Addendum Number: B2  Date Issued: 11.08.16
Project: NORM ASBJ ORNSON HALL  Project Number: A&E: 14080
Date Issued: 11.08.16  A/E#: 2014-02-07
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Issued To: Montana State University - Sam J. DesJardins
Montana State A/E - Cody Mitchell
All Planholders
All Consultants

This Addendum consists of:

**General Items:**
- Updated Bid Form (2 pages)
- Pre-Bid Meeting Agenda Schedule B – Meeting Minutes (17 pages)

**Specifications:**
- 05 73 13 - GLAZED DECORATIVE METAL RAILINGS
- 07 13 26 - SELF-ADHERING SHEET WATERPROOFING
- 07 22 70 - FALL PROTECTION DEVICES
- 10 50 00 - MISCELLANEOUS SPECIALTIES
- 08 62 00 - UNIT SKYLIGHTS
- 10 14 23.13 – Sign Type A2, C09, C10

**Drawings:**

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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:

Project Manual (Specifications):

Section 01 40 00 Quality Requirements:
Delete Paragraph 1.2.C.1 Laboratory Mockups.
Delete Paragraph 1.6.K Laboratory Mockups.

Section 01 23 00 Alternates
Modify the following Alternate:
**BID ALTERNATE #A-05 ROOF MEMBRANE:**
PROVIDE LINE ITEM PRICING TO THE GENERAL CONTRACTOR FOR 90 MIL. BLACK EPDM ROOFING COMPLETE IN LIEU OF SPECIFIED 60 MIL. BLACK EPDM ROOFING. REFERENCE ROOF ASSEMBLY RA-1 SHEET A3-09, SHEETS A1-51 TO A1-54 AND SPECIFICATIONS

Add the following Alternates:
**BID ALTERNATE #A-07 ACOUSTIC PANEL CEILING - APC-4:**
PROVIDE LINE ITEM PRICING TO THE GENERAL CONTRACTOR FOR THE ALTERNATE CEILING TILE APC-4, AS DEFINED IN SECTION 09 05 02 - FINISH MATERIALS, OF THE SPECIFICATIONS.
BID ALTERNATE #A-08 LAB WALL PROTECTION:
PROVIDE LINE ITEM PRICING FOR THE "WALL PROTECTION", COMPLETE, IN ROOMS: 0156, 0156A, 0156B, 0175, 0176, 0185, 0180, 0188, 0190, 0191, 0200, 0212, 0226, 0230, 0256, 0264, PER DETAIL 1/A-7-06

BID ALTERNATE #A-09 DONOR WALL:
PROVIDE LINE ITEM PRICING FOR ALL ITEMS ASSOCIATED WITH THE "DONOR WALL", PER DETAILS 4, 9 & 10 ON SHEET A7-03 IN LIEU OF A GYPSUM BOARD WALL, ASSEMBLY AS SCHEDULED AT ADJACENT WALLS, PAINTED TO MATCH THE COMMONS, WITH RUBBER BASE AS INDICATED. NOTE: VESTIBULE 0197VE TO REMAIN AS INDICATED.

BID ALTERNATE #A-10 "NORM" WALL:
PROVIDE LINE ITEM PRICING FOR ALL ITEMS ASSOCIATED WITH THE "NORM WALL", PER DETAIL 16 ON SHEET A7-04 & DETAILS 10 & 15 ON SHEET A8-28 IN LIEU OF A TYPICALLY FRAMED GYPSUM BOARD WALL (NO RECESSED FRAMING POCKET), WALL ASSEMBLY AS SCHEDULED AT ADJACENT WALLS, PAINTED TO MATCH THE COMMONS, WITH RUBBER BASE TYP.

BID ALTERNATE #TC1 monitoring for MSU:
PROVIDE LINE ITEM PRICING TO THE GENERAL CONTRACTOR FOR THE PROVISION & INSTALLATION OF A BTU METER FOR THE HEAT PUMP SERVING THE DOAS UNIT, AS DEFINED IN SECTION 23 09 93.11-15 & 16 OF THE SPECIFICATIONS.

BID ALTERNATE #TC2 monitoring for research purposes:
PROVIDE LINE ITEM PRICING TO THE GENERAL CONTRACTOR FOR THE PROVISION & INSTALLATION OF A DUCT TEMPERATURE SENSOR, A DUCT VELOMETER, AND A THERMAL SENSOR ARRAY TO MONITOR THE WEST SOLAR WALL AS DEFINED IN SECTION 23 09 93.11 15&16 OF THE SPECIFICATIONS.

Section 03 30 00 – Cast-In-Place Concrete:
• 2.11.B.1: Change the maximum percentage of fly ash that may be used from “25-percent” to “15-percent”.

Section 04 26 13 Masonry Veneer
Change Paragraph 2.4.C.2 to read: “Tie Section: Rectangular or triangular-shaped wire tie…”
Change Paragraph 2.4.C.3 to read: “Tie connector section consists of a wire tie and rigid PVC extrusion with snap-in grooves or defomed/slotted end of wire tie for inserting continuous wire.”
Change Paragraph 2.4.D.2 to read: “Tie Section: Rectangular or triangular-shaped wire tie…”
Change Paragraph 2.4.D.3 to read: “Tie connector section consists of a wire tie and rigid PVC extrusion with snap-in grooves or defomed/slotted end of wire tie for inserting continuous wire.”
Change Paragraph 2.4.E.4 to read: “Masonry Veneer Anchors: Connector section consisting of a single screw, thermally broken, adjustable wing nut with an adjustable rectangular 2X-hook that receives and connects to the continuous wire horizontal reinforcing.”
Delete Paragraph 2.4.E.5.
Paragraph 3.5.A.4, change to read: “16 inches o.c.”
Paragraph 3.6.A.3, change to read: “16 inches o.c. both vertically and horizontally.”

Section 05 12 00 – Structural Steel Framing:
• 2.2.T.2: Change the structural slide bearing mating surfaces to be “Stainless Steel and PTFE”.
• 2.2.T.3: Change the structural slide bearing coefficient of friction to be “0.06”.
• 2.2.T.4: Change the structural slide bearing design load to be not less than “800 psi”.
• 2.9.A: Change the beginning of the first sentence to read “Owner will...” rather than “Owner may...”

**Section 05 50 00 Metal Fabrications**


Change Paragraph 2.17 to read: “ALUMINUM GRATING SCREEN WALL PANELS AND SUN SHADES - MTL-8.”

Add Paragraph 2.22 Mechanical Platform and Stair. Mechanical Access Platform, Ship’s Ladder, vertical ladder, and guardrail assembly to be custom fabricated using standard steel shapes and steel bar grating.

Delete Paragraph 3.3 Installing Prefabricated Building Columns. There are no prefabricated columns on this project.

Change Paragraph 3.5.B to read: “For nosings embedded in concrete steps or curbs or recessed into wood steps . . .”

**Section 05 73 13 Glazed Decorative Metal Railings** – add the attached new section. This section applies to the handrail across Inspiration Hall mezzanine.

**Section 07 13 26 Self-Adhering Sheet Waterproofing** – add the attached new section. This section applies to waterproofing of the basement and elevator pit foundation walls and underslab.

**Section 07 17 13 Bentonite Panel Waterproofing** – change Paragraph 1.2.A to read: “The Geotextile/Bentonite Clay waterproofing membrane shall be used for waterproofing the tunnel areas only.”

**Section 07 21 00 Thermal Insulation** – add the following paragraph: 2.5.C. Thermal Clips for Attaching Girts and Hat Channels for Metal Panel Installation: Cascadia Clips, fiberglass thermal spacers, to secure cladding through the continuous exterior insulation layer. Size as shown on drawings. Cascadia Windows, LTD., [www.cascadiawindows.com](http://www.cascadiawindows.com)

**Section 07 22 70 Fall Protection Devices** – add the attached new section. Refer to Roof Plan for further information.

**Section 07 42 19 Flat Metal Plate Wall and Soffit Panels**

Paragraph 2.2.A, remove and replace as follows: Weathering Steel Plate – Deductive Alternate: Provide material of same alloy and temper as recommended for Weathering Steel Plate, but that will naturally weather over time to achieve similar results as the Weathering Steel Plate noted above.

Paragraph 2.5.D, remove the words “Perforated Aluminum Sheet”.

Paragraph 2.5.E, change to read “M-1 – M-6:”.

**Section 08 14 16 Wood Doors** – clarify paragraph 2.3.A to read: “Interior Solid-Core Doors - SCW-1”.

**Section 08 32 19 Sliding Wood-Framed Glass Doors** – add the attached new section. Applies to doors into Rooms 0115 and 0267E.
Section 08 33 23 Overhead Coiling Doors - eliminate this section. There are no overhead coiling doors on the project.

Section 08 44 13 Glazed Aluminum Curtain Walls

Section 2.6.C.1 and 2, modify as follows:
1. Operators at motorized operable windows in the Commons are part of smoke exhaust system and natural ventilation system. Windows to open 18” clear. Color to match curtainwall mullions.
2. Operators at motorized operable windows in the offices and labs are part of natural ventilation system. Windows to open 10” clear. Color to match curtainwall mullions.

Section 2.6.D.2, remove and replace with the following:

Actuator operated sashes:
  a. Motor description: 24V DC current, magnetic linear electric actuator with movement by a flat link chain contained inside an aluminum shell finished to match the curtain wall.
     1) B.O.D: D+H Megatronics AG Magnetic SRL:
        a) Horizontally hinged windows: 12” opening: KA34-BSY +UL
        b) Horizontally hinged windows: 18” opening: KA54-BSY +UL
     2) Provide complete system wired and ready to connect with building control and security systems.
  b. Controller (control panel) description: 24 V DC controller and external power supply:
     1) B.O.D: D+H VCP-M 8408: 8 Amp panel
     2) B.O.D: D+H VCP-E 8316: 16 Amp panel
     3) Interconnect with building management system.
     4) Provide as located on the drawings.
        a) At locations where controller is located remotely, run homerun cable from panel to each window as follows:
           1) 16 AWG for up to 98 feet.
           2) 14 AWG for up to 164 feet.
           3) 12 AWG for up to 262 feet.
  c. 24V DC Power Supply:
     1) B.O.D: D+H SNT2-115 V power supply
     2) Provide as located on the drawings.
  d. System Indicator panel: Module for relay to fire alarm/smoke evac system
     1) B.O.D: D+H ERM 44: Use at operators that are tied into the smoke evac system.
  e. Manual override switch: B.O.D: Leviton Decora Plus #5657-2W
     1) 15 Amp, 120/277 Volt, Decora Plus Rocker Double-Throw ctr-OFF Momentary Contact Single-Pole AC Quiet Switch, Commercial Spec Grade, Self Grounding, back and side wired, white in color.

Section 08 62 00 Unit Skylights - remove existing section and replace with attached new section.

Section 08 71 00 Finish Hardware

Hardware Group #12:
  o Revise Description from FIRE EXIT HARDWARE to PANIC HARDWARE
  o Revise Catalog Number from 99-L-F-06-SNB to 99-L-996-06

Hardware Group #52: Revise Door #0198.22 to #0164.1

Section 08 80 00 Glazing

Section 3.6 Monolithic Glass Schedule

Delete: Glass Type GL-10A.
Delete: Glass Type GL-5.

Section 3.7 Laminated Glass Schedule


Paragraph 3.8.C, add Item 9: Solar Heat Gain Coefficient: 0.27 maximum.


Delete: Glass Type GL-11.

Add: Glass Type GL-15A – to be the same as GL-15 but with frosted, translucent film applied to “Atrium” side of glazing, as shown on drawings.

Section 3.8 Insulating Glass Schedule

Add: Glass Type GL-5: Water-based silicone spandrel glass, fully tempered float glass.
   2. Outer Glass (Atrium side): Clear float glass
      a. Tint Color: None (clear)
      b. Coating Color: #3-0586 Medium Gray
      c. Thickness: ¼” laminated
   3. Airspace: 2” minimum
   4. Inner glass: Clear float glass
      a. Tint Color: None (clear)
      b. Thickness: 3/16”
   5. STC Rating: 45

Section 3.9 change to: Insulated Fire Resistance Glass

A. Modify Glass Type GL-14 as follows:
   1. Inner Lite: Minimum Thickness: 1/4 inch thick
   2. Application: Glazed lites in openings in partitions indicated as having an hourly fire rating and as shown on drawings.
   3. Type: Annealed float glass.
   4. Labeling: Provide permanent label on fire-rated glazing in compliance with ICC (IBC) and authorities having jurisdiction.
   5. Provide products listed by Underwriters Laboratories in Intertek Warnock Hersey.
   7. Glazing Method: As required for fire rating.
   8. Markings for Fire-Rated Glazing Assemblies:
      1) “W” - meets wall assembly criteria of ASTM E119 or UL 263 fire test standards.
      2) “OH” - meets fire window assembly criteria including the hose stream test of NFPA 252, UL 108, or UL 10C fire test standards.
      3) “D” - meets fire door assembly criteria of NFPA 252, UL 10B, or UL 10C fire test standards.
      4) “H” - meets fire door assembly “Hose Stream" test of NFPA 252, UL 10B, or UL 10C fire test standards.
      5) “NH” - does not meet the hose stream test requirements of tests.
      6) “T” - meets 450 degrees F temperature rise criteria for 30 minutes of NFPA 252, UL 10B, or UL 10C fire test standards.
      7) “NT” - does not meet the temperature requirements of tests.
9. Manufacturers:
   1) SAFTIFIRST, a division of O’Keeffe’s Inc; SuperLite II-XL: www.safti.com
   2) Technical Glass Products: Pilkington Pyrostop: www.fireglass.com
   3) Vetrotech Saint-Gobain North America; Contraflam: www.vetrotechusa.com

10. Airspace: 2"
11. Outer Lite: Minimum 3/16" clear float glass
12. STC Rating: 45

B. Add Glass Type GL-14A as follows:
   1. Inner Lite: Minimum Thickness: 1/4 inch thick
   2. Application: Glazed lites in fire doors, fire windows, sidelights, borrowed lites and all other glazing in partitions indicated as having an hourly fire rating and as shown on drawings.
   3. Type: Annealed float glass.
   4. Labeling: Provide permanent label on fire-rated glazing in compliance with ICC (IBC) and authorities having jurisdiction.
   5. Provide products listed by Underwriters Laboratories in Intertek Warnock Hersey.
   7. Glazing Method: As required for fire rating.
   8. Markings for Fire-Rated Glazing Assemblies:
      1) “W” - meets wall assembly criteria of ASTM E119 or UL 263 fire test standards.
      2) “OH” - meets fire window assembly criteria including the hose stream test of NFPA 257 or UL 9 fire test standards.
      3) “D” - meets fire door assembly criteria of NFPA 252, UL 10B, or UL 10C fire test standards.
      4) “H” - meets fire door assembly “Hose Stream” test of NFPA 252, UL 10B, or UL 10C fire test standards.
      5) “NH” - does not meet the hose stream test requirements of tests.
      6) “T” - meets 450 degrees F temperature rise criteria for 30 minutes of NFPA 252, UL 10B, or UL 10C fire test standards.
      7) “NT” - does not meet the temperature requirements of tests.

9. Manufacturers:
   1) SAFTIFIRST, a division of O’Keeffe’s Inc; SuperLite II-XL: www.safti.com
   2) Technical Glass Products: Pilkington Pyrostop: www.fireglass.com
   3) Vetrotech Saint-Gobain North America; Contraflam: www.vetrotechusa.com

10. Airspace: 2"
11. Outer Lite: Minimum 3/16” clear float glass
   1) Tint Color: None (clear)
   2) Coating Color: #3-0586 Medium Gray
12. STC Rating: 45

Section 09 05 02 Finish Materials

Add Sub-Section 08 32 19 Sliding Wood-Framed Glass Doors

SCW-2 Door 0267.6 into Empower/Collaboration Room
   Wood Species: Manufacturer’s standard for paint grade finish
   Finish: Factory primed, field painted color P-3

Sub-Section 09 68 13 Tile Carpeting, modify CPT-2 and CPT-3 as follows:

CPT-2 Manufacturer: Milliken
   Collection: Unearthed
   Name: Mantle
   DR Number: 00707844
   Color: Larimar
Section 09 93 00 Staining and Transparent Finishing

Paragraph 3.5.A, delete and replace with the following:

1. Basis-of-Design: Vertical Wood (walls and trim)
   a. Stain: Minwax water-based wood stain (as scheduled) and wait 24 hours to dry
   b. Intermediate Coat: Minwax Polycrylic Finish
   c. Top Coat: Minwax Polycrylic Finish
   d. Finish: Satin.

2. Basis-of-Design: Horizontal Wood (floors)
   a. Stain: Minwax Wood Finish (as scheduled) and wait 24 hours to dry
   b. If no Stain Scheduled: Minwax Sanding Sealer
   c. Intermediate Coat #1: Minwax Ultimate Floor Finish
   d. Intermediate Coat #2: Minwax Ultimate Floor Finish
   e. Top Coat: Minwax Ultimate Floor Finish

Section 10 11 00 Visual Display Units - eliminate this section. There are no Visual Display Units in this project.

Section 10 14 23.13 Room Identification Signage - add attached sign types A2, C09, & C10 to this section

Section 12 66 00 Telescoping Stands with Integral Fixed Seating - remove existing section and replace with attached new section.

Section 14 24 00 Hydraulic Elevators

Paragraph 1.5.A.1, change Warranty Period to two (2) years.

Paragraph 2.3.B.7.i, change to read: “⅝” x 2” rectangular, stainless steel.”

Paragraph 2.3.C.2, change to read: “Rated Load: 6,700 lbs.”

Paragraph 2.3.C.3, change to read: “Freight Loading Class for Service Elevators: Class C.”

Paragraph 2.3.C.4, change to read: “Speed: 120 fpm.”

Paragraph 2.3.C.9.i, change to read: “⅝” x 2” rectangular, stainless steel.”
The following full Specification Sections are Included in this Addendum:

Section 05 73 13 Glazed Decorative Metal Railings - new
Section 07 13 26 Self-Adhering Sheet Waterproofing - new
Section 07 22 70 Fall Protection Devices - new
Section 08 32 19 Sliding Wood-Framed Glass Doors - new
Section 08 62 00 Unit Skylights - reissued
Section 10 50 00 Miscellaneous Specialties - new
Section 12 66 00 Telescoping Stands - reissued

Drawings:

C1.00: General Notes
1. 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”.

A1-12: Screen Wall (Revised Sheet)
1. Dimensions have been added to the screen wall layout. Section call-out has been added as well.
2. Detail 10/a1-12 SCREEN WALL SECTION has been added to sheet.

A1-13: (Revised Sheet)
1. Wall types revised in Innovation Alley.
2. Carpet in Commons 0199 CM revised to CPT-3

A1-22: (Revised Sheet)
1. Removed 6” borders at inset carpet in Commons areas and updated legend to strike keynote 11.

A1-23: (Revised Sheet)
1. Removed 6” borders at inset carpet in Commons areas and updated legend to strike keynote 11.

A1-32: (Revised Sheet)
1. Removed 6” borders at inset carpet in Commons areas and updated legend to strike keynote 11.

A1-33: (Revised Sheet)
1. Removed 6” borders at inset carpet in Commons areas and updated legend to strike keynote 11.

A1-52: (Revised Sheet)
1. Detail 1 – Roof hatch & ladder access revised.

A2-03: (Revised Sheet)
1. Added metal panel joints to Detail 7.
A3-09: (Revised Sheet)
1. WA-10 wall assembly revised.
2. WA-12 wall assembly revised.

A3-13: (Revised Sheet)
1. Detail 7 - Plate canopy roof to be revised from 3/16” to 1/4”. Edge canopy extended to south.
2. Detail 9 – Added detail call-outs

A3-22: (Revised Sheet) - Top of brick revised

A3-41: (Revised Sheet)
1. Detail 1&16 - added detail call-outs.

A3-42: (Revised Sheet)
1. Detail 16 &19 - added detail call-outs.

A3-43: (Revised Sheet)
1. Detail 16 - added detail call-outs.
2. Detail 19 - added operable window to elevation & detail call-out.

A3-44: (Revised Sheet)
1. Detail 1 - operable windows removed.

