This ADDENDUM will become part of the Contract Documents. In case of difference with previous addenda or communications, this addendum takes precedence.

It is the responsibility of the contractor to notify all subcontractors from whom he accepts bids of all changes in the drawings and specifications covering this project.

Receipt shall be acknowledged by inserting the Addendum number and its date in the Bid From.

ADDENDUM NUMBER: 02  DATE ISSUED: 09.29.2015

PROJECT: NAIC Parking Garage  PROJECT NUMBER: A&E: 14080
A/E#: 2014-02-07-01
PPA#: 14-0046

PAGES IN ADDENDUM: 53  PREPARED BY: A&E Architects
(INCLUDING ATTACHMENTS)

ISSUED TO: Montana State University  ACE
Sam J. DesJardins  Todd Meling, Jeff Kraft
Montana State A/E  Access Consulting
Cody Mitchell  Pete Weber
A&E Architects  Martel Construction
Kris Koesl  Phil Lafata
ZGF  Morrison-Maierle

ATTACHMENTS:
Revised Bid Package Description – Schedule A (10 pages)
Parking Garage Schedule (2 pages)
Dental Excavation Detail (1 page)
Unit Price Schedule (1 page)
Pre-Bid Meeting Minutes & Attendees List 9.24.15 (7 pages)

LETTER OF AGREEMENT FOR ELECTRONIC DRAWING FILES - A&E ARCHITECTS, P.C.

SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION (7 pages)
Revised SECTION 017839 – PROJECT RECORD DOCUMENTS (3 pages)
Revised SECTION 017900 – DEMONSTRATION & TRAINING (4 pages)
SECTION 061000 – ROUGH CARPENTRY (3 pages)
SECTION 331500 – TREE PROTECTION (8 pages)
Revised Sheet MP0.01
Revised Sheet MP1.05

ADDENDUM TO CONTRACT DOCUMENTS

The additions, clarifications, and corrections contained herein shall be made to the Project Specification Manual, Drawings, and Schedules for the above referenced project, and shall be included in the scope of work and proposals to be submitted. References made below to the Project Specification Manual and Drawings shall be used as a general guide only. Bidder shall determine the extent of work affected by Addendum items.

GENERAL BID ITEMS:

Reinforcing Steel Package:
- Bid Package 3E has been broken into 3 sub categories to allow the separate bidding of supply and install. These sub categories are shown on the attached revised bid package breakdown as 3E.1, 3E.2 and 3E.3. If you would like to bid all three of these packages please submit a bid for the original 3E package.
Sitework Package: The following notes have been added to this category on the attached revised bid package:
- Haul off of spoils from clear and grub as well as excavation if not to be re-used
- Re-use of sod from clear and grub to be used to repair area at installation of waterline
- Mobilizations as required throughout the duration of the project
- Include Haul Off of Spoils From Engineered Aggregate Pier Install

Schedule
- A more detailed schedule has been included to show the breakdown and timeframe of the sitework

Detail
- A detail for the dental excavation or “fine” excavation has been included

Unit Pricing
- A unit pricing spreadsheet has been included for concrete cost

Pre Bid Meeting Minutes and Notes
- Attached

General Requirement Forms
- Replace AIA C106 DIGITAL LICENSING AGREEMENT with the attached LETTER OF AGREEMENT FOR ELECTRONIC DRAWING FILES - A&E ARCHITECTS, P.C.

PROJECT MANUAL (SPECIFICATIONS):
1. ADDITION: Add the attached Specification Section 01310 – PROJECT MANAGEMENT AND COORDINATION to Volume 1 of the Project Manual. Section is shown on the Table of Contents but the section was not included in the Project Manual.
2. REVISION: Replace existing Specification SECTION 017839 – PROJECT RECORD DOCUMENTS in Volume 1 of the Project Manual in its entirety with attached revised section.
5. REVISION: Revise Specification SECTION 011000-SUMMARY in Volume 1 of the Project Manual as follows:
   I. Part 1, 1.2 B. - Revise Owner to read, “Campus Planning, Design, and Construction, Montana State University, State of Montana”
   II. part 1, 1.8 C.-1 – Revise two days to read “5 BUSINESS DAYS”
   III. Part 1, 1.8 E. – Revise section to read “Montana State University is a tobacco free campus. Smoking or any other use of tobacco products on campus property is not permitted.”
   iv. Part 1, 1.8 F. – Revise section to read “Controlled Substances: Use of controlled substances on campus property is not permitted.”
6. REVISION: Revise Specification SECTION 079233 – CONCRETE JOINT SEALERS in Volume 2 of the Project Manual as follows:
   i. Add sub-paragraph K to Part 2.2
   K. Silicone, Nonstaining, S, NS, 100/50, T, NT: Nonstaining, single-component, nonsag, plus 100 percent and minus 50 percent movement capability, traffic- and nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 100/50, Uses T and NT.
      1. Manufacturers: Subject to compliance with requirements, provide products by the following:
         a. Dow Corning Corporation.
7. REVISION: Revise Specification SECTION 312000 – EARTH MOVING in Volume 4 of the Project Manual as follows:
   i. Add sub-paragraphs G and H below to part 2.1
   G. Topsoil: Topsoil shall be free of existing sod and lawn. Imported – Friable, dark loamy soil, fertile, free from rubble, stones, clay lumps, extraneous material, and plant roots and reasonably free of weeds. Physical properties as follows:
H. Sod: Sod shall be from a commercial sod farm located in Gallatin Valley. Sod shall be well-established lawn turf grasses similar to the seed mix described below:

Irrigated Grass Seed Mixture: Seed at the minimum rate of three (3) pounds per one thou-sand (1000) square feet (130 lbs./acre).

<table>
<thead>
<tr>
<th>Name of Grass</th>
<th>Proportion by Weight</th>
<th>Percent Purity</th>
<th>Percent Germination</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Midnight' Kentucky bluegrass</td>
<td>25%</td>
<td>95%</td>
<td>85%</td>
</tr>
<tr>
<td>'Rugby II' Kentucky bluegrass</td>
<td>25%</td>
<td>95%</td>
<td>85%</td>
</tr>
<tr>
<td>'Ram I' Kentucky bluegrass</td>
<td>25%</td>
<td>95%</td>
<td>85%</td>
</tr>
<tr>
<td>'Delaware' Dwarf Peren. Rye Grass</td>
<td>25%</td>
<td>95%</td>
<td>85%</td>
</tr>
</tbody>
</table>

ii. Add Section 3.21 to Part 3-EXECUTION

3.21 PLACING OF TOPSOIL AND SOD

A. All areas disturbed by construction, except surfaces occupied by paving and areas indicated to be undisturbed shall be restored with topsoil and sod.

B. Cut sod in uniformly wide strips, uniformly 1-1/2 inches thick with clean cut edges.

C. Sod shall be rolled or folded prior to lifting. Handling of sod shall be done in a manner that will prevent tearing, breaking, drying, or any other damage.

D. Sod shall be installed in place on the site not more than 24 hours after cutting.

E. Obtain ENGINEER’s approval of rough grading before placing topsoil.

F. Relieve subgrade compaction using a fracturing, deep-tine aerifier, a high-pressure water injection aerifier, or other method approved by OWNER.

G. Scarify and place 9-10 inches minimum of topsoil. Uniformly spread layer of topsoil over areas that have been distributed. If quantity of on-site topsoil is insufficient, import off-site topsoil.

H. Level topsoil to eliminate water pockets and irregularities. Compact to 85 % Standard Proctor Density in planted areas.

I. Slope graded surfaces to drain surface water away from buildings; minimum slope 1/4 inch in 12 inches (2%).

J. Grade uniformly with rounded surfaces at tops and bottoms of abrupt changes in plane. Hand-grade steep slopes and areas that are inaccessible for machine work and areas around existing trees.

K. Protect graded areas from undue erosion. Repair and regrade if required. Refill and compact where settlement or erosion occurs. Provide hay bales and burlap as required to prevent erosion throughout project.

L. Grade areas to elevations and slopes indicated without depressions causing pocketing of surface water or humps, producing localized runoff and gullying. Ponding of water on-site is not allowed. Finish surfaces to be not more than 0.10 foot above or below established grade elevation.

M. Remove all lumps and clods prior to placing sod.

DRAWINGS:

SHEET #

C1.00

1. ADDITION: add note 15 to the general notes. “15. All areas disturbed by construction outside the construction fence, except surfaces occupied by paving and areas indicated to be undisturbed shall be restored with topsoil and sod”.
C2.06  
1. **REVISION:** revise plan callout from “598 LF” to “465 LF” and profile call out from “468 LF” to “465 LF”.

A7.01  
1. **REVISION:** HARDWARE SCHEDULE  
a. **HDWR GROUP #1:** Revise Lockset to read “STANLEY BEST 9K SERIES LEVER SET, 15D TRIM, 619 FINISH, 7 PIN INTERCHANGEABLE CORE FOR THE MEDECO KEYMARK X4, TYPE “D” STOREROOM FUNCTION”  
b. **HDWR GROUP #2:** Revise Lockset to read “1 @ ACTIVE LEAF: STANLEY BEST 9K SERIES LEVER SET, 15D TRIM, 619 FINISH, 7 PIN INTERCHANGEABLE CORE FOR THE MEDECO KEYMARK X4, TYPE “D” STOREROOM FUNCTION”  

2. **ADDITION:** HARDWARE SCHEDULE – ADD NOTE TO SCHEDULE AS FOLLOWS: NOTE 1: PREFERRED ALTERNATIVE LOCKSET - SCHLAGE ND-SERIES WITH RHODES TRIM.

S0.01  
1. **CLARIFICATION:** Note III, E. #1a. – Revise note to read “Top slab reinforcing (excluding slab on grade).”

S3.50  
1. **ADDITION:** DUCTILE FRAME NOTES  
a. Add Note 8 - Note to read “TOP BARS IN DUCTILE FRAMES TO BE EPOXY COATED.”

S6.03  
2. **ADDITION:** BEAM NOTES  
b. Add Note 13 to BEAM NOTES. Note to read “TOP BARS IN BEAMS TO HAVE 3” COVER TYP. EPOXY COATING OF TOP BARS & TIES IS NOT REQUIRED.”

