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01 00 00	GENERAL REQUIREMENTS

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01 10 00	SUMMARY
01 11 00	Summary of Work
01 11 13	<p>Work Covered by Contract Documents</p> <p>This project includes the removal and replacement of pavement along Huffer Lane and, as an add alternate, removal and replacement pavement around the ROTC building.</p> <p>If using Division 1 for subcontractor bid packages the Contractor shall incorporate applicable language from Contractor's Construction Agreement with Owner.</p>
01 11 16	<p>Work by Owner</p> <p>Inspections will be undertaken by the NAU Engineering department to provide oversight to ensure work is completed to NAU Technical Standards. NAU Grounds, Plumbing and Electrical departments will perform inspections as needed.</p>
01 12 00	Multiple Contract Summary
	N/A
01 14 00	Work Restrictions
01 14 13	<p>Access to Site</p> <p>Contractor selected to complete this work will submit the required logistics site plan to the NAU Project Manager for review.</p> <p>Truck washing stations, truck tire scraping grates and street sweeping may be required. Access to site shall be provided as to keep construction activity, dirt and mud on site.</p>
01 14 16	<p>Coordination with Occupants</p> <p>Communication with the occupants is to be sent through the Owner. Impact requests shall be requested a minimum of 5 business days prior to the proposed starting time. Requests may not be approved and may be rescheduled to meet occupant needs.</p>
01 14 19	<p>Use of Site</p> <p>Use of the site is restricted to materials and equipment necessary for completion of the Work. It is the Contractor's responsibility to ensure enclosure of the site from the general public.</p>
01 18 00	Project Utility Sources

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01 18 13	Utility Service Connections N/A

The Contractor shall prearrange time with the DP and Owner whenever it becomes necessary to energize new services or to interrupt any service to make connections, alterations or relocations; and shall fully cooperate with the Owner in doing Work so as to cause the least annoyance and interference with the continuous operation of the Owner's business or official duties. Following such a meeting the Contractor shall submit a work authorization request that will include a detailed description and procedure for each task, schedule for each task, any safety controls being implemented and signoff locations for tasks completed. The work authorization request will be similar to the document identified in 29 CFR 1910.147 App A and must be approved by the Owner (trade supervisor for the intended utility). The work authorization document is considered a submittal subject to the review periods indicated in the contract but in no case less than 5 business days, and must be approved prior to scheduling work.

Any existing utility distribution or internal plumbing, heating, ventilating, air conditioning or electrical disconnections which may affect portions of existing buildings or other construction projects must be coordinated with the DP and Owner to avoid any disruption of operation. While bidding, the Contractor shall assume that all shutdowns shall occur during afterhours and/or weekends unless specifically stated otherwise in the contract documents. In no case, unless previously approved in writing by Owner, shall utilities be left disconnected at the end of a workday or over a weekend. Any interruption of utilities shall be reported immediately to the Owner (Project Manager). Such interruptions, whether negligently, intentionally, or accidentally, shall not relieve the Contractor's responsibility for the interruption or from liability for loss or damage caused by such interruption even though such loss or damage was not foreseeable by Contractor or subcontractor, or from responsibility for repairing and restoring the utility to normal service. Repairs and restoration shall be made before the Contractor leaves the project site.

****END OF SECTION****

Section Number	Title
01 20 00	PRICE AND PAYMENT PROCEDURES
01 21 00	<p>Allowances</p> <p>The Contractor's price for the Work shall include all of the Contractor's costs associated with such allowance or allowances. If the actual costs to the Contractor of such allowance or allowances is different from the specified sum, increases or decreases in the cost of the allowance and associated Contractor's cost shall be adjusted in accordance with the Construction Agreement.</p> <p>Use of Allowances must be requested and approved through the Allowance Use Authorization form.</p>
01 22 00	<p>Unit Prices</p> <p><i>The base bid for the project will be for the removal and replacement of pavement along Huffer Lane. Unit prices will be used by the Contractor to form a lump sum bid for the project. Quantities shown on the plans are approximate only. The Contractor is responsible for independently estimating the contract quantities. By submitting their bid, the Contractor represents that the total contract sum is adequate compensation for completing the entire project as shown on the plans.</i></p>
01 23 00	<p>Alternates</p> <p><i>The bid alternate for the project will be for the removal and replacement of pavement on the driveway to and around the ROTC Building. Unit prices will be used by the Contractor to form a lump sum bid for the alternate. Quantities shown on the plans are approximate only. The Contractor is responsible for independently estimating the contract quantities. By submitting their bid, the Contractor represents that the total contract sum is adequate compensation for completing the entire project as shown on the plans.</i></p>
01 26 00	Contract Modification Procedures
01 26 13	<p>Requests for Interpretation</p> <p>Requests for Interpretation (RFI) will be sent electronically to the Owner (Project Manager) and the DP concurrently. The RFI must indicate the Owner's project number, RFI #, spec section and plan sheet impacted, trades involved, images if applicable, a proposed solution and potential cost or time impact.</p>
01 26 46	<p>Construction Change Directives</p> <p>Use Owner form FS#16 for all Construction Change Directives (CCD).</p> <p>No changes in the work shall be undertaken by the Contractor without written direction by the Owner and DP (if a DP is on the project), either as a CCD or a Change Order.</p>

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01 26 53	Proposal Requests Refer to Section 01 26 57
01 26 54	Proposal Worksheet Summaries Refer to Section 01 26 57
01 26 57	Construction Change Proposal Request The CCPR form is required to be completed by the Contractor with a detailed description and cost breakdown for each individual requested change. Please refer to FS#12 available at: https://in.nau.edu/facility-services/forms-index/ . Refer to construction agreement for specific provisions.
01 26 63	Change Orders No changes in the work shall be undertaken by the Contractor without written direction by the Owner and DP (if a DP on the project), either as a CCD or a Change Order. Any changes made without such written direction are done so at the Contractor's own risk. Change Orders shall be processed as identified in the construction agreement. Change procedures must follow the requirements outlined in the Construction Agreement between Owner and Contractor. A copy of the latest version of the Construction Agreement between Owner and Contractor is available at https://in.nau.edu/facility-services/dp-contract/ . Change orders are on Owner form FS#14.
01 29 00	Payment Procedures
01 29 73	Schedule of Values Individual construction activities which are indicated by the Schedule of Values shall coincide with activities presented on the Contractor's Construction Schedule. Contractor shall submit proposed schedule of values for review and approval by DP and by Owner, per the Construction Agreement between Owner and Contractor, prior to submission of first pay application.
01 29 76	Progress Payment Procedures Contractor will submit payments electronically to the Project Manager, DP and Owner (project manager and project assistant) concurrently. Payments will be measured against the Schedule of Values as approved by the DP, Owner and CM (as applicable).