A3-51: (Revised Sheet)
1. Detail 11: Exterior walls at bridge are revised.

A3-52: (Revised Sheet)
2. Detail 19: South elevation of Bridge has been revised.

A3-53: (Revised Sheet) - Top of brick revised
1. Detail 4 & 7 - added angled jamb and sill.
2. Detail 19 - exterior walls have been revised.

A4-01: (Revised Sheet)
1. Detail 17 - Added wing walls at ends of seating system.
2. Detail 17 – added interior call-outs for interior elevations 10 & 11/A7-21

A4-04: Handrail Diameter
3. 2/A4-04 - Revise steel pipe from 1 ¼” O.D. to 1” NOMINAL.
4. 6/A4-04 - Revise steel pipe from 1 ¼” O.D. to 1” NOMINAL.

A4-07: Handrail Diameter
1. Detail 2 - Revise steel pipe from 1 ¼” O.D. to 1” NOMINAL.
2. Detail 6 - Revise steel pipe from 1 ¼” O.D. to 1” NOMINAL.
3. Detail 7 - Added beam pocket detail call-out.
4. Detail 10 - Added beam pocket detail

A5-41: Entry Canopies
1. Details 5, 9, & 10 - Canopy Roof to be MTL-7
2. Detail 2: South edge of canopy has been extended.
A5-51: (Revised Sheet)
1. Detail 4 – Revised note to read 9/A5-51.
2. Detail 11 – Revised fin tube detail.
3. Detail 17 – Remove insulation @ interior side of foundation wall.

A5-52: (Revised Sheet)
1. Detail 1 – Added curtain wall detailing.
2. Detail 2 – Added curtain wall detailing.
3. Detail 6 – Added curtain wall detailing.
4. Detail 11 – Added curtain wall detailing.
5. Detail 18 – Added plan detail @ metal panel transition at Penthouse.

A6-01: (Revised Sheet)
1. Room Finish Schedule has been revised and updated in multiple locations.

A6-02: (Revised Sheet)
2. Door schedule has been revised and updated in multiple areas.

A6-03: (Revised Sheet)
1. Clarification to Door Types TS & TD.
2. Elevation of Door Type BD2 is revised to flush panel.
3. HM 2-F Frame Type added.
4. Dimensions provided for Frame Type HM3 & HM4

A6-04: (Revised Sheet)
1. Window schedule has been revised and updated in multiple areas.
2. Interior window glazing & frame key has been revised

A6-06: (Revised Sheet)
1. Detail 2 & 3 – Adjusted door head detail to 2 ½ stop.

A7 & A8 Sheets: Interior Materials Key
1. Revise the interiors materials keys on various A7 & A8 sheets to match Key on the attached Sketch Drawing ASK-001

A7-03: (Revised Sheet)
1. Detail 9 – Removed detail call-out and updated note at graphic location.
2. Details 11, 12, & 17 - metal stud wall bulkhead added to conceal sliding door hardware at elevations.

A7-04: (Revised Sheet)
1. Detail 16 – Added M-6 and WD-5 as indicated on elevations.
2. Details 19 – Added M-6 and WD-5 as indicated on elevations.

A7-06: (Revised Sheet)
1. Detail 16 - Added steel plate to elevation and raised top of WC-1

A7-21: (Revised Sheet) - Added interior elevations 10 & 11/A7-21

A9 Sheets:
1. RCP General Notes – revise note #6 to read “ALL STRUCTURE AND DECK IN MECHANICAL ROOMS 0127ME, 0217ME AND 0317ME ARE TO BE PAINTED P-2.” Reference attached Sketch Drawings ASK-002.
A9-12: (Revised Sheet)
1. Detail 16 - Ceiling type ACP-5 added to ceiling to provide access to heat pumps

A9-13: (Revised Sheet)
1. Detail 16 - Ceiling type ACP-5 added to ceiling to provide access to heat pumps

A9-22: (Revised Sheet)
1. Detail 16 - Ceiling type ACP-5 added to ceiling to provide access to heat pumps

A9-23: (Revised Sheet)
1. Detail 16 - Ceiling type ACP-5 added to ceiling to provide access to heat pumps

A9-32: (Revised Sheet)
1. Detail 17 - Ceiling type ACP-5 added to ceiling to provide access to heat pumps

A9-33: (Revised Sheet)
1. Detail 17 - Ceiling type ACP-5 added to ceiling to provide access to heat pumps

General Notes:
1. Restroom #0166 Toilet Accessories: Provide the following toilet accessories for Room #0166. Final locations of toilet accessories to be determined in field.
   - TA-3
   - TA-5
   - TA-6
   - TA-8
   - TA-9
   - TA-10
   - TA-12
   - TA-13
   - TA-14
   - TA-15
   - TA-20
   - TA-21
   - TA-22

2. The following rooms are to be considered Primary Custodial Closets:
   - 0146 CU
   - 0208 CU
   - 0308 CU

3. The following rooms are to be considered Secondary Custodial Closets:
   - 0164A CU
   - 0121 CU Sm. Custodial
   - 0117 Café Sto / Custodial
   - 0362 CU

Please reference Sheet A7-07 for typical interior elevations of primary and secondary closets.

Prior Approvals:
Reviewing is for conformance with the design concept of the project and compliance with the information given in the contract documents. Contractor is responsible for dimensions to be confirmed and correlated to the job site; for information that pertains solely to the fabrication processes or to techniques of construction; and for coordination of work of all trades.
DRAWINGS:

S0-01: Make the following changes:
- Design Codes and Standards Notes: Delete the International Existing Building Code (IEBC) reference in Note 1.
- Design Loads Notes: In Note 1 for dead loads, change the sheet reference for the Presentation Hall Ceiling from “S2-0” to “S2-1”.
- Earthwork Notes: Add to Note 8 and revise Note 9 as indicated in the attached SSK-1.
- Concrete Notes: In the concrete properties table, change the “MIN.” MAXIMUM AGGREGATE SIZE for the FOOTINGS/FOUNDATION WALLS and SLABS ON GRADE/SLABS ON METAL DECK to ¾” and 1” respectively.
- Concrete Notes: There are (2) Note 8’s listed. Renumber the remaining notes accordingly.
- Concrete Notes: In Note 15 (revised), change basis of design for the epoxy system for new or existing concrete from “HITI HIT HY150” to “HITI HIT HY200”.
- Cold Formed Metal Framing Notes: Renumber the last 2 notes to be 11 and 12.
- Metal Decking Notes: Revise references to deck gauges as shown in the attached SSK-2 to reflect multiple types indicated in the plans.
- General Legends and Notes: In the General Foundation Notes, change the detail referenced in Note 5 and add Note 9 as shown in the attached SSK-3.
- General Legends and Notes: In the General Structural Framing Plan Notes, change the detail referenced in note 3 and add Note 9 as shown in the attached SSK-3.

S0-02: Replace with the attached sheet.
S1-02: Replace with the attached sheet.
S1-03: Replace with the attached sheet.
S1-12: Make the following changes:
- Change the callout of the column at the southwest corner of the south entry vestibule (approx. grid H.4-5.5) from a “HSS4x4x1/4” to a “HSS4x4x1/2”.
- In Note 3 of the General Slab/Main Flr. Framing Plan Notes, add the reference to detail “15/S5-01” in the blank space.

S1-14: Make the following changes:
- Change the callout of the column at the southeast corner of the south entry vestibule (approx. grid I.81-5.5) from a “HSS4x4x1/4” to a “HSS4x4x1/2”.

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In Note 3 of the General Slab/Main Flr. Framing Plan Notes, add the reference to detail “15/S5-01” in the blank space.

**S1-22:** Replace with the attached sheet.

**S1-23:** Replace with the attached sheet.

**S1-24:** Replace with the attached sheet.

**S1-25:** Make the following changes:
- In the Floor Slab-On-Deck and Roof Deck Legend, change the first part of the description of the bottom symbol for roof decking to be “1 ½” x GAUGE INDICATED...” Instead of the currently noted “2” x 20 GA. ....” callout.

**S1-32:** Replace with the attached sheet.

**S1-33:** Replace with the attached sheet.

**S1-34:** Replace with the attached sheet.

**S1-35:** Make the following changes:
- In the Floor Slab-On-Deck and Roof Deck Legend, change the first part of the description of the bottom symbol for roof decking to be “1 ½” x GAUGE INDICATED...” Instead of the currently noted “2” x 20 GA. ....” callout.

**S1-42:** Replace with the attached sheet.

**S1-43 and S1-45:** Make the following changes:
- In the Floor Slab-On-Deck and Roof Deck Legend, change the first part of the description of the bottom symbol for roof decking to be “1 ½” x GAUGE INDICATED...” Instead of the currently noted “2” x 20 GA. ....” callout.

**S1-44:** Replace with the attached sheet.

**S1-52:** Replace with the attached sheet.

**S1-53:** Make the following changes:
- At the beam dimensions called out between grids K and L, add a note that the dimensions are “TYP. SPACING U.N.O.”.
- In the General Structural Framing Plan Notes, change the detail referenced in note 3 and add Note 9 as shown in the attached SSK-3.

**S2-01:** Make the following changes:
- Detail 1: Replace as shown in the attached SSK-4.
- Detail 13: change the sheet referenced in Note 1 from “S4-44” to “S1-44” and the sheets referenced in Note 2 from “S1-01” to “S0-01”.
- Details 16 and 17: replace as shown in the attached SSK-5.

**S2-02 and S2-03:** At all details, where not indicated all ready, add a dimension from grid 1 to 3.7 of 62’-3”.

**S3-01:** Make the following changes:
- Moment Frame Connection Legend: change the sheet reference in the “A#” or “B#” SidePlate connection schedule mark to be for sheets “S4-01 TO S4-11”.
- Detail 1: Change the beam size between grids I and J from a “W18x65” to a “W18x76”.
- Detail 11: At Level 2 grid C, change the description adjacent to the detail 2/S4-12 callout from “BM. TO COL...” to “BM. TO BM...”.
- Detail 16: At Level 2 grid C, change the callout from “3/S4-12” to “2/S4-12” and change the
description adjacent to this callout from “BM. TO COL...” to “BM. TO BM....”.

S3-02: Make the following changes:
- Moment Frame Connection Legend: change the sheet reference in the “A#” or “B#” SidePlate connection schedule mark to be for sheets “S4-01 TO S4-11”.
- Detail 6: Remove the triangular moment frame symbol showing on the right side of the grid II column line and add HSS8x8x1/2 column callouts at levels 2 and 3 for the discontinuous columns located on grids JJ, KK, and LL.
- Detail 18: Change the beam size between grids L8 and M.8 from a “W18x50” to a “W18x55”.

S3-03: Make the following changes:
- Moment Frame Connection Legend: change the sheet reference in the “A#” or “B#” SidePlate connection schedule mark to be for sheets “S4-01 TO S4-11”.
- Detail 6: Remove the 3'-6” dimension the column splice detail callout above level 1 on grid line N.

S3-04: Make the following changes:
- Moment Frame Connection Legend: change the sheet reference in the “A#” or “B#” SidePlate connection schedule mark to be for sheets “S4-01 TO S4-11”.
- Detail 6: Change the beam and column sizes at the south entry roof to “W12x14” and “HSS4x4x1/2” respectively as was changed on the framing/slab plan views.

S3-05: Make the following changes:
- Detail 2: Delete the diagonal brace shown at this frame line and change the detail callout to match detail 3/S3-05.
- Detail 16: Change the callout at the roof level, grid L brace connection from “8/S4-13 SIM.” to “9/S4-13 SIM.”.

S4-00: Replace with the attached sheet.

S4-12: Add the attached sheet.

S4-13: Make the following changes:
- Detail 2: At the weld of the column to the beam, change the tail note to read “COLUMN TO BM.”.
- Detail 3: Replace as shown in the attached SSK-6.
- Detail 4: At the weld of the column to the beam, add a tail note to read “P.J.P.”.
- Detail 5: Add an erection bolt similar to detail 1/S4-13 and add a “GR. 50” to the gusset plate callout.
- Detail 10: Add to the Plan A-A portion of the detail at the 3/8" Weld Plate callout to “PROVIDE A SHORT HORIZ. SLOTTED HOLE AT ERECTION BOLT”.

S5-01: Replace with the attached sheet.

S5-02: Make the following changes:
- Detail 6: Remove the internal dimensions at the tunnel roof slab and add an outside dimension of 1'-0" at the right hand side.
- Detail 8: Add an outside dimension of 1'-4" at the left hand side of the tunnel roof slab.
- Detail 16: Add a callout “BASEMENT WALL ABOVE, SEE PLAN” at the upper vertical concrete wall.
- Detail 18: Change the direction of the arrow calling out the tunnel slab longitudinal slope to be sloping to the right.
- Details 16 and 18: Add callouts for “HYDROPHILIC WATERSTOP” at the intersections of the tunnel roof and floor slabs with the building foundation walls.

S5-03: Make the following changes:
- Detail 9: Remove the outside dimension of 1'-0" at the left hand side.
- Details 16 and 17: Add callouts for “HYDROPHILIC WATERSTOP” at the intersections of the tunnel hatch opening walls with the tunnel roof slab.
- Details 16 and 17: Add callouts to the vertical reinforcing of the tunnel hatch opening walls to be “CTRD. IN WALL”.

S5-04: Replace with the attached sheet.
S5-04: Make the following changes:
- Detail 13: Add a “VARIES” dimension from grid 1 to the inside face of the foundation wall.
- Details 14 and 18: Replace as shown in the attached SSK-7.
- Detail 16: Add a 1'-0” dimension for the wall thickness of the chase wall on the left hand side of the detail.

S5-05: Make the following changes:
- Details 7, 9, 10, & 11: Extend foundation wall vertical reinforcing into slab above, stopping 2” clear of top of slab.
- Details 8: Replace as shown in the attached SSK-8.
- Detail 18: Stretch the right hand side footing extension to show the edge of the slab at 9 ¾” from the outside face of the elevator pit wall.

S5-11: Replace with the attached sheet.

S5-12: Make the following changes:
- Detail 1: Add a callout at section B-B below the section cut of the beam that says “COL. & CONN. TO BM. NOT SHOWN FOR CLARITY”.
- Detail 5: Replace as shown in the attached SSK-9.
- Detail 6: At the far right detail, change the bypass clip required capacity from “750#” to “500# U.N.O.”.
- Detail 12: Modify the connections of the new beams to the existing Parking Garage N.E. Stair Tower beams to reflect the changes to details 17 and 18 noted below
- Details 17 & 18: Replace as shown in the attached SSK-10.

S5-13: Make the following changes:
- Detail 9: Change the callout for the wall elements to read “SEE ARCH. SHEETS FOR ELEVATOR SHAFT WALL REQUIREMENTS, TYP.”.
- Detail 15: Replace as shown in the attached SSK-11.
- Detail 16: Change the dimension from Level 2 to the top of the hss9x5x1/4 bridge support beam to be 1'-11 ¾”.

S5-14: Make the following changes:
- Details 6, 7, 8, 10, 11, & 13: Change the callout of the exterior wall stud to the floor edge angle from “6/S5-12” to “12/S7-04”.
- Details 6, 7, 8, 10, 11, & 13: Add a note below the floor and above the ceiling to “SEE S7-04 FOR EXTERIOR CEILING STRUCTURAL SUPPORT DETAILS”.

S5-15: Make the following changes:
- Detail 6: Change the dimension from grid to the edge of slab to be 2'-0 ¼”.
- Details 14, 15, 16, & 17: Change the callout for the wall elements to read “SEE ARCH. SHEETS FOR ELEVATOR SHAFT WALL DETAILS, TYP.”.

S5-17: Make the following changes:
- Details 6: Add a callout at the HSS column saying “COLUMNS ABOVE AND BELOW CONT. BEAM (CONN. NOT SHOWN FOR CLARITY, SEE SECTION VIEW)”. Add another callout at the north-south beam that says “CONT. CANTILEVERED BEAM”.
- Details 7, 8, 9, & 10: Add a callout to the east-west beam connection to the sides of the SidePlate connection that reads “SEE FRAMING PLANS AND ELEVATIONS FOR PERPENDICULAR BEAM CONN. CALLOUTS”.

S5-18: Make the following changes:
- Details 7, 8, 15, & 16: Change the callout for the wall elements to read “SEE ARCH. SHEETS FOR ELEVATOR SHAFT WALL DETAILS, TYP.”.
- Details 12, 13, & 16: Add a “SIM.” callout to the detail 4/S5-12 detail bubble.
S5-21: Replace with the attached sheet.

S5-22: Replace with the attached sheet.

S5-23: Replace with the attached sheet.

S5-24: Make the following changes:
- Details 1, 5, 6, 11, 12, & 13: At the callout for the deck connection, change the callout for the General Structural Notes sheet to “S0-01”.
- Detail 14: At the moment frame column bracing callout, add “@ EACH” after the “L3x3 BRACE…” callout.
- Details 14 & 19: Make the field weld an all-around weld by adding a circle at the start of the weld symbol.
- Detail 15: Add a 1’-7 3/8” dimension from the grid to the edge of decking.
- Detail 17: Add a 1’-4 31/4” dimension from the grid to the edge of decking and change the detail callout at the moment frame column bracing to be “15/S5-24”.

S5-25: Make the following changes:
- Details 1 & 2: At the callout for the deck connection, change the callout for the General Structural Notes sheet to “S0-01”.

S7-01, S7-02, S7-03, S7-04, S7-05, S7-06, S7-07, S7-08, S7-09, and S7-10: Replace with the attached sheets.

S8-13: Replace with the attached sheet.

S8-14: Replace with the attached sheet.

S8-15: Replace with the attached sheet.

S8-16: Replace with the attached sheet.

S8-17: Make the following changes:
- Detail 13: Remove the weld length of “0” at the shop weld.
- Detail 14: Fix the welds to show an all-around weld at each by moving the circles to the end of the weld symbols.

S8-18: Replace with the attached sheet.
Addendum #B2

To: Bill DuBeau, A&E Architects
From: Todd Meling, P.E., Jeff Kraft, P.E., Jeffrey Fox, Aaron Sadowski & Terry Jiracek
Date: 11-8-2016
Re: Norm Asbjornson Hall

A.C.E. Job # 15BL4300

Please issue the following information to the contractor in your next addendum:

General Notes:

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.

Mechanical:

Drawings:

1. Sheet MH1-12: HVAC PLAN LEVEL 1, WEST
   - See VAV E-7 in 0156 GENERAL PURPOSE MAKER SPACE. Line 10’ of duct between grille and VAV box with 1” acoustical liner downstream of VAV.

2. Sheet MH1-23: HVAC PLAN LEVEL 1, EAST
   - See VAV E-6 in 0191 CAPSTONE SMALL. Line with 8’ of duct between grille and VAV box with 1” acoustical liner.

   - See 0293 CM COLLABORATION 2-1. Ceiling diffusers shifted to avoid conflict with fire sprinklers.
   - See 0267 EMPOWER/STUDENT SUCCESS. Ductwork rerouted to avoid conflict with fire sprinklers.
   - See 0253 FACULTY/GRAD OFFICES. Ductwork rerouted to avoid conflict with fire sprinklers.
   - See 0258 RAPID PROTOTYPE. Ductwork rerouted to avoid conflict with fire sprinklers.
   - See 0256 EMEC/ETME (Design Space). Ceiling diffuser shifted to avoid conflict with fire sprinklers.

4. Sheet MH1-23: HVAC PLAN LEVEL 2, EAST - see attached revised sheet.
• See 0237J CONFERENCE. Ductwork rerouted to avoid conflict with fire sprinklers.
• See 0237K WORKROOM. Ductwork rerouted to avoid conflict with fire sprinklers.
• See 0299 CM COMMONS 2. Ductwork rerouted to avoid conflict with fire sprinklers.
• See 0212 INSP. HALL STOR. Heat Pump 2-13 and associated ductwork shifted to avoid conflict with fire sprinklers. VAV 2-13 relocated to provide service access in exposed corridor.
• See 0200 INSPIRATION HALL STORAGE. HP 2-15 moved east to allow VAV 2-15 to be moved from 0298C CO CORR 2C into 0200 INSPIRATION HALL STORAGE.