MP0.01  
1. **REVISION:** Modify piping of 3rd level floor drains (4 total) located adjacent to gridlines “C & 12” and “B & 12” to be tied into storm drain system that drains into detention pond. Reference attached revised Sheet MP0.01

MP1.05  
1. **REVISION:** Modify piping of 3rd level floor drains (4 total) located adjacent to gridlines “C & 12” and “B & 12” to be tied into storm drain system that drains into detention pond. Reference modifications clouded on Detail 2. Reference attached revised Sheet MP1.05

**PRIOR APPROVALS:**

**END OF ADDENDUM 02**
All subcontractors are responsible for the following:

1. The Trade Contractor must review and comply with all requirements of Division 1 General Requirements.
2. All specification sections listed below are for reference only. All Bid Packages referenced sections contain related sections necessary to complete the work.
3. Other sections of the specifications may apply to each bid package for the necessary completion of the work.
4. All Trade Contractors will be required to comply with the Construction Manager's safety program and it will be mandatory that all trades attend scheduled safety and progress meetings conducted on site each week.
5. All materials should be quoted delivered to the jobsite.
6. Layout from Benchmarks & Gridlines to complete scope.
7. Electronic communications.
8. Repair or closing of fence where damaged or opened. Cleanup of any mud tracked from project site by Subtrade's vehicles or work.
9. Cost for employee parking at stadium (F) lot for all employees and associated parking regulations.
10. Clean up from own operations to Martel provided dumpsters and sorting as required.
11. MT Prevailing wages.
12. On Site Communication with Martel.
13. Off site storage to facilitate just in time delivery to the jobsite.
14. Protection of existing utilities and facilities.
15. No disruption to existing utilities unless scheduled with Martel 2 weeks in advance.
16. Protection of installed work.
17. Sleeves as required to complete work in addition to those shown on the drawings, there can be no core drilling.
18. Field measurements as required to complete scope of work.
19. Coordination of work to eliminate the need to drilling into the elevated decks after they are placed.
20. House keeping pads will be FRP by the concrete subcontractor, if shown. All other pads required will be the responsibility of the contractor requiring them.
21. Meeting attendance by Superintendent or higher level employee empowered to make decisions regarding project and coordinate manpower.
22. Installation of embeds required to complete their scope, identified during the submittal process.
23. Exhaling of fumes, gasses, or dust not deemed appropriate by Martel.
25. See Logistics drawing for site access plan.

The Norm Asbjornson Innovation Center Parking Structure is being procured as a Construction Management At Risk project with Martel Construction Inc. acting as Construction Manager. All Contracts will be between Martel Construction Inc. and the selected bidder unless otherwise noted.
### SCHEDULE A Building and Systems

#### 3A Concrete Supply
- Furnish concrete for footings, foundations, structure, and decks
- Washout in designated areas
- Concrete mix delivered to jobsite within spec or subject to rejection
- Proposal to Be Submitted as Unit Price Bid Form

Furnish and install all concrete joint sealants and curing compound for work installed

<table>
<thead>
<tr>
<th>All Plans &amp; Specifications - Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>033000 - Cast In Place Concrete</td>
</tr>
<tr>
<td>Unit Price Bid Form to follow in Addenda</td>
</tr>
</tbody>
</table>

#### 3B Structural Concrete Form, Place and Finish
- Labor, Materials and Equipment to Form, Place & Finish footings, foundation walls and columns
- Dental excavation and fill of soil at footings + .5’ of Bottom of Footing Elevation.
- Furnish and install all concrete joint sealants and curing compound for work installed
- Fine grade, Form and Prep for flatwork
- Form, place, finish, cure, seal, and cut all slabs on grade
- Furnish and Install all vapor barrier related to concrete
- Provide protection as required by ACI for Cold and Hot Weather.
- Cooperate, coordinate and support all testing by owner’s testing agency
- Receive, coordinate and place all misc. steel embeds Supplied by Others
- Provide survey and layout as required to perform package
- As Built - accurately record any deviations from construction documents to project record documents.

<table>
<thead>
<tr>
<th>All Plans &amp; Specifications - Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>033000 - Cast In Place Concrete</td>
</tr>
<tr>
<td>MSU NAIC Parking Structure</td>
</tr>
<tr>
<td>---------------------------</td>
</tr>
<tr>
<td><strong>Please Refer to the Instructions to Bidders, Invitation to Bid, Bid Form, Plans, Specifications and Addenda</strong></td>
</tr>
</tbody>
</table>

Subcontractor shall be responsible for all clean up associated with scope of work. Clean up must be performed daily.

Temporary power may not be on site during the work covered by this bid package. Subcontractor will provide temporary power generators as needed to complete this scope.

Confirmation of slab depth at columns and center of bays

General clean-up

Install sleeves in concrete as shown

Install interior bollards

### 3C: Concrete Place & Finish

<table>
<thead>
<tr>
<th>Description</th>
<th>All Plans &amp; Specifications - Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor to place and finish flatwork for Structure. SOG, Elevated Deck Misc.</td>
<td>033000 - Cast In Place Concrete</td>
</tr>
</tbody>
</table>

### 3D: Elevated Garage Beam & Deck Forming System

Supply, Erect, Form Slabs, Beams, Moment Frames, Bulkheads and all related misc. components for Garage Beam Forming System. System will include Engineered Formwork Drawings and coordination with Post Tension and Rebar Coordination Drawings. System will be erected and cycled on a mutually agreeable schedule with other trades. System shall include enough forms and equipment to cycle forms on a weekly basis.

### 3E: Rebar and Post Tensioning Tendons

<table>
<thead>
<tr>
<th>Description</th>
<th>All Plans &amp; Specifications - Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>3E.1, 3E.2, 3E.3 Packages Should Only Be Bid If a Number Will Not Be Submitted For The Original 3E Package These can be bid individually</td>
<td></td>
</tr>
<tr>
<td>3E.1 Rebar (Furnish Only)</td>
<td>All Plans &amp; Specifications - Complete</td>
</tr>
<tr>
<td>Furnish all reinforcing steel and accessories as required</td>
<td>033000 - Cast In Place Concrete</td>
</tr>
<tr>
<td>Furnish all rebar supports, chairs etc.</td>
<td>033816 - Unbonded Post Tensioned Concrete</td>
</tr>
<tr>
<td>Furnish, layout and install all rebar and tendon supports, chairs etc.</td>
<td>033000 - Cast In Place Concrete</td>
</tr>
<tr>
<td>Furnish and install cable guardrails</td>
<td>033000 - Cast In Place Concrete</td>
</tr>
<tr>
<td>Furnish and install epoxy coated rebar</td>
<td>033000 - Cast In Place Concrete</td>
</tr>
<tr>
<td>Submit cable elongation and pressure gauge readings as required</td>
<td>033000 - Cast In Place Concrete</td>
</tr>
<tr>
<td>Offload, Inventory all Resteel deliveries</td>
<td>033000 - Cast In Place Concrete</td>
</tr>
<tr>
<td>Provide Hoisting for Off Loading as required</td>
<td>033000 - Cast In Place Concrete</td>
</tr>
<tr>
<td>Review, Process &amp; Administer all Steel Shop and Placement Drawings as required to ensure reinforcing material is received in coordination with the project construction schedule.</td>
<td>033000 - Cast In Place Concrete</td>
</tr>
<tr>
<td>Provide copies of all delivery tickets and mill certs to Construction Manager</td>
<td>033000 - Cast In Place Concrete</td>
</tr>
<tr>
<td>Laydown all materials in areas coordinated with Construction Manager</td>
<td>033000 - Cast In Place Concrete</td>
</tr>
<tr>
<td>Furnish, layout and install all reinforcing steel and accessories as required</td>
<td>033000 - Cast In Place Concrete</td>
</tr>
<tr>
<td>Furnish, layout and install all post tensioning materials equipment and labor</td>
<td>033000 - Cast In Place Concrete</td>
</tr>
<tr>
<td>Furnish and install all rebar and tendon supports, chairs etc.</td>
<td>033000 - Cast In Place Concrete</td>
</tr>
<tr>
<td>Furnish and install cable guardrails</td>
<td>033000 - Cast In Place Concrete</td>
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<tr>
<td>Laydown all materials in areas coordinated with Construction Manager</td>
<td>033000 - Cast In Place Concrete</td>
</tr>
</tbody>
</table>
### MSU NAIC Parking Structure
**Bid Package Descriptions - Schedule A**

Please Refer to the Instructions to Bidders, Invitation to Bid, Bid Form, Plans, Specifications and Addenda