DIVISION 1 – GENERAL REQUIREMENTS

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	<p>For all Testing and Inspection Services, the Testing and Inspection Log (FS#105) shall be completed and shall accompany each pay app for that billing period.</p> <p>Payment procedures shall be per the Construction Agreement. The Pay Application form can be found at: https://in.nau.edu/facility-services/dp-contract/.</p>

****END OF SECTION****

Section Number	Title
01 30 00	ADMINISTRATIVE REQUIREMENTS
01 31 00	Project Management and Coordination
01 31 13	<p>Project Coordination</p> <p>Project coordination and communication procedures will be discussed in detail at the preconstruction meeting. The minutes of this meeting shall serve as reference and documentation of proper coordination and communication channels.</p>
01 31 14	<p>Facility Services Coordination</p> <p>An emergency contact sheet will be provided to the Contractor with contacts for the Owner's different departments in Facility Services. The Contractor will fill out with their emergency numbers and return to the Owner for distribution.</p>
01 31 16	<p>Multiple Contract Coordination</p> <p>The Owner reserves the right to award other contracts related to the Project, or to perform certain work itself. Any such other work may or may not be known to the Owner or disclosed to the Contractor prior to execution of the Agreement. The Contractor shall allow the Owner and such other additional contractors to deliver and store the additional contractors' or Owner's materials and equipment and to execute the additional contractors' or Owner's work, and shall properly coordinate the Contractor's Work with the additional contractors' or Owner's work in such manner as the Owner or Design Professional may direct. The Contractor shall also assure at the Contractor's own cost reasonable access of additional contractors to the Contractor's site and the Contractor's work.</p>
01 31 19	<p>Project Meetings</p> <p>Refer to the required project meetings in the Construction Agreement.</p>
01 31 19.13	<p>Preconstruction Meetings</p> <p>A preconstruction meeting shall be held for all projects. Notification of the time and date of such conference shall be made to the selected Contractor in the Notice of Intent to Award, or via other coordination methods. The preconstruction meeting agenda (FS#21) is located online at: https://in.nau.edu/facility-services/forms-index/.</p>
01 31 19.14	<p>Inspection Meeting</p> <p>A meeting will be held between Owner (including Project Manager, Building Official, and applicable Trades Inspectors) and the Contractor to discuss inspection procedures and to establish expectations. This may be a separate</p>

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	meeting from the preconstruction meeting or may be covered in the preconstruction meeting.
01 31 19.15	<p>Blue Stake Meeting</p> <p>Contractor and earthwork/underground foreman will coordinate a Blue Stake Kickoff Meeting prior to the start of Work to review the proposed schedule and blue stake requirements. This is a separate meeting from the preconstruction meeting.</p>
01 31 19.16	Site Mobilization Meetings
01 31 19.23	<p>Progress Meetings</p> <p>Progress meetings shall occur on a regular basis (weekly) according to a schedule determined at the pre-construction conference or as established in the contract.</p>
01 31 19.33	<p>Pre-Installation Meetings</p> <p>The Contractor shall schedule a pre-installation meeting before starting any trade work in the field, between the Owner's Trade Inspector(s), the Contractor and subcontractor(s). The contractor performing the work (which may be the Contractor if self-performing or a subcontractor) must be in attendance at this meeting. The pre-installation meeting will review the installation and inspection protocol (quality control, workmanship expectations, means and methods etc.) and review project specifications and drawings with the Contractor and subcontractor(s). The pre-installation meetings shall be specified when applicable for the following work:</p> <ul style="list-style-type: none"> • Concrete formwork and placing • Waterproofing • Mortar / masonry • Flashing • Roofing • Sealant • Vapor Barrier • Painting and Drywall • Fire Sprinkler • Fire Alarm • HVAC • Plumbing • Electrical • Datacomm/ITS • Site Utilities • Refer to FS#15 for additional requirements

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	<ul style="list-style-type: none"> Owner may require additional pre-installation meetings depending on the scope of work. <p>Acknowledgement of the Pre-Installation Meeting is required on the FS#15 form prior to any inspections being performed.</p> <p>Contractor shall schedule a subsequent inspection when 10 – 15% of the work reviewed in the pre-installation meeting to verify proper installation practices are implemented.</p>
01 31 26	<p>Electronic Communication Protocols</p> <p>All communications on the project are to go through the Owner's Project Manager.</p>
01 32 00	Construction Progress Documentation
01 32 13	<p>Scheduling of Work</p> <p>In general, hours of construction activity shall be limited to 7 a.m. until 7 p.m., Monday through Friday, unless written approval is obtained from Owner (Project Manager). Additionally, the Contractor shall agree to limit any noisy activities during "reading week" and "finals week". Reading Week and Finals Week generally occur during the first weeks of May and December.</p> <p>Year-round, project work adjacent to or within Residence Halls shall be more strictly limited to the hours of 8:00 a.m. until 6:00 p.m., unless written approval is obtained from the Owner. In addition to these hours, work performed on weekends will not be permitted without prior authorization from Owner.</p>
01 32 16	<p>Construction Progress Schedule</p> <p>The following requirements shall support and amplify the requirements of the Construction Agreement between Owner and Contractor.</p> <p>In conjunction with the Contractor's construction schedule, the Contractor shall provide a procurement schedule for all major project components to be purchased and incorporated by the Contractor into the project.</p> <p>The procurement schedule shall indicate scheduled delivery of major project components, both equipment and materials, in support of the activities included on the Contractor's construction schedule.</p>

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	<p>Revisions to the Contractor's construction schedule shall be coordinated with revisions to the procurement schedule.</p> <p>In the event significant delays or lags in schedule, as determined by the Owner, are encountered, the Contractor shall provide to the Owner a revised Contractor's Construction Schedule indicating proposed rescheduling of subsequent activities to achieve project completion by the Contract Completion Time or Amended Completion Time.</p> <p>Additions to or deletions from the Contract, authorized through Change Orders, shall be reflected in the Contractor's construction schedule.</p> <p><u>Owner's Approval of Phasing</u></p> <p>The Owner reserves the right to review and approve scheduling or phasing of construction activities.</p> <p>Contractor shall be aware of the impact of construction activities on Owner's functions and operations and shall advise the Owner when they may be impacted by the schedule. The Contractor shall act to lessen or avert impact to Owner operations through alternative phasing of activities or other measures.</p>
01 32 19	<p>Submittals Schedule</p> <p>The Contractor is required to make submittals for the DP and Owner review in a prompt and timely manner. A schedule of submittals is to be delivered to the Owner within <u>5</u> days of the notice to proceed. Submittals are required for each subsection detailed in the individual sections of Divisions 2 through 48.</p>
01 32 23	<p>Survey and Layout Data</p> <p>The Contractor shall be responsible for retaining a registered land surveyor, licensed to practice in Arizona, who shall be responsible for providing all stakes necessary to establish construction lines and grades. Stakes provided shall be of sufficient number to satisfy the Engineer that the work may be constructed in accordance with the plans.</p> <p>All underground utilities installed or exposed by Contractor shall have GPS points taken and indicated on the as-built drawings with utility descriptor, pipe size, material, and any other pertinent data. Points shall include any connections, valves, bends, rises/falls and points where other utilities are crossed. In the event that existing utilities are exposed during construction then 1 GPS point will be taken for every 10' of exposed surface in addition to any connections, valves, bends, rises/falls and points where other utilities are crossed.</p>