5. Sheet **MH1-32: HVAC PLAN LEVEL 3, WEST - see attached revised sheet.**

• See 0359 BOARDROOM. Use hard duct connection to ceiling diffusers per acoustic consultant comment. No flex duct allowed at these connections.
• See 0347G BREAKROOM. Use hard duct connection to ceiling diffusers per acoustic consultant comment. No flex duct allowed at these connections.
• See 0347 HONORS ADMIN/RECEPTION. Use hard duct connection to ceiling diffusers per acoustic consultant comment. No flex duct allowed at these connections.
• See 0347A STORAGE. Use hard duct connection to ceiling diffusers per acoustic consultant comment. No flex duct allowed at these connections.

6. Sheet **MH1-33: HVAC PLAN LEVEL 3, EAST - see attached revised sheet.**

• See 0329 Seminar 1. Ductwork rerouted to avoid conflict with fire sprinklers.
• See 0388 CM COMMONS. Ceiling diffuser shifted to avoid conflict with fire sprinklers.

7. Sheet **MP1-33: HYDRONIC PLAN LEVEL 3, EAST**

• See 0201 Inspiration Hall. Delete FT 3-3 and associated piping and thermostat from project scope.

8. Sheet **MP1-23: HYDRONIC PLAN LEVEL 3, WEST**

• See 0201 Inspiration Hall. Delete mechanical HWS/HWR associated with FT 3-3.

9. Sheet **M1-52 NATURAL VENTILATION AND SMOKE CONTROL PLAN**

• Operable windows moved from west side only to combination west and north. See attached sketch SK-M1-52-1.

10. Sheet **M1-53 NATURAL VENTILATION AND SMOKE CONTROL PLAN**

• Operable windows moved from west side only to combination west and north. See attached sketch SK-M1-53-1.

11. Sheet **M5-01 MECHANICAL DETAILS**

• See attached sketch SK-M5-01-1 for revisions to detail 2 on this sheet.

12. Sheet **M5-04 MECHANICAL DETAILS**

• See attached sketch SK-M5-04-1 for revisions to detail 3 on this sheet.

13. Sheet **M6-01 MECHANICAL SCHEDULES**

• Delete FT 3-3 from project.
• Change Shell/Tube Heat Exchanger Schedule: HX-HW1, HX-HW2 to be Taco E12210-S with 5’ length and 12” diameter, tube water pressure drop is 0.8’ of head, or equal.
Specifications:

Question #1:
Is regular Schd 40 ERW – A53 acceptable in lieu of the “B” type 96 steel pipe in the Hot Water Piping Above portion of the spec… Section 3.1 –A-2 & B-2.

Response: PIPE MUST BE ASTM A53 GRADE B-ERW.

Question #2:
Is grooved fittings acceptable for the Hot water supply & return piping 2.5” and larger?

Response: GROOVED PIPING IS NOT ACCEPTABLE FOR HEATING WATER, BUT WILL BE ALLOWED FOR HEAT PUMP WATER, PER MSU STANDARDS.

Question #3:
Are malleable fittings ok in lieu of cast iron fittings?

Response: CLASS 150 MALLEABLE IRON FITTINGS ARE ACCEPTABLE.

1. Section 23 21 13:
   a. Paragraph 3.1-A.2 Class 125 or better malleable iron fittings will be allowed for heating hot water and heat pump piping.
   b. Paragraph 3.1-B.2: Schedule 40 ASTM A53 Grade B-ERW steel piping for piping 2-1/2” and larger will be acceptable.

Prior Approvals:

1. MECHANICAL EQUIPMENT SUBSTITUTION APPROVALS: Prior approvals for equipment substitutions are based upon manufacturer’s name only. No material submissions have been reviewed. Any substitutions shall meet the specification for the product specified. Any costs associated with electrical modifications necessary due to a product substitution shall be the responsibility of the mechanical contractor.
   a. Product: SECTION 23 05 48: VIBRATION & SEISMIC CONTROLS
      i. Vibration Isolators, Bases, Seismic Regulators
         a. Vibro-Acoustics
      ii. Rooftop Unit Curbs & Isolation Systems
         a. Thybar
      iii. Flexible Pipe Connections
         a. Engineered Flexible Products
   b. SECTION 23 09 23.14: FLOW INSTRUMENTS
      i. Pitot-Tube Airflow Station, Thermal Airflow Station, & Airflow Transmitters
         a. Ruskin
   c. SECTION 23 09 23: DIRECT DIGITAL CONTROL SYSTEM FOR HVAC
i. Variable Frequency Drives
   a. Danfoss

d. SECTION 23 31 13 METAL DUCTS
   i. Spiral Ductwork
      a. Spiral-Tech
      b. Metco, Inc

e. SECTION 23 33 00: AIR DUCT ACCESSORIES
   i. Duct Mounted Access Doors
      a. Ruskin
   ii. Flexible Ducts
      a. Hart & Cooley

f. SECTION 23 34 16: CENTRIFUGAL HVAC FANS
   i. Twin City Fans

g. SECTION 23 34 23: HVAC POWER VENTILATORS
   i. Twin City Fans

h. SECTION 23 36 00: AIR TERMINAL UNITS
   i. Single Duct VAV Terminal Units
      a. Enviro-Tec

i. SECTION 23 22 23 CONDENSATE PUMPS
   i. Condensate Pump
      a. Shipco

j. HOT WATER UNIT HEATERS
   i. Hot Water Unit Heaters
      a. Rittling

k. SOUND ATTENUATORS
   i. POTTORFF, INC

l. VEHICLE TAILPIPE EXHAUST SYSTEM
   i. Vehicle Exhaust System
      a. Car-Mon Products
      b. Ventaire, Inc
Plumbing/Fire Protection:

Drawings:

1. Sheet **P0-01 - MECHANICAL LEGEND AND SCHEDULES**
   - Sump Pump Schedule: Provide 4’ diameter x 6’ deep fiberglass basins for both SUMP-1 AND SUMP-2.

2. Sheet **PW1-32 DWV PLAN – LEVEL 3, WEST**
   - Between grids D & E, ADD a new 4” ORD-1, route 4” SD-OF piping from drain north to a new DS-1, coordinate exact location and elevation with architectural. (See Attached Sheet)

3. Sheet **P1-52 PLUMBING PLAN – ROOF, WEST**
   - Between grids D & E, ADD a new 4” ORD-1. (See Attached Sheet)

4. Sheet **PH1-01 H2O PLAN - BASEMENT**
   - ADD a 6” PVC “Conduit / Chase” down from Café BOH above over and up into Café casework above. This shall be utilized to route the carbonated beverage lines to the dispensers. Coordinate exact routing with other work within the basement. (See Attached Sheet)

5. Sheet **PH1-23 H2O PLAN – LEVEL 1, EAST**
   - ADD the 6” PVC “Conduit / Chase” up from below to the Café BOH and into the Café casework.
   - ADD to Keynote 10 “Provide stops (shut-off valves) as required within the casework.” This will occur at all 3 places within the Café #0111. (See Attached Sheet)

   - Room #0242 Family Care – CHANGE LAV-2 to be LAV-3. LAV-3 is to be American Standard Murro Universal Lavatory #0954.004EC with Shroud/Knee Contact Guard #0059.020EC. Faucet shall be Moen Commercial #8279, 4” center set faucet, 5 ¼” goose neck, 4” wrist blades, 1.2 gpm max flow. Provide ASSE 1070 compliant thermostatic mixing valve as required. (See Attached Sheet)

Specifications:

1. No modifications to plumbing specifications.

Prior Approvals:

1. **PLUMBING EQUIPMENT SUBSTITUTION APPROVALS**: Prior approvals for equipment substitutions are based upon manufacturer’s name only. No material submissions have been reviewed. Any substitutions shall meet the specification for the product specified. Any costs associated with electrical modifications necessary due to a product substitution shall be the responsibility of the mechanical contractor.
   a. **Product: Temperature Mixing Valves**
      i. **TMV-1**
         1. **APPROVED - Bradley S19-2300-P-RS**
ii. TMV-2
   1. APPROVED - Bradley S19-2000

iii. TMV-3
   1. APPROVED - Bradley S59-4008

iv. TMV-4
   1. APPROVED – Bradley S19-2000

b. SECTION: 22 14 23 STORM DRAINAGE PIPING SPECIALTIES
   i. RD-1 & ORD-1
      1. NOT APPROVED – Froet Industries

c. SECTION: 22 42 13.13 COMMERCIAL WATER CLOSETS
   i. Water Closet Flush Valves
      1. NOT APPROVED – MAC Faucets

d. SECTION: 22 42 13.16 COMMERCIAL URINALS
   i. Urinal Flush Valves
      1. NOT APPROVED – MAC Faucets

e. SECTION: 22 13 19 SANITARY WASTE PIPING SPECIALTIES
   i. GI-1
      1. NOT APPROVED – Schier

f. SECTION: 22 42 16.13 COMMERCIAL LAVATORIES
   i. Lavatory Faucets
      1. NOT APPROVED – MAC Faucets
      2. NOT APPROVED – Sloan EAF 350
      3. NOT APPROVED – Symmons S-6060

g. SECTION 22 42 16.16 COMMERCIAL SINKS
   i. Sink Faucets
      1. S-1 Sink – APPROVED – Elkay LK800GN05T4 with LK735
      2. S-2 Sink – APPROVED – Elkay LK800GN08T4 with LK735

h. SECTION 22 66 00: CHEMICAL WASTE SYSTEMS FOR LABORATORY AND HEALTHCARE FACILITIES
   i. IPEX, Inc.
Electrical:

Clarification/ Supplemental information.

1. Electrical light fixture cut sheets, previously procured under an Early Work Package, are available as supplemental information at the FTP location listed below.

**FTP Location:** ftp://ftp.aearchitects.com/ (connect to FTP directory)

*(NOTE: Type ftp location above directly into Windows Explorer File Manager, not web browser)*

**Username:** NAH-Bidder

**Password:** MSU *(case sensitive)*

For assistance, if needed, email: bdubeau@aearchitects.com

Drawings:

1. **Sheet E0-01: Electrical Legend And Luminaire Schedule**

   - Light fixture ZT1b was omitted from the schedule, but is shown on floor plan on sheet EL1-33. Part number for fixture shall be the same as fixture ZT1am which is: CONTECH #NHTEK48-**_FINISH -- INCLUDE REQ'D PARTS & ACCESSORIES FOR TRACK.
   - Light fixture ZR3D_17 has been added to the project. Fixture shall be: CORONET #PG4LED-17-LTG2-4000K-UNV-3"-DB.

2. **Sheet EPS1-12: Power & Fire Alarm Plan – Level 1, West**

   - Many power connections were added for automatic window operators that will be provided by window installer.

3. **Sheet EPS1-13: Power & Fire Alarm Plan – Level 1, East**

   - See room 0191: Add power connection and manual motor starter to overhead door motor in space. Connect to a spare 20A, 1P breaker in panel 1L5, # 38. See attached drawing showing revised layout.
   - Many power connections were added for automatic window operators that will be provided by window installer.

4. **Sheet EPS1-22: Power & Fire Alarm Plan – Level 2, West**

   - Many power connections were added for automatic window operators that will be provided by window installer.

5. **Sheet EPS1-23: Power & Fire Alarm Plan – Level 2, East**

   - Many power connections were added for automatic window operators that will be provided by window installer.


   - Many power connections were added for automatic window operators that will be provided by window installer.

7. **Sheet EPS1-33: Power & Fire Alarm Plan – Level 3, East**
• Many power connections were added for automatic window operators that will be provided by
window installer.

8. Sheet **EL1-12: Lighting Plan – Level 1, West**
   • See room 0196 LB: Change the ZR3D_16 light fixture to be a ZR3D_17, (same part number as 16
in all respects but in 17’ length). Move the new ZR3D_17 light fixture located on the south side of
the space to be located within the ceiling opening shown on the south side of this space, setting the
enclosure tight to the south wall. Center light in opening from east to west.
   • Change mounting location for all ZD9 light fixtures located in plan to be mounted on the opposite
side of the roof beam that they are currently shown on. Locations affected on canopies located
outside of: Vestibule 0196 VE (Mount fixtures on south side of beam), Vestibule 0197 VE (Mount
fixtures on south side of beam) and Bldg Loading/ Storage 0164 LD (Mount fixtures on north side
of beam)

9. Sheet **EL1-13: Lighting Plan – Level 1, East**
   • See room 0190: Rotate the layout of P5 fixtures in space to be 90 degrees from current layout.
Both P5 fixtures in space shall be mounted @ 15'-6". See attached drawing showing revised
layout.
   • See room 0198 CO: Change mounting height for the P8E light fixture located at the west most side
of space to be mounted at 15'-6” BOF.
   • See Building Exterior: Change mounting location for all ZD9 light fixtures located in plan to be
mounted on the opposite side of the roof beam that they are currently shown on. Locations
affected on canopies located outside of: Vestibule 0197 VE (Mount fixtures on south side of beam),
Vestibule 0198 VE (Mount fixtures on south side of beam) and Vestibule 0199 VE (Mount fixtures
on west side of beam).
   • See room 0191: Delete the P21 light fixture in space. Change P5 fixture to be a P4 light fixture.
Mounting height of P4 shall be the same as all other fixtures in building with this call out. North side
of P4 fixture shall be controlled via switch “a” and south side shall be controlled via “b” switch leg.

10. Sheet **EL1-22: Lighting Plan – Level 2, West**
    • See room 0295: Move the ZP2D light fixtures located in room to be located at 4’ on center.
Accomplish this work by moving the west fixture 1’ to the east and east fixture 1’ to the west.
    • See room 0296: Move the ZP2D light fixtures located in room to be located at 4’ on center.
Accomplish this work by moving the west fixture 1’ to the east and east fixture 1’ to the west.
    • See room 0299 CO: Move the ZR3D_16 light fixture located on the south side of the space to be
located within the ceiling opening shown on the south side of this space, setting the enclosure tight
to the south wall. Center light in opening from east to west.
    • See room 0242: Remove the G3 light fixtures in this room. In their place EC to install a D2 light on
the west wall and a D1 on the east wall. Mount these fixtures centered along their respective wall
and mount @ 7'-6" BOF. Connect fixtures complete to circuitry in space.

11. Sheet **EL1-32: Lighting Plan – Level 3, West**
    • See room 0394: Move the ZP2D light fixtures located in room to be located at 4’ on center.
Accomplish this work by moving the west fixture 1’ to the east and east fixture 1’ to the west.
    • See room 0395: Move the ZP2D light fixtures located in room to be located at 4’ on center.
Accomplish this work by moving the west fixture 1’ to the east and east fixture 1’ to the west.
    • See room 0392 CM: Move the ZR3D_16 light fixture located on the south side of the space to be
located within the ceiling opening shown on the south side of this space, setting the enclosure tight
to the south wall. Center light in opening from east to west.

12. Sheet **E5-03: Electrical Details**
• Add detail 13 “Typical operable window”. Detail describes work by EC and TC.
BID ITEM:
(For Subs and Suppliers submitting on more than one scope of work, please use separate Bid Forms for each Scope submitted. Please attach bidder's own proposal form or scope letter for clarification and qualification purposes.)

Submitted By: ____________________________________________

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

On Behalf of:
State of Montana

We, the undersigned Company, having carefully read the Documents for the proposed contract, including the General Conditions, Supplemental Conditions, Specifications, and Drawings and Addendums and having carefully ascertained the conditions under which the Work is to be performed represent that bidder also has adequate staffing, plant & financial capability, hereby propose and offer to enter into a Contract to perform the Work as described in accordance with the Documents, complete and ready for use by the time specified, for the price of:

**Base Bid:** Including 1% GRT
- Complete as per Bid Package named above.

$ __________________________ dollars

Alternate #A-01 Pricing – Tennis Court Lights $ __________________________
Alternate #A-02 Pricing – Bike Parking and Landscaping $ __________________________
Alternate #A-03 Pricing – Roof Safety Rail $ __________________________
Alternate #A-04 Pricing – Acoustic Ceiling Panels $ __________________________
Alternate #A-05 Pricing – Roof Membrane $ __________________________
Alternate #A-06 Pricing – Thermochromic Glazing $ __________________________
Alternate #A-07 Pricing – Acoustic Panel Ceiling - APC-4 $ __________________________
Alternate #A-08 Pricing – Wall Protection $ __________________________
Alternate #A-09 Pricing – Donor Wall $ __________________________
Alternate #A-10 Pricing – Norm Wall $ __________________________
Alternate #TC1 Pricing – Monitoring For MSU $ __________________________
Alternate #TC2 Pricing – Monitoring for Research Purposes $ __________________________
Bond - Rate as a Percentage to Supply 100% Performance and Payment Bond.

Subject to such additions and deductions as may be properly made under the terms of finalizing the Contract, the prices are firm and are not subject to escalation for the entire duration of the project.

PERIOD OF ACCEPTANCE:
The proposer agrees that this bid shall remain open for acceptance and the price shall remain unchanged and notwithstanding any error in the Bid at the amount stated for a period of ninety (90) days from the date of closing of this Proposal.

CONTRACT:
The Bidder agrees that this Bid is subject to a formal AIA 401 Contract Modified being prepared and executed with the Construction Manager.

The Bidder agrees to execute the Contract within 14 days of notification of the acceptance of his bid and to provide Certificates of Insurance including Worker’s Compensation Insurance.

The Bidder shall furnish 100% performance and Payment Bonds, if required by the Construction Manager. Cost of said bonds is listed as a bid item to the base bid above.