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnish epoxy coated rebar</td>
<td>033816 - Unbonded Post Tensioned Concrete</td>
</tr>
<tr>
<td>Review, Process &amp; Administer all Steel Shop and Placement Drawings as required</td>
<td></td>
</tr>
<tr>
<td>reinforcing material is received in coordination with the project construction schedule.</td>
<td></td>
</tr>
<tr>
<td>Provide copies of all delivery tickets and mill certs to Construction Manager</td>
<td></td>
</tr>
<tr>
<td><strong>3E.2</strong> Post Tension (Furnish Only)</td>
<td></td>
</tr>
<tr>
<td>Furnish all post tensioning materials and supports</td>
<td>033816 - Unbonded Post Tensioned Concrete</td>
</tr>
<tr>
<td><strong>3E.3</strong> Rebar and Post Tension (Install Only)</td>
<td></td>
</tr>
<tr>
<td>Layout and install all reinforcing steel and accessories as required</td>
<td>033000 - Cast In Place Concrete</td>
</tr>
<tr>
<td>Install all rebar and tendon supports, chairs etc.</td>
<td>033816 - Unbonded Post Tensioned Concrete</td>
</tr>
<tr>
<td>Install cable guardrails</td>
<td></td>
</tr>
<tr>
<td>Install epoxy coated rebar</td>
<td></td>
</tr>
<tr>
<td>Submit cable elongation and pressure gauge readings as required</td>
<td></td>
</tr>
<tr>
<td>Offload, Inventory all Resteel deliveries</td>
<td></td>
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<tr>
<td>Review, Process &amp; Administer all Steel Shop and Placement Drawings as required</td>
<td></td>
</tr>
<tr>
<td>reinforcing material is received in coordination with the project construction schedule.</td>
<td></td>
</tr>
<tr>
<td>Laydown all materials in areas coordinated with Construction Manager</td>
<td></td>
</tr>
<tr>
<td><strong>5A</strong> Structural and Miscellaneous Steel - Supply</td>
<td></td>
</tr>
<tr>
<td>Supply all structural steel, joist, and decking.</td>
<td>051200 - Structural Steel Framing</td>
</tr>
<tr>
<td>Supply all connections and embeds to steel, concrete.</td>
<td>051617 - Strand Guard Rail System</td>
</tr>
<tr>
<td>Supply all shop welded rebar</td>
<td>053100 - Steel Decking</td>
</tr>
<tr>
<td>Supply all metal fabrications.</td>
<td>054000 - Cold Formed Metal Framing</td>
</tr>
<tr>
<td>Supply all steel stairs and rails.</td>
<td>055000 - Metal Fabrications</td>
</tr>
<tr>
<td>Supply all site misc. steel including but not limited to bollards, brackets, gratings, etc.</td>
<td>055113 - Metal Pan Stairs</td>
</tr>
<tr>
<td>Furnish snow gates</td>
<td>055119 - Metal Grating Stairs</td>
</tr>
<tr>
<td></td>
<td>055213 - Pipe and Tube Railings</td>
</tr>
<tr>
<td><strong>5B</strong> Structural and Miscellaneous Steel - Install</td>
<td></td>
</tr>
<tr>
<td>Install all structural steel.</td>
<td>051200 - Structural Steel Framing</td>
</tr>
<tr>
<td>Install all steel decking.</td>
<td>051617 - Strand Guard Rail System</td>
</tr>
<tr>
<td>Install all steel joists.</td>
<td>053100 - Steel Decking</td>
</tr>
<tr>
<td>Install all steel stairs and handrails.</td>
<td>054000 - Cold Formed Metal Framing</td>
</tr>
<tr>
<td>Install all misc. metal fabrications.</td>
<td>055000 - Metal Fabrications</td>
</tr>
<tr>
<td>Offload and inventory all steel</td>
<td>055113 - Metal Pan Stairs</td>
</tr>
<tr>
<td>Provide all layout</td>
<td>055119 - Metal Grating Stairs</td>
</tr>
<tr>
<td>Install snow gates</td>
<td>055213 - Pipe and Tube Railings</td>
</tr>
<tr>
<td>Bid Package</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>6A Rough Carpentry</td>
<td>Furnish and install wood blocking as shown on the drawings for roof parapet and tel-data rooms</td>
</tr>
<tr>
<td>7A Concrete Joint Sealants &amp; Traffic Coatings</td>
<td>Supply and Install Joint Sealants related to the Structural Concrete 033000 - Cast in Place Concrete</td>
</tr>
<tr>
<td>7B Roofing</td>
<td>Furnish and install PVC roofing including insulation and cover board 075419 - PVC Roofing</td>
</tr>
<tr>
<td>8A Supply Doors, Frames, and Hardware</td>
<td>Supply all steel doors and HM frames. 081113 - Hollow Metal Frames and Doors 087100 - Door Hardware and Door Schedule  Supply all interior hollow metal windows/lites.  Supply all door hardware for Bid Package 8A.</td>
</tr>
<tr>
<td>8B Install Doors, Frames, and Hardware</td>
<td>Install all steel doors and frames, hollow metal lites, and associated hardware. 081113 - Hollow Metal Frames and Doors 087100 - Door Hardware and Door Schedule  Provide all fasteners, adhesives, tools and equipment for a complete installation of Bid Package 8A.</td>
</tr>
<tr>
<td>9A Gypsum Board Assemblies &amp; Cold Formed Metal Framing</td>
<td>Furnish and install all gypsum board walls complete with framing, hang, tape, and finish 054400 - Cold Formed Framing 092216 - Non Structural Metal Framing 092900 - Gypsum Board</td>
</tr>
<tr>
<td>9B Paintings &amp; Water Repellents</td>
<td>Supply and install all painting and coating, including all exposed steel, doors and door frames 071900 - Water Repellents  Supply and install finish caulk at door frames  Supply and install water Repellents on concrete floors as scheduled.  Final coat of paint after all fixed equipment is installed  All finish caulking where painted surfaces meet each other or a dissimilar material, including door and window frames etc. 099113 - Exterior Painting</td>
</tr>
<tr>
<td>Schedule</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td>10A</td>
<td>Supply Specialties</td>
</tr>
<tr>
<td></td>
<td>Furnish Interior Expansion Joint Covers</td>
</tr>
<tr>
<td></td>
<td>Furnish all fire extinguisher cabinets</td>
</tr>
<tr>
<td></td>
<td>Furnish all fire extinguishers</td>
</tr>
<tr>
<td></td>
<td>Furnish signage</td>
</tr>
<tr>
<td></td>
<td>Furnish precast parking stops</td>
</tr>
<tr>
<td>10B</td>
<td>Install Specialties</td>
</tr>
<tr>
<td></td>
<td>Install Interior Expansion Joint Covers</td>
</tr>
<tr>
<td></td>
<td>Install all fire extinguisher cabinets</td>
</tr>
<tr>
<td></td>
<td>Install all fire extinguishers</td>
</tr>
<tr>
<td></td>
<td>Install precast parking stops</td>
</tr>
<tr>
<td>10C</td>
<td>Supply and Install Signage</td>
</tr>
<tr>
<td></td>
<td>Furnish and Install Signage</td>
</tr>
<tr>
<td>21A</td>
<td>Fire Suppression</td>
</tr>
<tr>
<td></td>
<td>Supply and Install Fire Protection System Complete</td>
</tr>
<tr>
<td></td>
<td>Provide one line coordination drawings</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>22A</td>
<td>Plumbing</td>
</tr>
<tr>
<td></td>
<td>Furnish and install complete plumbing scope to 5’ outside building.</td>
</tr>
<tr>
<td></td>
<td>Furnish and install all plumbing piping insulation.</td>
</tr>
<tr>
<td></td>
<td>Furnish and install all seismic bracing.</td>
</tr>
<tr>
<td></td>
<td>Furnish and install sand/oil separator as shown on the civil drawings</td>
</tr>
<tr>
<td></td>
<td>Underground and excavation work as required to complete scope</td>
</tr>
<tr>
<td></td>
<td>Provide one line coordination drawings</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
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</tr>
<tr>
<td>23A</td>
<td>Heating, Ventilating and Air Conditioning - Dry Side Mechanical</td>
</tr>
</tbody>
</table>
## MSU NAIC Parking Structure
### Bid Package Descriptions - Schedule A

Please Refer to the Instructions to Bidders, Invitation to Bid, Bid Form, Plans, Specifications and Addenda

| 230000 | HVAC General Requirements |
| 230500 | Common Work Results For HVAC |
| 230513 | Common Motor Requirements For HVAC Equipment |
| 230529 | Hangers and Supports For HVAC Piping and Equipment |
| 230553 | Identification For HVAC Piping and Equipment |
| 230593 | Testing Adjusting and Balancing for HVAC |
| 233113 | Metal Ducts |
| 233300 | Air Duct Accessories |
| 233423 | HVAC Power Ventilators |
| 233713 | Diffusers, Registers and Grilles |
| 233723 | HVAC Gravity Ventilators |

### Electrical, Communications, and Fire Alarm

| 024100 | Site Demolition |
| 260000 | Electrical General Requirements |
| 2601513.16 | Medium Voltage, Single and Multi Conductor Cables |
| 260519 | Low Voltages Electrical Power Conductors and Cables |
| 260526 | Grounding and Bonding For Electrical Systems |
| 260529 | Hangers and Supports For Electrical Systems |
| 260533 | Raceway and Boxes For Electrical Systems |
| 260543 | Underground Ducts and Raceways For Electrical Systems |
| 260543.13 | Excavation and Backfill |
| 260543.19 | Manholes and Hardware |
| 260548 | Seismic Controls For Electrical Systems |
| 260553 | Identification for Electrical Systems |
| 260572 | Overcurrent Protective Device Short-circuit Study |
| 260573 | Overcurrent Protective Device Coordination Study |
| 260574 | Overcurrent Protective Device Arc Flash Study |
| 260812 | Power Distribution Acceptance Tests |
| 260813 | Power Distribution Acceptance Test Tables |
| 260923 | Lighting Control System |
| 261219 | Pad Mounted Liquid Filled Medium Voltage Transformers |
| 262200 | Low Voltage Transformers |
| 262416 | Panelboards |
| 262713 | Electricity Metering |
| 262726 | Wiring Devices |
| 262813 | Fuses |
| 262816 | Enclosed Switches |
| 265100 | Interior Lighting |
| 265600 | Exterior Lighting |
### MSU NAIC Parking Structure

**Bid Package Descriptions - Schedule A**

Please Refer to the Instructions to Bidders, Invitation to Bid, Bid Form, Plans, Specifications and Addenda

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>270000</td>
<td>Communications Project Overview</td>
</tr>
<tr>
<td>270100</td>
<td>Basic Telecommunications Requirements</td>
</tr>
<tr>
<td>271100</td>
<td>Telecommunication Rooms</td>
</tr>
<tr>
<td>271200</td>
<td>Pathways, Fittings, and Boxes</td>
</tr>
<tr>
<td>271500</td>
<td>Backbone Cabling Requirements</td>
</tr>
<tr>
<td>271600</td>
<td>Horizontal Cabling Requirements</td>
</tr>
<tr>
<td>283111</td>
<td>Digital Addressable Firealarm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>31A</th>
<th>Earthwork &amp; Utilities</th>
</tr>
</thead>
</table>

Site Demo to include work on C1.04 and C1.05 as well as other drawings as related to this scope
Furnish and install all requirements for earth moving for mass excavation and site improvements to within .05" +/- .05" of finished subgrade
Excavation should be to final subgrade .5" above bottom of footing and dental excavation for footings of remaining .5" will be by the concrete contractor.
Furnish and install all site utilities that enter the structure to within 5" of the exterior of the structure including fixtures such as hydrants (excluding primary electrical and sand oil separator)
Provide street sweeping at all areas affected or soiled by import and export operations as well as for SWPPP requirements while on Site
Furnish and install all requirements per the SWMPP

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>024100</td>
<td>Site Demolition</td>
</tr>
<tr>
<td>220000</td>
<td>Plumbing General Requirements</td>
</tr>
<tr>
<td>220500</td>
<td>Common Work Results For Plumbing</td>
</tr>
<tr>
<td>220529</td>
<td>Hangers and Supports For Plumbing and Piping Equipment</td>
</tr>
<tr>
<td>220553</td>
<td>Identification for Plumbing Piping and Equipment</td>
</tr>
<tr>
<td>220700</td>
<td>Plumbing Insulation</td>
</tr>
<tr>
<td>221113</td>
<td>Facility Water Distribution Piping</td>
</tr>
<tr>
<td>221313</td>
<td>Facility Sanitary Sewers</td>
</tr>
</tbody>
</table>

Haul off of spoils including but not limited from EAP Installation
Provide survey and layout as required. Any additional staking point data with elevations, offsets, point lists, exhibits with point locations shall be the responsibility of the Subcontractor.