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01 32 26	<p>Construction Progress Reporting</p> <p>The Contractor shall maintain a written daily log in accordance with the Construction Agreement.</p>
01 32 33	<p>Photographic Documentation</p> <p>Photos are required on projects as determined by Owner, submitted electronically with pay application, and representative of the work for which the pay application is for. Photographs shall be a minimum of 5 megapixels. A description of photos required will be discussed at the preconstruction meeting. The photo's file name shall be labeled with first the location of the photo, direction of view and then description. Exterior locations must provide the location with GPS coordinates.</p>
01 32 43	<p>Procurement Tracking</p> <p>Included in the Contractor's critical path schedule, the Contractor shall provide procurement durations for all major project components (equipment and material) to be purchased (regardless if purchased by Owner or Contractor).</p> <p>Expediting reports/schedule corrections shall be provided by the Contractor to the Owner in the event that scheduled deliveries, of a significant nature, do not arrive as planned and the Contractor shall make all reasonable effort to expedite deliveries in accordance with the original schedule.</p> <p>Time submitted by the Contractor on the basis of delayed material or equipment deliveries, shall be accompanied by documentation from the vendor/supplier indicating the date order was placed, usual time required for delivery and the date of scheduled delivery.</p>
01 33 00	<p>Submittal Procedures</p> <p>Provide complete submittals. Diagrams shall show installed component model numbers; block diagrams do not constitute an acceptable schematic. There shall be a separate submittal for each of the first-4 digits of the CSI divisions, as needed. For example, a separate submittal is needed for Division 26 05 as opposed to a submittal for Division 26 09.</p>
01 33 13	<p>Certificates</p> <p>N/A</p>
01 33 16	Design Data
01 33 19	Field Test Reporting

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	Copies of Field Test Reports will be turned over monthly along with the Pay Application.
01 33 23	Shop Drawings, Product Data, and Samples The Submittal Procedure shall be per the requirements of the Construction Agreement.
01 33 29	Sustainable Design Reporting
01 33 29.06	Reused Product Form N/A
01 35 00	Special Procedures
01 35 13	Special Project Procedures N/A
01 35 13.26	Special Project Procedures for Clean Rooms N/A
01 35 13.43	Special Project Procedures for Contaminated Sites N/A
01 35 23	Owner Safety Requirements The Contractor's responsibility for project safety is according to the Construction Agreement, which includes submitting a written safety plan to Owner and DP. This safety plan shall include the name and contact information of the contractor/vendor safety officer, emergency contact information, information on hazards likely to be encountered on the work site, work site PPE requirements, and any safety training requirements, training logs or proof of certification, and Job Hazard Analyses (JHA's) for the planned activities. Blank JHA forms may be downloaded from https://in.nau.edu/facility-services/contractor-safety-plans/ . The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with Contractor's Work. The Contractor shall designate an employee as Safety Officer at the Project Site whose duties shall include prevention of accidents and monitoring/enforcement of the Contractor's safety program. The Contractor's Safety Officer shall attend the preconstruction meeting.

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	<p>The Contractor's Safety Officer will be responsible for continued monitoring of the job site to maintain safe working conditions in strict compliance with <u>State of Arizona Occupational Safety and Health Standards for the Construction Industry</u> (29 CFR Part 1926). Specific attention is called to Housekeeping (Section 1926.25, ADOSH, 29 CFR Part 1926).</p> <p>The Contractor and all subcontractors shall clear away all debris which poses an unsafe condition as required in Section 1926.25 on a <u>daily</u> basis.</p> <p>Failure of the Contractor to promptly correct unsafe conditions, subsequent to written notification by the Owner, shall constitute violation of the standards indicated herein. The Owner reserves the right, in the event of such violation, to correct unsafe conditions through the most expedient means available. Any costs incurred by the Owner for such corrective work shall be reimbursed by the Contractor, via deductive Change Order.</p>
01 35 26	<p>Governmental Safety Requirements</p> <p>All employees of the Contractor or subcontractors shall have adequate safety training for their respective facets of the work as specifically required by document #2254, <u>Training Requirements and OSHA Standards and Training Guidelines</u> (USDA, OSHA 1985).</p>
01 35 29	<p>Health, Safety, and Emergency Response Procedures</p> <p>NAU's Emergency Response Call Sheet can be found at: https://in.nau.edu/facility-services/dp-contract/.</p>
01 35 29.13	<p>Health, Safety, and Emergency Response Procedures for Contaminated Sites</p> <p><i>This information can be obtained from the Owner's Office of Environmental Health & Safety.</i></p>
01 35 43	<p>Environmental Procedures</p> <p>The Owner shall have first right of refusal on all materials and equipment which are removed as part of the Project construction process to include materials both above and below the existing ground surface.</p> <p>Contractor shall notify the Owner prior to disposing of such materials and equipment. Owner will notify the Contractor promptly if possession is to be taken by the Owner.</p> <p>Materials not claimed by the Owner within three working days of notification of impending disposal shall be removed from the Project site by the Contractor and disposed of appropriately.</p>

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Hazardous Materials Procedures

The Contractor shall inform Owner (Office of Environmental Health & Safety (EH&S) and the Project Manager) of any hazardous chemicals they will be using on campus. The Contractor shall comply with the requirements specified in OSHA's Hazard Communication program (29 CFR 1910.1200). The Contractor shall assume responsibility for the safe and legal disposal of all chemicals used on the job site. If any hazardous waste is generated on site as a result of a project, please contact Owner (EH&S) for determination of whether the waste must be disposed of in accordance with EPA regulations.

Lead Abatement

This information can be obtained from the Owner (EH&S).

Asbestos Abatement

NAU has completed asbestos surveys for the majority of buildings currently present on the Flagstaff Campus and remote campuses. Survey results are housed in the NAU Asbestos Program office and are available for review or notification purposes.

To maintain compliance with all applicable state and Federal EPA and OSHA regulations, Owner's policy requires that a site specific asbestos inspection be completed to determine the need for abatement before any work involving the disturbance of pre-existing building components is conducted. This inspection and any other required asbestos information and guidance may be requested directly by calling the Material Safety office at (928) 523-6435, or by completing the online asbestos inspection request (<https://in.nau.edu/facility-services/asbestos-lead-and-pcbs/>.) Asbestos inspections may involve additional sampling of previously untested materials, and may facilitate the need for NESHAP notified abatement work, so an appropriate amount of lead time must be allotted in the project schedule.

All asbestos-containing materials (ACM) which are scheduled for disturbance are to be removed, containerized, and disposed of in accordance with all applicable Federal, State, and Local regulations. This work must be performed by NAU or by a licensed asbestos abatement contractor before any other work which may impact the materials in question. Work must be scheduled and performed in a manner which minimizes the chance of contamination of non-asbestos materials. The asbestos removal work must comply with the NESHAP (40 CFR 61, subpart M), AHERA (40 CFR 763, subpart E), and OSHA Asbestos construction standard (29 CFR 1926.1101) and general industry standard (29 CFR 1910.1001), whichever may apply.

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Abatement activities are the responsibility of Owner and may not be subcontracted as part of the larger construction project without prior authorization from the Owner's. In cases where abatement is performed by the Contractor, or by a subcontractor retained by the Contractor, the Contractor or abatement subcontractor must meet the minimum requirements for qualifications and insurance for abatement contractors under the Arizona State purchasing system. When abatement is necessary, the Owner's Project Manager will work in cooperation with Owner's EH&S to develop specifications, collect bids, and contract/complete any necessary abatement independently from the larger construction contract and, unless otherwise authorized by Owner (EH&S), abatement shall be completed prior to commencement of any other construction activities at the work site.