ADDENDA:
Addendum No. 1 Dated: ______________________
Addendum No. 2 Dated: ______________________

ADDITIONAL INFORMATION MAY BE REQUESTED WITHIN 48 HOURS AFTER BID PROPOSALS ARE OPENED

1. References of Similar Projects – Minimum of 3
Owner, Contractor and Architect
2. Milestone schedule confirming procurement, shop drawings, fabrication and delivery/lead times.
3. Staffing and Organizational Chart for this Project
4. Letter from Surety supporting ability to bond
5. Current Work Load

SUBMITTED BY:
Company: ________________________________

______________________________

______________________________

Name of Bidder: ________________________________

Signature of Bidder: ________________________________

Dated: ________________________________

Registration No.  ________________

Phone No. ________________________________

Email ________________________________

END OF BID FORM
Pre-Bid Meeting Agenda Schedule B

1 Introductions:
   a.) MSU Owner Representatives
      Sam Des Jardins - Project Manager

   b.) Architect - A&E Architects/ZGF
      Kris Koessl - Construction Administration

   e.) Martel Construction - Construction Manager
      Jason Martel - Principal
      Phil Lafata - Project Manager
      Tom Estes - Superintendent
      Patrick 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
      7 Conduct Project Meetings
      8 Coordinate Independent Testing- MSU will contract and pay for direct

3 Trade Subcontractors Contractors and Suppliers
   a.) Selected by an Advertised Bid Process managed by the Construction Manager

   b.) There are no defined bid packages. Please bid the scope that best fit your firm's area of expertise. Please provide a scope letter on company's own letterhead for qualification and clarification purposes along with the formal project bid form.

   c.) Responsibility
      1 Perform all work defined in Drawings and related
Pre-Bid Meeting Agenda Schedule B

Specification Sections

2 Provide Full time supervision acceptable to the Construction Manager
3 Provide all material and Labor required to Perform proposed work and as described in all Contract Documents
4 Provide Daily Site & Project Clean up as defined in the specifications
5 Provide Project Management for the scope of work bid
6 Provide all Safety Requirements of the scope of work bid
7 Abide by CM Firm's safety program
8 Provide any necessary equipment for a the scope bid. (i.e. Hoisting, tradesman access)
9 Responsible for QA/QC of the scope bid
11 Provide all necessary survey, layout, staking, for scope of work bid
12 Weather Protection of your work
13 As-Built Drawings
14 Mandatory attendance - weekly safety meeting
15 Mandatory attendance - weekly subcontractor coordination meetings
16 Submittal Exchange will be used to track all project documents and each subcontractor will be responsible to use this system to coordinate pricing and work
17 Daily logs to be turned in daily, including extra work tickets
18 Sustainable Design Requirements - Section 01 81 13.13-1 LEED 2009 for Construction
19 Special Attention Should be paid to Construction / Indoor Air Quality Management

All work will be done during a standard 5 day work week, no trades will be permitted to work 4-10 hour shifts without approval of Martel due to the amount of coordination required on this project. Bids should include 5 day work weeks
20 Protection of installed work and if you damage another contractors work it will be repaired at your cost.
21 Sleeves as required to install your work

Scope of Work-Misc.

a.) Trade Contractor Bid Contracts carried under Martel's GC/CM
b.) Refer to the drawings, specs and supplemental information provide in Addendum #B1
c.) Bidders should thoroughly review Division 1 Specifications
d.) Work Hours-7:00 AM - 3:30 PM M-F(Memorial Day - Labor Day) 8:00 AM - 4:30 PM M-F(Labor Day - Memorial Day). Extended Hours as Approved by CM
Pre-Bid Meeting Agenda Schedule B

e.) MSU is a TOBACCO FREE campus. No Exceptions.

f.) Parking - Designated Areas only - Stadium Lot
   East Stadium Lot - Purchase F Lot permits. Currently $40 but prices could escalate over
   course of job. These are the responsibility of the subcontractor.
   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.) All contractors are responsible for cutting and patching required to install there scope. If
   something is preventing the work from being accessed or installed then it is the contractors
   responsibility to remove and replace as required. This may be the jobsite fence, drywall,
   excavation, etc.

k.) 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.

l.) HVAC equipment and Lighting/Lighting Control have already bid and the suppliers have pricing for
   this equipment that will be provided to subcontractors upon request. The install subcontractor will
   carry these numbers in their bid and furnish and install the equipment. The procurement portion of this
   has already been bid to provide a level field to ensure that the suppliers have the right
   equipment/fixture types and counts so that there is minimal discrepancies on bid day.

m.) Scopes that have already bid

   HVAC Equipment - AAON - Contact Dan Fry at Vemco for pricing
   Lighting and lighting control - Contact Jack Fish at Crescent Electric
   HVAC Controls and Building Management Systems - Electro Controls
   Building Commissioning - Elkhorn
   Engineered aggregate piers supply and install - GTFC-West
   Primary Site Electrical supply and install - South Hills Electric
   Civil outside the building footprint(demo, excavation, and backfill) - Central Excavation

n.) This project is a Sideplate design, firms bidding should be familiar with the installation for
   a Sideplate design

o.) Steel lead time is important and will need to be agreed upon immediately after bid results are
   received for schedule purposes. Please have this information prepared.
Pre-Bid Meeting Agenda Schedule B

p.) We need to get elevator shop drawings immediately after award so that we can coordinate the drilling of the jack holes.

q.) Revised Bid Form

r.) No design questions will be answered past 11/2

s.) Questions will be responded to in Addendum B2 to be issued 11/8

t.) The excavation for the footprint of the building has not been bid and we would like to receive proposals for this work. When bidding this work, bids should include the excavation and disposal of the asphalt and base course material within the footprint of the building, as well as mass excavation and foundation excavation. Adhere to OSHA Standards.

u.) If you will be tracking mud off site you will need to carry cost to clean the road as required.

v.) Fill/backfill to +/- .05' of finished grades

w.) Sequence of demo - See schedule

y.) Landscaper should have 6' of topsoil at all areas not receiving hardscapes

z.) Access panels as required to install/access your scope installed in place

aa.) In place mock-ups of exterior skin prior to start of production work to be tested. See Building Enclosure Commissioning General Requirements 01 19 15

ab.) Other mock-ups as required for material and color selections

4 Submission of Bid - All Information is in Addendum No. B1

a.) Invitation to Bid

b.) Instructions to Bidders

c.) Bid Form

d.) Bid Requirements & Supplemental Bidder Information

e.) Logistics Plan

f.) Overall Preliminary Construction Schedule

g.) Parking Requirements

Submission of Bids - Tuesday November 15th at 2pm

At: Martel Construction, Inc.

1203 S. Church

Bozeman, MT 59715

How: Mail, Hand Delivered, Fax or email

h.) On Bid Form found in Addendum No. B2

i.) Qualifications or Clarifications to Bid (Scope Letter)
Pre-Bid Meeting Agenda Schedule B

1 Submit on Trade Contractors Company letter head

j.) Must be a Montana licensed contractor
k.) Bids DO NOT require a Bid Bond or Security

l.) Bids may require a Performance and Payment bond. The cost of the bond should be included as a line item in the submitted bid
m.) Bids DO require the Montana 1% Gross Receipts Tax included in Bid
n.) MT 2016 Prevailing Wage Scale apply to this project.-See specs for wage scale
     Certified Payroll reporting is required.
o.) Acknowledge Addendums on the Bid Form in space provided.
     An addendum will be issued next week

5 Miscellaneous

a.) Substitutions Requests and Pre-Bid Request for Information should be directed to Martel Construction Inc. in writing before November 2nd.
   Phil Lafata - plafata@martelconstruction.com - 406-223-1251
   Patrick Bjorndal - pbjorndal@martelconstruction.com - 406-589-6410

   All responses and clarifications will be issued in an Addendum

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

c.) Contact Martel 2 weeks before utility outages to coordinate. In some cases more depending on the impact.

d.) Lock everything up. Lock up your tools and trailers.

e.) MSU Tree Protection Requirements - Corral panels is the standard

f.) CAD Files - Will be available upon signing a release

6 Montana State

a.) Owner’s Items

7 Architect & Engineers

a.) Architect Items
Pre-Bid Meeting Agenda Schedule B

1. Addendum #2 will be forthcoming early next week (week 11/8) and will include agenda and notes from this meeting

8. Open Q&A
Bid Form

MSU Norm Asbjornson Hall
Schedule B – Building & Systems
Bozeman, Montana

BID ITEM:
(For Subs and Suppliers submitting on more than one scope of work, please use separate Bid Forms for each scope submitted. Please attach bidder's proposal form or scope letter for clarification and qualification purposes.)

Submitted By: ________________________________

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

On Behalf of: State of Montana

We, the undersigned Company, having carefully read the Documents for the proposed contract, including the General Conditions, Supplemental Conditions, Specifications, and Drawings and Addendums and having carefully ascertained the conditions under which the Work is to be performed represent that bidder also has adequate staffing, plant & financial capability, hereby propose and offer to enter into a Contract to perform the Work as described in accordance with the Documents, complete and ready for use by the time specified, for the price of:

**Base Bid:** Including 1% GRT
- Complete as per Bid Package named above.

  $ __________________________
  (written) ____________________________ dollars

**Alternate #A-01 Pricing – Tennis Court Lights**

  $ __________________________

**Alternate #A-02 Pricing – Bike Parking and Landscaping**

  $ __________________________

**Alternate #A-03 Pricing – Roof Safety Rail**

  $ __________________________

**Alternate #A-04 Pricing – Acoustic Ceiling Panels**

  $ __________________________

**Alternate #A-05 Pricing – Roof Membrane**

  $ __________________________

**Alternate #A-06 Pricing – Thermochromic Glazing**

  $ __________________________

**Bond - Rate as a Percentage to Supply 100% Performance and Payment Bond.**

  %

Subject to such additions and deductions as may be properly made under the terms of finalizing the Contract, the prices are firm and are not subject to escalation for the entire duration of the project.

**PERIOD OF ACCEPTANCE:**
The proposer agrees that this bid shall remain open for acceptance and the price shall remain unchanged and notwithstanding any error in the Bid at the amount stated for a period of ninety (90) days from the date of closing of this Proposal.

**CONTRACT:**

The Bidder agrees that this Bid is subject to a formal AIA 401 Contract Modified being prepared and executed with the Construction Manager.

The Bidder agrees to execute the Contract within 14 days of notification of the acceptance of his bid and to provide Certificates of Insurance including Worker’s Compensation Insurance.

The Bidder shall furnish 100 % performance and Payment Bonds, if required by the Construction Manager. Cost of said bonds is listed as a bid item to the base bid above.

**ADDENDA:**

Addendum No. 1 Dated: ____________________

Addendum No. 2 Dated: ____________________

Addendum No. 3 Dated: ____________________

Addendum No. 4 Dated: ____________________

**ADDITIONAL INFORMATION MAY BE REQUESTED WITHIN 48 HOURS AFTER BID PROPOSALS ARE OPENED**

1. References of Similar Projects – Minimum of 3 Owner, Contractor and Architect
2. Milestone schedule confirming procurement, shop drawings, fabrication and delivery/lead times.
3. Staffing and Organizational chart for this Project
4. Letter from Surety supporting ability to bond
5. Current Work Load

**SUBMITTED BY:**

Company: ________________________________

______________________________

______________________________

Name of Bidder: ________________________________

Signature of Bidder: ________________________________

Dated: ________________________________

Registration No. ________________________________

Phone No. ________________________________

Email ________________________________

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<td><a href="mailto:pbjorndal@martelconstruction.com">pbjorndal@martelconstruction.com</a></td>
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<tr>
<td>Eric Goroski</td>
<td>Liberty Electric</td>
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<td><a href="mailto:eric.goroski@libertyelectricinc.com">eric.goroski@libertyelectricinc.com</a></td>
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<tr>
<td>Ryan Haught</td>
<td>Clear Creek Plumbing</td>
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<tr>
<td>Michael Parks</td>
<td>Sav</td>
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<td><a href="mailto:mike.parks@savincc.com">mike.parks@savincc.com</a></td>
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<tr>
<td>Brendan Phillips</td>
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<td>589-5489</td>
<td><a href="mailto:bphillips@sahs-mt.com">bphillips@sahs-mt.com</a></td>
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<tr>
<td>Anthony Marzurka</td>
<td>Simplex Grinnell</td>
<td>412-6932</td>
<td><a href="mailto:a.marzurka@simplexgrinnell.com">a.marzurka@simplexgrinnell.com</a></td>
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<tr>
<td>Chris Steenis</td>
<td>Stearns Masonry</td>
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<td><a href="mailto:c.steens@stearnsmasonry.com">c.steens@stearnsmasonry.com</a></td>
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<tr>
<td>Jonathan Jarvis</td>
<td>Precision Air-Whk Bldg</td>
<td>406-249-6697</td>
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<tr>
<td>Dave Yaggy</td>
<td>Western States Fire</td>
<td>539-5727</td>
<td><a href="mailto:dave.yaggy@wspf.US">dave.yaggy@wspf.US</a></td>
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<td>Austin Barnhardt</td>
<td>Quality Roofing</td>
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<tr>
<td>Michael Rossmiller</td>
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<tr>
<td>David Harnell</td>
<td>DKB</td>
<td>589-727-7878</td>
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<td>Wes Sargent</td>
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<td>Ryan Waldenberg</td>
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Date: 08/04/2016  
MSU Norm Asbjorndson Hall  

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<td>Jason Lee</td>
<td>HDR</td>
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SECTION 05 73 13 - GLAZED DECORATIVE METAL RAILINGS

PART 1 - GENERAL

1.1 SUMMARY
A. Section Includes:
   1. Glass- and plastic-supported railings.

1.2 ACTION SUBMITTALS
A. Product Data: For the following:
   1. Manufacturer's product lines of railings assembled from standard components.
   2. Grout, anchoring cement, and paint products.
B. Sustainable Design Submittals:
C. Shop Drawings: Include plans, elevations, sections, and attachment details.
D. Samples: For each type of exposed finish required.
E. Delegated-Design Submittal: For installed products indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.3 INFORMATIONAL SUBMITTALS
A. Qualification Data: For professional engineer.
B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, according to ASTM E 894 and ASTM E 935.
C. Preconstruction test reports.
D. Evaluation Reports: For post-installed anchors, from ICC-ES.

PART 2 - PRODUCTS

2.1 MANUFACTURERS
A. Basis-of-Design: CR Laurence Co., Inc.
B. Substitutions: See Section 01 25 00 Substitution Procedures.
C. Product Options: Information on Drawings and in Specifications establishes requirements for system's aesthetic effects and performance characteristics. The following components establish the Basis-of-Design:

2. Glass: 9/16" tempered, clear.
4. Gates: CR Laurence #CRL1202W142BS, 36” x 42” In-Rail closing mechanism cap rail and full bottom rail heavy duty glass gate. ½” tempered glass, brushed stainless steel.
5. Refer to drawings for further information.

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design railings, including attachment to building construction.

B. Structural Performance: Railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Handrails and Top Rails of Guards:
   a. Uniform load of 50 lbf/ft. applied in any direction.
   b. Concentrated load of 200 lbf applied in any direction.
   c. Uniform and concentrated loads need not be assumed to act concurrently.

2. Infill of Guards:
   a. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft..
   b. Infill load and other loads need not be assumed to act concurrently.

3. Glass-Supported Railings: Support each section of top rail by a minimum of three glass panels or by other means so top rail will remain in place if any one panel fails.

2.3 METALS, GENERAL

A. Brackets, Flanges, and Anchors: Same metal and finish as supported rails unless otherwise indicated.

2.4 STAINLESS STEEL

A. Tubing: ASTM A 554, Grade MT 304.
B. Pipe: ASTM A 312/A 312M, Grade TP 304.
C. Castings: ASTM A 743/A 743M, Grade CF 8 or CF 20.
D. Sheet, Strip, Plate, and Flat Bar: ASTM A 666 or ASTM A 240/A 240M, Type 304.
2.5 GLASS AND GLAZING MATERIALS

A. Safety Glazing: Glazing shall comply with 16 CFR 1201, Category II.

B. Tempered Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated), Type 1 (transparent flat glass), Quality-Q3. Provide products that have been tested for surface and edge compression according to ASTM C 1048 and for impact strength according to 16 CFR 1201 for Category II materials.

2. Thickness for Glass Infill Panels: As required by structural loads, but not less than 9/16”.

C. Safety Glazing Labeling: Permanently mark glass with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction or manufacturer. Label shall indicate manufacturer’s name, type of glass, thickness, and safety glazing standard with which glass complies.

D. Glazing Gaskets for Glass Infill Panels: Glazing gaskets and related accessories recommended or supplied by railing manufacturer for installing glass infill panels in post-supported railings.

2.6 FASTENERS

A. Fastener Materials: Unless otherwise indicated, provide the following:

1. Stainless-Steel Components: Type 304 stainless-steel fasteners.
2. Dissimilar Metals: Type 304 stainless-steel fasteners.

B. Post-Installed Anchors: Fastener systems with working capacity greater than or equal to the design load, according to an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC193 or ICC-ES AC308.

1. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B 633 or ASTM F 1941, Class Fe/Zn 5, unless otherwise indicated.

2.7 MISCELLANEOUS MATERIALS

A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.8 FABRICATION

A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.

B. Mechanical Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.

C. Close exposed ends of hollow railing members with prefabricated end fittings.
D. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work where indicated.

2.9 GLAZING PANEL FABRICATION

A. Infill Panels: Provide tempered glass panels.

2.10 SWING GATES

A. Provide fully operational glazed swing gates with top rail as shown on the drawings. Provide complete hardware sets to include hinge mechanisms, swing dampers to provide controlled and silent closing sequence, and electro-magnetic latching device that is fully locked when bleachers are in stored position and freely operating when bleachers are fully extended and locked. Coordinate locking device with supplier of bleachers.

2.11 STAINLESS-STEEL FINISHES

A. Directional Satin Finish: No. 4.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Fit exposed connections together to form tight, hairline joints.

B. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.

1. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.

C. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

D. Glass-Supported Railings: Install assembly to comply with railing manufacturer's written instructions.

E. Swing Gates: Adjust swing gates for proper alignment and smooth operation. Verify and adjust latching hardware to assure proper operation and that the magnetic latch is properly interlocked with the telescoping bleachers so that it is fully locked until bleachers are fully extended and locked into place.

END OF SECTION 05 73 13
SECTION 07 13 26 - SELF-ADHERING SHEET WATERPROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. High Density Polyethylene sheet.
3. Waterproofing for below grade basement walls, elevator pit walls, top of basement and elevator footings, and underside of basement slab and elevator pit slab.
4. For waterproofing of utility tunnels, see Section 07 17 13 – Bentonite Panel Waterproofing.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Sustainable Design Submittals:
   1. Product Certificates: For regional materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include distance to Project and cost for each regional material.
C. Shop Drawings: Show locations and extent of waterproofing and details of substrate joints and cracks, expansion joints, sheet flashings, penetrations, inside and outside corners, tie-ins with adjoining waterproofing, and other termination conditions.
   1. Include setting drawings showing layout, sizes, sections, profiles, and joint details of pedestal-supported concrete pavers.
D. Samples: For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS

A. Sample warranties.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by waterproofing manufacturer.
1.6 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to furnish replacement waterproofing material for waterproofing that does not comply with requirements or that fails to remain watertight within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 HIGH DENSITY POLYETHYLENE MEMBRANE

A. Basis-of-Design: Delta-Thene 60, Cosella-Dorken Products.

1. Substitutions: See Section 01 25 00 Substitution Procedures.

2. Physical Properties:

   a. Thickness: 60 mil
   b. Tensile Strength, Membrane: 2.24 MPa, minimum; ASTM D 412, Die C, modified.
   c. Ultimate Elongation: 300 percent minimum; ASTM D 412, Die C, modified.
   d. Low-Temperature Flexibility: Pass at minus 40 deg F; ASTM D 1970/D 1970M.
   e. Crack Cycling: Unaffected after 100 cycles of 1/8-inch movement; ASTM C 836/C 836M.
   f. Puncture Resistance: 222 N, minimum; ASTM E 154/E 154M.
   g. Water Absorption: 0.2 percent weight-gain maximum after 48-hour immersion at 70 deg F; ASTM D 570.
   h. Water Vapor Permeance: .03 perms, maximum; ASTM E 96/E 96M, Water Method.
   i. Hydrostatic-Head Resistance: 200 feet minimum; ASTM D 5385.

2. Sheet Strips: Self-adhering, strips of same material and thickness as sheet waterproofing.

2.2 AUXILIARY MATERIALS

A. Furnish auxiliary materials recommended by waterproofing manufacturer for intended use and compatible with sheet waterproofing.

1. Furnish liquid-type auxiliary materials that comply with VOC limits of authorities having jurisdiction.

B. Primer: Liquid waterborne primer recommended for substrate by sheet-waterproofing material manufacturer.

C. Surface Conditioner: Liquid, waterborne surface conditioner recommended for substrate by sheet-waterproofing material manufacturer.

D. Liquid Membrane: Elastomeric, two-component liquid, cold fluid applied, of trowel grade or low viscosity.

E. Substrate Patching Membrane: Per manufacturer's recommendations.

F. Metal Termination Bars: Aluminum bars, approximately 1 by 1/8 inch, predrilled at 9-inch centers.
2.3 MOLDED-SHEET DRAINAGE PANELS

A. Basis-of-Design: Delta-Drain, Cosella-Dorken Products.

1. Substitutions: See Section 01 25 00 Substitution Procedures.

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean, prepare, and treat substrates according to manufacturer's written instructions. Provide clean, dust-free, and dry substrates for waterproofing application.

B. Mask off adjoining surfaces not receiving waterproofing to prevent spillage and overspray affecting other construction.

3.2 HIGH DENSITY POLYETHYLENE SHEET-WATERPROOFING APPLICATION

A. Install polyethylene sheets according to waterproofing manufacturer's written instructions and per recommendations in ASTM D 6135.

B. Apply primer to substrates at required rate and allow it to dry. Limit priming to areas that will be covered by sheet waterproofing in same day. Reprime areas exposed for more than 24 hours.

C. Apply and firmly adhere sheets over area to receive waterproofing. Accurately align sheets and maintain uniform 2-1/2-inch-minimum lap widths and end laps. Overlap and seal seams, and stagger end laps to ensure watertight installation.

1. When ambient and substrate temperatures range between 25 and 40 deg F, install self-adhering, modified bituminous sheets produced for low-temperature application. Do not use low-temperature sheets if ambient or substrate temperature is higher than 60 deg F.

D. Horizontal Application: Apply sheets from low to high points of decks to ensure that laps shed water.

E. Apply continuous sheets over already-installed sheet strips, bridging substrate cracks, construction, and contraction joints.