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>221413</td>
<td>Facility Storm Drainage Piping</td>
</tr>
<tr>
<td>221423</td>
<td>Storm Drainage Piping Specialties</td>
</tr>
<tr>
<td>311000</td>
<td>Site Clearing</td>
</tr>
<tr>
<td>312000</td>
<td>Earth Moving</td>
</tr>
</tbody>
</table>

Include testing of each utility system as required by authority having jurisdiction.
Protect subcontractor’s own open excavations and/or trenches
Provide survey and layout as required. Any additional staking point data with elevations, offsets, point lists, exhibits with point locations shall be the responsibility of the Subcontractor.

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>312500</td>
<td>Erosion and Sediment Control</td>
</tr>
<tr>
<td>331000</td>
<td>Water Distribution Piping</td>
</tr>
<tr>
<td>333000</td>
<td>Sanitary Sewers</td>
</tr>
<tr>
<td>334100</td>
<td>Storm Utility Drainage Piping</td>
</tr>
</tbody>
</table>

Provide and maintain vehicle track pad as required to prevent the tracking of mud off the site
Temp roads on site as required
Furnish and install gravel fire lane as shown on the drawings
Dewatering of ground water as required - Refer to Geotech Report

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>331100</td>
<td>- Water Distribution Piping</td>
</tr>
<tr>
<td>333000</td>
<td>- Sanitary Sewers</td>
</tr>
<tr>
<td>334100</td>
<td>- Storm Utility Drainage Piping</td>
</tr>
</tbody>
</table>

Temporary power may not be on site during the work covered by this bid package. Subcontractor will provide temporary power generators as needed to complete this scope.
Include excavation and fill for relocation of gas line
All work per geotechnical data provided

---

Additional items below
**MSU NAIC Parking Structure**  
**Bid Package Descriptions - Schedule A**

Please Refer to the Instructions to Bidders, Invitation to Bid, Bid Form, Plans, Specifications and Addenda

- Haul off of spoils from clear and grub as well as excavation if not to be re-used
- Re-use of sod from clear and grub to be used to repair area at installation of waterline
- Mobilizations as required throughout the duration of the project
- Include Haul Off of Spoils From Engineered Aggregate Pier Install

### 31B Engineered Aggregate Piers

<table>
<thead>
<tr>
<th>All Plans &amp; Specifications - Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnish and install all requirements for rammed aggregate piers</td>
</tr>
<tr>
<td>Include engineering coordination for rammed aggregate piers to comply with performance spec</td>
</tr>
<tr>
<td>Open Holes to be protected when not being worked on. All borings in progress must be completed during work hours. No open holes allowed overnight.</td>
</tr>
<tr>
<td>Performance testing as required per the spec and remediation as necessary</td>
</tr>
<tr>
<td>Provide unit pricing for work not covered by this contract</td>
</tr>
<tr>
<td>Dewatering of ground water as applies</td>
</tr>
<tr>
<td>Provide quality plan per the spec</td>
</tr>
<tr>
<td>Temporary power may not be on site during the work covered by this bid package. Subcontractor will provide temporary power generators as needed to complete this scope.</td>
</tr>
</tbody>
</table>

### 32A Asphalt Paving

<table>
<thead>
<tr>
<th>All Plans &amp; Specifications - Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnish and install all asphalt paving</td>
</tr>
<tr>
<td>Finish Grade Crushed Gravel Base Course as required.</td>
</tr>
<tr>
<td>Install exterior site signage as shown on civil drawings</td>
</tr>
<tr>
<td>Layout and grade to complete work package</td>
</tr>
<tr>
<td>Furnish and install pavement markings for asphalt areas and all areas exterior to the structure</td>
</tr>
<tr>
<td>Furnish and install curb, gutter, and crosswalks</td>
</tr>
</tbody>
</table>

### 32B Concrete Paving

<table>
<thead>
<tr>
<th>All Plans &amp; Specifications - Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnish and install all concrete site paving shown on civil sheets including but not limited to drives and walks</td>
</tr>
<tr>
<td>Furnish and install fine grade of subgrade</td>
</tr>
<tr>
<td>Install exterior bollards as shown on the civil drawings</td>
</tr>
<tr>
<td>Furnish and install site concrete accessories including but not limited to detectable domes</td>
</tr>
<tr>
<td>Include colored concrete at cross walks</td>
</tr>
<tr>
<td>Provide concrete joint location plan per the spec</td>
</tr>
<tr>
<td>Furnish and install concrete joints and joint sealants for work installed</td>
</tr>
<tr>
<td>Layout, cure, and seal work installed</td>
</tr>
<tr>
<td>Protect from weather when required</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>316310 - Vertically Rammed Engineered Aggregate Piers</th>
</tr>
</thead>
<tbody>
<tr>
<td>321216 - Asphalt Paving</td>
</tr>
<tr>
<td>321313 - Concrete Paving</td>
</tr>
<tr>
<td>321373 - Concrete Paving Joint Sealants</td>
</tr>
<tr>
<td>321723 - Pavement Markings</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>079233 - Joint Sealants As Related to This Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>32113 - Concrete Paving</td>
</tr>
<tr>
<td>321373 - Concrete Paving Joint Sealants</td>
</tr>
<tr>
<td>32C</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Task Name</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>PARKING STRUCTURE PRECONSTRUCTION PHASE</td>
</tr>
<tr>
<td>GARAGE CONSTRUCTION PHASE</td>
</tr>
<tr>
<td>Notice to Proceed Requirements</td>
</tr>
<tr>
<td>Building Permit Issued - COB</td>
</tr>
<tr>
<td>Contract Insurance Certificate to Owner</td>
</tr>
<tr>
<td>Notice to Proceed Submittals by GCCM</td>
</tr>
<tr>
<td>Notice to Proceed - Parking Structure</td>
</tr>
<tr>
<td>Construction Submittals</td>
</tr>
<tr>
<td>Parking Garage Submittals</td>
</tr>
<tr>
<td>PreCon Meetings</td>
</tr>
<tr>
<td>Mobilize on Site</td>
</tr>
<tr>
<td>Parking Structure</td>
</tr>
<tr>
<td>Building Pad Excavation &amp; Fill / Deep Foundations</td>
</tr>
<tr>
<td>Cut or Fill Bilg Pad</td>
</tr>
<tr>
<td>Deep Foundation System Installation</td>
</tr>
<tr>
<td>Flg Trenching</td>
</tr>
<tr>
<td>Underground Plumbing</td>
</tr>
<tr>
<td>Fly &amp; Wall Backfill</td>
</tr>
<tr>
<td>USI Vapor Barriers</td>
</tr>
<tr>
<td>Unders Slab Gravels</td>
</tr>
<tr>
<td>Concrete Foundations &amp; Slab on Grade Work</td>
</tr>
<tr>
<td>Concrete Foundations Work</td>
</tr>
<tr>
<td>Slab on Grade Concrete</td>
</tr>
<tr>
<td>Structural Deck Placement</td>
</tr>
<tr>
<td>UNX P11 #1</td>
</tr>
<tr>
<td>UNX P11 #2</td>
</tr>
<tr>
<td>Deck Pour #3</td>
</tr>
<tr>
<td>Deck Pour #4</td>
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<tr>
<td>UNX P11 #5</td>
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<tr>
<td>UNX P11 #6</td>
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<tr>
<td>UNX P11 #7</td>
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<tr>
<td>Deck Pour #8</td>
</tr>
<tr>
<td>UNX P11 #10</td>
</tr>
<tr>
<td>UNX P11 #11</td>
</tr>
<tr>
<td>Deck Pour #12</td>
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<tr>
<td>Deck Pour #13</td>
</tr>
<tr>
<td>UNX P11 #14</td>
</tr>
<tr>
<td>Deck Pour #15</td>
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<td>Façade &amp; Stair Towers</td>
</tr>
<tr>
<td>STAIR TOWER - S2</td>
</tr>
<tr>
<td>STAIR TOWER - S1</td>
</tr>
<tr>
<td>Exterior Façade</td>
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<td>152</td>
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<td>153</td>
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<tr>
<td>154</td>
</tr>
</tbody>
</table>
Site contractor to excavate to 6" above bottom of footing

Dental Excavation or "Fine" Excavation Detail

Concrete contractor to excavate remaining for footing installation

Engineered Aggregate Pier

Footing
### Building Element Required Volume (Includes Waste) Required Strength Mix Design Base Concrete Unit Price Unit Total Cost

<table>
<thead>
<tr>
<th>Building Element</th>
<th>Required Volume</th>
<th>Required Strength</th>
<th>Mix Design</th>
<th>Base Concrete Unit Price</th>
<th>Unit</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Footings</td>
<td>694</td>
<td>4,000</td>
<td>Per Plans &amp; Specifications</td>
<td>$</td>
<td>$/CY</td>
<td>$</td>
</tr>
<tr>
<td>At-Grade Walls</td>
<td>161</td>
<td>4,000</td>
<td>Per Plans &amp; Specifications</td>
<td>$</td>
<td>$/CY</td>
<td>$</td>
</tr>
<tr>
<td>Grade Beams</td>
<td>140</td>
<td>4,000</td>
<td>Per Plans &amp; Specifications</td>
<td>$</td>
<td>$/CY</td>
<td>$</td>
</tr>
<tr>
<td>Slabs on Grade</td>
<td>1,058</td>
<td>5,000</td>
<td>Per Plans &amp; Specifications</td>
<td>$</td>
<td>$/CY</td>
<td>$</td>
</tr>
<tr>
<td>Columns</td>
<td>454</td>
<td>5,000</td>
<td>Per Plans &amp; Specifications</td>
<td>$</td>
<td>$/CY</td>
<td>$</td>
</tr>
<tr>
<td>Elevated Slabs &amp; Beams</td>
<td>3,411</td>
<td>5,000</td>
<td>Per Plans &amp; Specifications</td>
<td>$</td>
<td>$/CY</td>
<td>$</td>
</tr>
<tr>
<td>Above Grade Walls &amp; All Other</td>
<td>35</td>
<td>4,500</td>
<td>Per Plans &amp; Specifications</td>
<td>$</td>
<td>$/CY</td>
<td>$</td>
</tr>
<tr>
<td><strong>Total Volume:</strong></td>
<td><strong>5,953</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Cost, Based on Provided Volumes (Use this Value for Bid Form Submission):** $ -

