Real Estate Commissions. Each of the Parties represents that it engaged no broker, agent or finder in connection with this transaction. In the event any broker, agent or finder makes a claim, the Party through whom such claim is made shall be solely responsible for any Losses arising out of such claim.

10.8 Reserved.

10.9 Entire Agreement. This Agreement (including all of the Attachments) constitutes the entire agreement among the Parties with respect to the subject matter of this Agreement and supersedes all negotiations or previous agreements among the Parties with respect to all or any part of the terms and conditions mentioned in or incidental to this Agreement. No parol evidence of any prior draft of this Agreement, or of any other agreement shall be permitted to contradict or vary the terms of this Agreement.

10.10 Amendment. Subject to Article 9 hereof, neither this Agreement nor any of its terms may be terminated, amended or modified except by a written instrument executed by the Parties. No person has the authority to, on behalf of any Party, verbally agree to terminate or modify this Agreement.

10.11 Governing Law. The laws of the State of Nevada shall govern any dispute arising from or relating to a dispute over the interpretation, validity, construction, or performance of this Agreement (“Dispute”). As part of the consideration for the University and NCCD entering into this Agreement, except as otherwise provided in this Agreement, the Developer agrees that all actions or proceedings arising directly or indirectly under this Agreement may be litigated in courts having sites within Washoe County, Nevada, and the Developer expressly consents to the jurisdiction of any such local, State or Federal court, and consents that any service of process in such action or proceeding may be made by personal service upon the Developer wherever the Developer may then be located, or by certified or registered mail directed to the Developer at the address set forth in Section 10.2 for the delivery of notices.

10.12 Extensions by the University, NCCD or Developer.

(a) Upon the request of the Developer, the University and NCCD may, by written instrument, extend the time for Developer's performance of any term, covenant or condition of this Agreement or permit the curing of any default upon such terms and conditions as it determines appropriate, including, but not limited to, the time within which the Developer shall agree to such terms or conditions, provided, however, any such extension or permissive curing of any particular default will not operate to release any of the Developer's obligations nor constitute a waiver of the University's or NCCD's rights with respect to any other term, covenant or condition of this Agreement or any other default in, or breach of, this Agreement or otherwise affect the time of the essence provisions with respect to the extended date or the other dates for performance under this Agreement.

(b) Upon the request of the University or NCCD, Developer may, by written instrument, extend the time for the University or NCCD performance of any term, covenant or condition of this Agreement or permit the curing of any default upon such terms and conditions as it determines appropriate, including, but not limited to, the time within which the University or NCCD shall agree to such terms or conditions, provided, however, any such extension or permissive curing of any particular default will not operate to release any of the University's or NCCD's obligations nor constitute a waiver of the Developer's rights with respect to any other term, covenant or condition of this Agreement or any other default in, or breach of, this Agreement or otherwise effect the time of the essence provisions with respect to the extended date or the other dates for performance under this Agreement.

10.13 Dispute Resolution. Upon the written demand of any Party ("Dispute Notice"), the Parties shall meet to make a good faith effort to resolve any Dispute. The Dispute Notice shall specify in reasonable detail, the nature and the material facts underlying the Dispute. Senior representatives of each Party shall meet ("Initial Dispute Meeting") in person at the University's offices on Campus not later than six (6) Business Days after the Dispute Notice is provided to all Parties. If the Dispute is not resolved within seven (7) Business Days after the Initial Dispute Meeting, the Dispute shall be submitted to non-binding mediation before a mediator agreeable to the Parties. The cost of the mediator shall be shared by the Parties. It shall be a material obligation of each Party to reasonably cooperate in good faith with the mediator's efforts to resolve the Dispute. The mediator shall establish a schedule and procedure for mediation of the Dispute that shall last not more than thirty (30) days. Any Dispute not resolved by the foregoing procedure shall be resolved by litigation as set forth in Section 9.8(a) above.

10.14 Further Assurances. The Parties agree to execute and acknowledge such other and further documents as may be necessary or reasonably required to express the intent of the Parties or otherwise effectuate the terms of this Agreement. Without limiting the foregoing, if and to the extent that any of the Attachments hereto are not final and complete as of the Effective Date, the Parties agree to work together in good faith to finalize and complete such Attachments as soon as possible, subject in all events to the approval of such final and complete Attachments by all Parties hereto, at which time the final, complete, and approved Attachments shall be attached to this Agreement and made a part hereof.

10.15 Attorneys' Fees and Costs. In all Disputes arising from or related to this Agreement, each Party shall pay its own Attorneys' Fees and Costs.

10.16 Relationship of Parties. The subject of this Agreement is a private development with no Party acting as the Agent of the other Parties in any respect. None of the provisions in this Agreement shall be deemed to render any Party a partner in another Party's business, or joint venturer or member in any joint enterprise with another Party.

10.17 Severability. If any provision of this Agreement, or its application to any Person or circumstance, is held invalid by any court, the invalidity or inapplicability of such provision shall not affect any other provision of this Agreement or the application of such provision to any other Person or circumstance, and the remaining portions of this Agreement shall continue in full force and effect, unless enforcement of this Agreement as so modified by and in response to such invalidation would be grossly inequitable under all of the circumstances, or would frustrate the fundamental purposes of this Agreement.

10.18 Reserved.

10.19 Section 179D. The University, NCCD and Developer agree that Developer will be designated as the Party primarily responsible for designing the COB Project, within the meaning of Internal Revenue Code Section 179D as, and to the extent, it relates to the COB Project, and the University and NCCD agree to issue the "179D Letter Agreement" attached hereto as Attachment 10.19, whereby the Developer shall receive any effective tax savings that result from the tax deductions available under Section 179D, if any.

10.20 Acts of Agents. Whether or not expressly provided in this Agreement, the acts or omissions of a Party shall be deemed to include the acts or omissions of such Party's respective authorized agents, employees, contractors and subcontractors to the extent such parties are acting within the scope of their employment or agency, as the case may be.

10.21 Reserved

10.22 Reserved.

10.23 Reserved.

10.24 Supplier Diversity. Developer shall exercise good faith efforts to engage minority-owned, women-owned and other small disadvantaged business enterprises, as well as local businesses to perform some of the Developer's Work hereunder, and shall comply with University Regulations, as identified in Attachment 12-3, including without limitation Nevada System of Higher Education Handbook, Title 4, Chapter 10, Section 2: *Supplier Diversity Spending and Inclusion Policy* and Nevada System of Higher Education Procedures and Guidelines Manual, Chapter 5, Section 2(II): *Tier 2 & Subcontractor Reporting Requirements*; provided, however, this clause shall not prevent Developer from engaging an enterprise with whom Developer has a preferred supplier or strategic relationship.

10.25 Naming Rights. Subject to the Tax Agreement, all naming rights with regard to the COB Project or any part thereof, including without limitation the sole right to collect and retain any and all monies related thereto, shall belong to the University exclusively.

10.26 Sovereign Immunity. Nothing contained in this Agreement shall be construed to waive, limit or otherwise alter University's defense of sovereign immunity, which defense is hereby expressly reserved, nor to waive or limit the protections afforded to University under NRS 41.0305 to 41.039.

10.27 Counterparts. This Development Agreement may be executed in counterparts. Further, any copy, facsimile, or electronic signature (such as a pdf) of any signatory shall be considered to have the same binding effect as an original signature.

10.28 Contingent on Board of Regents' Approval. Effectiveness of this Agreement is contingent upon approval by the Board of Regents of the Nevada System of Higher Education in their sole and absolute discretion. If the Board of Regents, in their sole and absolute discretion, do not approve the terms hereof, this Agreement shall be deemed null and void without the necessity of further documentation and shall be deemed to be of no binding effect whatsoever.

ARTICLE 11 REPRESENTATIONS AND WARRANTIES

11.1 Representations and Warranties of Developer. The Developer represents and warrants as follows, as of the Effective Date and as of the Commercial Closing Date:

(a) Valid Existence; Good Standing. The Developer is a limited liability company duly organized and validly existing under the laws of the State of Maryland. The Developer has all requisite power and authority to own its property and conduct its business as presently conducted. The Developer has made all required filings and is in good standing in Maryland and qualified and permitted to do business in the State of Nevada, Washoe County, and the City of Reno. Without limiting the foregoing, Developer has obtained all licenses required to conduct its business in Nevada and is not in default on any fees or taxes dues to any applicable governmental authority;

(b) Authority. The Developer has all requisite power and authority to execute and deliver this Agreement and the agreements contemplated by this Agreement and to carry out and perform all of the terms and covenants of this Agreement and the agreements contemplated by this Agreement;

(c) No Limitation on Ability to Perform. Neither the Developer's articles of organization or operating agreement, nor the organization documents of any of the Developer's members, nor any other agreement or Laws in any way prohibits, limits or otherwise affects the right or power of the Developer to enter into and perform all of the terms and covenants of this Agreement. Neither the Developer nor any of its members are party to or bound by any contract, agreement, indenture, trust agreement, note, obligation or other instrument which could prohibit or limit the same. Except for the customary licenses and the Permits contemplated hereby, no consent, authorization or approval of, or other action by, and no notice to or filing with, any governmental authority, regulatory body or any other Person is required for the due execution,

delivery and performance by the Developer of this Agreement or any of the terms and covenants contained in this Agreement. There are no pending or threatened suits or proceedings or undischarged judgments affecting the Developer or any of its members before any court, governmental agency, or arbitrator which might materially adversely affect the enforceability of this Agreement or the business, operations, assets or condition of the Developer;

(d) Valid Execution. The execution and delivery of this Agreement and the agreements contemplated hereby by Developer have been duly and validly authorized by all necessary action. This Agreement will be a legal, valid and binding obligation of the Developer, enforceable against the Developer in accordance with its terms;

(e) Defaults. The execution, delivery and performance of this Agreement (i) do not and will not violate or result in a violation of, contravene or conflict with, or constitute a default under (A) any agreement, document or instrument to which the Developer is a party or by which the Developer's assets may be bound or affected, (B) any Laws, or (C) the limited liability company agreement of Developer, and (ii) do not and will not result in the creation or imposition of any lien or other encumbrance upon the assets of Developer;

(f) Meeting Financial Obligations. There has been no material adverse change in Developer's financial condition over the six (6) month period prior to the Effective Date, and, as of the Effective Date, and the Commercial Closing Date, Developer is meeting its current liabilities as they mature; no undisputed Federal or State tax liens have been filed against it; and Developer is not in default under any agreement for borrowed money; and

(g) Skill and Capacity. The Developer has the requisite skill and capacity to perform all obligations hereunder, and is not debarred or otherwise forbidden from performing its obligations hereunder.

11.2 Representations and Warranties of the University. The University represents and warrants, as follows, as of the Effective Date and as of the Commercial Closing Date:

(a) Authority. The University is a constitutionally created entity of the state of Nevada and, subject to Section 10.28 above, has all requisite power to execute and deliver and perform its obligations under this Agreement and the agreements contemplated by this Agreement and to carry out and perform all of the terms and covenants of this Agreement and the agreements contemplated by this Agreement;

(b) Defaults. The execution, delivery and performance by the University of this Agreement (i) do not and will not violate or result in a violation of, contravene or conflict with, or constitute a default under (A) any agreement, document or instrument to which the University is a party or by which the University's assets may be bound or affected, or (B) any Laws, and (ii) do not and will not result in the creation or imposition of any lien or other encumbrance upon the assets of the University. Except for the customary licenses and the Permits contemplated hereby, and except as otherwise provided in Section 10.28 above, no consent, authorization or approval of, or action by, and no notices to or filing with any governmental authority, regulatory body or any other Person is required for the due execution, delivery and performance by the University of this Agreement or any of the terms and covenants contained in this Agreement. To its actual

knowledge, there are no pending or threatened suits or proceedings or undischarged judgments affecting the University before any court, governmental agency or arbitrator which might materially adversely affect the enforceability of this Agreement; and

(c) Valid Execution. Subject to Section 10.28 above, the execution and delivery of this Agreement and the agreements contemplated hereby by the University have been duly and validly authorized by all necessary action. This Agreement will be a legal, valid and binding obligation of the University, enforceable against the University in accordance with its terms.

11.3 Representations and Warranties of NCCD. The NCCD represents and warrants, as follows, as of the Effective Date and as of the Commercial Closing Date:

(a) Valid Existence; Good Standing. The NCCD is a limited liability company duly organized and validly existing under the laws of the State of Nevada. The NCCD has all requisite power and authority to conduct its business as presently conducted. The NCCD has made all required filings and is in good standing in Nevada and qualified and permitted to do business in the State of Nevada, Washoe County, and the City of Reno. Without limiting the foregoing, NCCD has obtained all licenses required to conduct its business in Nevada and is not in default on any fees or taxes dues to any applicable governmental authority;

(b) Authority. The NCCD has all requisite power and authority to execute and deliver this Agreement and the agreements contemplated by this Agreement and to carry out and perform all of the terms and covenants of this Agreement and the agreements contemplated by this Agreement;

(c) No Limitation on Ability to Perform. Neither NCCD's articles of organization or operating agreement, nor any other agreement or Laws in any way prohibits, limits or otherwise affects the right or power of NCCD to enter into and perform all of the terms and covenants of this Agreement. NCCD is not party to or bound by any contract, agreement, indenture, trust agreement, note, obligation or other instrument which could prohibit or limit the same. Except for the customary licenses and the Permits contemplated hereby, no consent, authorization or approval of, or other action by, and no notice to or filing with, any governmental authority, regulatory body or any other Person is required for the due execution, delivery and performance by NCCD of this Agreement or any of the terms and covenants contained in this Agreement. There are no pending or threatened suits or proceedings or undischarged judgments affecting NCCD before any court, governmental agency, or arbitrator which might materially adversely affect the enforceability of this Agreement or the business, operations, assets or condition of NCCD;

(d) Valid Execution. The execution and delivery of this Agreement and the agreements contemplated hereby by NCCD have been duly and validly authorized by all necessary action. This Agreement will be a legal, valid and binding obligation of NCCD, enforceable against NCCD in accordance with its terms; and

(e) Defaults. The execution, delivery and performance of this Agreement (i) do not and will not violate or result in a violation of, contravene or conflict with, or constitute a default

under (A) any agreement, document or instrument to which NCCD is a party or by which NCCD's assets may be bound or affected, (B) any Laws, or (C) the organizational documents of NCCD, and (ii) other than as a result of the Bond Financing, do not and will not result in the creation or imposition of any lien or other encumbrance upon the assets of NCCD.

11.5 Survival. The Parties' respective liabilities for any breach of the representations and warranties in this Article 11 shall survive the Term and any termination of this Agreement.

ARTICLE 12- DEFINITIONS.

The following terms used in this Agreement, shall have the meanings ascribed to them in this Article 12:

"179D Letter Agreement" is defined in Section 10.19 and attached as Attachment 10.19.

"Affirmation Certificate" means a certificate in the form attached hereto as Attachment 12-1 whereby a Party affirms the material accuracy of such Party's representations and warranties under this Agreement.

"Agents" means, when used with reference to any Party to this Agreement or any other Person, the members, managers, officers, directors, commissioners, and employees of such Party or other Person, and each of them.

"Agreement" means this Development Agreement, as it may be amended in accordance with its terms.

"Approval Cure Period" is defined in Section 5.13(d).

"Approval Failure Notice" is defined in Section 5.13(d).

"Approved Design Documents" is defined in Section 5.5(a)(ii).

"Architect" means LMN Architects, LLP.

"Architect Agreement" means the Design Services Agreement entered into between Architect and Design Builder effective August 2022, with respect to the design of the COB Project.

"Attorneys' Fees and Costs" means any and all reasonable attorneys' fees (including the fees and costs of in-house counsel and legal staff), costs, expenses, and disbursements, including, but not limited to, expert witness fees and costs, travel time and associated costs, transcript preparation fees and costs, document copying, exhibit preparation, courier, postage, facsimile, long-distance and communications expenses, court costs and the costs and fees associated with any other legal, administrative, or alternative dispute resolution proceeding, fees and costs associated with execution upon any judgment or order, and costs on appeal.

"Authorized Individuals" is defined in Section 5.13(a).

"Bonds" is defined in Section 3.1(b).

“Bond Financing” shall mean the financing of the COB Project Fund Amount, and certain other costs associated with the Bonds and the COB Project, using the proceeds from the Bonds.

“Bond Trustee” is defined in Section 3.1(b).

“Building Permit(s)” means a Permit or Permits issued by the authority having jurisdiction and all applicable State and local governmental authorities that are necessary for the Developer to commence and perform the Developer’s Work.

“Business Day” or “Business Days” means any day other than a Saturday, Sunday or Nevada or federal legal holiday.

“Campus” is defined in the Recitals.

“CCOE Target Date” is defined in Section 2.2.

“Certificate of Occupancy” is defined in Section 6.2(a).

“Change Event” is defined in Section 5.22.

“Change Request Supporting Materials” is defined in Section 5.22(a).

“Claim” is defined in Section 4.4(a).

“COB Improvements” means all physical Construction on the Site and all buildings, structures, fixtures and other improvements required by the Construction Documents to be erected, built, placed, installed or constructed by Developer upon or within the Site on or after the Effective Date pursuant to this Agreement.

“COB Project” means the Construction of the COB Improvements in accordance with the COB Project Requirements.

“COB Project Fund” is defined in Section 3.1(b).

“COB Project Fund Amount” means the amount deposited into the COB Project Fund from the sale of the Series 2023 Bonds.

“COB Project Requirements” is defined in Section 5.2(c).

“Commercial Close of Escrow” means completion of the transactions described in Section 2.6 hereof, including the Delivery of the Site by the University to NCCD.

“Commercial Closing Date” means the date upon which the Commercial Close of Escrow occurs.

“Commercial Escrow” is defined in Section 2.2.

“Completion” or “Completed” is defined in Section 6.2.

“Construction” means all new excavation, construction, replacement, rehabilitation, and demolition occurring on the Site pursuant to this Agreement.

“Construction Documents” is defined in Section 5.5(a).

“Current Dollars” means a dollar amount calculated by multiplying a dollar amount specified in this Agreement by a fraction, the numerator of which is the Consumer Price Index last published prior to the date upon which such amount is calculated and the denominator of which is the Consumer Price Index last published prior to the Effective Date. As used herein, the applicable Consumer Price Index shall be the Index for US BLS (Reno Area).

“Deferred Items” is defined in Section 6.3.

“Delay Credit” is defined in Section 9.3(d).

“Delivery” or “Deliver” means the execution and delivery of the Ground Lease.

“Design/Build Agreement” or “DBA” is defined in the Recitals.

“Design Builder” means, Clark Construction Group, LLC, a Maryland limited liability company.

“Design Development Documents” is defined in Section 5.5(a)(ii).

“Developer Assumed Hazardous Materials Obligations” is defined in Section 4.2(a).

“Developer Assumed Regulatory Approvals” is defined in Section 4.3(b).

“Developer Change Order” is defined in Section 5.22(c).

“Developer Change Request” is defined in Section 5.22(c).

“Developer Event of Default” or “Developer Events of Default” is defined in Section 9.2.

“Developer Responsible Party” shall mean Developer, Developer’s employees and Agents, and any other Persons who are involved in the COB Project at the behest of, or under contract with (including all subcontractors thereto), Developer.

“Developer’s Known Environmental Conditions” means the Site environmental conditions listed in Attachment 12-4.

“Developer’s Known Site Conditions” means the conditions listed in Attachment 12-5.

“Developer’s Work” is defined in the Recitals.

“Differing Site Conditions” means (1) subsurface or latent physical conditions at the Site which differ materially from those indicated in the materials listed in Attachment 12-5, and (2) unknown physical conditions at the Site of an unusual nature, which differ materially from those

ordinarily encountered and generally recognized as inhering in work of the character provided in this Agreement.

“Direct Agreements” means the Direct Agreement (Development Agreement), Direct Agreement (Ground Lease), and Direct Agreement (Sublease) executed by and among the University, Bond Trustee, Developer, and NCCD, as applicable, reflecting certain consents and the granting a security interest to the Bond Trustee.

“Disabled Access Laws” means all Laws related to access for persons with disabilities including, without limitation, the Americans with Disabilities Act, 42 U.S.C. §§ 12101 et seq.

“Disbursement” is defined in the Disbursement Agreement.

“Disbursement Agreement” is defined in Section 1.7.

“Disbursement Due Date” is defined in the Disbursement Agreement.

“Dispute” is defined in Section 10.11.

“Dispute Notice” is defined in Section 10.13.

“Effective Date” is defined in the Preamble above.

“Engagement Agreement” is defined in the Recitals.

“Escrow Holder” is defined in Section 2.2.

“Extension” means an NLFM Extension or LFM Extension.

“Extension Conditions” is defined in Section 10.1(b).

“FCOE Target Date” is defined in Section 3.2.

“Final Completion” means the point after Completion when all Deferred Items have been completed, and such particular COB Improvement(s), has received a final Certificate of Occupancy (or its effective equivalent), to the extent applicable.

“Final Construction Documents” is defined in Section 5.5(a)(iii).

“Final Maximum Completion Date” is the last of the then current (as of the date of the University’s notice of default) Maximum Completion Dates for any of the COB Improvements.

“Financial Close of Escrow” means completion of the transactions described in Section 3.6 hereof, including the issuance of the Bonds and the loan of the proceeds thereof to NCCD pursuant to the Loan Agreement.

“Financial Closing Date” means the date upon which the Financial Close of Escrow occurs.

“Financial Escrow” is defined in Section 3.2.

“Gateway” is defined in the Recitals.

“Gateway Project” means the COB Project and the Hotel Project, collectively.

“Ground Lease” is defined in the Recitals.

“Hazardous Material” means any material that, because of its quantity, concentration or physical or chemical characteristics, is deemed by any federal, state or local governmental authority to pose a present or potential hazard to human health or safety or to the environment. Hazardous Material includes, without limitation, any material or substance defined as a “hazardous substance,” or “pollutant” or “contaminant” under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (“CERCLA”, also commonly known as the “Superfund” law), as amended, (42 U.S.C. Sections 9601 et. seq.); any asbestos and asbestos containing materials whether or not such materials are part of the structure of any existing improvements on the Site, any COB Improvements to be constructed on the Site by or on behalf of Developer, or are naturally occurring substances on, in or about the Site; and petroleum, including crude oil or any fraction, and natural gas or natural gas liquids and lead containing materials.

“Hazardous Material Laws” means any present or future federal, state or local Laws or policies relating to Hazardous Material (including, without limitation, its Handling, transportation or Release) or to human health and safety, industrial hygiene or environmental conditions in, on, under or about the Site (including the COB Improvements) and any other property, including, without limitation, soil, air, air quality, water, water quality and groundwater conditions.

“Hotel Project” is defined in the Recitals.

“Indemnified Parties” means the University, NCCD, Developer, as the case may be, and, as the case may be, their respective boards, commissions, departments, Regents, affiliates, members, partners, officers, directors, agencies, managers and other subdivisions, including, without limitation, all of the Agents and each of them.

“Indemnify” means indemnify, protect, defend and hold harmless.

“Indenture” is defined in Section 3.1(b).

“Initial Disbursement” is the payment at Financial Close of Escrow as mutually agreed by the Parties.

“Initial Dispute Meeting” is defined in Section 10.13.

“Instruments of Service” means any drawings, specifications, models, renderings or other materials prepared by the Architect for the Developer in connection with the COB Project.

“Issuer” is defined in Section 3.1(b).

“Joint Commercial Escrow Instructions” is defined in Section 2.2 and attached as Attachment 2.2.

“Joint Financial Escrow Instructions” is defined in Section 3.2 and attached as Attachment 3.2.

“Laws” shall mean all present and future applicable laws, ordinances, rules, regulations, permits, authorizations, orders, requirements, and University Regulations, whether or not in the contemplation of the Parties, which may affect or be applicable to the Site or any part of the Site (including, without limitation, any subsurface area, use of the Site and the buildings and COB Improvements on or affixed to the Site), including, without limitation, all consents or approvals required to be obtained from, and all rules and regulations of, and all building and zoning laws of, all Federal, State, county and municipal governments, the departments, bureaus, agencies or commissions thereof, authorities, board of officers, any national or local board of fire underwriters, or any other body or bodies exercising similar functions, having or acquiring jurisdiction of the Site, and similarly the phrase “Law” shall be construed to mean the same as the above in the singular as well as the plural.

“Lender’s Collateral Assignment Agreement” means the Collateral Assignment Agreement to be entered into by NCCD and Developer in favor of the Bond Trustee.

“LFM Extension” is defined in Section 10.1(a).

“Litigation Force Majeure” is defined in Section 10.1(a).

“Loan Agreement” is defined in Section 3.1(b).

“Loss” or “Losses” means any and all claims, demands, losses, liabilities, damages (including foreseeable and unforeseeable damages), liens, obligations, interest, injuries, penalties, fines, lawsuits and other proceedings, judgments and awards and costs and expenses (including, without limitation, Attorneys’ Fees and Costs, and consultants’ fees and costs) of whatever kind or nature, known or unknown, contingent or otherwise.

“Maximum Completion Date” means, as applicable, those certain Maximum Completion Dates for any part of the COB Improvement(s) as set forth on the Schedule of Performance.

“NCCD Event of Default” or “NCCD Events of Default” is defined in Section 9.6.

“NLFM Extension” is defined in Section 10.1(b).

“Non-Litigation Force Majeure” means acts of a public enemy; fires; floods; explosions; epidemics; quarantine restrictions; freight embargoes; strikes; boycotts; obstructive actions by labor organizations; demonstrations; earthquakes; tidal waves; pandemics; epidemics; substantial interruption of work because of other construction by contractors other than Developer hired directly by the University in the immediate vicinity of the Site; archeological finds on the Site; shortage of, or inability to obtain materials or reasonably acceptable substitute materials; acts of terror or terrorism; unreasonable delays in issuing necessary Permits or approvals or conducting inspections not caused by the Developer; the inability to obtain easements, licenses, dedications, approvals or title required for utilities not caused by Developer; material change in Laws adversely affecting the COB Project; war and related causes; nuclear perils; explosion or nuclear, radioactive, chemical or biological contamination not caused by the Developer; the failure of any utility

company to provide and maintain utilities to the COB Project not caused by the Developer which are required for the performance of Construction; Differing Site Conditions; the discovery of Hazardous Materials on the Site (excluding any Developer Assumed Hazardous Materials); acts or omissions not authorized by this Agreement of the University, or contractors directly hired by the University to perform work in the immediate vicinity of the site; and any adverse or inclement weather conditions, including thunderstorms, lightning, tornadoes and other windstorms, but only to the extent such inclement weather conditions exceeds Usual Weather Conditions. Notwithstanding anything contained in this Agreement to the contrary, a Non-Litigation Force Majeure shall not include any act, instance or occurrence within the reasonable control of, or the negative effects of which could have been prevented or mitigated by the exercise of reasonable diligence or ordinary care by, the Party claiming Non-Litigation Force Majeure.

“Notice of Non-Responsibility” means that certain Notice of Non-Responsibility in the form attached hereto as Attachment 7.2(b).

“O&M Agreement” is defined in the Recitals.

“O&M Services” means those particular operation and maintenance services to be performed by Developer for the benefit of University, as described more completely in the O&M Agreement.

“Official Records” mean, with reference to the recordation of documents, the Official Records of Washoe County, Nevada.

“Outside Commercial Close Date” is defined in Section 2.2.

“Outside Financial Close Date” is defined in Section 3.2.

“Party” or “Parties” means the University, NCCD, or Developer, as a party to this Agreement; Parties means all of the University, NCCD and Developer, as parties to this Agreement.

“Permits” means all permit(s), licenses and governmental approvals required to be obtained in connection with the use or construction of the COB Project.

“Permitted Encumbrances” means, as of any particular time, any one or more of the following:

- (1) Encumbrances for utility charges, taxes, rates and assessments not yet delinquent or for utility charges, taxes, rates, assessments, and other charges being contested in accordance with the Loan Agreement or this Ground Lease;
- (2) Any encumbrance arising out of any judgment rendered which is being contested diligently and in good faith, the execution of which has been stayed or against which a bond or bonds in the aggregate principal amount equal to such judgments shall have been posted with a financially-sound insurer;

- (3) Any encumbrance arising in the ordinary course of business imposed by law dealing with materialmen's, mechanic's, workmen's, repairmen's, warehousemen's, landlords', vendors' or carriers' encumbrances created by operation of law, but that have not been perfected by the required filing of record for work done or materials delivered after the date of recording of this Ground Lease in connection with additions to or alterations of the Project,
- (4) Servitudes, licenses, easements, encumbrances, restrictions, rights-of-way and rights in the nature of easements or similar charges which shall not in the aggregate materially and adversely impair the construction of the Project or operation of the Project;
- (5) Applicable zoning and building bylaws and ordinances, municipal bylaws and regulations, and restrictive covenants, which do not materially interfere with the construction of the Project and operation of the Project;
- (6) Encumbrances which are created on or before the date hereof and as described in the title policy required by the Loan Agreement;
- (7) Any encumbrances required in connection with the development of the Project;
- (8) Encumbrances which are created by a change in Applicable Law on or after the date hereof;
- (9) Any servitudes, licenses, easements, restrictions, encumbrances created by a Governmental Authority or to which University has granted its consent; and
- (10) This Ground Lease, the Sublease and the other Bond Documents.

“Person” means any individual, partnership, corporation (including, but not limited to, any business trust), limited liability company, joint stock company, trust, unincorporated association, joint venture or any other entity or association, the United States, or a Federal, State or political subdivision thereof.

“Prime Rate” means the WSJ Prime Rate publicly announced from time to time by Wall Street Journal, and if such rate in its present form becomes unavailable, such similar reference rate as may be agreed by the parties, acting reasonably.

“Property and Possessory Interest Taxes” is defined in the Ground Lease.

“Qualified Out-of-Pocket Costs” is defined in Section 3.6(d).

“Regulatory Approval” means any authorization, approval or Permit required to develop the COB Project by any governmental agency having jurisdiction over the Site or the COB Improvements, including the Nevada Public Works Division (as set forth in NRS Chapter 341). The term “Regulatory Approval” shall not include any authorization, approval or Permit required for the University's use and occupancy of the COB Project, including without limitation any approvals required by the FDA, and any other applicable Federal, State, or local agencies.

“Release” when used with respect to Hazardous Material means any actual or imminent spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into or inside any existing improvements or any COB Improvements constructed under this Agreement by or on behalf of Developer, or in, on, under or about the Site or any portion of the Site.

“Required Warranties” is defined in Section 5.23.

“Responsible Party” is defined in Section 4.4(c).

“RFP” is defined in the Recitals.

“Schedule of Performance” means the schedule of performance attached hereto as Attachment C, subject to extensions and adjustments as provided in this Agreement, including without limitation Sections 5.15, 5.22 and 10.1.

“Schedule of Values” is set forth on Attachment 2.3(a)(ii).

“Schematic Drawings” is defined in Section 5.5(a)(i).

“Separate Gateway Developer” is defined in Section 5.28.

“Series 2023A Bonds” means the National Finance Authority Lease Revenue Bonds (NCCD – UNR Properties LLC - University of Nevada, Reno Project) Series 2023A.

“Series 2023 Bonds” mean collectively, the Series 2023A Bonds and the National Finance Authority Lease Revenue Bonds (NCCD – UNR Properties LLC - University of Nevada, Reno Project) Taxable Series 2023B.

“Significant Change” means any of the following: (a) the dissolution, merger, consolidation or other reorganization of the Developer or Edgemoor Development LLC, as the case may be;; (b) any issuance or transfer by the Developer of fifty percent (50%) or more of the beneficial interests in the Developer, directly or indirectly, in one or more transaction; or (c) the sale of fifty percent (50%) or more of Developer’s assets, capital or profits. Notwithstanding the foregoing, or anything herein to the contrary, a transfer of membership interests in Developer among parties that are members of Developer or Edgemoor Development LLC, as the case may be, on the Effective Date shall be deemed not to be a Significant Change.

“Site” is defined in the Recitals.

“Standard of Care” means the level of skill, knowledge, care and diligence that a reasonably careful Person (including architects and engineers) would use under similar circumstances.

“Sublease” is defined in the Recitals.

“Subordinate Collateral Assignment Agreement” is defined in Section 5.24(a).

“Target Completion Date(s)” means, as applicable, those certain Target Completion Dates for any part of the COB Improvements as set forth on the Schedule of Performance.

“Term” is defined in Section 1.5.

“Title Defect” is defined in Section 2.7(b).

“Transaction Documents” is defined in Section 2.1.

“Transfer” is defined in Section 8.1.

“University Assumed Regulatory Approvals” is defined in Section 4.3(b).

“University Change Order” is defined in Section 5.22.

“University Event of Default” or “University Events of Default” is defined in Section 9.4.

“University Regulations” means those certain University policies and regulations set forth on Attachment 12-3.

“Usual Weather Conditions” is defined in Section 10.1(b)(i).

*Remainder of page intentionally left blank.
Signatures on following page.*

IN WITNESS WHEREOF the Parties have caused this Agreement to be executed by their duly appointed representatives as of the date first above written.

University:

BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON BEHALF OF THE UNIVERSITY OF NEVADA, RENO

Recommended by:

Brian Sandoval
President, University of Nevada, Reno

Date: _____

Approved by:

Dale Erquiaga
Acting Chancellor,
Nevada System of Higher Education

Developer:

UNR/EDGEMOOR GATEWAY PARTNERS LLC,
a Maryland limited liability company

By: _____

Name: _____

Its _____

By: _____

Name: _____

Its _____

NCCD:

NCCD - UNR PROPERTIES LLC
a Nevada limited liability company

By: _____

Name: _____

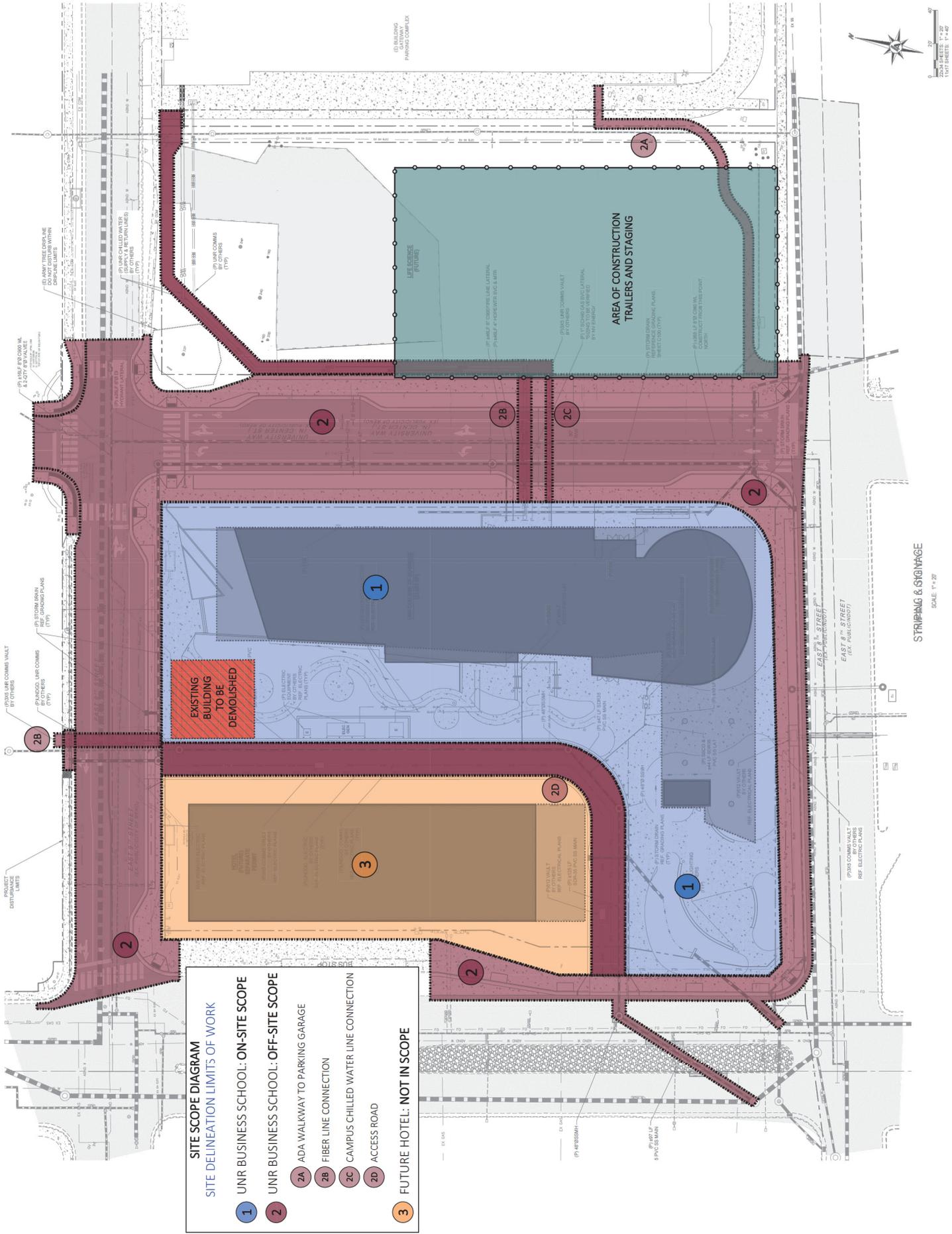
Its: _____

ATTACHMENT A

Site Map

See Site map appended behind this cover page.

Attachment A



- SITE SCOPE DIAGRAM**
SITE DELINEATION LIMITS OF WORK
- 1** UNR BUSINESS SCHOOL: ON-SITE SCOPE
 - 2** UNR BUSINESS SCHOOL: OFF-SITE SCOPE
 - 2A ADA WALKWAY TO PARKING GARAGE
 - 2B FIBER LINE CONNECTION
 - 2C CAMPUS CHILLED WATER LINE CONNECTION
 - 2D ACCESS ROAD
 - 3** FUTURE HOTEL: NOT IN SCOPE

STAIRWELL & STAIRWELL
 SCALE: 1"=30'



ATTACHMENT B

DESCRIPTION OF COLLEGE OF BUSINESS IMPROVEMENTS

The new College of Business building is conceived as an above-grade, approximately 128,000 GSF, 5-story, glass and brick structure with a rooftop mechanical penthouse. The building is planned to primarily consist of a mixture of academic instructional spaces, including an auditorium, classrooms, computer labs, and team meeting spaces, along with student gathering and amenity spaces and administrative functions, such as faculty and staff offices. Adjacent to a planned future hotel, the new College of Business project is envisioned as a “gateway” which will further connect the University of Nevada, Reno campus with the downtown area of the City of Reno. In conjunction with the College of Business building, the project includes several on-site and off-site improvements, such as a landscaped courtyard and plaza, utilities updates, and improvements to sidewalks and streets.

ATTACHMENT C

Schedule of Performance

See Schedule of Performance is appended behind this cover page.

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	2023												2024												2025												2026											
						M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A								
UNR MATHEWSON GATEWAY PROJECT																																																					
SUMMARY SCHEDULE																																																					
SUMM-1000	CONSTRUCTION NOTICE TO PROCEED	1	1	30-Jun-23	30-Jun-23	CONSTRUCTION NOTICE TO PROCEED																																															
SUMM-1010	DEMOLITION	74	74	03-Jul-23	16-Oct-23	DEMOLITION																																															
SUMM-1020	EXCAVATION & SUPPORT OF EXCAVATION	50	50	28-Jul-23	06-Oct-23	EXCAVATION & SUPPORT OF EXCAVATION																																															
SUMM-1040	FOUNDATIONS	32	32	25-Sep-23	07-Nov-23	FOUNDATIONS																																															
SUMM-1140	CONCRETE CORE WALLS	89	89	11-Oct-23	16-Feb-24	CONCRETE CORE WALLS																																															
SUMM-1110	SITE UTILITIES	266	266	27-Nov-23	11-Dec-24	SITE UTILITIES																																															
SUMM-1060	STRUCTURAL STEEL ERECTION	35	35	30-Jan-24	18-Mar-24	STRUCTURAL STEEL ERECTION																																															
SUMM-1160	WEATHER CRITICAL ACTIVITIES	213	213	30-Jan-24	26-Nov-24	WEATHER CRITICAL ACTIVITIES																																															
SUMM-1050	CONCRETE SLABS	50	50	23-Apr-24	02-Jul-24	CONCRETE SLABS																																															
SUMM-1070	EXTERIOR FACADE	109	109	08-Jul-24	10-Dec-24	EXTERIOR FACADE																																															
SUMM-1080	VERTICAL TRANSPORTATION	85	85	16-Aug-24	17-Dec-24	VERTICAL TRANSPORTATION																																															
SUMM-1090	INTERIOR ROUGH-IN	105	105	03-Sep-24	31-Jan-25	INTERIOR ROUGH-IN																																															
SUMM-1100	INTERIOR FINISHES	147	147	18-Nov-24	17-Jun-25	INTERIOR FINISHES																																															
SUMM-1130	COMMISSIONING	103	103	21-Jan-25	13-Jun-25	COMMISSIONING																																															
SUMM-1120	HARDSCAPE/LANDSCAPE	59	59	06-Mar-25	28-May-25	HARDSCAPE/LANDSCAPE																																															
SUMM-1150	SUBSTANTIAL COMPLETION (COO)	35	35	09-Jun-25	25-Jul-25	SUBSTANTIAL COMPLETION (COO)																																															

- Remaining Level of Effort
- Actual Level of Effort
- Actual Work
- Remaining Work
- Critical Remaining Work

◆ Milestone



ATTACHMENT 1.7.1
(cover page)

Form of Ground Lease

See form of Ground Lease appended behind this cover page.

Attachment 1.7.1

GROUND LEASE

By and Between

**BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON
BEHALF OF THE UNIVERSITY OF NEVADA, RENO, Landlord**

and

NCCD-UNR PROPERTIES LLC, a Nevada limited liability company, Tenant

[_____, 2023]

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GROUND LEASE

THIS GROUND LEASE (“Ground Lease” or “Lease”), dated [_____, 2023][**Note: The Effective Date would be the date of Financial Closing**] (“Effective Date”), is by and between the BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON BEHALF OF THE UNIVERSITY OF NEVADA, RENO (“Landlord” or the “University”), and NCCD-UNR PROPERTIES LLC (“Tenant”), a single member limited liability company organized and existing under the laws of the State of Nevada, whose sole member is National Campus and Community Development Corporation, a Texas non-profit corporation that is exempt from United States federal income taxation under Section 501(a) of the Code (as defined herein) as an organization described under Section 501(c)(3) of the Code, as tenant.

RECITALS

A. The University owns certain real property comprising approximately 2.21 acres bordered by Eighth Street, Ninth Street, North Virginia Street and University Way in Reno Nevada (the “Property”). The land that is the subject of this Ground Lease is comprised of certain portions of the Property and is more particularly described on the attached Attachment A-1 and shown on the attached Attachment A-2 (collectively, the “Site”).

B. The University wishes to cause development of the Site with an approximate 128,000 square foot College of Business (collectively, the “Improvements”) as more particularly described in that certain Development Agreement dated as of the Effective Date (as amended or supplemented from time to time in accordance with the provisions thereof, the “Development Agreement”) among University, Tenant, and UNR/Edgemoor Gateway Partners LLC, a Maryland limited liability company (the “Developer”).

C. Pursuant to the Development Agreement, Developer has agreed to develop, design, construct and equip the Improvements on the Site as more particularly described in the Development Agreement (collectively, and together with any additional Improvements funded by Additional Bonds, as applicable, referred to as the “Project”).

D. Landlord is prepared to lease the Site and the Improvements to the Tenant, and the Tenant is prepared to lease the Site and the Improvements from Landlord in accordance with the terms of this Ground Lease. Concurrently with the execution of this Ground Lease, Tenant, as sublandlord, shall enter into that certain Sublease effective as of the Effective Date with the University, as subtenant, pursuant to which, the University shall sublease the Site and the Improvements in connection with the development of the Project pursuant to the Development Agreement.

E. In connection with the development and construction of the Project, National Finance Authority, as issuer (“Issuer”) will cause to be issued certain Lease Revenue Bonds (NCCD - UNR Properties LLC – University of Nevada, Reno Project) Series 2023 (the “Series 2023 Bonds”) and any Additional Bonds, as applicable, pursuant to a Trust Indenture dated as of the Effective Date (as amended or supplemented from time to time in accordance with the provisions thereof, the “Indenture”) by and between Issuer and U.S. Bank Trust Company,

National Association, as trustee (“Bond Trustee” or “Trustee”), and the proceeds of such Bonds shall be loaned to Tenant pursuant to a Loan Agreement dated as of the Effective Date (as amended or supplemented from time to time in accordance with the provisions thereof the “Loan Agreement”) between Issuer, as lender, and Tenant, as borrower, and a portion of such proceeds shall be paid to Developer pursuant to that certain Disbursement Agreement dated as of the Effective Date among Tenant, Developer and Trustee (as amended or supplemented from time to time in accordance with the provisions thereof, the “Disbursement Agreement”) and the Indenture and Loan Agreement, to pay the costs of the Project under the Development Agreement.

F. Pursuant to the Operation and Maintenance Agreement dated as of the Effective Date (as amended or supplemented from time to time in accordance with the provisions thereof, the “O&M Agreement”) between the University and Manager (as defined in the O&M Agreement), the Manager has agreed to perform the O&M Services (as defined in the O&M Agreement) for the Project.

NOW, THEREFORE, in consideration of the mutual covenants, conditions and agreements that follow, the parties hereby agree as follows:

ARTICLE 1 DEFINITIONS, GRANT AND TERM

1.1 Definitions. Certain words and terms used in this Ground Lease and not otherwise defined herein shall have the meaning given them in the other Transaction Documents (as defined below). The following terms as used in this Ground Lease, shall have the following meanings, unless the context indicates otherwise:

“Additional Bonds” shall have the meaning set forth in the Indenture.

“Applicable Law” means all present and future laws, statutes, regulations, ordinances, resolutions and orders of any applicable Governmental Authority.

“Assessments” has the meaning set forth in Section 5.4 hereof.

“Bond Documents” means, collectively, the Indenture, the Loan Agreement, this Ground Lease, the Sublease, the Tax Agreement, the Leasehold Deed of Trust, the Disbursement Agreement, the Collateral Assignment Agreement, the Security Agreement, the Direct Agreement - Ground Lease, the Direct Agreement - Sublease, the Direct Agreement - Development Agreement and all other instruments or agreements executed by the Trustee, Issuer and/or Tenant in connection with the issuance and delivery of the Bonds and the use of proceeds thereof.

“Beneficiary” has the meaning set forth in Section 24.1.

“Bond Trustee” or “Trustee” is defined in the Recitals above.

“Bonds” means collectively, the Series 2023 Bonds and any Additional Bonds.

“Business Day” or “Business Days” means any day other than a Saturday, Sunday or Nevada or federal legal holiday.

“Casualty” has the meaning set forth in Article 15 hereof.

“Claims” has the meaning set forth in Section 12.1 hereof.

“Code” means the Internal Revenue Code of 1986, as amended from time to time, or the corresponding provisions of any succeeding United States federal tax law.

“Collateral Assignment Agreement” means the Collateral Assignment Agreement, dated as of the Effective Date, by the Tenant and the Developer in favor of the Trustee, as the same may be amended and/or supplemented from time to time as permitted hereby and thereby.

“Common Areas” has the meaning set forth in Section 9.4 hereof.

“Completion” is defined in the Development Agreement.

“Defaulting Party” has the meaning set forth in Section 19.2 hereof.

“Design/Build Agreement” has the meaning set forth in the Development Agreement.

“Developer” is defined in the Recitals above.

“Development Agreement” is defined in the Recitals above.

“Direct Agreement - Development Agreement” means the Direct Agreement – Development Agreement dated as of the Effective Date among the Landlord, the Tenant, the Developer and the Trustee, as it may be amended or supplemented from time to time.

“Direct Agreement – Ground Lease” is that certain Direct-Agreement- Ground Lease dated as of the Effective Date among the Landlord, Tenant, and Trustee, as it may be amended or supplemented from time to time.

“Direct Agreement - Sublease” means the Direct Agreement – Sublease Agreement dated as of the Effective Date among the Landlord, the Tenant and the Trustee, as it may be amended or supplemented from time to time.

“Disbursement Agreement” is defined in the Recitals above.

“Effective Date” is defined in the Preamble above.

“Event of Default” means each of the events specified in Article 19 hereof.

“Fixed Rent” shall have the meaning set forth in Section 2.2 hereof.

“Governmental Authority” means any and all entities, courts, boards, agencies, commissions, offices, divisions, subdivisions, departments, bodies or authorities of any nature

whatsoever of any governmental unit (federal, state, county, city or otherwise) whether now or hereafter in existence, other than Landlord.

“Ground Lease” is defined in the Preamble above.

“Hazardous Substances” shall be interpreted broadly to include but not be limited to (a) substances designated as hazardous under the Resource Conservation and Recovery Act, 42 U.S.C. §6901, et seq., the Federal Water Pollution Control Act, 33 U.S.C. §1257, et seq., the Clean Air Act, 42 U.S.C. §2001, et seq., or the Comprehensive Environmental Response Compensation and Liability Act of 1980, 42 U.S.C. §9601, et seq., or any other Federal or State law or regulation now or in the future applicable to the Premises, Improvements or Site, The National Institute of Health, CDC and FDA rules and guidelines, (b) any substance which after release into the environment and upon exposure, ingestion, inhalation or assimilation, either directly from the environment or directly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavior abnormalities, cancer and/or genetic abnormalities, and (c) oil and petroleum based derivatives.

“Improvements” is defined in the Recitals above.

“Indenture” is defined in the Recitals above.

“Issuer” is defined in the Recitals above, and includes Issuer’s successors and assigns under the Indenture.

“Landlord” is defined in the Preamble above, and its successors and assigns.

“Landlord Indemnitees” has the meaning set forth in Section 12.2 hereof.

“Leasehold Deed of Trust” means the Leasehold Deed of Trust, Assignment of Rents and Leases, Security Agreement and Fixture Filing dated as of [•], 2023 by the Tenant in favor of the Trustee, as the same may be amended and/or supplemented from time to time.

“Lien” has the meaning set forth in Section 8.2.1 hereof.

“Loan Agreement” is defined in the Recitals above.

“Manager” has the meaning set forth in the O&M Agreement.

“Non-Breaching Party” has the meaning set forth in Section 19.2 hereof.

“O&M Agreement” is defined in the Preamble above.

“O&M Services” has the meaning set forth in the O&M Agreement.

“Person” means natural persons, firms, joint ventures, associations, trusts, partnerships, corporations, limited liability companies, public bodies, and similar entities, whether for profit or non-profit.

“Premises” means the Site and the Improvements.

“Permitted Encumbrances” means, as of any particular time, any one or more of the following:

- (1) Encumbrances for utility charges, taxes, rates and assessments not yet delinquent or for utility charges, taxes, rates, assessments, and other charges being contested in accordance with the Loan Agreement or this Ground Lease;
- (2) Any encumbrance arising out of any judgment rendered which is being contested diligently and in good faith, the execution of which has been stayed or against which a bond or bonds in the aggregate principal amount equal to such judgments shall have been posted with a financially-sound insurer;
- (3) Any encumbrance arising in the ordinary course of business imposed by law dealing with materialmen’s, mechanic’s, workmen’s, repairmen’s, warehousemen’s, landlords’, vendors’ or carriers’ encumbrances created by operation of law, but that have not been perfected by the required filing of record for work done or materials delivered after the date of recording of this Ground Lease in connection with additions to or alterations of the Project,
- (4) Servitudes, licenses, easements, encumbrances, restrictions, rights-of-way and rights in the nature of easements or similar charges which shall not in the aggregate materially and adversely impair the construction of the Project or operation of the Project;
- (5) Applicable zoning and building bylaws and ordinances, municipal bylaws and regulations, and restrictive covenants, which do not materially interfere with the construction of the Project and operation of the Project;
- (6) Encumbrances which are created on or before the date hereof and as described in the title policy required by the Loan Agreement;
- (7) Any encumbrances required in connection with the development of the Project;
- (8) Encumbrances which are created by a change in Applicable Law on or after the date hereof;
- (9) Any servitudes, licenses, easements, restrictions, encumbrances created by a Governmental Authority or to which University has granted its consent; and
- (10) This Ground Lease, the Sublease and the other Bond Documents.

“Project” is defined in the Recitals above.

“Prohibited Use” or “Prohibited Uses” has the meaning set forth in Section 3.2.2.

“Property and Possessory Interest Taxes” means any and all governmental fees and charges, whether general or special, or ordinary or extraordinary, which may be levied, assessed, charged or imposed, or may become a lien or charge upon the Premises or any part or parts thereof, or upon Tenant’s Interest, including, without limitation, taxes on land, any buildings,

any parking facilities or any other improvements now or hereafter at any time during the Term located at or on the Premises.

“Security Agreement” has the meaning set forth in the Indenture.

“Series 2023 Bonds” is defined in the Recitals above.

“Site” is defined in the Recitals above.

“State” means the State of Nevada.

“Sublease” means the Sublease Agreement between Tenant, as sublandlord, and the University, as subtenant, dated as of the Effective Date, as it may be amended or supplemented from time to time.

“Subtenant” means the University, as subtenant under the Sublease.

“Taking” is defined in Section 16.1 hereof.

“Tax Agreement” has the meaning set forth in the Indenture.

“Tenant” is defined in the Preamble above.

“Tenant Indemnitees” has the meaning set forth in Section 12.1 hereof.

“Tenant’s Interest” means Tenant’s entire interest in the Premises and this Ground Lease.

“Term” means the period set forth in Section 1.5 hereof.

“Termination Date” means the date on which the Term hereof ends by termination or expiration of this Ground Lease, as described in Section 1.5 hereof.

“Transaction Documents” means, collectively, the Sublease, the Development Agreement, this Ground Lease, the Disbursement Agreement, the O&M Agreement, the other Bond Documents, the Design/Build Agreement, and the ancillary agreements entered into by and/or between Landlord, Tenant and Developer in connection with the Project.

“University” is defined in the Recitals above.

1.2 Lease. In consideration of the covenants and agreements to be performed and observed by Tenant, Landlord hereby leases to Tenant, subject only to Permitted Encumbrances, and Tenant hereby leases from Landlord, the Site as more particularly described on the attached Attachment A-1 and shown on the attached Attachment A-2 and the Improvements in existence thereon from time to time.

1.2.1 The Landlord and Tenant agree that Attachment A-1 and Attachment A-2 may be amended from time to time to reflect the Site necessary for the development and operation of the Project upon written agreement of the parties hereto.

1.2.2 In addition, Landlord and Tenant hereby acknowledge and agree that as of the Effective Date, the Premises do not include the portion of the Site consisting of the existing restaurant lease depicted on Attachment A-2; provided, however, upon termination of such restaurant lease, anticipated to occur on or about August 15, 2023, such portion of the Site comprised of the existing restaurant lease shall be deemed to be included in the Premises leased by Landlord to Tenant hereunder upon the date of such termination.

1.2.3 The Board of Regents of the Nevada System of Higher Education expressly delegate authority to the Chancellor of the Nevada System of Higher Education to execute amendments made pursuant to this Section 1.2.

1.2.4 Notwithstanding anything to the contrary contained herein, the Project, including the Site and the Improvements, shall be owned by the Landlord at all times.

1.3 Reservation of Oil, Gas and Mineral Rights. Landlord reserves to itself all of the oil, gas and mineral rights of the Site without the right of surface entry; provided that any such actions taken with respect to oil, gas and mineral rights do not interfere with or adversely affect the Premises.

1.4 Condition of Site. Tenant accepts the Site “as is” without representation or warranty of Landlord. Landlord shall not be required or obligated to make any changes, alterations, additions, improvements or repairs in, on, under or about the Site except as specifically described in the Bond Documents and the other Transaction Documents. Landlord makes no warranty as to the suitability of the Site for the uses permitted by this Ground Lease. Landlord makes no covenants or warranties respecting the condition of the soil, subsoil or any other condition of the Site, nor does Landlord make any covenant, representation or warranty regarding the suitability of the Site for the proposed development, construction or use by Tenant or Developer under the Development Agreement, except as specifically described in the Transaction Documents.

1.5 Term. The term of this Ground Lease (“Term”) shall commence on the Effective Date and terminate at 11:59 p.m. local time on the date that is thirty-five (35) years thereafter, unless sooner terminated as expressly provided herein. This Ground Lease shall expire without further notice upon its expiration, and no holding over shall be permitted. Any holding over by Tenant after the expiration of this Ground Lease shall not constitute a renewal or extension nor shall it give Tenant any rights in or to the Premises or any part thereof. In addition, and notwithstanding anything to the contrary contained herein, this Ground Lease shall terminate prior to such thirty-five (35) year term on the date that the Bonds are no longer outstanding pursuant to the terms of the Indenture and all amounts due and payable by Tenant under the Loan Agreement are paid in full and discharged.

1.6 Confirmation of Term. Landlord or Tenant, within thirty (30) days after receipt of a written request from the other, shall confirm the expected Termination Date in writing, and if so requested, by an instrument in recordable form.

ARTICLE 2 LEASE CONSIDERATION

2.1 Transaction Documents and Development Agreement. Tenant shall: (i) enter into the Transaction Documents to which it is a party, including the Loan Agreement and the Development Agreement and (ii) make a portion of the proceeds of the Bonds available to the Developer pursuant to the Indenture and the Disbursement Agreement so that Developer may construct the Project in accordance with the Development Agreement.

2.2 Payment of Rent. Throughout the Term, Tenant shall pay to Landlord an absolute net annual rent ("Fixed Rent") as follows:

2.2.1 During Sublease Term. During the term of the Sublease, Fixed Rent shall be in the amount of One U.S. Dollar (\$1.00) per annum. Fixed Rent under this Section 2.2.1 shall be paid in advance in annual installments, commencing on the Effective Date and on each anniversary thereafter; provided, however, Tenant shall have the right to prepay Fixed Rent due and payable at any time to Landlord. The parties agree that the Fixed Rent payable under this Section 2.2.1 and performance of Tenant's obligations under the Transaction Documents are good and sufficient consideration for the lease of the Premises hereunder.

2.2.2 Following Early Termination of Sublease. In the event the Sublease terminates prior to this Ground Lease as provided therein, (i) commencing on first day following the effective date of the termination of the Sublease and continuing for twenty-four (24) months, Fixed Rent shall be in the amount of One U.S. Dollar (\$1.00) per annum; and (ii) after the period established in Section 2.2.2(i), Fixed Rent shall be equal to Seventy-Five Thousand U.S. Dollars (\$75,000.00) per annum, provided that the Fixed Rent payable under this Section 2.2.2(ii) shall be increased on an annual basis commencing on the fifth (5th) annual anniversary by an amount equal to three percent (3%) of the Fixed Rent for the preceding year of the Term. Fixed Rent under this Section 2.2.2 shall be paid in advance in annual installments as provided for above; provided, however, Tenant shall have the right to prepay Fixed Rent due and payable at any time to Landlord.

ARTICLE 3 USES AND RESTRICTIONS

3.1 Use and Sublease; Quiet Enjoyment. Tenant shall sublease the Site and, upon Completion of the Project, the Improvements to the University pursuant to the Sublease. Upon Completion of the Project in accordance with the Development Agreement, the parties intend that the Project shall be occupied by the University pursuant to the Sublease. Subject to the restrictions and limitations contained in this Ground Lease, the Permitted Encumbrances and the provisions of the Transaction Documents, Tenant, while in compliance with the terms and covenants of this Ground Lease, shall at all times during the Term, and Landlord hereby covenants and agrees, peaceably and quietly hold and enjoy all of the Premises.

3.2 Restrictions on Use. In the event the Sublease is terminated prior to the end of the Term as provided herein, Tenant shall continue to have the right to use, occupy and operate the Project subject to the following restrictions on use:

3.2.1 No Hazardous Waste. Neither the Premises nor any portion thereof shall ever be utilized for the storage or disposal of Hazardous Substances in violation of Applicable Law, nor shall any Tenant cause, suffer or permit any Hazardous Substances to be brought upon, kept, or used in or about the Premises in violation of Applicable Law;

3.2.2 Certain Prohibited Uses. No portion of the Premises shall be utilized for the following (each a “Prohibited Use,” and collectively, the “Prohibited Uses”): (i) as an adult theater, adult bookstore, adult video store, or for any other form of adult entertainment; (ii) for the sale or rental of any pornographic or “adult” materials, except at incidental to the sale of “general audience” DVDs, games, magazines or books; (iii) for the sale, dispensing or use of marijuana or marijuana-infused products (as defined in Nevada Revised Statute 453A.112), whether for medicinal or other purposes; (iv) for the operation of any gaming activity (as defined in Chapter 463 of the Nevada Revised Statutes); (v) for purposes of marketing, offering, or making of any deferred deposit loans, high-interest loans, title loans, or check-cashing services (as those terms are defined in Chapter 604A of the Nevada Revised Statutes); (vi) for transacting as, or conducting the operation of, a pawnbroker (as defined in NRS 646.010); (vii) for any form of short or long term lodging, including without limitation as a hotel, motel, residence hall, or apartment complex; (viii) to administer, promote or conduct the operations of any postsecondary educational institution other than one operated by University; or (ix) any other use which is prohibited by written policy, whether presently existing or later adopted, of the Board of Regents of the Nevada System of Higher Education from occurring on property owned by the Nevada System of Higher Education.

3.2.3 Nuisances and Noxious or Offensive Activities. Tenant shall not use the Premises in any manner that would create a nuisance to all or any part of the Premises or the surrounding neighborhood. No rubbish or debris of any kind shall be placed or permitted to accumulate upon or adjacent to the Premises (except trash awaiting regular removal and temporarily placed in approved trash receptacles) and no odors shall be permitted to arise therefrom so as to render the Premises or any portion thereof unsanitary, unsightly, offensive or detrimental to any property in the vicinity thereof;

3.2.4 Fumes, Gases, Odors, etc. No fumes, odors, gases, vapors, acids or other substance shall be permitted to escape or be discharged into the atmosphere which, in the opinion of the Landlord, may be detrimental to the health, safety or welfare of persons, or may interfere with the comfort or persons within the area, or which may be harmful to property or vegetation. Without limiting the generality of any other provision hereof, all uses of the Premises shall comply with all applicable governmental authorities’ air pollution control standards;

3.2.5 Dirt, Dust and Waste Discharge. No use will be permitted which emits dust, sweepings, dirt or cinders into the atmosphere, or discharges liquid, solid wastes or other harmful matter into any runoff, irrigation or other water. No waste or any substance or materials of any kind shall be discharged into any public sewer serving the Premises, or any part thereof, in violation of any regulations of any public body having jurisdiction;

3.2.6 Drainage. There shall be no interference with the established drainage pattern of the Premises, without prior written consent of Landlord, in its sole discretion; and

3.2.7 Laws. Tenant's use shall comply with Applicable Law.

ARTICLE 4 FINANCING OF PROJECT

Tenant shall be responsible for arranging the issuance of the Bonds and making a portion of the proceeds thereof available to Developer pursuant to the Disbursement Agreement and the Indenture. Landlord agrees to reasonably cooperate with the Tenant and to provide such reasonable assistance as the Tenant may need to facilitate the issuance of the Bonds. Any other financing which would encumber Tenant's Interest or any amendment or renewal thereof during the Term, and any refinancing or refunding of any such financing, shall require the prior written approval of the Landlord in the Landlord's sole and absolute discretion and in no event shall the documents evidencing any such financing encumber the interest of Landlord in this Ground Lease or its fee interest in the Site. Excluding the University's obligations to make payments under the Sublease as Subtenant, (i) the University shall not incur or insure any indebtedness with respect to the Project, and (ii) any and all financing for the Project shall (A) not rely on the credit of the University, and (B) shall be non-recourse to the University and the State of Nevada. In connection with any refinancing of the Bonds permitted hereunder, the parties shall mutually agree to allocate any savings associated with any refinancing as may be appropriate to Landlord. Public money shall not be used to finance any part of the Project.

ARTICLE 5 TAXES AND ASSESSMENTS

5.1 Taxes and Assessments. Landlord shall at all times be the owner of the Site and the Improvements leased to Tenant under this Ground Lease. In addition, Landlord and Tenant have determined that the use of the Premises pursuant to Article 3, above, is exclusively in furtherance of: (i) the educational and charitable purposes of Tenant, and (ii) the educational, research and public purposes of University. Accordingly, the parties intend and expect that the leasehold estate of Tenant created by this Ground Lease together with the Project, will be eligible for exemption under Nevada law from Property and Possessory Interest Taxes.

5.2 Maintenance of Exemption. Landlord shall use diligent efforts to maintain exemption of the Premises from Property and Possessory Interest Taxes; however, to the extent any Property or Possessory Interest Taxes are assessed, Tenant and Landlord shall have the responsibilities and rights set forth herein.

5.3 Tax Obligations. Tenant will pay all Property and Possessory Interest Taxes, including without limitation, all real estate taxes, taxes upon or measured by rents, personal property taxes, privilege taxes, gross receipts taxes, excise taxes, parking taxes, business and occupation taxes, gross sales taxes, occupational license taxes, water charges, sewer charges, or environmental taxes or assessments of any kind and nature whatsoever, including any possessory interest tax resulting from the Improvements, this Ground Lease or the Sublease, whether levied

by the State of Nevada, the government of the United States, or any agency thereof, or any other governmental body or assessment district during the Term, and whether or not now customary or within the contemplation of the parties hereto, and regardless of whether the same shall be foreseen or unforeseen, similar or dissimilar to any of the foregoing. If the Landlord transfers fee simple title to the Premises, and such transfer results in the levy, assessment, charge, or imposition of the ad valorem property taxes against the Premises or causes the Premises to become subject to such levy or assessment, the successor Landlord shall be responsible for the payment of such ad valorem property taxes, and the Tenant shall have no liability therefor.

5.4 Assessment. Specifically, and without in any way limiting the generality of the foregoing, but subject to the last sentence of Section 5.3, Tenant shall pay any and all special assessments or levies or charges made by any municipal or political subdivision for local improvements (“Assessments”), and as required by the act and proceedings under which any such Assessments or levies or charges are made.

5.5 Right to Contest. Tenant and Landlord shall each have the right, at their respective own expense, to contest the amount or validity of any Property and Possessory Interest Taxes or Assessments by appropriate proceedings which shall operate to prevent the collection of any such Property and Possessory Interest Taxes or Assessments so contested or the sale of the Premises or any part thereof to satisfy the same.

5.6 Cooperation. Provided the cooperating party incurs no liability, cost, expense, or fees in doing so, each party shall reasonably cooperate with the other party in any proceedings brought by a party to contest the validity or the amount of any Property and Possessory Interest Taxes or Assessments or to recover any Property and Possessor Interest Taxes or Assessments paid. If Applicable Law at the time in effect shall require that such proceedings be brought by or in the name of the non-contesting party, then, provided the non-contesting party incurs no liability, cost, expense, or fees in doing so, the non-contesting party shall join in any such proceedings or permit the same to be brought in its name. If any such proceedings shall be brought, the contesting party shall be solely responsible for payment of any and all loss, cost, or expense of any kind that may be imposed upon the non-contesting party in connection therewith, including reasonable attorneys’ fees and costs incurred by the non-contesting party.

ARTICLE 6 UTILITY SERVICES

Pursuant to the Development Agreement Landlord has caused Developer to agree to install, and pursuant to the O&M Agreement Manager has agreed to maintain all facilities necessary to provide utilities to the Premises as more particularly described therein. During the term of the Sublease, Tenant will have no obligation to provide or pay for utility facilities or utility services to the Premises, but shall cooperate with University, Manager and Developer in providing the same.

ARTICLE 7
COMPLIANCE WITH APPLICABLE LAW AND ORDINANCES

Throughout the Term, and subject to the terms and conditions contained in the Development Agreement and the Sublease, Tenant shall, at its sole cost and expense, promptly comply with Applicable Law except as expressly provided herein. Notwithstanding the forgoing, to the extent the Sublease terminates due to an Event of Default by University as Subtenant under the Sublease prior to the Termination Date of this Ground Lease, Landlord shall be responsible for reimbursing Tenant upon demand for its costs and expenses incurred following such termination associated with causing the Premises to comply with Applicable Law.

ARTICLE 8
CONSTRUCTION OF IMPROVEMENTS

8.1 Development of the Project. The Project shall be developed pursuant to and in accordance with the Development Agreement. Without limiting the foregoing, such development shall be in accordance with the University of Nevada, Reno Adopted Standards attached to the Development Agreement as Attachment 5.2(c), it being understood that any deviations from such Adopted Standards must be approved in writing by University. If Developer shall be found to be in default in the performance of its obligations under the Development Agreement, beyond any applicable notice and cure periods, then Tenant and Landlord shall cooperate in the exercise of Landlord's and Tenant's resulting rights under the Development Agreement.

8.2 Liens.

8.2.1 All Liens and Rights are Subordinate to Landlord Right's. Tenant's rights, as well as the rights of anyone else, including, but not limited to, the rights of the Developer, Manager, the Issuer, or any mortgagee, architect, independent contractor, assignee, sublessee, subcontractor, prime or general contractor, mechanic, laborer, materialmen, or other lien or claim holder, shall always be and remain subordinate, inferior, and junior to Landlord's title, interest, and estate in the Site. Except as otherwise expressly permitted hereunder or in the Transaction Documents, Tenant shall not create or permit to be created or to remain, and shall discharge any lien, encumbrance, or charge levied on account of any mechanic's, laborer's, or materialman's lien, or any security agreement, conditional bill of sale, title retention agreement, chattel mortgage, or otherwise (a "Lien") that might, or does, constitute a lien, encumbrance, or charge upon the Site, or any part thereof, or the income therefrom. Nothing in this Ground Lease shall be deemed or construed in any way as constituting the consent or request of Landlord, express or implied, by inference or otherwise, to the filing of any Lien against the Premises by any contractor, subcontractor, laborer, materialmen, architect, engineer, or other Person for the performance of any labor or the furnishing of any materials or services for or in connection with the Premises or any part thereof.

8.2.2 Compliance with Nevada Lien Laws. Notwithstanding anything to the contrary contained herein, Tenant understands and agrees that any and all improvements made to the Site must comply with Nevada's construction lien laws, including without limitation

NRS 108.2403. Without limiting the forgoing, Tenant acknowledges that NRS 108.2403 requires Tenant, before causing any work of improvement to be constructed, to record a notice of posted security with the Washoe County Recorder and either (i) establish a construction disbursement account in compliance with NRS 108.2403(1)(b)(1), or (ii) record a surety bond for the prime contractor performing the work in compliance with NRS 108.2403(1)(b)(2).

8.2.3 University's Notice of Non-Responsibility. Not less than ten (10) Business Days before commencing any approved work of improvement to the Site, Tenant shall (i) notify or cause to be notified University in writing of (1) the expected date of commencement thereof, and (2) the name and contractor's license number of the prime contractor performing the work, and (ii) provide to University evidence of Tenant's compliance with NRS 108.2403. University shall have the right at any time and from time to time to post and maintain on the Site such notices as the University reasonably deems necessary to protect the Site and University from Liens.

8.2.4 Tenant Obligated to Remove Liens. Notwithstanding anything to the contrary contained herein, Tenant shall pay, when due, all claims for labor or materials furnished to or for Tenant at or for the use in the Site. Tenant shall not permit any mechanic's or materialmen's liens to be levied against the Site for any labor or materials furnished to the Tenant, or claimed to have been furnished to the Tenant, or to Tenant's agents or contractors in connection with the work of any character performed or claimed to have performed on the Site by or at the direction of the Tenant. Landlord reserves the right at any time to require deposits by the Tenant to assure performance of the Tenant's obligations hereunder. If any such Lien shall at any time be filed, Tenant shall, within thirty (30) days after notice of the filing thereof, cause the same to be discharged of record by payment, deposit, bond, order of a court of competent jurisdiction or as otherwise permitted by law. If Tenant shall fail to cause such notice or lien to be discharged within the period aforesaid, then, in addition to any other right or remedy of Landlord, Landlord may, but shall not be obligated to, discharge the same either by paying the amount claimed to be due or by procuring the discharge of such lien by deposit or by bonding proceedings, and in any such event Landlord shall be entitled, if Landlord so elects, to compel the prosecution of an action for the foreclosure of such mechanic's lien by the lienor and to pay the amount of the judgment for and in favor of the lienor with interest, cost and allowances.

8.3 Title to the Project. Title to the Site and to the Project, including any modifications or additions thereto during the Term, shall be vested in University at all times and, if requested by University, Tenant shall execute such further instruments as may be reasonably required in connection therewith, and Tenant hereby acknowledges and agrees that it shall only have a leasehold interest in the Site and the Project.

ARTICLE 9 EASEMENTS, ENCUMBRANCES AND COMMON AREAS

9.1 Landlord Reservation of Rights. Landlord reserves to itself the right, in accordance with Applicable Law, to grant to others in the future nonexclusive utility and/or access easements and licenses over, under, through, across or on the Site in locations that will not unreasonably interfere with the use of the Premises. In the event the installation or maintenance of such future utility lines or access roads in such easements or licenses causes any

damage to the Premises, including the Project, or any portion thereof, including but not limited to, pavement, curbs and sidewalks, Landlord shall repair the same, or cause the same to be repaired, at Landlord's expense. At Landlord's request, Tenant shall join in any grant of such an easement and/or license. In addition, Landlord agrees to cooperate with Tenant in granting or otherwise obtaining any utility, access licenses, easements or other such shared use and maintenance agreements, as may be necessary for the operation of the Project, including without limitation, access over any access roads that may be developed or located on the adjacent portion of the Property not leased to Tenant hereunder.

9.2 Tenant's Rights. Other than Permitted Encumbrances, Tenant shall not suffer or permit any encumbrance on the Premises without University's prior written consent, in its sole and absolute discretion.

9.3 Compliance with Encumbrances. Tenant shall comply with all terms and conditions of any encumbrance on the Premises, including payment of any costs and expenses thereunder; provided, however, to the extent the Sublease terminates due to an Event of Default by University as Subtenant under the Sublease prior to the Termination Date of this Ground Lease, Landlord shall be responsible for reimbursing Tenant upon demand for any costs and expenses following such termination associated with Tenant's compliance with the terms and conditions of any such encumbrances.

9.4 Common Areas. Tenant shall perform and be responsible for all normal and ordinary maintenance of the grounds and other property outside of the Project as shown on Attachment A-2 (collectively, the "Common Areas"), including landscaping in accordance with the University's landscaping requirements as implemented from time to time and provided to Tenant, trash removal, snow removal and the maintenance of any access roads on the Site, and shall keep the Common Areas in good working order, condition and repair and in a neat and orderly condition.

ARTICLE 10 OPERATION AND MAINTENANCE OF PROJECT

Upon the Completion of the Project in accordance with the Development Agreement, pursuant to the terms of the Sublease, University as Subtenant under the Sublease shall operate and maintain the Project and shall cause the Manager to perform the O&M Services for the Project in accordance with the O&M Agreement; provided, however, that in the event the Sublease terminates prior to the expiration of this Ground Lease, Tenant shall be solely responsible to operate and maintain the Project and to perform, or cause the Manager to perform, the O&M Services.

ARTICLE 11 ASSIGNMENT OF LEASE

11.1 During Sublease Term. Except for the sublease of the Premises to University pursuant to the Sublease, the assignment to Trustee pursuant to the Leasehold Deed of Trust, and any assignment subsequent to a foreclosure of the Leasehold Deed of Trust (to all of which Landlord hereby consents), Tenant shall not have the right to assign or transfer Tenant's Interest

or any portion thereof or any right or privilege appurtenant thereto, or to sublease the Premises or any portion thereof, without the prior written consent of Landlord, which consent may be withheld in Landlord's sole and absolute discretion, and which consent may be subject to any conditions reasonably required by Landlord to protect Landlord's economic and programmatic interests in this Ground Lease, the Sublease and/or the Premises.

11.2 Following Early Termination of Sublease. In the event the Sublease terminates prior to this Ground Lease as provided therein, while in compliance with the terms and covenants of this Ground Lease, Tenant, or the Beneficiary or any assignee of the Beneficiary subsequent to a foreclosure of the Leasehold Deed of Trust, may assign or transfer Tenant's Interest or any portion thereof or any right or privilege appurtenant thereto, and/or sublease the Premises or any portion thereof, without the necessity of obtaining Landlord's prior written consent; provided, however, that in any and all cases, no use shall be made, or permitted to be made, of the Premises in violation of the restrictions on use contained in Section 3.2 hereof, including without limitation any Prohibited Use.

11.3 Effect of Assignment. Any attempt by Tenant to assign this Ground Lease without Landlord's consent, where such consent is required, shall be void and of no effect and, at Landlord's election, shall constitute an Event of Default under this Ground Lease. The consent by Landlord to any transfer, hypothecation, assignment or subleasing shall not constitute a waiver of the necessity for such consent to any subsequent assignment, transfer, hypothecation or subleasing. Notwithstanding any assignment, subletting, or sublicensing, Tenant shall remain liable to Landlord under the terms of this Ground Lease.

ARTICLE 12 INDEMNIFICATION

12.1 University Indemnity. Except to the extent caused by the acts or omissions of Tenant or any of the Tenant Indemnitees (defined below), and solely to the extent limited in accordance with NRS 41.0304 to 41.039, inclusive, Landlord, to the extent permitted by Applicable Law, hereby releases and agrees to indemnify, defend and hold harmless Tenant and all of its officers, employees, directors, agents, and consultants (hereinafter collectively referred to as the "Tenant Indemnitees") of and from any and all third-party claims, demands, liabilities, losses, costs, or expenses for any loss from bodily injury (including death), personal injury, property damage, expenses, taxes and attorneys' fees (collectively "Claims"), caused by, growing out of, or otherwise happening in connection with the negligent acts or omissions of Landlord or the Landlord Indemnitees (as defined below). Landlord will assert the defense of sovereign immunity as appropriate in all cases, including malpractice and indemnity actions. Landlord's indemnity obligation for actions sounding in tort is limited in accordance with the provisions of NRS 41.035.

12.2 Tenant Indemnity. Except to the extent caused by the acts or omissions of Landlord or any of the Landlord Indemnitees (defined below), Tenant to the extent permitted by Applicable Law, subject to Section 25.11, hereby releases and agrees to indemnify, defend and hold harmless Landlord and all of its regents, officers, employees, directors, agents, and consultants (hereinafter collectively referred to as the "Landlord Indemnitees") of and from any

and all Claims, caused by, growing out of, or otherwise happening in connection with the negligent acts or omissions of Tenant or the Tenant Indemnitees.

12.3 Survival. The obligations of Landlord and Tenant under this Article 12 shall survive the expiration or earlier termination of this Ground Lease or any finding of invalidity or unenforceability thereof unless such finding expressly includes the provisions of this Article 12.

ARTICLE 13 POLICE SERVICES

The Premises shall be subject at all times during the Term to the jurisdiction of the University of Nevada Reno Police Services and any other law enforcement agencies with jurisdiction.

ARTICLE 14 INSURANCE

At all times throughout the Term, Tenant shall maintain or cause to be maintained for the benefit of Landlord and Tenant (as named insureds, as their respective interests may appear), all of the insurance coverages with respect to the Premises in accordance with Attachment B, attached hereto.

ARTICLE 15 DAMAGE AND DESTRUCTION

15.1 Damage or Destruction. Should the Premises be damaged or destroyed, in whole or in part, by fire, flood, earthquake, windstorm, snowstorm or any other weather-related event, or by casualty, accident, war, riot, public disorder, acts authorized or unauthorized by the government or any other cause or happening (a "Casualty"), the rights of Landlord and Tenant shall be as follows:

15.1.1 Prior to Completion of the Project in accordance with the Development Agreement, in the event of a Casualty, Tenant's rights and obligations shall be governed by the terms and conditions of the Development Agreement.

15.1.2 After Completion of the Project in accordance with the Development Agreement, except as provided in Section 15.1.3 the right of Landlord and Tenant with respect to a Casualty shall be as set forth in Article 16 of the Sublease.

15.1.3 In the event the Sublease terminates prior to the expiration of this Ground Lease, Landlord shall cooperate with Tenant and shall assign to Tenant the Net Proceeds arising from such Casualty, subject to the terms of the Bond Documents, and Tenant shall be obligated to promptly restore the Improvements to substantially the same condition thereof as existed prior to the event of such Casualty with such changes, alterations and modifications as may be desired by Tenant and reasonably approved by Landlord and as will not impair the value or the character of the Project; provided, however, in the event the Net Proceeds of insurance with respect to the Casualty shall be equal to or in excess of \$25,000,000, Tenant shall cause all such insurance proceeds to be paid to the Trustee and deposited and held in the Insurance Fund

and Tenant shall, within sixty (60) days from the date of such deposit, direct the Trustee to apply such amounts as provided in Section 7.01(c) of the Loan Agreement.

15.2 Optional Redemption. In the event the Sublease has terminated prior to expiration of this Ground Lease , then the following provisions shall apply:

15.2.1 If the Project shall have been destroyed or damaged by a Casualty, the Net Proceeds of insurance with respect to the Casualty shall be equal to or in excess of \$25,000,000, and in the opinion of Tenant, expressed in a certificate furnished to Landlord, the Issuer and the Trustee, that (a) the Project cannot be reasonably restored within a period of eighteen (18) months from the date of the Casualty to the condition thereof immediately preceding the Casualty, or (B) the Project cannot be used for the purposes of which it was constructed for a period of eighteen (18) consecutive months following the date of the Casualty, or (C) the cost of restoration or replacement of the Project would exceed the Net Proceeds of insurance payable in respect of such destruction or damage, Tenant shall have the option to redeem in full all outstanding Bonds within one hundred eighty (180) days of such Casualty at a Redemption Price equal to one hundred percent (100%) of the principal amount thereof plus interest accrued to the redemption date in accordance with Section 3.04 of the Indenture.

15.2.2 In addition, in the event of partial damage or destruction of the Project, Tenant shall have the right to redeem all or a portion of the outstanding Bonds within one hundred eighty (180) days of the Casualty in accordance with Section 3.04 of the Indenture to the extent all or a portion of the Net Proceeds received by Tenant are not applied to the restoration of the Project if Tenant furnishes Landlord, Issuer and Trustee a certificate stating (A) that the property forming a part of the Project that was partially damaged or destroyed is not essential to Tenant's use or occupancy of the Project at substantially the same revenue-producing level prior to such Casualty; or (B) that the Project has been restored to a condition substantially equivalent to its condition prior to the partial damage or destruction; or (C) that the Tenant has acquired improvements that are substantially equivalent to the property forming a part of the Project that was partially destroyed or damaged

15.2.3 If no Bonds shall be outstanding, Landlord shall be entitled to any remaining Net Proceeds.

15.3 Other. The provisions of this Ground Lease, including this Article 15, constitute an express agreement between Landlord and Tenant with respect to any Casualty to all or any part of the Premises and any statute or regulation with respect to any rights or obligations concerning damage or destruction in the absence of an express agreement between the parties, and any other statute or regulation, now or hereafter in effect, shall have no application to this Ground Lease or any damage or destruction to all or any part of the Premises.

ARTICLE 16 CONDEMNATION

16.1 Taking. If, during the Term, the Premises, or any portion thereof or interest therein, shall be appropriated, taken or damaged by reason of the exercise of the power of eminent domain, whether by condemnation proceedings or otherwise, or any transfer thereof

shall be made in avoidance of an exercise of the power of eminent domain (all of the foregoing being hereinafter referred to as a “Taking”), the rights of Landlord and Tenant shall be as set forth in Article 17 of the Sublease. Notwithstanding the foregoing, in the event the Sublease terminates prior to the expiration or termination of this Ground Lease, this Ground Lease shall remain in effect and Tenant’s obligations to pay Rent shall continue unabated. Tenant shall promptly notify Landlord, the Issuer and Trustee of any such Taking.

16.2 Application of Proceeds From a Taking. Notwithstanding anything to the contrary set forth herein, in the event the Sublease terminates prior to the expiration or termination of this Ground Lease, Tenant shall cause the Net Proceeds of a Taking to be paid to the Trustee and deposited and held in the Condemnation Fund (as defined in the Indenture) and Tenant shall, within sixty (60) days from the date of such deposit, direct the Trustee to apply such amounts as provided in Section 7.02(b) of the Loan Agreement.

16.3 Optional Redemption. In the event the Sublease has terminated prior to expiration of this Ground Lease, then the following provisions shall apply:

16.3.1 In the event of a Taking of all of the Project that in the opinion of Tenant, expressed in a certificate furnished to Landlord, the Issuer and the Trustee, (a) the Project cannot be reasonably restored within a period of eighteen (18) months from the date of the Taking to substantially the condition thereof immediately preceding the Taking, or (B) it cannot be used for the purposes of which it was constructed for a period of eighteen (18) consecutive months from the date of the Taking, or (C) the cost of restoration or replacement would exceed the Net Proceeds from a Taking, Tenant shall have the option to redeem in full all outstanding Bonds within one hundred eighty (180) days of such Taking at a Redemption Price equal to one hundred percent (100%) of the principal amount thereof plus interest accrued to the redemption date in accordance with Section 3.04 of the Indenture.

16.3.2 In the event of a partial Taking of the Project, the Tenant shall have the right to redeem all or a portion of the outstanding Bonds within one hundred eighty (180) days of the Taking in accordance with Section 3.04 of the Indenture to the extent that the Net Proceeds received by Tenant are not applied to the restoration of the Project or the acquisition of substitute property in accordance with Section 3.04 of the Indenture and Section 7.02 of the Loan Agreement if Tenant furnishes Landlord, Issuer and Trustee a certificate stating (A) that the property forming a part of the Project that is the subject of the partial Taking is not essential to Tenant’s use or occupancy of the Project at substantially the same revenue-producing level prior to such Taking; or (B) that the Project has been restored to a condition substantially equivalent to its condition prior to the partial Taking; or (C) that the Tenant has acquired improvements that are substantially equivalent to the property forming a part of the Project that was subject of the partial Taking.

16.3.3 If no Bonds shall be outstanding, Landlord shall be entitled to any remaining Net Proceeds.

ARTICLE 17
ESTOPPEL CERTIFICATES

17.1 Execution and Delivery. No later than twenty (20) calendar days following receipt of written request therefor, Landlord and Tenant will execute, acknowledge and deliver to the other promptly upon request, a certificate reasonably satisfactory to the recipient certifying as to the following:

17.1.1 Validity of Lease: that this Ground Lease is unmodified and in full force and effect (or, if there have been modifications, that this Ground Lease is in full force and effect, as modified, and stating the modifications);

17.1.2 Defaults by Tenant: that no notice has been given by Landlord to Tenant of any failure to comply under this Ground Lease that has not been cured and to the best of its knowledge and belief no Event of Default exists (or, if there has been any notice given or an Event of Default exists, describing the same); and

17.1.3 Other Matters: such other matters as may be reasonably requested by the requesting party.

17.2 Reliance on Certificates. Certificates from Landlord and Tenant pertaining to the same matters may be relied upon by the Issuer, Bond Trustee, any holder of a leasehold mortgage or beneficiary of a leasehold deed of trust, any prospective bond trustee, any prospective assignee of an interest under this Ground Lease or by any prospective sublessee as to all or any portion of the Site.

ARTICLE 18
DISPUTE RESOLUTION

18.1 General. In the event of a dispute between the parties to this Ground Lease with respect to any Event of Default or alleged default by either party, such dispute shall be resolved by litigation initiated and maintained in the State of Nevada or federal courts located in Reno, Nevada.

18.2 Nonbinding Mediation.

18.2.1 Either party may request non-binding mediation of any dispute arising under this Ground Lease. The non-requesting party may decline the request in its discretion. If there is concurrence that any particular matter shall be mediated, the provisions of this Section shall apply. The costs of the mediator shall be divided equally between Landlord and Tenant.

18.2.2 The mediator shall be a professional mutually acceptable to the parties who has no current or on-going relationship to either party. The mediator shall have full discretion as to the conduct of the mediation. Each party shall participate in the mediation to resolve the dispute until and unless the parties reach agreement with respect to the disputed matter or one party determines in its discretion that its interests are not being served by the mediation.

18.2.3 Mediation is intended to assist the parties in resolving disputes over the correct interpretation of this Ground Lease. No mediator shall be empowered to render a binding decision.

18.2.4 Nothing in this Section shall operate to limit, interfere with or delay the right of either party under this Article to commence judicial legal proceedings in respect of any dispute under this Ground Lease, whether in lieu of, concurrently with, or at the conclusion of any non-binding mediation.

18.3 Attorneys' Fees and Costs. In all disputes arising from or related to this Ground Lease, each party shall pay its own attorneys' fees and costs.

ARTICLE 19 EVENTS OF DEFAULT AND REMEDIES

19.1 Events of Default Defined. The following shall be "Events of Default" under this Ground Lease, and the terms "Event of Default" or "Default" shall mean, whenever they are used herein, any one or more of the following events:

19.1.1 Tenant shall fail to pay Fixed Rent at the times specified herein and such failure shall continue for ten (10) days after written notice from Landlord.

19.1.2 Tenant or Landlord, as applicable, shall fail to perform or cause to be performed any term, covenant, condition, or provision hereof, and to correct such failure within thirty (30) days after written notice specifying such failure is given to such party. In the case of any such failure that cannot with due diligence be corrected within such thirty (30) day period but can be wholly corrected within a period of time not materially detrimental to the rights of the other party, it shall not constitute an Event of Default if corrective action is instituted by such party within the applicable period and diligently pursued until the failure is corrected.

19.1.3 Tenant shall be adjudicated a bankrupt.

19.1.4 A permanent receiver shall be appointed for Tenant's interest in the Premises and such receiver shall not be removed within ninety (90) days after notice from Landlord to Tenant to obtain such removal.

19.1.5 Tenant shall voluntarily take advantage of any debtor relief proceedings under any present or future law or shall become subject to any such involuntary proceedings and said involuntary proceedings shall not be dismissed within ninety (90) days after notice from Landlord to Tenant to obtain such dismissal.

19.1.6 Tenant shall make a general assignment for benefit of creditors.

19.1.7 The Premises or Tenant's effects or interests therein shall be levied upon or attached under process against Tenant, and the same shall not be satisfied or dissolved within ninety (90) days after such levying or attachment.

19.1.8 Tenant is in default under the Sublease beyond applicable notice and cure periods.

19.1.9 Any other event that is expressly stated to be an Event of Default elsewhere in this Ground Lease.

19.2 Remedies. Upon the occurrence of an Event of Default, the non-breaching party (the “Non-Breaching Party”), may pursue the following remedies, all subject to the provisions of Section 19.2.3:

19.2.1 Any remedies it may have under Applicable Law, each and all of which shall be cumulative and nonexclusive.

19.2.2 The Non-Breaching Party may, but shall not be obligated to, make any payment or perform or otherwise cure any obligation, provision, covenant or condition on the part of the party in default (the “Defaulting Party”) to be observed or performed (and, as applicable, may enter the Premises for such purposes if needed).

19.2.3 It is acknowledged and agreed that upon an Event of Default, and notwithstanding anything to the contrary contained herein, the rights and obligations of the parties shall be subject to the rights and obligations of the parties and the Trustee under the Direct Agreement – Ground Lease and the Leasehold Deed of Trust.

19.3 No Waiver. No waiver by the Non-Breaching Party of any violation or breach by the Defaulting Party of any of the terms, provisions and covenants herein contained shall be deemed or construed to constitute a waiver of any other or later violation or breach by the Defaulting Party of the same or any other of the terms, provisions, and covenants herein contained. Forbearance by the Non-Breaching Party in enforcement of one or more of the remedies herein provided upon a default by Defaulting Party shall not be deemed or construed to constitute a waiver of such default.

ARTICLE 20 EXPIRATION OR TERMINATION

20.1 No Early Termination; End of Term. Notwithstanding anything to the contrary contained herein, in no event shall this Ground Lease be terminated for any reason whatsoever while the Sublease remains in effect or while any Bonds remain outstanding under the Indenture. Upon the expiration or termination of this Ground Lease, all rights and interests of Tenant, and all persons whomsoever claiming by, through or under Tenant shall immediately cease and terminate, in and to the Site, including without limitation, all improvements, engines, machinery, generators, boilers, furnaces, elevators, fire escapes, and all lifting, lighting, heating, cooling, refrigerating, air conditioning, ventilating, gas, electric and plumbing apparatus, appliances and fixtures, as well as other fixtures attached to or within the Premises, and all personal property of Tenant located thereon, shall thence forward constitute and belong to and be the absolute property of Landlord or Landlord’s successors and assigns, without further act or conveyance, and without liability to make such compensation to Tenant, or to anyone whomsoever, and free and discharged from all and every lien, encumbrance, claim and charge of any character created or attempted to be created by Tenant or Developer at any time. Tenant agrees, at the end of the

Term, to surrender unto Landlord, the Premises with then existing buildings, other structures and improvements constructed and located thereon and therein, in the condition then existing.

20.2 Prepaid Items Assigned. Upon the end of the Term, all expense items prepaid by Tenant or Developer with respect to constructing, operating, maintaining, and protecting the Premises, including, but not limited to, prepaid insurance premiums, and any tax and utility deposits, shall inure to the benefit of and become the property of Landlord, and to this extent Tenant does hereby transfer, assign and convey any such prepaid expense items, and Tenant's interest in such prepaid expense items of Developer, to Landlord.

20.3 Amounts Remaining in Funds and Accounts. Upon the end of the Term, any amounts remaining in any fund, account or reserve created in connection with the Bonds, the Sublease, the O&M Agreement or otherwise related to the maintenance and repair of the Project or the management of the Project, shall inure to the benefit of and become the property of Landlord, and to this extent Tenant does hereby transfer, assign, and convey any such funds, as well as its interest in any such funds held by Developer, to Landlord.

20.4 Other Documents and Intangibles. Upon the end of the Term, Tenant shall be deemed to have automatically transferred to Landlord, as of the Termination Date, Tenant's interest in all documents and agreements pertaining to or useful in the ownership, operation and maintenance of the Premises, together with all contracts, contract rights, warranties and other intangibles related to, or useful in, the ownership, operation or maintenance of the Premises.

ARTICLE 21 NOTICES

21.1 Addresses. All notices, certificates, demands, requests, or other communications hereunder shall be sufficiently given and shall be deemed given when mailed by certified mail, postage prepaid, return receipt requested, by nationally recognized overnight courier, or by personal delivery addressed as follows:

If to Tenant: NCCD – UNR Properties LLC
 Attn: President
 2630 Exposition Boulevard, Suite 213
 Austin, Texas 78703
 Telephone: (512) 322-9650
 Email: geden@nccdevelopment.org

With a copy to:
Holland & Knight LLP
Attn: Gerald Mace
511 Union Street, Suite 2700
Nashville, Tennessee 37219
Telephone: (615) 850-8912
Email: gerald.mace@hkllaw.com

If to Landlord: University of Nevada, Reno

Attn: Office of Community & Real Estate Management
1664 N. Virginia St./MS 243
Reno Nevada 89557-0243

With a copy to:

University of Nevada, Reno
Attn: General Counsel
1664 N. Virginia St./MS 550
Reno Nevada 89557-0550

21.2 Changes. Either party hereto may, by notice given to each of the other, designate any additional or different addresses to which subsequent notices, certificates, demands, requests, or other communications shall be sent.

21.3 Effectiveness. Notwithstanding anything contained herein to the contrary, any notice required to be given by Landlord or Tenant hereunder shall be deemed to have been given and shall be effective as of the date such notice is received or refused as reflected on said notice. All notices, certificates, demands, requests, or other communications made by either party to the other which are required or permitted by the provisions of this Ground Lease shall be in writing.

ARTICLE 22 SUBMISSION OF MATTERS TO LANDLORD FOR APPROVAL

Any matter which must be submitted to and consented to or approved in writing by Landlord or any matter which must be submitted to Landlord which may become effective if not denied by Landlord, as required under this Ground Lease, shall be submitted to Landlord in accordance with Section 21.1 hereof. Any review by Landlord of any matter submitted to Landlord is for Landlord's own convenience and purpose only. By undertaking such review, Landlord does not obtain or have any liability to Tenant or any other person, including, without limitation, the insurers and lenders of Tenant.

ARTICLE 23 HOLDING OVER BY TENANT

Tenant shall not use or remain in possession of the Premises after the end of the Term. There shall be no renewal whatsoever of this Ground Lease by operation of law.

ARTICLE 24 MORTGAGING

24.1 Leasehold Mortgage Permitted. Tenant shall have the right to place a leasehold mortgage or leasehold deed of trust (including the Leasehold Deed of Trust) on Tenant's Interest in this Ground Lease for the benefit of the beneficiary under the Leasehold Deed of Trust (together with any beneficiary under any replacements, amendments, or assignments of the Leasehold Deed of Trust, the "Beneficiary"), upon the condition that all rights acquired under such leasehold mortgage or leasehold deed of trust shall be, and such leasehold mortgage or leasehold deed of trust, as applicable, shall expressly state that it is, subject and subordinate to all

of the rights and interests of Landlord hereunder and under the Sublease. The execution and delivery of a leasehold mortgage shall not be deemed to constitute an assignment or transfer of Tenant's leasehold interest nor shall the holder of a leasehold mortgage be deemed to be an assignee or transferee of this Ground Lease so as to require such holder to assume the performance of any of the terms, covenants or conditions on the part of Tenant to be performed hereunder. The respective rights and obligations of Landlord and any holder of a leasehold mortgage or beneficiary of a leasehold deed of trust, shall be as set forth in such leasehold mortgage or the Direct Agreement – Ground Lease, as applicable, which is incorporated herein to the extent applicable to this Lease.

24.2 No Merger; Amendment to Lease; Etc. No union of the interests of Landlord and Tenant herein shall result in a merger of this Ground Lease in the fee interest while any leasehold mortgage or leasehold deed of trust is outstanding. No agreement between Landlord and Tenant modifying, canceling or surrendering this Ground Lease shall be effective without the prior written consent of the holder of a leasehold mortgage or leasehold deed of trust. Landlord covenants it will not treat this Ground Lease as terminated by any election made under Section 365 of the Bankruptcy Code of 1978 or under any similar law or right of any nature, and hereby assigns to the Beneficiary any right to acquiesce in any such termination.

24.3 Requested Amendments for the Security of the Leasehold Deed of Trust. Landlord and Tenant agree to cooperate in including in this Ground Lease by suitable amendment from time to time any provision that may reasonably be requested by any proposed holder of a leasehold mortgage or leasehold deed of trust for the purpose of implementing the mortgagee-protection provisions contained in this Ground Lease, and Landlord and Tenant each agrees to execute and deliver any agreement necessary to effect any such amendment; provided, however, that any such amendment shall be in form and substance acceptable to Landlord and shall not in any way affect the Term or the Fixed Rent or other amounts payable by or to Landlord under this Ground Lease nor otherwise adversely affect any rights or benefits of Landlord under this Ground Lease. The Board of Regents of the Nevada System of Higher Education expressly delegate authority to the Chancellor of the Nevada System of Higher Education to execute amendments made pursuant to this Section 24.3.

24.4 Subordination. This Ground Lease shall not be subordinate to and shall be senior to the lien of any fee mortgage in effect as of the commencement date of this Ground Lease or at any time thereafter during the Term of this Ground Lease. Simultaneously with the execution of this Ground Lease, Landlord shall deliver an executed subordination agreement in a form reasonably satisfactory to Tenant and its title insurer with respect to any existing fee mortgagee. With respect to all future fee mortgages, this Section 24.4 will be self-operative and no further instrument of subordination shall be required, provided that upon the request of Tenant the Landlord shall deliver an executed subordination agreement in a form mutually agreeable to the parties hereto.

ARTICLE 25 MISCELLANEOUS

25.1 No Waiver of Rights by Landlord. No failure of Landlord to exercise any power given Landlord hereunder or to insist upon strict compliance by Tenant with its undertakings,

duties and obligations hereunder, and no custom or practice of the parties hereto at variance with the provisions hereof shall constitute a waiver of Landlord's right to demand exact compliance with the provisions contained in this Ground Lease.

25.2 Rights are Cumulative. All rights, powers, and privileges conferred herein upon both parties hereto shall be cumulative.

25.3 Provisions are Binding Upon Assigns and are Real Covenants. Each of the provisions of this Ground Lease shall apply to, extend to, be binding upon and inure to the benefit or detriment of not only the parties hereto, but also the legal representatives, successors and permitted assigns of Landlord and Tenant hereto, and shall be deemed and treated as real covenants running with the Site during the Term. The parties further acknowledge and agree that the Trustee and any holder of a leasehold mortgage or beneficiary of a leasehold deed of trust and their successors and permitted assigns, shall be deemed third party beneficiaries hereunder. Whenever a reference to the parties hereto is made, such reference shall be deemed to include the legal representatives, successors and permitted assigns of said party, the same as if in each case expressed.

25.4 Applicable Law and Venue. This Ground Lease, and all matters arising out of or relating to this Ground Lease shall be governed, construed, performed and enforced in accordance with the Applicable Law of the State of Nevada (excluding principles of conflict of law). The exclusive venue for any and all disputes arising out of or in any way related to this Ground Lease shall be the state or federal courts located in Washoe County, Reno, Nevada.

25.5 All Genders and Numbers Included. Whenever the singular or plural number, or masculine, feminine, or neuter gender is used in this Ground Lease, it shall equally apply to, extend to, and include the other.

25.6 Invalidity of Provision or Part Thereof. In the event any provision, or any portion of any provision of this Ground Lease is held invalid, the other provisions of this Ground Lease and the remaining portion of said provision, shall not be affected thereby and shall continue in full force and effect.

25.7 Time is of the Essence. All time limits stated in this Ground Lease are of the essence of this Ground Lease.

25.8 Section Captions are to be Disregarded. The captions of the numbered sections of this Ground Lease are for purposes of identification and convenience only and are to be completely disregarded in construing this Ground Lease.

25.9 Entire Agreement Contained Herein. The making, execution and delivery of this Ground Lease by Tenant has not been induced by any representations, statements, covenants or warranties by Landlord except for those contained in the Transaction Documents. This Ground Lease and the other Transaction Documents constitute the full, complete and entire agreement between and among the parties hereto; no agent, employee, officer, representative or attorney of the parties hereto has authority to make, or has made, any statement, agreement, representation or contemporaneous agreement, oral or written, in connection herewith modifying, adding to or

changing the provisions of this Ground Lease. No amendment of this Ground Lease shall be binding unless such amendment shall be in writing and signed by both parties hereto.

25.10 No Partnership or Agency. Nothing in this Ground Lease is intended, or shall in any way be construed, so as to create any form of partnership or agency relationship between the parties. The parties hereby expressly disclaim any intention of any kind to create any partnership or agency relationship between themselves. Nothing in this Ground Lease shall be construed to make either party liable for any of the indebtedness of the other, except as specifically provided herein.

25.11 Limitation of Liability. It is expressly understood and agreed that notwithstanding anything in this Ground Lease to the contrary, the liability of Tenant hereunder (including, but not limited to its indemnity obligations) and any recourse by Landlord against Tenant (including, but not limited to its indemnity obligations) shall be limited to the sum of an amount that is equal to the interest of Tenant in the Premises plus any Claims covered under available insurance.

25.12 Waiver of Consequential Damages. Except with respect to either party's indemnification obligations under Article 12, to the maximum extent permitted by Applicable Law, Landlord and Tenant each waive all claims against each other, and in no event will either party be liable or responsible to the other party, for any type of incidental, punitive, special, indirect, or consequential damages, including but not limited to, lost revenue or lost profits, even if advised of the possibility of such damages, arising under theory of contract, tort (including negligence), strict liability or otherwise. This mutual waiver is applicable, without limitation other than each party's indemnification obligations under Article 12, to all consequential damages due to either parties' termination of the Lease in accordance with its terms.

25.13 Recordation of Memorandum of Lease. Upon the request of either party, Landlord and Tenant agree that the parties shall execute, seal, acknowledge and deliver, in recordable form, a memorandum of lease setting forth the basic terms hereof, and that said memorandum of lease shall be recorded by the Landlord at the expense of the Tenant in the appropriate records of Washoe County, Nevada.

25.14 Counterparts. This Ground Lease may be executed simultaneously in two or more counterparts, each of which shall be deemed original and all of which, when taken together, shall constitute one in the same document. The signature of any party to any counterpart shall be deemed a signature to, and may be appended to, any other counterpart. The words "execution", "executed", "signed" and "signature" and words of like import in this Ground Lease shall include images of manually executed signatures transmitted by facsimile or other electronic format (including, without limitation, ".pdf", ".tif" or ".jpg") and other electronic signatures (including, without limitation, DocuSign and AdobeSign). The use of electronic signatures and electronic records (including, without limitation, any contract or other record created, generated, sent, communicated, received or stored by electronic means) shall be of the same legal effect, validity and enforceability as a manually executed signature or use of a paper-based recordkeeping system to the fullest extent permitted by Applicable Law, including, without limitation, the Electronic Signatures in Global and National Commerce Act, any state law based on the Uniform Electronic Transactions Act and the Uniform Commercial Code.

25.15 Preservation of Tax Status of Bonds. Landlord and Tenant each agree to not take any action with respect to the Premises that would adversely affect the exclusion of the interest payable on the Tax-Exempt Bonds (as defined in the Indenture) from gross income for Federal income tax purposes, or would otherwise result in a breach of any representations, conditions, or covenants of Tenant or Landlord as set forth in the Bond Documents.

25.16 Submission of Lease. Submission of this instrument for examination or signature by Tenant does not constitute a reservation of or an option for lease, and it is not effective as a lease or otherwise until execution and delivery by both Landlord and Tenant.

25.17 Brokers. The parties to this Ground Lease warrant to each other that neither party dealt with any brokers or finders in connection with the consummation of this Ground Lease. In the event any broker, agent or finder makes a claim, the party through whom such claim is made shall be solely responsible for any and all claims or liabilities for brokerage commissions or finder's fees arising out of that party's acts in connection with this Ground Lease to anyone.

25.18 Incorporation. The Attachments attached hereto are hereby incorporated by this reference into this Ground Lease.

25.19 Authority. Each individual executing this Ground Lease on behalf of his or her respective party represents and warrants that he or she is duly authorized to execute and deliver this Ground Lease on behalf of said entity in accordance with the governing documents of such entity, and, subject to the condition precedent in Section 25.26 below, that upon full execution and delivery this Ground Lease is binding upon said entity in accordance with its terms.

25.20 Drafting. In the event of a dispute between any of the parties hereto over the meaning of this Ground Lease, both parties shall be deemed to have been the drafter hereof, and any Applicable Law that states that contracts are construed against the drafter shall not apply.

25.21 No Third Party Beneficiaries. Except as otherwise expressly stated herein, nothing in this Ground Lease is intended or shall be construed to confer upon any person other than the Trustee, the Issuer, and the parties hereto any legal or equitable rights or remedies under or by reason of this Ground Lease or any provision contained herein.

25.22 No Merger. If under any circumstances both Landlord's and Tenant's estates in the Premises, or any portions thereof, become vested in the same owner, this Ground Lease nevertheless shall not be extinguished by application of the doctrine of merger except until the principal of and premium, if any, and interest on the Bonds has been paid or is deemed paid within the meaning of the Indenture.

25.23 Reasonable Expenditures. Any expenditure by a party permitted or required under this Ground Lease, for which such party is entitled to demand and does demand reimbursement from the other party, shall be limited to the fair market value of the goods and services involved, shall be reasonably incurred, and shall be substantiated by documentary evidence.

25.24 Survival. All representations, obligations, indemnities, warranties, covenants, conditions and agreements contained in this Ground Lease which are either expressed as

surviving the expiration or earlier termination of this Ground Lease or, by their nature, are to be performed or observed, in whole or in part, after the termination or expiration of this Ground Lease, shall survive the termination or expiration of this Ground Lease.

25.25 Reservation. Nothing contained in this Ground Lease shall be construed to waive or limit University's right to assert the defense of sovereign immunity, which defense is hereby expressly reserved, nor to waive or limit the protections afforded to University under NRS 41.0305 to 41.039.

25.26 Contingent on Board of Regents' Approval. Effectiveness of this Ground Lease is contingent upon approval by the Board of Regents of the Nevada System of Higher Education in their sole and absolute discretion. If the Board of Regents, in their sole and absolute discretion, do not approve the terms hereof, this Ground Lease shall be deemed null and void without the necessity of further documentation and shall be deemed to be of no binding effect whatsoever.

*Remainder of page intentionally left blank.
Signatures on the following page.*

WHEREFORE, the parties have executed this Ground Lease as of the date first above written.

Landlord

BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON BEHALF OF THE UNIVERSITY OF NEVADA, RENO,

Recommended by:

Brian Sandoval
President, University of Nevada, Reno

Date: _____

Approved by:

Dale Erquiaga
Acting Chancellor,
Nevada System of Higher Education

Date: _____

Tenant

NCCD – UNR PROPERTIES LLC,
a Nevada limited liability company

By: _____

Name: _____

Its: _____

ATTACHMENT A-1

LEGAL DESCRIPTION OF SITE

[Attached]

Attachment A-1

All that certain real property situate within a portion of the Southeast one-quarter (SE1/4) of Section 2, Township 19 North, Range 19 East, M.D.M., Washoe County, State of Nevada, being a portion of all that real property described in Deed Document No. 4987441 recorded December 31, 2019; Deed Document No. 4184259 recorded December 13, 2012; Deed Document No. 4586772 recorded May 5, 2016; Deed Document No. 4689119 recorded March 22, 2017; Deed Document No. 4184064 recorded January 13, 2012 and Deed Document No. 5135029 recorded January 29, 2021 together with all that real property described in Deed Document No. 3051779 recorded June 10, 2004; Deed Document No. 4606191 recorded July 1, 2016; Deed Document No. 2969488 recorded December 16, 2003, and together with a portion of the abandoned alleyway described in Deed Document No. 5073326, recorded September 4, 2020, Official Records of Washoe County, State of Nevada, being more particularly described as follows:

BEGINNING at the northeasterly corner of said Parcel described in said Deed Document No. 3051779, also being a point on the southerly right-of-way line of East 9th Street and the westerly right-of-way line of University Way;

THENCE along said westerly right-of-way line, South 12°57'58" East, 370.00 feet to a point on the northerly right-of-way line of East 8th Street;

THENCE along said northerly right-of-way line, South 77°02'02" West, 272.48 feet to a point on the easterly right-of-way line of North Virginia Street as described in Quitclaim Deed Document No. 5135029 recorded January 29, 2021;

THENCE along said easterly right-of-way line, the following three (3) courses and distances:

1. North 58°00'14" West, 7.19 feet;
2. North 13°00'14" West, 14.69 feet;
3. North 03°32'30" West, 69.35 feet;

THENCE departing said easterly right-of-way line, North 76°59'46" East, 78.16 feet to the beginning of a curve to the left having a radius of 48.50 feet;

THENCE along said curve at a distance of 76.18 feet, and through a central angle of 90°00'00";

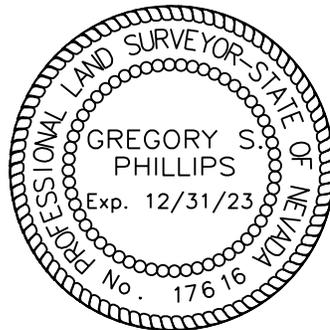
THENCE North 13°00'14" West, 233.25 feet to a point on the southerly right-of-way line of East 9th street;

THENCE along said southerly right-of-way line, North 77°02'30" East, 139.75 feet to the **POINT OF BEGINNING**, and end of this description.

Containing 63,946 square feet, more or less.

The Basis of Bearings for this description the Nevada Coordinate System of 1983, West Zone, NAD 83/94, modified to ground using the combined scale factor of 1.000197939.

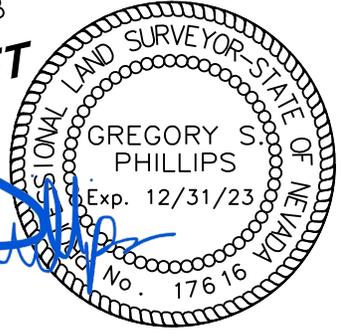
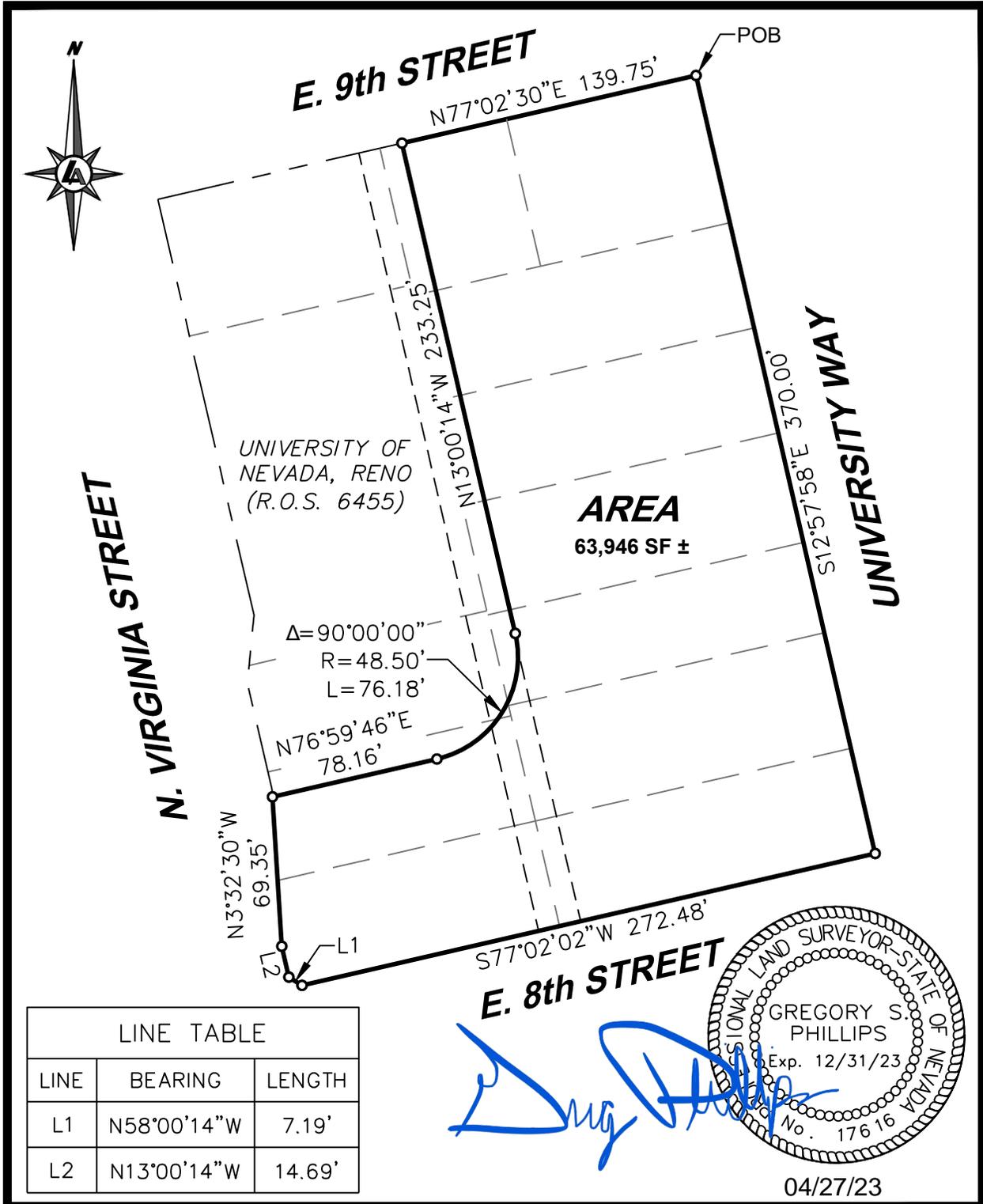
Refer to Exhibit "B" attached hereto and by this reference made a part of.



A handwritten signature in blue ink, appearing to read "Gregory S. Phillips". The signature is stylized and written in a cursive script.

04/27/23

Prepared by:
Lumos & Associates, Inc.
Gregory S. Phillips, P.L.S. 17616
308 N. Curry Street
Suite 200
Carson City, NV 89703



04/27/23

LUMOS & ASSOCIATES
 308 N. CURRY ST., SUITE 200
 CARSON CITY, NV 89703
 TEL (775) 883-7077

EXHIBIT "B"
UNIVERSITY OF NEVADA, RENO
PORTION OF SEC. 2, T.19N, R.19E, M.D.M.
RENO NEVADA

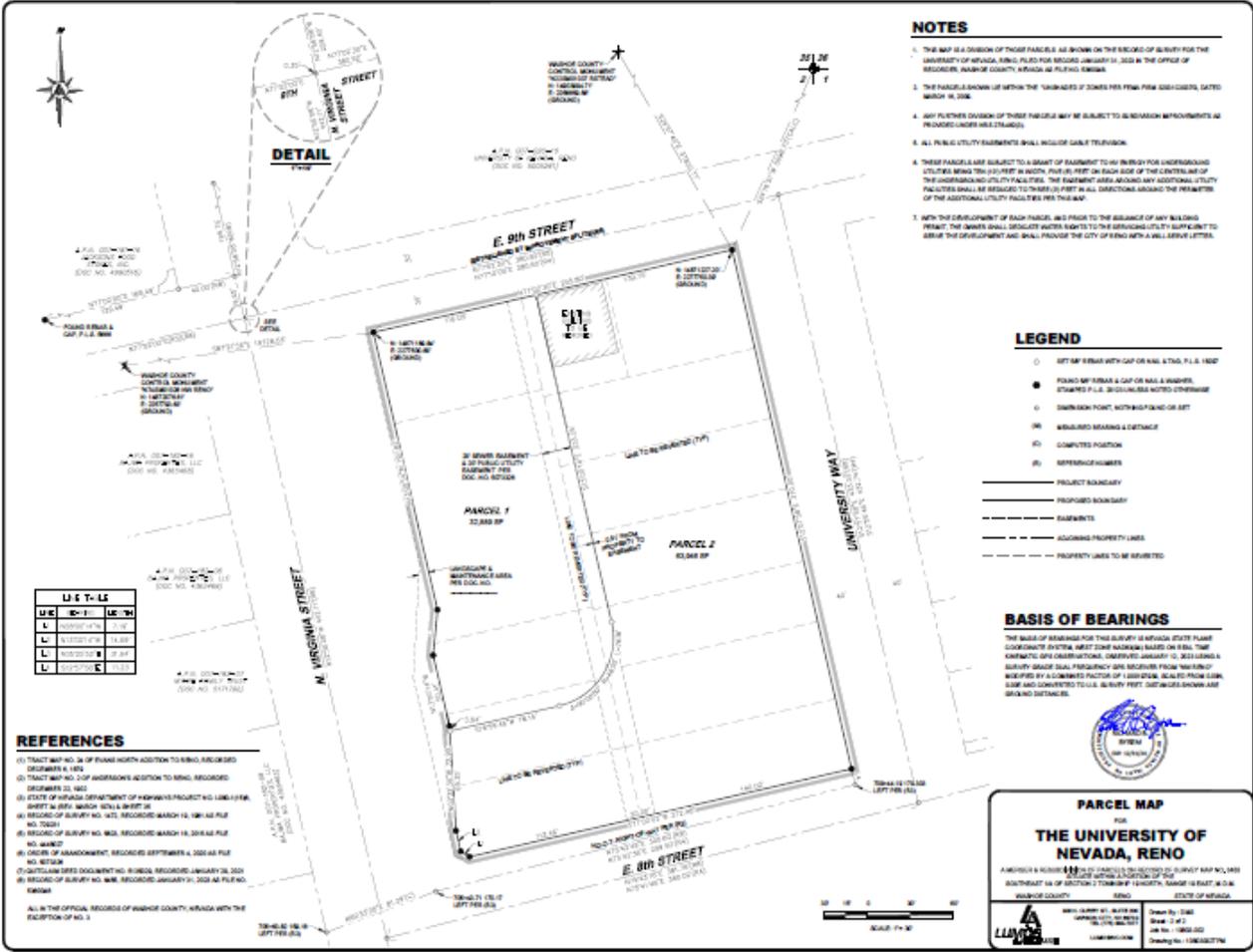
Date: 04/2023
 Scale: 1" = 70'
 Job No: 10803.002
 Drawn By: DMS

ATTACHMENT A-2

SITE MAP

[Attached]

Attachment A-2



- NOTES**
1. THE MAP IS A DIVISION OF THOSE PARCELS AS SHOWN ON THE RECORD OF SURVEY FOR THE UNIVERSITY OF NEVADA, RENO, FILED FOR RECORD JANUARY 19, 2024 IN THE OFFICE OF RECORDS, WASHINGTON COUNTY, NEVADA AS PLAT NO. 88864.
 2. THE PARCELS SHOWN ARE WITHIN THE UNINCORPORATED TOWN OF RENO FROM 2005 CONTROL, DATED MARCH 18, 2006.
 3. ANY FURTHER DIVISION OF THESE PARCELS MAY BE SUBJECT TO SUBDIVISION REQUIREMENTS AS PROVIDED UNDER H.S. 204.010.
 4. ALL PUBLIC UTILITY EASEMENTS SHALL INCLUDE GASET TOLERANCE.
 5. THESE PARCELS ARE SUBJECT TO EASEMENT OF EASEMENT TO ANY PUBLIC UTILITY FOR UNDERGROUND UTILITIES BEING THE (2) FEET WIDE, PLUS (5) FEET ON EACH SIDE OF THE CENTERLINE OF THE UNDERGROUND UTILITY FACILITIES. THE EASEMENT AREA AROUND ANY ADDITIONAL UTILITY FACILITIES SHALL BE EASED TO THREE (3) FEET IN ALL DIRECTIONS AROUND THE PERIMETER OF THE ADDITIONAL UTILITY FACILITIES PER THE MAP.
 6. WITH THE DEVELOPMENT OF EACH PARCEL, AND PRIOR TO THE ISSUANCE OF ANY BUILDING PERMIT, THE OWNER SHALL DELEGATE WATER RIGHTS TO THE SERVICES UTILITY SUPPLYMENT TO SERVE THE DEVELOPMENT AND SHALL PROVIDE THE CITY OF RENO WITH A WELL SERVICE LETTER.

- LEGEND**
- SETBACK POINT WITH CAP OR WALL & 10' P.L.S. MARK
 - POINTS BY BEARING & CAP OR WALL & MARKS, CHAINED P.L.S. INCLUDING BEARING AND DISTANCE
 - SURVEY POINT WITH BEARING AND DISTANCE
 - (M) MEASURED BEARING & DISTANCE
 - (C) COMPUTED POSITION
 - (R) REFERENCE NUMBER
 - PROJECT BOUNDARY
 - - - PROPOSED BOUNDARY
 - - - EASEMENTS
 - - - ADJOINING PROPERTY LINES
 - - - PROPERTY LINES TO BE SURVEYED

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS NEVADA STATE PLUMB COORDINATE SYSTEM (NAD 83) ZONE 10N. BEARINGS BASED ON THIS COORDINATE SYSTEM OBSERVATIONS, COMPUTED JANUARY 10, 2024 USING A SURVEY GRADE DUAL FREQUENCY GPS RECEIVER FROM THE SURVEYING SOCIETY OF NEVADA. ALL BEARINGS ARE GIVEN FROM SOUTH AND CONVERTED TO U.S. SURVEY FEET. DISTANCES SHOWN ARE BEARING DISTANCES.



PARCEL MAP
FOR
THE UNIVERSITY OF NEVADA, RENO

APPROVED & RECORDED IN THE OFFICE OF THE COUNTY CLERK OF WASHINGTON COUNTY, NEVADA, ON JANUARY 19, 2024, AT 10:00 AM. PLAT NO. 88864.

WASHINGTON COUNTY, NEVADA STATE OF NEVADA

Surveyed by: JAMES W. HARRIS
Checked by: JAMES W. HARRIS
Date: 01/19/2024
Drawing No.: 108000070

LIST-LS

U.C.	U.C.	U.C.
U.C.	U.C.	U.C.

- REFERENCES**
- (1) TRACT MAP NO. 36 OF RENO NORTH ADDITION TO RENO, RECORDED DECEMBER 8, 1922.
 - (2) TRACT MAP NO. 2 OF ADDITIONS ADDITION TO RENO, RECORDED DECEMBER 22, 1922.
 - (3) STATE OF NEVADA DEPARTMENT OF HIGHWAYS PROJECT NO. LHM-1178A, SHEET 18 OF 18, MARCH 2011, SHEET 18.
 - (4) RECORD OF SURVEY NO. 1421, RECORDED MARCH 14, 2004 AS FILE NO. 2029.
 - (5) RECORD OF SURVEY NO. 804, RECORDED MARCH 14, 2004 AS FILE NO. 80402.
 - (6) ORDER OF ASSIGNMENT, RECORDED SEPTEMBER 4, 2004 AS FILE NO. 80120.
 - (7) CITIES AND VILLAGES DOCUMENT NO. 80084, RECORDED JANUARY 26, 2024.
 - (8) RECORD OF SURVEY NO. 846, RECORDED JANUARY 29, 2024 AS FILE NO. 84604.
- ALL IN THE OFFICIAL RECORDS OF WASHINGTON COUNTY, NEVADA WITH THE EXCEPTION OF NO. 1.

ATTACHMENT B

INSURANCE REQUIREMENTS

B.1. Insurance During Sublease Term. At all times throughout the Term of the Sublease, Landlord and Tenant shall maintain or cause to be maintained all of the insurance coverages required of the parties under the Sublease.

B.2. Insurance Following Termination of Sublease. In the event the Sublease terminates prior to the expiration of this Ground Lease, the Sections B.3 through B.9 of this Attachment B shall apply.

B.3. Tenant's Insurance. From the effective date of the termination of the Sublease and continuing until the Termination Date of this Ground Lease, Tenant, at its sole cost and expense, shall maintain or cause to be maintained, the following insurance coverages:

B.3.1. Commercial General Liability.

B.3.1.1. Minimum limits required:
\$3,000,000 General Aggregate
\$1,000,000 Products & Completed Operations Aggregate
\$1,000,000 Personal and Advertising Injury
\$3,000,000 Each Occurrence

B.3.1.2. Coverage shall be on an occurrence basis and shall cover liability arising from premises, operations, independent contractors, completed operations, personal injury, products, and liability assumed under contract;

B.3.1.3. University shall be added as an additional insured on Tenant's liability policy;

B.3.2. Property. Tenant shall obtain and maintain an all risk property insurance policy, insuring loss or damage to the Premises. The amount of such insurance shall be equal to the full replacement costs of the Premises, as the same shall exist from time to time. Such policy shall insure against physical loss or damage, including the perils of fire, flood and earthquake and include coverage for any additional costs related to debris removal and related standard extra expenses. Tenant shall maintain sufficient funds to cover any self-insured retention amounts under the property policy, and shall be solely responsible for any related deductibles.

B.3.3. Workers Compensation. Tenant shall maintain workers compensation insurance if such insurance is required of Tenant by NRS 616B.627, or proof that compliance with the provisions of NRS Chapter 616A-D and all other related chapters, is not required. Tenant shall further obtain and maintain employer's liability insurance in an amount not less than One Million U.S. Dollars (\$1,000,000.00).

B.3.4. Business Auto. Tenant's insurance shall cover the Tenant for those sources of liability which would be covered by the latest occurrence form edition of the standard Business Auto Policy, including coverage for liability contractually assumed, as filed for use in the State of

Nevada by the Insurance Services Office, without the attachment of restrictive endorsements. Coverage shall be provided for owned, scheduled, non-owned, and hired automobiles with a combined single limit of not less than Two Million U.S. Dollars (\$2,000,000.00) per occurrence

B.3.5. Business Interruption. Tenant shall obtain and maintain a policy of business interruption insurance in minimum amounts typically carried by prudent tenants engaged in similar operations, but in no event shall be in an amount less than the annual Fixed Rent then in effect during any year during the Term.

B.4. Waiver of Subrogation. All insurance policies obtained and maintained as required under Section B.3 of this Attachment B shall include a waiver of subrogation in favor of the University.

B.5. Sublandlord's Insurance. Tenant's insurance hereunder shall be primary and non-contributory to any insurance carried by the University. Any additional insurance carried by University shall not reduce the insurance carried by Tenant, nor cause University to become a coinsurer under the insurance carried by Tenant under this Ground Lease.

B.6. Use of Insurance Proceeds Received. From the effective date of the termination of the Sublease and continuing until the Termination Date of this Ground Lease, Tenant shall have an obligation to use such proceeds from insurance in compliance with Section 15.2 of this Ground Lease.

B.7. Deductibles and Self-Insured Retentions. Insurance maintained by Tenant shall apply on a first dollar basis without application of a deductible or self-insured retention unless otherwise specifically agreed to by the University. Such approval shall not relieve Tenant from the obligation to pay any deductible or self-insured retention.

B.8. Approved Insurer. Each insurance policy shall be issued by insurance companies authorized to do business in the State of Nevada or eligible surplus lines insurers acceptable to the State and having agents in Nevada upon whom service of process may be made.

B.9. Evidence of Insurance. Tenant shall, upon written request of the University, provide to the University the Accord 25 Certificate of Insurance form, or a form substantially similar, to evidence the insurance policies and coverages required under this Attachment B.

ATTACHMENT 1.7.2
(cover page)

Form of Sublease

See form of Sublease appended behind this cover page.

Attachment 1.7.2

SUBLEASE AGREEMENT

By and Between

NCCD-UNR Properties LLC,

a Nevada limited liability company, Sublandlord

and

**BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON
BEHALF OF THE UNIVERSITY OF NEVADA, RENO, Subtenant**

[_____, 2023]

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SUBLEASE AGREEMENT

THIS SUBLEASE AGREEMENT (“Sublease”), dated [_____, 2023][**Note: The Effective Date would be date of Financial Closing – Same as the Ground Lease**] (“Effective Date”), is by and between NCCD-UNR PROPERTIES LLC (“Sublandlord”), a single member limited liability company organized and existing under the laws of the State of Nevada, whose sole member is National Campus and Community Development Corporation, a Texas non-profit corporation (“NCCD”) that is exempt from United States federal income taxation under Section 501(a) of the Code (as defined herein) as an organization described under Section 501(c)(3) of the Code, as sublandlord, and the BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON BEHALF OF THE UNIVERSITY OF NEVADA, RENO, as subtenant (“Subtenant” or the “University”).

RECITALS

A. The University owns certain real property comprising approximately 2.21 acres bordered by Eighth Street, Ninth Street, North Virginia Street and University Way in Reno Nevada (the “Property”). The land that is the subject of this Sublease is comprised of certain portions of the Property and is more particularly described on the attached Attachment A-1 and shown on the attached Attachment A-2 (collectively, the “Site”).

B. The University wishes to cause development of the Site with an approximate 128,000 square foot College of Business (collectively, the “Improvements”) as more particularly described in that certain Development Agreement dated as of the Effective Date (as amended or supplemented from time to time in accordance with the provisions thereof, the “Development Agreement”) among the University, Sublandlord, and UNR/Edgemoor Gateway Partners LLC, a Maryland limited liability company (the “Developer”).

C. Pursuant to the Development Agreement, Developer has agreed to develop, design, construct and equip the Improvements on the Site as more particularly described in the Development Agreement (collectively, and together with any additional Improvements funded by Additional Bonds, as applicable, referred to as the “Project”).

D. The University has leased the Site and the Improvements to Sublandlord pursuant to the Ground Lease dated as of the Effective Date (the “Ground Lease”), and Sublandlord is prepared to sublease the Site and the Improvements to the University, and the University is prepared to sublease the Site and the Improvements from Sublandlord, in connection with the development of the Project pursuant to the Development Agreement.

E. In connection with the development and construction of the Project, National Finance Authority, as issuer (“Issuer”) will cause to be issued certain Lease Revenue Bonds (NCCD - UNR Properties LLC – University of Nevada, Reno Project) Series 2023 Bonds (the “Series 2023 Bonds”) and any Additional Bonds, as applicable, pursuant to a Trust Indenture dated as of the Effective Date (as amended or supplemented from time to time in accordance with the provisions thereof, the “Indenture”) by and between Issuer U.S. Bank Trust Company, National Association, as trustee (“Bond Trustee” or “Trustee”), and the proceeds of such Bonds shall be loaned to Sublandlord pursuant to a Loan Agreement dated as of the Effective Date (as

amended or supplemented from time to time in accordance with the provisions thereof, the “Loan Agreement”) between Issuer as lender, and Sublandlord as borrower, and a portion of such proceeds shall be paid to Developer pursuant to that certain Disbursement Agreement, dated as of the Effective Date, among Sublandlord, Developer and Trustee (as amended or supplemented from time to time in accordance with the provisions thereof, the “Disbursement Agreement”) and the Indenture and Loan Agreement, to pay the costs of the Project under the Development Agreement.

F. Pursuant to the Operation and Maintenance Agreement dated as of the Effective Date (as amended or supplemented from time to time in accordance with the provisions thereof, the “O&M Agreement”) between the University and Manager (as defined in the O&M Agreement), Manager has agreed to perform the O&M Services (as defined in the O&M Agreement) for the Project.

NOW, THEREFORE, in consideration of the mutual covenants, conditions and agreements that follow, the parties hereby agree as follows:

ARTICLE 1 DEFINITIONS, GRANT AND TERM

1.1 Definitions. Certain words and terms used in this Sublease and not otherwise defined herein shall have the meaning given them in the other Transaction Documents (as defined below). The following terms as used in this Sublease, shall have the following meanings, unless the context indicates otherwise:

“Additional Bonds” shall have the meaning set forth in the Indenture.

“Additional Rent” is defined in Section 2.3.

“Administrative Expense Reimbursements” is defined in Section 2.2.

“Applicable Law” means all present and future laws, statutes, regulations, ordinances, resolutions and orders of any applicable Governmental Authority.

“Assessments” is defined in the Ground Lease.

“Base Sublease Payment” means a base sublease payment for the Premises in the amounts calculated and payable in accordance with Section 2.2 hereof, including without limitation the amounts set forth in Attachment B attached hereto, together with such amounts set forth in any amendment hereto executed in connection with the issuance of Additional Bonds, as applicable. The Base Sublease Payment shall be the same as the Basic Loan Payments as defined in the Indenture.

“Base Sublease Payment Commencement Date” shall have the meaning as set forth on the attached Attachment B.

“Base Sublease Payment Date” shall mean the Base Sublease Payment Commencement Date and thereafter on or before the first (1st) day of each month during the Term until the Bonds

are paid or deemed paid in full in accordance with the Indenture, and on or before the date set forth in any amendment to the Loan Agreement executed in connection with the issuance of Additional Bonds, as applicable.

“Bond Documents” means, collectively, the Indenture, the Loan Agreement, this Sublease, the Ground Lease, the Tax Agreement, the Leasehold Deed of Trust, the Disbursement Agreement, the Collateral Assignment Agreement, the Security Agreement, the Direct Agreement - Ground Lease, the Direct Agreement - Sublease, the Direct Agreement - Development Agreement and all other instruments or agreements executed by the Trustee, Issuer and/or Sublandlord in connection with the issuance and delivery of the Bonds and the use of proceeds thereof.

“Bond Trustee” or “Trustee” is defined in the Recitals above.

“Bonds” means collectively, the Series 2023 Bonds and any Additional Bonds.

“Borrower” is defined in the Loan Agreement.

“Casualty” has the meaning set forth in Article 16 hereof.

“Claims” has the meaning set forth in Section 13.1 hereof.

“Code” means the Internal Revenue Code of 1986, as amended from time.

“Collateral Assignment Agreement” means the Collateral Assignment Agreement, dated as of the Effective Date, by the Tenant and the Developer in favor of the Trustee, as the same may be amended and/or supplemented from time to time as permitted hereby and thereby.

“Common Areas” has the meaning set forth in Section 9.4 hereof.

“Completion” is defined in the Development Agreement.

“Defaulting Party” has the meaning set forth in Section 20.2 hereof.

“Design/Build Agreement” has the meaning set forth in the Development Agreement.

“Developer” is defined in the Recitals above.

“Development Agreement” is defined in the Recitals above.

“Direct Agreement - Development Agreement” means the Direct Agreement – Development Agreement dated as of the Effective Date among the Sublandlord, Subtenant, the Developer and the Trustee, as it may be amended or supplemented from time to time.

“Direct Agreement – Ground Lease” is that certain Direct Agreement- Ground Lease dated as of the Effective Date among the Sublandlord, Subtenant, and Trustee, as it may be amended or supplemented from time to time.