F. Seal edges of sheet-waterproofing terminations with mastic.

G. Install sheet-waterproofing and auxiliary materials to tie into adjacent waterproofing.

H. Repair tears, voids, and lapped seams in waterproofing not complying with requirements. Slit and flatten fishmouths and blisters. Patch with sheet waterproofing extending 6 inches beyond repaired areas in all directions.

I. Install insulation board over waterproof membrane with Delta-Grip fasteners as recommended by manufacturer.
J. Immediately install a protection course of molded-sheet drainage panels with butted joints over insulation layer as recommended by manufacturer.

3.3 MOLDED-SHEET DRAINAGE-PANEL INSTALLATION

A. Place and secure molded-sheet drainage panels, with geotextile facing away from wall or deck substrate, according to manufacturer's written instructions. Use adhesive or another method that does not penetrate waterproofing. Lap edges and ends of geotextile to maintain continuity. Protect installed molded-sheet drainage panels during subsequent construction.

1. For vertical applications, install board insulation or protection course before installing drainage panels.

3.4 PROTECTION, REPAIR, AND CLEANING

A. Do not permit foot or vehicular traffic on unprotected membrane.

B. Protect installed insulation drainage panels from damage due to UV light, harmful weather exposures, physical abuse, and other causes. Provide temporary coverings where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

C. Correct deficiencies in or remove waterproofing that does not comply with requirements; repair substrates, reapply waterproofing, and repair sheet flashings.

D. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended in writing by manufacturer of affected construction.

END OF SECTION 07 13 26
SECTION 07 22 70 – FALL PROTECTION DEVICES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes: Roof tie-down system of fall restraint and fall arrest for worker safety. System to include roof-mounted anchors along with horizontal life line.

B. Related Sections:
   1. Section 03 30 00 – Cast-in-Place Concrete
   2. Section 05 12 00 – Structural Steel Framing
   3. Section 05 31 00 – Steel Decking
   4. Section 05 40 00 – Cold Formed Metal Framing
   5. Section 06 10 53 – Miscellaneous Rough Carpentry
   6. Section 07 53 23 – EPDM Roofing
   7. Section 07 72 00 – Roof Accessories

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM)

B. American National Standard Institute (ANSI)
   1. ANSI Z359.1 – 2007 Safety Requirements for Personal Fall Arrest Systems, Subsystems and components
   2. ANSI Z359.6-2009 – Specification and Design Requirements for Active Fall Protection Systems

C. Occupational Health and Safety Administration (OSHA)
   1. OSHA 1926.502 – Fall Prevention Systems Criteria and Practices

1.3 SYSTEM DESCRIPTION

A. General: Provide structural fall restraint and fall arrest system capable of withstanding loads and stresses within limits and under conditions specified in OSHA and other applicable safety codes. Provide fall protection anchors permanently attached to roof structure.

B. Design Requirements: Anchors and accessories comprising system of following types:
   1. 4-Way Plate Anchors, spaced as indicated by manufacturer, for safety snap connection by individual workers capable of withstanding a 5,000 pound load or safety factor of 2 meeting the requirements of OSHA 1926.502(d)(8).

C. Performance Requirements: System and components tested for the resistance of the following loads:
   1. Fall Arrest: 1 User in the directions permitted by the system.
   2. Fall Restraint: 2 Users in the directions permitted by the system.
3. When used in combination with horizontal lifeline systems, it may support a maximum of 2 users in fall arrest or 4 users in fall restraint. The maximum end anchor loads must be limited to 2,500 lbs. or less to maintain a 2:1 factor of safety.
4. Capacity range is 130-310 lbs., or up to 420 lbs. if used in combination with equipment explicitly certified for such use.

1.4 SUBMITTALS
   A. Product Data: For each type of device specified, including manufacturer’s standard fabrication details and installation instructions.
   B. Shop Drawings: Show layout, profiles, and anchorage details. Submit engineering calculations demonstrating compliance with the references of Section 1.02.
   C. Maintenance Data: Written instructions for maintenance of fall prevention safety devices to be included in the operation and maintenance manual.
   D. In-house Test Reports: Indicate anchor fabrication compliance with performance requirements.

1.5 QUALITY ASSURANCE
   A. Manufacturer Qualifications: Firm having at least 10 years continuous experience in manufacturing fall safety equipment similar to systems specified and exhibiting records of successful in-service acceptability and performance. Firm must employ personnel dedicated to provide regularly scheduled Authorized and Competent Person Training courses as mandated by OSHA 1926 and 1910 for owner’s authorized safety personnel.
   B. OSHA Standards: Comply with Occupational Safety and Health Administration Standards for the Construction Industry 29 CFR § 1926.500 Subpart M (Fall Protection), and with applicable State Administrative Code safety standards for Fall Restraint and Fall Arrest.
   C. Source Limitations: Obtain all roof anchors through one source from a single manufacturer.

1.6 COORDINATION
   A. Contractor to coordinate installation of structural deck to meet requirements of roof anchor manufacturer.
      1. Metal Deck: Minimum 24 gauge thickness, or provided with additional deck reinforcing per manufacturer’s instructions.
   B. Contractor to coordinate installation of structural deck reinforcements and anchorages to receive fall protection anchors.
   C. Contractor to coordinate placement of roofing system, insulation and flashing to ensure water-tight integrity to roof.
1.7 WARRANTY

A. Provide manufacturer’s standard warranty to guarantee products will be free from defects for a period of 12 months. Warranty period shall become effective on date of substantial completion.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Provide fall protection system manufactured by one of the following:

2.2 MATERIALS

A. 100% 1/4" HRS (powder coated)

B. Fasteners: Per manufacturer’s recommendation.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine framing and substrate and verify conditions comply with structural requirements for proper system performance.

B. Proceed with installation of roof anchors only after verifying conditions are satisfactory.

3.2 INSTALLATION

General: Installation of anchors to be performed by contractor according to manufacturer’s instructions and recommendations.

END OF SECTION 07 22 70
SECTION 08 62 00 - UNIT SKYLIGHTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Self-flashing unit skylights with integral curbs.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of unit skylight.

B. Shop Drawings: For unit skylight work. Include plans, elevations, sections, details, and connections to supporting structure and other adjoining work.

C. Samples: For each type of exposed finish required and each type of glazing.

D. Product Schedule: For unit skylights.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification data.

B. Product test reports.

C. Field quality-control reports.

D. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of unit skylights that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Ten years from date of Substantial Completion.
PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include skylights that incorporated prefabricated translucent panels within a prefabricated frame.

B. Basis-of-Design: Kalwall S Line Skylights.

C. Substitutions: See Section 01 25 00 Substitution Procedures.

2.2 PERFORMANCE REQUIREMENTS

A. Unit Skylight Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.

1. Skylight must meet OSHA Standard 1910.23 fall protection without screen or fixed standard railing on all exposed sides.

B. Thermal Transmittance: NFRC 100 maximum U-factor of 0.23 Btu/sq. ft. x h x deg F.

2.3 UNIT SKYLIGHTS – US-1

A. Unit Shape and Size: See Window Schedule, A-6 series drawings.

B. Prefabricated sandwich panels of flat fiberglass reinforces translucent face sheets resin laminated to grid core of mechanically interlocking thermally broken aluminum I-beams. Panels and aluminum perimeter frame shall be pre-assembled and sealed at the factory.

C. Panel thickness is 2 ¾”.

   a. Light transmission of 30% Thicknesses:
   b. Solar heat gain coefficient: .33

2. Self-Ignition Temperature: 650 deg F or more for plastic sheets in thickness indicated when tested according to ASTM D 1929.

3. Smoke-Production Characteristics: Smoke-developed index of 450 or less when tested according to ASTM E 84, and smoke density of 75 or less when tested according to ASTM D 2843

4. Burning Characteristics: Tested according to ASTM D 635. Class CC1, burning extent of 1 inch or less for nominal thickness of 0.060 inch or thickness indicated for use.

D. Integral Curb: Extruded-aluminum, self-flashing type.

2. Height: As indicated.
3. Construction: Double wall.
4. Insulation: Manufacturer’s standard rigid or semirigid type.
E. Condensation Control: Fabricate unit skylights with integral internal gutters and nonclogging weeps to collect and drain condensation to the exterior.

F. Thermal Break: Fabricate unit skylights with a minimum 1” thermal barrier separating exterior and interior face sheets. A panel configuration with a urethane poured and debridged thermal break is not acceptable.

G. Fasteners: Same metal as metal being fastened, nonmagnetic stainless steel, or other noncorrosive metal as recommended by manufacturer. Finish exposed fasteners to match material being fastened. Provide nonremovable fastener heads.

2.4 ALUMINUM FINISHES

A. Mill Finish: Manufacturer's standard.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Coordinate installation of unit skylight with installation of substrates, vapor retarders, roof insulation, roofing membrane, and flashing as required to ensure that each element of the Work performs properly and that combined elements are waterproof and weathertight.

B. Comply with recommendations in AAMA 1607 and with manufacturer's written instructions for installing unit skylights.

3.2 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. After completion of installation and nominal curing of sealant and glazing compounds but before installation of interior finishes, test for water leaks according to AAMA 501.2.

C. Perform test for total area of each unit skylight.

D. Work will be considered defective if it does not pass tests and inspections.

E. Additional testing and inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.3 CLEANING

A. Clean exposed unit skylight surfaces according to manufacturer's written instructions. Touch up damaged metal coatings and finishes.

END OF SECTION 08 62 00
SECTION 10 50 00 – MISCELLANEOUS SPECIALTIES

PART 1 - GENERAL

1.1 SUMMARY
A. Section Includes:
   1. Acoustic Relite Partition Assembly.
   2. Wire Mesh Door and Frame Assembly.

1.2 ACTION SUBMITTALS
A. Product Data: For each type of product.
B. Shop Drawings: For each type of wall and door protection showing locations and extent.
   1. Include plans, elevations, sections, and attachment details.
C. Samples: For each exposed product and for each color and texture specified, 12 inches long.

1.3 INFORMATIONAL SUBMITTALS
A. Product certificates.
B. Material certificates.
C. Sample warranty.

1.4 CLOSEOUT SUBMITTALS
A. Maintenance data.

1.5 WARRANTY
A. Special Warranty: Manufacturer agrees to repair or replace specialty item.
   1. Warranty Period: Manufacturer’s standard warranty period from date of Substantial Completion.
PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Surface Burning Characteristics: Comply with ASTM E 84 or UL 723; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: 25 or less.
2. Smoke-Developed Index: 450 or less.

2.2 ACOUSTIC RELITE PARTITION ASSEMBLY – AR-1

A. Provide custom double-glazed acoustic partition to fit in the opening labeled W26 on the Third Floor looking into Inspiration Hall.

1. Basis-of-Design: Carvart Flex Partition (Acoustic) with double glazing application.
   a. Size: As required to fit opening and as shown on the drawings.
   b. Material: Aluminum frame with clear, laminated safety glass each side. Thickness: As required to meet safety glazing requirements and achieve STC requirement. Color: As selected by Architect from manufacturer’s full range.
   c. Installation: Dry method, as recommended by manufacturer.
   d. STC Rating: 45.


A. Swinging Doors: Framing fabricated from 1-1/4-by-1/2-by-1/8-inch steel channels or 1-1/4-by-5/8-by-0.080-inch cold-rolled, C-shaped steel channels, banded with 1-1/4-by-1/8-inch flat steel bar cover plates on four sides, and with 1/8-inch-thick angle strike bar and cover on strike jamb. Infill with steel mesh.

1. Hinges: Full-surface type, 3-by-3-inch steel, three per door; bolted, riveted, or welded to door and jamb framing.
2. Cylinder Lock: Mortise type with cylinder specified in Section 087100 "Door Hardware"; operated by key outside and lever inside.

B. Mesh: 0.192-inch-diameter steel wire woven into 2-inch diamond mesh or welded into 1-1/2-by-2-1/2-inch rectangular mesh.

C. Frame: Provide 1 ½” x 1 ½” tube steel door frame. Attach frame directly to the metal stud framing of the rough opening as detailed.

D. Finish: Hot-dip galvanized unless otherwise indicated.

E. General: Fabricate wire mesh items from components of sizes not less than those indicated. Use larger-sized components as recommended by wire mesh item manufacturer. Furnish bolts, hardware, and accessories required for complete installation with manufacturer's standard finishes.
1. Fabricate wire mesh items to be readily disassembled.
2. Welding: Weld corner joints of framing and grind smooth, leaving no evidence of joint.

F. Install doors complete with door hardware.

2.4 GLAZING ATTACHMENT DEVICES

A. Provide glazing attachment devices from the same manufacturer.

B. Submittals: Product data, shop drawings, engineering calculations, and samples.

C. Delegate-Design: Engage a qualified professional engineer, as defined in Section 01 40 00 Quality Requirements to design the connections for the “Tree House” structure. Provide an engineering analysis, load calculations, product data, and shop drawings based upon manufacturer’s components.

D. Basis-of-Design Manufacturer: CR Laurence Co., Inc. Components include:

1. CRL 316 Brushed Stainless 1 1/2” diameter stand-off base # SOB11212BS
2. CRL 316 Brushed Stainless 1 1/2” diameter stand-off round cap assembly # CAP112BS
3. CRL Stainless 3/8”–16 Flat Washer for 1 ½’ and 2” diameter standoffs # FW38S
4. CRL Stainless Steel 3/8”–16 Acorn Cap Nut for 1 ½’ and 2” diameter standoffs # ACN381S
5. CRL Stainless Steel 3/8”–16 Long Hanger Bolt for 1 ½’ and 2” diameter standoffs # HB38112Z
6. Components are listed above to establish the style and appearance of the connectors.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Installation Quality: Install all specialty items according to manufacturer's written instructions, level, plumb, and true to line without distortions. Do not use materials with chips, cracks, voids, stains, or other defects that might be visible in the finished Work.

B. Cleaning and Protection: Clean specialty items and protect installed work as necessary.

END OF SECTION 10 50 00
SECTION 02 66 00 - TELESCOPING STANDS WITH INTEGRAL FIXED SEATING

PART 1 - GENERAL

1.1 SUMMARY
   A. Section Includes:
      1. Electrically operated recessed telescoping stands in Inspiration Hall
      2. Fixed Seating for Inspiration Hall
         1. Mounted on telescoping stands

1.2 PREINSTALLATION MEETINGS
   A. Preinstallation Conference: Conduct conference at Project site Project.

1.3 ACTION SUBMITTALS
   A. Product Data: For each type of product.
   B. Sustainable Design Submittals:
      2. Product Data: For composite wood products, indicating that product contains no urea formaldehyde.
   C. Shop Drawings: For telescoping stands in both stacked and extended positions.
      1. Include plans, elevations, sections, and attachment details
      2. Include diagrams for power, signal, and control wiring.
   D. Samples: For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS
   A. Welding certificates
   B. Product certificates.
   C. Field quality-control reports

1.5 CLOSEOUT SUBMITTALS
   A. Operation and maintenance data.
1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer.

B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Telescoping stands shall withstand the effects of gravity loads, operational loads, and other loads and stresses according to ICC 300.

2.2 TELESCOPING STANDS

A. System Description: Operable system of multiple-tiered seating on interconnected folding platforms that close for storage, without being dismantled, into a nested stack. Telescoping-stand units permit opening and closing of adjacent, individual and multiple rows, and close with vertical faces of platforms in the same vertical plane.


B. Recessed Telescoping Stands: Forward-folding system, in which the bleachers open in the forward direction by moving the front row away from the stack to the fully extended position and the rear of bleacher understructure permanently attaches to building construction so that closed stands are recessed in opening.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

   2. Figueras
   4. Substitutions: See Section 01 25 00 Substitution Procedures.

2. Layout: Two side aisles. See drawings.

3. Operation: Electrically operated, with friction-type, integral power unit.

4. Electrical Characteristics for Each Seating Section: As required. See electrical drawings.

5. Electrical Controls:

   2. Limit Switches: Automatically stop power system when telescoping stands reach fully opened or closed positions.
   3. Motion Monitor: Flashing light with self-contained warning horn, rated at 85 dB at 10 feet, mounted under telescoping seating for audio and visual warning during integral power operation.
   4. Transformer: As required to coordinate current characteristics of motor and control station with building electrical system.
2.3 COMPONENTS

A. Seating Types: For telescoping platforms.
   1. No. Bank
   2. Total Width: 45' 4"
   3. Row Rise: 12⅛"
   4. Row Depth: 35½"
   5. Deck: Carpeted
   6. No of Rows: 14 rows of seats on 14 rows of platforms
   7. No of Aisles: 2
   8. Side Rails: 2 sets of folding rails with foldout ‘graspable’ rails
   9. Rear Rails: Not required
   10. Side Drapes: 2 sets required – black fire retardant fabric
   11. Chair Type: Gallery 3 semi-automatic with dual action gas struts
   12. Quantity: 280
   13. Seat Numbers: Required
   14. Row Letters: Required

B. MAIN PLATFORM
   1. Each main platform assembly (row) to be a lightweight, welded steel space-frame that provides
      strength, stiffness and accuracy to the whole system. Note systems with bolted together platforms
      will Not be acceptable. Each platform assembly is constructed from steel tubes and steel
      pressings of the following sizes;
      1. Front Beam: 3" x 3" x 1 ½" x 1/13" S275 Pressed Steel Beam.
      2. Rear Beam: 7 5/8" x 1 ¾" x 1/10" S275 Pressed Steel Beam.
      3. Supports: 2" x 1 ½" x 1/2" x 1/13" S275 Pressed Steel ‘Top Hat’ Section.
      4. Other Parts Pressed steel, profiled sections of minimum thickness 1/8".
      5. Finish Cleaned, de-greased and epoxy powder coated, baked at 180C.
         ACCEPTABLE.
      7. Deck (floor) 3/4" thick, tongued and grooved, Spruce plywood, bonded to Class 3, BS
         EN314:1993, listed in BS 5268, Part 2, Section 4 for structural building use and orientated
         for grain to run front to back on platform space-frame for extra stiffness.
         Carpet: Ref: Rawson ‘Eurocord’, to client color choice.

C. MAIN COLUMNS
   1. Each column is a welded sub-frame with an ‘adjustable cantilever arm’ for height adjustment of
      each row when installed. Systems without adjustable cantilevers will not be acceptable. There are
      two main columns per row of section structure. All columns to be fitted with automatic row
      latching at floor level and vertical restraints at high level.
      1. Wheels: 5" diameter x 1 ½" width c/w nylon hub, polyurethane tire & roller bearing. Note
         smaller wheels will not be acceptable.
      2. Column: 4" x 2" x ⅜" steel, rolled hollow section. (Stiffened on Rows 10 to 15 with a
         secondary 2" x 2" x ⅜" steel rolled hollow section, and 4" x 2" on rows 16 to 19
      3. Column Foot: 3 1/2" x 2" x ⅞" S275 steel pressed channel

D. COLUMN BRACES
1. Each vertical column is braced diagonally with a bolted brace member connecting column to main platform assembly.
   1. Brace: 1 ½” x 1 ½” x ⅛” steel angle. (Rows 1 – 5)
   2. Brace: 2” x 2” x ⅛” steel R.H.S. (Rows 6 upwards)

E. PLATFORM GUIDANCE

1. Each row is to be aligned by Parallel Guidance Frames working on the ‘scissor’ principle to prevent jamming and ensure accurate opening and closing of the telescopic platform.
   1. Guide Arms 1 ½” x 1 ½” x ⅛” steel angle.
   2. Cross Tube 1” x 1” x ⅛” steel R.H.S.

F. ROW TO ROW CONTACT

1. Each row of platforms to transfer load to the row below through molded nylon Load Transfer Skids, to reduce noise and reduce friction during opening and closing operation.

G. ROW TO ROW LOCKING

1. Each main column to lock on opening automatically through gravity action latch locks. These also prevent accidental closing and allow partial opening of rows.