### Seasonally-Dependent Admixtures (Provide Unit Prices)

<table>
<thead>
<tr>
<th>Admixture Price</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Water</td>
<td>$/CY</td>
</tr>
<tr>
<td>Non-Chloride Accelerating Admixture (1%)</td>
<td>$/CY</td>
</tr>
<tr>
<td>Non-Chloride Accelerating Admixture (2%)</td>
<td>$/CY</td>
</tr>
<tr>
<td>Water Reducing Admixture</td>
<td>$/CY</td>
</tr>
<tr>
<td>Retarding Admixture</td>
<td>$/CY</td>
</tr>
<tr>
<td>Water-Reducing &amp; Retarding Admixture</td>
<td>$/CY</td>
</tr>
<tr>
<td>High-Range Water Reducing Admixture</td>
<td>$/CY</td>
</tr>
<tr>
<td>High-Range Water Reducing &amp; Retarding Admixture</td>
<td>$/CY</td>
</tr>
<tr>
<td>Plasticizing &amp; Retarding Admixture</td>
<td>$/CY</td>
</tr>
</tbody>
</table>
1 Introductions:
   a.) MSU Owner Representatives
       Sam Des Jardins - Project Manager
       Randy Stephens - MSU Lead Architect
       Christian Black - MSU Mapping Technician
   b.) Architect - A&E Architects/ZGF
       Paul Siderius - Project Architect
   c.) Structural Engineer - Morrison and Maierle
       Kurt Keith P.E.
       Jay Fischer P.E.
   e.) Parking Consultant - Walker Parking
       Don Monahan
   e.) Martel Construction - Construction Manager
       Jason Martel - Principal
       Phil Lafata - Project Manager
       Tom Estes - Superintendent
       Pat Bjorndal - Project Engineer
       Tyler Ragen - Estimator

2 Martel Construction - Construction Manager
   a.) Responsibility
       1 Manage Subcontractor / Supplier Bid Process - > Submit GMP to Owner
       2 Manage Project Schedule, Process Pay Applications, Process RFI's,
       3 Process CO's, Process Submittals, Quality Control
       4 Prepare & Execute Trade Contractors Contracts as the Construction Manager
       5 Liaison between Trade Contractor & Owner/Architect
       6 Provide & Maintain Control Points and Bench Marks for Project layout
           Martel will provide 2 main gridlines (one in each direction)
       7 Conduct Project Meetings
       8 Coordinate Independent Testing- MSU will contract and pay for direct
           The State A&E Dept. has an RFP out for Concrete Testing
Pre-Bid Meeting Agenda Schedule A

3 Trade Subcontractors Contractors and Suppliers

a.) Selected by an Advertised Bid Process managed by the Construction Manager

Bid docs are available at all MT exchanges, regional exchanges and campus plan design website.

b.) Responsibility

1. Perform all work defined in Bid Packages, Drawings and related Specification Sections
2. Provide Full time supervision acceptable to the Construction Manager
3. Provide all material and Labor required to Perform Bid Package and as described in the Contract Documents
4. Provide Daily Site & Project Clean up as defined in the specifications Clean up to Martel provided recycle and waste receptacles.
5. Provide Project Management for the Bid Package
6. Provide all Safety Requirements of the Bid Package
7. Abide by CM Firm's safety program, including daily morning stretch and flex
8. Provide any necessary equipment for the Bid Package (i.e. Hoisting)
9. Responsible for QA/QC of the Bid Package
10. Provide all necessary survey, layout, staking, for Bid Package work
11. Weather Protection
   Both hot & cold weather protection - weather dependent
12. As-Built Drawings
   Required per spec. Certified As-Built Survey - see specifications.
13. Mandatory attendance - weekly safety meeting
14. Mandatory attendance - weekly subcontractor coordination meetings
15. Daily logs to be turned in daily
16. Sleeves required for all penetrations and anchors
   Decks are post-tension. There will be NO drilling or cutting into the slabs.
17. The Parking Solution portion of the project is not LEED but we will be following LEED protocol with respects to recycling and tracking regional materials.
Pre-Bid Meeting Agenda Schedule A

Scope of Work-Misc

a.) Trade Contractor Bid Package Contracts carried under Martel's GC/CM
b.) Refer to the Bid Packages issued in Addendum # 1
c.) Bidders should thoroughly review Division 1 Specifications
d.) Work Hours- 8:00 AM - 4:30 PM M-F. Extended Hours as Approved by CM

Some exceptions might be early morning pours of the elevated concrete decks and large material deliveries. Subs are responsible to watch their equipment and materials during the pours. Utility work may fall into this category when working out of the limits of construction.

e.) MSU is a TOBACCO FREE campus.
   Strictly enforced! This includes the spitting of sunflower seeds. Don't do it!

f.) Parking - Designated Areas only - Stadium Lot
   East Stadium Lot - Purchase F Lot permits. Parking tickets issued $60.
   There may be room for 1 company vehicle per sub inside jobsite fence. Not guaranteed so plan accordingly.

g.) There are no radios (music) or headphones allowed on the jobsite

h.) Under no circumstances should any tradesmen approach or interact with any MSU student or faculty. Violation is grounds for immediate dismissal.

i.) Logistics, access, staging

j.) Early contractors will be required to furnish power via generators
   Temp power will come off of permanent power but this is not installed yet. Electrical subs need to indicate what their lead time will be to get the temp power up and running.

k.) All contractors should include cutting and patching in their scope if there is no work shown on the drawings that will follow their work. An example of this would be the excavation and patching of asphalt in 7th st to install the sewer to the East side of the road.

l.) All contractors must call in their own underground locates as related to scope
   Call in all locates as usual. Call Locate will communicate with MSU engineers. Give 2 full business days. Call in a locate for each area.

4 Submission of Bid - All Information is in Addendum No. 1

a.) Invitation to Bid
b.) Instructions to Bidders
c.) Bid Form
d.) Bid Packages & Preliminary Schedule
e.) Submission of Bids - Hand delivered (or mail) sealed bids - Tuesday October 6th at 2pm
Pre-Bid Meeting Agenda Schedule A

At: Martel Construction, Inc.
1203 S. Church
Bozeman, MT 59715

How: Mail
no fax or email bids will be accepted
Hand Delivered

f.) On Bid Form found in Addendum No. 1 in sealed envelope

g.) Qualifications or Clarifications to Bid

   1 Submit on Trade Contractors Company letter head

i.) Must be a Montana licensed contractor

j.) Bids DO NOT require a Bid Bond or Security

k.) Bids may require a Performance and Payment bond. The cost of the bond should be included as a line item in the submitted bid

l.) Bids DO require the Montana 1% Gross Receipts Tax included in Bid

m.) MT Prevailing Wage Scale apply to this project.-See specs for wage scale

   Certified Payroll reporting is required.

n.) Acknowledge Addendums on the Bid Form in space provided.

   Addendum #2 will be issued early next week.

   Sections in "green" on Bid Package Descriptions are scopes of work that Martel will bid to self perform. Same bid criteria applies to Martel as to subcontractors.

5 Miscellaneous

a.) Substitutions Requests and Pre-Bid Request for Information should be directed to Martel Construction Inc. in writing before October 1st.

   Phil Lafata - plafata@martelconstruction.com
   Pat Bjorndal - pbjorndal@martelconstruction.com

   All responses and clarifications will be issued in an Addendum

b.) Addendum #2

   1 May break out from BP 3E (Rebar Supply - BP 3F)

   2 Will include unit price schedule for concrete

c.) Schedule A - Does not include elevator, skin or NE stair tower.
Pre-Bid Meeting Agenda Schedule A

d.) Schedule B - The work may be dealt with by Change Order through existing contractors pending performance. There will be some new bid packages for new contracts. NAIC is currently in the SD phase. Bid Packages to be ready Dec. 2015.

e.) Concrete Pour Schedule - Martel will be driving the deck pour schedule hard. Must stay on schedule to take advantage seasonal work.

f.) Jobsite Map & Parking - All traffic will come in through Kagy from the south. Construction employees to park in F Lot near Stadium East side. No construction traffic is allowed on Grant unless approved by Martel. Alternate parking plan - East back laydown yard of Martel off of Garfield.

g.) CAD Files - Will be available upon signing a release in spec book.

6 Montana State

a.) Owner's Items

1 This is a high profile project. Center of campus. A lot of foot traffic. There will be a project camera that people from all over the state and beyond will be watching.

2 Be aware of environmental issues such as dust in the air and vehicles tracking dirt and mud onto the roadways.

3 Utility outages need at least 72 hrs notice. Contact Phil 2 weeks before utility outages to coordinate.

4 Anything you damage you repair to original condition.

5 Lock everything up. Lock up your tools and trailers. Last one off the jobsite needs to make sure the gate is secured and locked.

7 Architect & Engineers

a.) Architect Items

1 Addendum #2 will be forthcoming early next week (week of 9/28) and will include agenda and notes from this meeting

2 Schedule B will be issued at a later date and will include the scope at the NW stair and the skin that will be installed on the garage
Pre-Bid Meeting Agenda Schedule A

8 Open Q&A

Subcontractors Job Trailers - there is a small area at the North side of the project site that may be available, but this is also the only laydown area on site. The Martel laydown yard will also be available for store some materials, parking and preassembling some items. Coordinate with Phil.

1 Site Walk - See MSU spec for standard tree protection (issued in addendum).

2 Some trees will be relocated...see drawings.

3 Site Walk - All utilities will need to be moved, including the storm drain. Plumbing contractors responsible for 5’ out from building and Site contractors for 5’ to building. Last one to get there is responsible for final connection. Plumbing contractor responsible to furnish and install sand oil separator with piping from building side.
Pre-Bid Meeting
9/24/2015

RE: MSU NAIC Parking Structure
Martel Construction Project No. 15-001

<table>
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LETTER OF AGREEMENT FOR ELECTRONIC DRAWING FILES
A&E ARCHITECTS, P.C.

