Section Number	Title
01 31 26	Electronic Communication Protocols
01 32 00	**Construction Progress Documentation**
01 32 13	Scheduling of Work
01 32 16	Construction Progress Schedule
01 32 19	Submittals Schedule
01 32 23	Survey and Layout Data
01 32 26	Construction Progress Reporting
01 32 33	Photographic Documentation
01 32 43	Purchase Order Tracking
01 33 00	**Submittal Procedures**
01 33 13	Certificates
01 33 16	Design Data
01 33 19	Field Test Reporting
01 33 23	Shop Drawings, Product Data, and Samples
01 33 29	Sustainable Design Reporting
01 33 29.06	Reused Product Form
01 35 00	**Special Procedures**
01 35 13	Special Project Procedures
01 35 13.26	Special Project Procedures for Clean Rooms
01 35 13.43	Special Project Procedures for Contaminated Sites
01 35 23	Owner Safety Requirements
01 35 26	Governmental Safety Requirements
01 35 29	Health, Safety, and Emergency Response Procedures
01 35 29.13	Health, Safety, and Emergency Response Procedures for Contaminated Sites
01 35 43	Environmental Procedures
01 35 43.13	Environmental Procedures for Hazardous Materials
01 35 43.16	Environmental Procedures for Toxic Materials
01 35 46	Indoor Air Quality Procedures
01 35 53	Security Procedures
01 35 63	Sustainability Certification Project Requirements
01 35 66	Sustainability Certification Project Procedures
01 35 91	Historic Treatment Procedures
01 40 00	**QUALITY REQUIREMENTS**
01 41 00	**Regulatory Requirements**
01 41 13	Codes
01 41 16	Laws
01 41 19	Rules
01 41 23	Fees
01 41 26	Permit Requirements
01 43 00	**Quality Assurance**
01 43 23	Installer Qualifications

Section Number	Title
01 00 00	**GENERAL REQUIREMENTS**
01 10 00	**SUMMARY**
01 11 00	**Summary of Work**
01 11 13	Work Covered by Contract Documents

This section is to include project specific information which will be provided by the DP.

If using Division 1 for subcontractor bid packages the Contractor shall incorporate applicable language from Contractor's Construction Agreement with Owner.

01 11 16 Work by Owner

This section is to include project specific information which will be provided by the Project Manager if applicable.

01 12 00 Multiple Contract Summary

This section is to list other contracts awarded within the project boundary, which will be provided by the DP/Owner (if applicable).

01 14 00 Work Restrictions

01 14 13 Access to Site

This section is to include project specific information which will be provided by the DP.

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.

01 14 16 Coordination with Occupants

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.

01 14 19 Use of Site

This section is to include project specific information which will be provided by the DP.

Section Number | Title

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.

01 18 00 Project Utility Sources

01 18 13 Utility Service Connections

This section is to include project specific information which will be provided by the DP.

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 Allowances

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.

Use of Allowances must be requested and approved through the Allowance Use Authorization form.

01 22 00 Unit Prices

This section is to include project specific information which will be provided by the DP.

01 23 00 Alternates

This section is to include project specific information which will be provided by the DP.

01 26 00 Contract Modification Procedures

01 26 13 Requests for Interpretation

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.

01 26 46 Construction Change Directives

Use Owner form FS#16 for all Construction Change Directives (CCD).
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.

01 26 53 Proposal Requests

Refer to Section 01 26 57

01 26 54 Proposal Worksheet Summaries

Refer to Section 01 26 57

Section Number	Title
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). 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. Payment procedures shall be per the Construction Agreement. The Pay Application form can be found at: https://in.nau.edu/facility-services/dp-contract/.

****END OF SECTION****

Section Number	Title
01 30 00	**ADMINISTRATIVE REQUIREMENTS**
01 31 00	**Project Management and Coordination**

01 31 13 Project Coordination

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.

01 31 14 Facility Services Coordination

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.

01 31 16 Multiple Contract Coordination

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 ensure at the Contractor's own cost reasonable access of additional contractors to the Contractor's site and the Contractor's work.

01 31 19 Project Meetings

Refer to the required project meetings in the Construction Agreement.

01 31 19.13 Preconstruction Meetings

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/.

01 31 19.14 Inspection Meeting

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 meeting from the preconstruction meeting or may be covered in the preconstruction meeting.

Section Number	Title
01 31 19.15	Blue Stake Meeting 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.
01 31 19.16	Site Mobilization Meetings
01 31 19.23	Progress Meetings 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.
01 31 19.33	Pre-Installation Meetings *(DP to edit areas of work requiring Pre-Installation Meetings)* 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: • 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 • Landscaping and Irrigation • Refer to FS#15 for additional requirements

Section Number | Title

- Owner may require additional pre-installation meetings depending on the scope of work.

Acknowledgement of the Pre-Installation Meeting is required on the FS#15 form prior to any inspections being performed.

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.

01 31 26 Electronic Communication Protocols

All communications on the project are to go through the Owner's Project Manager.

01 32 00 Construction Progress Documentation

01 32 13 Scheduling of Work

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.

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.

01 32 16 Construction Progress Schedule

The following requirements shall support and amplify the requirements of the Construction Agreement between Owner and Contractor.

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.

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.

Revisions to the Contractor's construction schedule shall be coordinated with revisions to the procurement schedule.

Section Number | Title

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.

Additions to or deletions from the Contract, authorized through Change Orders, shall be reflected in the Contractor's construction schedule.

Owner's Approval of Phasing

The Owner reserves the right to review and approve scheduling or phasing of construction activities.

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.

01 32 19 Submittals Schedule

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 *XX* days of the notice to proceed. Submittals are required for each subsection detailed in the individual sections of Divisions 2 through 48.

01 32 23 Survey and Layout Data

This information to be provided by Design Professional.

All underground utilities installed or exposed by Contractor shall have survey points taken and indicated on the as-built drawings with utility descriptor, pipe size, material, and any other pertinent data. These need to be presented for review prior to backfilling a section, or as indicated in Division 33.

Points shall be taken at a minimum of every 20 feet plus at any connections, valves, bends, rises/falls and points where other utilities are crossed. In the event that existing utilities are exposed during construction then one point will be taken on the exposed utility at the exposed location or crossing for trench widths of 3 feet or less. Trench widths wider than 3 feet shall have a point taken on the exposed utility where it crosses the newly installed utility and where it enters and exits the trench. Any exposed connections, valves, bends, and rises/falls shall have points taken as well.