“Direct Agreement – Sublease” is that certain Direct Agreement- Sublease dated as of the Effective Date among the Sublandlord, Subtenant and Trustee, as it may be amended or supplemented from time to time.

“Disbursement Agreement” is defined in the Recitals above.

“Effective Date” is defined in the Preamble above.

“Event of Default” means each of the events specified in Article 20 hereof.

“Fiscal Fund-Out Termination” is defined in Section 21.2 hereof.

“Governmental Authority” means any and all entities, courts, boards, agencies, commissions, offices, divisions, subdivisions, departments, bodies or authorities of any nature whatsoever of any governmental unit (federal, state, county, city or otherwise) whether now or hereafter in existence, other than Subtenant.

“Governmental Unit” means a “governmental unit,” within the meaning of Section 1.103 of the Treasury Regulations.

“Ground Lease” is defined in the Recitals above.

“Improvements” is defined in the Recitals above.

“Indenture” is defined in the Recitals above.

“Issuer” is defined in the Recitals above, and includes Issuer’s its successors and assigns under the Indenture.

“Leasehold Deed of Trust” means the Leasehold Deed of Trust, Assignment of Rents and Leases, Security Agreement and Fixture Filing dated as of [•], 2023 by the Sublandlord in favor of the Trustee, as the same may be amended and/or supplemented from time to time.

“Loan Agreement” is defined in the Recitals above.

“NCCD” is defined in the Preamble.

“NCCD Annual Fee” is defined in Section 2.3.2.

“NCCD Origination Fee” is defined in Section 2.3.2.

“Net Proceeds” has the meaning set forth in the Indenture.

“Non-Breaching Party” has the meaning set forth in Section 20.2 hereof.

“O&M Agreement” is defined in the Recitals above.

“O&M Services” means the services to be performed by Developer pursuant to the O&M Agreement.

“Person” means natural persons, firms, joint ventures, associations, trusts, partnerships, corporations, limited liability companies, public bodies, and similar entities, whether for profit or non-profit.

“Premises” means the Site and the Improvements.

“Permitted Encumbrances” means, as of any particular time, any one or more of the following:

- (1) encumbrances for utility charges, taxes, rates and assessments not yet delinquent or for utility charges, taxes, rates, assessments, and other charges being contested in accordance with the Loan Agreement or this Sublease;
- (2) Any encumbrance arising out of any judgment rendered which is being contested diligently and in good faith, the execution of which has been stayed or against which a bond or bonds in the aggregate principal amount equal to such judgments shall have been posted with a financially-sound insurer;
- (3) Any encumbrance arising in the ordinary course of business imposed by law dealing with materialmen’s, mechanics“, workmen’s, repairmen’s, warehousemen’s, landlords’, vendors’ or carriers’ encumbrances created by operation of law, but that have not been perfected by the required filing of record for work done or materials delivered after the date of recording of this Sublease in connection with additions to or alterations of the Project;
- (4) Servitudes, licenses, easements, encumbrances, restrictions, rights-of-way and rights in the nature of easements or similar charges which shall not in the aggregate materially and adversely impair the construction of the Project or operation of the Project;
- (5) Applicable zoning and building bylaws and ordinances, municipal bylaws and regulations, and restrictive covenants, which do not materially interfere with the construction of the Project and operation of the Project;
- (6) Encumbrances which are created on or before the date hereof and as described in the title policy required by the Loan Agreement;
- (7) Any encumbrances required in connection with the development of the Project pursuant to the Development Agreement;
- (8) Encumbrances which are created by a change in Applicable Law on or after the date hereof;
- (9) Any servitudes, licenses, easements, restrictions, encumbrances created by a Governmental Authority or to which the University has granted its consent; and
- (10) This Sublease, the Ground Lease, and the other Bond Documents.

“Project” is defined in the Recitals above.

“Property and Possessory Interest Taxes” means any and all governmental fees and charges, whether general or special, or ordinary or extraordinary, which may be levied, assessed, charged or imposed, or may become a lien or charge upon the Premises, the Improvements, or any part or parts thereof, or upon Subtenant’s Interest, including, without limitation, taxes on land, any buildings, any parking facilities or any other improvements now or hereafter at any time during the Term located at or on the Premises.

“Rent” means collectively Base Sublease Payments, the Administrative Expenses Reimbursements and Additional Rent.

“Security Agreement” has the meaning set forth in the Indenture.

“Section 501(c)(3) Organization” shall mean an organization (i) that been determined by the United States Department of Treasury to be an organization described in paragraph (3), subsection (c), of Section 501 of the Code or in the corresponding provisions of prior law, (ii) that is exempt from federal income taxes under subsection (a) of Section 501 of the Code, and (iii) that is not a “private foundation,” within the meaning of Section 509(a) of the Code.

“Series 2023 Bonds” is defined in the Recitals above.

“Site” is defined in the Recitals above.

“State” means the State of Nevada.

“Sublandlord” is defined in the Preamble.

“Sublandlord Indemnitees” has the meaning set forth in Section 13.1 hereof.

“Sublandlord’s Interest” means Sublandlord’s entire interest in the Premises and this Sublease.

“Sublease” is defined in the Preamble above.

“Sublease Expiration Date” is defined in Section 1.5 below.

“Subtenant” is defined in the Preamble above.

“Subtenant Indemnitees” has the meaning set forth in Section 13.2 hereof.

“Subtenant’s Interest” means Subtenant’s entire interest, as subtenant hereunder in the Premises and this Sublease.

“Taking” is defined in Section 17.1 hereof.

“Tax Agreement” has the meaning set forth in the Indenture.

“Tax-Exempt Bonds” is defined in the Indenture.

“Term” means the period set forth in Section 1.5 hereof.

“Termination Date” means the date on which the Term hereof ends by termination or expiration of this Sublease, as described in Section 1.5 hereof.

“Transaction Documents” means, collectively, the Ground Lease, the Development Agreement, this Sublease, the O&M Agreement, the Disbursement Agreement, the other Bond Documents, the Design/Build Agreement, and the ancillary agreements entered into by and/or between Sublandlord, Subtenant and Developer in connection with the Project.

“Treasury Regulations” means any proposed, temporary or final income tax regulations issued pursuant to the Code. Any reference to any specific Treasury Regulations shall also mean, as appropriate, any proposed, temporary or final income tax regulation designed to supplement, amend or replace the specific Treasury Regulation referenced.

“University” is defined in the Recitals above.

“Unrelated Business Taxable Income” means “unrelated business taxable income,” within the meaning of Section 512 of the Code.

“Unrelated Trade or Business” means “unrelated trade or business” within the meaning of Section 513(a) of the Code. Generally, any trade or business that is not substantially related (in a manner other than the general need for income or funds) to the exercise or performance by a 501(c)(3) Organization of its charitable, educational, or other purpose or function constituting its exemption under Section 501(c)(3) of the Code constitutes an Unrelated Trade or Business.

1.2 Sublease. In consideration of the covenants and agreements to be performed and observed by Subtenant, Sublandlord hereby subleases to Subtenant, subject only to Permitted Encumbrances, and Subtenant hereby subleases from Sublandlord, the Site as more particularly described on the attached Attachment A-1 and shown on the attached Attachment A-2 and the Improvements in existence from time to time.

1.2.1 Sublandlord and Subtenant acknowledge and agree that Attachment A-1 and Attachment A-2 shall be consistent with Attachment A-1 and Attachment A-2 to the Ground Lease and such Attachments may be amended from time to time to reflect the Site necessary for the development and operation of the Project upon written agreement of the parties hereto.

1.2.2 In addition, Sublandlord and Subtenant hereby acknowledge and agree that as of the Effective Date the Premises do not include the portion of the Site consisting of the existing restaurant lease depicted on Attachment A-2; provided, however, upon termination of such restaurant lease, anticipated to occur on or about August 15, 2023, such portion of the Site comprised of the existing restaurant lease shall be deemed to be included in the Premises leased by Sublandlord to Subtenant hereunder upon the date of such termination.

1.2.3 The Board of Regents of the Nevada System of Higher Education expressly delegate authority to the Chancellor of the Nevada System of Higher Education to execute amendments made pursuant to this Section 1.2.

1.3 Reservation of Oil, Gas and Mineral Rights. Pursuant to the Ground Lease University has reserved to itself all of the oil, gas and mineral rights of the Site without the right

of surface entry; provided that any such actions taken with respect to oil, gas and mineral rights do not interfere with or adversely affect the Premises.

1.4 Condition of Site. Subtenant accepts the Site “as is” without representation or warranty of Sublandlord. Sublandlord shall not be required or obligated to make any changes, alterations, additions, improvements or repairs in, on, under or about the Site except as specifically described in the Bond Documents and the other Transaction Documents. Sublandlord makes no warranty as to the suitability of the Site for the uses permitted by this Sublease. Sublandlord makes no covenants or warranties respecting the condition of the soil, subsoil or any other condition of the Site, nor does Sublandlord make any covenant, representation or warranty regarding the suitability of the Site for the proposed development, construction or use by Subtenant or Developer under the Development Agreement.

1.5 Term. The term of this Sublease (“Term”) shall commence on the Effective Date and shall expire at 11:59 p.m. local time on the date that is thirty (30) years thereafter (the “Sublease Expiration Date”), unless sooner terminated in accordance with the provisions of this Sublease. Any holding over by Subtenant after expiration shall not constitute a renewal or extension nor shall it give Subtenant any rights in or to the Premises or any part thereof. In addition, and notwithstanding anything to the contrary contained herein, this Sublease shall terminate prior to such thirty (30) year term on the date that the Bonds are no longer outstanding pursuant to the terms of the Indenture and all amounts due and payable under Loan Agreement are paid in full and discharged.

ARTICLE 2 SUBLEASE CONSIDERATION

2.1 Transaction Documents and Development. Subtenant shall: (i) enter into the Transaction Documents to which it is a party, and (ii) make the Site available to Developer so that Developer may construct the Project in accordance with the Development Agreement. Sublandlord shall make a portion of the proceeds of the Bonds available to the Developer pursuant to the Indenture and the Disbursement Agreement.

2.2 Sublease Payments.

2.2.1 Base Sublease Payments. During the Term, Subtenant shall pay to the Trustee, on behalf of and as assignee of the Sublandlord, a Base Sublease Payment on each Base Sublease Payment Date starting on the Base Sublease Payment Commencement Date. All such payments shall be fully credited to Subtenant’s obligation to make the Base Sublease Payments hereunder. The Base Sublease Payments payable under this Sublease shall be comprised of principal and interest components in the amounts required to be paid by Sublandlord under the Loan Agreement and as set forth on the attached Attachment B, and shall be solely for the payment of the aggregate amount of the principal of, premium, if any, and interest on the Bonds, as and when due under the Indenture, until the principal of and interest on the Bonds shall have been fully paid or provision for the payment thereof shall have been made in accordance with the Indenture.

2.2.2 Administrative Expense Reimbursements. In addition to the Base Sublease Payments, during the Term, Subtenant shall pay to the Trustee, on behalf of and as assignee of the Sublandlord all additional amounts sufficient to pay all fees, expenses and other amounts payable to the Issuer and/or the Trustee under the Bond Documents, including without limitation all amounts payable by the Borrower pursuant to Section 5.02(b) of the Loan Agreement including the Authority Issuance Fee and the Authority Annual Fee (collectively, “Administrative Expense Reimbursements”). The Administrative Expense Reimbursements shall be paid by Subtenant to the Trustee within thirty (30) days of demand in accordance with Section 5.02 of the Loan Agreement; provided that the Authority Issuance Fee shall be paid on the Effective Date and the Authority Annual Fee shall be paid by Subtenant in advance on [] 1 of each year [the first day of the month in which the Bonds were issued].

2.2.3 General. Each Base Sublease Payment and the Administrative Expense Reimbursements shall be paid in immediately available funds, in lawful money of the United States of America, and deposited in those certain funds held by the Trustee and established pursuant to the Indenture to hold the Base Sublease Payments and the Administrative Expense Reimbursements made hereunder. Anything herein to the contrary notwithstanding, the Base Sublease Payments described above shall at all times be sufficient to pay the total amount of principal of and interest on the Bonds payable on their next succeeding payment date. Except in the event of a Fiscal Fund-Out Termination, the obligation of Subtenant to make the Base Sublease Payments and the Administrative Expenses Reimbursements set forth above is absolute and unconditional during the Term and such payment obligations shall not be subject to any claim for setoff, diminution, or abatement for any reason whatsoever (including, without limitation, any event of default that may have occurred and be continuing under this Sublease) and the Subtenant will not discontinue or suspend any payment of Base Sublease Payment or Administrative Expenses Reimbursements, whether or not the Site or Improvements or any part thereof is operating or operable or has been completed, or its use is suspended, interfered with, reduced or curtailed or terminated in whole or in part, and such payments shall not be subject to reduction whether by set-off or otherwise and shall not be conditional upon the performance or nonperformance by any party of any agreement for any cause whatsoever.

2.2.4 Adjustments. Notwithstanding anything to the contrary contained in this Section 2.2, the parties recognize and agree that the payment schedule contained in Attachment B is a good faith estimate of the anticipated Basic Loan Payments due from Sublandlord under the Loan Agreement. The parties agree that Attachment B shall be amended as follows:

(i) Following Financial Close of Escrow (as defined in the Development Agreement) to reflect the actual Basic Loan Payments due from Sublandlord under the Loan Agreement;

(ii) in the event Sublandlord and Subtenant receive written notice from Trustee pursuant to Section 5.01(g) of the Indenture that amounts already on deposit in the Base Sublease Payment Revenue Account and available therefor will be sufficient to make all or a portion of the next required deposit(s) to the Bond Fund pursuant to Section 5.01(a)(i), (ii), (iii) and/or (iv) of the Indenture, Subtenant’s Base Sublease Payment(s) shall be reduced or shall not be required to be made to the extent the amounts on deposit in the Base Sublease Payment

Revenue Account equal or exceed the next required deposit(s) to the Bond Fund pursuant to Section 5.01(a)(i), (ii), (iii) and/or (iv) of the Indenture;

(iii) in the event Sublandlord and Subtenant receive written notice from Trustee pursuant to Section 5.01(g) of the Indenture that amounts already on deposit in the Administrative Expenses Account and available therefor will be sufficient to make all or a portion of the next required payments pursuant to Section 5.01(b), (c), (d), (e) and/or (f) of the Indenture, Subtenant's payments of Administrative Expenses Reimbursement shall be reduced or shall not be required to be made to the extent the amounts on deposit in the Administrative Expenses Account equal or exceed the next required payments pursuant to Section 5.01(b), (c), (d), (e) and/or (f) of the Indenture; and

(iv) in the event Subtenant prepays its Base Sublease Payments as provided in Section 2.4 of this Sublease or if such other moneys are on deposit in the Redemption Fund that are required to be used to redeem Bonds prior to their stated maturity dates, in which case Sublandlord and Subtenant shall amend Attachment B to take into account such prepayments and amounts on deposit in the Redemption Fund; provided that the amounts payable pursuant to such revised schedule shall in all cases be equal to or greater than the payment obligations of the Sublandlord under Section 5.02(a) of the Loan Agreement.

The Board of Regents of the Nevada System of Higher Education expressly delegate authority to the Chancellor of the Nevada System of Higher Education to execute amendments made pursuant to this Section 2.2.4.

2.3 Additional Sublease Payments.

2.3.1 Additional Rent. Subtenant shall pay or discharge, or cause to be paid or discharged when the same shall become due, as additional rent, all costs, expenses, and obligations of every kind relating to the Premises which the Subtenant has assumed or agreed to pay or discharge pursuant to this Sublease and the Ground Lease (as the Landlord thereunder), except as may be specifically provided for herein, which may arise or come due during the Term, including without limitation, all fees, costs and expenses incurred by Sublandlord under the Ground Lease or in connection with the operation and maintenance of the Premises. To the extent Sublandlord incurs these costs directly, Subtenant shall reimburse Sublandlord for such costs and expenses within thirty (30) days of written demand. All costs and expenses payable by Subtenant hereunder which are not Base Sublease Payments or Administrative Expenses Reimbursements shall constitute "Additional Rent," including the NCCD Origination Fee, the NCCD Annual Fee, the costs paid or incurred by the Sublandlord for its annual audits, internal audits, compliance fees, insurance costs, and reasonable legal expenses incurred by the Sublandlord in connection with the Project. Failure to pay Additional Rent as and when due shall constitute an Event of Default, and in such event, the Sublandlord shall have the same rights and remedies available in the event of a failure to pay Base Rent.

2.3.2 Sublandlord and NCCD Assistance and Fees. As consideration for and in recognition of the assistance to be provided by Sublandlord to the University in facilitating the provision of the needed educational facility for the University's College of Business for its students, faculty, and staff and to otherwise assist to the University in furthering its educational,

research, and public purposes, the University agrees to pay Sublandlord, or cause Sublandlord to be paid, as Additional Rent, (a) an origination fee equal to \$125,000 on the Base Sublease Payment Commencement Date (the “NCCD Origination Fee”), which fee shall be paid from the proceeds of the Bonds, and (b) (i) beginning in the first full month following the Base Sublease Payment Commencement Date until the Completion of the Project an amount equal to \$5,000 per month and (ii) beginning in the month after Completion of the Project, an amount equal to, \$3,500 per month, which amount shall increase by three percent (3%) annually for the following ten (10) years with no annual increases occurring on the eleventh (11th) year or thereafter (the “NCCD Annual Fee”). The NCCD Annual Fee shall be paid monthly on the 25th day of the month and continuing until the Termination Date in lawful money of the United States of America via wire transfer to Sublandlord.

2.3.3 Absolute Net Sublease. This is an absolute net sublease. Subtenant acknowledges and agrees, without limiting the generality of any other terms or provisions of this Sublease, that Subtenant shall pay any and all expenses incurred in connection with the use, operation, management, and maintenance of the Premises. During the Term, Subtenant shall pay, as they come due and payable, all insurance premiums, maintenance costs, operating expenses and all other charges, costs, and expenses of any nature and all penalties and interest thereon that are assessed or imposed upon the Premises or any of the Subtenant’s property located thereon.

2.4 Prepayment Rights. Subtenant shall have the right to exercise or cause Sublandlord, as applicable, to exercise the optional redemption rights under Section 3.02 of the Indenture and Section 11.03 of the Loan Agreement and prepay the principal components of the Base Sublease Payments in full, or in part. Said rights shall be exercised by Subtenant giving written notice to the applicable parties of the exercise of such option(s) and by causing to be deposited with said notice the Redemption Price as required by Section 3.02 of the Indenture and Section 11.03 of the Loan Agreement to cause the redemption in full or in part of the Bonds. In the event of prepayment in part, the Base Sublease Payments shall be reduced as provided in Section 2.2.4 of this Sublease.

2.5 Payment to Trustee for Credit of Subtenant and Issuer. The Sublandlord and the Subtenant acknowledge and agree that the Sublandlord shall cause all Base Sublease Payments and Administrative Expense Reimbursements to be remitted to the Trustee to be disbursed by the Trustee in accordance with the provisions of the Indenture and the other Bond Documents, including without limitation Section 5.01 of the Indenture. The Sublandlord hereby authorizes and directs the Subtenant, and the Subtenant hereby agrees, to remit, on the Sublandlord’s behalf, the Base Sublease Payments and the Administrative Expense Reimbursements directly to the Trustee in satisfaction of the Sublandlord’s obligations under the Loan Agreement, the Indenture, and the other Bond Documents.

ARTICLE 3 USES AND RESTRICTIONS

3.1 Use. University shall use the Premises for activities related to the University’s teaching, research, and outreach missions including, without limitation, traditional classrooms, lecture halls, fundraising activities, special events, community events, and research facilities,

together with ancillary activities commonly associated with community outreach and the support of students and faculty in a higher education and research setting, and other legally permissible uses in accordance with the Bond Documents and Applicable Law.

3.2 Use Restrictions. Subtenant covenants and agrees that it will not use, or suffer or permit any Person or Persons to use, the Premises: (i) in any manner that would result in Base Sublease Payments, Administrative Expenses Reimbursements, Additional Rent, or any other payments made under this Sublease being Unrelated Business Taxable Income; (ii) in any manner that would cause the Sublandlord or NCCD to have “unrelated debt financed income,” within the meaning of Section 514 of the Code; or (iii) in any manner that would jeopardize the tax exempt status of the Sublandlord or NCCD under Section 501(a) of the Code, as more particularly described in Section 501(c)(3) of the Code. Subtenant further covenants that it will not carry on or permit to be carried on in the Premises any trade or business, the conduct of which would cause the interest on the Tax-Exempt Bonds to be included in the gross income of the owners thereof for federal income tax purposes (including, without limitation, allowing more than three percent (3%) of the property financed or refinanced with the net proceeds of the Tax-Exempt Bonds (either by square footage or by fair rental value) to be used in an Unrelated Trade or Business of a Section 501(c)(3) Organization, or to be used in the trade or business of a Person who is neither a Governmental Unit nor a Section 501(c)(3) Organization). In this regard, the Subtenant covenants that it will not enter into any other “arrangement,” within the meaning of §1.141-3(b) of the Treasury Regulations, with any Person that is not a Governmental Unit or a Section 501(c)(3) Organization or any “Management Contract,” as such term is used in Internal Revenue Procedure 2017-13 or any “Research Agreement,” as such term is used in Internal Revenue Procedure 2007-47, relating to the Premises (other than persons who do not use such space for the carrying out of any trade or business) other than for “incidental services,” within the meaning of §1.141-3(d)(2) of the Treasury Regulations, without previously delivering a favorable opinion of Bond Counsel

3.3 Hazardous Substances. Subtenant will comply, at its sole cost and expense, with Applicable Law and University guidelines concerning the (i) use, storage, handling or discharge of any Hazardous Substances (A) generated or used by Subtenant in the course of its operations at the Premises during the Term, or (B) otherwise brought onto the Premises by Subtenant during the Term, and (ii) monitoring, mitigation and remediation (all to the extent required) of any Hazardous Substances migrating onto the Premises during the Term. For purposes of this section, the term “Hazardous Substances” shall be interpreted broadly to include but not be limited to (a) substances designated as hazardous under the Resource Conservation and Recovery Act, 42 U.S.C. §6901, et seq., the Federal Water Pollution Control Act, 33 U.S.C. §1257, et seq., the Clean Air Act, 42 U.S.C. §2001, et seq., or the Comprehensive Environmental Response Compensation and Liability Act of 1980, 42 U.S.C. §9601, et seq., or any other Federal or State law or regulation now or in the future applicable to the Premises, Improvements or Site, The National Institute of Health, CDC and FDA rules and guidelines, (b) any substance which after release into the environment and upon exposure, ingestion, inhalation or assimilation, either directly from the environment or directly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavior abnormalities, cancer and/or genetic abnormalities, and (c) oil and petroleum based derivatives.

3.4 Audit Rights. Sublandlord may, at its sole cost and expense, during customary business hours only, and upon prior reasonable written notice, examine or audit of the books, records and accounts of the Subtenant directly related to the Premises, to the extent necessary to verify compliance with this Sublease. Audits may be conducted by employees of the Sublandlord or independent auditors retained by the Sublandlord, but any and all such audits shall be conducted without materially, unreasonably, or unnecessarily interrupting or interfering with the normal conduct of business affairs of the Subtenant. Subtenant shall reasonably cooperate with Sublandlord and its authorized representatives and/or designees in connection with such audits and shall promptly make available to the Sublandlord and its authorized representatives and/or designees any and all information in Subtenant's possession relating to the Premises that they may reasonably request in connection with such audits.

3.5 Compliance with Ground Lease and Bond Documents.

3.5.1 The terms, covenants, and conditions of the Ground Lease and the Bond Documents applicable to the Premises are hereby incorporated in and made a part of this Sublease with the same force and effect as though set forth at length herein. The terms of this Sublease are subject to the terms and conditions set forth in the Ground Lease. Subject to Subtenant's rights under Section 21.2 of this Sublease, Subtenant shall not take or omit to take any action under this Sublease which would cause the Sublandlord to be in default under the Ground Lease.

3.5.2 Subject to Subtenant's rights under Section 21.2 of this Sublease, the Subtenant shall not:

- (I) take any action inconsistent with the terms of the Ground Lease or the Bond Documents,
- (II) do or permit to be done anything prohibited to the Sublandlord, as Tenant under the Ground Lease, or under the Bond Documents, or which would constitute, with or without the giving of notice or the passage of time or both, an "Event of Default" under the Ground Lease;
- (III) take any action that would adversely affect the validity of the Series 2023 Bonds or the tax-exempt status of interest on the Tax-Exempt Bonds under, or the status of 501(c)(3), as an organization described in Section 501(c)(3) of, the Code, as amended, or
- (IV) take any action, do, or permit anything that would result in any additional cost or other liability to the Sublandlord under the Ground Lease or the Bond Documents.

3.5.3 The Sublandlord shall comply with all covenants and agreements of Tenant under the Ground Lease.

3.5.4 Unless otherwise specifically stated in any provision of this Sublease or the Ground Lease requiring the Subtenant to obtain consent or approval from the Sublandlord, the Sublandlord shall not unreasonably deny, condition, or delay any consent or approval.

ARTICLE 4 FINANCING OF PROJECT

Any financing, other than financings related to the Bonds, which would encumber Sublandlord's Interest in the Site or this Sublease, or any amendment, renewal, refinancing, or refunding of any such financing, shall be subject to the prior written approval of Subtenant, which approval Subtenant may grant or withhold at its sole and absolute discretion, and in no event shall the documents evidencing any such financing encumber the interest of Subtenant in this Sublease or its fee interest in the Site. Excluding Subtenant's obligations to make payments under this Sublease or the Development Agreement, as applicable, (i) University shall not incur or insure any indebtedness with respect to the Project, and (ii) any and all financing for the Project shall (A) not rely on the credit of the University, and (B) shall be non-recourse to the University and the State of Nevada. In connection with any refinancing of the Bonds during the Term of this Sublease and as permitted hereunder, the parties shall mutually agree to allocate any savings associated with any refinancing as may be appropriate to Subtenant. Public money shall not be used to finance any part of the Project.

ARTICLE 5 TAXES AND ASSESSMENTS

5.1 Taxes and Assessments. University, as Landlord under the Ground Lease, is at all times the owner of the Site and the Improvements. In addition, Sublandlord and Subtenant have determined that the use of the Premises pursuant to Article 3, above, is exclusively in furtherance of (i) the educational and charitable purposes of Sublandlord, and (ii) the educational, research and public purposes of University. Accordingly, the parties intend and expect that the subleasehold estate of Subtenant created by this Sublease together with the Premises, will be eligible for exemption under Nevada law from Property and Possessory Interest Taxes.

5.2 Maintenance of Exemption. Subtenant and Sublandlord shall use diligent efforts to maintain exemption of the Premises from Property and Possessory Interest Taxes. Nothing contained in this Sublease is intended to change the degree to which the interest or estate of Subtenant created by this Sublease is subject to Property and Possessory Interest Taxes; however, to the extent any Property or Possessory Interest Taxes or Assessments are assessed, Subtenant and Sublandlord shall have the responsibilities and rights set forth herein.

5.3 Tax Obligations. University will pay all Property and Possessory Interest Taxes and Assessments including without limitation, all real estate taxes, taxes upon or measured by rents, personal property taxes, privilege taxes, gross receipts taxes, excise taxes, parking taxes, business and occupation taxes, gross sales taxes, occupational license taxes, water charges, sewer charges, or environmental taxes or assessments of any kind and nature whatsoever, including any possessory interest tax resulting from the Improvements, the Ground Lease or this Sublease, whether levied by the State of Nevada, the government of the United States, or any agency thereof, or any other governmental body or assessment district during the Term, and whether or not now customary or within the contemplation of the parties hereto, and regardless of whether the same shall be foreseen or unforeseen, similar or dissimilar to any of the foregoing.

**ARTICLE 6
UTILITY SERVICES**

Pursuant to the Development Agreement Subtenant has caused Developer to agree to install, and pursuant to the O&M Agreement Manager has agreed to maintain and repair all facilities necessary to provide utilities to the Premises as more particularly described therein. Sublandlord will have no obligation to provide or pay for utility facilities or utility services to the Premises during the Term, but shall cooperate with Subtenant in obtaining the same. Any facilities necessary to provide utilities to the Premises not provided by the Developer or the Manager for any reason shall be provided by Subtenant.

**ARTICLE 7
COMPLIANCE WITH APPLICABLE LAW AND ORDINANCES**

Throughout the Term, and subject to the terms of the Development Agreement, Subtenant shall, at its sole cost and expenses, promptly comply with Applicable Law respecting the manner in which the Premises is or should be used by Subtenant, including any applicable continuing disclosure obligations.

**ARTICLE 8
LIENS**

Subtenant's rights under this Sublease, as well as the rights of anyone else, including, but not limited to, the rights of the Developer, Manager, the Issuer, the Sublandlord or any mortgagee, architect, independent contractor, assignee, sublessee, subcontractor, prime or general contractor, mechanic, laborer, materialmen, or other lien or claim holder, shall always be and remain subordinate, inferior, and junior to University's fee title, interest, and estate in the Premises. Except as otherwise expressly permitted under the Transaction Documents, Subtenant shall not create or permit to be created or to remain, and shall discharge any lien, encumbrance, or charge levied on account of any mechanic's, laborer's, or materialman's lien, or any security agreement, conditional bill of sale, title retention agreement, chattel mortgage, or otherwise (a "Lien") that might, or does, constitute a lien, encumbrance, or charge upon the Premises, or any part thereof, or the income therefrom, having a priority or preference over or ranking on a parity with the estate, rights, or interest of the Sublandlord in the Premises or any part thereof, or the income therefrom.

**ARTICLE 9
EASEMENTS, ENCUMBRANCES AND COMMON AREAS**

9.1 Subtenant's Rights. Pursuant to the Ground Lease, Subtenant shall have the right, in accordance with Applicable Law, to grant to others in the future nonexclusive utility and/or access easements and licenses over, under, through, across or on the Site in locations that will not unreasonably interfere with the use of the Premises. In the event the installation or maintenance of such future utility lines or access roads in such easements or licenses causes any damage to the Premises, or any portion thereof, including but not limited to, pavement, curbs and sidewalks, Subtenant shall repair the same, or cause the same to be repaired, at Subtenant's expense. At Subtenant's request, Sublandlord shall join in any grant of such an easement and/or

license. In addition, Sublandlord agrees to cooperate with Subtenant in granting or otherwise obtaining any utility, access licenses, easements or other such shared use and maintenance agreements, as may be necessary for the operation of the Project, including without limitation, access over any access roads that may be developed or located on the adjacent portion of the Property not leased to Subtenant hereunder.

9.2 Sublandlord's Rights. Pursuant to the Ground Lease, other than Permitted Encumbrances, Sublandlord shall not suffer or permit any encumbrance on the Site or the Project without Subtenant's consent, in its sole and absolute discretion.

9.3 Compliance with Encumbrances. Subtenant shall comply with all terms and conditions of any encumbrance on the Premises, including payment of any costs and expenses thereunder.

9.4 Common Areas. Subtenant shall perform and be responsible for all normal and ordinary maintenance of the grounds and other property outside of Project as shown on Attachment A-2 (collectively, the "Common Areas"), including landscaping in accordance with the University's landscaping requirements as implemented from time to time, trash removal, snow removal and the maintenance of any access roads on the Site, and shall keep the Common Areas in good working order, condition and repair and in a neat and orderly condition.

ARTICLE 10 OPERATION AND MAINTENANCE OF PROJECT

Upon the Completion of the Project in accordance with the Development Agreement, Subtenant shall operate and maintain the Project and perform, or shall cause the Manager to perform, the O&M Services in accordance with the O&M Agreement. Anything in this Article 10 to the contrary notwithstanding, Sublandlord shall have no obligation to provide the O&M Services.

ARTICLE 11 SECURITY INTEREST

11.1 Further Action and Documents. Subtenant and Sublandlord shall from time to time promptly execute and deliver all further instruments and documents, and take all further action, that may be necessary or desirable, or that either may reasonably request, in order to perfect and protect any pledge, assignment, or security interest granted or purported to be granted by Developer, and/or to enable Sublandlord or Subtenant to exercise and enforce their rights and remedies with respect to any of the Transaction Documents to which Developer is a party.

11.2 Financing Statements. Subtenant hereby authorizes Sublandlord to file one or more financing and/or continuation statements, and amendments thereto, relating to all or any part of the Assigned Agreements without the signature of Subtenant where permitted by Applicable Law. A photocopy or other reproduction of this Sublease or any financing statement covering the Transaction Documents or any part thereof shall be sufficient as a financing statement where permitted by Applicable Law.

11.3 Subtenant May Perform. Subject to the Trustee's rights under the Direct Agreement – Development Agreement, if Developer shall fail to perform any covenant or agreement contained in the Development Agreement, the O&M Agreement or any other Transaction Document to which it is a party, and if such failure shall continue uncured after the giving of notice and the expiration of any applicable cure period, Subtenant may itself elect to perform, or cause the performance of, such covenant or agreement, and Sublandlord hereby assigns to Subtenant any rights it has pursuant to the Development Agreement in connection therewith. Sublandlord hereby irrevocably appoints Subtenant as Sublandlord's attorney-in-fact, with full authority in the place and stead of Sublandlord and in the name of Sublandlord or otherwise, if a default occurs by Developer under the Development Agreement, the O&M Agreement or any other Transaction Document to which it is a party, beyond applicable notice and cure periods, to take any action and to execute any instrument which Subtenant may deem necessary or advisable to accomplish the purposes of this Sublease, the Ground Lease, the Development Agreement and the O&M Agreement, including, without limitation:

11.3.1 To obtain any insurance required pursuant to the Development Agreement, the O&M Agreement and/or any other Transaction Document to which Developer is a party in the event Developer shall fail to obtain such insurance;

11.3.2 To ask, demand, collect, sue for, recover, compromise, receive, and give acquittance and receipts for moneys due and to become due under or in connection with the Development Agreement, the O&M Agreement or any other Transaction Document to which Developer is a party; and

11.3.3 To file any claims or take any action or institute any proceedings which Subtenant may deem necessary or desirable to enforce compliance with the terms and conditions of the Development Agreement, the O&M Agreement and any other Transaction Document to which Developer is a party or the rights of Sublandlord and Subtenant with respect to any of the Transaction Documents to which Developer is a party.

11.4 No Duty. The powers conferred on Subtenant under this Article 11 are solely to protect its interest in the Development Agreement, the O&M Agreement and the other Transaction Documents to which Developer is a party and shall not impose any duty upon it or the Sublandlord to exercise any such powers.

ARTICLE 12 ASSIGNMENT OF SUBLEASE

Subtenant shall not have the right to assign or transfer Subtenant's Interest or any portion thereof or any right or privilege appurtenant thereto, without the prior written consent of Sublandlord, which consent shall not be unreasonably withheld, conditioned or delayed; but subject in all cases to the terms and conditions with respect thereto set forth in the Bond Documents. Any attempt by Subtenant to assign without Sublandlord's consent shall be voidable by Sublandlord and, at Sublandlord's election, shall constitute an Event of Default under this Sublease. The consent by Sublandlord to any assignment shall not constitute a waiver of the necessity for such consent to any subsequent assignment, transfer, hypothecation or subleasing. Notwithstanding the forgoing, University may, without the consent of Sublandlord,

sublease or license portions of the Premises (a) for use by third-parties for office, conference and/or event space, and (b) to third-party operators for the operation of ancillary activities commonly associated with the support of students and faculty in an education setting, including, without limitation, cafes, bookstores, sundry stores, and restaurants so long as such operations are not in violation of any restrictions contained within the Transaction Documents. In the event of any assignment or sublease consented to or permitted under this Article 12, Subtenant shall at all times remain fully liable for all of its obligations set forth under this Sublease, including the obligation to pay Rent.

ARTICLE 13 INDEMNIFICATION

13.1 University Indemnity. Except to the extent caused by the acts or omissions of Sublandlord or any of the Sublandlord Indemnitees (defined below), and solely to the extent limited in accordance with NRS 41.0304 to 41.039, inclusive, Subtenant, to the extent permitted by Applicable Law, hereby releases and agrees to indemnify, defend and hold harmless Sublandlord and all of its officers, employees, directors, agents, and consultants (hereinafter collectively referred to as the “Sublandlord Indemnitees”) of and from any and all third-party claims, demands, liabilities, losses, costs, or expenses for any loss from bodily injury (including death), personal injury, property damage, expenses, taxes and attorneys’ fees (collectively “Claims”), caused by, growing out of, or otherwise happening in connection with the negligent acts or omissions of Subtenant or the Subtenant Indemnitees (as defined below). Subtenant will assert the defense of sovereign immunity as appropriate in all cases, including malpractice and indemnity actions. Subtenant’s indemnity obligation for actions sounding in tort is limited in accordance with the provisions of NRS 41.035.

13.2 Sublandlord Indemnity. Except to the extent caused by the acts or omissions of Subtenant or any of the Subtenant Indemnitees (defined below), Sublandlord to the extent permitted by Applicable Law, subject to Section 24.12, hereby releases and agrees to indemnify, defend and hold harmless Subtenant and all of its regents, officers, employees, directors, agents, and consultants (hereinafter collectively referred to as the “Subtenant Indemnitees”) of and from any and all Claims, caused by, growing out of, or otherwise happening in connection with the negligent acts or omissions of Sublandlord or the Sublandlord Indemnitees.

13.3 Survival. The obligations of Sublandlord and Subtenant under this Article 13 shall survive the expiration or earlier termination of this Sublease or any finding of invalidity or unenforceability thereof unless such finding expressly includes the provisions of this Article 13.

ARTICLE 14 POLICE SERVICES

The Premises shall be subject at all times during the Term to the jurisdiction of the University of Nevada, Reno Police Services and any other law enforcement agencies with jurisdiction.

ARTICLE 15 INSURANCE

Unless required in connection with the Bond Documents, Sublandlord shall not be required to maintain any insurance with respect to the Premises in connection with this Sublease. At all times throughout the Term, Subtenant shall maintain or cause to be maintained for the benefit of Sublandlord, Subtenant and Trustee (to the extent allowed under Applicable Law, as named insureds, as their respective interests may appear), all of the insurance coverages with respect to the Premises in accordance with Attachment C, attached hereto. The Subtenant will annually provide the Sublandlord, on the anniversary date of the Subtenant's insurance coverages, evidence of compliance with Attachment C attached hereto.

ARTICLE 16 DAMAGE AND DESTRUCTION

16.1 Damage or Destruction. Should the Premises be damaged or destroyed, in whole or in part, by fire, flood, earthquake, windstorm, snowstorm or other weather-related event, or by casualty, accident, war, riot, public disorder, acts authorized or unauthorized by the government or any other cause or happening (a "Casualty"), this Sublease shall remain in effect and Subtenant's obligations to pay Rent shall continue unabated.

16.2 Obligation to Restore. Subject to Section 16.3, Subtenant shall continue to use the Premises for educational and other legally permissible purposes, and shall be obligated to promptly restore or replace the Improvements to substantially the same condition thereof as existed prior to the event of such Casualty with such changes, alterations and modifications as may be desired by Subtenant and as will not impair the value or the character of the Project.

16.3 Application of Insurance Proceeds. Notwithstanding anything to the contrary set forth in Section 16.2, if the Net Proceeds of insurance with respect to the Casualty shall be equal to or in excess of \$25,000,000, Subtenant shall cause all such insurance proceeds to be paid to the Trustee and deposited and held in the Insurance Fund and Subtenant shall, within sixty (60) days from the date of such deposit, direct the Trustee to apply such amounts as provided in Section 7.01(c) of the Loan Agreement. Notwithstanding anything to the contrary set forth herein, once the Subtenant is in possession of the insurance proceeds described in this Section 16.3, if the Subtenant does not diligently pursue the restoration or replacement of the Improvements as described in Section 16.2 and in any event does not commence such restoration or replacement within one hundred and twenty (120) days of receipt of such insurance proceeds, then the Subtenant shall cause all such insurance proceeds to be paid to the Trustee and deposited and held in the Insurance Fund.

16.4 Optional Redemption.

16.4.1 If the Project shall have been destroyed or damaged by a Casualty that in the opinion of Subtenant expressed in a certificate furnished to the Issuer and the Trustee that (a) the Project cannot be reasonably restored within a period of eighteen (18) months from the date of the Casualty to the condition thereof immediately preceding the Casualty, or (B) the Project cannot be used for the purposes of which it was constructed for a period of eighteen (18)

consecutive months following the date of the Casualty or (C) the cost of restoration or replacement of the Project would exceed the Net Proceeds of insurance payable in respect of such destruction or damage, Subtenant shall have the option to cause Sublandlord to redeem in full all of the outstanding Bonds within one hundred eighty (180) days of such Casualty at a Redemption Price equal to one hundred percent (100%) of the principal amount thereof plus interest accrued to the redemption date in accordance with Section 3.04 of the Indenture.

16.4.2 In addition, in the event of partial damage or destruction of the Project, the Subtenant shall have the right to cause Sublandlord to redeem all or a portion of the outstanding Bonds within one hundred eighty (180) days of the Casualty in accordance with Section 3.04 of the Indenture to the extent that all or a portion of the Net Proceeds received by Subtenant are not applied to the restoration of the Project if Subtenant furnishes Issuer and Trustee a certificate stating (A) that the property forming a part of the Project that was partially damaged or destroyed is not essential to Subtenant's use or occupancy of the Project at substantially the same revenue-producing level prior to such Casualty; or (B) that the Project has been restored to a condition substantially equivalent to its condition prior to the partial damage or destruction; or (C) that the Subtenant has acquired improvements that are substantially equivalent to the property forming a part of the Project that was partially destroyed or damaged.

16.4.3 If no Bonds shall be outstanding, Subtenant shall be entitled to any remaining Net Proceeds.

16.5 Other. The provisions of this Sublease, including this Article 16, constitute an express agreement between Sublandlord and Subtenant with respect to any Casualty to all or any part of the Premises and any statute or regulation with respect to any rights or obligations concerning damage or destruction in the absence of an express agreement between the parties, and any other statute or regulation, now or hereafter in effect, shall have no application to this Sublease or any damage or destruction to all or any part of the Premises Notwithstanding anything else herein contained, the provisions of the Bond Documents shall control in all respects the receipt, handling, and application of any and all Net Proceeds (before any proceeds are delivered to Subtenant).

ARTICLE 17 CONDEMNATION

17.1 Taking. If, during the Term, the Premises, or any portion thereof or interest therein, shall be appropriated, taken or damaged by reason of the exercise of the power of eminent domain, whether by condemnation proceedings or otherwise, or any transfer thereof shall be made in avoidance of an exercise of the power of eminent domain (all of the foregoing being hereinafter referred to as a "Taking"), this Sublease shall remain in effect and Subtenant's obligations to pay Rent shall continue unabated. Subtenant shall promptly notify the Issuer and Trustee of any such Taking.

17.2 Application of Proceeds From a Taking. Notwithstanding anything to the contrary set forth herein, Subtenant shall cause the Net Proceeds of a Taking to be paid to the Trustee and deposited and held in the Condemnation Fund (as defined in the Indenture) and Subtenant shall,

within sixty (60) days from the date of such deposit, direct the Trustee to apply such amounts as provided in Section 7.02(b) of the Loan Agreement.

17.3 Optional Redemption.

17.3.1 In the event of a Taking of all of the Project, if in the opinion of Subtenant, expressed in a certificate furnished to the Sublandlord, the Issuer and the Trustee, (a) the Project cannot be reasonably restored within a period of eighteen (18) months from the date of Taking to substantially the condition thereof immediately preceding the Taking, or (B) it cannot be used for the purposes of which it was constructed for a period of eighteen (18) consecutive months from the date of Taking, or (C) the cost of restoration or replacement would exceed the Net Proceeds from a Taking, Subtenant shall have the option to cause Sublandlord to redeem in full all outstanding Bonds within one hundred eighty (180) days of such Taking at a Redemption Price equal to one hundred percent (100%) of the principal amount thereof plus interest accrued to the redemption date in accordance with Section 3.04 of the Indenture.

17.3.2 In the event of a partial Taking of the Project, the Subtenant shall have the right to cause Sublandlord to redeem all or a portion of the outstanding Bonds within one hundred eighty (180) days of the Taking in accordance with Section 3.04 of the Indenture to the extent that the Net Proceeds received by Subtenant are not applied to the restoration of the Project or the acquisition of substitute property in accordance with Section 3.04 of the Indenture and Section 7.02 of the Loan Agreement if Subtenant furnishes to Sublandlord, Issuer and Trustee a certificate stating (A) that the property forming a part of the Project that is the subject of the partial Taking is not essential to Subtenant's use or occupancy of the Project at substantially the same revenue-producing level prior to such Taking; or (B) that the Project has been restored to a condition substantially equivalent to its condition prior to the partial Taking; or (C) that the Subtenant has acquired improvements that are substantially equivalent to the property forming a part of the Project that was subject of the partial Taking.

17.3.3 If no Bonds shall be outstanding, Subtenant shall be entitled to any remaining Net Proceeds.

ARTICLE 18 ESTOPPEL CERTIFICATES

18.1 Execution and Delivery. No later than twenty (20) calendar days following receipt of written request therefor, Sublandlord and Subtenant will execute, acknowledge and deliver to the other promptly upon request, a certificate reasonably satisfactory to the recipient certifying as to the following:

18.1.1 Validity of Lease: that this Sublease is unmodified and in full force and effect (or, if there have been modifications, that this Sublease is in full force and effect, as modified, and stating the modifications);

18.1.2 Defaults by Subtenant: that no notice has been given by Sublandlord to Subtenant of any failure to comply under this Sublease that has not been cured, and to the best of its knowledge and belief, no Event of Default exists (or, if there has been any notice given or an Event of Default exists, describing the same); and

18.1.3 Other Matters. Such other matters as may be reasonably requested by the requesting party.

18.2 Reliance on Certificates. Certificates from Sublandlord and Subtenant pertaining to the same matters may be relied upon by the Issuer, Bond Trustee, any holder of a leasehold mortgage or beneficiary of a leasehold deed of trust, prospective bond trustee, any prospective assignee of an interest under this Sublease or by any prospective sublessee as to all or any portion of the Site.

ARTICLE 19 DISPUTE RESOLUTION

19.1 General. In the event of a dispute between the parties to this Sublease with respect to any Event of Default or alleged default by either party, such dispute shall be resolved by litigation initiated and maintained in the State of Nevada or federal courts located in Reno, Nevada.

19.2 Nonbinding Mediation.

19.2.1 Either party may request non-binding mediation of any dispute arising under this Sublease. The non-requesting party may decline the request in its discretion. If there is concurrence that any particular matter shall be mediated, the provisions of this Section shall apply. The costs of the mediator shall be divided equally between Sublandlord and Subtenant.

19.2.2 The mediator shall be a professional mutually acceptable to the parties who has no current or on-going relationship to either party. The mediator shall have full discretion as to the conduct of the mediation. Each party shall participate in the mediation to resolve the dispute until and unless the parties reach agreement with respect to the disputed matter or one party determines in its discretion that its interests are not being served by the mediation.

19.2.3 Mediation is intended to assist the parties in resolving disputes over the correct interpretation of this Sublease. No mediator shall be empowered to render a binding decision.

19.2.4 Nothing in this Section shall operate to limit, interfere with or delay the right of either party under this Article to commence judicial legal proceedings in respect of any dispute under this Sublease, whether in lieu of, concurrently with, or at the conclusion of any non-binding mediation.

19.3 Attorneys' Fees and Costs. In all disputes arising from or related to this Sublease, each party shall pay its own attorneys' fees and costs.

ARTICLE 20
EVENTS OF DEFAULT AND REMEDIES

20.1 Events of Default Defined. The following shall be “Events of Default” under this Sublease, and the terms “Event of Default” or “Default” shall mean, whenever they are used herein, any one or more of the following events:

20.1.1 Subtenant shall fail to pay any Base Sublease Payment, Administrative Expense Reimbursement or Additional Rent, or any portion thereof, and such failure continues for ten (10) days after written notice from Sublandlord.

20.1.2 Subtenant or Sublandlord, as applicable, shall fail to perform or cause to be performed any term, covenant, condition, or provision hereof (other than the nonpayment of Rent), and to correct such failure within thirty (30) days after written notice specifying such failure is given to such party. In the case of any such failure that cannot with due diligence be corrected within such thirty (30) day period but can be wholly corrected within a period of time not materially detrimental to the rights of the other party, it shall not constitute an Event of Default if corrective action is instituted by such party within the applicable period and diligently pursued until the failure is corrected.

20.1.3 Subtenant shall be adjudicated bankrupt.

20.1.4 A permanent receiver shall be appointed for Subtenant’s interest in the Premises and such receiver shall not be removed within ninety (90) days after notice from Sublandlord to Subtenant to obtain such removal.

20.1.5 Subtenant shall voluntarily take advantage of any debtor relief proceedings under any present or future law or shall become subject to any such involuntary proceedings and said involuntary proceedings shall not be dismissed within ninety (90) days after notice from Sublandlord to Subtenant to obtain such dismissal.

20.1.6 Subtenant shall make a general assignment for benefit of creditors.

20.1.7 The Premises or Subtenant’s effects or interests therein shall be levied upon or attached under process against Subtenant, and the same shall not be satisfied or dissolved within ninety (90) days after notice from Sublandlord to Subtenant to obtain satisfaction or dissolution thereof.

20.1.8 Subtenant or Sublandlord is in default under the Development Agreement beyond applicable notice and cure periods, which default results in a termination of the Development Agreement.

20.1.9 Subtenant or Sublandlord is in default under the Ground Lease beyond applicable notice and cure periods.

20.1.10 Any other event that is expressly stated to be an Event of Default elsewhere in this Sublease.

20.2 Remedies. Upon the occurrence of an Event of Default, the non-breaching party (the “Non-Breaching Party”), may pursue the following remedies, all subject to Sections 20.2.3 and 21.1 hereof:

20.2.1 Any remedies it may have under Applicable Law, each and all of which shall be cumulative and nonexclusive.

20.2.2 The Non-Breaching Party may, but shall not be obligated to, make any payment or perform or otherwise cure any obligation, provision, covenant or condition on the party of the party in default (the “Defaulting Party”) part to be observed or performed (and, as applicable, may enter the Premises for such purposes if needed).

20.2.3 It is acknowledged and agreed that upon an Event of Default, and notwithstanding anything to the contrary contained herein, the rights and obligations of the parties shall be subject to the rights and obligations of the parties and Trustee under the Direct Agreement – Sublease.

20.3 No Waiver. No waiver by the Non-Breaching Party of any violation or breach by the Defaulting Party of any of the terms, provisions and covenants herein contained shall be deemed or construed to constitute a waiver of any other or later violation or breach by the Defaulting Party of the same or any other of the terms, provisions, and covenants herein contained. Forbearance by the Non-Breaching Party in enforcement of one or more of the remedies herein provided upon a default by Defaulting Party shall not be deemed or construed to constitute a waiver of such default.

ARTICLE 21 EXPIRATION

21.1 No Early Termination by Subtenant; End of Term. Except as set forth in Section 21.2 and except as a result of an Event of Default under Section 20.1.8 which resulted in the termination of the Development Agreement, this Sublease shall not be terminated for any reason whatsoever by Subtenant until the principal of and premium, if any, and interest on the Bonds have been paid in full as provided in the Indenture, and all other liabilities of the Borrower accrued and to accrue under the Loan Agreement have been paid. Upon (i) the full payment and retirement of the Bonds, and all other liabilities of the Borrower accrued and to accrue under the Loan Agreement, or (ii) termination or expiration of the Ground Lease, the Term hereunder shall automatically end. It is acknowledged and agreed by the parties that this Sublease may be terminated by Sublandlord due to an Event of Default by Subtenant in accordance with Section 20.2 hereof; provided, however that the term of the Ground Lease shall not be affected, changed or otherwise impacted as a result of such termination by Sublandlord or termination by the Subtenant as a result of an Event of Default under Section 20.1.8 and the Ground Lease shall continue in full force and effect pursuant to the terms thereof.

21.2 Fiscal Fund-Out Termination. Notwithstanding any other provision, term or condition of this Sublease to the contrary, Subtenant, pursuant to Article 9, Section 3 of the Nevada Constitution, or any applicable law enacted by the Nevada legislature, may terminate this Sublease in the event any funding authority fails to appropriate funds to enable the

obligations of this Sublease to be fulfilled. If for any reason Subtenant's funding from state and/or federal sources is not appropriated or is withdrawn, limited, or impaired, such that sufficient funding is not available to meet its financial obligations under this Sublease, then Subtenant may terminate this Sublease without penalty ("Fiscal Fund-Out Termination"). Such termination shall be effective thirty (30) days after receipt by Sublandlord (who shall be obligated to provide a copy thereof to Trustee and the Issuer) of written notice from Subtenant to terminate pursuant to this Section 21.2. Subtenant shall not be considered in default of any provision, term or condition of this Sublease by terminating this Sublease pursuant to this Section 21.1. Upon any such Fiscal Fund-Out Termination, the Term of this Sublease shall terminate as provided herein; provided, however, the term of the Ground Lease shall not be affected, changed or otherwise impacted as a result of a Fiscal Fund-Out Termination and the Ground Lease shall continue in full force and effect.

21.3 Prepaid Items Assigned. Except in the event of a Fiscal Fund-Out Termination, upon the end of the Term, all expense items prepaid by Sublandlord or Developer with respect to constructing, operating, maintaining, and protecting the Premises, including, but not limited to, prepaid insurance premiums, and any tax and utility deposits, shall inure to the benefit of and become the property of Subtenant, and to this extent Sublandlord does hereby transfer, assign and convey any such prepaid expense items, and Sublandlord's interest in such prepaid expense items of Developer, to Subtenant, as Landlord under the Ground Lease. Notwithstanding the foregoing, in the event of a Fiscal-Fund Out Termination, Sublandlord shall be entitled to all expense items prepaid by Sublandlord or Developer with respect to constructing, operating, maintaining, and protecting the Premises, including, but not limited to, prepaid insurance premiums, and any tax and utility deposits, shall inure to the benefit of and become the property of Sublandlord.

21.4 Amounts Remaining in Funds and Accounts. Except in the event of a Fiscal Fund-Out Termination, upon the end of the Term, any amounts remaining in any fund, account or reserve created in connection with this Sublease or otherwise related to the maintenance and repair of or the management of the Premises, and any amounts transferred to Sublandlord pursuant to the terms of the Indenture, shall inure to the benefit of and become the property of Subtenant, and to this extent Sublandlord does hereby transfer, assign, and convey any such funds, as well as its interest in any such funds held by Developer, to Subtenant. Notwithstanding the foregoing, in the event of a Fiscal-Fund Out Termination, Sublandlord shall be entitled to any amounts remaining in any fund, account or reserve created in connection with this Sublease or otherwise related to the maintenance and repair of or the management of the Premises, and any amounts transferred to Sublandlord pursuant to the terms of the Indenture, shall inure to the benefit of and become the property of Sublandlord.

21.5 Other Documents and Intangibles. Except in the event of a Fiscal Fund-Out Termination, upon the end of the Term, Sublandlord shall be deemed to have automatically transferred to Subtenant, as of the Termination Date, Sublandlord's interest in all documents and agreements pertaining to or useful in the ownership, operation and maintenance of the Premises, together with all contracts, contract rights, warranties and other intangibles related to, or useful in, the ownership, operation or maintenance of the Premises. Notwithstanding the foregoing, in the event of a Fiscal-Fund Out Termination, Sublandlord shall retain all interest in all documents and agreements pertaining to or useful in the ownership, operation and maintenance of the

Premises, together with all contracts, contract rights, warranties and other intangibles related to, or useful in, the ownership, operation or maintenance of the Premises.

ARTICLE 22 NOTICES

22.1 Addresses. All notices, certificates, demands, requests, or other communications hereunder shall be sufficiently given and shall be deemed given when mailed by certified mail, postage prepaid, return receipt requested, by nationally recognized overnight courier, by personal delivery addressed as follows:

If to Subtenant: NCCD – UNR Properties LLC
 Attn: President
 2630 Exposition Boulevard, Suite 213
 Austin, Texas 78703
 Telephone: (512) 322-9650
 Email: geden@nccdevelopment.org

 With a copy to:
 Holland & Knight LLP
 Attn: Gerald Mace
 511 Union Street, Suite 2700
 Nashville, Tennessee 37219
 Telephone: (615) 850-8912
 Email: gerald.mace@hkllaw.com

If to Sublandlord: University of Nevada, Reno
 Attn: Office of Community & Real Estate Management
 1664 N. Virginia St./MS 243
 Reno Nevada 89557-0243

 With a copy to:

 University of Nevada, Reno
 Attn: General Counsel
 1664 N. Virginia St./MS 550
 Reno Nevada 89557-0550

22.2 Changes. Either party hereto may, by notice given to each of the other, designate any additional or different addresses to which subsequent notices, certificates, demands, requests, or other communications shall be sent.

22.3 Effectiveness. Notwithstanding anything contained herein to the contrary, any notice required to be given by Sublandlord or Subtenant hereunder shall be deemed to have been given and shall be effective as of the date such notice is received or refused reflected on said notice. All notices, certificates, demands, requests, or other communications made by either

party to the other which are required or permitted by the provisions of this Sublease shall be in writing.

ARTICLE 23
SUBMISSION OF MATTERS TO SUBLANDLORD FOR APPROVAL AND
SUBLANDLORD RESERVED RIGHTS

23.1 Sublandlord Approval. Any matter which must be submitted to and consented to or approved in writing by Sublandlord or any matter which must be submitted to Sublandlord which may become effective if not denied by Sublandlord, as required under this Sublease, shall be submitted to Sublandlord in accordance with Section 22.1 hereof. Any review by Sublandlord of any matter submitted to Sublandlord is for Sublandlord's own convenience and purpose only. By undertaking such review, Sublandlord does not obtain or have any liability to Subtenant or any other person, including, without limitation, the insurers and lenders of Subtenant.

23.2 Reserved Rights. Notwithstanding anything to the contrary contained herein, the Sublandlord retains the right to perform the following actions and functions in connection with the Premises:

23.2.1 Those actions with respect to compliance with federal tax and securities law, and the reporting requirements thereunder, that the Sublandlord is authorized or obligated to perform pursuant to, and in accordance with, the provisions of the Bond Documents, including communication with the Issuer and the Trustee regarding the performance of those obligations. The Subtenant agrees to furnish such information as may be reasonably requested by the Sublandlord to assist Sublandlord in fulfilling those obligations.

23.2.2 Those actions with respect to monitoring compliance of the Project and the Bonds with the Bond Documents that the Sublandlord is authorized or obligated to perform pursuant to, and in accordance with, the provisions of the Bond Documents.

23.2.3 Engagement of an independent auditor to prepare, and oversight of the preparation of, annual audits of the Annual Budget (as defined in the Loan Agreement).

23.2.4 The Subtenant agrees to provide Sublandlord such information regarding the Subtenant and the Premises as is reasonably necessary or required by the Bond Documents or Applicable Law to be posted on the Electronic Municipal Market Access website maintained by the Municipal Securities Rulemaking Board (www.emma.msrb.org).

23.2.5 Those actions with respect to the calculation of arbitrage rebate payments in connection with the Tax-Exempt Bonds that the Sublandlord is authorized or obligated to perform pursuant to, and in accordance with, the provisions of the Bond Documents.

23.2.6 The engagement and oversight of the activities of the Sublandlord's insurance consultant to ensure the maintenance of required insurance coverages at commercially-reasonable costs; provided, however, that the insurance requirements set forth in the Ground Lease and this Sublease shall not change.

23.2.7 Those actions with respect to the direction of the investment of the proceeds of the Bonds that the Sublandlord is authorized or obligated to perform pursuant to, and in accordance with, the provisions of the Bond Documents.

23.2.8 Oversight of and participation in any legal proceedings or legal matters regarding the compliance of the Bonds and the Project with the Bond Documents, to the extent that the Sublandlord is authorized or obligated to oversee or participate in such proceedings and matters pursuant to, and in accordance with, the provisions of the Bond Documents; provided, however, that to the extent that such proceedings and matters materially and adversely affect: (i) Subtenant's rights under this Sublease or as Landlord under the Ground Lease; or (ii) the Subtenant's operation of the Premises, the Subtenant shall have the exclusive right to oversee and direct its participation in any such proceedings or matters.

23.2.9 Those actions with respect to responding to inquiries from rating agencies, the Trustee, and the Issuer that the Sublandlord is authorized or obligated to perform pursuant to, and in accordance with, the provisions of the Bond Documents.

ARTICLE 24 MISCELLANEOUS

24.1 No Waiver of Rights by Sublandlord. No failure of Sublandlord to exercise any power given Sublandlord hereunder or to insist upon strict compliance by Subtenant with its undertakings, duties and obligations hereunder, and no custom or practice of the parties hereto at variance with the provisions hereof shall constitute a waiver of Sublandlord's right to demand exact compliance with the provisions contained in this Sublease.

24.2 Rights are Cumulative. All rights, powers, and privileges conferred herein upon both parties hereto shall be cumulative.

24.3 Provisions are Binding Upon Assigns and are Real Covenants. Each of the provisions of this Sublease shall apply to, extend to, be binding upon and inure to the benefit or detriment of not only the parties hereto, but also the legal representatives, successors and permitted assigns of Sublandlord and Subtenant hereto, and shall be deemed and treated as real covenants running with the Site during the Term. The parties further acknowledge and agree that the Trustee and its successors and permitted assigns, shall be deemed third party beneficiaries hereunder. Whenever a reference to the parties hereto is made, such reference shall be deemed to include the legal representatives, successors and permitted assigns of said party, the same as if in each case expressed.

24.4 Separate Rights and Obligations. The rights and obligations of the Subtenant in its capacity as the Subtenant under this Sublease and the rights and obligations of the Sublandlord as the Sublandlord under this Sublease shall be separate from and shall not be limited by, or be deemed a limitation on, the rights and obligations of the Sublandlord in its capacity as Tenant under the Ground Lease or the rights and obligations of the Subtenant in its capacity as Landlord under the Ground Lease.

24.5 Applicable Law and Venue. This Sublease, and all matters arising out of or relating to this Sublease Lease shall be governed, construed, performed and enforced in

accordance with the Applicable Law of the State of Nevada (excluding principles of conflict of law). The exclusive venue for any and all disputes arising out of or in any way related to this Sublease shall be the state or federal courts located in Washoe County, Reno, Nevada.

24.6 All Genders and Numbers Included. Whenever the singular or plural number, or masculine, feminine, or neuter gender is used in this Sublease, it shall equally apply to, extend to, and include the other.

24.7 Invalidity of Provision or Part Thereof. In the event any provision, or any portion of any provision of this Sublease is held invalid, the other provisions of this Sublease and the remaining portion of said provision, shall not be affected thereby and shall continue in full force and effect.

24.8 Time is of the Essence. All time limits stated in this Sublease are of the essence of this Sublease.

24.9 Section Captions are to be Disregarded. The captions of the numbered sections of this Sublease are for purposes of identification and convenience only and are to be completely disregarded in construing this Sublease.

24.10 Entire Agreement Contained Herein. The making, execution and delivery of this Sublease by Subtenant has not been induced by any representations, statements, covenants or warranties by Sublandlord except for those contained in the Transaction Documents. This Sublease and the other Transaction Documents constitute the full, complete and entire agreement between and among the parties hereto; no agent, employee, officer, representative or attorney of the parties hereto has authority to make, or has made, any statement, agreement, representation or contemporaneous agreement, oral or written, in connection herewith modifying, adding to or changing the provisions of this Sublease. No amendment of this Sublease shall be binding unless such amendment shall be in writing and signed by both parties hereto.

24.11 No Partnership or Agency. Nothing in this Sublease is intended, or shall in any way be construed, so as to create any form of partnership or agency relationship between the parties. The parties hereby expressly disclaim any intention of any kind to create any partnership or agency relationship between themselves. Nothing in this Sublease shall be construed to make either party liable for any of the indebtedness of the other, except as specifically provided herein.

24.12 Limitation of Liability. It is expressly understood and agreed that notwithstanding anything in this Sublease to the contrary, the liability of Sublandlord hereunder (including, but not limited to its indemnity obligations) and any recourse by Subtenant against Sublandlord (including, but not limited to its indemnity obligations) shall be limited to the sum of an amount that is equal to the interest of Sublandlord in the Premises plus any Claims covered under available insurance.

24.13 Waiver of Consequential Damages. Except with respect to either party's indemnification obligations under Article 13, to the maximum extent permitted by Applicable Law, Sublandlord and Subtenant each waive all claims against each other, and in no event will either party be liable or responsible to the other party, for any type of incidental, punitive, special, indirect, or consequential damages, including but not limited to, lost revenue or lost

profits, even if advised of the possibility of such damages, arising under theory of contract, tort (including negligence), strict liability or otherwise. This mutual waiver is applicable, without limitation other than each party's indemnification obligations under Article 13, to all consequential damages due to either parties' termination of this Sublease in accordance with its terms.

24.14 Recordation of Memorandum of Sublease. Upon the request of either party, Sublandlord and Subtenant agree that the parties shall execute, seal, acknowledge and deliver, in recordable form, a memorandum of sublease setting forth the basic terms hereof, and that said memorandum of sublease shall be recorded by the Subtenant at the expense of the Sublandlord in the appropriate records of Washoe County, Nevada.

24.15 Counterparts. This Sublease may be executed simultaneously in two or more counterparts, each of which shall be deemed original and all of which, when taken together, shall constitute one in the same document. The signature of any party to any counterpart shall be deemed a signature too, and may be appended to, any other counterpart. The words "execution", "executed", "signed" and "signature" and words of like import in this Sublease shall include images of manually executed signatures transmitted by facsimile or other electronic format (including, without limitation, ".pdf", ".tif" or ".jpg") and other electronic signatures (including, without limitation, DocuSign and AdobeSign). The use of electronic signatures and electronic records (including, without limitation, any contract or other record created, generated, sent, communicated, received or stored by electronic means) shall be of the same legal effect, validity and enforceability as a manually executed signature or use of a paper-based recordkeeping system to the fullest extent permitted by Applicable Law, including, without limitation, the Electronic Signatures in Global and National Commerce Act, any state law based on the Uniform Electronic Transactions Act and the Uniform Commercial Code.

24.16 Preservation of Tax Status of Tax-Exempt Bonds. Sublandlord and Subtenant each agree to not take any action with respect to the Premises that would adversely affect the exclusion of the interest payable on the Tax-Exempt Bonds from gross income for Federal income tax purposes, or would otherwise result in a breach of any representations, conditions, or covenants of Subtenant or Sublandlord as set forth in the Bond Documents.

24.17 Submission of Sublease. Submission of this instrument for examination or signature by Subtenant does not constitute a reservation of or an option for sublease, and it is not effective as a sublease or otherwise until execution and delivery by both Sublandlord and Subtenant.

24.18 Brokers. The parties to this Sublease warrant to each other that neither party dealt with any brokers or finders in connection with the consummation of this Sublease. In the event any broker, agent or finder makes a claim, the party through whom such claim is made shall be solely responsible for any and all claims or liabilities for brokerage commissions or finder's fees arising out of that party's acts in connection with this Sublease to anyone.

24.19 Incorporation. The Attachments attached hereto are hereby incorporated by this reference into this Sublease.

24.20 Authority. Each individual executing this Sublease on behalf of his or her respective party represents and warrants that he or she is duly authorized to execute and deliver this Sublease on behalf of said entity in accordance with the governing documents of such entity, and, subject to the condition precedent in Section 24.28 below, that upon full execution and delivery this Sublease is binding upon said entity in accordance with its terms.

24.21 Drafting. In the event of a dispute between any of the parties hereto over the meaning of this Sublease, both parties shall be deemed to have been the drafter hereof, and any Applicable Law that states that contracts are construed against the drafter shall not apply.

24.22 No Third Party Beneficiaries. Except as otherwise expressly stated herein, nothing in this Sublease is intended or shall be construed to confer upon any person other than the Trustee, the Issuer, and the parties hereto any legal or equitable rights or remedies under or by reason of this Sublease or any provision contained herein.

24.23 No Merger. If under any circumstances both Sublandlord's and Subtenant's estates in the Site, or any portions thereof, become vested in the same owner, this Sublease nevertheless shall not be extinguished by application of the doctrine of merger except until the principal of and premium, if any, and interest on the Bonds has been paid or is deemed paid within the meaning of the Indenture.

24.24 Reasonable Expenditures. Any expenditure by a party permitted or required under this Sublease, for which such party is entitled to demand and does demand reimbursement from the other party, shall be limited to the fair market value of the goods and services involved, shall be reasonably incurred, and shall be substantiated by documentary evidence.

24.25 Survival. All representations, obligations, indemnities, warranties, covenants, conditions and agreements contained in this Sublease which are either expressed as surviving the expiration or earlier termination of this Sublease or, by their nature, are to be performed or observed, in whole or in part, after the termination or expiration of this Sublease, shall survive the termination or expiration of this Sublease.

24.26 Quiet Enjoyment. Provided Subtenant shall pay the Base Sublease Payment, Additional Rent, and other expenses required to be paid by Subtenant as provided herein and keep and perform all of the terms and obligations hereof, Subtenant shall peaceably possess and quietly enjoy the Premises without hindrance or interruption, subject only to the terms hereof, and Applicable Law.

24.27 Reservation. Nothing contained in this Sublease shall be construed to waive or limit University's right to assert the defense of sovereign immunity, which defense is hereby expressly reserved, nor to waive or limit the protections afforded to University under NRS 41.0305 to 41.039.

24.28 Contingent on Board of Regents' Approval. Effectiveness of this Sublease is contingent upon approval by the Board of Regents of the Nevada System of Higher Education in their sole and absolute discretion. If the Board of Regents, in their sole and absolute discretion,

do not approve the terms hereof, this Sublease shall be deemed null and void without the necessity of further documentation and shall be deemed to be of no binding effect whatsoever.

*Remainder of page intentionally left blank.
Signatures on the following page.*

WHEREFORE, the parties have executed this Sublease as of the date first above written.

Sublandlord

NCCD- UNR PROPERTIES LLC,
a Nevada limited liability company

By _____
Name: Charles G. Eden
Title: President

Subtenant

**BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON
BEHALF OF THE UNIVERSITY OF NEVADA, RENO,**

Recommended by:

Brian Sandoval
President, University of Nevada, Reno

Date: _____

Approved by:

Dale Erquiaga
Acting Chancellor,
Nevada System of Higher Education

Date: _____

ATTACHMENT A-1

LEGAL DESCRIPTION OF SITE

[Attached]

Attachment A-1

EXHIBIT "A"

All that certain real property situate within a portion of the Southeast one-quarter (SE1/4) of Section 2, Township 19 North, Range 19 East, M.D.M., Washoe County, State of Nevada, being a portion of all that real property described in Deed Document No. 4987441 recorded December 31, 2019; Deed Document No. 4184259 recorded December 13, 2012; Deed Document No. 4586772 recorded May 5, 2016; Deed Document No. 4689119 recorded March 22, 2017; Deed Document No. 4184064 recorded January 13, 2012 and Deed Document No. 5135029 recorded January 29, 2021 together with all that real property described in Deed Document No. 3051779 recorded June 10, 2004; Deed Document No. 4606191 recorded July 1, 2016; Deed Document No. 2969488 recorded December 16, 2003, and together with a portion of the abandoned alleyway described in Deed Document No. 5073326, recorded September 4, 2020, Official Records of Washoe County, State of Nevada, being more particularly described as follows:

BEGINNING at the northeasterly corner of said Parcel described in said Deed Document No. 3051779, also being a point on the southerly right-of-way line of East 9th Street and the westerly right-of-way line of University Way;

THENCE along said westerly right-of-way line, South 12°57'58" East, 370.00 feet to a point on the northerly right-of-way line of East 8th Street;

THENCE along said northerly right-of-way line, South 77°02'02" West, 272.48 feet to a point on the easterly right-of-way line of North Virginia Street as described in Quitclaim Deed Document No. 5135029 recorded January 29, 2021;

THENCE along said easterly right-of-way line, the following three (3) courses and distances:

1. North 58°00'14" West, 7.19 feet;
2. North 13°00'14" West, 14.69 feet;
3. North 03°32'30" West, 69.35 feet;

THENCE departing said easterly right-of-way line, North 76°59'46" East, 78.16 feet to the beginning of a curve to the left having a radius of 48.50 feet;

THENCE along said curve at a distance of 76.18 feet, and through a central angle of 90°00'00";

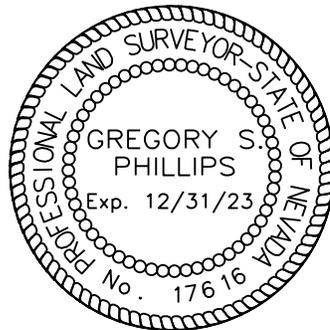
THENCE North 13°00'14" West, 233.25 feet to a point on the southerly right-of-way line of East 9th street;

THENCE along said southerly right-of-way line, North 77°02'30" East, 139.75 feet to the **POINT OF BEGINNING**, and end of this description.

Containing 63,946 square feet, more or less.

The Basis of Bearings for this description the Nevada Coordinate System of 1983, West Zone, NAD 83/94, modified to ground using the combined scale factor of 1.000197939.

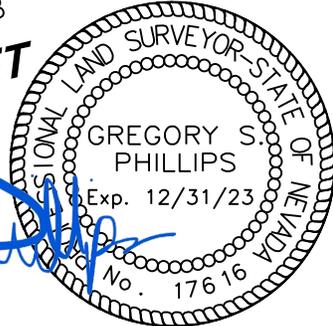
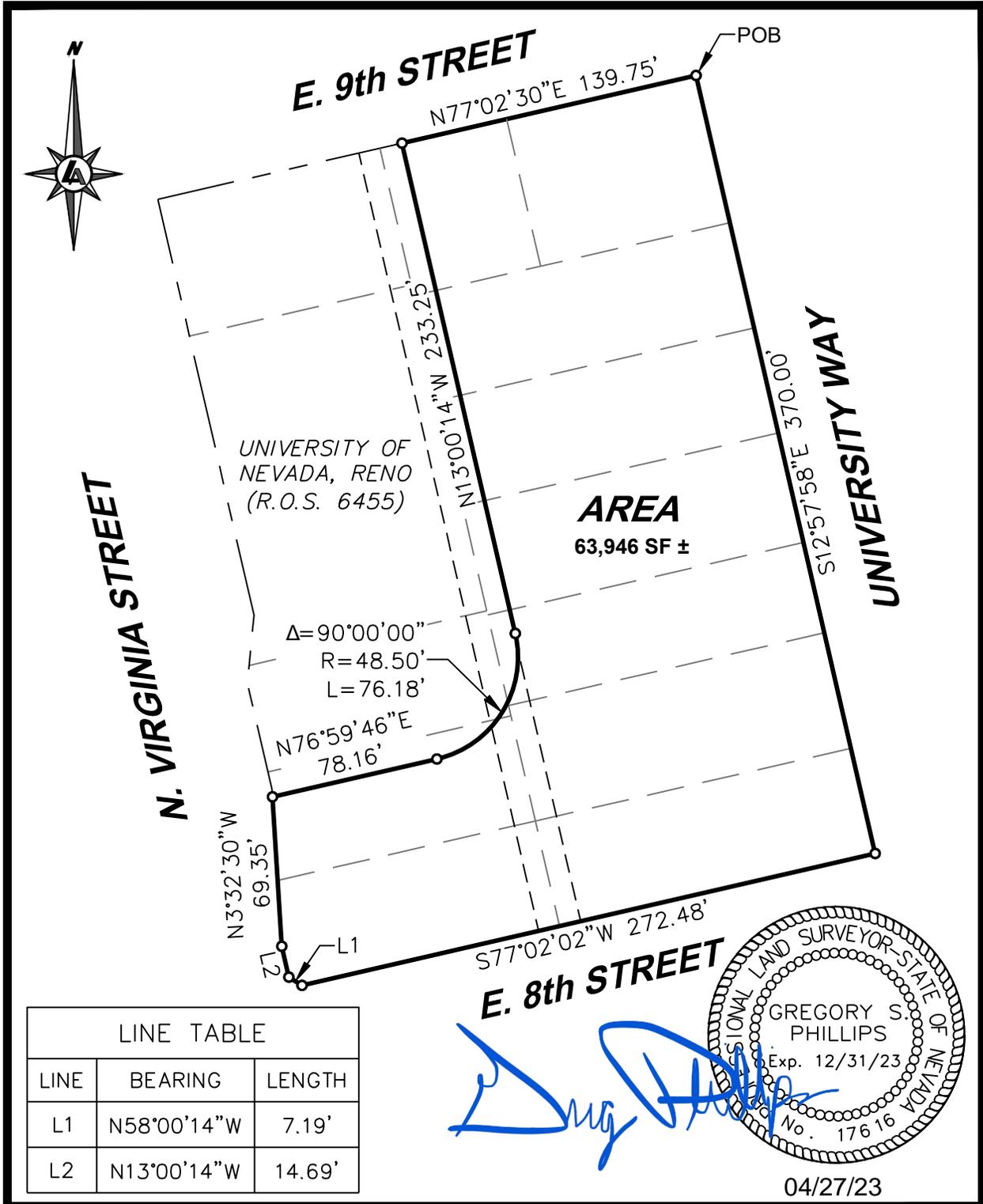
Refer to Exhibit "B" attached hereto and by this reference made a part of.



A handwritten signature in blue ink, appearing to read "Greg Phillips". The signature is stylized and written in a cursive-like font.

04/27/23

Prepared by:
Lumos & Associates, Inc.
Gregory S. Phillips, P.L.S. 17616
308 N. Curry Street
Suite 200
Carson City, NV 89703



04/27/23

LUMOS & ASSOCIATES
 308 N. CURRY ST., SUITE 200
 CARSON CITY, NV 89703
 TEL (775) 883-7077

EXHIBIT "B"
UNIVERSITY OF NEVADA, RENO
PORTION OF SEC. 2, T.19N, R.19E, M.D.M.
RENO NEVADA

Date: 04/2023
 Scale: 1" = 70'
 Job No: 10803.002
 Drawn By: DMS

ATTACHMENT A-2

SITE MAP

[Attached]

Attachment A-2

ATTACHMENT B

PAYMENT SCHEDULE

(This Schedule is Projected Payments Based on Pro-Forma)

<i>Monthly</i>	
Date	Base Sublease Payments (in the thousands & rounded)
1-Jul-23	\$ -
1-Aug-23(the " Base Sublease Payment Commencement Date ")	\$ 992.47
1-Sep-23	\$ 992.47
1-Oct-23	\$ 992.47
1-Nov-23	\$ 992.47
1-Dec-23	\$ 992.47
1-Jan-24	\$ 823.40
1-Feb-24	\$ 823.40
1-Mar-24	\$ 823.40
1-Apr-24	\$ 823.40
1-May-24	\$ 823.40
1-Jun-24	\$ 823.40
1-Jul-24	\$ 860.90
1-Aug-24	\$ 860.90
1-Sep-24	\$ 860.90
1-Oct-24	\$ 860.90
1-Nov-24	\$ 860.90
1-Dec-24	\$ 860.90
1-Jan-25	\$ 822.51
1-Feb-25	\$ 822.51
1-Mar-25	\$ 822.51
1-Apr-25	\$ 822.51
1-May-25	\$ 822.51
1-Jun-25	\$ 822.51
1-Jul-25	\$ 837.68
1-Aug-25	\$ 837.68
1-Sep-25	\$ 837.68
1-Oct-25	\$ 837.68
1-Nov-25	\$ 837.68
1-Dec-25	\$ 837.68
1-Jan-26	\$ 837.68
1-Feb-26	\$ 837.68
1-Mar-26	\$ 837.68
1-Apr-26	\$ 837.68

1-May-26	\$	837.68
1-Jun-26	\$	837.68
1-Jul-26	\$	837.68
1-Aug-26	\$	837.68
1-Sep-26	\$	837.68
1-Oct-26	\$	837.68
1-Nov-26	\$	837.68
1-Dec-26	\$	837.68
1-Jan-27	\$	837.68
1-Feb-27	\$	837.68
1-Mar-27	\$	837.68
1-Apr-27	\$	837.68
1-May-27	\$	837.68
1-Jun-27	\$	837.68
1-Jul-27	\$	837.68
1-Aug-27	\$	837.68
1-Sep-27	\$	837.68
1-Oct-27	\$	837.68
1-Nov-27	\$	837.68
1-Dec-27	\$	837.68
1-Jan-28	\$	837.68
1-Feb-28	\$	837.68
1-Mar-28	\$	837.68
1-Apr-28	\$	837.68
1-May-28	\$	837.68
1-Jun-28	\$	837.68
1-Jul-28	\$	837.68
1-Aug-28	\$	837.68
1-Sep-28	\$	837.68
1-Oct-28	\$	837.68
1-Nov-28	\$	837.68
1-Dec-28	\$	837.68
1-Jan-29	\$	837.68
1-Feb-29	\$	837.68
1-Mar-29	\$	837.68
1-Apr-29	\$	837.68
1-May-29	\$	837.68
1-Jun-29	\$	837.68
1-Jul-29	\$	837.68
1-Aug-29	\$	837.68
1-Sep-29	\$	837.68
1-Oct-29	\$	837.68
1-Nov-29	\$	837.68
1-Dec-29	\$	837.68

1-Jan-30	\$	837.68
1-Feb-30	\$	837.68
1-Mar-30	\$	837.68
1-Apr-30	\$	837.68
1-May-30	\$	837.68
1-Jun-30	\$	837.68
1-Jul-30	\$	837.68
1-Aug-30	\$	837.68
1-Sep-30	\$	837.68
1-Oct-30	\$	837.68
1-Nov-30	\$	837.68
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1-Jul-53	\$	-
Total		301,464

ATTACHMENT C

INSURANCE REQUIREMENTS

C.1. University's Insurance. At all times throughout the Term of this Sublease, University, at its sole cost and expense, shall maintain or cause to be maintained, the following insurance coverages:

C.1.1. Liability. A self-insurance program in accordance with and sufficient to cover the University's liability under the provisions of NRS Chapter 41, as amended from time to time;

C.1.2. Excess. An excess liability policy in an amount determined annually by the State of Nevada. Such policy, shall, if permitted by the State of Nevada, name Sublandlord as an additional insured;

C.1.3. Premises Liability. University shall obtain and maintain a premises liability insurance policy for the Premises, in an amount sufficient to cover the difference between the University's statutory liability limits and the self-insured retention amount of the excess liability insurance policy required under Section C.1.2 of this Attachment C; provided, that in all cases not to exceed a Five Million U.S. Dollars (\$5,000,000.00) annual policy limit. The policy required under this Section C.1.3 shall name both University and Sublandlord as named insureds;

C.1.4. Property. University shall obtain and maintain an all risk property insurance policy, insuring loss or damage to the Premises. The amount of such insurance shall be equal to the full replacement costs of the Premises, as the same shall exist from time to time. Such policy shall insure against physical loss or damage, including the perils of fire, flood and earthquake and include coverage for any additional costs related to debris removal and related standard extra expenses. University shall maintain sufficient funds to cover any self-insured retention amounts under the property policy, and shall be solely responsible for any related deductibles.

C.1.5. University shall be responsible to provide property insurance on its contents within the Premises; and

C.1.6. Workers Compensation. University shall maintain workers compensation insurance as required by NRS 616B.627, and employer's liability insurance in an amount not less than One Million U.S. Dollars (\$1,000,000.00).

C.2. Waiver of Subrogation. All insurance policies obtained and maintained as required under Section C.1 of this Attachment C shall include a waiver of subrogation in favor of the Sublandlord.

C.3. Sublandlord's Insurance. University insurance hereunder shall be primary and non-contributory to any insurance carried by the Sublandlord. Any additional insurance carried by Sublandlord shall not reduce the insurance carried by University, nor cause Sublandlord to become a coinsurer under the insurance carried by University under this Sublease.

C.4. Policy Form, Content, Insurer. All or any portion of the coverages University is
Attachment C, 1

required to maintain under this Attachment C may be maintained under a program of self-insurance or under policies that include self-insured retentions or deductibles larger than those typically carried by similarly situated subtenants. University shall advise Sublandlord of any self-insurance program, self-insured retentions or deductibles. Alternatively, University shall be permitted to provide the insurance under this Attachment C by obtaining a blanket policy or policies to be maintained by University. The coverages afforded to Sublandlord under this Attachment C shall in no way be limited, diminished, or reduced under such blanket policy or policies. All such policies shall be nonassessable and shall contain language, to the extent obtainable, to the effect that (a) any loss shall be payable notwithstanding any act or negligence of Sublandlord or any of Sublandlord's agents and representatives that might otherwise result in a forfeiture of the insurance, (b) the insurer waived the right of subrogation against Sublandlord and against Sublandlord's agents and representatives, (c) the policies are primary and noncontributing with any insurance that may be carried by Sublandlord, and (d) they cannot be canceled or materially changed except after thirty (30) days' notice by the insured to Sublandlord or Sublandlord's designated representative. Prior to the Effective Date, University shall furnish Sublandlord with certificates evidencing the insurance.

ATTACHMENT 1.7.3
(cover page)

Form of Disbursement Agreement

See form of Disbursement Agreement appended behind this cover page.

DISBURSEMENT AGREEMENT

This Disbursement Agreement (the “Agreement”) is dated for reference purposes as of _____, 2023 (the “Effective Date”), and is entered into by and between **NCCD – UNR Properties LLC** (the “Borrower”), a Nevada limited liability company, and **UNR/Edgemoor Gateway Partners LLC**, a Maryland limited liability company (“Developer”).

RECITALS

THIS AGREEMENT is made with reference to the following facts and circumstances:

A. Pursuant to the Development Agreement, dated as of [•], 2023 (the “Development Agreement”), by and among the Board of Regents of the Nevada System of Higher Education, on behalf of the University of Nevada, Reno (the “University”), Borrower and Developer, Developer has agreed to develop, design and construct certain COB Improvements (as defined in the Development Agreement) on certain real property located in Reno, Nevada (as described and defined in the Development Agreement, the “Site”). The Site is owned by the University and leased to Borrower pursuant to a Ground Lease dated _____, 2023 (the “Ground Lease”), between University, as landlord, and Borrower, as tenant.

B. Any COB Improvements constructed as part of the COB Project (as defined in the Development Agreement) shall vest in the University, and such COB Improvements shall thereafter be subject to the terms of the Ground Lease and the Sublease Agreement dated _____, 2023 (the “Sublease”), between Borrower, as sublandlord, and University, as subtenant .

C. Pursuant to the Development Agreement, Borrower has agreed to obtain funding for construction of the COB Project by (i) causing to be issued those certain National Finance Authority Lease Revenue Bonds (University of Nevada Reno – College of Business Project) Series 2023 (the “Bonds”) pursuant to the Trust Indenture, dated as of [•], 2023 (the “Indenture”), by and between National Finance Authority, as issuer (“Issuer”), and U.S. Bank Trust Company, National Association, as trustee (“Trustee”), and (ii) borrowing the proceeds of the Bonds (“Proceeds”) from Issuer pursuant to the Loan Agreement, dated as of [•], 2023 (the “Loan Agreement”) by and between Issuer and Borrower.

D. Pursuant to the Indenture, the Loan Agreement and the Development Agreement, a portion of the Proceeds equal to the COB Project Fund Amount (as defined in the Development Agreement) is being held by the Trustee under the Indenture in the Project Fund (as defined in the Indenture), and the COB Project Fund Amount is to be disbursed, upon written requisition by Borrower to Trustee, to pay Borrower for the development, design, and construction of the COB Project as specified in the Development Agreement. This Agreement sets forth the obligations of Developer, Borrower and Trustee with respect to disbursements to Developer of Proceeds in the Project Fund (“Disbursements”) and the conditions precedent to the making of Disbursements.

E. Developer is entering into the Development Agreement in reliance upon the undertakings of Borrower and Trustee in this Agreement.

F. Capitalized terms used herein and not otherwise defined herein shall have the meanings ascribed thereto in the Development Agreement and the Indenture.

AGREEMENT

WHEREFORE, the parties agree as follows:

1. Disbursement Procedures and Requirements.

1.1 Funding of Project Fund. On the date of issuance of the Bonds, Borrower shall cause a portion of the Proceeds in an amount equal to the COB Project Fund Amount to be deposited in the Project Fund. Within five (5) Business Days (“Business Days” shall mean any day other than a Saturday, Sunday or Nevada or federal legal holiday) after written request from Developer, from time to time, Borrower shall provide Developer with a complete and accurate copy of any statement Borrower receives showing the balance of funds in the Project Fund (an “Account Statement”).

1.2 Limitations on Use of COB Project Fund Amount. No moneys in the Project Fund shall be used for any purpose other than for Disbursements pursuant to this Agreement. The Project Fund shall be invested only in investments expressly permitted by the Indenture. Any earnings on investments of the Project Fund shall be deposited in such other account as may be specified in accordance with the Loan Agreement and the Indenture. Such earnings are not intended to be added to the Project Fund. Provided Developer has given Borrower notice (in a Draft Requisition defined below or otherwise), not less than five (5) Business Days prior to a Disbursement Due Date, as defined below, of the approximate amount of the Disbursement requested to be paid on such Disbursement Due Date, Borrower shall assure that there are sufficient cash proceeds in the Project Fund available for that Disbursement, notwithstanding any investment losses.

1.3 Requisition Procedure.

(a) Each month prior to full payment of the COB Project Fund Amount, Developer may submit to Borrower a draft requisition certificate (a “Draft Requisition”) requesting a disbursement of funds from the Project Fund, substantially in the form of Exhibit A attached hereto. On any date that is five (5) or more Business Days after a Draft Requisition shall have been submitted, Developer may submit to Borrower a final requisition certificate (a “Requisition Certificate”) requesting a disbursement of funds from the Project Fund, substantially in the form of Exhibit B attached hereto.

(b) Each Requisition Certificate shall be an Officers’ Certificate of Developer, and (except for the Requisition Certificate for the Initial Disbursement, as defined below) shall specify the percentage of completion, as of the last day of the month to which such Requisition Certificate relates, of each line item in the Schedule of Values and the amount payable for each such line item based on such percentage of completion and the Schedule of Values.

(c) Not later than five (5) Business Days after Borrower shall have received a Requisition Certificate pursuant to this Section 1.3, Borrower shall either:

(1) if all applicable conditions set forth in this Agreement are satisfied, provide to the Trustee and Developer a Trustee Requisition in the form of Exhibit C attached to the Indenture (“Trustee Requisition”) instructing the Trustee to disburse funds from the Project Fund in the amounts, and to the payees, specified in the Requisition Certificate with respect to any amounts of such Requisition Certificate that are not disputed; or

(2) as to any disputed amounts, return such Requisition Certificate to Developer accompanied by a statement (“Objection Statement”) specifying which items Borrower believes are not eligible for payment under this Agreement or what conditions to the requested disbursement have not been satisfied, and indicating such corrections as in its judgment are necessary for resubmission thereof.

(d) It is anticipated that the monthly schedule for Requisition Certificates and Disbursements shall be as follows:

(1) Draft Requisition submitted on or about the 25th day of the subject month;

(2) Progress meeting not later than three (3) Business Days after receipt of the Draft Requisition of the subject month to review the Draft Requisition;

(3) Final Requisition Certificate submitted on or about the 1st day of the month following the subject month;

(4) Trustee Requisition submitted on or about the 5th day of the month following the subject month; and

(5) Disbursement made on or about the 10th day of the month following the subject month.

1.4 Payment Disputes. In the event of any dispute as to the eligibility of any item for payment under this Agreement, or as to any other matter relating to payment of Disbursements, either Developer or Borrower may elect to refer such dispute to resolution in accordance with the terms of hereunder. If a dispute exists, or if a condition in Section 2.2 or Section 2.3 is not satisfied, with respect to only a portion of the amount requested in a Requisition, the undisputed amounts (or the amounts as to which all such conditions are satisfied) shall be paid and only the disputed amounts may be withheld pending resolution of the dispute or satisfaction of the condition.

1.5 Required Retainage. Each Requisition Certificate shall reflect a retainage of five percent (5%) of all Subcontractor Costs with respect to each Building or other COB Improvements, as identified in the Schedule of Values (the “Retainage”), subject to release upon Completion of each such Building or other COB Improvements in accordance with Section 3.3 below. Once Developer has received Disbursements for any particular Building or other COB Improvements equal to fifty percent (50%) of the costs set forth in the Schedule of Values for such particular Building or other COB Improvements, no further Retainage shall be held back from any future Disbursements with respect to such Building or other COB Improvements; except that if,

and while, at that time (i) there is an existing Event of Default by Developer; (ii) the Developer is proceeding according to a Recovery Schedule pursuant to Section 5.15(c) of the Development Agreement; or (iii) the Developer and Borrower are negotiating a Proposed Recovery Schedule pursuant to Section 5.15(c) of the Development Agreement, the Borrower may, in its absolute and sole discretion, elect to continue to withhold five percent (5%) retainage or less, except if the Developer is proceeding under a Recovery Schedule that was made necessary solely by an act of the University or the Borrower, the Borrower may not elect to continue to hold five percent (5%) retainage. Notwithstanding the foregoing, at the Borrower's sole and exclusive discretion, Developer may satisfy the Retainage requirements set forth above by providing satisfactory alternative security to Borrower pursuant to a mutually agreed upon written agreement ("Alternative Security"). If Borrower consents and Developer elects to provide Alternative Security, then the amount of a Disbursement shall not be reduced by the Retainage, provided that, as of the date of such Disbursement, Alternative Security shall have been provided in the amount required by this Section 1.5.

1.6 Unincorporated Materials. The percentage of completion of a line item in the Schedule of Values may, for purposes of a Requisition Certificate, include Unincorporated Materials (as defined below), including costs of applicable insurance, storage and transportation to the Site for materials and equipment stored off the Site, provided that:

(a) The Requisition Certificate therefor shall describe the Unincorporated Materials in reasonable detail by types or items, identifying the same as Unincorporated Materials, shall state that such Unincorporated Materials are secured; protected from damage, theft, and the elements (as required by the Development Agreement); segregated; and identifiable and shall set forth the complete address of the place of storage of any such Unincorporated Materials stored off the Site;

(b) Borrower shall have received a certificate executed by Developer to the effect that it has made such examinations of such Unincorporated Materials as are reasonably necessary, that they are in compliance with the Final Construction Documents, that such Unincorporated Materials are covered by casualty insurance as required pursuant to the Development Agreement, and that, subject only to the payment of the purchase price of such materials to be made out of the proceeds of such Disbursement, Developer has good title thereto, free from any lien; and

(c) Developer shall comply with procedures satisfactory to the University and Borrower to establish Developer's title to such materials and equipment, or otherwise to protect Developer's interest.

The term "Unincorporated Materials" means (i) materials and other personal property purchased or manufactured for incorporation into the COB Improvements in accordance with the Final Construction Documents but, at the time a disbursement is made hereunder to pay the costs thereof, not yet incorporated into the COB Improvements, (ii) personal property to be installed in or used in connection with the COB Project in accordance with the Final Construction Documents but not intended to be incorporated into the COB Improvements, and (iii) in either case, either (A) have been secured and segregated, or (B) are in the custody or control of Developer.

2. Conditions to Funding of Disbursements. The following are the conditions precedent applicable to Disbursements:

2.1 Initial Disbursement. Borrower shall not be obligated to cause the Initial Disbursement unless and until it shall have received the following items:

(a) Borrower shall have received from Developer a Requisition Certificate requesting the subject Disbursement.

(b) An executed copy of the Design-Build Agreement;

(c) An executed Collateral Assignment of Design-Build Agreement in accordance with Section 5.24 of the Development Agreement;

(d) other evidence reasonably required by Borrower of amounts incurred by Developer in connection with the COB Project; and

(e) Any other conditions to Borrower's obligation to cause the Initial Payment to be made, which are not set forth above but are expressly included in the Development Agreement have been satisfied or waived.

2.2 All Disbursements. Borrower shall not be obligated to cause any Disbursement prior to satisfaction and prior written certification of each of the following conditions:

(a) Borrower shall have received from Developer a Requisition Certificate requesting the subject Disbursement, together with written certification by Developer that, based on Developer's review of the most recently received Account Statement (and without regard to any investment losses referred to in the last sentence of Section 1.2), the amounts then remaining in the Project Fund are sufficient to pay for the remaining work to construct the COB Improvements in accordance with the Final Construction Documents;

(b) With respect to any Major Payee (as defined below), Borrower shall have received from Developer a conditional claim/lien release (in the form of Exhibit D) as to amounts to be paid with the proceeds of the subject Disbursement, and an unconditional claim/lien release as to amounts payable to such Major Payee in previous months (the term "Major Payee" means any material supplier, subcontractor, laborer or service provider which (i) has a right under applicable Laws to a lien for unpaid amounts related to the COB Project, and (ii) is expected to be paid an aggregate amount in excess of \$100,000 in connection with the COB Project);

(c) No Event of Default by Developer under Section 9.2 of the Development Agreement shall have occurred and remain uncured;

(d) Borrower shall have received from Developer (i) with respect to any item that Developer is required to deliver under Section 2.1, above, any update of any such item, and (ii) a list of the names and addresses of all material dealers, laborers and subcontractors with whom agreements have been made by the Design Builders and/or Developer to deliver materials to and/or perform work on the Site;

(e) In connection with any Disbursement to be used to pay the costs incurred by Developer for the COB Project, Borrower shall have received from Developer a written confirmation, or otherwise confirmed that (i) to date the COB Project has been constructed substantially in accordance with the Final Construction Documents, and (ii) the present state of construction of the Buildings then under construction will, barring any unforeseen and unknown delays, permit completion of such Buildings in accordance with the Final Construction Documents on or before the applicable Completion Date for such Buildings; and

(f) No lien related to the COB Project shall have been recorded against the Site and no stop notice or notice to withhold related to the COB Project shall have been served on the Trustee or Borrower that has not been removed, vacated or bonded in a manner reasonably satisfactory to Borrower.

2.3 Disbursement upon Completion. With respect to each particular Building or other COB Improvements, Borrower shall not be obligated to cause the Disbursement for such Building or other COB Improvements upon the Completion thereof prior to satisfaction of each of the following conditions:

(a) A Certificate of Occupancy, if applicable, or its equivalent shall have been issued for such Building or other COB Improvements in accordance with the Development Agreement;

(b) Borrower shall have received reasonable evidence of lien free Completion of such Building or other COB Improvements as may be reasonably required by Trustee; and

(c) Borrower shall have received unconditional lien releases from all material suppliers, subcontractors, laborers or service providers with respect to such Building or other COB Improvements.

3. Funding of Disbursements.

3.1 In General. Subject to satisfaction of the applicable conditions precedent and the terms of Section 1.4 regarding Requisition Certificate items in dispute, Borrower shall (a) deliver to Trustee a Trustee Requisition respecting amounts requested in the Requisition Certificate within five (5) Business Days after Borrower's receipt of the Requisition Certificate, and (b) use reasonable efforts to enforce Trustee's disbursement obligations under the Indenture to cause a Disbursement to be made to Developer to the account(s) designated by Developer, within five (5) Business Days after the Trustee's receipt of a properly executed Trustee Requisition from Borrower (each, a "Disbursement Due Date"). If any items in a Requisition Certificate are the subject of an Objection Statement, all amounts requested in the Requisition Certificate shall nevertheless be paid, excepting only such items as are subject to an Objection Statement.

3.2 Initial Disbursement. Not less than ten (10) Business Days prior to the Financial Closing Date (as defined in the Development Agreement), Developer shall submit a Requisition Certificate requesting Disbursement of amounts incurred or earned by Developer relating to services performed prior to Financial Close of Escrow (the "Initial Disbursement").

The Initial Disbursement shall be paid on the Financial Closing Date. The terms of this Section 3.2 supersede, as to the Initial Disbursement, any contrary terms in Section 1.3 with respect to timing.

3.3 Disbursements on Completion; Deferred Items. Upon issuance of a Determination of Completion Certificate for any particular Building or other COB Improvements, satisfaction of the applicable conditions set forth in Section 2.3, and Developer's submission of a Requisition Certificate requesting payment of the Retainage for such Building or other COB Improvements, Borrower shall deliver to Trustee a Trustee Requisition respecting amounts requested in such Requisition Certificate and cause Disbursement to be made to Developer, or the party or parties designated as payees in the Requisition Certificate, within five (5) Business Days after Borrower's receipt of such Requisition Certificate; provided, however, that an amount equal to one-hundred fifty percent (150%) of the costs expected to be incurred to complete any applicable Deferred Items and all items necessary to achieve Final Completion in accordance with the Development Agreement with respect to any such Building or other COB Improvements (the "Punch List Holdback Amount"), may be withheld to pay Disbursements relating to Deferred Items for such Building or other COB Improvements. The Punch List Holdback Amount shall be disbursed, from time to time, upon completion of the respective Deferred Items and all items necessary to achieve Final Completion for such Building or other COB Improvements, and submission of Requisition Certificates therefore, in an amount equal to one-hundred fifty percent (150%) of the estimated cost of such items.

3.4 Allocation of Amounts Remaining in Project Fund. If, after payment of the entire COB Project Fund Amount pursuant to this Agreement, funds remain in the Project Fund, such remaining funds shall be disbursed one hundred percent (100%) to Borrower and used in accordance with the Loan Agreement and the Indenture; Developer shall have no further right or claims with respect thereto.

4. RESERVED.

5. Borrower's Covenants. Borrower shall not amend or modify the Loan Agreement, or waive any of its rights thereunder, in any manner which could impair the rights of Developer under this Agreement. Borrower shall not assign any rights under the Loan Agreement or this Agreement without Developer's prior written consent, except to a permitted assignee of Borrower's rights and obligations under the Development Agreement. Until the payment in full of all amounts payable to Developer hereunder, Borrower shall not permit the use of funds in the Project Fund (except any net earnings on such funds in excess of the COB Project Fund Amount) for any purpose other than payment of Disbursements pursuant to this Agreement.

6. Trustee's Agreement. Trustee, for the benefit of Developer, agrees to honor and promptly cause to be paid, all Trustee Requisitions duly submitted by Borrower in accordance with the Indenture. By this paragraph the parties do not intend to cause a borrower/lender relationship to exist between Developer and any other party. Developer intends by this paragraph solely to protect its rights to payment under this Agreement, as the Developer under the Development Agreement. The parties agree that, in connection with Trustee's execution, delivery and performance of this Agreement, Trustee is acting pursuant to a written request of Borrower provided in accordance with the Loan Agreement and the Indenture and Trustee shall enjoy all of the rights, benefits and protections and Indemnities afforded it under the Indenture and the Loan

Agreement. Subject to the foregoing, Trustee will be liable to Developer and Borrower for damages suffered arising solely from Trustee's negligence or willful misconduct relating to the administration of, or Disbursements from, the Project Fund under this Agreement, the Indenture or the Loan Agreement; provided, however, in no event shall Trustee be liable for incidental, indirect, special, consequential or punitive damages or penalties (including, but not limited to, lost profits), even if Trustee has been advised of the likelihood of such damages or penalties and regardless of the form of action.

7. Miscellaneous.

7.1 Amendment. Subject to Article 9 of the Development Agreement, neither this Agreement nor any of its terms may be terminated, amended or modified except by a written instrument executed by the parties.

7.2 No Waivers; Rights and Remedies Are Cumulative. Except with respect to any rights and remedies expressly declared to be exclusive in this Agreement or the Development Agreement, the rights and remedies of the parties to this Agreement, whether provided by Law, in equity or by this Agreement or the Development Agreement, are cumulative, and not in derogation of other rights and remedies found in this Agreement or the Development Agreement. The exercise by any party of any one or more of such remedies will not preclude the exercise by it, at the same or a different time, of any other such remedies for the same default or breach or of any of its remedies for any other default or breach by the other party. No waiver made by any party with respect to the performance, or manner or time of performance, or any obligation of the other parties or any condition to their own obligations under this Agreement will be considered a waiver with respect to the particular obligations of the other parties or condition to its own obligation beyond those expressly waived to the extent of such waiver, or a waiver in any respect in regard to any other rights of the party making the waiver or any other obligations of the other parties.

7.3 Interpretation of Agreement.

(a) Exhibits. Whenever an "Exhibit" is referenced, it means an exhibit to this Agreement unless otherwise specifically identified. All such Exhibits are incorporated in this Agreement by reference.

(b) Captions. Whenever a section, article or paragraph is referenced, it refers to this Agreement unless otherwise specifically identified. The captions preceding the articles and sections of this Agreement and in the table of contents have been inserted for convenience of reference only. Such captions shall not define or limit the scope or intent of any provision of this Agreement.

(c) Words of Inclusion. The use of the term "including," "such as" or words of similar import when following any general term, statement or matter shall not be construed to limit such term, statement or matter to the specific items or matters, whether or not language of non-limitation is used with reference thereto. Rather, such terms shall be deemed to refer to all other items or matters that could reasonably fall within the broadest possible scope of such statement, term or matter.

(d) No Presumption Against Drafter. This Agreement has been negotiated at arm's length and between Persons sophisticated and knowledgeable in the matters dealt with herein. In addition, each party has been represented by experienced and knowledgeable legal counsel. Accordingly, this Agreement shall be interpreted to achieve the intents and purposes of the parties, without any presumption against the party responsible for drafting any part of this Agreement.

(e) Costs and Expenses. In the case of the Borrower and Developer, the party on which any obligation is imposed in this Agreement shall be solely responsible for paying all costs and expenses incurred in the performance of such obligation, unless the provision imposing such obligation, or the applicable provisions of the Development Agreement or Loan Agreement specifically provides to the contrary.

(f) Agreement References. Wherever reference is made to any provision, term or matter "in this Agreement," "herein" or "hereof" or words of similar import, the reference shall be deemed to refer to any and all provisions of this Agreement reasonably related thereto in the context of such reference, unless such reference refers solely to a specific numbered or lettered article, section or paragraph of this Agreement or any specific subdivision of this Agreement.

(g) Approvals. Unless otherwise specifically stated in this Agreement or the applicable provisions of the Development Agreement or Loan Agreement, wherever a party hereto has a right of approval or consent, such approval or consent shall not be unreasonably withheld, conditioned or delayed, subject to the terms of the Indenture in the case of the Trustee. Unless otherwise specifically stated in this Agreement, wherever a party has a right of approval or consent, and such approval or consent is not given within the time frames provided, such matter subject to approval or consent shall not be deemed approved.

7.4 Successors and Assigns. Subject to any restrictions on the parties' rights to transfer their respective interests under the Development Agreement, Ground Lease, and Loan Agreement, this Agreement is binding upon and will inure to the benefit of the successors and assigns of the parties. Where the term "Developer," "Borrower" or "Trustee" is used in this Agreement, it means and includes their respective successors and permitted assigns.

7.5 Counterparts. This Agreement may be executed in counterparts, each of which is deemed to be an original, and all such counterparts constitute one and the same instrument.

7.6 Entire Agreement. This Agreement (including all Exhibits), along with the applicable provisions of the Development Agreement and Loan Agreement, constitute the entire agreement among the parties with respect to the subject matter of this Agreement and supersedes all negotiations or previous agreements among the parties with respect to all or any part of the terms and conditions mentioned in or incidental to this Agreement. No parol evidence of any prior draft of this Agreement, or of any other agreement shall be permitted to contradict or vary the terms of this Agreement.

7.7 Severability. If any provision of this Agreement, or its application to any Person or circumstance, is held invalid by any court, the invalidity or inapplicability of such provision shall not affect any other provision of this Agreement or the application of such provision to any other Person or circumstance, and the remaining portions of this Agreement shall continue in full force and effect, unless enforcement of this Agreement as so modified by and in response to such invalidation would be grossly inequitable under all of the circumstances, or would frustrate the fundamental purposes of this Agreement.

7.8 No Third Party Beneficiaries. This Agreement is made and entered into for the sole protection and benefit of the parties and their successors and permitted assigns. No other person shall have or acquire any right or action based upon any provisions of this Agreement.

7.9 Disputes; Governing Law. The laws of Nevada shall govern any dispute arising from or relating to a dispute over the interpretation, validity, construction, or performance of this Agreement (“Dispute”). Upon the written demand of any Party (“Dispute Notice”), the Parties shall meet to make a good faith effort to resolve any Dispute. The Dispute Notice shall specify in reasonable detail, the nature and the material facts underlying the Dispute. Senior representatives of each Party shall meet (“Initial Dispute Meeting”) in person at the University’s offices on Campus not later than three (3) business days after the Dispute Notice is provided to all Parties. Thereafter, any party may submit the matter to a mediator agreeable to the Parties; it shall be a material obligation of each Party to cooperate with the mediator’s efforts to resolve the Dispute. If any Dispute is not resolved prior to mediation, a Party may, at its sole discretion, institute legal action to resolve the Dispute.

(a) Institution of Legal Actions. Any Party may institute legal action to cure, correct, or remedy any default; to recover damages; to obtain any other remedy consistent with the terms of this Agreement; or resolve any Dispute. Such legal actions shall be instituted in the Courts in or around Washoe County, Nevada. Each party agrees to not seek a jury trial for the resolution of any matter between or among them.

(b) Acceptance of Service of Process. In the event that any legal action is commenced by a Party against another Party hereto, service of process on such other Party shall be made by personal service at the address provided for notices hereunder or such other address as shall have been given to the Parties, or in such other manner as may be provided by Law.

(c) Rights and Remedies Are Cumulative. Except with respect to any rights and remedies expressly declared to be exclusive in this Agreement, the rights and remedies of the Parties to this Agreement, whether provided by Law, in equity or by this Agreement, are cumulative, and not in derogation of other rights and remedies found in this Agreement. The exercise by any Party of any one or more of such remedies will not preclude the exercise by it, at the same or a different time, of any other such remedies for the same default or breach or of any of its remedies for any other default or breach by the other Party. No waiver made by any Party with respect to the performance, or manner or time of performance, or any obligation of the other Parties or any condition to their own obligations under this Agreement will be considered a waiver with respect to the particular obligations of the other Parties or condition to its own obligation beyond those expressly waived to the extent of such waiver, or a waiver in any respect in regard to any other rights of the Party making the waiver or any other obligations of the other Parties.

(d) Non-liability of Parties' Officers and Employees, Etc. Excluding any criminal behavior, civil fraud, or liability created by the statutes or regulations of the State of Nevada, no member, officer, partner, agent, shareholder, director, or employee of the University, Borrower or the Developer will be personally liable to any other Party hereunder, or any successor in interest, as a result of an Event of Default by the University, Borrower or the Developer, as the case may be, or for any amount which may become due to the Developer, the University, Borrower, or any of their successors, as applicable, under, on account of, or with respect to such Party's obligations under this Agreement.

7.10 Further Assurances. The parties agree to execute and acknowledge such other and further documents as may be necessary or reasonably required to express the intent of the parties or otherwise effectuate the terms of this Agreement and the Development Agreement.

7.11 Effective Date. This Agreement shall become effective upon the latter of its full execution or Commercial Closing Date.

7.12 Notices.

(a) Manner of Delivery. Except as otherwise expressly provided in this Agreement, all notices, demands, approvals, consents and other formal communications between or among the Parties required or permitted under this Agreement shall be in writing and shall be deemed given and effective (i) upon the date of receipt if given by personal delivery (including nationally recognized express courier) on a Business Day (or the next Business Day if delivered personally on a day that is not a Business Day) or (ii) if mailed three (3) Business Days after deposit with the U.S. Postal Service for delivery by United States registered or certified mail, first class postage prepaid, to a party at their respective addresses for notice designated below. For convenience of the parties, copies of notices may also be given by email delivery of documents in .PDF format; however, no party may give official or binding notice by email alone.

(b) Request for Approval. In order for a request for any approval required under the terms of this Agreement to be effective, it shall be clearly marked "Request for Approval" and state (or be accompanied by a cover letter stating) substantially the following:

(1) the section of this Agreement under which the request is made and the action or response required;

(2) if applicable, the period of time as stated in this Agreement within which the recipient of the notice shall respond; and

(3) if appropriate, that the failure to object to the notice within the stated time period will be deemed to be the equivalent of the recipient's approval of or consent to the request for approval which is the subject matter of the notice.

In the event that a request for approval states a period of time for approval which is less than the time period provided for in this Agreement for such approval, the time period stated in this Agreement shall be the controlling time period. In no event shall a recipient's approval of or consent to the subject matter of a notice be deemed to have been given by its failure to object to

such notice if such notice (or the accompanying cover letter) does not comply with the requirements of this Section.

(c) Addresses for Notices. All notices shall be properly addressed and delivered to the Parties at the addresses set forth below or at such other addresses as a party may designate by written notice given in the manner provided in this Section 7.12:

To Borrower:

With a copy to:

To Developer: UNR/Edgemoor Gateway Partners LLC
7900 Westpark Drive
Suite T300
McLean, VA 22102
Attention: Geoffrey Stricker
Email: geoffrey.stricker@edgemoordevelopment.com

With a copy to: UNR/Edgemoor Gateway Partners LLC
7900 Westpark Drive
Suite T300
McLean, VA 22102
Attn: Frank J. Baltz.
Email: frank.baltz@edgemoor.com

And with a copy to: Pillsbury Winthrop Shaw Pittman LLP
1200 Seventeenth Street NW
Washington, DC 20036-3006
Attention: Jeffrey Gans, Esq.
Email: jeffrey.gans@pillsburylaw.com

To Trustee: 2222 E. Camelback Road, Suite 110
Phoenix, Arizona 85016
Attn: Global Corporate Trust
Telephone: 602.257.5431
Email: keith.henselen@usbank.com

Remainder of page left blank.
Signatures on following page.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed and delivered by their proper and duly authorized officers as of the day and year first above written.

NCCD - UNR PROPERTIES LLC,
a Nevada limited liability company

By _____
Name: Charles G. Eden
Title: President

DEVELOPER:

UNR/EDGEMOOR GATEWAY PARTNERS LLC,
a Maryland limited liability company

By: _____

Name: _____

Its: _____

By: _____

Name: _____

Its: _____

Solely for purposes of Section 6 hereof, Trustee agrees to be bound by signing below:
U.S. Bank Trust Company, National Association, in its capacity as trustee under the Indenture

U.S. BANK TRUST COMPANY, NATIONAL ASSOCIATION

By: _____

Its: Authorized Signatory

EXHIBIT A

Draft Requisition Form

Exhibit A

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1	DRAFT AIA® Document G702™ - 1992																													
2	DRAFT REQUISITION																													
3	TO OWNER:					PROJECT: zz Test 2					APPLICATION NO: 001					Distribution to:														
4																OWNER:														
5																ARCHITECT:														
6																DEVELOPER:														
7	FROM					VIA					PERIOD TO:					CONTRACT FOR: General Construction														
8	DEVELOPER:					ARCHITECT:					CONTRACT DATE:					FIELD:														
9																														
10																														
11	DEVELOPER'S APPLICATION FOR PAYMENT																													
12	Application is made for payment, as shown below, in connection with the Contract.																The undersigned Developer certifies that to the best of the Developer's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Developer for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.													
13	Continuation Sheet, AIA Document G703, is attached.																													
14	1. ORIGINAL CONTRACT SUM..... \$0.00																DEVELOPER:													
15	2. NET CHANGE BY CHANGE ORDERS..... \$0.00																By: _____ Date: _____													
16	3. CONTRACT SUM TO DATE (Line 1 ± 2)..... \$0.00																State of: _____													
17	4. TOTAL COMPLETED & STORED TO DATE (Column G on G703)..... \$0.00																County of: _____													
18	5. RETAINAGE:																Subscribed and sworn to before													
19	a. 0 % of Completed Work																me this _____ day of _____													
20	(Column D + E on G703: \$0.00) = \$0.00																Notary Public: _____													
21	b. 0 % of Stored Material																My Commission expires: _____													
22	(Column F on G703: \$0.00) = \$0.00																													
23	Total Retainage (Lines 5a + 5b or Total in Column I of G703)..... \$0.00																													
24																														
25	6. TOTAL EARNED LESS RETAINAGE..... \$0.00																													
26	(Line 4 Less Line 5 Total)																													
27	7. LESS PREVIOUS CERTIFICATES FOR PAYMENT..... \$0.00																													
28	(Line 6 from prior Certificate)																													
29	8. CURRENT PAYMENT DUE..... \$0.00																													
30	9. BALANCE TO FINISH, INCLUDING RETAINAGE																													
31	(Line 3 less Line 6) \$0.00																													
32																														
33																														
34	CHANGE ORDER SUMMARY					ADDITIONS					DEDUCTIONS																			
35	Total changes approved in previous months by Owner					\$0.00					\$0.00																			
36	Total approved this Month					\$0.00					\$0.00																			
37	TOTALS					\$0.00					\$0.00																			
38	NET CHANGES by Change Order										\$0.00																			

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User Notes:

EXHIBIT B

Requisition Certificate

The undersigned authorized representative of UNR/Edgemoor Gateway Partners LLC (“Developer”) hereby requests NCCD – UNR Properties LLC to request from U.S. BANK National Association, in its capacity as trustee under the Indenture (“Trustee”) to pay to Developer the amounts shown on the attached application for payment.

The Developer hereby certifies that (a) obligations in amounts stated in this Requisition have been incurred by the Developer and are presently due and payable and each item is a proper charge against the Project Fund and has not been previously paid from the Project Fund; (b) there has not been filed with or served upon the Developer any notice of claim of lien, or attachment upon, or claim affecting the right to receive payment of, any of the amounts payable in this Requisition, that has not been released or will not be released simultaneously with the payment of such obligation, other than materialmen’s or mechanics’ liens accruing by mere operation of law; and (c) no Event of Default has occurred under the Development Agreement.

All payments shall be made by check or wire transfer in accordance with the attached payment instructions.

Dated: _____

NCCD – UNR Properties LLC

By:

Authorized Representative

EXHIBIT C

Trustee Requisition

The undersigned authorized representative of NCCD – UNR Properties LLC (the “Borrower”) hereby requests U.S. Bank Trust Company, National Association, as trustee (the “Trustee”) under that certain Indenture, dated as of _____, 2023, between the National Finance Authority and the Trustee, to pay to the Persons listed on **Schedule I** attached hereto, the amounts shown for the purposes indicated from the Project Fund established and maintained under the Indenture.

The Borrower hereby certifies that (a) obligations in amounts stated in this Requisition have been incurred by the Borrower and are presently due and payable and each item is a proper charge against the Project Fund and has not been previously paid from the Project Fund; (b) there has not been filed with or served upon the Borrower any notice of claim of lien, or attachment upon, or claim affecting the right to receive payment of, any of the amounts payable to any of the persons named in this Requisition, that has not been released or will not be released simultaneously with the payment of such obligation, other than materialmen’s or mechanics’ liens accruing by mere operation of law; (c) no Event of Default has occurred under the Loan Agreement; (d) this requisition of funds meets all requirements of the Loan Agreement; and (e) this requisition of funds meets all requirements of the Disbursement Agreement, dated _____, 2023, by and between the Borrower, the Trustee and NCCD – UNR Properties LLC.

All payments shall be made by check or wire transfer in accordance with payment instructions contained in Schedule I and the Trustee shall have no duty or obligation to authenticate such payment instructions or the authorization thereof.

Dated: _____

NCCD – UNR Properties LLC

By: _____
Authorized Representative

Schedule I

(PROJECT FUND REQUISITION)

<u>Item #</u>	<u>Name/Address</u>	<u>Amount</u>	<u>Purpose</u>	<u>Wire/Check</u>
---------------	---------------------	---------------	----------------	-------------------

EXHIBIT D

(cover page)

Form of Lien Release/Waiver

See form attached behind this cover page.

Exhibit D

AFFIDAVIT AND PARTIAL RELEASE OF LIENS/CLAIMS
UNR/Edgemoor Gateway Partners LLC

Project No. /Name: _____
Subcontractor/Supplier: _____
Subcontract/P.O. Date: _____
Subcontract/P.O. No.: _____
Payment Request No.: _____

From: _____

1. Certifications. Affirmations and Warranties

The undersigned, acknowledging the receipt and adequacy of good and valuable consideration, to support its entitlement to the payment requested in Payment Request No. _____ and as provided in the Contract, Subcontract or Purchase Order between it and UNR/Edgemoor Gateway Partners LLC (“EDGEMOOR”), hereby affirms, certifies and warrants as follows:

1. Payment Request No. ____ represents the actual value of work performed through the above indicated payment request period for which payment is due under the terms of the Subcontract or Purchase Order (and all authorized changes thereto) between the undersigned and EDGEMOOR relating to the Project, including (i) all labor expended in the construction of the Project, (ii) all materials and equipment delivered to the site and either incorporated or to be incorporated into the Project, (iii) all materials, fixtures, and equipment for the Project stored offsite to the extent authorized by EDGEMOOR and for which payment therefore is permitted by EDGEMOOR’s contract with the Owner and for which all requirements of said contract with respect to materials stored offsite have been fulfilled, (iv) all services performed in the construction of the Project, and (v) all equipment used, or provided for use, in the construction of the Project. Such work including items (i) through (v) is hereafter collectively referred to as the “Work.”
2. The undersigned has received payment in full, less retainage, for all Work performed in the construction of the Project through the __ day of _____, 20__ (“Effective Date”), and, except for pending change orders/claims (“Claims”) that are listed on the attached Form A, there are no outstanding Claims against EDGEMOOR and/or its sureties, the Owner of the Project and/or its lenders and guarantors, or the Project, in connection with Work performed through the Effective Date. In the event the undersigned does not submit a Form A with this Affidavit and Partial Release of Liens/Claims, the undersigned, for good and valuable consideration, receipt of which is hereby acknowledged, forever waives its right to assert any Claim whatsoever arising out of, relating to or otherwise concerning any change in the Work or Claim in connection with the Work through the Effective Date.
3. The undersigned has not assigned to anyone any Claim, any lien, or any right to file or perfect a lien, against EDGEMOOR and/or its sureties, the Owner of the Project and/or its lenders and guarantors, or the Project.
4. The undersigned has paid all laborers, and, subject to retainage no greater than the percentage retainage held by EDGEMOOR, all subcontractors, suppliers, materialmen and others with respect to all Work performed through the Effective Date.

Exhibit D

5. The undersigned has not given or executed any security interest for or in connection with any materials, equipment, appliances, machines, fixtures or furnishings that have been or are to be placed upon or installed in the Project, and is conveying good title to the same to EDGEMOOR and/or the Owner.
6. The undersigned has paid all applicable taxes, fees, duties, other charges, and amounts due benefit funds relating directly or indirectly to the Work performed through the Effective Date.
7. The undersigned has complied with all applicable federal, state and local laws, codes, ordinances and regulations relating to the Work performed through the Effective Date.
8. The undersigned has the right, power and authority to execute this document.

2. Waiver and Release

In accord with paragraph _____ of the Subcontract Agreement or paragraph _____ of the Purchase Order, as applicable, the undersigned hereby forever waives and releases the Owner of the Project and its lenders and guarantors, the Project, and the title company or companies examining and/or insuring title to the Project, and any and all successors and assignees of the above, all rights that presently exist or may hereafter exist by reason of Work performed through the Effective Date to assert a lien upon the land and/or improvements comprising the Project. Further, the undersigned hereby covenants and agrees that except for retainage and the Claims listed on the attached Form A that it hereby forever waives and releases all causes of action, claims (including, but not limited to, delay, disruption, inefficiency or cumulative impact claims), suits and demands, known or unknown, that the undersigned ever had, now has or hereafter may have against EDGEMOOR and/or its sureties, the Owner of the Project and/or its lenders and guarantors, or the Project, by reason of, relating to, arising from or in connection with Work performed through the Effective Date.

3. Indemnification

The undersigned hereby agrees to indemnify and hold harmless EDGEMOOR and its sureties, and the Owner of the Project and its lenders and guarantors, from any and all damages, costs, expenses (including attorneys' fees incurred), demands, and suits, directly or indirectly relating to any cause of action, claim or lien filing with respect to any (i) Work performed or which should have been performed in construction of the Project through the Effective Date, (ii) any rights waived or released herein, and (iii) any misrepresentation or breach of any certification, affirmation or warranty made by the undersigned in this Affidavit and Partial Release of Liens/Claims. Upon the request of EDGEMOOR, its sureties, or the Owner of the Project or its lenders and guarantors, the undersigned will undertake to defend such cause of action, claim or lien filing at its sole cost and expense.

4. Preservation of Waiver and Release

In the event that EDGEMOOR elects in its sole discretion to consider, or make a payment with respect to, a Claim that has been previously waived or released pursuant to Part II above, that consideration and/or payment shall not in any manner or degree operate to compromise or otherwise adversely affect the scope or enforceability of the waiver and release as it applies to any other Claim.

Exhibit D

DATE: _____

(Contractor/Subcontractor/Supplier - Full
Corporate Name)

BY: _____
(Authorized Signature)

TITLE: _____
(Title)

Subscribed and sworn before me this ___ day of _____, 20__

State of: _____

Notary Public: _____

County of: _____

My Commission Expires: _____

Exhibit D

FORM A - OUTSTANDING CHANGE ORDERS/CLAIMS
UNR/Edgemoor Gateway Partners LLC

Project No. /Name: _____
 Subcontractor/Supplier: _____
 Subcontract/P.O. Date: _____
 Subcontract/P.O. No.: _____
 Payment Request No.: _____

From: _____

ITEM NO.	DESCRIPTION OF WORK	AMOUNT CLAIMED
1		\$0
2		\$0
3		\$0
4		\$0
5		\$0
6		\$0
7		\$0
8		\$0
9		\$0
10		\$0

DATE: _____

(This space left intentionally blank)

Exhibit D

SUBCONTRACTOR FINAL AFFIDAVIT, WAIVER OF LIEN, AND RELEASE
UNR/Edgemoor Gateway Partners LLC

PROJECT NO.: _____
PROJECT NAME: _____
SUBCONTRACTOR/SUPPLIER: _____
SUBCONTRACT DATE: _____
SUBCONTRACT NO.: _____
SUBCONTRACT PAYMENT _____
REQUEST NO.: _____
PERIOD FROM: _____ TO: _____

The undersigned, for and in consideration of the payments made to it by UNR/Edgemoor Gateway Partners LLC ("EDGEMOOR") or to a subcontractor, materialman, or supplier of the undersigned for labor employed in and/or materials furnished for the construction of the above-referenced project pursuant to the above-referenced contract, hereby certifies as follows:

1. Upon receipt of final payment in the amount of \$ _____, the undersigned has received payment in full for all deliveries of material to and/or for work performed in the construction of the project, and by acceptance of said final payment and in consideration of same hereby affirms that there are no outstanding claims against EDGEMOOR, its sureties, the Architect and the Owner in connection with this project.
2. In consideration of the above-mentioned payment in full, the undersigned does hereby waive, release, and quit claim in favor of EDGEMOOR, the Owner of the project, each and every party acquiring title to and/or making a loan on the project and the title company or companies examining and/or insuring title to the project and any and all of their successors and assigns all rights that presently exist or hereafter may accrue to the undersigned to assert a lien upon the land and improvements comprising the project by virtue of any law in the jurisdiction in which the land and improvements are situated or any amendment of said law regarding the rights of a contractor, subcontractor, laborer, supplier, or materialman to assert a lien or claim against the project.
3. The undersigned has not and will not assign any claim for payment or right to perfect a lien against the project and the undersigned has the right, power, and authority to execute this Affidavit, Waiver of Lien, and Release.
4. The undersigned warrants that all laborers and subcontractors employed by it and all suppliers or materialman from which it has acquired materials incorporated into the project have received payments due and that none of such laborers, subcontractors, suppliers, or materialmen have any claim, demand, or lien against the project.
5. No security interest has been given or executed by the undersigned for, or in connection with, any materials, appliances, machinery, fixtures, or furnishings placed upon or installed in the project.

This Final Affidavit, Waiver of Lien, and Release shall be an independent covenant and shall operate and be effective with respect to work and labor done and materials furnished under any supplemental contract or contracts, whether oral or written, for extra or additional work on the

Exhibit D

project and for any further work done or materials furnished at any time with respect to the project subsequent to the execution hereof.

IN WITNESS WHEREOF, this Affidavit, Wavier of Lien, and Release has been executed this ___ day of _____, 20__.

Witness: _____

(Conractor/Subcontractor/Supplier - Full Corporate Name)

BY: _____
(Authorized Signature/Title)

Subscribed and sworn before me this day __ of _____, 20__.

Notary Public: _____

My Commission Expires: _____

Exhibit D

ATTACHMENT 2.2

Form of Joint Commercial Escrow Instructions

_____, 2023

Pillsbury Winthrop Shaw Pittman LLP
1200 Seventeenth Street NW
Washington, DC 20036-3006
Attention: Jeffrey Gans, Esq.
E-mail: jeffrey.gans@pillsburylaw.com

Re: Joint Commercial Escrow Instructions for Development Agreement dated
TBD, 2023

Dear Mr. Gans:

Reference is hereby made to that certain Development Agreement dated _____, 2023 (the "Development Agreement") by and among the Board of Regents of the Nevada System of Higher Education, on behalf of the University of Nevada, Reno ("University"), NCCD – UNR Properties LLC, a Nevada limited liability company ("NCCD"), and UNR/Edgemoor Gateway Partners LLC, a Maryland limited liability company ("Developer"). Capitalized terms used, but not otherwise defined herein, shall have the meanings ascribed to such terms in the Development Agreement. This letter constitutes the Parties' Joint Commercial Escrow Instructions to Pillsbury Winthrop Shaw Pittman LLP ("Escrow Holder" or "you").

University has deposited, or will cause to be deposited with you prior to the Commercial Close of Escrow, _____ (____) counterparts of the following documents, each duly executed and, where appropriate, acknowledged ("University's Documents"):

1. The Ground Lease;
2. The Sublease;
3. The Affirmation Certificate for the Commercial Close of Escrow;
4. The Development Agreement; and
5. Any other documents and instruments required from University in connection with the closing of the Commercial Escrow pursuant to the Development Agreement.

NCCD has deposited, or will cause to be deposited with you prior to the Commercial Close of Escrow, _____ (____) counterparts of the following documents, each duly executed and, where appropriate, acknowledged ("NCCD's Documents"):

1. The Ground Lease;
2. The Sublease;
3. The Disbursement Agreement (which NCCD shall also have caused to be executed by the Bond Trustee);
4. The Affirmation Certificate for the Commercial Close of Escrow;
5. The Development Agreement: and

6. Any other documents and instruments required from NCCD in connection with the closing of the Commercial Escrow pursuant to the Development Agreement.

Developer has deposited, or will cause to be deposited with you prior to the Commercial Close of Escrow, _____ (____) counterparts of the following documents, each duly executed and, where appropriate, acknowledged (“Developer’s Documents”):

1. The Disbursement Agreement;
2. The Affirmation Certificate for the Commercial Close of Escrow; and
3. Any other documents and instruments required from Developer in connection with the closing of the Commercial Escrow pursuant to the Development Agreement.

University’s Documents, NCCD’s Documents, and Developer’s Documents are from time to time collectively referred to herein as the “Commercial Closing Documents”. You are to close the Commercial Escrow by taking each of the following steps in the order indicated when, and only when, you (i) hold all of the foregoing items, and (ii) are in a position to comply with each of the following:

1. You shall have received written confirmation from University, Developer, and NCCD that each of the conditions precedent to the Commercial Close of Escrow set forth in Sections 2.3 (with respect to University), 2.4 (with respect to Developer), and 2.5 (with respect to NCCD) has been satisfied or waived in writing, and separate authorization from each of the Parties to proceed with the Commercial Close of Escrow.
2. You shall record, or cause to be recorded, the Covenants, Conditions and Restrictions in the Official Records.
3. You shall deliver to the Parties fully executed copies of each of the Transaction Documents to which they are a party, and shall email each Party a .PDF scanned copy of all other fully executed Transaction Documents.

You are to close the Commercial Escrow on the CCOE Target Date (or as soon thereafter as possible and as directed by the Parties), in accordance with the foregoing instructions. Notwithstanding the foregoing, in the event the Commercial Escrow is not closed as of the Outside Commercial Close Date, you are to take no further action without further written instructions from the Parties. This letter supersedes any prior escrow instructions that may have been provided in connection with transaction. All of the Commercial Closing Documents are delivered to you in trust for the closing of the Commercial Escrow in accordance with the terms and conditions of the Development Agreement.

In the event that you receive instructions in your capacity as Escrow Holder from fewer than all Parties, you shall:

1. Immediately notify University, NCCD, and Developer of same;
2. Resign as Escrow Holder and deliver the Commercial Closing Documents to an alternate escrow holder, which alternate shall be immediately appointed by the Parties;

3. If the Parties fail to appoint an alternate escrow holder within 48 hours of your notice, you shall designate the alternate escrow holder which shall be a nationally recognized title and/or escrow company; and
4. Be absolved of all further obligations and liability hereunder upon delivery of the Commercial Closing Documents to an alternative escrow holder.

You shall resign as Escrow Holder if you are directed to take (or refuse to take) any action that you determine, in your absolute discretion, will cause you to violate any obligation (ethical or otherwise) to Developer.

Nothing herein will constitute a waiver of any privilege, and University and NCCD agree that neither of them shall directly or indirectly assert any such waiver in any form or forum. Moreover, nothing shall restrict you from having privileged communications with the Developer regarding these instructions or your obligations as Escrow Holder. All instructions given to you in your capacity as Escrow Holder shall be simultaneously provided to all Parties or shall be a nullity.

Nothing herein shall create a fiduciary duty or attorney-client relationship between you and the University and/or NCCD.

By accepting the Commercial Closing Documents, you are acknowledging that you have the authority and authorization to bind and commit Pillsbury Winthrop Shaw Pittman LLP to these matters and obligations described herein. Please acknowledge your receipt of these instructions and your willingness to comply with them by executing the enclosed copy of this letter in the space provided below and returning a copy to each of the Parties.

*Remainder of page intentionally left blank.
Signatures on following page*

BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON
BEHALF OF THE UNIVERSITY OF NEVADA, RENO

Recommended by:

Brian Sandoval
President, University of Nevada, Reno

Date: _____

Approved by:

Dale Erquiaga
Acting Chancellor,
Nevada System of Higher Education

UNR/EDGEMOOR Gateway Partners LLC,
a Maryland limited liability company

By: _____
Name: _____
Its _____

By: _____
Name: _____
Its _____

NCCD - UNR PROPERTIES LLC
a Nevada limited liability company

By: _____
Name: _____
Its: _____

Pillsbury Winthrop Shaw Pittman LLP hereby agrees to comply with the foregoing instructions.

By: _____
Jeffrey Gans, Esq.

ATTACHMENT 2.3(a)(ii)

Schedule of Values

Development Costs	Total
Consultant Fees	\$ 746,000
Commissioning Testing & Inspection	\$ 792,000
Permits & Fees	\$ 1,299,000
Legal / Accounting / Insurance	\$ 2,876,000
General Administrative	\$ 3,983,000
Development Management	\$ 6,788,000
Finance Costs	\$ 1,946,000
Design/Build Costs	
Building	\$ 129,624,000
Infrastructure	\$ 6,970,000
Allowances	
Furniture Fixtures & Equipment Allowance	\$ 4,253,000
Owner Contingency Allowance	\$ 4,500,000
TOTAL	\$ 163,777,000

Attachment 2.3(a)(ii)

ATTACHMENT 3.2

Form of Joint Financial Escrow Instructions

_____, 2023

Pillsbury Winthrop Shaw Pittman LLP
1200 Seventeenth Street NW
Washington, DC 20036-3006
Attention: Jeffrey Gans
E-mail: jeffrey.gans@pillsburylaw.com

Re: Joint Financial Escrow Instructions for Development Agreement dated TBD, 2023

Dear Jeffrey:

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University, NCCD, and Developer have each deposited, or will cause to be deposited with you prior to the Financial Close of Escrow, _____ (_____) counterparts of any Transaction Documents to be executed by such Party on or before the Financial Close of Escrow, which were not executed and delivered into Escrow on or before the Commercial Close of Escrow, together with any documents, instruments or instructions reasonably required from such Party in connection with the closing of the Financial Escrow pursuant to the Development Agreement, including without limitation Sections 3.2 and 3.6(b) thereof (collectively, the "Financial Closing Documents").

You are to close the Financial Escrow and shall deliver to the Parties fully executed copies of each of the Transaction Documents to which they are a party, and shall email each Party a .PDF scanned copy of all other fully executed Transaction Documents delivered to you in connection with the Financial Escrow when, and only when, you (i) hold all of the foregoing items, (ii) you have received written confirmation from University, Developer, and NCCD that each of the conditions precedent to the Financial Close of Escrow set forth in Sections 3.3 (with respect to University), 3.4 (with respect to Developer), and 3.5 (with respect to NCCD) has been satisfied or waived in writing, and (iii) you have received separate authorization from each of the Parties to proceed with the Financial Close of Escrow.