H. INTERMEDIATE STEPS

1. Each spectator aisle is fitted with intermediate half-steps, each 4’ 11” wide and ½ row rise high to ensure safe and easy access up and down the aisle.
   1. Step: ⅛” S275 Steel Pressing c/w full width extruded aluminum, non-slip nosing fixed to front edge c/w integral photo luminescent strips.
   2. Step Frame: ⅛” thick pressed steel, epoxy powder coated finish

I. SAFETY RAILS

1. The ends of each seating block row are fitted with integral folding safety rails to all rows
   2. Rail: 2” x ⅛” x ⅛” oval shaped steel top tube.
   3. Uprights: 1 ⅛” x 1 ⅛” x ⅛” square steel tube.
   4. Infill: Vertical steel tubular members at 4” spacing. ⅛” x ⅛” x ⅛” Sq. ERW tube

J. ROW 1 FASCIA

1. Kick Panel: ⅛” S275 Steel Profiled full length panel
2. Finish: Cleaned, iron phosphate pre-treatment and epoxy powder to color choice.

K. SYSTEM OPERATION

1. Overview - Systems to incorporate soft start to reduce the startup loads on the floor. From start, the speed ramps up over a 2 second period, after which the system operates at full speed/torque. Please note systems that apply Full torque and speed instantly, will not be acceptable.

L. CHAIR SYSTEMS
1. Basis-of-Design: Hussey 'GALLERY 3 PC' semi-automatic fold down fully upholstered chairs with armrests, grouped in banks of up to 11 seats which automatically fold down on to platform (rows 2 to 13).

2. Chair Frame Welded tubular and pressed steel, beam mounted design.

3. Tip mechanism Near silent mechanism contained in an aluminum casting fitted to the chair support legs. The spring activated mechanism up/down stops will be fully enclosed so it cannot trap fingers or clothing. (Safe for small children).

4. Gas Struts Dual action gas struts to be incorporated to assist the lifting of the assembly and control the descent speed. Note – the gas struts to be concealed in the fold down mechanism, it is not acceptable for the gas struts to be exposed for durability reasons.

5. Seat & Back To be laminated, 1/2" thick, pre-formed plywood construction, contoured with 33 CMFR [Backrest] and 39 CMFR [Seat pan] fabricated foam to suit FR Codes CAL 117.

6. Armrests Molded plastic, with automatic setting / striking feature. Manual armrests will not be acceptable.


8. Seat Numbers Aluminum plate fixed to seat pan.


2.4 MATERIALS

A. Certified Wood: Wood products shall be FSC certified

B. Composite Wood Products: Products shall be made without urea formaldehyde.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install telescoping stands according to ICC 300 and manufacturer's written instructions

3.2 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to inspect, adjust, operate, and maintain telescoping stands.

END OF SECTION 12 66 00
INTERIOR PANEL SIGN
TYPE: A2

FACILITIES PLANNING, DESIGN AND CONSTRUCTION
A2-SHOP - Interior Panel Signs - Master Set.dwg - Issued Sep 22, 2009
C09

C09 EVACUATION HOLDER SIGN & MAP GRAPHIC

LAYOUT

NOTE: RAISED LETTERING TO BE FRANKLIN GOTHIC BOOK.

NOTE: CORNER FILLETS TO BE 1/16" (TYPICAL)

RAISED BORDER
ARCH GRAY 3279

1/16" ACRYLIC BACKER
PLATE, MATCH RAISED
BORDER COLOR

BACKGROUND WHITE
225

1/32" RAISED COPY
ARCH GRAY 3279
3/4" TEXT

INSERT FOR MAP

EVACUATION MAP

SIDE VIEW

Scale: 6" = 1'-0"

Routed area with clear acrylic to accept printed insert. Routed area to be painted to match P01.

NOTE: RAISED LETTERING TO BE FRANKLIN GOTHIC BOOK.

NOTE: CORNER FILLETS TO BE 1/16" (TYPICAL)
C10

C10 USE STAIRS IN CASE OF FIRE SIGN AT ELEVATORS

LAYOUT

1/8" stainless steel plate with etched and paint filled symbol and text Red and Black.
Font: ITC Franklin Gothic Book
Field verify mounting conditions prior to fabrication.

C11 ELEVATOR FLOOR ID

LAYOUT

Scale: 3" = 1'-0"

1/8" stainless steel plate with ADA tactile messaging to match 3M “Dark Gray” with clear Grade II bead Braille message equivalent.
Apply to elevator returns with tape and adhesive.
Locate at each freight and passenger elevator.
Font: ITC Franklin Gothic Demi
Field verify mounting conditions prior to fabrication.

C12 ELEVATOR CAB NUMBER AT PRIMARY RECALL

LAYOUT

Scale: 3" = 1'-0"

Applied vinyl lettering to match 3M “Dark Gray”.
Locate at each freight and passenger elevator.
Font: ITC Franklin Gothic Demi
Field verify mounting conditions prior to fabrication.
### INTERIOR MATERIALS KEY

| GL-10  | INTERIOR MONOLITHIC CLEAR GLASS |
| GL-10A | INTERIOR MONOLITHIC CLEAR GLASS WITH FRIT |
| GL-11  | INTERIOR LAMINATED GLASS |
| GL-12  | INTERIOR BACKPAINTED GLASS, WHITE |
| GL-13  | INTERIOR MONOLITHIC GLASS WITH FILM, COLORED |
| GL-14  | INTERIOR FIRE GLASS |
| GL-15  | INTERIOR COLORED LAMINATED GLASS |

**REFERENCE SHEET A6-04 AND SPECIFICATIONS FOR ADDITIONAL GLAZING REQUIREMENTS**

| MI      | MIRROR GLASS |
| M-1     | PERFORATED METAL PLATE GUARDRAIL |
| M-2     | PERFORATED METAL ACOUSTIC PANEL |
| M-3     | METAL PORTAL/FRAME MATCH P-3, REF. A8 SERIES DTLS. |
| M-4     | PERFORATED METAL PLATE |
| M-5     | STEEL SHAPES AND PLATES, P-5 |
| M-6     | PREWEATHERED STEEL PLATE |

| P-1     | PAINT, TYPICAL WALLS |
| P-2     | PAINT, WALL/STRUCTURE/DUCTS ABOVE DATUM |
| P-3     | PAINT, DOOR ACOVES |
| P-4     | PAINT, ACCENT |
| P-5     | PAINT, ACCENT |
| P-6     | PAINT, ACCENT |
| P-7     | PAINT, PROJECTION SCREEN WALL / AMPHITHEATER |

| FWP-1   | FABRIC PANEL, ACOUSTIC / INSPIRATION HALL |
| FWP-2   | FABRIC PANEL, PIN UP BOARDS |
| FWP-3   | FABRIC PANEL, ACOUSTIC / CLASSROOMS |

| FRP     | FIBER REINFORCED PANEL |
| TB-1    | TACK BOARD |
| TCP     | PLASTIC TOILET COMPARTMENTS |
| WC-1    | DRY ERASE WALL COVERING |

**NOTE:** REFER TO SHEET A0-02 FOR INTERIOR ASSEMBLIES INFORMATION

| WD-1   | WOOD PLANK PANELING |
| WD-2   | WOOD FLOORING |
| WD-3   | WOOD BENCH |
| WD-4   | WOOD STAIR TREADS |
| WD-5   | WOOD SPECIAL FINISH |
| WD-6   | MDF, PAINTED |
| WD-7   | WOOD HANDRAIL |
| WD-8   | WOOD VENEER PLYWOOD |

| T-1    | TILE 6 X 24 |
| T-2    | TILE 4 X 12 |
| T-3    | TILE 1 X 1 |

| APC-1  | ACOUSTIC CEILING TILE 24 X 24 |
| APC-2  | NOT USED |
| APC-3  | ACOUSTIC CEILING TILE 24 X 24, WATER RESISTANT |
| APC-4  | ACOUSTIC CEILING TILE 24 X 24 |
| APC-5  | ACOUSTIC CEILING TILE 16 X 72 |

| RB-1   | RUBBER BASE, COVED |
| RB-2   | RUBBER BASE, FLAT |
| RBS-1  | RUBBER SHEET FLOORING 1 |
| RBS-2  | RUBBER SHEET FLOORING 2 |

| CPT-1  | CARPET TILE 1 |
| CPT-2  | CARPET TILE 2 |
| CPT-3  | CARPET TILE 3 |
| CPT-4  | CARPET TILE 4 - WALK-OFF-MAT |

| PL-1   | PLASTIC LAMINATE 1 |
| PL-2   | PLASTIC LAMINATE 2 |
| PL-3   | PLASTIC LAMINATE 3 |
| PL-4   | PLASTIC LAMINATE 4 |

| SSM-1  | SOLID SURFACING |
| SSM-2  | SOLID SURFACING, RICHLITE |
| SSM-3  | SOLID SURFACING |
| SSM-4  | SOLID SURFACING |

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### REVISED INTERIOR MATERIALS KEY
RCP GENERAL NOTES

1. ALL GYP. BOARD CEILING TO BE PAINTED, P-1. U.N.O.
2. ALL APC CLOUDS TO BE TRIMMED WITH 2" ARMSTRONG AXIOM TRIM, U.N.O. (BASIS OF DESIGN)
3. IN ALL COMMONS & COLLABORATION AREAS THE OPEN TO STRUCTURE (OTS) EXPOSED STEEL BEAMS AND COLUMNS ARE TO BE PAINTED, P-5 (DRYFALL PAINT WHERE REQUIRED). REFERENCE, G0-5 & G0-06 AND SPECIFICATION FOR EXPOSED STRUCTURE REQ'D TO HAVE INTUMESCENT PAINT.
4. IN ALL COMMONS & COLLABORATION AREAS THE OPEN TO STRUCTURE (OTS) DECK AND SYSTEMS ARE TO BE PAINTED, P-2 (DRYFALL PAINT WHERE REQUIRED)
5. ALL OPEN TO STRUCTURE (OTS) INSPIRATION HALL STRUCTURE, DECK AND SYSTEMS TO BE PAINTED, P-5
6. ALL STRUCTURE AND DECK IN MECHANICAL ROOMS 0127ME, 0217ME AND 0317ME ARE TO BE PAINTED P-2.
7. WITHIN ROOMS WITH ACOUSTIC PANEL CEILING CLOUDS OR GWB CLOUDS DUCTING IS ONLY REQUIRED TO BE PAINTED, P-5 DRYFALL, FOR THE FIRST 4 FEET AS IT ENTERS THE ROOM.
8. 3RD FLOOR IDEATION LAB ROOMS 0324 AND 0360 CEILINGS ARE TO REMAIN UNFINISHED.
NOTE:

1. FIXED ROOF LADDER
2. REFERENCE SHEET
3. ROOF PENETRATION
4. GENERAL NOTES
5. ROOF DRAIN
6. OVERFLOW ROOF DRAIN
7. ROOF HATCH
8. GUARDRAIL
9. ALTERNATE ROOF SAFETY RAIL
10. TYPICAL ROOF MEMBRANE SYSTEM
11. FIELD MEMBRANE FOR THE BOOT FLANGE TO BE WELDED TO OR STICK BOOT FLANGE TO THE PRIMED MEMBRANE WITH A 2" SILICONE ROLLER STATOR BOOT FLANGE TO THE PRIMED MEMBRANE WITH A 2" SILICONE ROLLER
12. MEMBRANE ATTACHMENT AT 12" OUT FROM PENETRATION AND 12" O.C. REQUIRED FOR MECHANICALLY ATTACHED ROOF SYSTEMS.
13. TAPERED INSULATION ON ROOF DECK
14. ROOFING IN ALL LOCATIONS EXCEPT ROOF MONITOR IS TAPERED INSULATION (SLOPED AS INDICATED) OVER LEVEL STRUCTURE (R-38 MINIMUM). ROOF MONITOR THE PENETRATION BEFORE INSTALLING THE PIPE BOOT.
15. AS AN ALTERNATIVE; MEMBRANE ATTACHMENT MAY ALSO BE REQUIRED FOR MECHANICALLY ATTACHED ROOF SYSTEMS.
16. MAINTAIN 1/8" PER FOOT MINIMUM FOR ALL CRICKET VALLEYS.
17. CRICKETS SHOWN ARE FOR REFERENCE ONLY; CONTRACTOR TO PROVIDE CRICKETS TO SLOPE POSITIVELY 1/8" OR 1/4" PER FOOT FROM HORIZONTAL PLANE AS INDICATED.
18. ROOF PENETRATIONS OF ANY KIND SHALL NOT BE LOCATED IN CRICKET VALLEYS.
19. ADDITIONAL ITEMS (MECHANICAL, ELECTRICAL, ETC) WILL PENETRATE THE ROOF IN THESE AREAS.
20. OVERFLOW ROOF DRAINS TO BE INSTALLED 2" HIGHER THAN PRIMARY ROOF DRAINS IN ALL INSTANCES.
## ROOM FINISH SCHEDULE

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<td>CPT-1</td>
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**Notes:**
- **PAINT ALL EXPOSED STRUCTURE, PIPES AND DUCTS**
- **A6-01**

**A/E #:**
- **14080**

**Phone:** 406.994.5413
<table>
<thead>
<tr>
<th>DOOR SCHEDULE</th>
<th>DOOR SCHEDULE</th>
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<td>0119.1 FL 3' - 0&quot; 8' - 0&quot; 1 3/4&quot; HM P-3 HM 1 HM P-3 49</td>
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<td>0253.1 TS 3' - 0&quot; 9' - 6&quot; 1 3/4&quot; SCW-1 STAIN HM 3 HM P-3 37.01 12</td>
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<td>0310.G 2' - 11&quot; 7' - 0&quot; PRE- MANUF. GATE</td>
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<td>0194.1 FGD 6' - 4&quot; 8' - 0&quot; 1 3/4&quot; ALUM HPOF-1 CW ALUM. HPOF-1 VEST-0194-01 VESTIBULE, 2, 3</td>
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<td>0230.1 FGUE 4' - 6&quot; 8' - 0&quot; 1 3/4&quot; HM P-3 HM 2 HM P-3 42 12</td>
<td>0237.1 TS 3' - 0&quot; 8' - 0 1/4&quot; 1 3/4&quot; SCW-1 STAIN HM 3 HM P-3 37 12</td>
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</table>

**DOOR REMARKS LEGEND**

1. Opening is intended for life safety evacuation. See fire alarm instruction signs for location of fire alarm pull station and alarm activation pull station. 12.1.1.1.2.1. Fire alarm, lamp, and speaker (if applicable) shall be located in a location visible and audible from the occupant area.
2. Opening is also intended for life safety evacuation, access to public area or evacuation. 12.1.1.1.2.1. Fire alarm, lamp, and speaker (if applicable) shall be located in a location visible and audible from the occupant area.
3. Opening is intended for life safety evacuation, access to public area or evacuation. 12.1.1.1.2.1. Fire alarm, lamp, and speaker (if applicable) shall be located in a location visible and audible from the occupant area.
4. Opening is intended for life safety evacuation, access to public area or evacuation. 12.1.1.1.2.1. Fire alarm, lamp, and speaker (if applicable) shall be located in a location visible and audible from the occupant area.
5. Opening is intended for life safety evacuation, access to public area or evacuation. 12.1.1.1.2.1. Fire alarm, lamp, and speaker (if applicable) shall be located in a location visible and audible from the occupant area.
6. Opening is intended for life safety evacuation, access to public area or evacuation. 12.1.1.1.2.1. Fire alarm, lamp, and speaker (if applicable) shall be located in a location visible and audible from the occupant area.
7. General note 1.2.1.1.2.1. Fire alarm, lamp, and speaker (if applicable) shall be located in a location visible and audible from the occupant area.
8. Opening is intended for life safety evacuation, access to public area or evacuation. 12.1.1.1.2.1. Fire alarm, lamp, and speaker (if applicable) shall be located in a location visible and audible from the occupant area.
9. Opening is intended for life safety evacuation, access to public area or evacuation. 12.1.1.1.2.1. Fire alarm, lamp, and speaker (if applicable) shall be located in a location visible and audible from the occupant area.
10. Opening is intended for life safety evacuation, access to public area or evacuation. 12.1.1.1.2.1. Fire alarm, lamp, and speaker (if applicable) shall be located in a location visible and audible from the occupant area.
11. Opening is intended for life safety evacuation, access to public area or evacuation. 12.1.1.1.2.1. Fire alarm, lamp, and speaker (if applicable) shall be located in a location visible and audible from the occupant area.
12. Opening is intended for life safety evacuation, access to public area or evacuation. 12.1.1.1.2.1. Fire alarm, lamp, and speaker (if applicable) shall be located in a location visible and audible from the occupant area. 12.1.1.1.2.1. Fire alarm, lamp, and speaker (if applicable) shall be located in a location visible and audible from the occupant area.
JP CONFERENCE

ALL APC CLOUDS TO BE TRIMMED WITH 2" AXIOM TRIM. CO STAFF 3" IN ALL COMMONS & COLLABORATION AREAS THE OPEN 10' - 0"

3RD FLOOR IDEATION LAB ROOMS 0324 AND 0360 10' - 0"

IN ALL OPEN ROOMS WITHIN ROOMS WITH ACOUSTIC PANEL CEILING CLOUDS

ALL STRUCTURE AND DECK IN MECHANICAL ROOMS 9' - 0"

ALL OPEN TO STRUCTURE (OTS) INSPIRATION HALL 9' - 0"

ALL GYP. BOARD CEILING TO BE PAINTED, P-1. UNO.

1. AXIOM TRIM, UNO. (BASIS OF DESIGN)

2. COLUMNS ARE TO BE PAINTED, P-5 (DRYFALL PAINT)

3. TO STRUCTURE (OTS) DECK AND SYSTEMS ARE TO BE PAINTED, P-2 (DRYFALL PAINT WHERE REQUIRED)

4. STRUCTURE, DECK AND SYSTEMS TO BE PAINTED, P-5

5. 0127ME, 0217ME AND 0317ME ARE TO BE PAINTED P-2.

6. GWB OR GWB CLOUDS DUCTING IS ONLY REQUIRED TO BE PAINTED, P-5 DRYFALL, FOR THE FIRST 4 FEET AS IT INSPIRES THE ROOM.

7. CEILINGS ARE TO REMAIN UNFINISHED.

8. 0201
3RD FLOOR IDEATION LAB ROOMS 0324 AND 0360
4' - 5 1/4"
10' - 0"
WITHIN ROOMS WITH ACOUSTIC PANEL CEILING CLOUDS
10' - 0"
10' - 0"
9' - 8"

MECH
F
10' - 0"
11' - 0"
10' - 0"
+
10' - 8"
ALL APC CLOUDS TO BE TRIMMED WITH 2" ARMSTRONG
CEILINGS ARE TO REMAIN UNFINISHED.

COLUMNS ARE TO BE PAINTED, P-5 (DRYFALL PAINT
HAVE INTUMESCENT PAINT.

PENDENT SPRINKLER ON - DROP
APC-1 CEILING TILES
APC-4 CEILING TILES

OCCUPANCY SENSOR RELAY/ POWER PACK
OCCUPANCY SENSOR DRY CONTACT
THERMOSTAT

IT SIGN
SUPPLY AIR TERMINAL
EXHAUST AIR TERMINAL
2X2 TRIMLESS ACCESS DOOR

BLOW OPEN CONTROL BOX

PHONE:  406.994.5413

ELEV 1

ELEC

IDEA LAB

FOR REVIEW BY:

AUTHOR

B2

ASBJORNSON HALL

A/E #:
2014-02-07
14080

PREPARED BY: A/E
DATE: 11/9/2016 7:54:04 AM

REVIEWED BY:

ISSUE DATE 10.21.16

MONTANA STATE UNIVERSITY

ZGF

A9-32

1/8" = 1'-0"
EARTHWORK:
1. A GEOTECHNICAL INVESTIGATION HAS BEEN COMPLETED AND A REPORT HAS BEEN PREPARED BY DOWL, DATED MARCH 8, 2016. REFER TO THE SPECIFICATIONS FOR AVAILABILITY.

2. FOUNDATIONS WERE DESIGNED BASED ON AN ALLOWABLE BEARING PRESSURE OF 5500 PSF FOR BEARING ON SUBGRADE IMPROVED BY VERTICALLY RAMMED ENGINEERED AGGREGATE PIERS. SEE E.A.P. NOTES AND SPECIFICATIONS FOR SPECIFIC REQUIREMENTS.