Oversight for abatement services shall be conducted by Owner or by an approved third party oversight contractor. No additional demolition or renovation activities may proceed in the selected abatement area until the work has been cleared by the oversight contractor and/or Owner. The oversight contractor or Owner will have the authority to stop work immediately if abatement or demolition procedures are found to be inadequate to control the release of asbestos fibers, or if asbestos is being disturbed in an uncontrolled or unsafe manner.

Owner will issue a written or verbal authorization to proceed with non-asbestos demolition/renovation activities following achievement of acceptable clearance of the asbestos abatement. Prior to authorization to proceed, the oversight contractor or Owner (Asbestos Program Manager) must complete a visual inspection and/or analytical sampling of the area to document completeness of the work. If contamination is found following abatement, the abatement contractor will be required to perform additional cleaning, at no additional cost to Owner, until acceptable levels are achieved. No other non-asbestos work may commence until all necessary abatement has been completed and authorization to proceed has been furnished by the Owner (Material Safety office).

It is the responsibility of the construction or demolition contractor to furnish an accurate work schedule to the Owner in order to allow for timely abatement and good coordination between other trades/subcontractors. The construction/demolition contractor may be held accountable for additional fees incurred by the Owner due to improper scheduling or communication on the part of the Contractor.

Following completion of all abatement activities, the abatement/oversight contractor shall provide copies of closeout documents including the date,

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location, and scope of work; negative exposure assessment; and air sampling data, daily logs, and waste shipment records. Copies of all closeout documents shall be furnished to both the Owner's Project Manager and Owner's Material Safety office.

To satisfy its obligations under OSHA, Owner will issue a written notification of the presence of asbestos and other hazards in the work area and building which work is being conducted in; and specific abatement requirements which may be required for the project. The Contractor is responsible for the health and safety of its own employees and for meeting OSHA communication of hazard, training, and PPE requirements. Worker compliance with all applicable regulations will be enforced by the Contractor.

The Contractor shall comply with:

The National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR 61, subpart M, enforced by the Arizona Department of Environmental Quality, regulating the removal and disposal of asbestos-containing materials.

The abatement contractor will be required to notify the State of Arizona Department of Environmental Quality NESHAP office 10 business days before removal of threshold amounts of friable asbestos or RACM as specified in 40 CFR 61.145. The Contractor shall send a copy of this notice to the Owner's Asbestos Program Manager. A NESHAP notification is also required 10 days prior to commencement of demolition of any building on Owner campus even if no asbestos abatement is required. Filing of the Demolition NESHAP notification is the responsibility of the demolition or construction contractor.

During and following completion of the renovation, all newly installed building materials shall be analyzed for asbestos and a report containing the analytical results shall be furnished to the Owner's Material Safety Office to maintain complete records of NAU buildings in the future. Testing shall conform to the guidelines set forth in the EPA AHERA regulation. This testing shall be conducted by an AHERA certified building inspector and if requested, shall be conducted by the renovation/construction contractor. This is an inspection sign off item in the Owner's FS #15 form and final sign off will not be furnished without completion of the inspection and review of the resulting report by the Owner's Material Safety office.

Section Number	Title
	<p><u>Blasting Policy</u></p> <p>Blasting is not a preferred process on campus. Any use of explosives must be approved in writing by NAU Fire Marshal and must conform to The City of Flagstaff policies and procedures. The City of Flagstaff maintains jurisdiction for all blasting.</p> <p>Prior to any blasting, the Contractor shall submit to Owner appropriate employee certification for use of explosives.</p> <p>No explosives will be stored on the campus overnight or on weekends. No quantity of explosives will be brought to the campus beyond that which will be used on the day blasting operations are to be performed.</p> <p>No blasting shall take place earlier than 8 a.m. or later than 5 p.m.</p>
01 35 43.13	Environmental Procedures for Hazardous Materials N/A
01 35 43.16	Environmental Procedures for Toxic Materials N/A
01 35 46	Indoor Air Quality Procedures N/A
01 35 53	<p>Security Procedures</p> <p>Contractor is responsible for securing access to all construction areas to prevent damage or theft. This may include but is not limited to securing site fencing, temporary construction and building entrances. Work within tunnels must be in accordance with 01 41 19 Rules.</p> <p>Refer to Construction Agreement for any additional security requirements.</p>
01 35 63	Sustainability Certification Project Requirements N/A
01 35 66	Sustainability Certification Project Procedures N/A
	<p>Owner's Project Manager is to be listed as the NAU administrator for the UGBC LEED website login.</p>

DIVISION 1 – GENERAL REQUIREMENTS

Section Number	Title
01 35 91	Historic Treatment Procedures N/A

****END OF SECTION****

Section Number	Title
01 40 00	QUALITY REQUIREMENTS
01 41 00	<p>Regulatory Requirements</p> <p>Any work performed on or within the boundaries of the Northern Arizona University campus shall be subject to special inspections, periodic inspections, Code compliance inspections, and pre-occupancy and/or final inspections by the following agencies as applicable:</p> <ul style="list-style-type: none"> • State Fire Marshal's Office • Arizona Corporation Commission • State Boiler Inspector • State Risk Management Division • City of Flagstaff, including Dark Sky ordinance • Coconino County • State Elevator Inspector • NAU Facility Services • National Emissions Standards for Hazardous Air Pollutants (NESHAP) • Arizona Department of Environmental Quality <p>It is the responsibility of the Contractor to provide a complete copy of the construction plans, specifications and other pertinent documents as necessary for review and approval by the necessary agencies.</p> <p>No construction shall commence until the Contractor receives from NAU Fire Marshal and NAU Building Official the approved stamped copy of the construction plans, permit, and other documents provided.</p>
01 41 13	<p>Codes and Standards</p> <p>All design and construction work shall be done in such a manner that the completion of the project is in compliance with the following codes and standards the Owner has adopted as Code. When reference is made to "this Code" it shall mean all the codes listed below. In the event there is a conflict between any of these codes and standards, the most restrictive code shall apply.</p> <ul style="list-style-type: none"> • International Building Code 2018 (IBC) • International Existing Building Code 2018 (IEBC) • International Plumbing Code 2018 (IPC) • International Mechanical Code 2018 (IMC) • National Electrical Code 2017 (NEC) (NFPA 70) • International Fuel Gas Code 2018 (IFGC) • International Fire Code 2018 (IFC) • National Fire Alarm Code 2016 (NFPA 72)