You are to close the Financial Escrow on the FCOE Target Date (or as soon thereafter as possible and as directed by the Parties), in accordance with the foregoing instructions. Notwithstanding the foregoing, in the event the Financial Escrow is not closed as of the Outside Financial Close Date,

you are to take no further action without further written instructions from the Parties. This letter supersedes any prior escrow instructions that may have been provided in connection with the transaction. All of the Financial Closing Documents are delivered to you in trust for the closing of the Financial Escrow in accordance with the terms and conditions of the Development Agreement.

In the event that you receive instructions in your capacity as Escrow Holder from fewer than all Parties, you shall:

1. Immediately notify University, NCCD, and Developer of same;
2. Resign as Escrow Holder and deliver the Financial Closing Documents to an alternate escrow holder, which alternate shall be immediately appointed by the Parties;
3. If the Parties fail to appoint an alternate escrow holder within 48 hours of your notice, you shall designate the alternate escrow holder which shall be a nationally recognized title and/or escrow company; and
4. Be absolved of all further obligations and liability hereunder upon delivery of the Financial Closing Documents to an alternative escrow holder.

You shall resign as Escrow Holder if you are directed to take (or refuse to take) any action that you determine, in your absolute discretion, will cause you to violate any obligation (ethical or otherwise) to Developer.

Nothing herein will constitute a waiver of any Developer privilege, and University and NCCD agree that they shall not directly or indirectly assert any such waiver in any form or forum. Moreover, nothing shall restrict you from having privileged communications with the Developer regarding these instructions or your obligations as Escrow Holder. All instructions given to you in your capacity as Escrow Holder shall be simultaneously provided to all Parties or shall be a nullity.

Nothing herein shall create a fiduciary duty or attorney-client relationship between you and University and/or NCCD.

By accepting the Financial Closing Documents, you are acknowledging that you have the authority and authorization to bind and commit Pillsbury Winthrop Shaw Pittman LLP to these matters and obligations described herein. Please acknowledge your receipt of these instructions and your willingness to comply with them by executing the enclosed copy of this letter in the space provided below and returning a copy to each of the Parties.

*Remainder of page intentionally left blank.
Signatures on following page*

BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON
BEHALF OF THE UNIVERSITY OF NEVADA, RENO

Recommended by:

Brian Sandoval
President, University of Nevada, Reno

Date: _____

Approved by:

Dale Erquiaga
Acting Chancellor,
Nevada System of Higher Education

UNR/EDGEMOOR GATEWAY PARTNERS LLC,
a Maryland limited liability company

By: _____
Name: _____
Its _____

By: _____
Name: _____
Its _____

NCCD - UNR PROPERTIES LLC
a Nevada limited liability company

By: _____
Name: _____
Its: _____

Pillsbury Winthrop Shaw Pittman LLP hereby agrees to comply with the foregoing instructions.

By: _____
Jeffrey Gans, Esq.

ATTACHMENT 3.6(d)

Approved Qualified Out-of-Pocket Costs

Qualified Out-Of-Pocket Costs	Total
Edgemoor Qualified Expenses	
<i>Edgemoor Staff Estimate</i>	\$ 130,000
<i>Corporate Support (IT, Supplies, etc.)</i>	\$ 6,000
<i>Corporate Departmental Overhead Reimbursement</i>	\$ 100,000
<i>Travel and Expense Reimbursement</i>	\$ 22,000
<i>Developers Administrative Costs</i>	\$ 250,000
<i>Subtotal</i>	\$ 408,000
Edgemoor Third Party College of Business	
<i>Financial Advisor</i>	\$ -
<i>Legal - Bond Counsel / Underwriter Counsel</i>	\$ 315,000
<i>Legal - Sponsor's Counsel</i>	\$ 20,000
<i>Legal - Local Counsel</i>	\$ 3,000
<i>Marketing and Communications</i>	\$ 10,000
<i>Insurance</i>	\$ 80,000
<i>Gateway Site Traffic Study</i>	\$ 7,000
<i>Phase 1 Environmental Site Assessment</i>	\$ -
<i>Phase 2 Environmental Site Assessment</i>	\$ -
<i>Early Work Permit Fees</i>	\$ -
<i>State of Nevada Building Permits (2 of 3)</i>	\$ -
<i>City of Reno - Off Site</i>	\$ -
<i>Utility Applications</i>	\$ 3,000
<i>New Water Service Agreement (Initial Review Fees)</i>	\$ -
<i>Parcel Lot Consolidation</i>	
<i>Design Phase Commissioning Services</i>	\$ 4,000
<i>Legal Parcel and Surveying Services</i>	\$ -
<i>Subtotal</i>	\$ 442,000
Pre-Construction College of Business	
<i>Clark Pre-Construction</i>	\$ 250,000
<i>LMN Architects</i>	\$ 1,200,000
<i>Off-Site Design Work</i>	\$ -
<i>Parking Study</i>	\$ -
<i>Site Due Diligence (Geotech, Survey, etc.)</i>	\$ -
<i>Environmental Site Assessment</i>	\$ -
<i>Dry Utility Design</i>	\$ -
<i>Utility Poles, ADA Pathway, Traffic Signal</i>	\$ 40,000
<i>LEED Consultant - Atelier 10</i>	\$ 8,000
<i>Early Work / Material Deposits</i>	\$ -
<i>Subtotal</i>	\$ 1,498,000
Qualified Out-Of-Pocket Costs Total	\$ 2,348,000

ATTACHMENT 4.3(b)

Responsibility for Regulatory Approvals

University Assumed Regulatory Approvals

Item No.	Agency / Permit	Responsible
	PLANNING AND ZONING - DEVELOPMENT SERVICES (CITY OF RENO)	
001	N. Virginia City of Reno Easement	University
002	N. Virginia Street Access Agreement / Curb Cut	University
003	Zoning Approval	University
	RENO PUBLIC WORKS (CITY OF RENO)	
004	Reversion to Acreage/Merging Parcels	University
005	Building Permit - Public Right of Way Improvements	University
006	Utility Easements / Encroachment Agreements	University
	CITY OF RENO DEPT. OF PARKS & RECREATION - URBAN FORESTRY	
007	Tree Removal Permit	University
	UTILITY PROVIDERS	
008	Terminate Existing Utilities (Power, Gas, Water, Sewer, Communications)	University
	TRUCKEE MEADOWS WATER AUTHORITY (TMWA)	
009	Water Resource Determination Application	University
	NEVADA DEPARTMENT OF TRANSPORTATION	
010	Encroachment Permit - 8th Street Improvements	University
	REGIONAL TRANSPORTATION COMMISSION (RTC)	
011	Encroachment Permit – N. Virginia Street Improvements	University
	WASHOE COUNTY - HEALTH DISTRICT (WCHD)	
012	Health Department Permit <i>Café space scope and requirements (Chartwells)</i>	University

Developer Assumed Regulatory Approvals

Item No.	Agency / Permit	Responsible
	NEVADA STATE PUBLIC WORKS BOARD	
001	Package #1 - Excavation, Demolition, and Site Improvements	Developer
002	Package #2 - Foundations, Superstructure, and Shoring	Developer
003	Package #3 - Full Building (Includes Deferred Approvals)	Developer
004	Temporary Certificate of Occupancy (TCO)	Developer
005	Certificate of Occupancy (COO)	Developer
	NEVADA STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION	
006	Construction Stormwater Permit	Developer
	RENO FIRE DEPARTMENT (RFD)	
007	Temporary FDC Permit	Developer
	RENO PUBLIC WORKS (CITY OF RENO)	
008	Encroachment / Excavation Permit - Utilities	Developer
009	Encroachment / Excavation Permit - Site Logistics	Developer
010	Demolition Permit - To track the utilities that are abandoned	Developer
	CITY OF RENO DEPT. OF PARKS & RECREATION - URBAN FORESTRY	
011	Street Tree Planting Permit - <i>Part of Reno Building Permit</i>	Developer
	NV ENERGY	
012	Temp Power Service Application <i>(Include crane and hoist power requirements)</i>	Developer
013	Permanent Power Service Application <i>(Switchgear proposed on Lowest Level currently)</i>	Developer
014	Permanent Gas Service <i>(1 service that splits to 2 meters in the alcove)</i>	Developer
	TRUCKEE MEADOWS WATER AUTHORITY (TMWA)	
015	New Water Service Agreement (Domestic & Fire)	Developer
016	Construction Water Agreement	Developer
017	Fire Flow / Fire Hydrant location / Pressure Request	Developer
	PUBLIC COMMUNICATIONS/DATA (AT&T/MCI): DATA AND FIBER	
018	Potential need to relocate utilities/coordinate - applications and standards	Developer
019	Temporary Occupancy Permit	Developer

Item No.	Agency / Permit	Responsible
	WASHOE COUNTY - AIR QUALITY DIVISION	
020	Dust Control Permit	Developer
021	Demolition/Asbestos Removal Permit	Developer
022	Washoe County Air Permit - Building Operation (including Generator)	Developer
	OSHA	
023	Project Permit	Developer
024	Shoring Permit	Developer
025	Structural Steel Erection Permit	Developer
026	Scaffolding Permit	Developer
027	Demolition Operation and Logistics <i>Demo sub will complete: Recycling Report, OSHA Report, Air Quality Report</i>	Developer
028	Elevators <i>Construction Use Permit</i> <i>Final Elevator Permit</i>	Developer
	SPECIALTY PERMITS	
029	Generator <i>Generator Construction Permit</i> <i>Generator Operating Permit</i>	Developer

ATTACHMENT 5.2(c)

University of Nevada, Reno Adopted Standards

See Adopted Standards appended behind this cover page, which are hereby incorporated by reference with the following modification:

Section 282300 – VIDEO SURVEILLANCE is deleted and replaced in its entirety with the following:

282300 - VIDEO SURVEILLANCE

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Camera coverage shall be provided for all exterior doors where applicable.

Power Requirements

- Power supplies shall have a single dedicated 20 amp 110v AC circuit tied to building emergency power.
- Each DVR shall have an 110v AC circuit tied to building emergency power.

All wiring shall be installed in conduit where code dictates.

Camera locations shall be approved by Director of Police Services. Cameras shall be placed within the building interior whenever possible.

PRODUCT STANDARDS AND MANUFACTURERS

Manufacturer: Avigilon

Models:

4MP mini dome

2MP mini dome

8MP IR Fisheye

4k 180 degree

4k 270 degree

University of Nevada, Reno
Campus Design & Construction Standards

UNIVERSITY OF NEVADA, RENO
CAMPUS DESIGN AND
CONSTRUCTION STANDARDS

Updated July 1, 2021

University of Nevada, Reno
Campus Design & Construction Standards

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Campus Design & Construction Standards

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SECTION 0: PREFACE

The following is a compilation of standards developed by the University Facilities Services Department (FSD) and the Nevada State Public Works Division. Although the University standards have been merged with the State standards, design professionals and contractors must review them separately to ensure compliance. Where there is a conflict between the two, contact FSD for clarification. These standards apply to any construction, equipment installation, or building modification performed for the University of Nevada, Reno (University).

These standards have been developed to ensure an appropriate level of quality, adherence to applicable codes, communicate the operating and maintenance needs, and establish the characteristic look of the University. Where certain items have been specified as “no substitutions,” FSD expects to get what is specified. However, it is the designer’s responsibility to coordinate the use of specified items to ensure their successful incorporation into the work. Where there is a conflict, such that the specified item cannot be used in the design, it is the designer’s responsibility to coordinate and seek alternative solutions with the University project manager assigned to the project.

The use of these standards for University projects does not relieve design professionals or contractors of any liability or lack of performance for incorporating them into their designs and construction regardless of their specification and approval by FSD.

These standards are reviewed and revised periodically. It is the design professional’s responsibility to review them during the development of their work for University projects to ensure compliance. If you have any questions about these standards, please contact Dean Hitchcock at dhitchcock@unr.edu.

End of Section 0.0

PREFACE

University of Nevada, Reno
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SECTION 1
MISSION STATEMENT

FACILITIES SERVICES DEPARTMENT

MISSION

The primary goal of the Facilities Services Department (Planning and Construction) is to serve the needs of students, staff, and faculty by enhancing, maintaining, and improving the physical environment and facilities of all University of Nevada, Reno components. In this role, the Facilities Planning and Construction organization carries out its mission by providing professional support in the areas of campus planning, architecture, engineering, construction services, and directing the efforts of outsourced ventures.

NOMENCLATURE AND ACRONYMS

It is useful to clearly distinguish the names and acronyms used in this document for the University of Nevada, Reno, the Facilities Planning and Construction Department, and the Design Consultants.

Facilities Services Department (FSD) includes Planning and Construction Services and is the office that is in charge of the planning, design, and construction of all physical facilities for the University.

DESIGN CONSULTANTS (also referred to as “Designers” and “A/E”) are the architects, engineers, landscape architects, interior designers, graphic artists, etc., with whom the University (through FSD) contracts for the design of its buildings and facilities.

END OF SECTION 1
MISSION STATEMENT

University of Nevada, Reno
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SECTION 2: ARCHITECTURAL DESIGN GUIDELINES

PLANNING

DEFINITIONS

Adopted

Shall mean adopted by the University of Nevada, Reno Facilities Services Department or the Nevada State Public Works Division.

Division

Shall mean the Nevada State Public Works Division, or its authorized representative, the University of Nevada, Reno Facilities Services Department.

Construction Budget

Shall mean the amount of money allocated by the University of Nevada, Reno Facilities Services Department and the award of a contract for construction.

Consultant

Shall mean an architect or engineer hired by the University of Nevada, Reno Facilities Services or its authorized representative.

Using Agency

Shall mean the State agency having custody or use of the project upon completion of construction.

ADOPTED CODES AND REGULATIONS

The design and construction of all projects under the jurisdiction of the Division shall comply with the latest locally adopted edition of the following codes and regulations. The adopted codes and regulations are subject to interpretation by the Division and appropriate governmental agencies:

- International Building Code (IBC) published by the International Code Council.
- The Uniform Mechanical Code (UMC) published by the International Association of Plumbing and Mechanical Code Officials (IAPMCO).

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- The International Existing Building Code (IEBC) published by the International Code Council.
- The Uniform Plumbing Code (UPC) published by the International Association of Plumbing and Mechanical Officials.
- The International Fire Code (IFC) published by the International Code Council.
- The International Energy Conservation Code (IECC) published by the International Code Institute. ASHRAE 90.1-2007 is adopted by reference.
- The National Fire Codes (NFPA Standards) published by the National Fire Protection Association (NFPA).
- The Manual of Steel Construction published by the American Institute of Steel Construction (AISC).
- The ACI Manual of Concrete Practice published by the American Concrete Institute (ACI).
- The Timber Construction Manual published by the American Institute of Timber Construction (AITC).
- The National Electric Code (NEC) published by the National Fire Protection Association (NFPA).
- The NFPA 70E Standard for Electrical Safety in the Workplace.
- All volumes of the ASHRAE Handbook Series published by the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE).
- The IES Lighting Handbook published by the Illuminating Engineering Society (IES).
- The Sheet Metal and Air Conditioning Contractor's National Association (SMACNA) standards for duct design and construction.
- The regulations of the State Lands Division, Nevada Department of Conservation and Natural Resources, Carson City, Nevada.
- The Nevada Revised Statutes (NRS) and Nevada Administrative Code (NAC).
- ADA Standards for Accessible Design.
- American National Standard for Accessible and Usable Buildings and Facilities (ICC/ANSI A117.1)
- The rules and regulations of the Nevada Industrial Relations Division, Nevada Department of Business and Industry, Carson City, Nevada.
- The rules and regulations of the Bureau of Health Protection Services, Health Division, Nevada Department of Human Resources, Carson City, Nevada.
- The rules and regulations of the Environmental Protection Division, Nevada Department of Conservation and Natural Resources, Carson City, Nevada.

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- The rules and regulations of the Fire Marshal Division (NAC Chapter 477), Nevada Department of Motor Vehicles and Public Safety, Carson City, Nevada.
- NFPA 45 – Standard on Fire Protection for Laboratories using Chemicals
- Applicable zoning ordinances and master plans of city and county governments in effect at the location of the project.
- USGBC LEED V3.-LEED 2009 – Leadership in Energy and Environmental Design “Green” Building rating system.
- INDOOR AIR QUALITY – Standards for interior finish materials emissions
 - CRI – Carpet and Rug Institute Green Label Plus Program
 - Green Seal Standards 3, 11, and 36
 - SCAQMD – South Coast Air Quality Management District Rule #1168
- OSHA General Industry (29 CFR 1910) and Construction (29 CFR 1926) Standards.
- Tree Care Industry Association (TCIA) Guidelines
 - ANSI A300 (Part 2): Soil Management (a. Modification Section)
 - ANSI A300 (Part 6): Planting and Transplanting
 - ANSI A300 (Part 5): Management of Trees and Shrubs During Site Planning, Site Development, and Construction
 - ANSI A300 (Part 8): Root Management Standard

- Other codes, regulations, and standards referenced in the body of this document.
- B31.1 Power Piping Code
- Model Energy Code
- SMACNA Duct Construction Standards
- National Uniform Seismic Installation Guidelines
- ASPE Data Books
- IEEE Recommended Practice Color Book Series published by the Institute of Electrical and Electronics Engineers
- Commercial Building Telecommunications Wiring Standard, EIA/TIA 568, published by the Electronic Industry Association and the Telecommunications Industries Association.
- Commercial Building Standard for Telecommunications Pathways and Spaces, EIA/TIA 569, published by the Electronic Industry Association and the Telecommunications Industries Association.

GENERAL PLANNING GUIDELINES

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GENERAL

Any conflict between adopted codes and standards shall be resolved by using the more conservative or stringent guideline unless specifically directed by the Division.

Building projects shall include all site development and utilities, designed to comply with appropriate city, county, and state standards, necessary to provide a complete and usable facility.

State Public Works Division/University projects shall be connected to public utility systems where economically feasible.

Base bids shall provide for complete and usable facilities.

No plan check or approval shall relieve the consultant of the responsibility for developing a project in full compliance with the State Public Works Division or the University Facilities Services Adopted Standards and applicable Federal, State, and local laws.

All new buildings shall include a dedicated lactation/quiet room space with a sink, small counter space, and seating for one.

All new buildings shall include at least one single occupancy restroom available to any person.

Mechanical and electrical equipment rooms shall permit the easy installation, maintenance and removal of equipment. Direct access to the outside is preferable.

For all new or remodeled laboratories, a complete list of chemicals is to be submitted with design documents.

VARIANCES

Variations from the requirements of the referenced model codes, these Adopted Standards, or reviewing authorities shall only be granted by the Division.

Requests for variances shall be made in writing to the University Facilities Services Department in a timely manner.

ASBESTOS SURVEYS

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In accordance with NAC 618.961, before commencement of a renovation or demolition project that will disturb building material that may contain asbestos, samples of each suspect material must be collected by a licensed inspector and analyzed for asbestos content.

Any substance found to contain asbestos shall result in the project being subject to NAC 618.850 through 618.986. Refer to Division 2, Existing Conditions.

SUSTAINABILITY AND GREEN DESIGN

See Division 1 General Requirements

ACCESSIBILITY

All buildings and facilities customarily used by the public or offering employment opportunities for the disabled shall comply with adopted barrier-free design standards.

Primary public and employee entrances to public buildings shall be equipped with power assisted or accessible doors as appropriate.

Walkways, steps, ramps, and accessible routes shall have non-slip surfaces.

Space Standards - the following table shall be used as a guide in assigning office space to the University personnel.

SPACE ASSIGNMENT GUIDE

Classification	Suggested Allowable Space (Sq. Ft.)
Director of Departments/Deans/Chairs	200
Large Office	170
Two Person Office	140-170
Standard Office	100-120
Clerical Support (open office setting)	80
Custodial Closets	60
Conference Room (14)	300
Classroom Minimum Size (30 Students)	600

CLASSROOM TECHNOLOGY STANDARDS

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All classroom technology projects shall be coordinated with the University Department of Teaching and Learning Technologies (TLT); which, is comprised of the Classroom Support and Instructional Design teams. TLT guides and standards can be found on the TLT website through this link:

[Classroom Technology Design Standards](#)

LABORATORY DESIGN

See [UNR Laboratory Safety Guidelines- EH&S](#) - Laboratory Safety Design Guidelines

ACCEPTABLE LIMITS OF NOISE

NOISE CRITERIA

The design goal for the maximum allowable noise in each space; primarily resulting from the noise produced by a ventilation system.

NOISE RATING

The acceptable sound pressure levels at different frequencies. Noise ratings vary with the use of the room.

Noise Criteria and Noise Rating Levels for Various Uses

Type of Occupancy	Noise Criteria (NC)	Noise Rating (NR)
Concert Halls, Broadcast and Recording Studios	10-20	20
Conference/Lecture Rooms	20-25	25
Classrooms, Libraries, Executive Offices	30-40	30
Reception, Lobbies, Offices, Restrooms, Laboratories	35-45	40
Corridors, Food Services Areas	35-45	40
Open Office Areas, Bookstore	40-50	45
Maintenance Shops	50-60	

DOCUMENT STANDARDS

GENERAL

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A high standard of professionalism in architectural and engineering drawings, specifications, and calculations is required. The University Facilities Services Department reserves the right to reject any work that does not meet the highest standards of professional representation for architectural and engineering practice.

DRAWING PAPER SIZES ARE LIMITED TO THE FOLLOWING:

ANSI B Plot = 11"X17" (small projects)

ARCH D Plot = 24"x36"

ARCH E1 Plot = 30"x42" (Not to exceed)

Proprietary specifications shall be avoided except in those cases where the product is designed to match others in use at a public facility. In cases involving a unique or novel product, the use of which is deemed to be in the best interest of the project, only one product or manufacturer need be listed. The use of such products shall be approved by the University of Nevada, Reno Facilities Services Department prior to specifying.

Specifications which call for a product by specific brand or trade name shall be followed by the words "or approved equal".

DOCUMENTS, DRAWINGS AND SPECIFICATIONS

Architectural

In addition to standard architectural plan sheets, the set shall include cross sections, roof plans, complete door and window schedules, and sufficient sections and details to fully describe the architectural portions of the work.

A title sheet shall be included for the entire drawing set containing the following information:

- I. Name of project and project number
- II. Location of project
- III. Name, address and seal of designing architect and all professional engineering consultants
- IV. Index of all drawings included in the set
- V. Basis of design information shall be shown on the title sheet, heavily boxed in, and including the following:
 - i. IBC Building Code Edition and applicable mechanical,

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plumbing, electrical, fire and energy conservation, and accessibility codes

- ii. Site Area
- iii. Floor Area(s)
- iv. Allowable Building Area and Height
- v. Occupancy Group(s)
- vi. Exiting Plan with Occupancy Loads
- vii. Type of Construction
- viii. Fire Resistive Ratings (Table 601)
- ix. Required Separations
- x. Fire Sprinkler Requirements
- xi. Alarm Systems
- xii. Plumbing Fixture Count
- xiii. Number of Stories
- xiv. Maximum Height
- xv. Zoning
- xvi. Set Backs
- xvii. Insulation Provided
- xviii. Allowable Live Loadings for Roofs and Floors
- xix. Seismic Zone and Seismic Design Data
- xx. Wind Speed and Exposure
- xxi. Allowable Soil Bearing
- xxii. Design Stresses for Building Materials
- xxiii. List of all special inspection requirements
- xxiv. List of all deferred submittal requirements
- xxv. List of chemicals and quantities to be utilized in work areas

A “limit” of work area designating the area allocated to the contractor for storage and operations, and on-site dedicated construction parking, shall be shown on the architectural site plan.

Where fire resistive construction, structural fire protection, or protection of openings is required, plans and specifications shall include a fire resistive design schedule.

Identify exactly where these elements are required.

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Provide complete details showing how the fire resistive assemblies are to be built, including all penetrations. All assemblies shall be approved with listing numbers.

Include a foundation plan identifying footing types and dimensions.

Provide sufficient sections and details to completely describe the structural portions of the work.

Graphic illustrations with dimensional tolerance shall be provided on the drawings for all ADA and CABO/ANSI accessible elements.

Provide complete list of all chemicals known to be used at any new or remodeled laboratory. Design Consultant to coordinate with laboratory users and EHS to obtain this list of chemicals / quantities to be utilized in the projects work areas. Design Consultant to include the list on the projects construction documents.

STRUCTURAL

The Engineer of Record shall be responsible for all aspects of the structural design. Where standard connections or components are specified to be designed by a fabricator or manufacturer, the Engineer of Record shall review and approve such designs. For pre-engineered structures or components which are specified to be stamped by another engineer, the Engineer of Record shall review and approve such designs for compliance with the structural design criteria for the project.

Consideration shall be given in the design of roof framing systems to support the original roofing dead load plus any future re-roofing dead load, should such be likely to occur during the life of the structure.

Supports and anchors for mechanical and electrical equipment shall be capable of resisting appropriate seismic loadings.

Design loads shall conform to the requirements of the IBC. The following describes the design loads that shall be considered in the structural design. These loads shall include but may not be limited to the following load types:

- Dead loads
- Live loads
- Equipment loads
- Wind design
- Seismic loads

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- Ponding water on roofs
- Special load allowances
- Snow load

Every structural component shall be provided with strength adequate to resist the most critical effect resulting from a combination of loads as required by the IBC.

Consideration shall be given for adequate stiffness in floor systems to ensure occupant comfort.

All foundations, pavements, slabs or any structures, which interface with the soil, shall be designed in accordance with the project's geotechnical report. On projects where a soil investigation is not performed, foundations shall be designed using the guidelines of the IBC.

All footings and foundations shall extend below the frost line, or to depths recommended in the soils report. The minimum bearing depth for footings shall be 24 inches below finished grade.

The structural drawings shall include, as a minimum, the following:

- General structural notes including a basis of design, loading information, allowable design stresses, basic information regarding material used on the project.
- Design Consultant to include a complete listing of all structurally required special inspection requirements on the construction documents code analysis sheet.
- A framing plan for each floor and roof, showing structural connections and vertical support systems. A foundation plan identifying footing types and dimensions.
- Sufficient sections and details to completely describe the structural portions of the work.

Structural calculations are required for all aspects of the structural design, including vertical and lateral load carrying systems. Calculations shall be neatly prepared and organized so that an independent peer reviewer can check the validity and completeness of the calculations. Computer programs used shall be clearly identified and input and results fully documented.

MECHANICAL

HVAC, plumbing, and fire sprinkler drawings shall adhere to the following criteria:

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- Graphical symbols and abbreviations shall conform to those recommended by ASHRAE and ASPE.
- Chilled water and heating water systems shall be illustrated utilizing piping schematics (in addition to floor plan piping drawings).
- Mechanical equipment rooms shall be illustrated utilizing enlarged floor plan drawings (1/4" scale minimum) and sections.
- Temperature control wiring schematics (and written control sequences) shall be provided for all temperature control systems requiring field installation.

Plumbing systems shall be clearly illustrated utilizing one of the following two options to illustrate piping in restrooms and other areas containing batteries of plumbing fixtures:

- Enlarged floor plans - 1/4" scale minimum (with waste & vent piping on one plan, domestic hot & cold water on another plan).
- Isometric piping diagrams.

Plumbing plans shall include invert elevations where waste piping exits each building.

Fire sprinkler plans shall include locations and details for fire riser(s) and anti-freeze loops, and requirements for interfacing with electrical and fire alarm systems.

ELECTRICAL

Electrical drawings shall adhere to the following criteria:

- Graphical symbols shall conform to those recommended by the American Standard Association.
- Buildings with extensive electrical systems shall be clearly illustrated with three separate floor plans of each floor. One floor plan shall show the lighting system, a second the power system, and a third the communications and signaling systems.
- Lighting and power panel schedules shall be included on the drawings.
- Separate enlarged (1/4" scale minimum) floor plans shall be included for building areas with extensive electrical equipment.
- Special fixture and equipment supports shall be fully detailed where necessary to clarify the designer's intent.
- All electrical circuit outlets shall be shown with the circuit number or numbers to which each is connected.
- Wiring diagrams shall be included for clarification for all special control systems.

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- Provide settings for circuit breakers with electronic trip units.
- Provide an electrical single line diagram for the project. See Drawing # 260620.23-1, Single Line Diagram – Electrical
- Provide an electrical site plan indicating all site conduit, duct banks, lighting, mechanical equipment connections, and electrical equipment including pad mounted switches, transformers, generators, load banks, panels, etc.
- Provide an electrical lighting site plan with point by point lighting illumination calculations indicating max/min ratios, average foot candles. Use .85 light loss factor for all fixtures.
- On the drawings provide NEC load calculations and energy code compliance calculations.
- Lighting fixture schedule with descriptions, lamp type, wattage, and ordering information.
- Equipment schedules for feeders, kitchen equipment, mechanical connections, etc.
- Fire alarm floor plans including location of control panels, remote annunciation panels, each device, sound levels for each annunciation device, riser diagram indicating all devices and cable types.

CIVIL/UNDERGROUND UTILITIES

For all new civil and underground utility work to be done on University properties, the Design Consultant of contract shall be responsible for providing record as-built utility drawings when project is completed. The Design Consultant is required to make sure all sub-design consultants (Civil, Domestic, Fire, Electrical, Mechanical, Plumbing, etc.) including all private utility companies (i.e., TMWA, NV Energy, etc.) involved with project follow the same electronic drawing format and final as-built/GPS deliverable process (no exceptions). The Design Consultant of contract shall incorporate all utilities within the scope of the project into one final Site Utility Plan.

The General Contractor shall be responsible for providing the Design Consultant with accurate as-built utility information throughout the utility installation phase. The General Contractor is required to hire the services of a Professional Licensed Surveyor prior to starting any utility work to map, via Global Positioning System (GPS), all new and existing utilities. The Project Coordinator shall determine if the services of a Professional Licensed Surveyor are required or agreed-upon substitute per the scope of utility work.

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During the initial utility installation phase, the Design Consultant of contract shall be required to submit a progress partial compliance check set to the University Project Coordinator within the agreed-upon set time frame for review and compliance (no exceptions). The Project Coordinator shall determine the time frame for partial and final as-built utility deliverables based upon the scope of utility work

Partial and final payment shall be withheld from the Design Consultants and General Contractors contract until such partial and final utility as-built deliverables are completed to the University's satisfaction. Failure to produce accurate utility as-built record drawings in a timely manner shall result in monetary damages subtracted from withholdings from final payment equal to fees assessed by a 3rd party Professional Licensed Surveying Consultant to complete the work per the University Design and Construction Standards.

CIVIL/UNDERGROUND UTILITIES DATUMS

Drawings shall be NAD 1983 Nevada State Plane Zone West 2703 US Survey Foot horizontal and NGVD29 vertical. If the project is not in Nevada, use appropriate state plane coordinate system. Architectural drawings may use architectural units on a coordinate system convenient for the project, and reference NAD83 coordinates at each building corner. Drawings shall be in 2D with $z = 0$ feet. 3D and BIM documents are welcome in addition, but not in lieu of standard submittals.

Horizontal and vertical coordinate system to be referenced and survey benchmark location(s) indicated on all design drawings. All coordinates to be Nevada State Plane, NAD 1983. Include ground to grid conversion scale factor if submitting GPS coordinates in ground.

Specify the horizontal x-y coordinates at every pipe bend.

Use 1" = 40' scale for plans, or agreed-upon scale.

Piping inverts shall have the vertical elevation identified to an accuracy of one tenth of a foot.

Show all other existing utilities on plan.

Show grade contours on all plans, not less than 2-foot intervals.

Always indicate pipe slope and direction of slope.

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Must show both the supply and return lines for high temp hot water piping, a single line representation is not acceptable.

Must show manhole and manhole piping details in scaled plan and sections, not less than $\frac{1}{4}'' = 1'$ scale.

Thermal expansion (high temp hot water) must be accommodated by expansion loops for stated design temperature conditions. Anchors and guides must be indicated on plan and profile with specific dimensions and details.

Indicate and detail thrust blocks for all pressure systems. Specify piping system joint type: bell & spigot, mechanically restrained joint, welded, threaded, flanged etc.

All plans to have north arrow indication.

For high temperature hot water piping, piping design shall be in accordance with ASME/ANSI B31.1, Power Piping, latest edition. A thermal stress analysis must be completed for all buried piping and piping inside of manholes.

AIA Layering Standards are recommended but not required.

All piping and duct banks must include invert elevations.

All manholes to be to scale.

Pipe diameters must be indicated. (NPS).

Duct banks must indicate # of conduit, size of conduit and arrangement; e.g. 2 x 2. For electrical, indicate conductor sizes.

All valves to be indicated.

All contours at two-foot intervals.

All bends/changes of direction must have horizontal GPS coordinates identified in NAD 1983 coordinate system. Final underground utility record drawings "as-builts" must have ground to grid conversion scale factor listed on drawings.

Provide a tracer wire with suitable access above all non-metallic utilities (no exceptions).

All underground utility marking shall be in accordance with NRS 455, 'Subsurface Utilities Marking Requirements'.

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SURVEYING / GPS / AND DATUM REQUIREMENTS.

As-built utility locations by global positioning system (GPS): The General Contractor shall obtain the services of a Nevada Licensed Professional Land Surveyor (unless approved otherwise by the Project Coordinator) to provide as-built locations and elevations for constructed utilities. The locations and elevations shall be tied using global positioning equipment. The tied locations shall be based on Nevada State Plane West Zone (NAD 83/94) as determined with Real Time Kinematic (RTK) GPS observations.

Accuracy: Horizontal Accuracy: +/- 0.20 feet; Vertical Accuracy: +/- 0.20 feet.

Format: The GPS information shall be provided to the University so that they can re-establish the tied points using global positioning equipment.

GPS point files shall be submitted in .CSV (Comma-separated values) in excel table format with point descriptions based on the following below.

GPS coordinates shall be taken for all existing utilities and listed as “E” with descriptions listed below.

All abandoned utilities that are left in place shall be located and identified by GPS and listed as “E-ABND” with descriptions listed below.

All new utilities locations shall be identified with GPS and listed as “N” with descriptions listed below.

Include sizes of new and existing pipe sizes.

The tied point shall be as follows

Sanitary Sewer and Storm Drain:

- Location at the center of all manholes with elevation at rim and invert.
- Location and top of pipe elevation at any horizontal or vertical angle points.
- Location and top of pipe elevation at points of entry into buildings.
- Location and top of pipe elevation at all points of crossing with other utilities.

Water (domestic, fire, irrigation mains), Natural Gas, High Temperature Hot Water, Chiller Piping, and Mechanical Systems:

- Location and top of pipe elevation at all horizontal or vertical angle points.

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- Location and top of pipe elevation at all valves, fittings, service tees and at points of entry into buildings.
- Locations and top of pipe elevation at all points of crossing with other utilities.

Electrical, Communication and Fiber:

- Location and top of duct back, or encasement, at all horizontal or vertical angle points.
- Location and top of duct back, or encasement, at all points of entry into vaults, hand holes, transformers, switches and buildings.
- Location and top of duct back, or encasement, at all points of crossings with other utilities.
- Location and elevations at four corners of all vaults, hand holes, transformers and switches.

The following types of utilities shall be “As-built” by Global Positioning System: Sanitary Sewer and Storm Drain, Water, Irrigation (mains, valve boxes, timers), Natural Gas, High Temperature Hot Water, Chiller Piping, Mechanical Systems, Electrical (medium and low voltage), Communication and Fiber.

PROJECT CLOSEOUT DOCUMENTS / DELIVERABLES

Deliverables

See [APPENDIX J](#) for As-Built Transmittal Template for Project Deliverables.

Record drawings should exactly match hard copy documents. The engineer’s stamp may be omitted from the electronic copy.

Media/Compression

Submitted via web-based file transfer program or on USB drive accompanied by as-built transmittal document. See [APPENDIX J](#) for standard template for project deliverables.

Each record drawing sheet should have a corresponding CAD file. Multiple drawing sheets may not be submitted within a single CAD file. CAD file names should be identical to hard-copy drawing sheet identification numbers. Special characters should be limited to dashes. For example, the CAD file for sheet “A-1” should be named “A-1.dwg.”

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Zipped files should be named "Project name.exe" and not UNR.exe. Only self-extracting archives should be used. Directions must be included with the transmittal and electronically in the root directory of the electronic media in *.txt format.

A full set of record drawings compiled into one PDF document, as well as CAD drawings, are required as part of the electronic deliverable package (no exceptions). Final record drawing printed hard copies are not required. Include any relevant warranties and Operations & Maintenance documents in the deliverables package.

All applicable external references (XREFS) must be included in project deliverables package. If unreferenced external references (XREFS) are used to create drawings, they should be removed before delivering final record drawings.

All font files and line types shall be included in the submittal package. The consultant is responsible for transfer of license for any purchased line types or fonts.

All color table books (.ctb files) used for plotting colors and line weights shall be included in the submittal package.

Electronic Drawing Format

Record drawings shall be in a currently supported version of AutoCAD. DXF and DWF are not acceptable. PDF or TIFF files should accompany the submittal, but may not be submitted in lieu of DWGs. DWG files should be last saved with the default ACAD.MNU menu. If converting from a format other than DWG, ensure all graphic elements are preserved.

Drafting

All lines must be snapped/closed.

Drawings shall not contain multiple overlaid lines or lines with multiple segments unless overlaid lines or adjacent line segments are assigned to different layers.

Drawings shall be purged of empty, unused, or non-essential drawing data.

All drawings will be developed in full scale format (one foot = one foot) and will be maintained as an integrated whole with individual drawings plotted using paper space.

Entity colors shall be defined "by layer."

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Blocks shall be created on the corresponding layer (electrical block on electrical layer), or on layer 0 if there is no corresponding layer. Use 1:1 scale to create blocks and insert at the appropriate scale.

Attributes shall be defined on layer 0 (zero).

AIA layering standards are preferred.

Only native AutoCAD fonts, line types, and hatch pattern shall be used.

All shades and fills must be decipherable when the drawing is reproduced using photocopy methods.

CONSTRUCTION

Construction Signage and Fencing

Temporary construction signs shall be 6'-0" wide by 3'-6" high. Lettering shall be ROMAN style. Lettering color for University of Nevada, Reno shall be Nevada Blue and all other lettering black. Background color to be white. Lettering to be minimum 1/4" to maximum of 2-3/4" high.

Sign format as follows:

- University of Nevada, Reno
- Project Title
- Completion Date
- Contractor Name
- Architect Name
- Structural Engineer Name
- MEP Engineers Name(s)

All construction sites to be enclosed at limits of work boundary as established at the construction kick-off meeting by 6'-0" high chain link fencing, unless otherwise approved by Facilities Services.

End of Section 2.0

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ARCHITECTURAL DESIGN GUIDELINES

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SECTION 3: CAMPUS SIGNAGE POLICY AND STANDARDS

SUMMARY

The University recognizes the need for a comprehensive, coordinated system of campus signage. It is important for signage to provide a distinct identity for the University of Nevada, Reno and to help establish a welcoming image. Signage can enhance the character of the University by providing direction and information regarding campus buildings, departments, events, and services. Every effort is made to limit signage on campus with the understanding that some signage is essential to support the mission of the University. Uniformity of design is necessary to contribute to the overall aesthetic value of the campus. All signage must be approved by the Facilities Resource Committee.

The signage policy for the University facilitates an aesthetically consistent approach to signage across campus. The policy is concerned with general design standards for all campus signage, and with the priority areas where implementation of these new standards shall be given immediate attention. All logos will be consistent with the University trademarked logo criteria.

The purpose of this policy is to set standards for the departments of the University to follow when making decisions about campus signage. These guidelines are intended to encourage a friendly, welcoming atmosphere where the necessary information is readily available for visitors, new students and staff to become easily familiarized with the campus.

Requests for signs in common or shared areas must be reviewed and approved by the University Facilities Resource Committee.

TYPES OF SIGNAGE

CAMPUS IDENTIFICATION SIGNAGE

Refers to all signage on the periphery of the campus, which notifies visitors that they have arrived at the University of Nevada Reno. Three categories of identification signage will be addressed.

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Gateway/Entry/Portal Signage

Entry signage serves to notify visitors, students, and passersby that they have arrived at the University of Nevada, Reno. Gateway/portal signage is an important part of campus way-finding and can enhance a visitor's arrival to the University.

Each entry location to the campus provides unique access, traffic, and visibility opportunities. Therefore, criteria for all entry signage is determined on a case by case bases through collaboration with Facilities Services and Marketing and Communications. Final approval is provided by the University Facilities Resource Committee.

Campus Interior Traffic/Vehicular Signage

Traffic/Vehicular signage marks the campus intersections and is easily read from automobiles. These signs are used to direct the vehicle user through the campus to parking areas and points of interest.

Pedestrian Way-finding Signage

Pedestrian signage provides way-finding information to pedestrians on campus and is standardized.

Pedestrian signs may identify key departments within certain buildings.

Building Identification Signage

Refers specifically to signage that identifies a building on the exterior. Three categories of building identification signage are discussed:

Building Dedication Plaques

Standard plaques shall be placed on Nevada System of Higher Education buildings as follows:

- Building plaques should be installed for the building dedication.
- The plaque should be one piece, cast bronze, wall mounted in main entrances to building.
- Plaques should not exceed 36" x 36" and may include the following:
 - Building name and year of completion
 - University Institution
 - Special message if appropriate

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- Names of Regents*
 - Governor*
 - Chancellors*
 - Institution President(s)*
 - State Public Works Division
 - Name of Design Firm
- *At the time of dedication

Affixed Building Signage

Lettering: Design and placement standards for new affixed building signage shall be consistent with current design and construction standards. See **APPENDIX I** for typical building lettering detail

This type of signage is mounted onto the exterior face of a building and is typically lettering (not panels).

Free Standing Signage

Typically used for multiple vendors in a building.

REGULATORY SIGNAGE

Parking and Traffic Signage

Parking signage shall be coordinated through Facilities Services.

ADA and Access Signage

Typical flag sign posts are 3" x 3" x 8" long tube steel, mounted 24 inches in concrete.

Flag is typically 1/8" x 12" x 12" steel, welded to steel post for strength.

Interior Signage (See **DIVISION 10: SPECIALTIES**, and **APPENDIX I**, *Signage Standard Details*, for additional information on interior signage)

Directional Signage

Directional signage is intended to provide directional assistance at both building lobbies and corridor junctures.

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Directories

Main building directory boards are to be mounted within each main entrance to a building.

The purpose of a directory is to list the locations of faculty offices, and other important rooms, under the department with which they are associated.

Main directories will include a listing of each department and a summary of floors and/or rooms occupied by these departments.

Main building directory boards are to be mounted within each main entrance to a building.

Interior Way-Finding Signage

Interior way-finding signage directs people at various junctures, or “forks in the road” within buildings. The design team shall review the need and locations for building maps with the owner at Design Development.

Room Signage

Includes: room numbers, occupant name and room space identification depending on sign type within building and room type.

Emergency Information Signage

Egress Signage is used to assist people with exiting a building safely and efficiently to the designated assembly area.

Hazards and Emergency Contact Signage is posted at the entry to areas containing hazards with information of the type of hazard, access requirements, and contact information of responsible parties.

RESIDENTIAL LIFE SIGNAGE

The University Logo is typically not displayed on buildings, however, Residential Life may, at their cost, install the block “N” logo sign, meeting Marketing and Communication specifications, on residential buildings. Residential Life will collaborate with Facilities Services for sign size and location. Facilities Services retains final approval within parameters provided by the Facilities Resource Committee. The sign may not interfere with building entry signage, may be no larger than 60 inches by 60 inches and will not

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Campus Design & Construction Standards

be illuminated. Residential Life is responsible for the maintenance and repair of installed signs.

End of Section 3

CAMPUS SIGNAGE POLICY & STANDARDS

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DIVISION 1: GENERAL REQUIREMENTS

013300 – SUBMITTAL PROCEDURES

All submittal requirements shall be stated in the project specification. The University of Nevada, Reno Facilities Services Department requires electronic versions all submittals, shop drawings and correspondence for the University records. In addition, specifications shall identify number and format of copies for contractor uses. Contractors shall obtain comments and approval of submittals from both Facilities Services and A/E. (Architects/Consultant team).

Specifications shall require all supplied materials be asbestos free. The contractor(s) shall provide certification that all materials supplied are asbestos free.

The form shall be signed by the supplying contractor, the general contractor and the architect to ensure the review process is accomplished. Materials brought to the job that are not certified shall be removed until certified. This certification is not required for uncoated or unfinished steel, aluminum, brass, masonry, concrete, or glass.

018113 – SUSTAINABLE DESIGN REQUIREMENTS - LEED

It is University policy that all campus building construction meets or exceeds LEED Silver equivalency.

017419 – CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

University policy is to salvage and recycle as much nonhazardous demolition and construction waste as possible.

END OF DIVISION 1
GENERAL REQUIREMENTS

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DIVISION 2: EXISTING CONDITIONS

028213 - ASBESTOS ABATEMENT

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

State and Federal regulations require that every remodel, renovation or demolition project be surveyed for the presence of asbestos and lead prior to the project's commencement. The survey shall be specific to the project itself and must be generated and signed by the licensed inspector for each project undertaken.

Review of a building's historical data is but one component of the required survey. Many variables influence the validity of historical survey data. Questions about the scope of prior remodels or renovations shall be answered. Previous abatement activities shall be quantified and documented. Additional samples of all new or modified construction materials shall be collected. These and other concerns shall be addressed when preparing the required survey report.

Asbestos and lead surveys shall be performed in advance of doing any demolition, construction, or abatement work. When abatement work is needed and is required to go to bid, a licensed asbestos consultant shall write the abatement specifications.

The University Asbestos Program Guide is available on the Environmental Health and Safety Department website.

02200 - EARTHWORK

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Consultant shall follow the earthwork design criteria as established in the Geotechnical Report. Any deviations from the Geotechnical Report recommendations shall be approved by both the Geotechnical Engineer as well as the UNR Project Manager.

In cases where no Geotechnical Report was prepared and conditions warrant initiation of a report, consultant shall make their request for additional information to the UNR Project Manager.

EXISTING UTILITIES

Location of existing underground utilities shall be coordinated with both "USA Dig" and University Planning and Construction, as there are both utility and University owned underground installations on campus.

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Protect existing structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

Unclassified Excavation

Excavate to sub-grade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the contract sum or the contract time shall be authorized for rock excavation or removal of obstructions.

Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by the project's Architect of Record.

Testing Agency

A qualified independent geotechnical engineering testing agency shall perform field quality-control testing.

Protecting Graded Areas

Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

Where settling occurs before project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

Disposal

Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Campus property.

Drainage

Site development shall ensure positive drainage and minimum erosion. Rolled curbs shall not be used.

Storm Protection Plan

Create waddles around storm drains and any areas where there is soil erosion potential.

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Irrigation Water Management Plan

Contractor shall provide an irrigation water management plan for existing landscaping for the duration of the project. Tree protection per ANSI A300 Pamphlet on Construction around Trees.

End of Division 2
EXISTING CONDITIONS

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DIVISION 3: CONCRETE

SYSTEM DESIGN AND PERFORMANCE STANDARDS

CONCRETE MATERIALS

Concrete shall be proportioned, mixed and placed in accordance with the provisions of the IBC and the American Concrete Institute.

Exterior Concrete shall have minimum compressive design strength of 4,000 psi at 28 days. Horizontal application shall also contain synthetic fiber reinforcing, minimum 1.5 pounds per cubic yard of concrete.

The minimum compressive strength for concrete used in structural applications, including slabs-on-grade, shall be a minimum of 3,000 psi at 28 days.

An air-entraining admixture, resulting in 5% to 7% entrainment, shall be used for all concrete exposed to the effects of weather or freezing and thawing.

All Portland cement shall be an approved American (USA) brand conforming to ASTM C150, Type II or Type V, as recommended by the project geotechnical report. Different types of cement shall not be used in the same pour or structural member.

Admixtures containing calcium chloride shall not be specified.

Fine and coarse aggregates for normal weight concrete shall conform to the requirements of ASTM C33.

Lightweight aggregate shall conform to ASTM C33.

Water used for concrete mixing shall be clean and free from oil, acid, alkalis, organic matter, or other deleterious substances and shall conform to the requirements of ASTM C94. Drinking water is generally acceptable.

Mix designs shall be submitted to the Consultant for approval prior to any production of concrete for structures. Water-cement ratios, curing methods, and finishing requirements shall be specified to reduce cracking in the placed concrete.

A water-reducing admixture shall be specified for all concrete.

Contractor shall be fully responsible for protection of all exposed horizontal concrete and replace any such concrete damaged or defaced during set period.

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CONCRETE REINFORCEMENT

Structural concrete shall be reinforced with deformed bars conforming to ASTM A615, Grade 40 or Grade 60. Structural slabs and slab-on-grade shall be reinforced with rebar or welded wire fabric. Synthetic fiber reinforcement may be used in non-structural applications or in combination with steel reinforcing for structural applications, to control shrinkage cracking.

Reinforcing steel shall be detailed and fabricated in accordance with the Manual of Standard Practice for Detailing Reinforced Concrete Structures (ACI 315) and the CRSI Manual of Standard Practice (Concrete Reinforcing Steel Institute).

End of Division 3

CONCRETE

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DIVISION 4: MASONRY

SYSTEM DESIGN AND PERFORMANCE STANDARDS

GENERAL MASONRY PROCEDURES

Masonry design and construction, and requirements for special inspection or periodic special inspection, shall comply with the IBC recommendations and the National Concrete Masonry Association (NCMA).

Masonry construction shall be reinforced with vertical and horizontal deformed bar reinforcing. Joint reinforcing may be used in lieu of horizontal bars.

Specified requirements for continuous or periodic special inspection of masonry shall be approved by the University Facilities Services Department and/or Nevada State Public Works Division.

Where prism testing is required, the minimum strength of masonry, grout, and mortar shall be specified.

The tops of all masonry walls shall be provided with metal architectural coping or full width metal flashing installation below a cast stone, natural stone, or concrete masonry cap material.

Exposed exterior masonry shall receive two coats of a non-staining sealer prior to completion of construction.

Sandblasting visible masonry surfaces to clean off mortar shall not be permitted.

End of Division 4

MASONRY

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DIVISION 5: METALS

051200 - STRUCTURAL STEEL FRAMING

SYSTEM DESIGN AND REQUIREMENTS

All structural steel and their connections shall be designed, fabricated and erected in accordance with the latest specifications of the American Institute of Steel Construction.

The Engineer of Record shall: (a) design and detail all connections on the structural drawings, or (b) review and approve all shop drawings, including connections designed and detailed by the Fabricator. For connections to be designed by the Fabricator, the Engineer of Record shall clearly indicate all design loads on the drawings.

All structural penetrations through roofs shall be round.

PRODUCT STANDARDS AND MANUFACTURERS

Structural Steel

The allowable type and grade of all structural steel, plate, bar, pipe, tubes, and bolts shall be specified in the construction documents.

Welding

All welding, welding procedures and welder qualifications shall be in accordance with the American Welding Society, AWS D1.1.

05500 - METAL FABRICATIONS

SYSTEM DESIGN AND REQUIREMENTS

In general, miscellaneous metal items such as lintels, embeds, grating, ladders, bollards, stair nosing, trim, and similar architectural features shall be designed and sized to meet codes and their applications.

Handrails, both interior and exterior will be painted bronze to match the medium, bronze aluminum window and door frames, or as directed by Facilities Services to match existing door and window frames.

[Request Drawing Details](#) for standard design details:

- Typical Handrail (Drawing # 055213-1)

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- Typical Exterior Stairs and Handrail (Drawing # 055213-2)
- Typical Ramp (Drawing # 055213-3)

Stairs, handrails and ramps shall comply with the latest ADA standards.

PRODUCT STANDARDS AND MANUFACTURERS

Metal Surfaces, General

Provide materials with smooth, flat surfaces, unless otherwise indicated. For components exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

Bollard and base plate shall be Trafficguard Round Post HRP or equivalent and painted UNR blue, Tiger Drylac Powder Coatings RAL 5011 049/43180 or equivalent.

End of Division 5
METALS

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DIVISION 6: WOOD, PLASTICS, AND COMPOSITES

06400 - ARCHITECTURAL WOODWORK

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Timber design and construction shall be in accordance with the IBC, and recommendations of the American Institute of Timber Construction (AITC).

Specifications shall establish the species, grade and allowable moisture content of all wood and wood products used.

The use of exposed wood or other high maintenance materials for exterior finishes shall be avoided.

Drawer Construction

Fabricate with exposed fronts fastened to sub-front with mounting screws from interior of body. Join sub-fronts, backs, and sides with glued rabbeted joints supplemented by mechanical fasteners or glued dovetail joints.

QUALITY ASSURANCE All casework must comply with American Woodwork Institute (AWI) Standards (AWS) with a minimum of custom grade or better, style as determined by the Architect. The casework fabricator shall be a licensed participant in the AWI Quality Certification Program.

Submittals

Provide AWI Quality Certificates/labels for the shop drawings, fabrication and installation for all casework where the value of the casework exceeds \$20,000

Casework must be fabricated by the manufacturer or a casework fabricator and/or installer that is a licensed participant in the AWI Quality Certification Program to install the manufacturer's casework.

Load test requirements

Grade 1, 50 lbf (22.2 kg)

- for drawers not more than 3 inches high and not more than 24 inches wide

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- for drawers more than 3 inches high but not more than 6 inches high and not more than 24 inches wide

Grade 1HD-100, 100 lbf (44.5 kg)

- for trash bins not more than 20 inches high and 16 inches wide
- for drawers more than 6 inches high or more than 24 inches wide
- for computer keyboard shelves

MATERIALS

Cabinet Hardware

Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 170 degrees of opening, self-closing.

Adjustable Shelf Standards and Supports

BHMA A156.9, B04071; with shelf rests, B04081 BHMA A156.9, B04102; with shelf brackets, B04112.

Drawer Slides

BHMA A156.9.

Grade 1 and Grade 2: Side mounted; full-extension type; zinc-plated steel with polymer rollers.

Grade 1HD-100 and Grade 1HD-200: Side mounted; full-extension type; zinc-plated-steel ball-bearing slides.

Door Locks

BHMA A156.11, E07121.

Drawer Locks

BHMA A156.11, E07041.

Door and Drawer Silencers

BHMA A156.16, L03011.

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Exposed Hardware Finishes

For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.

For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

End of Division 6

WOOD, PLASTICS, AND COMPOSITES

DIVISION 7: THERMAL AND MOISTURE PROTECTION

07000 - GENERAL

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Roof slope, including crickets, for new roof construction shall be a minimum of 1/2 inch per foot. Re-roof projects shall follow the same slope standards as new roof systems. Slope variances will be considered by the University Facilities Services only for re-roofing projects where conditions mandate a lesser slope.

All roofs shall be free from mechanical equipment. Exceptions to this standard shall be approved in advance by Facilities Services. All ductwork, piping, cabling, conduit, etc. shall be in the attic or ceiling space. Proper maintenance access, lighting, and walking surfaces required.

For new construction, access to roofs with roof mounted mechanical equipment more than 40 pounds shall have one elevator and one stair that extend to the roof level. Access to roofs where there is minor mechanical equipment located (equipment with replacement weighing 40 lbs. or less) shall be provided by extending one stair to the roof level.

For new construction, access to roofs without roof mounted mechanical equipment shall have reasonable access provided with a roof access hatch, not less than 3-foot square, in an accessible location. Access hatches shall not be located in restrooms, offices or janitor closets.

In addition to other code requirements, all roofs on new building shall have one 20A electrical outlet within a 100-foot radius of all points on the roof. All roofs shall have one freeze proof hose bib within a 100-foot radius of all points on the roof.

All mechanical equipment shall be set on roof curbs; no wood sleepers will be allowed.

All roof parapet walls shall be 42 inches in height above the roof line. Where parapets are not applicable, roof fall protection/anchors/tie-off shall be provided per OSHA requirements.

Provide wood nailers and metal flashing (or an approved metal system) at the top of all parapet walls. Coping shall be minimum 24-gauge galvanized iron with 22-gauge

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continuous clips. Any alternate parapet top details shall be approved by the University Facilities Services Department.

Where lightweight, insulating, non-structural concrete is used under roofing, the deck shall be vented at not less than 1-1/2 percent of the roof area.

Foam roofing systems shall not be specified unless the scope of work is patching of an existing foam roof or is approved by the University Facilities Services Department.

The consultant's specifications shall require the contractor to schedule and conduct a mandatory pre-roofing coordination meeting at the job site, prior to installation of any roofing. The purpose of the coordination meeting is to review requirements of the contract documents, to ensure that details are appropriate, review application procedures, coordinate related work, determine surface readiness, and discuss material storage and protection.

The general contractor, roofing contractor, roofing manufacturer's representative, architect, the University Facilities Services Department and/or State Public Works Board's representative as applicable, shall all attend this meeting.

No roofs shall drain or shed snow over entrances.

Shingle roofs must be six nailed and hand tabbed.

Provide ice/water shield at all valleys and perimeter of sloped roofs 2:12 and over.

Pitch pockets shall not be used.

PRODUCT STANDARDS AND MANUFACTURERS

Roofing systems shall be designed to meet Factor Mutual (FM) I-90, requirements, using systems which meet FM certifications.

Roofing systems shall be designed to provide a U.L. Class "A" rated roof assembly.

The standard shingle for the University shall be a 50-year Elk laminated shingle, unless approved otherwise by the University Facilities Services Department. Color selected by University Facilities Services Department.

07500 - MEMBRANE ROOFING

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

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Roofing systems shall be a PVC sheet in manufacturer's standard thickness, but not less than 60 mils (not nominal thickness) and approved by the University Facilities Services Department for the State's 20-year guarantee prior to issuance of bid documents. No private labeling of the roof membrane will be allowed. The membrane supplier/manufacturer must manufacture its own membrane. The Adopted Standards for the State Public Works Division must be followed.

Low slope roofs shall be white and must meet the requirements for an EnergySmart roof membrane EnergySmart (white), initial reflectivity of 0.83, initial emissivity 0.90, solar reflective index (SRI) of >104. Colors of sloped and /or exposed roofing must be Earth tone. Colors shall be approved by University Facilities Services Department prior to issuance of plans for bid.

Roof slopes shall be 1/2" per foot for all new buildings. Roof slopes for re-roof must meet the roof slope for new buildings unless written approval is given by the University Facilities Services Department.

Buildings shall be designed to minimize roof penetrations.

All roof curbs, including skylights, shall be a minimum of eight inches high above the finished roof and shall be located 10 feet from the roof edge. Skylights shall be protected with fall protection barriers.

All Roof Drains including overflow drains shall be covered with a cast iron (no plastic) dome.

Roof membranes shall be protected with appropriate manufacturer's pre-approved walk pads or wearing surfaces around all sides of roof top equipment and high traffic areas. These pads must be pads from the same manufacture as the rest of the materials that are being installed, and are under the same warranty.

Provide roof expansion joints in built-up and modified roof systems as follows:

- Where expansion or contraction joints are provided in the structural system.
- Where steel framing, structural steel, or decking change direction.
- Where separate wings of "L", "U", "T", or similar configurations exist.
- Where the type of decking changes; for example, where a precast concrete deck and a steel deck abut.
- Where additions are connected to existing buildings.

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- At junctions where interior heating conditions change, such as a heated office abutting an unheated warehouse, canopies, etc.
- Where movement between vertical walls and the roof deck may occur.

Roofs shall be flood tested 4" minimum depth at roof drain locations, for a 48-hour period and verified watertight, prior to the filing of the Certificate of Substantial Completion.

Contractor shall be required to perform flood testing on all low slope roofs.

PRODUCT STANDARDS AND MANUFACTURERS

Only those manufacturers whose PVC products have been preapproved by the State of Nevada will be considered.

Secure Rock, as manufactured by USG, is not an acceptable recovery board for any roofing system until they have corrected their shrinkage problem, dated November 29, 2012.

All roofs shall be IBC class A, FM I-90, and UL rated.

07600 - FLASHING AND SHEET METAL

Metal roofs shall have all concealed fasteners, be 24-gauge material, and colors of earth tones approved by the University Facilities Services Department.

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STATE OF NEVADA
UNIVERSITY OF NEVADA, RENO

Nevada System of Higher Education on
behalf of University of Nevada, Reno

2601 Enterprise Road
Reno, Nevada, 89512



Facilities Services

Mailstop 0182
1664 North Virginia Street
Reno, Nevada 89557

ROOFING SYSTEM
20 YEAR WARRANTY

Building Name: Click or tap here to enter text.

Project Address, City, State: Click or tap here to enter text.

SPWD Project Number: Click or tap here to enter text.

SPWD FCA Index Number: Click or tap here to enter text.

Date of Completion: Click or tap to enter a date.

Warranty End Date: Click or tap to enter a date.

Roof Type Membrane: Click or tap here to enter text.

Roof Type Deck: Click or tap here to enter text.

Roofing Manufacturer: Click or tap here to enter text.

Address: Click or tap here to enter text.

City, State, Zip Code: Click or tap here to enter text.

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Phone: [Click or tap here to enter text.](#)

Owner: University of Nevada, Reno

Address: Facilities Services- Mailstop 0182

City, State, Zip Code: Reno, Nevada, 89557

Phone: (775)-784-6514

WARRANTY TERMS AND CONDITIONS

1. It is hereby stipulated and agreed that the Roofing Manufacturer shall conform to all the conditions set forth herein as pertinent to a warranty (hereafter referred to as the Roofing Warranty) for the completed roofing system as specified and installed. The Roofing Warranty shall include all components from the roof deck up to the top of the roof membrane.
2. The Roofing Manufacturer shall provide a 20-year Roofing Warranty which shall provide that:
 - a. The roofing system shall be maintained watertight for a period of 20 years from the listed Date of Completion.
 - b. The Roofing Contractor is a certified installer of the specified and installed roofing system.
 - c. The Roofing Manufacturer, at his expense, agrees to make all repairs to the roofing system, including roof drains if supplied by the Roofing Manufacturer, as required to eliminate all leaks resulting from any cause except those causes specifically noted in the following paragraph.
3. This Roofing Warranty shall not be applicable to damage or loss caused in whole or in part by:
 - a. Acts of God, including but not limited to lightning, sustained winds exceeding 70 miles per hour, earthquake, fire, or hailstorm exceeding the manufacturer's most current published impact resistance for the roofing system specified.

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- b. Vandalism, acts of war, or civil disobedience.
 - c. Alteration of the roof or installation of structures, fixtures, or utilities on or through the roof without the prior written approval of the Roofing Manufacturer.
 - d. Settling, warping, or other failure of the structure to which the roofing system is attached.
 - e. Environmental fallout, chemical attack or use within the building, including but not limited to commercial or industrial solvents, acids, caustic fluids, oils, waxes, greases, or plasticizers.
 - f. Failure by the Owner to use reasonable care in maintaining the roof.
 - g. Excessive traffic (other than for periodic maintenance of the roof or roof-mounted equipment), abuse to the roofing system, or storage of materials on the roof.
 - h. Acts of negligence or misuse by parties other than the Roofing Manufacturer or the authorized Roofing Contractor.
 - i. Water entering onto the roof from other buildings or structures.
 - j. Repairs or other applications to or on the roofing system unless performed by an authorized applicator in a manner authorized in writing by the Roofing Manufacturer.
 - k. Ponding water, defined as water ponding on the roof membrane in amounts such that the water will not evaporate within 48 hours during a normal sunny, summer-equivalent climate condition.
 - l. Maintenance of caulking, which shall be the responsibility of the Owner.
4. The Owner shall provide the Roofing Manufacturer with written notice of any defect or leak in the roof and of any claim under this Roofing Warranty within thirty days of the discovery of the defect or leak. If the Roofing Manufacturer does not respond within 5 days of receipt of such notification, the Owner shall have the right to take such temporary measures as deemed necessary to protect the contents of the building without invalidating this Roofing Warranty. Such measures may include temporary patches applied by a roofing contractor approved by the Roofing Manufacturer. If there is no roofing contractor approved by the Roofing Manufacturer in the local area, the Owner may have temporary repairs made by any reputable roofing contractor. No

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temporary work shall be performed without prior notification and response from the Roofing Manufacturer. It shall be the Roofing Manufacturer's responsibility to re-work any such temporary repairs as required to re-establish the integrity of the original roofing system, utilizing an authorized roofing contractor.

5. In the case of extreme emergency situations, the Owner shall have the right to immediately implement the procedures outlined in the preceding paragraph without invalidating the Roofing Warranty. It shall be the undersigned Roofing Manufacturer's responsibility to re-work such temporary work (as described in the preceding paragraph) as necessary to re-establish the integrity of the original roof system.
6. If there is a failure of the roofing membrane and/or of the roofing system that occurs within the duration of the warranty, the Roofing Manufacturer shall repair or replace the roofing system and pay all costs necessary to completely remedy such failure. The terms and conditions pertaining to the inspection, repair, and/or replacement of the roofing membrane and/or roofing system shall be as follows:
 - a. Upon receiving notice of any failure, the Roofing Manufacturer shall visit the site within 14 days of such notice and shall submit a report of his findings to the Owner within 7 days of the visit.
 - b. In any case where failures and necessary repairs involve multiple locations, and the total of the areas requiring repair or replacement exceeds 30% of the total roof area, the Roofing Manufacturer shall replace the entire roofing membrane and/or roofing system, as applicable. If such failures are concentrated in only one or two areas of the roof, the Roofing Manufacturer shall have the option of replacing the entire roofing membrane and/or roofing system, or replacing only the one or two concentrated areas, in their entirety.
 - c. The Roofing Manufacturer shall replace any roofing system components that become damaged during the roofing membrane removal process.
 - d. All repair or replacement work shall utilize materials that are identical to the original products.
7. The terms and conditions of this Roofing Warranty shall become invalid if the roofing system is used in a manner or for a purpose for which it was not designed, or if any additions, alterations, or repairs (except emergency or temporary repairs) are made without notification and written approval from the Roofing Manufacturer.

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8. The Roofing Manufacturer shall not be liable for any incidental or consequential damages to the building or its contents resulting from a leak in the roofing system.
9. The terms and conditions of this Roofing Warranty shall be in lieu of all other warranties expressed or implied.
10. The Roofing Manufacturer's signature on this Roofing Warranty shall serve as certification and agreement that the roofing system (including walk pads) is installed as required by the Roofing Manufacturer and that the roofing system will be fully warranted as installed.

ROOFING MANUFACTURER SIGNATURE

Print Name: _____

Signature: _____

Title: _____

Date: _____

END OF DIVISION 7

THERMAL AND MOISTURE PROTECTION

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DIVISION 8: OPENINGS

081313 – ALUMINUM - FRAMED ENTRANCES AND STOREFRONTS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

System shall be engineered.

Aluminum storefront systems shall accommodate University hardware requirements.

Exterior frames shall be constructed of a minimum 16 Ga. with welded corners. Interior frames shall be constructed of a minimum 18 Ga. with welded corners.

Entrances with two or more doors will have keyed removable mullions.

PRODUCT STANDARDS AND MANUFACTURERS

Aluminum Storefront and Doors

Kawner 451 medium bronze anodized aluminum with insulated solar bronze glazing. Kawner 350 medium stile doors with insulated solar bronze glazing. Anodized finish shall be 7 mil. thick minimum for all doors and framing. Selection of other aluminum and/or glazing finish colors shall only be considered with formal request made by design team and formal approval given in writing from a director within Facilities Services Department.

Existing building renovations and constructions, it is expected and acceptable to match color of existing frame and door styles and finishes

Door Operators

Operators shall be provided at least at one entrance, use Stanley Magic Force. For both exterior and interior applications provide interior and exterior push button controls hard wired to the door operator. Use elongated vertical panel push plate operators for high and low activation for all new construction and on retrofits to existing conditions unless infeasible. Push plates shall include a handicap logo and push to open lettering.

Sliding Type Automatic Door Operators

Stanley model Dura Glide (DG) with access control. Exterior set applications need closers in SX panels. Provide with battery back-up. Provide with alarm contacts at exterior application sets

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08700 - HARDWARE

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Locksets

Schlage Rhodes ND-series. All locksets to use standard Schlage 6-pin cylindrical type cylinders, or less cylinder to accept standard 6-pin designed cylinders. Do not use interchangeable core cylinders with Schlage Rhodes ND-Series locksets or with deadbolts.

Cylinders

Keymark by Medeco using Schlage format. Keying shall be performed by owner. Owner shall purchase all cylinders using project funds.

Closers

LCN 4040XP or Norton 7500. Special applications may require different model numbers, but quality as established by model numbers given.

LCN type. For standard glass in metal frame type doors, use LCN 4040XP. For doors accessible to people with disabilities, adjust closers to provide a 3-second closer sweep period for doors to move from a 70-degree open position to 3 inches from the latch measured to the leading door edge.

Exit Devices

Von Duprin 33, 35, 98, or 99 series silent device for rim operation. All panic device keyed access to use Schlage Full Size Interchangeable Core Housings compatible with KeyMark by medeco lock cylinders. Use Rim exit devices with keyed removable mullions using Schlage Full Size Interchangeable Core Housings. **Do not use surface or concealed rod devices.**

Electronic Door Locks

Any individual, stand alone, self-contained, keypad style, electronic lock is to be of Schlage grade 1 brand and design only.

Other

All keyed mortise-style doors locks, key operated switches, roll-up door locks/switches, and similar items should have Schlage Full Size Interchangeable Core Housings.

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Removable Mullion

Von Duprin keyed removable mullion.

Weather-stripping

Pemko 303 AV.

Coordinators

Glynn Johnson COR1 through CORD series

Butts

Hager BB1279 with a **lifetime guarantee** or equal manufacturer with a lifetime guarantee. Where the butts are visible on the lock side (key side door, must have one security butt per door). Use butt hinges on all aluminum doors, no pivots.

Heavy Use Aluminum Entrance Doors utilize continuous heavy duty full mortise hinges as manufactured by Pemko.

Rest Room Locksets

- Multi-Stall: Schlage lockset, Rhodes design, “D” series, 70PD function, finish noted above.
- Single Stall: Schlage lockset, Rhodes design, “D” series, 73PD function, finish as noted above.

PRODUCT STANDARDS AND MANUFACTURERS

Finish Hardware

US 26D

Electronic Door Locks

Schlage CO-100-CY-70.

088100 - GLAZING

All exterior windows shall be dual pane; Low “E” insulated glazing.

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End of Division 8

OPENINGS

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DIVISION 9: FINISHES

092900 - GYPSUM WALLBOARD

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

All gypsum wallboard shall be Type X

A painted finish shall not be used to comply with the requirements for a hard, smooth, non-absorbent surface for shower room, toilet room walls and floors

Wall Renovation

[Request Drawing Details](#)

- Renovation Wall Constructed Underneath an Existing Ceiling (092116-1)

093013 - TILE

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Tile floors larger than 10'-0" in any direction shall have relief joints not to exceed 10'-0" on center

All tile flooring and grouting shall be sealed using a water emulsion, acrylic sealer with a minimum 18% non-evaporative solids

The following tile is not to be used due to staining problems:

- Bedrosians Tile and Stone
- Item Code: TCRRUN36A
- Collection: Runway
- Color: Alabaster
- Size: 12" x 24"

095100 - ACOUSTICAL TREATMENT

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

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Acoustical Tile Ceilings

All ceilings shall be designed to resist earthquakes and have minimum height of 8'-0"

The ceiling grid for suspended ceilings shall be white steel Heavy duty. Ceiling suspension systems shall meet all requirements of 2012 IBC 808

Acoustic Wall Panels

7PCF glass fiber core with 16-20PCF tackable glass fiberboard laminated to front, full fabric wrap. Thickness, ¾" min. 1" preferred.

Chemically hardened edge treatment on all panels. Edge detail to be coordinated per project requirements. Mounting using mechanical clips. Core Material is glass fiber with resin hardened edges

NRC 0.95

Comply with ASTM D 5034 Tensile, ASTM D 2261 Tear, Colorfastness AATCC 16E, Flammability ASTM E 84 Class A, NFPA 701

PRODUCT STANDARDS AND MANUFACTURERS

Acoustical Tile Ceilings

Standard Acoustical Ceiling Tile: Ceiling Tile – Armstrong: Cortega Finish; 15" / 16" Angled Tegular, Medium Texture, 704A (24 X 24 X 5/8) or 703B (24 X 48 x 5/8) and 769A (24 x 48 X 5/8) Square Lay-In. Fire rating Class A

Clean Room Ceiling Tile: Armstrong: Optima 15" / 16" Square lay-in, Fine texture, 3114 (2 X 2) or 3115 (2 x 4). Clean Room Suspension System. Fire rating Class A

Acoustical Wall Panels

CONWED – "ACT Absorptive" sound panels or equal

Panel fabric, Guilford of Maine FR 701

096500 - RESILIENT FLOORING

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

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General Notes for all resilient flooring

All flooring must be asbestos free

Contractor/ Sub-contractor shall purchase and install

Must have 5 years of experience with specified flooring and installation

VCT (12"x12")

Wear Rating: Commercial

Thickness: 0.125" overall

Product Attribute: limestone, polyvinyl chloride resin, plasticizer, stabilizers and pigments

Color Selection: Depending on building and floor; to be approved by Facilities

Smoke Density: Less than 450 when tested in accordance with ASTM E662

Fire Resistance: Flammability minimum of Class1, type A rating per ASTM E648

Static Load Limit: 125 psi in accordance with ATMS F970 should be protected from sharp-point loads and heavy static loads.

Static Coefficient of Friction: 0.05 or > polished slip resistance requirements of OSHA ASTM D2047 James slip test

Light Reflectivity: 65-69%

Maintenance: Sweep, dust mop and/or damp mop floor. If needed seal and wax VCT with a certified janitorial service, recommend ABM Janitorial Service (775) 823-9090 or Service Solution (775) 784-4656. Sweep thoroughly, wash with low PH cleaner, rinse thoroughly, let dry. Seal floor with one coat sealer (factory recommended) let dry. Apply three coats wax (factory recommended): let dry 30 minutes between coats

Warranties: 5 year minimum/ free of charge, similar flooring to replace defective material

Recyclable: 20% Post consumer recyclability min

Method of installation: use manufactures specification installation standard: using non-flammable, low VOC, thin spread adhesive

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Quartz Tile (24"x24")

Wear Rating: Heavy duty commercial according to EN649

Thickness: 0.10"

Product Attributes: Homogeneous combination of high quality vinyl, calcium carbonate, and fine and naturally weathered quartz. Ensures that color, chipping and marbling will not wear through

Color Selection: Depending on building and floor; to be approved by Facilities

Chemical Resistance: Quartz tile needs to be virtually unaffected by surface water and most chemicals

Light Resistance: Meets light resistance requirements of ASTM F1066

Flexibility: Meet flexibility requirements of ASTM F1066 will not crack or break under pressure

Smoke Density: Less than 450 when tested in accordance with ASTM E662

Fire Resistance: Flammability minimum of Class 1 Type A rating per ASTM E648

Indentation Resistance/ Static Load: Meets the current residual indentation requirements and reaches 2100psi when tested according to ASTM F970

Static Coefficient of Friction: 0.05 or > polished slip resistance requirements of OSHA ASTM D2047 James slip test

Moisture Testing: Moisture emission from concrete subfloors must not exceed 5 lbs. per 100sf per 24 hours- ASTM F1869 and not to exceed 85% internal concrete relative humidity – ASTM F217-02

Maintenance: Dry maintenance method: remove all surface soil, debris, sand and grit by sweeping or dust mopping. Damp mop off any dried on spillages. Do not flood floor. Do not use solvents. Do not wax

Warranties: 15 year minimum/ free of charge, similar flooring to replace defective material

Recyclable: 30% pre-consumer recycled content

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ISO 14001 certified

Green Label certified

LUXURY VINYL Tile (LVT) – Tile and Plank FORMAT

Construction: Beveled Edge Preferred, Plank to be approved by Facilities

Wearlayer Thickness: 30 Mil is preferred, no less than 20 mil to be specified. If 20 mil is specified, selection for application must be approved by Facilities

Thickness: 0.098" (2.5 mm)

Product Attributes: Modular flexibility, including large format shapes and sizes, durable, long-lasting performance – withstands heavy foot and rolling load traffic, installation possible over existing flooring containing materials in need of abatement without disruption

Color Selection: Depending on building and floor; to be approved by Facilities

Stain and Chemical Resistance: Must meet or exceed ASTM F-925

Flexibility: Meet flexibility requirements of ASTM F1700

Smoke Density: Less than 450 when tested in accordance with ASTM E662

Fire Resistance: Flammability minimum of Class 1 Type A rating per ASTM E648

Static Load Limit: Must meet or exceed 1000 PSI

Maintenance: Dry maintenance method: remove all surface soil, debris, sand and grit by sweeping or dust mopping. Damp mop off any dried on spillages. Do not flood floor. Do not use solvents. Do not wax

Warranties: 20 year minimum finish warranty - free of charge, exception may be made for 20 mil specification

Method of installation: Use manufactures specification installation standards: Install flooring with adhesives, tools and procedures in strict accordance with the manufacturer's instructions.

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Rubber Flooring and Stair Coverings

Wear Rating: Relative Resistance to wear of unglazed ceramic tile by the Taber abrader test- ASTM C501

Thickness: 0.125 inch

Product Attribute: 46% rubber content, Self-waxing

Color Selection: Depending on building and floor. To be approved by facilities

Applicable standards: ASTM F-1344, Class 1A

Indentation resistance: ASTM F-970 .000" residual indent at 250 PSI

Flam resistance: ASTM E-648, Class 1

Surface burning characteristics: Must pass the Steiner tunnel test ASTM E84

Static Coefficient of Friction: Greater than 0.85

Stair Treads: ASTM F2169, Type TS, Class 2, Style 1 & 2

- Striping: Provide striping for the visually impaired
- Riser Height: 7 inches ASTM F2169, Type TS, Group 1, Style 1 and 2
- Tread Depth: Round, Square or Sculpted (hammered) 12 inches
- Must use nose filling

Maintenance: Thorough sweep with broom/ Mop with warm water

Warranties:

- 10 year minimum/ free of charge, similar flooring to replace defective material
- 10 year warranty against nose cracking using proper nosing filler
- 10 year limited warranty that the flooring will not wear through raised design

Recyclable: 7% recycled content and can contribute to LEED qualification points

Rubber flooring and stair coverings must be manufactured within 750 miles of job site.

Method of installation: use manufactures specification standards: using non-flammable and low VOC adhesive. Adhesive may vary for tread application.

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Sheet Vinyl

Wear Rating: Commercial

Heat welds are required at all seams

Needs to be verified and approved by Facilities Services project coordinator

Warranties: 15 years minimum/ free of charge, similar flooring to replace defective material commencing on date of substantial completion

Epoxy Flooring

Wear Rating: Heavy Duty Commercial

Needs to be verified and approved by Facilities Services project coordinator

Warranties: Manufacturer shall furnish a single, written warranty covering both material and workmanship for a period of one full year from date of installation

MMA Flooring

Wear Rating: Heavy Duty Commercial

Needs to be verified and approved by Facilities Services project coordinator

Warranties: Manufacturer shall furnish a single, written warranty covering both material and workmanship for a period of one full year from date of installation

Tile

Wear Rating: Commercial

Needs to be verified and approved by Facilities Services project coordinator

Installation: Seal floors and grout as per factory recommendations

Warranties: 3 year minimum/free of charge, similar flooring to replace defective material

PRODUCT STANDARDS AND MANUFACTURERS

VCT (12"x12")

- Acceptable Manufacturers:
- Azrock

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- Armstrong
- Mannington

Quartz Tile (24"x24")

- Acceptable Manufacturers:
- Altro

Luxury Vinyl Tile (LVT)

- Acceptable Manufacturers:
- Mannington
- Mohawk
- Interface
- Shaw
- Armstrong

Epoxy Flooring

For mechanical room floors or any floors where waterproofing is required, the following products are approved:

- BASF Chemical
- Sonoguard
- Polyurethane 707 18 00
- Color and Sheen to be reviewed and approved by Facilities Services
- Corotech
- Water Amine Epoxy
- V440
- Color and Sheen to be reviewed and approved by UNR – Facilities Services
- Pittsburgh Paints
- AquaPon WB Epoxy
- 98 Series
- Color and Sheen to be reviewed and approved by UNR - Facilities Services

096513 - RESILIENT BASE

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Height: 4-8 inches

Rubber to be SBR vulcanized and thermoset molded with coved toe and rounded top

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Provide in 4 foot lengths with pre-molded thermoset outside corners

For remodeling project, if existing wood base is acceptable, rubber base may be omitted. Otherwise, existing wood base shall be completely removed and the wall surface patched for application of rubber base or new wood base shall be provided

Adhesive: solvent free no VOC as recommended by manufacturer

Color: To be approved by Facilities

096800 - CARPETING

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

General Use Carpet (Carpet Tiles and Broadloom)

Carpet tiles shall be used to the greatest extent possible. Use of broadloom carpet shall be used only upon approval by Facilities Services

Wear Rating: Heavy or Extra Heavy Commercial: Vetterman Drum wear test- Rating of 3 or better DIN 54323- ISO-TR 10361

Face Weight

Carpet Tile - 16 oz. minimum

Broadloom - 20 oz. minimum

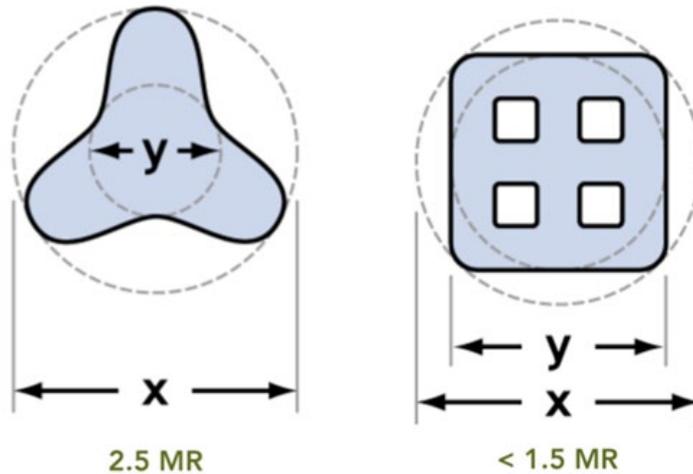
Face Yarn

100% first quality bulk continuous filament (BCF).

Acceptable specifications: Type 6,6 nylon or a blended fiber with a minimum of 80% Type 6,6 nylon combined with polymer made from renewable resources or Type 6 with inherent stain resistance by means of cationic dye process. Construction to be approved by Facilities Services based on flooring application.

Acceptable Commercial Fiber Shapes for optimum soil hiding capability

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Fiber identification at AATCC 20 test method

Modification ration of 1.7 or less

Dye Method: 100% Solution Dyed

Gauge: 1/8" min

Construction: Tufted

Surface/Style: Level Loop or Multi Level Loop – utilitarian application specifications to be all loop unless otherwise approved by Facilities Services

Color: Depending on building and floor: To be approved by Facilities Services. In refurbishments which do not affect full building renovations Facilities Services to provide Architect of Record with specification information

Density Factor: 5,000 min.

TARR rating: at least 3.0

Stain Resistance: Stain resistance properties MUST be inherent. Topical Stain resistance treatment will not be acceptable. Stain Resistance properties must be permanent and cannot be removed by commercial cleaning or abrasive wear. Must pass the AATCC 175 red dye 40 test. Carpet will retain permanent stain protection against acid type spill for the life of the carpet as measured by General Services Administration (GSA) test for permanence SIN 31-8.

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Edge Ravel: Limited lifetime Warranty against Edge Ravel. Preference will be given to carpet manufacturers that do NOT require the edges of the carpet to be seam sealed to guarantee 20 years of edge unraveling

Tuft Bind: Wet: Limited Lifetime Warranty against zippering

Color fastness-light/color: Carpet will resist color loss from light exposure for 10 years. Manufacturer to provide a 10 year warranty for colorfastness after exposure to light as measured by AATCC Test Method 16E- International Gray scale rating after 160 AFU's should be 4 or better

Colorfastness-ozone: Carpet will resist color loss from Atmospheric Contamination for 10 years. Carpet manufacturer to provide a 10 year warranty for colorfastness after exposure to atmospheric contaminants as measured by AATCC Test Method 129- Ozone minimum shade change rating after five cycles should be no less than International Gray scale rating of 4 or better.

Colorfastness-crocking: 4 or better (wet and dry) AATCC transference scale AATCC 165.

Colorfastness- Carpet will resist color transfer from wear for the life of the carpet. Carpet will exhibit permanent colorfastness (wet or dry) for the lifetime of the installation as measured by AATCC Test method 8, minimum stain rating of 4 or better compared to AATCC color transference scale. The carpet will also exhibit permanent wetfastness for the lifetime of the installation as measured by AATCC Test Method 107, minimum shade change should be no less than International Gray Scale rating of 4 or better.

Water: 4 or better AATCC transference scale AATCC 107

Flammability NBS smoke: <450 flaming mode NFPA 258

Flammability Radiant Panel:

- Class 1 fire rated ASTM E-648
- Class A fire rated ASTM E-84

Static: 3.0 or less AATCC 134 Step method

Maintenance: Pre-treat & hot water extraction cleaning

Warranties: 10 year minimum, with lifetime of carpet for:

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- Wear, no more than 10% face yarn loss
- Static
- Edge Ravel
- Delimitation
- Tuft Bind, no zipper, wet or dry
- Stain Resistance

Indoor Air Quality: Meet the Carpet & Rug Institute's IAQ certification ASTM- D-5116

Recyclable: 20% Post consumer recyclability min. total weight

CRI Green Label Plus certified

Backing

Broadloom

Primary: 100% Polypropylene

Preferred Bonding Agent: Hot Melt thermoplastic

Facilities will consider Cross linked Polymer for the bonding agent depending on location and application

Secondary: 100% woven Polypropylene Warranty: Lifetime

Tile

Reinforced synthetic, Bonding Agent: premium vinyl

Fiberglass reinforced Thermoplastic composite

Backing Delimitation: Secondary backing products, 3.5 pounds

Dimensional stability: removable modular products 0.2% or less ISO 2551

Method of installation: Adhesive must be from the same manufacturer as the carpet tile itself.

Tile size: standard square or plank

Warranty: Lifetime

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Note: ONLY Dormitories and the President's Office can vary from these performance specifications and it MUST be approved by Facilities Management

Contractor/Sub-contractor

MUST purchase and install the carpet

MUST have 5 years of experience with specified carpet and installation

MUST be certified within the last 5 years by the carpet manufacture

099100 - PAINTING

PRODUCT STANDARDS AND MANUFACTURERS

Interior Walls (includes classrooms, hallways, offices, stairways, restrooms, etc.)

- Benjamin Moore Paints
- Eco Spec Interior Semi-gloss Latex 376
- Color and sheen to be reviewed and approved by UNR Facilities Services
- Benjamin Moore
- Ultra Spec 500
- N540
- Color and sheen to be reviewed and approved by UNR Facilities Services

Durable Wall Finish

For areas that require a more durable wall finish to moisture or sanitation issues such as shower rooms, kitchens, food services, or specialty labs

- Pittsburgh Paints
- AquaPon WB Epoxy
- 98 Series
- Color and sheen to be reviewed and approved by UNR Facilities Services

Interior and Exterior (includes doors, door trim, safety railings, exterior stairways, handrails)

- Pittsburgh Paints
- Pitt Tech
- DTM Industrial Acrylic Enamel
- 90 Series
- Color and sheen to be reviewed and approved by UNR Facilities Services

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- PPG Industrial Finishes
- Durathane
- 95-3300
- Color: To be reviewed and approved by UNR Facilities Services

Floor Paints (for normal foot traffic and light duty services)

- Pittsburgh Paints
- AquaPon WB Epoxy
- 98 Series
- Color and sheen to be reviewed and approved by UNR Facilities Services

Floor Paints for heavy-duty service and extreme traffic areas product should be project specific.

Mechanical Room Floors (or any floors where waterproofing is required)

- BASF Chemical
- Sonoguard
- Polyurethane 707 18 00
- Color and Sheen to be reviewed and approved by UNR –Facilities Services
- Corotech
- Water Amine Epoxy
- V440
- Color and Sheen to be reviewed and approved by UNR – Facilities Services
- Pittsburgh Paints
- AquaPon WB Epoxy
- 98 Series
- Color and Sheen to be reviewed and approved by UNR –Facilities Services

Standard University Colors

- UNR Off White
- UNR Blue
- UNR Gray
- Bronzestone
- Hemlock Green
- BM 969 Soft Chamois

Color samples/information for standard UNR colors are available at:

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Facilities Services Department: 784-6514

UNR Paint Shop: 784-8036

End of Division 9

FINISHES

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DIVISION 10: SPECIALTIES

101100 - VISUAL DISPLAY UNITS

PRODUCT STANDARDS AND MANUFACTURERS

Hallway installation is to be done in a manner that allows placement of room numbers adjacent to doorways per [APPENDIX I](#).

Whiteboards

4' X 8' typical size

24 gauge high gloss on 7/16" Particle Board

Map Rail, Chalk Tray, Satin Aluminum Trim

Approved Manufacturers:

Claridge Series 4 Markerboard, or equal

Tackboards

4' X 3' typical & 4' X 6' typical sizing

1/4" cork on 1/4" hardboard - Fabric Covering

Satin Aluminum Trim

Approved Manufacturers:

Claridge Series 4 Fabriccork Tackboard

Fabricmate acoustic panels

101300 - DIRECTORIES

SYSTEM DESIGN AND PERFORMANCE STANDARDS

Main building directory boards shall be mounted within each main entrance to a building.

Main directories shall include a listing of each department and a summary of floors and/or rooms occupied by these departments.

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Fabricate in strict accordance with the approved shop drawings and the original design, except where specifically otherwise approved by the Architect.

Inspect the areas and conditions under which work of this section will be installed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

Installation

At all times during progress of work, coordinate as required with all other trades to ensure proper and adequate provision in the work of other trades for interface with the work required under this section.

Comply with all applicable recommendations of the ADA and ANSI Specification A117.1.

Install the work of this section in strict accordance with the original design and the approved shop drawings, except as specifically otherwise approved by the Architect. Anchor all components firmly into position, in the true alignment horizontally and vertically within a tolerance of one in 1000.

PRODUCT STANDARDS AND MANUFACTURERS

Building Directories (Printed Surface)

Subject to compliance with requirements, manufacturers offering signage which may be incorporated in the work include, but are not limited to the following:

Printed Surface Materials:

- Material type: Foam Core board or equivalent
- Depth: 3/16"
- Width: 24" (Cut to fit)
- Height: 36" (Cut to fit)

Content of printed surface to be determined by department(s) with design and printing assistance from UNR Marketing & Communications. Content and design to be approved by the UNR Facilities Resource Committee.

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Building Directories (Digital)

Subject to compliance with requirements, manufacturers offering signage which may be incorporated in the work include, but are not limited to the following:

- Sharp Professional LED Displays (PN-YXXX5 model line)
- Approved equal (only with express written approval by Teaching and Learning Technologies (TLT))

Directory Materials/Features:

- Sharp Commercial flat panel displays (Sharp PN-Y43625)
- Screen size: Size as determined by UNR TLT; default is 42" class
- Monitor: Commercial grade flat panel
- Warranty: 3 years parts and labor

Directory Installation Requirements:

- Power: 20A 120V Duplex
- Data: Requires data drop to connect to UNR network.
- Compliance: All work to comply with 2011 NEC & UNR Construction standards.

Directory Flat Panel Mounts:

- Manufacturer: Premier Mounts
- Model: Low Profile Portrait Mount (P4263FP)

Other Materials

All other materials not specifically described, but required for a complete and proper installation, shall be as selected by the Contractor subject to the approval of the Architect.

101400 - SIGNAGE

SYSTEM DESIGN AND PERFORMANCE STANDARDS

Fire Wall Barrier Signs, Fire Wall Labeling

Provide permanent identification, with signs or stenciling, of all firewalls, fire barriers, fire partitions and smoke barriers that are required to have protected openings or penetrations.

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Each identification will be located within 15 feet of the end of each wall and include lettering not less than 3 inches high per Section 707.6 IBC.

See SECTION 3.0 GENERAL CAMPUS SIGNAGE POLICY AND STANDARDS for additional information regarding signage.

See [APPENDIX I](#) for additional information regarding interior signage, materials, and layout.

Provide all identifying devices complete, in place, specified herein, and as needed for a complete and proper installation.

Exterior Wayfinding Signage

[Request Drawing Details](#)

- Typical ADA Flag Sign (101426-1)
- Parking - Traffic Sign Installation (101426-2)
- Parking – ADA Parking Signage (101426-3)

Lettering on Glass Doors

Special circumstances may warrant lettering on glass doors and adjacent glass. This shall have the approval of the Facilities Services Department. Lettering shall be gold metallic with a black shadow or white in decal form and be applied directly to the glass by an approved vendor. The size and layout of the lettering will be determined by the size of the door glass but not to exceed four inches in height unless it is an official building number, which is typically 6 inches in height.

PRODUCT STANDARDS AND MANUFACTURERS

Products used in the work of this section shall be produced by manufacturers regularly engaged in manufacture of similar items.

Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

101419 - EXTERIOR DIMENSIONAL LETTER SIGNAGE

SYSTEM DESIGN AND PERFORMANCE STANDARDS

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Signage mounted to the exterior of the buildings shall be cast aluminum lettering, not panel signs.

Variances to size, finish and font style of any exterior building lettering needs to be pre-approved by Facilities Services and the Facilities Resource Committee.

See [APPENDIX I](#) for typical lettering details.

PRODUCT STANDARDS AND MANUFACTURERS

Use all means necessary to protect materials of this section before, during, and after installation and to protect installed work and materials of all other trades.

In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

101423 - INTERIOR PANEL SIGNAGE

SYSTEM DESIGN AND PERFORMANCE STANDARDS

See [APPENDIX I](#) for interior signage requirements for new construction and existing buildings.

Typical Room Signage

Historical: 1/8" acrylic with 1/32" raised extended acrylic letters and symbols with braille per ADA and ANSI A117.1 requirements, extruded aluminum frame

New Construction: Perforated brushed finished chassis with placard

Mounting

Mechanically Fastened

Pictograms

6" x 6" Pictograms shall use International Symbols. All signage shall comply with the ADA for size, image and raised braille.

Emergency LED Exit Signs

Provide LED lighted exit signs for marking the means of egress in accordance with Life Safety Code NFPA 101.

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Signs shall have green letters with LED lamps and battery backup.

Use dual-voltage input 120v or 277V AC.

Provide with test switch, status indicator, and rechargeable maintenance.

Exit Plan Signage Systems will be installed by UNR Environmental Health & Safety.

Appropriate interior graphics and signage complying with adopted barrier-free design standards shall be included in all buildings.

PRODUCT STANDARDS AND MANUFACTURERS

Subject to compliance with requirements, manufacturers offering signage that may be incorporated in the work include, but are not limited to, the following:

- ASI Sign Systems
- Art Images
- Tripp Plastics
- Approved equal

101716 - TELEPHONE ENCLOSURES (EMERGENCY BLUE LIGHT TELEPHONE)

SYSTEM DESIGN AND PERFORMANCE STANDARDS

Exterior Emergency Phone Tower

Consist of a highly vandal-resistant freestanding steel emergency phone tower mount with an integrated flashing LED blue light.

Have an integrated LED faceplate light, mounted directly above the phone faceplate.

Tower to be safety blue in color with highly reflective white “EMERGENCY” lettering.

Exterior Emergency Phone for Tower Application

Outdoor, two-button, ADA-compliant phone with LED indicator.

Phone line powered with built-in two-line autodialer. Hands free after initial push.

Two buttons, one for Emergency (911), the other programmable for information or a police duty phone. Programmable to situation.

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Exterior Building Mount Emergency Phone

Outdoor, two-button, ADA-compliant phone with LED indicator.

Phone line powered with built-in two-line autodialer. Hands free after initial push.

Two buttons, one for Emergency (911) the other programmable for information or a police duty phone. Programmable to situation.

Auxiliary input and outputs programmable to integrate with CCTV, Blue Light/Strobe, etc.

Parking Structure Emergency Phone

Outdoor, two-button, ADA-compliant phone with LED indicator.

Phone line powered with built-in two-line autodialer. Hands free after initial push.

Two buttons, one for Emergency (911) and the other programmable for information or a police duty phone.

Auxiliary input and outputs programmable to integrate with CCTV, blue light/strobe, etc.

PRODUCT STANDARDS AND MANUFACTURERS

Exterior Emergency Phone Tower

Talk-A-Phone; Model ETP-SM-1

There are no equivalents.

Exterior Emergency Phone- Building Mount Station

Talk-A-Phone; Model ETP-WM

There are no equivalents.

Parking Structure Emergency Phone- Surface Mount

Talk-A-Phone; Model ETP-SM-1-SS

Safety yellow with black lettering on sides

There are no equivalents.

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Parking Structure- Blue LED

Talk-A-Phone; Model ETP-EL

There are no equivalents.

Exterior Emergency Phone

Tower, Wall Mount, and Parking Structure Applications (verify analog or digital configuration)

Talk-A-Phone; Model ETP-500EI (2button/ analog)

Talk-A-Phone; Model VOIP-600EI (2button/ digital)

There are no equivalents.

102113 - SOLID PLASTIC TOILET COMPARTMENTS

SYSTEM DESIGN AND PERFORMANCE STANDARDS

Provide Solid Core Reinforced Composite (SCRC) 1092.67P partitions and shower enclosures.

Floor-mounted, overhead braced toilet compartments with non-corrosive components made of 3/4" doors and stiles and 1/2" panels of SCRC.

The supporting hardware to be 18-8 type 304 stainless steel with satin finish.

Threaded inserts shall be factory installed for door hinge and latch to withstand direct pull force exceeding 1,500 pounds per fastener. Hardware of chrome plated Zamak, aluminum, or extruded plastic is unacceptable.

Mounting brackets shall be 18 gauge stainless steel and extend the full height of panel.

Leveling device shall be 7 gauge, 3/16", hot rolled steel bar, chromate treated.

Stile shoe shall be one piece, 4" high, type 304 stainless steel with satin finish.

Wall-mounted urinal screens shall be SCRC 1095 with 11 gauge stainless steel mounting brackets.

PRODUCT STANDARDS AND MANUFACTURERS

High-density polyethylene is more durable than other materials, is non-absorptive, resists moisture, odors and mildew, and graffiti. The material does not rust or need painting. Provide 15-year warranty on all materials. Comply with ASTM standards

Impact resistance ASTM D 2794-93 Min. 34 inch-lbs.

Scratch resistance ASTM D 2179-98 Min. 10.0 kg.

Graffiti resistance ASTM D 6578-00

ASTM E 84 Flame spread index 45

ASTM E 84 Smoke spread index 120

Toilet partitions constructed of HDPE or color-thru phenolic will not be acceptable.

Acceptable Manufacturers

- Privacy Plus toilet compartments by Gerali Custom Design
- Wilson Art Gibraltar Material
- Wilson Art Earthstone Material

02813 - TOILET AND BATH ACCESSORIES

PRODUCT STANDARDS AND MANUFACTURERS

Installation of accessories must be compliant with ADA codes and regulations including cane detection as appropriate.

Waste Receptacles shall be 25 gallon capacity, 11" wide x 30"high x 20"long, gray in color, swing lid. 3540 Slim Jim Waste Container by Rubbermaid. Rubbermaid FG354000 Gray, 2673-60 Slim Jim Swing Lid, FG267360 Gray.

Mirror with Stainless Steel ChanNel Frame

Type-430 stainless steel, ½" x ½" x 3/8" (13 x 13 x 9.5mm) channel with ¼" (6mm) return at rear with bright polished finish. No. 1 quality, ¼" (6mm) select float glass: selected for silvering, electrolytically copper-plated by the galvanic process, and guaranteed for 10 years against silver spoilage. 20 gauge (0.9mm) galvanized steel.

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Incorporates lower support member, forming rigid rectangle, which engages lower back-plate louver to keep bottom of mirror against wall. Bobrick B-165 Series.

Coat Hook with Bumper

Solid cast aluminum with matte finish, hard rubber secured with drive screw, wall unit mounted with four screws. Bobrick B-212.

Toilet Seat Cover Dispenser

For dispensing ½ or single fold seat covers with 250 seat covers capacity, 18-8S, type-304, 22-gauge (0.8mm) stainless steel with satin finish. Bobrick B-221.

Utility Shelf

Keep mops and brooms away from wall, spring-loaded rubber cam holders, and utility shelf shall all be type-304 stainless steel with satin finish on exposed surfaces. 8" (205mm) deep with ¾" (19mm) return edges. Bobrick B-239

Sanitary Napkin Disposal

Self-closing panel covering disposal opening, wall type, heavy-gauge stainless steel. Use Bobrick B-254 in non-ADA stalls. Use comparable ADA compliant devices in ADA stalls.

Diaper Changing Station

High impact gray polyethylene with foam core, surface-mounted on wall or semi-recessed into wall opening 2-1/2" (65mm) deep, pneumatic cylinder for slow controlled opening. Bobrick KB-200-01.

GRAB BARS

¼" (32mm) diameter, stainless steel, snap flange. Bobrick B-5806 Series.

OWNER SUPPLIED/CONTRACTOR INSTALLED EQUIPMENT

Paper Towel Dispenser

Surface mounted paper towel dispenser (Splash Blue or Smoke Grey). Georgia-Pacific enMotion Automated Towel Dispenser, Mfg. #59460 or 59462.

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Toilet Tissue Dispenser

Surface mounted multi-roll toilet tissue dispenser (Splash Blue/Translucent Smoke). Georgia-Pacific compact quad vertical four roll coreless tissue dispenser. Mfg. #56743 or 56744.

Soap Dispenser

Surface mounted Automatic Touchless Soap Dispenser (Splash Blue/Smoke). Georgia-Pacific Mfg. # 52053 or 52052.

10850 - KNOX BOX

SYSTEM DESIGN AND PERFORMANCE STANDARDS

Provide a Knox Box at each building to accommodate fire department access.

All Knox Boxes to be dual keyed.

Flush mount, ¼" thick plate steel housing, 5/8" thick steel door with interior gasket seal and stainless steel hinge, and tamper-resistant fasteners. Finish to be selected by Architect and Owner.

Coordinate placement with Fire Department authorization.

Coordinate mounting height and location in field with the Architect and Owner.

PRODUCT STANDARDS AND MANUFACTURERS

Large Size Knox Box: Use Knox Box Model # 1300 Series for all buildings that need keys and HazMat Binders to be housed in the Knox Box.

Standard Knox Box: Use Knox Box # 4100 Series or # 4400 Series for buildings that require only keys to be housed in the Knox Box.

Manufacturer:

Knox Company
1601 W. Deer Valley Road
Phoenix, AZ 85027
(800) 552-5669

End of Division 10

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SPECIALTIES

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DIVISION 11: EQUIPMENT

115313 - FUME HOODS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

All newly installed hoods shall be equipped with a flow indicator, flow alarm, or face velocity alarm indicator to alert users of improper exhaust flow.

The flow measuring device shall be capable of indicating that the airflow is in the desired range, and capable of indicating improper flow when the flow is high or low by 20% (ANSI Z9.2-2012 section 3.3.3).

Fume hoods shall be designed to maintain an average face velocity between 80 fpm and 120 fpm at the design sash position of 16" with no individual face velocity measurement exceeding +/- 20% of the hoods average velocity. (ANSI Z9.5 – 2012 section 3.3.1)

Diversity

The following must be considered when applying the concept of ventilation and load diversity:

- Capacity of any existing equipment
- Expansion considerations
- Maintenance department's ability to perform periodic maintenance
- Minimum and maximum ventilation rates for each laboratory
- Quantity of hoods and researchers
- Requirements to maintain a minimum exhaust volume for each hood on the system
- Sash management (sash habits of users)
- Thermal loads
- Type, size, and operating times of facility
- Type of laboratory chemical hood controls
- Use patterns of variable volume hoods

Following conditions shall be met in order to design a system diversity:

- Acceptance of all hood-use restrictions by the user groups. Designers must take into account the common work practices of the site users

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- An airflow alarm system must be installed to warn users when the system is operating beyond capabilities allowed by diversity
- Restrictions on future expansions or flexibility must be identified

PRODUCT STANDARDS AND MANUFACTURERS

The following fume hood manufacturers are acceptable for new-ducted fume hood installations:

- Labconco
- Hamilton Scientific
- Kewaunee

LABORATORY AND DEIONIZED WATER

Laboratory and Deionized Water requirements are located in Division 22, *Plumbing*.

End of Division 11

EQUIPMENT

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DIVISION 12: FURNISHINGS

122113 - HORIZONTAL LOUVER BLINDS

PRODUCT STANDARDS AND MANUFACTURERS

Mini-blinds shall be Levolor (or equal)

Aluminum slats shall be with nominal 1" wide louver slat

Color Options:

- Levolor #112 Alabaster Riviera 1" Dustguard
- Levolor #885 Dark Bronze Riviera 1" Dustguard

Color Option to be determined by University Facilities Services Department only.

122200 - CURTAINS AND DRAPES

Window drapery and coverings shall be fade resistant and comply with minimum flame spread and smoke generation ratings.

122113 - SOLAR SHADE STANDARD

PRODUCT STANDARDS AND MANUFACTURERS

Chain or Motorized Operated

Type 6 Nylon with 3 high strength carbon steel wrap springs

Chain - #10 qualified stainless steel

Brackets – Standard brackets are .125 thick steel ceiling, rear or side mount

Tubes and Spline – Key ways providing for simple field adjustability or changing of fabric bands. Soft PVC Spline is welded onto shade band to affix shade to tube

1 ½ " tube with single spline key way in .065 gauge wall or 2 ½ " tube with three spline key ways in .071 gauge wall

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123553 – LABORATORY CASEWORK

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Casework must be manufactured, delivered, and installed under the direct supervision of a single manufacturer to ensure a single source of responsibility.

Depending on laboratory use, select laboratory casework material on a case-by-case basis.

PRODUCT STANDARDS AND MANUFACTURERS

General

Hardwood: Kiln-dried hardwood, clear and free of defects, maple for exposed components

Plywood: Either veneer core or 3 ply 45lb. particle board core (vertical services and base cabinets' bottoms only)

Exposed face veneers: Rotary-cut select white hard maple

Melamine Components shall not be allowed

Cabinet Construction

Style: Flush overlay door and drawer construction and/or blush overlay. Door and drawer color with radius edges for all sides.

Grain Direction: Vertical match

Cabinet Component Construction

Shelves: ¾" veneer core plywood with edge banding

Doors: Solid door of 3-ply ¾" particle core

Drawers: Four-sided drawer box with ½" 9-ply birch plywood

Laboratory Tops: Minimum 1" thick epoxy resin laboratory grade top

Hardware

Door Catches: Adjustable tension nylon roller or magnetic

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Shelf Supports: Pin and socket style, plated 13 gauge steel angle with 5 mm dia. 3/8” long support pin

Drawer Suspension: ¾ extension, open roller, 100lb dynamic load, epoxy coated

Hinges: 5-knuckle institutional style, stainless steel, or concealed 165 degree self-closing or 3-barrel

Locks: Five disk tumbler, heavy duty cylinder, for master key system

Pulls: Steel wire, in powder coat or plated chrome (satin)

FINISH

All surfaces free of dirt, interior and exterior veneer surfaces exposed after installation to be stained and finished with multiple coats of chemical resistant acrylic urethane finish (including UV blocker).

124813 - ENTRANCE FLOOR MATS AND FRAMES

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Provide “walk-off” mats at exterior and interior entrances

Floor mats shall comply with ADA Accessibility Guidelines for Buildings and Facilities

Recessed Frames – Extruded Aluminum ASTM B 221

Wear Rating: Heavy Commercial

125633 - CLASSROOM TABLES AND CHAIRS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Classroom Seating - Stack Chair

Flex back for comfort in extended term class applications

Polypropylene shell (for flexibility and durability)

Aesthetic

Color: Warm Grey Shell and Frame

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Classroom Seating - Task Chairs

Flex back for comfort

Polypropylene shell (for flexibility and durability)

Simple function (up and down adjustment)

Ergonomic Task Seating

Aesthetic

Classroom Seating - Tablet Arm

Flex back for comfort in extended term class applications

Polypropylene shell (for flexibility and durability)

Oversize tablet arm (plywood core preferred for strength and screw retention)

Aesthetic

Color: Back shell and frame Warm Grey; seat shell Midnight; Laminate White Nebula

Standard and Oversized Tablet Boards are 5/8" high-density particleboard with melamine laminate surface. Limited laminate colors. Edge is painted to match laminate

Laptop Size Tablet Boards are 5/8", 11-ply plywood core with high pressure laminate and plain backer sheet

Tablet Arm Dimensions

Standard Size: 12-1/2" x 20-1/2"

Oversized: 17" x 20-12"

Laptop Size: 19" x 22-3/4"

Classroom Tables

Fixed leg, standard size 24 x 48 74 "P" edge

Color: Legs Warm Grey

Laminate White Nebula

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Optional:

- Wire management
- Casters
- Modesty Panel

Panel shall be 0685" thick particleboard faced on both sides with laminate that matches tabletop laminate: vinyl bullnose will match vinyl bullnose color on top four KI core colors only (black, sand, blue grey, and warm grey). All other tops will have black bullnose on modesty panels as standard. The modesty panel will be available on fixed, folding or flip-top Barron tables. The table top and modesty panel will be pre drilled to accept the modesty panel. The panel is shipped "KD". The lower edge of the panel will extend 8-1/4" from the underside of the table.

Tops: All tops SHALL be pre drilled. Vinyl "T" molding shall be press fit into particleboard core. Nails will secure molding to top. There will be 7-1/6" spike on "T" molding. There will be 15 standard vinyl edge colors in 1-1/4" (54B edge) size: Black*, Blue Grey*, Warm Grey*, Sand*, Eggshell White*, Light Tone*, Yellow, Cobalt Blue, Juniper, Marsh, Baltic, Midnight, Bordeaux, Plum Stone, Russett, Thistle, Rouge, Teal Green.

Veneer: Surface will consist of 1-1/8" thick high-density particleboard core covered with a 0.30" to 0.50" high pressure melamine laminate top with 0.30 to 0.26 Gatorply back sheet. Wood edges will be of solid red oak lumber with a clear lacquer finish as standard. Option will include maple wood with 4 stain finishes. Radius or square corners. Bullnose edges will be in vinyl with radius corners; self-edges will be with square corners. Beveled edge with bullnose will have dark neutral phenolic backing sheet, which will cover exposed bevel. Exposed wood will be protected by a conversion catalyzed lacquer.

Resin: Resin will be 1-1/8" to 1-1/2" high density particleboard core. Resin will be approximately 1/8" thick covering top and edges. Overall will be 1-3/8" thick. Back surfaces will be sealed.

Wire Management

Leg Wireways: will be scruff resistant, high impact, rigid PVC, plastic with two separate wire channels per leg. Leg wireways will be fastened to the legs using a full-length adhesive bond. Wireways will be available in black only. They will be shipped assembled. There will be one wireway per leg.

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Grommets: Plastic grommets will be 3" in overall diameter and will be recessed into the tabletop. The cap will be fully removable and will have a retractable slot cover. Will be available in four standard colors: Black, Blue Grey, Warm Grey, and Sand. There will be two grommets per top.

Under-Table Wire Harness: will be made of easy to use, high quality black Velcro. Harness will be screwed to the table bottom. Harness will be shipped assembled. Provides organized wire management from tabletop to floor.

Table Truck: Product minimums for the truck will be 48" round or square and 18" x 60" rectangular. Maximum table sized are 48" x 96" rectangular or 60" round or square. Maximum length will be up to 8' long. Maximum number of Barron folding tables will be six. Overall dimension of the truck will be 30" wide, 60" long and 55" high. Overall weight will be 90lbs. The truck platform will be constructed of 2" x 2" angle iron and the two side rails of 1" diameter x 14-gauge tubing. Two swivel and two rigid 5" diameter casters with heavy-duty roller bearings will permit easy and safe movement on any hard floor surface. Shipment will be in two packages: one with the truck platform and one with the two side rails. Assembly with four thumbscrews will be required.

Chroming: Steel surfaces will be duplex nickel-chrome plated in a twenty-two step process. This process is the same as is used in the automotive industry for exterior finishes.

PRODUCT STANDARDS AND MANUFACTURERS

Classroom Seating - Stack Chair

Undergoing Reselection

Warranty: 10 years parts and labor

Classroom Seating - Task Chairs

Undergoing Reselection

Warranty: 10 years parts and labor

Classroom Seating - Tablet Arm

Undergoing Reselection

Warranty: 10 years parts and labor

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Classroom Tables:

Undergoing Reselection

Warranty: 10 years on bases and tops

126100 - FIXED AUDIENCE SEATING

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Fire Test Response Characteristics of Upholstered Chairs:

Padding: Comply with California Technical Bulletin 117

Certified Wood Materials: Provide seating units made from wood and wood-based materials that are produced from wood obtained from forests certified by an FSC accredited certification body to comply with FSC 1.2, "Principles and Criteria."

Upholstery Fabric Source Limitations: Obtain fabric of a single dye lot for each color and pattern of fabric required.

Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PRODUCT STANDARDS AND MANUFACTURERS

Available Products: Subject to compliance with requirements, products that may be incorporated into the work include, but are not limited to, the following products:

KI, Concerto Auditorium Seating

Back cushion assembly: structural back shall be a 7-ply, 7/16" molded plywood inner structure bonded to 2" urethane foam. Foam density shall be 3.2 lbs. per cubic foot.

Seat cushion assembly: compound curve inner structure consisting of a 7-ply, 7/16" molded plywood board with waterfall. The seat board counterbalance shall be bolted in place inside the seat assembly. The seat board shall be bonded to a 2" or 3" urethane foam cushion of 3.2 lbs. density per cubic foot.

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Tablet Arm

Large tablet arm, shall be a self-storing, one-motion table arm, consisting of a storable writing surface constructed of a 13-ply Baltic Birch plywood core, .040 high-pressure laminate on face and .040 HPL backer sheet, measuring 11 ½" X 15 ¼".

Seat Pivot Assembly

Pivot shall include a full width axle of 5/8" diameter cold-rolled steel, with welded 12-gauge drawn steel pivot stop cams and 10-gauge formed steel end brackets.

Textile

KI fabric or Pallas, durability 60,000 double rubs, upholstery fabric shall be bonded to foam and attached through C-Gex upholstery methods

Molded Plastic

High density polyethylene, injection-molded

Optional Power/Data Module

One distribution harness feeds two seats. Fully enclosed wireway covers. Power/data system shall be UL listed.

Uprights and Chair Mounting

Seating shall be floor mounted, or riser mounted, with common upright support assemblies. Upright floor mounted shall be 16-gauge steel round dual supports, 1.5" diameter, welded to an 11-gauge steel, 2 5/8" X 10 1/8" floor plate by a concealed weldment. Finish to be powder coated according to standard color offering. Riser mounted uprights shall be 14-gauge steel round dual supports, 1.5" diameter, welded to a 3" X 5 1/5" X 10 ¼" steel riser plate. Finish to be powder coated according to standard color offerings.

129300 - SITE FURNISHINGS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Bicycle Racks

All major remodel and new construction projects shall address the need for bicycle parking.

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Racks are intended to accommodate conventional, upright, single-rider bicycles. Assume the cyclist will use a solid, U-shaped lock, or a cable lock, or a combination of the two.

Racks shall not block or inhibit pedestrian flow in or out of buildings. The rack shall be located along a major building approach line and clearly visible from the approach.

Support the bicycle upright by its frame in two places.

Prevent the wheel of the bicycle from tipping over.

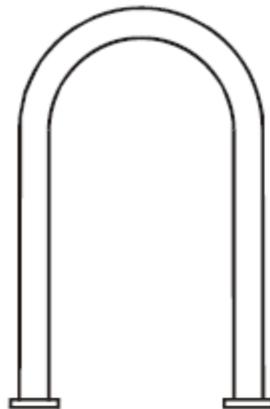
Enable the frame and one or both wheels to be secured.

Support bicycles without a diamond-shaped frame with a horizontal top tube.

Allow front-in parking: a U-lock should be able to lock the front wheel and the down tube of an upright bicycle.

Allow back-in parking: a U-lock should be able to lock the rear wheel and seat tube of the bicycle.

Use inverted "U" style rack designs. Wave style racks shall not be used.



Inverted "U"

One rack element supports two bikes

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The rack should provide easy, independent bike access. Inverted “U” rack elements mounted in a row should be placed on 30 inch centers. Allow at least 72 inches of depth for each row of parked bicycles.

Bike racks shall be located in well-lit areas.

Bicycle Ramps

Exterior Bicycle Stair Access Ramps will be considered in all new building construction where exterior stairways are included in the construction. In addition, where exterior stairs already exist, repair projects of stairways will consider adding access ramps. Ramps may be integral to the stairway, or mounted to the stairway surface. Use of ramps shall be coordinated with the Campus Bicycle Working Group for appropriateness in each location.

Bicycle ramps need to be incorporated into new or existing stairway construction in such a way that they do not create non-compliance with National Building Code and ADA guidelines for general stair and handrail designs.

Recycling Containers

In design of remodel and/or new construction projects, space for recycling containers is required. The space should accommodate roll-out carts provided by the Facilities Services Department (95-gallon capacity, 43.5 inches high, 29.2 inches wide, and 33.3 inches wide).

Outdoor seating and tables, permanently affixed, and left outdoors year-round

Steel shotblasted, etched, phosphatized, preheated and electrostatically powder-coated with TGIC polyester powder coatings.

Rust and corrosion resistant

10-year warranty

Flame resistant

Scrolled steel slat seats formed from 1/4” x 1-1/2” (6.35mm x 38.1mm) solid steel bars; table top formed from 11-gauge spun steel; steel slats are welded to cross members of 1-5/16” (33.34mm) tubular steel; 3” (76.2mm) tubular steel legs

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Method of installation: use manufactures installation standards for in-ground or surface mounting.

Color Selection to be approved by Facilities Services Department.

PRODUCT STANDARDS AND MANUFACTURERS

Bicycle Racks

Victor Stanley Cycle Sentry Collection, BRCS-101 or equivalent

Outdoor Seating and Tables

Victor Stanley Steelsites Collection, NRB-6 Outdoor Bench

Victor Stanley Steelsites Collection, RND-333 - 363 Independent post table and scrolled seats (see diagram 1.0)

Victor Stanley Steelsites Collection, RND-ACS-2 Independent post table ADA compliant option

<https://victorstanley.com/product/nrb-6/>

<https://victorstanley.com/product/rnd-333/>

<https://victorstanley.com/product/rnd-acs-2/>

End of Division 12

FURNISHINGS

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DIVISION 14: CONVEYING EQUIPMENT

142000 - ELEVATORS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Comply with regulations for elevators, dumbwaiters, escalators, moving walks, and related equipment per NAC 618.400 – 618.507.

All hydraulic elevators shall have a sprinkler head in the pit and must have a Zoeller Model # N292 sump pump with double piggyback variable level float switches and alarm system A-pak II float switch, horn and light warning in a 2 foot by 2 foot by 2 foot deep recessed pit and a shunt trip connected to the fire alarm.

Elevators serving buildings three stories or less shall be double lined hole-less hydraulic elevators with minimum speed of 125 feet per minute.

Elevators serving buildings four stories or less shall be in double lined ground or telescopic jackshaft hydraulic elevators with minimum speed of 125 feet per minute.

Elevators serving buildings more than four stories shall be geared traction elevators using steel cables with minimum speed of 350 feet per minute.

Emergency and Fire Recall Devices shall comply with University Standards and State Elevator Inspection requirements. Facilities Service Department to review and approve.

PRODUCT STANDARDS AND MANUFACTURERS

Door Hanger

GAL Manufacturing, or approved equal

Door Operators

GAL Manufacturing, or approved equal

Door Clutches

GAL Manufacturing, or approved equal

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Geared Traction Drive Machine

Hollister-Whitney, or approved equal with steel cables

Elevator Safety Door Edges

Janus Pana 40, no substitute

Elevator Ceiling Cab Lights

LED down lighting, no substitute

Car Station

GAL Manufacturing Traditional Design, VPMC Series, or approved equal

Digital Hall Position Indicator

GAL Manufacturing Traditional Design, VPMC Series, or approved equal

Digital Hall Lantern

GAL Manufacturing Traditional Design, VPMC Series, or approved equal

Hall Station

GAL Manufacturing Traditional Design, VPMC Series, or approved equal

142713 - CAB FINISHES

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Materials in their end-use configuration shall conform to the following requirements, based on the tests conducted in accordance with the requirement of ANSI/UL 723 (ASTM E84), NFPA 252, or CAN/ULC-S102.2, whichever is applicable:

- Flame Spread rating of 0 to 75
- Smoke development of 0 to 450

Floor coverings, underlayment and adhesives shall have a critical radiant flux of not less than 0.45 W/cm², as measured by ASTM 648 or conform to the requirement of NBCC and ULC standard CAN/ULC-S 102.2, whichever is applicable.

PRODUCT STANDARDS AND MANUFACTURERS

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Recommended flooring is Mannington Assurance II, Slip Retardant Sheet Flooring

End of Division 14
CONVEYING EQUIPMENT

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DIVISION 21: FIRE SUPPRESSION

211100 - FIRE PROTECTION PIPING

SYSTEM DESIGN AND PERFORMANCE STANDARDS

All fire protection systems shall be designed in accordance with NFPA 13. All building fire suppression piping systems shall be made with A53 Grade B carbon steel pipe. Threaded pipe fittings with schedule 40 steel pipe or Victaulic fittings with ASTM A135 schedule 10 steel pipe.

All devices shall be UL listed.

All fire sprinkler riser main drains shall be piped external to the building or tied into a fire sprinkler drain loop. Use of floor drains/slop sinks is prohibited.

All auxiliary drains must be piped to any of the following:

- Exterior of building,
- Fire sprinkler drain loop,
- Floor drain, or
- Custodial slop sink.

Auxiliary drain valve not to exceed 8' AFF and be readily accessible to a hose for draining. All auxiliary drain locations must be approved by UNR Fire/Life Safety shop prior to installation.

211300 - FIRE SPRINKLER SYSTEMS

SYSTEM DESIGN AND PERFORMANCE STANDARDS

All University of Nevada Fire sprinkler systems shall be connected to a monitored University of Nevada fire alarm system.

Each wet, dry, and specialty type system shall be design-build per project design by a licensed State of Nevada Contractor.

Strict adherence to NFPA guidelines as applied by State of Nevada NAC/NRS must be followed.

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The fire sprinkler water service to each building shall incorporate a double check detector assembly or a reduced pressure backflow preventer to protect the water supply from backflow. The selected device shall be located as directed by TMWA and Facilities Services.

All fire sprinkler control valves, sectional valves, and inspection test valves to be mounted at a height no greater than 6' AFF wherever possible.

All anti-freeze refill and inspection points to be mounted at a height no greater than 6' AFF wherever possible.

All new dry system installations shall include their own dedicated air compressor and an external resetting type dry pipe valve device. Dry system components to be mounted at a height no greater than 6' AFF wherever possible.

All couplings on fire pumps will be metal. Elastomeric couplings will not be used.

211313 - FIRE SUPPRESSION/PROTECTION CABINETS

DESIGN AND PERFORMANCE STANDARDS

All fire extinguisher cabinets may be of recessed, semi recessed, or surface mount design.

Cabinets must be suitable for all conditions within their mounted locations.

Cabinets must contain a full acrylic or non-wire imbedded glass front and be of only pull handle and roller catch design.

All fire extinguisher cabinets shall be latch closure, non-locking type.

Locking cabinets for exterior installations only will only be permitted upon design review of their intended location.

Extinguishers and cabinets shall be clearly labeled as to their location on plans.

214400- FIRE EXTINGUISHERS

PRODUCT STANDARDS AND MANUFACTURERS

All University of Nevada fire extinguishers shall be Amerex brand.

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All CO2 type extinguishers shall be no larger than 10 lb. unless specifically called for and approved by UNR Facilities Services.

End of Division 21

FIRE SUPPRESSION

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DIVISION 22: PLUMBING
220000 - GENERAL REQUIREMENTS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

GENERAL

No steam pipe shall be directly connected to a plumbing or drainage system, nor shall water having a temperature above 140 degrees Fahrenheit (60 degrees Celsius) be discharged under pressure directly into a drainage system.

Automatic flushometers shall be battery powered, infrared type with a manual override button.

Water hammer arrestors shall be provided as required to protect against noise and damage from water hammer (sizes and locations shall be in accordance with UPC, chapter 6).

ROOF DRAINS

Do not attach roof drains to structural members. Roof drains shall be piped to storm sewer if available. Do not pipe roof drains to any sidewalk or pedestrian paths. Provide splash blocks in landscape areas. No scuppers or external gutter and downspout systems allowed. Roof drains and covers shall be cast iron. Plastic drains are prohibited.

Minimum size for all roof and over-flow drains shall be 3". All outflows through the building walls above grade shall be via a J.R. Smith 1770 downspout, or equal.

All waste lines into indirect wastes shall have an air gap of a minimum of 1 inch above the overflow rim. All solder or low fusion joints must be lead free.

FLOOR DRAINS

Every toilet room and custodial room shall have a floor drain located at the lowest point in the floor. Provide trap primers on all floor drains, or floor sinks.

Air handler and mechanical equipment rooms shall have oversize drain located at the lowest point of the floor. Locate floor sinks adjacent to equipment that requires

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condensate drainage. All mechanical room floor drains and floor sinks shall be 4" diameter.

Wherever a plumbing pipe penetrates a concrete floor slab the pipe shall be protected with a minimum of 1/2" thick insulation (typically closed cell elastomeric type insulation). Where site conditions warrant, pipe sleeves and water-tight seals shall be specified at each penetration.

ISOLATION VALVES

Isolation valves shall be installed on the hot and cold water supply for each floor of the building. Isolation valves shall be installed on the main water lines to each building.

Isolation valves shall be installed on the branches to each group of restrooms.

A shut-off valve and pressure reducing valve, where required, with full size bypass shall be installed on the domestic cold water riser in each building.

The isolation valves shall be located for easy access in an emergency. Isolation valves shall be wall mounted no lower than 3 feet and no higher than 5 feet.

PIPING

All copper pipe, both domestic and waste, installed on a metal framing system such as Unistrut, shall be isolated using Cush-A-Clamps or equivalent.

Plastic pipe shall be limited inside of buildings as follows:

For reverse osmosis/de-ionized laboratory water systems virgin, unpigmented polyvinylidene fluoride pipe (PVDF) ASTM 3222, schedule 80 shall be specified. Fittings shall be unpigmented polyvinylidene fluoride pipe (PVDF) schedule 80, socket fusion type joints.

For laboratory waste piping acid resistant, schedule 40 flame retardant polypropylene pipe per ASTM F1412 and ASTM D4101 shall be used except in return air plenums, which requires schedule 40 polyvinylidene fluoride pipe (PVDF) per ASTM F1673 and ASTM D3222. Fittings to be schedule 40, no-hub or electrofusion depending on access to the piping. Electrofusion joints required where access to fittings is not practical. All polyvinylidene fluoride pipe (PVDF) to meet ASTM E-74 and UL 723 requirements for flame spread and smoke generation.

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5 inch diameter piping shall not be specified.

A lockable cover, loose keyed hose bib shall be provided in each toilet room. The hose bib shall be attached to the hot water supply.

Winterization: The following methods of winterization are required to ensure adequate protection of lines during colder weather months.

- Insulation
- Heating: Any of the following heating systems may be used:
 - Internal heat tracing
 - External heat tracing
 - Jacketing
 - Electrical tracing
 - Routing along and/or insulating together with a hot line

Winterization with heating should not be used where other methods can be used

221119 - DOMESTIC WATER PIPING SPECIALTIES (BACKFLOW PREVENTION)

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Domestic cold water service to each building shall incorporate a reduced pressure backflow preventer to protect the water supply from backflow. The reduced pressure backflow preventer shall be located as directed by Facilities Services Department requirements.

Backflow preventers shall be mounted above ground in a weather sheltered area with at least three feet of clear space on either side of the preventer. The backflow preventer shall be located so no part of the building needs to be dismantled to replace the preventer. All exterior locations or other sites subject to freezing shall be provided with insulated, lockable hot boxes.

Provide two types of heat sources.

- Electric heater supplied with large hotbox and heat tape, small hotboxes not supplied with heater, require only two heat tapes each on separate circuits.

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- Two heat tapes: Heat tapes to be manufactured by Raychem and be self-regulating, braided copper; commercial style or equal.
- Each heat tape installed individually must cover the main backflow, bypass and piping.

All bypass water lines shall have the same type of backflow prevention as the backflow prevention on the main water service.

Installation of an appropriately sized thermal expansion tank is required on hot water lines downstream of the backflow prevention device.

Any outlets, tees, tap, hose bib connections, must be down-stream of the backflow prevention assembly.

The backflow prevention assembly shall be sized the same as the inlet pipe size diameter.

All piping up to and including 4" in diameter shall be type L copper pipe, underground piping shall be wrapped with 10-mil tape. Copper pipe shall extend 6' beyond both sides of the backflow for support.

Service protection backflow prevention assemblies shall not be installed in attics, above ceilings, or behind walls. Assemblies more than 5 feet above the grade of the floor shall have a permanent platform.

A drain system shall be required for all Reduced Pressure RP assemblies.

All boiler and cooling tower feeds must be equipped with approved back flow preventer and full sized by-pass.

Fire Protection Backflow Prevention

The fire sprinkler water service to each building shall incorporate a double check detector assembly or a reduced pressure backflow preventer to protect the water supply from backflow.

See Drawings for Backflow Prevention Assemblies Detail

[Request Drawing Details](#)

- Backflow External Horizontal – Industrial-Domestic (221113-1)
- Backflow Internal Horizontal Retrofit Only (221113-2)

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- Backflow Irrigation Horizontal (221113-3)
- Backflow External Horizontal Above Ground (221113-4)
- Backflow Internal Installation (221113-6)
- Backflow Assemblies Internal Vertical (221113-8)
- Backflow External Horizontal (221113-9)
- Backflow Internal Horizontal – Fire System (221113-10)

PRODUCT STANDARDS AND MANUFACTURERS

Backflow Preventers: Apollo Backflow Preventers required.

Backflow preventers shall be listed on the most recent “List of Approved Backflow Prevention Assemblies” published by the Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California. A manufacturer’s label verifying approval by the Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California shall be provided with each backflow preventer.

Installation of backflow preventers in vaults is prohibited without permission from Facilities Services.

224200 - PLUMBING FIXTURES AND TRIM

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

The minimum number of plumbing fixtures shall be in accordance with the locally adopted International Building Code (IBC).

All plumbing fixtures shall be specifically designed to conserve water. Maximum water usage by specific fixture type shall be as follows:

- Water Closets 1.6gallons per flush
- Urinals 1.0 gallons per flush
- Lavatories 2.5gallons per minute
- Sinks 2.5 gallons per minute
- Showers 2.5gallons per minute

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Exterior hose bibs shall be installed every 50 feet on all sides of buildings.

Water closets shall be wall-mounted type (except in remodel construction where existing wall or chase space does not allow for wall-mounted type) unless written authorization is obtained from the University Facilities Services Department allowing floor-mounted water closets.

Sinks shall be under mounted where applicable.

All industrial and potable water fixtures/systems must have backflow preventers that meet TMWA standards and Washoe County Health Codes and be on a backflow preventer list. (A copy can be obtained from TMWA backflow department.)

All faucets with any possibility of back-siphon into potable water must be equipped with vacuum breakers. Provide faucets with grid strainers only, pop-up are not allowed.

All new construction and remodels, where possible, shall include automatic flush devices and faucets that are certified under the WaterSense program established by the United States Environmental Protection Agency.

PRODUCT STANDARDS AND MANUFACTURERS

Faucets

Automatic faucets for lavatories:

- 120 or 240 volt models
- Moen 8553AC sensor operated faucet with 99557 4" deck plate with 104424 mixing valve
- Sloan Optima Systems ETF-600
- No Symmons faucets or valves will be accepted.

Battery Powered Models:

- Moen 8553 sensor operated faucet with 99557 4" deck plate with 104424 mixing valve.
- Sloan Optima Systems EBF-650
- Manual Devices are to be used only with written approval from Facilities Services.
- Faucet: 4" center Moen 8437 or 8430F05. Lever handle: Moen 8420.
- Handicapped wrist blade faucet: 4" center Moen 8215F05 or Moen gooseneck 8278.

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Shower Valves

3 port: Moen 8371HD (valve only), Moen T8375EP15 (shower head & trim only)

4 port: Moen 8371HD (valve only), Moen T8389EP15 (shower head, tub filler & trim only)

Urinals

Automatic flush valves for urinals:

- 120 volt models
- Moen 8315AC05 sensor-operated flush valve – 0.5 GPF with 104406 AC adapter
- 104401 multi AC adapter for up to 8 valves, 104402 needed for every valve

Battery powered models:

- Moen 8315 sensor operated flush valve – 0.5 GPF

Automatic flush valves for water closets:

- 120 or 240 volt Models
- Moen 8311AC12 sensor operated flush valve – 1.28 GPF with 104406 AC adapter
- 104401 multi AC adapter for up to 8 valves, 104402 needed for every valve

Battery powered models:

- Moen 8311 sensor operated flush valve – 1.28 GPF

Flush Valves

Water Closet Flush Valves: Moen 8310M128 – 1.28 GPF or with 1" VR control stop, 1-1/2" tailpiece, heavy duty brass piston and brass handle assembly

Urinal Flush Valve: Moen 8312M05 – 0.5 GPF or with 3/4" VR control stop, 3/4" tailpiece, heavy duty brass piston and brass handle assembly

Sinks, Water Closets, and Urinals: American Standard and Kohler

Hose Bibbs: Zurn or Woodford

Medical Surgeons Lav: American Standard 9010.018 or 9012.14 with concealed arms and Moen 8225 gooseneck faucet.

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Service Sink: Moen 8124 with internal check stop and with vacuum breaker

Stainless Sinks: Minimum of #18 1.2mm gauge type 304- 18-8 stainless sinks.

Water Cooler: Elkay LZSTLG8WSSK Bi-level ADA with bottle filler. Elkay LZS8WSLK single ADA unit with bottle filler where appropriate.

Hydration Station: Elkay or Brita/Haws Touch Free Hydration Station. *Note: this does not alleviate the requirement for water fountains.*

Floor Drain Trap Primers: Within restrooms use Sloan Vacuum Breaker Trap Primer, Model # VBF-72-A. Where water is not close to floor drain, use Sure Seal Trap Guard. All other applications require a Prime-Time electronic trap priming system PPP model PTS-4 manifold system.

Water Closet

Wall mounted toilets will be American Standard or Kohler.

Floor mount toilets will be American Standard

Water Closet Carrier

Carriers will be Zurn floor mounted closet carriers, vertical and horizontal.

All anchor lugs shall be secured using ½” all-thread rod with ½” drop in anchor in concrete application.

Wood application will require all-thread to penetrate the floor below and be secured with uni-strut to a solid wood structure.

Floor Mount Toilets

10 inch or 12 inch rough in and ADA compliant

Material installation requirements

Offset closet flanges are not allowed.

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223330 - DOMESTIC HOT WATER HEATERS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Buildings attached to the Central Heat Plant will utilize a shell and tube heat exchanger to provide domestic heat. The heat exchanger will utilize 180 degrees F water from the building.

Storage tanks to be cement-lined steel with stainless steel threaded connections.

Tank to be insulated with minimum 2 inch fiberglass insulation and 18 gauge epoxy painted steel jacket.

Buildings not tied to the Central Heat Plant will utilize a gas fired water heater.

PRODUCT STANDARDS AND MANUFACTURERS

Water Heaters: State or A.O. Smith

226700 - LABORATORY AND DEIONIZED WATER SYSTEMS

See [APPENDIX H](#)- Laboratory Safety Design Guidelines

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Specify the type of water to be distributed. Type 1, 2 or 3 are the categories laboratory water is typically specified. Type 3 is for general and non-critical applications. Type 2 for activities such as buffer preparation, pH solution preparation, re-agents preparation. Type 1 water is for critical applications - cell cultures, molecular biology, etc. ASTM D1193-1999 specifies quality of different water types.

During programming, the Architect shall interview faculty to determine requirements for deionized water systems. Consider point of use systems for Type 1 water. Central system can be Type 2 if feeding a Type 1 point of use system.

Consider floor by floor systems to minimize risk of contamination and downtime.

City water quality may vary day to day and by season. Must evaluate water quality in selecting pre-filtering components.