Contractor’s Name: XXXXX

Email: xxxxxx
Telephone: 406.XXX.XXXX
Project Name and #: XX

If requested, A&E Architects, P.C. (A&E) and its contracted consultants (hereafter referred to as A&E) will provide electronic files of Architectural drawings for the above-named Contractor’s convenience and use in the preparation of shop drawings related to the referenced project subject to the following terms and conditions:

A&E makes no representation as to the compatibility of these files with the above-named Contractor’s computer hardware or software beyond the specified release of the referenced specifications. A&E retains its rights in the electronic files. By transmitting the electronic files, A&E does not grant to the above-named Contractor an assignment of those rights; nor does A&E convey to the above-named Contractor any right in the software used to generate the electronic files.

Data contained on these electronic files are part of A&E’s instruments of service and shall not be used by the above-named Contractor or anyone else receiving this data through or from the above-named Contractor for any purpose other than as a convenience in the preparation of shop drawings for the referenced project. Any other use or reuse by the above-named Contractor or by others will be at the above-named Contractor’s sole risk and without liability or legal exposure to A&E. The above-named Contractor agrees to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against A&E, its officers, directors, employees, agents, or sub-consultants which may arise out of or in connection with the above-named Contractor’s use of the electronic files.

Furthermore, the above-named Contractor shall, to the fullest extent permitted by law, indemnify and hold harmless A&E from all claims, damages, losses and expenses, including attorney’s fees arising out of or resulting from the above-named Contractor’s modification to, or unlicensed use of, these electronic files.

These electronic files are not contract documents. Significant differences may exist between these electronic files and corresponding hard copy contract documents due to addenda, change orders or other revisions. A&E makes no representation regarding the accuracy or completeness of the electronic files received by the above-named Contractor. In the event that a conflict arises between the signed documents prepared by A&E and electronic files, the signed contract document shall govern. The above-named Contractor is responsible for determining if any conflict exists. By use of these electronic files, the above-named Contractor is not relieved of responsibility to fully comply with the contract documents, including and without limitation, the need to check, confirm, and coordinate all dimensions and details, take field measurements, verify field conditions, and coordinate work with that of other contractors for the project.

Because of the potential that the information presented on the electronic files can be modified, unintentionally or otherwise, A&E reserves the right to remove all indicia of its ownership and/or involvement for each electronic display.

A&E will furnish the above-named Contractor electronic files per this request. Please list drawings below:

Under no circumstances shall delivery of the electronic files for use by the above-named Contractor be deemed a sale by A&E, and A&E makes no warranties, either expressed or implied, of merchantability and fitness for any particular purpose. In no event shall A&E be liable for any loss of profit or any consequential damages.

_____________________________ File Type: ___ AutoCAD 2014 ___ DWG File ___ DWF File
Contractor’s Signature & Date

_____________________________ Delivery format: ___ FTP ___ Email ___ CD
SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. Coordination drawings.
2. Requests for Information (RFIs).
3. Project Web site.
4. Project meetings.

B. Related Requirements:

1. Section 011200 "Multiple Contract Summary" for a description of the division of work among separate contracts and responsibility for coordination activities not in this Section.
2. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.2 DEFINITIONS

A. RFI: Request from Owner, Construction Manager, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.3 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

1.4 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility
   for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for
   coordination. Include such items as required notices, reports, and list of attendees at meetings.
   1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is
      required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with
   other construction activities and activities of other contractors to avoid conflicts and to ensure orderly
   progress of the Work. Such administrative activities include, but are not limited to, the following:
   1. Preparation of Contractor's construction schedule.
   2. Preparation of the schedule of values.
   3. Installation and removal of temporary facilities and controls.
   4. Delivery and processing of submittals.
   5. Progress meetings.
   6. Preinstallation conferences.
   7. Project closeout activities.
   8. Startup and adjustment of systems.

1.5 COORDINATION DRAWINGS

A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual
   Sections, where installation is not completely shown on Shop Drawings, where limited space availability
   necessitates coordination, or if coordination is required to facilitate integration of products and materials
   fabricated or installed by more than one entity.
   1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and
      resolve conflicts. Do not base coordination drawings on standard printed data. Include the
      following information, as applicable:
      a. Indicate functional and spatial relationships of components of architectural, structural, civil,
         mechanical, and electrical systems.
      b. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to
         be in conflict with submitted equipment and minimum clearance requirements. Provide
         alternate sketches to Architect indicating proposed resolution of such conflicts. Minor
         dimension changes and difficult installations will not be considered changes to the
         Contract.

B. Coordination Drawing Organization: Organize coordination drawings as follows:
   1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and
      mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible
      ceiling-mounted devices relative to acoustical ceiling grid.
   2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and
      electrical equipment, and related Work. Locate components within ceiling plenum to
      accommodate layout of light fixtures indicated on Drawings.
   3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and
      elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
   4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.

6. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility.

1.6 REQUESTS FOR INFORMATION (RFIs)

A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.

2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Project number.
3. Date.
4. Name of Contractor.
5. Name of Architect and Construction Manager.
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Architect.

D. Architect's and Construction Manager's Action: Architect and Construction Manager will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.

1. The following RFIs will be returned without action:

   a. Requests for approval of submittals.
   b. Requests for approval of substitutions.
   c. Requests for coordination information already indicated in the Contract Documents.
   d. Requests for adjustments in the Contract Time or the Contract Sum.
   e. Requests for interpretation of Architect's actions on submittals.
   f. Incomplete RFIs or inaccurately prepared RFIs.
2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.

3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."

   a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect and Construction Manager in writing within 10 days of receipt of the RFI response.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:

1. Project name.
2. RFI number.
3. RFI description.
4. Date the RFI was submitted.
5. Date Architect's response was received.

F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect and Construction Manager within seven days if Contractor disagrees with response.

   1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
   2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.7 PROJECT WEB SITE

A. Use Construction Manager's Project Web site for purposes of hosting and managing project communication and documentation until Final Completion. Project Web site shall include the following functions:

   1. Project directory.
   2. Project correspondence.
   3. Meeting minutes.
   5. RFI forms and logs.
   6. Task and issue management.
   7. Submittals forms and logs.
   8. Drawing and specification document hosting, viewing, and updating.
   10. Reminder and tracking functions.
   11. Archiving functions.

B. On completion of Project, provide one complete archive copy of Project Web site files to Owner and to Architect in a digital storage format acceptable to Architect.

C. Contractor, subcontractors, and other parties granted access by Contractor to Project Web site shall execute a data licensing agreement acceptable to Owner and Architect.
1.8 PROJECT MEETINGS

A. General: Construction Manager will schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.

2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.

3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

B. Preconstruction Conference: Construction Manager will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Discuss items of significance that could affect progress, including the following:

   a. Tentative construction schedule.
   b. Phasing.
   c. Critical work sequencing and long-lead items.
   d. Designation of key personnel and their duties.
   e. Procedures for processing field decisions and Change Orders.
   f. Procedures for RFIs.
   g. Procedures for testing and inspecting.
   h. Procedures for processing Applications for Payment.
   i. Distribution of the Contract Documents.
   j. Submittal procedures.
   k. Sustainable design requirements.
   l. Preparation of record documents.
   m. Use of the premises.
   n. Work restrictions.
   o. Working hours.
   p. Owner’s occupancy requirements.
   q. Responsibility for temporary facilities and controls.
   r. Procedures for moisture and mold control.
   s. Procedures for disruptions and shutdowns.
   t. Construction waste management and recycling.
   u. Parking availability.
   v. Office, work, and storage areas.
   w. Equipment deliveries and priorities.
   x. First aid.
   y. Security.
   z. Progress cleaning.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

   b. Options.
   c. Related RFIs.
   d. Related Change Orders.
   e. Purchases.
   f. Deliveries.
   g. Submittals.
   h. Sustainable design requirements.
   i. Review of mockups.
   j. Possible conflicts.
   k. Compatibility problems.
   l. Time schedules.
   m. Weather limitations.
   n. Manufacturer’s written instructions.
   o. Warranty requirements.
   q. Acceptability of substrates.
   r. Temporary facilities and controls.
   s. Space and access limitations.
   t. Regulations of authorities having jurisdiction.
   u. Testing and inspecting requirements.
   v. Installation procedures.
   w. Coordination with other work.
   x. Required performance results.
   y. Protection of adjacent work.
   z. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.

4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.

5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Progress Meetings: Construction Manager will conduct progress meetings at weekly intervals.

1. Attendees: In addition to representatives of Owner, Construction Manager, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

1) Review schedule for next period.

b. Review present and future needs of each entity present, including the following:

1) Interface requirements.
2) Sequence of operations.
3) Status of submittals.
4) Status of sustainable design documentation.
5) Deliveries.
6) Off-site fabrication.
7) Access.
8) Site utilization.
9) Temporary facilities and controls.
10) Progress cleaning.
11) Quality and work standards.
12) Status of correction of deficient items.
13) Field observations.
14) Status of RFIs.
15) Status of proposal requests.
16) Pending changes.
17) Status of Change Orders.
18) Pending claims and disputes.
19) Documentation of information for payment requests.

3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100
SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for project record documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.

B. Related Requirements:

1. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit copies of record Drawings as follows:

   a. Initial Submittal:

      1) Submit PDF electronic files of scanned record prints.
      2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

   b. Final Submittal:

      1) Submit PDF electronic files of scanned record prints.
      2) Print each drawing, whether or not changes and additional information were recorded.

   c. Final Submittal:

      1) Submit record digital data files.
      2) Plot each drawing file, whether or not changes and additional information were recorded.

B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.
PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised Drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

   a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
   b. Record data as soon as possible after obtaining it.
   c. Record and check the markup before enclosing concealed installations.

2. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.

3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.

4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

2. Format: Annotated PDF electronic file with comment function enabled.

3. Identification: As follows:
   a. Project name.
   b. Date.
   c. Designation "PROJECT RECORD DRAWINGS."
   d. Name of Architect.
   e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.

3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.

4. Note related Change Orders, record Product Data, and record Drawings where applicable.

B. Format: Submit record Specifications as annotated PDF electronic file.
2.3 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, record Specifications, and record Drawings where applicable.