Survey data – Control points established for a project are preferred to be at locations easily identifiable from aerial imagery. Examples include corners were asphalt and concrete intersect, distinct corners of pedways and sidewalks, the center of circular utility manhole covers, etc. A few examples are circled in yellow in the image below. A project should contain a minimum of three control points per Civil Site Utilities As-Built sheet that are visible from aerial imagery and mapped on the As-Built. If that is not possible then points are to be collected for features visible from aerial imagery, using the same technology (GPS or total station survey) and coordinates supplied to NAU. Control points and points visible from aerial imagery will be documented with photographs (see photographic documentation section) and written descriptions and used for GIS georeferencing purposes.

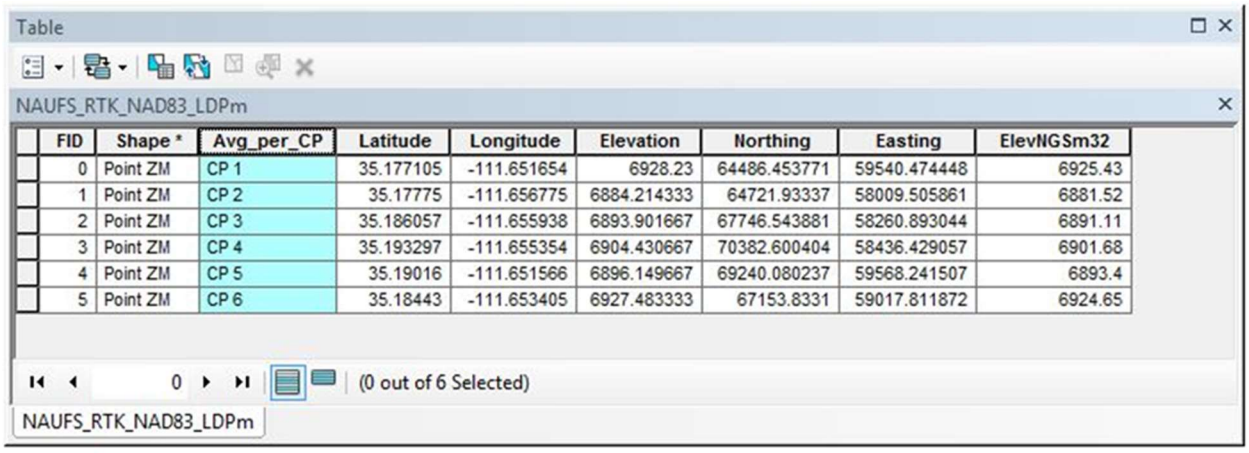
A list of coordinate values will be provided for control points and all other utility points collected as well as a comment/note of what the point is of (ex. 8" waterline bend) as well as include projection and datum information, specifically scale factor, datum, and spheroid/ellipsoid information. Preferably, the data is delivered in the following spatial reference system.

The LDPm System is defined by the following conditions:

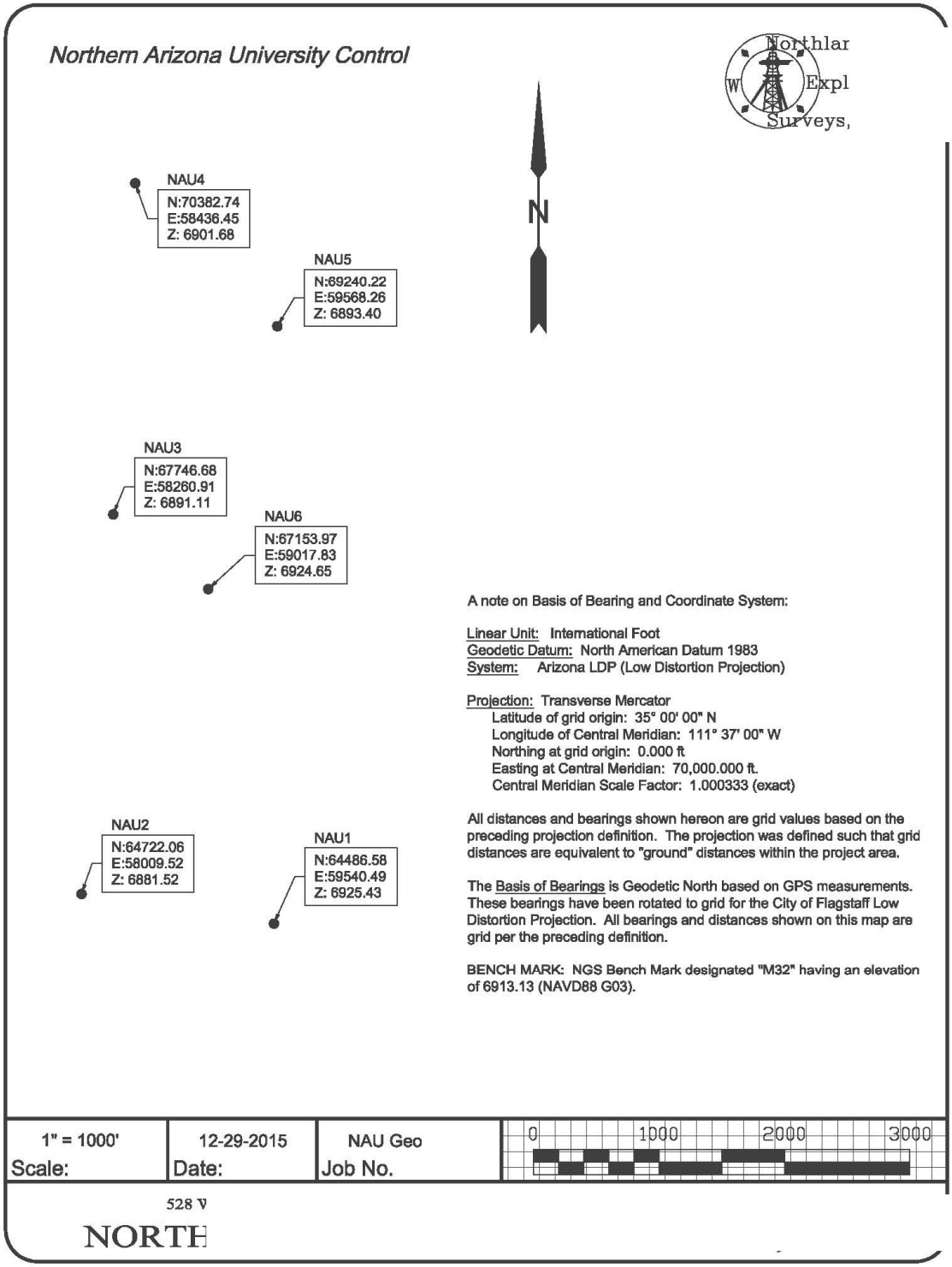
Arizona LDP (Meters)
Authority: Custom

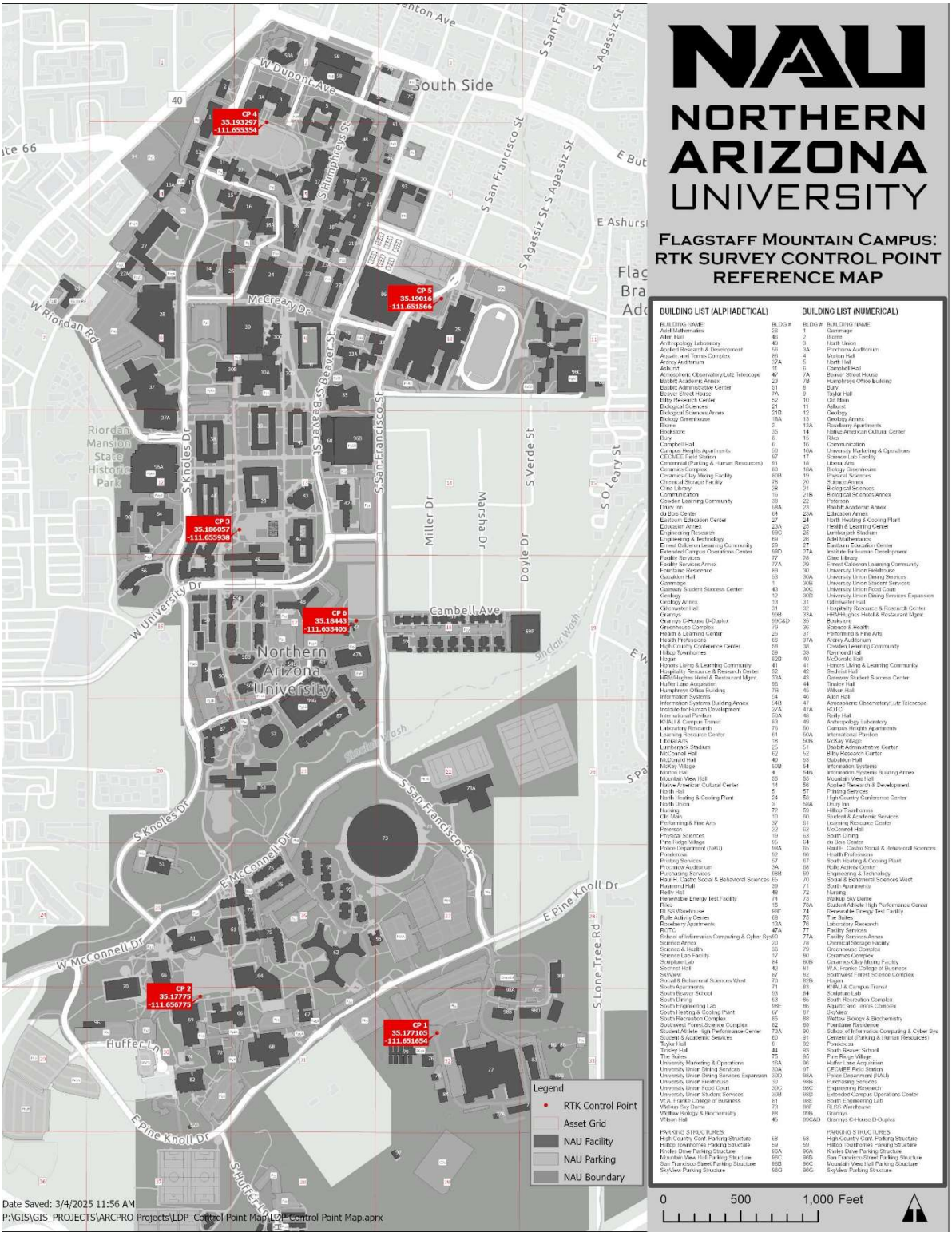
Projection: Transverse_Mercator
False_Easting: 21336.0
False_Northing: 0.0
Central_Meridian: -111.616667
Scale_Factor: 1.000333
Latitude_Of_Origin: 35.0
Linear Unit: Meter (1.0)
Where the basis of bearing is Geodetic North based on GPS measurements.
These bearings have been rotated to grid for the City of Flagstaff LDP.
BENCH MARK: NGS Bench Mark designated 'M32' having an elevation of 6913.13 (NAVD88 G03)
(see corresponding map below)

The Lat/Long/elevation control point coordinates (converted to feet) are as follows:



FID	Shape *	Avg_per_CP	Latitude	Longitude	Elevation	Northing	Easting	ElevNGSm32
0	Point ZM	CP 1	35.177105	-111.651654	6928.23	64486.453771	59540.474448	6925.43
1	Point ZM	CP 2	35.17775	-111.656775	6884.214333	64721.93337	58009.505861	6881.52
2	Point ZM	CP 3	35.186057	-111.655938	6893.901667	67746.543881	58260.893044	6891.11
3	Point ZM	CP 4	35.193297	-111.655354	6904.430667	70382.600404	58436.429057	6901.68
4	Point ZM	CP 5	35.19016	-111.651566	6896.149667	69240.080237	59568.241507	6893.4
5	Point ZM	CP 6	35.18443	-111.653405	6927.483333	67153.8331	59017.811872	6924.65


Northern Arizona University Control
Northlar
W
Expl
Surveys,
N
NAU4
N:70382.74
E:58436.45
Z: 6901.68
NAU5
N:69240.22
E:59568.26
Z: 6893.40
NAU3
N:67746.68
E:58260.91
Z: 6891.11
NAU6
N:67153.97
E:59017.83
Z: 6924.65
NAU2
N:64722.06
E:58009.52
Z: 6881.52
NAU1
N:64486.58
E:59540.49
Z: 6925.43
A note on Basis of Bearing and Coordinate System:
Linear Unit: International Foot
Geodetic Datum: North American Datum 1983
System: Arizona LDP (Low Distortion Projection)
Projection: Transverse Mercator
Latitude of grid origin: 35° 00' 00" N
Longitude of Central Meridian: 111° 37' 00" W
Northing at grid origin: 0.000 ft
Easting at Central Meridian: 70,000.000 ft.
Central Meridian Scale Factor: 1.000333 (exact)
All distances and bearings shown hereon are grid values based on the preceding projection definition. The projection was defined such that grid distances are equivalent to "ground" distances within the project area.
The Basis of Bearings is Geodetic North based on GPS measurements. These bearings have been rotated to grid for the City of Flagstaff Low Distortion Projection. All bearings and distances shown on this map are grid per the preceding definition.
BENCH MARK: NGS Bench Mark designated "M32" having an elevation of 6913.13 (NAVD88 G03).
1" = 1000'
Scale:
12-29-2015
Date:
NAU Geo
Job No.
0
1000
2000
3000
528 V
NORTH