Use an activated carbon filter upstream of Reverse –Osmosis (RO) system to remove chlorine. Chlorine can damage RO membranes.

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Cation and anion exchange shall not be used.

Specify systems with EDI - Electrodeionization, which uses electrical current and permeable membranes for ion removal.

Use R.O. feed water to an EDI system.

Specify UV lamps 185 nm and 254 nm wavelengths, which are the most effective.

Use chlorine dioxide to sanitize DI piping systems.

Polyvinylidene Fluoride PVDF piping is preferred. PVDF manufactured per ASTM E-84 and UL 723. The only alternative is stainless steel. (Type 316 L). Do not use PVC piping. Do not use solvent welded joints, glue will contaminate system.

Use diaphragm valves only.

Design with zero dead-legs in piping system. (No greater than 6 pipe diameters)

Sanitary sampling valve - use needle valve for microbiological sampling.

Do not oversize. Size storage tanks for one day's supply.

Gravity systems are not acceptable.

Distilled water systems are not acceptable.

Resistivity and TOC monitoring are needed.

For critical systems specify duplex systems for reliability.

End of Division 22
PLUMBING

DIVISION 23: HEATING, VENTILATING AND AIR CONDITIONING

23000 - BASIC REQUIREMENTS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Energy Conservation: Prior to the construction or renovation of any public building with a gross floor area greater than 20,000 square feet, a detailed life cycle cost analysis, including the cost of operation and maintenance, must be completed. The study shall identify measures for the conservation of energy, and shall consider the use of alternate non-fossil fuels when applicable. The analysis shall include comparisons of at least three different HVAC system types. The three different system types to be evaluated shall be reviewed and approved by the University Facilities Services Mechanical Engineer prior to beginning the analysis. A separate narrative shall be provided outlining the building envelope insulating values (for walls, glass, roof, etc.) and specific HVAC system components (i.e., plate and frame heat exchangers, variable frequency drives, compensating type kitchen exhaust hoods, etc.) as they relate to energy conservation.

HVAC SYSTEMS AND EQUIPMENT

All new buildings shall utilize heat provided by the Utility Plant unless directed otherwise by the Facilities Services Department (FSD).

All new buildings shall utilize cooling provided by the Utility Plant unless directed otherwise by the Facilities Services Department (FSD).

Heating and air conditioning load calculations for Reno Nevada shall be completed utilizing the following criteria:

Indoor/Outdoor

Heating	72F	ASHRAE 99% Winter Value = 13F db
Cooling	74F	95 F db / 61F wb

All equipment shall be rated for an elevation of 5,000 feet above mean sea level. Propylene glycol shall be used in any system that has a hydronic coil and uses 100% outside air such as a makeup air unit. This pertains to new systems as well as existing.

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Engineering calculations shall be performed on the entire new or existing hydronic system to verify that the equipment will perform satisfactorily with glycol. Glycol shall be added to the system in the amount to provide freeze protection down to 0°F, unless specifically requested otherwise by Facilities Services. The percentage of glycol added to the system shall not exceed 40%.

Heating and air conditioning load calculations shall not incorporate safety factors. Safety factors shall only be applied in selecting the desired equipment.

All equipment, ductwork, and piping shall be braced for the applicable seismic zone. Seismic bracing requirements shall be specifically identified in the Contract Documents.

All equipment and equipment rooms shall be designed to ensure adequate provisions for maintenance. Special consideration shall be given to ensure proper clearances for maintenance of filters and removal of chiller and boiler tubes, fan housings, and fan shafts.

Access to equipment for service and maintenance shall be coordinated with FSD. Required clearances shall be specifically identified on the drawings (for equipment such as fan coils, VAV boxes, air handling units, control panels, etc.). Coordinate with other disciplines to ensure that other trades (electrical, fire sprinkler, etc.) are made aware of the required clearances.

Provide pump performance curves for all hydronic system pumps to the University design manager for system analysis and modeling.

Pumps shall be laser aligned after installation with any misalignment correct to eliminate rotation rate vibration.

Mechanical equipment rooms that utilize water in any way and are located above any other space shall have the floor sealed in such a way as to not allow water to seep through the floor to the space below. Critical areas shall be provided with water detectors with alarming through the BMS. Floor drains shall be provided complete with automatic trap primers. These rooms shall also be provided with at least one anti-siphon hose bib.

Designs shall include isolation and drain valves, with a hose bib connection, at each floor or major building section. Isolation valves shall be full port ball or gate valve design.

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All HVAC equipment with a condensate drain connection shall have the condensate piped to an approved receptor, size drain to match or exceed code minimums. Reference Condensate Drain Detail Drawing #2300-1 and Condensate Drain To P-Trap Drawing #2300-2. The requirement for condensate drains includes but is not limited to: Air Handling Units, Roof Top Units, Make Up Air units, Fan Coils, and Terminal Units. Where auxiliary condensate pumps are required, the condensate pump shall be manufactured by Little Giant VCMA or an approved equivalent. The contractor is responsible for supplying electrical power to condensate pumps.

PRODUCT STANDARDS AND MANUFACTURERS

The following manufacturers shall be used for the equipment listed:

- Frequency Drives: ABB Danfoss
- Roof-top units: York, Carrier, Trane
- Dual Fuel, Steel, Hot Water Boilers: Fulton (Vertical/tubeless), Cleaver Brooks, Bryan, Parker, Burnham, International Boiler Works
- Modular, Copper Fin, Gas-Fired Hot Water Boilers: Lochinvar, Hydrotherm
- Chillers: Carrier, Trane, York, Daikin
- Centrifugal Pumps: Goulds or Bell & Gossett
- Custom Air Handlers: Temptrol, Scott Springfield, Governair, Marcraft, Energy Labs
- Plate and Frame Heat Exchangers: Alfa-Laval Tranter, Sondex, Bell & Gossett
- Shell and Tube Heat Exchangers: Bell & Gossett
- Make-Up Air Units: Greenheck, Reznor, Modine, Trane, Rapid, Aaon
- Air Separators: Spirotherm, Thrush Aar-O-Vent
- Pneumatic Control Valves: Leslie
- Buried High Temperature Hot Water (HTHW) Piping Powder Insulation: Gilsulate 500XR.

INSTRUMENTATION AND CONTROL FOR HVAC

Building Management Systems (BMS) DDC Control Modules

All control components in new buildings shall be native Automated Logic Controls (ALC). No exceptions.

All new buildings shall use BACnet standard MS/TP, TCP/IP bus protocol ASHRAE Standard-135 or ALC Arcnet. Additions to existing buildings may be BACnet, MSTP, or ALC Arcnet. Alternatives will be considered on a case by case scenario with the UNR

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Controls Department. ALC BACnet Routers shall be used. ***BACnet IP shall only be used for the Global level communications. Individual equipment level controllers shall be MS/TP or Arcnet hardwired to the building level controller.*** All new construction must provide graphics with accompanying text fields for all pertinent data along with user view trees (contact University Controls Department for any questions). Servers are used as part of the BMS for extensive archiving of system configuration data, trending, operator transactions, and alarming purposes. These functions shall be performed through the use of virtual servers for the ALC systems. All shall use SQL databases.

The control system shall provide direct digital control with a Windows-based user interface. The DDC shall include surge suppressors, operating software. All software shall be updated to the latest revision. Check with the University Controls Department before performing any upgrades.

All control components in buildings connected to the Campus Chilled Water System that will be added to the existing chilled water control system shall be native ALC to match the existing control architecture. No exceptions. The existing chilled water loop controller programming shall be modified to include all points necessary to match the existing sequence of operation and all associated graphic displays shall be updated.

Designs adding buildings or sections of buildings to the campus chilled water system shall provide ¾" NPT ports with ball valves on the supply and return pipes nearest to the pipe entrance of differential pressure sensors.

Designs adding buildings or sections of buildings to the campus chilled water system shall provide ¾" NPT ports on the supply and return pipes nearest to the pipe entrance of temperature sensors.

BMS Software and Programming Requirements

The Temperature Control Contractor shall program the eleven State Holidays into the EMCS software for the five years following the date of the installation.

A separate occupied/unoccupied schedule shall be provided for each air handling unit, fan coil unit, exhaust fan, and/or other individual air handling system.

Outside air temperature sensors capable of sensing both temperature and humidity shall be programmed to display dry bulb temperature, wet bulb temperature, and relative humidity. The campus is divided into climatic zones. The Temperature

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Controls Contractor shall map the point from the applicable climatic zone in addition to installing a new sensor. The system shall be programmed to use the global sensor as primary outside air conditions and, upon failure of the primary, switch to the buildings local sensors. Each building shall utilize its own outside air conditions program that all building systems point to.

Each zone shall be capable of being set to either a global set point or a remote set point with adjustable dead bands for each. The global set point can be utilized to set/adjust the temperature in all associated zones with a single set point. Each air handling unit and its associated zones and/or each floor of fan coil units shall have a separate global set point. The strategy for global set point assignment shall be confirmed with the University Controls Department prior to programming. The remote set point is an individually adjustable set point for each zone provided by the Controls Department. All zones shall also be capable of being put into local control with the occupant having the ability to change the zone set point +/- 2°F (adjustable).

Buildings shall have programming added to facilitate scheduled and immediate building wide systems shutdowns. This programming shall have the ability to be scheduled via a wire lock in ALC. This is mainly used for planned power outages to shut down every piece of equipment in the building. This programming shall only be accessible by operators that have “admin” rights to the system. No other operators shall be allowed access to building shutdown programming.

Fault Detection and Diagnostics (FDD)

Internal Fault Detection and Diagnostics shall be provided, installed and fully configured. FDD shall have the ability to follow NIST and ASHRAE standards for enhanced monitoring and alarming. The capability of FDD shall reside in the controller and integral to the programming. External software for primary FDD reporting is not acceptable. FDD capabilities shall include diagnostics for: Simultaneous Heating and Cooling; Continuous Operation; Fraction of Outdoor Air; Analog Output Cycling; Discrete Output Cycling; Sensor Failures; and Run Requests Analytics. Equipment using these FDD capabilities, as a minimum, shall include: Single Zone Units (SZU), VAV Air Handlers, VAV Terminal Units, Fan Coils, Unit Ventilators, Air Source & Water Source Heat Pumps. FDD software shall be configured to prevent cascading alarms.

Environmental Index System

Environmental index systems shall monitor all occupied zones and compile an index that provides a numerical indication of the environmental comfort within the zone. As a

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minimum, this indication shall be based upon the deviation of the zone temperature from the heating or cooling set point. If humidity is being measured within the zone then the environmental index shall be adjusted to reflect a lower comfort level for high or low humidity levels. Similarly, if carbon dioxide levels are being measured as an indication of ventilation effectiveness then the environmental index shall be adjusted to indicate degraded comfort at high carbon dioxide levels. Other adjustments may be made to the environmental index based upon additional measurements. The system shall maintain a trend of the environmental index for each zone in the trend log. The system shall also compute an average comfort index for every building included in this contract and maintain trend logs of these building environmental indices. Similarly, the system shall compute the percentage of occupied time that comfortable conditions were maintained within the zones. Through the UI the user shall be able to add a weighting factor to adjust the contribution of each zone to the average index based upon the floor area of the zone, importance of the zone, or other static criteria.

Sustainability Kiosk Contractor

Sustainability kiosk contractor shall provide all software, programming, content, computer or web server hardware, touchscreen panels, and configuration to display building sustainability. The purpose of this display is to inform and educate visitors and building occupants on the various systems and sustainability features of the building or buildings included in this project. The display shall allow a user to navigate through the screens by touching icons or other controls. Screens shall also be viewable through a standard web browser with a network connection to the contractor supplied hardware. Display shall highlight the sustainability features of the project by displaying automatically updated graphs that show energy use, water consumption, natural gas consumption, and sustainable features incorporated into the building such as solar panels, solar water heating, rainwater collection, geothermal heating and cooling, and similar features as applicable to the project. Display shall provide educational material about the resource being trended as well as tips on how building occupants can help reduce the use of these resources. Display shall also provide animated graphics and simple explanations about how basic building systems included in this project operate and how they affect energy consumption. Systems covered shall as a minimum include air handling units, boilers, chilled beam systems, energy recovery wheels, geothermal heat pump systems, rainwater recovery systems, solar water heating systems, solar photovoltaic panels, and wind turbine generators if such equipment is included in the project.

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GRAPHIC DISPLAYS

Campus Graphic

The campus graphic shall show all University buildings. The main campus graphic shall be updated to include any new buildings added to campus.

Each building footprint shall be a link to that building's main screen.

If an alarm is present anywhere in a building, the footprint shall be red. If the building global controller is offline, the footprint shall turn pink.

System Wide Graphics

UNR uses some system wide graphics such as but not limited to campus chilled water, peer caching, global building shutdown screen, HTHW heat exchanger summaries, boiler summaries, snow melt system summaries, air compressor summaries, and domestic water summaries.

Anytime work is done on campus to any system, the associated system wide graphic shall be updated with the new information.

BMS Integration

Direct Protocol (Integrator Panel)

The BMS system shall include appropriate hardware equipment and software to allow bi-directional data communications between the BMS system and 3rd party manufacturers' control panels. The BMS shall receive, react to, and return information from multiple building systems, including but not limited to chillers, boilers, variable frequency drives, power monitoring system, and medical gas.

All data required by the application shall be mapped into the network controller and shall be transparent to the operator.

Input and output points from the third-party controllers shall have real-time interoperability with BMS software features such as: Control Software, Energy Management, Custom Process Programming, Alarm Management, Historical Data and Trend Analysis, Totalization, and Local Area Network Communications.

BACnet Protocol Integration

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The neutral protocol used between systems shall be BACnet over Ethernet and comply with the ASHRAE BACnet standard 135.

A complete Protocol Implementation Conformance Statement (PICS) shall be provided for all BACnet system devices.

The ability to command, share point object data, change of state (COS) data and schedules between the host and BACnet systems shall be provided.

When adding a piece of equipment on campus such as an air handler, chiller, package unit, etc. that is BACnet compatible, Bacnet shall be used for monitoring ONLY. No “control” over BACnet is allowed. All start/stop, status, alarm, speed reference, or any other control point shall be hard wired from a BMS controller to the piece of equipment.

Any BACnet device that is connected to the UNR network shall have a unique device ID between 0 and 4194303. The contractor shall contact the UNR Controls Shop for approval of any and all BACnet device ID's. A seven digit device ID is preferred but not always possible due to BACnet limits. Typically the ID will be vendor ID followed by building number followed by 1-3 identifying numbers. The same holds true for network numbers.

Example:

- Danfoss Vendor ID=190
- Belimo Vendor ID=423
- Lincoln Building #=60
- BACnet device for Belimo valves at Lincoln Hall=42360#
- BACnet device ID for Danfoss VFDs at Lincoln Hall=19060##

Multiple BMS systems integration

In buildings where there are more than one BMS manufacturer present, the systems shall be integrated together via BACnet. This includes but not limited to:

Update thermographic floor plans on the ALC system with information from both systems.

Update any affected summary screens on the ALC system with information from both systems.

Program heat and cool requests from one system to the other

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Transfer occupancy schedule from ALC system to the other.

Maintain original system functionality by providing any and all programming necessary in both systems i.e., heat/cool requests from TUs or air handling equipment, building static pressure control with common elements, and other building/site wide interdependencies.

Integration of multiple BMS systems within a building shall be completed in such a way as to provide for a complete and operational system completely controlled by the ALC system.

Input Devices

All equipment shall be sized, selected, installed, setup, and calibrated as appropriate for the application and per the manufacturer's specifications.

Temperature Sensor General Requirements

Temperature sensors shall be resistance type, and shall be two wire thermistor 10k-2 (10k ohms @ 25C, -55 to 150 C).

Room sensors on exterior walls shall be mounted with adequately insulated bases, and insulation shall be stuffed inside the wall to block off internal wall air flows. Wall boxes shall be caulked around perimeter and conduit penetrations shall be sealed.

All fluid temperature monitoring shall be accomplished by using insertions sensors inside thermo wells. Wells shall be filled with thermal conducting compound.

All HVAC air moving equipment shall have a duct discharge air temperature sensor installed. This includes but is not limited to: Air Handling Units, Roof Top Units, Make Up Air units, Fan Coils, Terminal Units, etc.

The following point types (and the accuracy of each) are required, and their associated accuracy values include errors associated with the sensor, lead wire, and A to D conversion:

- Chilled Water +/- 0.5°F.
- Room Temp +/- 0.5°F.
- Duct Temperature +/- 0.5°F.
- All others +/- 0.75°F.

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Room Temperature Sensors

Room sensors shall be constructed for either surface or wall box mounting.

Room sensors shall have the following options when specified:

Set point adjustment providing a minimum +/- 3 degree (adjustable) range.

A momentary override request push button for activation of after-hour operation with LED status.

Temperature and mode display.

Thermowells

When thermo wells are required, the sensor and well shall be supplied as a complete assembly.

Thermo wells shall be pressure rated and constructed in accordance with the system working pressure.

Thermo wells and sensors shall be mounted in a thread-o-let or 1/2" FPT fitting and allow easy access to the sensor for repair or replacement.

Thermo-wells and sensors shall be matched in size. They shall be sized such that the end of the well is located in the center of the pipe.

Thermo-wells shall be constructed of 316 stainless steel, if installed in the High Temperature Hot Water System (HTHWS). All other installations may be brass.

Outside Air Sensors

The University has divided its campus into zones that group buildings into similar OSA climates. Each zone has a NIST certified Vaisala OSA temperature sensor and %RH transmitter. The values from these devices are mapped across the BMS network to all buildings in their respective zones.

New buildings or new control installations in buildings that do not have a standalone OSA sensor shall have a new OSA and %RH sensor installed. After the new control system is brought online on the campus network, the existing climatic zone sensors shall be programmed as the primary sensor and the building's standalone sensors shall

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be programmed as the backup in the event that the primary goes unreliable. In addition, the program shall be written to allow for manually selecting which sensor is used as the primary.

Duct Mount Sensors

Duct mount sensors shall mount in an electrical box through a hole in the duct, and be positioned to be easily accessible for repair or replacement.

If the duct has exterior insulation, the sensor shall be provided with standoff spacers with insulating material firmly fitted around spacers.

Duct sensors shall be insertion type and constructed as a complete assembly, including lock nut and mounting plate.

For outdoor duct applications, a weatherproof mounting box with weatherproof cover and gasket shall be used.

Averaging Sensors

For ductwork greater in any dimension than 48 inches, mixed air applications, or where air temperature stratification could exist, an averaging sensor shall be used.

The sensor shall have continuous averaging over the entire element; discrete points will not be accepted.

The sensor element shall be installed in a serpentine fashion with no less than 18" between each pass. The element shall span horizontally to within 8" from each coil edge.

Capillary supports at the sides of the duct shall be provided to support the sensing string.

Humidity Sensors

The sensor shall be a solid-state type, relative humidity sensor. The sensor element shall resist surface contamination.

The humidity transmitter shall be equipped with non-interactive span and zero adjustment; a 2-wire isolated loop powered 4-20 mA, or 0-10VDC, and 0-100% linear proportional output.

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The humidity transmitter shall meet the following overall accuracy, including lead loss and Analog to Digital conversion. 3% between 20% and 80% RH @ 77 Deg F unless specified elsewhere.

Transmitters shall be shipped factory pre-calibrated.

Pressure Transmitters

Pressure transmitters shall be constructed to withstand 100% over-range pressure without damage, and to hold calibrated accuracy when subject to a momentary 40% over-range input.

Pressure transmitters shall transmit a 0 to 10 VDC or 4 to 20 mA output signal. Maintain accuracy up to 20 to 1 turndown ratio. Reference Accuracy: +0.2% of full span.

Differential pressure transmitters used for flow measurement shall be sized to the flow sensing device, and shall be supplied with Tee fittings. Shut-off valves in the high and low sensing pick-up lines shall only be provided for water to allow the balancing Contractor and Owner a permanent, easy-to-use connection.

A minimum NEMA 1 housing shall be provided for the transmitter. Transmitters shall be located in accessible local control panels wherever possible.

The exterior sensing tip for a building differential air pressure transmitter shall be installed with a shielded static air probe to reduce pressure fluctuations caused by wind. Location of pressure sensors shall be shown on control as-built drawings.

Room pressure monitoring and/or control

Pressure monitoring and/or control below 0.10" shall be by thermal anemometer technology which senses air flow and correlates this to a pressure difference. Mechanical diaphragm, strain gauge, or similar means shall not be used.

Pressure monitoring and/or control shall be a through the wall pressure sensor UL listed for 2-hour fire walls, bi-directional +/- 0.00001" accuracy. Display shall have audio & visual alarms along with keypad and LCD display for field adjustment of parameters. Monitor shall have dual alarm time delays for door closed and door open conditions. Furnish and install GE 1076 flush mount door switches on all associated doors. Monitor shall be a native node on BACnet control network. Sensors shall be TSI, Setra or equal upon approval.

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Static Pressure Traverse Probe

Duct static traverse probes shall be provided where required to monitor duct static pressure. The probe shall contain multiple static pressure sensors located along exterior surface of the cylindrical probe.

BTU Monitoring Devices

Building BTU's shall be monitored by the building's gas supply source, if the building is not on the HTHW loop. The meter shall provide an output which can be read by the BMS. BTU readings shall be incorporated into the ALC system and programmed into the existing Energy Reports software.

If the building heat is supplied by the campus HTHWS, the secondary side of the building heat exchanger shall be monitored. Flow shall be read by ultrasonic flow sensors and a matched pair of strap on temperature sensors. Alternately, a Belimo Energy Valve may be used. All inputs shall go into a centralized BTU meter which performs all data calculations. BTU readings shall be incorporated into the ALC system and programmed into the existing Energy Reports software.

Refrigerant Leak Detectors

The refrigerant leak detector shall be a standalone device and shall provide a SPDT output to directly energize the refrigeration room exhaust ventilation fans. The detector shall include a sensor or sensors connected to a control panel. Two relay contacts at the control panel shall provide trouble and alarm indication to the BMS. The alarm relay contact shall also directly energize the exhaust fans.

The sensor(s) shall be mounted 18" above finished floor. The detector shall have an adjustable sensitivity range to allow for alarming at any refrigerant concentration from 100 PPM to 1,000 PPM. The sensor(s) shall be factory calibrated with the first stage alarm (non-audible alarm) calibrated at 600 PPM, the second stage alarm (non-audible alarm) calibrated at 800 PPM, and the third stage alarm (audible and visible alarms) calibrated at 1,000 PPM. The third stage alarm shall also enable the emergency ventilation system. Refrigerant leak monitor shall be furnished with optional remote audible/visible alarms (horn/strobe combination). Locate two horn/strobes at each chiller room exit (one inside and one outside of each exit door). Install each horn/strobe at approximately 7'-6" above finished floor. Remote audible/visible alarms shall be suitable for either indoor or outdoor installation.

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The refrigerant leak detector shall sense the type of refrigerant used in the specified chillers. Multiple sensors shall be required to detect different refrigerants and/or provide proper sensing coverage for the area of the refrigeration room.

Smoke Detector

Smoke detectors shall be furnished as required by applicable code. All wiring for air duct detectors shall be connected to the fire alarm control system and be provided under Division 26, Electrical. Smoke detectors on air handling equipment where the flow is over 200CFM shall be monitored by the BMS. An alarm shall be generated by the BMS when the smoke detector is in an alarm condition.

Current Sensing Switches

The current sensing switch shall be self-powered with solid-state circuitry and a dry contact output. It shall consist of a current transformer, a solid state current sensing circuit, adjustable trip point, solid state switch, SPDT relay, and an LED indicating the on or off status. A conductor of the load shall be passed through the window of the device. It shall accept over-current up to twice its trip point range.

Current sensing switches shall be used for run status for fans, pumps, and other miscellaneous motor loads. Note: If VFDs are used, motor status shall come from VFD status output. The exception is when the VFD controls multiple loads as in fan walls. In that case CTs would be required for each load and must be designed for VFD use.

Current sensing switches shall be calibrated to show a positive run status only when the motor is operating under load. A motor running with a broken belt or coupling shall indicate a negative run status.

Devices shall be split core to have the ability to be installed and removed on a conductor without disconnecting the conductor.

Air Filter Status

Differential pressure transducers shall be used to monitor air filter status.

A complete installation kit shall be provided, including: static pressure taps, tubing, fittings.

Air Pressure Safety Switches

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Air pressure safety switches shall be of the manual reset type with DPDT contacts rated for 2 amps at 120VAC.

Pressure range shall be adjustable with appropriate scale range and differential adjustment for intended service. Installed device locations shall be indicated on control as-built drawings.

Low Temperature Limit Switches

The low temperature limit switch shall be of the manual reset type with Double Pole/Single Throw snap acting contacts rated for 16 amps at 120VAC.

Mount on the discharge side of the first water or steam coil in the air stream.

The sensing element shall be a minimum of 15 feet in length and shall react to the coldest 18-inch section. Element shall be mounted horizontally across duct in strict accordance with manufacturers recommended installation procedures.

The sensor element shall be installed in a serpentine fashion with no less than 18" between each pass. The element shall span horizontally to within 4" from each coil edge.

Capillary supports at the sides of the duct shall be provided to support the sensing string.

For large duct areas where the sensing element does not provide full coverage of the air stream, additional switches shall be provided as required, and wired in series, to provide full protection of the air stream. Provide additional switches at a ratio of one linear foot of element per one square foot of duct opening or coil surface area.

Output Devices

All equipment shall be sized, selected, installed, setup, and calibrated as appropriate for the application and per the manufacturer's specifications.

Actuators

Damper and valve actuators shall be electronic.

Electronic control actuators for all valves and dampers shall be modulating 4-20 mA or 0-10 VDC control signal, unless the application calls for a two position function. Two position functions with fail safe positions shall be achieved with actuators that are

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powered to drive and unpowered to spring return to the fail safe position. Three wire “floating control” actuators are powered to drive one direction, and reverse powered to drive in the other direction. They shall only be allowed for 2-position, non-fail safe applications. They shall never be used for modulating applications, except for the onboard integrated actuator on the VAV controller. Modulating actuators with fail safe positions shall do so via spring return.

All actuators shall have external adjustable stops (to limit the travel in either direction), and a gear release to allow manual positioning.

Two-position or open/closed actuators shall accept 24 or 120 VAC power and be UL listed.

Modulating actuators shall accept 24 or 120 VAC or 24 VDC power, consume no more than 15 VA, and be UL listed. The control signal shall be 2-10 VDC or 4-20 mA.

Each actuator shall have current limiting circuitry incorporated in its design to prevent damage to the actuator.

Damper Actuators

Electronic damper actuators shall be mounted directly to the shaft.

Actuator sizing shall be based on actuator manufacturer’s recommendations in regards to face velocity, differential pressure and damper type. The actuator mounting arrangement and spring return feature shall permit normally open or normally closed positions of the dampers, as required.

Valve Actuators

Actuators shall provide the minimum torque required for proper valve close-off against the system pressure for the required application. The valve actuator shall be sized based on valve manufacturer’s recommendations for flow and pressure differential. All actuators shall fail in the last position unless specified with mechanical spring return in the sequence of operations. The spring return feature shall permit normally open or normally closed positions of the valves, as required. All direct shaft mount rotational actuators shall have external adjustable stops to limit the travel in either direction.

Butterfly isolation and other valves, as specified in the sequence of operations, shall be furnished with adjustable end switches to indicate open/closed position or be hard wired to start/stop the associated pump or chiller.

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Control Relays

Control pilot relays shall be of a modular plug-in design with retaining springs or clips.

Mounting Bases shall be snap-mount.

DPDT, 3PDT, or 4PDT relays shall be provided, as appropriate for application. SPDT are not allowed. DPDT is the minimum number of contacts.

Contacts shall be rated for 10 amps at 120VAC.

Relays in temperature control panels shall have 24 VAC or VDC coils and an integral indicator light.

Control Valves

All automatic control valves shall be fully proportional and provide near linear flow control. The valves shall be quiet in operation and fail-safe open, closed, or in their last position as specified on the drawings. All control valves shall be sized by the control manufacturer, and shall be guaranteed to meet the flow requirements, as specified. All control valves shall be suitable for the system flow conditions and close against the differential pressures involved. Body pressure rating and connection type (sweat, screwed, or flanged) shall conform to the pipe schedule.

Provide control valve resistance curve (flow versus pressure drop) to the University design manager for system analysis and modeling.

Chilled water control valves shall be modulating ball or globe as required by the specific application. Modulating water valves shall be sized per manufacturer's recommendations for the given application. Butterfly valves are not acceptable for chilled water control.

Ball or globe valves shall be used for hot and chilled water applications, water terminal reheat coils, radiant panels, unit heaters, package air conditioning units, and fan coil units except those described hereinafter.

Butterfly valves shall be acceptable for modulating only on condenser water supply to a chiller for head pressure control application, and for all two-position, open/close applications. In-line and/or three-way butterfly valves shall be heavy-duty pattern with a body rating comparable to the pipe rating, and a replaceable lining suitable for temperature of system. Valves for isolation service shall be the same size as the pipe. Valves in the closed position shall be bubble-tight.

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Miscellaneous Devices

All equipment shall be sized, selected, installed, setup, and calibrated as appropriate for the application and per the manufacturer's specifications.

Variable Frequency Drives shall be provided by the controls contractor. The following points shall be hard wired: start/stop, status, speed and fault, whereas kW and feedback shall be networked.

Thermostats

Electric room thermostats of the heavy-duty type shall be provided for unit heaters, cabinet unit heaters, and ventilation fans, where required. All of these items shall be provided with concealed adjustment. Finish of covers for all room-type instruments shall match and, unless otherwise indicated or specified, covers shall be manufacturer's standard finish.

Energy Monitoring and Management

Provide the University Facilities Services Department a standard electrical monitoring system for each new building. The monitoring system shall use Veris Industries 8100 series KW power meters with current transformers matched to the actual load. The meters shall have the capability to interface with Johnson Controls or ALC BAS. Electrical meter readings shall be incorporated into the ALC system and programmed into the existing Energy Reports software.

Data output shall be:

- kWh, Consumption
- kW, Real Power
- kVAR, Reactive Power
- kVA, Apparent Power
- Powerfactor
- Voltage, Line to Line
- Voltage, Line to Neutral
- Amps, Average Current
- kW, Real Power ØA
- kW, Real Power ØB
- kW, Real Power ØC
- Powerfactor ØA
- Powerfactor ØB
- Powerfactor ØC
- Voltage, ØA to ØB
- Voltage, ØB to ØC
- Voltage, ØA to ØC
- Voltage, ØA to Neutral
- Voltage, ØB to Neutral
- Voltage, ØC to Neutral
- Amps, Current ØA
- Amps, Current ØB
- Amps, Current ØC

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EQUIPMENT AND WIRING IDENTIFICATION

All instrument and output device wiring shall be labeled at every termination including both sides of interim splices within field terminal panels (splices out in the field are not acceptable).

Labels are required for wire pairs, and not for individual wires. Labels shall be installed within two (2) inches of termination, or in the case of I/O devices around the wire jacket anywhere in the device wiring cavity within six (6) inches of termination.

Label names shall reflect the BMS object name as displayed on the network (i.e. SF-S). The Controls Contractor to contact the University Controls Department for current nomenclature.

Equipment, devices and sensors which are located above the ceiling shall be indicated by a label on the ceiling beneath the unit. For T-bar ceilings, locate label on metal cross supports. The equipment label must follow the nomenclature called out on the mechanical prints (example: TU-113, AHU-1, etc.).

Panel Labeling:

Each panel face shall have a permanently attached engraved plastic tag bearing the panel number designated in the riser drawing along with the equipment name it controls. ., building name, system name(s), controller name(s) and addresses, mac address', IP address if applicable, and power source locations.

Each component shall be tagged on the panel back plate with a machine printed tag bearing the BMS object name, i.e. SF-C for the relay that commands on the supply fan. Controls contractor must Contact UNR Controls Department for current object name list.

Room sensors shall be labeled with the corresponding terminal unit or fan coil unit number and controller address. Label ceiling grid for location of all concealed equipment, VAV's, duct static pressure sensor/probe etc.

Accessibility

All instruments shall be installed such that they are accessible for removal, repair, or recalibration in place. All instrument cabinet doors shall allow full one hundred twenty

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(120) degree opening without interference. Any installation deemed by the University to be inaccessible shall be corrected by the contractor at no extra cost to the University.

Penetrations

Provide fire stopping for all penetrations used by dedicated BMS conduits and raceways.

All openings in fire proofed or fire stopped components shall be closed by using approved fire resistive sealant.

All wiring passing through penetrations, including walls shall be in conduit or enclosed raceway.

Penetrations of floor slabs shall be by core drilling. All penetrations shall be plumb, true, and square.

Project Record Documents

Upon completion of installation, submit three copies of record (as-built) documents of the documents shall be submitted for approval prior to final completion and shall include:

- Project Record Drawings including locations of all control components, sensors, power supplies and actual installed path of communications networks i.e. Arcnet Bus. As-built versions of submittal shop drawings provided as AutoCAD compatible files on suitable solid state media(file format: .DWG, .DXF, .VSD, or comparable) and as 11" x 17" prints.
- Testing and Commissioning Reports and Checklists. Completed versions of reports, checklists, and trend logs.
- Operation and Maintenance (O&M) Manual.
- As-built versions of submittal product data.
- Names, addresses, and telephone numbers of installing contractors and service representatives for equipment and control systems.
- Operator's manual with procedures for operating control systems: logging on and off, handling alarms, producing point reports, trending data, overriding computer control, and changing set points and variables.
- List of recommended spare parts with part numbers and suppliers.

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- Complete original-issue documentation, installation, and maintenance information for furnished third-party hardware including computer equipment and sensors.
- Licenses, guarantees, and warranty documents for equipment and systems.
- A complete spreadsheet of IP addresses and BACnet device IDs used in the project including vendor names, mac addresses, locations and network numbers. Contact the UNR Controls Shop for current requirements and format.

Product Standards and Manufacturers

Building Management Systems (BMS) DDC Control Modules

Approved manufacturer is: Automated Logic

- Optiflex BACnet Integrator
- Optiflex BACnet Building Controller
- Optiflex I/O Expanders
- Control Modules (ZN-Series)

The controls contractor shall warrant that all equipment supplied, and all work performed shall be free from defects in workmanship and materials for a period of one year from acceptance by the University. If any such products or workmanship should prove to be defective within the one year period, the contractor agrees either to correct by repair or by replacement with equivalent product or corrective workmanship, provided that such defects developed under normal and proper use. The equivalency determination rests with the University. Troubleshooting services shall be the responsibility of the contractor; preventative maintenance of the system is the responsibility of the Owner.

Input Devices

Approved manufacturers

- Room Temperature Sensors
 - BAPI
 - ACI
 - Equal upon approval
- Thermowells & Duct Mount Sensors

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- Mamac
- BAPI
- ACI
- Equal upon approval
- Averaging Sensors
 - Mamac
 - BAPI
 - Veris Industries
 - Grey Stone
 - Minco ACI
- Humidity Sensors
 - Veris
 - Mamac
 - ACI
 - Equal upon approval
- Pressure Transmitters
 - Veris
 - Equal upon approval
 - Exterior Sensors shall be Veris, Setra or equal upon approval. Veris PX series shall be used for Air and PW series for wet application.
- Carbon Dioxide Sensors shall be silicon based NDIR single beam dual wave length technology
 - Vaisala
 - INTEC
 - Equal upon approval
- Air Flow Monitoring
 - Ebtron
 - Equal upon approval
 - Static Pressure Traverse Probe
 - Cleveland Controls
 - Equal upon approval
- BTU Monitoring Devices
 - Sierra Instruments model series 640S gas mass flow meter (buildings not on the HTHW loop)

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- Fluxus ADM 7407 by Flexim with either Modbus or BACnet communication options (if the building heat is supplied by the campus HTHWS)
- SITRANS FUE1010 by Siemens which comes in Modbus or N2 communication protocols (if the building heat is supplied by the campus HTHWS)
- Belimo Energy Valve
- Equivalent upon approval
- Refrigerant Leak Detectors
 - Amseco Model CSHB-BG (with blue light lens)
 - MSA Instruments
 - Approved equal by Kele & Associates
 - Current Sensing Switches
 - Veris Industries
 - Functional Devices
 - Equal upon approval
- Air Pressure Safety Switches
 - Penn
 - Dwyer
 - Equal upon approval
 - Water Flow Switches & Low Temperature Limit Switches
 - Penn P74
 - Equal upon approval
- Electrical Power Monitoring Devices
 - Meters shall be Nexus series 1262.

Output Devices

Approved manufacturers

- Actuators & Control Valves
 - Belimo
 - Equal upon approval
- Control Relays
 - Idec
 - Equal upon approval
- Miscellaneous Devices

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Approved manufacturers

- Variable Frequency Drives
 - ABB
 - Dan Foss

230910 – LABORATORY SYSTEMS - INSTRUMENTATION AND CONTROL FOR HVAC

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Variable Volume Systems

All variable volume systems shall have an occupant sensor for each fume hood which will reduce the air flow to a minimum level when the hood is not in use.

For all variable volume systems, the fume hood shall have a local override control that will permit the operator to run the hood air volume to its maximum rate.

Variable air volume systems controllers must be integrated with the campus controls system, Automated Logic. The system shall provide BACnet interface capabilities.

Variable air volume systems shall have pressure independent airflow control valves suitable for up to 3" w.g. pressure drop.

Variable volume control system must react within 3 seconds to changes in air flow.

Fume Hoods

Fume hood average face velocities shall be an average of 100 fpm, plus or minus 10%, at a design sash opening of 16" with no individual face velocity reading exceeding plus or minus 20% of the average face velocity. All hoods must be tested both in the factory and on-site in accordance with ASHRAE 110. Fume hood designs that demonstrate as installed containment with an average face velocity of less than 80 fpm, such as low flow constant volume hoods, can be considered with approval from Facilities Services and EH&S; however, average face velocities at the design sash position shall be at least 60 fpm. In addition to meeting the requirements of ASHRAE 110 as installed, hood field certification by EH&S is required before being turned over for service to the user.

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All fume hoods shall have a flow indicator installed which has both an audible and visual alarm for low flows. The flow-measuring device shall be capable of indicating improper flow when the flow is 20% low, that is, 80% of the set point value.

All fume hood exhaust ducting shall be made from 16 or 18 gauge 316 stainless steel with screwed slip joint connections sealed with an appropriate sealant such as polysulfide. Facilities Services will determine if welded 'TIG' joints are required based on the laboratory materials and use planned for the fume hoods. (Type 316L must be used if welded joints are specified.) Additionally, Facilities Services will review alternate duct materials such as galvanized steel if proposed.

Fume hood exhaust shall not pass through un-ducted areas. Exhaust ducts shall always be at a negative pressure with regard to ambient.

All exhaust fans shall be located outside of the building on the roof or in a dedicated penthouse mechanical room with its own independent ventilation. All motors shall be outside of the duct and be of spark-proof design.

Laboratories with fume hoods shall maintain a slightly negative air pressure with regards to non-laboratory areas. Biosafety level 3 & 4 laboratories require a minimum of -0.03 to -0.05 w.g. differential between the laboratory and adjacent areas.

The fume hood and ducting shall have materials with a flame spread rating of 25 or less, per NFPA method 255.

Fume hood exhausts shall extend above the building roof at least ten (10) feet to prevent personnel exposure and re-entrainment unless modeling demonstrates a higher point of discharge. Air dispersion modeling shall be done for new installations with two or more fume hoods.

Fume hood exhausts should be located at least fifty (50) feet away from any supply air intakes.

Exhaust discharge velocities shall be 3,000 fpm to prevent personnel exposure and re-entrainment unless modeling determines a different value is required. This requirement does not negate the need to perform air dispersion modeling. Mixed-flow exhaust fans shall be considered in addition to centrifugal type fans.

Fume hood discharge air shall not be recirculated.

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Biological safety cabinets and clean benches are not a substitute for laboratory fume hoods.

The minimum air changes for laboratories are six (6) air changes per hour (ACH) for occupied conditions and four (4) ACH for unoccupied conditions. Supply air is 100% outside air. Variable volume (and constant volume) systems should be designed to have some capability for additional ventilation rates beyond the design level. Facilities Services and EH&S will work with the design team on what additional capacity is feasible for each zone. For a single laboratory, which is served by a single, dedicated make-up air unit, and the cooling load cfm exceeds the required exhaust cfm, a make-up air system with outside air and return air is acceptable provided that the six ACH minimum cfm rate required must be outside air. Any design for hood ventilation load diversity shall be approved by EH&S. Prior to applying any diversity, restrictions on future expansions or flexibility must be identified. Full-flow or very high-usage factor designs should be considered for oratories with extremely high use patterns, such as teaching laboratories, or laboratories with high turnover.

Fume hoods shall not have automatic sprinkler systems or fire detection devices installed in them, unless specifically required by the authority having jurisdiction.

Heat recovery systems for room and/or laboratory fume hood exhaust shall be considered and a life cycle cost analysis should be performed to determine if the heat recovery system has a payback of ten (10) years or less. Heat recovery for fume hood exhausts shall be 100% cross contamination free between two air stream.

Fume hoods shall be located away from opening windows, doors and high traffic areas.

The fume hood shall be designed to contain minor spills. A ¼ inch lip or recess shall be provided within the hood.

Time clocks shall not be used to control fume hood exhaust or sash height.

All hood lighting shall be of UL-listed fixtures and meet NFPA 70, be of fluorescent type and be replaceable from outside the hood.

Sashes shall be made of laminated or tempered safety glass.

Dampers, when used in exhaust systems, shall fail open.

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Room ambient air velocities directly adjacent to fume hoods shall avoid strong air currents. Ambient air velocities shall be less than 35 fpm as measured directly in front of the fume hood.

Perchloric acid hoods shall meet the requirements of NFPA Chapter 8 and be reviewed by EH&S and Facilities Services during the design phase.

Laboratory ventilation systems shall meet a noise criteria (NC) curve of NC 50 (approximately 55 dBA) at 3.2 feet, for research laboratories and NC 35 (approximately 40 dBA) at 3.2 feet for teaching laboratories.

Natural-gas, direct-fired make-up air units are not permitted for laboratory make-up (supply) air.

Used fume hood are not acceptable unless approved by EH&S.

Auxiliary supplied air hoods shall not be installed.

Ductless hoods shall not be installed in lieu of ducted hoods. Any design for ductless hoods must be approved by EH&S.

230933 - ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

All motors over 1/2 horsepower shall be premium efficiency type. Motors shall be open drip-proof (ODP), or totally enclosed fan cooled (TEFC) in high heat or high humidity locations. Minimum motor efficiencies at full load shall be as follows:

1.0 HP	86%	50.0 HP	94.1%
5.0 HP	89.5%	100.0 HP	95.1%
10.0 HP	91%		

Those motors that will be controlled by a frequency drive shall be inverter rated. Any motor that could possibly have a frequency drive installed at a future date shall be inverter rated.

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Ceiling mounted fan coils shall have a power disconnect switch mounted ON the cabinet on the same side as the filter access door. In addition the motor and V-Belt shall be accessible from the same side of the unit.

232100 – HIGH TEMPERATURE HOT WATER PIPING SYSTEMS WITHIN BUILDINGS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

All HTHW systems shall be engineered and tested in accordance with ANSI/ASME B31.1, Power Piping Code. A professional engineer registered in the state of Nevada shall take full responsibility for HTHW system design by affixing his stamp to the drawings and specifications.

All piping, components and heat exchangers shall be rated for hot water service with continuous duty at 400 deg. F at 400 psig.

[Request Drawing Details](#)

- HTHW Heat Exchanger Piping Diagram, Drawing #232116-3.

Piping located inside buildings shall be ASTM A53B Schedule 40 seamless type S or electric resistance welded type E, schedule 40 or wall thickness as determined by calculations per B31.1 Power Piping Code, whichever thickness is greater. Any piping that is threaded shall be ASTM A53B Schedule 80 seamless type S or type E. HTHW piping runs interior to buildings shall be kept to a minimum as needed to efficiently connect to the building's heat exchanger.

In no case shall piping be smaller than ¾" diameter (NPS), unless otherwise specified.

Fittings shall be 300lb. ASTM A105 forged, socket weld for 2" and below. Above 2", use butt-weld or 300# flanged carbon steel fittings meeting ASTM A234 WCB and ANSI B16.5. Gaskets shall be 316 stainless steel and graphite spiral wound by Flexitalic Type CG or approved equal.

Piping located inside a building shall be insulated with either fiberglass or calcium silicate. Calcium silicate shall be used at the direction of UNR anywhere there is the possibility of incidental contact due to maintenance activities or foot traffic. Jacketing shall be kraft-faced, fittings shall be pre-formed plastic, and the piping shall be labeled.

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Expansion loops shall be used whenever feasible. If it is not feasible to use expansion loops, expansion joints may be used with authorization from FSD.

Isolation valves shall be rising stem gate with bolted bonnet, cast carbon steel body ASTM A216 WCB, 13% Cr stem and disc with satellite seat, ANSI Class 300 with raised face flanges, and high temperature graphite packing.

Control valves shall be globe type with cast carbon steel body ASTM A216 WCB, with stainless steel trim, ANSI Class 300 with raised face flanges, and high temperature graphite packing. Valves 2" and smaller shall be socket weld or flanged. Control valves shall seat tightly to class IV seat leakage sent leakage at a pressure equal to 110% of the design pressure of 400 psig and 400°. Actuators shall have a minimum 25% margin over valve seating torque. Provide a 1/3 and 2/3 modulating control valves on the high temperature hot water return side and a two-way shutoff valve on the supply side. Valves to close on temperature in excess of 210 degrees F on the low temperature supply side and be manually reset.

Electric control and isolation valves in hthw piping shall be 300# flanged. Actuator shall be capable of shut-off against a 400 psi pressure differential. Valves shall include super capacitor accessory and shall be flowserve valtek gs316 stainless steel general service control valve or equal by rotork only, no other mfrs will be considered

Pneumatic control and isolation valves in hthw piping shall be 300# flanged. Actuator shall be capable of shut-off against a 400 psi pressure differential. Valves to be manufactured by Fisher or Leslie. No other manufacturers will be considered

Thermometers shall be installed in threaded 316 stainless steel thermowells installed in 3/4" 300 lb. carbon steel threadolets. Thermometers shall be 4-1/2" dial, bi-metal type.

Pressure gages shall be no smaller than 4-1/2 dial. Isolation valves shall be installed between the line and the gage, and gages shall be selected such that the operating pressure falls between 40 and 50 percent of the full scale. Gage stems shall be no smaller than 1/2". Liquid filled gages are not acceptable.

Branch Piping: Taps shall be made using 300 lb. Forged carbon steel ASTM A105 Grade B, ANSI B16.11 sockolets. No direct welding or use of half or full couplings is allowed. All branches shall utilize forged fittings, unless code calculations are provided.

All piping shall be seismically restrained as required by IBC, latest edition.

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Piping shall be flushed prior to hydrotest. Contractor shall provide all temporary measures to facilitate flushing and testing, and shall provide a flushing and testing plan to the engineer for approval prior to flush or testing.

Product Standards and Manufacturers

Only piping fittings, valves and materials manufactured in the USA or Canada are acceptable.

232113 – HYDRONIC PIPING

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Provide make-up water regulator, automatic isolation valve, flow meter, and pressure sensor for all closed loop heating and cooling hydronic systems.

Make-up water regulator to be set for proper system cold fill pressure as determined by the balancing contractor. Provide a full size bypass with manual isolation valve around the regulator to facilitate quick filling of the closed loop system.

Automatic isolation valve shall be a full port motorized ball valve installed to completely isolate the closed loop from the city water system.

Isolation valves shall be installed for all mechanical equipment and instrumentation. Isolation valves shall be full port ball or gate valve design.

Make-up water flow meter shall be monitored by the BMS. A sustained flow of water (GPM adj) for a pre-determined amount of time (adj) into the closed loop system shall cause the BMS to close the automatic isolation valve and generate an alarm to the operator.

A pressure sensor shall be installed at the point that the expansion tank is tied into the closed loop system (point of no pressure change). It shall be continuously monitored by the BMS and generate an alarm to the operator if the system pressure increases above or decreases below pre-determined set points (adj).

232120 - THERMAL ENERGY METERS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

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Provide a fully integrated thermal energy metering system to calculate BTU's.

Ultrasonic clamp-on transit-time flow measurement: temperature measurement with clamp-on or insert temperature sensors.

System has an onboard memory to store energy trends

Quantities of measurement: Instantaneous thermal energy output, totalized thermal energy, volume and mass flow, temperature Ts,Tr,Td, flow velocity, liquid's sound speed, signal strength.

PRODUCT STANDARDS AND MANUFACTURERS

Fluxus Btu Ultrasonic Meter

Approved manufacturer:

Flexim Americas Corp.
250-v Executive Drive
Edgewood, NY 11717
1-888-852-7473

[Approved Manufacturer Flexium](#)

233113 - UNDERGROUND HIGH TEMPERATURE HOT WATER (HTHW) PIPING

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

High temperature hot water (HTHW) is the primary heat source for a variety of heating functions throughout the University. HTHW is generated at the Utility Plant and distributed via a loop piping system which operates at 250-325°F. Design conditions for piping are 400 psig and 400F.

PIPE

ASTM A-106 or A-53 type S (seamless) or Type E (electric resistance weld), Grade B, black carbon steel. Type F (furnace butt weld) is not acceptable.

Pipe Wall Thickness:

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2 inch and smaller: Schedule 80

2.5 inch through 10 inch: Schedule 80

Fittings

Socket Weld (2 inch and smaller): ANSI B16.11 forged carbon steel, ASTM A105, 2000 #class.

Butt Weld (2.5 inch and larger): ANSI B16.9, ASTM A234 WPB, extra strong.

Flanged (2.5 inch and larger): ANSI B16.5, ASTM A105 forged steel, 300 pound class, weld-neck flanges raised face.

Unions (2 inch and smaller): ANSI B16.11 forged carbon steel, 800 # class, socket weld ends.

All buried pipe fittings shall be butt welded for all sizes.

VALVES

General: Valves shall be socket welded for 1 1/2 inch and smaller piping, forged steel flanged or socket welded for 2" and larger. Flanged or butt welded for 2 1/2 inch and larger. Acceptable valve manufacturers are provided below; no substitutions unless approved by the Project Coordinator. All rising stem valves shall have their stems coated with high temperature Nickle anti-seize after installation.

GATE VALVES

Socket Weld (2 inch and smaller): ANSI B16.34, 800 pound class, forged steel, bolted bonnet, OS&Y, conventional port gate valve Walworth, Vogt, or Edwards.

Flanged (2 inch and larger): ANSI B16.34, 300 pound class, A216 WCB cast steel body, bolted bonnet, OS&Y, stainless steel trim; Walworth, Crane or Stockham.

Butt weld (2.5inch or larger): ANSI B16.34, 300 pound class, A216 WCB cast steel body, bolted bonnet, OS&Y, stainless steel trim, Walworth, Crane or Stockham.

GLOBE VALVES

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Socket Weld (2 inch and smaller): ANSI B16.34 800 pound class, forged steel body, stainless steel seat ring and plug, bolted bonnet, rising steam; Walworth, Vogt, or Edwards.

Flanged (2.5 inch and larger): ANSI B16.34 300 pound class, A216 WCB cast steel body, OS&Y, stainless steel trim, Walworth, Crane or Stockham.

ROTARY VALVES

300 pound class, carbon steel, flanged, Adams or Keystone Vanessa. stainless steel seats.

Piping Specialties

Gaskets: Non-asbestos containing ring gaskets, flexitallic type "cg" grafoil/304ss or equal, suitable for the fluids and temperatures encountered.

Bolting: ASTM A193, Grade B7, for bolts and studs, and ASTM A194, Grade 2H for nuts.

Sleeves: Sleeves for foundation wall penetrations shall be fabricated of one-eighth inch (1/8") thick steel, with two inch (2") wide collar welded in place, and the assembly hot-dip galvanized.

Wall Penetration Seals: High temperature elastomeric link type mechanical seals compressed with corrosion protected bolts and compression plates; Thunderline High Temperature Link Seal, no substitution; or fiberglass rope stuffed packing box if pipe or casing surface temperature exceeds 375 degrees F.

Expansion Joints (where permitted, expansion loops are preferred and shall be used wherever possible):

Expansion joints shall be slip tube type as designed for the specific location. They shall be 300 # rating, flanged, and shall conform to the Standards of the Expansion Joint Manufacturer's Association.

Slip-tube type shall have external and internal high performance guides rated for 500°F and designed for packing under pressure; Yarway or Hyspan.

Slip-tube shall be single or double type with center take off taps as required for the given service.

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Air Vents (for high points): $\frac{3}{4}$ inch, 300# steel gate valve is required at all high points and be located in accessible manholes. Discharge of air vents in vaults shall be routed to the floor with $\frac{3}{4}$ inch diameter steel pipe; use socket weld fittings. Install pipe nipple with threaded cap in outlet of valve.

Strainers: Y-type with cast or forged steel body. Cast steel 300# rated flanged ends or forged steel 300# socket weld ends; $\frac{1}{8}$ inch mesh monel strainer elements, socket weld ends for 2 inch and smaller piping.

Pipe Hangers and Supports: Pipe hangers and supports shall be designed and located per the requirements of B31.1 and the recommendations of the powder insulation or prefabricated conduit system vendor.

Pressure gauges: 4.5 inch dial, bourdon tube, 0 to 500 psig, Ashcroft or equal. Include 300# forged steel needle isolation valve.

Insulation

In manholes, pipe 2.5 inch diameter and greater shall be insulated with ASTM C533, type I, calcium silicate; 2.5 to 6 inch diameter - 3 inches thick insulation, 8 to 12 inch diameter - 4 inches thick. Less than 2.5 inch diameter -1 inch thick.

In manholes, tunnels, and exterior installations: pipe and fitting insulation shall be covered with 0.016 inch smooth aluminum jackets with integral moisture barrier. Stainless steel band on 12 inch center shall hold the insulation to the pipe.

Valves and equipment shall be insulated with removable shop fabricated fiberglass padding rated for 500°F, with thin wire mesh lining, and covered with 18 ounce high temperature fiberglass cloth with Velcro straps.

Manholes

All structures shall be of reinforced concrete. Main line junctions and service connections shall be in vaults, which require two openings.

Prefabricated or field constructed manholes, where allowed, shall be provided with walls, floors, and roofs not less than 8 inches thick and reinforced with steel bars. Floors shall drain to sump hole.

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Concrete shall be 4,000 psi minimum compressive strength after twenty eight (28) days, synthetic fiber, for both prefabricated and field constructed manholes. Air entrained admixture, 5 to 7% entrainment for all concrete exposed to effects of weather or freezing conditions.

Waterproofing shall be provided. Membrane waterproofing is preferred.

Steel ladders shall be provided.

Covers and openings shall be vehicular traffic rated (H-20).

Steel Pipe and Powder Insulation System

The powder insulation system shall provide for minimizing heat loss, corrosion protection, and unrestricted thermal movement between anchors.

Powder insulation shall be Gilsulate 500 XR. Thickness of the insulation shall be defined by the Engineer and shown on the Contract Drawings.

Expansion Loops and L-Bends: In addition to the powder insulation thickness, bends shall be preinsulated with ASTM C547, Class 1, mineral fiber to allow for thermal expansion of the piping. The mineral fiber thickness at bends should be approximately 200% of the calculated thermal growth.

Pipe Supports: Anchors shall be located outside vaults, typically at five feet from the vault wall. Anchors shall not transmit thrust loads to the manhole wall unless the manhole wall has been specifically designed for these thrust loads. Expansion loops shall use guides and vertical supports as required.

Buried Conduit Systems

Coated Steel Conduit Casing: Conduit casing shall be manufacturer's standard drainable, ventable, and pressure testable system with an annular air space. Steel outer casing systems shall be epoxy coated. Perma Pipe Multi-Therm 500 or equal.

Conduit End Seals: Conduit end seals shall be fixed type where there is no thermal pipe expansion through the end seal and shall be slip type where there is thermal pipe expansion through the end seal. One-half inch (1/2") threaded pipe ports at top and bottom of each end seal shall be provided for draining, venting, and pressure testing of conduit casings.

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Insulation: ASTM C533, Type I, Calcium silicate, mineral fiber, or C552 cellular glass shall be used on the steel pipe within the casing.

Expansion Loops and L-Bends:

ANSI B31.1 factory fabricated, with weld testing per design. Casing, couplings, insulation, and piping shall be identical to those used for straight runs and designed to ensure complete drainage. Fabricated materials shall be shipped to the job site in maximum feasible size sections to minimize number of filed joints.

Loop casings shall be sized to contain pipe movement without crushing the insulation or causing other damage. Eccentric reducers and increasers or welding collars designed to serve the same purpose shall be used to allow free drainage through the loop.

Pipe supports shall be slotted to permit unrestricted lateral movement of piping and shall be otherwise identical to pipe supports specified for straight runs.

Pipe Supports: Anchors shall be located outside vaults away from manhole wall. Inside vaults, vent and drain holes shall be provided at the top and bottom of casing closure plates.

Trenching, Backfilling, and Compacting

Trenching: The University may limit the amount of trench to be opened at any time.

Bedding: Pre-insulated conduit systems: Ditch bedding shall be accurately graded with a minimum of six inches (6") of sand. Sand shall pass a ¼ inch screen with not more than fifteen percent (15%) passing a No.200 sieve. Sand shall be backfilled to a minimum of six inches (6") above the pipe casing. Bedding shall be laid to firmly support the piping along its entire length.

Steel pipe and powder insulation system: The steel pipes shall be top hung or bottom supported to allow a bedding of powder insulation underneath (in accordance with manufacturer's specifications). The powder insulation shall be placed to the minimum thickness shown on the contract drawings. The insulation shall be installed and compacted (per manufacturer specifications) to firmly support the piping along its entire length.

Backfilling: Backfilling of trenches shall progress as rapidly as construction, testing, and acceptance of work permits.

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Damage Repair: Utilities, wall, piping, and other improvements damaged during the course of work shall be repaired to their original condition or replaced by the contractor.

Excess Material: Excess material and debris shall be removed and disposed of, at an approved disposal site, within one week after final approval of installation.

Piping Installation

General

Piping and pipe systems shall be fabricated, assembled, welded; installed, and tested in accordance with ANSI B31.1

Piping shall be cut accurately to field measurements and worked into place without springing or forcing, except where cold springing is specified. Piping shall not be buried, concealed, or insulated until it has been inspected, tested, and approved in accordance with FIELD QUALITY CONTROL (below).

Materials and equipment shall be protected from the weather during construction.

Pipe runs underground between vaults shall be welded. Flanged and threaded joints shall not be buried.

Gaskets, packing, and thread compounds shall be suitable for the service. Joint compound shall be applied to male threads only.

Arrangement of all piping shall be shown on the drawings. During installation, care shall be taken to avoid interference with other piping, conduit, and equipment. Lines shall be trapped only where shown on the drawings.

Reducing fittings shall be used for changes in pipe sizes. Bushings shall not be used.

In horizontal lines two inches (2") and larger, reducing fittings of the eccentric type shall be used to maintain the tops of the lines in the same plane.

Pipe shall be adequately supported and anchored so that strain from weight and thermal movement of piping is not imposed on piping, equipment, or structures.

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Cleaning

Each section of pipe, fittings, and valves shall be thoroughly cleaned free of all foreign matter before erection. Interior of piping shall be cleaned thoroughly as described in Article 3.7 (below) before final connections are made.

Open ends of mains shall be plugged or capped during shutdown periods. Lines shall not be left open at any place where foreign matter might accidentally enter pipe.

Pipe Expansion: Expansion of pipes shall be accommodated by expansion loops, L-bends, Z-bends in buried locations, or by slip type expansion joints in manholes, tunnels and buildings. Expansion joints shall be set to ensure proper function and movement during system operation.

Connections: Locations of capped or plugged outlets for future connections shall be shown on the drawings. Weldolets or welding fittings shall be used for tapping existing system.

Line Drainage: HTHW lines shall be pitched to allow for drainage to the low point. Buried lines shall be pitched to accommodate the worst case of elevations and must be recorded on the as-built drawings.

Welding

Responsibilities of contractor for electric fusion welding:

Contractor shall be responsible for the quality of all welding.

Contractor shall be capable of performing all welding operations required for construction of the high temperature hot water distribution system.

Contractor shall determine the suitability of welding procedures used to ensure that welds meet the requirements specified herein.

Beveling: Field bevels and shop bevels shall be done by mechanical means or by flame cutting. Where beveling is done after flame cutting, surfaces shall be ground and thoroughly cleaned of scale and oxidation just prior to welding. Beveling shall conform to ANSI standards.

Butt welds: All butt welds shall be open root, multi-pass welds, 6010 or 6011 root with 7018 filler caps (SMAW welding process).

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Electrodes shall be stored in a dry, warm area and kept free of moisture during fabrication operations. Electrodes that have lost part of their coatings shall be discarded.

Welds shall be inspected in accordance with ANSI B31.1 requirements. The University will radiograph 5 to 10% of the welds.

If any welds are found to be defective, the contractor is responsible for full 100% radiograph testing of all the welds. Repair of defective welds by adding weld material over the defect, or by peening shall not be permitted. Welders responsible for defective welds shall be re-qualified before performing more welding on the job.

All finished weld joints shall be painted with high temperature black paint.

Anchor Blocks:

Anchor Blocks: Concrete anchor blocks shall be provided for pipe anchorage not less than five feet (5') from building or manhole walls (except where metal anchor at the vault wall is shown on the contract drawings). Anchor blocks shall be cast against undisturbed earth using concrete that conforms to ASTM C-94 and has a minimum compressive strength of 4,000 psi at twenty eight (28) days.

Fabricated Structural Anchors: Fabricated structural anchors shall be provided if necessary in vaults, tunnels, and mechanical rooms as described in the contract drawings.

Wall Penetrations

Galvanized steel sleeves shall be provided for penetrations in concrete walls six inches (6") or less in thickness and masonry walls. Existing concrete walls thicker than six inches (6") shall be core drilled or equipped with galvanized steel sleeves. High temperature elastomeric link type seals shall be acceptable for use in all locations where the pipe temperature is 375 degrees F or less.

Insulation and Jackets:

Insulation shall be continuous through pipe hangers with calcium silicate inserts to prevent crushing of insulation.

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Valves and equipment in manholes and buildings shall be insulated and covered with removable jackets. Insulation shall stop short of bolts/studs at flanges to allow their removal without damage of permanent insulation.

No exposed insulation will be permitted. Metal end caps that match the insulation jackets shall be used to cover the ends of insulation runs.

Valve Installation

Valves shall be installed in accordance with ANSI B31.1 and ASME Section VIII.

Valves shall be installed as shown on the drawings and as required for proper functioning of the system.

Valve handwheels shall be installed in locations accessible from floor level, preferably with vertical stems, for operation and repair.

All flange bolts shall be lubricated with a high temperature bolt lubricant approved by the project coordinator. Flanged bolt torquing shall be in an incremental staggered pattern to assure even compression of the gasket.

Piping Special Ties Installation (Hangers and Supports)

Hangers shall be sized to allow for continuous pipe insulation through the hangers. Hangers shall not be permitted to touch pipe.

Expansion bolts shall be acceptable for use in wall or ceiling construction.

Powder Insulation System Installation

Installation of system to be done in strict accordance with the manufacturer's specifications and design/installation manual. The contractor shall utilize the services of the manufacturer or manufacturer's agent to oversee and approve the installation of the system at no additional cost to the University.

Buried Conduit Installation - Conduit Field Joints

Conduit sections shall be joined after leak testing of carrier pipe. Conduit joining materials provided or specified by the system manufacturer shall be used.

Pipe shall be insulated and casing joined to provide field joint equal to factory fabricated section on conduit system. Connections to existing conduit systems of a different

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manufacturer or type shall be made only in manholes or buildings and never in buried locations.

Conduit End Seals: Conduit end seals in manholes or tunnels shall be provided with goose neck vents on the top and drain valves on the bottom. In buildings, conduit end seals shall be provided with threaded brass plugs.

Field Quality Control

General: The project coordinator or his representative will conduct field inspections and shall witness all field tests specified in this section. The contractor shall perform field tests and provide labor, equipment, and incidentals required for testing. The contractor shall produce evidence, when required by the project coordinator, that any item of work has been constructed properly in accordance with the contract drawings and specifications.

Field Tests

General: All anchor blocks and restraints shall be complete prior to testing. Concrete supports shall be fully cured.

Piping Hydrostatic Pressure Tests:

Test pressure gauges for a specific test shall have dials indicating not less than one and one half (1-1/2) times nor more than two (2) times the test pressure.

Piping shall be flushed prior to hydrotest. Hydrotest at 600 psi for a 1 hr period, witnessed by University personnel. Contractor to provide all temporary measures to facilitate flushing and testing, and shall provide a flushing and testing plan to the engineer for approval prior to flushing or testing. After pressure testing, University personnel and the engineer must approve the completed piping system prior to insulating. At the discretion of the University, all welds that are not able to be hydrotested shall be x-rayed.

Cleaning: After pressure and hydrostatic testing, the pipe system shall be flushed with a water/chemical solution such as San Joaquin Chemicals, Inc. Sansolv 6103 or equal. The procedure, cleaning solutions, and disposal shall be approved by the project coordinator.

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Operational Tests: After completion of the work, the system shall be operated for not less than six (6) hours at operational temperatures and pressure to demonstrate satisfactory function. The movement of each expansion joint shall be checked, and each valve shall be operated in both cold and hot conditions.

Product Standards and Manufacturers

All materials shall be certified new from factory. Pipe, and fittings shall be built in the USA or Canada to ANSI/ASME standards. Piping components made in other countries shall not be used unless specifically approved in advance by the Project Coordinator. Valves shall be made in the USA or Canada unless otherwise approved by the Project Coordinator.

Welder Qualifications: Welder(s) shall be qualified in accordance with ASME Boiler & Pressure Vessel Code, Section IX, Welding and Brazing Qualifications. Welders shall be thoroughly familiar with ANSI B31.1 requirements.

The Contractor shall furnish to the Project Coordinator all applicable welding procedures, individual welder certifications and procedure qualification records. All documentation shall be signed and dated by the appropriate contractor personnel.

Delivery and Storage

Contractor shall be responsible for inspecting materials delivered to site for damage.

Materials shall be stored on-site in enclosures or under protective coverings. Materials shall not be stored directly on ground.

Insulation, expansion joints, joint materials, fittings, valves, and gaskets shall be stored under cover out of direct sunlight.

Handling

Pipe, conduit sections, fittings, valves and other accessories shall be handled in such a manner as to ensure delivery to the trench in sound, undamaged condition.

Special care shall be taken to avoid injury to coatings and linings on pipe and fittings. Damaged coatings and linings shall be repaired by the Contractor to the satisfaction of the Project Coordinator.

232500 – WATER TREATMENT

University of Nevada, Reno
Campus Design & Construction Standards

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

All new hydronic water piping shall be initially cleaned before start-up of any equipment with Garratt Callahan closed loop cleaner #248L or equal.

Water treatment specialists shall be Garratt Callahan 50 Ingold Rd. Burlingame, Ca. All new water treatment chemicals shall be approved by the University of Nevada, Reno HVAC Maintenance Department prior to its introduction to the system.

Cooling tower water treatment must include the following:

Controller to be an Advantage LCFB -2E.

Chemical pump shall be Pulsatron Mod# LBO2SA-PTCI 24 GALLON a day for tower corrosion inhibitor, biocides will use Blue White Industries A100NX peristaltic pumps.

Make up and blow down water meters shall be Seamtrics WMP water meters with pulse capabilities.

Blow down valves shall be Blimo stainless steel ball valves and actuators.

Double wall containment tanks for chemicals and biocides only 5 gallon pails of biocides will be accepted.

Chemical pot-feeders shall be Griswald 5 gallon professional series with Griswald safety bar closure for both open and closed loops.

[Request Drawing Details](#)

- Corrosion Test Coupon Rack (Drawing # 232100-1)
- Injection Quill (Drawing # 232100-2) for steam boiler installations.

233300 - DUCTS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

All new round ducting shall be spiral. All fittings shall be long radius unless otherwise approved.

Fiberglass duct is prohibited.

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234100 – FILTERS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

General Air Handler Applications

Pre- Filters: Standard efficiency pleated, media filters with average dust spun efficiency of 30 percent to 35 percent (MERV 8) when tested in accordance with ASHRAE 52.2-1999. Flanders 30/30 U/L class 2, 0.10" initial resistance at 300 FPM velocity.

Final Filters: High efficiency pleated media filters with average dust spun efficiency of 80 percent to 85 percent (MERV 13) when tested in accordance with ASHRAE 52.2 – 1999, Flanders U/L class 2, 0.30" initial resistance at 300 fpm velocity.

Standard Filter Sizes

The following filter sizes are acceptable to use at the University Nevada Reno Campus. Sizes other than those noted below will not be accepted without prior approval from the Facilities Services Department.

- 1 inch x 12 inches x 24 inches (1"x12"x24")
- 1 inch x 16 inches x 20 inches (1"x16"x20")
- 1 inch x 16 inches x 25 inches (1"x16"x25")
- 1 inch x 20 inches x 20 inches (1"x20"x20")
- 1 inch x 20 inches x 25 inches (1"x20"x25")
- 1 inch x 24 inches x 24 inches (1"x24"x24")
- 2 inch x 12 inches x 24 inches (2"x24"x24")
- 2 inch x 16 inches x 20 inches (2"x20"x24")
- 2 inch x 16 inches x 25 inches (2"x25"x24")
- 2 inch x 20 inches x 20 inches (2"x20"x24")
- 2 inch x 24 inches x 24 inches (2"x24"x24")
- 4 inch x 12 inches x 24 inches (4"x12"x24")
- 4 inch x 24 inches x 24 inches (4"x24"x24")

Furnish and install filter gauges as part of the DDC system. Assembly shall include an adjustable pressure transmitter with a 4-20 MA output signal for DDC interface.

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Product Standards and Manufacturers

Manufacturer: Dwyer (No Substitutions)

233416- VARIABLE AIR VOLUME UNITS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

DDC Interoperable variable air volume diffusers such as those manufactured by Acutherm Therma-Fuser model EM shall not be used. Any variable air volume diffusers specified shall be thermally powered such as Therma-Fuser model TF.

235200- HEATING HOT WATER BOILERS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Hot water boilers shall be designed to provide 180 degrees F boiler water. Boilers shall be designed and constructed in accordance with ASME Boiler & Pressure Vessel Code Section IV and designed for 250 degrees F and 160 psig.

Boilers for critical use and/or emergency response facilities shall be dual fuel (natural gas and fuel oil) unless a variance is obtained or an alternate approach is approved by FSD. The secondary fuel (fuel oil) storage shall be for 24 hours maximum load and shall utilize in a double wall day tank located in the boiler room of 660 gallons or less per NFPA 30, of an exterior fiberglass or steel double wall storage tank either above-ground or buried type. All exterior tanks to have full instrumentation including interstitial monitoring and alarms and level reporting and alarm. Dual fuel boilers shall be equipped with electronic spark ignition for firing on fuel oil. Boiler flues for dual fuel boilers shall include a barometric damper at each boiler outlet.

Boiler types include steel vertical tubeless, scotch marine, fire box, fire tube and cast iron sectional. Selection shall be based on boiler horsepower requirements, available floor space and efficiencies. Boilers under 30 boiler horsepower can be cast iron sectional. Flex tube boilers are not permitted. A minimum of 5 square feet of heating surface per horsepower is required.

Burners shall be designed for a minimum 6:1 turndown.

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The waterside pressure loss through the boilers at rated load shall not exceed 4psi. The boiler shall have a factory installed insulation with metal jacket. Minimum of 2" thick fiberglass or mineral wool insulation. Jacket to be 18 gauge, painted steel with heat resistant primer and finish coats.

Provide ASME safety valve(s).

Each boiler shall be equipped with a combination feeder and low water cut-off. Low water cut-off shall be float type with manual reset.

Each boiler shall be equipped with a manual reset type high temperature limit control.

Modular, gas-fired boilers for non-critical facilities up to 1,000,000 BTU/h are non-condensing type, copper fin tube, 85% minimum thermal efficiency. Units shall be forced draft with modulating burners.

The specifications for projects including a boiler shall require that the contractor apply for and obtain all required boiler inspections and operating permits (as required by the Nevada Industrial Relations Division, Occupational Safety and Health Enforcement Section, the contractor shall obtain an installation application prior to beginning any work and shall apply for a final inspection as required to obtain the boiler operating permit). Reference NRS 455C.

All new gas burners on boilers will have an IRI (Industrial Risk Insurers) approved gas train.

For applications where two boilers are to be installed, the boilers and associated pumps shall be enabled and disabled individually from the BMS. A single master controller that is a single point of control from the BMS shall not be allowed. Boiler status and alarms shall be hard wired to the BMS. Other points can be via BACnet.

235700 –HEAT EXCHANGERS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

For free cooling systems, a plate and frame heat exchanger shall be specified. Heat exchanger shall be sized for a 2 degree F approach, 304 stainless steel plates and nitrile, EPDM or BUNA N gaskets. Flanged connections to be 150# ANSI raised faced flanges. Frames shall be epoxy painted carbon steel. Frame bolting to be stainless steel

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with carbon steel nuts. Provide in line conical stainless steel strainer. Upon startup the approach temperatures and differential pressures shall be documented and included in the balance report.

High temperature heat exchangers shall be shell and tube type: U-tube design, 2-pass with removable bundle, similar to Bell and Gossett HTWU.

[Request Drawing Details](#)

- High Temperature Heat Exchanger Standard Detail in the Drawing 232116-3

The high temperature side shall be the tube side with a 400 psig/400 deg. F rating, and the shell side shall have a 150 psig rating.

Provide a $\frac{3}{4}$ inch HX bypass with orifice plate where required by Facilities Services to provide a minimum bypass flow. Provide a flanged Y-strainer on HTHW supply side with $\frac{3}{4}$ inch drain valve.

All connections to be steel flanges using spiral wound, 300# gaskets, 316 ss/graphite. All flanges and valves to be 300# rating; cast steel valves 2 inches diameter and above and Class 800 forged steel less than 2 inch. All joints to be welded, no threaded joints except for instrumentation connections.

Exchangers shall be selected with a 0.0005 fouling factor.

Materials shall be steel shell, tube sheet, baffles, and tie rods, with 90/10 cupronickel tubes, 0.035 inches minimum tube thickness.

Provide ASME Code vessel complete with U-1 form.

Provide heat exchanger resistance curves (flow versus pressure drop) to the University design manager for system analysis and modeling.

Provide pressure relief on the shell side.

Specify a 'Selco Seal' steel trap heat exchanger head.

236400 –WATER CHILLERS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

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Chillers shall comply and be tested in accordance with ARI 550/590. Pressure vessels to be in accordance with ASME B&PV Code Section VIII. Units shall be factory assembled including evaporator, condenser, compressor, lubrication system, refrigerant charge and controls/wiring. Chillers shall be UL listed.

Provide chillers chilled water resistance curve (flow versus pressure drop) to the University design manager for system analysis and modeling.

The Engineer of Record shall analyze and recommend screw type water chillers or centrifugal chillers based on an energy analysis and IPLV (Integrated Part Load Value). Chillers over 300 tons rating to be centrifugal. Screw type chillers to be dual compressors with independent refrigeration circuits. Turbo Core magnetic bearing compressors are to be used whenever possible.

Condenser and evaporator tubs to be 0.035 inch wall thickness, copper. Condensers shall be cleanable, thru-tube types. 150 psig working pressure. Water boxes shall be removable. Tube side fluid velocity shall be 5 to 7 feet per second at full load.

Hermetic and semi-hermetic chiller drives shall have a five (5) year drive warranty that also includes refrigerant replacement in the event of drive failure and/or leakage. Open drives shall have squirrel cages, open drip-proof motors, induction type. All chillers to be factory tested to ARI standards.

The chiller shall have a graphic control panel with a standalone microprocessor to control the chiller. The display shall include the following:

- Chiller liquid leaving temperature
- Chiller liquid entering temperature
- Condenser liquid entering temperature
- Condenser liquid leaving temperature
- Percent full load amps
- Operating Hours
- Input kW
- Evaporator pressure
- Condenser pressure
- Oil Sump Temperature
- Oil pressure

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Chiller shall be able to run from 100% to 10% of full load. The controls shall have BACNet capability to interface with the campus control system: Automated Logic

Controls shall include an external unit stop pushbutton with indicating lights, oil safety switch, high and low pressure switches, water temperature controller, freeze protection thermostats, lock-out timer, compressor lead/lag switch, manual pump down switch and unloaders. The chiller shall also have local chilled water supply and return temperature gauges.

Screw chillers shall have independent refrigeration circuits and isolation valves.

Compressor drives shall be VFD drives.

Chillers shall be located in refrigeration machinery rooms per the Uniform Mechanical Code and a refrigeration monitoring system and evacuation system shall be provided.

236500 –COOLING TOWERS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Comply with ASCE 7 for seismic supports of equipment (Seismic design requirements for factory assembled cooling towers).

Cooling Towers

Cooling towers are to be designed and constructed in accordance with the Cooling Tower Institute and CTI 201.

Cooling towers to be either cross flow or counter flow design, 2-cell, induced flow type designed for outdoor use, 304 stainless steel construction with PVC fill and mist eliminators. Low noise axial fan with V-belt drive. Towers systems to include conductivity controller and blow down valve. Where exposed to freezing conditions, cold water basin to have electric basin heaters. Sump temperatures, vibration cut-outs, and sump heaters to be monitored by the BMS. Each cell shall have independent fill piping and controls. Cells shall be capable of operating independently while the second cell is isolated for maintenance or repair.

Cooling tower basin shall be equipped with a basin cleaning system consisting of PVC piping and nozzles with automatic blowdown capabilities. A filtration system rated for

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10% of condenser water system flow shall be provided with a pump that discharges to the basin cleaning system. Flame spread of all materials used shall be 25 or less.

The cooling tower, where required, shall have an OSHA-compliant handrail around the top and/or side where access is necessary and a cage ladder to all platforms.

Water Treatment

Provide a chemical treatment system with tanks, pumps, piping and controls as outlined in section 232500. EPA approved dual biocides for microbiological control. The following criteria must be met: 1) Biological control of both bulk water and under deposit bacteria. The program components must be EPA registered as a biocide and be known to be effective against Legionella. Our maximum counts for open systems are 10,000 cells/ml or less for total aerobic; 50 cells/ml or less for anaerobic in the bulk water; and no Legionella. 2) Scale Control - This is normally accomplished with a combination of polymers & phosphonates. The LSI's should be calculated at various cycles and the program limitations identified. The highest skin temperatures are used in this calculation. 3) Corrosion Control - This is normally accomplished with a combination of the water's naturally scaling tendencies (hardness + alkalinity) and then modified as necessary using phosphates, zinc, molybdenum, etc. for mild steel. Azoles are used for copper corrosion control. Our acceptable corrosion rates are 1.0 mils/year or less for mild steel and 02 mils/yr or less for copper. Provide for storage tanks, positive displacement metering pumps and piping for two alternating biocides and **two** corrosion inhibitors on cooling tower condenser water circuit.

Testing

Biweekly testing and written reports by the vendor for a period of one year from building occupancy, at no cost to the University, of condenser water with the following testing and data: conductivity, M alkalinity, pH, iron, copper, chlorides and microbiological counts (anaerobic and aerobic species and identification of species). Also, install steel, copper and galvanized steel (or 304ss) coupons in a 4- position coupon rack. Examine, weigh and replace coupons every ninety days. Also, the vendor must have a plan and demonstrate passivation of the cooling tower surfaces over a 90 day break-in period, if galvanized. At the end of one year of continuous services the vendor shall perform a borescope inspection of the chiller condenser bundle with photographs showing tube surfaces.

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Corrosion Coupon Racks – All cooling towers shall have a four-position corrosion coupon rack, Betz-Dearborn # 2013971 PVC pipe and furnished with a flow meter, Dwyer Visi-Float VFC-142, 1-10 GPM range.

[Request Drawing Details](#)

- [Drawing # 232100-1 Corrosion Test Coupon Rack](#)
- Drawing # 232100-2 Injection Quill for steam boiler installations.

237339 – MAKE UP AIR UNITS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Make-up air units shall be indirect gas-fired units with stainless steel heat exchanger. Modulating or staged burners required. UL and Factory Mutual listed. Air filters to meet MERV 8 or better.

Gas valves shall not be directly controlled by the BMS. Make up air units shall have their own standalone burner controls. The BMS shall only send set points or firing rate commands to the standalone burner controller.

Make-up air units shall not be controlled by BACnet communications. BACnet to be used for monitoring and information points only.

237400- AIR HANDLERS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Roof top air handlers shall be built in accordance with AMCA and ARI standards and shall be factory assembled and tested. The exterior casing shall be 22 gauge steel or better with 2" thick acoustic panels. Unit shall have a C-channel steel base and 14 gauge floor plate. Unit shall have fully gasketed access doors same thickness as walls. Minimum door dimensions are 24" x 72". Finish shall be epoxy prime coat and acrylic finish. Centrifugal fans shall be steel or aluminum. Minimum bearing life to be AFBMA L-10 200,000 Hours.

Hot water and chiller water coils to be rated for 250 psig, 0.20" minimum wall and 5/8 inch tube diameter. Minimum 10 fins per inch copper coils with aluminum fins. Cooling coil racks to be 304 stainless steel. Chilled water coils to have minimum 12 degrees

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delta T. face velocity not to exceed 500 fpm. Provide compartment in unit for coil valving, accessible from outside the units via access doors.

Provide air handlers resistance curves (flow versus pressure drop) to the University design manager for system analysis and modeling.

Unit shall have disposable pre-filters, 4 inch thick, meeting MERV 6. Final filters to be MERV 13 or better. Strion electro-static filters shall be evaluated for large units. Provide sound attenuators in unit.

Fan-wall/fan-array technology shall be used unless the design requirements do not permit the application. Arrays shall not exceed 10 total fans.

Air handlers shall not be controlled by BACnet communications. BACnet to be used for monitoring and information points only.

237433 – ROOFTOP AND GROUND MOUNTED PACKAGED HEATING/COOLING UNITS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Unless specifically approved by the University, all rooftop and ground mounted packaged heating and cooling units shall be supplied with an outside air economizer section to provide free cooling complete with exhaust air to prevent over pressurizing the space. Dampers shall be full modulation with minimum position set to provide 100% or required ventilation air.

Heating sections shall be indirect natural gas fired with an electronic ignition system.

Cooling sections shall utilize either R-22 or R-410A refrigerant and use hermetic scroll compressors. Low ambient controls including but not limited to crankcase heaters, head pressure controls, low pressure cut-outs and manual reset high pressure cut-outs shall be included. Each refrigerant circuit shall include a thermostatic expansion valve (TXV) with removable power element.

Package units shall not be controlled by BACnet communications. BACnet to be used for monitoring and information points only.

238100 – HVAC EQUIPMENT: SPOT COOLING APPLICATIONS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

For high density cooling applications, such as computer/server rooms or other sensitive electronic equipment, that requires constant 24/7 cooling: the product allowed is Liebert precision air conditioning systems. For controls, a field supplied 3 or 4 wire connection, (24 VDC) is required between the evaporator and condenser. Control wiring must not allow a voltage drop in the line of more than 1 volt (16 gauge minimum for 75 feet). On a small system, the wall box is connected to the system's microprocessor board using a four wire system. Wiring to be Belden shielded cable, 20-22 AWG up to 1,000 feet. The shield should be grounded at the evaporator unit.

In buildings with chilled water available a DX & CHW coil shall be installed. Onboard controls shall utilize chilled water if available and automatically switch to DX as needed.

UNITARY AIR CONDITIONERS

Window or wall mounted air conditioners are not acceptable. Where space cooling is needed and the building primary system cannot be used, split DX cooling systems with a remote condenser shall be used.

Unitary air conditioners shall not be controlled by BACnet communications. BACnet to be used for monitoring and information points only.

HVAC COMMISSIONING

Heating hot water, glycol, chilled water, and condenser water piping systems: work includes installation inspections and checks; pressure tests cleaning and flushing and documentation; expansion tanks; confirmation of flow balancing completion; seismic restraints installation certification.

Duct and air-handling systems: work includes installation inspections and checks; confirmation of flow balancing completion; leak testing as applicable; seismic restraints installation certification.

Chillers: work includes installation inspections and checks; seismic restraints installation certification; checkout and startup by manufacturer's representative; documented performance measurements including capacity, evaporator and condenser flows, motor amperage, controls operation, and sound levels.

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Cooling towers: work includes installation inspection and checks; seismic restraints installation certification; chemical treatment; checkout and startup by manufacturer's representative in conjunction with chiller; documented performance measurements including sound, capacity, motor amperage, pan heater operation, sweeper system operation, makeup water, overflow, and capacity controls.

Closed-circuit heat rejecters or Evaporative Condenser: work includes installation inspection and checks; seismic restraints installation certification; chemical treatment; checkout and startup by manufacturer's representative in conjunction with chiller; documented performance measurements including sound, capacity, motor amperage, pan heater operation, sweeper system operation, makeup water, overflow, and capacity controls.

Refrigeration compressor/condensing unit: work includes installation inspection and checks; seismic restraints installation certification; checkout and startup by manufacturer's representative as specified; documented performance measurements including capacity, evaporator and condenser pressures, motor current draw, and controls operation.

Boilers: work includes installation inspection and checks; seismic restraints installation certification; boil out and chemical treatment; checkout and startup by manufacturer's representative as specified; documented performance measurements including combustion efficiency, capacity test, burner and controls operation.

Pumps: work includes documented checks on alignment, rotation, motor current draw, flows and pressures.

Supply, Return, Relief and Exhaust Fans: work includes checks on installation; seismic restraints; dampers and other accessories; rotation, sound levels, motor current draw, and airflows and pressures.

Air Handling Units (both packaged and built-up): work includes installation inspections and checks; seismic restraints installation certification; checkout and startup by manufacturer's representative as specified; documented capacity tests, for heating, cooling, air flow and static pressures; operation of all controls; sound level.

Air Terminal Devices: work includes installation inspection and checks; for VAV units, flow adjustments and calibration coordinated with controls and air balancing; controls operation including flow modulation, reheat, controls responses.

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Fan-coil Units: work includes installation inspections and checks; performance and controls checks.

Water-source Heat Pumps: work includes installation inspections and checks; documented seismic installation certification; performance and controls checks.

Controls Air Compressor: work includes installation inspections and checks; documented seismic installation certification; operational checks.

Direct Digital Control System: work includes inspections and checks of installation and operation of all devices; complete operation of all controls sequences, in coordination with commissioning of all controlled systems.

Variable Frequency Drives/Motor controls: work includes inspections and checks of installation and operation of all devices; complete operation of all controls sequences, in coordination with commissioning of all controlled systems.

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DIVISION 26: ELECTRICAL
260000 - GENERAL

SYSTEM DESIGN AND PERFORMANCE STANDARDS

All work shall comply with the latest adopted versions of the National Electrical Code, National Fire Code, NFPA 70E, OSHA, International Building Code, State Codes, and University Campus Design & Construction Standards.

Design systems and select equipment to minimize or eliminate the risks of electrocution, arc-flash, and arc-blast hazards to maintenance and operations personnel. *Refer to NFPA 70E, Article 130.1.*

Work on energized electrical equipment is not permitted. All systems shall be shut down before opening or working on equipment. The proper PPE shall be worn by those verifying that the equipment is not energized. Anyone not complying with these requirements is subject to dismissal and not being allowed to work on campus. For any complex Lock-out/Tag-out procedure as defined in NFPA 70E Article 120.2(D), contractors shall submit a method of procedure (MOP) when work inside existing panels, switchboards, transfer switches, transformers, pad mounted switches, etc., needs to be done. MOP shall contain all the information included in the example MOP in [APPENDIX L Electrical Method of Procedure](#). MOP shall be submitted to the Facilities Services Senior Electrical Engineer for approval. Contractor shall not proceed with the work until the MOP is approved and a shutdown notice is in place.

All equipment shutdowns shall be coordinated with Facilities Services personnel. Notice of pending shutdown shall be submitted to Facilities Services in writing 2 weeks minimum prior to the shutdown. No shutdown shall take place without authorization and UNR Facilities Services personnel present.

Seismic Loads: All electrical equipment, light fixtures, etc. shall be securely anchored to resist earthquake loads.

VOLTAGES

Building systems shall be 208Y/120 volt, 3 phase, 4 wire or 480Y/277 volt, 3 phase, 4 wire.

CHOICE OF VOLTAGE AND DISTRIBUTION SYSTEMS SHALL BE BASED ON A STUDY OF THE REQUIREMENTS OF THE BUILDING TO DETERMINE WHICH IS THE MOST ECONOMICAL. DEMOLITION AND RENOVATION

Do not abandon equipment in place. All equipment not being reused shall be removed.

When equipment and/or devices are removed from service by being disconnected, remove the conductors and conduit back to the source. Conduits in concrete or concealed in walls shall be cut flush and sealed.

Remove all labels not being reused.

All electrical equipment being removed shall be disposed of properly unless otherwise directed.

Update panel schedules for removed loads. Indicate 'Spare' on the schedule when wires are removed from a circuit breaker and 'Space' on open breaker spots.

Underground conduit shall be capped and attach an identification tag indicating conduit origin.

CLEARANCES AND LOCATIONS

All interior and exterior electrical equipment and equipment rooms shall be designed to ensure adequate clearances for service, maintenance, and removal/replacement of electrical equipment, panels, switchboards, transformers, generators, etc.

All electrical rooms shall only contain electrical equipment. No data equipment, no plumbing piping, no HVAC ductwork or piping, unless it is associated with the electrical room, are allowed in an electrical room.

All electrical panels, transformers and switchboards shall be installed in electrical rooms. Motor control centers shall be located in mechanical equipment rooms with the equipment that they serve.

Locate electrical equipment so it will be accessible for inspection, service, repair, and replacement without removing permanent construction, with working clearance and dedicated space as required by the *NEC*® and as recommended by the manufacturer.

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For all medium voltage pad mounted transformers and switches 10' minimum clearance is required in front of the doors and 3' minimum clearance on the non-accessible sides. Maintain area for truck access and overhead clearance for removal by crane. Provide 3' minimum concrete or asphalt apron around equipment pads. The 10' minimum clearance in front of the equipment shall be flat, concrete, grass, decomposed granite or pea gravel.

WHEN DETERMINING GENERATOR SITE LOCATION CONSIDER THE FOLLOWING:

Access for large fuel truck, load bank trailer and crane for removal.

Generator engine exhaust in relation to building air intakes and operable windows.

Landscaping - deciduous trees in close proximity to generator enclosure (debris gets sucked into radiator).

Snow, ice, rain shed from building.

Drainage from nearby cooling towers or roof drains.

Bird habitats.

3' minimum clearance around generator for service.

CALCULATIONS

Electrical calculations are required for all aspects of the electrical systems. Calculations shall be neatly prepared and organized so that an independent peer reviewer can readily check the validity and completeness of the analysis and design. All significant electrical components shall be validated by calculations. Computer programs used shall be identified by name and version number and the input results shall be clearly documented and presented.

The minimum calculations required for each project design are:

- Energy code compliance calculations
- Lighting calculations for all spaces (interior and exterior)
- Feeder voltage drop calculations (3% Maximum)
- Short circuit calculations

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- Service load calculations (Per NEC)

The contractor shall be responsible to provide the following calculations prior to ordering equipment to verify coordination:

- Fault current calculation.
- Overcurrent protective device coordination study based on the actual equipment to be installed for the project
- Arc Flash Study

TESTING OF ELECTRICAL SYSTEMS

Specifications shall include requirements for electrical system testing, including documentation of test results, as appropriate for the electrical systems utilized in the project. Electrical systems testing and documentation requirements shall be in accordance with a recognized testing standard such as those published by the International Electrical Testing Association (NETA).

260513 - MEDIUM VOLTAGE CONDUCTORS

SYSTEM DESIGN AND PERFORMANCE STANDARDS

All medium voltage conductors shall be MV-105 copper conductors, single conductor EPR (Ethylene Propylene Rubber) insulated with a black sun-light resistant polyvinyl chloride jacket rated 5,000 or 25,000 volts, and 133% insulation level. All MV conductors shall have copper tape shields.

All new campus distribution 25kV system conduit shall be 6" Schedule 40 PVC. Conduit shall be buried 3' minimum to the top of conduit. Conduit shall be encased in 3" minimum envelope of 2500psi red concrete with #12 tracer wire. Warning tape shall be buried 1' below finished grade above MV conduits.

All new 25kV line side conductors shall be 750kCM installed in 6" conduit.

Medium voltage conductor splices shall only be made with approval from a UNR representative. Splices, when allowed, shall be of the molded material type with conductor mating seal to provide a fully shielded and fully submersible splice. Splices shall not be made with taped splice kits.

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Terminations for 600A MV conductors shall be bolted dead-break elbows and load-break elbows for 200A MV conductors and less.

The color code for medium voltage conductors shall be: A phase – red; B phase – yellow; C phase – blue.

260519 - LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

Conductor material shall be copper for all conductor sizes.

No wire smaller than #12 AWG shall be used for light and power circuits.

Provide full size separate color coded neutral conductors with a stripe that corresponds with phase color for all branch circuits. No shared neutral conductors on 120 volt and 277 volt circuits.

All conductors shall be stranded for #12 or larger.

All splices of branch circuit conductors shall be done with twist-on wire nuts or insulated mechanical terminations. Push-in terminations are not allowed.

All building interior power, telephone, signal and other wiring (whether plenum rated or not) shall be installed in raceways. Exception: 50V or less cables in a remodeled area where other methods are currently being utilized and approved by a UNR representative.

MC Cable shall not be used. Exception: For a fixture whip (6' maximum length) from a junction box to (1) a recessed fixture above an accessible (lift-out tile) ceiling, or (2) a recessed fixture with at least 4 square feet of surface area in a non-accessible type ceiling, or (3) a receptacle mounted in a ceiling tile.

Instrument cable shall consist of twisted shielded pair or triads.

Color code for conductors as follows:

Phase	120/240 Volts Δ	120/208 Volts Y	277/480 Volts Y	Isolated Ground
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A	Black	Black	Brown	Contrast Stripe
B	Red with Orange Stripe for stinger leg	Red	Orange	Contrast Stripe
C	Blue	Blue	Yellow	Contrast Stripe
Neutral	White with constant phase colored strip	White with constant phase colored strip	Gray with constant phase colored strip	Contrast Stripe
Equip. Ground	Green	Green	Green	Contrast Stripe

Note: On a delta connected, three-phase, four-wire system, the "high-leg" shall be connected to "B" phase and identified orange.

260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

SYSTEM DESIGN AND PERFORMANCE STANDARDS

Grounding System Resistance shall be five ohms or less.

All medium voltage duct banks shall contain a minimum #2/0 bare stranded copper conductor. Connect this conductor to other grounding conductors and/or grounding electrodes.

Drive a 3/4" x 10' ground rod in the bottom of each medium voltage vault. Connect grounding conductors and metal framing for vault lids to ground rod.

Every feeder and branch circuit raceway shall contain an equipment grounding conductor.

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Proper grounding shall be provided for all electrical systems, including bonding connections at service entrances, metal piping, structures, panelboards, transformers, etc.

Do not rely solely on ground-rods for system grounding electrodes. A concrete encased 3/0 copper grounding electrode 30' in length shall be installed per NEC for each electrical service.

All circuit grounds shall be made up such that a continuous path is reliably maintained to a grounding electrode or system.

Special consideration shall be given to grounding of sensitive office equipment (computer data circuits, etc.).

Provide a building ground ring attached to building steel at corners and then at no more than 100-foot separation when required by a lightning protection system.

Provide code acceptable isolated grounding for computer and communications room.

Utilize ground pads for termination of grounding conductors.

Configure emergency generator systems as separately derived systems.

Cable or electrode connections shall be exothermic.

260533 - CONDUIT AND RACEWAY SYSTEMS

SYSTEM DESIGN AND PERFORMANCE STANDARDS

Fittings for electrical metallic tubing shall be steel, watertight, gland-ring types or steel setscrew types.

All metal conduit, couplings, elbows, and fittings buried below grade shall be coated with PVC or 1/2-lap wrapped with an approved tape (coating or wrapping shall be a 20 mil total thickness). In lieu of rigid galvanized conduit for horizontal secondary service raceways and branch circuit wiring in or under a floor slab, Schedule 40 PVC may be used with rigid steel conduit termination stub-ups out of the ground or slab and into the building.

Electrical PVC conduit shall not be installed inside buildings.

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Conduits located in concrete slabs shall not exceed 3/4" and shall be spaced no closer than eight inches on center except at panel and junction boxes where they shall be spread as widely as possible. Provide for special framing when required where conduits enter a panel board. In cases where conduits larger than 3/4" are to be placed in a concrete slab, the structural engineer shall be notified/consulted.

For irrigation systems provide a 1" conduit from the valves to the irrigation controller. Provide a pull string for future use.

Use flexible steel conduit (3' maximum length) in the following applications and install a code sized ground wire:

- Motor connections.
- Connection between fan plenum and structure.
- Expansion joints with an accessible junction box on each side.
- Transformers, motors and other equipment that produce vibration.

For recessed lighting fixtures in an accessible (lift-out tile) ceiling flexible steel conduit shall not exceed 6'.

In existing walls, flexible steel conduit shall be allowed to fish down the wall to a new outlet location. A junction box shall be installed at the top of the wall.

At damp and wet locations or where exposed to weather, flexible steel conduit, where allowed, shall be liquid tight type.

All fire alarm system conduit shall be manufactured red.

260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

SYSTEM DESIGN AND PERFORMANCE STANDARDS

All labeling shall be done by machine. No hand-written labels.

Provide labels on the covers for outlets, switches and junction boxes. These labels shall be engraved or created with a label maker using a high-quality label tape. Labels shall indicate panel and circuit numbers.

Provide identification for the systems and equipment shown on the drawings and/or specifications.

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Types of electrical identification include:

- Conduit Labeling
- Buried Cable and Conduit Labeling
- Cable/Conduit Identification
- Operational Instructions and Warnings
- Danger Signs
- Equipment/System Identification Labels and Signs

All Equipment/System/Panel Identification Labels shall include a room number, voltage, destination, and origin. Labels shall be engraved type with white letters on black for normal power, white letters on red for emergency power, and white letters on orange for UPS power.

Examples: At Panel 5L the label would contain the following information:

- PNL 5L 208/120V 3P 4W
- Fed from DPL1
- Located in Rm. E100

At Feeder Circuit Breaker in Distribution Panel DPL1 the label would contain the following information:

- Feeds PNL 5L
- Located in Rm. E500

Provide the following types of identification on all electrical equipment as required by the NEC®, and NFPA 70E:

- Arc-flash and shock hazard-warning labels
- Component identification
- Equipment nameplates
- Diagrams and Operating Instructions
- Emergency System Equipment Identification
- Warning Signs, Markers, & Device Labels

Single Line Diagram: Provide a one line diagram under a Plexiglas cover in the main electric room of any new or renovated building showing room, locations of panels and equipment.

[Request Drawing Details](#)

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- Sample Single Line Diagram – Electrical (Drawing # 260620.23-1)

Warning Signs and Markers

Install warning signs that conform to ANSI Z535.2 and meet the intent of the OSHA and NEC® danger and caution specifications on electrical equipment containing hazardous voltages (e.g. switchgear, switchboards, transformers, motor control centers, panel boards, starters, safety switches, busways, pull boxes, and cabinets).

Install voltage markers on electrical equipment (e.g. switchgear, transformers, motor control centers, panel boards, starters, safety switches, pull boxes, cabinets, etc.).

Install wire markers on power, control, instrumentation, fire alarm, and communications circuit wires.

Arc-Flash & Shock-Hazard Warning Labels

Install arc-flash and shock hazard-warning labels that comply with ANSI Z535.4 on switchgear, switchboards, transformers, motor control centers, panel boards, motor controllers, transfer switches, generator panels, safety switches, industrial control panels, and other electrical equipment that is likely to require examination, adjustment, servicing, or maintenance while energized.

Locate the marking to be clearly visible to qualified persons before examination, adjustment, servicing, or maintenance of the equipment.

Note: Refer to Section 110.16 in the NEC®.

On renovation projects, install arc-flash warning labels on existing equipment where lock-out/tag-out will be required for the renovation work.

Note: Refer to NFPA 70-E, Articles 120 and 130.

Provide the information listed below on each label. Specify that arc-flash warning label information be produced by the electrical equipment manufacturer or supplier as a part of the final power system studies to be submitted by the Contractor in accordance with the electrical acceptance testing.

Note: In addition to the final arc-flash analysis, the final power system studies include fault-current calculations and an overcurrent protective device (OCPD) coordination study based on the actual equipment to be installed for the project.

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Information to be determined and applied to electrical equipment:

- Arc-Flash Protection Boundary
- Arc-flash incident energy calculated in accordance with IEEE Std 1584a™
- Working distance calculated in accordance with IEEE Std 1584a™
- NFPA 70E Hazard / Risk Category Number or the appropriate personal protective equipment (PPE) for operations with doors closed and covers on.

An abbreviated warning label may be used where it has been determined that no dangerous arc-flash hazard exists in accordance with IEEE 1584a™, paragraph 9.3.2. Use a “DANGER” label where the calculated arc-flash incident energy exceeds 40 cal/cm.

260913 - ELECTRICAL POWER MONITORING AND CONTROL

SYSTEM DESIGN AND PERFORMANCE STANDARDS

Provide University of Nevada, Reno standard monitoring system for each new building. The monitoring system shall use Electro Industries Nexus Series 1262 power meters with current transformers matched to the actual load. The meters shall have ModBus RTU selectable to interface with the campus controls system. Provide data cable from meter to nearest data rack per OIT standards. Obtain IP address from OIT office. Hire a controls contractor to program the new meter into the campus controls system. Coordinate with UNR Controls Shop. Verify that meter is calibrated and can be seen on the campus controls system.

Data Output shall be:

- kWh, Consumption
- kW, Real Power
- kVAR, Reactive Power
- kVA, Apparent Power
- Powerfactor
- Voltage, Line to Line
- Voltage, Line to Neutral
- Amps, Average Current
- kW, Real Power ØA
- kW, Real Power ØB

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- kW, Real Power ØC
- Powerfactor ØA
- Powerfactor ØB
- Powerfactor ØC
- Voltage, ØA to ØB
- Voltage, ØB to ØC
- Voltage, ØA to ØC
- Voltage, ØA to Neutral
- Voltage, ØB to Neutral
- Voltage, ØC to Neutral
- Amps, Current ØA
- Amps, Current ØB
- Amps, Current

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261219 - PAD-MOUNTED, LIQUID FILLED, MEDIUM-VOLTAGE TRANSFORMERS

SYSTEM DESIGN AND PERFORMANCE STANDARDS

All service transformers shall be outdoor pad mounted transformers, shall be oil filled, radial feed configuration and shall be TP-1 or energy star rated with copper windings. The dielectric coolant shall be listed less-flammable and shall be readily and completely biodegradable. Each transformer shall be labeled with primary and secondary voltage, kVA rating and where it is fed from. Each transformer shall be configured delta/wye.

Provide a driven 5/8" x 10' ground rod on the secondary side of each pad mounted transformer and attach to neutral terminal of the secondary side of the transformer.

Transformers shall be protected with steel bollards from damage by vehicles. Bollards shall be spaced to allow full access in front of equipment doors.

Provide a pet cock or valve located on the exterior of the transformer for oil sampling in an attached separate weatherproof enclosure.

261319 - PAD MOUNTED, MEDIUM VOLTAGE, VACUUM INTERRUPTER SWITCHES

SYSTEM DESIGN AND PERFORMANCE STANDARDS

All medium voltage pad mounted switches (PMS) shall be rated at 25kV, 600 amps. PMS shall be provided with 600A load interrupter switches, 200A fault interrupter switches, microprocessor-based overcurrent control, three-pole switching, three position switch (closed-open-grounded), vacuum fault interrupters for fault clearing, welded stainless steel tank, viewing windows, gas gauge, voltage indicator with LCD, SFG insulation and weatherproof hinged green enclosure. S&C Vista series – no exceptions.

PMS shall be installed on top of Jensen precast #612-7-F vaults for four-way PMS and #612-7-G for six-way PMS.

Install ten foot by ¾ inch ground rod in bottom of vault. All grounding and bonding conductors shall be mechanically bonded to ground rod.

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Switches shall be protected with steel bollards from damage by vehicles. Bollards shall be spaced to allow full access in front of equipment doors.

262200 - LOW VOLTAGE TRANSFORMERS (600V OR LESS)

SYSTEM DESIGN AND PERFORMANCE STANDARDS

All indoor transformers shall be dry type NEMA TP-1, Class 1 rated with copper windings, 220-degree C UL-component-recognized insulation system with a maximum of 115 degree rise above 40 degrees C ambient temperature.

All transformers sizes 30 kVA and higher shall be floor mounted. Sound levels shall be low not exceeding NEMA ST20 standard sound levels. All transformers shall be provided with vibration isolation. Isolation devices shall be designed for the equipment and shall retain their isolation characteristics for the life of the equipment. Each transformer shall have a manufacturer's nameplate and a separate label indicating where it is fed from and required clearance from the wall.

Transformers manufacturers shall be consulted to obtain accurate heat generation data (on indoor transformers) which shall be coordinated with the mechanical engineer.

262400 - PANELBOARDS, DISTRIBUTION BOARDS, MOTOR CONTROL CENTERS

SYSTEM DESIGN AND PERFORMANCE STANDARDS

All distribution boards, motor control centers, and branch circuit panels shall have a minimum of 10% spare positions and not less than 6 spare poles.

Where panels are installed flush with the walls, empty conduits shall be extended from the panel to an accessible space above and below. A minimum of one 3/4 inch conduit shall be installed for every three single pole spare circuit breakers or spaces, or fraction thereof, but not less than two empty conduits.

Each interior building main disconnecting means shall be provided with a trip coil and exterior shunt trip switch identified with a red triangle. Location shall be coordinated with the fire authority.

A minimum of two levels of harmonic suppression shall be provided. One level at the main switchboard and the second level at each downstream distribution panel board.

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All circuit breakers shall be bolt-on type. All circuit breakers shall be 100% rated. No series rating allowed.

All panel board covers provide full height hinged trim integrated into the front cover to allow access to wire ways without removal of cover (door in door type).

Where underfloor space is accessible, spare conduits shall be extended there in addition to the ceiling space.

Panels shall have a typewritten directory giving circuit numbers and a complete description of all outlets controlled by each panel circuit breaker including room numbers.

All bussing for panel boards, distribution boards, and motor control centers shall be copper.

262419 - MOTOR APPLICATIONS

For HVAC motors over 10 HP and without VFDs, use solid state, reduced voltage starters. Starters shall have solid state adjustable heaters and provide protection for phase loss/reversal, over/under voltage, and shall have selectable trip classes (10, 20, and 30).

All motors larger than 1/2 horsepower shall be high efficiency type. Minimum motor efficiencies at full load shall be as follows:

- 1.0 HP @ 86%
- 5.0 HP @ 89.5%
- 10.0 HP @ 91%
- 50.0 HP @ 94%
- 100.0 HP @ 95.1%

262726 - WIRING DEVICES

SYSTEM DESIGN AND PERFORMANCE STANDARDS

All wiring devices shall be heavy duty specification grade.

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All general receptacles and wall switches shall be 20A rated.

All corridors or hallways shall have duplex receptacles spaced not over 30 feet apart.

Outlet boxes, covers, rings, or other fittings shall be galvanized steel.

Sinks: When receptacles are installed within 1.8 m (6 ft.) of the outside edge of any sink, this includes laboratory sinks, they shall be GFCI protected.

Spacing: In office spaces a minimum of one duplex receptacle per wall.

Mounting heights of all electrical outlets shall be 24" AFF (top of box) unless noted otherwise.

Mounting heights of all switch plates shall be 42" AFF (top of box) unless noted otherwise.

Electrical outlets, switches, and all other controls required to be accessible shall only be mounted at heights inside these reach ranges (24" – 42" AFF) unless specifically justified and approved by Facilities Services Department (but in no circumstances shall they exceed reach ranges permitted by ARTSI A117.1 guidelines).

Wall switches near doors shall be mounted not more than 12 inches from the trim on the latch side of the door.

Gang type plates shall be used for multiple gang boxes.

Outside gathering areas shall have two dedicated 20 ampere 120 volt circuits installed in weatherproof lockable enclosures with a 20 ampere duplex GFCI receptacle for each circuit.

All devices shall be hard wired. No push-in or plug-in connections allowed.

All device plates shall be unbreakable nylon plates.

All exterior receptacles shall have a metal, while-in-use cover and be NEMA 3R rated.

263213 - DIESEL ENGINE GENERATORS

SYSTEM DESIGN AND PERFORMANCE STANDARDS

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New buildings with research facilities and critical loads shall be entirely backed up with a diesel generator and code required automatic transfer switches.

Diesel generator sets for critical buildings shall have a fuel storage system that will permit a 48-hour run time at full load before refueling occurs.

Non-critical buildings shall have a minimum fuel storage system that will permit 24-hour run time at full load before refueling occurs.

Acceptable generator manufacturers are: Detroit, Cummins and Caterpillar.

Tanks shall be double walled with a rupture basin.

The generator/engine/control panel shall be a package system by a specified manufacturer with a minimum of ten years documented experience.

Generator sets shall have "One source responsibility". Generator sets and components to be prototype tested, factory built and production tested.

Generator sets below 750 kW shall meet or exceed Tier III emissions minimum.

Generator supplier shall have factory authorized engine and generator service center within fifty miles.

Generator set shall be rated for 6000' altitude or higher.

Generator set controls shall have pre-alarms for fuel level, coolant level, coolant temp, oil pressure as well as safety shutdowns.

Generator shall be equipped with controls to permit remote communication.

Generator shall be equipped with PMG (permanent magnetic excitation).

Engine shall be equipped with an electronic governor.

Generator set shall be rated for 120° F. ambient temperature or higher.

Generator/ engine cooling system shall be capable of dissipating 100% engine heat rejection @ 100% rated load at spec. temp and altitude.

Generator set enclosure shall be weatherproof and sound attenuated for 75 dB or less at 21 feet.

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Generator set enclosure shall be rodent proof.

Each generator shall be provided with a remote load bank @ 50% or greater of rated load.

Generator set shall be supplied with a catwalk if mounted above normal reach.

Generator set shall be equipped with external drains for coolant, oil and fuel.

The generator shall have 2/3 pitch windings.

Generator set shall have isolation valves for engine heater.

Engine cooling system shall be equipped with a coolant level sight glass.

Engine heater(s) shall have an adjustable thermostat(s).

Battery charger shall be equipped with adjustable rate.

Generator set shall be equipped with complete service and parts manuals.

Programming and or monitoring software and connecting cables to be included as well as detailed training.

Provide a non-draw out molded case circuit breaker at the generator for generator protection.

Generator shall be capable of 75% block load minimum.

Installation shall include minimum two-hour load bank testing on startup at 100% load rating.

Provide minimum two hours on-site operator training.

263600 - AUTOMATIC TRANSFER SWITCHES

SYSTEM DESIGN AND PERFORMANCE STANDARDS

Transfer switches shall be rated to carry 100 percent of rated current continuously.

Transfer switches shall be closed transition 4 pole (switched neutral) switches.

All sensing controls such as under voltage, overvoltage, under frequency, engine start, return to normal etc. shall be adjustable.

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Provide an exerciser clock to set the day/time/duration of the generator set exercise/test period.

Acceptable manufacturers are: Asco, Zenith, Detroit, Cummins and Caterpillar.

Transfer Switch shall include an in-phase monitor option.

Transfer Switch shall include transfer inhibit capabilities.

Transfer Switch shall include remote monitoring capabilities.

Start up, (configuring) by factory representative to be included.

Provide a separate dedicated transfer switch for code required emergency lighting.

265000 - LIGHTING

SYSTEM DESIGN AND PERFORMANCE STANDARDS

Special use areas or areas used for multiple purposes which may require unusual levels of illumination should be reviewed with the University of Nevada, Reno Facilities Services Department and approved during the early stages of design.

All lighting controls shall be wired. Wireless controls are not allowed.

All lighting fixtures shall be LED type for all indoor and outdoor installations where possible.

For indoor and outdoor lighting use only lamps of 4000 degree Kelvin rating with the highest color rendering index available.

Lighting in all offices and classrooms shall be designed for a minimum maintained average lighting level of 40 foot-candles at the desktop surface.

Step lighting for individual steps shall not be installed. Provide lighting for steps using sidewall mounted fixtures and/or pole lighting for exterior steps.

If fluorescent lighting is used, the ballasts shall be Philips Advance ICN series, or equal.

All 4' fluorescent lamps shall be Philips F32T8/ADV941/2XL/ALTO II series, or equal.

All exterior doors and entries shall have emergency illumination on the building exterior.

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All exit signs shall have green letters with LED lamps and battery back-up.

Control of lighting shall be provided for all spaces including small single offices. Lighting shall be controlled by occupancy sensors, multilevel switching or daylight dimming in accordance with the International Energy Conservation Code (IECC).

Utilize occupancy sensors in all spaces except foyers, stairways and lobbies. This includes the use of motion sensors in corridors.

Only emergency lighting in stairways, electrical rooms and exit signs shall have battery backup. All other code required emergency lighting shall be provided back-up power by a separate dedicated emergency transfer switch unless the building is not equipped with a backup generator. Mechanical room lighting shall be connected to the emergency lighting system.

Provide an independent lighting control system for time of day, day of week, timed control of the lighting for that lighting which is not connected to motion sensors. Provide the ability to turn the lighting off at pre-selected times and provide a timed override switch in a convenient and logical place to override the time clock.

Lighting control systems shall not be connected to the campus DDC system.

For large auditoriums, classrooms, gathering areas, etc. (determine the areas on a project by project basis) where day-lighting is available, provide a light harvesting control system. Where light harvesting is utilized the system shall utilize electronic dimming ballasts (not step level switching).

No proprietary luminaries shall be specified.

Lighting circuits shall not be 480 volts.

ELECTRICAL COMMISSIONING

PAD MOUNT SWITCH

Work includes visual inspections of the equipment, anchoring, paint, labeling, clearances, grounding, terminations, testing caps, bleeder wires, cable supports, conductor phasing, vault cleanliness, vault and door hardware.

Review of cable testing report for each conductor.

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Review and record settings of overcurrent protection.

Test tripping mechanisms for each fault interrupter.

Verify and record gas levels.

Verify arc flash labeling is installed and in agreement with arc flash study.

PAD MOUNT TRANSFORMER

Work includes visual inspections of the equipment, anchoring, paint, labeling, clearances, grounding, torquing of terminations, conductor phasing, cleanliness, door hardware, and door seals.

Review cable testing report for each conductor.

Verify gauges are working properly and record gauge readings.

Verify arc flash labeling is installed and in agreement with arc flash study.

MAIN SWITCHBOARD

Work includes visual inspections of the equipment, anchoring, paint, labeling, nameplate information, clearances, grounding, torquing of terminations, conductor phasing, cleanliness, door hardware, and door seals.

Review cable testing report for each conductor.

Record all circuit breaker settings and verify that each setting is in accordance with the coordination study.

Verify arc flash labeling is installed and in agreement with arc flash study.

Test and verify the accuracy of the load meter in each function and verify values can be seen on the campus control system.

Test and verify the operation of the shunt trip mechanism.

Inspect installation and functions of the surge suppression device and verify SPD lead lengths are as short as possible.

DISTRIBUTION BOARDS

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Work includes visual inspections of the equipment, anchoring, paint, labeling, nameplate information, clearances, grounding, torqueing of terminations, conductor phasing, cleanliness, door hardware, and door seals.

Review cable testing report for each conductor.

Record all circuit breaker settings and verify that each setting is in accordance with the coordination study.

Verify arc flash labeling is installed and in agreement with arc flash study.

Inspect installation and functions of the surge suppression device and verify SPD lead lengths are as short as possible.

STEP DOWN TRANSFORMERS

Work includes visual inspections of the equipment, anchoring, paint, labeling, nameplate information, clearances, grounding, torqueing of terminations, conductor phasing, vibration isolation, and cleanliness.

Review cable testing report for each conductor.

Verify arc flash labeling is installed and in agreement with arc flash study.

BRANCH CIRCUIT PANELS

Work includes visual inspections of the equipment, anchoring, paint, labeling, nameplate information, clearances, grounding, torqueing of terminations, conductor phasing, cleanliness, and door hardware.

Review cable testing report for each feeder conductor.

Record main circuit breaker settings and verify that each setting is in accordance with the coordination study.

Verify arc flash labeling is installed and in agreement with arc flash study.

LIGHTING CONTROL/TIME CLOCKS/PHOTOCELLS

Work includes a visual inspection of the equipment, anchoring, paint, labeling, nameplate information, clearances, grounding, terminations and cleanliness.

Test each device for on/off operation.

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Verify and record timed on/off settings.

Test all motion sensors and dual level switching in each room.

Test on/off function of all exterior lighting and verify time settings.

Verify each lighting fixture is working properly.

Perform a 90-minute run test of all emergency lighting with battery backup with the building power off.

Verify all emergency lighting fixtures both interior and exterior are providing required lighting levels at 90 minutes.

GENERATOR

Work includes visual inspection of the equipment, anchoring, paint, labeling, nameplate information, clearances, grounding, termination, no leaks, gauges, battery charger, battery heater, block heater, meters, control panel, weatherproof/sound attenuated enclosure, bird screens, and cleanliness.

With permanently installed or portable load bank perform and record a full load 2 hour run test.

Test and record the function of the following items: gauges, battery charger, battery heater, block heater, emergency stop switch, meter, control panel functions, fuel level alarm, oil pressure alarm, coolant level alarm, high temperature alarm.

With the generator running record sound levels in multiple directions and at multiple distances.

Verify arc flash labeling is installed and in agreement with arc flash study.

Test and verify that the function of the shunt trip device.

Verify fuel tank is full after all tests.

AUTOMATIC TRANSFER SWITCH

Test and record all functions are operational.

Perform a loss of power test to the building and verify all functions work properly.

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Test and verify all by-pass functions.

Verify and record frequency and duration of generator exercising.

Verify arc flash labeling is installed and in agreement with arc flash study.

UPS SYSTEM

Work includes visual inspection of the equipment, anchoring, paint, labeling, nameplate information, clearances, grounding, terminations, control panel, batteries, wiring, and cleanliness.

With batteries fully charged perform a full load run test using a portable load bank.

Record voltage and current levels every minute during the test for the duration of the specified run time.

Verify closed transition switching during a loss of power and restoration of power to the building.

Test and verify all alarms.

Test and verify by-pass functions.

Verify arc flash labeling is installed and in agreement with arc flash study.

FIRE ALARM SYSTEM

Work includes visual inspection of the equipment, anchoring, paint, nameplate information, batteries, wiring, grounding, terminations, device installations and locations. Test all functions of the system.

Verify the function and address of each initiating and indicating device for supervisory, trouble and alarm signals.

Test and verify interface with HVAC equipment and controls.

Perform a loss of power test.

Verify required certifications and proper tagging.

Perform all tests in the presence of the Authority Having Jurisdiction.

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Test the auto-dialer for functionality.

Verify all supervisory, trouble and alarm signals are cleared upon completion.

End of Division 26

ELECTRICAL

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DIVISION 27: COMMUNICATION

UNIVERSITY OF NEVADA, RENO COMMUNICATIONS / IT BUILDING REQUIREMENTS

When a department or building is involved in planning a network, renovating an existing network, building a new building, or renovating an existing space, University of Nevada, Reno Network Operations (NetOps) must be contacted before the start of the project. The NetOps will assist Facilities Services or the architect in defining the specific details of each project. NetOps will also assist in ensuring that all appropriate network costs are included in project budgets.

Typically, a 2-3 day notice sent via email to: netops@unr.edu will be sufficient to schedule the inspections. If the cabling portion of the project is small in nature, some or all of the inspections may be performed at the same time.

The Director of Unified Communications & Network Operations (UCNO) or his designee must approve in advance all computer network designs and installations.

The contract drawings and specifications shall cover all work enumerated under the respective headings. The contract drawings are diagrammatic only, as far as final location is concerned. Any item of work not clearly included, specified, or shown, and any errors or conflict between contract drawings, specifications, codes, and field conditions shall be clarified by a written request to the Design Architect before bidding.

270800 – COMMISSION OF COMMUNICATIONS

CODES AND STANDARDS

The minimum standards for all electrical work shall be the newest revision of the NEC and the current revision(s) of all applicable standards and national code. Whenever and wherever OSHA and/or federal, state, and/or local laws or regulations and/or design require higher standards than the NEC, then these laws and/or regulations and/or design shall be followed.

All work shall meet all applicable codes and standards, including but not limited to:

- National Fire Protective Assoc. (NFPA) 70
- Building Industry Consulting Service International (BICSI) Standards

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- National Electrical Manufacturers Assoc. (NEMA) Standards
- Electronics Industry Assoc./Telecom. Industry Assoc. (EIA/TIA) 568C
- University of Nevada System requirements
- ANSI/TIA-568-C.0 – Generic Telecommunications Cabling for Customer Premises.
- ANSI/TIA-568-C.1 – Commercial Building Telecommunications Cabling Standard.
- ANSI/TIA-568-C.2 – Balanced Twisted-Pair Telecommunication Cabling and Components Standard.
- ANSI/TIA-568-C.3 – Optical Fiber Cabling Components Standard.
- ANSI/TIA-569-D – Commercial Building Standard for Telecommunications Pathways and Spaces.
- ANSI/TIA-570-B – Residential Telecommunications Infrastructure Standard.
- ANSI/TIA-606-A -- The Administration Standard for the Telecommunications Infrastructure of Commercial Buildings.
- ANSI/TIA-607-C -- Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications.
- ANSI/TIA-758-A -- Customer-Owned Outside Plant Telecommunications Infrastructure Standard.
- ISO/IEC 11801 2nd edition
- CENELEC EN50173
- IEC 603-7

PRE-CONSTRUCTION SUBMITTALS

Contractor is to submit to the UNR facilities Project Manager a complete documentation package before commencement of the project. Contractor shall not commence work before approval of submittals, any additional costs to conform to approve submittals shall be borne by the contractor. The package shall include:

- Shop Drawings – must show all WSO locations with cable ID's, general cable routing, and firewall penetrations
 - Shop drawings of all telecommunications room plan view layouts, rack elevations and equipment
- Product data – a complete list of all materials used in the cable system, including manufacturer and part number
 - Cut sheets of all proposed components
- Certifications – provide as detailed in the manufacturer and technician certifications section
- Contractor should be trained and certified by specific manufacture cable type they are installing.

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PROJECT CLOSEOUT DOCUMENTS

Record Drawings

Contractor is to provide to the owner a complete network documentation package upon completion of the project. The package shall include:

- As built drawings – must show all WSO locations with cable ID's, general cable routing, and firewall penetrations. As-builts must show pathways and media used.
- Delivered as PDF emailed to netops@unr.edu.

Test Reports – delivered on by E-mail

- Test documentation for UTP cabling
- Test documentation for fiber optic cabling
- Test documentation for multi-pair copper cabling

Warranty

Provide minimum of 20-year manufacturer's warranty listing UNR as the owner along with the specific building name where work was performed.

SCHEDULES FOR COMMUNICATIONS INSTALLATION INSPECTIONS

During construction, the cabling contractor must contact UNR NetOps to inspect the work at the following milestones:

- At pre-construction meeting.
- While pulling horizontal cable from Telecommunication Room (TR).
- During termination of the horizontal cabling in the TR on the patch panels.
- During wall outlet terminations.
- When testing and labeling faceplates.

UNACCEPTABLE ROOM LOCATIONS

Any areas subject to water or steam infiltration, particularly basements. A floor drain is required if there is any risk of water entering the TR. Any areas exposed to excessive heat or direct sunlight. Any areas exposed to corrosive atmospheric or environmental conditions. Near or adjacent to any potential sources of electromagnetic interference (EMI) or radio frequency interference (RFI) such as large electric motors, power transformers, arc welding equipment, or high-power radio transmitting antenna.

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BUILDING INTERFACES

Modular Furniture: Furniture pathways are entered from building walls, columns, ceilings, or floors. The interface between the building and furniture requires careful planning and may require special products or furniture options. Safety, reliability, and aesthetic concerns all favor concealment of the building and furniture pathway interface. These pathway interfaces shall not interfere with access covers or otherwise block access to WAO's, building junction boxes or pathways. Pathways used to interconnect the furniture with building horizontal pathways shall be provided with a cross-sectional area at least equal to the horizontal pathways cross-sectional area for the floor area being served.

Walls and columns: Raceways shall be provided between furniture pathways and the inside of building walls or columns.

Floors: A raceway shall be provided between furniture pathways and horizontal floor pathway terminations. Alignment of furniture with building modules, duct locations and other cable delivery means shall be considered as part of the layout planning.

CAMPUS ENVIRONMENTS

Construction involving a new or existing building structure shall have an assessment of the outside conduit infrastructure, (i.e. connections between buildings) accomplished early during the design phase. in the project cycle. This assessment is of particular importance if demolition of any structure is required as part of the overall project, and/or the new project may impact an existing conduit infrastructure. All BDF and IDF rooms shall have building air supplied – 3 complete air changes per hour and a temperature range between 64 to 75 degrees Fahrenheit measured 5 feet above the floor and relative humidity less than 30% to 55% relative humidity, non-condensing.

LIGHTING

Ensure that lighting fixtures are located a minimum of 8.5 feet above finished floor. Light switch without dimmer shall be located near entrances. Lighting levels shall be at least 50-foot candles at middle elevation of every equipment rack.

ROUTING OF COPPER CABLING

All routing of copper cabling shall meet the minimum distances according to TIA standards. Do not run UTP copper cabling in locations where temperature will be below

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40 degrees Fahrenheit or above 115 degrees Fahrenheit. Humidity should normally be in the range of 8-80%. All cable, conduit, and Wiremold (TM) routings shall utilize the path of least obstructions and shall be run parallel or perpendicular to existing walls. Hang multiple horizontal conduits in tight, vertically organized arrays and run vertical riser similarly. Avoid creating obstructions to future mechanical/electrical work. All interior conduits required under this contract shall be provided with a non-conductive, fish tape, or approved nylon pull string. Do not run UTP cabling in the slab foundation to avoid water infiltration.

CONCEALMENT

Horizontal and backbone raceway and cabling shall be concealed above ceilings, in walls, below slabs, and elsewhere throughout building. If concealment is impossible or impractical, or in areas without ceilings, the Owner's Representative shall be notified of the proposed routing prior to starting that portion of the work.

WATERPROOFING

The Contractor shall seal all foundation penetrating conduits and all service entrance conduits and sleeves to eliminate the intrusion of moisture, gases and rodents into the building. This requirement also applies to spare conduits. A water pan must be installed above any rack where water may leak onto equipment rack.

CLEANING

At the completion of work each day, the contractor shall clean all work areas of debris, trash, dust, etc. All ceiling tiles shall be reinstalled, and materials placed in the designated storage area(s). All areas shall be restored to a normal condition, as found. At the completion of the work required under this contract and just before acceptance by the Owner, thoroughly clean all exposed equipment and accessories.

270505 – SELECTIVE DEMOLITION FOR COMMUNICATIONS

Abandoned Cable Removal (Major Renovation Project) The National Electric Code (NEC) 2002 requires the removal of abandoned cable in buildings. Abandoned cable is defined as installed cable that is not terminated at equipment and not identified for later use. UNR IT shall be contacted and requested to survey the existing cable plant. There is a possibility that all or a portion of the existing installed cable may be reusable.

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270526 – GROUNDING AND BONDING OF COMMUNICATIONS SYSTEMS

All grounding and bonding shall comply with ANSI J/STD-607-C.

270528 – PATHWAYS FOR COMMUNICATION SYSTEMS

Fire stopping of conduits must use proper sized intumescent plugs not mineral wool and caulk to preserve the firewall rating of the penetrated surface. EZ-Path may be used for horizontal wall penetrations. Fire stopping material must be included in submittals. No sprayed in foam, of any type, is to be used as fire barrier. Material must be able to be removed and replaced when adds moves and changes occur.

270539 – SURFACE RACEWAYS FOR COMMUNICATION SYSTEMS

Acceptable material shall be Wiremold (TM) 700 series or applicable 2000, 3000, or 4000 series depending on manufacturers recommended fill ratios. Raceway to be securely mounted to walls with screws anchored into walls. Screws to be drilled into base of raceway 12 inches apart on center.

JUNCTION BOXES

No conduit run shall be more than 100 feet between access points. No conduit shall contain more than 180-degree of bends between junction boxes. Junction boxes shall be no less than 18"x18"x12".

CABLE ROUTING

All cable and MaxCell (TM) routings shall utilize the path of least obstructions and shall be run parallel or perpendicular to existing walls. Hang multiple horizontal conduits in tight, vertically organized arrays and run vertical riser cabling similarly. Avoid creating obstructions to future mechanical/electrical work. J-hooks shall be installed per TIA 569 standards. Minimum of 2" J-hooks, where no other pathways exist. J-hooks shall have their own support, not attached to any other building structure, such as; light fixtures, ceiling tiles, HVAC attachment, etc. Also, J-hooks should be included in submittals. In any renovation project, all existing cabling needs to be properly supported by J-hooks. J-hooks should be spaced of a maximum of 5'.

270553 – IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

TESTING

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Inside Plant (ISP) Copper

Contractor must supply to UNR NetOps and UNR Facilities Project Manger a complete set of test records 2 weeks prior to equipment installation. Testing is to be performed using a Fluke DSX or equivalent tester. Testing shall be per IEEE Standards and TIA TSB-67.

Outside Plant (OSP) Copper

All OSP cable pairs in each of the copper feeders must be tested for continuity, polarity and shorts. The contractor must correct cables that do not pass.

OSP/ISP Fiber

All fiber shall be tier 1 and tier 2 tested using a Fluke DSX or equivalent tester.

LABELING

Every component of the technology wiring system must be labeled. All cables must be labeled to show the source and destination. All labels must be easily viewed. All cables, components and device identifiers must be unique. All labels must be permanent, and machine printed.

RACKS

Racks shall be installed and numbered in the TR from left to right (viewed from front) first rack on left labeled 1 then sequentially across the room to right.

PATCH PANELS

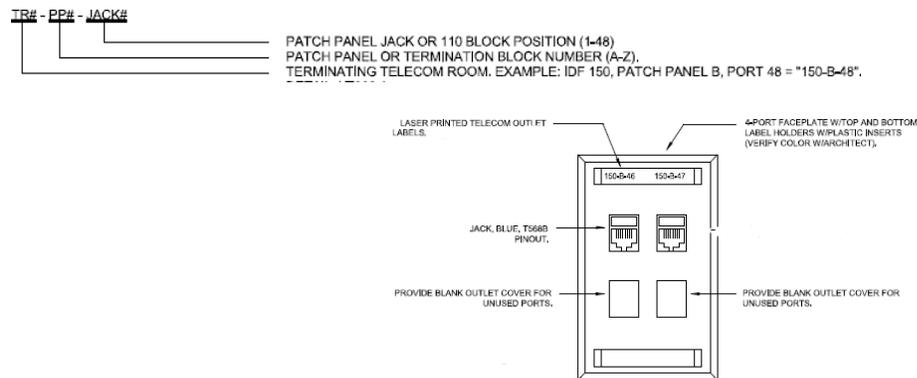
All patch panels must be labeled starting with A, B, C, etc. from top to bottom and left to right. All patch panel ports must be labeled with the room number so as not to obscure the patch panel port numbering. Use the existing 1-48 numbering from the patch panel. All cabling shall be bundled geographically and punched down with other cables from that area in a sequential manor, I.E. all cables from room 100 would directly precede all cables from room 101 on the patch panel.

Any port supporting an access point (AP) shall be labeled "AP Room number".

Example: If an AP is in room 204, the label on them patch panel will be "AP204".

WORKSTATION FACEPLATE

Each communications faceplate will be labeled with the IDF number and Rack designation plus patch panel in rack labeled alphabetically in descending order. A on top through H, and patch panel port number 1-48, On a 48-port patch panel. All faceplate labels must be machine generated thermal type label. All faceplate labels to be put under plastic cover provided on faceplate for that purpose. No faceplate shall be used that does not provide a label area with a clear plastic cover.



UNSHIELDED TWISTED PAIR (UTP) CABLE

All UTP cabling must be labeled within 5 inches of the attached connector and within 6 inches of the attached connector at the distribution location. Label must indicate the room designation and the faceplate circuit of the cable. For example, label: 102-1A1 indicates that the cable serves room 102, to rack number 1 and patch panel A port 1.

FIBER CABLE

Place a label on the bulkheads of the fiber enclosure and the end of the fiber cable. Label the far side with building and room of near side destination. Near side label with building and room number of where the fiber was routed from.

Every fiber bulkhead should be labeled with the building name and room number of the far end of the cable.

GROUND ATTACHMENTS

All ground attachments shall be properly tagged and labeled in accordance with TIA/EIA-606-A.

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271000 – STRUCTURED CABLING

The contract drawings and specifications are intended to cover all work enumerated under the respective headings. The contract drawings are diagrammatic only, as far as final location is concerned. Any item of work not clearly included, specified or shown, and any errors or conflict between contract drawings, specifications, codes and field conditions shall be clarified by a written Request for Information (RFI) to the engineer before bidding.

All infrastructure cabling systems must be a single manufacturer (Original Equipment Manufacturer), including cabling, patch panels, patch cords, jacks, faceplates.

Contractor shall be certified by the manufacturer for installation of the proposed system products. The approved manufacturers of communications infrastructure systems for UNR are; CommScope/SYSTIMAX and Belden/CDT for copper cabling and Corning Cable Systems for fiber infrastructure. All new constructions shall be Category 6A infrastructure systems only. Campus cable shall be minimally category 6 excepting communication riser. Note: Cable in existing buildings shall match current system vendor.

271100 – COMMUNICATIONS EQUIPMENT ROOM FITTINGS

Refer to TIA-569-D pathways and spaces for Communications Cabinets, Racks, Frames and Enclosures.

TELECOMMUNICATIONS SPACES MINIMUM REQUIREMENTS

Telecommunications rooms shall have only one lockable entrance door, 36 inches wide and 80 inches in height, without windows, that opens towards the outside of the room, and does not open into another room. There shall be a minimum of three walls covered by ¾ in. fire rated plywood painted with two coats of white fire-retardant paint and rated label shall be clearly visible. Telecommunications rooms shall not be shared with other building services. Electrical distribution panels/transformers pose the threat of damage or EMI interference, heat or clearance problems. Storage areas present fire hazards as well as hindering access to equipment.

These rooms shall be reserved for Data and Voice communications infrastructure and equipment only. No fire alarm, security, DVR's, or other electronic equipment not specifically required by network and voice infrastructure. Floors shall be concrete. Carpeted floors are not acceptable due to static discharge. Drop ceilings shall not be

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installed in telecommunications rooms and sheetrock shall be finish to below upper deck.

BUILDING DISTRIBUTION FACILITY (BDF) / INTERMEDIATE DISTRIBUTION FACILITY (IDF)

The building distribution facility (BDF) for New Construction shall be 10 x 15 foot minimum.

Design and placement of IDF, must be based on keeping cable runs to work areas under 295 ft.

Preferably stacking these rooms on each floor, if possible. Horizontal and vertical riser conduits or cable trays must be available from each IDF to the BDF. Each IDF shall have a minimum of two #4 trade size conduits for cable access to horizontal cable path and vertical riser pathways.

- Freestanding Equipment Rack
 - Freestanding equipment racks shall be Chatsworth Products Incorporated (CPI), 7 ft. X 19 in. floor mount two-post rack, black in color. Mfg. Part #55053-703
 - Equipment racks must be properly anchored to the concrete structure using ½" X 3 ¾" wedge anchors to support the rack and its equipment.
 - Each equipment rack shall be properly bonded and grounded using a #6 ground wire and extended to the bus bar within the room. (Bus bar provided and installed by EC)
 - Equipment racks shall be outfitted with cable runway elevation kits for connection to overhead cable runway. Mfg. Part #10506-706
 - Maximum 8, 48 port patch panels per rack

POWER

The room shall have one dedicated 20-amp circuit with 20-amp Quad outlets installed every 6 feet at 18 inches above finished floor per wall. Two dedicated 20-amp circuit with Quad outlets shall be located on the top and behind of each 7-foot equipment rack. If a building has a backup generator, all new or renovated telecommunications spaces shall have circuits which are protected with building generator backup power.