B. Format: Submit record Product Data as annotated PDF electronic file.

2.4 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as PDF electronic file.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

END OF SECTION 017839
SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
   1. Demonstration of operation of systems, subsystems, and equipment.
   2. Training in operation and maintenance of systems, subsystems, and equipment.

1.2 INFORMATIONAL SUBMITTALS

A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

   1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

1.3 QUALITY ASSURANCE

A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.

B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.

C. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to demonstration and training.

1.4 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.

B. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.
2.1 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
   a. System, subsystem, and equipment descriptions.
   b. Performance and design criteria if Contractor is delegated design responsibility.
   c. Operating standards.
   d. Regulatory requirements.
   e. Equipment function.
   f. Operating characteristics.
   g. Limiting conditions.
   h. Performance curves.

2. Documentation: Review the following items in detail:
   a. Emergency manuals.
   b. Operations manuals.
   c. Maintenance manuals.
   d. Project record documents.
   e. Identification systems.
   f. Warranties and bonds.
   g. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following, as applicable:
   a. Instructions on meaning of warnings, trouble indications, and error messages.
   b. Instructions on stopping.
   c. Shutdown instructions for each type of emergency.
   d. Operating instructions for conditions outside of normal operating limits.
   e. Sequences for electric or electronic systems.
   f. Special operating instructions and procedures.

4. Operations: Include the following, as applicable:
   a. Startup procedures.
   b. Equipment or system break-in procedures.
   c. Routine and normal operating instructions.
   d. Regulation and control procedures.
   e. Control sequences.
   f. Safety procedures.
   g. Instructions on stopping.
   h. Normal shutdown instructions.
   i. Operating procedures for emergencies.
   j. Operating procedures for system, subsystem, or equipment failure.
PART 3 - EXECUTION

3.1 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."

3.2 INSTRUCTION

A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
1. Architect will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.

2. Owner will furnish an instructor to describe Owner's operational philosophy.

3. Owner will furnish Contractor with names and positions of participants.

C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Schedule training with Owner, through Architect, with at least seven days' advance notice.

D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

E. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a written performance-based test.

END OF SECTION 017900
SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Wood blocking, cants, and nailers.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product.

1.3 INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For the following, from ICC-ES:
   1. Fire-retardant-treated wood.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

2.2 FIRE-RETARDANT-TREATED MATERIALS

A. General: Where fire-retardant-treated materials are indicated, materials shall comply with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than $10.5$ feet ($3.2$ m) beyond the centerline of the burners at any time during the test.

1. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
2. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.

C. Kiln-dry lumber after treatment to maximum moisture content of 19 percent.

D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.

E. Application: Treat all rough carpentry unless otherwise indicated.

2.3 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.
3. Rooftop equipment bases and support curbs.
5. Furring.

B. Dimension Lumber Items: Construction or No. 2 grade lumber of any species.

C. Concealed Boards: 19 percent maximum moisture content and the following species and grades:

1. Western woods; Construction or No. 2 Common grade; WCLIB or WWPA.

2.4 FASTENERS

A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.

B. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

2.5 METAL FRAMING ANCHORS

A. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.

1. Use for interior locations unless otherwise indicated.
PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

B. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

C. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

2. ICC-ES evaluation report for fastener.

3.2 PROTECTION

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061000
SECTION 311500 – TREE PROTECTION

PART 1 - GENERAL

1.0 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General conditions, Supplementary Conditions, apply to work of this section.

1.1 DESCRIPTION

The work in this section includes protection, trimming and maintenance of existing trees, shrubs and groundcover that are affected by execution of the Contract Documents, whether temporary or permanent construction.

A. The Contractor assumes responsibility for all coordination of work within the Critical Root Zone (CRZ) of protected trees.

B. Plant protection applies to all trees to remain within the Limit of Work as well as those, which are adjacent to the Limit of work and could be affected by new construction. Work to include:

1. Protection of existing trees and indicated vegetated areas.
2. Watering of existing trees and vegetated areas to be protected.
3. Maintenance of existing and newly installed tree and vegetation protection elements including but not limited to fencing, organic bark mulch, landscape fabric, cabling, and signage.
4. Pruning of existing trees to be protected.
5. Removal of pruning debris and other excess material not used. On-site chipping and re-use of pruned material is encouraged.

C. Contractor shall perform all tree protection installation and removal, and any necessary pruning work required for construction under the supervision of the Owner.

1.2 RELATED WORK DESCRIBED ELSEWHERE

A. Section 01500 – Temporary Facilities and Controls
B. Section 02235 – Site Clearing
C. Section 02300 - Earthwork
D. Section 02810 - Irrigation System
E. Section 02900 - Landscaping
F. Section 02935 – Lawns and Grass

1.3 DEFINITIONS
A. Tree Protection Zone: Area surrounding individual trees or groups of trees to remain during construction, and defined by the drip line of individual trees or the perimeter drip line of groups of trees, unless otherwise indicated.

B. Drip Line: The areas encompassing the base of the tree as delineated by an imagined vertical line drawn from the farthest extent of the branches to the ground.

C. Diameter at Breast Height (DBH): Diameter at breast height as measured at four and one-half feet (4'-6") above the existing grade at the base of the tree.

D. Critical Root Zone (CRZ): An area up to one and one-half the radius of the drip line of the tree.

1.4 REFERENCED STANDARDS


D. Alex Shigo, Tree Pruning, Shigo & Tree Associates, LLC, 1989.


G. ANSI A300: Standards for Tree Care Operations, American National Standards Institute.

1.5 QUALITY ASSURANCE

A. Tree Service Firm Qualifications: An experienced tree service firm with a minimum of five years of experience that has successfully completed tree protection and trimming work similar to that required for this project.

B. Arborist Qualifications: An arborist certified by ISA or licensed in the jurisdiction where the project is located.


1. Owner’s Arborist shall be present for all pruning, thinning and tree protection work.

D. Pre-Construction Conference: Conduct conference at project site to comply with requirements in ANSI A300 Division 1, Section “Project Management and Coordination.”

1. Before tree protection and trimming operations begin, meet with representatives of authorities having jurisdiction, Owner’s Arborist, Landscape Architect, consultants, and other concerned entities to review tree protection and trimming procedures and responsibilities.
A. **Product Data:** For each type of product indicated below.

B. **Product samples:**
   1. Tree protection area signage.
   2. Cabling materials.
   3. Landscape fabric.
   4. Organic bark mulch.

C. **Tree Pruning Schedule:** Written schedule from arborist detailing scope and extent of pruning of trees to remain that are affected by construction.

D. **Tree Protection Plan:** Contractor shall submit a tree protection plan that confirms that use of the tree protection fencing plan provided in the Contract Documents. Contractor shall notify the Owner of all work activities within 20 feet of trees to be protected, anticipated work methods, proposed tree and root avoidance techniques, and Arborist's on-site confirmation of CRZ for each tree.

### 1.7 JOB CONDITIONS

A. **Site Work Restrictions:** In order to prevent excessive soil compaction and destruction of soil structure, no site work will be performed in cases where equipment or traffic must pass over wet soils or if wet soils must be handled or manipulated within the Tree Protection Zone in order for the work to progress. Wet soil is defined as any soil within 85 percent of field capacity (saturation).

B. **Utilities**
   1. Utility locates are required prior to digging and any construction activities.
   2. Coordinate work with Owner, including irrigation specialist, in order to prevent damage to underground sprinkler system.

### 1.8 MAINTENANCE

A. **Water** will be available on site. Provide necessary hoses and other watering equipment required to complete work.

B. Maintain existing plantings and trees by watering, cultivating, weeding, and spraying as necessary to keep landscape in a vigorous, healthy condition.

C. Coordinate watering schedules with irrigation contractor during installation and until final acceptance. Provide deep root watering to newly installed trees.

### PART 2 – PRODUCTS

#### 2.0 MATERIALS

A. **Topsoil Depth:** Natural or cultivated surface-soil layer containing composted organic matter an sand, silt and clay particles; friable, pervious, and black or darker shade of brown, gray or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than two inches in diameter; and free of weeds, roots and toxic and other non-soil materials.
B. Filter Fabric: Manufacturer’s standard, non-woven, pervious, geotextile fabric of polypropylene, nylon, or polyester fibers.

C. Chain-Link Fence:
   1. Fencing shall be galvanized chain link as specified below, six feet minimum height. Plastic fencing and wood stakes, or snow fencing are not acceptable.
   2. Includes posts, braces, supports and mesh that may be salvaged materials or other used material to form a minimum six foot high enclosure.
   3. Posts shall be a minimum diameter of 1-1/2-inch steel pipe.
   4. Mesh shall be two inches by two inches by 11 gauge minimum chain link fabric.
   4. Use of concrete or metal post piers is permitted.

E. Signage: Provide weather resistant 8-1/2 inches by 11 inches fluorescent green or yellow signs that identify Tree Protection Zone and list restrictions.

F. Cabling: Cabling materials shall meet the ANSI A300 standards for cabling of trees.

G. Tree Tags: Rack track shaped aluminum engraved numbered tags.

H. Organic Mulch: Shall be free from weed seed, sawdust and splinters and shall not contain resin, tannin, wood fiber or other compounds detrimental to plant life. Bagged mulch shall have moisture content not in excess of 22%. Bulk mulch shall have a size range of ½ inch to 1-1/4 inch with a maximum of 20% passing a ½ inch screen. Re-use of organic debris generated during the project is encouraged.

I. Mycorrhizae Fungal Inoculants: “mycogrow gel” as manufactured by Fungi Perfecti, Olympia, WA, 1-800-780-9162, or approved alternate.

J. Slow Release Fertilizer: Osmocote Plus, 15-9-12, or approved alternate.

K. Anti-Desiccant: Protective film emulsion for protection of plant surfaces during transport. Permeable to permit transpiration, as manufactured by Wilt Pruf, Inc., P.O. Box 4280, Greenwich, Connecticut, 06830, or approved alternate. Mixed and applied in accordance with manufacturer’s instructions.

L. Staking and Guying
   1. Tie Wire: 12-gauge, galvanized wire
   2. Metal stakes: 24-inch t-stakes
   3. Metal posts: 8'-0" t-stakes
   4. Nylon strap: three inches wide, 12 inches long white or black nylon strap with one ½" brass grommet in each end or Landscape Architect approved equivalent.