Section Number	Title
	<ul style="list-style-type: none"> • Installation of Sprinkler Systems 2016 (NFPA 13) • NAU Fire Code (Most recent edition unless otherwise required) • Arizona State Fire Code • 2010 ADA Standards for Accessible Design as approved by the Department of Justice on July 26, 2010 (published in the Federal Register on September 15, 2010) and any more recent related Federal and State requirements with their related standards as they may apply. • ICC/ANSI, A117.1 – 2017, Accessible and Usable Buildings and Facilities. <ul style="list-style-type: none"> ○ FYI: Please be advised that where there is a conflict between any applicable accessibility requirements the most restrictive shall apply (e.g. 2018 IBC, 2010 ADA, 2017 ICC/ANSI A117.1, other NAU, State & Federal requirements, etc.). • 2007 American Society of Mechanical Engineers (ASME) A17.1, Safety Codes for Elevators and Escalators (unless otherwise required) <ul style="list-style-type: none"> ○ AZ Elevator Act (Title 23, Chapter 2, Article 12) ○ Latest ADOSH Arizona Elevator Rules • AZ Executive Order 2008-29 (FYI: Reaffirms Executive Order 2005-05. Requires all new state-funded buildings to meet the Silver LEED standard, at a minimum.) • American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) 55 2017 • ASHRAE 62.1 2019 • ASHRAE 90.1 - 2016 • ASHRAE 189.1 - 2017 • ASHRAE 202 (Most recent edition unless otherwise required by Owner) • Arizona Revised Statutes (ARS) • Occupational Safety and Health Administration Regulations • NAU Material Safety Policies (e.g. Program Manuals such as Asbestos, Lead, PCB, etc.) (Most recent edition unless otherwise required) http://nau.edu/Research/Compliance/Environmental-Health-and-Safety/ • IAQ Guidelines for Occupied Buildings Under Construction (Most recent edition unless otherwise required) • ACGIH Industrial Ventilation Manual of Recommended Practices (Most recent edition unless otherwise required) • ANSI/AIHA Z9.5 Laboratory Ventilation (Most recent edition unless otherwise required) • NAU Design Guidelines and Technical Standards (Most recent edition unless otherwise required)

Compliance shall conform to the requirements of the latest editions of all State regulations and the various codes which have been adopted by the University at

Section Number	Title
	<p>the time of selection of the Design Professional (or at time of bid if the University does not designate a Design Professional), unless otherwise required by Federal or State regulation (such as ADA code compliance which is required at time of bid).</p> <p>Contractor will be held to have examined and to have become familiar with these regulations in all ways they apply to the project.</p> <p>If a conflict is found between any Code requirement and information given in written or graphic specifications, Contractor will abide by the more stringent of the two. Such conflict shall be reported in writing to the DP and to Owner (NAU Fire Marshal, Building Official, and PM).</p> <p>The issuance of approved plans, specifications, and computations shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of the above-listed codes, the NAU Fire Prevention Manual or the NAU Design Guidelines and Technical Standards.</p> <p>The issuance of approved plans, specifications, and other data shall not prevent Owner from thereafter requiring the correction of errors in said plans, specifications and other data, nor shall issuance of such approved plans, specifications, or other data preclude the prevention of building operations being carried on thereunder when in violation of the above-listed codes.</p>
01 41 16	<p>Laws</p> <p>By signing a contract with Owner or as a subcontractor to a general contractor that has a contract with Owner, the Contractor agrees to follow Owner's Blue Stake procedure under ARS 40-360.22.</p> <p>It is the responsibility of the Contractor to make all utility staking requests. To request utility staking for any project the Contractor must submit an E-Stake request through the Arizona811 Center (http://www.arizona811.com/e-stake/) and email Owner, per Blue Stake request form and process. All requests are given a log number. It is the Contractor's responsibility to note that number for future reference.</p> <p>For the complete Blue Stake Procedure, Contractor shall refer to https://in.nau.edu/facility-services/dp-contract/</p> <p>DO NOT DIG UNTIL BLUE STAKING HAS BEEN CLEARED! ALL KNOWN UTILITIES MUST BE POTHOLED!</p>

Section Number	Title
	<p>If the excavation phase is completed more than a month prior to substantial completion, Contractor shall remove the blue stake marks outside of the fenced area in a manner that does not damage finished surfaces. All projects will remove blue stake marks at substantial completion in a manner that does not damage finished surfaces. Note that the longer that the paint is on the ground the harder it is to remove.</p>
01 41 19	<p>Rules</p> <p>The tunnels on campus are generally considered a non-permit required confined space. However, conditions may change without Owner knowledge. Prior to entry, contractors must supply their own atmospheric tester/monitor, complete an NAU Confined Space Entry Checklist, and submit this checklist to their safety officer and the Owner's project manager. If through utilization of the checklist the area is to be considered a confined space, then the contractor is responsible for their confined space safety program. This must be submitted to the Owner's project manager for documentation. Owner's confined space program is located here: https://in.nau.edu/wp-content/uploads/sites/226/2020/03/Confined-Space-Entry-Program.pdf .</p> <p>No one may enter the tunnel system alone. Anyone entering the tunnel system must make contact with Owner (PM and appropriate plant operator) to provide the section of tunnel being accessed, time of entry, purpose of work and approximate time frame. Contact must be made with the appropriate Owner (plant operator) when leaving the tunnels as well.</p> <p>The entry checklist can be found at: https://in.nau.edu/wp-content/uploads/sites/226/2020/03/NAUentrychecklist.pdf</p>
01 41 23	<p>Fees</p> <p>If a Contractor requires a re-inspection because the Contractor is unprepared for the initial inspection, a fee will be assessed. The fee will be charged at the inspector's chargeout rate per hour spent, and no less than \$200. This will be at the Contractor's expense.</p>
01 41 26	<p>Permit Requirements</p> <p>NAU permit requirements and applications can be found at: https://in.nau.edu/facility-services/dp-contract/</p>

Section Number	Title
01 43 00	Quality Assurance
01 43 23	Installer Qualifications N/A
01 43 26	Testing and Inspecting Agency Qualifications This section is to include project specific information which will be provided by the DP for the purposes of NAU's ARQ inspection selections.
01 43 29	Code-Required Special Inspector Qualifications This section is to include project-specific information which will be provided by the DP for the purposes of NAU's ARQ inspection selections.
01 45 00	Quality Control
01 45 23	Testing and Inspecting Services Please refer to https://in.nau.edu/facility-services/dp-contract/ for the complete detail of inspection procedures.
	Re-inspection of uncompleted work shall be at the Contractor's expense. See 01 41 23.
	All Work must be inspected and accepted by Owner. Any work required to be inspected which is covered prior to inspection, must be uncovered by Contractor at Contractor's expense.
	Reinforcing steel or structural framework of any part of any building or structure shall not be covered or concealed without first obtaining approval of the DP or Structural Engineer.
	Foundation Inspection: To be made after excavations for footings are complete and any required reinforcing steel is in place. For concrete foundations, any required forms shall be in place prior to inspection.
	Concrete Slab or Under-Floor Inspection: To be made after all in-slab or under-floor building service equipment, conduit, piping accessories and other ancillary equipment items are in place, but before any concrete is placed or floor sheathing installed, including the sub-floor.
	Frame and Rough-In Mechanical, Plumbing and Electrical Inspection: To be made after the roof, all framing, fire blocking and bracing are in place and all pipes,