271123 – COMMUNICATION CABLE MANAGEMENT AND LADDER RACK

The use of a wire basket tray or cable runway systems are the preferred methods of cable pathways within the corridors. A minimum of 12-inches of clearance shall be

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provided above the cable tray and a minimum clearance of 12-inches on at least one side shall be provided for access to tray. Minimum size is 12" wide x 4" high. Specify larger size to maintain 50% fill ratio. *Chatsworth Products, Basket Tray or Runway systems or equal.*

WIRE MANAGEMENT

- Vertical wire management shall be supplied to support each freestanding rack within the telecom rooms.
- Between each rack, provide one CPI Evolution vertical cable manager, double-sided, 15 in. wide X 7 ft. high, black in color. *Mfg. Part #35525-703*
- At each end of the row of racks, provide one CPI Evolution vertical cable manager, double-sided, 12 in. wide X 7 ft. high, black in color. *Mfg. Part #35524-703*
- Each rack shall receive one CPI Evolution single-sided horizontal wire manager, 19"W x 3 RMU x 8.2"D. Wire manager shall be placed in the middle of each rack to create a bellline across the row of racks (see attached rack elevation drawings). *Mfg. Part #35441-703*
- Each rack shall receive one CPI cable management jumper & transition upper tray, 19"W x 2.22"H x 3.5"D, black in color. *Mfg. Part #12183-719*

LADDER RACK

- Ladder rack shall be installed to wrap the entire telecom room and over the top of the equipment rack row.
- Provide CPI 18" cable runway for Category 6 installations. *Mfg. Part #10250-718*
- Provide CPI 24" cable runway for Category 6A installations. *Mfg. Part #10250-724*
- Ladder rack shall be supported with appropriate CPI hardware to include:
 - Wall angle support kits – *#11421-718 / #11421-724*
 - Triangular support bracket - *#11746-718 / #11746-724*
 - Junction splice kit - *#11302-701*
 - Butt splice kit - *#11301-701*
 - Cable runway elevation kits - *#10506-706*

CONDUITS AND BACK BOXES FOR COMMUNICATION SYSTEMS

Each habitable space must be connected individually to the cable tray with two locations, at least one 1" conduit for Cat 6 projects and 1 ¼" for Cat 6A projects. In labs, or other multi-drop locations, each RJ-45 computer drop will have its own 1" or 1 ¼"

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conduit. Spare conduits shall be plugged with expandable plugs. All conduit work must comply with current edition of National Electrical Code (NEC).

271300 – COMMUNICATION BACKBONE CABLING

Ref: TIA 568C

OSP Copper Backbone

- Cable type
- Protector type and size

271313 – COMMUNICATION COPPER BACKBONE CABLING

Each IDF shall receive one (1) 25 pair plenum/riser (as appropriate) cable running to the MDF. Contractor shall terminate one (1) pair per port (on blue/white IDC's) and coil the 25th pair at the sheath opening with enough length to be utilized anywhere on the patch panel.

- Multi pair cable
 - Riser – *Mfg. Part #18-499-33*
 - Plenum – *Mfg. Part #18-499-36*
- Category 5E Patch Panel
 - Belden - *Part #AX103258*
 - SYSTIMAX - *Part #1100PSCAT5E-24*

271323 – COMMUNICATION OPTICAL FIBER BACKBONE CABLING

OSP FIBER BACKBONE

All fiber optic cabling and termination apparatus shall be manufactured by Corning Cable Systems.

Provide conduit duct banks with four 4" conduits to 2 different communications vaults leading to existing campus conduit infrastructure. Duct banks shall have no more than two 90 degree long sweep bends between access points. Each duct bank will have a green jacketed conducting locator wire that will be secured at each access point or vault. Each conduit will include the installation of 1,800 pound mule tape marked with footage (Part# Wolff). Conduit pathways to existing campus vaults will be designed in consultation with NetOps to verify available capacity in existing campus conduits. Any new OSP telecom vaults being added shall be minimum 3'x 5'.

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Provide (2) 72 strand Single Mode fiber optic cables originating from two different buildings to the BDF in consultation with NetOps to provide redundant pathway. Each 72 strand fiber optic cable will be placed in a separate 4" conduit following two diverse paths from the adjacent buildings to the BDF. All conduits housing fiber optic cables shall receive (3) 3" 3 cell fabric innerducts to allow for future placement of cables. Terminate fiber optic cables using 12 LC Single Mode splice cassettes and place in 4 RU fiber optic termination housings. OSP fiber optic cables shall not share a Fiber Optic Connector Housing with ISP cables.

- Single Mode OSP Fiber
 - OSP fiber optic cables shall be Corning Cable Systems 72 fiber, Single Mode (OS2) Altos Loose Tube, Gel-Free, All Dielectric Cable with FastAccess Technology (Inter-Building Links) *Mfg. Part #072EU4-T4701D20*
 - Fiber optic cables shall follow diverse paths from the MDF to the BDF.
 - Provide a fiber optic cable storage ring no less than 24" in size to maintain the proper bend radius and prevent any kinking of the fiber optic cable. The storage ring shall be able to hold up to 25' of service coiled fiber after termination. Fiber optic storage ring shall be Black Box Part #FOSR24 or equal
 - Fiber optic cabling shall have no bends with a radius smaller than twenty times the outside diameter of the enclosing sheath.
 - Fiber optic cable will be labeled with both termination locations at each communication vault or access point.
- MaxCell (TM) Fabric Innerduct
 - Fabric innerduct shall be MaxCell (TM) 3" 3 cell fabric, detectable with an 18 gauge solid copper core tracer wire. Standard thread color running along the length of the MaxCell (TM) "pack" shall be Black with each individual cell having its own unique thread stripe for easy identification. *Mfg. Part #MXD3456BK-XXX* (XXX identifies the length of the reel)
 - Contractor must secure MaxCell (TM) at each manhole so that it cannot be pulled back into the conduit during installation or placement of cables.
 - Contractor shall utilize an 1800lb swivel with an outside diameter of .875" to eliminate the possibility of twisting during installation. Any MaxCell (TM) that is found to have twists shall be removed and replaced at the expense of the Contractor. *Mfg. Part #MXCIK11*
 - Provide 4" duct plugs with nine (9) holes consisting of three (3) -1.10", three (3) – 0.90", three (3) – 0.70" holes. Duct plugs shall be placed whenever entering an IDF/BDF/MDF. *Mfg. Part #MXCTP4*
- Fiber Optic Connector Housings

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- Fiber optic connector housings shall be Corning closet connector housings, four rack spaces, holding up to 12 CCH connector panels. *Mfg. Part #CCH-04U*
- All connector housings must be CCH-04U. Connector housings of lesser size or density are not allowed regardless of the number of fiber terminations they are required to support.
- Connector Panels
 - Fiber optic connector panels shall be Corning 12F, LC UPC duplex, Single Mode (OS2), single fiber (250um) Pigtailed Splice Cassettes. *Mfg. Part # CCH-CS12-A9-P00RE*
 - Pigtailed splice cassettes of greater density than 12 fibers are not allowed

Termination of all fiber optic cables must be performed via fusion splicer. Field terminated fiber optic connectors are not acceptable.

ISP FIBER (HORIZONTAL FIBER TO LABS)

Each New and Remodeled lab will have a Corning Fan out Tight –Buffered Cable, Plenum 6 F, 2.0mm Subunits, Single-mode (OS2) part#: 006E68-31331-29 fusion spliced to six AFL Fuse Connect FUSE–LC@SMU-6 SM LC/UPC Connectors. 2.0mm, Blue on each end. The fiber on the lab end will be placed in Corning | SPH-01p Single–Panel Housing, wall mountable, with 1 CCH connector panel. Part#: CCH-CP06-A9. The fiber in the IDF/MDF will be placed in a Corning CCH04U housing with a CCHCP06-a9 for each lab. Each lab housing will have a Class 1M invisible Laser Radiation warning label. Also, Fiber should be put in the storage ring.

ISP FIBER BACKBONE

Provide 24 strand single mode fiber optic cable from the BDF to each IDF. Each end of the fiber optic cable shall be terminated via fusion splicer using 12 LC pigtailed splice cassettes. Splice cassettes shall be housed in four rack space fiber optic connector housings. ISP fiber optic cables shall not share a Fiber Optic Connector Housing with OSP cables. No corrugated innerduct shall be used inside the building or closets.

- ISP Single Mode Fiber Optic Cable
 - Single Mode fiber optic cable shall be Corning 24 F, Single mode (OS2), MIC Tight-Buffered, Plenum, Interlocking Armored Cable. *Mfg. Part #024E88-33131-A3*
 - Contractor shall provide a service loop of at least 20' at each end of the cable.
- Fiber Optic Connector Housings

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- Fiber optic connector housings shall be Corning closet connector housings, four rack spaces, holding up to 12 CCH connector panels. *Mfg. Part #CCH-04U*
- All connector housings must be CCH-04U. Connector housings of lesser size or density are not allowed regardless of the number of fiber terminations they are required to support.
- Connector Panels
 - Single Mode fiber optic connector panels shall be Corning 12F, LC UPC duplex, Single Mode (OS2), single fiber (250um) Pigtailed Splice Cassettes. *Mfg. Part # CCH-CS12-A9-P00RE*
 - Pigtailed splice cassettes of greater density than 12 fibers are not allowed.
 - Termination of all fiber optic cables must be performed via fusion splicer. Field terminated fiber optic connectors are not acceptable.
- Fiber Optic Cable Storage Ring
 - Provide a fiber optic cable storage ring no less than 24" in size to maintain the proper bend radius and prevent any kinking of the fiber optic cable. The storage ring shall be able to hold up to 50' of service coiled fiber.
 - Fiber optic storage ring shall be Black Box *Part #FOSR24* or equal
 - Place the fiber optic storage ring below or above the conduits where the cable enters the closet and secure to the plywood backboard. Service loop shall be placed where it will not interfere with future cable installations.
 - Each Fiber optic cable will be stored on its own storage ring at location of termination.

271500 – COMMUNICATIONS HORIZONTAL CABLING

All new construction projects shall follow Category 6A specifications and standards.

All existing or retrofit projects shall follow Minimum Category 6 to match building existing cable plant in Category and Cable manufacturer and specifications.

Provide a complete (depending on project type) structured cabling solution to match building existing cable plant in Category and Cable manufacturer. Cabling systems shall be from a single manufacturer per the following specifications. All horizontal cabling shall be Plenum rated.

- Copper Cable
 - Horizontal copper cable shall be 4-pair, unshielded twisted pair, and plenum rated cable.
 - Part numbers:
 - Belden – *Mfg. Part #10GX13* (6A) small OD
 - Belden – *Mfg. Part #3600* (6)

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- SYSTIMAX – *Mfg. Part #2091B BL* (6A)
 - SYSTIMAX – *Mfg. Part #2071* (6)
 - Horizontal cable runs shall not exceed 295ft in length.
 - Each workstation outlet shall receive (2) cables.
 - Each wireless access point (WAP) location shall receive (1) cable drop.
- Copper Patch Panels
 - Part numbers:
 - Belden – *Mfg. Part # AX103256* (6A)
 - Belden – *Mfg. Part # AX103255* (6)
 - SYSTIMAX – *Mfg. Part #360-IPR-1100-E-GS6-2U-48* (6A)
 - SYSTIMAX – *Mfg. Part #360-IPR-1100-E-GS3-2U-48* (6)
 - All horizontal copper cables shall terminate on patch panels following T-568B termination configuration.
- Workstation Outlets
 - Part numbers:
 - Belden – *Mfg. Part # AX102282* (6A)
 - Belden – *Mfg. Part # AX101320* (6)
 - SYSTIMAX – *Mfg. Part #MGS600-262* (6A)
 - SYSTIMAX – *Mfg. Part #MGS400-262* (6)
- Faceplates
 - Part numbers:
 - Belden – *Mfg. Part #AX102249*
 - SYSTIMAX – *Mfg. Part # M14L-262*
 - Blank inserts shall be used to fill any unused ports on faceplate. Color shall match faceplate.
- Surface Mount Boxes (SMB's)
 - Part numbers:
 - Belden – *Mfg. Part # AX102652*
 - SYSTIMAX – *Mfg. Part # M102SMB-B-262*
- Copper Patch Cords
 - Part numbers:
 - Belden (small diameter) – *Mfg. Part # cad1106002* (6A, 2')
 - Belden (small diameter) – *Mfg. Part # cad1106007* (6A, 7')
 - Belden – *Mfg. Part #CA21106015* (6A, 15')
 - Belden – *Mfg. Part #CA21106025* (6A, 25')
 - Belden (small diameter) – *Mfg. Part # c6d1106002* (6, 2')
 - Belden (small diameter) – *Mfg. Part # c6d1106007* (6, 7')
 - Belden – *Mfg. Part #C601106015* (6, 15')
 - Belden – *Mfg. Part #C601106025* (6, 25')
 - SYSTIMAX (small diameter)– *Mfg. Part # CO199K2-0ZF002* (6A, 2')
 - SYSTIMAX – *Mfg. Part # CPCSSX2-0ZF007* (6A, 7')
 - SYSTIMAX (small diameter)– *Mfg. Part # CO199K2-0ZF007* (6A, 7')

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- SYSTIMAX – *Mfg. Part # CPCSSX2-0ZF015* (6A, 15')
- SYSTIMAX – *Mfg. Part # CPCSSX2-0ZF025* (6A, 25')
- SYSTIMAX (small diameter)– *Mfg. Part # CO166S2-02F002* (6, 2')
- SYSTIMAX (small diameter)– *Mfg. Part # CO166S2-02F007* (6, 7')
- SYSTIMAX – *Mfg. Part # CPC3312-0ZF015* (6, 15')
- SYSTIMAX – *Mfg. Part # CPC3312-0ZF025* (6, 25')
- Copper patch cords shall be provided in lengths of 7ft Small Diameter High Density at MDF/IDF, 15ft at WAO, or 2ft Small Diameter High Density at WAP location. Unless longer length is needed. Locking Jumpers shall be added for all WAP locations.
- All patch cords shall match the manufacturer of the system installed.

WORK AREA OUTLETS (WAO)

- WAO density:
 - A minimum of two WAO locations shall be installed per work area. For planning purposes, space allocated per work area averages 100-square feet.
 - For building areas where it is difficult to add additional WAO's at a later date (i.e. private office space), a minimum of two separate WAO locations shall be provided in the initial design for that area, and they shall be located to offer maximum flexibility for change within the work area, (i.e. on opposing walls in private office space).
 - A minimum of one WAO shall be installed with two data cables at the Fire Alarm Control Panel (FACP) located in the electrical or mechanical room.
 - A minimum of one WAO shall be installed with data cable for each elevator phone at the Elevator Control Panel.
 - A minimum of one WAO shall be installed with one data cable at the Building Environmental Control Panel.
 - A minimum of one WAO shall be installed with one data cable at the Security NVR/DVR location.
 - WAO locations shall be coordinated with the furniture layout. A power receptacle should be installed near each WAO location (i.e. within 3-feet). WAO locations are typically at the same height as the power receptacles.
 - Open office area interior design, telecommunications distribution planning, and power system distribution planning should be coordinated to avoid conflicting assignments for pathways or WAO locations, installation sequencing problems, and other difficulties.

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272133 – DATA COMMUNICATIONS WIRELESS ACCESS POINTS

WIRELESS NETWORKING

- An appropriate wireless design shall be provided by a UNR Network Wireless Engineer Prior to the design phase of any Facilities Project.
- Contractors shall provide a detailed scope of work for all wireless installations.
- All designs shall provide coverage to all parts of the building at a signal strength of -65dBm or greater on the 5GHz spectrum.
- All Wireless Access Points shall receive 1 Category 6A/6 cable
- The copper cables will be permanently attached in accessible and serviceable interstitial space (above ceiling) on a two port SMB (biscuit). At no time should a support be attached to building infrastructure designed for other purposes, i.e. drop tile wire support, conduits, plenum, electrical conduits/ boxes.
- Contractor shall leave a 25ft slack shall be neatly bundled with Velcro in a service loop above grid in the ceiling where the WAP cables terminates.
- All WAPs shall be installed and secured with an appropriate bracket in an approved orientation and location per approved wireless designs.
- All APs shall be mounted below ceiling.
- For outdoor WAPs, cable from the patch panel will be terminated to interior SMB near penetration point. An outdoor patch cord will be pulled from the interior SMB (biscuit) to the outdoor WAP.
- The penetration point through which the outdoor rated patch cord passes shall be weather sealed and the transition from plenum rated cable to OSP cable need to be in a serviceable location.
- Telecommunications contractor is responsible for the mounting of all WAP's on projects.

270620 – SCHEDULES FOR DATA COMMUNICATIONS

PATCHING

- Contractor shall patch in every cable installed from the patch panel into the network switches using 7' patch cords in any new closets.
- Patch cables will be plugged in from the patch panel to the switch port shown below:

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Patch or Switch	#	#	#	#	#	#	#	#	#	#	#	#
Patch panel port	1	2	3	4	5	6	7	8	9	10	11	12
Switch port	23	21	19	17	15	13	11	9	7	5	3	1
Patch panel port	13	14	15	16	17	18	19	20	21	22	23	24
Switch port	47	45	43	41	39	37	35	33	31	29	27	25
Patch panel port	25	26	27	28	29	30	31	32	33	34	35	36
Switch port	24	22	20	18	16	14	12	10	8	6	4	2
Patch panel port	37	38	39	40	41	42	43	44	45	46	47	48
Switch port	48	46	44	42	40	38	36	34	32	30	28	26

- Cable in patch panel ports 1-12 and 25-36 are to be routed through the left vertical cable management, and cords in ports 13-24 and 37-48 are to be routed through the right vertical management.
- Patch cords are to be bundled together with Velcro in groups of 12 matching the chart in section B.
- All patch cords are to be connected to the switches in the corresponding rack. At no point should patch cords cross from one rack to another.
- If at any point the network switches in a rack have reached max capacity an E-mail is to be sent to netops@unr.edu.
- 15' patch cords are to be handed off to a NetOps employee.
- A CSV or Excel document is to be provided populated with the following columns: IDF room number, rack number, patch panel letter, patch panel port, patch panel label, switch number, and switch ports.

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MDF– Example Layout

RU	RU	RU	RU
45	LEAVE OPEN (1RU)	45	LEAVE OPEN (1RU)
44	Fiber Enclosure 1	44	Cable Management
43	(4x1RU)	43	(2RU)
42	(4x1RU)	42	TELCO (As Needed)
41	(4x1RU)	41	(17x1RU)
40	Cable Management (1RU)	40	(17x1RU)
39	Fiber Enclosure 2	39	(17x1RU)
38	(4x1RU)	38	(17x1RU)
37	(4x1RU)	37	(17x1RU)
36	(4x1RU)	36	(17x1RU)
35	Cable Management (1RU)	35	(17x1RU)
34	Fiber Enclosure 3	34	(17x1RU)
33	(4x1RU)	33	(17x1RU)
32	(4x1RU)	32	(17x1RU)
31	(4x1RU)	31	(17x1RU)
30	Cable Management (1RU)	30	(17x1RU)
29	Fiber Enclosure 4	29	(17x1RU)
28	(4x1RU)	28	(17x1RU)
27	(4x1RU)	27	(17x1RU)
26	(4x1RU)	26	(17x1RU)
25	Cable Management (1RU)	25	Cable Management (1RU)
24	Fiber Enclosure 5	24	Cable Management
23	(4x1RU)	23	(2RU)
22	(4x1RU)	22	Network (As Needed)
21	(4x1RU)	21	(16x1RU)
20	Cable Management (1RU)	20	(16x1RU)
19	Fiber Enclosure 6	19	(16x1RU)
18	(4x1RU)	18	(16x1RU)
17	(4x1RU)	17	(16x1RU)
16	(4x1RU)	16	(16x1RU)
15	Cable Management (1RU)	15	(16x1RU)
14	Fiber Enclosure 7	14	(16x1RU)
13	(4x1RU)	13	(16x1RU)
12	(4x1RU)	12	(16x1RU)
11	(4x1RU)	11	(16x1RU)
10	Fiber Enclosure 8	10	(16x1RU)
9	(4x1RU)	9	(16x1RU)
8	(4x1RU)	8	(16x1RU)
7	(4x1RU)	7	(16x1RU)
6	LEAVE OPEN	6	PDU 1 (1RU)
5	(2RU)	5	PDU 2 (1RU)
4	Cable Management	4	Cable Management
3	(2RU)	3	(2RU)
2	LEAVE OPEN	2	UPS
1	(2RU)	1	(2RU)

Room: no less than 10'x12' for three racks. Add an additional 3' length for subsequent racks.

If racks aggregates multiple floors, each floor will have a separate rack.

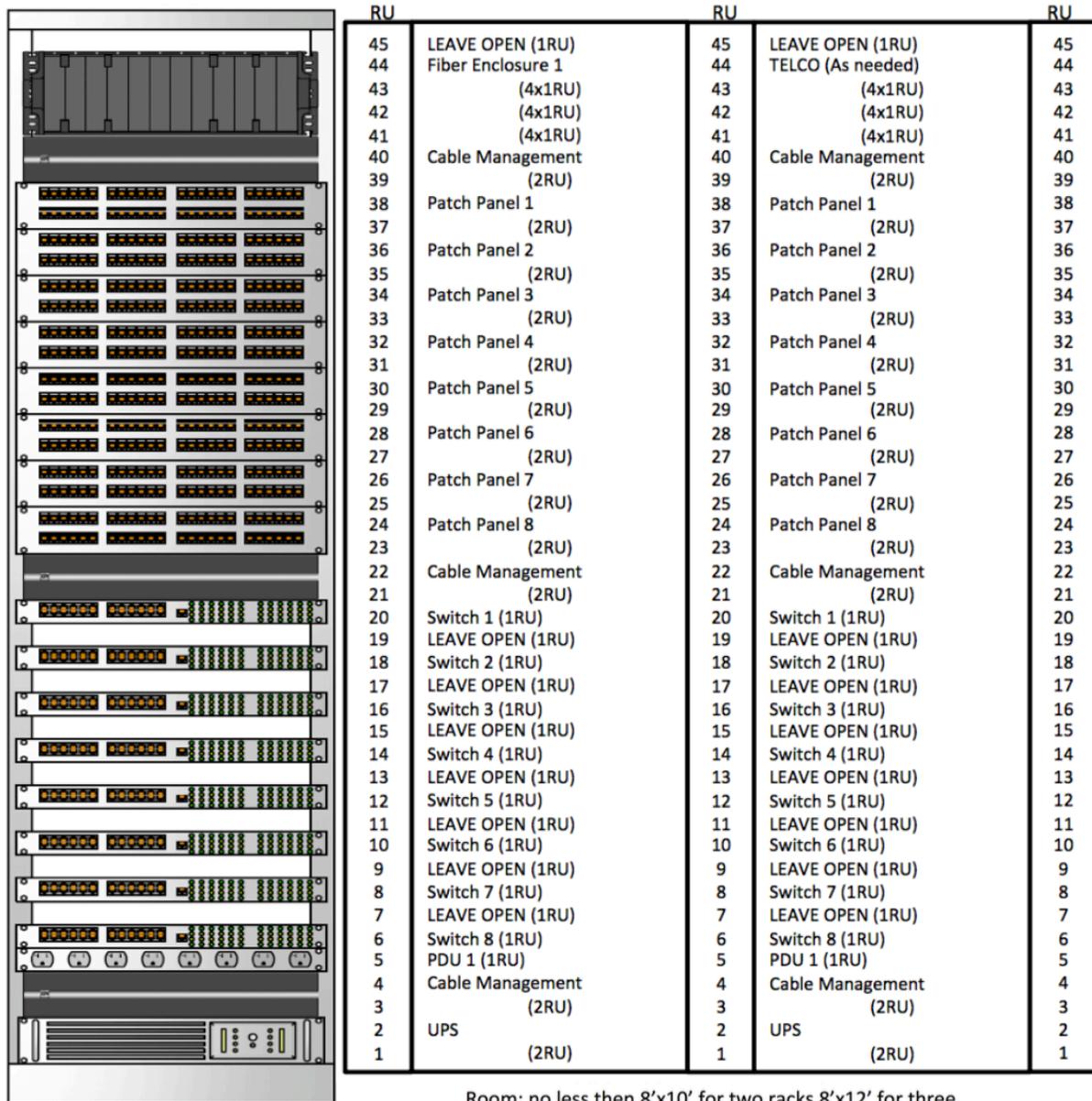
Rack for fiber enclosures will be planned for 6x 4u enclosures, not to exceed 8x of each. If more than 5x enclosures are planned an empty rack needs to be installed for growth.

Racks will be planned for 5x 48 port patch panels and 5x switches, not to exceed 8x of each. If more than 5x each are planned then an empty rack needs to be installed for growth.

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IDF – Example Layout



Room: no less than 8'x10' for two racks 8'x12' for three.
Additional 3' length for subsequent racks.

If IDF aggregates multiple floors each floor will have a separate rack.

Racks will be planned for 5x 48 port patch panels and 5x switches not to exceed 8x of each. If more than 5x each are planned then an empty rack needs to be installed for growth.

DIVISION 28: ELECTRONIC SAFETY AND SECURITY

281643 - PERIMETER SECURITY SYSTEMS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

On new construction, all perimeter doors shall be provided with conduit for future electronic access control devices.

The Project Coordinator, working with the end user, will determine which interior doors are to receive electronic access control devices.

PRODUCT STANDARDS AND MANUFACTURERS

Software and Head-end Hardware

AMAG – Symmetry Enterprise = 8.0.2.

Symmetry – AMAG – SR-DBU, SR – DC2000 Controller.

Symmetry – AMAG – SR – F2FR-B proximity readers.

Altronix – SMP – 10 power supply with open frame transformer (T2428300) for controllers, strikes, and sounders or equivalent Altronix/Command Access product.

Note: AMAG node and associated power supplies shall be tied to a dedicated 120VAC circuit on building emergency power wherever applicable.

Detection Systems DS150i request to exit detector (when needed).

Securiton PB3N exit push buttons (when needed).

Securiton EEB2 emergency exit buttons with 30 second timer single gang (when needed).

All exterior doors monitored/door contacts. Sounder optional.

IDF/MDF/BDF (building distribution, IT, perimeter security, telecom) read in/read out

Exterior doors slated/required read in (read out optional) for Audit after hours.

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Control Devices

Command access PD 25/26 series electronic crash bars.

Von Duprin KR4954 key removable mullions.

Command Access – VLP M-kit & VLP–UL-M kit for existing Von Duprin 33/35/98/99 bars.

Command Access power transfer models CDL, DL-20.

Hes electric strike product or Von Duprin 6211 model where applicable.

LCN 4041 Tri-Arm closers.

Request Drawing Details

- Perimeter Control Exterior Entrance, Single Door Latching (281300-1)
- Perimeter Control Exterior Entrance, Single Door Non-Latching (281300-2)
- Perimeter Control Exterior Entrance, Double Doors Latching (281300-3)
- Perimeter Control Exterior Entrance, Double Doors Non-Latching (281300-4)
- Perimeter Control Exterior Entrance, Automatic Slider Latching (281300-5)
- Perimeter Control Exterior Entrance, Single Door No Reader Latching (281300-6)
- Perimeter Control Exterior Entrance, Single Door Exit Only (281300-7)
- Perimeter Control Exterior Entrance, Single Door Mechanical Room (281300-8)
- Perimeter Control Interior, Single Door (281300-9)
- Perimeter Control Interior, Double Doors (281300-10)
- Perimeter Security Panel Board Layout (281300-11)

282300 - VIDEO SURVEILLANCE

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Camera coverage shall be provided for all exterior doors where applicable.

Power Requirements

- Power supplies shall have a single dedicated 20 amp 110v AC circuit tied to building emergency power.
- Each DVR shall have an 110v AC circuit tied to building emergency power.

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All wiring shall be installed in conduit where code dictates.

Camera locations shall be approved by Director of Police Services. Cameras shall be placed within the building interior whenever possible.

PRODUCT STANDARDS AND MANUFACTURERS

CCTV Requirements

BOSCH VDN29520 650T 2.8-10.5MM IND DOM 12/24

BOSCH VDN27620 650T 2.8-10.5MM IND DOM 12/24

BOSCH VDN244V32 OTDR/VANDOM/DN/TRU-WDR/720TVL

BOSCH VDI244V32 DOME OD D/N/WDR/IR/960H/NTSC

UTC/G.E. Interlogix TVR 4408H2 or 4416H2 with 2TB storage minimum.

MidAtlantic VLBX and VLBX-WM metal locking enclosure for above recorder.

283111 - FIRE DETECTION AND ALARM

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

New buildings shall be equipped with a complete fire alarm system per NFPA 72 guidelines and all applicable NRS/NAC/IFC/IBC standards. System shall include complete smoke detection system throughout. System shall be connected to campus Onyxworks Notifier fire alarm network.

All initiating and indicating devices shall be tested for both “alarm” and “trouble” conditions in a test conducted by the installer and witnessed by the Consultant responsible for the design, the Board’s representative, and the local authority where required.

The fire alarm system shall be designed with a “Notifier” intelligent detection system with a field programmable fire alarm control panel. The fire alarm control panel top of cabinet shall be installed no higher than 67” AFF.

All post indicator valves shall be electronically monitored.

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Campus Design & Construction Standards

All intelligent fire alarm control panel fire alarm initiating devices shall be labeled with address and loop number on the exterior of the device. All intelligent fire alarm control panel addressable power supplies and amplifiers shall be labeled in programming as to their location within the building by room number.

All intelligent fire alarm control panel notification devices shall be labeled as to power supply/amplifier they are connected to as well as output circuit they are connected to within the power supply/amplifier on the exterior of the device.

All AC power circuit breaker means shall be labeled (per NEC 760.10-2005 edition), and all cabinets containing AC power connections shall be labeled as to the location of their associated circuit breaker(s). All FACP new installations shall be connected to emergency backup power circuits whenever available.

All intelligent fire alarm control panels' audio/visual circuits shall be programmed with zoning for the ability to disable by floor as well as a single and separate zone (excluding zone 0) to disable all building audio/visual devices.

All intelligent fire alarm control panels' fire smoke dampers shall be programmed with zoning so that fire smoke dampers can be disabled by floor as well as by single and separate zone to disable all fire smoke dampers.

All intelligent fire alarm control panels shall be programmed with flooring zones programmed in sequential order starting with lowest floor.

All intelligent fire alarm control panels shall be programmed for the ability to disable all water flow alarm initiating devices within a single zone.

All intelligent fire alarm control panel duct detection devices and/or their monitor modules shall be labeled in programming as to their location by room and or corridor number. Upon acceptance of the fire alarm system by the authority having jurisdiction, a copy of the fire alarm panel program shall be either left at the control panel or given to the UNR fire/life safety department.

UNR fire/life safety department shall reserve the right to preview and modify all control panels point descriptions and or labeling prior to final acceptance by the AHJ.

All fire alarm systems utilizing duct detection devices shall include remote test switch per each detector located at a height no higher than 5' AFF near the detector.

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Campus Design & Construction Standards

All documentation and plans boxes shall be located within 5' of the main FACP at a height not to exceed 5' AFF. Plans shall include an accurate representation of device layout within building such as original as-built or reasonable facsimile thereof.

PRODUCT STANDARDS AND MANUFACTURERS

Fire detection and alarm devices shall be Notifier by Honeywell.

[Request Drawing Details](#)

- Typical Blue Light Phone Installation (280000-1)

End of Division 28

ELECTRONIC SAFETY AND SECURITY

DIVISION 32: EXTERIOR IMPROVEMENTS

321216 - ASPHALT PAVING AND PAVEMENT MARKING

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

The contractor or Engineer shall follow the latest Standard specifications for public works construction (1) (Orange book) unless otherwise specified in this manual of practice.

New Construction, Reconstruction, or Overlay of Asphalt Pavement

A new construction, reconstruction or overlay of asphalt pavement, could be either a parking lot or a trafficked road, shall use Type 3 HMA mix with PG64-28NV or PG64-28NVTR asphalt binder and 15 percent or less RAP by total weight of the mix per Orange book Section 320.01.02.01.01.01. The HMA shall be designed in accordance with Section 337.04. Unless otherwise specified on the plans: for roadways 50 blow per side, 4% design air void requirements of Table 337.04.01-1 apply and for parking lots 50 blow per side, 3% design air void requirements of Table 337.04.01-1 apply. Aggregate shall be Type 3 per Section 200.02.03 Table 200.02.03-I. Asphalt binder shall be PG64-28NV or PG64-28NVTR per Section 201.02 Tables 201.02-IV or 201.02-VI. The Type 3 aggregate for the HMA shall be treated with 1.5% hydrated lime per Section 320.03.06.01.02.03.01 (Marination Method) or 320.03.06.01.02.03.02 (Dry Lime). The mix design shall demonstrate that the HMA mix can attain a minimum dry tensile strength of at least 65 PSI at 77°F and a tensile strength ratio of at least 70 percent determined in accordance with AASHTO T283. The Engineer may specify other Orange Book HMA for limited quantity paving under unique conditions (i.e. paving to correct grade deficiencies, thin (≤ 1.5 ") HMA overlays, paved areas that will not be trafficked).

Patching

Patching is a process in which the material in a highly-distressed area is either removed and replaced or additional material is placed to cover the distressed area. Maximum performance is achieved when the boundaries of the distressed area are appropriately marked and cut, the failed material is removed, the remaining (underlying) material is re-compacted, the excavated area is properly prepared, and new material is added and compacted to a level similar to that for the existing surrounding pavement (2).

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Permanent patching shall use the Type 3 hot mix asphalt (HMA) with PG 64-22 asphalt binder with 15 percent or less of recycled asphalt pavement (RAP) by total weight of the mix according to the Orange book section 337.04.01. The following steps describe the permanent patching process:

- Mark the boundaries of the distressed area, encompassing a slightly larger area than that affected by the distress. The repair boundaries should be as straight and as rectangular as possible.
- Cut the boundaries of the patch square using either a diamond saw or pneumatic hammer with a spade bit. In the case of the latter, care should be taken not to damage the HMA surface layer in the sound pavement (Orange book section 303.03.05.01.02).
- Square up the sides of the cut area until the edges are within sound pavement. This step is usually very simple if the boundaries of the repair area were cut with a diamond saw. The depth of the patch is to be 50% thicker than the thickness of the failed layer.
- Remove water and debris from the cut area. Depending on the size of the area, this may be accomplished manually with a pick and shovel or with various combinations of power equipment, i.e., a pneumatic hammer and shovel, backhoe, or front-end loader.
- Apply a tack coat of asphalt emulsion to the sides and bottom of the excavated area at a rate of approximately 0.2 gal/yd² (1 liter/m²) using a slow or rapid setting emulsion. The tack coat shall be either be sprayed or brushed on the edges of the repair, **never poured**.
- Place the patch material in the excavated area. If the patch is placed manually, use a shovel (not a rake) to place the HMA material while taking care to avoid segregation. The excavated area shall be overfilled by 20 to 25 percent of its depth to provide adequate material for compaction.
- Compact the HMA material with a hand device or a small vibratory roller. It is preferable to use compaction equipment whose surface is smaller than the size of the excavated area. To allow for additional compaction by traffic and to prevent standing water over the patch surface, the finished patch should have a 0.1 to 0.2 in (3 to 6 mm) crown.

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Temporary patching for cracks wider than 2 inches

Shall use the patching material described under the permanent patching section. If the weather conditions are too poor to obtain/place such hot mix asphalt mixture, special patching mixtures or cold mix asphalt as specified in the standard specifications for road and bridge construction (3) (Silver book) section 404.02.02 shall be allowed. The “throw and roll” method may not be employed for temporary patches. The following steps describe the temporary patching for cracks wider than 2 inches:

- Smooth the crack edges and remove any extraneous material, vegetation and water from the cracks.
- Place the patching material into the cracks.
- Compact the mix using a vibratory compactor.
- The finished patch should have 1/8 to 1/4 in (3 to 6 mm) of crown to help avoid water ponding.

Emergency patching

Shall use the special patching mixtures or cold mix asphalt as specified in the standard specifications for road and bridge construction (3) (Silver book) section 404.02.02. The “throw and roll” method is often used for emergency patches. This is only appropriate when weather conditions are too poor for a permanent patch to be placed or the pavement is due to be rehabilitated soon. The following steps describe the emergency method:

- Patching material is placed into the hole, with or without cleaning and/or drying of the hole.
- The material is compacted using the maintenance truck tires.
- The finished patch should have 1/8 to 1/4 in (3 to 6 mm) of crown to help avoid water ponding.

Slurry Seals

Mix Design

Mix Design shall be completed by Contractor in AASHTO Accredited Lab

Emulsion Certificate per the requirement of the Orange Book

University of Nevada, Reno

Campus Design & Construction Standards

Aggregates

- Gradation meeting Type II specs
- Properties meeting specs of the Orange Book/ISSA A105 Criteria

Mix Design properties meet the Orange Book/ISSA A105 Criteria

Application Rate meet the Orange Book/ISSA A105 Criteria

Quality Assurance

Obtain Aggregate Sample from the Slurry Machine

- Check for gradation
- Check for properties

Check Equipment calibration records

Verify mix composition through materials quantities

Verify application rate through materials quantities

Use tarp to measure application rate:

- Measure weight of 1 yd² tarp
- Place tarp under the slurry machine
- Measure weight of tarp loaded with slurry
- Determine application rate as the difference of c-b in lb/yd²

Allow Tolerances: Finished surfaces shall be true to required elevations within ¼ inch in 10-feet with no evidence of cracking, uneven settlement, improper drainage, depressions, birdbaths, or junctions with adjoining surfaces. Flood surfaces as instructed to verify drainage characteristics.

Protect concrete in place, adjacent structure, and surfaces from injury, damage, staining, marking, or discoloration from paving and surfacing work.

Base: Type 2; class “B”, aggregate, crusher-run, ¾ inch maximum size.

Prime coat: Liquid asphalt, type MC

Seal Coat: Fog seal consisting of SSI asphaltic emulsion. Immediately remove spilled and splattered materials from adjacent surfaces

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Traffic Paint

White: Fuller O'Brien or equal

Blue: Glidden or equal

Follow manufacturer's printed instructions and details shown.

When seal coat is dry, air temperature is over 50 degrees F and weather conditions are favorable, but not sooner than 24 hours after application of fog seal, paint symbols, stripes and arrows to dimensions and alignment in accordance with manufacturer's recommendations.

Parking Lot Design

Drive Aisles

Parking lot drive aisles shall be fourteen (14) feet wide for one-way traffic, twenty-four (24) feet wide for two-way traffic, a minimum of twenty (20) feet for designated emergency vehicle access routes, or for one-way traffic with angular parking, as designated in Table 32.1.

Parking Stalls

All parking spaces shall consist of a rectangular area not less than nine (9) feet wide by eighteen (18) feet in length except that parallel parking stalls shall be ten (10) feet by twenty (20) feet or angular parking stalls as designated in Figure 32.1 and Table 32.1.

Campus Design & Construction Standards

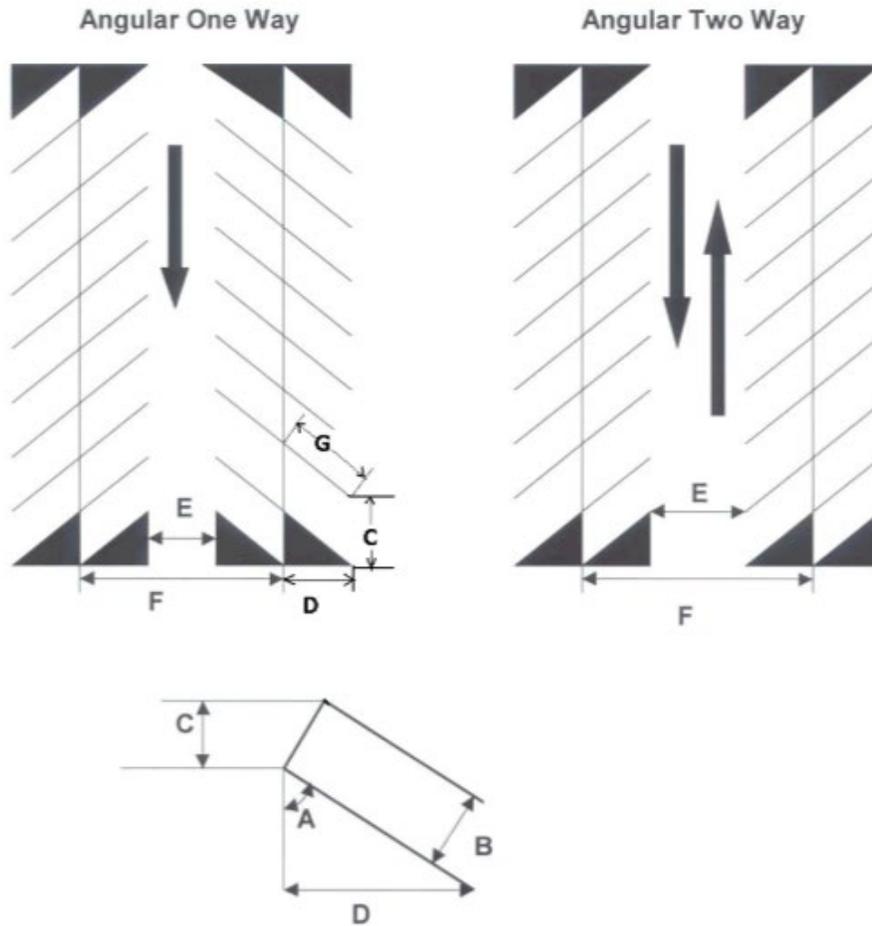


FIGURE 32.1 ANGULAR PARKING DESIGNS

Angle	Dimensions				One Way Traffic		Two Way Traffic	
	Stall Width (ft)	Curb Length (ft)	Stall Depth (ft)	Stripe Length (ft)	Aisle Width (ft)	Section Width (ft)	Aisle Width (ft)	Section Width (ft)
A	B	C	D	G	E	F	E	F
30°	9	18	16.4	32.7	14	46.8	24	56.8
45°	9	12.7	18.7	26.5	14	51.4	24	61.4
60°	9	10.4	19.8	22.9	16	55.6	24	63.6
90°	9	9	18	18	22	58	24	60

TABLE 32.1 ANGULAR PARKING MINIMUM STANDARDS

Campus Design & Construction Standards

Wheel Stops

Prefabricated concrete parking barriers, where used, shall be a minimum of six (6) inches wide, six (6) inches tall, and 6 feet long (See Figure 9.12.1). Basis of design is Jensen Precast Model S-72. Prefab barriers must be firmly and permanently anchored a minimum of twelve (12) inches below the pavement with galvanized anchor pins (See Figure 32.2). When wheel stops are used in angular parking stalls, they shall be set parallel to the curb at the head of the parking stall which will allow for efficient snow plowing and street sweeping operations.

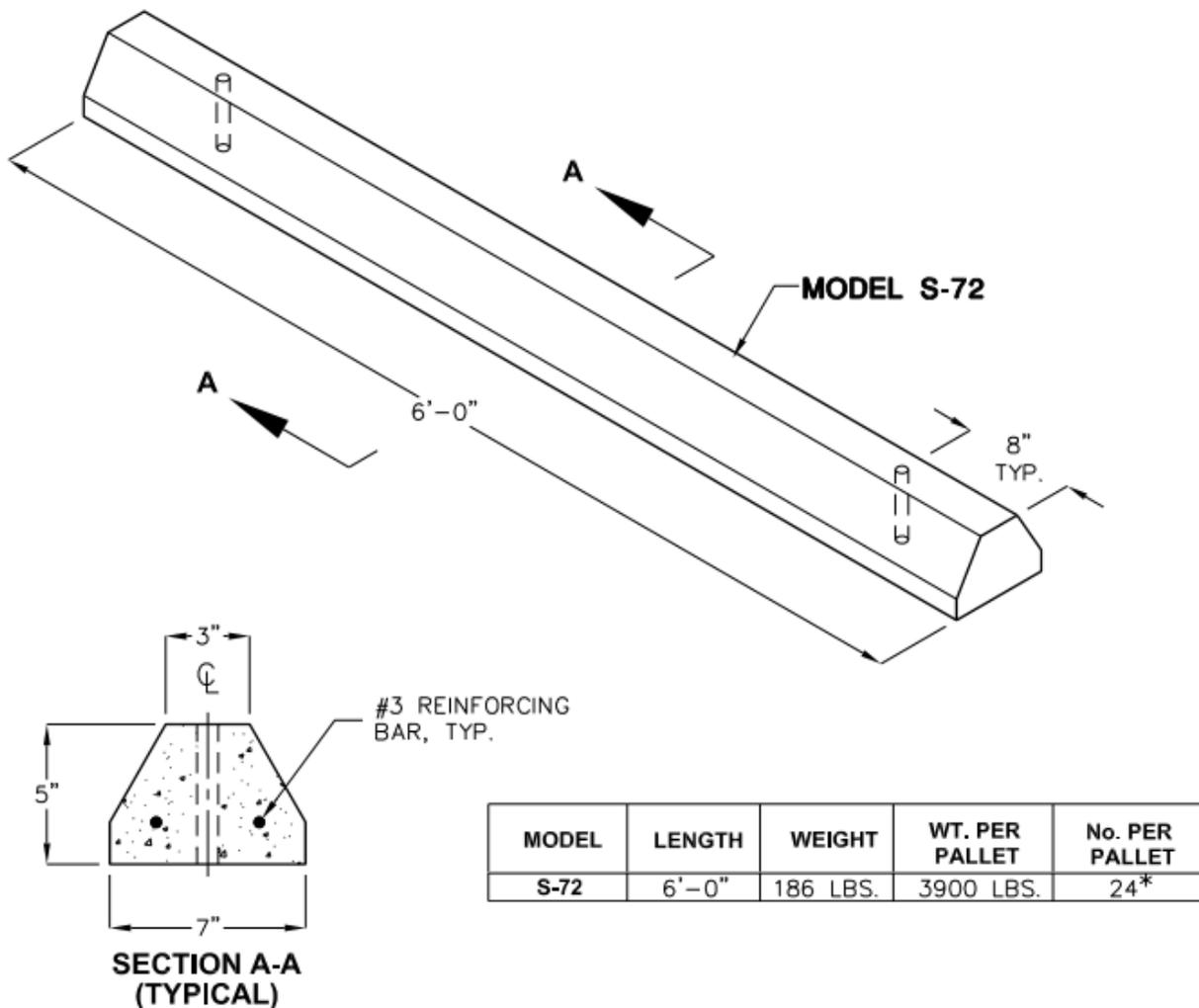


FIGURE 32.2 PRE-CAST CONCRETE PARKING BARRIER

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Campus Design & Construction Standards

EXTERIOR STAIR AND HANDRAILS

- Handrails are required on each side of all concrete steps
- Handrails shall be painted bronze to match the medium bronze windows and door frames
- Any coring into existing structures require prior approval from Facilities Services
- Spacing and locations of handrails and brackets are to be indicated on submittals
- Concrete is to be rated at 4000 pounds per square inch with fiber reinforcement
- Clear space between handrail and wall shall be 1 ½"

[Request Drawing Details](#)

- Typical Exterior Stairs and Handrail (055213-2)
- Typical Handrail 055213-1)

321313 - CONCRETE PAVING - SIDEWALKS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Base material for walkways should be a minimum of six inches using a ¾" minimum aggregate base type 2 class B. Soil subgrade shall be compacted to 95% before base material is installed. The aggregate base is to be installed and compacted. A geotextile fabric is to be installed between the subgrade and aggregate base material, per the manufacture specs.

Concrete paver projects shall have a minimum of six inches of base material on compacted subgrade soil. Soil subgrade is to be compacted before base material is installed. The aggregate base is to be installed and compacted. A geotextile fabric is to be installed between the subgrade and aggregate base material, per the manufacture specs.

Geotextile fabric shall perform the three primary functions of a geotextile: Separation (separating the native subgrade from an aggregate layer); reinforcement (reinforcing an area by distributing weight over a wider area); and filtration (retaining soil while allowing the passage of water).

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Campus Design & Construction Standards

See Site Detail Drawings for Typical Sidewalk

[Typical Thickened Edge Sidewalk Detail \(321313-1\)](#)

PRODUCT STANDARDS AND MANUFACTURERS

Approved Manufacturer: Terra Tex Woven Geotextiles

LANDSCAPING GENERAL REQUIREMENTS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Existing trees shall be preserved where possible.

When trees are removed for construction, a replacement equivalent will be compensated. For each 6" caliper of tree trunk a replacement tree caliper of 2" is required. For example: if the tree removed measures 18" caliper then 3 replacement trees measuring 2" caliper would be compensated. Anything under 6" will be 1 for 1. These replacement trees may either be planted on site as part of the new landscape or anywhere else on campus after consulting with the Assistant Director for Grounds Services.

Tree staking shall consist of two t-posts with safety caps, nylon straps with eyelets, guywire, strap around and above the bottom branches. Tree staking method to be reviewed with owner prior to installation. See detail drawing 329343-1 for standard design details.

Contractor shall submit landscape protection and watering plan, and schedule to the University Project Coordinator.

Landscape design shall minimize water use and maintenance.

Landscape area shall utilize rock for ground cover in planter beds. Decomposed Granite (DG) is not an acceptable ground cover. With prior approval, bark mulch may be acceptable in some instances. Review all ground cover selections with the Project Manager and the Assistant Director of Grounds prior to installation.

Non-invasive and water conserving plant materials shall be used to the greatest extent possible; native or non-native. Any exceptions shall be approved by the University Project Coordinator.

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Campus Design & Construction Standards

NOTE: The University Campus is a designated arboretum; which, promotes plant and tree diversity. Not all native plants are drought tolerant and most plants on campus are not native. Consulting with the arboretum board and the grounds manager is encouraged.

Poisonous and/or invasive plant materials shall not be planted near facilities where children congregate for school, near water bodies, or near eating/vending establishments.

Grading, dust control, weed control, curbs, gutters, streets, off-street parking and sidewalks shall conform to local ordinances and local design and site construction standards.

Site development shall give full consideration to established flood plains, and existing easements and right-of-way's.

Site lighting shall be restricted to that required for safety and function.

Traffic control, pavement markings, and exterior signage shall comply with the guidelines of the Manual on Uniform Traffic Control Devices.

The plant materials identified in Table 32-1 below have been classified as noxious or poisonous and shall not be used on University projects:

“With regards to invasive plants, all species listed under the Nevada Revised Statute 555 (NRS 555) as a “Noxious Weed” will be notated, within the larger table, as such. A noxious weed is a plant that has been designated by the state as a “species of plant which is, or is likely to be, detrimental or destructive and difficult to control or eradicate” (NRS 555.05).”

“Noxious Weed List (NRS 555) Category A Weeds are generally not found or that are limited in distribution throughout the State. Such weeds are subject to: (a) Active exclusion from the State and active eradication wherever found; (b) Active eradication from the premises of a dealer of nursery stock.”

“Category B Weeds that are generally established in scattered populations in some counties of the State. Such weeds are subject to: (a) active exclusion where possible; (b) active eradication from the premises of a dealer of nursery stock.

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Campus Design & Construction Standards

Category C Weeds are weeds that are generally established and generally widespread in many counties of the State. Such weeds are subject to active eradication from the premises of a dealer of nursery stock.

Table 32-1 Nevada Department of Wildlife Noxious/Invasive Plant List

Common Name	Scientific Name	Status (E=Exotic; I=Invasive; N=Noxious)	NRS 555
			Noxious Weed List Category (A,B, or C)
cheatgrass	Bromus tectorum	E,I	
brome, smooth	Bromus inermis	I	
didymo	Didymosphenia geminata	I	
elodea, Brazilian	Egeria densa	E,I	
flixweed	Descurainia sophia	I	
halogeton	Halogeton glomeratus	E,I	
medusahead	Taeniatherum caput-medusae	E,I,N	B
mustard, sahara or african	Brassica tournefortii	E,I,N	B
mustard, tansy	Descurainia spp.	E,I	
olive, Russian	Elaeagnus angustifolius	E,I	
phragmites	Phragmites australis	I	
pondweed, curly-leaf	Potamogeton crispus	E,I	

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Campus Design & Construction Standards

redstem filaree	Erodium cicutarium	I	
russian knapweed	Rhaponticum repens	I	
saltcedar	Tamarix ramosissima	E,I,N	C
shepherd's purse	Capsella bursa-pastoris	I	
thistle, Canada	Cirsium arvense	E,I,N	C
thistle, Bull	Cirsium vulgare	I	
thistle, Musk	Carduus nutans	E,I,N	B
thistle, Russian	Salsola tragus	E,I	
thistle, Scotch	Onopordum acanthium	E,I,N	B
toad-flax	Linaria spp.	E,I,N	A
whitetop, tall (perennial pepperweed)	Lepidium latifolium	E,I,N	C
whitetop, (hoary cress)	Lepidium draba	I, N	C
yarrow, common	Achillea millefolium	I	
yellow sweet-clover	Melilotus officinalis	I	

329300 - TREES & SHRUBS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

No trees will be planted smaller than 1.5" caliper.

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No shrubs smaller than 5 gallons will be planted without approval from the University Project Coordinator.

All plant material shall meet the current industrial standards adopted by the American Association of Nurseryman ANSI Z60 Standards and NRS 555.

All plant material shall be inspected by Owner at the nursery, if possible, before delivery to campus and installation.

Contractor shall maintain all plant material in a healthy condition until final acceptance by Owner.

Contractor shall be responsible for programming the controller and irrigating all plant material until final acceptance by Owner including valve maintenance, pipe repair, and head adjustment.

The owner reserves the right to adjust the plant plan prior to installation.

Excavate tree holes 3 to 5 times as wide as root ball diameter and deep enough to allow placing the root ball in the same relation to finished grade that it has in the container or burlap ball. Hole shall be shaped like a bowl, narrow at the base and wide at the top (not shaped like a cylinder). Allow top of root ball and bottom of root flare to extend 1" to 2" above grade in native soil; plant at grade for prepared soil 18" deep. Gradually mound soil up to top of root ball and place earthen ring around edge of root ball. Add mulch 2" to 3" on ring, but only 1 inch on top of root ball. Never pile mulch up around trunk of tree. See detail drawing 329343-1 for standard design details. Contractor will follow the ANSI A300 (Part 6) Planting and Transplanting guidelines or those approved by the Owner for planting and transplanting. UNR specifications shall prevail.

Rock shall be utilized in all non-turf areas. Rock areas shall include a landscape fabric with irrigation drip placed on top.

Cornell Structural Soil Mix shall be utilized under all hard surfaces where trees are to be planted in tree wells surrounded by concrete, pavers, or asphalt. Go to [Cornell Structural Soil Mix](#) and type "Outreach>Structural Soil" in the Search Box at the top.

Tree ball and burlap root ball diameter shall be 12" for every 1" of trunk diameter. Follow guidelines established by the American Association of Nurseryman ANSI Z60 Standards and NRS 555.

[Request Drawing Details](#)

University of Nevada, Reno

Campus Design & Construction Standards

- Tree Detail 329343-1

Should there be a discrepancy between the American Association of Nurserymen Standards and University Standards, University standards shall prevail.

The contractor will notify the owners Facilities Maintenance Grounds Services representative for inspections and approval of plant placement before the planting of all trees, shrubs, & turf.

Plants with girdling roots will not be accepted and will subject the entire delivery to rejection.

Trees that have been grown tied directly to stakes will not be accepted.

Trees and shrubs stored on site shall have their containers or root balls protected from direct sun light by contractor. For balled and burlap (B & B) trees, heel in and cover with mulch up to top of root ball. Group trees and strap them together to prevent wind from blowing them over.

Trees and shrubs stored on site shall be watered frequently to keep uniform moisture, daily if necessary. Adjust per climatic conditions.

Install plants at the appropriate time of year. Optimal times are fall starting October and spring starting in March. Avoid planting when ground is frozen.

Install plant material plumb and in the center of pit slightly above adjacent grade.

Do not prune any live plant material without authorization from owner's representative. Deadwood may be removed anytime but damaged/broken branches must be removed every time from trees and shrubs. Remove all labels and tags.

All plant substitutions shall be submitted to owner for approval before award of contract.

Container plants with densely swirling rigid roots inside the container surface will not be accepted.

The contractor will follow the ANSI A300 (Part 5) Management of Trees and Shrubs during Site Planning, Site Development, and Construction guidelines during construction. Reference the International Society of Arboriculture publication, *Managing Trees During Construction*, for best management practices. Tree barricades of either construction fence with t-posts or chain link fence will be used to protect the root zone of trees during construction. Fencing shall be sturdy and highly visible. A tree protection

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plan must be submitted before demolition and construction begins. Permission to excavate or work inside this barrier must have approval from the Facilities Maintenance Grounds Services representative before commencing. Any unapproved entrance or stockpiling of construction tools, equipment and materials including personal items by workers will not be accepted and could result in fines. Any damages to trees (roots, trunk or branches) either intentionally or not will be the responsibility of the contractors competent, landscape crew chief to repair or replace if necessary. Intentional damages will be subject to fines. Chemicals (liquids, powders or solids) such as gas, oil, herbicides, paint products, concrete and asphalt shall not be stored within the barricade at any time.

Construction documents shall be on site at all times until final acceptance.

A competent supervisor shall be on site at all times until completion of landscape installation.

There shall be a pre-construction meeting with owner's representative before construction begins.

All trees planted in areas other than lawn which use drip irrigation emitters shall receive the appropriate gallons per hour (GPH) water requirement for that species. Specifications for separate zones for trees in any area, including the use of bubblers, must have good justification and approval from owner. Trees in lawns which include overhead irrigation do not need an additional, separate zone such as bubblers unless special circumstances require it.

Product Standards and Manufacturers

After completion of final acceptance all plant material shall be guaranteed for a period of one year and each replacement plant shall also be guaranteed for one year until plant establishment is achieved for one year. All plants that show signs of failure to grow at any time during the life of the contract, including the maintenance period, or those so injured or damaged as to render them unsuitable for the purpose intended, shall be immediately replaced in kind at the expense of the contractor.

329115 - SOIL PREPARATION

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

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All raised planters and garden retaining walls shall be backfilled with 2' maximum depth double double mix or equal to Oxborrow Landscape materials located at 2A Sunshine Lane Reno Nevada, 89502. Phone 324-2772. See item 2:5

All plant holes shall be backfilled with existing soil with rock and debris larger than ½" screened and removed from site. Backfill plant hole soil shall be mixed per soil report.

All base material and materials associated with concrete and asphalt pours (nails, boards, leftover pieces, etc.) shall be removed from plant holes, from the soil, and in the lawns in the surrounding area.

Existing and imported soil to receive trees, turf, and shrubs shall be tested. A complete soil analysis with recommendations shall be required for all areas receiving trees, shrubs and turf. The soil report recommendations shall be incorporated into all soils utilized for turf and backfill installations.

Soil analysis may be performed by:

Soil & Plant Laboratory

352 Mathew Street

Santa Clara California, 95050

408-727-0330

Cornell Structural soil mix shall be installed under all hard surfaces where trees are to be planted within the hard surface area.

Product Standards and Manufacturers

Soil preparation and amending around trees (new and existing) shall be done in accordance with the ANSI A300 Soil Management Guidelines (Section A: Modification Section guidelines.)

Care of tree roots on existing trees shall follow the guidelines established in the ANSI A300 (Part 8) Root Management Standard during construction.

328400 - IRRIGATION

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SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Drip irrigation shall be installed above weed barrier under mulches. Staples for holding down drip lines should be spaced every 6'-10'.

All low voltage valve irrigation wire shall be installed under irrigation water lines and "pigtailed" at the valves and timer.

Sprinkler heads must be on three-way swing joints.

All lateral lines must be buried no less than 18".

All main lines must be buried no less than 24".

All glued fittings must be pressure tested before backfill.

All pvc pipe must be covered with 2" of sand then native backfill free of rock and debris.

Irrigation sleeves shall be installed under all hardscape surfaces. All irrigation sleeves will be 2" minimum larger than outside diameter of irrigation pipe, or a minimum of twice as large as irrigation pipe, to be inserted schedule 80. Extend sleeve 6" beyond pavement on both sides and mark. Mark all sleeves with a stainless steel or brass bolt sunken in concrete atop the walk or curb.

Trees, shrubs, turf and perennials shall be on separate zones, exceptions allowed only with Owner's approval.

Turf areas are required to have a separate zone for each North and South end of the building and timed appropriately through the clock.

The irrigation clock box shall be locked with a padlock provided by contractor. One key shall be provided to the University for emergency use only until the work is accepted and turned over to the University.

Install ball shut off valve to supply side of each sprinkler and drip zone valve to fit in the same valve box.

Valves shall be numbered with a tag corresponding with the zone number on the clock.

Back flow devices shall be installed by contractor with Owner approved custom made blue mesh cage or lockable ornamental rock on a concrete base and kept locked during

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construction with one key provided to the University for emergencies. Details and drawings of proposed cage or faux rock cover to be reviewed and approved by Owner.

Areas using stone, gravel, or rip rap will need to have samples available and a description of the product. A final inspection and approval from the Owner will be required.

All new irrigation components joined to existing irrigation systems must perform with equal or greater efficiency than prior to construction. Same size parts, pipes and components must match between the two.

Add four additional wires for valves and controllers and tie them off appropriately for storage to prevent corrosion or weakening due to climatic conditions. Do not ground or connect to any metal surfaces; only appropriate slots.

The master valve shall be specified and installed to facilitate an open system, not closed. This allows the lines to stay charged and provide available water to quick coupler connections on the main line.

Once the irrigation is completely installed, the irrigation clock/timer, valves, shut-off valves, quick connectors, and irrigation heads should be marked in GIS and uploaded to the Grounds Services and Facilities Services utilities map.

PRODUCT STANDARDS AND MANUFACTURERS

All new irrigation systems shall have a Toro brass master valve 220-26-0X (or equivalent), a Toro TFS-X00 Series flow sensor, and a Toro Sentinel SCNXXWS3 controller with faceplate and antenna. One handheld remote controller shall be provided at owner's request. All controllers and handhelds shall be compatible with the Toro Sentinel central controller located on campus.

All irrigation heads shall be Rainbird 5000 and 1800 series, exceptions allowed only with Owner's approval.

All lateral lines and fittings must be schedule 40 pvc.

All irrigation parts and components will be warrantied for one year. All irrigation components including controllers, wires, valves, lateral and main lines, irrigation heads, drip lines and emitters that are not performing effectively and/or have damages requiring repair will be the responsibility of the contractor to replace and repair.

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329200 - TURF AND GRASSES

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

All new sod shall be monitored with a soil profile tube by contractor to maintain proper soil moisture and prevent oversaturation of the sod and sub-soil

Contractor shall monitor irrigation prior to and during rain events and adjust irrigation to prevent over saturation of sod and sub-soil

Contractor shall apply irrigation to new sod at a rate and frequency to provide adequate water for optimum growth and minimum runoff

Contractor shall maintain sprinkler heads in proper adjustment to insure matched precipitation for consistent soil moisture monitoring throughout the sod area

All sod shall be laid with big rolls measuring 2.5' X 80' with exceptions allowed only with owner's approval

Sod shall be 80% bluegrass and 20% rye grass

Sod shall be $\frac{3}{4}$ " below any adjacent hard surface. (i.e. sidewalk, mowing strip, etc.)

Sod shall be cut to a uniform thickness of $\frac{3}{4}$ " excluding top growth and thatch

Each individual roll shall be strong enough to support its own weight when lifted by one end and be free of netting

Sod shall be laid at right angles to slopes and flow of water and lay tightly together with no overlap

Sod rows shall be staggered so that joints do not align and add topsoil in any open joints and cracks.

All turf areas shall be ripped to a depth of 1' irrigated with 2" water to promote settling, re-grade, till recommended soil amendments to a depth of 6". Remove rock and debris larger than $\frac{1}{2}$ " within the 6" stratum. Apply 1" of water, re-grade, roll, & final grade and lay sod on moist soil. Add additional humus to insure a minimum 20% O.M. if soil recommendations fail to meet our 20% minimum standard. 4 yards per 1,000 sq. ft. humus shall achieve the 20% O.M. If the soil report calls for more than 4 yards O.M. per 1,000 sq. ft. the soil report shall prevail.

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Sod shall be delivered and installed the same day, without netting, and watered immediately (per climatic conditions).

End of Division 32

EXTERIOR IMPROVEMENTS



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DIVISION 33: UTILITIES

331100 – DOMESTIC AND FIRE WATER UTILITIES

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Pipe four inches and larger: AWWA C900 PVC, Class 150, bell and spigot or AWWA C151 ductile iron pipe, cement mortar lined, Class 50. Less than 4 inch diameter, type K or L copper

Fittings for 4 inch to 12 inch ductile iron pipe shall be AWWA C153 ductile iron with 350 psi working pressure, cement mortar lined, and 1 mil thick exterior petroleum asphaltic coating. Mechanical joints to be provided with concrete thrust blocks or Mega-Lug joints.

Gate valves to be capable of 200 psi working pressure, factory coated, iron body, resilient wedge gate valves and have a non-rising stem.

TRENCHING, BACKFILLING, AND COMPACTING

Trenching

The amount of trench to be opened at any time may be limited by site conditions, access, and safety concerns.

Minimum depth is 3 feet below grade.

Trench bedding shall be accurately graded with a minimum of six inches (6") of sand. Sand shall pass a ¼ inch screen with not more than fifteen percent (15%) passing a No.200 sieve. Sand shall be backfilled to a minimum of six inches (6") above the pipe casing. Bedding shall be laid to firmly support the piping along its entire length.

Backfilling of trenches shall progress as rapidly as construction, testing, and acceptance of work permits.

Damage Repair

Utilities, wall, piping, and other improvements damaged during work shall be repaired to their original condition or replaced by the contractor.

Excess material and debris shall be removed and disposed of at an approved disposal site within one week after final approval of installation.

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Piping Installation

Utility marking tape shall be installed over the entire length of the underground piping. Install plastic tape directly above the utility pipe at the elevation of approximately 12" above the top of pipe line.

Protect all non-metallic pipe, including but not limited to plastic piping, glass piping, and vitrified clay piping with detectable underground warning tape.

Detectable underground warning tape shall consist of 4.5 mil foil tape printed with pipe service, (i.e. "CAUTION GAS LINE BELOW," "CAUTION WATER LINE BELOW," etc.)

Tape buried up to 24" deep shall be a minimum of 3" wide.

Tape buried greater than 24" deep shall be a minimum of 6" wide.

Anchors shall be installed as per the manufacturer's recommendations. Concrete shall be cast over the anchor plate and conduit and shall be large enough for firm anchorage into undisturbed soil.

All underground piping systems must be inspected by the Owner's representative prior to backfilling.

Reference ANSI/AWWA Standard C651 for cleaning and disinfection procedures.

Test pressure gauges for a specific test shall have dials indicating not less than one and one half (1-1/2) times nor more than two (2) times the test pressure.

After installation of insulation, anchor blocks, and backfill, hydrostatic pressure shall be applied to 150 psig and allowed to stabilize to ground temperature while maintaining 150 psig, +/- 10 psi. After stabilization, pressure source shall be removed. Piping must hold 150 psig, +/- 10 psi, for at least four (4) hours. Leaks shall be repaired and the test repeated if the pressure does not hold.

Owner must witness flushing, disinfection, and hydrostatic testing before acceptance.

PRODUCT STANDARDS AND MANUFACTURERS

All materials shall be certified new from factory. Pipe, fittings, and valves shall be made in the USA or Canada to AWWA and ANSI standards and suitably stamped. Piping components made in other countries shall not be used unless specifically approved in advance by the Project Coordinator.

DELIVERY AND STORAGE

Contractor shall be responsible for inspecting materials delivered to site for damage.

Materials shall be stored on-site in enclosures or under protective coverings. Materials shall not be stored directly on ground.

Joint materials, fittings, valves, and gaskets shall be stored under cover out of direct sunlight.

Handling

Pipe, fittings, valves and other accessories shall be handled in such a manner as to ensure delivery to the trench in sound, undamaged condition.

Special care shall be taken to avoid injury to coatings and linings on pipe and fittings. Damaged coatings and linings shall be repaired by the Contractor to the satisfaction of the Project Coordinator.

Field Quality Controls

The project coordinator or his representative will conduct field inspections and shall witness all field tests specified in this section. The contractor shall perform field tests and provide labor, equipment, and incidentals required for testing. The contractor shall produce evidence, when required by the project coordinator, that any item of work has been constructed properly in accordance with the contract drawings and specifications.

All anchor blocks and restraints shall be complete prior to testing. Concrete supports shall be fully cured. Disinfection completed. All joints exposed for testing.

334100 -STORM DRAINAGE SYSTEM

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

Polyvinyl Chloride (PVC) Piping: Polyvinyl chloride pipe and fittings shall conform to ASTM D3034, SDR 35 with bell and spigot type rubber-gasket joints.

Reinforced Concrete Piping (RCP): Reinforced concrete pipe shall conform to ASTM C76 with tongue and groove or bell and spigot joints. Unless indicated otherwise on the plans, all reinforced concrete piping shall be Class III, 1350-D pipe.

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Cast Iron Piping (CIP)

Cast iron pipe and fittings shall conform to ASTM C74. Joints shall be rubber-gasket bell and spigot type.

Perforated Underdrain

Perforated underdrain shall be polyvinyl Chloride (PVC) pipe up to and including 15 inches in diameter, conforming to ASTM D3034, SDR 35.

Catch Basins and Manholes

Precast drainage structures shall conform to ASTM C478 and shall be of the size and shape shown on the drawings. Equivalent poured-in-place structures may be used at Contractor's option.

Manhole covers shall have 24" clear opening with the words "STORM DRAIN" in letters not less than 2" high cast into the cover (except where grated covers are shown on the drawings). Foreign made frames and covers will not be accepted.

Grates for catch basins shall have bars as shown on the plans suitable for use in areas with bicycle traffic.

Frames and grates for manholes and catch basins shall be match-marked in pairs before delivery to the job site. The grates shall fit into their frames without rocking.

Portland Cement Concrete

Concrete shall be Class A concrete.

Cement shall be Type II cement conforming to ASTM Designation C150.

Aggregate shall be 3/4" maximum size.

Water shall be clear and free from injurious amounts of oil, acid, alkali, organic matter or other deleterious substances.

Reinforcing bars shall conform to requirements of ASTM A615 Grade 40.

No admixtures will be allowed without prior approval of the Project Coordinator.

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Pipe Installation

No pipe shall be laid until the Construction Inspector approves the condition of the bottom of the trench. Pipe laying shall proceed upgrade with the spigot section of bell and spigot pipe pointing in the direction of flow.

All above-grade piping shall be securely attached to building wall or anchored to ground as required to maintain the grades shown on the drawings.

Slotted Edge Drain

Trench excavation for the slotted edge drain will be completed during the roadway excavation phase at the cost of the Contractor.

Slotted edge drain and hugger bands shall be stored, handled and laid in such a manner as to prevent bruising, scaling or breaking of the surface or protective coating.

The slotted edge channel shall be primed and painted black prior to installation.

An alternative joint sealant or sealing method that will provide a watertight joint may be used provided said alternative sealant or method is approved, in writing, by the Project Coordinator.

The Contractor shall develop and propose a method for positioning the slotted edge drain to the specified line and grade shown on the plans prior to placing the concrete encasement. The top of the slotted edge drain shall not deviate from the specified horizontal position more than 1/2 inch per 20-foot section of pipe. The vertical position of the pipe shall conform to the slopes shown on the plans.

The pipe slot shall be covered with a heavy-duty tape or other covering approved by the Project Coordinator prior to placing the concrete encasement and any paving operations to prevent infiltration of material into the pipe.

Concrete Encasement for the slotted edge drain shall be placed in accordance with the details shown on the plans. Concrete Encasement shall be placed against the bottom and undisturbed sides of the trench or forms, and consolidated in a manner that will prevent floating or shifting of the pipe, and voids in, or segregation of, the concrete. Where necessary, earth plugs shall be constructed and compacted at the ends of the planned concrete backing to contain the concrete within the trench. Foreign material which falls into the trench, prior to or during placing of the concrete, shall be immediately removed.

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Loads shall not be placed on the Concrete Encasement sooner than 8 hours after placement.

Poured In Place Concrete

No pigment shall be used in curing compounds. All work shall be subject to inspection. No concrete shall be placed until the Construction Inspector has approved the forms and reinforcement.

Concrete shall not be dropped freely where reinforcing bars will cause segregation, nor shall it be dropped freely more than six feet (6'0"). Spouts, elephant trunks, or other approved means shall be used to prevent segregation.

Trench Drain

The trench drain shall be excavated and lined with filter fabric with a twelve inch (12") overlap on the top of the trench. The perforated pipe shall be installed with perforations down and backfilled with class I permeable material.

FIELD QUALITY CONTROL:

Prior to the encasement of the slotted edge drain pipe, the Contractor shall have the Field Surveyor verify the accuracy of the alignment and grade of the pipe. All adjustments to the alignment and grade shall be the Contractor's responsibility before the pipe is encased.

GRADE ADJUSTMENTS TO SURFACE STRUCTURES

Frames, Grates, and Covers

Frames, grates and covers of all surface structures (manholes, drain inlets, catch basins, etc.) shall be adjusted to within 1/8" +/- of proposed finish grade. Grade rings shall be supplied and installed as required.

Frames of new or adjusted surface structures shall be supported by concrete with minimum dimensions as follows: six (6) inches wide by ten (10) inches deep.

Structures within Paved Areas

A structure located in an area to be resurfaced with asphaltic concrete shall not be constructed to final grade until the adjacent pavement or surfacing has been compacted.

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The Contractor shall be responsible for referencing structures prior to paving and locating them after paving operations are complete.

After asphaltic concrete resurfacing is complete, the asphalt shall be cut out six inches (6") wider than the frames of all surface structures. Each frame shall then be raised to finished grade (sloped as necessary) and concrete shall be placed to approximately 1-1/2 inches below finish grade as noted above. After the concrete collar has cured, a tack coat shall be applied and asphaltic concrete placed to finish grade.

PRODUCT STANDARDS AND MANUFACTURERS

Delivery and Handling

Reinforced concrete pipe, precast concrete manhole sections, inlet frames and grating, and fittings must be handled carefully at all times. Only suitable and proper equipment and appliances shall be used for the safe loading, hauling, unloading, handling, and placing of materials. Material that is checked, spalled, or damaged shall not be installed and must be permanently removed from the job site.

335113 – NATURAL GAS PIPING SYSTEMS

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

The piping at the building entrance shall have a California Seismic Gas Shutoff valve to automatically shutoff gas to the building in the event of an earthquake.

Above-grade natural gas line

Schedule 40, A53 carbon steel pipe with malleable iron threaded fittings 2 ½ inch diameter and larger and schedule 80 for less than 2 ½ inch for gas pipe inside buildings. To be tested with compressed air at 35 lbs. for 24 hours.

All gas lines shall be tested to fixture with monometer by a licensed contractor with a gas card.

337119 - ELECTRICAL UNDERGROUND DUCTS AND MANHOLES

SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

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Electrical manholes and vaults located in streets shall have round covers rated for H20 wheel loading. Rectangular spring-loaded covers shall not be used.

End of Division 33

UTILITIES

APPENDIX F

INDOOR ENVIRONMENTAL QUALITY POLICY

The following appendix includes information and standard drawings that are diagrammatic and are used only to convey intent.

MISSION

In accordance with the university's Indoor Environmental Quality Policy, the University will strive to provide buildings that provide an indoor environment conducive to productivity and learning.

POLICY

It shall be the policy of the University to provide favorable indoor environmental quality in University facilities and buildings. Indoor environmental quality includes indoor air quality, thermal comfort, lighting and day-lighting, acoustics and vibration, which enhance learning and work environments. This applies to the design, renovation, and maintenance of University facilities and buildings.

PURPOSE

The purpose of the University policy on Indoor Environmental Quality is to provide work and learning environments that promote the health of students, visitors, and staff, maximizes productivity, and enhances the learning environment.

Facilities Services and their design consultants incorporate designs, materials, and equipment which promote indoor environmental quality in the design of new UNR buildings.

Recommended Practices in support of Indoor Environmental Quality are as follows:

- All new laboratory building designs will comply with the UNR Design and Construction Standards, Appendix H - Laboratory Safety Design Guidelines, and will meet a minimum standard equivalent to the latest LEED NC Certified Rating and Labs21 Environmental Performance Criteria.
- New building designs must provide an easily accessible area that serves the entire building and is dedicated to the separation, collection and

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storage of materials for recycling including (at a minimum) paper, corrugated cardboard, glass, plastics, and metals. (LEED NC 2.2, MR Prerequisite 1)

- Before occupancy, new buildings should implement best practice commissioning procedures to ensure that fundamental building elements and systems are designed, installed and calibrated to operate as intended. Commissioning procedures shall include the following:
 - engage a commissioning team that does not include individuals directly responsible for project design or construction management;
 - review the design intent and basis of design documentation;
 - incorporate commissioning requirements into the construction documents;
 - develop and utilize a commissioning plan;
 - verify installation, functional performance, training and operation and maintenance documentation. (LEED NC 2.2, EA Prerequisite 1)
- Before occupancy and with all interior finishes installed, new buildings should undergo a building flush-out period to reduce possible indoor air quality contamination after construction completion. This requires supplying a total air volume of 14,000 cubic feet of outdoor air per square foot of floor area while maintaining an internal temperature of at least 60 degrees F and a relative humidity of less than 60%. (LEED NC 2.2 EQ 3.2)
- New buildings will provide natural day-lighting where possible while minimizing *direct* sunlight and glare in teaching environments. (LEED NC 2.2 EQ 8.1, EQ 8.2 applies if views are added)
- Campuses will prohibit smoking in newly designed buildings. (NRS 202.2491, LEED NC 2.2 EQ Prerequisite 1)
- New buildings will provide indoor ventilation rates that meet the minimum requirements of ANSI/ASHRAE 62.1-2016 "Ventilation for Acceptable Indoor Air Quality". (LEED NC 2.2 EQ Prerequisite)
- New buildings will provide indoor thermal conditions that meet the minimum requirements of ANSI/ASHRAE 55-2013 "Thermal Environmental Conditions for Human Occupancy".

END OF INDOOR ENVIRONMENTAL QUALITY POLICY

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APPENDIX G

AUDIO AND VISUAL DESIGN

CLASSROOM TECHNOLOGY

All classroom technology projects shall be coordinated with the University Department of Teaching and Learning Technologies (TLT) which is comprised of the Classroom Support and Instructional Design teams. TLT guides and standards can be found on the TLT website through this link:

<https://nevada.box.com/s/4gnpgydnjrklpy4h4rl5obt2obw49c1e>

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APPENDIX H
LABORATORY SAFETY DESIGN GUIDELINES

The following appendix includes information and standard drawings that are diagrammatic and are used only to convey intent.

LABORATORY SAFETY DESIGN GUIDELINES INTRODUCTION

The requirements in this appendix apply to all laboratory buildings, laboratory units, and laboratory work areas in which hazardous materials are used, handled, or stored. It also addresses biological safety and ionizing and nonionizing radiation situations commonly found in laboratories. The University of Nevada, Reno believes this standard represents the minimum requirement; more stringent requirements may be necessary, depending on the specific laboratory function or contaminants generated.

GENERAL REQUIREMENTS FOR LABORATORIES

SCOPE

The primary objective in laboratory design shall be to provide a safe, accessible environment for laboratory personnel to conduct their work. A secondary objective is to allow for the maximum flexibility for safe research use. Undergraduate teaching laboratories require other specific design considerations. Therefore, health and safety hazards shall be anticipated and carefully evaluated so that protective measures can be incorporated into the design wherever possible.

The General Requirements listed below illustrate some of the basic health and safety design features required for new and remodeled laboratories. Variations from these guidelines need approval from Campus Environment, Health, and Safety (EH&S) and Facilities Services.

BUILDING REQUIREMENTS

Designer Qualifications: The designer shall have the appropriate professional license in his/her area of expertise (either a registered architect or professional engineer in the

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State of Nevada).

Building Occupancy Classification: Occupancy classification is assigned to meet building code requirements and is to be based upon an assessment of a projected chemical inventory of the building.

BUILDING DESIGN ISSUES

The handling and storage of hazardous materials inherently carries a higher risk of exposure and injury. Therefore, it is important to segregate laboratory and non-laboratory activities. In an academic setting, the potential for students to need access to laboratory personnel, such as instructors and assistants, is great. A greater degree of safety will result when non-laboratory work and interaction is conducted in a space separated from the laboratory.

It is desirable to provide separate office spaces for laboratory employees.

Public access to laboratory personnel in office rooms with separate corridor access is highly desirable.

An automatically triggered main gas shutoff valve for the building shall be provided for use in a seismic event. In addition, interior manual shutoff valves shall be provided for both research and teaching areas.

Large sections of glass shall be shatter-resistant. In the event of a severe earthquake, as the glass in cabinets and windows breaks, the glass shards need to be protected to prevent injury.

LABORATORY DESIGN CONSIDERATIONS

A process that integrates key decision makers (e.g., facilities, environmental health and safety, users, facility operators) into the design team shall be used.

Supply and exhaust systems shall meet the requirements listed in **Division 23** of the Facilities Design and Construction Standards.

When office and laboratory spaces are connected, airflow shall enter via office spaces, and exit via hoods or other exhausts in laboratory spaces.

Laboratory bench standard depths are 30 inches for a wall bench, and 66 inches for an island bench. Bench lengths usually allow for 72 inches of free counter space per

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laboratory worker, in addition to the counter space allotted for equipment.

Deskwork areas in laboratories shall be separate from areas where hazardous materials are used. Specifically, fume-hood openings shall not be located opposite desk-type work areas.

Ensure that casework has no vibration, movement or loading limitations, is not seismic sensitive, interacts with laboratory equipment, is ergonomically designed, and is responsive to ADA concerns.

Floor loading shall be no more than 100–125 pounds/square foot. Heavy support equipment shall be located elsewhere.

Wet sprinklers in ductwork; and fume hoods are prohibited, avoid non-fireproof material in interstitial spaces.

Locate eyewash/safety shower near door. When feasible include a floor drain for the shower.

Where hazardous, bio-hazardous, or radioactive materials are used, each laboratory shall contain a sink for hand washing. The sink drain shall be connected either to a retention tank or building plumbing.

All work surfaces (e.g., bench tops, counters, etc.) shall be impervious to the chemicals and materials used in the laboratory. The countertop shall incorporate a lip to prevent run-off onto the floor. Laboratory benches shall be resistant to the chemical actions of chemicals and disinfectants.

The laboratory shall be designed so that it can be easily cleaned. Bench tops shall be a seamless one-piece design to prevent contamination. Laminate bench tops are not suitable. Penetrations for electrical, plumbing, and other considerations shall be completely and permanently sealed. If the bench abuts a wall, it shall be coved or have a backsplash against the wall. The countertop shall incorporate a lip to prevent runoff onto the floor.

Laboratory flooring in chemical use areas and other high hazard areas (such as biological containment facilities) shall be chemically resistant and one piece, and with covings to the wall.

The walls will be nonporous and painted with a durable, impervious finish in such a manner to facilitate decontamination. High-gloss paint is recommended.

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Vented cabinets with electrical receptacles and sound insulation shall be provided for the placement of individual vacuum pumps, where their use is anticipated.

Laboratory areas shall be well lit to avoid spills and other accidents that could result in contamination buildup.

Provide storage racks for compressed gas cylinder storage.

If a house vacuum is provided, include traps or filters to prevent uptake of hazardous vapors by the vacuum system. Vacuum systems shall be exhausted directly outside of the building.

The need for gas detection systems in new laboratories and laboratory renovations will be coordinated with EH&S and the using department. When required, all new laboratories shall be equipped with a multi-level (ability to detect various types of gases) gas detection system with shut off valves incorporated into the system. Each system controller shall be clearly labeled with name of installing company and provide all necessary technical support contact information. The following Gas Detection Sequence of Operations shall be implemented:

- Establish what laboratory needs gas detection, i.e. they use a certain amount of material or store a certain amount of gas.
- Install detector.
- This will be tied into the fire system as a non-alarm point.
- Install a communicator with 8-zone minimum.
- All gas detection will be assigned to a zone on the communicator.
- Every laboratory will assign a responsible or contact person.
- When that device goes into alarm that person will be contacted. They will have to set their own policies on how to handle the alarm.
- If they feel it is a false alarm or a malfunction they will contact the Fire and Life Safety Department. If it is after business hours they will contact the monitoring company and the monitoring company will handle it.

HAZARDOUS MATERIALS DESIGN ISSUES

Facilities shall be designed so that use of a respirator is not required for normal operations.

Where appropriate, general ventilation systems shall be designed, such that, in the

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event of an accident, they can be shut down and isolated to contain radioactivity or hazardous chemicals.

A pressure differential system shall be used to control the flow of airborne contamination. The flow shall always be from clean areas to contaminated areas, but it shall be recognized that similar areas may not always require the same ventilation characteristics.

The laboratory shall have a means of securing specifically regulated materials such as controlled substances regulated by the Drug Enforcement Administration (DEA), select agents regulated by Center for Disease Control (CDC), and radioactive materials (i.e., lockable doors, lockable cabinets etc.), where applicable.

Sufficient space or facilities shall be provided, so that materials that have unique physical or hazardous properties are stored safely, and materials that, in combination with other substances, may cause a fire or explosion or may liberate a flammable or poisonous gas, are kept separate. Separate space or facilities can include storage cabinets with partitions, acid cabinets, flammable cabinets, gas cabinets, etc.

Ventilated compressed gas cabinets shall be provided for laboratories where synthetic chemistry will be conducted or if gases with a NFPA health or flammability rating of 3 or 4 will be used or stored. Provide flammable and corrosive chemical storage cabinets.

ENTRIES, EXITS, AND AISLE WIDTH

The main emergency egress from the laboratory shall have a minimum door width of 36 inches to facilitate departure in the event of an emergency.

Laboratories having a floor area of 200 square feet (18.6 m²) or more need two separate exits. All portions of the laboratory shall be within 75 feet of an exit.

Laboratory benches, furniture, or obstacles shall be placed so that there is at least 5 feet of clear egress. Laboratory benches shall not impede emergency access to an exit. This is also applicable to placement of other furniture and appliances such as chairs, stools, refrigerators, etc.

The space between adjacent workstations and laboratory benches shall be 5 feet or greater to provide ease of access. In a teaching laboratory, the desired spacing is 6 feet. Bench spacing shall be considered and included in specifications and plans.

The laboratory doors are to be automatically self-closing. Doors shall contain

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appropriate glazing or sidelights such that viewing into the laboratory is provided.

The self-closing laboratory doors are to be able to be opened with a minimum of effort as to allow access and egress for physically challenged individuals.

All exit and emergency doors serving hazardous occupancies shall swing in the direction of exit travel, regardless of the occupant load, and shall be equipped with panic hardware.

ELECTRICAL AND UTILITY ISSUES

Circuit breakers shall be located outside the laboratory, but not in rated corridors. In the event of an emergency, the laboratory may be unsafe to enter.

Electrical receptacles above countertops and within six feet of sinks or other wet areas shall have GFCI circuit protection. Receptacles that are not readily accessible or receptacles for appliances occupying dedicated space that are cord-and-plug connected in accordance with NEC Section 400-7A (6–8), are exempt from this requirement.

Shutoff valves for gas and vacuum lines shall be located outside the laboratory, or near the laboratory exit.

Flexible connections shall be used for connecting gas and other plumbed utilities to any freestanding device, including but not limited to, incubators, and liquid nitrogen freezers. Biosafety cabinets shall not have natural gas piped to them. Seismic activity may cause gas and other utility connections to the biosafety cabinet to break off. Leaking natural gas is a fire hazard, and flexible connections minimize this potential hazard.

ACCESSIBILITY

Laboratory design shall include adapted workbenches as necessary:

- A work surface that can be adjusted to 27 to 37 inches from the floor
- A 29-inch clearance beneath the top to a depth of at least 20 inches
- A minimum width of 36 inches to allow for leg space for the seated individual
- The utility and equipment controls are placed within easy reach

NONSTRUCTURAL SEISMIC HAZARD ABATEMENT

All shelves shall have a passive restraining system such as seismic shelf lips (3/4 inch

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or greater). The shelves themselves shall be firmly fixed so they cannot be vibrated out of place and allow the shelf contents to fall.

Flexible connections are preferred for connecting equipment and devices to utilities to allow for relative movement in a severe earthquake.

Any equipment, including but not limited to appliances and shelving to be installed by the contractor, which is 42 inches or higher and has the potential for falling over during an earthquake, or moving and blocking corridors or doors, shall be permanently braced or anchored to the wall and/or floor.

All compressed gas cylinders in service or in storage shall be secured to substantial racks or appropriate, sufficiently sturdy storage brackets with two chains, straps, or the equivalent, at 1/3 and 2/3 of the height of the cylinders to prevent their being dislodged during a violent earthquake. NOTE: Clamping devices are not acceptable as cylinder restraints. Provision should be made for securing large liquid nitrogen cylinders from sliding or tipping during a seismic event.

ELECTRICAL SAFETY

SCOPE

This guide addresses some of the most common issues affecting the appropriate and safe installation of electrical systems for research laboratories. It is not intended to include all electrical installation requirements or good practices.

GENERAL DESIGN GUIDELINES

120-volt receptacles shall be located on every open wall such that there is not more than 6 feet of wall space to a given receptacle. Quad outlet boxes are preferred over duplex. Laboratory bench areas shall be equipped with continuous receptacle molding (e.g., Plugmold) strips with receptacles spaced on 6–12-inch centers, or similarly continuous receptacles in raceway.

Provide receptacles of appropriate voltage and current ratings for known equipment in addition to the general convenience receptacles noted above.

Ground Fault Circuit Interrupter (GFCI) protection shall be provided for convenience receptacles located within 6 feet of a sink or other wet location. GFCI receptacles shall

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not be used for critical equipment such as refrigeration, sump pumps, or gas detectors. Use dedicated single receptacle outlets for such equipment.

Provide GFCI protection for receptacles that feed vessel-heating equipment such as strip heaters for vacuum vessels.

Each circuit breaker panel and similar equipment shall be labeled with a notification of an electrical arc flash hazard.

Circuit-breaker panels shall not be in the laboratory.

Each circuit and circuit breaker shall be sized to carry no less than 100% of the non-continuous current load plus 125% of the continuous current load for that circuit.

Laboratory convenience receptacle circuits shall be sized as 20-amp circuits, with no more than 13 duplex devices per circuit.

When designing circuit-breaker panels, at least 20–40% additional load capacity and circuit-breaker spaces than required by initial calculations shall be provided.

Fixed equipment that requires periodic maintenance shall be provided with lockable disconnect points (safety switch).

Electrical equipment and controls within fume hoods shall be provided with a disconnect switch within 15 feet.

Electrical receptacles and switches shall be located to minimize their exposure to spilled liquids.

Each branch circuit shall carry its own neutral conductor. Do not use multi-wire branch circuits that share a grounded (neutral) conductor.

Circuits serving sensitive Information Technology or data acquisition equipment shall be provided with an isolated grounding conductor in addition to the required equipment grounding conductor. This isolated conductor is to be terminated in an identified isolated receptacle or within the sensitive equipment.

Electrical wiring and equipment meeting the specific requirements of NFPA 70, Chapter 5, for classified locations shall be provided if substances used or stored in the laboratory can create a flammable or explosive atmosphere.

Rated clamps and conductors shall be provided to adequately bond containers, hoses,

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and other dispensing equipment to each other and the grounding system where flammable liquids are to be dispensed.

Electrical power shall not be commingled in a cable tray with other utilities (e.g., electrical, gas, water, etc.).

PRE-COMMISSIONING EVALUATION ACCEPTANCE

Due to the potential for shock, serious injury, and fire, laboratories shall be inspected and approved by a qualified University staff electrical safety expert prior to beginning work.

LABORATORY VENTILATION AND FUME HOODS

(See Division 115313 of Facilities Design and Construction Standards)

COMMISSIONING AND PERFORMANCE TESTING

A written commissioning plan shall accompany design documents and be approved by the commissioning authority in advance of construction activities. The commissioning plan, along with the other project documents, shall be available to all potential suppliers and contractors prior to bid. The commissioning plan shall address the operation of the entire ventilation system where the hoods, laboratories, and associated exhaust and air supply ventilation systems are considered subsystems. The plan shall include, in addition to written procedures to verify or validate the proper operation of all system components:

- Laboratory Chemical Hood Specification and Performance Tests
- Preoccupancy Hood and Ventilation System Commissioning Tests
- Preoccupancy Laboratory Commissioning Tests

Preliminary and final commissioning documents shall be issued to the appropriate parties by the University representative. The documents shall include:

- Design Flow Specifications
- Laboratory and System Drawings for Final System Design
- Copy of Test and Balance Report
- Commissioning Test Data
- List of Ventilation System Deficiencies uncovered and the details of how (and if) they were satisfactorily resolved

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Operational deficiencies and other problems uncovered by the commissioning process shall be communicated to the responsible party (i.e., installer, subcontractor, etc.) for prompt correction.

The volumetric flow exhausted from a laboratory chemical hood shall be determined by measuring the flow in the exhaust duct, using industry-approved methods.

The hood static pressure shall be measured above the outlet collar of the hood at the flows required to achieve the design average face velocity.

The average face velocity, cross draft, response time, smoke containment, and tracer gas containment shall be determined by the methods described in the latest edition of ASHRAE 110, *Testing Performance of Laboratory Fume Hoods*. The minimum acceptance criteria for tracer gas containment testing is no greater than 0.1 ppm tracer gas at each test location as a 5 minute average using a tracer gas release rate of 4 liters per minutes when tested under “as used” conditions. The area Industrial Hygienist shall approve results of fume hood commissioning tests.

EMERGENCY EYEWASH AND SAFETY SHOWER EQUIPMENT

SCOPE

This guide presents criteria for eyewash and shower equipment for the emergency treatment of the eyes or body of a person who has been exposed to chemicals. The following types of equipment are covered: eyewash equipment, safety showers, combination shower and eyewash or eye/face-wash equipment.

APPLICATIONS

Eyewash and safety shower equipment shall be provided for all new construction and major renovations involving laboratories, chemical storage rooms, or other areas where corrosive or injurious chemicals are used.

EQUIPMENT REQUIREMENTS

Emergency eyewash, safety shower, and combination units shall comply with the requirements of ANSI Z358.1

The eyewash shall have a plumbed drain to the sanitary sewer connection. When a sewer connection cannot be provided, a means shall be provided to empty test water

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into a bucket that can hold at least 10 gallons.

The 10-gallon capacity criterion comes from flowing water for 15 minutes at a flow rate of 0.4 gallons per minute.

Eyewash and safety shower water shall be delivered at a tepid temperature. For indoor systems, typical cold-water supply temperature is considered satisfactory. If the heating of hot water is required to provide tepid water, then a mixing valve to blend hot and cold water shall be provided.

The water supply to safety showers and combination units shall be controlled by a ball-type shutoff valve that is visible, well-marked, and accessible to shower testing personnel in the event of leaking or failed shower head valves. The valve shall not be located where an unauthorized person could easily shut it off.

The area around the safety shower shall be painted a bright color and shall be well lighted. Whenever possible, the floor immediately beneath the eyewash and emergency shower, and to a radius of 30 inches, shall be constructed of a nonslip surface and be a distinctive pattern and color to facilitate promoting a clear path of access.

GENERAL LOCATION

Locate emergency eyewash facilities and safety showers in unobstructed and accessible locations requiring no more than 10 seconds for the injured person to reach along an unobstructed pathway. If both eyewash and shower are needed, they shall be located so that each can be used at the same time by one person. The pathway to the emergency eye wash or shower shall not require passage through a door and shall be on the same building level (no stairs or ramps). A travel time of 10 seconds is cited by ANSI as the comparable distance covered by an individual walking at a normal pace.

An emergency eyewash and safety shower station shall be located as near as practicable to laboratory fume hoods designed for handicapped access.

No obstructions, protrusions, or sharp objects shall be located within 16 inches from the center of the spray pattern of the emergency shower facility (i.e., a 32-inch clearance zone).

No electrical apparatus, telephones, thermostats, or power outlets shall be located within 18 inches of either side of the emergency shower or emergency eyewash facility

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(i.e., a 36-inch clearance zone) or within any area that may reasonably be considered a splash or flood zone. If 120-volt outlets or receptacles are present within 6 feet of an eyewash or shower, it shall be equipped with a GFCI.

PRE-COMMISSIONING TESTING

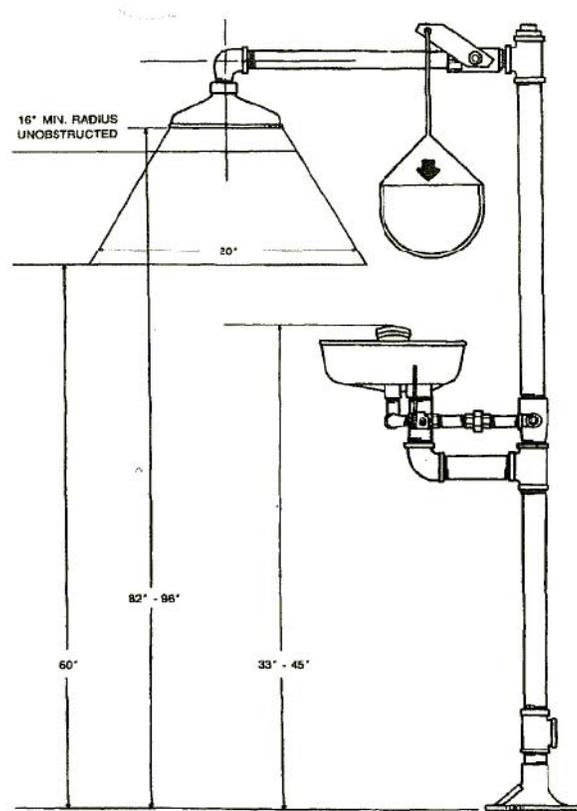
Proper installation and operation of the equipment, within the specifications of the ANSI Z358.1 standard and the requirements of this section, shall be demonstrated prior to project closeout and facility occupation. Tags to allow periodic testing records to be kept shall be affixed to the showers and eyewash fountains. A commissioning checklist such as that included in Appendix 4-1 shall be used to document proper equipment installation and operation.

APPROVED EQUIPMENT

All emergency eyewash and safety shower equipment shall meet the requirements of ANSI Z358.1. The most versatile and complete emergency rinsing facility would include a combination unit with an emergency eye/face wash, a safety shower, and a drench hose. See Figure 1.

FIGURE 1
Eyewash Safety Shower Illustration

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ANSI Z358.1 is published by the International Safety Equipment Association, Arlington, VA www.safetysystem.org. Used by permission.

HAZARDOUS MATERIALS STORAGE CABINETS

SCOPE

This section applies to all campus facilities. It covers the design, construction, and installation of hazardous materials storage cabinets (including flammable liquid, corrosive material, and toxic material storage cabinets).

APPROVALS AND LISTINGS

The purchase and installation of storage cabinets for both flammable liquids and toxic materials shall be subject to review and approval of EH&S.

Flammable liquid storage cabinets shall be listed by a Nationally Recognized Testing Laboratory such as Underwriters Laboratories, Factory Mutual, or the State Fire

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Marshal.

DESIGN

Laboratories that store, use, or handle more than 10 gallons of flammable or combustible liquids shall have one or more flammable liquid storage cabinets.

Flammable liquid storage cabinets shall not store more than 60 gallons of Class I flammable or Class II combustible liquids.

Flammable liquid storage cabinets shall be conspicuously labeled with the warning "FLAMMABLE — KEEP FIRE AWAY" in red letters on a contrasting background. Doors shall be well fitted, self-closing and equipped with a self-latching device.

When flammable or combustible liquids present multiple hazards, the storage requirements for each hazard shall be addressed.

Laboratories that store, use, or handle more than 10 pounds of highly toxic liquids or solids shall have one or more approved and vented toxic material storage cabinet.

Where necessary, vented cabinets shall be provided to store toxic materials, separated by hazard class. The vents shall be connected, preferably at the top of the cabinet to a supply ventilation system.

Corrosive/toxic material storage cabinet shelving shall be constructed to prevent spillage of contents with tight-fitting joints, a welded or riveted liquid-tight bottom, a door sill of at least 2 inches, and lockable cabinet doors that are self-closing and self-latching. Corrosive materials shall not be stored in metal cabinets unless the materials of construction are specifically treated to be corrosion-resistant.

Venting Hazardous Material Storage Cabinets

Venting of storage cabinets is not required by Code and has not been demonstrated to be necessary for fire protection purposes. Additionally, if improperly performed, venting of a storage cabinet could compromise the ability of the cabinet to adequately protect its contents from involvement in a fire. However, there may be other health and safety considerations (e.g., odor control, control of potentially hazardous vapors) that dictate that the interior of a cabinet be ventilated. Early in the design phase, the designer shall discuss ventilation of hazardous material storage cabinets with Facilities Services, Environmental Health and Safety, and the Fire Marshal. Flammable/combustible storage cabinets shall be vented in accordance with NFPA 30.

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If a flammable liquid storage cabinet is ventilated, then it shall be connected through the lower bung opening to an exterior exhaust in such a manner that it will not compromise the specified performance of the cabinet. The other metal bung shall be connected to an air supply located outside of the fire control area.

Non-vented cabinets be sealed.

Toxic material storage cabinets used to store Highly Toxic materials more than an exempt amount shall be vented like flammable liquid storage cabinets.

Exhaust vent materials for hazardous material cabinets shall be compatible with contents of the cabinets. Vent materials for flammable liquid storage cabinets shall be resistant to high temperatures generated in a fire. Stainless steel, hard-soldered copper, and carbon steel are appropriate vent materials for flammable storage cabinets, provided the material is compatible with the intended service. Nonmetallic duct shall not be used to vent flammable storage cabinets. Compatible nonmetallic duct material, such as PVC, can be used for toxic material storage cabinet service. Polypropylene, which is combustible, is not appropriate vent duct material.

GENERAL INSTALLATION REQUIREMENTS

Flammable liquid storage cabinets shall NOT be located near exit doorways, stairways, or in a location that would impede leaving the area.

Flammable liquid storage cabinets shall NOT be wall mounted.

Flammable liquid storage cabinets shall NOT be located near an open flame or other ignition source.

One room shall not contain more than three flammable liquid storage cabinets unless those groups of three cabinets are separated from each other by not less than 100 feet (30 m) – OR – if the building is protected by an automatic sprinkler system, the number of cabinets in any one group shall be increased to six.

Flammable and toxic/corrosive liquid storage cabinets shall be seismically anchored to prevent spillage of contents. Anchoring shall not compromise the integrity of the fire rating, i.e., drilling holes through a free-standing cabinet.

BIOSAFETY LABORATORIES

INTRODUCTION

Containment is defined as a safe method for managing hazardous materials or infectious agents in an environment where they are handled or maintained. The purpose of containment is to reduce or eliminate the exposure of hazardous materials or infectious agents to laboratory workers, other persons, and the environment.

Containment is divided into three levels: primary, secondary, and tertiary. Primary containment involves standard work practices to protect personnel and the immediate work area; secondary containment is the protection of the environment outside of the work area; and tertiary containment involves the use of highly specific biological barriers that prevent the survival of an organism outside of the host. The three main components of containment include work practices, safety equipment, and facility design. The guidelines listed here are for facility design and safety equipment used in the containment of infectious agents.

In recent years, laboratory designers and architects have constructed open laboratories instead of the more traditional closed laboratory. Regardless of an open or closed design, there are many factors that shall be considered before construction activities begin. These factors include, but are not limited to, the placement of HVAC systems, acoustic considerations, plumbing for sanitary drainage, laboratory drainage and vent systems, water supply systems, lighting, windows, access control and security, biological safety cabinets and fume hoods, storage, compressed gas systems, fire protection systems, and power for standard and emergency uses.

Before a proposed biosafety containment laboratory can be effectively planned, a risk assessment is needed to determine the containment conditions that will be required to mitigate the hazards associated with the proposed work. Risk assessments, conducted on a case-by-case basis, shall consider factors such as the types of bio-hazardous materials, the nature of the proposed work, laboratory and safety equipment needs, regulatory requirements, and the requirements of the University.

SCOPE

The guidelines presented below are for general laboratory use for Biosafety Levels (BSL) 1, 2, and 3 (as defined by CDC/NIH) for biological research laboratories. Reference the latest version of the *NIH Guidelines for Research Involving Recombinant DNA Molecules*. And the latest version of *Biosafety in Microbiological and Biomedical Laboratories*. These design guidelines do not factor in American with Disabilities Act

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(ADA) issues, or recent changes to building or fire codes. If modifications are required due to any of these changes, biosafety considerations will be adjusted.

Although additional containment requirements may be imposed when working with specific agents, these design guidelines still apply to the following:

- Biocontainment facilities for animals
- Biocontainment facilities for plants
- Insectaries for disease vectors
- Biocontainment facilities for select agents
- Biocontainment facilities for U.S. Department of Agriculture–regulated animal and plant pathogens
- Biocontainment facilities for large-scale (> 10 liters in a single vessel) biological work
- Biological work in clean rooms, or biological work covered by the Food and Drug Administration Biosafety Level-4 facilities

BASIC LABORATORY DESIGN FOR BIOSAFETY LEVELS 1 AND 2 LABORATORIES

For research involving human pathogens, four biosafety levels (BSL-1 through BSL-4) are described in Section III of the CDC's *Biosafety in Microbiological and Biomedical Laboratories* (BMBL) and Appendix G, *Physical Containment* of the *NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules*. Each biosafety laboratory shall, at a minimum, meet the requirements for laboratory facilities as stated in the BMBL:

[CDC Biosafety Publication.](#)

Doors

Entry doors shall be self-closing and lockable.

Floors

Floors shall be durable and liquid tight.

Floor materials shall be nonabsorbent, skid-proof, resistant to wear, and resistant to the adverse effects of acids, solvents, and detergents.

For monolithic floors, either a 100-mm-high, readily cleanable, integrally coved sheet

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flooring base, or a readily cleanable, 100-mm-high, vinyl or rubber base shall be used.

Ceilings

In BSL- 2 laboratories, drop ceilings shall use smooth, cleanable tiles (Mylar face with a smooth surface, or the equivalent).

Ceiling height shall accommodate a 14-inch clearance for biological safety cabinet(s). The ceiling shall be high enough to allow for canopy/thimble connection and the opening of thimble door(s), and so that the configuration of the ductwork will not interfere with airflow. A ceiling height of at least 10 feet is recommended. (Note: If the laboratory has a sprinkler system, local fire codes may require a clearance of 18 inches or more).

Offices and Eating Areas

Formal offices shall not be included in the laboratory. An area shall be provided to allow researchers to record notes, possibly at a computer workstation with a laptop, or to fax materials.

Eating and drinking is generally prohibited in BSL-2 laboratories. An adjoining room shall be provided for eating and drinking in each laboratory suite. Eating and drinking is allowed only outside of the laboratory suite.

Windows

Operable windows that open to the exterior, if present, shall be fitted with fly screens. Note: USDA does not allow operable windows.

Furniture and Casework

Furniture and casework shall be sturdy, capable of supporting anticipated loading and uses.

Furniture and casework shall be spaced so that areas around and under benches, cabinets, and equipment are accessible for cleaning.

Bench tops shall be impervious to water, and resistant to acids, alkalis, organic solvents, and moderate heat.

Bench tops shall have marine/drip edging for spill control.

Fixed casework, if used, shall be sealed or caulked to the walls on installation to

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facilitate cleaning and prevent harborage for vermin.

Closed cabinets rather than open shelving shall be used for storage.

In BSL-2 laboratories, chairs and other furniture used shall be covered with a non-fabric that can be easily decontaminated.

Heating, Ventilation, and Air Conditioning (HVAC) Systems

In BSL-2 laboratories, HVAC systems shall provide inward flow of air from rooms/areas of low hazard into rooms/areas of high hazard.

In BSL-2 laboratories, air shall not be recirculated to spaces outside of the laboratory or suite.

Emergency Eyewash

An emergency eyewash shall be available in BSL-2 and BSL-3 laboratories.

Emergency eyewashes shall be plumbed to drain or installed over a sink to facilitate monthly testing.

Eyewashes shall be near splash hazards: less than 10 seconds' travel distance, and no more than 22 m from any point in the laboratory. Good practice requires that no doors or other obstructions be in the line of travel.

Hand Washing Sink

Each BSL-3 laboratory shall have a hand washing sink that is hands-free or automatically operated.

The hand washing sink shall be located near the exit, have chemical-resistant traps (for disinfectants), a coved backsplash, and a hot-cold water, pre-mixing faucet.

The hand washing sink shall be accompanied by a paper-towel dispenser and a hands-free soap dispenser mounted within easy reach.

ADDITIONAL DESIGN CONSIDERATIONS

Provide provisions for locked storage in the building that meet the requirements of The Washoe County District Health Dept. WCDHD has established biohazardous waste regulations that apply to the university.

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Provide storage for halogen and/or flammable chemical disinfectants.

For HIV, HBV, and HCV research laboratories and production facilities, follow Nevada State OSHA requirements.

BASIC LABORATORY DESIGN FOR BIOSAFETY LEVEL 3 LABORATORIES

The Facilities Services Department, in collaboration with EH&S, shall approve the location and design of any BSL-3 facility, and have final authority to authorize the commencement of BSL-3 work. The Institutional Biosafety Committee and EH&S have oversight of biosafety issues and facilities, and have authority to approve or stop work with bio hazardous materials.

The Biosafety Level-3 facility design and operational procedures shall be documented. The facility shall be tested for verification that the design and operational parameters have been met prior to operation. It is essential that the facility meets the required predetermined standards before putting the bio-containment facility into service.

GENERAL

The laboratory shall consist of an anteroom and laboratory rooms.

The facility shall have gas-impermeable walls, ceilings, and floors. Air gaps under doors are acceptable for directional airflow. If the door gaps are sealed, the laboratory suite shall not leak gaseous decontamination materials. All penetrations of walls, ceiling, and floor shall be sealed.

Air balance shall be set so air from low hazard rooms flows into rooms with higher hazards, and entry into the laboratory requires passage through two self-closing, lockable doors.

All tall and/or heavy fixtures and equipment (e.g., biological safety cabinets, autoclaves, freezers, incubators, etc.) shall be fitted with a seismic anchoring system/device engineered to withstand earthquake stresses equal to 7.0 on the Richter scale.

The laboratory shall be designed for ease of maintenance, so that access to critical mechanical equipment (ventilation ducts, fans, piping, etc.) is outside containment. Access panels are only allowed in some retrofits, and in those cases, the panels shall be piano-type hinged and gasketed with gas-tight gaskets.

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There shall be a room for large equipment decontamination. The room shall be capable of being sealed for decontamination with gaseous formaldehyde or other gaseous or vaporous sterilant, and shall have a connection to the HVAC exhaust system.

CO₂ and other specialty gases shall be plumbed from outside the laboratory into containment.

Work surfaces, floors, walls, and ceilings shall be designed, constructed, and finished to facilitate easy cleaning and decontamination.

The facility shall pass third-party inspection and tests to verify that design and operational parameters have been met. This shall be done by a third party who has previous experience in certifying BSL-3 laboratories.

The laboratory shall be located away from public areas and corridors used by laboratory personnel who do not work in the BSL-3 laboratory.

The laboratory shall be separated from unrestricted traffic.

An intercom or hands-free telephone shall be in each room and shall be connected to a location that has personnel available for emergency response at all times work is being performed in a BSL-3 laboratory.

Anteroom

The anteroom shall consist of two doors for access to the laboratory.

Anteroom doors shall be interlocked or alarmed so only one door may be opened at a time, or placed sufficiently apart so that one person cannot open both doors at the same time. A manual override shall be provided for emergency exit.

Space shall be provided on or near the door for the conspicuous posting of the biohazard warning symbol, a list of personnel authorized to enter the area, and access rules.

Floors

Floors shall be impermeable to liquids, be monolithic/seamless, or have welded seams. Seamless floors are highly recommended.

Floors shall be coved up the wall to a minimum of 4 inches.

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Floors shall be easily cleaned, with chemical-resistant flooring (vinyl, or epoxy with fiberglass reinforcement) with a slip-resistant, smooth, hard finish.

For monolithic floors, either a 100-mm-high, readily cleanable, integrally coved sheet flooring base, or a readily cleanable, 100-mm-high, vinyl or rubber base shall be used.

Walls

Walls shall be full height, extending to the structural deck above. For suites, exterior suite walls and individual laboratory room walls shall meet this requirement.

Walls shall be durable, washable, and resistant to detergents/disinfectants (masonry, gypsum board, fiberglass-reinforced plastic, etc.).

Wall/ceiling penetrations shall be kept to a minimum and sealed with non-rigid, non-shrinking silicone or latex sealant; for fire rated walls, apply sealant before fire stopping.

Corner guards and bumper rails shall be provided to protect wall surfaces in high-traffic/impact areas.

Ceilings

The ceiling shall be washable and resistant to detergents/disinfectants.

The ceiling shall be of monolithic construction (i.e., gypsum board, not removable tiles).

The ceiling shall be high enough over Class II A2 biological safety cabinets (BSCs) to allow for a canopy/thimble connection or the opening of canopy/thimble door(s).

Ceiling height shall be at least 10 feet to allow for 14 inches of clearance above BSCs.

Light fixtures shall be ceiling mounted, recessed lighting with air tight gaskets and be sealed to prevent leakage of air, and be specifically designed for use in BSL-3 laboratories. Light fixture surfaces must be smooth and easily cleanable.

Offices and Eating Areas

Eating and drinking is prohibited in BSL-3 laboratories. Formal offices shall not be included in the laboratory suite.

Doors

Doors shall be self-closing and lockable.

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Doors shall open inward (dependent on Fire Marshal requirements) or slide open. If sliders are used, they shall be made of safety glass, and a trackless design shall be considered. Note: Opening sliding doors causes less turbulence than standard doors. Pocket doors shall not be used.

Door between anteroom and corridor shall have door sweep for pest control.

Doors inside the suite shall allow for an approximately 3/4-inch clearance underneath the door for directional airflow.

Doors and frames shall be of solid finish construction, have required fire ratings, and include panic-hardware, hardware appropriate for high-use, and kick plates.

Windows

Windows (safety glass, permanently closed, sealed with silicone or latex sealant) shall be installed so that the interior of the adjacent room, except change rooms and restrooms, is visible. For new construction, there shall be no exterior windows.

Operable windows shall not be allowed, to maintain air balance. Additionally, all windows shall be sealed.

Eyewash/Safety Shower

An emergency eyewash shall be in each BSL-3 room.

Shower — Entry/Exit

A shower may be required in ABSL-3 laboratories, insectaries, or with certain agents.

Plumbing

All penetrations shall be perpendicular to the surface and shall be sealed to be gas-tight.

Penetrations shall be sealed with non-rigid, non-shrinking, silicone or latex sealant; for fire-rated walls, apply sealant before fire stopping.

All pipes into the BSL-3 laboratories shall be secured to prevent movement.

Fixtures shall be resistant to corrosion of bleach and other disinfectants.

Back-flow prevention devices shall be installed on all faucets (including industrial water).

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6-inch P-traps shall be installed if significant changes in pressure could occur.

All pipes shall be identified by use of labels and tags.

Water supply control shall be located outside the containment area.

Plumbing shall discharge directly to a sanitary sewer.

Sinks

Hand washing sinks shall be in each room near the exit. For suites that contain multiple laboratory rooms, a hand washing sink shall be available in each room. Knee – operated sinks shall not be installed; hands-free infrared sensors are preferred to avoid rip or bump hazards.

Sinks shall be hands-free. Infrared sensors are preferable, but may not be suitable for all laboratories. In cases where infrared sensors cannot be used, knee-operated sinks are preferable to foot-operated.

Autoclaves

“Clean” side of pass-thru autoclave shall be in a room with security system to limit access to specific individuals. Install pass-thru autoclave using a bio-seal to seal wall penetration. Pass-through to the anteroom or support room; may be located outside the BSL-3 laboratory but within the building (only when no alternative is available).

Autoclave shall be equipped with interlocked doors.

The floor under the autoclave shall be monolithic, seamless, or heat-sealed, coved, and water-tight.

Floor penetrations, if essential, shall have a water and gas-tight seal at the monolithic floor.

The walls and hard ceiling shall have epoxy paint.

Exposed pipes shall be insulated.

The autoclave shall be seismically anchored.

Fire sprinkler heads, if in the canopy, shall be rated higher than the steam temperature.

A curbed corrosion-resistant basin shall be installed to prevent leakage.

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A canopy hood is provided over the exit door of the autoclave to contain heat and steam.

The installation shall be signed off by a professional engineer.

The autoclave room shall have a minimum of 10 air changes per hour.

Life Safety

Visual and audible fire alarms shall be provided, with the audible alarm clearly audible above ambient noise levels (low-frequency alarms for animal facilities).

A wall-mounted ABC Dry Chemical fire extinguisher shall be mounted near the exit door of the anteroom.

Laboratory-safe refrigerators shall be used to store flammable/ combustible materials. Refrigeration is generally not required for chemicals used in BSL-3 labs.

Alarms

Alarms shall be provided for:

- Fire hazard
- Ventilation failure (exhaust fan failure)
- Differential pressures below 0.05" wg
- -80°C freezers
- Incubators (based on user programming)

Local and remote alarms are required for facility access control systems and facility security systems.

Alarms shall be connected to the building control system.

Alarms shall be audible and visible throughout the laboratory. Exhaust fan/pressure differential failure alarms shall be audible/visible to personnel prior to entry into the laboratory or suite.

Alarms shall be differentiated from each other so that each can be easily identified.

Alarms shall be on UPS power.

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Vacuum System/Pump

Vacuum lines are protected with liquid disinfectant traps and HEPA filters, or their equivalent. Filters shall be replaced as needed. An alternative is to use portable vacuum pumps (also properly protected with traps and HEPA filters).

If an individual vacuum pump is used, it shall be in the laboratory. Noise and maintenance issues shall be addressed.

Electrical

Emergency power shall be provided for:

- HVAC (including controls)
- Alarms
- Security /access control systems
- Emergency lighting
- Biological safety cabinets
- Storage freezers
- Incubators
- Facility security systems

UPS power shall be provided to alarms, access control systems, and the facility security system, and when possible, to biological safety cabinets.

An independent circuit shall be provided for each biological safety cabinet.

Wall/ceiling penetrations shall be kept to a minimum and shall be sealed with non-rigid, non-shrinking, silicone or latex sealant; for fire-rated walls, apply sealant before fire stopping.

Junction boxes shall be cast and/or sealed airtight (e.g. closed cell foam compatible with gaseous formaldehyde).

Circuit breakers are located outside containment and are labeled.

Heating, Ventilation, and Air Conditioning (HVAC) Systems

BSL-3 laboratory spaces shall be provided with redundant air exhaust fans unless an alternative design is specifically approved by EH&S and Facilities Services.

A differential pressure monitor to determine proper directional (inward) air flow shall be

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installed at each suite and laboratory entrance, and the monitor shall provide a local audible alarm. Pressure differentials shall be monitored remotely to track performance in real time and communicate off-normal conditions.

For Class II, type B2 biosafety cabinets, the cabinet exhaust fan shall be interlocked with the cabinet supply air to prevent positive pressurization of the interior of the cabinet if the exhaust fan fails.

In most cases, the HVAC system shall be Constant Air Volume (CAV). Variable Air Volume (VAV) is not recommended.

Electronic direct digital controls are used to manage the system.

Recirculation of exhaust air shall not be allowed.

A dedicated exhaust system is required.

All air exhausted from the BSL-3 laboratory space shall be HEPA-filtered unless an alternative design is specifically approved by EH&S. HEPA filter housing shall allow in situ decontamination of filters (gas-tight dampers are required upstream and downstream), as well as performance testing of the HEPA filters.

Air supply and exhaust system capacity shall be $\geq 125\%$ of the laboratory's requirements to provide for future adaptability and flexibility.

The HVAC system shall create directional airflow drawing air from rooms/areas of low hazard into rooms/areas of higher hazard.

Inward directional airflow shall be maintained by providing 15% more flow of exhaust airflow than supply air (USDA) (minimum 200 cfm – Jennette, 2000), and sufficient to maintain a differential pressure between rooms of 0.05 – 0.20" Wg.

The air balance shall accommodate biological safety cabinet canopy/thimble connection or Class II type B2 cabinet exhaust requirements.

Inward directional airflow shall be able to be verified before entry. Install a device(s) to indicate/confirm directional airflow into the laboratory (e.g., 0 – 0.20" Wg magnehelic gauges, digital differential pressure monitors, or both).

The BSL-3 laboratory shall not become positively pressured if the exhaust system fails, power to exhaust fans and supply air fans is lost, or upon returning from power failure to normal operating conditions. The supply air fan must be interlocked with the exhaust air

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fan to prevent the BSL-3 laboratory space from becoming positively pressurized. Interlock of the supply and exhaust fans is not specifically stated in the current edition of the BMBL but is required to ensure “sustained directional airflow” as required by the BMBL; therefore, an interlock is a requirement for a BSL-3 laboratory.

Exhaust ductwork shall not be positively pressurized.

Supply and exhaust dampers shall be gas-tight and closable from outside the facility to facilitate decontamination with gaseous paraformaldehyde or other sterilant gas.

Local visual and audible ventilation system failure alarms are required for laboratory personnel.

Air supply diffusers shall be located so that airflow at the biological safety cabinet face is unaffected (laminar diffusers preferred).

Ductwork shall normally be located external to the laboratory; if exposed in the laboratory, ductwork is clear of walls to allow for cleaning, maintenance, and leak testing.

Ductwork shall be gas-tight 316 stainless steel up to the HEPA filter (if present).

All ducts shall be constructed in a leak-tight manner with seams and joints usually welded airtight.

Welded joints are required for all connections except for the damper(s) (use flange and bolt connections for quick change-out in the future).

Limit elbows whenever possible to reduce the amount of background noise generated.

HEPA Filters

The Environmental Health & Safety and Facilities Services Department may determine that a HEPA-filtered exhaust system is not necessary after complete evaluation of the on-site conditions, including evaluations of:

- Local code
- Facility/building
- Infectious agent
- Conditions of the experiment or nature of animal used
- An engineering study of the exhaust air plume that demonstrates that air shall be directed away from occupied areas and air intakes

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HEPA filters, if provided on the exhaust system, shall be "bag-in, bag-out," and the housing shall accommodate gas decontamination and filter testing (gas-tight dampers and housing).

HEPA filters shall be located as close to the laboratory as practical to minimize the length of potentially contaminated ductwork.

HEPA filter housings shall be no more than five-feet high to facilitate filter change-out.

When HEPA filters are installed, a manometric gauge or other pressure-monitoring device shall be installed, with the display placed in the most accessible location that is practical, to measure pressure drop across the filters.

A HEPA may be required on the autoclave exhaust, ultracentrifuge vent, and sewer vent.

Arrangements shall be made to permit periodic leak testing of exhaust system HEPA filters. The system shall comply with ASME AG-1.

Laboratory Furniture and Casework

Bench tops shall be impervious to water and resistant to acids, alkalis, organic solvents, and moderate heat.

Fixed casework, if used, shall be sealed/caulked to the walls on installation to facilitate cleaning and prevent harborage for vermin.

Closed cabinets rather than open shelving shall be used for storage.

In BSL-2 and 3 laboratories, chairs and other furniture shall be covered with a non-fabric material that can be easily decontaminated. NIH Guidelines; USDA; NIH Design Guidelines

Security

Provide programmable security system at entrance to suites and interior laboratories to control access by specific individual. UNR Biosafety Officer/Select Agent Responsible Official shall be consulted to determine specific security needs.

Access controls be provided to record entry and exit times and dates.

Access to mechanical and support areas shall be limited.

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Security measures shall equal or exceed the guidance set forth in the latest version of the CDC-NIH's Biosafety in Microbiological and Biomedical Laboratories. Facility security measures for BSL-3 laboratories that will be used for work involving select agents must comply with CDC/USDA select agent regulation security measures. Note: USDA has specific security requirements; refer to USDA Security Policies and Procedures for Biosafety Level-3 Facilities, DM 9610-001.

Communications

An intercom or hands-free telephone shall be in each room and shall be connected to a location that has personnel available for emergency response at all times work is being performed in a BSL-3 laboratory.

Wall/ceiling penetrations shall be kept to a minimum and shall be sealed with non-rigid, non-shrinking, silicone or latex sealant; for fire-rated walls, apply sealant before fire stopping.

COMMISSIONING

Certification of the BSL-3 laboratory (different than building commissioning) shall be performed by independent party chosen by EH&S and Facilities Services that has previous experience in testing and certifying BSL-3 labs.

Commissioning shall be performed by a third party in the presence of the Facilities Services Department and Environmental Health & Safety Offices.

A properly designed and constructed bio-containment facility, including its structural and mechanical safety systems, shall meet predetermined performance criteria and be operational upon completion of construction. The integrity of the critical components of the biological containment systems shall be verified by the testing and certification requirements.

Certification of the facility, including structural components and safety systems, shall be included as part of the overall commissioning processes normally undertaken to verify that the design and construction meet applicable standards, and that the facility can operate in accordance with the design intent.

Commissioning testing shall also be performed without degradation to the facility or mechanical system that is being tested.

BSCs shall be certified in accordance with NSF 49 after the BSC is anchored in its final

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location.

All HEPA filters shall be tested to meet NSF 49 after installation.

Integrity of epoxy coatings may be tested using ASTM D4541 Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.

The autoclave installation shall be found to be proper as attested by the sign-off of a Professional Engineer.

The autoclave shall be tested to verify that it meets specified standards:

- Thermometers are calibrated
- Clocks and timers are calibrated
- Biological indicators are used to verify the autoclave's effectiveness

The operation of backflow preventers shall be verified

Except in BSL-3 laboratories, which have special testing and certification procedures, ventilation systems shall be tested by:

- Ventilation ductwork and HEPA housings shall pass pressure-decay testing under ASHRAE SMACNA Standard 126-2000 (Method of Testing HVAC Air Ducts).
- Measurements of airflow at each supply and exhaust diffuser
- Smoke testing to visually verify limited turbulence at face of BSC
- Smoke testing to visually verify airflow from areas of low hazard to areas of higher hazard
- Verification that air system failure alarms (exhaust, supply, room pressure) function and annunciate properly
- Air balance report shall be provided to and verified by the project manager

Additional environmental protection (e.g., personnel showers, HEPA filtration of exhaust air, containment of other piped services, and the provision of effluent decontamination) shall be considered if recommended by the agent summary statement, as determined by risk assessment, the site conditions, or other applicable federal, state, or local regulations.

BIOSAFETY IN MICROBIOLOGY AND BIOMEDICAL LABORATORIES (BMBL)

REQUIREMENTS

Refer to the latest version of the CDC/NIH publication, “Biosafety in Microbiological and Biomedical Laboratories” (BMBL) for requirements for BSL-1, BSL-2, and BSL-3 laboratories. An overview of these requirements are provided below but they may not be all inclusive or may be out of date with the most current requirements.

Biosafety Level 1

A door.

A sink for hand washing.

Designed for easy cleaning.

Bench-tops impervious to water and resistant to acids, alkalis, organic solvents, moderate heat, and chemicals used to decontaminate.

Laboratory furniture capable of supporting anticipated loading and uses.

Accessible spaces between and under benches, cabinets, and equipment.

Windows fitted with fly screens (if they can be opened).

Biosafety Level 2

BSL-1 Requirements and Good Practices.

Lockable, self-closing, fire-rated door that opens inward.

Located away from public areas.

Appropriately installed biological safety cabinets.

Readily available eyewash station that complies with the requirements of Chapter 4 of this Guide.

Adequate illumination for all activities.

Consideration of inward flow of air without recirculation to spaces outside of the laboratory.

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Seismically anchored autoclaves.

Good Practice for BSL-2 includes:

- Floors with a slip-resistant, smooth, hard finish; are liquid-tight or monolithic/seamless or have welded seams; and that have a wall covered up 4-inches, or a cove-base installed to create a water-tight seal to the floor.
- Walls that are durable, washable, and resistant to detergents/disinfectants (use durable glossy acrylic or epoxy paint or equivalent).
- Protection of exposed corners and walls from damage by carts.
- Wall/ceiling penetrations kept to a minimum and sealed with fire-retardant material.
- Douse shower unit in near proximity. The safety shower/eyewash shall comply with the requirements of Chapter 4 of this Guide.
- Floor drain for autoclave.
- A canopy hood located over each end of the autoclave.

Biosafety Level 3

BLS-2 Requirements and Good Practices.

The laboratory is separated from areas that are open to unrestricted traffic flow within the building, and access to the laboratory is restricted. Passage through a series of two self-closing doors is the basic requirement for entry into the laboratory from access corridors. Doors shall be lockable. A clothes-changing room may be included in the passage way.

Each laboratory room contains a sink for hand washing. The sink is hands-free or automatically operated, and is located near the room exit door.

The interior surfaces of walls, floors, and ceilings of areas where BSL-3 agents are handled are constructed for easy cleaning and decontamination. Seams, if present, shall be sealed. Walls, ceilings, and floors shall be smooth, impermeable to liquids, and resistant to the chemicals and disinfectants normally used in the laboratory. Floors shall be monolithic and slip-resistant. Consideration shall be given to the use of covered floor coverings. Penetrations in floors, walls, and ceiling surfaces are sealed. Openings such as those around ducts and the spaces between doors and frames are capable of being sealed to facilitate decontamination.

Bench-tops are impervious to water and are resistant to moderate heat and the organic solvents, acids, alkalis, and those chemicals used to decontaminate the work surfaces

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and equipment.

Laboratory furniture can support anticipated loading and uses. Spaces between benches, cabinets, and equipment are accessible for cleaning. Chairs and other furniture used in laboratory work shall be covered with a non-fabric material that can be easily decontaminated.

All windows in the laboratory are closed and sealed.

A method for decontaminating all laboratory wastes is available in the facility and utilized, preferably within the laboratory (i.e., autoclave, chemical disinfection, incineration, or other approved decontamination methods). Consideration shall be given to means of decontaminating equipment. If waste is transported out of the laboratory, it shall be properly sealed and not transported in public corridors.

Biological safety cabinets are required and are located away from doors, from room supply louvers, and from heavily traveled laboratory areas.

A ducted exhaust air ventilation system is provided. This system creates directional airflow, which draws air into the laboratory from "clean" areas and toward "contaminated" areas. The exhaust air is not recirculated to any other area of the building. Filtration and other treatments of the exhaust air are not required, but may be considered based on site requirements and specific agent manipulations and use conditions. The outside exhaust shall be dispersed away from occupied areas and air intakes, or the exhaust shall be HEPA-filtered. Laboratory personnel shall verify that the direction of the airflow (into the laboratory) is proper. It is recommended that a visual monitoring device that indicates and confirms directional inward airflow be provided at the laboratory entry. Consideration shall be given to installing an HVAC control system to prevent sustained positive pressurization of the laboratory. Audible alarms shall be considered to notify personnel of HVAC system failures.

HEPA-filtered exhaust air from a Class II biological safety cabinet (BSC) can be recirculated into the laboratory if the cabinet is tested and certified at least annually. When exhaust air from Class II BSCs is to be discharged to the outside through the building exhaust air system, the cabinets shall be connected in a manner that avoids any interference with the air balance of the cabinets or the building exhaust system (e.g., an air gap between the cabinet exhaust and the exhaust duct). When Class III BSCs are used, they shall be directly connected to the exhaust system. If Class III BSCs are connected to the supply system, it is done in a manner that prevents positive

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pressurization of the cabinets

Continuous flow centrifuges or other equipment that may produce aerosols are contained in devices that exhaust air through HEPA filters before discharge into the laboratory. These HEPA systems are tested at least annually. Alternatively, the exhaust from such equipment may be vented to the outside if it is dispersed away from occupied areas and air intakes.

Vacuum lines are protected with liquid disinfectant traps and HEPA filters, or their equivalent. Filters shall be replaced as needed. An alternative is to use portable vacuum pumps (also properly protected with traps and filters).

An eyewash station is readily available inside the laboratory.

Illumination is adequate for all activities, avoiding reflections and glare that could impede vision.

The Biosafety Level-3 facility design and operational procedures shall be documented. The facility shall be tested for verification that the design and operational parameters have been met prior to operation. Facilities shall be re-verified, at least annually, against these procedures as modified by operational experience.

Additional environmental protection (e.g., personnel showers, HEPA filtration of exhaust air, containment of other piped services, and the provision of effluent decontamination) shall be considered if recommended by the agent summary statement, as determined by risk assessment, the site conditions, or other applicable federal, state, or local regulations.

Laboratory separated from areas that are open to unrestricted traffic flow within the building, and access to the laboratory is restricted.

BIOLOGICAL SAFETY CABINETS

Features

All biological safety cabinets (BSCs) shall meet the specifications within the most recent edition of the National Sanitation Standard 49 – Class II (Laminar Flow) Biohazard Cabinetry.

UV lights are not required nor recommended.

All BSCs shall be seismically anchored.

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All biological safety cabinets will be selected prior to HVAC design and be approved by the Facilities Officer and EH&S.

Class II A2 BSCs are recommended for most biohazard work, and are preferable to Class II A1 because of the negative plenum design of the A2. At a minimum, Class II A1 or Class II A2 BSCs shall be used for biohazard work. Class I BSCs will not be approved.

Class II A1 and A2 BSCs shall connect to the exhaust system via an air gap (canopy or thimble), or exhaust directly into the laboratory. The canopy/thimble connection shall provide access to the exhaust filter for testing of the HEPA filter. The canopy/thimble connection shall have a ribbon streamer or like device attached to the edge to indicate the direction of flow.

Class II B2 BSCs shall be used for bio-hazardous work involving greater-than trace amounts of flammable, volatile, or toxic chemicals. Class II B2 BSCs shall be directly (hard) connected to the exhaust system. Class II B2 BSCs shall have fan interlocks, so that when the exhaust fan is manually shut off, the internal blower of B2 BSCs shuts off.

Class III BSCs shall be directly (hard) connected to an exhaust system dedicated to that Class III BSC. If they are connected to the supply system, it is done in a manner that prevents positive pressurization of the BSC. Class III BSCs have two HEPA filters in the exhaust system.

Class II B2 and Class III BSCs shall not be manifolded with other types of BSCs or fume hoods. Class II B2 BSCs can be manifolded with other Class II B2 BSCs.

Redundant exhaust fans shall be supplied for Class II B2 BSC exhausts, since the BSC's containment depends on the building's exhaust system.

14-inch clearance above the cabinet shall be provided for accurate air velocity measurement across the exhaust filter surface and for exhaust filter changes. When the BSC is hard-ducted or connected by a canopy connection to the ventilation system, adequate space shall be provided so that the configuration of the ductwork will not interfere with airflow.

Natural gas is not recommended. If provided, the gas line shutoff valve shall be easily accessible. The gas supply line shall have flex gas lines and a pipe union between the shutoff valve and the wall.

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Where BSCs are directly (hard) connected to the exhaust system, an audible and visual alarm system to alert the user indicating the loss of exhaust flow in the external duct shall be used.

Location

The BSC shall be located at least six feet from doors and high-traffic areas, and such that air supply diffusers do not affect airflow at the BSC face.

BSCs shall be placed out of the direct traffic pattern of the laboratory. Air supply diffusers or exhaust vents shall not be placed directly over or in front of BSCs where the movement of air can affect the airflow of the cabinet.

The BSC shall be located away from the entry to the laboratory (i.e., the rear of the laboratory away from traffic), since people walking parallel to the face of a BSC can disrupt the air curtain. The air curtain created at the front of the cabinet is quite fragile, amounting to a nominal inward and downward velocity of 1 mph. Open windows, air supply registers, or laboratory equipment that create air movement (e.g., centrifuges, vacuum pumps) shall not be located near the BSC. Similarly, chemical fume hoods shall not be located close to BSCs.

If multiple BSCs are located across from each other, they shall be offset for personnel clearance if placed near another BSC, and away from windows where convection may affect airflow at the BSC face.

BSCs shall have clearance of at least six inches from rear and side walls for cleaning and maintenance, and to ensure that the air return to the laboratory is not hindered.

Certification

Biosafety cabinets shall be certified by a qualified independent testing organization approved by EH&S prior to building acceptance or for installations not involving significant building modifications, and before use with biohazards.