3. DATA ON INDICATED SUBSURFACE CONDITIONS ARE NOT INTENDED AS REPRESENTATIONS OR WARRANTIES OF CONTINUITY OF SUCH CONDITIONS. IT IS EXPRESSLY UNDERSTOOD THAT OWNER AND ENGINEER WILL NOT BE RESPONSIBLE FOR INTERPRETATIONS OR CONCLUSIONS DRAWN THEREFROM BY THE CONTRACTOR. THE DATA ARE MADE AVAILABLE FOR CONVENIENCE OF THE CONTRACTOR.

4. STABILITY OF CONSTRUCTION EXCAVATION AND WORKER SAFETY ARE THE RESPONSIBILITY OF THE CONTRACTOR. BASED UPON THE GEOTECHNICAL REPORT, TEMPORARY CONSTRUCTION EXCAVATIONS, ABOVE GROUNDWATER, TO BE PLANNED IN ACCORDANCE WITH OSHA PROVISIONS SHOULD ASSUME TYPE B MATERIAL FOR STIFF CLAY, AND TYPE C MATERIAL FOR SAND.

5. GROUNDWATER WAS ENCOUNTERED AT BORING LOCATIONS DURING THE DRILLING OPERATION. GROUNDWATER ELEVATIONS ARE NOT NECESSARILY A TRUE INDICATION OF THE STATIC GROUNDWATER. SEASONAL AND ANNUAL FLUCTUATIONS IN THE GROUNDWATER LEVELS CAN BE EXPECTED TO OCCUR.

6. KEEP EXCAVATIONS FREE OF STANDING WATER. REMOVE AND REPLACE MATERIAL THAT IS NOT WITHIN 3% OF OPTIMUM MOISTURE PRIOR TO PLACING ADDITIONAL FILL OR CONCRETE. PROPER DRAINAGE SHALL BE MAINTAINED DURING CONSTRUCTION TO KEEP SURFACE RUNOFF FROM ENTERING THE EXCAVATIONS AND DIRECTED AWAY FROM THE STRUCTURE.

7. ALL EXCAVATION IS UNCLASSIFIED, REGARDLESS OF THE MATERIAL ENCOUNTERED.


9. WHERE DRAINAGE GRAVEL IS REQUIRED FOR SLAB SUPPORT, SEE THE SPECIFICATIONS FOR MATERIAL AND PLACEMENT REQUIREMENTS.

10. USE ONLY HAND OPERATED COMPACTION EQUIPMENT WITHIN 5 FT. OF STRUCTURES.

11. DO NOT PLACE BACKFILL UNTIL ALL SUPPORTING STRUCTURES ARE IN PLACE AND CONCRETE WALLS AND SLABS HAVE ACHIEVED THE SPECIFIED 28-DAY COMPRESSIVE STRENGTH UNLESS OTHERWISE NOTED ON DRAWINGS.

12. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
1. METAL ROOF DECKING SHALL BE 1-1/2" DEEP, WIDE RIB TYPE "B" DECK, 16, 18 OR 20 GAUGE AS INDICATED IN THE DRAWINGS, G60 GALVANIZED, CONTINUOUS OVER A MINIMUM OF TWO SPANS.

2. ACOUSTICAL CELLULAR METAL ROOF DECKING SHALL BE PROVIDED IN THE AREAS NOTED, OF THE SAME TYPE AS THE OTHER ROOF DECKING, WITH HAT/PAN MATERIAL THICKNESS OF DECK GA. INDICATED/20 GA. CONTINUOUS OVER A MINIMUM OF TWO SPANS.

3. MISC. FORM DECKING SHALL BE THE DEPTH X GAGE INDICATED IN THE PLANS, "C" TYPE, G60 GALVANIZED, CONTINUOUS OVER AS MANY SPANS AS POSSIBLE.

4. TYPICAL METAL FLOOR DECKING SHALL BE 2" DEEP, COMPOSITE, WIDE RIB TYPE, 16 OR 18 GAUGE, G60 GALVANIZED, CONTINUOUS OVER A MINIMUM OF TWO SPANS.

5. SPECIAL METAL DECKING AT LOCATIONS INDICATED SHALL BE 3" DEEP WIDE RIB TYPE, COMPOSITE, WIDE RIB TYPE, 18 GAUGE, G60 GALVANIZED, SIMPLE SPAN (WITH CANTILEVERED END WHERE INDICATED, SHORE CANTILEVERED END UNTIL CONCRETE FIELD STRENGTH REACHES 100% OF REQUIRED 28 DAY STRENGTH).

6. ACOUSTICAL CELLULAR METAL FLOOR DECKING SHALL BE PROVIDED IN THE AREAS NOTED, OF THE SAME TYPE AS THE OTHER FLOOR DECKING, WITH HAT/PAN MATERIAL THICKNESS OF DECK GA. INDICATED/20 GA., CONTINUOUS OVER A MINIMUM OF TWO SPANS.

7. WHERE INDICATED AT STAIR LANDINGS, PROVIDE 1 1/2" DEEP, COMPOSITE, WIDE RIB TYPE, 20 GAUGE, G60 GALVANIZED, SIMPLE SPAN CONDITION.

8. ATTACH DECKING WITH PUDDLE WELDS AT ALL SUPPORTS UNLESS OTHERWISE INDICATED ON THE DRAWINGS. SEE THE SCHEDULE BELOW FOR ATTACHMENT SPACING. WELD FILLER METAL SHALL BE AWS A5.1 OR A5.5 E60XX ELECTRODES. CONNECT SIDE LAPS AS INDICATED IN THE SCHEDULE BELOW.

9. CONNECT DECK TO OPENING SUPPORT FRAMING AT EVERY OTHER METAL DECK VALLEY AT PERPENDICULAR SUPPORTS, AND AT 12-INCHES O.C. AT LONGITUDINAL SUPPORTS BUT NOT LESS THAN TWO (2) SCREWS PER OPENING SIDE OR PER MEMBER (UNLESS NOTED OTHERWISE).

10. PROVIDE "Z" OR "L" SHAPED FLUTE EXTENSIONS TO ATTACH DECKING TO DIAPHRAGM DRAG STRUTS, EDGER ANGLES AND TOP OF SHEAR WALLS WHERE DECKING LAYOUT DOES NOT CENTER THE BOTTOM DECK FLUTE OVER THE CONNECTION AS INDICATED IN THE DRAWINGS. ATTACH FLUTE EXTENSIONS TO THE ADJACENT DECK PANEL WITH THE SAME ATTACHMENT TYPE AND SPACING AS REQUIRED AT FRAMING.

11. SEE SPECIFICATIONS FOR ADDITIONAL METAL DECKING REQUIREMENTS.
GENERAL FOUNDATION NOTES

1. COORDINATE ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL PLANS AND NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES FOR REVIEW AND RESOLUTION.
2. FOUNDATION SUBGRADE REQUIRES SUBGRADE IMPROVEMENT USING ENGINEERED AGGREGATE PIERS. SEE GENERAL STRUCTURAL NOTES FOR REQUIREMENTS.
3. SEE ARCHITECTURAL/CIVIL/LANDSCAPE SHEETS FOR ALL EXTERIOR, NON-STRUCTURAL CONCRETE.
4. VERTICAL FOOTING AND FOUNDATION WALL CONSTRUCTION JOINTS ARE NOT SHOWN. SEE GENERAL STRUCTURAL NOTES FOR REQUIREMENTS.
5. COORDINATE ALL OPENINGS IN FOUNDATION WALLS AND SLABS WITH ALL DISCIPLINES AND PROVIDE OPENING REINFORCING PER DETAIL 16 / S5-01.
6. WHERE APPLICABLE, SEE SLAB PLAN FOLLOWING THIS SHEET FOR JOINTING, SPECIAL SLAB FINISHES, DEPRESSED/DROPPED SLAB LOCATIONS, AND OTHER SLAB REQUIREMENTS.
7. PROVIDE PRE-FABRICATED SUMP CAN/BARREL AT ELEVATOR PIT AND/OR AT DEWATERING SYSTEM PER ARCHITECTURAL/PLUMBING SHEETS.
8. SEE OVERALL PLAN SHEETS AT THIS LEVEL FOR FULL BUILDING FRAME AND FOUNDATION SECTIONS.
9. PROVIDE 2'-0" MIN OF BASE COURSE/STRUC. FILL BELOW ENTRY CANOPY COLUMN FOOTINGS PER DETAIL 10 / S5-01 SIM., EXTENDING FILL 2'-0" MIN. BEYOND EDGES OF THE FOOTING.

GENERAL STRUCTURAL FRAMING PLAN NOTES

1. COORDINATE ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL PLANS AND NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES FOR REVIEW AND RESOLUTION.
2. SEE ARCHITECTURAL/CIVIL/LANDSCAPE SHEETS FOR ALL EXTERIOR, NON-STRUCTURAL CONCRETE.
3. COORDINATE ALL OPENINGS IN SLABS WITH ALL DISCIPLINES AND PROVIDE OPENING REINFORCING PER DETAIL 19 / S5-11.
4. SEE SLAB PLAN FOLLOWING THIS SHEET FOR JOINTING, SPECIAL SLAB FINISHES, DEPRESSED/DROPPED SLAB LOCATIONS, AND OTHER SLAB REQUIREMENTS. SEE THE OVERALL FRAMING PLAN AT THIS LEVEL FOR REQUIRED LOCATIONS OF ACCOUSTIC CELLULAR FLOOR AND ROOF DECKING.
5. NON-BEARING WALLS, WINDOW AND DOOR OPENINGS, AND OTHER INTERIOR PARTITION WALLS ARE SHOWN FOR INFORMATION ONLY. SEE ARCHITECTURAL FOR DIMENSIONS, LOCATIONS, AND SIZES OF THESE ELEMENTS.
6. SEE OVERALL PLAN SHEET FOR THIS LEVEL FOR FULL BUILDING FRAME ELEVATIONS AND CONNECTION REQUIREMENTS THAT ARE SHOWN IN THE S3-XX SERIES SHEETS.
7. SEE OVERALL PLAN SHEET FOR THIS LEVEL FOR EXTERIOR ENVELOPE/CLADDING ELEVATION CALLOUTS THAT ARE SHOWN ON THE S7-XX SERIES SHEETS.
8. SEE GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.
9. AT BRIDGE MOMENT FRAME BEAM BRACE CONN., PROVIDE SHEAR TAB PER DETAIL 10/S5-11 WITH ADDITIONAL 5/16" FILLET WELD AT 3 SIDES OF THE SHEAR TAB/BRACE BEAM WEB INTERFACE.
TABLE 1 - REQUIRED STRUCTURAL STEEL WELDING SPECIAL INSPECTIONS/SEISMIC RESISTANCE

<table>
<thead>
<tr>
<th>SYSTEM OR MATERIAL</th>
<th>REFERENCE</th>
<th>FREQUENCY</th>
<th>INSPECTION</th>
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</thead>
<tbody>
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TABLE 2 - REQUIRED GEOTECHNICAL SPECIAL INSPECTIONS

<table>
<thead>
<tr>
<th>SYSTEM OR MATERIAL</th>
<th>REFERENCE</th>
<th>FREQUENCY</th>
<th>INSPECTION</th>
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TABLE 3 - REQUIRED STRUCTURAL STEEL BOLTING SPECIAL INSPECTIONS

<table>
<thead>
<tr>
<th>SYSTEM OR MATERIAL</th>
<th>REFERENCE</th>
<th>FREQUENCY</th>
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TABLE 4 - REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL

<table>
<thead>
<tr>
<th>SYSTEM OR MATERIAL</th>
<th>REFERENCE</th>
<th>FREQUENCY</th>
<th>INSPECTION</th>
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SPECIAL INSPECTION NOTES

- All inspection notes are to be recorded on the inspection sheets and signed by the inspector.
- Inspectors shall be permitted to use their judgment in determining the need for additional inspections or changes in the inspection frequency.
- Inspectors shall be responsible for ensuring that all inspections are completed in a timely manner.
- Inspectors shall be responsible for notifying the cost of any additional inspections.
### SCHEDULE - CONCRETE WALL FOOTINGS

<table>
<thead>
<tr>
<th>Type</th>
<th>Thickness</th>
<th>Count</th>
<th>Reinforcement</th>
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### SCHEDULE - SPREAD FOOTINGS

<table>
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<tr>
<th>Type</th>
<th>Thickness</th>
<th>Count</th>
<th>Reinforcement</th>
</tr>
</thead>
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### SCHEDULE - CONCRETE COLUMN PLANTER

<table>
<thead>
<tr>
<th>Type</th>
<th>Thickness</th>
<th>Count</th>
<th>Reinforcement</th>
</tr>
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### GENERAL FOUNDATION NOTES

- **A**
- **B**
- **C**
- **D**
- **E**
- **F**
- **G**
- **H**
- **I**
- **J**
- **K**
- **L**
- **M**
- **N**
- **O**
- **P**
- **Q**
- **R**
- **S**
- **T**
- **U**
- **V**
- **W**
- **X**
- **Y**
- **Z**

(Continued on diagram with detailed annotations and measurements)
Abnormal Footings, U.N.O.) (TYP. @ INTERIOR

This sheet includes a detailed plan for the concrete columns and pilasters, with dimensions and notes for various sections. The schedule on the sheet details the reinforcing bars and their placements for each section. The plan also highlights the tie bars and dowels used for structural support. The schedule comments section provides additional instructions for the construction process.

For a better understanding, the plan includes a grid system with specific coordinates and labels for each section. The grid helps in understanding the relative positions of the concrete elements and their dimensions.

The schedule table offers a comprehensive list of materials and their respective quantities, ensuring that the construction team has all the necessary information to proceed with the work accurately.

Overall, the document provides a detailed guide for the construction of concrete columns and pilasters, with clear instructions and specifications to ensure a successful project outcome.
LEVEL 2 - WEST SLAB PLAN

1. SLAB SLABS ON DECK WITH DECKING LEVELS

2. COORDINATE LOCATIONS OF ALL DEPRESSED AND/OR DROPPED SLABS WITH ARCHITECTURAL SHEETS.

3. LOCATE CONSTRUCTION JOINTS PARALLEL TO DECK SPAN 4' FROM GIRDER CENTERLINE. AT JOINTS PERPENDICULAR TO DECK, PROVIDE 1/4" DIAPHRAGM ATTACHMENT REQUIREMENTS

4. UNLESS A SPECIFIC POUR SIZE IS SHOWN/REQUIRED IN SLAB PLANS, LIMIT DAILY POUR SIZE TO NOT EXCEED 2500 S.F.

5. SEE SPECIFICATIONS FOR REQUIREMENTS ON PRE-INSTALLATION CONFERENCES, SUBMITTALS, QUALITY CONTROL, AND PREPARATION.

6. EDGE OF SLAB/TRUCK PATH OR DECK TYPE CHANGE

GENERAL SLAB-ON-DECK NOTES:

- 4" CONCRETE HOUSEKEEPING PAD, SEE DETAIL
- 6" CONCRETE EQUIPMENT SUPPORT PAD, SEE DETAIL
- EDGE OF DECKING AT SPAN DIRECTION OR DECK TYPE CHANGE
- 3" SLAB OVER 2" METAL DECK DROPPED 1 3/4" AT INSET WOOD
- 3" SLAB OVER 2" DECKING W/ STANDARD TROWEL FINISH
- SEE DETAILS AS CALLED OUT SLAB PLAN

DIAPHRAGM ATTACHMENT REQUIREMENTS:

- 4" CONCRETE HOUSEKEEPING PAD, SEE DETAIL
- 6" CONCRETE EQUIPMENT SUPPORT PAD, SEE DETAIL
- EDGE OF DECKING AT SPAN DIRECTION OR DECK TYPE CHANGE
- 3" SLAB OVER 2" METAL DECK DROPPED 1 3/4" AT INSET WOOD
- 3" SLAB OVER 2" DECKING W/ STANDARD TROWEL FINISH
- SEE DETAILS AS CALLED OUT SLAB PLAN
1. Coordinate all openings in slabs with all disciplines and provide opening reinforcing per any discrepancies for review and resolution.

2. See general structural notes for additional requirements.

3. At bridge moment frame beam brace connection, provide shear tab per detail 10/S5-11 with additional 5/16".

4. Additional requirements.
1. Coordinate all dimensions and elevations with architectural plans and notify architect/engineer of any discrepancies for review and resolution.

2. See architectural/civil/landscape sheets for all exterior, non-structural concrete. Coordinate all openings in slabs with all disciplines and provide opening reinforcing per detail.

3. Coordinate all shear stud locations of acoustic cellular floor and roof decking. See the overall framing plan at this level for required details.

4. Beam bracing, typical. See detail 10/S5-11 with additional 5/16".

5. At bridge moment frame beam brace connection, provide shear tab per detail.

6. See overall plan sheet for this level for full building frame elevations and connection requirements.
ENLARGED PLAN - SOUTH ENTRY VESTIBULE ROOF FRAMING (REVISED)

1/4" = 1'-0"

PROVIDE 4" MAX. DIA. HOLE IN BEAM WEB, REF. PLUMBING SHEETS FOR LOCATION AND SIZE.

1 1/2" X 20 GA. ROOF DECKING, SEE SHEET S0-01 FOR ADDL. REQUIREMENTS.

T.O. DECK = 111' - 6"
3.15

3 1/4"

3/16

PLATE TO HSS, TYP.

4 1/2"

10.23°

ROOF MONITOR COLUMN

B2

1/4" x 4" LONG BENT PLATE

HSS SILL 8"x20 GA. STUDS @ 16" CONNECT STUDS PER 6 / S5-12

T.O.S. = 151' - 8 1/2"

ROOF MONITOR FRAMING DETAIL (REVISED)

SSK - 6

1" = 1'-0"

SSK - 6

NORM ASBJORNSON HALL

STATE OF MONTANA
LEVEL 1
100' - 0"
6"
10"
2' - 0"
T.O.F. = 96' - 6"

(3) #4 CONT. LONG. REINF.
@ 18" O.C.

#5 HORIZ. REINF.
@ 12" O.C. EA. FACE

#5 FULL HT. DOWELS @ 12" O.C. EA. FACE

1/2" PJF & JOINT SEALANT
S5-01

5" SLAB ON GRADE

FACE
#5 FULL HT. DOWELS @ 12" O.C. EA. FACE

EXTERIOR SLAB SEE ARCH/CIVIL

EXTERIOR WALL ASSEMBLY,
SEE ARCH. SHEETS, SEE S7-XX
SERIES SHEETS FOR EXTERIOR/ NON-BRG. STUD FRMG.

EXTERIOR WALL ASSEMBLY,
SEE ARCH. SHEETS, SEE S7-XX
SERIES SHEETS FOR EXTERIOR/ NON-BRG. STUD FRMG.

T.O.F. = 96' - 6"

LEVEL 1
100' - 0"

T.O.SL
VARIERS, SEE PLAN

42"

6"

2' - 0"

EXTERIOR SLAB PER ARCH/CIVIL

#5 HORIZ. REINF.
@ 12" O.C. EA. FACE

#5 FULL HT. DOWELS @ 12" O.C. EA. FACE

1/2" PJF & JOINT SEALANT
S5-01

5" SLAB ON GRADE

FACE
#5 FULL HT. DOWELS @ 12" O.C. EA. FACE

EXTERIOR WALL ASSEMBLY,
SEE ARCH. SHEETS, SEE S7-XX
SERIES SHEETS FOR EXTERIOR/ NON-BRG. STUD FRMG.

T.O.F. = 96' - 6"

LEVEL 1
100' - 0"

T.O.SL
VARIERS, SEE PLAN

42"

6"

2' - 0"

EXTERIOR SLAB PER ARCH/CIVIL

#5 HORIZ. REINF.
@ 12" O.C. EA. FACE

#5 FULL HT. DOWELS @ 12" O.C. EA. FACE

1/2" PJF & JOINT SEALANT
S5-01

5" SLAB ON GRADE

FACE
#5 FULL HT. DOWELS @ 12" O.C. EA. FACE

EXTERIOR WALL ASSEMBLY,
SEE ARCH. SHEETS, SEE S7-XX
SERIES SHEETS FOR EXTERIOR/ NON-BRG. STUD FRMG.