NAU
NORTHERN ARIZONA UNIVERSITY
FLAGSTAFF MOUNTAIN CAMPUS: RTK SURVEY CONTROL POINT REFERENCE MAP
CP 1 35.177105 -111.651654
CP 2 35.17775 -111.656775
CP 3 35.186057 -111.655938
CP 4 35.193297 -111.655354
CP 5 35.19016 -111.651566
CP 6 35.18443 -111.653405
South Side
Northern Arizona University
Riordan Mansion State Historic Park
Cambell Ave
Miller Dr
Doyle Dr
S Verde St
S Knoles Dr
S San Francisco St
S Beaver St
S Humphreys St
S Agassiz St
E Pine Knoll Dr
W McConnell Dr
E McConnell Dr
Huffer Ln
S Lone Tree Rd
W University Dr
McCreary Dr
W Riordan Rd
W Dupont Ave
Legend
RTK Control Point
Asset Grid
NAU Facility
NAU Parking
NAU Boundary
BUILDING LIST (ALPHABETICAL)
BUILDING LIST (NUMERICAL)
PARKING STRUCTURES
0 500 1,000 Feet
Date Saved: 3/4/2025 11:56 AM
P:\GIS\GIS_PROJECTS\ARCPRO Projects\LDP_Control Point Map\LDP_Control Point Map.aprx

Projection:

NAD_1983_StatePlane_Arizona_Central_FIPS_0202_Feet
Projection: Transverse_Mercator
False_Easting: 699998.600000
False_Northing: 0.000000
Central_Meridian: -111.916667
Scale_Factor: 0.999900
Latitude_Of_Origin: 31.000000
Linear Unit: Foot_US (0.304801)

Geographic Coordinate System:

GCS_North_American_1983
Angular Unit: Degree (0.017453292519943299)
Prime Meridian: Greenwich (0.000000000000000000)
Datum: D_North_American_1983
Spheroid: GRS_1980
Semimajor Axis: 6378137.000000000000000000
Semiminor Axis: 6356752.314140356100000000
Inverse Flattening: 298.257222101000020000

Drawings

Projects will have a minimum of three control points per Civil Site Utilities As-Built sheet that are visible on aerial imagery. Other utility GPS/survey data is to be included in the Record Drawings including information from comments/notes.

Layers to be included are:

1. Electric on layer ELEC (red).
2. Telephone on layer TELE (orange).
3. Gas on layer GAS (yellow).
4. Water on layer H2O (blue).
5. Storm/sewer on layer STRM (green).
6. Fire lines and hydrant locations on layer FIRE (blue).
7. Reclaimed water (purple).
8. Survey lines/ Easement (pink)
9. Steam
10. Hot Water
11. Chilled Water

Section Number | Title

Other helpful features include:

Buildings on layer BLDG (green) – not to be used for GIS georeferencing.
Sidewalks on layer WALK (white).
Miscellaneous structures on layer MSTR (blue).
Curb and gutter on layer C&G (cyan).
Vegetation (including plants, trees, shrubs and *all* landscaping) on layer VEG (green).
Parking on layer PARK (yellow).

Alternatives to this need approval from Utility Services.

01 32 26 Construction Progress Reporting

The Contractor shall maintain a written daily log in accordance with the Construction Agreement.

01 32 33 Photographic Documentation

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.

01 32 43 Procurement Tracking

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).

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.

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.

Section Number	Title
01 33 00	**Submittal Procedures** 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.
01 33 13	Certificates *This section is to include project specific information which will be provided by the DP if applicable.*
01 33 16	Design Data
01 33 19	Field Test Reporting 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 *This section is to include project specific information which will be provided by the Owner on property control number information, if applicable.*
01 35 00	**Special Procedures**
01 35 13	Special Project Procedures *This section is to include project specific information which will be provided by the DP if applicable.*
01 35 13.26	Special Project Procedures for Clean Rooms *This section is to include project specific information which will be provided by the DP if applicable.*
01 35 13.43	Special Project Procedures for Contaminated Sites *This section is to include project specific information which will be provided by the DP if applicable.*

Section Number	Title
01 35 23	Owner Safety Requirements

The Contractor's responsibility for project safety is according to OSHA/ADOSH regulations, the EHS Contractor Safety Program (found at https://in.nau.edu/environmental-health-and-safety/occupational-safety/), and the Construction Agreement, which requires submitting a written safety plan to Owner and DP. This safety plan shall be based on contractor performed job hazard assessment (JHA) of the project or work site. Safety Plans 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 which list the task/job steps, anticipated hazards, hazard controls, and required PPE. Contractor shall use their own JHA form and submit to Contractor. 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.

The Contractor's Safety Officer will be responsible for continued monitoring of the job site to maintain safe working conditions in strict compliance with applicable State of Arizona Occupational Safety and Health Standards for the Construction Industry (29 CFR Part 1926), including Housekeeping (Section 1926.25, ADOSH, 29 CFR Part 1926).

The Contractor and all subcontractors shall clear away all debris which poses an unsafe condition as required in Section 1926.25 on a daily basis.

Failure of the Contractor to promptly correct unsafe conditions, subsequent to written or other documented 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.

Additional or specific information regarding Contractor Roles and Responsibilities for safety can be found in the EHS Contractor Safety Program manual (https://in.nau.edu/environmental-health-and-safety/occupational-safety/). This information includes campus safety program information and expectations but

Section Number | Title

may not be comprehensive. It is the responsibility of the Contractor to take adequate steps to ensure safety at the work site.

All design professionals and contractors as well as their subconsultants and subcontractors shall be aware of the *NAU Safe* app, which is Owner's official safety app. The app features notifications and alerts, tools for responding to an emergency, tips for staying safe on campus, and other enhanced features. All external personnel working on campus are encouraged to download the app in order to receive important emergency notifications regarding events occurring on campus that may impact safety. Information regarding the app and how to download it can be found on Owner's website at https://in.nau.edu/its/nausafe/.