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	chimneys and vents are complete and the rough electrical, plumbing, and heating, pipes and ducts, and fire sprinkler piping are approved.
	Lath and/or Gypsum Board Inspection: To be made after all lathing and gypsum board, interior and exterior, is in place but before any plastering is applied or before gypsum board joints and fasteners are taped and finished.
	Substantial Completion Inspection: Prior to issuance of the Substantial Completion Certificate, all required in progress inspections listed in form FS#15 shall be passed. The Contractor must schedule a walkthrough with each trade inspector individually to sign off on the substantial completion lines of the FS#15 and provide a punch list.
	Final Completion Inspection: Prior to Final Payment the Contractor must schedule an additional walk with each trade inspector ensure that all punch work is completed and inspected, and all required inspections listed in form FS#15 shall be passed.
01 45 26	Plant Inspection Procedures Materials must be inspected by Owner (Landscape Architect) prior to install.
01 45 33	Code-Required Special Inspections and Procedures N/A

****END OF SECTION****

Section Number	Title
01 50 00	TEMPORARY FACILITIES AND CONTROLS
01 51 00	Temporary Utilities Temporary construction utility connections are to be approved by Owner (Utility Services department) and shall be metered.
01 51 13	Temporary Electricity N/A
01 51 16	Temporary Fire Protection N/A
01 51 23	Temporary Heating, Cooling, and Ventilating N/A
01 51 26	Temporary Lighting N/A
01 51 29	Temporary Natural-Gas Temporary natural gas is not allowed. Propane may be used for temporary heating.
01 51 33	Temporary Telecommunications Temporary telephone service is available through Owner. Contractor is responsible for all connection, maintenance, and service fees.
01 51 36	Temporary Water Temporary water connections must have a back flow prevention device with meter, obtained from Owner (Plumbing department) and installed by the Contractor.
01 52 00	Construction Facilities The Contractor shall provide a staging plan/site logistic plan at the preconstruction meeting. The staging plan shall clearly identify the following items: <ul style="list-style-type: none"> • Construction Trailer • Material Staging • Wash down areas (concrete, mud, etc.) • Dumpsters • Traffic Control including signals and barricades

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	<ul style="list-style-type: none"> • Signage • Site Fencing including gate locations and height of the fence • Site Access for contractors, material delivery and waste haul off • Sanitary Facilities • Temporary Utilities • Temporary Parking • SWPPP measures • ADA accessible routes • Pedestrian/bikes routes • Vehicle routes • Emergency Access <p>Any other provision, direction or accommodation agreed to and approved by Owner, the Contractor and DP, shall be clearly noted and conveyed on the staging/site demolition plan.</p>
01 52 13	<p>Field Offices and Sheds</p> <p>Location of field office must be approved by Owner. All utilities to the field office must be metered. Area must be restored to its original condition when field office is removed, including demolition of utilities back to the source.</p>
01 52 19	<p>Sanitary Facilities</p> <p>Contractors shall not use Owner's sanitary facilities. Contractors are responsible for providing and maintaining adequate temporary sanitation facilities and indicate location(s) on the site logistics plan.</p>
01 55 00	Vehicular Access and Parking
01 55 13	<p>Temporary Access Roads</p> <p>Optimum truck routes and access roads, including fire department access, to the Project site shall be identified at the pre-construction conference and noted in the site logistics plan.</p>
01 55 19	<p>Temporary Parking Areas</p> <p>All persons driving or parking on the NAU campus are subject to NAU parking regulations. Owner's parking policies are available at https://in.nau.edu/university-transit-services/.</p> <p>All vehicles parking within campus boundaries must display permits. Vehicles without permits will be ticketed by the NAU Police Department or Parking Services. Vehicles parked within the fenced staging / storage area identified on the Construction Documents do require parking permits. The Contractor will be</p>

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	<p>required to make a written request to the Owner (Project Manager) at the preconstruction meeting for parking permits for all vehicles to be parked within the campus boundaries. NAU Parking Services will attempt to meet requests for specific parking areas; however, due to availability, alternative parking areas may be assigned. Storage / Staging areas will be requested in writing to the Owner (Project Manager) prior to bidding. They are not guaranteed to be approved where requested, but Owner will attempt to make the best accommodations possible.</p>
01 55 26	<p>Traffic Control</p> <p>All traffic control shall be coordinated with the Owner's Project Manager, and shall be approved by NAU Parking Services, NAU Shuttle Services, NAU Police Department, NAU Fire Marshal, NAU Office of Environmental Health & Safety and City of Flagstaff Fire Department.</p> <p>All proposed traffic control plans or modifications shall be submitted to the Owner's Project Manager five (5) working days prior to the proposed implementation date of the change and receive approval, as stated above.</p>
01 55 29	<p>Staging Areas</p> <p>The Contractor shall submit a site logistics plan at the preconstruction meeting. Storage / Staging Areas must be maintained and returned to the condition they were in prior to occupation by the Contractor. The Contractor shall patch, repair or replace any and all damaged areas upon completion of the work. The area must receive final inspection and approval by the Owner prior to final payment.</p>
01 56 00	Temporary Barriers and Enclosures
01 56 16	<p>Temporary Dust Barriers</p> <p>Dust control is the Contractor's responsibility at no additional cost to the Owner. The Contractor shall address complaints regarding dust control within four (4) hours. Air, water, surface, and subgrade conditions shall be protected from pollution by the Contractor. Such protection requirements as detailed in all State and Federal regulations shall apply. Arizona State DEQ, OSHA, and NAU Office of Environmental Health & Safety may inspect for compliance without notice.</p>
01 56 19	<p>Temporary Noise Barriers</p> <p>N/A</p>
01 56 26	Temporary Fencing

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	<p><u>Project Site Fencing</u></p> <p>Contractor shall erect and maintain in good condition a six-foot high chain link fence of standard construction surrounding the Project site and enclosing the area of work and materials staging. Location of the fence shall be approved by the Owner prior to erection. Fence gates shall remain locked when unattended to discourage access by unauthorized persons.</p> <p>This applies to large construction projects and small projects with multiple locations.</p> <p><u>Staging Area Fencing</u></p> <p>A commercial grade chain-link fence around the entire perimeter of the staging area will be required.</p> <p>The fence may be ground-set or tee supported, but must remain stable in high or gust wind conditions and scaling by pedestrians. The Contractor shall coordinate all fence pole locations that are to be pounded into the ground with Owner's Landscape and Outdoor Services and Blue Stake to avoid shallow utilities and irrigation. The Contractor is responsible for all repairs required to return the area to original condition after fencing is removed, including, but not limited to, sod, asphalt and concrete repair.</p> <p>Post holes in asphalt will be repaired using Fastpatch DPR Pourable Asphalt Repair. Using a hot or cold patch for the post holes is not allowed.</p> <p>An 8' wide, two section chain-link access gate shall be required in the fence and the Facility Services' Project Manager and Construction Manager (as applicable) shall be given a key(s) to the gate lock by the Contractor for emergency access.</p> <p>Fencing shall be placed immediately after or during site preparation, and remain in place for the entire duration of construction.</p> <p>The staging plan shall note that the Contractor is to maintain the fence in a neat and orderly appearance.</p>
01 56 39	<p>Temporary Tree and Plant Protection</p> <p>Existing trees and plants designated to remain shall be fenced off outside the drip line (this includes all memorial trees). "Snow" or "Cyclone" fencing shall be green; orange is prohibited. No construction activity shall occur within fenced area. Contractor shall provide site maintenance and control of erosion, weeds, snow, debris, etc. Irrigation is not a standard part of the blue stake procedure. The Contractor is responsible for coordinating with Owner (Landscape and</p>

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	Outdoor Services) to determine location prior to bid. The Contractor shall be responsible for relocating/repairing any irrigation equipment.
	Owner is a Tree Campus USA designated school, and specific guidelines relating to this designation for Contractor to follow are located at: https://in.nau.edu/green-nau/tree-campus-usa/ .
01 58 00	Project Identification
01 58 13	Temporary Project Signage Free-standing or hanging signs for Contractors, Sub-contractors or suppliers are not allowed on University property. Site safety signage is allowed but must be approved by the NAU Project Manager.
01 58 16	Temporary Interior Signage

****END OF SECTION****

DIVISION 1 – GENERAL REQUIREMENTS

Section Number	Title
01 60 00	PRODUCT REQUIREMENTS
01 61 00	Common Product Requirements
01 61 13	Software Licensing Requirements
01 66 00	Product Storage and Handling Requirements Refer to Agreement for information regarding on-site and off-site storage.