ERGONOMICS DESIGN AND LABORATORY SPACES

BACKGROUND

Today, technology has advanced to include automated processes for centrifugation, chemical and biological assays, and processing. These advancements, however, have exposed people working inside these high-tech labs to new hazards: cumulative trauma

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disorders, such as tendonitis, carpal tunnel syndrome, and back disorders. Attention to ergonomic issues can prevent the development of these work-related musculoskeletal disorders, and can result in a more safe and productive workplace.

Cumulative trauma disorders are signposts that work design is a barrier to a researcher's performance. To support performance, laboratory facilities and research activities shall be designed such that:

- Workstations, scientific products, laboratory layout, optical systems, and displays match the requirements of people in terms of height, reach, and access.
- Material-handling tasks, such as moving carboys and handling compressed gas cylinders, are designed to accommodate differences in strength and body size among workers.
- Barriers to productivity, human performance, and safety are removed by focusing on and understanding lab users' needs.

Worker comfort directly impacts laboratory research and production. Failure to outfit and set up a laboratory properly can encourage the development of repetitive stress injuries or cumulative trauma disorders. Proper selection and installation of chairs, tables, work surfaces, and equipment can improve worker comfort, safety, productivity, and accuracy.

Use of a systematic approach to the design process can optimize laboratory environments for human use and safety. Human-factor design/ergonomics is most effective when it is an essential part of a good design, not something separate or added on after the fact. It shall be integrated into the total design process from start to finish.

LABORATORY ERGONOMIC DESIGN CRITERIA

Ergonomic design considerations shall be incorporated into laboratory planning, construction and operation.

The team shall prepare a conceptual design to provide the foundation for the functional design and layout of the space. Equipment requirements, user needs, and performance expectations shall be identified, preliminary research and development efforts initiated, and the system specified. User needs and requirements, equipment performance specifications, regulatory constraints, and other factors impacting the lab environment shall be identified before the formal design process is initiated.

Workstations shall be tailored to match the human anthropometry (human

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measurements) to minimize extreme postures, improve task efficiency and provide a safe work environment.

- Fume hoods shall be adjustable for researchers of different sizes.
- Base cabinets shall have a knee clearance for seated work (e.g., to accommodate disabled researchers).
- Angled-glass fronts can improve visibility when working.

End of Appendix H LABORATORY SAFETY DESIGN GUIDELINES

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APPENDIX I
SIGNAGE STANDARDS

The following appendix includes information and standard drawings that are diagrammatic and are used only to convey intent.

SYSTEM DESIGN AND PERFORMANCE STANDARDS

Signs shall adhere to current campus design standard. When adding or replacing signs in buildings with legacy-style signage, all attempts must be made to match existing.

Sign colors shall be factory finished. No painted surface signage will be accepted.

See linked signage details. CAD details are available upon request.

The contractor is responsible for ensuring signage complies with UNR standards.

All dimensions are in inches unless otherwise specified.

Signage must meet 2010 ADA standards.

Variances of any type must be approved by UNR Planning & Construction.

See Signage Details for typical building signage

[Request Drawing Details](#)

- Standard Signage (101423-A)
- Standard Signage 9" Width (101423-B)
- Standard Signage with Sheet Insert (101423-C)
- Elevator Signage (101423-E)
- Lactation Room Signage (101423-L)
- Restroom Signage (101423-R)
- Stairwell Signage (101423-S)
- Standard Exterior Signage (101423-X)
- Legacy Signage (101422-A)
- Legacy Department Signage (101422-B)
- Legacy Directional Signage (101422-C)
- Legacy Suite Signage (101422-D)
- Legacy Lactation Room Signage (101422-L)
- Legacy Restroom Signage (101422-R)
- Legacy Stairwell Signage (101422-S)

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	Current Standard (for buildings built 2006 or later)	Legacy Standard (for buildings built before 2006)
General Color Scheme	Navy or charcoal placard w/ perforated chassis	Bronze placard w/ black holder
Plates		
Material	1/8" thick substrate plastic	1/8" thick substrate plastic
Size	See signage details for allowable sizes.	Cut to fit application requirements. See legacy details for common sizes. Blank space is to be minimized.
Corner Condition	Square	Square
Background Color	Rowmark 341-502 (Marine Blue), Pantone 282 C, or RGB 4, 30, 66. Color may vary by building.	Rowmark 342-731 (Vintage Gold) or equal
Raised Character Material	1/32" thick substrate plastic applique	1/32" thick substrate plastic applique
Raised Character Color	Rowmark 311-204 (Bright White)	Rowmark 311-401 (Black)
Raised Character Font	Myriad Pro	Helvetica LT Std. (or match existing)
Braille Material	1/32" thick, clear beaded substrate plastic applique	1/32" thick, clear beaded substrate plastic applique
Mounting Method	Mount onto chassis (or wall when no chassis is required) using 3M white, double-sided foam mounting tape applied to rear surface. Gray 3M tape is not acceptable.	Mount into frame using 3M white, double-sided foam mounting tape applied to rear surface. Gray 3M tape is not acceptable.
Chassis/Frames		
Material	1/16" thick horizontally brushed aluminum plate with 3/16" diam. holes, 3/8" O.C. in both vertical and horizontal directions.	JRS brand #240 frame (1/16" thick aluminum)
Color	N/A - Stainless steel	JRS Arch Bronze
Mounting Method	3M white, double-sided tape applied to rear surface.	3M white, double-sided tape applied to rear surface. Frame may be drilled to accept screws for wall-mounting in certain applications (asbestos sampling required). Silicone and tape acceptable. Epoxy and gray 3M tape are not acceptable.
Name Plate Sliders (cubicle use)		
Material	1/16" thick substrate plastic	1/16" thick substrate plastic

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	Current Standard (for buildings built 2006 or later)	Legacy Standard (for buildings built before 2006)
Size	2" x 10" landscape	2" x 10" landscape
Background Color	Rowmark 341-502 (Marine Blue), Pantone 282 C, or RGB 4, 30, 66. Color may vary by building.	Rowmark 342-731 (Vintage Gold)
Text Font	Helvetica LT Std.	Helvetica LT Std. (or match existing)
Text Height	1/2" maximum	1/2" maximum
Text Color	Rowmark 311-204 (Bright White)	Rowmark 311-401 (Black)
Name Plate Slider Frames (cubicle use)		
Material	JRS brand #36 wall holder (1/16" thick aluminum) for 2" x 10" insert	JRS brand #36 wall holder (1/16" thick aluminum) for 2" x 10" insert
Color	Polished Silver	Polished Rose Gold

LEGACY BUILDING SIGNAGE EXAMPLES:



2" x 4" Gold ADA sign with Arch Bronze Frame (2.75" x 4.23" size currently installed in Chemistry Building, Savitt Medical Sciences, and the Redfield Campus – not preferred.)



6" x 18" Gold ADA sign with Arch Bronze Frame

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CURRENT STANDARD SIGNAGE EXAMPLES:



3" x 6" Navy Standard Sign with Aluminum Chassis (101423-A1)



6" x 6" Navy Standard Sign with Card Insert and Aluminum Chassis (101423-A3)



3" x 9" Navy Standard 9" Sign with Aluminum Chassis (101423-B1)

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INTERIOR ALPHA/NUMERIC ROOM NUMBER SEQUENCING GENERAL GUIDELINES

SYSTEM DESIGN AND PERFORMANCE STANDARDS

All new room naming/number assignments should adhere to the following criteria, and must be reviewed by the Facilities Planning & Construction designated room numbering authority. All edits to a room numbering scheme must be reflected in final record drawings.

GENERAL ROOM NUMBER SEQUENCING

Room numbers are typically three digits, four digits with alpha suffixes or prefixes, and are established from the floor on which they are located. Basement room numbers start with 001 and continue, First Floor room numbers start with 100 and continue, Second Floor numbers start with 200 and continue, and so on.

Accessible Attic and Mechanical Penthouse levels follow the same pattern and are treated as another level (400, 500, etc.).

In the unlikely event that a Sub-Basement level is constructed, room numbering should begin with SB001 and continue.

Large mezzanines shall be a numbered floor. Rooms within small mezzanines between floors shall carry an MZ prefix. Example: A lounge space between floors 01 and 02 shall be MZ100.

All rooms should be numbered sequentially (example: 101, 102, 103, 103A, 103B, 104) unless there is known potential for further subdivision of a room. In this case, an appropriate gap in sequencing should be observed.

Any room that is only accessible via entry through another room should carry the anteroom's number followed by an alpha letter. Example: A room accessible only through room 201 would be designated room 201A. A closet or room accessed through a room with an alpha suffix shall be formatted as 201A1.

Cubicles: Cubicle areas are not assigned sub-room numbers (401A, 401B, 401C, etc.) unless needed to identify multiple departments or room uses within a cubicle-containing space.

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SPECIALTY ROOMS

The following specialty rooms require alpha prefixes as shown in the table below.

All attempts should be made to 'stack' these room numbers from floor to floor. Example: Men's Restroom R202 on the Second Floor should be directly above Men's Restroom R102 on the First Floor and so on.

Room numbering for these rooms should begin with X01 to allow for 'stacking' down to a Basement or Sub-Basement level (example: EL001, EL101, EL201, EL301, etc.). Numbering for these room types is independent of numbering of surrounding non-specialty room types.

Any other areas that may be unique to a building must be identified by numbering but do not necessarily require posted signage.

ROOM TYPE	ALPHA PREFIX (ex: C301)	SIGNAGE NOTE
Corridor	C	Requires number but not signage
Electrical	E	Requires braille
Elevator	EL	Requires floor number and braille signage, no room number
Information Technology (includes telecom, server rooms/closets, MDF, IDF)	T	Requires braille
Janitorial	J	Requires braille
Mechanical	M	Requires braille
Restroom	R	Requires braille. Private restrooms should have an alpha suffix, not

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ROOM TYPE	ALPHA PREFIX (ex: C301)	SIGNAGE NOTE
		prefix (ex: office 235, attached restroom 235A)
Stairwells	S	Requires floor number and braille signage at exterior and interior points of stairwell, no room number

DIRECTION OF NUMBERING

Room numbering should begin at a building’s main entrance and follow a natural pedestrian footpath, whether clockwise or counterclockwise. A building’s space plan will dictate the direction of numbering.

Long hallways with rooms on either side will be numbered as a pedestrian passes each door, with every attempt to be made at assigning even numbers on one side and odd numbers on the other side of the hallway.

Room numbering direction should be established on the main floor of a building, and subsequent floor numbering should vertically correspond to that floor as best as possible, respecting the unique nature of each floor’s plan.

Office Suites: Each room within a suite should carry the main room number plus an alpha suffix. Example Suite 301: Reception – 301; Offices – 301A, 301B, 301C, 301D, etc. Direction of numbering should follow a natural pedestrian footpath.

Important: Skip a number or two after a large room that could be split into two rooms in the future. This will help to avoid numbering out of sequence, disrupting the wayfinding nature of the numbering scheme.

END OF SIGNAGE STANDARDS

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APPENDIX J

AS-BUILT TRANSMITTAL TEMPLATE

The following appendix includes information and standard record drawings that are diagrammatic and are used only to convey intent.



As-Built Transmittal Template for Project Deliverables

SUBMITTAL DATE: _____

TO: Facilities Services Department

1664 N. Virginia St.

Reno, NV 89557

PROJECT DATE: _____

MS: 0182 Attn: (Project Coordinator)

Phone (775) 784-6514

PROJECT MANAGER: _____

FROM: _____

PROJECT #: _____

BUILDING NAME / #:

PROJECT NAME:

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Site and Utility Pre-Design Work

As-Built Record Documents

No. Of Copies	Description of Documents/Material/ Size	Electronic Format
1	CD: Architectural & Structural Record Drawings	✓ dwg ✓ pdf <input type="checkbox"/> doc <input type="checkbox"/> tif
1	CD: Plumbing & Mechanical Record Drawings	✓ dwg ✓ pdf <input type="checkbox"/> doc <input type="checkbox"/> tif
		<input type="checkbox"/> dwg <input type="checkbox"/> pdf <input type="checkbox"/> doc <input type="checkbox"/> tif
		<input type="checkbox"/> dwg <input type="checkbox"/> pdf <input type="checkbox"/> doc <input type="checkbox"/> tif
		<input type="checkbox"/> dwg <input type="checkbox"/> pdf <input type="checkbox"/> doc <input type="checkbox"/> tif
		<input type="checkbox"/> dwg <input type="checkbox"/> pdf <input type="checkbox"/> doc <input type="checkbox"/> tif
		<input type="checkbox"/> dwg <input type="checkbox"/> pdf <input type="checkbox"/> doc <input type="checkbox"/> tif
Other:		
Received By: _____ Comments: _____		

END OF AS-BUILT TRANSMITTAL TEMPLATE

APPENDIX L ELECTRICAL METHOD OF PROCEDURE

The following appendix includes information and standard drawings that are diagrammatic and are used only to convey intent.

ELECTRICAL METHOD OF PROCEDURE (MOP)

UNR requires a Method of Procedure (MOP) whenever there will be an electrical shutdown of our transmission and distribution system(s). The purpose of the MOP is:

- Increase Safety.
- Minimize shut down time by planning properly.
- Coordinate duties between all parties involved in the shutdown process.
- Improve communication and provide a clear understanding of the process.
- Ensure proper PPE is used.
- Have communication between the University and any contractor working the shut-down.

MOPS should include the following:

- Pre-work briefing with all that are present for the shutdown.
- Include safety discussion, all potential hazards.
- Job description – what will be done, when it will be done, the voltages and location of the equipment will all need to be included.
- The steps that will be followed.
- Emergency procedures and collection points.
- Location of emergency exits.
- The levels of PPE required for each step.
- Include steps for pre-use inspection of PPE.
- Steps to take for Lock-out/Tag-out.
- Steps for verification of voltage / rotation or other tasks to be accomplished.
- How you will control access into the work area based on arc flash boundaries.
- Type of meter being used for voltage verification and max voltage rating.
- Lighting considerations.

THE FOLLOWING IS AN EXAMPLE OF AN ACTUAL MOP EXECUTED ON CAMPUS:

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MOP 7-23-2016

Ross Hall and Jones Center shut down.

Work to be performed: UNR to replace wire to main switch gear for new water heater, tighten and clean gear and panels in Ross Hall and Jones Center.

Contractor Contact - John Doe – 775-321-1234

UNR Contact – Project Coordinator – 775-987-6789

Proper PPE

- Category 2 and 4 / 8 cal. and 40 cal.
- Fluke volt meter
- Lock out tag out, lock out tag out tree

Equipment

- LED lights
- Socket sets
- Rags
- 5-point sockets
- Torque Wrenches
- Portable Generators
- Cords
- Vacuums
- Torque specs.
- Hot Sticks
- Rope with a hook

Morning meeting at 6:30 am in Electric shop Saturday 7-23-2016

- Review Project with UNR MOP

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- Verify Rotation at 120/208 volt disconnect on main transformer with Category 2/8 cal² gear (James and Steve).

Power shut down 7:00 am with Joe from Contractor X on site in case switch does not work

- UNR Open Main breakers in Ross and Jones and LOTO (Steve and James).
- UNR open PB- 13, open, close, open 4160-volt switch to Ross and Jones with Category 4/40 cal² gear (Steve and James).
- Close vault lid, LOTO PB-13.
- UNR Verify power is de-energized to Ross and Jones with Category 2/8 cal² gear (Steve and James).
- If PB- 13 switches correctly, Joe from Contractor X can leave.

7:00 to 3:00 pm.

- UNR to pull wire for water heater @ Ross Hall (Brent and Cimothy).
- UNR torque and cleaning switch gear @ Ross Hall (Brent and Cimothy).
- Check all Emergency lights in Ross and Jones (James, Steve).
- UNR to torque and clean panels @ Ross Hall and Jones (James, Steve, Brent, and Cimothy).
- UNR clean and torque transformer (not the porcelain bushings) T- RHJV.
- UNR exercise all breakers in both buildings.
- Make drawing of conduits in PB-13 for FS Electrical Engineer.

Re-energize power 3:30 pm or sooner

- UNR contact control shop (997-9652) before we re-energize
- UNR remove LOTO from PB-13
- UNR close switch at PB-13 with Category 4/40 cal² gear (James and Steve)
- UNR Verify three phase power Ross and Jones with Category 2/8 cal² gear (James and Steve).
- UNR close Main breakers @ Ross and Jones with Category 2/8 cal² gear (James and Steve).

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- UNR confirms power is restored to both buildings.
- Clean up and put away all tools and equipment.

If Switch fails Joe from Contractor X is on standby to bypass switch.

Joe (775) 555-1234

END OF ELECTRICAL METHOD OF PROCEDURE

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BASIC SYSTEMS REQUIRING THIRD PARTY COMMISSIONING

HVAC

HOT WATER, GLYCOL, CHILLED WATER, AND CONDENSER WATER PIPING SYSTEMS

Work includes installation inspections and checks; pressure tests and documentation; expansion tanks; confirmation of flow balancing completion; seismic restraints installation certification.

DUCT AND AIR-HANDLING SYSTEMS

Work includes installation inspections and checks; confirmation of flow balancing completion; leak testing as applicable; seismic restraints installation certification.

CHILLERS

Work includes installation inspections and checks; seismic restraints installation certification; checkout and startup by manufacturer's representative; documented performance measurements including capacity, evaporator and condenser flows, motor amperage, controls operation, and sound levels.

COOLING TOWERS

Work includes installation inspection and checks; seismic restraints installation certification; chemical treatment; checkout and startup by manufacturer's representative in conjunction with chiller; documented performance measurements including sound, capacity, motor amperage, pan heater operation, sweeper system operation, makeup water, overflow, and capacity controls.

CLOSED-CIRCUIT HEAT REJECTORS OR EVAPORATIVE CONDENSER

Work includes installation inspection and checks; seismic restraints installation certification; chemical treatment; checkout and startup by manufacturer's representative in conjunction with chiller; documented performance measurements including sound,

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capacity, motor amperage, pan heater operation, sweeper system operation, makeup water, overflow, and capacity controls.

REFRIGERATION COMPRESSOR/CONDENSING UNIT

Work includes installation inspection and checks; seismic restraints installation certification; checkout and startup by manufacturer's representative as specified; documented performance measurements including capacity, evaporator and condenser pressures, motor current draw, and controls operation.

BOILERS

Work includes installation inspection and checks; seismic restraints installation certification; boil out and chemical treatment; checkout and startup by manufacturer's representative as specified; documented performance measurements including combustion efficiency, capacity test, burner and controls operation.

PUMPS

Work includes documented checks on alignment, rotation, motor current draw, flows and pressures.

SUPPLY, RETURN, RELIEF AND EXHAUST FANS

Work includes checks on installation; seismic restraints; dampers and other accessories; rotation, sound levels, motor current draw, and airflows and pressures.

AIR HANDLING UNITS (BOTH PACKAGED AND BUILT-UP)

Work includes installation inspections and checks; seismic restraints installation certification; checkout and startup by manufacturer's representative as specified; documented capacity tests, for heating, cooling, air flow and static pressures; operation of all controls; sound level.

AIR TERMINAL DEVICES

Work includes installation inspection and checks; for VAV units, flow adjustments and calibration coordinated with controls and air balancing; controls operation including flow modulation, reheat, controls responses.

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FAN-COIL UNITS

Work includes installation inspections and checks; performance and controls checks.

WATER-SOURCE HEAT PUMPS

Work includes installation inspections and checks; documented seismic installation certification; performance and controls checks.

CONTROLS AIR COMPRESSOR

Work includes installation inspections and checks; documented seismic installation certification; operational checks.

DIRECT DIGITAL CONTROL SYSTEM

Work includes inspections and checks of installation and operation of all devices; complete operation of all controls sequences, in coordination with commissioning of all controlled systems.

VARIABLE FREQUENCY DRIVES/MOTOR CONTROLS

Work includes inspections and checks of installation and operation of all devices; complete operation of all controls sequences, in coordination with commissioning of all controlled systems.

ELECTRICAL COMMISSIONING

PAD MOUNT SWITCH

Work includes visual inspections of the equipment, anchoring, paint, labeling, clearances, grounding, terminations, testing caps, bleeder wires, cable supports, conductor phasing, vault cleanliness, vault and door hardware. Review of cable testing report for each conductor. Review and record settings of overcurrent protection. Test tripping mechanisms for each fault interrupter. Verify and record gas levels. Verify arc flash labeling is installed and in agreement with arc flash study.

PAD MOUNT TRANSFORMER

Work includes visual inspections of the equipment, anchoring, paint, labeling, clearances, grounding, torquing of terminations, conductor phasing, cleanliness, door

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hardware, and door seals. Review cable testing report for each conductor. Verify gauges are working properly and record gauge readings. Verify arc flash labeling is installed and in agreement with arc flash study.

MAIN SWITCHBOARD

Work includes visual inspections of the equipment, anchoring, paint, labeling, nameplate information, clearances, grounding, torqueing of terminations, conductor phasing, cleanliness, door hardware, and door seals. Review cable testing report for each conductor. Record all circuit breaker settings and verify that each setting is in accordance with the coordination study. Verify arc flash labeling is installed and in agreement with arc flash study. Test and verify the accuracy of the load meter in each function and verify values can be seen on the campus control system. Test and verify the operation of the shunt trip mechanism. Inspect installation and functions of the surge suppression device and verify SPD lead lengths are as short as possible.

DISTRIBUTION BOARDS

Work includes visual inspections of the equipment, anchoring, paint, labeling, nameplate information, clearances, grounding, torqueing of terminations, conductor phasing, cleanliness, door hardware, and door seals. Review cable testing report for each conductor. Record all circuit breaker settings and verify that each setting is in accordance with the coordination study. Verify arc flash labeling is installed and in agreement with arc flash study. Inspect installation and functions of the surge suppression device and verify SPD lead lengths are as short as possible.

STEP DOWN TRANSFORMERS

Work includes visual inspections of the equipment, anchoring, paint, labeling, nameplate information, clearances, grounding, torqueing of terminations, conductor phasing, vibration isolation, and cleanliness. Review cable testing report for each conductor. Verify arc flash labeling is installed and in agreement with arc flash study.

BRANCH CIRCUIT PANELS

Work includes visual inspections of the equipment, anchoring, paint, labeling, nameplate information, clearances, grounding, torqueing of terminations, conductor phasing, cleanliness, and door hardware. Review cable testing report for each feeder conductor. Record main circuit breaker settings and verify that each setting is in

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accordance with the coordination study. Verify arc flash labeling is installed and in agreement with arc flash study.

LIGHTING CONTROL/TIME CLOCKS/PHOTOCELLS

Work includes a visual inspection of the equipment, anchoring, paint, labeling, nameplate information, clearances, grounding, terminations and cleanliness. Test each device for on/off operation by local and remote control by DDC system. Verify and record timed on/off settings. Test all motion sensors and dual level switching in each room. Test on/off function of all exterior lighting and verify time settings. Verify each lighting fixture is working properly. Perform a 90-minute run test of all emergency lighting with the building power off. Verify all emergency lighting fixtures both interior and exterior are providing required lighting levels at 90 minutes.

GENERATOR

Work includes visual inspection of the equipment, anchoring, paint, labeling, nameplate information, clearances, grounding, termination, no leaks, gauges, battery charger, battery heater, block heater, meters, control panel, weatherproof/sound attenuated enclosure, bird screens, and cleanliness. With permanently installed or portable load bank perform and record a full load 3 hour run test. Test and record the function of the following items: gauges, battery charger, battery heater, block heater, emergency stop switch, meter, control panel functions, fuel level alarm, oil pressure alarm, coolant level alarm, high temperature alarm. With the generator running record sound levels in multiple directions and at multiple distances. Verify arc flash labeling is installed and in agreement with arc flash study. Test and verify that the function of the shunt trip device. Verify fuel tank is full after all tests.

AUTOMATIC TRANSFER SWITCH

Test and record all functions are operational. Perform a loss of power test to the building and verify all functions work properly. Test and verify all by-pass functions. Verify and record frequency and duration of generator exercising. Verify arc flash labeling is installed and in agreement with arc flash study.

UPS SYSTEM

Work includes visual inspection of the equipment, anchoring, paint, labeling, nameplate information, clearances, grounding, terminations, control panel, batteries, wiring, and

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cleanliness. With batteries fully charged perform a full load run test. Record voltage and current levels every minute during the test for the duration of the specified run time. Verify closed transition switching during a loss of power and restoration of power to the building. Test and verify all alarms. Test and verify by-pass functions. Verify arc flash labeling is installed and in agreement with arc flash study.

FIRE ALARM SYSTEM

Work includes visual inspection of the equipment, anchoring, paint, nameplate information, batteries, wiring, grounding, terminations, device installations and locations. Test all functions of the system. Verify the function and address of each initiating and indicating device for supervisory, trouble and alarm signals. Test and verify interface with HVAC equipment and controls. Perform a loss of power test. Verify required certifications and proper tagging. Perform all tests in the presence of the Authority Having Jurisdiction. Test the auto-dialer for functionality. Verify all supervisory, trouble and alarm signals are cleared upon completion.

END OF BASIC SYSTEM REQUIRING COMMISSIONING

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SCOPE OF SERVICES, THIRD PARTY COMMISSIONING AGENT

DESIGN PHASE

Review design documents (drawings and specifications) and provide comments and suggestions for designer consideration

- 100% Schematic Design
- 100% Design Development
- 50% Construction Documents
- 100% Construction Documents

COMMISSIONING

Prepare a commissioning plan to be included in the bid documents

- Scope of commissioning
 - Describe the overall commissioning process.
- The commissioning team
 - List all members of the commissioning team, identified by individual name and corporate identity (if known) or by functional identity (e.g. general contractor, mechanical contractor, etc.) and describe their roles and responsibilities.
- Reference documents
 - Drawings, specifications, and published standards or guidelines relevant to commissioning requirements.
- Commissioning meeting requirements
 - Describe the purpose and number of commissioning meetings.

SYSTEM-SPECIFIC DETAILS

For each system to be commissioned, the commissioning plan will include the details listed below.

- The plan should also identify the required testing sequence, progressing logically from equipment, to sub-systems, from systems, to interactions between systems.

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- Equipment readiness – Describe the system verification checks to be carried out prior to start-up, and include specific checklists.
- Equipment and system start-ups – Describe the step-by-step start-up procedure for each system and piece of equipment. If the specification requires that the manufacturer's authorized technician perform the start-up, then the plan should require that a copy of the completed and signed manufacturer start-up form be included with the start-up checklist in the final documentation.
- Functional performance tests – Detail the tests needed to be demonstrated by the contractor and witnessed by the commissioning team for the correct operation under all modes of operation, and include the applicable pass/fail criteria.
- Acceptance – List the criteria for completion of the commissioning process. Typically, these will include verification of functional performance for all systems, submission of test and balance reports, operation and maintenance manuals, as well as other project specific criteria.
- Operation and maintenance staff orientation and training – Describe the intended program for staff orientation, training and demonstration. Training sessions will be videotaped.

DOCUMENTATION REQUIREMENTS

list all documentation required for the final commissioning report.

The commissioning plan itself will form the basis of this documentation, which will typically include:

- A document reference list
- Descriptions of each system, including sequence of operation
- Completed and signed system verification, start-up and functional performance test checklists
- Retests of all unacceptable results
- Training documentation, including an agenda for each scheduled session, a list of attendees, and videotape requirements
- Comprehensive operations and maintenance data
- Estimated Schedule

CONSTRUCTION PHASE

- Organize and lead the commissioning team.

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- Review shop drawings and equipment submittals for information affecting the commissioning process.
- Update the commissioning plan to reflect equipment and controls data from the submittals, and provide commissioning schedule information that the contractor can integrate into the project schedule.
- Schedule and lead commissioning meetings.
- Establish and maintain a system for tracking issues needing resolution.
- Review the project schedule periodically to ensure commissioning activities are properly incorporated; provide feedback to the designer as needed.
- Perform on-site observations during construction.
- Monitor correct component and equipment installation; including controls point-to-point checkouts. Document all observations.
- Witness equipment and system start-ups as deemed necessary. Ensure complete documentation.
- Other related work.

ACCEPTANCE PHASE

- Review and inspect, on a sample basis, the testing, adjusting and balancing work that has been carried out by another agency.
- Contractor to conduct all functional performance tests as written by the commissioning team. All functional performance tests shall be witnessed and documented by the commissioning team of sub-systems, systems, and interactions between systems. Retesting shall be scheduled for all failed tests until all functional performance tests pass the prescribed acceptance level.
- Organize and direct the training of O&M personnel.
- Videotape O&M training sessions.

POST-ACCEPTANCE PHASE

- Conduct functional performance testing of sub-systems, systems, and interactions between systems that could not be carried out prior to acceptance due to unsuitable weather conditions.
- Prepare and submit a final commissioning report.
- Provide follow-up for quality performance during the guarantee period.

Classroom Technology & Audio/Visual Design Standards

University of Nevada, Reno



Revised 2022

Departmental Contact Information:

Office of Digital Learning

Classroom Technology

1664 N Virginia Street

Mailstop 292

Reno, NV 89557

775-784-6085

classroom@unr.edu

Important Contact Information:

Ed Huffman

Executive Director, Office of Digital Learning

edhuffman@unr.edu

775.682.5666

Greg Gardella

Assistant Director, Office of Digital Learning

greg@unr.edu

775.682.6782

Brad Kuhn

Audiovisual Unit Supervisor, Office of Digital Learning

bkuhn@unr.edu

775.682.5114

Jerry Winter

IT Infrastructure Contact

jdw@unr.edu

775.784.4112

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1 Introduction

This document outlines the standards for *all projects involving audiovisual components* at the University of Nevada, Reno. The standards laid forth in this document shall be followed on all projects. Any variation from these standards shall only be done with the expressed approval from the University of Nevada, Reno (UNR) and the Office of Digital Learning (ODL).

2 Design Review and Approval

All project plans, drawings and documentation that include audiovisual components (classrooms, lecture halls, conference rooms, seminar rooms, study rooms, etc.) shall be submitted to ODL for review. Reviews by ODL will be required at each step of the planning, design and construction process - including, but not limited to, conceptual design, design development, construction documents, requests for information, and change orders.

3 Construction Meetings

The Office of Digital Learning (ODL) shall be present at all project kick-off meetings and subsequent construction meetings for any projects that include audiovisual (AV) components. The ongoing involvement of ODL in the construction process helps to ensure that AV needs are properly met and reduces the number of change orders required to meet these needs.

4 University Standards

The university has several broad standards that it follows regarding manufacturers and designs. These general standards are expanded in further detail through out this document.

5 General Requirements for All Spaces

5.1 Infrastructure

5.1.1 Networking

5.1.1.1 Wired Network Ports

Please see the table below for wired networking requirements for various types of spaces.

Location Type	Number of Wired Network Ports
Digital Signage	1 (located behind monitor)
Digital Building Directory	1 (located behind monitor)
Conference Rooms	2 (located behind monitor)
Collaboration/Group Study Rooms	3 (1 port will be needed above the drop ceiling in close proximity to the user interface location and the other 2 will be located behind the monitor)
Smart Classrooms (Single, Dual)	4 (located at podium location typically in a floor box)
Other Spaces	Contact ODL for specific requirements

For questions about network port installation and requirements, please contact:

University of Nevada, Reno - Low Voltage Contact:

Jerry Winter

I.T. Infrastructure Contact

jdw@unr.edu

775-784-4112

5.1.1.2 Wireless

Each location should be provided with complete wireless coverage. Wireless access points should be added to the location to accommodate required coverage, if necessary. Wireless coverage should be configured to support a density of 2 devices per person (or 2 times max occupancy number). All instructional spaces shall have this as a minimum level of wireless coverage.

Reference the University's Office of Information Technology (OIT)'s standards for wireless access points.

5.1.2 Conduit & Junction Boxes

5.1.2.1 Conduit

All conduits for AV cabling should be 1.25" unless otherwise specified. Rigid conduit should be used in all installations. Any turns in the conduit should be done as sweeps. Do not use hard 90° turns in any of the conduits. **AV, Network and power cabling shall each be run through separate, dedicated conduits.**

Flex (aka flexible conduit) must **not** be used under ANY circumstance for AV conduits.

*****ALL CONDUITS MUST HAVE A NYLON PULL STRING INSTALLED.*****

5.1.2.2 J-Hooks

All drop-ceiling locations will require j-hooks to be installed, spanning the distance between any conduit stub-outs and equipment locations including but not limited to projector and speaker locations. Exact locations for j-hooks will be verified on-site. J-hooks installed for wire management of these systems must use dedicated anchor points and may not use wire supports currently in use for any other purpose (i.e. ceiling grid or network wiring support). J-Hooks should be installed approximately every 5'.

5.1.2.3 Junction Boxes

Standard single- and double-gang boxes should be used for conduit installations as indicated. Do not use non-standard or "cut-in" boxes without explicit, prior approval.

Some equipment will require deeper double-gang boxes to accommodate their connections and/or depth. The following are our standard for extra-deep boxes:

- **Garvin Solid 2 ½" Deep, Two Gang Masonry Box TB-225**
<https://www.garvinindustries.com/steel-boxes-covers-accessories/masonry-boxes-and-extensions/two-gang-masonry-box-2-1-2-deep-non-gangable-w-conduit-ko-s/p/TB-225>

- **Garvin Solid 3 ½" Deep, Two Gang Masonry Box TB-235**

<https://www.garvinindustries.com/steel-boxes-covers-accessories/masonry-boxes-and-extensions/two-gang-masonry-box-3-1-2-deep-non-gangable-w-conduit-ko-s/p/TB-235>

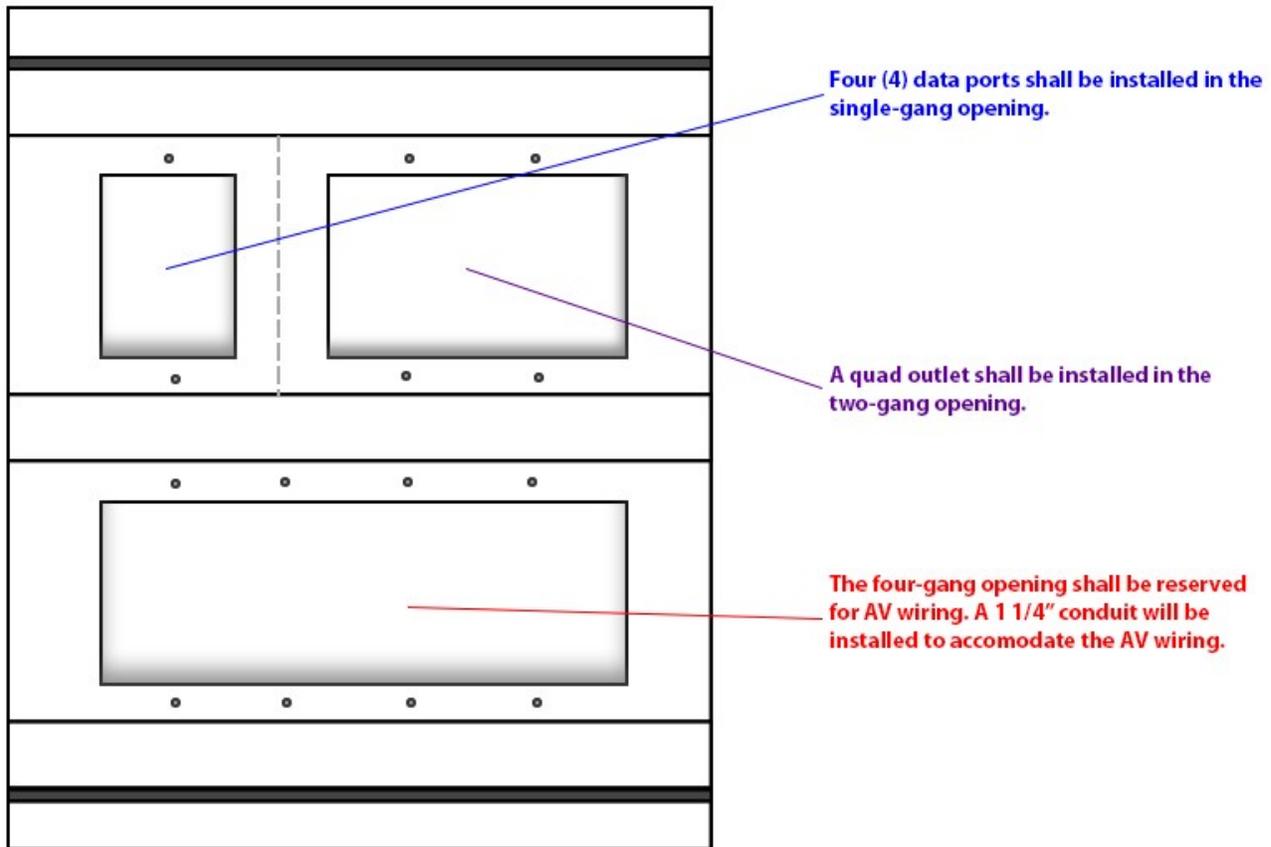
Do ***not*** use non-standard or cut-in boxes without explicit, prior approval from ODL.

Floor Boxes

Floor boxes should be used whenever possible to provide a direct pathway for AV cabling to enter instructor podia and other furniture. We use Hubbell fire-rated floor boxes for our classroom and other spaces. **All floor boxes must be fire-rated. All floor box locations shall be field verified with ODL staff.**

“Cut-In”/“Pour-In” Model:

- Hubbell CFB7G6 7-Gang Recessed Concrete Floor Box



NOT TO SCALE. OVERHEAD VIEW

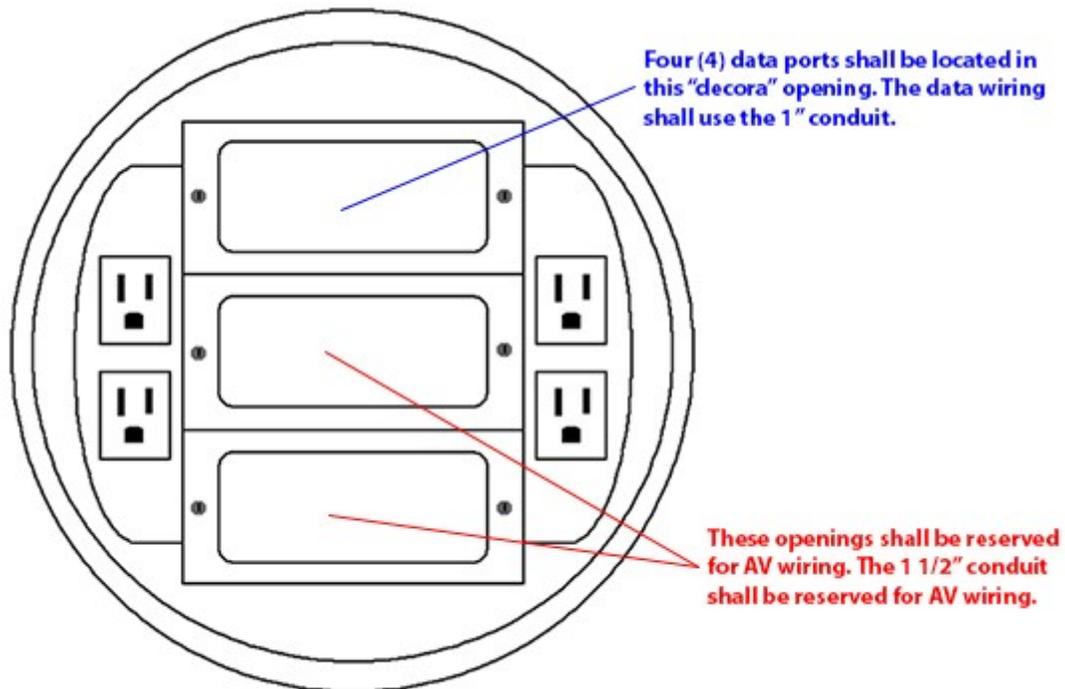
Hubbell Component	Part Number
7-Gang Recessed Concrete Floor Box	CFB7G6
Fire-Classified Kit for 7-Gang Floor Box	CFB7G6FRK
Cover for 7-Gang Floor Box	Determined based on finishes for installation location.

Contact **ODL** to determine the appropriate model specifics and final configuration.

“Poke-Through” Model:

- **Hubbell SystemOne Fire-Rated 8” Poke-through Floor Box**

Hubbell Component	Part Number
8” SystemOne floor box	S1R8PTFIT1
Single-gang insert with decora opening	S1R8CSPK
2-gang insert with 2 decora openings	S1R8CSPM
Power modules for side inserts	S1R8PSP2



NOT TO SCALE. OVERHEAD VIEW

5.1.3 Equipment Mounts

5.1.3.1 Flat Panel Mounts

Different mounts are used for different installation needs. The table below shows our standards for different scenarios. *Flat panel mounts are owner furnished and GC installed unless otherwise specified.*

Application	Manufacturer	Model
Flat, fixed install (default)	Premier	LMVS
Tilt, fixed install	Chief	LTM1U
Digital Directory	Peerless	ESF655P
Digital Signage	Premier	P4263F

5.1.3.2 Projector Mounts

Chief RPA series mounts should be used for all projector installations. Chief CMS 445 suspended ceiling tile kits (projector pans) should be used in all locations that have drop-ceilings. (See section 7.2.7 for installation instructions.) *For hard ceilings, please work with ODL to determine appropriate mount configuration.*

- **Chief RPA 298**
<https://www.legrandav.com/products/chief/mounts/projector/ceiling/rpa/rpa298>
- **Chief CMS 445***
https://www.legrandav.com/products/chief/accessories/projector/suspended_ceiling/suspended_kits/cms445
- **Chief Speed-Connect Fixed Extension Column** (specific model depends on job)
<https://www.legrandav.com/products/chief/accessories/projector/extension/extension-fixed>

*The Chief CMS445 is owner furnished and GC installed unless otherwise specified.

5.1.4 Additional Infrastructure Requirements

Additional requirements are necessary for the installation of the AV equipment listed below:

5.1.4.1 Flat Panel Locations

Some flat panel locations will require additional backing material to ensure the weight of the monitor can be properly accommodated.

5.1.4.2 Powered Speaker Locations

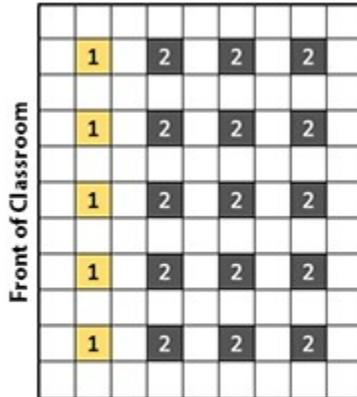
All powered speaker locations will require additional backing material to ensure the weight of the speakers can be properly accommodated.

5.1.5 Lighting and Electrical

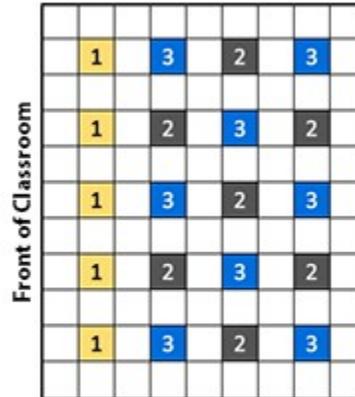
5.1.5.1 Lighting

5.1.5.1.1 Lighting Zones

As a rule, all classroom spaces will have lighting organized into a number of zones. These zones can be combined and dimmed to create any number of different lighting scenarios. Most typically, there will be a 2 or 3 zone configuration as shown in the following examples.



An example of a classroom with 2 lighting zones.



An example of a classroom with 3 lighting zones.

5.1.5.1.2 Light Switch Locations

Light switches shall be located near entry doors, as required, but any secondary switches shall be located in proximity to the final instructor/podium location.

5.1.5.1.3 Lighting Types

Indirect lighting is preferred; however, *pendant style fixtures shall not be used in rooms with AV systems.*



This is an example of a preferred indirect lighting fixture.

***** Absolutely no pendant fixtures shall be in classroom or conference room spaces. *****



Pendant fixtures such as these impede the future flexibility of the space as they interfere with projection. They shall not be used in any spaces with AV systems, such as conference rooms, classrooms, lecture halls or other meeting spaces.

5.1.5.1.4 Task Lighting

Task lighting is required for some whiteboard installations. Task lighting will be addressed on a project-by-project basis. For more information on task lighting requirements, contact ODL.

5.1.5.2 *Electrical*

All line voltage connections must be separated from low voltage connections through separate conduit or a separate channel in the raceway or cable tray.

Each circuit should have its own neutral. There should be no multi-wire branched circuits.

5.1.5.2.1 Equipment Rack/Podium Locations

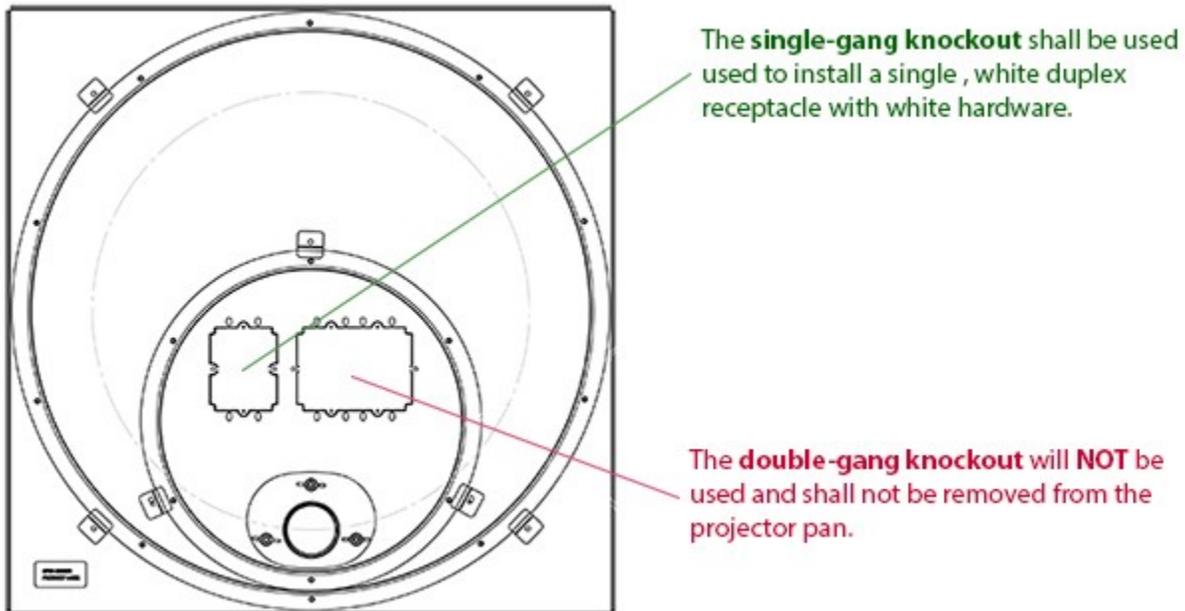
Each equipment rack/podium location will require a **dedicated** 120v/20 amp circuit. This location should have a single duplex receptacle. The duplex receptacle should be a NEMA5-15R model. Podium power is almost always located in a floor box. Floor boxes should have a single duplex receptacle. Surface mounted or flush mounted receptacles located under the podium are not permitted.

For floor box specifications, see section 4.1.3. For final floor box layouts and finish specifications, contact ODL.

5.1.5.2.2 Projector Locations

Each projector location should have a **single duplex receptacle**. The duplex receptacle should be a NEMA5-15R model. The hardware for this receptacle should be **white**, unless otherwise specified.

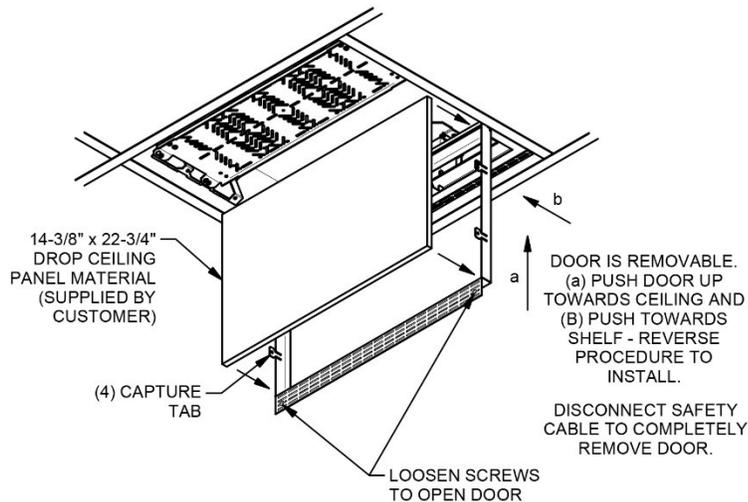
In drop ceiling installations, the duplex receptacle should be installed directly into the projector pan (*Chief model CMS 445*) using the single gang knockout located in the pan. The power should be installed using flex to the projector pan. An extra 5' of flex should be provided for this outlet to allow for future repositioning. Please note that the projector pan will not be installed in conjunction with a ceiling tile.



Projector pans are NOT used in hard-pan ceilings. For projector installations in locations with hard ceilings, please work with ODL to identify proper mounting and electrical requirements.

5.1.5.2.3 Ceiling Enclosures

For instances where equipment needs to be located near the projector, we use FSR ceiling enclosures (*FSR CB22*) mounted in the ceiling grid. The FSR enclosures fit standard 2x2 grid spaces. The FSR enclosures should be installed and wired for power according to manufacturer's specifications and UNR code.



The image above illustrates how the acoustical (or drop) ceiling material is placed in the ceiling enclosure during installation. The ceiling material will be in the room or provided by the GC. Installation of the acoustical/drop ceiling materials must be completed by the party responsible for the installation of the enclosure.

5.1.5.2.4 Flat Panel Monitor Locations (including Fixed Collaborative Monitors)

Each flat panel monitor location requires a 120v/20-amp circuit. These locations require a single duplex receptacle that should be located such that it is hidden behind the display after installation. These receptacles should be 20 amp, standard duplex receptacle.

5.1.5.2.5 Electric Projection Screens

Electric projection screens should be installed per the manufacturer's documentation. Low voltage switches that are included with the screens shall be used. Line voltage switches should not be used with electric screens on campus. In some cases, additional low-voltage wiring may be required for control of the screen from the room's AV control system. Contact ODL for final wiring configuration and the placement of the low voltage control switch prior to installation.

5.1.5.2.6 Equipment Rooms

In locations that require AV equipment rooms, all electrical outlets should have an isolated ground. The number of circuits and receptacles required will depend upon the specific project.

Other Locations

- **Camera Locations:** Camera locations require single duplex receptacles unless otherwise specified with connection to a 120v/20-amp circuit. The duplex receptacle should be a NEMA5-15R model. The hardware for these receptacles should match others installed in the room unless otherwise specified. Locations for these outlets will be field verified by the UNR ODL staff.
- **Powered Speakers:** Powered speaker locations require single duplex receptacles unless otherwise specified with connection to a 120v/20-amp circuit. The duplex receptacle should be a NEMA5-15R model. The hardware for these receptacles should match others installed in the room unless otherwise specified. Locations for these outlets will be field verified by the UNR ODL staff.

5.1.6 HVAC

Since most of the equipment is located in climate-controlled portions of classrooms, generally they do not have additional HVAC requirements. However, any AV equipment rooms will require additional HVAC considerations. These rooms typically have an abundance of gear and may not be hooked to the HVAC systems by default. The requirements for these rooms will be based upon the equipment located in the room and the nominal BTUs generated by that equipment. Contact Office of Digital Learning for exact requirements based upon the project.

5.1.7 ADA Compliance

The design of all classrooms and other spaces should follow principles of Universal Design and ***must*** adhere to all Americans with Disabilities Act (ADA) standards for accessibility and access.

- **2010 ADA Standards for Accessible Design -**
<http://www.ada.gov/regs2010/2010ADAStandards/2010ADAStandards.pdf>

5.1.7.1 Assistive Listening Systems

All spaces will be equipped for assistive listening systems as required by ADA Standards (2010).

See section 8.1.5.6 for assistive listening hardware specifications.

6 Classroom Interiors

6.1.1 Whiteboards

Whiteboard surfaces should be maximized throughout the space. Porcelain-on-steel whiteboards shall be used in all classrooms and other meeting spaces. We currently use **Claridge** brand whiteboards. The standard model is a 4' x 8' LCS Deluxe series in white with aluminum trim and map rail. Whiteboards are mounted at a standard height of 36" AFF. Other sizes/colors are used when necessary, with approval. **Substitutions are only permitted with PRIOR approval from ODL.**

- **Claridge Porcelain-on-Steel Whiteboards - LCS Deluxe**
<https://claridgeproducts.com/product/lcs-deluxe-porcelain-whiteboard/>

*****In the event that a projection whiteboard is needed, please work with ODL to identify the proper specifications for these whiteboard units prior to order/installation. *****

NOTE: Da-Lite IDEA boards or the equivalent are NOT permitted.

All whiteboards should be mounted flat to the wall, with no bowing. **Additional mounting hardware should be used when necessary to prevent bowing and maintain a flat surface.**

6.1.2 Acoustics

In rooms with multiple hard surfaces or in locations in proximity to significant noise levels, sound dampening and/or special wall construction will be required. Sound attenuation should be provided to contain noise generated from adjacent locations and from above and below the classroom's location. Mechanical equipment used in classroom spaces should not have Noise Criteria (NC) ratings that exceed 25 (throughout load range). Walls in classroom spaces should have a minimum sound transmission class (STC) of 50.

Minimum Noise Criteria (NC) ratings for classrooms:

Room Size (in Seats)	NC Rating
0-59	30-35
60 – 149	25-30
150+	20-25

For lecture halls and other large spaces, sound dampening will be required to control the reverberation time and protect sound quality.

6.1.3 Furniture

6.1.3.1 Instructor/AV Furniture

The table below shows the most common pieces of furniture used for our classroom instructor stations. Furniture models not listed below shall not be used without PRIOR approval from ODL. Contact ODL for the final configuration and location of each podium.

Furniture that does not meet ADA standards is ***not*** permitted.

Furniture Make/Model	Classroom Type
Spectrum Freedom XRS Elite Lectern (Podium)	Single Projection Classrooms*, Dual Projection Classrooms, Collaborative Classrooms*, Lecture Halls
Spectrum Honors Lectern	Only used in special instances <i>with ODL approval</i>
Middle Atlantic Credenza	Seminar Rooms+, Conference Rooms, Small Single Projection Classrooms**

* These models will be used if the space in the room permits.

+This model will be used unless a podium is preferred and can be accommodated.

**This model will be used if a podium cannot be accommodated.

7 Installation & Testing

7.1 Scheduling Installation Work

Adequate time must be allocated for the installation of the audiovisual equipment. This timeframe will vary depending on the scope of the project and the size of the location. Typically, this work can begin before the general contractor has completed work, but always has to be completed after the general contractor has completed their portion of the project. In order to ensure timely project completion, sufficient time must be allotted for either ODL or AV integrators to complete the final installation and commissioning of AV systems, prior to the release of the building for occupancy. Project teams should work with ODL (and any integration companies) to plan and schedule the installation work.

All installation work shall be completed in a timely manner. Installation work is not considered complete until the final punch list has been completed and all final job documentation has been delivered (i.e. as-built drawings, Crestron code – both compiled and un-compiled, wiring testing documentation and system use/maintenance instructions).

7.2 Equipment Installation

All equipment locations should be field verified by ODL staff prior to installation and rough-in.

7.2.1 Structural Cabling

The following cable manufacturers, makes and models listed below shall be used, unless otherwise expressly approved by ODL.

Cable Type	Manufacturer	Application	Part Number
CAT6 Shielded	Belden	HDBaseT	2183P 0101000
CAT6	Belden	AV interconnections	612825061618
3-Conductor	Belden	RS-232	82761 8771000
2-Conductor	Belden	Speaker cabling	6000UE 8771000
Balanced Microphone Cable	Mogami	Audio	W2549

7.2.2 Cable Installation

All cable should be **plenum-rated** unless otherwise stated. All cable runs will provide 10 ft of service loop. All cable runs must meet University of Nevada, Reno and State of Nevada code standards. All cable runs shall be tested and field verified.

- All category cable (i.e. CAT 5, 5e, 6, 6a, 7) shall have the following tests performed on them with the results provided to Office of Digital Learning (ODL) as part of final job documentation.
 - Attenuation
 - Near-end Crosstalk (NEXT)
 - Attenuation to Crosstalk Ratio (ACR)
 - Power Sum Equal Level Crosstalk (PSELFEXT)

- In all cable installations, the simplest, most direct path from point to point should be used; the use of adapters and /or barrel connectors shall be avoided.

Shielded category cable should be terminated using the shielded (STP) connectors listed below, following manufacturer guidelines and instructions for proper termination.

Connector Type	Manufacturer	Application	Part Number
10GX STP Field Mount Plug	Belden	HDBaseT	RVAFPSME-S1
10GX STP Modular Jack	Belden	HDBaseT	RVAMJKSME-S1
REVConnect Core Pack	Belden	HDBaseT	RVUCOEW-B50

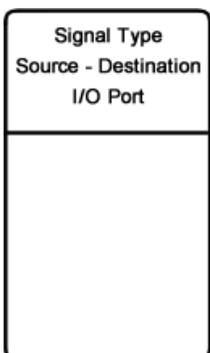
For conduit specifications, please see section 4.1.2.1.

7.2.3 J-Hooks

For all cable runs in ceiling spaces, J-Hooks will be required at 5’ increments. J-Hooks will be placed between all AV conduit stub outs and all equipment that is mounted in the ceiling space (i.e. speakers, projector mount). All AV wiring should be run across the installed J-Hooks. It should be noted that contractors will often install the J-Hooks with others completing the wire runs that will leverage the J-Hooks.

7.2.4 Cable Labeling

All cables shall be labeled clearly on both the source and destination ends. Labels shall be no closer than 2” to the connector on either end and no further than 6” from the connector on either end. Labels shall be printed and should be in a sans-serif font such as Arial or Calibri. Self-laminating labels should be used similar to the ones available here: <https://www.labelidsystems.com/cable-labels/wrap-around-cable-laser-labels.html> .



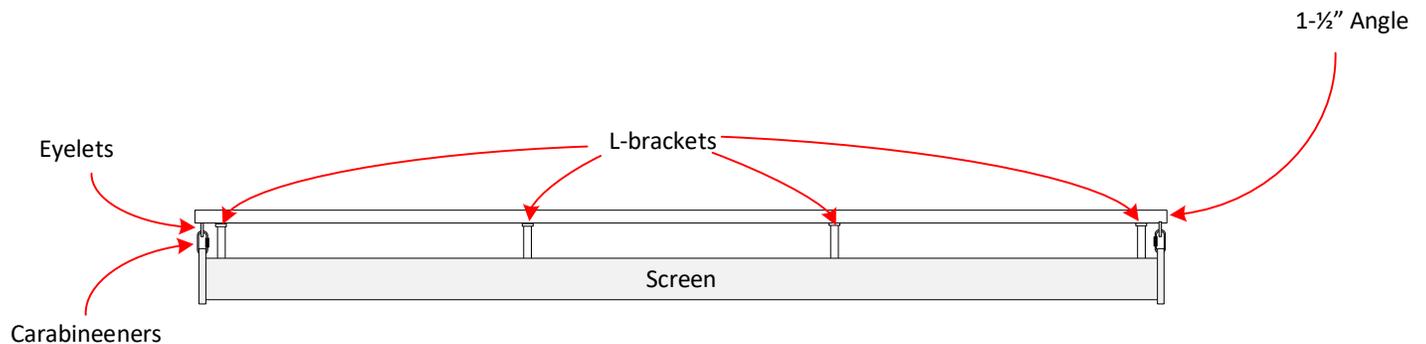
Sample Wire Label

7.2.5 Projection Screen Installation

All projection screens should be sized, located, and installed in such a manner that any overlaps with the whiteboard space in the room are minimized.

7.2.5.1 Manual Projection Screen Installation

Wall-mounted manual screens should be installed using four **Richelieu Hardware model 494W16B 16" L-brackets** (available at Home Depot) as screen hangers, anchored to the wall, with at least two of the brackets anchored into studs. These L-brackets will be spanned by one 2"x2"x1/8" angle iron, cut to size and painted white, as shown below.



Standard Screen Installation-- Front View

Ceiling-mounted manual screens shall be installed into the ceiling grid and secured to the deck per manufacturers' instructions.

7.2.5.2 Electric Projection Screen Installation

All electric screens should be installed per the manufacturer's specifications. The low voltage switch included with the screen shall be used. Line voltage switches shall not be used to control the projection screens. In some instances there will also be AV control wiring tied into the screen. In these instances, the general contractor should install the screen and low voltage control wiring that is included and the AV wiring (if needed) will be installed by OLD or the AV contractor.

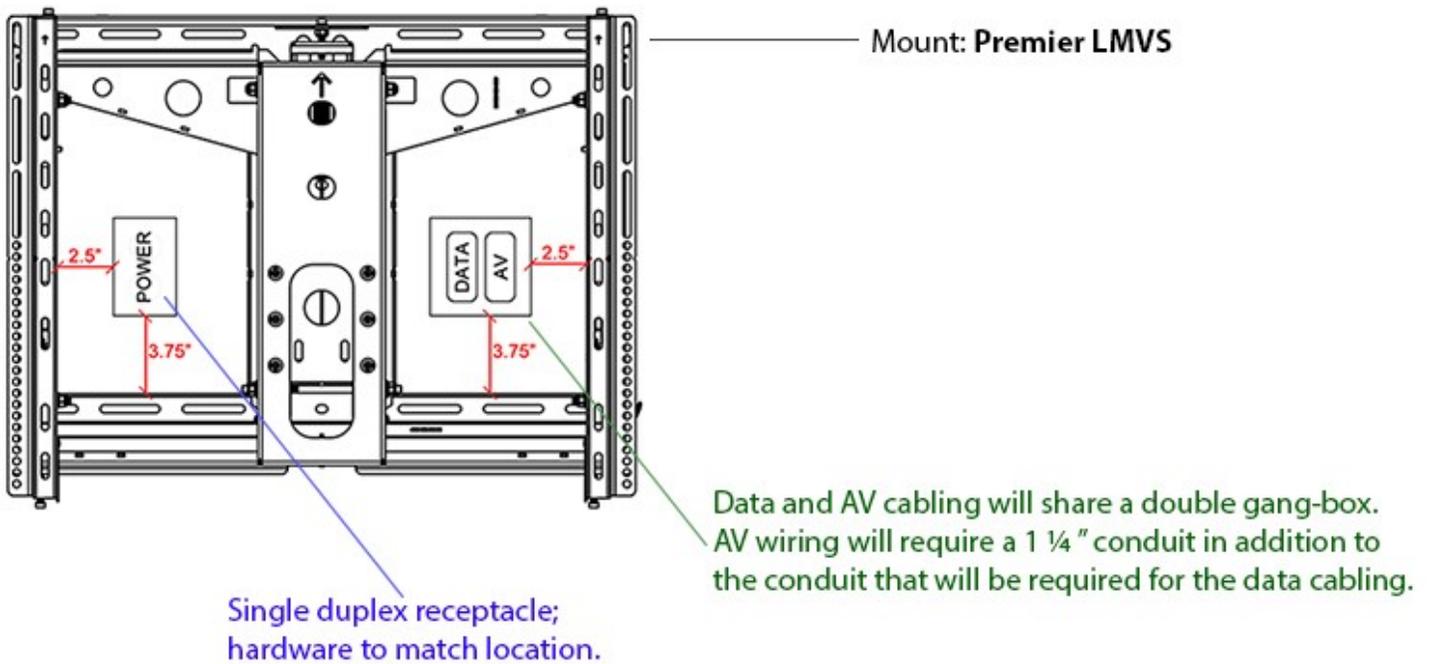
7.2.5.3 Fixed Frame Screen Installation

Fixed frame projection screens should be installed per manufacturer's specifications. Screens should be level and free from wrinkles or other deformities once installed. Screen mounting height will be specified on project plans. Confirm height prior to installation with Office of Digital Learning.

7.2.6 Flat Panel Installation

Flat panel mounts are owner provided and contractor installed, unless otherwise specified.

The connections for all flat panel displays must be located behind the display and not visible from the front of the display once installed. Mounts should be installed with fasteners that anchor to studs or other structural elements. Toggle or “Molly” style anchors which rely solely on drywall for support shall not be used. Power, data and conduit/junction boxes are typically located at **60” AFF** (to center of box). See the following sections for details on Digital Signage and Directory installations.



7.2.7 Digital Directory Installation

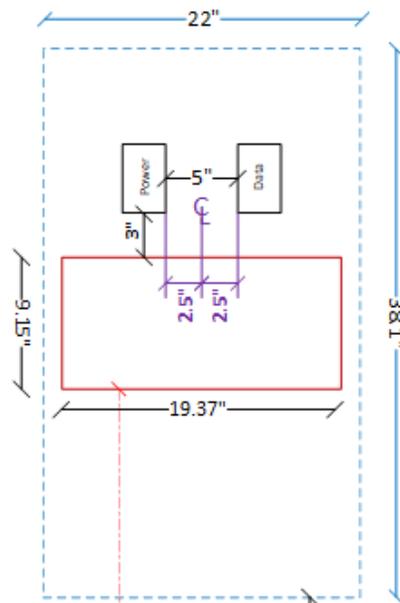
Digital directory mounts are owner provided and GC installed, unless otherwise specified.

Digital directories shall be installed according to the specifications listed in the diagram below. Peerless model ESF655P shall be used for installation. Each installation shall require one **(1) standard single duplex receptacle** and one **(1) data port** both located behind the monitor, per the diagram below. Mounts are general contractor (GC) supplied and installed. As necessary, backing should be added to ensure the mount is stable and can support the weight of the flat panel. See the detail on the follow page for layout information.

- — Outline of monitor (Samsung QB43R-B)
- — Outline of mount (Peerless ESF655P)
- ⊕ Centerline of mount

NOTES:

- One (1) data port is required at data location
- A standard single duplex receptacle is required at power location shown.



55.5" from the finished floor to the bottom of the mount.

41" from the finished floor to the bottom of the directory.

Scale 1" = 1'

7.2.8 Digital Signage Installation

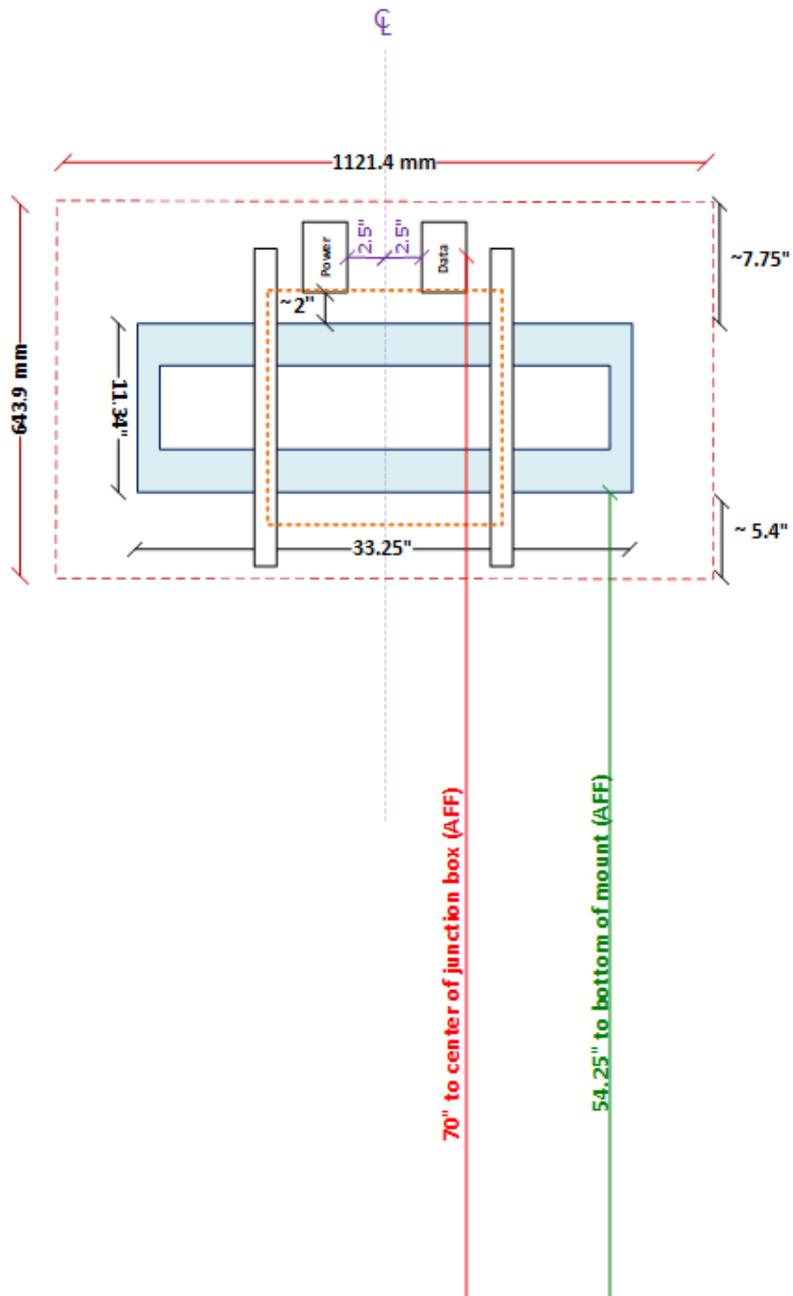
Digital signage mounts are owner provided and GC installed, unless otherwise specified.

Digital directories shall be installed according to the specifications listed in the diagram below. Peerless model ESF655P shall be used for installation. Each installation shall require one **(1) standard single duplex receptacle** and one **(1) data port** both located behind the monitor, per the diagram below. Mounts are general contractor (GC) supplied and installed. As necessary, backing should be added to ensure the mount is stable and can support the weight of the flat panel. See the detail on the follow page for layout information.

- - Outline of monitor (Samsung QB50B)
- Outline of mount (Premier P4263F)
- ⊕ Centerline of mount

NOTES:

- Monitor should be centered on wall portion.
- 1 Data port is required at data location
- A standard single duplex receptacle is required for power location



Scale 1" = 1'

7.2.9 Speaker Installation

Speakers are owner provided and installed by the general contractor, unless otherwise specified.



Drop-in ceiling tile speakers (e.g. KSI 8081-CS) should be installed according to manufacturer specifications. Each speaker should have two (2) support cables that attach it to the deck above. The weight of the speaker should be supported by the support cables and not the ceiling grid. Final locations for these speakers should be field verified with ODL.

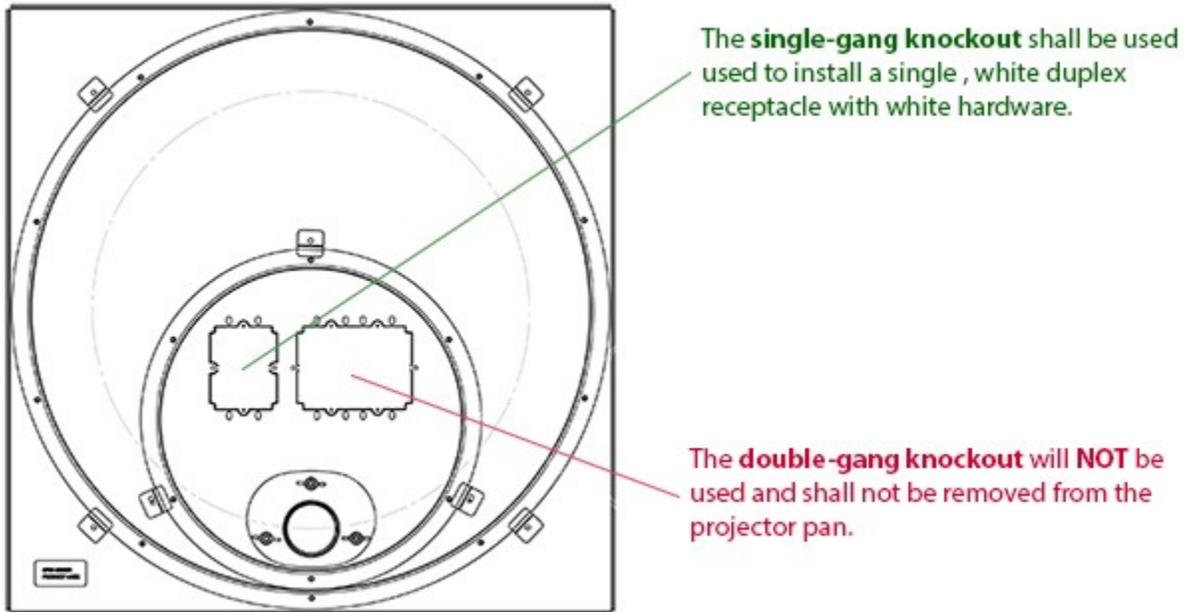
Other speakers should be mounted according to the manufacturer's specifications. Final locations for these speakers should be field verified with Office of Digital Learning.

All speaker wiring and termination will be completed by ODL staff, unless otherwise specified.

7.2.10 Projector Pan Installation

Projector pans are provided and installed by the general contractor, unless otherwise specified.

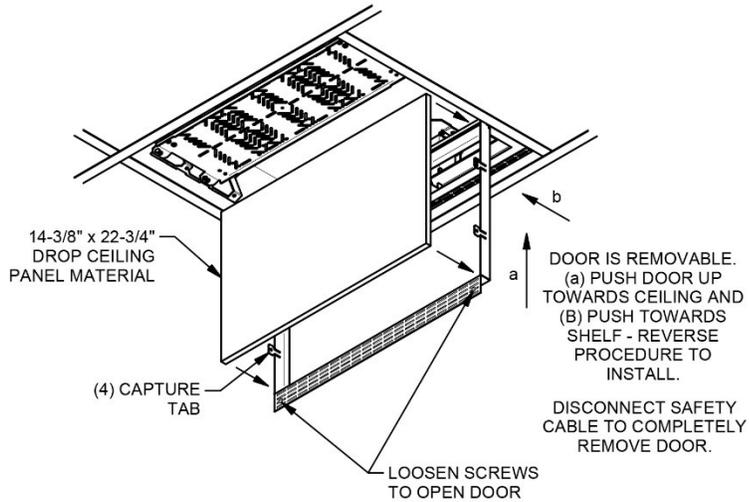
Projector pans are used in all standard *drop-ceiling* installations. Projector pans are NOT used for installations with hard ceilings. The projector pan (i.e. Chief CMS 445) should be installed according to factory instructions. The pan should have four (4) support cables that attach the pan to the deck above. The weight of the pan should be supported by the support cables and not the drop ceiling grid. **The pan should NOT be installed over the top of an acoustical tile.** Do **not** use any of the additional knockouts for AV or data cabling.



7.2.11 Ceiling Enclosure Installation

Ceiling enclosures are provided and installed by the general contractor, unless otherwise specified.

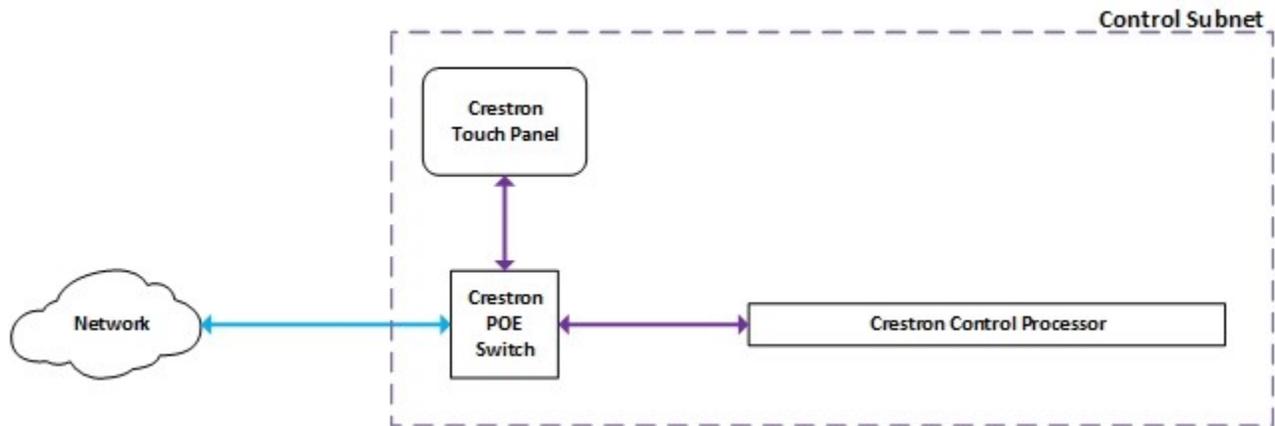
All ceiling enclosures (i.e. FSR CB-22) shall be installed per the manufacturer's specifications. These enclosures require power and should be connected by the general contractor. Acoustical tile shall be cut and installed into the enclosure's door per manufacturer instructions (see image below).



7.3 Control System Programming

UNR has standardized on Crestron control systems. All AV systems that require control should use this standard. In cases where outside programmers have completed system programming for a project, copyright ownership of the finished code reverts to the University, upon acceptance of the system by the University. This code shall be provided to ODL in an unlocked and unprotected state along with other required project documentation, for the University's future use and alteration, without legal limitation or functional constraint. Outside contractors who program Crestron processors shall follow standards listed below:

- A copy of both the un-compiled code and the compiled code will be provided for each project or subproject.
- The control code should be written to accommodate Crestron Fusion.
- The control code should include an X-Panel for remote control/access.
- The control code should include a 12 a.m. shutdown for any standard classroom spaces.
- The control code should be provided for final approval to our internal Crestron programmer for review (contact ODL for more information).
- Use templates available from ODL for touch panel design and layout.
- **Use a control subnet for all Crestron devices – do not use UNR network for network control data**



An example of a control subnet.

7.4 Configuration of Other Devices

The following standards shall be followed when configuring any other non-Crestron AV devices. These devices include but are not limited to: mixers, recorders, sound processors and media players.

- Network devices shall adhere to all UNR network and network security best practices and policies.
- A copy of any and all configuration settings and/or files shall be provided to ODL at the time of job completion. If a system configuration file is not available, screenshots of all configuration and/or setting screens, in their final state, shall be provided.
- Any usernames and/or passwords associated with all devices shall be provided to ODL at the time of job completion.

8 Audio-Visual Technology

8.1.1 Control & Distribution

8.1.1.1 Control Processors

Crestron control processors are the standard control processor for all new AV installations requiring integrated control.

8.1.1.2 Touch Panels/User Interfaces

Crestron touch panels are the standard user interface for all new AV installations requiring integrated control. The touch panel can vary depending on room function but the table below shows our standard touch panels.

8.1.1.3 Matrix Switchers

Matrix switchers are typically used in our larger rooms such as lecture halls. In our smaller rooms, this functionality is typically built into the control processor. UNR uses **Crestron Digital Media Switchers**. Work with ODL to identify the appropriate matrix chassis and cards for the project.

8.1.1.4 HDBaseT Transmitters & Receivers

HDBaseT is the University's applied standard for digital media transmission. Crestron Digital Media (DM) is UNR's HDBaseT solution. Work with ODL to determine appropriate transmitters and receivers for the project. Please note that the use of AV-over-IP solution requires University approval (both ODL and OIT).

8.1.1.5 Wireless Display Interfaces

Crestron's AirMedia is our solution for providing wireless presentation capabilities from user devices. The AM-3200 model is our primary wireless interface device, which supports both Mac and PC laptops as well as Android and iOS devices.

AppleTV is not supported for wireless display.

8.1.2 Computers

8.1.2.1 Computer Models

PC (i.e., Dell) computers are used as the standard in our classroom and other spaces. If explicitly requested, Apple computers can be integrated into those spaces.

8.1.2.2 Computer Installation

PCs shall be installed on a **Middle Atlantic U3V** rack shelf and secured to the rack with a Kensington security lock. The standardized Kensington locks are provided by ODL.

Micro Form Factor (MFF) PCs are used in conference rooms and mounted behind the monitor/display.

Contact ODL for instructions on installation of Apple computers, if they are to be used.

8.1.2.3 Computer Monitors

Dell computer monitors are used in our classroom installations. **All monitors should have a 16:9 aspect ratio and a minimum resolution of 1080P.** Higher resolution monitors may be specified in rooms that leverage 4K content and primary displays.

8.1.2.4 Computer Monitor Installation

In most classroom installations, an Ergomart **LS9109XS** low profile mount is used for the PC monitor.

8.1.3 Other Sources:

8.1.3.1 Document Cameras

Elmo document cameras are used in all of our classroom AV systems.

8.1.4 Displays

8.1.4.1 Flat Panel Monitors

Commercial flat panel monitors shall be used in all installations requiring flat panel monitors. Samsung is our standard for commercial flat panel monitors. Contact ODL for specific model information.

8.1.4.2 Projectors

Epson projectors are used at UNR. All projectors should have a widescreen format and minimum native resolution of 1920x1080 pixels. **Projection systems shall be configured to a 16:9 aspect ratio.**

Current Standard Projector Model:

- **Epson PowerLite L510U WUXGA 3LCD Laser Projector**
<https://epson.com/For-Work/Projectors/Meeting-Room/PowerLite-L510U-WUXGA-3LCD-Laser-Projector/p/V11H903020>

Other projector brands and/or models shall not be substituted without the prior written approval from Office of Digital Learning. This includes but is not limited to short-throw and 4k projectors.

8.1.4.3 Projection Screens

Da-Lite projection screens shall be used in all AV installations. The screen size should be determined based on the distance between the screen and the furthest viewer. The vertical dimension of the screen (height) should be as close to 1/5th of the distance to the furthest viewer whenever possible. **All screens must be in 16:9 aspect ratio. High Contrast Da-Mat is the standard screen material for most installations.**

Screen Type	Standard Da-Lite Model
Electric Screen	Tensioned Advantage Deluxe Electrol
Wall-Mounted Manual Screen	Model C with CSR
Ceiling-Mounted Manual Screen	Advantage Manual with CSR (Ceiling Recessed)
Fixed Frame Screen	Cinema Contour

8.1.5 Audio Devices

The following audio devices are used in our standard configurations.

8.1.5.1 Speakers

In most drop-ceiling installations, UNR uses **KSI 8081-CS** 2x2 drop-in speakers. Hard-ceiling or open-ceiling installations are handled on a case-by-case basis.

8.1.5.2 Microphones

In most installations requiring microphones, **Shure QLXD** digital wireless mics are used. In classrooms and lecture halls, lavalier kits are used. Other microphone makes and/or models shall be used only with permission from ODL.

8.1.5.3 Audio Amplifiers

For standard classroom installation we use Extron audio amplifiers. For larger spaces we use Crown amplifiers.

8.1.5.4 Sound Mixers

For larger venues or more complex systems we will utilize sound mixers. A mixer will be more commonly used in larger spaces. For projects requiring additional microphones or enhanced sound, please contact ODL.

8.1.5.5 Sound Processors

A DSP (Digital Sound Processor) will be used more commonly in our larger spaces. Projects that require specific functionality, such as surround sound, will be addressed on a case-by-case basis. For enhanced or project-specific functionality, please contact ODL.

8.1.5.6 Assistive Listening

All classrooms are equipped with infrastructure to support assistive listening systems. Large venues have dedicated assistive listen systems – ideally providing support for T-Coil capable hearing aids. The number of receivers for each space is determined based on ADA guidelines. Listen Technologies systems are used for assistive listening.

Large Venue

- **ListenRF72**
<https://www.listentech.com/assistive-listening/listenrf/>

Classrooms

- **Listen iDSP Essentials Level 2 Stationary RF System (72 MHz)**
<https://www.listentech.com/shop/product/listen-idsp-essentials-level-2-stationary-rf-system-72-mhz/>

8.1.6 Uninterrupted Power Supply (UPS) Devices

All AV systems should include UPS devices that will ensure operational continuity for 5-10 minutes and through power “bumps.” UNR uses **Eaton** UPS devices for its AV installations.

8.1.7 Interconnect Cables

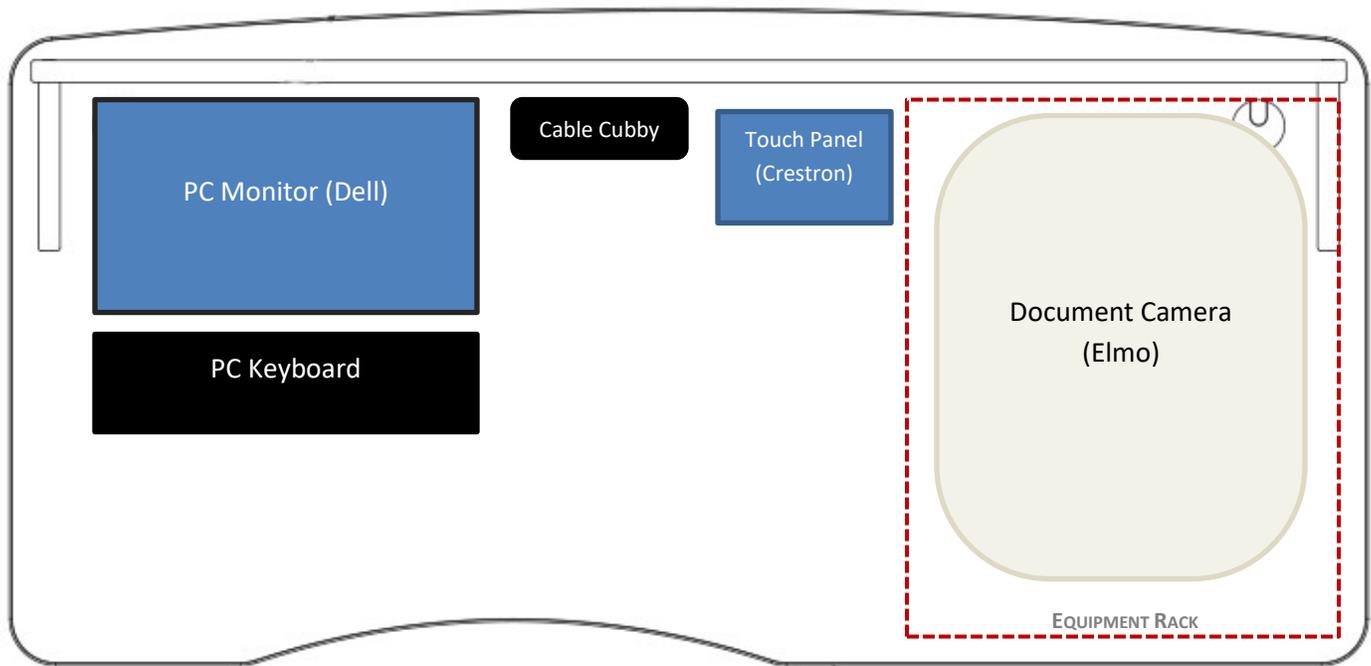
The following manufacturers/models shall be used for all interconnects between devices. Only commercial grade cables shall be used. For interconnects not listed below, consult with ODL.

Cable Type	Manufacturer	Model
HDMI	Comprehensive	MicroFlex Pro AV/IT 4K60/18G/10.2 GB HDMI Cables with ProGrip & SureLength
Display Port	Comprehensive	Standard Series DisplayPort Male To Male Cable
Display Port to HDMI	Comprehensive	Standard Series DisplayPort to HDMI High Speed Cable
USB 2.0 Extension	C2G	USB 2.0 Extension Cable (under 15')
USB 2.0 Extension	Tripp-Lite	USB 2.0 Active Extension Cable (over 15')
USB 3.0 Extension	C2G	USB 3.0 Extension Cable (under 15')
CAT6/CAT6 Shielded	Tripp-Lite	Cat6 Gigabit Molded Patch Cable/CAT6 Shielded Molded Patch Cable
Right-Angle CAT6	Tripp-Lite	Cat6 Gigabit Molded Patch Cable (RJ45 Right Angle Up M to RJ45 M)
XLR	Comprehensive	Standard Series XLR Plug to Jack Audio Cable
Audio (3.5 mm)	Comprehensive	Stereo Mini (3.5mm) Audio Cable

8.1.8 Instructor Station

8.1.8.1 Podium Layout/Configuration

The configuration below should be used in all instances where a Spectrum Industries **Freedom Elite Podium** is used:



Note that some rooms will have the rack on the left side of the podium. For rooms with a left hand rack, the layout above should be *mirrored*.

8.1.8.2 Touch Panel Interface

The touch panel interface for the instructor station must follow the UNR standard layout as seen in Appendix 5. UNR standard colors must be used and are listed in the table below:

Color	RGB Code	Hex Code	Pantone Matching (PMS)
Nevada Blue	R: 0 G: 30 B: 66	#041E42	282C
Nevada Gray	R: 116 G: 118 B: 123	#74767B	409
Nevada White	R: 0 G: 0 B: 0	#FFFFFF	White

Use of the “N” logo must follow all branding standards. Detailed information is available on the UNR marketing website (<https://www.unr.edu/brand/visual-identity>).

All touch panel designs and layouts must be submitted for approval by ODL. All touch panel design must meet UNR brands standards and ODL specifications.

8.1.8.3 Laptop Connections and Cable Cubbies

As shown in the podium layout in section 6.2.4.1, cable cubbies are used with our standard configuration of the Spectrum Industries Freedom podium. In rooms where credenzas are used to house the room’s AV equipment, laptops connections are provided as strain-relieved cables and in some instances, there are additional connections in the front of the classroom. In rooms that require cable cubbies, Extron models are used.

The instructor station should have the following **wired** laptop connections, which will be installed through the cable cubby:

- HDMI
- 3.5 mm stereo audio

In some conference rooms, **retractors** are used in conjunction with cable cubbies.

9 Job Completion & Documentation

9.1 Job/Project Completion

Jobs/projects are not considered complete until the final punch list has been completed and all required project documentation has been provided. The punch list will be comprised of all incomplete/incorrect work after the first owner walk-through/inspection.

9.2 Documentation

Ownership of all system designs, system programming code and component configuration sets shall become the sole property of the University of Nevada, Reno upon final acceptance of contract work. These rights of ownership are without limit and include the right of the University, or its agents, to alter system designs, programming code and configuration sets at will.

Project documentation shall consist of, but is not limited to, the following:

- **As-Built Drawings** – drawings of the final system noting any changes or adjustments made in the field or during the installation; all final port names/numbers and wiring labels should be noted on the drawings
- **Both Compiled and Un-Compiled Crestron Code** – electronic copies of both the compiled and un-compiled Crestron code shall be provided; this is considered part of the project and shall not incur an additional charge
- **Complete Configuration Settings for All Non-Crestron Components** – Any mixers, DSPs, video conferencing codecs, etc. must include a full reporting of all configurations, usernames, passwords and any other information that has been set by the integrator.
- **All admin user account and password information for all systems** – some systems require these types of accounts (i.e. Crestron, ClearOne, BSS, etc.)
- **All equipment remotes and additional components** (i.e. wiring, mounting hardware included with products that is not used for installation)
- **All product documentation and warranty information**

10 Standard Room Types & Capabilities

10.1 Group Study Room/Collaboration Space

Group Study/Collaboration Spaces generally seat between four and 10 meeting participants. These are informal, student-focused learning spaces. The technology in these rooms can vary depending on the needs of the users, but the most common technologies installed in these rooms include:

- One large flat panel monitor
- Wireless device interface (i.e. Crestron AirMedia)
- Push button or touch panel control interface with processor
- Wi-Fi access sufficient to support at least two (2) devices per person (room capacity x 2)
- As much whiteboard surface as the room will permit

10.2 Conference Room Plus

Seminar/Conference rooms generally seat between four and 20 meeting participants. As the name implies, a conference table and movable chairs are the most common participant furniture in these rooms. In the Conference Room Plus, all gear is housed behind the wall mounted monitor. These are typically smaller conference rooms. The technology in these rooms can vary depending on the needs of the users, but the most common technologies installed in these rooms include:

- One large flat panel monitor
- Wireless device interface (i.e. Crestron AirMedia)
- Wall mounted, micro form-factor PC
- Wireless Keyboard and mouse
- HD USB Web cam
- USB conference microphone/speaker (i.e. Crestron UC-SB1)
- Wi-Fi access sufficient to support at least two (2) devices per person (room capacity x 2)

10.3 Smart Seminar/Conference Room

Seminar/Conference rooms generally seat between four and 20 meeting participants. As the name implies, a conference table and movable chairs are the most common participant furniture in these rooms. Typically, there is no lectern in these spaces, and a credenza is used to house any installed technology. The technology in these rooms can vary depending on the needs of the users, but the most common technologies installed in these rooms include:

- One display; either a large flat panel monitor or a projector and screen
- Presenter/instructor computer, with a wired network connection (a Windows-based PC is our standard; a Mac can be substituted upon request)
- Wireless (RF or Bluetooth) keyboard and mouse
- Cable cubby containing an HDMI cable, 3.5 mm/stereo mini audio cable, and 120v AC outlet (or alternative HDMI connection for user devices, as room permits)
- Control/switching/distribution system
- Touch panel or another user interface
- Wireless display interface (i.e. Crestron AirMedia)
- Amplified sound system for program audio (i.e. computer, laptop, etc.)
- Equipment credenza (or an ADA-compliant, height-adjustable instructor podium, if applicable)
- Wi-Fi access sufficient to support at least two (2) devices per person (room capacity x 2)
- As much whiteboard surface as the room will permit

10.4 Standard Smart Classroom (Single Display)

The standard smart classroom will seat above 10 participants. The classroom will include an instructor podium that is fully height-adjustable and has a rack for housing smart classroom equipment at a presentation position. Student seating/desk types are variable, depending on instructional need and room layout. Student seating schemes that allow for active learning models are encouraged. These rooms will have standard set of installed technology to include:

- One display; either a large flat panel monitor or a projector and screen
- Presenter/instructor computer, with a wired network connection (a Windows-based PC is standard; a Mac can be substituted upon request and ODL approval)
- Cable cubby containing an HDMI cable, 3.5 mm/stereo mini audio cable, and 120v AC outlet
- Wireless display interface (i.e. Crestron AirMedia)
- Document camera
- Control/switching/distribution system
- Touch panel interface
- Amplified sound system for program audio (i.e. computer, laptop, etc.)
- Wireless lavalier microphone
- ADA-compliant, height adjustable instructor podium
- Wi-Fi access sufficient to support at least two (2) devices per person (room capacity x 2)
- As much whiteboard surface as the room will permit

10.5 Dual-Projection Smart Classroom

The dual-projection smart classroom will usually seat more participants (typically 40+) than a single projection smart classroom, but may be installed in smaller rooms, based on pedagogical or discipline-specific need. The classroom will include an instructor podium that is fully height-adjustable and has a rack for housing smart classroom equipment at a presentation position. Student seating/desk types are variable, depending on instructional need and room layout. Some of the common types are movable tab-arm desks, theater-style seating, fixed tables with attached swing-arm seats or movable tables and chairs. Student seating schemes that allow for active learning models are encouraged, but can be challenging in rooms with larger occupancy ratings. These rooms will have standard set of installed technology to include:

- Two displays; either two projectors and screens or two flat panel monitors
- Presenter/instructor computer, with a wired network connection (a Windows-based PC is standard; a Mac can be substituted upon request and ODL approval)
- Cable cubby containing an HDMI cable, 3.5 mm/stereo mini audio cable, and 120v AC outlet
- Wireless display interface (i.e. Crestron AirMedia)
- Document camera
- Control/switching/distribution system
- Touch panel interface
- Amplified sound system for program audio (i.e. computer, laptop, etc.)
- Wireless lavalier microphone for voice reinforcement
- ADA-compliant, height adjustable instructor podium
- Wi-Fi access sufficient to support at least two (2) devices per person (room capacity x 2)
- As much whiteboard surface as the room will permit

10.6 Active Learning Classroom

Active Learning classrooms offer group based seating and foster group or team-based learning. Typically, they do not have a “teaching wall” but employ a number of displays around the room. The instructor station is typically positioned so the instructor has the flexibility to move around the room while they teach. Both instructor and student content can be routed to the room displays. While some of the classroom technologies are the same, these rooms typically require more complex switching systems to accommodate the multiple displays. Additionally, the nature of these spaces requires more square footage than traditional classrooms. These rooms will have installed technology to include:

- Multiple displays – either short-throw projectors or flat panel monitors (the exact number will be determined by the room dimensions and overall design)
- Presenter/instructor computer, with a wired network connection (a Windows-based PC is standard; a Mac can be substituted upon request)
- Cable cubby containing an HDMI cable, 3.5 mm/stereo mini audio cable, and 120v AC outlet
- Wireless display interface(s) (i.e. Crestron AirMedia); These rooms may have multiple units depending on the final design and layout of the room
- Document camera
- Control/switching/distribution system
- Touch panel interface
- Amplified sound system for program audio (i.e. computer, laptop, etc.)
- Wireless lavalier microphone
- ADA-compliant, height adjustable instructor podium
- Wi-Fi access sufficient to support at least two (2) devices per person (room capacity x 2)
- As much whiteboard surface as the room will permit (typically all open wall space is covered by whiteboard in these rooms)

10.7 Lecture Hall

This standard smart classroom type consists of a room that will seat more participants than a dual projection smart classroom, typically rooms with occupancies of more than 100 students. Often the size and available space within the room will indicate whether two or more displays will be used. The furniture in Lecture Halls will include a lectern that is fully height-adjustable and has a rack for housing smart classroom equipment at a presentation. **In instances where special technology or very large rooms must be accommodated, a control room or equipment closet may be necessary.** Student seating/desk types are variable, depending on instructional need and room layout, but are less variable than smaller rooms. These rooms will have standard set of installed technology to include:

- Multiple displays; typically, projectors & screens and/or flat panel displays (the exact number will be determined by the room dimensions and overall design)
- Presenter/instructor computer, with a wired network connection (a Windows-based PC is standard; a Mac can be substituted upon request)
- Cable cubby containing an HDMI cable, 3.5 mm/stereo mini audio cable, and 120v AC outlet
- Wireless display interface (i.e. Crestron AirMedia)
- Document camera
- Control/switching/distribution system
- Touch panel interface

- Amplified sound system for program audio (i.e. computer, laptop, etc.)
- ADA-compliant, height adjustable instructor podium
- Assistive listening system
- Wi-Fi access sufficient to support at least two (2) devices per person (room capacity x 2)
- As much whiteboard surface as the room will permit

10.8 Digital Signage

All Digital signage installations must adhere to the University's policies and standards. The University Digital Signage policy covers approved digital signage locations, density and the process for approval. UNR currently uses **Visix** for its digital signage system. The campus digital signage system is currently managed through ASUN & OIT.

Please refer to the [University Administrative Manual \(UAM\) policy regarding digital signage requirements](#).

See Section 8.1.4.1 for approved flat panel manufacturers/models for Digital Signage.

All digital signage on campus must conform with ADA standards.

10.9 Video Walls

The nature and cost of video walls means that these solutions are always custom to the space where they will be installed/built. Please work with ODL to identify project scope and technical functionality. These installations may require approval from the University Faculties Resource Committee (FRC).

All video walls on campus must conform with ADA standards.

10.10 Digital Directories

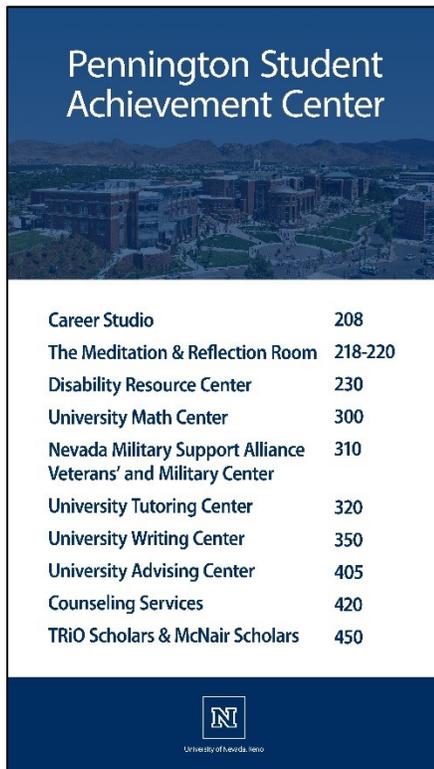
All digital directory installations must adhere to the standards laid forth in [UAM 5316](#). Any digital directories existing prior to 2016 must be brought up to these standards when they are updated. Any exceptions to this policy must be approved by the Facilities Resource Committee (FRC).

See Section 8.1.4.1 for approved flat panel makes/models for Digital Directories.

10.10.1.1 Digital Directory Content

Digital directories on campus must adhere to University policy as stated in [UAM 5316](#).

- All directory content must adhere to the templates created by UNR's Marketing & Communications unit.
- Directories shall **not** be interactive or touch-enabled.
- Directories shall display a **static** image of the directory content.
- Content will be presented via USB player built in to the flat panel monitor.
- Content will take the form of a 1080 x 1920 pixel .png file.



All digital directory installations on campus must conform with ADA standards.

10.11 Other Spaces

10.11.1 Flat Panel Monitor/TV Locations

All flat panel monitor/TV installations shall be installed such that all cabling and connections are hidden behind the unit. All conduits and electrical outlets feeding the flat panels/TVs shall be positioned so they can be hidden behind the unit as well. No connection boxes shall be placed outside of the dimensions for the flat panel/TV. **Only commercial grade flat panel displays shall be used.**

All flat panel installations must adhere to ADA guidelines.

See Section 8.1.4.1 for approved models.

10.11.2 Interactive/Collaborative Monitor Locations

All Interactive/Collaborative monitor installations should be installed such that all cabling and connections are hidden behind the unit or otherwise neatly installed (mobile installations). All conduits and electrical outlets feeding the flat panels/TVs should be positioned so they can be hidden behind the unit as well. No connection boxes should be placed outside of the dimensions for the flat panel/TV.

All interactive/collaborative monitor installations must adhere to ADA standards.

10.11.2.1 Fixed Installations

All fixed installations of Interactive/Collaborative monitors should be completed such that all cabling and connections are hidden behind the unit. All conduits and electrical outlets feeding the flat panels/TVs should be positioned so they can be hidden behind the unit as well. No connection boxes should be placed outside of the dimensions for the flat panel/TV. Additionally, no cables or wires shall be visible when installation has been completed. **Only commercial grade flat panel displays shall be used.**

All flat panel installations must adhere to ADA standards.

10.11.2.2 Mobile Installations

Mobile installations of Interactive/Collaborative monitors shall be neatly configured so all cables/components are cleanly integrated and installed. Only cables necessary for power (and data) connection are exposed. **Only commercial grade flat panel displays shall be used.**

10.12 Add-on Capabilities

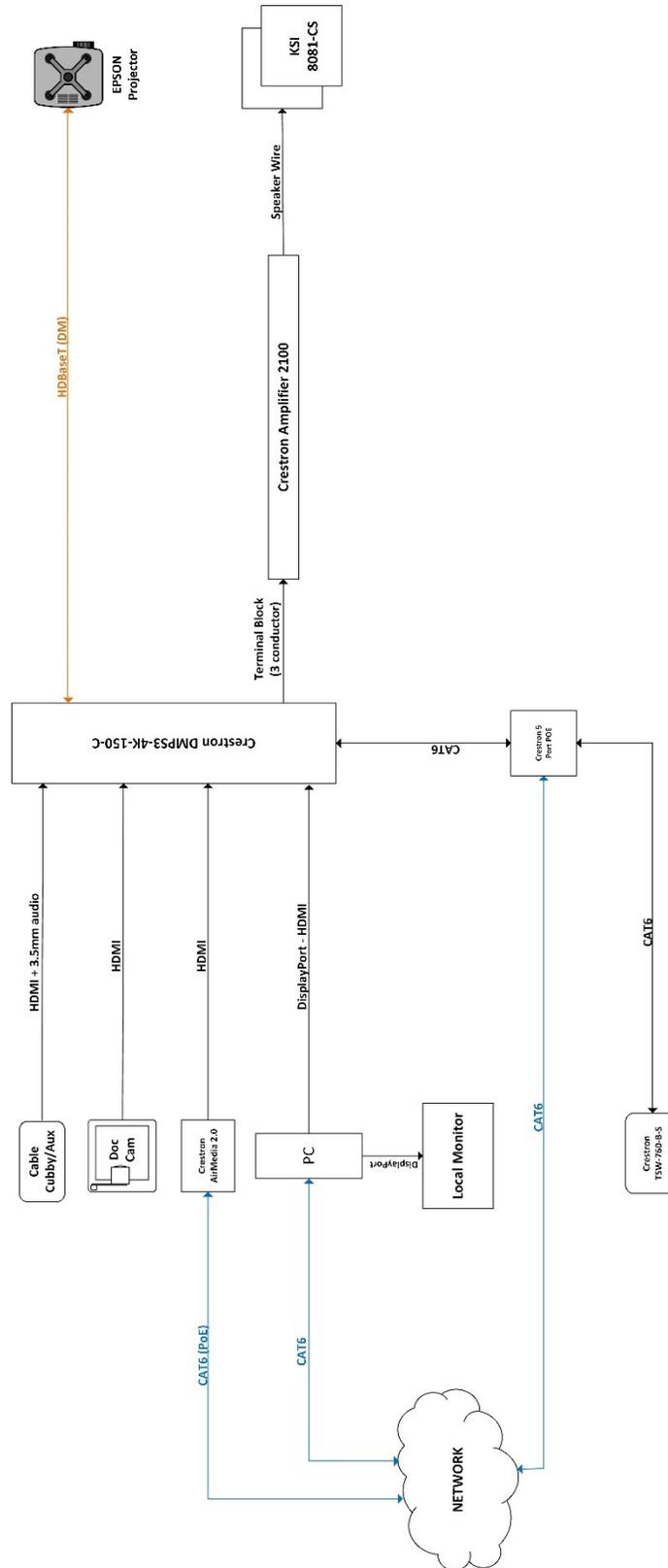
Some rooms mentioned in the previous subsections can have additional non-standard technology packages added on for increased functionality.

10.12.1 Web Conferencing

Web-based video conferencing, for instructional use, generally utilizes the computer in a classroom or seminar room or a laptop carried in by the professor. Various types of web conferencing software can be supported with the technologies listed in this add-on group, including Zoom, Skype, GoToMeeting, WebEx, Google+ Hangouts, and Teams. Zoom, Skype, and Teams (formerly Skype for Business) are all installed on classroom computers as part of our standard software installation.

11 Appendices

11.1 Appendix 1: Standard Smart Classroom System Diagram



11.2 Appendix 2: PC Minimum Hardware Specifications

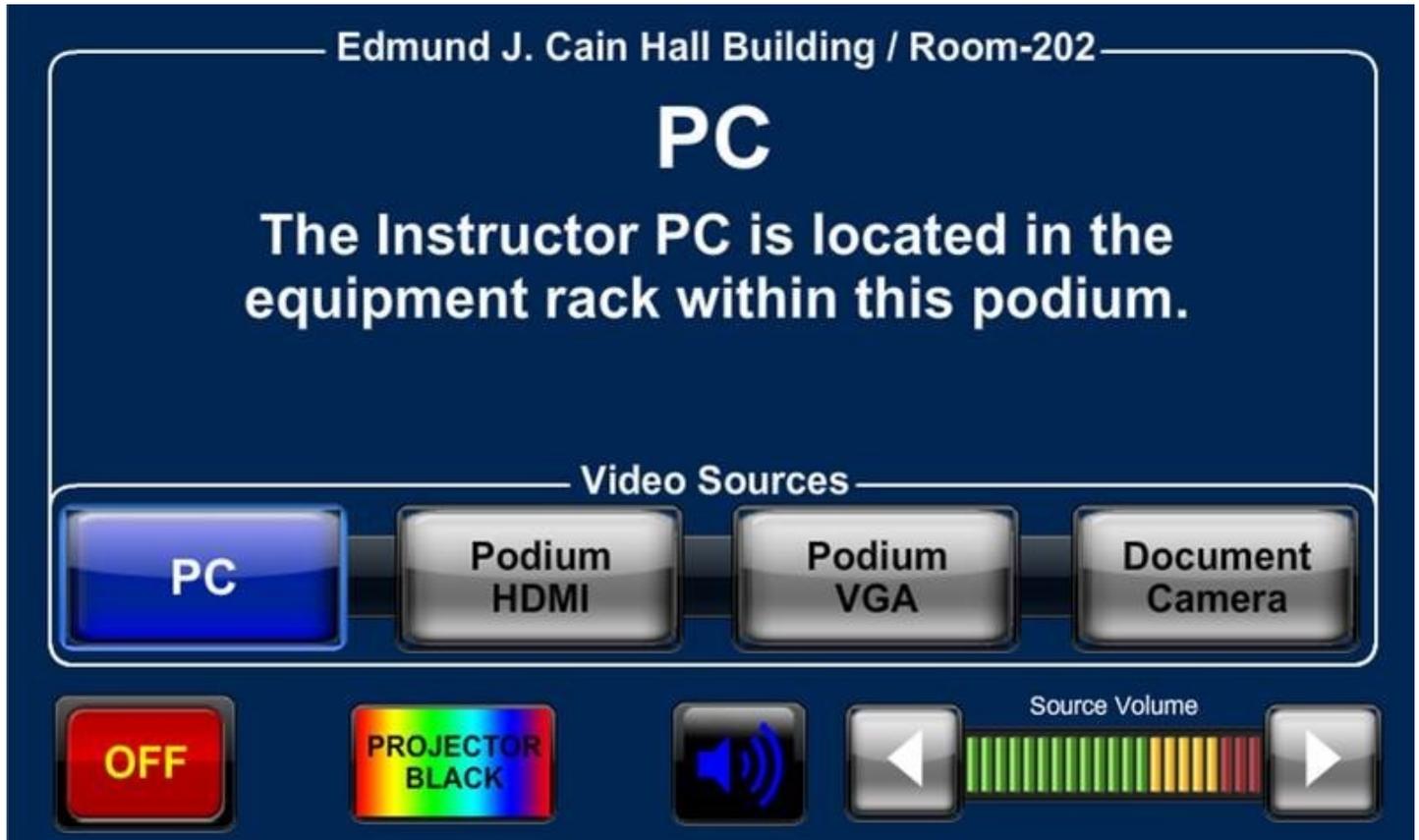
Each classroom will have a PC workstation with a hardwired network connection. Apple workstations are available per request. The PC workstation hardware specifications are below. Contact ODL for Apple workstation specifications.

- Intel Core i7 9700 Processor 3.0-4.7 GHz
- Windows 10 Enterprise 64-bit
- 32 GB RAM
- 256 GB M.2 Solid State Drive (SSD)
- 8x DVD +/- RW Drive
- AMD Radeon R5 340X 2GB LP (DP/DP) dual output video card

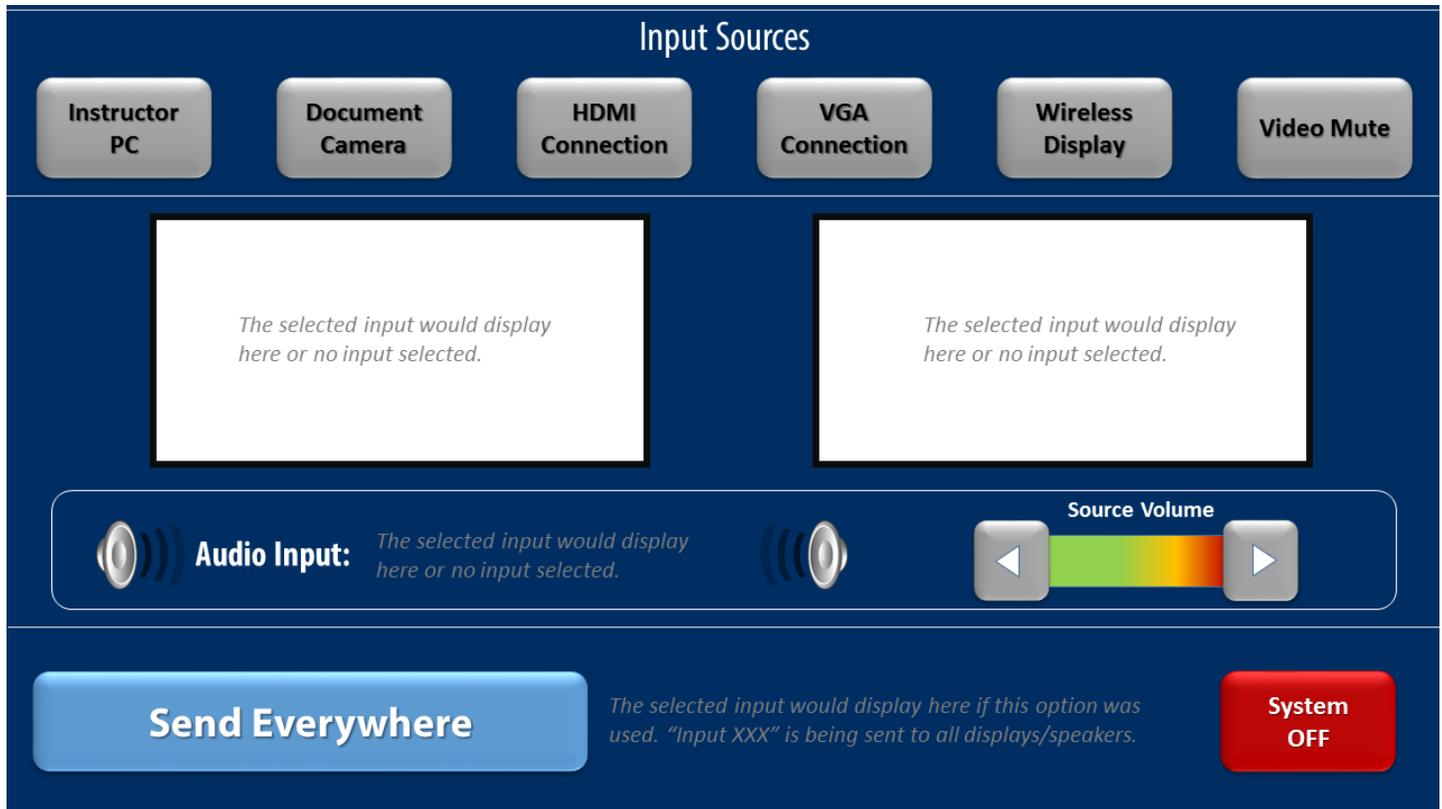
11.3 Appendix 3: Example Touch Panel Layouts

The following touch panel layouts are examples. All touch panel designs/layouts must be approved by Office of Digital Learning. Designs must be submitted with enough time for review and adjustment, prior to job completion. Ideally, these designs would be provided prior to installation to ensure there is ample time to make any necessary edits/changes.

Single Projection Classroom:



Dual Projection Classroom:



Please note: For other types of classrooms, please work with ODL to identify acceptable touch panel layouts. Nonstandard touch panel layouts must receive ODL approval prior to deployment.

ATTACHMENT 5.5(a)(ii)

List of Approved Design Documents

Item No.	Document	Document Date	Created By	Notes or File Name
001	DM #4 Volume 1: Project Manual (Divisions 00-14)	04/14/2023	LMN/Design Team	Design Milestone #4 Package
002	DM #4 Volume 2: Project Manual (Divisions 21-33)	04/14/2023	LMN/Design Team	Design Milestone #4 Package
003	DM #4 Volume 3: Drawings	04/14/2023	LMN/Design Team	Design Milestone #4 Package
004	DM #4 Volume 4: Appendices	04/14/2023	LMN/Design Team	Design Milestone #4 Package
005	UNR Low Voltage Responsibility Matrix	03/07/2023	Clark/PAE/UNR	UNR - Low Voltage Responsibility Matrix - 2023-0307.pdf

Attachment 5.5(a)(ii)

ATTACHMENT 5.5(a)ii

ATTACHMENT 5.5(a)ii
LIST OF APPROVED DESIGN DOCUMENTS
DEVIATIONS FROM UNIVERSITY OF NEVADA, RENO ADOPTED STANDARDS

Item No.	UNR Design Standard Section	UNR Design Spec Section	Program Requirement	Deviation to Standard or Confirmation	Clarification / Notes
001	SECTION 3: CAMPUS DESIGN STANDARDS	Division 5: Metals 05500 - Metal Fabrications	Handrails, both interior and exterior will be painted bronze to match the medium, bronze aluminum window and door frames	No painted handrails are proposed. All handrail finishes would be prefinished or unpainted (exposed metal, etc.)	All finishes will be presented to and confirmed by UNR/Edgemoor.
002	SECTION 3: CAMPUS DESIGN STANDARDS	Division 7: Thermal and Moisture Protection 07000 - General	For new construction, access to roofs with roof mounted mechanical equipment more than 40 pounds shall have one elevator and one stair that extend to the roof level.	Ship's ladder proposed as an alternative to stair access	UNR confirmed that 1 elevator going to the roof as well as a ships ladder would meet this requirement
003	SECTION 3: CAMPUS DESIGN STANDARDS	Division 7: Thermal and Moisture Protection 07000 - General	All roof parapet walls shall be 42 inches in height above the roof line.	Smaller areas of roofing at isolated locations where there is no equipment can include a roofing system with tie-offs	UNR confirmed that these smaller roof areas (on Level 2 for example) would be acceptable with tie-offs. All other locations will have parapets at 42 inches min. Penthouse upper roof and Level 2 angled roof segment do not contain equipment and are provided with tie-offs instead of parapets.
004	SECTION 3: CAMPUS DESIGN STANDARDS	Division 7: Thermal and Moisture Protection 07500 - Membrane Roofing	Low slope roofs shall be white and must meet the requirements for an EnergySmart roof membrane EnergySmart (white), initial reflectivity of 0.83, initial emissivity 0.90, solar reflective index (SRI) of >104	Use of ballast rock over PVC at visible roofs.	EnergySmart white was been listed in the spec for all exposed locations for the PVC roofing. UNR confirmed that ballast over the PVC in highly visible areas would be accepted.
005	SECTION 3: CAMPUS DESIGN STANDARDS	Division 7: Thermal and Moisture Protection 07500 - Membrane Roofing	All roof curbs, including skylights, shall be a minimum of eight inches high above the finished roof and shall be located 10 feet from the roof edge	Roof curbs are minimum 8" above adjacent roof surface, however there are limited areas where curbs are less than 10'-0" from the roof edge based on the geometry of the building.	Roof areas and layout/geometry of the building have been reviewed with UNR/Edgemoor. Fall protection and tie-off anchors have been provided at all locations at the roof levels
006	SECTION 3: CAMPUS DESIGN STANDARDS	Division 8: Openings 081313 - Aluminum - Framed Entrances and Storefronts	Exterior frames shall be constructed of a minimum 16 Ga. with welded corners. Interior frames shall be constructed of a minimum 18 Ga. with welded corners.	Kawneer storefront systems proposed (601UT-exterior, Trifab 400-interior. Entrance door AA425)	UNR has confirmed that Kawneer would be an acceptable manufacturer
007	SECTION 3: CAMPUS DESIGN STANDARDS	Division 8: Openings 081313 - Aluminum - Framed Entrances and Storefronts	Aluminum Storefront and Doors: Kawneer 451 medium bronze anodized aluminum with insulated solar bronze glazing.	Kawneer storefront systems proposed (601UT-exterior, Trifab 400-interior. Entrance door AA425)	UNR has confirmed that Kawneer would be an acceptable manufacturer
008	SECTION 3: CAMPUS DESIGN STANDARDS	Division 9: Finishes 095100 - Acoustical Treatment	Acoustical Tile Ceilings: Standard Acoustical Ceiling Tile: Ceiling Tile -Armstrong: Cortega Finish; 15" / 16" Angled Tegular, Medium Texture, 704A (24 X 24 X 5/8) or 703B (24 X 48 X 5/8) and 769A (24 x 48 X 5/8) Square Lay-In. Fire rating Class A	Alternate manufacturer and product from Armstrong proposed to meet acoustic requirements for the project, which performs better than the UNR standard	UNR confirmed that this modification was acceptable, but would require attic stock to be provided to ensure operations and maintenance of the products
009	SECTION 3: CAMPUS DESIGN STANDARDS	Division 9: Finishes 096500 - Resilient Flooring	Resilient Flooring - VCT (12"x12") Wear Rating: Commercial Thickness: 0.125" overall Product Attribute: limestone, polyvinyl chloride resin, plasticizer, stabilizers and pigments Color Selection: Depending on building and floor; to be approved by Facilities Smoke Density: Less than 450 when tested in accordance with ASTM E662 Fire Resistance: Flammability minimum of Class 1, type A rating per ASTM E648	Linoleum product has been selected	UNR confirmed
010	SECTION 3: CAMPUS DESIGN STANDARDS	Division 9: Finishes 096800 - Carpeting	General Use Carpet (Carpet Tiles and Broadloom): Carpet tiles shall be used to the greatest extent possible.	Broadloom carpet has been proposed for the auditorium and the case study rooms	UNR confirmed broadloom carpet is acceptable in these locations
011	SECTION 3: CAMPUS DESIGN STANDARDS	Division 12: Furnishings 129300 - Site Furnishings	Exterior Bicycle Stair Access Ramps will be considered in all new building construction where exterior stairways are included in the construction	Not needed on this project	UNR confirmed in design meetings, that these access ramps at stairs are not needed due to the adjacent sloped walks
012	SECTION 3: CAMPUS DESIGN STANDARDS	Division 12: Furnishings 129300 - Site Furnishings	Outdoor seating and tables, permanently affixed, and left outdoors year-round Steel shotblasted, etched, phosphatized, preheated and electrostatically powder-coated with TGIC polyester powder coatings.	Deviation to being permanently fixed has been proposed for event planning areas	UNR confirmed that the areas being proposed for event seating can have moveable furniture that will be brought in by the university for specific events
013	SECTION 3: CAMPUS DESIGN STANDARDS	Division 12: Furnishings 129300 - Site Furnishings	Outdoor Seating and Tables Victor Stanley Steelsites Collection, NRB-6 Outdoor Bench , Victor Stanley Steelsites Collection, RND-333 - 363 Independent post table and scrolled seats (see diagram 1.0), Victor Stanley Steelsites Collection, RND-ACS-2 Independent post table ADA compliant option	Deviations to the manufacturer in select areas only are being proposed	UNR confirmed that deviations to manufacturers for movable furniture and some fixed lounge furniture are acceptable. UNR to review the final cut sheet package of site furnishings
014	SECTION 3: CAMPUS DESIGN STANDARDS	Division 21: Fire Suppression 211100 - Fire Protection Piping	Needs to be in the spec as Fire Protection is DB later All building fire suppression piping systems shall be made with A53 Grade B carbon steel pipe. Threaded pipe fittings with schedule 40 steel pipe or Victaulic fittings with ASTM A135 schedule 10 steel pipe All couplings on fire pumps will be metal. Elastomeric couplings will not be used.	Flexible fire sprinkler drops are proposed	UNR confirmed that flexible fire sprinkler drops are allowable

ATTACHMENT 5.5(a)ii

Item No.	UNR Design Standard Section	UNR Design Spec Section	Program Requirement	Deviation to Standard or Confirmation	Clarification / Notes
015	SECTION 3: CAMPUS DESIGN STANDARDS	Division 22: Plumbing 224299 - Plumbing Fixtures and Trim	Faucets Battery Powered Models: Moen 8553 sensor operated faucet with 99557 4" deck plate with 104424 mixing valve. Sloan Optima Systems EBF-650. Faucet: 4" center Moen 8437 or 8430F05. Lever handle: Moen 8420. Handicapped wrist blade faucet: 4" center Moen 8215F05 or Moen gooseneck 8278.	Reviewed providing hardwired in lieu of battery	UNR confirmed hardwired
016	SECTION 3: CAMPUS DESIGN STANDARDS	Division 22: Plumbing 224299 - Plumbing Fixtures and Trim	Urinals Battery powered models: Moen 8315 sensor operated flush valve – 0.5 GPF	Reviewed providing hardwired in lieu of battery	UNR confirmed hardwired
017	SECTION 3: CAMPUS DESIGN STANDARDS	Division 22: Plumbing 22330 - Domestic Hot Water Heaters	Water Heaters: State or A.O. Smith	Providing Lochinvar as alternate	UNR confirmed Lochinvar as acceptable
018	SECTION 3: CAMPUS DESIGN STANDARDS	Division 23: Heating, Ventilating and Air Conditioning 23000 - Basic Requirements	Sustainability Kiosk Contractor The purpose of this display is to inform and educate visitors and building occupants on the various systems and sustainability features of the building or buildings included in this project.	Not required on this project	UNR confirmed that this is not included in campus projects
019	SECTION 3: CAMPUS DESIGN STANDARDS	Division 23: Heating, Ventilating and Air Conditioning 234100 - Filters	Pre- Filters: Standard efficiency pleated, media filters with average dust spun efficiency of 30 percent to 35 percent (MERV 8)	MERV 8 was confirmed for pre-filter systems	UNR confirmed that this was acceptable in conjunction with the MERV 15 final filter, but requested that the direction of units was set to minimize the impact of prevailing winds
020	SECTION 3: CAMPUS DESIGN STANDARDS	Division 23: Heating, Ventilating and Air Conditioning 234100 - Filters	Final Filters: High efficiency pleated media filters with average dust spun efficiency of 80 percent to 85 percent (MERV 13)	MERV 15 is proposed for final filters	UNR confirmed that this was acceptable
021	SECTION 3: CAMPUS DESIGN STANDARDS	Division 26: Electrical 261219 - Pad-Mounted, Liquid Filled, Medium-Voltage Transformers	Transformers shall be protected with steel bollards from damage by vehicles. Bollards shall be spaced to allow full access in front of equipment doors.	Bollards and approach will need to be finalized and coordinated with NV Energy who will service the transformer.	Bollards coordinated on civil, landscape & electrical drawings.
022	SECTION 3: CAMPUS DESIGN STANDARDS	Division 26: Electrical 262400 - Panelboards, Distribution Boards, Motor Control Centers	All circuit breakers shall be 100% rated. No series rating allowed.	The standards were reviewed to confirm the series rating requirements	The standards were clarified to be referencing the short circuit rating of circuit breakers, not the nominal overload rating. Series ratings will not be utilized by panelboard/switchboard manufacturers to achieve higher short circuit ratings on devices.
023	SECTION 3: CAMPUS DESIGN STANDARDS	Division 26: Electrical 260519 - Low Voltage Electrical Power Conductors and Cables	All building interior power, telephone, signal and other wiring (whether plenum rated or not) shall be installed in raceways	Fire alarm to be provided in raceways. All other would be plenum rated cabling.	UNR has reviewed the cable tray layouts and confirmed
024	SECTION 3: CAMPUS DESIGN STANDARDS	Division 26: Electrical 263213 - Diesel Engine Generators	Acceptable generator manufacturers are: Detroit, Cummins and Caterpillar.	MTU included as acceptable manufacturer as they own Detroit.	UNR confirmed
025	SECTION 3: CAMPUS DESIGN STANDARDS	Division 26: Electrical 263213 - Diesel Engine Generators	Each generator shall be provided with a remote load bank @ 50% or greater of rated load.	Radiator mounted load bank was reviewed as an option	UNR confirmed a radiator mounted load bank as acceptable
026	SECTION 3: CAMPUS DESIGN STANDARDS	Division 26: Electrical 263600 - Automatic Transfer Switches	Acceptable manufacturers are: Asco, Zenith, Detroit, Cummins and Caterpillar.	MTU included as acceptable manufacturer as they own Detroit.	UNR confirmed
027	SECTION 3: CAMPUS DESIGN STANDARDS	Division 26: Electrical 265000 - Lighting	Lighting circuits shall not be 480 volts.	We clarified that 277V, 1-pole circuits for lighting is acceptable and the intent of the standard is to not have 480V, 2-pole circuit breakers.	Confirmed with UNR Engineering.
028	SECTION 3: CAMPUS DESIGN STANDARDS	Division 26: Electrical 265000 - Lighting	For indoor and outdoor lighting use only lamps of 4000 degree Kelvin rating with the highest color rendering index available.	Alternate temperature fixtures are proposed in limited areas/scope for specialty areas and uses	UNR confirmed that deviations to campus color temperature standards are acceptable in limited areas only. Design team has provided a full cut sheet package for design and types.
029	SECTION 3: CAMPUS DESIGN STANDARDS	Division 26: Electrical 262400 - Panelboards, Distribution Boards, Motor Control Centers	A minimum of two levels of harmonic suppression shall be provided.	We are providing transient voltage suppression (TVSS) as required by the specifications and confirmed that "harmonic" does not refer to harmonic distortion suppression	UNR confirmed
030	SECTION 3: CAMPUS DESIGN STANDARDS	Division 28: Electronic Safety and Security 281643 - Perimeter Security Systems	On new construction, all perimeter doors shall be provided with conduit for future electronic access control devices.	Not Applicable if the devices are already part of the project	UNR confirmed
031	SECTION 3: CAMPUS DESIGN STANDARDS	Division 28: Electronic Safety and Security 282300 - VIDEO SURVEILLANCE	Camera coverage shall be provided for all exterior doors where applicable	Fifth floor Dean's Terrace does not need to be on a perimeter security system. The door will be key locked and no video camera to be provided	UNR confirmed
032	Attachment 3, pg. 119; Product Standards & Manufacturers; HVAC Equipment	Custom Air Handlers	Custom Air Handlers: Temptrol, Scott Springfield, Governair, Marcraft, Energy Labs	JCI is seeking a deviation to UNR Facilities Standards to allow for YORK equipment.	Equipment shall be configured to match the University's HVAC integration and installation standards.
033	Attachment 3, pgs. 119-134; Product Standards & Manufacturers; Building Management Systems (BMS) DDC Control Modules Equipment	Building Management Systems (BMS) DDC Control Modules	All control components in new buildings shall be native Automated Logic Controls (ALC).	JCI is seeking a deviation to UNR Facilities Standards to allow for Metasys.	Equipment shall be configured to match the University's Building Management Systems (BMS) DDC Control Module integration and installation standards.
034	Attachment 3, pgs. 221-223; Fire Detection and Alarm Equipment	Fire Detection and Alarm Equipment	Fire detection and alarm devices shall be Notifier by Honeywell.	JCI is requesting a deviation from the UNR Facilities Standards to use SimplexGrinnell.	Equipment shall be configured to match the University's Fire Detection and Alarm integration and installation standards.
035	Attachment 3, pgs. 104-105; Fire Sprinkler Systems	Fire Sprinkler Systems	All University of Nevada Fire sprinkler systems shall be connected to a monitored University of Nevada fire alarm system.	JCI is requesting a deviation from the UNR Facilities Standards to use SimplexGrinnell.	Equipment shall be configured to match the University's Fire Sprinkler Systems integration and installation standards.

ATTACHMENT 5.17(b)

Required Insurance After Financial Close of Escrow

1. General. Without limiting any of the Developer's other obligations or liabilities, the Developer shall, at the Developer's sole expense, procure, maintain and keep in force, or shall cause to be procured, maintained and kept in force, the amounts and types of insurance conforming to the minimum requirements set forth in this Attachment 5.17(b) as applicable to the scope of work being performed. The required insurance shall be in effect prior to the commencement of any of Developer's Work and shall continue in force until the earlier to occur of: (a) Final Completion of the COB Project or (b) ninety (90) days following Completion of the COB Project. Neither approval by University nor failure to disapprove the insurance furnished by the Developer shall relieve the Developer of the Developer's responsibility to provide the insurance required by the Agreement. Further, compliance with the insurance requirements of the Agreement shall not limit the liability of the Developer or Design Builder to University or others, and shall be in addition to and not in lieu of any other remedy available to University under the Agreement or otherwise. Certificates of Developer's insurance shall be filed with the University prior to commencing Developer's Work and be signed by a person authorized by that insurer to bind coverage on its behalf. Certificate Holder shall be identified as "Board of Regents of the Nevada System of Higher Education, on behalf of the University of Nevada, Reno." The project name or description shall be noted on the certificate of insurance. The University reserves the right to require complete, certified copies of all insurance policies required by the Agreement at any time.

2. Primary. The insurance provided by the Developer and Design Builder pursuant to this Agreement shall apply on a primary basis and any other insurance or self-insurance maintained by University shall be excess of and not contributing with the insurance provided by or on behalf of the Developer. Coverage maintained by the Developer or its contractors or subcontractors shall apply on a first dollar basis.

3. Changes, Cancellations and Renewals. The Developer shall provide University with thirty (30) calendar days' written notice prior to cancellation of any required insurance. The Developer/Design Builder shall provide University with renewal or replacement evidence of insurance no less than ten (10) calendar days before the expiration or replacement of any required insurance.

4. Insurers. Insurers providing the insurance required by this Agreement must be: (1) authorized to conduct business and issue policies by the Department of Insurance of the State of Nevada and with an AM Best rating of not less than A-VII., or (2) with respect only to the Workers' Compensation coverage, be authorized as a self-insurer under NRS 616.291.

5. Design Builder and Subcontractors. Developer's insurance certificate(s) must include Design Builder and all subcontractors as additional insured under its policies or such parties shall be required by Developer to maintain separate insurance as reasonably determined by the Developer, however the limits of liability of such policies shall not be less than \$1,000,000 per occurrence / \$2,000,000 aggregate and the "Board of Regents of the Nevada System of Higher Education, on behalf of the University of Nevada, Reno" shall be named as additional insured on

such liability policies. Such policies shall further contain a waiver of subrogation against the University.

6. Commercial. The Developer's insurance shall cover the Developer for those sources of liability which would be covered by the latest occurrence form edition of the standard Commercial General Liability Coverage Form as filed for use in the State of Nevada, including but not limited to bodily injury, property damage, fire damage, medical payments, broad form contractual liability and XCU (Explosion, Collapse and Underground Coverage) using the latest broad form by the Insurance Services Office. Developer shall maintain separate limits of coverage applicable only to Developer's Work under this Agreement. The minimum limits to be maintained by the Developer (inclusive of any amounts provided by an umbrella or excess policy written as broad as primary policy) shall be those that would be provided with the attachment of ISO endorsement - Amendment of Limits of Insurance (Designated Project or Premises) - to a Commercial General Liability Policy with minimum limits as follows:

Each Occurrence	\$5,000,000;
Products/Completed Operations Aggregate	\$5,000,000;
Personal and Advertising Injury	\$5,000,000;
General Aggregate	\$5,000,000;
Mobile Equipment	\$1,000,000;
Fire Damages	\$100,000; and
Medical Payments	\$10,000.

The Developer shall continue to maintain Products/Completed Operations coverage for a period of six (6) years after the Agreement completion date.

7. Business Auto. The Developer's insurance shall cover the Developer for those sources of liability which would be covered by the latest occurrence form edition of the standard Business Auto Policy, including coverage for liability contractually assumed, as filed for use in the State of Nevada by the Insurance Services Office. Coverage shall be provided for owned, scheduled, non-owned, and hired automobiles with a combined single limit of not less than \$2,000,000 per occurrence.

8. Umbrella/Excess Liability. Developer shall maintain Umbrella/Excess Liability Insurance with an aggregate limit of not less than \$10,000,000.

9. Builders' Risk. Developer shall maintain All Risk Builders' Risk – Property Insurance covering all COB Improvements that are part of the Developer's Work, against all risks, in an amount equal to one hundred percent (100%) of the full replacement value of the COB Improvements to conform with then current codes and the costs of demolition and debris removal, excluding land and the footings, foundations and installations below the basement level, without deduction for depreciation of the covered items and in amounts that meet any co-insurance clauses of the policies of insurance, with a vandalism and malicious mischief endorsement, sprinkler leakage coverage, and a soft costs endorsement covering up to one (1) year of any interest expenses payable with regard to the Bonds. Policy must provide coverage from the time any covered property becomes the responsibility of the Developer and continue without interruption during construction, renovation or installation, including any time during which the covered property is

being transported to the construction installation site, or awaiting installation, whether on or off site. Policy shall be endorsed such that the insurance shall not be canceled or lapse because of any partial use or occupancy by University.

10. Workers' Compensation and Employer's Liability. Nevada Law requires that the Developer shall provide worker's compensation insurance as stated in NRS 616B.627 or proof that compliance with the provisions of NRS Chapter 616A-D and all other related chapters is not required. The Developer shall require the same insurance when the work is to be performed by Design Builder or any subcontractor. Minimum limits shall be as follows:

Workers Compensation	Statutory
Employer's Liability	
Each Accident/Disease	\$1,000,000
Each Employee	\$1,000,000
Policy Limit	\$1,000,000

11. Contractor's Pollution Liability. The policy shall provide for complete professional service coverage, including coverage for pollution liability that is the result of a breach of professional duties. The policy shall provide for protection against claims for third-party bodily injury, property damage, or environmental damage caused by pollution conditions resulting from general contracting activities for which the Developer is legally liable. The policy shall provide for cleanup costs when mandated by governmental entities, when required by Law, or as a result of third-party claims. Minimum limits shall be as follows:

Per Occurrence	\$1,000,000
General Aggregate	\$2,000,000

12. Professional Liability. Developer shall require Architect to maintain professional liability coverage meeting the minimum limits stated below:

Per Occurrence	\$1,000,000
Aggregate	\$3,000,000

13. The coverages referred to under Sections 6, 7, 8, and 11 above and shall include NCCD and the University as additional insureds (by ISO form CG 2010 11 85). The coverages referred to under Section 9 shall name NCCD and the University as named insureds and loss payees as their respective interest may appear pursuant to the Ground Lease and this Agreement. Each policy required to be carried hereunder shall contain, or be endorsed with, a provision by which the insurer shall waive its right of subrogation against the University and NCCD.