01 35 26 Governmental Safety Requirements

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, Training Requirements and OSHA Standards and Training Guidelines (USDA, OSHA 2015).

01 35 29 Health, Safety, and Emergency Response Procedures

Contractor will receive the FS28 – Project Specific Emergency Contacts form from the Owner Project Manager at the project kickoff meeting. Information on how to proceed during an emergency will be provided at that meeting.

01 35 29.13 Health, Safety, and Emergency Response Procedures for Contaminated Sites

This information can be obtained from the Owner's Office of Environmental Health & Safety. https://in.nau.edu/environmental-health-and-safety/

01 35 43 Environmental Procedures

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.

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.

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.

Hazardous Materials Procedures

Any hazardous construction materials must be removed and disposed of in compliance with all applicable regulatory standards. If hazard abatement is required, these activities must be completed prior to the commencement of other activities that would disturb the materials in question or result in hazard to workers or building occupants. If previously undiscovered materials, which are known/suspected to be hazardous are encountered, the Contractor is responsible for stopping work and contacting the Owner (Office of Environmental Health & Safety [EHS] and the Project Manager) to determine the appropriate action before proceeding. Owner may have regulatory obligations for shipping and tracking of hazardous waste streams. The Contractor is responsible for coordinating with the Owner before disposal of any removed hazardous construction materials.

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 (EHS) for determination of whether the waste must be disposed of in accordance with EPA regulations.

To maintain compliance with all applicable state and Federal EPA and OSHA regulations, Owner's policy requires that a site-specific hazard inspection be completed to determine the need for abatement before any work involving the disturbance of pre-existing building components is conducted. This inspection may be requested by Owner or Contractor via the online Worksite Hazard Inspection (FS13) Request Form, which is available at https://in.nau.edu/environmental-health-and-safety/. This form must be signed by Contractor prior to commencing work. Any other required asbestos information and guidance may be requested directly by contacting EH&S at https://in.nau.edu/environmental-health-and-safety/contact-form/. 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.

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 in which work is being conducted; 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 requirements for communication of hazard, training, and PPE. Worker compliance with all applicable regulations shall be enforced by the Contractor.

Lead Abatement
This information can be obtained from the Owner (EHS).

Mercury Disposal
This Information can be obtained from the Owner (EH&S)

PCB Disposal
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 Environmental Health and Safety office and are available for review or notification purposes.

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. NAU specifically requires that floor tile be removed inside a standard class II containment area (e.g. Critical barriers, shower decon, negative pressure, splash guards when applicable). ACBM roofing materials be removed by certified asbestos workers in a regulated work are using appropriate engineering and work controls. Regulatory exemptions for these materials do not meet NAU campus standards. Category I and II Non-Friable materials that are located on the exterior of the building, may be removed within a regulated area that meets the applicable OSHA requirements. If the exterior non-friable materials are to be rendered into Regulated Asbestos Containing Material (RACM) or if RACM to be removed is located on the exterior of the building, the removal will be conducted within a containment under negative pressure with all the OSHA requirements.

By Default, 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 Environmental Health and Safety Office.

When Owner performed abatement is necessary, the Owner's Project Manager will work in cooperation with EHS to develop specifications, collect bids, and contract/complete any necessary abatement independently from the larger construction contract and, unless otherwise authorized by EHS, abatement shall be completed prior to commencement of any other construction activities at the work site.

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. The Contractor shall work with the Owner or an Owner retained representative (Consultant) to thoroughly inspect the work area, develop abatement scope and schedule, collect bids from Owner-approved abatement vendors, and execute abatement consistent with the regulations and requirements identified in this standard. In the event that deficiencies, additional hazards, or inappropriate work practices are noted, the Owner or Owner representative may exercise stop work authority as necessary to facilitate corrective actions.

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 (EH&S) 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 (EH&S).

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, 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.

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 by Owner, 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.

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Blasting Policy

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.

Prior to any blasting, the Contractor shall submit to Owner appropriate employee certification for use of explosives.

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.

01 35 43.13 Environmental Procedures for Hazardous Materials

This section is to include project specific information which will be provided by the DP if applicable.

01 35 43.16 Environmental Procedures for Toxic Materials

This section is to include project specific information which will be provided by the DP if applicable.

01 35 46 Indoor Air Quality Procedures

If a project is for a renovation, the DP shall indicate how to isolate the space to protect the indoor air quality of the rest of the building.

01 35 53 Security Procedures

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.

Refer to Construction Agreement for any additional security requirements.

01 35 63 Sustainability Certification Project Requirements

This section is to include project specific information which will be provided by the DP if applicable.

01 35 66 Sustainability Certification Project Procedures

This section is to include project specific information which will be provided by the DP if applicable. Owner's Project Manager is to be listed as the NAU administrator for the UGBC LEED website login.

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01 35 91	Historic Treatment Procedures *This section is to include project specific information which will be provided by the DP if applicable.*

****END OF SECTION****

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01 40 00 QUALITY REQUIREMENTS

01 41 00 Regulatory Requirements

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:

- 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

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.

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.

01 41 13 Codes and Standards

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.
The department of Engineering and Inspections of Northern Arizona University has marked and designated the *International Building Code 2021, including the listed codes and standards below,* excluding appendix chapters of the I codes are hereby adopted as the building codes of Northern Arizona University in the state of Arizona

- International Building Code 2021 (IBC)
- International Residential code 2021

- International Existing Building Code 2021(IEBC)
- International Energy Conservation Code 2021
- International Plumbing Code 2021(IPC)
- International Mechanical Code 2021 (IMC)
- National Electrical Code 2020 (NEC) (NFPA 70)
- International Fuel Gas Code 2021 (IFGC)
- International Fire Code 2021 (IFC)
- National Fire Alarm Code2022(NFPA 72)
- Installation of Sprinkler Systems 2022(NFPA 13)
- NAU Fire Code 2025
- 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.
    - FYI: Please be advised that where there is a conflict between any applicable accessibility requirements the most restrictive shall apply (e.g., 2021 IBC, 2010 ADA, 2017 ICC/ANSI A117.1, other NAU, State & Federal requirements, etc.).
- 2022 American Society of Mechanical Engineers (ASME) A17.1, Safety Codes for Elevators and Escalators (unless otherwise required)
    - 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 2023
- ASHRAE 362024
- ASHRAE 62.1 2019
- ASHRAE 90.1 – 2022
- ASHRAE 189.1 – 2023
- ASHRAE 202 2024
- Arizona Revised Statutes (ARS)
- IECC 2021
- 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/

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- 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 Ventilation2022
- NAU Design Guidelines and Technical Standards 2025

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 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).