****END OF SECTION****

Section Number	Title
01 70 00	EXECUTION AND CLOSEOUT REQUIREMENTS
01 73 00	Execution
01 73 29	<p>Cutting and Patching</p> <p>Cutting and patching of asphalt and concrete may necessitate removal of embedded utility survey markers. The Contractor is required to field verify marker locations prior to bidding and include replacement of markers where necessary. Refer to Division 33 for installation standards. Verification of marker location requires sign-off on the FS#15 prior to substantial completion.</p>
01 74 00	Cleaning and Waste Management
01 74 13	<p>Progress Cleaning</p> <p>The Contractor shall maintain all work and staging areas in a clean and orderly condition to enhance the safety and appearance of the jobsite. Accumulations of refuse will not be permitted except as specifically approved in writing by the Owner.</p> <p>Contractor is responsible for removal of Blue Stake markings and returning the site to its original condition.</p>
01 74 16	Site Maintenance
01 74 19	<p>Construction Waste Management and Disposal</p> <p>The Contractor will identify waste diversion opportunities and track waste and recycling figures for each of their respective projects. Waste and waste diversion totals should be tracked on a monthly basis and entered into the project-specific spreadsheet FS#49.</p> <p>The Contractor will provide proper and adequate trash containers at no additional cost to the Owner. These containers will be emptied at regular intervals so that trash will not be allowed to overflow and/or collect around the dump area.</p> <p>The placing of trash or debris in any Owner trash container by the Contractor or any subcontractor is expressly forbidden. Contractor shall be responsible for costs incurred by the Owner for the removal of trash placed in Owner trash containers.</p>

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01 74 23	<p>Final Cleaning</p> <p>Provide final cleaning of the work area prior to Owner occupancy. Final cleaning shall mean cleaning each surface or unit of work to conditions expected in a new building and high level maintenance program. Comply with manufacturer's instructions for cleaning operations. Cleaning shall include but not be limited to all of the following as applicable:</p> <ul style="list-style-type: none"> • Clean transparent/reflective surfaces to a polished, streak free condition including all mirrors, windows and door glass. Remove all paint, putty, labels or other vision obscuring materials. Replace any broken or damaged surfaces. • Remove marks, stains, fingerprints, other soil and dirt from painted, decorated or stained work. • Clean polish and/or wax woodwork as preferred by Owner. • Clean light fixtures and lamps so as to function at full efficiency. Remove dirt, dust, fingerprints, excess lubrication, drywall, paint etc. and all non-permanent labels. • Wipe clean all mechanical and electrical equipment; remove excess lubrication and other substances. • Clean exposed interior and exterior surface finishes to a condition free of dirt, dust, stains, films or other noticeable distracting substance. • Clean exterior and interior metal surfaces, including doors and windows, of oil, stains, dust, dirt, paint and the like. • Clean and polish all hard floors, remove dirt, material or water stains, scratches etc.; clean and vacuum all carpeted areas. • Clean plumbing fixtures to polished, sanitary condition free of stains including those resulting from water exposure. • Except as otherwise indicated or requested by Owner, remove all temporary protection devices and facilities which were installed during the course of the work. <p>Make building ready for occupancy in all respects. Protect cleaned areas until final inspection and acceptance.</p> <p>All existing improvements inside or outside the property which have been disturbed, damaged or destroyed by the Work under the Contract shall be restored to the condition in which they originally were, including all storage and staging areas. Final inspection of storage / staging areas used during construction is required prior to final payment.</p> <p>If the Contractor fails to clean up during, or at the completion of the Work, or fails to enforce such clean up by subcontractors, the Owner, subsequent to</p>

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	advising the Contractor in writing, may after five (5) working days proceed to perform clean-up of areas which pose a threat to life/safety or are excessively unsightly. The cost of cleaning provided by the Owner under this condition shall be borne by the Contractor, via deductive Change Order.
01 75 00	Starting and Adjusting
01 75 13	Checkout Procedures N/A
01 75 16	Startup Procedures
	Signoff from the Owner (Utility Services department) on the FS #15 is required before any utility is energized. Refer to Division 33 for individual utility requirements.
	The Preliminary Balance Report shall have been submitted by the Contractor to the Owner prior to, and as a requirement of, Substantial Completion.
	The Final Balance Report shall have been submitted by the Contractor to the Owner prior to, and as a requirement of, Final Completion.
	Systems start-up, commissioning, and balancing shall be 100% complete prior to, and as a requirement of, Final Completion.
	Any additional information to be provided by the Design Professional.
01 77 00	Closeout Procedures
01 77 13	Preliminary Closeout Reviews The Contractor shall request the Owner to schedule a closeout meeting to be scheduled 30 days prior to substantial completion.
01 77 16	Final Closeout Review The Contractor will schedule a meeting with the Owner and DP when the all the document packages are ready for the individual substantial completion, final completion and final payment phases.
01 77 19	Closeout Requirements For all closeout requirements, please refer to the Construction Agreement located at https://in.nau.edu/facility-services/dp-contract/ .

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All contracts are listed under “Contracts”. Please refer to the appropriate contract’s closeout requirements specific to the project you are contracted for.

01 78 00 Closeout Submittals

01 78 23 Operation and Maintenance Data

01 78 23.13 Operation Data

Upon completion of the installation of all work specified in Construction Documents, and prior to Final Completion, Contractor shall furnish to the DP for review; one (1) complete bound copy and one (1) electronic copy of operating and maintenance instructions and parts lists for all material and equipment, including electrical and control items, being supplied. Upon receipt of review, the Contractor shall submit three (3) complete bound corrected copies and one (1) electronic corrected copy of the operating and maintenance instructions and parts list for all material and equipment in divisions 2-48. **Operation and maintenance manuals for all specified equipment and systems shall be provided as part of the contractor’s base bid.**

Assemble Operation and Maintenance (O&M) Manuals in hard-back 3-ring loose leaf binders. Manuals will be organized by division with all warranties in a separate section at the back of the manual. Suitably label and index all material contained therein for ready reference.

Operating instructions shall include complete operating sequence, control diagrams, description of method for operating machinery, machine serial numbers, factory order numbers, parts lists, instruction books, suppliers’ phone numbers and addresses and individual equipment guarantee. Parts lists shall be complete in every respect, showing all parts and part numbers for ready reference.