14. All coverage limits set forth in this Attachment 5.17(b) shall be maintained in Current Dollars during the Term.

15. If the insurance required to be carried by this Attachment 5.17(b) is written on a "claims made" form, coverages shall survive for no less than three (3) years following Final Completion. Coverages shall also provide for a retroactive date of placement coinciding with the Effective Date of this Agreement.

16. The proceeds from any insurance covering damage to the COB Project shall be held by the Developer, accounted for separately from the Project Fund Amount and used in accordance with Section 4.1(b) of the Agreement; provided (A) Developer shall provide NCCD and the University with an accounting of such proceeds and such account promptly upon written request from either NCCD or the University, and shall also provide NCCD and the University with any back-up documents reasonably requested by such Parties in connection therewith, and (B) if the proceeds are in excess of \$10,000,000, then the Parties shall jointly name a mutually agreed upon independent corporate trustee, such as a title company, to hold the insurance proceeds for such purposes in trust and to make disbursements as provided in the Agreement. Developer may draw the proceeds from such bank account by following the disbursement procedures set forth in the Disbursement Agreement, as applicable, unless agreed otherwise by the Parties in writing.

17. Developer shall at all times observe and comply with the requirements of all policies of insurance in force with respect to the Site and COB Project, and Developer shall so perform and satisfy the requirements of the companies writing such policies so that, at all times, companies meeting the requirements of Section 4 above and reasonably satisfactory to NCCD and the University shall be willing to write or to continue such insurance. Developer shall, in the event of any violation or attempted violation of the provisions of this paragraph by any of its contractors, subcontractors, or Agents, take all steps immediately upon knowledge of such violation or attempted violation to remedy or prevent the same.

18. The consent and approval of the University and NCCD shall be required to any proposed settlement, adjustment or compromise of any insurance claim affecting the Site other than claims by and between Developer and its contractors or subcontractors.

19. The University's Self-Help Right to Obtain Insurance. After five (5) Business Days' written notice to the Developer, the University has the right, but not the obligation, to obtain, and thereafter continuously to maintain, any insurance required by this Attachment 5.17(b) that the Developer fails to obtain or maintain, and to charge the actual and reasonable cost of obtaining and maintaining that insurance to Developer; provided, however, if Developer reimburses the University for any premiums and subsequently provides such insurance satisfactory to the University, then the University agrees to cancel the insurance it obtained and to credit Developer with any premium refund.

20. Indemnity. The indemnification requirements under the Agreement shall in no way be limited by any insurance requirements under any such agreements.

ATTACHMENT 5.23
(cover page)

Required Warranties

See list and description of Required Warranties behind this cover page.

For one year after Completion, the general contractor warrants that all Work shall be of good quality, in conformance with the Contract Documents, and free of defects. The Contractor's warranty does not include remedies for defects or damages caused by normal wear and tear during normal usage, use for a purpose for which the Work was not intended, improper or insufficient maintenance, modifications performed by Client or others, or abuse. All warranties given by a manufacturer will be passed-through to the University or NCCD, as elected by University; a full list of such warranties shall be produced by the Design Builder as promptly as possible after Commercial Close and such list shall be added to this Attachment 5.23.

Attachment 5.23

ATTACHMENT 5.24

Form of Subordinate Collateral Assignment of Design/Build Agreement

SUBORDINATE COLLATERAL ASSIGNMENT OF DESIGN/BUILD AGREEMENT

FOR VALUE RECEIVED, the undersigned UNR/EDGEMOOR GATEWAY PARTNERS LLC, a Maryland limited liability company (“Developer”), hereby assigns to the BOARD OF REGENTS of the NEVADA SYSTEM of HIGHER EDUCATION, on behalf of the UNIVERSITY OF NEVADA, RENO (“University”), its rights under (i) that certain Design/Build Agreement dated _____, 2023 between Developer and Clark Construction Group, a Maryland limited liability company relating to the Construction of the COB Improvements on the Site. Capitalized terms not defined herein shall have the meanings given to them in that certain Development Agreement dated _____, 2023 (“Development Agreement”) between University, Developer, and NCCD.

This SUBORDINATE COLLATERAL ASSIGNMENT OF DESIGN/BUILD AGREEMENT (“Assignment”) constitutes a present and absolute assignment to University as of the Financial Closing Date; provided, however, University confers on Developer the right to enforce the terms of the Design/Build Agreement so long as no Developer Event of Default or event which would constitute a Developer Event of Default after notice or the passage of time, or both, has occurred and is continuing under the Development Agreement. Upon the occurrence of (i) a Developer Event of Default or event which would constitute a Developer Event of Default after notice or the passage of time, or both, under the Development Agreement, or (ii) an event of default by Developer, in its capacity as the “Manager”, under the O&M Agreement, beyond all applicable notice and cure periods set forth therein, then the University may, in its sole discretion, give notice to the Design Builder of its intent to enforce the rights of Developer under the Design/Build Agreement and may initiate or participate in any legal proceedings respecting the enforcement of said rights. Developer acknowledges that by accepting this Assignment, University does not assume any of Developer’s obligations under the Design/Build Agreement. University shall not incur any liability if any action taken by University, or on its behalf in good faith, pursuant to the foregoing provisions, shall prove to be, in whole or in part, inadequate or invalid, and Developer hereby agrees to Indemnify University from and against any and all Loss in connection with any such action or actions.

Developer hereby irrevocably constitutes and appoints University as Developer’s true and lawful attorney-in-fact with the power and authority, including full power of substitution, to demand, receive and enforce Developer’s rights with respect to the Design/Build Agreement, to give appropriate receipts, releases and satisfactions for, and on behalf of, Developer, and to do any and all acts in the name of Developer or in the name of University with the same force and effect as if done by Developer. This power of attorney is a power coupled with an interest and cannot be revoked.

Developer represents and warrants to University, as of the Financial Closing Date, that (a) all Design/Build Agreement are in full force and effect and are enforceable in accordance with their terms and no default, or event which would constitute a default after notice or the passage of time, or both, exists with respect to said Design/Build Agreement, (b) all copies of the Design/Build

Agreement delivered to University and NCCD are complete and correct, and (c) Developer has not assigned any of its rights under the Design/Build Agreement. Developer shall deliver to University and NCCD a true, complete and correct copy of all amendments or modifications to the Design/Build Agreement promptly upon execution thereof.

Developer agrees (a) to pay and perform all obligations of Developer under the Design/Build Agreement, (b) to enforce the payment and performance of all obligations of any other person or entity under the Design/Build Agreement, (c) not to modify the existing Design/Build Agreement nor to enter into any future Design/Build Agreement without University's and NCCD's prior written approval except as otherwise may be permitted in the Development Agreement, and (d) not to further assign, for security or any other purposes, its rights under the Design/Build Agreement without University's and NCCD's prior written consent.

This Assignment secures payment and performance by Developer of all obligations of Developer under the Development Agreement. This Assignment is supplemented by those provisions of the Development Agreement which apply to the Design/Build Agreement and said provisions are incorporated herein by reference. This Assignment shall bind the successors and permitted assigns of Developer and inure to the benefit of the successors and assigns of University. This Assignment shall be governed by and construed in accordance with the laws of the State of Nevada. In the event of a dispute between any of the parties hereto over the meaning of this Assignment, both parties shall be deemed to have been the drafter hereof, and any applicable law that states that contracts are construed against the drafter shall not apply. The attached Design Builder's Consent is hereby incorporated by reference.

This Agreement is subject to and subordinate to the rights of the assignees under the Collateral Assignment Agreement, dated [____], 2023, by NCCD and Developer in favor of Bond Trustee.

Dated as of TBD __, 2023

UNR/EDGEMOOR GATEWAY PARTNERS LLC,
a Maryland limited liability company

By: _____

Name: _____

Its _____

By: _____

Name: _____

Its _____

DESIGN BUILDER'S CONSENT

The undersigned (collectively, "Design Builder") hereby consents to the foregoing Subordinate Collateral Assignment of Design/Build Agreement ("Assignment"), of which this Design Builder's Consent ("Consent") is a part.

1. Design Builder agrees that if, at any time the University, pursuant to its rights under the Development Agreement, elects to undertake or cause the completion of Construction of the COB Improvements on any portion of the Site, and gives Design Builder written notice of such election; THEN, so long as the Design Builder has received, receives or continues to receive the compensation called for under the Design/Build Agreement, Design Builder shall continue to perform its obligations under the Design/Build Agreement in accordance with the terms thereof.
2. Design Builder further agrees that, in the event of a breach by Developer of the Design/Build Agreement, Design Builder will give written notice of such breach to the University at the addresses set forth below. University shall have thirty (30) days from the receipt of such written notice of default to remedy or cure said default provided, if such default is of a nature that it cannot be cured within thirty (30) days, University shall have thirty (30) days within which to commence the cure and shall thereafter have such reasonable period of time to complete such cure as is necessary. Nothing herein shall require University to cure said default or to undertake the Construction of the COB Improvements.

University's Address for Notices: University of Nevada, Reno
Attn: Vice President, Administration and Finance 1664
N. Virginia St./MS 003
Reno Nevada 89557-0003

AND

University of Nevada, Reno
Attn: Office of Community & Real Estate
Management
1664 N. Virginia St./MS 243
Reno Nevada 89557-0243

With a copy to: University of Nevada, Reno
Attn: General Counsel
1664 N. Virginia St./MS 550
Reno Nevada 89557-0550

3. University may periodically inspect and copy, at reasonable times, the books, records and accounting data of Design Builder relating to the Construction of the COB Improvements.
4. Design Builder shall hold in trust all money disbursed to or otherwise received by Design Builder from or on account of Developer in connection with the Construction of the COB

Attachment 5.24, Page 3

Improvements and shall use such money solely for the payment of costs incurred in the Construction of the COB Improvements, including Design Builder's fees, and for no other purpose, until all bills, claims and demands for such costs have been paid in full.

Design Builder warrants and represents that it has no knowledge of any prior assignment(s) of any interest in the Design/Build Agreement. Except as otherwise defined herein, the terms used herein shall have the meanings given them in the Assignment.

Executed by Design Builder on TBD ____, 2023.

Clark Construction Group,
a Maryland limited liability company

By: _____

Name: _____

Its _____

ATTACHMENT 5.29

Form of Collateral Assignment of Architect Agreement

COLLATERAL ASSIGNMENT OF ARCHITECT AGREEMENT

FOR VALUE RECEIVED, the undersigned CLARK CONSTRUCTION GROUP, a Maryland limited liability company (“Design Builder”), hereby assigns (1) first to NCCD-UNR Properties LLC (“NCCD”) and U.S. Bank Trust Company, National Association, as trustee (“Bond Trustee”) under that certain Trust Indenture, dated as of _____, 2023, by and between National Finance Authority and the Bond Trustee and (2) second to the BOARD OF REGENTS of the NEVADA SYSTEM of HIGHER EDUCATION, on behalf of the UNIVERSITY OF NEVADA, RENO (“University”), its rights under (i) that certain Design Services Agreement effective August 2022 between Design Builder and LMN Architects, LLP relating to the design of the COB Improvements on the Site. Capitalized terms not defined herein shall have the meanings given to them in that certain Development Agreement dated _____, 2023 (“Development Agreement”) between University, UNR/Edgemoor Gateway Partners LLC (“Developer”) and NCCD.

This COLLATERAL ASSIGNMENT OF ARCHITECT AGREEMENT (“Assignment”) constitutes a present and absolute assignment to NCCD, Bond Trustee, and University as of the Financial Closing Date; provided, however, NCCD, Bond Trustee, and University confer on Design Builder the right to enforce the terms of the Architect Agreement so long as the Design/Build Agreement has not been terminated. Upon the termination of the Development Agreement and the termination of the Design/Build Agreement then NCCD, Bond Trustee, and University may, in their sole discretion, give notice to the Design Builder of their intent to enforce the rights of Design Builder under the Architect Agreement and may initiate or participate in any legal proceedings respecting the enforcement of said rights. Design Builder acknowledges that by accepting this Assignment, none of NCCD, Bond Trustee, or University assume any of Design Builder’s obligations under the Architect Agreement. None of NCCD, Bond Trustee, or University shall incur any liability if any action taken by NCCD, Bond Trustee, or University, respectively, or on its behalf in good faith, pursuant to the foregoing provisions, shall prove to be, in whole or in part, inadequate or invalid, and Design Builder hereby agrees to Indemnify NCCD, Bond Trustee and University from and against any and all Loss in connection with any such action or actions.

Design Builder hereby irrevocably constitutes and appoints, subject to Section 5.29 of the Development Agreement, first, NCCD and Bond Trustee, and second, University as Design Builder’s true and lawful attorney-in-fact with the power and authority, including full power of substitution, to demand, receive and enforce Design Builder’s rights with respect to the Architect Agreement, to give appropriate receipts, releases and satisfactions for, and on behalf of, Design Builder, and to do any and all acts in the name of Design Builder or in the name of NCCD, Bond Trustee, or University, as applicable, with the same force and effect as if done by Design Builder. This power of attorney is a power coupled with an interest and cannot be revoked.

Design Builder represents and warrants to NCCD, Bond Trustee, and University, as of the Financial Closing Date, that (a) the Architect Agreement is in full force and effect and is

enforceable in accordance with its terms and no default, or event which would constitute a default after notice or the passage of time, or both, exists with respect to said Architect Agreement, (b) all copies of the Architect Agreement delivered to NCCD, Bond Trustee, and University are complete and correct, and (c) Design Builder has not assigned any of its rights under the Architect Agreement. Design Builder shall deliver to NCCD, Bond Trustee, and University a true, complete and correct copy of all amendments or modifications to the Architect Agreement promptly upon execution thereof.

Design Builder agrees (a) to pay and perform all obligations of Design Builder under the Architect Agreement, (b) to enforce the payment and performance of all obligations of any other person or entity under the Architect Agreement, (c) not to modify the existing Architect Agreement nor to enter into any future Architect Agreement without NCCD, Bond Trustee, and University's prior written approval except as otherwise may be permitted in the Architect Agreement, and (d) not to further assign, for security or any other purposes, its rights under the Architect Agreement without NCCD, Bond Trustee, and University's prior written consent.

Design Builder hereby authorizes NCCD, Bond Trustee and University to file one or more of NCCD, Bond Trustee or University's own financing and/or continuation statements, and amendments thereto, relating to all or any part of the Architect Agreement without the signature of Design Builder where permitted by Law. A photocopy or other reproduction of the Development Agreement or any of NCCD, Bond Trustee or the University's financing statements covering the Architect Agreement or any part thereof shall be sufficient as a financing statement where permitted by Law.

This Assignment secures payment and performance by Developer of all obligations of Developer under the Development Agreement. This Assignment is supplemented by those provisions of the Development Agreement which apply to the Architect Agreement and said provisions are incorporated herein by reference. This Assignment shall bind the successors and permitted assigns of Design Builder and inure to the benefit of the successors and assigns of NCCD, Bond Trustee, and University. This Assignment shall be governed by and construed in accordance with the laws of the State of Nevada. In the event of a dispute between any of the parties hereto over the meaning of this Assignment, both parties shall be deemed to have been the drafter hereof, and any applicable law that states that contracts are construed against the drafter shall not apply. The attached Architect's Consent is hereby incorporated by reference.

Dated as of TBD ___, 2023

CLARK CONSTRUCTION GROUP,
a Maryland limited liability company

By: _____

Name: _____

Its _____

ARCHITECT'S CONSENT

The undersigned (collectively, "Architect") hereby consents to the foregoing Subordinate Collateral Assignment of Architect Agreement ("Assignment"), of which this Architect's Consent ("Consent") is a part.

1. Architect agrees that if, at any time NCCD, Bond Trustee or University, pursuant to its rights under the Development Agreement, elects to undertake or cause the completion of the design and construction of the COB Improvements on any portion of the Site, and gives Architect written notice of such election; THEN, so long as the Architect has received, receives or continues to receive the compensation called for under the Architect Agreement, Architect shall continue to perform its obligations under the Architect Agreement in accordance with the terms thereof.

2. Architect further agrees that, in the event of a breach by Design Builder of the Architect Agreement, Architect will give written notice of such breach to NCCD, Bond Trustee or University, as applicable, at the addresses set forth below. University shall have thirty (30) days, from the receipt of such written notice of default to remedy or cure said default provided, if such default is of a nature that it cannot be cured within thirty (30) days, University shall have thirty (30) days within which to commence the cure and shall thereafter have such reasonable period of time to complete such cure as is necessary. Nothing herein shall require NCCD, Bond Trustee or University to cure said default or to undertake the design or construction of the COB Improvements.

University's Address for Notices: University of Nevada, Reno
Attn: Vice President, Administration and Finance 1664
N. Virginia St./MS 003
Reno Nevada 89557-0003

AND

University of Nevada, Reno
Attn: Office of Community & Real Estate
Management
1664 N. Virginia St./MS 243
Reno Nevada 89557-0243

With a copy to: University of Nevada, Reno
Attn: General Counsel
1664 N. Virginia St./MS 550
Reno Nevada 89557-0550

Bond Trustee's Address for Notices: U.S. Bank Trust Company, National Association
2222 E. Camelback Road, Suite 110
Phoenix, Arizona 85016
Attn: Global Corporate Trust
Telephone: (602)257-5431
Email: keith.henselen@usbank.com

NCCD's Address for Notices: NCCD - UNR Properties LLC
2630 Exposition Boulevard, Suite 213
Austin, Texas 78703
Attention: President
Telephone: (512) 322-9650
Email: geden@nccdevelopment.org

3. NCCD, Bond Trustee and University may periodically inspect and copy, at reasonable times, the books, records and accounting data of Architect relating to the design and construction of the COB Improvements.
4. Architect shall hold in trust all money disbursed to or otherwise received by Architect from or on account of Architect in connection with the design and construction of the COB Improvements and shall use such money solely for the payment of costs incurred in the design and construction of the COB Improvements, including Architect's fees, and for no other purpose, until all bills, claims and demands for such costs have been paid in full.

Architect warrants and represents that it has no knowledge of any prior assignment(s) of any interest in the Architect Agreement. Except as otherwise defined herein, the terms used herein shall have the meanings given them in the Assignment.

Executed by Architect on TBD ____, 2023.

LMN Architects, LLP

By: _____

Name: _____

Its _____

ATTACHMENT 6.2

Form of Determination of Completion Certificate

DETERMINATION OF COMPLETION CERTIFICATE

This Certificate serves as written determination by the University and NCCD that the Developer has achieved Completion of those COB Improvements described on the documents hereto in accordance with the terms of the Development Agreement. The items listed below have been received by the Developer as required by Section 6.2 of the Development Agreement and are attached to this Certificate. Capitalized terms used herein shall have the meanings given to them in the Development Agreement.

The effective date of this Certificate is _____ 20__.

AIA Notice of Substantial Completion from Developer’s Architect, including any Deferred Items.

Certificate of Occupancy or temporary Certificate of Occupancy from the Nevada Department of Administration

University:

Developer

BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON BEHALF OF THE UNIVERSITY OF NEVADA, RENO

UNR/EDGEMOOR GATEWAY PARTNERS LLC, a Maryland limited liability company

By: _____
Name: _____
Its _____

By: _____
Name: _____
Its _____

NCCD:

NCCD - UNR PROPERTIES LLC
a Nevada limited liability company

By: _____
Name: _____
Its _____

By: _____
Name: _____
Its: _____

ATTACHMENT 7.2(b)
(cover page)

Form of Notice of Non-Responsibility

See form of Notice of Non-Responsibility appended behind this cover page.

Attachment 7.2(b)

APN: [To be added]

WHEN RECORDED, MAIL TO:

Attn: Office of Community &
Real Estate Management
University of Nevada, Reno
Mail Stop 243
Reno, Nevada 89557-0243

The undersigned hereby affirms that this document submitted for recording does not contain the social security number of any person or persons. (NRS 239B.030)

**NOTICE OF NON-RESPONSIBILITY
(NRS 108.234)**

NOTICE IS HEREBY GIVEN THAT:

1. The Board of Regents of the Nevada System of Higher Education, on behalf of the University of Nevada, Reno ("Owner") is the owner of certain real property located in Reno, Washoe County, Nevada, and more particularly described on the attached Exhibit A (the "Property").
2. Owner has entered, or will enter, into a certain Ground Lease with National Campus Community Development Corporation ("Tenant"), pursuant to which Tenant has leased, or will lease, the Property from Owner.
3. Pursuant to the Lease Ground and related documents, Tenant intends to develop an approximately 128,000 square-foot building and associated improvements and amenities (the "Project") on the Property.
4. Not more than three days have elapsed since the earlier of (a) the effective date of the Ground Lease, or (b) full execution of the Ground Lease by all parties.
5. **Owner will not be responsible** for the improvement, alteration, or repair of the Property by Tenant or on Tenant's behalf, or for the materials or labor used or to be used by Tenant or on Tenant's behalf on such Property.
6. Tenant has been notified in writing that it must comply with the requirements of NRS 108.2403.

Remainder intentionally blank

7. Owner does not waive its immunity as a public entity from liens on its property.

BOARD OF REGENTS OF THE NEVADA SYSTEM
OF HIGHER EDUCATION, ON BEHALF OF THE
UNIVERSITY OF NEVADA, RENO

By: _____
Vic Redding, Vice President, Admin. & Finance

Dated _____

STATE OF NEVADA)
)
COUNTY OF WASHOE)

The above instrument was acknowledged before me on this ____ day of _____,
2023, by Vic Redding, Vice President, Admin. & Finance, acting for the BOARD OF
REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON BEHALF OF
THE UNIVERSITY OF NEVADA, RENO.

Notary Public
Commission Expires _____

Exhibit A

Legal Description

All that certain real property situated in the Washoe County, State of Nevada, described as follows:

[To be added]

ATTACHMENT 9.3(d)

Applicable Daily Delay Credits

COB Improvement(s)		Daily Delay Credit
Completion		\$5,000
Final Completion		\$1,000

Attachment 9.3(d)

ATTACHMENT 10.1(b)(i)

Usual Weather Conditions

Month	Twenty Five (25) Reasonably Anticipated Days of Adverse Weather	Average Precipitation
January		1.06
February		1.06
March		0.86
April		0.35
May		0.62
June		0.47
July		0.24
August		0.27
September		0.45
October		0.42
November		0.80
December		0.88

Precipitation shall be gauged at the UNR Valley Road Weather Station as posted on the website:
<http://www.wrcc.dri.edu/cgi-bin/rawMAIN2.pl?nvunrc>.

ATTACHMENT 10.19

179D Letter Agreement

[UNR LETTERHEAD]

Date: TBD ____, 2023

Project:

[INSERT ADDRESS]

Geoffrey Stricker
UNR/Edgemoor Gateway Partners LLC
7900 Westpark Drive
Suite T300
McLean, VA 22102

Re: Internal Revenue Code Section 179D Credit

Dear Mr. Stricker:

This letter will serve as our agreement regarding the allocation of available tax deductions for the Energy Efficient Commercial Buildings Deduction under Internal Revenue Code Section 179D.

Pursuant to that certain contract between UNR/Edgemoor Gateway Partners LLC (“Edgemoor”) and the Board of Regents of the Nevada System of Higher Education, on behalf of the University of Nevada, Reno (“University”), Edgemoor has agreed to design and construct certain improvements to real property located in the University's Reno, Nevada campus (the “COB Project”) for _____ \$_____. As of the date of this letter, the date of completion for the COB Project is ____ ____, 20__ which shall be the projected in service date for the COB Project.

Edgemoor represents and warrants, and the University believes that Edgemoor is the designer of the COB Project within the meaning of Section 179D of the Internal Revenue Code, and the University agrees to share any effective tax savings that result from the tax deductions available under Internal Revenue Code Section .

Under penalty of perjury, I declare that I have examined this allocation, including any accompanying documents, and to the best of my knowledge and belief, the facts presented in support of this allocation are true and complete.

Sincerely,

University of Nevada, Reno

AGREED

Geoffrey Stricker
UNR/Edgemoor Gateway Partners LLC

ATTACHMENT 12-1

Form of Affirmation Certificate

AFFIRMATION CERTIFICATE

(Commercial Close of Escrow)

Each of the undersigned Parties hereby certifies to each of the other Parties to that certain Development Agreement dated _____, 2023 (the "Development Agreement") entered into by and among the **Board of Regents of the Nevada System of Higher Education, on behalf of the University of Nevada, Reno** (the "University"), **NCCD -UNR Properties LLC**, a Nevada limited liability company ("NCCD"), and **UNR/Edgemoor Gateway Partners LLC**, a Maryland limited liability company ("Developer"), as follows:

1. The representations and warranties of such Party contained in the Development Agreement are true and correct in all material respects as of the date of the Commercial Close of Escrow (as defined in the Development Agreement).

2. This Certificate is being delivered to each of the other Parties on the date of the Commercial Close of Escrow.

Capitalized terms not defined herein shall have the meanings given to them in the Development Agreement.

[Signatures on following page]

University:

**BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON
BEHALF OF THE UNIVERSITY OF NEVADA, RENO**

Recommended by:

Brian Sandoval
President, University of Nevada, Reno

Date: _____

Approved by:

Dale Erquiaga
Acting Chancellor,
Nevada System of Higher Education

Developer:

UNR/EDGEMOOR GATEWAY PARTNERS LLC,
a Maryland limited liability company

By: _____

Name: _____

Its _____

By: _____

Name: _____

Its _____

NCCD:

NCCD - UNR PROPERTIES LLC
a Nevada limited liability company

By: _____

Name: _____

Its: _____

AFFIRMATION CERTIFICATE
(Financial Close of Escrow)

Each of the undersigned Parties hereby certifies to each of the other Parties to that certain Development Agreement dated _____, 2023 (the "Development Agreement") entered into by and among the **Board of Regents of the Nevada System of Higher Education, on behalf of the University of Nevada, Reno** (the "University"), **NCCD -UNR Properties LLC**, a Nevada limited liability company ("NCCD"), and **UNR/Edgemoor Gateway Partners LLC**, a Maryland limited liability company ("Developer"), as follows:

3. The representations and warranties of such Party contained in the Development Agreement are true and correct in all material respects as of the date of the Financial Close of Escrow (as defined in the Development Agreement).

4. This Certificate is being delivered to each of the other Parties on the date of the Financial Close of Escrow.

Capitalized terms not defined herein shall have the meanings given to them in the Development Agreement.

[Signatures on following page]

University:

BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON BEHALF OF THE UNIVERSITY OF NEVADA, RENO

Recommended by:

Brian Sandoval
President, University of Nevada, Reno

Date: _____

Approved by:

Dale Erquiaga
Acting Chancellor,
Nevada System of Higher Education

Developer:

UNR/EDGEMOOR GATEWAY PARTNERS LLC,
a Maryland limited liability company

By: _____

Name: _____

Its _____

By: _____

Name: _____

Its _____

NCCD:

NCCD - UNR PROPERTIES LLC
a Nevada limited liability company

By: _____

Name: _____

Its: _____

ATTACHMENT 12-3

University Regulations

For purposes of this Agreement, “University Regulations” shall include any written policy, procedure, or guideline of the University of Nevada, Reno, or Nevada System of Higher Education, existing at the time of the conduct in question governing generally the conduct of vendors, visitors, and guests on the University Campus, including without limitation the following:

University Administrative Manual Section 1,510: *Vendor Diversity*

University Administrative Manual Section 1,523: *Off-Campus Business by Contracted Vendors*

University Administrative Manual Section 1,900: *Equal Employment Opportunity Statement*

University Administrative Manual Section 1,910: *Sexual Harassment*

University Administrative Manual Section 1,911: *Policy Against Discrimination and Sexual Harassment: Complaint Procedure*

University Administrative Manual Section 2,040: *University Workplace Violence and Bullying Prohibition*

University Administrative Manual Section 5,030: *Policy on Use of Unmanned Aerial Vehicles (UAVs) and Drones*

University Administrative Manual Section 5,101: *Use of Motorized Vehicles on University Property*

University Administrative Manual Section 5,119: *Parking and Traffic Regulations*

University Administrative Manual Section 5,304: *Event Accessibility and Accommodation Policy*

University Administrative Manual Section 5,305: *Posting, Distributing and Exhibiting of Public Announcements*

University Administrative Manual Section 5,306: *Commercial Filming, Videography and Photography*

University Administrative Manual Section 5,307: *Attendance at Meetings and Events at University Facilities and Outdoor Areas*

University Administrative Manual Section 5,321: *Vehicles on Campus*

University Administrative Manual Section 5,322: *Camping, Overnight Parking and Occupancy of Vehicles*

University Administrative Manual Section 5,405: *Damage, Destruction and Theft*

University Administrative Manual Section 5,430: *Outdoor Banners*

University Administrative Manual Section 5,440: *University Sound Policy*

University Administrative Manual Section 5,450: *Use of Bicycles on University Property*

University Administrative Manual Section 5,451: *Use of Skateboards and Other Wheeled Equipment, Excluding Bicycles, on University Property*

University Administrative Manual Section 5,455: *University Arboretum*

University Administrative Manual Section 5,456: *Slackline, Hammock, Ropes and Tent Stakes*

University Administrative Manual Section 5,460: *Tobacco Free University*

University Administrative Manual Section 5,470: *Animals on University Property*

University Administrative Manual Section 5,500: *University of Nevada, Reno Safety Policy*

University Administrative Manual Section 5,502: *Unsafe Conditions or Activities*

University Administrative Manual Section 5,510: *Environmental Policy*

University Administrative Manual Section 5,515: *Requirement for Certification by a Nationally Recognized Testing Laboratory*

University Administrative Manual Section 7,002: *Policy on the Protection of Children*

University Administrative Manual Section 7,003: *Policy on Registered Sex Offenders*

University Administrative Manual Section 7,004: *Policy on Video and Audio Equipment Usage*

University Administrative Manual Section 7,006: *Lost and Found*

University Administrative Manual Section 7,008: *Possession and Use of Marijuana*

University Administrative Manual Section 7,012: *Jeanne Clery Campus Security Act*

Nevada System of Higher Education Handbook, Title 4, Chapter 10, Section 2: *Supplier Diversity Spending and Inclusion Policy*

Nevada System of Higher Education Handbook, Title 4, Chapter 1, Section 22: *Covert Video Surveillance*

Nevada System of Higher Education Handbook, Title 4, Chapter 1, Section 33: *Possession of Weapons on NSHE Property*

Nevada System of Higher Education Handbook, Title 4, Chapter 1, Section 34: *Possession and Use of Marijuana*

Nevada System of Higher Education Handbook, Title 4, Chapter 1, Section 36: *Policy on Registered Offenders*

Nevada System of Higher Education Handbook, Title 4, Chapter 1, Section 37: *Unmanned Aircraft Systems (UAS)*

Nevada System of Higher Education Handbook, Title 4, Chapter 8, Section 13: *Contract Compliance for Construction, Skilled Trades and Purchasing*

Nevada System of Higher Education Handbook, Title 4, Chapter 8, Section 14: *Policy Against Unlawful Discrimination and Harassment: Complaint Procedure*

Nevada System of Higher Education Procedures and Guidelines Manual, Chapter 5, Section 2(II): *Tier 2 & Subcontractor Reporting Requirements*

ATTACHMENT 12-4

Developer's Known Environmental Conditions

1. Phase I Environmental Site Assessment University Gateway Project City of Reno, Washoe County Nevada (February 24th, 2023) produced by McGinley and Associates, Inc.
2. LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT (ESA), UNIVERSITY GATEWAY PROJECT, COLLEGE OF BUSINESS PARCELS, APNs 007-183-04, 007-183-21, 007-183-22, 007-183-23, 007-183-24, 007- 183-25, 007-183-26, 007-183-32, AND 007-183-34, RENO, WASHOE COUNTY, NV (SITE) (April 25th, 2023) produced by McGinley and Associates, Inc.
3. LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT (ESA), UNIVERSITY GATEWAY PROJECT, HOTEL PARCELS, APNs 007-183-36, 007-183-38, AND 007-183-40, RENO, WASHOE COUNTY, NV (SITE) (April 25th, 2023) produced by McGinley and Associates, Inc.
4. Soil Characterization UNR Gateway E 9th St. & Virginia Way Reno, Nevada 89501 ACC Project 5057-078.00 (December 9th, 2022) produced by ACC Environmental Consultants, Inc.
5. Limited Hazardous Materials Survey for the Planned Demolition Project Former Jimmy Johns Sandwich Shop (March 30th, 2023) (Amended April 17th, 2023) produced by ACC Environmental Consultants, Inc.

ATTACHMENT 12-5

Developer's Known Site Conditions

MATHEWSON GATEWAY COLLEGE OF BUSINESS UNIVERSITY OF NEVADA RENO
RENO, NEVADA GEOTECHNICAL EXPLORATION (March 21, 2023) produced by ENGEO
Incorporated.

Exhibit 3b

GROUND LEASE

By and Between

**BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON
BEHALF OF THE UNIVERSITY OF NEVADA, RENO, Landlord**

and

NCCD-UNR PROPERTIES LLC, a Nevada limited liability company, Tenant

[_____, 2023]

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GROUND LEASE

THIS GROUND LEASE (“Ground Lease” or “Lease”), dated [_____, 2023][**Note: The Effective Date would be the date of Financial Closing**] (“Effective Date”), is by and between the BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON BEHALF OF THE UNIVERSITY OF NEVADA, RENO (“Landlord” or the “University”), and NCCD-UNR PROPERTIES LLC (“Tenant”), a single member limited liability company organized and existing under the laws of the State of Nevada, whose sole member is National Campus and Community Development Corporation, a Texas non-profit corporation that is exempt from United States federal income taxation under Section 501(a) of the Code (as defined herein) as an organization described under Section 501(c)(3) of the Code, as tenant.

RECITALS

A. The University owns certain real property comprising approximately 2.21 acres bordered by Eighth Street, Ninth Street, North Virginia Street and University Way in Reno Nevada (the “Property”). The land that is the subject of this Ground Lease is comprised of certain portions of the Property and is more particularly described on the attached Attachment A-1 and shown on the attached Attachment A-2 (collectively, the “Site”).

B. The University wishes to cause development of the Site with an approximate 128,000 square foot College of Business (collectively, the “Improvements”) as more particularly described in that certain Development Agreement dated as of the Effective Date (as amended or supplemented from time to time in accordance with the provisions thereof, the “Development Agreement”) among University, Tenant, and UNR/Edgemoor Gateway Partners LLC, a Maryland limited liability company (the “Developer”).

C. Pursuant to the Development Agreement, Developer has agreed to develop, design, construct and equip the Improvements on the Site as more particularly described in the Development Agreement (collectively, and together with any additional Improvements funded by Additional Bonds, as applicable, referred to as the “Project”).

D. Landlord is prepared to lease the Site and the Improvements to the Tenant, and the Tenant is prepared to lease the Site and the Improvements from Landlord in accordance with the terms of this Ground Lease. Concurrently with the execution of this Ground Lease, Tenant, as sublandlord, shall enter into that certain Sublease effective as of the Effective Date with the University, as subtenant, pursuant to which, the University shall sublease the Site and the Improvements in connection with the development of the Project pursuant to the Development Agreement.

E. In connection with the development and construction of the Project, National Finance Authority, as issuer (“Issuer”) will cause to be issued certain Lease Revenue Bonds (NCCD - UNR Properties LLC – University of Nevada, Reno Project) Series 2023 (the “Series 2023 Bonds”) and any Additional Bonds, as applicable, pursuant to a Trust Indenture dated as of the Effective Date (as amended or supplemented from time to time in accordance with the provisions thereof, the “Indenture”) by and between Issuer and U.S. Bank Trust Company,

National Association, as trustee (“Bond Trustee” or “Trustee”), and the proceeds of such Bonds shall be loaned to Tenant pursuant to a Loan Agreement dated as of the Effective Date (as amended or supplemented from time to time in accordance with the provisions thereof the “Loan Agreement”) between Issuer, as lender, and Tenant, as borrower, and a portion of such proceeds shall be paid to Developer pursuant to that certain Disbursement Agreement dated as of the Effective Date among Tenant, Developer and Trustee (as amended or supplemented from time to time in accordance with the provisions thereof, the “Disbursement Agreement”) and the Indenture and Loan Agreement, to pay the costs of the Project under the Development Agreement.

F. Pursuant to the Operation and Maintenance Agreement dated as of the Effective Date (as amended or supplemented from time to time in accordance with the provisions thereof, the “O&M Agreement”) between the University and Manager (as defined in the O&M Agreement), the Manager has agreed to perform the O&M Services (as defined in the O&M Agreement) for the Project.

NOW, THEREFORE, in consideration of the mutual covenants, conditions and agreements that follow, the parties hereby agree as follows:

ARTICLE 1 DEFINITIONS, GRANT AND TERM

1.1 Definitions. Certain words and terms used in this Ground Lease and not otherwise defined herein shall have the meaning given them in the other Transaction Documents (as defined below). The following terms as used in this Ground Lease, shall have the following meanings, unless the context indicates otherwise:

“Additional Bonds” shall have the meaning set forth in the Indenture.

“Applicable Law” means all present and future laws, statutes, regulations, ordinances, resolutions and orders of any applicable Governmental Authority.

“Assessments” has the meaning set forth in Section 5.4 hereof.

“Bond Documents” means, collectively, the Indenture, the Loan Agreement, this Ground Lease, the Sublease, the Tax Agreement, the Leasehold Deed of Trust, the Disbursement Agreement, the Collateral Assignment Agreement, the Security Agreement, the Direct Agreement - Ground Lease, the Direct Agreement - Sublease, the Direct Agreement - Development Agreement and all other instruments or agreements executed by the Trustee, Issuer and/or Tenant in connection with the issuance and delivery of the Bonds and the use of proceeds thereof.

“Beneficiary” has the meaning set forth in Section 24.1.

“Bond Trustee” or “Trustee” is defined in the Recitals above.

“Bonds” means collectively, the Series 2023 Bonds and any Additional Bonds.

“Business Day” or “Business Days” means any day other than a Saturday, Sunday or Nevada or federal legal holiday.

“Casualty” has the meaning set forth in Article 15 hereof.

“Claims” has the meaning set forth in Section 12.1 hereof.

“Code” means the Internal Revenue Code of 1986, as amended from time to time, or the corresponding provisions of any succeeding United States federal tax law.

“Collateral Assignment Agreement” means the Collateral Assignment Agreement, dated as of the Effective Date, by the Tenant and the Developer in favor of the Trustee, as the same may be amended and/or supplemented from time to time as permitted hereby and thereby.

“Common Areas” has the meaning set forth in Section 9.4 hereof.

“Completion” is defined in the Development Agreement.

“Defaulting Party” has the meaning set forth in Section 19.2 hereof.

“Design/Build Agreement” has the meaning set forth in the Development Agreement.

“Developer” is defined in the Recitals above.

“Development Agreement” is defined in the Recitals above.

“Direct Agreement - Development Agreement” means the Direct Agreement – Development Agreement dated as of the Effective Date among the Landlord, the Tenant, the Developer and the Trustee, as it may be amended or supplemented from time to time.

“Direct Agreement – Ground Lease” is that certain Direct-Agreement- Ground Lease dated as of the Effective Date among the Landlord, Tenant, and Trustee, as it may be amended or supplemented from time to time.

“Direct Agreement - Sublease” means the Direct Agreement – Sublease Agreement dated as of the Effective Date among the Landlord, the Tenant and the Trustee, as it may be amended or supplemented from time to time.

“Disbursement Agreement” is defined in the Recitals above.

“Effective Date” is defined in the Preamble above.

“Event of Default” means each of the events specified in Article 19 hereof.

“Fixed Rent” shall have the meaning set forth in Section 2.2 hereof.

“Governmental Authority” means any and all entities, courts, boards, agencies, commissions, offices, divisions, subdivisions, departments, bodies or authorities of any nature

whatsoever of any governmental unit (federal, state, county, city or otherwise) whether now or hereafter in existence, other than Landlord.

“Ground Lease” is defined in the Preamble above.

“Hazardous Substances” shall be interpreted broadly to include but not be limited to (a) substances designated as hazardous under the Resource Conservation and Recovery Act, 42 U.S.C. §6901, et seq., the Federal Water Pollution Control Act, 33 U.S.C. §1257, et seq., the Clean Air Act, 42 U.S.C. §2001, et seq., or the Comprehensive Environmental Response Compensation and Liability Act of 1980, 42 U.S.C. §9601, et seq., or any other Federal or State law or regulation now or in the future applicable to the Premises, Improvements or Site, The National Institute of Health, CDC and FDA rules and guidelines, (b) any substance which after release into the environment and upon exposure, ingestion, inhalation or assimilation, either directly from the environment or directly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavior abnormalities, cancer and/or genetic abnormalities, and (c) oil and petroleum based derivatives.

“Improvements” is defined in the Recitals above.

“Indenture” is defined in the Recitals above.

“Issuer” is defined in the Recitals above, and includes Issuer’s successors and assigns under the Indenture.

“Landlord” is defined in the Preamble above, and its successors and assigns.

“Landlord Indemnitees” has the meaning set forth in Section 12.2 hereof.

“Leasehold Deed of Trust” means the Leasehold Deed of Trust, Assignment of Rents and Leases, Security Agreement and Fixture Filing dated as of [•], 2023 by the Tenant in favor of the Trustee, as the same may be amended and/or supplemented from time to time.

“Lien” has the meaning set forth in Section 8.2.1 hereof.

“Loan Agreement” is defined in the Recitals above.

“Manager” has the meaning set forth in the O&M Agreement.

“Non-Breaching Party” has the meaning set forth in Section 19.2 hereof.

“O&M Agreement” is defined in the Preamble above.

“O&M Services” has the meaning set forth in the O&M Agreement.

“Person” means natural persons, firms, joint ventures, associations, trusts, partnerships, corporations, limited liability companies, public bodies, and similar entities, whether for profit or non-profit.

“Premises” means the Site and the Improvements.

“Permitted Encumbrances” means, as of any particular time, any one or more of the following:

- (1) Encumbrances for utility charges, taxes, rates and assessments not yet delinquent or for utility charges, taxes, rates, assessments, and other charges being contested in accordance with the Loan Agreement or this Ground Lease;
- (2) Any encumbrance arising out of any judgment rendered which is being contested diligently and in good faith, the execution of which has been stayed or against which a bond or bonds in the aggregate principal amount equal to such judgments shall have been posted with a financially-sound insurer;
- (3) Any encumbrance arising in the ordinary course of business imposed by law dealing with materialmen’s, mechanic’s, workmen’s, repairmen’s, warehousemen’s, landlords’, vendors’ or carriers’ encumbrances created by operation of law, but that have not been perfected by the required filing of record for work done or materials delivered after the date of recording of this Ground Lease in connection with additions to or alterations of the Project,
- (4) Servitudes, licenses, easements, encumbrances, restrictions, rights-of-way and rights in the nature of easements or similar charges which shall not in the aggregate materially and adversely impair the construction of the Project or operation of the Project;
- (5) Applicable zoning and building bylaws and ordinances, municipal bylaws and regulations, and restrictive covenants, which do not materially interfere with the construction of the Project and operation of the Project;
- (6) Encumbrances which are created on or before the date hereof and as described in the title policy required by the Loan Agreement;
- (7) Any encumbrances required in connection with the development of the Project;
- (8) Encumbrances which are created by a change in Applicable Law on or after the date hereof;
- (9) Any servitudes, licenses, easements, restrictions, encumbrances created by a Governmental Authority or to which University has granted its consent; and
- (10) This Ground Lease, the Sublease and the other Bond Documents.

“Project” is defined in the Recitals above.

“Prohibited Use” or “Prohibited Uses” has the meaning set forth in Section 3.2.2.

“Property and Possessory Interest Taxes” means any and all governmental fees and charges, whether general or special, or ordinary or extraordinary, which may be levied, assessed, charged or imposed, or may become a lien or charge upon the Premises or any part or parts thereof, or upon Tenant’s Interest, including, without limitation, taxes on land, any buildings,

any parking facilities or any other improvements now or hereafter at any time during the Term located at or on the Premises.

“Security Agreement” has the meaning set forth in the Indenture.

“Series 2023 Bonds” is defined in the Recitals above.

“Site” is defined in the Recitals above.

“State” means the State of Nevada.

“Sublease” means the Sublease Agreement between Tenant, as sublandlord, and the University, as subtenant, dated as of the Effective Date, as it may be amended or supplemented from time to time.

“Subtenant” means the University, as subtenant under the Sublease.

“Taking” is defined in Section 16.1 hereof.

“Tax Agreement” has the meaning set forth in the Indenture.

“Tenant” is defined in the Preamble above.

“Tenant Indemnitees” has the meaning set forth in Section 12.1 hereof.

“Tenant’s Interest” means Tenant’s entire interest in the Premises and this Ground Lease.

“Term” means the period set forth in Section 1.5 hereof.

“Termination Date” means the date on which the Term hereof ends by termination or expiration of this Ground Lease, as described in Section 1.5 hereof.

“Transaction Documents” means, collectively, the Sublease, the Development Agreement, this Ground Lease, the Disbursement Agreement, the O&M Agreement, the other Bond Documents, the Design/Build Agreement, and the ancillary agreements entered into by and/or between Landlord, Tenant and Developer in connection with the Project.

“University” is defined in the Recitals above.

1.2 Lease. In consideration of the covenants and agreements to be performed and observed by Tenant, Landlord hereby leases to Tenant, subject only to Permitted Encumbrances, and Tenant hereby leases from Landlord, the Site as more particularly described on the attached Attachment A-1 and shown on the attached Attachment A-2 and the Improvements in existence thereon from time to time.

1.2.1 The Landlord and Tenant agree that Attachment A-1 and Attachment A-2 may be amended from time to time to reflect the Site necessary for the development and operation of the Project upon written agreement of the parties hereto.

1.2.2 In addition, Landlord and Tenant hereby acknowledge and agree that as of the Effective Date, the Premises do not include the portion of the Site consisting of the existing restaurant lease depicted on Attachment A-2; provided, however, upon termination of such restaurant lease, anticipated to occur on or about August 15, 2023, such portion of the Site comprised of the existing restaurant lease shall be deemed to be included in the Premises leased by Landlord to Tenant hereunder upon the date of such termination.

1.2.3 The Board of Regents of the Nevada System of Higher Education expressly delegate authority to the Chancellor of the Nevada System of Higher Education to execute amendments made pursuant to this Section 1.2.

1.2.4 Notwithstanding anything to the contrary contained herein, the Project, including the Site and the Improvements, shall be owned by the Landlord at all times.

1.3 Reservation of Oil, Gas and Mineral Rights. Landlord reserves to itself all of the oil, gas and mineral rights of the Site without the right of surface entry; provided that any such actions taken with respect to oil, gas and mineral rights do not interfere with or adversely affect the Premises.

1.4 Condition of Site. Tenant accepts the Site “as is” without representation or warranty of Landlord. Landlord shall not be required or obligated to make any changes, alterations, additions, improvements or repairs in, on, under or about the Site except as specifically described in the Bond Documents and the other Transaction Documents. Landlord makes no warranty as to the suitability of the Site for the uses permitted by this Ground Lease. Landlord makes no covenants or warranties respecting the condition of the soil, subsoil or any other condition of the Site, nor does Landlord make any covenant, representation or warranty regarding the suitability of the Site for the proposed development, construction or use by Tenant or Developer under the Development Agreement, except as specifically described in the Transaction Documents.

1.5 Term. The term of this Ground Lease (“Term”) shall commence on the Effective Date and terminate at 11:59 p.m. local time on the date that is thirty-five (35) years thereafter, unless sooner terminated as expressly provided herein. This Ground Lease shall expire without further notice upon its expiration, and no holding over shall be permitted. Any holding over by Tenant after the expiration of this Ground Lease shall not constitute a renewal or extension nor shall it give Tenant any rights in or to the Premises or any part thereof. In addition, and notwithstanding anything to the contrary contained herein, this Ground Lease shall terminate prior to such thirty-five (35) year term on the date that the Bonds are no longer outstanding pursuant to the terms of the Indenture and all amounts due and payable by Tenant under the Loan Agreement are paid in full and discharged.

1.6 Confirmation of Term. Landlord or Tenant, within thirty (30) days after receipt of a written request from the other, shall confirm the expected Termination Date in writing, and if so requested, by an instrument in recordable form.

ARTICLE 2
LEASE CONSIDERATION

2.1 Transaction Documents and Development Agreement. Tenant shall: (i) enter into the Transaction Documents to which it is a party, including the Loan Agreement and the Development Agreement and (ii) make a portion of the proceeds of the Bonds available to the Developer pursuant to the Indenture and the Disbursement Agreement so that Developer may construct the Project in accordance with the Development Agreement.

2.2 Payment of Rent. Throughout the Term, Tenant shall pay to Landlord an absolute net annual rent ("Fixed Rent") as follows:

2.2.1 During Sublease Term. During the term of the Sublease, Fixed Rent shall be in the amount of One U.S. Dollar (\$1.00) per annum. Fixed Rent under this Section 2.2.1 shall be paid in advance in annual installments, commencing on the Effective Date and on each anniversary thereafter; provided, however, Tenant shall have the right to prepay Fixed Rent due and payable at any time to Landlord. The parties agree that the Fixed Rent payable under this Section 2.2.1 and performance of Tenant's obligations under the Transaction Documents are good and sufficient consideration for the lease of the Premises hereunder.

2.2.2 Following Early Termination of Sublease. In the event the Sublease terminates prior to this Ground Lease as provided therein, (i) commencing on first day following the effective date of the termination of the Sublease and continuing for twenty-four (24) months, Fixed Rent shall be in the amount of One U.S. Dollar (\$1.00) per annum; and (ii) after the period established in Section 2.2.2(i), Fixed Rent shall be equal to Seventy-Five Thousand U.S. Dollars (\$75,000.00) per annum, provided that the Fixed Rent payable under this Section 2.2.2(ii) shall be increased on an annual basis commencing on the fifth (5th) annual anniversary by an amount equal to three percent (3%) of the Fixed Rent for the preceding year of the Term. Fixed Rent under this Section 2.2.2 shall be paid in advance in annual installments as provided for above; provided, however, Tenant shall have the right to prepay Fixed Rent due and payable at any time to Landlord.

ARTICLE 3
USES AND RESTRICTIONS

3.1 Use and Sublease; Quiet Enjoyment. Tenant shall sublease the Site and, upon Completion of the Project, the Improvements to the University pursuant to the Sublease. Upon Completion of the Project in accordance with the Development Agreement, the parties intend that the Project shall be occupied by the University pursuant to the Sublease. Subject to the restrictions and limitations contained in this Ground Lease, the Permitted Encumbrances and the provisions of the Transaction Documents, Tenant, while in compliance with the terms and covenants of this Ground Lease, shall at all times during the Term, and Landlord hereby covenants and agrees, peaceably and quietly hold and enjoy all of the Premises.

3.2 Restrictions on Use. In the event the Sublease is terminated prior to the end of the Term as provided herein, Tenant shall continue to have the right to use, occupy and operate the Project subject to the following restrictions on use:

3.2.1 No Hazardous Waste. Neither the Premises nor any portion thereof shall ever be utilized for the storage or disposal of Hazardous Substances in violation of Applicable Law, nor shall any Tenant cause, suffer or permit any Hazardous Substances to be brought upon, kept, or used in or about the Premises in violation of Applicable Law;

3.2.2 Certain Prohibited Uses. No portion of the Premises shall be utilized for the following (each a “Prohibited Use,” and collectively, the “Prohibited Uses”): (i) as an adult theater, adult bookstore, adult video store, or for any other form of adult entertainment; (ii) for the sale or rental of any pornographic or “adult” materials, except at incidental to the sale of “general audience” DVDs, games, magazines or books; (iii) for the sale, dispensing or use of marijuana or marijuana-infused products (as defined in Nevada Revised Statute 453A.112), whether for medicinal or other purposes; (iv) for the operation of any gaming activity (as defined in Chapter 463 of the Nevada Revised Statutes); (v) for purposes of marketing, offering, or making of any deferred deposit loans, high-interest loans, title loans, or check-cashing services (as those terms are defined in Chapter 604A of the Nevada Revised Statutes); (vi) for transacting as, or conducting the operation of, a pawnbroker (as defined in NRS 646.010); (vii) for any form of short or long term lodging, including without limitation as a hotel, motel, residence hall, or apartment complex; (viii) to administer, promote or conduct the operations of any postsecondary educational institution other than one operated by University; or (ix) any other use which is prohibited by written policy, whether presently existing or later adopted, of the Board of Regents of the Nevada System of Higher Education from occurring on property owned by the Nevada System of Higher Education.

3.2.3 Nuisances and Noxious or Offensive Activities. Tenant shall not use the Premises in any manner that would create a nuisance to all or any part of the Premises or the surrounding neighborhood. No rubbish or debris of any kind shall be placed or permitted to accumulate upon or adjacent to the Premises (except trash awaiting regular removal and temporarily placed in approved trash receptacles) and no odors shall be permitted to arise therefrom so as to render the Premises or any portion thereof unsanitary, unsightly, offensive or detrimental to any property in the vicinity thereof;

3.2.4 Fumes, Gases, Odors, etc. No fumes, odors, gases, vapors, acids or other substance shall be permitted to escape or be discharged into the atmosphere which, in the opinion of the Landlord, may be detrimental to the health, safety or welfare of persons, or may interfere with the comfort or persons within the area, or which may be harmful to property or vegetation. Without limiting the generality of any other provision hereof, all uses of the Premises shall comply with all applicable governmental authorities’ air pollution control standards;

3.2.5 Dirt, Dust and Waste Discharge. No use will be permitted which emits dust, sweepings, dirt or cinders into the atmosphere, or discharges liquid, solid wastes or other harmful matter into any runoff, irrigation or other water. No waste or any substance or materials of any kind shall be discharged into any public sewer serving the Premises, or any part thereof, in violation of any regulations of any public body having jurisdiction;

3.2.6 Drainage. There shall be no interference with the established drainage pattern of the Premises, without prior written consent of Landlord, in its sole discretion; and

3.2.7 Laws. Tenant's use shall comply with Applicable Law.

ARTICLE 4 FINANCING OF PROJECT

Tenant shall be responsible for arranging the issuance of the Bonds and making a portion of the proceeds thereof available to Developer pursuant to the Disbursement Agreement and the Indenture. Landlord agrees to reasonably cooperate with the Tenant and to provide such reasonable assistance as the Tenant may need to facilitate the issuance of the Bonds. Any other financing which would encumber Tenant's Interest or any amendment or renewal thereof during the Term, and any refinancing or refunding of any such financing, shall require the prior written approval of the Landlord in the Landlord's sole and absolute discretion and in no event shall the documents evidencing any such financing encumber the interest of Landlord in this Ground Lease or its fee interest in the Site. Excluding the University's obligations to make payments under the Sublease as Subtenant, (i) the University shall not incur or insure any indebtedness with respect to the Project, and (ii) any and all financing for the Project shall (A) not rely on the credit of the University, and (B) shall be non-recourse to the University and the State of Nevada. In connection with any refinancing of the Bonds permitted hereunder, the parties shall mutually agree to allocate any savings associated with any refinancing as may be appropriate to Landlord. Public money shall not be used to finance any part of the Project.

ARTICLE 5 TAXES AND ASSESSMENTS

5.1 Taxes and Assessments. Landlord shall at all times be the owner of the Site and the Improvements leased to Tenant under this Ground Lease. In addition, Landlord and Tenant have determined that the use of the Premises pursuant to Article 3, above, is exclusively in furtherance of: (i) the educational and charitable purposes of Tenant, and (ii) the educational, research and public purposes of University. Accordingly, the parties intend and expect that the leasehold estate of Tenant created by this Ground Lease together with the Project, will be eligible for exemption under Nevada law from Property and Possessory Interest Taxes.

5.2 Maintenance of Exemption. Landlord shall use diligent efforts to maintain exemption of the Premises from Property and Possessory Interest Taxes; however, to the extent any Property or Possessory Interest Taxes are assessed, Tenant and Landlord shall have the responsibilities and rights set forth herein.

5.3 Tax Obligations. Tenant will pay all Property and Possessory Interest Taxes, including without limitation, all real estate taxes, taxes upon or measured by rents, personal property taxes, privilege taxes, gross receipts taxes, excise taxes, parking taxes, business and occupation taxes, gross sales taxes, occupational license taxes, water charges, sewer charges, or environmental taxes or assessments of any kind and nature whatsoever, including any possessory interest tax resulting from the Improvements, this Ground Lease or the Sublease, whether levied

by the State of Nevada, the government of the United States, or any agency thereof, or any other governmental body or assessment district during the Term, and whether or not now customary or within the contemplation of the parties hereto, and regardless of whether the same shall be foreseen or unforeseen, similar or dissimilar to any of the foregoing. If the Landlord transfers fee simple title to the Premises, and such transfer results in the levy, assessment, charge, or imposition of the ad valorem property taxes against the Premises or causes the Premises to become subject to such levy or assessment, the successor Landlord shall be responsible for the payment of such ad valorem property taxes, and the Tenant shall have no liability therefor.

5.4 Assessment. Specifically, and without in any way limiting the generality of the foregoing, but subject to the last sentence of Section 5.3, Tenant shall pay any and all special assessments or levies or charges made by any municipal or political subdivision for local improvements (“Assessments”), and as required by the act and proceedings under which any such Assessments or levies or charges are made.

5.5 Right to Contest. Tenant and Landlord shall each have the right, at their respective own expense, to contest the amount or validity of any Property and Possessory Interest Taxes or Assessments by appropriate proceedings which shall operate to prevent the collection of any such Property and Possessory Interest Taxes or Assessments so contested or the sale of the Premises or any part thereof to satisfy the same.

5.6 Cooperation. Provided the cooperating party incurs no liability, cost, expense, or fees in doing so, each party shall reasonably cooperate with the other party in any proceedings brought by a party to contest the validity or the amount of any Property and Possessory Interest Taxes or Assessments or to recover any Property and Possessor Interest Taxes or Assessments paid. If Applicable Law at the time in effect shall require that such proceedings be brought by or in the name of the non-contesting party, then, provided the non-contesting party incurs no liability, cost, expense, or fees in doing so, the non-contesting party shall join in any such proceedings or permit the same to be brought in its name. If any such proceedings shall be brought, the contesting party shall be solely responsible for payment of any and all loss, cost, or expense of any kind that may be imposed upon the non-contesting party in connection therewith, including reasonable attorneys’ fees and costs incurred by the non-contesting party.

ARTICLE 6 UTILITY SERVICES

Pursuant to the Development Agreement Landlord has caused Developer to agree to install, and pursuant to the O&M Agreement Manager has agreed to maintain all facilities necessary to provide utilities to the Premises as more particularly described therein. During the term of the Sublease, Tenant will have no obligation to provide or pay for utility facilities or utility services to the Premises, but shall cooperate with University, Manager and Developer in providing the same.

ARTICLE 7
COMPLIANCE WITH APPLICABLE LAW AND ORDINANCES

Throughout the Term, and subject to the terms and conditions contained in the Development Agreement and the Sublease, Tenant shall, at its sole cost and expense, promptly comply with Applicable Law except as expressly provided herein. Notwithstanding the forgoing, to the extent the Sublease terminates due to an Event of Default by University as Subtenant under the Sublease prior to the Termination Date of this Ground Lease, Landlord shall be responsible for reimbursing Tenant upon demand for its costs and expenses incurred following such termination associated with causing the Premises to comply with Applicable Law.

ARTICLE 8
CONSTRUCTION OF IMPROVEMENTS

8.1 Development of the Project. The Project shall be developed pursuant to and in accordance with the Development Agreement. Without limiting the foregoing, such development shall be in accordance with the University of Nevada, Reno Adopted Standards attached to the Development Agreement as Attachment 5.2(c), it being understood that any deviations from such Adopted Standards must be approved in writing by University. If Developer shall be found to be in default in the performance of its obligations under the Development Agreement, beyond any applicable notice and cure periods, then Tenant and Landlord shall cooperate in the exercise of Landlord's and Tenant's resulting rights under the Development Agreement.

8.2 Liens.

8.2.1 All Liens and Rights are Subordinate to Landlord Right's. Tenant's rights, as well as the rights of anyone else, including, but not limited to, the rights of the Developer, Manager, the Issuer, or any mortgagee, architect, independent contractor, assignee, sublessee, subcontractor, prime or general contractor, mechanic, laborer, materialmen, or other lien or claim holder, shall always be and remain subordinate, inferior, and junior to Landlord's title, interest, and estate in the Site. Except as otherwise expressly permitted hereunder or in the Transaction Documents, Tenant shall not create or permit to be created or to remain, and shall discharge any lien, encumbrance, or charge levied on account of any mechanic's, laborer's, or materialman's lien, or any security agreement, conditional bill of sale, title retention agreement, chattel mortgage, or otherwise (a "Lien") that might, or does, constitute a lien, encumbrance, or charge upon the Site, or any part thereof, or the income therefrom. Nothing in this Ground Lease shall be deemed or construed in any way as constituting the consent or request of Landlord, express or implied, by inference or otherwise, to the filing of any Lien against the Premises by any contractor, subcontractor, laborer, materialmen, architect, engineer, or other Person for the performance of any labor or the furnishing of any materials or services for or in connection with the Premises or any part thereof.

8.2.2 Compliance with Nevada Lien Laws. Notwithstanding anything to the contrary contained herein, Tenant understands and agrees that any and all improvements made to the Site must comply with Nevada's construction lien laws, including without limitation

NRS 108.2403. Without limiting the forgoing, Tenant acknowledges that NRS 108.2403 requires Tenant, before causing any work of improvement to be constructed, to record a notice of posted security with the Washoe County Recorder and either (i) establish a construction disbursement account in compliance with NRS 108.2403(1)(b)(1), or (ii) record a surety bond for the prime contractor performing the work in compliance with NRS 108.2403(1)(b)(2).

8.2.3 University's Notice of Non-Responsibility. Not less than ten (10) Business Days before commencing any approved work of improvement to the Site, Tenant shall (i) notify or cause to be notified University in writing of (1) the expected date of commencement thereof, and (2) the name and contractor's license number of the prime contractor performing the work, and (ii) provide to University evidence of Tenant's compliance with NRS 108.2403. University shall have the right at any time and from time to time to post and maintain on the Site such notices as the University reasonably deems necessary to protect the Site and University from Liens.

8.2.4 Tenant Obligated to Remove Liens. Notwithstanding anything to the contrary contained herein, Tenant shall pay, when due, all claims for labor or materials furnished to or for Tenant at or for the use in the Site. Tenant shall not permit any mechanic's or materialmen's liens to be levied against the Site for any labor or materials furnished to the Tenant, or claimed to have been furnished to the Tenant, or to Tenant's agents or contractors in connection with the work of any character performed or claimed to have performed on the Site by or at the direction of the Tenant. Landlord reserves the right at any time to require deposits by the Tenant to assure performance of the Tenant's obligations hereunder. If any such Lien shall at any time be filed, Tenant shall, within thirty (30) days after notice of the filing thereof, cause the same to be discharged of record by payment, deposit, bond, order of a court of competent jurisdiction or as otherwise permitted by law. If Tenant shall fail to cause such notice or lien to be discharged within the period aforesaid, then, in addition to any other right or remedy of Landlord, Landlord may, but shall not be obligated to, discharge the same either by paying the amount claimed to be due or by procuring the discharge of such lien by deposit or by bonding proceedings, and in any such event Landlord shall be entitled, if Landlord so elects, to compel the prosecution of an action for the foreclosure of such mechanic's lien by the lienor and to pay the amount of the judgment for and in favor of the lienor with interest, cost and allowances.

8.3 Title to the Project. Title to the Site and to the Project, including any modifications or additions thereto during the Term, shall be vested in University at all times and, if requested by University, Tenant shall execute such further instruments as may be reasonably required in connection therewith, and Tenant hereby acknowledges and agrees that it shall only have a leasehold interest in the Site and the Project.

ARTICLE 9 EASEMENTS, ENCUMBRANCES AND COMMON AREAS

9.1 Landlord Reservation of Rights. Landlord reserves to itself the right, in accordance with Applicable Law, to grant to others in the future nonexclusive utility and/or access easements and licenses over, under, through, across or on the Site in locations that will not unreasonably interfere with the use of the Premises. In the event the installation or maintenance of such future utility lines or access roads in such easements or licenses causes any

damage to the Premises, including the Project, or any portion thereof, including but not limited to, pavement, curbs and sidewalks, Landlord shall repair the same, or cause the same to be repaired, at Landlord's expense. At Landlord's request, Tenant shall join in any grant of such an easement and/or license. In addition, Landlord agrees to cooperate with Tenant in granting or otherwise obtaining any utility, access licenses, easements or other such shared use and maintenance agreements, as may be necessary for the operation of the Project, including without limitation, access over any access roads that may be developed or located on the adjacent portion of the Property not leased to Tenant hereunder.

9.2 Tenant's Rights. Other than Permitted Encumbrances, Tenant shall not suffer or permit any encumbrance on the Premises without University's prior written consent, in its sole and absolute discretion.

9.3 Compliance with Encumbrances. Tenant shall comply with all terms and conditions of any encumbrance on the Premises, including payment of any costs and expenses thereunder; provided, however, to the extent the Sublease terminates due to an Event of Default by University as Subtenant under the Sublease prior to the Termination Date of this Ground Lease, Landlord shall be responsible for reimbursing Tenant upon demand for any costs and expenses following such termination associated with Tenant's compliance with the terms and conditions of any such encumbrances.

9.4 Common Areas. Tenant shall perform and be responsible for all normal and ordinary maintenance of the grounds and other property outside of the Project as shown on Attachment A-2 (collectively, the "Common Areas"), including landscaping in accordance with the University's landscaping requirements as implemented from time to time and provided to Tenant, trash removal, snow removal and the maintenance of any access roads on the Site, and shall keep the Common Areas in good working order, condition and repair and in a neat and orderly condition.

ARTICLE 10 OPERATION AND MAINTENANCE OF PROJECT

Upon the Completion of the Project in accordance with the Development Agreement, pursuant to the terms of the Sublease, University as Subtenant under the Sublease shall operate and maintain the Project and shall cause the Manager to perform the O&M Services for the Project in accordance with the O&M Agreement; provided, however, that in the event the Sublease terminates prior to the expiration of this Ground Lease, Tenant shall be solely responsible to operate and maintain the Project and to perform, or cause the Manager to perform, the O&M Services.

ARTICLE 11 ASSIGNMENT OF LEASE

11.1 During Sublease Term. Except for the sublease of the Premises to University pursuant to the Sublease, the assignment to Trustee pursuant to the Leasehold Deed of Trust, and any assignment subsequent to a foreclosure of the Leasehold Deed of Trust (to all of which Landlord hereby consents), Tenant shall not have the right to assign or transfer Tenant's Interest

or any portion thereof or any right or privilege appurtenant thereto, or to sublease the Premises or any portion thereof, without the prior written consent of Landlord, which consent may be withheld in Landlord's sole and absolute discretion, and which consent may be subject to any conditions reasonably required by Landlord to protect Landlord's economic and programmatic interests in this Ground Lease, the Sublease and/or the Premises.

11.2 Following Early Termination of Sublease. In the event the Sublease terminates prior to this Ground Lease as provided therein, while in compliance with the terms and covenants of this Ground Lease, Tenant, or the Beneficiary or any assignee of the Beneficiary subsequent to a foreclosure of the Leasehold Deed of Trust, may assign or transfer Tenant's Interest or any portion thereof or any right or privilege appurtenant thereto, and/or sublease the Premises or any portion thereof, without the necessity of obtaining Landlord's prior written consent; provided, however, that in any and all cases, no use shall be made, or permitted to be made, of the Premises in violation of the restrictions on use contained in Section 3.2 hereof, including without limitation any Prohibited Use.

11.3 Effect of Assignment. Any attempt by Tenant to assign this Ground Lease without Landlord's consent, where such consent is required, shall be void and of no effect and, at Landlord's election, shall constitute an Event of Default under this Ground Lease. The consent by Landlord to any transfer, hypothecation, assignment or subleasing shall not constitute a waiver of the necessity for such consent to any subsequent assignment, transfer, hypothecation or subleasing. Notwithstanding any assignment, subletting, or sublicensing, Tenant shall remain liable to Landlord under the terms of this Ground Lease.

ARTICLE 12 INDEMNIFICATION

12.1 University Indemnity. Except to the extent caused by the acts or omissions of Tenant or any of the Tenant Indemnitees (defined below), and solely to the extent limited in accordance with NRS 41.0304 to 41.039, inclusive, Landlord, to the extent permitted by Applicable Law, hereby releases and agrees to indemnify, defend and hold harmless Tenant and all of its officers, employees, directors, agents, and consultants (hereinafter collectively referred to as the "Tenant Indemnitees") of and from any and all third-party claims, demands, liabilities, losses, costs, or expenses for any loss from bodily injury (including death), personal injury, property damage, expenses, taxes and attorneys' fees (collectively "Claims"), caused by, growing out of, or otherwise happening in connection with the negligent acts or omissions of Landlord or the Landlord Indemnitees (as defined below). Landlord will assert the defense of sovereign immunity as appropriate in all cases, including malpractice and indemnity actions. Landlord's indemnity obligation for actions sounding in tort is limited in accordance with the provisions of NRS 41.035.

12.2 Tenant Indemnity. Except to the extent caused by the acts or omissions of Landlord or any of the Landlord Indemnitees (defined below), Tenant to the extent permitted by Applicable Law, subject to Section 25.11, hereby releases and agrees to indemnify, defend and hold harmless Landlord and all of its regents, officers, employees, directors, agents, and consultants (hereinafter collectively referred to as the "Landlord Indemnitees") of and from any

and all Claims, caused by, growing out of, or otherwise happening in connection with the negligent acts or omissions of Tenant or the Tenant Indemnitees.

12.3 Survival. The obligations of Landlord and Tenant under this Article 12 shall survive the expiration or earlier termination of this Ground Lease or any finding of invalidity or unenforceability thereof unless such finding expressly includes the provisions of this Article 12.

ARTICLE 13 POLICE SERVICES

The Premises shall be subject at all times during the Term to the jurisdiction of the University of Nevada Reno Police Services and any other law enforcement agencies with jurisdiction.

ARTICLE 14 INSURANCE

At all times throughout the Term, Tenant shall maintain or cause to be maintained for the benefit of Landlord and Tenant (as named insureds, as their respective interests may appear), all of the insurance coverages with respect to the Premises in accordance with Attachment B, attached hereto.

ARTICLE 15 DAMAGE AND DESTRUCTION

15.1 Damage or Destruction. Should the Premises be damaged or destroyed, in whole or in part, by fire, flood, earthquake, windstorm, snowstorm or any other weather-related event, or by casualty, accident, war, riot, public disorder, acts authorized or unauthorized by the government or any other cause or happening (a "Casualty"), the rights of Landlord and Tenant shall be as follows:

15.1.1 Prior to Completion of the Project in accordance with the Development Agreement, in the event of a Casualty, Tenant's rights and obligations shall be governed by the terms and conditions of the Development Agreement.

15.1.2 After Completion of the Project in accordance with the Development Agreement, except as provided in Section 15.1.3 the right of Landlord and Tenant with respect to a Casualty shall be as set forth in Article 16 of the Sublease.

15.1.3 In the event the Sublease terminates prior to the expiration of this Ground Lease, Landlord shall cooperate with Tenant and shall assign to Tenant the Net Proceeds arising from such Casualty, subject to the terms of the Bond Documents, and Tenant shall be obligated to promptly restore the Improvements to substantially the same condition thereof as existed prior to the event of such Casualty with such changes, alterations and modifications as may be desired by Tenant and reasonably approved by Landlord and as will not impair the value or the character of the Project; provided, however, in the event the Net Proceeds of insurance with respect to the Casualty shall be equal to or in excess of \$25,000,000, Tenant shall cause all such insurance proceeds to be paid to the Trustee and deposited and held in the Insurance Fund

and Tenant shall, within sixty (60) days from the date of such deposit, direct the Trustee to apply such amounts as provided in Section 7.01(c) of the Loan Agreement.

15.2 Optional Redemption. In the event the Sublease has terminated prior to expiration of this Ground Lease, then the following provisions shall apply:

15.2.1 If the Project shall have been destroyed or damaged by a Casualty, the Net Proceeds of insurance with respect to the Casualty shall be equal to or in excess of \$25,000,000, and in the opinion of Tenant, expressed in a certificate furnished to Landlord, the Issuer and the Trustee, that (a) the Project cannot be reasonably restored within a period of eighteen (18) months from the date of the Casualty to the condition thereof immediately preceding the Casualty, or (B) the Project cannot be used for the purposes of which it was constructed for a period of eighteen (18) consecutive months following the date of the Casualty, or (C) the cost of restoration or replacement of the Project would exceed the Net Proceeds of insurance payable in respect of such destruction or damage, Tenant shall have the option to redeem in full all outstanding Bonds within one hundred eighty (180) days of such Casualty at a Redemption Price equal to one hundred percent (100%) of the principal amount thereof plus interest accrued to the redemption date in accordance with Section 3.04 of the Indenture.

15.2.2 In addition, in the event of partial damage or destruction of the Project, Tenant shall have the right to redeem all or a portion of the outstanding Bonds within one hundred eighty (180) days of the Casualty in accordance with Section 3.04 of the Indenture to the extent all or a portion of the Net Proceeds received by Tenant are not applied to the restoration of the Project if Tenant furnishes Landlord, Issuer and Trustee a certificate stating (A) that the property forming a part of the Project that was partially damaged or destroyed is not essential to Tenant's use or occupancy of the Project at substantially the same revenue-producing level prior to such Casualty; or (B) that the Project has been restored to a condition substantially equivalent to its condition prior to the partial damage or destruction; or (C) that the Tenant has acquired improvements that are substantially equivalent to the property forming a part of the Project that was partially destroyed or damaged

15.2.3 If no Bonds shall be outstanding, Landlord shall be entitled to any remaining Net Proceeds.

15.3 Other. The provisions of this Ground Lease, including this Article 15, constitute an express agreement between Landlord and Tenant with respect to any Casualty to all or any part of the Premises and any statute or regulation with respect to any rights or obligations concerning damage or destruction in the absence of an express agreement between the parties, and any other statute or regulation, now or hereafter in effect, shall have no application to this Ground Lease or any damage or destruction to all or any part of the Premises.

ARTICLE 16 CONDEMNATION

16.1 Taking. If, during the Term, the Premises, or any portion thereof or interest therein, shall be appropriated, taken or damaged by reason of the exercise of the power of eminent domain, whether by condemnation proceedings or otherwise, or any transfer thereof

shall be made in avoidance of an exercise of the power of eminent domain (all of the foregoing being hereinafter referred to as a “Taking”), the rights of Landlord and Tenant shall be as set forth in Article 17 of the Sublease. Notwithstanding the foregoing, in the event the Sublease terminates prior to the expiration or termination of this Ground Lease, this Ground Lease shall remain in effect and Tenant’s obligations to pay Rent shall continue unabated. Tenant shall promptly notify Landlord, the Issuer and Trustee of any such Taking.

16.2 Application of Proceeds From a Taking. Notwithstanding anything to the contrary set forth herein, in the event the Sublease terminates prior to the expiration or termination of this Ground Lease, Tenant shall cause the Net Proceeds of a Taking to be paid to the Trustee and deposited and held in the Condemnation Fund (as defined in the Indenture) and Tenant shall, within sixty (60) days from the date of such deposit, direct the Trustee to apply such amounts as provided in Section 7.02(b) of the Loan Agreement.

16.3 Optional Redemption. In the event the Sublease has terminated prior to expiration of this Ground Lease, then the following provisions shall apply:

16.3.1 In the event of a Taking of all of the Project that in the opinion of Tenant, expressed in a certificate furnished to Landlord, the Issuer and the Trustee, (a) the Project cannot be reasonably restored within a period of eighteen (18) months from the date of the Taking to substantially the condition thereof immediately preceding the Taking, or (B) it cannot be used for the purposes of which it was constructed for a period of eighteen (18) consecutive months from the date of the Taking, or (C) the cost of restoration or replacement would exceed the Net Proceeds from a Taking, Tenant shall have the option to redeem in full all outstanding Bonds within one hundred eighty (180) days of such Taking at a Redemption Price equal to one hundred percent (100%) of the principal amount thereof plus interest accrued to the redemption date in accordance with Section 3.04 of the Indenture.

16.3.2 In the event of a partial Taking of the Project, the Tenant shall have the right to redeem all or a portion of the outstanding Bonds within one hundred eighty (180) days of the Taking in accordance with Section 3.04 of the Indenture to the extent that the Net Proceeds received by Tenant are not applied to the restoration of the Project or the acquisition of substitute property in accordance with Section 3.04 of the Indenture and Section 7.02 of the Loan Agreement if Tenant furnishes Landlord, Issuer and Trustee a certificate stating (A) that the property forming a part of the Project that is the subject of the partial Taking is not essential to Tenant’s use or occupancy of the Project at substantially the same revenue-producing level prior to such Taking; or (B) that the Project has been restored to a condition substantially equivalent to its condition prior to the partial Taking; or (C) that the Tenant has acquired improvements that are substantially equivalent to the property forming a part of the Project that was subject of the partial Taking.

16.3.3 If no Bonds shall be outstanding, Landlord shall be entitled to any remaining Net Proceeds.

ARTICLE 17
ESTOPPEL CERTIFICATES

17.1 Execution and Delivery. No later than twenty (20) calendar days following receipt of written request therefor, Landlord and Tenant will execute, acknowledge and deliver to the other promptly upon request, a certificate reasonably satisfactory to the recipient certifying as to the following:

17.1.1 Validity of Lease: that this Ground Lease is unmodified and in full force and effect (or, if there have been modifications, that this Ground Lease is in full force and effect, as modified, and stating the modifications);

17.1.2 Defaults by Tenant: that no notice has been given by Landlord to Tenant of any failure to comply under this Ground Lease that has not been cured and to the best of its knowledge and belief no Event of Default exists (or, if there has been any notice given or an Event of Default exists, describing the same); and

17.1.3 Other Matters: such other matters as may be reasonably requested by the requesting party.

17.2 Reliance on Certificates. Certificates from Landlord and Tenant pertaining to the same matters may be relied upon by the Issuer, Bond Trustee, any holder of a leasehold mortgage or beneficiary of a leasehold deed of trust, any prospective bond trustee, any prospective assignee of an interest under this Ground Lease or by any prospective sublessee as to all or any portion of the Site.

ARTICLE 18
DISPUTE RESOLUTION

18.1 General. In the event of a dispute between the parties to this Ground Lease with respect to any Event of Default or alleged default by either party, such dispute shall be resolved by litigation initiated and maintained in the State of Nevada or federal courts located in Reno, Nevada.

18.2 Nonbinding Mediation.

18.2.1 Either party may request non-binding mediation of any dispute arising under this Ground Lease. The non-requesting party may decline the request in its discretion. If there is concurrence that any particular matter shall be mediated, the provisions of this Section shall apply. The costs of the mediator shall be divided equally between Landlord and Tenant.

18.2.2 The mediator shall be a professional mutually acceptable to the parties who has no current or on-going relationship to either party. The mediator shall have full discretion as to the conduct of the mediation. Each party shall participate in the mediation to resolve the dispute until and unless the parties reach agreement with respect to the disputed matter or one party determines in its discretion that its interests are not being served by the mediation.

18.2.3 Mediation is intended to assist the parties in resolving disputes over the correct interpretation of this Ground Lease. No mediator shall be empowered to render a binding decision.

18.2.4 Nothing in this Section shall operate to limit, interfere with or delay the right of either party under this Article to commence judicial legal proceedings in respect of any dispute under this Ground Lease, whether in lieu of, concurrently with, or at the conclusion of any non-binding mediation.

18.3 Attorneys' Fees and Costs. In all disputes arising from or related to this Ground Lease, each party shall pay its own attorneys' fees and costs.

ARTICLE 19 EVENTS OF DEFAULT AND REMEDIES

19.1 Events of Default Defined. The following shall be "Events of Default" under this Ground Lease, and the terms "Event of Default" or "Default" shall mean, whenever they are used herein, any one or more of the following events:

19.1.1 Tenant shall fail to pay Fixed Rent at the times specified herein and such failure shall continue for ten (10) days after written notice from Landlord.

19.1.2 Tenant or Landlord, as applicable, shall fail to perform or cause to be performed any term, covenant, condition, or provision hereof, and to correct such failure within thirty (30) days after written notice specifying such failure is given to such party. In the case of any such failure that cannot with due diligence be corrected within such thirty (30) day period but can be wholly corrected within a period of time not materially detrimental to the rights of the other party, it shall not constitute an Event of Default if corrective action is instituted by such party within the applicable period and diligently pursued until the failure is corrected.

19.1.3 Tenant shall be adjudicated a bankrupt.

19.1.4 A permanent receiver shall be appointed for Tenant's interest in the Premises and such receiver shall not be removed within ninety (90) days after notice from Landlord to Tenant to obtain such removal.

19.1.5 Tenant shall voluntarily take advantage of any debtor relief proceedings under any present or future law or shall become subject to any such involuntary proceedings and said involuntary proceedings shall not be dismissed within ninety (90) days after notice from Landlord to Tenant to obtain such dismissal.

19.1.6 Tenant shall make a general assignment for benefit of creditors.

19.1.7 The Premises or Tenant's effects or interests therein shall be levied upon or attached under process against Tenant, and the same shall not be satisfied or dissolved within ninety (90) days after such levying or attachment.

19.1.8 Tenant is in default under the Sublease beyond applicable notice and cure periods.

19.1.9 Any other event that is expressly stated to be an Event of Default elsewhere in this Ground Lease.

19.2 Remedies. Upon the occurrence of an Event of Default, the non-breaching party (the “Non-Breaching Party”), may pursue the following remedies, all subject to the provisions of Section 19.2.3:

19.2.1 Any remedies it may have under Applicable Law, each and all of which shall be cumulative and nonexclusive.

19.2.2 The Non-Breaching Party may, but shall not be obligated to, make any payment or perform or otherwise cure any obligation, provision, covenant or condition on the part of the party in default (the “Defaulting Party”) to be observed or performed (and, as applicable, may enter the Premises for such purposes if needed).

19.2.3 It is acknowledged and agreed that upon an Event of Default, and notwithstanding anything to the contrary contained herein, the rights and obligations of the parties shall be subject to the rights and obligations of the parties and the Trustee under the Direct Agreement – Ground Lease and the Leasehold Deed of Trust.

19.3 No Waiver. No waiver by the Non-Breaching Party of any violation or breach by the Defaulting Party of any of the terms, provisions and covenants herein contained shall be deemed or construed to constitute a waiver of any other or later violation or breach by the Defaulting Party of the same or any other of the terms, provisions, and covenants herein contained. Forbearance by the Non-Breaching Party in enforcement of one or more of the remedies herein provided upon a default by Defaulting Party shall not be deemed or construed to constitute a waiver of such default.

ARTICLE 20 EXPIRATION OR TERMINATION

20.1 No Early Termination; End of Term. Notwithstanding anything to the contrary contained herein, in no event shall this Ground Lease be terminated for any reason whatsoever while the Sublease remains in effect or while any Bonds remain outstanding under the Indenture. Upon the expiration or termination of this Ground Lease, all rights and interests of Tenant, and all persons whomsoever claiming by, through or under Tenant shall immediately cease and terminate, in and to the Site, including without limitation, all improvements, engines, machinery, generators, boilers, furnaces, elevators, fire escapes, and all lifting, lighting, heating, cooling, refrigerating, air conditioning, ventilating, gas, electric and plumbing apparatus, appliances and fixtures, as well as other fixtures attached to or within the Premises, and all personal property of Tenant located thereon, shall thence forward constitute and belong to and be the absolute property of Landlord or Landlord’s successors and assigns, without further act or conveyance, and without liability to make such compensation to Tenant, or to anyone whomsoever, and free and discharged from all and every lien, encumbrance, claim and charge of any character created or attempted to be created by Tenant or Developer at any time. Tenant agrees, at the end of the

Term, to surrender unto Landlord, the Premises with then existing buildings, other structures and improvements constructed and located thereon and therein, in the condition then existing.

20.2 Prepaid Items Assigned. Upon the end of the Term, all expense items prepaid by Tenant or Developer with respect to constructing, operating, maintaining, and protecting the Premises, including, but not limited to, prepaid insurance premiums, and any tax and utility deposits, shall inure to the benefit of and become the property of Landlord, and to this extent Tenant does hereby transfer, assign and convey any such prepaid expense items, and Tenant's interest in such prepaid expense items of Developer, to Landlord.

20.3 Amounts Remaining in Funds and Accounts. Upon the end of the Term, any amounts remaining in any fund, account or reserve created in connection with the Bonds, the Sublease, the O&M Agreement or otherwise related to the maintenance and repair of the Project or the management of the Project, shall inure to the benefit of and become the property of Landlord, and to this extent Tenant does hereby transfer, assign, and convey any such funds, as well as its interest in any such funds held by Developer, to Landlord.

20.4 Other Documents and Intangibles. Upon the end of the Term, Tenant shall be deemed to have automatically transferred to Landlord, as of the Termination Date, Tenant's interest in all documents and agreements pertaining to or useful in the ownership, operation and maintenance of the Premises, together with all contracts, contract rights, warranties and other intangibles related to, or useful in, the ownership, operation or maintenance of the Premises.

ARTICLE 21 NOTICES

21.1 Addresses. All notices, certificates, demands, requests, or other communications hereunder shall be sufficiently given and shall be deemed given when mailed by certified mail, postage prepaid, return receipt requested, by nationally recognized overnight courier, or by personal delivery addressed as follows:

If to Tenant: NCCD – UNR Properties LLC
 Attn: President
 2630 Exposition Boulevard, Suite 213
 Austin, Texas 78703
 Telephone: (512) 322-9650
 Email: geden@nccdevelopment.org

With a copy to:
Holland & Knight LLP
Attn: Gerald Mace
511 Union Street, Suite 2700
Nashville, Tennessee 37219
Telephone: (615) 850-8912
Email: gerald.mace@hklaw.com

If to Landlord: University of Nevada, Reno

Attn: Office of Community & Real Estate Management
1664 N. Virginia St./MS 243
Reno Nevada 89557-0243

With a copy to:

University of Nevada, Reno
Attn: General Counsel
1664 N. Virginia St./MS 550
Reno Nevada 89557-0550

21.2 Changes. Either party hereto may, by notice given to each of the other, designate any additional or different addresses to which subsequent notices, certificates, demands, requests, or other communications shall be sent.

21.3 Effectiveness. Notwithstanding anything contained herein to the contrary, any notice required to be given by Landlord or Tenant hereunder shall be deemed to have been given and shall be effective as of the date such notice is received or refused as reflected on said notice. All notices, certificates, demands, requests, or other communications made by either party to the other which are required or permitted by the provisions of this Ground Lease shall be in writing.

ARTICLE 22 SUBMISSION OF MATTERS TO LANDLORD FOR APPROVAL

Any matter which must be submitted to and consented to or approved in writing by Landlord or any matter which must be submitted to Landlord which may become effective if not denied by Landlord, as required under this Ground Lease, shall be submitted to Landlord in accordance with Section 21.1 hereof. Any review by Landlord of any matter submitted to Landlord is for Landlord's own convenience and purpose only. By undertaking such review, Landlord does not obtain or have any liability to Tenant or any other person, including, without limitation, the insurers and lenders of Tenant.

ARTICLE 23 HOLDING OVER BY TENANT

Tenant shall not use or remain in possession of the Premises after the end of the Term. There shall be no renewal whatsoever of this Ground Lease by operation of law.

ARTICLE 24 MORTGAGING

24.1 Leasehold Mortgage Permitted. Tenant shall have the right to place a leasehold mortgage or leasehold deed of trust (including the Leasehold Deed of Trust) on Tenant's Interest in this Ground Lease for the benefit of the beneficiary under the Leasehold Deed of Trust (together with any beneficiary under any replacements, amendments, or assignments of the Leasehold Deed of Trust, the "Beneficiary"), upon the condition that all rights acquired under such leasehold mortgage or leasehold deed of trust shall be, and such leasehold mortgage or leasehold deed of trust, as applicable, shall expressly state that it is, subject and subordinate to all

of the rights and interests of Landlord hereunder and under the Sublease. The execution and delivery of a leasehold mortgage shall not be deemed to constitute an assignment or transfer of Tenant's leasehold interest nor shall the holder of a leasehold mortgage be deemed to be an assignee or transferee of this Ground Lease so as to require such holder to assume the performance of any of the terms, covenants or conditions on the part of Tenant to be performed hereunder. The respective rights and obligations of Landlord and any holder of a leasehold mortgage or beneficiary of a leasehold deed of trust, shall be as set forth in such leasehold mortgage or the Direct Agreement – Ground Lease, as applicable, which is incorporated herein to the extent applicable to this Lease.

24.2 No Merger; Amendment to Lease; Etc. No union of the interests of Landlord and Tenant herein shall result in a merger of this Ground Lease in the fee interest while any leasehold mortgage or leasehold deed of trust is outstanding. No agreement between Landlord and Tenant modifying, canceling or surrendering this Ground Lease shall be effective without the prior written consent of the holder of a leasehold mortgage or leasehold deed of trust. Landlord covenants it will not treat this Ground Lease as terminated by any election made under Section 365 of the Bankruptcy Code of 1978 or under any similar law or right of any nature, and hereby assigns to the Beneficiary any right to acquiesce in any such termination.

24.3 Requested Amendments for the Security of the Leasehold Deed of Trust. Landlord and Tenant agree to cooperate in including in this Ground Lease by suitable amendment from time to time any provision that may reasonably be requested by any proposed holder of a leasehold mortgage or leasehold deed of trust for the purpose of implementing the mortgagee-protection provisions contained in this Ground Lease, and Landlord and Tenant each agrees to execute and deliver any agreement necessary to effect any such amendment; provided, however, that any such amendment shall be in form and substance acceptable to Landlord and shall not in any way affect the Term or the Fixed Rent or other amounts payable by or to Landlord under this Ground Lease nor otherwise adversely affect any rights or benefits of Landlord under this Ground Lease. The Board of Regents of the Nevada System of Higher Education expressly delegate authority to the Chancellor of the Nevada System of Higher Education to execute amendments made pursuant to this Section 24.3.

24.4 Subordination. This Ground Lease shall not be subordinate to and shall be senior to the lien of any fee mortgage in effect as of the commencement date of this Ground Lease or at any time thereafter during the Term of this Ground Lease. Simultaneously with the execution of this Ground Lease, Landlord shall deliver an executed subordination agreement in a form reasonably satisfactory to Tenant and its title insurer with respect to any existing fee mortgagee. With respect to all future fee mortgages, this Section 24.4 will be self-operative and no further instrument of subordination shall be required, provided that upon the request of Tenant the Landlord shall deliver an executed subordination agreement in a form mutually agreeable to the parties hereto.

ARTICLE 25 MISCELLANEOUS

25.1 No Waiver of Rights by Landlord. No failure of Landlord to exercise any power given Landlord hereunder or to insist upon strict compliance by Tenant with its undertakings,

duties and obligations hereunder, and no custom or practice of the parties hereto at variance with the provisions hereof shall constitute a waiver of Landlord's right to demand exact compliance with the provisions contained in this Ground Lease.

25.2 Rights are Cumulative. All rights, powers, and privileges conferred herein upon both parties hereto shall be cumulative.

25.3 Provisions are Binding Upon Assigns and are Real Covenants. Each of the provisions of this Ground Lease shall apply to, extend to, be binding upon and inure to the benefit or detriment of not only the parties hereto, but also the legal representatives, successors and permitted assigns of Landlord and Tenant hereto, and shall be deemed and treated as real covenants running with the Site during the Term. The parties further acknowledge and agree that the Trustee and any holder of a leasehold mortgage or beneficiary of a leasehold deed of trust and their successors and permitted assigns, shall be deemed third party beneficiaries hereunder. Whenever a reference to the parties hereto is made, such reference shall be deemed to include the legal representatives, successors and permitted assigns of said party, the same as if in each case expressed.

25.4 Applicable Law and Venue. This Ground Lease, and all matters arising out of or relating to this Ground Lease shall be governed, construed, performed and enforced in accordance with the Applicable Law of the State of Nevada (excluding principles of conflict of law). The exclusive venue for any and all disputes arising out of or in any way related to this Ground Lease shall be the state or federal courts located in Washoe County, Reno, Nevada.

25.5 All Genders and Numbers Included. Whenever the singular or plural number, or masculine, feminine, or neuter gender is used in this Ground Lease, it shall equally apply to, extend to, and include the other.

25.6 Invalidity of Provision or Part Thereof. In the event any provision, or any portion of any provision of this Ground Lease is held invalid, the other provisions of this Ground Lease and the remaining portion of said provision, shall not be affected thereby and shall continue in full force and effect.

25.7 Time is of the Essence. All time limits stated in this Ground Lease are of the essence of this Ground Lease.

25.8 Section Captions are to be Disregarded. The captions of the numbered sections of this Ground Lease are for purposes of identification and convenience only and are to be completely disregarded in construing this Ground Lease.

25.9 Entire Agreement Contained Herein. The making, execution and delivery of this Ground Lease by Tenant has not been induced by any representations, statements, covenants or warranties by Landlord except for those contained in the Transaction Documents. This Ground Lease and the other Transaction Documents constitute the full, complete and entire agreement between and among the parties hereto; no agent, employee, officer, representative or attorney of the parties hereto has authority to make, or has made, any statement, agreement, representation or contemporaneous agreement, oral or written, in connection herewith modifying, adding to or

changing the provisions of this Ground Lease. No amendment of this Ground Lease shall be binding unless such amendment shall be in writing and signed by both parties hereto.

25.10 No Partnership or Agency. Nothing in this Ground Lease is intended, or shall in any way be construed, so as to create any form of partnership or agency relationship between the parties. The parties hereby expressly disclaim any intention of any kind to create any partnership or agency relationship between themselves. Nothing in this Ground Lease shall be construed to make either party liable for any of the indebtedness of the other, except as specifically provided herein.

25.11 Limitation of Liability. It is expressly understood and agreed that notwithstanding anything in this Ground Lease to the contrary, the liability of Tenant hereunder (including, but not limited to its indemnity obligations) and any recourse by Landlord against Tenant (including, but not limited to its indemnity obligations) shall be limited to the sum of an amount that is equal to the interest of Tenant in the Premises plus any Claims covered under available insurance.

25.12 Waiver of Consequential Damages. Except with respect to either party's indemnification obligations under Article 12, to the maximum extent permitted by Applicable Law, Landlord and Tenant each waive all claims against each other, and in no event will either party be liable or responsible to the other party, for any type of incidental, punitive, special, indirect, or consequential damages, including but not limited to, lost revenue or lost profits, even if advised of the possibility of such damages, arising under theory of contract, tort (including negligence), strict liability or otherwise. This mutual waiver is applicable, without limitation other than each party's indemnification obligations under Article 12, to all consequential damages due to either parties' termination of the Lease in accordance with its terms.

25.13 Recordation of Memorandum of Lease. Upon the request of either party, Landlord and Tenant agree that the parties shall execute, seal, acknowledge and deliver, in recordable form, a memorandum of lease setting forth the basic terms hereof, and that said memorandum of lease shall be recorded by the Landlord at the expense of the Tenant in the appropriate records of Washoe County, Nevada.

25.14 Counterparts. This Ground Lease may be executed simultaneously in two or more counterparts, each of which shall be deemed original and all of which, when taken together, shall constitute one in the same document. The signature of any party to any counterpart shall be deemed a signature to, and may be appended to, any other counterpart. The words "execution", "executed", "signed" and "signature" and words of like import in this Ground Lease shall include images of manually executed signatures transmitted by facsimile or other electronic format (including, without limitation, ".pdf", ".tif" or ".jpg") and other electronic signatures (including, without limitation, DocuSign and AdobeSign). The use of electronic signatures and electronic records (including, without limitation, any contract or other record created, generated, sent, communicated, received or stored by electronic means) shall be of the same legal effect, validity and enforceability as a manually executed signature or use of a paper-based recordkeeping system to the fullest extent permitted by Applicable Law, including, without limitation, the Electronic Signatures in Global and National Commerce Act, any state law based on the Uniform Electronic Transactions Act and the Uniform Commercial Code.

25.15 Preservation of Tax Status of Bonds. Landlord and Tenant each agree to not take any action with respect to the Premises that would adversely affect the exclusion of the interest payable on the Tax-Exempt Bonds (as defined in the Indenture) from gross income for Federal income tax purposes, or would otherwise result in a breach of any representations, conditions, or covenants of Tenant or Landlord as set forth in the Bond Documents.

25.16 Submission of Lease. Submission of this instrument for examination or signature by Tenant does not constitute a reservation of or an option for lease, and it is not effective as a lease or otherwise until execution and delivery by both Landlord and Tenant.

25.17 Brokers. The parties to this Ground Lease warrant to each other that neither party dealt with any brokers or finders in connection with the consummation of this Ground Lease. In the event any broker, agent or finder makes a claim, the party through whom such claim is made shall be solely responsible for any and all claims or liabilities for brokerage commissions or finder's fees arising out of that party's acts in connection with this Ground Lease to anyone.

25.18 Incorporation. The Attachments attached hereto are hereby incorporated by this reference into this Ground Lease.

25.19 Authority. Each individual executing this Ground Lease on behalf of his or her respective party represents and warrants that he or she is duly authorized to execute and deliver this Ground Lease on behalf of said entity in accordance with the governing documents of such entity, and, subject to the condition precedent in Section 25.26 below, that upon full execution and delivery this Ground Lease is binding upon said entity in accordance with its terms.

25.20 Drafting. In the event of a dispute between any of the parties hereto over the meaning of this Ground Lease, both parties shall be deemed to have been the drafter hereof, and any Applicable Law that states that contracts are construed against the drafter shall not apply.

25.21 No Third Party Beneficiaries. Except as otherwise expressly stated herein, nothing in this Ground Lease is intended or shall be construed to confer upon any person other than the Trustee, the Issuer, and the parties hereto any legal or equitable rights or remedies under or by reason of this Ground Lease or any provision contained herein.

25.22 No Merger. If under any circumstances both Landlord's and Tenant's estates in the Premises, or any portions thereof, become vested in the same owner, this Ground Lease nevertheless shall not be extinguished by application of the doctrine of merger except until the principal of and premium, if any, and interest on the Bonds has been paid or is deemed paid within the meaning of the Indenture.

25.23 Reasonable Expenditures. Any expenditure by a party permitted or required under this Ground Lease, for which such party is entitled to demand and does demand reimbursement from the other party, shall be limited to the fair market value of the goods and services involved, shall be reasonably incurred, and shall be substantiated by documentary evidence.

25.24 Survival. All representations, obligations, indemnities, warranties, covenants, conditions and agreements contained in this Ground Lease which are either expressed as

surviving the expiration or earlier termination of this Ground Lease or, by their nature, are to be performed or observed, in whole or in part, after the termination or expiration of this Ground Lease, shall survive the termination or expiration of this Ground Lease.

25.25 Reservation. Nothing contained in this Ground Lease shall be construed to waive or limit University's right to assert the defense of sovereign immunity, which defense is hereby expressly reserved, nor to waive or limit the protections afforded to University under NRS 41.0305 to 41.039.

25.26 Contingent on Board of Regents' Approval. Effectiveness of this Ground Lease is contingent upon approval by the Board of Regents of the Nevada System of Higher Education in their sole and absolute discretion. If the Board of Regents, in their sole and absolute discretion, do not approve the terms hereof, this Ground Lease shall be deemed null and void without the necessity of further documentation and shall be deemed to be of no binding effect whatsoever.

*Remainder of page intentionally left blank.
Signatures on the following page.*

WHEREFORE, the parties have executed this Ground Lease as of the date first above written.

Landlord

BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON BEHALF OF THE UNIVERSITY OF NEVADA, RENO,

Recommended by:

Brian Sandoval
President, University of Nevada, Reno

Date: _____

Approved by:

Dale Erquiaga
Acting Chancellor,
Nevada System of Higher Education

Date: _____

Tenant

NCCD – UNR PROPERTIES LLC,
a Nevada limited liability company

By: _____

Name: _____

Its: _____

ATTACHMENT A-1

LEGAL DESCRIPTION OF SITE

[Attached]

Attachment A-1

All that certain real property situate within a portion of the Southeast one-quarter (SE1/4) of Section 2, Township 19 North, Range 19 East, M.D.M., Washoe County, State of Nevada, being a portion of all that real property described in Deed Document No. 4987441 recorded December 31, 2019; Deed Document No. 4184259 recorded December 13, 2012; Deed Document No. 4586772 recorded May 5, 2016; Deed Document No. 4689119 recorded March 22, 2017; Deed Document No. 4184064 recorded January 13, 2012 and Deed Document No. 5135029 recorded January 29, 2021 together with all that real property described in Deed Document No. 3051779 recorded June 10, 2004; Deed Document No. 4606191 recorded July 1, 2016; Deed Document No. 2969488 recorded December 16, 2003, and together with a portion of the abandoned alleyway described in Deed Document No. 5073326, recorded September 4, 2020, Official Records of Washoe County, State of Nevada, being more particularly described as follows:

BEGINNING at the northeasterly corner of said Parcel described in said Deed Document No. 3051779, also being a point on the southerly right-of-way line of East 9th Street and the westerly right-of-way line of University Way;

THENCE along said westerly right-of-way line, South 12°57'58" East, 370.00 feet to a point on the northerly right-of-way line of East 8th Street;

THENCE along said northerly right-of-way line, South 77°02'02" West, 272.48 feet to a point on the easterly right-of-way line of North Virginia Street as described in Quitclaim Deed Document No. 5135029 recorded January 29, 2021;

THENCE along said easterly right-of-way line, the following three (3) courses and distances:

1. North 58°00'14" West, 7.19 feet;
2. North 13°00'14" West, 14.69 feet;
3. North 03°32'30" West, 69.35 feet;

THENCE departing said easterly right-of-way line, North 76°59'46" East, 78.16 feet to the beginning of a curve to the left having a radius of 48.50 feet;

THENCE along said curve at a distance of 76.18 feet, and through a central angle of 90°00'00";

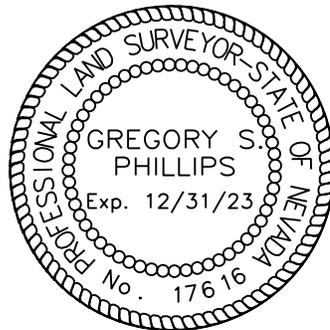
THENCE North 13°00'14" West, 233.25 feet to a point on the southerly right-of-way line of East 9th street;

THENCE along said southerly right-of-way line, North 77°02'30" East, 139.75 feet to the **POINT OF BEGINNING**, and end of this description.

Containing 63,946 square feet, more or less.

The Basis of Bearings for this description the Nevada Coordinate System of 1983, West Zone, NAD 83/94, modified to ground using the combined scale factor of 1.000197939.

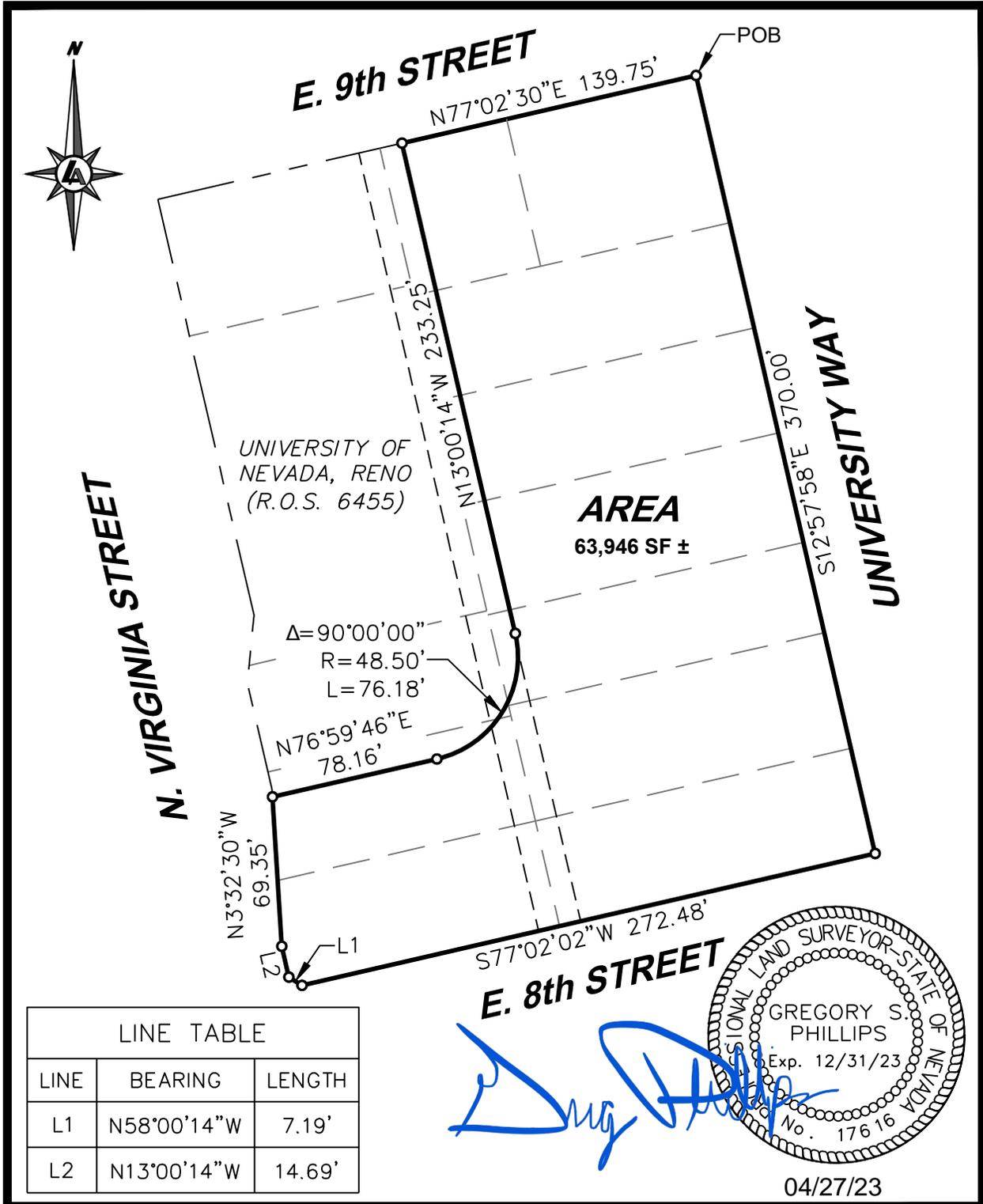
Refer to Exhibit "B" attached hereto and by this reference made a part of.



A handwritten signature in blue ink, appearing to read "Gregory S. Phillips". The signature is stylized and written in a cursive-like font.

04/27/23

Prepared by:
Lumos & Associates, Inc.
Gregory S. Phillips, P.L.S. 17616
308 N. Curry Street
Suite 200
Carson City, NV 89703



LINE TABLE		
LINE	BEARING	LENGTH
L1	N58°00'14\"W	7.19'
L2	N13°00'14\"W	14.69'

GREGORY S. PHILLIPS
 Exp. 12/31/23
 No. 17616
 04/27/23

LUMOS
 & ASSOCIATES

 308 N. CURRY ST.,
 SUITE 200
 CARSON CITY, NV 89703
 TEL (775) 883-7077

EXHIBIT "B"
UNIVERSITY OF NEVADA, RENO
PORTION OF SEC. 2, T.19N, R.19E, M.D.M.

RENO **NEVADA**

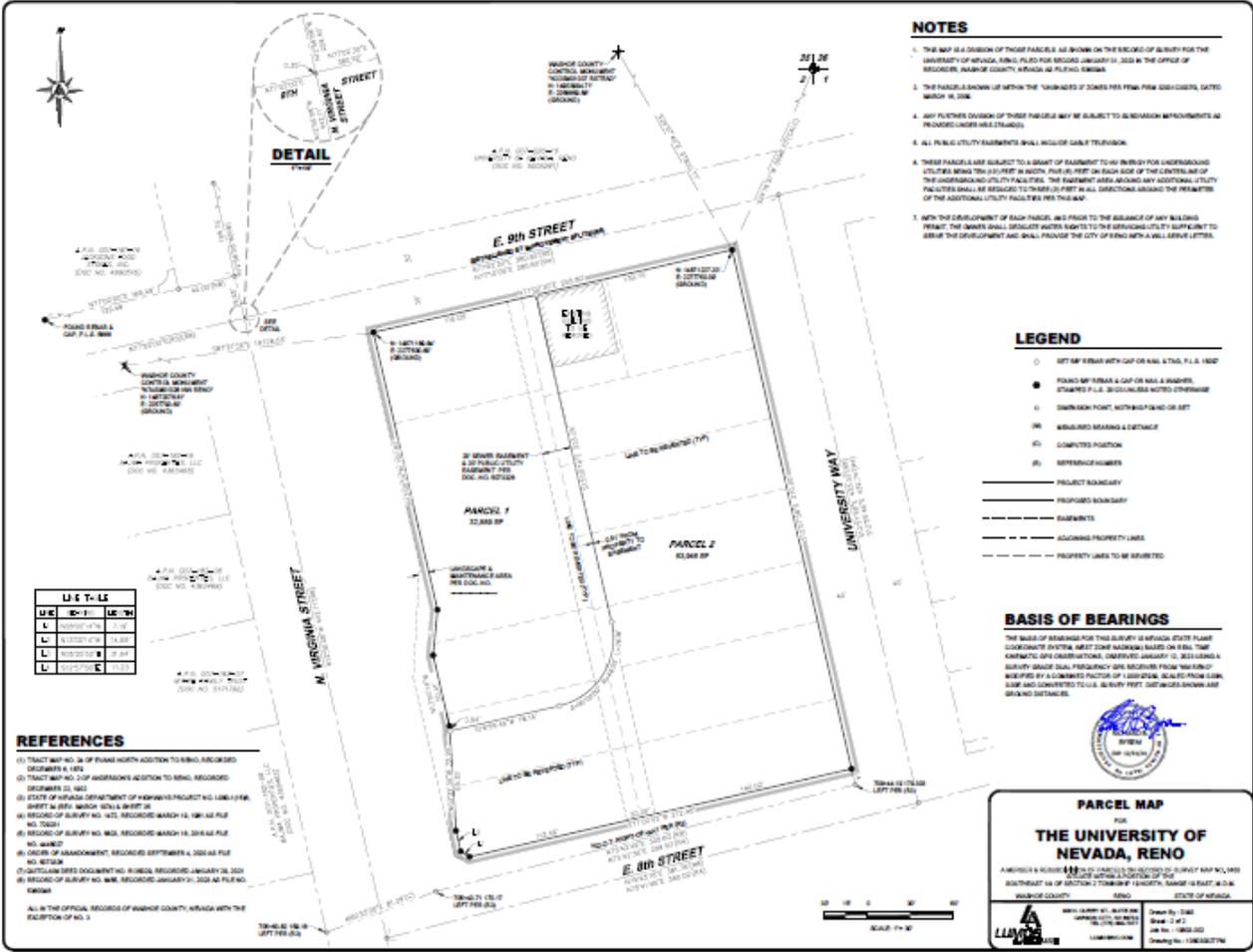
Date: 04/2023
 Scale: 1" = 70'
 Job No: 10803.002
 Drawn By: DMS

ATTACHMENT A-2

SITE MAP

[Attached]

Attachment A-2



ATTACHMENT B

INSURANCE REQUIREMENTS

B.1. Insurance During Sublease Term. At all times throughout the Term of the Sublease, Landlord and Tenant shall maintain or cause to be maintained all of the insurance coverages required of the parties under the Sublease.

B.2. Insurance Following Termination of Sublease. In the event the Sublease terminates prior to the expiration of this Ground Lease, the Sections B.3 through B.9 of this Attachment B shall apply.

B.3. Tenant's Insurance. From the effective date of the termination of the Sublease and continuing until the Termination Date of this Ground Lease, Tenant, at its sole cost and expense, shall maintain or cause to be maintained, the following insurance coverages:

B.3.1. Commercial General Liability.

B.3.1.1. Minimum limits required:
\$3,000,000 General Aggregate
\$1,000,000 Products & Completed Operations Aggregate
\$1,000,000 Personal and Advertising Injury
\$3,000,000 Each Occurrence

B.3.1.2. Coverage shall be on an occurrence basis and shall cover liability arising from premises, operations, independent contractors, completed operations, personal injury, products, and liability assumed under contract;

B.3.1.3. University shall be added as an additional insured on Tenant's liability policy;

B.3.2. Property. Tenant shall obtain and maintain an all risk property insurance policy, insuring loss or damage to the Premises. The amount of such insurance shall be equal to the full replacement costs of the Premises, as the same shall exist from time to time. Such policy shall insure against physical loss or damage, including the perils of fire, flood and earthquake and include coverage for any additional costs related to debris removal and related standard extra expenses. Tenant shall maintain sufficient funds to cover any self-insured retention amounts under the property policy, and shall be solely responsible for any related deductibles.

B.3.3. Workers Compensation. Tenant shall maintain workers compensation insurance if such insurance is required of Tenant by NRS 616B.627, or proof that compliance with the provisions of NRS Chapter 616A-D and all other related chapters, is not required. Tenant shall further obtain and maintain employer's liability insurance in an amount not less than One Million U.S. Dollars (\$1,000,000.00).

B.3.4. Business Auto. Tenant's insurance shall cover the Tenant for those sources of liability which would be covered by the latest occurrence form edition of the standard Business Auto Policy, including coverage for liability contractually assumed, as filed for use in the State of

Nevada by the Insurance Services Office, without the attachment of restrictive endorsements. Coverage shall be provided for owned, scheduled, non-owned, and hired automobiles with a combined single limit of not less than Two Million U.S. Dollars (\$2,000,000.00) per occurrence

B.3.5. Business Interruption. Tenant shall obtain and maintain a policy of business interruption insurance in minimum amounts typically carried by prudent tenants engaged in similar operations, but in no event shall be in an amount less than the annual Fixed Rent then in effect during any year during the Term.

B.4. Waiver of Subrogation. All insurance policies obtained and maintained as required under Section B.3 of this Attachment B shall include a waiver of subrogation in favor of the University.

B.5. Sublandlord's Insurance. Tenant's insurance hereunder shall be primary and non-contributory to any insurance carried by the University. Any additional insurance carried by University shall not reduce the insurance carried by Tenant, nor cause University to become a coinsurer under the insurance carried by Tenant under this Ground Lease.

B.6. Use of Insurance Proceeds Received. From the effective date of the termination of the Sublease and continuing until the Termination Date of this Ground Lease, Tenant shall have an obligation to use such proceeds from insurance in compliance with Section 15.2 of this Ground Lease.

B.7. Deductibles and Self-Insured Retentions. Insurance maintained by Tenant shall apply on a first dollar basis without application of a deductible or self-insured retention unless otherwise specifically agreed to by the University. Such approval shall not relieve Tenant from the obligation to pay any deductible or self-insured retention.

B.8. Approved Insurer. Each insurance policy shall be issued by insurance companies authorized to do business in the State of Nevada or eligible surplus lines insurers acceptable to the State and having agents in Nevada upon whom service of process may be made.

B.9. Evidence of Insurance. Tenant shall, upon written request of the University, provide to the University the Accord 25 Certificate of Insurance form, or a form substantially similar, to evidence the insurance policies and coverages required under this Attachment B.

SUBLEASE AGREEMENT

By and Between

NCCD-UNR Properties LLC,

a Nevada limited liability company, Sublandlord

and

**BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON
BEHALF OF THE UNIVERSITY OF NEVADA, RENO, Subtenant**

[_____, 2023]

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SUBLEASE AGREEMENT

THIS SUBLEASE AGREEMENT (“Sublease”), dated [_____, 2023][**Note: The Effective Date would be date of Financial Closing – Same as the Ground Lease**] (“Effective Date”), is by and between NCCD-UNR PROPERTIES LLC (“Sublandlord”), a single member limited liability company organized and existing under the laws of the State of Nevada, whose sole member is National Campus and Community Development Corporation, a Texas non-profit corporation (“NCCD”) that is exempt from United States federal income taxation under Section 501(a) of the Code (as defined herein) as an organization described under Section 501(c)(3) of the Code, as sublandlord, and the BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON BEHALF OF THE UNIVERSITY OF NEVADA, RENO, as subtenant (“Subtenant” or the “University”).

RECITALS

- A. The University owns certain real property comprising approximately 2.21 acres bordered by Eighth Street, Ninth Street, North Virginia Street and University Way in Reno Nevada (the “Property”). The land that is the subject of this Sublease is comprised of certain portions of the Property and is more particularly described on the attached Attachment A-1 and shown on the attached Attachment A-2 (collectively, the “Site”).
- B. The University wishes to cause development of the Site with an approximate 128,000 square foot College of Business (collectively, the “Improvements”) as more particularly described in that certain Development Agreement dated as of the Effective Date (as amended or supplemented from time to time in accordance with the provisions thereof, the “Development Agreement”) among the University, Sublandlord, and UNR/Edgemoor Gateway Partners LLC, a Maryland limited liability company (the “Developer”).
- C. Pursuant to the Development Agreement, Developer has agreed to develop, design, construct and equip the Improvements on the Site as more particularly described in the Development Agreement (collectively, and together with any additional Improvements funded by Additional Bonds, as applicable, referred to as the “Project”).
- D. The University has leased the Site and the Improvements to Sublandlord pursuant to the Ground Lease dated as of the Effective Date (the “Ground Lease”), and Sublandlord is prepared to sublease the Site and the Improvements to the University, and the University is prepared to sublease the Site and the Improvements from Sublandlord, in connection with the development of the Project pursuant to the Development Agreement.
- E. In connection with the development and construction of the Project, National Finance Authority, as issuer (“Issuer”) will cause to be issued certain Lease Revenue Bonds (NCCD - UNR Properties LLC – University of Nevada, Reno Project) Series 2023 Bonds (the “Series 2023 Bonds”) and any Additional Bonds, as applicable, pursuant to a Trust Indenture dated as of the Effective Date (as amended or supplemented from time to time in accordance with the provisions thereof, the “Indenture”) by and between Issuer U.S. Bank Trust Company, National Association, as trustee (“Bond Trustee” or “Trustee”), and the proceeds of such Bonds shall be loaned to Sublandlord pursuant to a Loan Agreement dated as of the Effective Date (as

amended or supplemented from time to time in accordance with the provisions thereof, the “Loan Agreement”) between Issuer as lender, and Sublandlord as borrower, and a portion of such proceeds shall be paid to Developer pursuant to that certain Disbursement Agreement, dated as of the Effective Date, among Sublandlord, Developer and Trustee (as amended or supplemented from time to time in accordance with the provisions thereof, the “Disbursement Agreement”) and the Indenture and Loan Agreement, to pay the costs of the Project under the Development Agreement.

F. Pursuant to the Operation and Maintenance Agreement dated as of the Effective Date (as amended or supplemented from time to time in accordance with the provisions thereof, the “O&M Agreement”) between the University and Manager (as defined in the O&M Agreement), Manager has agreed to perform the O&M Services (as defined in the O&M Agreement) for the Project.

NOW, THEREFORE, in consideration of the mutual covenants, conditions and agreements that follow, the parties hereby agree as follows:

ARTICLE 1 DEFINITIONS, GRANT AND TERM

1.1 Definitions. Certain words and terms used in this Sublease and not otherwise defined herein shall have the meaning given them in the other Transaction Documents (as defined below). The following terms as used in this Sublease, shall have the following meanings, unless the context indicates otherwise:

“Additional Bonds” shall have the meaning set forth in the Indenture.

“Additional Rent” is defined in Section 2.3.

“Administrative Expense Reimbursements” is defined in Section 2.2.

“Applicable Law” means all present and future laws, statutes, regulations, ordinances, resolutions and orders of any applicable Governmental Authority.

“Assessments” is defined in the Ground Lease.

“Base Sublease Payment” means a base sublease payment for the Premises in the amounts calculated and payable in accordance with Section 2.2 hereof, including without limitation the amounts set forth in Attachment B attached hereto, together with such amounts set forth in any amendment hereto executed in connection with the issuance of Additional Bonds, as applicable. The Base Sublease Payment shall be the same as the Basic Loan Payments as defined in the Indenture.

“Base Sublease Payment Commencement Date” shall have the meaning as set forth on the attached Attachment B.

“Base Sublease Payment Date” shall mean the Base Sublease Payment Commencement Date and thereafter on or before the first (1st) day of each month during the Term until the Bonds

are paid or deemed paid in full in accordance with the Indenture, and on or before the date set forth in any amendment to the Loan Agreement executed in connection with the issuance of Additional Bonds, as applicable.

“Bond Documents” means, collectively, the Indenture, the Loan Agreement, this Sublease, the Ground Lease, the Tax Agreement, the Leasehold Deed of Trust, the Disbursement Agreement, the Collateral Assignment Agreement, the Security Agreement, the Direct Agreement - Ground Lease, the Direct Agreement - Sublease, the Direct Agreement - Development Agreement and all other instruments or agreements executed by the Trustee, Issuer and/or Sublandlord in connection with the issuance and delivery of the Bonds and the use of proceeds thereof.

“Bond Trustee” or “Trustee” is defined in the Recitals above.

“Bonds” means collectively, the Series 2023 Bonds and any Additional Bonds.

“Borrower” is defined in the Loan Agreement.

“Casualty” has the meaning set forth in Article 16 hereof.

“Claims” has the meaning set forth in Section 13.1 hereof.

“Code” means the Internal Revenue Code of 1986, as amended from time.

“Collateral Assignment Agreement” means the Collateral Assignment Agreement, dated as of the Effective Date, by the Tenant and the Developer in favor of the Trustee, as the same may be amended and/or supplemented from time to time as permitted hereby and thereby.

“Common Areas” has the meaning set forth in Section 9.4 hereof.

“Completion” is defined in the Development Agreement.

“Defaulting Party” has the meaning set forth in Section 20.2 hereof.

“Design/Build Agreement” has the meaning set forth in the Development Agreement.

“Developer” is defined in the Recitals above.

“Development Agreement” is defined in the Recitals above.

“Direct Agreement - Development Agreement” means the Direct Agreement – Development Agreement dated as of the Effective Date among the Sublandlord, Subtenant, the Developer and the Trustee, as it may be amended or supplemented from time to time.

“Direct Agreement – Ground Lease” is that certain Direct Agreement- Ground Lease dated as of the Effective Date among the Sublandlord, Subtenant, and Trustee, as it may be amended or supplemented from time to time.

“Direct Agreement – Sublease” is that certain Direct Agreement- Sublease dated as of the Effective Date among the Sublandlord, Subtenant and Trustee, as it may be amended or supplemented from time to time.

“Disbursement Agreement” is defined in the Recitals above.

“Effective Date” is defined in the Preamble above.

“Event of Default” means each of the events specified in Article 20 hereof.

“Fiscal Fund-Out Termination” is defined in Section 21.2 hereof.

“Governmental Authority” means any and all entities, courts, boards, agencies, commissions, offices, divisions, subdivisions, departments, bodies or authorities of any nature whatsoever of any governmental unit (federal, state, county, city or otherwise) whether now or hereafter in existence, other than Subtenant.

“Governmental Unit” means a “governmental unit,” within the meaning of Section 1.103 of the Treasury Regulations.

“Ground Lease” is defined in the Recitals above.

“Improvements” is defined in the Recitals above.

“Indenture” is defined in the Recitals above.

“Issuer” is defined in the Recitals above, and includes Issuer’s its successors and assigns under the Indenture.

“Leasehold Deed of Trust” means the Leasehold Deed of Trust, Assignment of Rents and Leases, Security Agreement and Fixture Filing dated as of [•], 2023 by the Sublandlord in favor of the Trustee, as the same may be amended and/or supplemented from time to time.

“Loan Agreement” is defined in the Recitals above.

“NCCD” is defined in the Preamble.

“NCCD Annual Fee” is defined in Section 2.3.2.

“NCCD Origination Fee” is defined in Section 2.3.2.

“Net Proceeds” has the meaning set forth in the Indenture.

“Non-Breaching Party” has the meaning set forth in Section 20.2 hereof.

“O&M Agreement” is defined in the Recitals above.

“O&M Services” means the services to be performed by Developer pursuant to the O&M Agreement.

“Person” means natural persons, firms, joint ventures, associations, trusts, partnerships, corporations, limited liability companies, public bodies, and similar entities, whether for profit or non-profit.

“Premises” means the Site and the Improvements.

“Permitted Encumbrances” means, as of any particular time, any one or more of the following:

- (1) encumbrances for utility charges, taxes, rates and assessments not yet delinquent or for utility charges, taxes, rates, assessments, and other charges being contested in accordance with the Loan Agreement or this Sublease;
- (2) Any encumbrance arising out of any judgment rendered which is being contested diligently and in good faith, the execution of which has been stayed or against which a bond or bonds in the aggregate principal amount equal to such judgments shall have been posted with a financially-sound insurer;
- (3) Any encumbrance arising in the ordinary course of business imposed by law dealing with materialmen’s, mechanics“, workmen’s, repairmen’s, warehousemen’s, landlords’, vendors’ or carriers’ encumbrances created by operation of law, but that have not been perfected by the required filing of record for work done or materials delivered after the date of recording of this Sublease in connection with additions to or alterations of the Project;
- (4) Servitudes, licenses, easements, encumbrances, restrictions, rights-of-way and rights in the nature of easements or similar charges which shall not in the aggregate materially and adversely impair the construction of the Project or operation of the Project;
- (5) Applicable zoning and building bylaws and ordinances, municipal bylaws and regulations, and restrictive covenants, which do not materially interfere with the construction of the Project and operation of the Project;
- (6) Encumbrances which are created on or before the date hereof and as described in the title policy required by the Loan Agreement;
- (7) Any encumbrances required in connection with the development of the Project pursuant to the Development Agreement;
- (8) Encumbrances which are created by a change in Applicable Law on or after the date hereof;
- (9) Any servitudes, licenses, easements, restrictions, encumbrances created by a Governmental Authority or to which the University has granted its consent; and
- (10) This Sublease, the Ground Lease, and the other Bond Documents.

“Project” is defined in the Recitals above.

“Property and Possessory Interest Taxes” means any and all governmental fees and charges, whether general or special, or ordinary or extraordinary, which may be levied, assessed, charged or imposed, or may become a lien or charge upon the Premises, the Improvements, or any part or parts thereof, or upon Subtenant’s Interest, including, without limitation, taxes on land, any buildings, any parking facilities or any other improvements now or hereafter at any time during the Term located at or on the Premises.

“Rent” means collectively Base Sublease Payments, the Administrative Expenses Reimbursements and Additional Rent.

“Security Agreement” has the meaning set forth in the Indenture.

“Section 501(c)(3) Organization” shall mean an organization (i) that been determined by the United States Department of Treasury to be an organization described in paragraph (3), subsection (c), of Section 501 of the Code or in the corresponding provisions of prior law, (ii) that is exempt from federal income taxes under subsection (a) of Section 501 of the Code, and (iii) that is not a “private foundation,” within the meaning of Section 509(a) of the Code.

“Series 2023 Bonds” is defined in the Recitals above.

“Site” is defined in the Recitals above.

“State” means the State of Nevada.

“Sublandlord” is defined in the Preamble.

“Sublandlord Indemnitees” has the meaning set forth in Section 13.1 hereof.

“Sublandlord’s Interest” means Sublandlord’s entire interest in the Premises and this Sublease.

“Sublease” is defined in the Preamble above.

“Sublease Expiration Date” is defined in Section 1.5 below.

“Subtenant” is defined in the Preamble above.

“Subtenant Indemnitees” has the meaning set forth in Section 13.2 hereof.

“Subtenant’s Interest” means Subtenant’s entire interest, as subtenant hereunder in the Premises and this Sublease.

“Taking” is defined in Section 17.1 hereof.

“Tax Agreement” has the meaning set forth in the Indenture.

“Tax-Exempt Bonds” is defined in the Indenture.

“Term” means the period set forth in Section 1.5 hereof.

“Termination Date” means the date on which the Term hereof ends by termination or expiration of this Sublease, as described in Section 1.5 hereof.

“Transaction Documents” means, collectively, the Ground Lease, the Development Agreement, this Sublease, the O&M Agreement, the Disbursement Agreement, the other Bond Documents, the Design/Build Agreement, and the ancillary agreements entered into by and/or between Sublandlord, Subtenant and Developer in connection with the Project.

“Treasury Regulations” means any proposed, temporary or final income tax regulations issued pursuant to the Code. Any reference to any specific Treasury Regulations shall also mean, as appropriate, any proposed, temporary or final income tax regulation designed to supplement, amend or replace the specific Treasury Regulation referenced.

“University” is defined in the Recitals above.

“Unrelated Business Taxable Income” means “unrelated business taxable income,” within the meaning of Section 512 of the Code.

“Unrelated Trade or Business” means “unrelated trade or business” within the meaning of Section 513(a) of the Code. Generally, any trade or business that is not substantially related (in a manner other than the general need for income or funds) to the exercise or performance by a 501(c)(3) Organization of its charitable, educational, or other purpose or function constituting its exemption under Section 501(c)(3) of the Code constitutes an Unrelated Trade or Business.

1.2 Sublease. In consideration of the covenants and agreements to be performed and observed by Subtenant, Sublandlord hereby subleases to Subtenant, subject only to Permitted Encumbrances, and Subtenant hereby subleases from Sublandlord, the Site as more particularly described on the attached Attachment A-1 and shown on the attached Attachment A-2 and the Improvements in existence from time to time.

1.2.1 Sublandlord and Subtenant acknowledge and agree that Attachment A-1 and Attachment A-2 shall be consistent with Attachment A-1 and Attachment A-2 to the Ground Lease and such Attachments may be amended from time to time to reflect the Site necessary for the development and operation of the Project upon written agreement of the parties hereto.

1.2.2 In addition, Sublandlord and Subtenant hereby acknowledge and agree that as of the Effective Date the Premises do not include the portion of the Site consisting of the existing restaurant lease depicted on Attachment A-2; provided, however, upon termination of such restaurant lease, anticipated to occur on or about August 15, 2023, such portion of the Site comprised of the existing restaurant lease shall be deemed to be included in the Premises leased by Sublandlord to Subtenant hereunder upon the date of such termination.

1.2.3 The Board of Regents of the Nevada System of Higher Education expressly delegate authority to the Chancellor of the Nevada System of Higher Education to execute amendments made pursuant to this Section 1.2.

1.3 Reservation of Oil, Gas and Mineral Rights. Pursuant to the Ground Lease University has reserved to itself all of the oil, gas and mineral rights of the Site without the right

of surface entry; provided that any such actions taken with respect to oil, gas and mineral rights do not interfere with or adversely affect the Premises.

1.4 Condition of Site. Subtenant accepts the Site “as is” without representation or warranty of Sublandlord. Sublandlord shall not be required or obligated to make any changes, alterations, additions, improvements or repairs in, on, under or about the Site except as specifically described in the Bond Documents and the other Transaction Documents. Sublandlord makes no warranty as to the suitability of the Site for the uses permitted by this Sublease. Sublandlord makes no covenants or warranties respecting the condition of the soil, subsoil or any other condition of the Site, nor does Sublandlord make any covenant, representation or warranty regarding the suitability of the Site for the proposed development, construction or use by Subtenant or Developer under the Development Agreement.

1.5 Term. The term of this Sublease (“Term”) shall commence on the Effective Date and shall expire at 11:59 p.m. local time on the date that is thirty (30) years thereafter (the “Sublease Expiration Date”), unless sooner terminated in accordance with the provisions of this Sublease. Any holding over by Subtenant after expiration shall not constitute a renewal or extension nor shall it give Subtenant any rights in or to the Premises or any part thereof. In addition, and notwithstanding anything to the contrary contained herein, this Sublease shall terminate prior to such thirty (30) year term on the date that the Bonds are no longer outstanding pursuant to the terms of the Indenture and all amounts due and payable under Loan Agreement are paid in full and discharged.

ARTICLE 2 SUBLEASE CONSIDERATION

2.1 Transaction Documents and Development. Subtenant shall: (i) enter into the Transaction Documents to which it is a party, and (ii) make the Site available to Developer so that Developer may construct the Project in accordance with the Development Agreement. Sublandlord shall make a portion of the proceeds of the Bonds available to the Developer pursuant to the Indenture and the Disbursement Agreement.

2.2 Sublease Payments.

2.2.1 Base Sublease Payments. During the Term, Subtenant shall pay to the Trustee, on behalf of and as assignee of the Sublandlord, a Base Sublease Payment on each Base Sublease Payment Date starting on the Base Sublease Payment Commencement Date. All such payments shall be fully credited to Subtenant’s obligation to make the Base Sublease Payments hereunder. The Base Sublease Payments payable under this Sublease shall be comprised of principal and interest components in the amounts required to be paid by Sublandlord under the Loan Agreement and as set forth on the attached Attachment B, and shall be solely for the payment of the aggregate amount of the principal of, premium, if any, and interest on the Bonds, as and when due under the Indenture, until the principal of and interest on the Bonds shall have been fully paid or provision for the payment thereof shall have been made in accordance with the Indenture.

2.2.2 Administrative Expense Reimbursements. In addition to the Base Sublease Payments, during the Term, Subtenant shall pay to the Trustee, on behalf of and as assignee of the Sublandlord all additional amounts sufficient to pay all fees, expenses and other amounts payable to the Issuer and/or the Trustee under the Bond Documents, including without limitation all amounts payable by the Borrower pursuant to Section 5.02(b) of the Loan Agreement including the Authority Issuance Fee and the Authority Annual Fee (collectively, “Administrative Expense Reimbursements”). The Administrative Expense Reimbursements shall be paid by Subtenant to the Trustee within thirty (30) days of demand in accordance with Section 5.02 of the Loan Agreement; provided that the Authority Issuance Fee shall be paid on the Effective Date and the Authority Annual Fee shall be paid by Subtenant in advance on [] 1 of each year [the first day of the month in which the Bonds were issued].

2.2.3 General. Each Base Sublease Payment and the Administrative Expense Reimbursements shall be paid in immediately available funds, in lawful money of the United States of America, and deposited in those certain funds held by the Trustee and established pursuant to the Indenture to hold the Base Sublease Payments and the Administrative Expense Reimbursements made hereunder. Anything herein to the contrary notwithstanding, the Base Sublease Payments described above shall at all times be sufficient to pay the total amount of principal of and interest on the Bonds payable on their next succeeding payment date. Except in the event of a Fiscal Fund-Out Termination, the obligation of Subtenant to make the Base Sublease Payments and the Administrative Expenses Reimbursements set forth above is absolute and unconditional during the Term and such payment obligations shall not be subject to any claim for setoff, diminution, or abatement for any reason whatsoever (including, without limitation, any event of default that may have occurred and be continuing under this Sublease) and the Subtenant will not discontinue or suspend any payment of Base Sublease Payment or Administrative Expenses Reimbursements, whether or not the Site or Improvements or any part thereof is operating or operable or has been completed, or its use is suspended, interfered with, reduced or curtailed or terminated in whole or in part, and such payments shall not be subject to reduction whether by set-off or otherwise and shall not be conditional upon the performance or nonperformance by any party of any agreement for any cause whatsoever.