Contractor will be held to have examined and to have become familiar with these regulations in all ways they apply to the project.

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).

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.

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.

01 41 16 Laws

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.

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.

For the complete Blue Stake Procedure, Contractor shall refer to https://in.nau.edu/facility-services/dp-contract/.

DO NOT DIG UNTIL BLUE STAKING HAS BEEN CLEARED! ALL KNOWN UTILITIES MUST BE POTHOLED!

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.

01 41 19 Rules

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.

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.

The entry checklist can be found at: https://in.nau.edu/wp-content/uploads/sites/226/2020/03/NAUentrychecklist.pdf

01 41 23 Fees

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

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	inspector's chargeout rate per hour spent, and no less than $200. This will be at the Contractor's expense.
01 41 26	Permit Requirements NAU permit requirements and applications can be found at: https://in.nau.edu/facility-services/dp-contract/
01 43 00	**Quality Assurance**
01 43 23	Installer Qualifications This section is to include project specific information which will be provided by the DP.
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.

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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, 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
DP to specify which are needed on the project.

****END OF SECTION****

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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

DP to specify.

01 51 16 Temporary Fire Protection

DP to specify.

01 51 23 Temporary Heating, Cooling, and Ventilating

DP to specify.

01 51 26 Temporary Lighting

DP to specify.

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:

- Construction Trailer
- Material Staging
- Wash down areas (concrete, mud, etc.)
- Dumpsters
- Traffic Control including signals and barricades
- Signage
- Site Fencing including gate locations and height of the fence

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- 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
- Tree and Plant Protection area

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.

01 52 13 Field Offices and Sheds

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.

01 52 19 Sanitary Facilities

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.

01 55 00 Vehicular Access and Parking

01 55 13 Temporary Access Roads

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.

01 55 19 Temporary Parking Areas

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/ .

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

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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.

01 55 26 Traffic Control

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.

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.

01 55 29 Staging Areas

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.

01 56 00 Temporary Barriers and Enclosures

01 56 16 Temporary Dust Barriers

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.

01 56 19 Temporary Noise Barriers

This information to be provided by Design Professional (if applicable)

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01 56 26 Temporary Fencing

Project Site Fencing

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. Written approval is also required from the Director or Assistant Director for University Transit Services (Parking) prior to Contractor pounding or boring holes into the asphalt for erection of Project site fencing, where site fencing is located in a parking lot. Fence gates shall remain locked when unattended to discourage access by unauthorized persons.

This applies to large construction projects and small projects with multiple locations.

Staging Area Fencing

A commercial grade chain-link fence around the entire perimeter of the staging area will be required.

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. Written approval is also required from the Director or Assistant Director for University Transit Services (Parking) prior to Contractor pounding or boring holes into the asphalt for erection of staging area fencing located on a parking lot 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.

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.

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.

Fencing shall be placed immediately after or during site preparation and remain in place for the entire duration of construction.

The staging plan shall note that the Contractor is to maintain the fence in a neat and orderly appearance.

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01 56 39 Temporary Tree and Plant Protection

Part 1 – General

A. This section includes work in connection with protection of existing trees, lawn and other plants during construction, and repair and replacement necessitated as a result of construction operations.

B. Refer to Part 3 – Execution for scenarios where protection will be required.

C. Related sections:
   1. 32 84 00 Irrigation
   2. 32 91 13 Soil Preparation
   3. 32 92 00 Turf and Grasses
   4. 32 93 00 Planting
   5. 32 94 00 Planting Accessories and Mulch
   6. 32 96 00 Transplanting

D. Submittals: Prior to start of construction, the Design Professional or Contractor (if no Design Professional) shall document trees and plants to remain, including type, condition, approximate size, any structural deficiencies, and potential hazard trees. Landscaping & Outdoor Services and Campus Landscape Architect shall approve.

E. Prior to construction, Contractor to flag all trees and plants to remain or to be removed for review and approval by Owner. Use white plastic ribbon for those to remain, and orange for those to be removed.

F. Contractor qualifications: Submit qualifications of installer to perform work to Owner for approval prior to work for firm to perform all branch pruning, plant removal, root pruning, and fertilizing required by this section. Preferred installer qualifications to be certified arborist or minimum five-year's experience of similar experience.

G. Prohibited removals: Campus trees that have unique value include those part of NAU's Arboretum (Wommack Tree Walk, Littleman Tree Walk, J. Norm Grim Arboretum, and School of Forestry Tree Walk: https://in.nau.edu/greenhouse/nau-arboretum-tree-walks/), or trees designated as donor or memorial trees, and shall be prohibited from removal. Exceptions may be granted if determined necessary by the

Facilities Services Associate Vice President or the Vice President for Capital Planning & Campus Operations.

Part 2 – Products

A. Mulch for temporary protection shall be coarse ground, free from tree and woody brush, sourced from a local supplier. Minimum range of fine particles to be 3/8" inch or less and maximum size of individual pieces shall be approximately 1 to 1-1/2" in diameter with a maximum length of four to eight inches. Submit one gallon sample for approval to Campus Landscape Architect and LOS.

B. Plastic mesh fence: heavy-duty green or orange, as approved by Owner, plastic mesh fencing fabric 48" wide. Owner may request additional posts, post depth, or fabric attachments if fencing sags, leans or otherwise does not present a significant barrier to access. Provide a three-foot-wide gate for each fenced area.

C. Tree and plant protection signage: provide 8.5 x 11-inch corrugated plastic signs with white background and black text in arial font with two-inch-high letters, attached to tree protection fencing every 50 feet. Signage to read, "TREE AND PLANT PROTECTION AREA – PLEASE KEEP OUT."

D. Ground protection for vehicle and work protection shall be heavy duty, sufficient for vehicle loading over tree roots. Submit product data for Owner approval prior to placement.

Part 3 – Execution

A. To minimize disruption and protect existing tree roots, the guidelines below shall be followed:
   1. Locate poles, conduit, boxes 10' min. from tree trunk for large mature trees such as ponderosa pine or maple.
   2. Locate poles, conduit, boxes 6' min. from tree trunk for smaller mature trees such as ornamental crabapple.
   3. Never cut roots within 2' of tree trunk. Cutting of just one buttress root within 2' of tree reduces stability strength by 25%, making tree a liability even if it survives.
   4. Ideal tree protection is the entire drip line (outer edge of tree canopy).