PART 3 - EXECUTION

3.0 INSTALLATION OF TREE PROTECTION FENCING
A. Prior to the start of any construction activity install temporary fencing at the designated tree protection zones to protect existing trees and vegetation to remain from construction damage. Maintain temporary fence and remove when construction (including irrigation and planting) is complete. Owner shall approve fence installation prior to mobilization of the site.

1. Install chain-link fence according to ASTM F 567 and manufacturer’s written instructions. All fencing to be locked securely and only entered with owner’s permission and in consultation with the Owner’s Arborist.

2. Place concrete or metal piers to minimize pedestrian and vehicle circulation and landscape impacts.

3. Provide diagonal bracing to vertical posts at corners of enclosures and wherever needed to ensure rigidity of the fencing.

4. If chain link fabric is used versus chain link panels the chain-link fabric shall be tight to grade at the bottom edge and stretched uniformly between posts. Top of fabric shall be a minimum of six feet above grade. Install fabric to form completely closed area around tree(s). Attach fabric to posts 12 inches on center with 11 gauge wire ties securely fastened, or with bolted ring clips and to top rail not over three feet on center.

B. Fencing shall be installed as follows: In the vicinity of coniferous trees, this includes an area of a radius from the trunk equal to one and one-half times the radius of the drip line of the tree. In the vicinity of deciduous trees, this includes an area of a radius from the trunk equal to one and one-half times the radius of the drip line of the tree. For areas with shrubs plants, include the entire edge of the area planted in the fence.

C. Area within tree protection fencing must be mulched with organic bark mulch to a depth of two inches.

D. Attach orange flag strips 12 inches long at three feet on center along the fence, five feet above grade.

E. Place tree protection signs at thirty-foot intervals along fence with a minimum of one sign if the fence is less than 30 feet in length.

3.1 FENCE MAINTENANCE AND REMOVAL

A. Maintain fence in specified location and in good condition until completion of site operations and of delivery of equipment and material, except where directed otherwise in writing by Owner’s representative.

B. Fencing shall be immediately repaired when damaged.

C. Remove protection fencing at Substantial Completion.

3.2 USE OF AREA WITHIN FENCE

A. Do not use area within fence for operation, storage, vehicles, or foot traffic. Contractor shall notify Owner’s representative 24 hours in advance of the need to move a tree protection fence or access inside of it.
B. Do not alter grades within the required protective fence line except as directed during the fine grading operations at the conclusion of site development.

C. Control soil moisture within the protected area. Prevent flooding, ponding, erosion, or excessive wetting of the soil and root systems caused by dewatering operations. Protect root areas from leachate, concrete, oil, fuel, lubricating oil, and from other contaminants.

3.3 USE OF AREA ADJACENT TO FENCE

A. Do not store materials potentially harmful to tree roots within 20 feet of protected areas. Potentially harmful materials include, but are not limited to petroleum products, cement and concrete materials, cement additives, lime, paints coating, waterproofing agents, from coatings, detergents, acids, and cleaning agents.

B. All heavy equipment work to be performed within the CRZ that is not possible to protect shall be done in such a manner to minimize compaction.

1. Tie-back all flexible limbs and branches, which may be damaged during construction, under the direction of the Owner’s Arborist.

2. Use compaction mitigation strategies such as planking, mulch, or plating as directed by the Owner’s Arborist.

3.4 DAMAGES FOR LOSS OR INJURY TO TREES

A. Trees removed or damaged and deemed unviable, during demolition or construction, are to be replaced following consultation with Owner’s Arborist or approved other.

B. Trees removed during demolition or construction are to be replaced following consultation with Owner’s Arborist or Owner’s Representative. Appraised values of existing trees have been determined according to industry standards and will be provided by the Owner if applicable.

C. Contractor is to replace any and every tree lost or irreparably damaged as a result of failure of the Contractor to protect or to adequately maintain existing trees. Trees that fail to fully foliate in the spring following completion of construction operations may be presumed to have been lost due to construction operations.

D. In the event of injuries to the crown, trunk or root system of any tree to remain that are the result of the Contractor’s failure to protect and/or maintain such tree, the Owner’s Representative may elect to retain the tree and hold the Contractor liable for compensation.

E. Promptly repair trees damaged by construction operations within 24 hours. Treat damaged trunks, limbs, and roots according to Owner’s Arborist’s written instructions. Work required by the Owner’s Arborist shall be performed by the Contractor at no additional cost to the Owner.

F. Trees, which are removed without authorization, shall be replaced with a tree of the same size and species. If a tree of the same size and species is not available the Owner’s Representative shall provide alternatives. If a tree cannot be replaced because the size exceeds the maximum which can be relocated using latest technology, the Contractor shall compensate the Owner at amount equal to the appraised value.

G. Should replacement work of large trees be required as a result of Contractor’s failure to protect or maintain trees, a subcontractor specializing in relocating large trees shall conduct
all replacement work. Submit qualifications of tree relocation Contractor to the Owner’s Representative. The cost of the subcontractor will be at the Contractor’s expense.

H. Completely remove and dispose of any tree killed or irreparably damaged as a result of Contractor’s failure to protect or maintain trees. Remove those trees damaged or killed as a result of vandalism, natural acts or other causes. Removal and disposal shall include stumps and roots to a depth of two feet below finished grade.

3.5 PRUNING OF EXISTING TREES

A. Limbs and branches that have been broken shall be cut off cleanly above the nearest crotch in accordance with good horticulture practice. Cut limbs and branches greater than one-half inch in diameter. Sterilize equipment with alcohol prior and during trimming and pruning operation. All pruning of damaged trees shall be carried out to the complete satisfaction of the Owner’s Representative.

B. The Contractor shall provide a professional tree surgeon to assess and recommend treatment of any damage to trunks or major limbs three inches in diameter or over.

C. All existing trees to be saved shall be limbed and pruned by a licensed Arborist. Limbs shall be pruned to ensure safety and promote health of the tree. Inform the Owner’s Representative prior to commencement of pruning.

3.6 EXCAVATION

A. Install shoring or other protective support systems to minimize sloping or benching of excavations.

B. Do not excavate within Tree Protection Zones, unless otherwise indicated.

C. Where excavation for new construction is required within tree protection zones, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks and comb soil to expose roots. Work shall be performed under the supervision of the Owner’s Arborist.

1. Redirect roots into backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately three inches back from new construction.

2. Do not allow exposed roots to dry out before placing permanent backfill. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with approved soil.

   a. Straw Mulch: Thoroughly wet excavated sub-grade where roots of existing trees to remain have been exposed. Apply four inches of wet organic bark mulch on horizontal area and wet burlap mats along exposed trench sides.

   b. Watering and Maintenance: Thoroughly and evenly water protected areas at a rate not to exceed two inches per hour during dry periods. Coordinate water procedures and schedules with the Owner’s Representative or the Project Manager. Maintain root protection procedures throughout the term of the Contract, as required.

D. Where utility trenches are required within tree protection zones, tunnel under or around roots by drilling, auger boring, pipe jacking, or digging by hand.
1. Root Pruning: Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots with sharp pruning instruments; do not break or chop.

3.7 POST CONSTRUCTION TREE MAINTENANCE

A. Ensure that existing trees remaining on the project site shall be in as good condition at completion of the work as at the commencement of the work. If such a condition does not exist at the completion of the work, assume responsibility to provide corrective actions or replacement with new material as directed by the Owner’s Representative.

END OF SECTION 311500
NOTE: PROVIDE EQUIPMENT WITH ALL PIPING AND ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION AND OPERATIONAL SYSTEM.

PIPING FITTINGS, VALVES & SPECIALTIES

DOMESTIC PIPING

GENERAL PIPING

DUCTWORK & ACCESSORIES

AIR DEVICES & EQUIPMENT

1. SELECT ALL EQUIPMENT FOR BOZEMAN, MONTANA. ELEVATION APPROX. 4,795 FT.

MP0.01 MECHANICAL AND PLUMBING LEGENDS SCHEDULES AND DETAILS

MP1.01 GROUND LEVEL MECHANICAL & PLUMBING PLAN

MP1.02 SECOND LEVEL MECHANICAL & PLUMBING PLAN

MP1.03 THIRD LEVEL MECHANICAL & PLUMBING PLAN

MP1.04 TOP LEVEL MECHANICAL & PLUMBING PLAN

MP1.05 SECTIONS AND DETAILS

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PLAN CODE MANUFACT. MODEL NUMBER CFM ESP RPM DRIVE TYPE

EF-1 COOK GC-920 900 0.25 708 DIRECT 1/2 120 1 CEILING FAN, DUCT TO ROOF CAP, SEE NOTES

EF-2 COOK GC-622 450 0.25 1398 DIRECT 150 WATTS 120 1 CEILING FAN, DUCT TO ROOF CAP, SEE NOTES

NOTES:

1. PROVIDE ALL EXHAUST FANS WITH BACKDRAFT DAMPER AND 1" HANGING ISOLATORS.

2. SUSPEND EF-1,2 FROM STRUCTURE, PROVIDE WITH REVERSE ACTING THERMOSTAT, SET AT 80°F.

3. PROVIDE ROOF CAP FOR EF-1,2

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CEILING EXHAUST FAN DETAIL

SUSPEND EXHAUSTOR FROM STRUCTURE SPRING ISOLATORS SEE STRUCTURAL PLANS FOR STRUCTURE DETAIL

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PROVIDE THE FOLLOWING ACCESSORIES FOR THE FIRE SUPPRESSION SYSTEM (FOR WASHDOWN OF THE PARKING GARAGE):

1. 4 EACH, 2 ½" FEMALE TO 1 ½" MALE HOSE ADAPTERS (NATIONAL STANDARD THREAD)

2. 4 EACH, 1 ½" ADJUSTABLE HOSE NOZZLES (NATIONAL STANDARD THREAD)

3. 600' OF 1 ½" NYLON DOUBLE JACKETED HOSE (NATIONAL STANDARD THREAD) PROVIDE IN 50' SECTIONS WITH NECESSARY COUPLERS.

4. HOSE RACK FOR STORING HOSE ROLLS

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GRAVITY VENTILATOR SCHEDULE

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Louver Schedule

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Gravity Ventilator Schedule

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Plumbing Fixtures Schedule

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Mechanical Symbols Legend