2.2.4 Adjustments. Notwithstanding anything to the contrary contained in this Section 2.2, the parties recognize and agree that the payment schedule contained in Attachment B is a good faith estimate of the anticipated Basic Loan Payments due from Sublandlord under the Loan Agreement. The parties agree that Attachment B shall be amended as follows:

(i) Following Financial Close of Escrow (as defined in the Development Agreement) to reflect the actual Basic Loan Payments due from Sublandlord under the Loan Agreement;

(ii) in the event Sublandlord and Subtenant receive written notice from Trustee pursuant to Section 5.01(g) of the Indenture that amounts already on deposit in the Base Sublease Payment Revenue Account and available therefor will be sufficient to make all or a portion of the next required deposit(s) to the Bond Fund pursuant to Section 5.01(a)(i), (ii), (iii) and/or (iv) of the Indenture, Subtenant’s Base Sublease Payment(s) shall be reduced or shall not be required to be made to the extent the amounts on deposit in the Base Sublease Payment

Revenue Account equal or exceed the next required deposit(s) to the Bond Fund pursuant to Section 5.01(a)(i), (ii), (iii) and/or (iv) of the Indenture;

(iii) in the event Sublandlord and Subtenant receive written notice from Trustee pursuant to Section 5.01(g) of the Indenture that amounts already on deposit in the Administrative Expenses Account and available therefor will be sufficient to make all or a portion of the next required payments pursuant to Section 5.01(b), (c), (d), (e) and/or (f) of the Indenture, Subtenant's payments of Administrative Expenses Reimbursement shall be reduced or shall not be required to be made to the extent the amounts on deposit in the Administrative Expenses Account equal or exceed the next required payments pursuant to Section 5.01(b), (c), (d), (e) and/or (f) of the Indenture; and

(iv) in the event Subtenant prepays its Base Sublease Payments as provided in Section 2.4 of this Sublease or if such other moneys are on deposit in the Redemption Fund that are required to be used to redeem Bonds prior to their stated maturity dates, in which case Sublandlord and Subtenant shall amend Attachment B to take into account such prepayments and amounts on deposit in the Redemption Fund; provided that the amounts payable pursuant to such revised schedule shall in all cases be equal to or greater than the payment obligations of the Sublandlord under Section 5.02(a) of the Loan Agreement.

The Board of Regents of the Nevada System of Higher Education expressly delegate authority to the Chancellor of the Nevada System of Higher Education to execute amendments made pursuant to this Section 2.2.4.

2.3 Additional Sublease Payments.

2.3.1 Additional Rent. Subtenant shall pay or discharge, or cause to be paid or discharged when the same shall become due, as additional rent, all costs, expenses, and obligations of every kind relating to the Premises which the Subtenant has assumed or agreed to pay or discharge pursuant to this Sublease and the Ground Lease (as the Landlord thereunder), except as may be specifically provided for herein, which may arise or come due during the Term, including without limitation, all fees, costs and expenses incurred by Sublandlord under the Ground Lease or in connection with the operation and maintenance of the Premises. To the extent Sublandlord incurs these costs directly, Subtenant shall reimburse Sublandlord for such costs and expenses within thirty (30) days of written demand. All costs and expenses payable by Subtenant hereunder which are not Base Sublease Payments or Administrative Expenses Reimbursements shall constitute "Additional Rent," including the NCCD Origination Fee, the NCCD Annual Fee, the costs paid or incurred by the Sublandlord for its annual audits, internal audits, compliance fees, insurance costs, and reasonable legal expenses incurred by the Sublandlord in connection with the Project. Failure to pay Additional Rent as and when due shall constitute an Event of Default, and in such event, the Sublandlord shall have the same rights and remedies available in the event of a failure to pay Base Rent.

2.3.2 Sublandlord and NCCD Assistance and Fees. As consideration for and in recognition of the assistance to be provided by Sublandlord to the University in facilitating the provision of the needed educational facility for the University's College of Business for its students, faculty, and staff and to otherwise assist to the University in furthering its educational,

research, and public purposes, the University agrees to pay Sublandlord, or cause Sublandlord to be paid, as Additional Rent, (a) an origination fee equal to \$125,000 on the Base Sublease Payment Commencement Date (the “NCCD Origination Fee”), which fee shall be paid from the proceeds of the Bonds, and (b) (i) beginning in the first full month following the Base Sublease Payment Commencement Date until the Completion of the Project an amount equal to \$5,000 per month and (ii) beginning in the month after Completion of the Project, an amount equal to, \$3,500 per month, which amount shall increase by three percent (3%) annually for the following ten (10) years with no annual increases occurring on the eleventh (11th) year or thereafter (the “NCCD Annual Fee”). The NCCD Annual Fee shall be paid monthly on the 25th day of the month and continuing until the Termination Date in lawful money of the United States of America via wire transfer to Sublandlord.

2.3.3 Absolute Net Sublease. This is an absolute net sublease. Subtenant acknowledges and agrees, without limiting the generality of any other terms or provisions of this Sublease, that Subtenant shall pay any and all expenses incurred in connection with the use, operation, management, and maintenance of the Premises. During the Term, Subtenant shall pay, as they come due and payable, all insurance premiums, maintenance costs, operating expenses and all other charges, costs, and expenses of any nature and all penalties and interest thereon that are assessed or imposed upon the Premises or any of the Subtenant’s property located thereon.

2.4 Prepayment Rights. Subtenant shall have the right to exercise or cause Sublandlord, as applicable, to exercise the optional redemption rights under Section 3.02 of the Indenture and Section 11.03 of the Loan Agreement and prepay the principal components of the Base Sublease Payments in full, or in part. Said rights shall be exercised by Subtenant giving written notice to the applicable parties of the exercise of such option(s) and by causing to be deposited with said notice the Redemption Price as required by Section 3.02 of the Indenture and Section 11.03 of the Loan Agreement to cause the redemption in full or in part of the Bonds. In the event of prepayment in part, the Base Sublease Payments shall be reduced as provided in Section 2.2.4 of this Sublease.

2.5 Payment to Trustee for Credit of Subtenant and Issuer. The Sublandlord and the Subtenant acknowledge and agree that the Sublandlord shall cause all Base Sublease Payments and Administrative Expense Reimbursements to be remitted to the Trustee to be disbursed by the Trustee in accordance with the provisions of the Indenture and the other Bond Documents, including without limitation Section 5.01 of the Indenture. The Sublandlord hereby authorizes and directs the Subtenant, and the Subtenant hereby agrees, to remit, on the Sublandlord’s behalf, the Base Sublease Payments and the Administrative Expense Reimbursements directly to the Trustee in satisfaction of the Sublandlord’s obligations under the Loan Agreement, the Indenture, and the other Bond Documents.

ARTICLE 3 USES AND RESTRICTIONS

3.1 Use. University shall use the Premises for activities related to the University’s teaching, research, and outreach missions including, without limitation, traditional classrooms, lecture halls, fundraising activities, special events, community events, and research facilities,

together with ancillary activities commonly associated with community outreach and the support of students and faculty in a higher education and research setting, and other legally permissible uses in accordance with the Bond Documents and Applicable Law.

3.2 Use Restrictions. Subtenant covenants and agrees that it will not use, or suffer or permit any Person or Persons to use, the Premises: (i) in any manner that would result in Base Sublease Payments, Administrative Expenses Reimbursements, Additional Rent, or any other payments made under this Sublease being Unrelated Business Taxable Income; (ii) in any manner that would cause the Sublandlord or NCCD to have “unrelated debt financed income,” within the meaning of Section 514 of the Code; or (iii) in any manner that would jeopardize the tax exempt status of the Sublandlord or NCCD under Section 501(a) of the Code, as more particularly described in Section 501(c)(3) of the Code. Subtenant further covenants that it will not carry on or permit to be carried on in the Premises any trade or business, the conduct of which would cause the interest on the Tax-Exempt Bonds to be included in the gross income of the owners thereof for federal income tax purposes (including, without limitation, allowing more than three percent (3%) of the property financed or refinanced with the net proceeds of the Tax-Exempt Bonds (either by square footage or by fair rental value) to be used in an Unrelated Trade or Business of a Section 501(c)(3) Organization, or to be used in the trade or business of a Person who is neither a Governmental Unit nor a Section 501(c)(3) Organization). In this regard, the Subtenant covenants that it will not enter into any other “arrangement,” within the meaning of §1.141-3(b) of the Treasury Regulations, with any Person that is not a Governmental Unit or a Section 501(c)(3) Organization or any “Management Contract,” as such term is used in Internal Revenue Procedure 2017-13 or any “Research Agreement,” as such term is used in Internal Revenue Procedure 2007-47, relating to the Premises (other than persons who do not use such space for the carrying out of any trade or business) other than for “incidental services,” within the meaning of §1.141-3(d)(2) of the Treasury Regulations, without previously delivering a favorable opinion of Bond Counsel

3.3 Hazardous Substances. Subtenant will comply, at its sole cost and expense, with Applicable Law and University guidelines concerning the (i) use, storage, handling or discharge of any Hazardous Substances (A) generated or used by Subtenant in the course of its operations at the Premises during the Term, or (B) otherwise brought onto the Premises by Subtenant during the Term, and (ii) monitoring, mitigation and remediation (all to the extent required) of any Hazardous Substances migrating onto the Premises during the Term. For purposes of this section, the term “Hazardous Substances” shall be interpreted broadly to include but not be limited to (a) substances designated as hazardous under the Resource Conservation and Recovery Act, 42 U.S.C. §6901, et seq., the Federal Water Pollution Control Act, 33 U.S.C. §1257, et seq., the Clean Air Act, 42 U.S.C. §2001, et seq., or the Comprehensive Environmental Response Compensation and Liability Act of 1980, 42 U.S.C. §9601, et seq., or any other Federal or State law or regulation now or in the future applicable to the Premises, Improvements or Site, The National Institute of Health, CDC and FDA rules and guidelines, (b) any substance which after release into the environment and upon exposure, ingestion, inhalation or assimilation, either directly from the environment or directly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavior abnormalities, cancer and/or genetic abnormalities, and (c) oil and petroleum based derivatives.

3.4 Audit Rights. Sublandlord may, at its sole cost and expense, during customary business hours only, and upon prior reasonable written notice, examine or audit of the books, records and accounts of the Subtenant directly related to the Premises, to the extent necessary to verify compliance with this Sublease. Audits may be conducted by employees of the Sublandlord or independent auditors retained by the Sublandlord, but any and all such audits shall be conducted without materially, unreasonably, or unnecessarily interrupting or interfering with the normal conduct of business affairs of the Subtenant. Subtenant shall reasonably cooperate with Sublandlord and its authorized representatives and/or designees in connection with such audits and shall promptly make available to the Sublandlord and its authorized representatives and/or designees any and all information in Subtenant's possession relating to the Premises that they may reasonably request in connection with such audits.

3.5 Compliance with Ground Lease and Bond Documents.

3.5.1 The terms, covenants, and conditions of the Ground Lease and the Bond Documents applicable to the Premises are hereby incorporated in and made a part of this Sublease with the same force and effect as though set forth at length herein. The terms of this Sublease are subject to the terms and conditions set forth in the Ground Lease. Subject to Subtenant's rights under Section 21.2 of this Sublease, Subtenant shall not take or omit to take any action under this Sublease which would cause the Sublandlord to be in default under the Ground Lease.

3.5.2 Subject to Subtenant's rights under Section 21.2 of this Sublease, the Subtenant shall not:

- (I) take any action inconsistent with the terms of the Ground Lease or the Bond Documents,
- (II) do or permit to be done anything prohibited to the Sublandlord, as Tenant under the Ground Lease, or under the Bond Documents, or which would constitute, with or without the giving of notice or the passage of time or both, an "Event of Default" under the Ground Lease;
- (III) take any action that would adversely affect the validity of the Series 2023 Bonds or the tax-exempt status of interest on the Tax-Exempt Bonds under, or the status of 501(c)(3), as an organization described in Section 501(c)(3) of, the Code, as amended, or
- (IV) take any action, do, or permit anything that would result in any additional cost or other liability to the Sublandlord under the Ground Lease or the Bond Documents.

3.5.3 The Sublandlord shall comply with all covenants and agreements of Tenant under the Ground Lease.

3.5.4 Unless otherwise specifically stated in any provision of this Sublease or the Ground Lease requiring the Subtenant to obtain consent or approval from the Sublandlord, the Sublandlord shall not unreasonably deny, condition, or delay any consent or approval.

ARTICLE 4 FINANCING OF PROJECT

Any financing, other than financings related to the Bonds, which would encumber Sublandlord's Interest in the Site or this Sublease, or any amendment, renewal, refinancing, or refunding of any such financing, shall be subject to the prior written approval of Subtenant, which approval Subtenant may grant or withhold at its sole and absolute discretion, and in no event shall the documents evidencing any such financing encumber the interest of Subtenant in this Sublease or its fee interest in the Site. Excluding Subtenant's obligations to make payments under this Sublease or the Development Agreement, as applicable, (i) University shall not incur or insure any indebtedness with respect to the Project, and (ii) any and all financing for the Project shall (A) not rely on the credit of the University, and (B) shall be non-recourse to the University and the State of Nevada. In connection with any refinancing of the Bonds during the Term of this Sublease and as permitted hereunder, the parties shall mutually agree to allocate any savings associated with any refinancing as may be appropriate to Subtenant. Public money shall not be used to finance any part of the Project.

ARTICLE 5 TAXES AND ASSESSMENTS

5.1 Taxes and Assessments. University, as Landlord under the Ground Lease, is at all times the owner of the Site and the Improvements. In addition, Sublandlord and Subtenant have determined that the use of the Premises pursuant to Article 3, above, is exclusively in furtherance of (i) the educational and charitable purposes of Sublandlord, and (ii) the educational, research and public purposes of University. Accordingly, the parties intend and expect that the subleasehold estate of Subtenant created by this Sublease together with the Premises, will be eligible for exemption under Nevada law from Property and Possessory Interest Taxes.

5.2 Maintenance of Exemption. Subtenant and Sublandlord shall use diligent efforts to maintain exemption of the Premises from Property and Possessory Interest Taxes. Nothing contained in this Sublease is intended to change the degree to which the interest or estate of Subtenant created by this Sublease is subject to Property and Possessory Interest Taxes; however, to the extent any Property or Possessory Interest Taxes or Assessments are assessed, Subtenant and Sublandlord shall have the responsibilities and rights set forth herein.

5.3 Tax Obligations. University will pay all Property and Possessory Interest Taxes and Assessments including without limitation, all real estate taxes, taxes upon or measured by rents, personal property taxes, privilege taxes, gross receipts taxes, excise taxes, parking taxes, business and occupation taxes, gross sales taxes, occupational license taxes, water charges, sewer charges, or environmental taxes or assessments of any kind and nature whatsoever, including any possessory interest tax resulting from the Improvements, the Ground Lease or this Sublease, whether levied by the State of Nevada, the government of the United States, or any agency thereof, or any other governmental body or assessment district during the Term, and whether or not now customary or within the contemplation of the parties hereto, and regardless of whether the same shall be foreseen or unforeseen, similar or dissimilar to any of the foregoing.

**ARTICLE 6
UTILITY SERVICES**

Pursuant to the Development Agreement Subtenant has caused Developer to agree to install, and pursuant to the O&M Agreement Manager has agreed to maintain and repair all facilities necessary to provide utilities to the Premises as more particularly described therein. Sublandlord will have no obligation to provide or pay for utility facilities or utility services to the Premises during the Term, but shall cooperate with Subtenant in obtaining the same. Any facilities necessary to provide utilities to the Premises not provided by the Developer or the Manager for any reason shall be provided by Subtenant.

**ARTICLE 7
COMPLIANCE WITH APPLICABLE LAW AND ORDINANCES**

Throughout the Term, and subject to the terms of the Development Agreement, Subtenant shall, at its sole cost and expenses, promptly comply with Applicable Law respecting the manner in which the Premises is or should be used by Subtenant, including any applicable continuing disclosure obligations.

**ARTICLE 8
LIENS**

Subtenant's rights under this Sublease, as well as the rights of anyone else, including, but not limited to, the rights of the Developer, Manager, the Issuer, the Sublandlord or any mortgagee, architect, independent contractor, assignee, sublessee, subcontractor, prime or general contractor, mechanic, laborer, materialmen, or other lien or claim holder, shall always be and remain subordinate, inferior, and junior to University's fee title, interest, and estate in the Premises. Except as otherwise expressly permitted under the Transaction Documents, Subtenant shall not create or permit to be created or to remain, and shall discharge any lien, encumbrance, or charge levied on account of any mechanic's, laborer's, or materialman's lien, or any security agreement, conditional bill of sale, title retention agreement, chattel mortgage, or otherwise (a "Lien") that might, or does, constitute a lien, encumbrance, or charge upon the Premises, or any part thereof, or the income therefrom, having a priority or preference over or ranking on a parity with the estate, rights, or interest of the Sublandlord in the Premises or any part thereof, or the income therefrom.

**ARTICLE 9
EASEMENTS, ENCUMBRANCES AND COMMON AREAS**

9.1 Subtenant's Rights. Pursuant to the Ground Lease, Subtenant shall have the right, in accordance with Applicable Law, to grant to others in the future nonexclusive utility and/or access easements and licenses over, under, through, across or on the Site in locations that will not unreasonably interfere with the use of the Premises. In the event the installation or maintenance of such future utility lines or access roads in such easements or licenses causes any damage to the Premises, or any portion thereof, including but not limited to, pavement, curbs and sidewalks, Subtenant shall repair the same, or cause the same to be repaired, at Subtenant's expense. At Subtenant's request, Sublandlord shall join in any grant of such an easement and/or

license. In addition, Sublandlord agrees to cooperate with Subtenant in granting or otherwise obtaining any utility, access licenses, easements or other such shared use and maintenance agreements, as may be necessary for the operation of the Project, including without limitation, access over any access roads that may be developed or located on the adjacent portion of the Property not leased to Subtenant hereunder.

9.2 Sublandlord's Rights. Pursuant to the Ground Lease, other than Permitted Encumbrances, Sublandlord shall not suffer or permit any encumbrance on the Site or the Project without Subtenant's consent, in its sole and absolute discretion.

9.3 Compliance with Encumbrances. Subtenant shall comply with all terms and conditions of any encumbrance on the Premises, including payment of any costs and expenses thereunder.

9.4 Common Areas. Subtenant shall perform and be responsible for all normal and ordinary maintenance of the grounds and other property outside of Project as shown on Attachment A-2 (collectively, the "Common Areas"), including landscaping in accordance with the University's landscaping requirements as implemented from time to time, trash removal, snow removal and the maintenance of any access roads on the Site, and shall keep the Common Areas in good working order, condition and repair and in a neat and orderly condition.

ARTICLE 10 OPERATION AND MAINTENANCE OF PROJECT

Upon the Completion of the Project in accordance with the Development Agreement, Subtenant shall operate and maintain the Project and perform, or shall cause the Manager to perform, the O&M Services in accordance with the O&M Agreement. Anything in this Article 10 to the contrary notwithstanding, Sublandlord shall have no obligation to provide the O&M Services.

ARTICLE 11 SECURITY INTEREST

11.1 Further Action and Documents. Subtenant and Sublandlord shall from time to time promptly execute and deliver all further instruments and documents, and take all further action, that may be necessary or desirable, or that either may reasonably request, in order to perfect and protect any pledge, assignment, or security interest granted or purported to be granted by Developer, and/or to enable Sublandlord or Subtenant to exercise and enforce their rights and remedies with respect to any of the Transaction Documents to which Developer is a party.

11.2 Financing Statements. Subtenant hereby authorizes Sublandlord to file one or more financing and/or continuation statements, and amendments thereto, relating to all or any part of the Assigned Agreements without the signature of Subtenant where permitted by Applicable Law. A photocopy or other reproduction of this Sublease or any financing statement covering the Transaction Documents or any part thereof shall be sufficient as a financing statement where permitted by Applicable Law.

11.3 Subtenant May Perform. Subject to the Trustee's rights under the Direct Agreement – Development Agreement, if Developer shall fail to perform any covenant or agreement contained in the Development Agreement, the O&M Agreement or any other Transaction Document to which it is a party, and if such failure shall continue uncured after the giving of notice and the expiration of any applicable cure period, Subtenant may itself elect to perform, or cause the performance of, such covenant or agreement, and Sublandlord hereby assigns to Subtenant any rights it has pursuant to the Development Agreement in connection therewith. Sublandlord hereby irrevocably appoints Subtenant as Sublandlord's attorney-in-fact, with full authority in the place and stead of Sublandlord and in the name of Sublandlord or otherwise, if a default occurs by Developer under the Development Agreement, the O&M Agreement or any other Transaction Document to which it is a party, beyond applicable notice and cure periods, to take any action and to execute any instrument which Subtenant may deem necessary or advisable to accomplish the purposes of this Sublease, the Ground Lease, the Development Agreement and the O&M Agreement, including, without limitation:

11.3.1 To obtain any insurance required pursuant to the Development Agreement, the O&M Agreement and/or any other Transaction Document to which Developer is a party in the event Developer shall fail to obtain such insurance;

11.3.2 To ask, demand, collect, sue for, recover, compromise, receive, and give acquittance and receipts for moneys due and to become due under or in connection with the Development Agreement, the O&M Agreement or any other Transaction Document to which Developer is a party; and

11.3.3 To file any claims or take any action or institute any proceedings which Subtenant may deem necessary or desirable to enforce compliance with the terms and conditions of the Development Agreement, the O&M Agreement and any other Transaction Document to which Developer is a party or the rights of Sublandlord and Subtenant with respect to any of the Transaction Documents to which Developer is a party.

11.4 No Duty. The powers conferred on Subtenant under this Article 11 are solely to protect its interest in the Development Agreement, the O&M Agreement and the other Transaction Documents to which Developer is a party and shall not impose any duty upon it or the Sublandlord to exercise any such powers.

ARTICLE 12 ASSIGNMENT OF SUBLEASE

Subtenant shall not have the right to assign or transfer Subtenant's Interest or any portion thereof or any right or privilege appurtenant thereto, without the prior written consent of Sublandlord, which consent shall not be unreasonably withheld, conditioned or delayed; but subject in all cases to the terms and conditions with respect thereto set forth in the Bond Documents. Any attempt by Subtenant to assign without Sublandlord's consent shall be voidable by Sublandlord and, at Sublandlord's election, shall constitute an Event of Default under this Sublease. The consent by Sublandlord to any assignment shall not constitute a waiver of the necessity for such consent to any subsequent assignment, transfer, hypothecation or subleasing. Notwithstanding the forgoing, University may, without the consent of Sublandlord,

sublease or license portions of the Premises (a) for use by third-parties for office, conference and/or event space, and (b) to third-party operators for the operation of ancillary activities commonly associated with the support of students and faculty in an education setting, including, without limitation, cafes, bookstores, sundry stores, and restaurants so long as such operations are not in violation of any restrictions contained within the Transaction Documents. In the event of any assignment or sublease consented to or permitted under this Article 12, Subtenant shall at all times remain fully liable for all of its obligations set forth under this Sublease, including the obligation to pay Rent.

ARTICLE 13 INDEMNIFICATION

13.1 University Indemnity. Except to the extent caused by the acts or omissions of Sublandlord or any of the Sublandlord Indemnitees (defined below), and solely to the extent limited in accordance with NRS 41.0304 to 41.039, inclusive, Subtenant, to the extent permitted by Applicable Law, hereby releases and agrees to indemnify, defend and hold harmless Sublandlord and all of its officers, employees, directors, agents, and consultants (hereinafter collectively referred to as the “Sublandlord Indemnitees”) of and from any and all third-party claims, demands, liabilities, losses, costs, or expenses for any loss from bodily injury (including death), personal injury, property damage, expenses, taxes and attorneys’ fees (collectively “Claims”), caused by, growing out of, or otherwise happening in connection with the negligent acts or omissions of Subtenant or the Subtenant Indemnitees (as defined below). Subtenant will assert the defense of sovereign immunity as appropriate in all cases, including malpractice and indemnity actions. Subtenant’s indemnity obligation for actions sounding in tort is limited in accordance with the provisions of NRS 41.035.

13.2 Sublandlord Indemnity. Except to the extent caused by the acts or omissions of Subtenant or any of the Subtenant Indemnitees (defined below), Sublandlord to the extent permitted by Applicable Law, subject to Section 24.12, hereby releases and agrees to indemnify, defend and hold harmless Subtenant and all of its regents, officers, employees, directors, agents, and consultants (hereinafter collectively referred to as the “Subtenant Indemnitees”) of and from any and all Claims, caused by, growing out of, or otherwise happening in connection with the negligent acts or omissions of Sublandlord or the Sublandlord Indemnitees.

13.3 Survival. The obligations of Sublandlord and Subtenant under this Article 13 shall survive the expiration or earlier termination of this Sublease or any finding of invalidity or unenforceability thereof unless such finding expressly includes the provisions of this Article 13.

ARTICLE 14 POLICE SERVICES

The Premises shall be subject at all times during the Term to the jurisdiction of the University of Nevada, Reno Police Services and any other law enforcement agencies with jurisdiction.

ARTICLE 15 INSURANCE

Unless required in connection with the Bond Documents, Sublandlord shall not be required to maintain any insurance with respect to the Premises in connection with this Sublease. At all times throughout the Term, Subtenant shall maintain or cause to be maintained for the benefit of Sublandlord, Subtenant and Trustee (to the extent allowed under Applicable Law, as named insureds, as their respective interests may appear), all of the insurance coverages with respect to the Premises in accordance with Attachment C, attached hereto. The Subtenant will annually provide the Sublandlord, on the anniversary date of the Subtenant's insurance coverages, evidence of compliance with Attachment C attached hereto.

ARTICLE 16 DAMAGE AND DESTRUCTION

16.1 Damage or Destruction. Should the Premises be damaged or destroyed, in whole or in part, by fire, flood, earthquake, windstorm, snowstorm or other weather-related event, or by casualty, accident, war, riot, public disorder, acts authorized or unauthorized by the government or any other cause or happening (a "Casualty"), this Sublease shall remain in effect and Subtenant's obligations to pay Rent shall continue unabated.

16.2 Obligation to Restore. Subject to Section 16.3, Subtenant shall continue to use the Premises for educational and other legally permissible purposes, and shall be obligated to promptly restore or replace the Improvements to substantially the same condition thereof as existed prior to the event of such Casualty with such changes, alterations and modifications as may be desired by Subtenant and as will not impair the value or the character of the Project.

16.3 Application of Insurance Proceeds. Notwithstanding anything to the contrary set forth in Section 16.2, if the Net Proceeds of insurance with respect to the Casualty shall be equal to or in excess of \$25,000,000, Subtenant shall cause all such insurance proceeds to be paid to the Trustee and deposited and held in the Insurance Fund and Subtenant shall, within sixty (60) days from the date of such deposit, direct the Trustee to apply such amounts as provided in Section 7.01(c) of the Loan Agreement. Notwithstanding anything to the contrary set forth herein, once the Subtenant is in possession of the insurance proceeds described in this Section 16.3, if the Subtenant does not diligently pursue the restoration or replacement of the Improvements as described in Section 16.2 and in any event does not commence such restoration or replacement within one hundred and twenty (120) days of receipt of such insurance proceeds, then the Subtenant shall cause all such insurance proceeds to be paid to the Trustee and deposited and held in the Insurance Fund.

16.4 Optional Redemption.

16.4.1 If the Project shall have been destroyed or damaged by a Casualty that in the opinion of Subtenant expressed in a certificate furnished to the Issuer and the Trustee that (a) the Project cannot be reasonably restored within a period of eighteen (18) months from the date of the Casualty to the condition thereof immediately preceding the Casualty, or (B) the Project cannot be used for the purposes of which it was constructed for a period of eighteen (18)

consecutive months following the date of the Casualty or (C) the cost of restoration or replacement of the Project would exceed the Net Proceeds of insurance payable in respect of such destruction or damage, Subtenant shall have the option to cause Sublandlord to redeem in full all of the outstanding Bonds within one hundred eighty (180) days of such Casualty at a Redemption Price equal to one hundred percent (100%) of the principal amount thereof plus interest accrued to the redemption date in accordance with Section 3.04 of the Indenture.

16.4.2 In addition, in the event of partial damage or destruction of the Project, the Subtenant shall have the right to cause Sublandlord to redeem all or a portion of the outstanding Bonds within one hundred eighty (180) days of the Casualty in accordance with Section 3.04 of the Indenture to the extent that all or a portion of the Net Proceeds received by Subtenant are not applied to the restoration of the Project if Subtenant furnishes Issuer and Trustee a certificate stating (A) that the property forming a part of the Project that was partially damaged or destroyed is not essential to Subtenant's use or occupancy of the Project at substantially the same revenue-producing level prior to such Casualty; or (B) that the Project has been restored to a condition substantially equivalent to its condition prior to the partial damage or destruction; or (C) that the Subtenant has acquired improvements that are substantially equivalent to the property forming a part of the Project that was partially destroyed or damaged.

16.4.3 If no Bonds shall be outstanding, Subtenant shall be entitled to any remaining Net Proceeds.

16.5 Other. The provisions of this Sublease, including this Article 16, constitute an express agreement between Sublandlord and Subtenant with respect to any Casualty to all or any part of the Premises and any statute or regulation with respect to any rights or obligations concerning damage or destruction in the absence of an express agreement between the parties, and any other statute or regulation, now or hereafter in effect, shall have no application to this Sublease or any damage or destruction to all or any part of the Premises Notwithstanding anything else herein contained, the provisions of the Bond Documents shall control in all respects the receipt, handling, and application of any and all Net Proceeds (before any proceeds are delivered to Subtenant).

ARTICLE 17 CONDEMNATION

17.1 Taking. If, during the Term, the Premises, or any portion thereof or interest therein, shall be appropriated, taken or damaged by reason of the exercise of the power of eminent domain, whether by condemnation proceedings or otherwise, or any transfer thereof shall be made in avoidance of an exercise of the power of eminent domain (all of the foregoing being hereinafter referred to as a "Taking"), this Sublease shall remain in effect and Subtenant's obligations to pay Rent shall continue unabated. Subtenant shall promptly notify the Issuer and Trustee of any such Taking.

17.2 Application of Proceeds From a Taking. Notwithstanding anything to the contrary set forth herein, Subtenant shall cause the Net Proceeds of a Taking to be paid to the Trustee and deposited and held in the Condemnation Fund (as defined in the Indenture) and Subtenant shall,

within sixty (60) days from the date of such deposit, direct the Trustee to apply such amounts as provided in Section 7.02(b) of the Loan Agreement.

17.3 Optional Redemption.

17.3.1 In the event of a Taking of all of the Project, if in the opinion of Subtenant, expressed in a certificate furnished to the Sublandlord, the Issuer and the Trustee, (a) the Project cannot be reasonably restored within a period of eighteen (18) months from the date of Taking to substantially the condition thereof immediately preceding the Taking, or (B) it cannot be used for the purposes of which it was constructed for a period of eighteen (18) consecutive months from the date of Taking, or (C) the cost of restoration or replacement would exceed the Net Proceeds from a Taking, Subtenant shall have the option to cause Sublandlord to redeem in full all outstanding Bonds within one hundred eighty (180) days of such Taking at a Redemption Price equal to one hundred percent (100%) of the principal amount thereof plus interest accrued to the redemption date in accordance with Section 3.04 of the Indenture.

17.3.2 In the event of a partial Taking of the Project, the Subtenant shall have the right to cause Sublandlord to redeem all or a portion of the outstanding Bonds within one hundred eighty (180) days of the Taking in accordance with Section 3.04 of the Indenture to the extent that the Net Proceeds received by Subtenant are not applied to the restoration of the Project or the acquisition of substitute property in accordance with Section 3.04 of the Indenture and Section 7.02 of the Loan Agreement if Subtenant furnishes to Sublandlord, Issuer and Trustee a certificate stating (A) that the property forming a part of the Project that is the subject of the partial Taking is not essential to Subtenant's use or occupancy of the Project at substantially the same revenue-producing level prior to such Taking; or (B) that the Project has been restored to a condition substantially equivalent to its condition prior to the partial Taking; or (C) that the Subtenant has acquired improvements that are substantially equivalent to the property forming a part of the Project that was subject of the partial Taking.

17.3.3 If no Bonds shall be outstanding, Subtenant shall be entitled to any remaining Net Proceeds.

ARTICLE 18 ESTOPPEL CERTIFICATES

18.1 Execution and Delivery. No later than twenty (20) calendar days following receipt of written request therefor, Sublandlord and Subtenant will execute, acknowledge and deliver to the other promptly upon request, a certificate reasonably satisfactory to the recipient certifying as to the following:

18.1.1 Validity of Lease: that this Sublease is unmodified and in full force and effect (or, if there have been modifications, that this Sublease is in full force and effect, as modified, and stating the modifications);

18.1.2 Defaults by Subtenant: that no notice has been given by Sublandlord to Subtenant of any failure to comply under this Sublease that has not been cured, and to the best of its knowledge and belief, no Event of Default exists (or, if there has been any notice given or an Event of Default exists, describing the same); and

18.1.3 Other Matters. Such other matters as may be reasonably requested by the requesting party.

18.2 Reliance on Certificates. Certificates from Sublandlord and Subtenant pertaining to the same matters may be relied upon by the Issuer, Bond Trustee, any holder of a leasehold mortgage or beneficiary of a leasehold deed of trust, prospective bond trustee, any prospective assignee of an interest under this Sublease or by any prospective sublessee as to all or any portion of the Site.

ARTICLE 19 DISPUTE RESOLUTION

19.1 General. In the event of a dispute between the parties to this Sublease with respect to any Event of Default or alleged default by either party, such dispute shall be resolved by litigation initiated and maintained in the State of Nevada or federal courts located in Reno, Nevada.

19.2 Nonbinding Mediation.

19.2.1 Either party may request non-binding mediation of any dispute arising under this Sublease. The non-requesting party may decline the request in its discretion. If there is concurrence that any particular matter shall be mediated, the provisions of this Section shall apply. The costs of the mediator shall be divided equally between Sublandlord and Subtenant.

19.2.2 The mediator shall be a professional mutually acceptable to the parties who has no current or on-going relationship to either party. The mediator shall have full discretion as to the conduct of the mediation. Each party shall participate in the mediation to resolve the dispute until and unless the parties reach agreement with respect to the disputed matter or one party determines in its discretion that its interests are not being served by the mediation.

19.2.3 Mediation is intended to assist the parties in resolving disputes over the correct interpretation of this Sublease. No mediator shall be empowered to render a binding decision.

19.2.4 Nothing in this Section shall operate to limit, interfere with or delay the right of either party under this Article to commence judicial legal proceedings in respect of any dispute under this Sublease, whether in lieu of, concurrently with, or at the conclusion of any non-binding mediation.

19.3 Attorneys' Fees and Costs. In all disputes arising from or related to this Sublease, each party shall pay its own attorneys' fees and costs.

ARTICLE 20
EVENTS OF DEFAULT AND REMEDIES

20.1 Events of Default Defined. The following shall be “Events of Default” under this Sublease, and the terms “Event of Default” or “Default” shall mean, whenever they are used herein, any one or more of the following events:

20.1.1 Subtenant shall fail to pay any Base Sublease Payment, Administrative Expense Reimbursement or Additional Rent, or any portion thereof, and such failure continues for ten (10) days after written notice from Sublandlord.

20.1.2 Subtenant or Sublandlord, as applicable, shall fail to perform or cause to be performed any term, covenant, condition, or provision hereof (other than the nonpayment of Rent), and to correct such failure within thirty (30) days after written notice specifying such failure is given to such party. In the case of any such failure that cannot with due diligence be corrected within such thirty (30) day period but can be wholly corrected within a period of time not materially detrimental to the rights of the other party, it shall not constitute an Event of Default if corrective action is instituted by such party within the applicable period and diligently pursued until the failure is corrected.

20.1.3 Subtenant shall be adjudicated bankrupt.

20.1.4 A permanent receiver shall be appointed for Subtenant’s interest in the Premises and such receiver shall not be removed within ninety (90) days after notice from Sublandlord to Subtenant to obtain such removal.

20.1.5 Subtenant shall voluntarily take advantage of any debtor relief proceedings under any present or future law or shall become subject to any such involuntary proceedings and said involuntary proceedings shall not be dismissed within ninety (90) days after notice from Sublandlord to Subtenant to obtain such dismissal.

20.1.6 Subtenant shall make a general assignment for benefit of creditors.

20.1.7 The Premises or Subtenant’s effects or interests therein shall be levied upon or attached under process against Subtenant, and the same shall not be satisfied or dissolved within ninety (90) days after notice from Sublandlord to Subtenant to obtain satisfaction or dissolution thereof.

20.1.8 Subtenant or Sublandlord is in default under the Development Agreement beyond applicable notice and cure periods, which default results in a termination of the Development Agreement.

20.1.9 Subtenant or Sublandlord is in default under the Ground Lease beyond applicable notice and cure periods.

20.1.10 Any other event that is expressly stated to be an Event of Default elsewhere in this Sublease.

20.2 Remedies. Upon the occurrence of an Event of Default, the non-breaching party (the “Non-Breaching Party”), may pursue the following remedies, all subject to Sections 20.2.3 and 21.1 hereof:

20.2.1 Any remedies it may have under Applicable Law, each and all of which shall be cumulative and nonexclusive.

20.2.2 The Non-Breaching Party may, but shall not be obligated to, make any payment or perform or otherwise cure any obligation, provision, covenant or condition on the party of the party in default (the “Defaulting Party”) part to be observed or performed (and, as applicable, may enter the Premises for such purposes if needed).

20.2.3 It is acknowledged and agreed that upon an Event of Default, and notwithstanding anything to the contrary contained herein, the rights and obligations of the parties shall be subject to the rights and obligations of the parties and Trustee under the Direct Agreement – Sublease.

20.3 No Waiver. No waiver by the Non-Breaching Party of any violation or breach by the Defaulting Party of any of the terms, provisions and covenants herein contained shall be deemed or construed to constitute a waiver of any other or later violation or breach by the Defaulting Party of the same or any other of the terms, provisions, and covenants herein contained. Forbearance by the Non-Breaching Party in enforcement of one or more of the remedies herein provided upon a default by Defaulting Party shall not be deemed or construed to constitute a waiver of such default.

ARTICLE 21 EXPIRATION

21.1 No Early Termination by Subtenant; End of Term. Except as set forth in Section 21.2 and except as a result of an Event of Default under Section 20.1.8 which resulted in the termination of the Development Agreement, this Sublease shall not be terminated for any reason whatsoever by Subtenant until the principal of and premium, if any, and interest on the Bonds have been paid in full as provided in the Indenture, and all other liabilities of the Borrower accrued and to accrue under the Loan Agreement have been paid. Upon (i) the full payment and retirement of the Bonds, and all other liabilities of the Borrower accrued and to accrue under the Loan Agreement, or (ii) termination or expiration of the Ground Lease, the Term hereunder shall automatically end. It is acknowledged and agreed by the parties that this Sublease may be terminated by Sublandlord due to an Event of Default by Subtenant in accordance with Section 20.2 hereof; provided, however that the term of the Ground Lease shall not be affected, changed or otherwise impacted as a result of such termination by Sublandlord or termination by the Subtenant as a result of an Event of Default under Section 20.1.8 and the Ground Lease shall continue in full force and effect pursuant to the terms thereof.

21.2 Fiscal Fund-Out Termination. Notwithstanding any other provision, term or condition of this Sublease to the contrary, Subtenant, pursuant to Article 9, Section 3 of the Nevada Constitution, or any applicable law enacted by the Nevada legislature, may terminate this Sublease in the event any funding authority fails to appropriate funds to enable the

obligations of this Sublease to be fulfilled. If for any reason Subtenant's funding from state and/or federal sources is not appropriated or is withdrawn, limited, or impaired, such that sufficient funding is not available to meet its financial obligations under this Sublease, then Subtenant may terminate this Sublease without penalty ("Fiscal Fund-Out Termination"). Such termination shall be effective thirty (30) days after receipt by Sublandlord (who shall be obligated to provide a copy thereof to Trustee and the Issuer) of written notice from Subtenant to terminate pursuant to this Section 21.2. Subtenant shall not be considered in default of any provision, term or condition of this Sublease by terminating this Sublease pursuant to this Section 21.1. Upon any such Fiscal Fund-Out Termination, the Term of this Sublease shall terminate as provided herein; provided, however, the term of the Ground Lease shall not be affected, changed or otherwise impacted as a result of a Fiscal Fund-Out Termination and the Ground Lease shall continue in full force and effect.

21.3 Prepaid Items Assigned. Except in the event of a Fiscal Fund-Out Termination, upon the end of the Term, all expense items prepaid by Sublandlord or Developer with respect to constructing, operating, maintaining, and protecting the Premises, including, but not limited to, prepaid insurance premiums, and any tax and utility deposits, shall inure to the benefit of and become the property of Subtenant, and to this extent Sublandlord does hereby transfer, assign and convey any such prepaid expense items, and Sublandlord's interest in such prepaid expense items of Developer, to Subtenant, as Landlord under the Ground Lease. Notwithstanding the foregoing, in the event of a Fiscal-Fund Out Termination, Sublandlord shall be entitled to all expense items prepaid by Sublandlord or Developer with respect to constructing, operating, maintaining, and protecting the Premises, including, but not limited to, prepaid insurance premiums, and any tax and utility deposits, shall inure to the benefit of and become the property of Sublandlord.

21.4 Amounts Remaining in Funds and Accounts. Except in the event of a Fiscal Fund-Out Termination, upon the end of the Term, any amounts remaining in any fund, account or reserve created in connection with this Sublease or otherwise related to the maintenance and repair of or the management of the Premises, and any amounts transferred to Sublandlord pursuant to the terms of the Indenture, shall inure to the benefit of and become the property of Subtenant, and to this extent Sublandlord does hereby transfer, assign, and convey any such funds, as well as its interest in any such funds held by Developer, to Subtenant. Notwithstanding the foregoing, in the event of a Fiscal-Fund Out Termination, Sublandlord shall be entitled to any amounts remaining in any fund, account or reserve created in connection with this Sublease or otherwise related to the maintenance and repair of or the management of the Premises, and any amounts transferred to Sublandlord pursuant to the terms of the Indenture, shall inure to the benefit of and become the property of Sublandlord.

21.5 Other Documents and Intangibles. Except in the event of a Fiscal Fund-Out Termination, upon the end of the Term, Sublandlord shall be deemed to have automatically transferred to Subtenant, as of the Termination Date, Sublandlord's interest in all documents and agreements pertaining to or useful in the ownership, operation and maintenance of the Premises, together with all contracts, contract rights, warranties and other intangibles related to, or useful in, the ownership, operation or maintenance of the Premises. Notwithstanding the foregoing, in the event of a Fiscal-Fund Out Termination, Sublandlord shall retain all interest in all documents and agreements pertaining to or useful in the ownership, operation and maintenance of the

Premises, together with all contracts, contract rights, warranties and other intangibles related to, or useful in, the ownership, operation or maintenance of the Premises.

ARTICLE 22 NOTICES

22.1 Addresses. All notices, certificates, demands, requests, or other communications hereunder shall be sufficiently given and shall be deemed given when mailed by certified mail, postage prepaid, return receipt requested, by nationally recognized overnight courier, by personal delivery addressed as follows:

If to Subtenant: NCCD – UNR Properties LLC
 Attn: President
 2630 Exposition Boulevard, Suite 213
 Austin, Texas 78703
 Telephone: (512) 322-9650
 Email: geden@nccdevelopment.org

 With a copy to:
 Holland & Knight LLP
 Attn: Gerald Mace
 511 Union Street, Suite 2700
 Nashville, Tennessee 37219
 Telephone: (615) 850-8912
 Email: gerald.mace@hkllaw.com

If to Sublandlord: University of Nevada, Reno
 Attn: Office of Community & Real Estate Management
 1664 N. Virginia St./MS 243
 Reno Nevada 89557-0243

 With a copy to:

 University of Nevada, Reno
 Attn: General Counsel
 1664 N. Virginia St./MS 550
 Reno Nevada 89557-0550

22.2 Changes. Either party hereto may, by notice given to each of the other, designate any additional or different addresses to which subsequent notices, certificates, demands, requests, or other communications shall be sent.

22.3 Effectiveness. Notwithstanding anything contained herein to the contrary, any notice required to be given by Sublandlord or Subtenant hereunder shall be deemed to have been given and shall be effective as of the date such notice is received or refused reflected on said notice. All notices, certificates, demands, requests, or other communications made by either

party to the other which are required or permitted by the provisions of this Sublease shall be in writing.

ARTICLE 23
SUBMISSION OF MATTERS TO SUBLANDLORD FOR APPROVAL AND
SUBLANDLORD RESERVED RIGHTS

23.1 Sublandlord Approval. Any matter which must be submitted to and consented to or approved in writing by Sublandlord or any matter which must be submitted to Sublandlord which may become effective if not denied by Sublandlord, as required under this Sublease, shall be submitted to Sublandlord in accordance with Section 22.1 hereof. Any review by Sublandlord of any matter submitted to Sublandlord is for Sublandlord's own convenience and purpose only. By undertaking such review, Sublandlord does not obtain or have any liability to Subtenant or any other person, including, without limitation, the insurers and lenders of Subtenant.

23.2 Reserved Rights. Notwithstanding anything to the contrary contained herein, the Sublandlord retains the right to perform the following actions and functions in connection with the Premises:

23.2.1 Those actions with respect to compliance with federal tax and securities law, and the reporting requirements thereunder, that the Sublandlord is authorized or obligated to perform pursuant to, and in accordance with, the provisions of the Bond Documents, including communication with the Issuer and the Trustee regarding the performance of those obligations. The Subtenant agrees to furnish such information as may be reasonably requested by the Sublandlord to assist Sublandlord in fulfilling those obligations.

23.2.2 Those actions with respect to monitoring compliance of the Project and the Bonds with the Bond Documents that the Sublandlord is authorized or obligated to perform pursuant to, and in accordance with, the provisions of the Bond Documents.

23.2.3 Engagement of an independent auditor to prepare, and oversight of the preparation of, annual audits of the Annual Budget (as defined in the Loan Agreement).

23.2.4 The Subtenant agrees to provide Sublandlord such information regarding the Subtenant and the Premises as is reasonably necessary or required by the Bond Documents or Applicable Law to be posted on the Electronic Municipal Market Access website maintained by the Municipal Securities Rulemaking Board (www.emma.msrb.org).

23.2.5 Those actions with respect to the calculation of arbitrage rebate payments in connection with the Tax-Exempt Bonds that the Sublandlord is authorized or obligated to perform pursuant to, and in accordance with, the provisions of the Bond Documents.

23.2.6 The engagement and oversight of the activities of the Sublandlord's insurance consultant to ensure the maintenance of required insurance coverages at commercially-reasonable costs; provided, however, that the insurance requirements set forth in the Ground Lease and this Sublease shall not change.

23.2.7 Those actions with respect to the direction of the investment of the proceeds of the Bonds that the Sublandlord is authorized or obligated to perform pursuant to, and in accordance with, the provisions of the Bond Documents.

23.2.8 Oversight of and participation in any legal proceedings or legal matters regarding the compliance of the Bonds and the Project with the Bond Documents, to the extent that the Sublandlord is authorized or obligated to oversee or participate in such proceedings and matters pursuant to, and in accordance with, the provisions of the Bond Documents; provided, however, that to the extent that such proceedings and matters materially and adversely affect: (i) Subtenant's rights under this Sublease or as Landlord under the Ground Lease; or (ii) the Subtenant's operation of the Premises, the Subtenant shall have the exclusive right to oversee and direct its participation in any such proceedings or matters.

23.2.9 Those actions with respect to responding to inquiries from rating agencies, the Trustee, and the Issuer that the Sublandlord is authorized or obligated to perform pursuant to, and in accordance with, the provisions of the Bond Documents.

ARTICLE 24 MISCELLANEOUS

24.1 No Waiver of Rights by Sublandlord. No failure of Sublandlord to exercise any power given Sublandlord hereunder or to insist upon strict compliance by Subtenant with its undertakings, duties and obligations hereunder, and no custom or practice of the parties hereto at variance with the provisions hereof shall constitute a waiver of Sublandlord's right to demand exact compliance with the provisions contained in this Sublease.

24.2 Rights are Cumulative. All rights, powers, and privileges conferred herein upon both parties hereto shall be cumulative.

24.3 Provisions are Binding Upon Assigns and are Real Covenants. Each of the provisions of this Sublease shall apply to, extend to, be binding upon and inure to the benefit or detriment of not only the parties hereto, but also the legal representatives, successors and permitted assigns of Sublandlord and Subtenant hereto, and shall be deemed and treated as real covenants running with the Site during the Term. The parties further acknowledge and agree that the Trustee and its successors and permitted assigns, shall be deemed third party beneficiaries hereunder. Whenever a reference to the parties hereto is made, such reference shall be deemed to include the legal representatives, successors and permitted assigns of said party, the same as if in each case expressed.

24.4 Separate Rights and Obligations. The rights and obligations of the Subtenant in its capacity as the Subtenant under this Sublease and the rights and obligations of the Sublandlord as the Sublandlord under this Sublease shall be separate from and shall not be limited by, or be deemed a limitation on, the rights and obligations of the Sublandlord in its capacity as Tenant under the Ground Lease or the rights and obligations of the Subtenant in its capacity as Landlord under the Ground Lease.

24.5 Applicable Law and Venue. This Sublease, and all matters arising out of or relating to this Sublease Lease shall be governed, construed, performed and enforced in

accordance with the Applicable Law of the State of Nevada (excluding principles of conflict of law). The exclusive venue for any and all disputes arising out of or in any way related to this Sublease shall be the state or federal courts located in Washoe County, Reno, Nevada.

24.6 All Genders and Numbers Included. Whenever the singular or plural number, or masculine, feminine, or neuter gender is used in this Sublease, it shall equally apply to, extend to, and include the other.

24.7 Invalidity of Provision or Part Thereof. In the event any provision, or any portion of any provision of this Sublease is held invalid, the other provisions of this Sublease and the remaining portion of said provision, shall not be affected thereby and shall continue in full force and effect.

24.8 Time is of the Essence. All time limits stated in this Sublease are of the essence of this Sublease.

24.9 Section Captions are to be Disregarded. The captions of the numbered sections of this Sublease are for purposes of identification and convenience only and are to be completely disregarded in construing this Sublease.

24.10 Entire Agreement Contained Herein. The making, execution and delivery of this Sublease by Subtenant has not been induced by any representations, statements, covenants or warranties by Sublandlord except for those contained in the Transaction Documents. This Sublease and the other Transaction Documents constitute the full, complete and entire agreement between and among the parties hereto; no agent, employee, officer, representative or attorney of the parties hereto has authority to make, or has made, any statement, agreement, representation or contemporaneous agreement, oral or written, in connection herewith modifying, adding to or changing the provisions of this Sublease. No amendment of this Sublease shall be binding unless such amendment shall be in writing and signed by both parties hereto.

24.11 No Partnership or Agency. Nothing in this Sublease is intended, or shall in any way be construed, so as to create any form of partnership or agency relationship between the parties. The parties hereby expressly disclaim any intention of any kind to create any partnership or agency relationship between themselves. Nothing in this Sublease shall be construed to make either party liable for any of the indebtedness of the other, except as specifically provided herein.

24.12 Limitation of Liability. It is expressly understood and agreed that notwithstanding anything in this Sublease to the contrary, the liability of Sublandlord hereunder (including, but not limited to its indemnity obligations) and any recourse by Subtenant against Sublandlord (including, but not limited to its indemnity obligations) shall be limited to the sum of an amount that is equal to the interest of Sublandlord in the Premises plus any Claims covered under available insurance.

24.13 Waiver of Consequential Damages. Except with respect to either party's indemnification obligations under Article 13, to the maximum extent permitted by Applicable Law, Sublandlord and Subtenant each waive all claims against each other, and in no event will either party be liable or responsible to the other party, for any type of incidental, punitive, special, indirect, or consequential damages, including but not limited to, lost revenue or lost

profits, even if advised of the possibility of such damages, arising under theory of contract, tort (including negligence), strict liability or otherwise. This mutual waiver is applicable, without limitation other than each party's indemnification obligations under Article 13, to all consequential damages due to either parties' termination of this Sublease in accordance with its terms.

24.14 Recordation of Memorandum of Sublease. Upon the request of either party, Sublandlord and Subtenant agree that the parties shall execute, seal, acknowledge and deliver, in recordable form, a memorandum of sublease setting forth the basic terms hereof, and that said memorandum of sublease shall be recorded by the Subtenant at the expense of the Sublandlord in the appropriate records of Washoe County, Nevada.

24.15 Counterparts. This Sublease may be executed simultaneously in two or more counterparts, each of which shall be deemed original and all of which, when taken together, shall constitute one in the same document. The signature of any party to any counterpart shall be deemed a signature too, and may be appended to, any other counterpart. The words "execution", "executed", "signed" and "signature" and words of like import in this Sublease shall include images of manually executed signatures transmitted by facsimile or other electronic format (including, without limitation, ".pdf", ".tif" or ".jpg") and other electronic signatures (including, without limitation, DocuSign and AdobeSign). The use of electronic signatures and electronic records (including, without limitation, any contract or other record created, generated, sent, communicated, received or stored by electronic means) shall be of the same legal effect, validity and enforceability as a manually executed signature or use of a paper-based recordkeeping system to the fullest extent permitted by Applicable Law, including, without limitation, the Electronic Signatures in Global and National Commerce Act, any state law based on the Uniform Electronic Transactions Act and the Uniform Commercial Code.

24.16 Preservation of Tax Status of Tax-Exempt Bonds. Sublandlord and Subtenant each agree to not take any action with respect to the Premises that would adversely affect the exclusion of the interest payable on the Tax-Exempt Bonds from gross income for Federal income tax purposes, or would otherwise result in a breach of any representations, conditions, or covenants of Subtenant or Sublandlord as set forth in the Bond Documents.

24.17 Submission of Sublease. Submission of this instrument for examination or signature by Subtenant does not constitute a reservation of or an option for sublease, and it is not effective as a sublease or otherwise until execution and delivery by both Sublandlord and Subtenant.

24.18 Brokers. The parties to this Sublease warrant to each other that neither party dealt with any brokers or finders in connection with the consummation of this Sublease. In the event any broker, agent or finder makes a claim, the party through whom such claim is made shall be solely responsible for any and all claims or liabilities for brokerage commissions or finder's fees arising out of that party's acts in connection with this Sublease to anyone.

24.19 Incorporation. The Attachments attached hereto are hereby incorporated by this reference into this Sublease.

24.20 Authority. Each individual executing this Sublease on behalf of his or her respective party represents and warrants that he or she is duly authorized to execute and deliver this Sublease on behalf of said entity in accordance with the governing documents of such entity, and, subject to the condition precedent in Section 24.28 below, that upon full execution and delivery this Sublease is binding upon said entity in accordance with its terms.

24.21 Drafting. In the event of a dispute between any of the parties hereto over the meaning of this Sublease, both parties shall be deemed to have been the drafter hereof, and any Applicable Law that states that contracts are construed against the drafter shall not apply.

24.22 No Third Party Beneficiaries. Except as otherwise expressly stated herein, nothing in this Sublease is intended or shall be construed to confer upon any person other than the Trustee, the Issuer, and the parties hereto any legal or equitable rights or remedies under or by reason of this Sublease or any provision contained herein.

24.23 No Merger. If under any circumstances both Sublandlord's and Subtenant's estates in the Site, or any portions thereof, become vested in the same owner, this Sublease nevertheless shall not be extinguished by application of the doctrine of merger except until the principal of and premium, if any, and interest on the Bonds has been paid or is deemed paid within the meaning of the Indenture.

24.24 Reasonable Expenditures. Any expenditure by a party permitted or required under this Sublease, for which such party is entitled to demand and does demand reimbursement from the other party, shall be limited to the fair market value of the goods and services involved, shall be reasonably incurred, and shall be substantiated by documentary evidence.

24.25 Survival. All representations, obligations, indemnities, warranties, covenants, conditions and agreements contained in this Sublease which are either expressed as surviving the expiration or earlier termination of this Sublease or, by their nature, are to be performed or observed, in whole or in part, after the termination or expiration of this Sublease, shall survive the termination or expiration of this Sublease.

24.26 Quiet Enjoyment. Provided Subtenant shall pay the Base Sublease Payment, Additional Rent, and other expenses required to be paid by Subtenant as provided herein and keep and perform all of the terms and obligations hereof, Subtenant shall peaceably possess and quietly enjoy the Premises without hindrance or interruption, subject only to the terms hereof, and Applicable Law.

24.27 Reservation. Nothing contained in this Sublease shall be construed to waive or limit University's right to assert the defense of sovereign immunity, which defense is hereby expressly reserved, nor to waive or limit the protections afforded to University under NRS 41.0305 to 41.039.

24.28 Contingent on Board of Regents' Approval. Effectiveness of this Sublease is contingent upon approval by the Board of Regents of the Nevada System of Higher Education in their sole and absolute discretion. If the Board of Regents, in their sole and absolute discretion,

do not approve the terms hereof, this Sublease shall be deemed null and void without the necessity of further documentation and shall be deemed to be of no binding effect whatsoever.

*Remainder of page intentionally left blank.
Signatures on the following page.*

WHEREFORE, the parties have executed this Sublease as of the date first above written.

Sublandlord

NCCD- UNR PROPERTIES LLC,
a Nevada limited liability company

By _____
Name: Charles G. Eden
Title: President

Subtenant

**BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON
BEHALF OF THE UNIVERSITY OF NEVADA, RENO,**

Recommended by:

Brian Sandoval
President, University of Nevada, Reno

Date: _____

Approved by:

Dale Erquiaga
Acting Chancellor,
Nevada System of Higher Education

Date: _____

ATTACHMENT A-1

LEGAL DESCRIPTION OF SITE

[Attached]

Attachment A-1

EXHIBIT "A"

All that certain real property situate within a portion of the Southeast one-quarter (SE1/4) of Section 2, Township 19 North, Range 19 East, M.D.M., Washoe County, State of Nevada, being a portion of all that real property described in Deed Document No. 4987441 recorded December 31, 2019; Deed Document No. 4184259 recorded December 13, 2012; Deed Document No. 4586772 recorded May 5, 2016; Deed Document No. 4689119 recorded March 22, 2017; Deed Document No. 4184064 recorded January 13, 2012 and Deed Document No. 5135029 recorded January 29, 2021 together with all that real property described in Deed Document No. 3051779 recorded June 10, 2004; Deed Document No. 4606191 recorded July 1, 2016; Deed Document No. 2969488 recorded December 16, 2003, and together with a portion of the abandoned alleyway described in Deed Document No. 5073326, recorded September 4, 2020, Official Records of Washoe County, State of Nevada, being more particularly described as follows:

BEGINNING at the northeasterly corner of said Parcel described in said Deed Document No. 3051779, also being a point on the southerly right-of-way line of East 9th Street and the westerly right-of-way line of University Way;

THENCE along said westerly right-of-way line, South 12°57'58" East, 370.00 feet to a point on the northerly right-of-way line of East 8th Street;

THENCE along said northerly right-of-way line, South 77°02'02" West, 272.48 feet to a point on the easterly right-of-way line of North Virginia Street as described in Quitclaim Deed Document No. 5135029 recorded January 29, 2021;

THENCE along said easterly right-of-way line, the following three (3) courses and distances:

1. North 58°00'14" West, 7.19 feet;
2. North 13°00'14" West, 14.69 feet;
3. North 03°32'30" West, 69.35 feet;

THENCE departing said easterly right-of-way line, North 76°59'46" East, 78.16 feet to the beginning of a curve to the left having a radius of 48.50 feet;

THENCE along said curve at a distance of 76.18 feet, and through a central angle of 90°00'00";

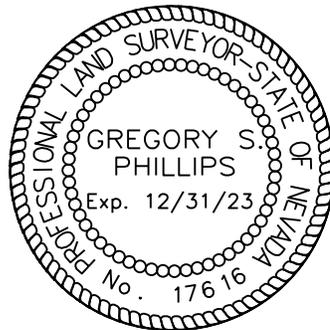
THENCE North 13°00'14" West, 233.25 feet to a point on the southerly right-of-way line of East 9th street;

THENCE along said southerly right-of-way line, North 77°02'30" East, 139.75 feet to the **POINT OF BEGINNING**, and end of this description.

Containing 63,946 square feet, more or less.

The Basis of Bearings for this description the Nevada Coordinate System of 1983, West Zone, NAD 83/94, modified to ground using the combined scale factor of 1.000197939.

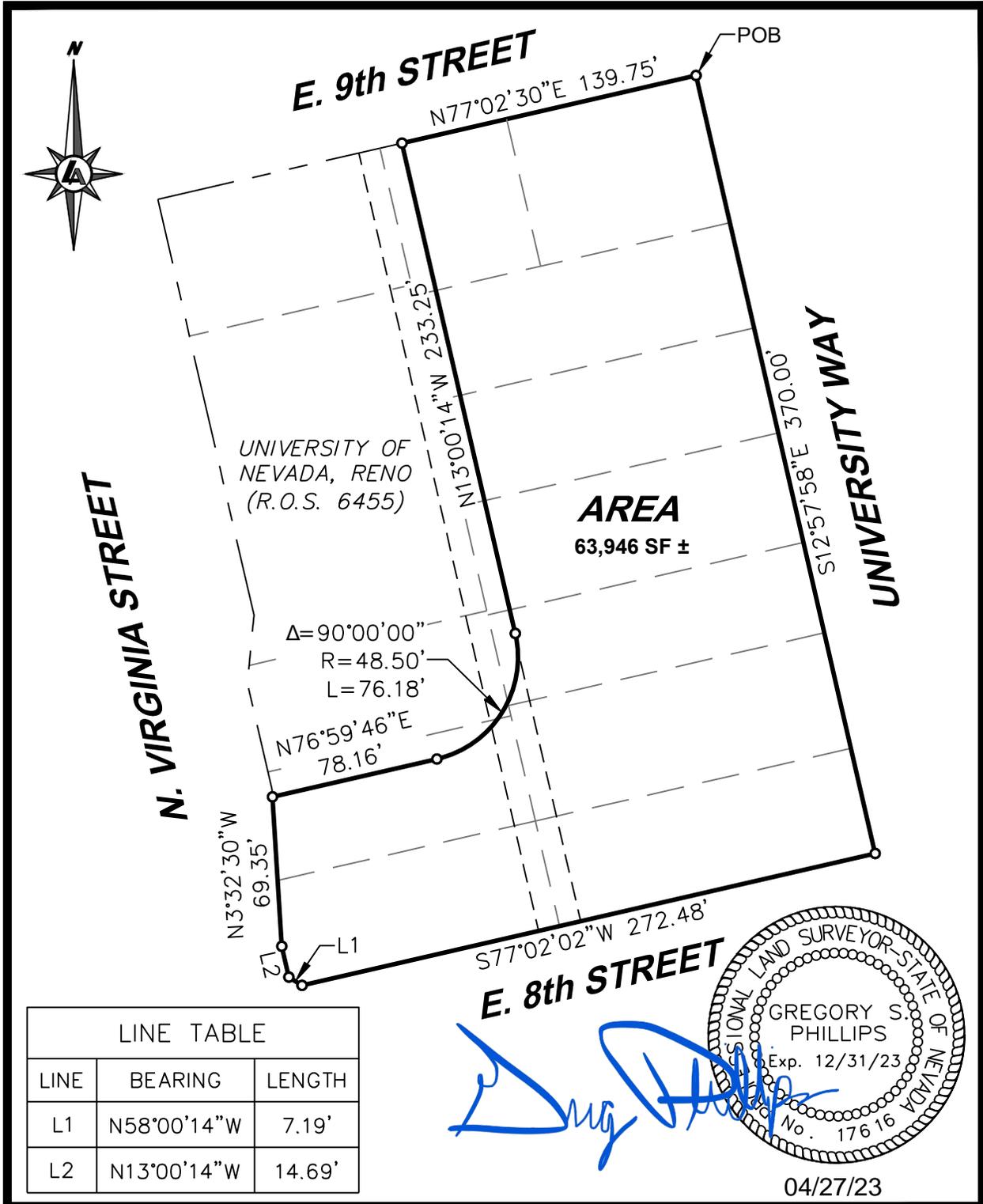
Refer to Exhibit "B" attached hereto and by this reference made a part of.



A handwritten signature in blue ink, appearing to read "Greg Phillips", written in a cursive style.

04/27/23

Prepared by:
Lumos & Associates, Inc.
Gregory S. Phillips, P.L.S. 17616
308 N. Curry Street
Suite 200
Carson City, NV 89703



LINE TABLE		
LINE	BEARING	LENGTH
L1	N58°00'14"W	7.19'
L2	N13°00'14"W	14.69'

Gregory S. Phillips

PROFESSIONAL LAND SURVEYOR—STATE OF NEVADA
 GREGORY S. PHILLIPS
 Exp. 12/31/23
 No. 17616

04/27/23

LUMOS
 & ASSOCIATES 
 308 N. CURRY ST.,
 SUITE 200
 CARSON CITY, NV 89703
 TEL (775) 883-7077

EXHIBIT "B"
UNIVERSITY OF NEVADA, RENO
PORTION OF SEC. 2, T.19N, R.19E, M.D.M.

RENO **NEVADA**

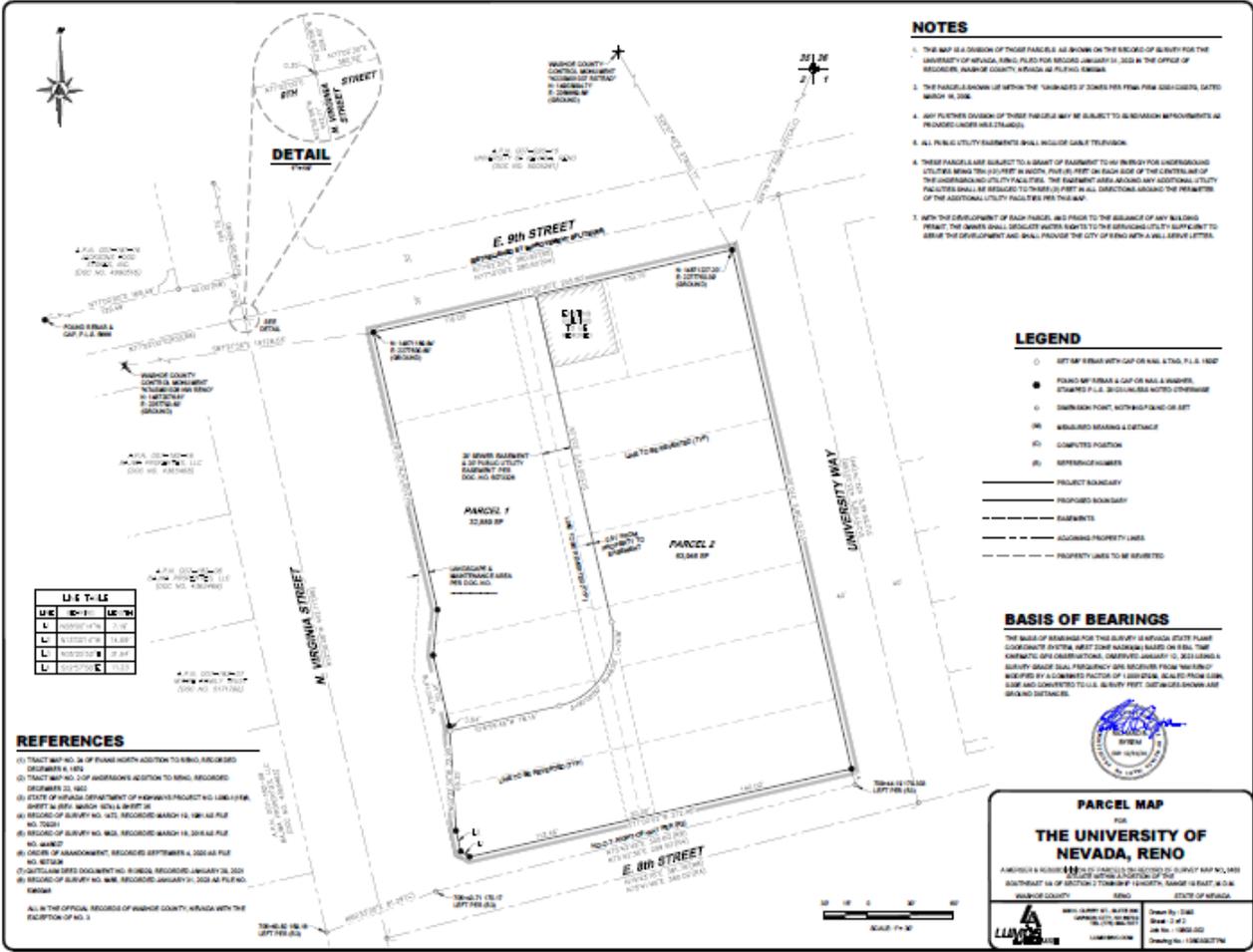
Date: 04/2023
 Scale: 1" = 70'
 Job No: 10803.002
 Drawn By: DMS

ATTACHMENT A-2

SITE MAP

[Attached]

Attachment A-2



NOTES

1. THE MAP IS A DIVISION OF THOSE PARCELS AS SHOWN ON THE RECORDS OF SURVEY FOR THE UNIVERSITY OF NEVADA, RENO, FILED FOR RECORD JANUARY 19, 2024 IN THE OFFICE OF RECORDS, WASHINGTON COUNTY, NEVADA AS PLAT NO. 8084A.
2. THE PARCELS SHOWN ARE WITHIN THE UNINCORPORATED TOWN OF RENO FROM 2005 CONTROL, DATED MARCH 18, 2006.
3. ANY FURTHER DIVISION OF THESE PARCELS MAY BE SUBJECT TO SUBDIVISION REQUIREMENTS AS PROVIDED UNDER HRS 20-200.
4. ALL PUBLIC UTILITY EASEMENTS SHALL INCLUDE GASET TOLERANCE.
5. THESE PARCELS ARE SUBJECT TO EASEMENT OF EASEMENT TO ANY PUBLIC OR UNDERGROUND UTILITIES BEING THE (2) FEET TO EACH SIDE OF THE CENTERLINE OF THE UNDERGROUND UTILITY FACILITIES. THE EASEMENT AREA AROUND ANY ADDITIONAL UTILITY FACILITIES SHALL BE EASED TO THREE (3) FEET IN ALL DIRECTIONS AROUND THE PERIMETER OF THE ADDITIONAL UTILITY FACILITIES PER THE MAP.
6. WITH THE DEVELOPMENT OF EACH PARCEL, AND PRIOR TO THE ISSUANCE OF ANY BUILDING PERMIT, THE OWNER SHALL DELEGATE RIGHTS TO THE SERVICES UTILITY SUPPLYMENT TO SERVE THE DEVELOPMENT AND SHALL PROVIDE THE CITY OF RENO WITH A WELL SERVED LETTER.

LEGEND

- SETBACK BOUNDARY ON WALL & TYPICAL P.L.S. MARK
- POINTS BY BEARING & DISTANCE OR BEARING & DISTANCE FROM A POINT
- SURVEY POINT WITH BEARING AND DISTANCE
- (M) MEASURED BEARING & DISTANCE
- (C) COMPUTED POSITION
- (R) REFERENCE NUMBER
- PROJECT BOUNDARY
- - - PROPOSED BOUNDARY
- - - EASEMENTS
- - - ADJOINING PROPERTY LINES
- - - PROPERTY LINES TO BE SURVEYED

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS NEVADA STATE PLUMB COORDINATE SYSTEM (NAD 83) ZONE 10N. BEARINGS ARE BASED ON THE TRUE MAGNETIC AND OBSERVATIONS, OBSERVED JANUARY 10, 2024 USING A SURVEY GRADE DUAL FREQUENCY GPS RECEIVER FROM THE SURVEY POINTS IDENTIFIED BY A CORNERED PIERCE OF 1/2" DIAMETER, BEARING FROM CORNER, GUM AND CONVERTED TO U.S. SURVEY FEET. DISTANCES SHOWN ARE BEARING DISTANCES.



PARCEL MAP
FOR
THE UNIVERSITY OF NEVADA, RENO

APPROVED & RECORDED IN THE OFFICE OF THE COUNTY CLERK, WASHINGTON COUNTY, NEVADA, ON JANUARY 19, 2024, AT 10:00 AM. PLAT NO. 8084A.

WASHINGTON COUNTY	RENO	STATE OF NEVADA
APPROVED BY: JAMES W. HARRIS	Drawn By: CMB	
REGISTERED PROFESSIONAL SURVEYOR	Scale: 2" = 1'	
NO. 10000	DATE: 01/19/2024	
COMMISSION	Drawing No.: 100000276	

U.C.	U.C.	U.C.
1	2	3
4	5	6
7	8	9
10	11	12

REFERENCES

- (1) TRACT MAP NO. 36 OF PLUMB NORTH ADDITION TO RENO, RECORDED DECEMBER 8, 1922.
 - (2) TRACT MAP NO. 2 OF ADDITIONS ADDITION TO RENO, RECORDED DECEMBER 22, 1922.
 - (3) STATE OF NEVADA DEPARTMENT OF HIGHWAYS PROJECT NO. LHM 1174A, SHEET 18 OF 18, MARCH 2011, SHEET 18.
 - (4) RECORD OF SURVEY NO. 1421, RECORDED MARCH 14, 2004 AS FILE NO. 10291.
 - (5) RECORD OF SURVEY NO. 804, RECORDED MARCH 14, 2004 AS FILE NO. 80402.
 - (6) ORDER OF ASSIGNMENT, RECORDED SEPTEMBER 4, 2004 AS FILE NO. 80738.
 - (7) CITIES AND VILLAGES DOCUMENT NO. 8084A, RECORDED JANUARY 26, 2024.
 - (8) RECORD OF SURVEY NO. 8084A, RECORDED JANUARY 26, 2024 AS FILE NO. 8084A.
- ALL IN THE OFFICIAL RECORDS OF WASHINGTON COUNTY, NEVADA WITH THE EXCEPTION OF NO. 3.

ATTACHMENT B

PAYMENT SCHEDULE

(This Schedule is Projected Payments Based on Pro-Forma)

<i>Monthly</i>	
Date	Base Sublease Payments (in the thousands & rounded)
1-Jul-23	\$ -
1-Aug-23(the " Base Sublease Payment Commencement Date ")	\$ 992.47
1-Sep-23	\$ 992.47
1-Oct-23	\$ 992.47
1-Nov-23	\$ 992.47
1-Dec-23	\$ 992.47
1-Jan-24	\$ 823.40
1-Feb-24	\$ 823.40
1-Mar-24	\$ 823.40
1-Apr-24	\$ 823.40
1-May-24	\$ 823.40
1-Jun-24	\$ 823.40
1-Jul-24	\$ 860.90
1-Aug-24	\$ 860.90
1-Sep-24	\$ 860.90
1-Oct-24	\$ 860.90
1-Nov-24	\$ 860.90
1-Dec-24	\$ 860.90
1-Jan-25	\$ 822.51
1-Feb-25	\$ 822.51
1-Mar-25	\$ 822.51
1-Apr-25	\$ 822.51
1-May-25	\$ 822.51
1-Jun-25	\$ 822.51
1-Jul-25	\$ 837.68
1-Aug-25	\$ 837.68
1-Sep-25	\$ 837.68
1-Oct-25	\$ 837.68
1-Nov-25	\$ 837.68
1-Dec-25	\$ 837.68
1-Jan-26	\$ 837.68
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1-Mar-26	\$ 837.68
1-Apr-26	\$ 837.68

1-May-26	\$	837.68
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1-Aug-51	\$	837.68
1-Sep-51	\$	837.68
1-Oct-51	\$	837.68
1-Nov-51	\$	837.68
1-Dec-51	\$	837.68

1-Jan-52	\$	837.68
1-Feb-52	\$	837.68
1-Mar-52	\$	837.68
1-Apr-52	\$	837.68
1-May-52	\$	837.68
1-Jun-52	\$	837.68
1-Jul-52	\$	837.68
1-Aug-52	\$	837.68
1-Sep-52	\$	837.68
1-Oct-52	\$	837.68
1-Nov-52	\$	837.68
1-Dec-52	\$	837.68
1-Jan-53	\$	837.68
1-Feb-53	\$	837.68
1-Mar-53	\$	837.68
1-Apr-53	\$	837.68
1-May-53	\$	837.68
1-Jun-53	\$	837.68
1-Jul-53	\$	-
Total		301,464

ATTACHMENT C

INSURANCE REQUIREMENTS

C.1. University's Insurance. At all times throughout the Term of this Sublease, University, at its sole cost and expense, shall maintain or cause to be maintained, the following insurance coverages:

C.1.1. Liability. A self-insurance program in accordance with and sufficient to cover the University's liability under the provisions of NRS Chapter 41, as amended from time to time;

C.1.2. Excess. An excess liability policy in an amount determined annually by the State of Nevada. Such policy, shall, if permitted by the State of Nevada, name Sublandlord as an additional insured;

C.1.3. Premises Liability. University shall obtain and maintain a premises liability insurance policy for the Premises, in an amount sufficient to cover the difference between the University's statutory liability limits and the self-insured retention amount of the excess liability insurance policy required under Section C.1.2 of this Attachment C; provided, that in all cases not to exceed a Five Million U.S. Dollars (\$5,000,000.00) annual policy limit. The policy required under this Section C.1.3 shall name both University and Sublandlord as named insureds;

C.1.4. Property. University shall obtain and maintain an all risk property insurance policy, insuring loss or damage to the Premises. The amount of such insurance shall be equal to the full replacement costs of the Premises, as the same shall exist from time to time. Such policy shall insure against physical loss or damage, including the perils of fire, flood and earthquake and include coverage for any additional costs related to debris removal and related standard extra expenses. University shall maintain sufficient funds to cover any self-insured retention amounts under the property policy, and shall be solely responsible for any related deductibles.

C.1.5. University shall be responsible to provide property insurance on its contents within the Premises; and

C.1.6. Workers Compensation. University shall maintain workers compensation insurance as required by NRS 616B.627, and employer's liability insurance in an amount not less than One Million U.S. Dollars (\$1,000,000.00).

C.2. Waiver of Subrogation. All insurance policies obtained and maintained as required under Section C.1 of this Attachment C shall include a waiver of subrogation in favor of the Sublandlord.

C.3. Sublandlord's Insurance. University insurance hereunder shall be primary and non-contributory to any insurance carried by the Sublandlord. Any additional insurance carried by Sublandlord shall not reduce the insurance carried by University, nor cause Sublandlord to become a coinsurer under the insurance carried by University under this Sublease.

C.4. Policy Form, Content, Insurer. All or any portion of the coverages University is

Attachment C, 1

required to maintain under this Attachment C may be maintained under a program of self-insurance or under policies that include self-insured retentions or deductibles larger than those typically carried by similarly situated subtenants. University shall advise Sublandlord of any self-insurance program, self-insured retentions or deductibles. Alternatively, University shall be permitted to provide the insurance under this Attachment C by obtaining a blanket policy or policies to be maintained by University. The coverages afforded to Sublandlord under this Attachment C shall in no way be limited, diminished, or reduced under such blanket policy or policies. All such policies shall be nonassessable and shall contain language, to the extent obtainable, to the effect that (a) any loss shall be payable notwithstanding any act or negligence of Sublandlord or any of Sublandlord's agents and representatives that might otherwise result in a forfeiture of the insurance, (b) the insurer waived the right of subrogation against Sublandlord and against Sublandlord's agents and representatives, (c) the policies are primary and noncontributing with any insurance that may be carried by Sublandlord, and (d) they cannot be canceled or materially changed except after thirty (30) days' notice by the insured to Sublandlord or Sublandlord's designated representative. Prior to the Effective Date, University shall furnish Sublandlord with certificates evidencing the insurance.

DIRECT AGREEMENT – DEVELOPMENT AGREEMENT

THIS **DIRECT AGREEMENT – DEVELOPMENT AGREEMENT** dated as of [●], 2023 (this “**Direct Agreement**”), is made by and among the **BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON BEHALF OF THE UNIVERSITY OF NEVADA, RENO** (the “**University**”), **NCCD – UNR PROPERTIES LLC**, a Nevada limited liability company (“**NCCD**”) **UNR/EDGEMOOR GATEWAY PARTNERS LLC**, a Maryland limited liability company (the “**Developer**”) and **U.S. BANK TRUST COMPANY, NATIONAL ASSOCIATION**, a national banking association organized and existing under the laws of the United States of America, (in such capacity, together with its successors in such capacity, the “**Trustee**” and together with the University, NCCD and the Developer, the “**Parties**” and each, a “**Party**”).

RECITALS

- A. The University, NCCD and the Developer have entered into a Development Agreement dated as of [●], 2023 (as amended or supplemented from time to time, the “**Agreement**”) for the development of an approximately 128,000 square foot College of Business building on the campus of the University of Nevada, Reno (the “**COB Project**”).
- B. In connection with the development and construction of the COB Project, National Finance Authority, as issuer (“**Issuer**”) will cause to be issued certain Lease Revenue Bonds (NCCD - UNR/Edgemoor Gateway Partners LLC - University of Nevada, Reno Project) Series 2023 (the “**Bonds**”) pursuant to a Trust Indenture dated as of [●], 2023 (as amended or supplemented from time to time, the “**Indenture**”) by and between the Issuer and the Trustee and the proceeds of such Bonds shall be loaned to NCCD pursuant to a Loan Agreement dated as of [●], 2023 (as amended or supplemented from time to time, the “**Loan Agreement**”) between the Issuer and NCCD.

NOW, THEREFORE, in consideration of the foregoing and the mutual terms and covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by the Parties, each of the University, the NCCD, the Developer and the Trustee hereby agree as follows:

1 DEFINITIONS AND INTERPRETATION

1.1 Definitions. Capitalized terms used and not otherwise defined and references used but not construed in this Direct Agreement have the respective meanings and constructions assigned to such terms in the Agreement. In addition, the following terms have the meanings specified below:

“**Agreement**” has the meaning given to it in the Recitals.

“**COB Project**” has the meaning given to it in the Recitals.

“**Cure Period**” means:

- (a) with respect to a Development Default set forth in a Development Default Notice that is curable by the payment of money, a period starting on the date of the receipt of such Development Default Notice and ending sixty (60) days after the Trustee’s receipt of such Development Default Notice;
- (b) with respect to a Development Default set forth in a Development Default Notice other than those under clauses (a) above and (c) below, a period starting on the date of the receipt

of such Development Default Notice and ending ninety (90) days after the receipt of such Development Default Notice;

- (c) with respect to a Development Default set forth in a Development Default Notice that by its nature is not capable of cure unless and until the Step-in Party, the Trustee or a court receiver has possession and control of the COB Project, a period starting on the date of the receipt of such Development Default Notice and ending one hundred eighty (180) days after the receipt of such Development Default Notice; and
- (d) provided, however, that with respect to a breach of the Development Agreement by University or NCCD for failing to timely take some action that is required to compel the Trustee to make a payment that is due to the Developer, a period starting on the date of the receipt of a notice of such breach and ending twenty (20) days after the Trustee's receipt of such notice.

“**Developer**” has the meaning given to it in the Preamble.

“**Developer Default**” means an event of a default or breach by the Developer in the performance of any of its obligations under the Agreement, or upon the occurrence or non-occurrence of any event or condition under the Agreement which would immediately or with the passage of any applicable cure period or the giving of notice, or both, enable NCCD or the University to suspend its performance under or terminate the Agreement.

“**Development Default**” means a NCCD Default, a Developer Default or a University Default.

“**Development Default Notice**” has the meaning given to it in Section 3.1 below.

“**Direct Agreement**” has the meaning given to it in the Preamble.

“**Discharge Date**” means the date on which all of the obligations of NCCD under the Loan Agreement have been irrevocably discharged in full to the satisfaction of the Trustee.

“**Financing Default**” means an “Event of Default” (or its terminological equivalent) as defined in the Transaction Documents.

“**NCCD**” has the meaning given to it in the Preamble.

“**NCCD Default**” means an event of a default or breach by NCCD in the performance of any of its obligations under the Agreement, or upon the occurrence or non-occurrence of any event or condition under the Agreement which would immediately or with the passage of any applicable cure period or the giving of notice, or both, enable the University or the Developer to suspend its performance under or terminate the Agreement.

“**Step-in Date**” has the meaning given to it in Section 7.1 below.

“**Step-in Notice**” has the meaning given to it in Section 6.1 below.

“**Step-in Party**” has the meaning given to it in Section 6.2 below.

“**Step-in Period**” means the period from and including the Step-in Date until the earliest of:

- (a) the Step-out Date;

- (b) the date of termination of the Agreement in accordance with the Agreement and this Direct Agreement; and
- (c) expiration of the applicable Cure Period without cure of the Development Default to which it relates.

“**Step-out Date**” means the effective date a Step-in Party designates for ceasing its step-in as set forth in any Step-out Notice served by the Step-in Party pursuant to Section 8 below.

“**Step-out Notice**” has the meaning given to it in Section 8 below.

“**Transaction Documents**” has the meaning assigned to such term in the Agreement.

“**Trustee**” has the meaning given to it in the Preamble.

“**Trustee Notice**” has the meaning given to it in Section 4.1 below.

“**University**” has the meaning given to it in the Preamble.

“**University Default**” means an event of a default or breach by the University in the performance of any of its obligations under the Agreement, or upon the occurrence or non-occurrence of any event or condition under the Agreement which would immediately or with the passage of any applicable cure period or the giving of notice, or both, enable NCCD or the Developer to suspend its performance under or terminate the Agreement.

2 AGREEMENTS AND CONSENT TO SECURITY

The Parties hereby consent to the assignment of and grant of security interest to the Trustee of all of the interests in the Agreement and acknowledge the right of the Trustee or any designee of the Trustee, in the exercise of the Trustee’s rights and remedies under the Transaction Documents, to make all demands, give all notices, take all actions and exercise all rights under the Agreement that then belong to the party responsible for the Financing Default from and after the occurrence and continuation of a Financing Default.

3 DEVELOPMENT DEFAULT NOTICE OF TERMINATION AND EXERCISE OF REMEDIES

3.1 Either the University, NCCD or the Developer shall give the Trustee written notice (a “**Development Default Notice**”) promptly upon giving notice to the defaulting Party of:

- (a) a Development Default; or
- (b) the non-defaulting Party’s right to terminate, or the non-defaulting Party’s election to terminate, the Agreement.

3.2 A Development Default Notice shall specify:

- (a) the unperformed obligations of the defaulting Party under the Agreement that are the grounds for the Development Default or the termination of the Agreement in detail sufficient to enable the Trustee to assess the scope and amount of any liability resulting therefrom;
- (b) to the extent known, all amounts due and payable under the Agreement on or before the date of such Development Default Notice and which remain unpaid at such date; and

(c) the estimated amount of the payment obligations that the non-defaulting Party reasonably foresees will arise during the applicable Cure Period.

3.3 Following receipt of a Development Default Notice in connection with a Development Default where (A) the cure period (if any) has expired for the defaulting Party's default under the Agreement or (B) the Agreement can be terminated for default, the Trustee shall have the rights set forth in this Agreement and the right to deliver a Step-in Notice as provided in Section 6 below.

4 TRUSTEE NOTICE; PAYMENTS TO TRUSTEE

4.1 The Trustee shall give the University and the Developer written notice (a "**Trustee Notice**"), with a copy to NCCD, promptly upon becoming aware of the occurrence of any Financing Default (whether or not a Development Default Notice has been served relating to the same event).

4.2 The Trustee shall specify in any Trustee Notice the circumstances and nature of the Financing Default to which the Trustee Notice relates.

4.3 The Trustee shall promptly provide notice to the University of any decision to accelerate amounts outstanding under the Transaction Documents or to exercise any enforcement remedies under the Transaction Documents.

5 LIMITATIONS ON REMEDIES DURING CURE PERIOD; CURE PERIOD EXTENSION

5.1 Prior to the expiration of any applicable Cure Period and for any period during which the University, the Developer or NCCD has not delivered a Development Default Notice where the non-defaulting Party is required to do so under this Direct Agreement, the Parties agrees not (a) to terminate or give notice of termination of the Agreement, (b) suspend its performance under the Agreement or (c) take or support any legal action, whether directly or indirectly, for the liquidation, bankruptcy, administration, receivership, reorganization, dissolution or winding up of NCCD or the Developer or for the composition or readjustment of NCCD's or the Developer's debts, or any similar insolvency procedure in relation to NCCD or the Developer, or for the appointment of a receiver, trustee, custodian, sequestrator, conservator, liquidator, administrator, or similar official for the NCCD or the Developer.

5.2 After delivery of any Trustee Notice or during any Cure Period, regardless of whether a Step-in Notice has been delivered, the Trustee shall have the right (but shall have no obligation), at its sole option and discretion, to perform or arrange for the performance of any act, duty, or obligation required of the defaulting Party under the Agreement, or to cure any default of the defaulting Party thereunder at any time, which performance by the Trustee shall be accepted by the Parties in lieu of performance by the other Party and in satisfaction of such Party's obligations under the Agreement. To the extent that any default of the Parties under the Agreement is cured or any payment liabilities or performance obligations of such Party are performed by the Trustee during the Cure Period, such action shall discharge the relevant liabilities or obligations of such Party.

6 STEP-IN NOTICE

6.1 Upon the issuance of a Trustee Notice or a Development Default Notice, the Trustee may give written notice (a "**Step-in Notice**") under this Section 6 to the Parties at any time during the Cure Period in the case of the issuance of a Development Default Notice or at any time following the receipt by the Parties of a Trustee Notice in the case of issuance of a Trustee Notice.

6.2 The Trustee shall nominate, in the Step-in Notice, (a) the Trustee or any of its affiliates or (b) any other person or entity approved by the Parties, and the person so nominated being referred to as the “**Step-in Party**.”

7 RIGHTS AND OBLIGATIONS ON STEP-IN

7.1 On and from the date of the receipt of the Step-in Notice (the “**Step-in Date**”) and during the Step-in Period, the Step-in Party shall be entitled to exercise and enjoy the rights and powers expressed to be assumed by or granted to a Step-in Party under this Direct Agreement.

7.2 From and after commencement of any applicable Cure Period and during the applicable Step-in Period, each Party (as applicable) shall:

(a) not terminate or give notice terminating the Agreement unless such Cure Period shall expire without cure of the Development Default to which it relates or the grounds for termination or giving notice of termination, subject to the Cure Period applicable to such subsequent Development Default;

(b) not suspend its performance under the Agreement unless such Cure Period shall expire without cure of the Development Default to which it relates or the grounds for suspension of performance are failure by the Step-in Party to perform the defaulting Party’s obligations under the Agreement, subject to the Cure Period applicable to such failure, or unless the Agreement has been rejected;

(c) not take or support any action for the liquidation, bankruptcy, administration, receivership, reorganization, dissolution or winding up of NCCD or the Developer or for the composition or readjustment of the NCCD’s or the Developer’s debts, or any similar insolvency procedure in relation to the NCCD or the Developer, or for the appointment of a receiver, trustee, custodian, sequestrator, conservator, liquidator, administrator or similar official for the NCCD or the Developer; and

(d) continue to make payments under the Agreement.

8 STEP-OUT

A Step-in Party may, at any time before the expiration of the Cure Period, by giving not less than thirty (30) days’ prior written notice (“**Step-out Notice**”) to the Parties, terminate its obligations to the other Parties under this Direct Agreement respecting the event giving rise to the Step-in Notice, in which event such Step-in Party shall be released from all obligations under this Direct Agreement respecting the event giving rise to the Step-in Notice, except for any obligation or liability of the Step-in Party arising on or before the effective date set forth in the Step-out Notice.

9 GENERAL

9.1 For so long as any amount under the Transaction Documents is outstanding, no Party shall, without the prior written consent of the Trustee, consent to any assignment, transfer, pledge or hypothecation of the Agreement or any interest therein, other than as specified in the Agreement or this Direct Agreement.

9.2 Notwithstanding anything to the contrary contained herein, the Trustee is acting hereunder, not in its individual capacity but solely as Trustee, on behalf of the secured parties identified in the Transaction Documents. Prior to exercising any rights hereunder, the Trustee shall not be required to take any action whatsoever hereunder unless and until it is specifically directed to do so in writing as specified in the Transaction Documents. Prior to exercising any rights hereunder, the Trustee shall not be liable for acting

in accordance with such directions or for failing to act if it does receive any such written direction. Prior to exercising any rights hereunder, under no circumstances (other than with respect to gross negligence or willful misconduct of the Trustee) shall the Trustee be liable for any and all claims, liabilities, obligations, losses, damages, penalties, costs and expenses that may be imposed on, incurred by, or asserted against the Trustee at any time or in any way relating to or arising out of the execution, delivery and performance of this Direct Agreement by the Trustee. For the avoidance of doubt, under no circumstances shall the Trustee be required to perform any activity related to the construction of the COB Project including, without limitation, directing or supervising any portion of the construction of the COB Project. Nothing contained herein shall require the Trustee to advance or risk its own funds. The Parties agree that, in connection with Trustee's execution, delivery and performance of this Direct Agreement, Trustee is acting pursuant to a written request of Borrower provided in accordance with the Loan Agreement and the Indenture and the Trustee shall enjoy all of the rights, benefits and protections and indemnities afforded it under the Transaction Documents.

10 TERMINATION

This Direct Agreement shall remain in effect until the earlier to occur of (a) the Discharge Date and (b) the time at which all of the Parties' obligations and liabilities have expired or have been satisfied in accordance with the terms of the Transaction Documents and this Direct Agreement.

11 AMENDMENT AND WAIVER

No amendment, modification or waiver of any provision of this Direct Agreement shall be effective against any Party hereto unless the same shall be in writing and signed by the Party against whom enforcement is sought, and then such amendment, modification or waiver shall be effective only in the specific instance and for the specific purpose for which it was given.

12 SUCCESSORS AND ASSIGNS

12.1 No Party to this Direct Agreement may assign or transfer any part of its rights or obligations hereunder without the consent of the other Parties, save that the Trustee may assign or transfer its rights and obligations hereunder to a successor Trustee in accordance with the Transaction Documents.

12.2 This Direct Agreement shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and permitted assigns.

13 COUNTERPARTS

This Direct Agreement may be executed in any number of counterparts, each of which shall be identical and all of which, taken together, shall constitute one and the same instrument, and the Parties may execute this Direct Agreement by signing any such counterpart. Transmission by facsimile or electronic ("e-mail") delivery of an executed counterpart of this Direct Agreement shall be deemed to constitute due and sufficient delivery of such counterpart, to be followed thereafter by an original of such counterpart.

14 SEVERABILITY

If, at any time, any provision of this Direct Agreement is or becomes illegal, invalid or unenforceable, neither the legality, validity or enforceability of the remaining provisions nor the legality, validity or enforceability of such provision will in any way be affected or impaired. The illegal, invalid or unenforceable provision shall be deemed replaced by such provisions as shall be legal, valid and enforceable in the relevant jurisdiction.

15 GOVERNING LAW AND JURISDICTION

This Direct Agreement shall be governed by, and construed in accordance with, the laws of the State of Nevada applicable to contracts to be performed within the State. The Parties consent to jurisdiction of and venue of any state or federal court located in Washoe County, Nevada.

16 CONFLICT WITH AGREEMENT

In the event of any irreconcilable conflict or inconsistency between the provisions of this Direct Agreement and the Agreement, the provisions of this Direct Agreement shall control and prevail.

17 ADDRESSES FOR NOTICES

All notices shall be properly addressed and delivered to the Parties at the addresses set forth below or at such other addresses as either Party may designate by written notice given in the manner provided in this Section 17:

To the University University of Nevada, Reno
Attn: Vice President, Administration and Finance
1664 N. Virginia St./MS 003
Reno Nevada 89557-0003

AND

University of Nevada, Reno
Attn: Office of Community & Real Estate Management
1664 N. Virginia St./MS 243
Reno Nevada 89557-0243

With a copy to: University of Nevada, Reno
Attn: General Counsel
1664 N. Virginia St./MS 550
Reno Nevada 89557-0550

To NCCD: NCCD - UNR Properties LLC
Attn: President
2630 Exposition Boulevard, Suite 213
Austin, Texas 78703
Email: geden@nccdevelopment.org

With a copy to: Holland & Knight LLP
Gerald Mace
511 Union Street, Suite 2700
Nashville, Tennessee 37219
Email: gerald.mace@hkllaw.com

To Developer: UNR Edgemoor Gateway Partners LLC
7900 Westpark Drive
Suite T300
McLean, Virginia 22102
Attention: Geoffrey Stricker
Email: geoffrey.stricker@edgemoor.com

AND

UNR Edgemoor Gateway Partners LLC
7900 Westpark Drive
Suite T300
McLean, Virginia 22102
Attention: Frank Baltz
Email: frank.baltz@edgemoor.com

With a copy to:

Clark Construction Group, LLC
7900 Westpark Drive, Suite T300
McLean, Virginia 22102
Attn:
Email:

Andrew Argyris, Esq.
Senior Corporate Counsel
Clark Construction Group, LLC
180 Howard Street
Suite 1200
San Francisco, CA 9415
andrew.argyris@clarkconstruction.com

With a further copy to:

Pillsbury Winthrop Shaw Pittman LLP
1200 Seventeenth Street NW
Washington, DC 20036-3006
Attention: Jeffrey Gans, Esq.
Email: jeffrey.gans@pillsburylaw.com

To the Trustee

Keith Henselen
U.S. Bank Global Corporate Trust
2222 E. Camelback Road, Suite 110
Phoenix, AZ 85016
keith.henselen@usbank.com

*Remainder of page intentionally left blank.
Signatures on following page*

IN WITNESS WHEREOF, each of the Parties hereto has caused this Direct Agreement to be duly executed by its duly authorized officer as of the date first written above.

**BOARD OF REGENTS OF THE NEVADA SYSTEM
OF HIGHER EDUCATION, ON BEHALF OF THE
UNIVERSITY OF NEVADA, RENO, as
UNIVERSITY**

Recommended by:

Brian Sandoval
President, University of Nevada, Reno

Date: _____

Approved by:

Dale Erquiaga
Acting Chancellor,
Nevada System of Higher Education

NCCD – UNR PROPERTIES LLC, as NCCD

By: _____
Name: _____
Title: _____

UNR/EDGEMOOR GATEWAY PARTNERS LLC, as DEVELOPER

By: _____
Name: _____
Title: _____

U.S. BANK TRUST COMPANY, NATIONAL ASSOCIATION, as TRUSTEE

By: _____
Name: _____
Title: _____

DIRECT AGREEMENT – GROUND LEASE

THIS **DIRECT AGREEMENT – GROUND LEASE** dated as of [●], 2023 (this “**Direct Agreement**”), is made by and among the **BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON BEHALF OF THE UNIVERSITY OF NEVADA, RENO** (the “**University**”), **NCCD - UNR PROPERTIES LLC**, a Nevada limited liability company (the “**Tenant**”) and **U.S. BANK TRUST COMPANY, NATIONAL ASSOCIATION**, a national banking association organized and existing under the laws of the United States of America, (in such capacity, together with its successors in such capacity, the “**Trustee**” and together with the University and the Tenant, the “**Parties**” and each, a “**Party**”).

RECITALS

- A. The University and the Tenant have entered into a Ground Lease dated as of [●], 2023 (as amended or supplemented from time to time, the “**Agreement**”) for the development of an approximately 128,000 square foot College of Business building on the campus of the University of Nevada, Reno (the “**COB Project**”).
- B. In connection with the development and construction of the COB Project, National Finance Authority, as issuer (“**Issuer**”) will cause to be issued certain Lease Revenue Bonds (NCCD - UNR Properties LLC – University of Nevada, Reno Project) Series 2023 (the “**Bonds**”) pursuant to a Trust Indenture dated as of [●], 2023 (as amended or supplemented from time to time, the “**Indenture**”) by and between the Issuer and the Trustee and the proceeds of such Bonds shall be loaned to Tenant pursuant to a Loan Agreement dated as of [●], 2023 (as amended or supplemented from time to time, the “**Loan Agreement**”) between the Issuer and Tenant.

NOW, THEREFORE, in consideration of the foregoing and the mutual terms and covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by the parties, each of the University, the Tenant, and the Trustee hereby agree as follows:

1 DEFINITIONS AND INTERPRETATION

1.1 Definitions. Capitalized terms used and not otherwise defined and references used but not construed in this Direct Agreement have the respective meanings and constructions assigned to such terms in the Agreement. In addition, the following terms have the meanings specified below:

“**Agreement**” has the meaning given to it in the Recitals.

“**Bond Documents**” has the meaning assigned to such term in the Agreement.

“**COB Project**” has the meaning given to it in the Recitals.

“**Cure Period**” means:

- (a) with respect to a Lease Default set forth in a Lease Default Notice that is curable by the payment of money, a period starting on the date of the receipt of such Lease Default Notice and ending sixty (60) days after the Trustee’s receipt of such Lease Default Notice;
- (b) with respect to a Lease Default set forth in a Lease Default Notice other than those under clauses (a) above and (c) below, a period starting on the date of the receipt of such Lease Default Notice and ending ninety (90) days after the receipt of such Lease Default Notice; and
- (c) with respect to a Lease Default set forth in a Lease Default Notice that by its nature is not capable of cure unless and until the Step-in Party, the Trustee or a court receiver has

possession and control of the COB Project, a period starting on the date of the receipt of such Lease Default Notice and ending one hundred eighty (180) days after the receipt of such Lease Default Notice.

“**Direct Agreement**” has the meaning given to it in the Preamble.

“**Discharge Date**” means the date on which all of the obligations of the Tenant under the Loan Agreement have been irrevocably discharged in full to the satisfaction of the Trustee.

“**Financing Default**” means an “Event of Default” (or its terminological equivalent) as defined in the Bond Documents.

“**Lease Default**” means a Tenant Default or a University Default.

“**Lease Default Notice**” has the meaning given to it in Section 3.1 below.

“**Step-in Date**” has the meaning given to it in Section 7.1 below.

“**Step-in Notice**” has the meaning given to it in Section 6.1 below.

“**Step-in Party**” has the meaning given to it in Section 6.2 below.

“**Step-in Period**” means the period from and including the Step-in Date until the earliest of:

- (a) the Step-out Date;
- (b) the date of termination of the Agreement in accordance with the Agreement and this Direct Agreement; and
- (c) expiration of the applicable Cure Period without cure of the Lease Default to which it relates.

“**Step-out Date**” means the effective date a Step-in Party designates for ceasing its step-in as set forth in any Step-out Notice served by the Step-in Party pursuant to Section 8 below.

“**Step-out Notice**” has the meaning given to it in Section 8 below.

“**Tenant**” has the meaning given to it in the Preamble.

“**Tenant Default**” means an event of a default or breach by the Tenant in the performance of any of its obligations under the Agreement, or upon the occurrence or non-occurrence of any event or condition under the Agreement which would immediately or with the passage of any applicable cure period or the giving of notice, or both, enable the University to suspend its performance under or terminate the Agreement.

“**Trustee**” has the meaning given to it in the Preamble.

“**Trustee Notice**” has the meaning given to it in Section 4.1 below.

“**University**” has the meaning given to it in the Preamble.

“**University Default**” means an event of a default or breach by the University in the performance of any of its obligations under the Agreement, or upon the occurrence or non-occurrence of any event or condition under the Agreement which would immediately or with the passage of any applicable cure period or the giving of notice, or both, enable the Tenant to suspend its performance under or terminate the Agreement.

2 AGREEMENTS AND CONSENT TO SECURITY

The Parties hereby consent to the assignment of and grant of security interest to the Trustee of all of the interests in the Agreement and acknowledge the right of the Trustee or any designee of the Trustee, in the exercise of the Trustee's rights and remedies under the Bond Documents, to make all demands, give all notices, take all actions and exercise all rights under the Agreement that then belong to the party responsible for the Financing Default from and after the occurrence and continuation of a Financing Default.

3 LEASE DEFAULT NOTICE OF TERMINATION AND EXERCISE OF REMEDIES

3.1 Either the University or the Tenant shall give the Trustee written notice (a "**Lease Default Notice**") promptly upon giving notice to the defaulting Party of:

- (a) a Lease Default; or
- (b) the non-defaulting Party's right to terminate, or the non-defaulting Party's election to terminate, the Agreement.

3.2 A Lease Default Notice shall specify:

- (a) the unperformed obligations of the defaulting Party under the Agreement that are the grounds for the Lease Default or the termination of the Agreement in detail sufficient to enable the Trustee to assess the scope and amount of any liability resulting therefrom;
- (b) to the extent known, all amounts due and payable under the Agreement on or before the date of such Lease Default Notice and which remain unpaid at such date; and
- (c) the estimated amount of the payment obligations that the non-defaulting Party reasonably foresees will arise during the applicable Cure Period.

3.3 Following receipt of a Lease Default Notice in connection with a Lease Default where (A) the cure period (if any) has expired for the defaulting Party's default under the Agreement or (B) the Agreement can be terminated for default, the Trustee shall have the rights set forth in this Agreement and the right to deliver a Step-in Notice as provided in Section 6 below.

4 TRUSTEE NOTICE; PAYMENTS TO TRUSTEE

4.1 The Trustee shall give the University written notice (a "**Trustee Notice**"), with a copy to the Tenant, promptly upon becoming aware of the occurrence of any Financing Default (whether or not a Lease Default Notice has been served relating to the same event).

4.2 The Trustee shall specify in any Trustee Notice the circumstances and nature of the Financing Default to which the Trustee Notice relates.

4.3 If applicable, the University shall, following receipt of a Trustee Notice relating to a Financing Default and until further notification from the Trustee, pay to an account designated by the Trustee in the Trustee Notice any payments required to be made by the University to the Tenant under the Agreement, including any termination compensation required to be paid to the Tenant under the Agreement, but subject to all rights, defenses, adjustments, deductions and offset respecting payment available to the University under the Agreement. The Trustee shall provide to the University the following information: (a) the individual responsible for administering the account, including his or her position, (b) the mailing address of such individual, and (c) the telephone, fax and e-mail address of such individual.

4.4 All sums paid as provided in Section 4.3 above shall be deemed paid to the Tenant under the Agreement. The University shall have no liability, whatsoever, for any delay in processing any payment

request pursuant to Section 4.3 above, provided that such delay does not extend fourteen (14) Business Days beyond the date of the University's certified, return-receipt or registered mail receipt of the Trustee Notice. In no event shall any payment be due to the Trustee earlier than it is due under the Agreement.

4.5 The Tenant and the Trustee agree that any payment made in accordance with Section 4.3 above shall constitute a complete discharge of the University's relevant payment obligations to the Tenant. The University shall have the unconditional right to rely upon any Trustee Notice purported to be signed and delivered by or for the Trustee, without the University obligation or liability to ascertain or investigate its authenticity, truth or accuracy.

4.6 The Trustee shall promptly provide notice to the University of any decision to accelerate amounts outstanding under the Bond Documents or to exercise any enforcement remedies under the Bond Documents.

5 LIMITATIONS ON REMEDIES DURING CURE PERIOD; CURE PERIOD EXTENSION

5.1 Prior to the expiration of any applicable Cure Period and for any period during which the University or the Tenant has not delivered a Lease Default Notice where the non-defaulting Party is required to do so under this Direct Agreement, the Parties agree not (a) to terminate or give notice of termination of the Agreement, (b) suspend its performance under the Agreement or (c) take or support any legal action, whether directly or indirectly, for the liquidation, bankruptcy, administration, receivership, reorganization, dissolution or winding up of the Tenant or for the composition or readjustment of the Tenant's debts, or any similar insolvency procedure in relation to the Tenant, or for the appointment of a receiver, trustee, custodian, sequestrator, conservator, liquidator, administrator, or similar official for the Tenant.

5.2 After delivery of any Trustee Notice or during any Cure Period, regardless of whether a Step-in Notice has been delivered, the Trustee shall have the right (but shall have no obligation), at its sole option and discretion, to perform or arrange for the performance of any act, duty, or obligation required of the defaulting Party under the Agreement, or to cure any default of the defaulting Party thereunder at any time, which performance by the Trustee shall be accepted by the Parties in lieu of performance by the other Party and in satisfaction of such Party's obligations under the Agreement. To the extent that any default of the Parties under the Agreement is cured or any payment liabilities or performance obligations of such Party are performed by the Trustee during the Cure Period, such action shall discharge the relevant liabilities or obligations of such Party.

6 STEP-IN NOTICE

6.1 Upon the issuance of a Trustee Notice or a Lease Default Notice, the Trustee may give written notice (a "**Step-in Notice**") under this Section 6 to the Parties at any time during the Cure Period in the case of the issuance of a Lease Default Notice or at any time following the receipt by the Parties of a Trustee Notice in the case of issuance of a Trustee Notice.

6.2 The Trustee shall nominate, in the Step-in Notice, (a) the Trustee or any of its affiliates or (b) any other person or entity approved by the Parties, and the person so nominated being referred to as the "**Step-in Party**."

7 RIGHTS AND OBLIGATIONS ON STEP-IN

7.1 On and from the date of the receipt of the Step-in Notice (the "**Step-in Date**") and during the Step-in Period, the Step-in Party shall be entitled to exercise and enjoy the rights and powers expressed to be assumed by or granted to a Step-in Party under this Direct Agreement.

7.2 From and after commencement of any applicable Cure Period and during the applicable Step-in Period, each Party (as applicable) shall:

(a) not terminate or give notice terminating the Agreement unless such Cure Period shall expire without cure of the Lease Default to which it relates or the grounds for termination or giving notice of termination, subject to the Cure Period applicable to such subsequent Lease Default;

(b) not suspend its performance under the Agreement unless such Cure Period shall expire without cure of the Lease Default to which it relates or the grounds for suspension of performance are failure by the Step-in Party to perform the defaulting Party's obligations under the Agreement, subject to the Cure Period applicable to such failure, or unless the Agreement has been rejected;

(c) not take or support any action for the liquidation, bankruptcy, administration, receivership, reorganization, dissolution or winding up of the Tenant or for the composition or readjustment of the Tenant's debts, or any similar insolvency procedure in relation to the Tenant, or for the appointment of a receiver, trustee, custodian, sequestrator, conservator, liquidator, administrator or similar official for the Tenant; and

(d) continue to make payments under the Agreement.

8 STEP-OUT

A Step-in Party may, at any time, by giving not less than thirty (30) days' prior written notice ("**Step-out Notice**") to the Parties, terminate its obligations to the other Parties under this Direct Agreement respecting the event giving rise to the Step-in Notice, in which event such Step-in Party shall be released from all obligations under this Direct Agreement respecting the event giving rise to the Step-in Notice, except for any obligation or liability of the Step-in Party arising on or before the effective date set forth in the Step-out Notice.

9 GENERAL

9.1 For so long as any amount under the Bond Documents is outstanding, neither Party shall, without the prior written consent of the Trustee, consent to any assignment, transfer, pledge or hypothecation of the Agreement or any interest therein, other than as specified in the Agreement or this Direct Agreement.

9.2 Notwithstanding anything to the contrary contained herein, the Trustee is acting hereunder, not in its individual capacity but solely as Trustee, on behalf of the secured parties identified in the Bond Documents. The Trustee shall not be required to take any action whatsoever hereunder unless and until it is specifically directed to do so in writing as specified in the Bond Documents. The Trustee shall not be liable for acting in accordance with such directions or for failing to act if it does receive any such written direction. Under no circumstances (other than with respect to gross negligence or willful misconduct of the Trustee) shall the Trustee be liable for any and all claims, liabilities, obligations, losses, damages, penalties, costs and expenses that may be imposed on, incurred by, or asserted against the Trustee at any time or in any way relating to or arising out of the execution, delivery and performance of this Direct Agreement by the Trustee. Under no circumstances shall the Trustee be liable for any indirect, special, consequential or punitive damages for any action it takes pursuant to the authority or directions given under the Bond Documents. For the avoidance of doubt, under no circumstances shall the Trustee be required to perform any activity related to the construction of the COB Project including, without limitation, directing or supervising any portion of the construction of the COB Project. Nothing contained herein shall require the Trustee to advance or risk its own funds. The Parties agree that, in connection with Trustee's execution, delivery and performance of this Direct Agreement, Trustee is acting pursuant to a written request of

Borrower provided in accordance with the Loan Agreement and the Indenture and the Trustee shall enjoy all of the rights, benefits and protections and indemnities afforded it under the Bond Documents.

10 TERMINATION

This Direct Agreement shall remain in effect until the earlier to occur of (a) the Discharge Date and (b) the time at which all of the Parties' obligations and liabilities have expired or have been satisfied in accordance with the terms of the Bond Documents and this Direct Agreement.

11 AMENDMENT AND WAIVER

No amendment, modification or waiver of any provision of this Direct Agreement shall be effective against any Party hereto unless the same shall be in writing and signed by the Party against whom enforcement is sought, and then such amendment, modification or waiver shall be effective only in the specific instance and for the specific purpose for which it was given.

12 SUCCESSORS AND ASSIGNS

12.1 No Party to this Direct Agreement may assign or transfer any part of its rights or obligations hereunder without the consent of the other Parties, save that the Trustee may assign or transfer its rights and obligations hereunder to a successor Trustee in accordance with the Bond Documents.

12.2 This Direct Agreement shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and permitted assigns.

13 COUNTERPARTS

This Direct Agreement may be executed in any number of counterparts, each of which shall be identical and all of which, taken together, shall constitute one and the same instrument, and the Parties may execute this Direct Agreement by signing any such counterpart. Transmission by facsimile or electronic ("e-mail") delivery of an executed counterpart of this Direct Agreement shall be deemed to constitute due and sufficient delivery of such counterpart, to be followed thereafter by an original of such counterpart.

14 SEVERABILITY

If, at any time, any provision of this Direct Agreement is or becomes illegal, invalid or unenforceable, neither the legality, validity or enforceability of the remaining provisions nor the legality, validity or enforceability of such provision will in any way be affected or impaired. The illegal, invalid or unenforceable provision shall be deemed replaced by such provisions as shall be legal, valid and enforceable in the relevant jurisdiction.

15 GOVERNING LAW AND JURISDICTION

This Direct Agreement shall be governed by, and construed in accordance with, the laws of the State of Nevada applicable to contracts to be performed within the State. The Parties consent to jurisdiction of and venue of any state or federal court located in Washoe County, Nevada.

16 CONFLICT WITH AGREEMENT

In the event of any irreconcilable conflict or inconsistency between the provisions of this Direct Agreement and the Agreement, the provisions of the Agreement shall control and prevail.

17 ADDRESSES FOR NOTICES

All notices shall be properly addressed and delivered to the Parties at the addresses set forth below or at such other addresses as either Party may designate by written notice given in the manner provided in this Section 17:

To the University University of Nevada, Reno
 Attn: Vice President, Administration and Finance
 1664 N. Virginia St./MS 003
 Reno Nevada 89557-0003

AND

University of Nevada, Reno
Attn: Office of Community & Real Estate Management
1664 N. Virginia St./MS 243
Reno Nevada 89557-0243

With a copy to: University of Nevada, Reno
 Attn: General Counsel
 1664 N. Virginia St./MS 550
 Reno Nevada 89557-0550

To NCCD: NCCD - UNR Properties LLC
 Attn: President
 2630 Exposition Boulevard, Suite 213
 Austin, Texas 78703
 Email: geden@nccdevelopment.org

With a copy to: Holland & Knight LLP
 Gerald Mace
 511 Union Street, Suite 2700
 Nashville, Tennessee 37219
 Email: gerald.mace@hklaw.com

To the Trustee Keith Henselen
 U.S. Bank Global Corporate Trust
 2222 E. Camelback Road, Suite 110
 Phoenix, AZ 85016
 keith.henselen@usbank.com

*Remainder of page intentionally left blank.
Signatures on following page*

IN WITNESS WHEREOF, each of the Parties hereto has caused this Direct Agreement to be duly executed by its duly authorized officer as of the date first written above.

**BOARD OF REGENTS OF THE NEVADA SYSTEM
OF HIGHER EDUCATION, ON BEHALF OF THE
UNIVERSITY OF NEVADA, RENO, as
UNIVERSITY**

Recommended by:

Brian Sandoval
President, University of Nevada, Reno

Date: _____

Approved by:

Dale Erquiaga
Acting Chancellor,
Nevada System of Higher Education

NCCD - UNR PROPERTIES LLC, as TENANT

By: _____
Name: _____
Title: _____

U.S. BANK TRUST COMPANY, NATIONAL ASSOCIATION, as TRUSTEE

By: _____
Name: _____
Title: _____

DIRECT AGREEMENT – SUBLEASE AGREEMENT

THIS **DIRECT AGREEMENT – SUBLEASE AGREEMENT** dated as of [●], 2023 (this “**Direct Agreement**”), is made by and among the **BOARD OF REGENTS OF THE NEVADA SYSTEM OF HIGHER EDUCATION, ON BEHALF OF THE UNIVERSITY OF NEVADA, RENO** (the “**University**”), **NCCD - UNR PROPERTIES LLC**, a Nevada limited liability company (the “**Sublandlord**”) and **U.S. BANK TRUST COMPANY, NATIONAL ASSOCIATION**, a national banking association organized and existing under the laws of the United States of America, (in such capacity, together with its successors in such capacity, the “**Trustee**” and together with the University and the Sublandlord, the “**Parties**” and each, a “**Party**”).

RECITALS

- A. The University and the Sublandlord have entered into a Sublease Agreement dated as of [●], 2023 (as amended or supplemented from time to time, the “**Agreement**”) for the development of an approximately 128,000 square foot College of Business building on the campus of the University of Nevada, Reno (the “**COB Project**”).
- B. In connection with the development and construction of the COB Project, National Finance Authority, as issuer (“**Issuer**”) will cause to be issued certain Lease Revenue Bonds (NCCD - UNR Properties LLC – University of Nevada, Reno Project) Series 2023 (the “**Bonds**”) pursuant to a Trust Indenture dated as of [●], 2023 (as amended or supplemented from time to time, the “**Indenture**”) by and between the Issuer and the Trustee and the proceeds of such Bonds shall be loaned to Sublandlord pursuant to a Loan Agreement dated as of [●], 2023 (as amended or supplemented from time to time, the “**Loan Agreement**”) between the Issuer and Sublandlord.

NOW, THEREFORE, in consideration of the foregoing and the mutual terms and covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by the parties, each of the University, the Sublandlord, and the Trustee hereby agree as follows:

1 DEFINITIONS AND INTERPRETATION

1.1 Definitions. Capitalized terms used and not otherwise defined and references used but not construed in this Direct Agreement have the respective meanings and constructions assigned to such terms in the Agreement. In addition, the following terms have the meanings specified below:

“**Agreement**” has the meaning given to it in the Recitals.

“**Bond Documents**” has the meaning assigned to such term in the Agreement.

“**COB Project**” has the meaning given to it in the Recitals.

“**Cure Period**” means:

- (a) with respect to a Sublease Default set forth in a Sublease Default Notice that is curable by the payment of money, a period starting on the date of the receipt of such Sublease Default Notice and ending sixty (60) days after the Trustee’s receipt of such Sublease Default Notice;
- (b) with respect to a Sublease Default set forth in a Sublease Default Notice other than those under clauses (a) above and (c) below, a period starting on the date of the receipt of such

Sublease Default Notice and ending ninety (90) days after the receipt of such Sublease Default Notice; and

- (c) with respect to a Sublease Default set forth in a Sublease Default Notice that by its nature is not capable of cure unless and until the Step-in Party, the Trustee or a court receiver has possession and control of the COB Project, a period starting on the date of the receipt of such Sublease Default Notice and ending one hundred eighty (180) days after the receipt of such Sublease Default Notice.

“**Direct Agreement**” has the meaning given to it in the Preamble.

“**Discharge Date**” means the date on which all of the obligations of the Sublandlord under the Loan Agreement have been irrevocably discharged in full to the satisfaction of the Trustee.

“**Financing Default**” means an “Event of Default” (or its terminological equivalent) as defined in the Bond Documents.

“**Step-in Date**” has the meaning given to it in Section 7.1 below.

“**Step-in Notice**” has the meaning given to it in Section 6.1 below.

“**Step-in Party**” has the meaning given to it in Section 6.2 below.

“**Step-in Period**” means the period from and including the Step-in Date until the earliest of:

- (a) the Step-out Date;
- (b) the date of termination of the Agreement in accordance with the Agreement and this Direct Agreement; and
- (c) expiration of the applicable Cure Period without cure of the Sublease Default to which it relates.

“**Step-out Date**” means the effective date a Step-in Party designates for ceasing its step-in as set forth in any Step-out Notice served by the Step-in Party pursuant to Section 8 below.

“**Step-out Notice**” has the meaning given to it in Section 8 below.

“**Sublandlord**” has the meaning given to it in the Preamble.

“**Sublandlord Default**” means an event of a default or breach by the Sublandlord in the performance of any of its obligations under the Agreement, or upon the occurrence or non-occurrence of any event or condition under the Agreement which would immediately or with the passage of any applicable cure period or the giving of notice, or both, enable the University to suspend its performance under or terminate the Agreement.

“**Sublease Default**” means a Sublandlord Default or a University Default.

“**Sublease Default Notice**” has the meaning given to it in Section 3.1 below.

“**Trustee**” has the meaning given to it in the Preamble.

“**Trustee Notice**” has the meaning given to it in Section 4.1 below.

“**University**” has the meaning given to it in the Preamble.

“**University Default**” means an event of a default or breach by the University in the performance of any of its obligations under the Agreement, or upon the occurrence or non-occurrence of any event or condition under the Agreement which would immediately or with the passage of any applicable cure period or the giving of notice, or both, enable the Sublandlord to suspend its performance under or terminate the Agreement.

2 AGREEMENTS AND CONSENT TO SECURITY

The Parties hereby consent to the assignment of and grant of security interest to the Trustee of all of the interests in the Agreement and acknowledge the right of the Trustee or any designee of the Trustee, in the exercise of the Trustee’s rights and remedies under the Bond Documents, to make all demands, give all notices, take all actions and exercise all rights under the Agreement that then belong to the party responsible for the Financing Default from and after the occurrence and continuation of a Financing Default.

3 SUBLEASE DEFAULT NOTICE OF TERMINATION AND EXERCISE OF REMEDIES

3.1 Either the University or the Sublandlord shall give the Trustee written notice (a “**Sublease Default Notice**”) promptly upon giving notice to the defaulting Party of:

- (a) a Sublease Default; or
- (b) the non-defaulting Party’s right to terminate, or the non-defaulting Party’s election to terminate, the Agreement.

3.2 A Sublease Default Notice shall specify:

- (a) the unperformed obligations of the defaulting Party under the Agreement that are the grounds for the Sublease Default or the termination of the Agreement in detail sufficient to enable the Trustee to assess the scope and amount of any liability resulting therefrom;
- (b) to the extent known, all amounts due and payable under the Agreement on or before the date of such Sublease Default Notice and which remain unpaid at such date; and
- (c) the estimated amount of the payment obligations that the non-defaulting Party reasonably foresees will arise during the applicable Cure Period.

3.3 Following receipt of a Sublease Default Notice in connection with a Sublease Default where (A) the cure period (if any) has expired for the defaulting Party’s default under the Agreement or (B) the Agreement can be terminated for default, the Trustee shall have the rights set forth in this Agreement and the right to deliver a Step-in Notice as provided in Section 6 below.

4 TRUSTEE NOTICE; PAYMENTS TO TRUSTEE

4.1 The Trustee shall give the University written notice (a “**Trustee Notice**”), with a copy to the Sublandlord, promptly upon becoming aware of the occurrence of any Financing Default (whether or not a Sublease Default Notice has been served relating to the same event).

4.2 The Trustee shall specify in any Trustee Notice the circumstances and nature of the Financing Default to which the Trustee Notice relates.

4.3 If applicable, the University shall, following receipt of a Trustee Notice relating to a Financing Default and until further notification from the Trustee, pay to an account designated by the Trustee in the

Trustee Notice any payments required to be made by the University to the Sublandlord under the Agreement, including any termination compensation required to be paid to the Sublandlord under the Agreement, but subject to all rights, defenses, adjustments, deductions and offset respecting payment available to the University under the Agreement. The Trustee shall provide to the University the following information: (a) the individual responsible for administering the account, including his or her position, (b) the mailing address of such individual, and (c) the telephone, fax and e-mail address of such individual.

4.4 All sums paid as provided in Section 4.3 above shall be deemed paid to the Sublandlord under the Agreement. The University shall have no liability, whatsoever, for any delay in processing any payment request pursuant to Section 4.3 above, provided that such delay does not extend fourteen (14) Business Days beyond the date of the University's certified, return-receipt or registered mail receipt of the Trustee Notice. In no event shall any payment be due to the Trustee earlier than it is due under the Agreement.

4.5 The Sublandlord and the Trustee agree that any payment made in accordance with Section 4.3 above shall constitute a complete discharge of the University's relevant payment obligations to the Sublandlord. The University shall have the unconditional right to rely upon any Trustee Notice purported to be signed and delivered by or for the Trustee, without the University obligation or liability to ascertain or investigate its authenticity, truth or accuracy.

4.6 The Trustee shall promptly provide notice to the University of any decision to accelerate amounts outstanding under the Bond Documents or to exercise any enforcement remedies under the Bond Documents.

5 LIMITATIONS ON REMEDIES DURING CURE PERIOD; CURE PERIOD EXTENSION

5.1 Prior to the expiration of any applicable Cure Period and for any period during which the University or the Sublandlord has not delivered a Sublease Default Notice where the non-defaulting Party is required to do so under this Direct Agreement, the Parties agrees not (a) to terminate or give notice of termination of the Agreement, (b) suspend its performance under the Agreement or (c) take or support any legal action, whether directly or indirectly, for the liquidation, bankruptcy, administration, receivership, reorganization, dissolution or winding up of the Sublandlord or for the composition or readjustment of the Sublandlord's debts, or any similar insolvency procedure in relation to the Sublandlord, or for the appointment of a receiver, trustee, custodian, sequestrator, conservator, liquidator, administrator, or similar official for the Sublandlord.

5.2 After delivery of any Trustee Notice or during any Cure Period, regardless of whether a Step-in Notice has been delivered, the Trustee shall have the right (but shall have no obligation), at its sole option and discretion, to perform or arrange for the performance of any act, duty, or obligation required of the defaulting Party under the Agreement, or to cure any default of the defaulting Party thereunder at any time, which performance by the Trustee shall be accepted by the Parties in lieu of performance by the other Party and in satisfaction of such Party's obligations under the Agreement. To the extent that any default of the Parties under the Agreement is cured or any payment liabilities or performance obligations of such Party are performed by the Trustee during the Cure Period, such action shall discharge the relevant liabilities or obligations of such Party.

6 STEP-IN NOTICE

6.1 Upon the issuance of a Trustee Notice or a Sublease Default Notice, the Trustee may give written notice (a "**Step-in Notice**") under this Section 6 to the Parties at any time during the Cure Period in the case of the issuance of a Sublease Default Notice or at any time following the receipt by the Parties of a Trustee Notice in the case of issuance of a Trustee Notice.

6.2 The Trustee shall nominate, in the Step-in Notice, (a) the Trustee or any of its affiliates or (b) any other person or entity approved by the Parties, and the person so nominated being referred to as the “**Step-in Party**.”

7 RIGHTS AND OBLIGATIONS ON STEP-IN

7.1 On and from the date of the receipt of the Step-in Notice (the “**Step-in Date**”) and during the Step-in Period, the Step-in Party shall be entitled to exercise and enjoy the rights and powers expressed to be assumed by or granted to a Step-in Party under this Direct Agreement.

7.2 From and after commencement of any applicable Cure Period and during the applicable Step-in Period, each Party (as applicable) shall:

(a) not terminate or give notice terminating the Agreement unless such Cure Period shall expire without cure of the Sublease Default to which it relates or the grounds for termination or giving notice of termination, subject to the Cure Period applicable to such subsequent Sublease Default;

(b) not suspend its performance under the Agreement unless such Cure Period shall expire without cure of the Sublease Default to which it relates or the grounds for suspension of performance are failure by the Step-in Party to perform the defaulting Party’s obligations under the Agreement, subject to the Cure Period applicable to such failure, or unless the Agreement has been rejected;

(c) not take or support any action for the liquidation, bankruptcy, administration, receivership, reorganization, dissolution or winding up of the Sublandlord or for the composition or readjustment of the Sublandlord’s debts, or any similar insolvency procedure in relation to the Sublandlord, or for the appointment of a receiver, trustee, custodian, sequestrator, conservator, liquidator, administrator or similar official for the Sublandlord; and

(d) continue to make payments under the Agreement.

8 STEP-OUT

A Step-in Party may, at any time, by giving not less than thirty (30) days’ prior written notice (“**Step-out Notice**”) to the Parties, terminate its obligations to the other Parties under this Direct Agreement respecting the event giving rise to the Step-in Notice, in which event such Step-in Party shall be released from all obligations under this Direct Agreement respecting the event giving rise to the Step-in Notice, except for any obligation or liability of the Step-in Party arising on or before the effective date set forth in the Step-out Notice.

9 GENERAL

9.1 For so long as any amount under the Bond Documents is outstanding, neither Party shall, without the prior written consent of the Trustee, consent to any assignment, transfer, pledge or hypothecation of the Agreement or any interest therein, other than as specified in the Agreement or this Direct Agreement.

9.2 Notwithstanding anything to the contrary contained herein, the Trustee is acting hereunder, not in its individual capacity but solely as Trustee, on behalf of the secured parties identified in the Bond Documents. The Trustee shall not be required to take any action whatsoever hereunder unless and until it is specifically directed to do so in writing as specified in the Bond Documents. The Trustee shall not be liable for acting in accordance with such directions or for failing to act if it does receive any such written directions. Under no circumstances (other than with respect to gross negligence or willful misconduct of

the Trustee) shall the Trustee be liable for any and all claims, liabilities, obligations, losses, damages, penalties, costs and expenses that may be imposed on, incurred by, or asserted against the Trustee at any time or in any way relating to or arising out of the execution, delivery and performance of this Direct Agreement by the Trustee. Under no circumstances shall the Trustee be liable for any indirect, special, consequential or punitive damages for any action it takes pursuant to the authority or directions given under the Bond Documents. For the avoidance of doubt, under no circumstances shall the Trustee be required to perform any activity related to the construction of the COB Project including, without limitation, directing or supervising any portion of the construction of the COB Project. Nothing contained herein shall require the Trustee to advance or risk its own funds. The Parties agree that, in connection with Trustee's execution, delivery and performance of this Direct Agreement, Trustee is acting pursuant to a written request of Borrower provided in accordance with the Loan Agreement and the Indenture and the Trustee shall enjoy all of the rights, benefits and protections and indemnities afforded it under the Bond Documents.

10 TERMINATION

This Direct Agreement shall remain in effect until the earlier to occur of (a) the Discharge Date and (b) the time at which all of the Parties' obligations and liabilities have expired or have been satisfied in accordance with the terms of the Bond Documents and this Direct Agreement.

11 AMENDMENT AND WAIVER

No amendment, modification or waiver of any provision of this Direct Agreement shall be effective against any Party hereto unless the same shall be in writing and signed by the Party against whom enforcement is sought, and then such amendment, modification or waiver shall be effective only in the specific instance and for the specific purpose for which it was given.

12 SUCCESSORS AND ASSIGNS

12.1 No Party to this Direct Agreement may assign or transfer any part of its rights or obligations hereunder without the consent of the other Parties, save that the Trustee may assign or transfer its rights and obligations hereunder to a successor Trustee in accordance with the Bond Documents.

12.2 This Direct Agreement shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and permitted assigns.

13 COUNTERPARTS

This Direct Agreement may be executed in any number of counterparts, each of which shall be identical and all of which, taken together, shall constitute one and the same instrument, and the Parties may execute this Direct Agreement by signing any such counterpart. Transmission by facsimile or electronic ("e-mail") delivery of an executed counterpart of this Direct Agreement shall be deemed to constitute due and sufficient delivery of such counterpart, to be followed thereafter by an original of such counterpart.

14 SEVERABILITY

If, at any time, any provision of this Direct Agreement is or becomes illegal, invalid or unenforceable, neither the legality, validity or enforceability of the remaining provisions nor the legality, validity or enforceability of such provision will in any way be affected or impaired. The illegal, invalid or unenforceable provision shall be deemed replaced by such provisions as shall be legal, valid and enforceable in the relevant jurisdiction.

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This Direct Agreement shall be governed by, and construed in accordance with, the laws of the State of Nevada applicable to contracts to be performed within the State. The Parties consent to jurisdiction of and venue of any state or federal court located in Washoe County, Nevada.

16 CONFLICT WITH AGREEMENT

In the event of any irreconcilable conflict or inconsistency between the provisions of this Direct Agreement and the Agreement, the provisions of this Direct Agreement shall control and prevail.

17 ADDRESSES FOR NOTICES

All notices shall be properly addressed and delivered to the Parties at the addresses set forth below or at such other addresses as either Party may designate by written notice given in the manner provided in this Section 17:

To the University University of Nevada, Reno
Attn: Vice President, Administration and Finance
1664 N. Virginia St./MS 003
Reno Nevada 89557-0003

AND

University of Nevada, Reno
Attn: Office of Community & Real Estate Management
1664 N. Virginia St./MS 243
Reno Nevada 89557-0243

With a copy to: University of Nevada, Reno
Attn: General Counsel
1664 N. Virginia St./MS 550
Reno Nevada 89557-0550

To NCCD: NCCD - UNR Properties LLC
Attn: President
2630 Exposition Boulevard, Suite 213
Austin, Texas 78703
Email: geden@nccdevelopment.org

With a copy to: Holland & Knight LLP
Gerald Mace
511 Union Street, Suite 2700
Nashville, Tennessee 37219
Email: gerald.mace@hkllaw.com

To the Trustee Keith Henselen
U.S. Bank Global Corporate Trust
2222 E. Camelback Road, Suite 110
Phoenix, AZ 85016
keith.henselen@usbank.com

IN WITNESS WHEREOF, each of the Parties hereto has caused this Direct Agreement to be duly executed by its duly authorized officer as of the date first written above.

**BOARD OF REGENTS OF THE NEVADA SYSTEM
OF HIGHER EDUCATION, ON BEHALF OF THE
UNIVERSITY OF NEVADA, RENO, as
UNIVERSITY**

Recommended by:

Brian Sandoval
President, University of Nevada, Reno

Date: _____

Approved by:

Dale Erquiaga
Acting Chancellor,
Nevada System of Higher Education

NCCD - UNR PROPERTIES LLC, as SUBLANDLORD

By: _____
Name: _____
Title: _____

U.S. BANK TRUST COMPANY, NATIONAL ASSOCIATION, as TRUSTEE

By: _____
Name: _____
Title: _____

Exhibit 3g

RESOLUTION NO. ____

A RESOLUTION PERTAINING TO THE APPROVAL OF THE UNIVERSITY OF NEVADA, RENO – COLLEGE OF BUSINESS BUILDING THIRD PARTY DEVELOPMENT PROJECT PHASE ONE, AND TO THE AUTHORIZATION OF THE CHANCELLOR, OR DESIGNEE, TO APPROVE AND SIGN THE CORRESPONDING DEVELOPMENT AGREEMENT, GROUND LEASE, SUBLEASE, ASSOCIATED DIRECT AGREEMENTS, LETTER OF REPRESENTATIONS, AND RELATED DISCLOSURES AFTER CONSULTATION WITH AND REVIEW BY THE NSHE CHIEF GENERAL COUNSEL, OR AT THE REQUEST OF CHIEF GENERAL COUNSEL, NSHE SPECIAL REAL PROPERTY COUNSEL.

BE IT RESOLVED that the Board of Regents approves and authorizes the University of Nevada, Reno – College of Business building third-party development project phase one.

BE IT FURTHER RESOLVED that the Board of Regents hereby authorizes the Chancellor, or Designee, after consultation with and review by the NSHE Chief General Counsel, or at the request of Chief General Counsel, NSHE Special Real Property Counsel, to execute the following documents related to such transaction:

1. Development Agreement;
2. Ground Lease;
3. Sublease;
4. Direct Agreement – Development Agreement;
5. Direct Agreement – Ground Lease Agreement;
6. Direct Agreement – Sublease Agreement; and
7. Letter of Representations for Bond Purchase Agreement.

BE IT FURTHER RESOLVED that the Board of Regents hereby approves and ratifies the delegations of authority contained in Development Agreement Section 3.1(f), Ground Lease Sections 1.2.3 and 24.3, and Sublease Sections 1.2.3 and 2.2.4, and hereby authorizes the Chancellor, or Designee, after consultation with and review by the NSHE Chief General Counsel, or at the request of Chief General Counsel, NSHE Special Real Property Counsel, to execute amendments to the transaction documents consistent with such delegations.

BE IT FURTHER RESOLVED that the Board of Regents hereby further authorizes the Chancellor, or Designee, after consultation with and review by the NSHE Chief General Counsel, or at the request of Chief General Counsel, NSHE Special Real Property Counsel, to execute such certificates of incumbency; factual statements and affirmations, and other ancillary documents required from NSHE in connection with the underlying bond financing.

PASSED AND ADOPTED on _____, 2023.

Chairman
Board of Regents of the
Nevada System of Higher Education

(SEAL)
Attest:

Chief of Staff
To the Board of Regents and
Ex facta Secretary of the Board of Regents