Majority of roots (80%) are in the top 2' of soil. Where no limit of tree and plant protection is defined on the drawings, limit shall be drip line of each tree or group of trees.

5. Prior to excavation into existing soil within two feet of the limit of tree and protection area or trees to remain, root prune existing trees with vertical cuts to depth of 24 inches below existing grade. Remove all torn root ends on tree side of excavation using clean cuts and backfill immediately with existing soil.

B. Contractor shall not engage in construction activity within the tree and plant protection area without approval of Campus Landscape Architect and Landscaping & Outdoor Services, including: operating and storing equipment, supplies or materials; temporary facilities including trailers or portable toilets; vehicular or foot traffic use of area to traverse for access to other areas or for breaks.
   1. Notify Owner in writing of any conditions or conflicts that may impact successful tree and plant protections.
   2. In the event that construction activity is unavoidable within tree and plant protection area, submit plan for Owner approval to include: reason for and description of activity, time period, and remedial actions to reduce impact.

C. Prior to any construction activity at the site including utility work, grading, material storage, or installation of temporary construction facilities, install tree and plant protection fencing, signage, and mulch. Existing trees, lawn, and other plants designated to remain shall be protected with temporary fencing.
   1. Where foot traffic or storage of lightweight materials is anticipated to be unavoidable within tree and plant protection area, install five inches of mulch. Lightweight materials are packaged materials that can be physically moved by hand into the location. No bulk materials such as excavated material, soil, or aggregate shall ever be stored within tree and plant protection areas.
   2. Where light vehicle traffic is unavoidable provide eight inches of mulch.
   3. Areas where heavy vehicle traffic is unavoidable provide 8-12 inches of mulch and a layer of ground protection over the mulch. Geogrids may also be required below mulch.
   4. Owner shall approve appropriate level of protection.

D. Protect tree and plant protection area at all times from soil compaction, and from damage or contamination to trunks, bark, branches, leaves and roots from construction materials or operations. Notify Owner of any damage, compaction or contamination and take corrective action using methods as approved by Owner.

E. Tree Removal: Refer to NAU Tree Bank for replacement of trees planned for removal. Only trees indicated by drawings as requiring removal, or those determined to be incapable of restoration to normal growth as a result of damage from construction operations, shall be removed, in a manner that will not damage adjacent plants or structures.
   1. Protect adjacent paving, soil, trees and other plants to remain from damage during all tree removal operations. Protection to include root systems, trunk, limbs, and crown, and soil from compaction.
   2. Remove stumps and grind trunk bases and large buttress roots to depth of largest buttress root or 18 inches minimum below existing grade. Remove all wood until there is less than 20 percent visible from stump hole. Backfill with native soil.
   3. Existing trees to be removed are categorized and replaced using the method below:
      a. Single or Multi-Stem Deciduous Trees, and Ponderosa Pines:

         Removal of a tree 6" DBH or greater but less than 15" DBH requires one (1) new 2" caliper deciduous tree or one (1) new 6' ht. evergreen tree.
      b. Removal of a tree 15" DBH or greater but less than 24" DBH requires two (2) new 2" caliper deciduous trees, two (2) new evergreen trees at 6' height, or one (1) evergreen tree at 10' height.
      c. Removal of a tree 24" DBH or greater requires three (3) new 2" caliper deciduous trees, three (3) new evergreen trees at 6' height, or two (2) evergreen trees at 10' height.
      d. Evergreen Trees (Excluding Ponderosa Pines):
         Removal of a tree less than 10 feet in height requires one (1) new 6' height tree.
      e. Removal of a tree greater than 10 feet but less than 20 feet in height requires two (2) new trees at 6' height, or one (1) tree at 10' height.
      f. Removal of a tree 20 ft in height or greater requires three (3) new trees at 6' height, or two (2) trees at 10' height.
   4. If an exception is granted for removal of a prohibited tree per Part 1. Item G this Section, values will be assessed at 1.5 times their DBH where deciduous or ponderosa pine, or 1.5 times their height where evergreen. Mitigation fees are calculated based on DBH x 1.5 less the total DBH of replacement trees.
   5. Exceptions for mitigation will be made where:
      a. Removal is considered beneficial to the health of the campus tree canopy such as in instances of overcrowding or dense ponderosa pine tree stands;

b. Tree is an unhealthy condition and cannot be reasonably treated for survival;
c. Tree species is classified as a noxious weed by the Arizona Department of Agriculture, such as Siberian Elm or Russian Olive: https://agriculture.az.gov/pestspest-control/agriculture-pests/noxious-weeds;
d. Tree is deemed to pose a hazard to buildings or pedestrians due to leaning trunks, weak branching or structural instability;
e. Tree is not of significant size (DBH is less than six inches);
f. Tree is able to be salvaged and transplanted in accordance with Section 32 96 00 Transplanting; or
g. Tree is dead (less than 25% live limbs).

F. Plant maintenance: Contractor may be responsible for ensuring adequate water, insect and disease control, and weed removal is provided during entire construction period. Responsibility for project maintenance to be determined by Owner on case-by-case basis.
1. Contractor shall coordinate with LOS to adjust irrigation system, if available, and apply additional water as required using hoses or water tanks to all plants to be preserved.
2. Provide hand removal of weedy species in and around the fenced tree and plant protection areas at least once per month during growing season, including final weeding at end of construction period.
3. Monitor all plants to remain for disease and insect infestations during entire construction period, and provide control required as approved by Owner.

G. At end of construction period or when requested by Owner, remove all fencing, mulch, and ground protection. Make all repairs to grades, ruts, and other damage.

H. Repair and Replacement of Existing Trees, Shrubs, Lawn and Native Grasses
1. Repair all plant material and landscape areas, including native grass and forest areas, damaged by construction in a manner acceptable to Owner. Make repairs promptly after damage occurs to prevent progressive deterioration, at no additional expense to Owner.
2. Remove and replace dead and damaged plants as a result of construction which are determined by the Owner to be incapable of restoration to normal growth patterns. Damaged trees, shrubs, lawns or native grass areas shall be removed and replaced and treated as required to conform with Division 32 specifications for fresh stock, at Contractor's expense.