O&M materials related to any of the following building components (as applicable for each project) are to be provided by the Contractor to the project manager to then be submitted to the Office of Regulatory Compliance:

- boilers
- emergency generators
- acid neutralization tanks
- grease interceptors
- sand/oil separators
- cooling towers
- chillers (documenting refrigerant type used)
- pre/post construction stormwater controls/NOI’s

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	<ul style="list-style-type: none"> • emergency showers • bulk chemical storage locations • fume hoods/bio-safety cabinets • location of sanitary sewer drains
01 78 23.16	<p>Maintenance Data</p> <p>Close-out submittals shall include a completed “Maintenance Check List” (FS#88) indicating all maintenance and frequency required for warranty purposes.</p>
01 78 29	<p>Final Site Survey</p> <p>The contractor is to keep a copy of asbuilts onsite for review during the project. At the completion of underground utilities and final site work, the Contractor shall provide an as-built drawing of all work completed. The contractor is responsible for locating all underground utilities until substantial completion is reached and the asbuilts have been submitted to, reviewed, and accepted by NAU. Natural Gas is turned over when it is energized so asbuilts must be available for that system prior to being energized. The final site work drawing shall be provided after all site work is complete. The as-built drawings shall consist of the following:</p> <ul style="list-style-type: none"> • Design Professional is to put as-built drawings in CAD format. • All buried and concealed items must be located with GPS coordinates or other NAU GIS accepted format. This includes tie-in locations, pipe alignments, change in direction, valves, manholes, utility crossings, and depth of utility. • The site survey shall also include site as built grades which have been surveyed and verified by a licensed surveyor. • The as-builts must be certified by a licensed surveyor who is currently registered in the State of Arizona certifying the drawing and GPS coordinates are accurate. Refer to Division 01 32 23.
01 78 36	<p>Warranties</p> <p>N/A</p> <p>The Contractor’s warranty shall commence on the date of Substantial Completion and remain in effect for two years. Prior to Final Completion the Contractor shall schedule a 1 year and 2 year warranty walkthrough with the Owner.</p> <p>All other warranties shall commence at Substantial Completion unless otherwise specified by manufacturer. These warranties are to remain in effect per the Construction Documents, including as specified throughout these Design Guidelines and Technical Standards.</p>

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	<p>The Contractor shall provide 24-hour response to all critical building systems, i.e., loss of heating, cooling and control systems. If applicable, the Contractor shall provide at Substantial Completion, service agreements between service companies and the Owner for all critical areas. The service agreement shall include 24-hour phone numbers and contact persons' names the Owner may use in case of emergency. The emergency service agreement shall remain in effect for the two-year warranty period. The Contractor shall provide a contact person's name and phone number for Contractor's bonding company for use if the Owner experiences problems during the warranty.</p> <p>All other, noncritical warranty items will be corrected within five (5) working days; unless the Contractor notifies the Owner in writing that a delay will be experienced due to shipping of materials. A shipping date must be provided to advise the Owner of the approximate date of warranty repair. All warranty work must commence as soon as reasonably possible and be diligently prosecuted to completion.</p>
01 78 39	<p>Project Record Documents</p> <p>For all project record documentation procedures, please reference the Construction Agreement located at https://in.nau.edu/facility-services/dp-contract/.</p> <p>Refer to Owner's form FS #76 at https://in.nau.edu/facility-services/dp-contract/ for example of As-Builts required.</p>
01 78 43	<p>Spare Parts</p> <p>N/A</p>
01 78 46	<p>Extra Stock Materials</p> <p>Refer to Owner's form FS #76 at: https://in.nau.edu/facility-services/forms-index/</p>
01 78 53	<p>Sustainable Design Closeout Documentation</p> <p>NA</p>
01 79 00	<p>Demonstration and Training</p> <p>The Contractor is required to develop, coordinate, and provide startup, operation and maintenance training on all installed systems and equipment. Generally, the CA and A/E shall conduct systems overview, design intent, and design criteria training as part of the contractor developed training. The contractor and vendors shall perform all other portions of trainings. Vendor</p>

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Number

Title

trainings shall be from a trained and qualified factory representative. Prior to scheduling the trainings, the contractor shall develop the training lesson plan and submit to the university for approval that includes:

1. Proposed dates, start times and finish times, and locations
2. Outline of the information to be presented.
3. Names and qualifications of the presenters.
4. List of texts and other materials required to support training.

Appropriate contractor or vendor shall instruct the Owner's designated representative(s) on the safe and proper operation, maintenance, diagnosis, and repair of each piece of specific equipment. Submitted operation and maintenance information shall be used during training. Sessions shall include as a minimum:

1. Conceptual overview of how the equipment works.
2. Names, addresses, numbers etc. of sources for information, tools, spare parts, etc. for the equipment.
3. Details of the warranty or guarantee.
4. Intended sequences of operation in all modes of operation.
5. Sources of utility support.
6. Routine operator tasks involving monitoring and operation covering all modes of operation and mode switching as applicable.
7. Relevant health and safety practices/concerns.

Along with the in person training, the Contractor shall supply written instructions and manufacturers equipment maintenance guidelines that will be used as handouts for trainings and have the Systems Operations and Maintenance Manuals available at the training session.

The training shall be videotaped by the contractor or designated representative with at least 720P format, on a tripod, and moved at times to clearly see components that are being presented on.

The components include, but are not limited to:

Irrigation system and programming
 Door closer tune-up
 6 pin cylinder set-up
 Automatic door openers
 ADA push buttons.
 Folding partition walls.
 Fire sprinkler system.

Section Number	Title
	Fire Alarm system and Dialer
	Fire alarm annunciator panel
	Mag Lock at doors
	Air Handler Units
	VFD's
	VAV Boxes
	Chilled Beams
	Makeup air units
	Heat exchangers and pumps
	Exhaust Fan
	Fan Coil Units
	Expansion tank
	Glycol make-up
	Terminal heating and cooling equipment
	Air curtain
	Radiant floor systems
	Snow melt systems
	Building management systems
	Sequence of operation
	Block programming
	Graphic system operation and modification
	Switchboard, MCC and panelboards
	Generator
	UPS
	Transformers
	Lighting Control Systems
	Security System
	A/V systems
	Data/Com Connectivity
	Elevator operation and maintenance

Refer to Owner's form FS #76 at: <https://in.nau.edu/facility-services/forms-index/>

****END OF SECTION****

Section Number	Title
01 80 00	PERFORMANCE REQUIREMENTS Intentionally left blank.
01 81 00	Facility Performance Requirements
01 81 13	Sustainable Design Requirements The Owner's Project Manager will be designated as an alternate project administrator for all sustainable design programs.

****END OF SECTION****

Section Number	Title
01 90 00	LIFE CYCLE ACTIVITIES Intentionally left blank.
01 91 00	Commissioning
01 91 13	General Commissioning Requirements Commissioning Agent is typically hired directly by Owner. Commissioning Agent shall adhere to ASHRAE Standards and Guidelines.
01 92 00	Facility Operation
01 92 13	Facility Operation Procedures N/A
01 93 00	Facility Maintenance
01 93 13	Facility Maintenance Procedures N/A

****END OF SECTION****