3. Replace existing damaged and dead shrubs, lawns or native grass areas with similar species of equal size or the largest size plants reasonably available. Plant, maintain, and warranty as specified under Division 32 of the specifications. Restore planting areas back to preconstruction conditions including mulch or gravel.
4. Plants that are damaged shall be considered as requiring replacement in the event the damage affects more than 25% of the crown, trunk, or root protection area, or the tree is damaged in a manner that the tree could develop into a potential hazard. Tree assessment may be determined by Owner or Owner's consultant to assess health or condition.
5. Replacement of trees will be achieved by replanting with species similar to those removed, with preference for native materials or as otherwise approved by Campus Landscape Architect. Tree replacements require two (2) year warranty per Division 32.
    a. Location of replacement trees are evaluated on a case-by-case basis by Campus Landscape Architect. Where it is not possible or desirable to plant the replacement tree at the same location, trees may be installed in another campus location with suitable conditions.
    b. Campus Landscape Architect may approve installation of non-similar species at alternate locations to enhance other campus areas.
    c. In instances where project limitations such as schedule or seasonal timing preclude replacement plantings, payment is to be made from the construction project budget to the Tree Bank account. Costs are based on recent campus construction projects, and are adjusted annually for inflation (based on the Replacement Cost Basis as outlined in the Guide for Plant Appraisal prepared by the Council of Tree and Landscape Appraisers (CTLA) 10th edition, which includes tree purchase, delivery, installation and establishment/warranty). In some instances, mitigation fees may also be calculated based on DBH less the total DBH of replacement trees. Refer to Tree Bank for current fee schedule.
6. Any remedial work on damaged existing plants shall be completed by the Contractor at no cost to the Owner. Remedial work can include but is not limited to soil compaction remediation, pruning, insect and disease control, compensatory watering, and mulching. Work may extend up to two years following Substantial Completion Acceptance to allow for multiple applications or seasonal timing.

Section Number	Title
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 including individual advertising signs, banners, plaques or credits on buildings or premises, except the name of the Contractor on their trailer. Site safety signage in accordance with OSHA standards is allowed but must be approved by the NAU Project Manager. Safety signage shall be provided by Contractor at all jobsite entrances, to include NAU project name, name of Contractor, superintendent's name and contact information, and OSHA safety requirements. All signage to have final approval by Facility Services Planning, Design and Construction (FS-PDC).

Exterior NAU signage for active construction, including site wraps, jobsite signage, and construction , parking lot road or sidewalk closure signs, shall be provided and managed by FS-PDC and printed through the University's Printing Services.

01 58 16 Temporary Interior Signage

Signs for temporary construction barricades shall include University project name, name of Contractor, superintendent's name and contact information, and duration dates for closures or barricades.

Two weeks minimum advance notice shall be provided for temporary closures of student spaces.

****END OF SECTION****

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 Cutting and Patching

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.

01 74 00 Cleaning and Waste Management

01 74 13 Progress Cleaning

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.

Contractor is responsible for removal of Blue Stake markings and returning the site to its original condition.

01 74 16 Site Maintenance

01 74 19 Construction Waste Management and Disposal

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.

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.

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.

01 74 23 Final Cleaning

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:

- 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.
- Landscaping and irrigation: irrigation systems and equipment to be operational with sufficient soil moisture without overwatering or soggy conditions; prune plants as required under Division 32; reset any plants that have settled or are leaning; tree guy wires to be taut; all landscape areas and planting beds to be free of weeds and any plants that do not appear on planting plan; remove all trash and debris from site boundaries to have neat and tidy appearance; clean all debris from surface water drains and paved surfaces.
- Except as otherwise indicated or requested by Owner, remove all temporary protection devices and facilities which were installed during the course of the work.

Make building ready for occupancy in all respects. Protect cleaned areas until final inspection and acceptance.

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. If concrete work was undertaken as part of the project, all debris or excess materials shall be removed from site and the area left in a clean and tidy

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state. Final inspection of storage / staging areas used during construction is required prior to final payment.

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 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

This information to be provided by the Design Professional.

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.

Section Number	Title
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/ *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 <u>all</u> 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 will 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

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- sand/oil separators
- cooling towers
- chillers (documenting refrigerant type used)
- pre/post construction stormwater controls/NOI's
- emergency showers
- bulk chemical storage locations
- fume hoods/bio-safety cabinets
- location of sanitary sewer drains

01 78 23.16 Maintenance Data

Close-out submittals shall include a completed "Maintenance Check List" (FS#88) indicating all maintenance and frequency required for warranty purposes.

01 78 29 Final Site Survey

The contractor is to keep a copy of as-builts 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 new and/or replaced utilities until substantial completion is reached and the as-builts have been submitted to, reviewed, and accepted by NAU. Natural Gas is turned over when it is energized so as-builts 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/CAD record drawings shall adhere to the following:

- All buried and concealed items must be located by survey as indicated above or other NAU GIS accepted format. This includes, but is not limited to 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.
- As-built CAD drawings to include irrigation system and landscaping.

01 78 36 Warranties

DP to provide project-specific information on guarantee submittals.

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.

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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.

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.

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.

01 78 39 Project Record Documents

For all project record documentation procedures, please reference the Construction Agreement located at https://in.nau.edu/facility-services/dp-contract/

Refer to Owner's form FS #76 at https://in.nau.edu/facility-services/dp-contract/ for example of As-Builts required.

01 78 43 Spare Parts

DP to provide project-specific information on guarantee submittals.

01 78 46 Extra Stock Materials

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

01 78 53 Sustainable Design Closeout Documentation

DP to provide project-specific information.

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01 79 00 Demonstration and Training

As directed by Owner, the Contractor may be required to develop, coordinate, and provide startup, operation and maintenance training on installed systems and equipment. Project-specific needs will be outlined during project implementation. The contractor is responsible for clarifying the scope of the training required with Owner. Generally, the Commissioning Agent and Design Professional 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 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 video recorded 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 recording shall be provided to Owner in either MP4 or MKV file format.

The components include, but are not limited to:

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

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Refer to Owner's form FS #76 at: https://in.nau.edu/facility-services/dp-contract/.

****END OF SECTION****

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.

All commissioning documents such as pre-functional checklists, TAB, and commissioning reports shall be submitted on PMWeb as submittals for review and approval by Utility Services in addition to the Commissioning agent when required.

The Checklist and the Functional Testing will be Activities in the Construction Schedule.

01 92 00	**Facility Operation**
01 92 13	Facility Operation Procedures

This section is to include project specific information which will be provided by the DP.

01 93 00	**Facility Maintenance**
01 93 13	Facility Maintenance Procedures

This section is to include project specific information which will be provided by the DP.

****END OF SECTION****