T.O.F. = 96' - 6"

LEVEL 1
100' - 0"

T.O.SL
VARIERS, SEE PLAN

42"

6"

2' - 0"

EXTERIOR SLAB PER ARCH/CIVIL

#5 HORIZ. REINF.
@ 12" O.C. EA. FACE

#5 FULL HT. DOWELS @ 12" O.C. EA. FACE

1/2" PJF & JOINT SEALANT
S5-01

5" SLAB ON GRADE

FACE
#5 FULL HT. DOWELS @ 12" O.C. EA. FACE

EXTERIOR WALL ASSEMBLY,
SEE ARCH. SHEETS, SEE S7-XX
SERIES SHEETS FOR EXTERIOR/ NON-BRG. STUD FRMG.
LEVEL 1
100' - 0"

(3) #4 CONT. LONG. REINF.
#4 TRANS. REINF.
@ 18" O.C.

FACE
#5 FULL HT. DOWELS @
12" O.C. EA. FACE

EXTERIOR SLAB
PER ARCH/CIVIL

T.O.SL
VARIES, SEE PLAN

9
S5-01
5" SLAB ON
GRADE

T.O.F. = 96' - 6"

10"

2' - 0"

1' - 0"

6"

EXTERIOR WALL ASSEMBLY, SEE
ARCH. SHEETS, SEE S7-XX SERIES
SHEETS FOR EXTERIOR/ NON-BRG.
STUD FRMG.

#5 HORIZ. REINF.
@ 12" O.C. EA. FACE

#5 HORIZ. REINF.
@ 12" O.C. EA. FACE

8
FOUNDATION SECTION (REVISED)

S1-04 : SSK - 8
3/4" = 1'-0"

sheet
S5-05 (REV. DETAIL 8)

project
NORM ASBJORNSON HALL

owner
STATE OF MONTANA
NOTE:
PROVIDE VENEER ANCHORS AT 16" O.C. MAX. VERTICAL, (OR BETWEEN EACH COARSE OF VENEER FOR 12" COURSING) 16" MAXIMUM HORIZONTAL. INSTALL 1ST AND LAST ROW OF TIES ABOVE THE FIRST COURSE AND BELOW THE LAST COURSE RESPECTIVELY. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

5

MASSONRY VENEER ANCHOR DETAILS (REVISED)
17  SOUTH BRIDGE FRAMING DETAIL (REVISED)  
: SSK - 10  1" = 1'-0"

18  SOUTH BRIDGE FRAMING DETAIL (REVISED)  
: SSK - 10  1" = 1'-0"
15 SOUTH BRIDGE FRAMING DETAIL (REVISED)

- SSK - 11  1" = 1'-0"

- Structural Slide Bearings:
  1) PTFE Substrate, 2) 1/4" Fabric Bearing Pad, 3) 10 GA. x 1'-7" x 1'-10" Steel Attachment Plate Welded to Bottom Plate

- Upper Unit:
  1) 7/16" x 9" Wide x 20" Long Sole Plate (Welded to Beam), 2) 10 GA. Carbon Steel Attachment Plate (Welded to Sole Plate), 3) 20 GA. Stainless Steel Lower Unit: 1) PTFE Substrate, 2) 1/4" Fabric Bearing Pad, 3) 10 GA. x 1'-7" x 1'-10" Steel Attachment Plate Welded to Bottom Plate

- 1/2" Bottom Plate

- 3/8" Stiffener Plates, Match Side Plate Profile

- 1/2" Side Plates

- 2" Max., 1/2" Min.

- 3/16" 2-6

- DROP TOP OF SHEAR PLATE TO 3/16" BELOW TOP OF HSS BEAM FOR P.J.P. WELD

- COPE BRIDGE GIRDER AS SHOWN

- PLAN A-A

- 11/8/2016 3:02:24 PM

- Project # 1552.051

- Issue Date 11.08.16

- Sheet S5-13 (REV. DETAIL 15)

- Project Owner

- State of Montana

- Norm Asbjornson Hall
SUPPORT DETAILS

EXTERIOR WALL/CLADDING ELEVATION (S1)

100% CONSTRUCTION DOCUMENTS

STATE OF MONTANA

NORM ASBJORNSON HALL

ASBJORNSON HALL

STATE OF MONTANA

MONTANA STATE UNIVERSITY

11.08.16

PENTHOUSE ROOF

LEVEL 1

LEVEL 2

LEVEL 3

ROOF

PHASE PLAN

16

S7-02

EXTERIOR WALL/CLADDING ELEVATION (S2)
LEVEL 1
100' - 0"

8-13 (6) 1" Ø ANCHOR RODS W/ LEVELING NUTS

BASE & PLATE FTG.
1' - 0 3/4"

SEE FTG. SCHEDULE
1 1/2" NON-SHRINK GROUT
1/2" TOP SOLE/BASE PLATE W/ SLOTTED HOLES
1/2" BOTTOM BASE PLATE W/ 1 1/4" DIA. HOLES

1 3/8"

UPPER UNIT:
1) 1/2" x DIMS. INDICATED SOLE/TOP BASE PLATE (WELDED TO BEAM), 2) 10 GA. x 7" x 3'-0" CARBON STEEL ATTACHMENT PLATE (WELDED TO SOLE PLATE), 3) 20 GA. STAINLESS STEEL [ALL W/ SLOTTED HOLES]

LOWER UNIT:
1) PTFE SUBSTRATE, 2) 1" FABRIC BEARING PAD, 3) 10 GA. x 7" x 3'-0" STEEL ATTACHMENT PLATE WELDED TO BOTTOM BASE PLATE [ALL W/ STD. HOLES]

STRUCTURAL SLIDE BEARINGS:
B2 1/8 2-6

ATTACHMENT PLATE TO BOTTOM PLATE
1/8 2-6

10 GA. PLATE TO SOLE PLATE

SIM. MAIN DECK, SEE PLAN

3.625" STEEL STUD WALL, TYP. FLOOR SLAB DECK EDGE ANGLE, SEE FRMG. DETAILS

22 GA. T & B TRACK (2) P.A.F. @ 12" O.C.

3.625" STEEL STUD WALL, TYP. PLATFORM/STAIR DECK, SEE PLAN

22 GA. T & B TRACK (2) #10 SCREWS @ 12" O.C.

22 GA. T & B TRACK (2) 4"x22 GA. CONT. STUDS W/ SOLID WEBS

S8-13
MECHANICAL NATURAL VENTILATION AND SMOKE CONTROL PLAN - LEVEL 3

: SK-M1-53-1  3/32" = 1'-0"

HP 2-7A N.V. WINDOW AND SMOKE CONTROL

COLLABORATION 3-1 (0.92 CM)

MECHANICAL SKETCH
NORM ASBJORNSON HALL
MSU-CPD&C / STATE OF MONTANA

sheet
project
owner

11/06/16
CONDUIT CONCEALED IN WINDOW FRAME (TYP.)

24V CABLE BY TC IN 3/4" CONDUIT

120V BY EC TO POWER SUPPLY BY WINDOW VENDOR

TO 120V POWER BY E.C.

24V CABLE BY TC IN 3/4" CONDUIT TO TOP OF WINDOW FRAME. CABLE CAN FREE AIR INSIDE WINDOW FRAME

FINISHED CEILING

1/2" CONDUIT

WINDOW ACTUATOR CONTROLLER BY WINDOW VENDOR. LOCATE IN CONCEALED LOCATION. SEE ELECTRICAL POWER PLANS FOR PROPOSED LOCATIONS

OVERRIDE SWITCH TO BE LOCATED ON WALL NEXT TO LIGHT SWITCHES. SEE ELECTRICAL POWER PLANS FOR PROPOSED LOCATIONS. COORDINATE FINAL LOCATION WITH OWNER

NOTES: ALL WORK BY T.C. CONTRACTOR U.O.N

2 TYPICAL OPERABLE WINDOW REVISION

: SK-M5-01-1  N.T.S.
NOTE:

WITH METAL SCREWS. AN APPLICATION OF SEALANT IS REQUIRED AT THE JOINTS BEFORE CONNECTING IN ORDER TO MAKE A TIGHT CONNECTION.

NOTE:

A TRENCH SHOULD BE DUG DEEP ENOUGH TO BURY THE DUCT AND ENCASE IN CONCRETE. DIRT TAKEN FROM THE TRENCHING CAN BE USED AS BACKFILL. BACKFILL SHOULD BE TAMPERED EVENLY AROUND BOTH SIDES OF THE CONCRETE.

NOTE:

VAPOR BARRIER WRAP CONTINUOUS AROUND DUCT (6 MIL POLYETHYLENE PLASTIC)

NOTE:

PIPE AND FITTINGS CAN BE JOINED IN THE CONVENTIONAL MANNER OF JOINING SPIRAL PIPE AND SECURED WITH METAL SCREWS. AN APPLICATION OF SEALANT IS REQUIRED AT THE JOINTS BEFORE CONNECTING IN ORDER TO MAKE A TIGHT CONNECTION.

NOTE:

ENCASE DUCT IN CONCRETE

NOTE:

UNDERSLAB PVC COATED DUCT

PVC COATED SPIRAL DUCT - COMPACTED FILL

VAPOR BARRIER WRAP CONTINUOUS AROUND DUCT (6 MIL POLYETHYLENE PLASTIC)

CONCRETE FLOOR SLAB

ENCASE DUCT IN CONCRETE

6" MIN.

3

BURIED DUCT DETAIL REVISION

: SK-M5-04-1 N.T.S.
MECHANICAL HVAC GENERAL NOTES

- All air duct dimensions shown on plans are clear interior dimensions.

- The HVAC system is using the ceiling space as a return air plenum.

- The heating and cooling systems shall be UL-approved fire rated system.

- Provide ceiling transfer grille ducted to return air plenum.

- Provide access panels and motorized dampers.

- Provide ceiling crossflow air measuring stations. Maintain adequate VAV installation.

- Verify exact location of T-stats with architect prior to documentation and specifications.

- General contractor shall patch piping installation to accommodate this.

- Provide access panels and motorized dampers.

- All duct dimensions shown on plans are clear interior dimensions.

- Provide ceiling transfer grille ducted to return air plenum.

- General contractor shall patch piping installation to accommodate this.

- Provide access panels and motorized dampers.

- Crossflow air measuring stations. Maintain adequate VAV installation.

- Verify exact location of T-stats with architect prior to documentation and specifications.

- General contractor shall patch piping installation to accommodate this.

- Provide access panels and motorized dampers.

- Crossflow air measuring stations. Maintain adequate VAV installation.

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- Crossflow air measuring stations. Maintain adequate VAV installation.

- Verify exact location of T-stats with architect prior to documentation and specifications.

- General contractor shall patch piping installation to accommodate this.

- Provide access panels and motorized dampers.
DOMESTIC WATER HEATER PIPING ISOMETRIC

1/2"ø CW
2 1/2"ø HW

PROVIDE 8"ø CW

PET
ET

6
15' UPSTREAM OF HWRC PUMP

NOTE: INSTALL AQUASTAST/TIMER GATE VALVE TYP.

HWRC
ST

1
1

1 1/2"ø HWR
1 1/2"ø HWS

VALVE (TYP) - PIPE TO DRAIN

CIRCUIT SETTER

DRAIN VALVE.

8"ø CW

PET
ET

6
2 1/2"ø CW
2"ø HWRC

2"ø HWR
2"ø HWS

1/8" = 1'-0"PH1-01

DOMESTIC WATER PLUMBING PLAN - BASEMENT

PLUMBING DOMESTIC WATER GENERAL NOTES

1. ALL ASSOCIATED FLOORS, WALLS, CEILINGS, AND ROOF AS REQUIRED TO THE SATISFACTION OF THE ARCHITECT/ENGINEER DOCUMENTS AND SPECIFICATIONS. GENERAL CONTRACTOR SHALL PATCH THE LOCATIONS WHERE ALUMINUM SHEETING IS REMOVED AND REPLACE IT WITH CORRUGATED STEEL SHEETING TO MATCH THE ADJACENT WALLS.

2. PLUMBING DOMESTIC WATER KEYNOTES

A. ALL UNDERFLOOR COPPER SHALL BE TYPE "K" SEAMLESS.

B. INSULATION ON ALL DOMESTIC WATER PIPING SHALL BE PROVIDED WITH A CONTINUOUS VAPOR BARRIER. OVERSIZE HANGERS FOR INSULATION SO NOTED. ALL VALVES GREATER THAN 2" SHALL BE GATE VALVES.

C. PROVIDE PIPE SLEEVE AND "LINK SEAL" OR EQUAL AT PENETRATION OF FLOOR DRAINS/SINKS. TRAP PRIMER TO SERVE ADJACENT FLOOR SINKS & CONTINUATION.

D. PIPE RACKS SPACED AT 10'-0" O.C. BUILT PER TUNNEL DETAILS ON P4-01.

E. COORDINATE HVAC AND PLUMBING EQUIPMENT WITH ALL OTHER TRADES.

F. COORDINATE EXACT LOCATION WITH GEOTHERMAL PIPES.

G. OFFSET AS NEEDED TO ROUTE PIPING IN PIPE RACK. COORDINATE ROUTING/LOCATION WITH MECHANICAL PIPING THIS AREA. SEE FIRST FLOOR PLAN FOR CONTINUATION.

H. FIRE PROTECTION RISER, SEE FIRE PROTECTION PLANS.

I. ROUTE 3" CW UP TO DOMESTIC WATER RISER ABOVE, SEE FIRST FLOOR PLAN FOR CONTINUATION.

J. ROUTE 1/2" CW UP TO SERVE CAFÉ EQUIPMENT ABOVE, VERIFY EXACT LOCATION AND ROUTING WITH GEOTHERMAL PIPES.

K. ROUTE 8" CW MAIN FROM NORTH TUNNEL THROUGH BASEMENT TO SOUTH FIXTURES/EQUIPMENT IN CAFÉ ABOVE. SEE FLOOR ABOVE FOR LOCATION AND ROUTING WITH MECHANICAL PIPING THIS AREA. SEE FIRST FLOOR PLAN FOR CONTINUATION.

L. ROUTE 8" CW OUT TO CONTINUE CW LOOP. SEE CIVIL FOR CONTINUATION.

M. ROUTE HEAT PUMP SUPPLY & RETURN PIPING TO SERVE DOMESTIC WATER FLOOR DRAINS/SINKS. TRAP PRIMER TO SERVE ADJACENT FLOOR SINKS & CONTINUATION.

N. PROVIDE PIPE SLEEVE AND "LINK SEAL" OR EQUAL AT PENETRATION OF FLOOR DRAINS/SINKS. TRAP PRIMER TO SERVE ADJACENT FLOOR SINKS & CONTINUATION.

O. FIRE PROTECTION RISER, SEE FIRE PROTECTION PLANS.

P. ROUTE 3" CW UP TO DOMESTIC WATER RISER ABOVE, SEE FIRST FLOOR PLAN FOR CONTINUATION.

Q. ROUTE 1/2" CW UP TO SERVE CAFÉ EQUIPMENT ABOVE, VERIFY EXACT LOCATION AND ROUTING WITH GEOTHERMAL PIPES.

R. ROUTE 8" CW MAIN FROM NORTH TUNNEL THROUGH BASEMENT TO SOUTH FIXTURES/EQUIPMENT IN CAFÉ ABOVE. SEE FLOOR ABOVE FOR LOCATION AND ROUTING WITH MECHANICAL PIPING THIS AREA. SEE FIRST FLOOR PLAN FOR CONTINUATION.

S. ROUTE 8" CW OUT TO CONTINUE CW LOOP. SEE CIVIL FOR CONTINUATION.
PLUMBING DOMESTIC WATER GENERAL NOTES

PLUMBING KEYNOTES

1. COMPRESSED AIR IN MECHANICAL ROOM FOR USE BY MAINTENANCE STAFF.

2. SET HWRC BALANCING VALVE TO 0.75 GPM.

3. SET HWRC BALANCING VALVE TO 0.5 GPM.

4. ROUTE 3/4" CW DOWN TO SERVE WALL HYDRANT INSTALLED OVER MOP SPACE.

5. ROUTE 3/4" CW DOWN TO SERVE URINAL.

6. ROUTE 1 1/4" CW DOWN TO SERVE WATER CLOSET.

7. ROUTE 3/4" CW/HW DOWN TO SERVE TMV-3, ROUTE 3/4" TW UP TO SERVE PANEL(S).

8. ROUTE 1/2" CW DOWN TO SERVE ELECTRIC WATER COOLER.

9. ROUTE 3/4" CW DOWN TO SERVE STATE MOUNTED WITHIN CHASE AT 60" FLOOR ABOVE. SEE FIRST & THIRD FLOORS FOR CONTINUATION.

10. ROUTE 3/4" CW/HW DOWN TO SERVE TMV-3, ROUTE 3/4" TW UP TO SERVE PANEL(S).

11. ROUTE 1/2" CW DOWN TO SERVE ELECTRIC WATER COOLER.

12. COORDINATE HVAC AND PLUMBING EQUIPMENT WITH ALL OTHER TRADES.

13. INSTALL DROP PER 8/P5-01 IN AN ACCESSIBLE LOCATION.

14. INSTALL DROP PER 8/P5-01 IN AN ACCESSIBLE LOCATION.

15. INSTALL DROP PER 8/P5-01 IN AN ACCESSIBLE LOCATION.

16. INSTALL DROP PER 8/P5-01 IN AN ACCESSIBLE LOCATION.

17. INSTALL DROP PER 8/P5-01 IN AN ACCESSIBLE LOCATION.

18. SEE P1-41 FOR ENLARGED PLANS AND ISOMETRICS.

19. MAINTAIN ALL CODE REQUIRED CLEARANCES AROUND AND ABOVE.

20. PROVIDE INSERTS AND CONTINUOUS VAPOR BARRIER. OVERSIZE HANGERS FOR INSULATION SO NOTED. ALL VALVES GREATER THAN 2" SHALL BE GATE VALVES.

21. PROVIDE INSERTS AND CONTINUOUS VAPOR BARRIER. OVERSIZE HANGERS FOR INSULATION SO NOTED. ALL VALVES GREATER THAN 2" SHALL BE GATE VALVES.

22. PROVIDE INSERTS AND CONTINUOUS VAPOR BARRIER. OVERSIZE HANGERS FOR INSULATION SO NOTED. ALL VALVES GREATER THAN 2" SHALL BE GATE VALVES.

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30. PROVIDE INSERTS AND CONTINUOUS VAPOR BARRIER. OVERSIZE HANGERS FOR INSULATION SO NOTED. ALL VALVES GREATER THAN 2" SHALL BE GATE VALVES.
PLUMBING DOMESTIC WASTE AND VENT, GENERAL NOTES

1. PLUMBING CONTRACTOR SHALL CUT ALL FLOORS, WALLS, CEILINGS, AND ROOF AS REQUIRED TO PERFORM THE WORK DEPICTED IN THESE CONTRACT DOCUMENTS AND SPECIFICATIONS. GENERAL CONTRACTOR SHALL PATCH ALL ASSOCIATED FLOORS, WALLS, CEILINGS, AND ROOF AS REQUIRED TO THE SATISFACTION OF THE ARCHITECT/ENGINEER.

2. COORDINATE HVAC AND PLUMBING EQUIPMENT WITH ALL OTHER TRADES AS REQUIRED.

3. REFERENCE ARCHITECTURAL PLANS FOR EXACT FIXTURE LOCATIONS.

4. COORDINATE UNDERSLAB PIPING WITH FOOTINGS AND STEM WALLS.

5. PROVIDE ALL FLOOR DRAINS AND FLOOR SINKS WITH TRAP PRIMERS. PROVIDE WALL ACCESS PANEL FOR TRAP PRIMER ACCESS AS REQUIRED. ACCESS PANELS SHALL BE RATED WHERE REQUIRED. WHERE POSSIBLE LOCATE TRAP PRIMERS IN PLUMBING CHASE OR MECHANICAL ROOM. TRAP PRIMERS SHALL NOT BE LOCATED ABOVE CEILINGS.

6. ALL UNDERFLOOR VENT SHALL BE MINIMUM 2".

7. PROVIDE CLEANOUTS ON ALL LINES SERVING SINKS AND URINALS.

8. ROUTE ALL FLOOR SINKS FLUSH WITH FINISHED FLOOR LEVEL.

PLUMBING ROOF PLAN - WEST

NORM ASBJORNSON HALL

CAMPUS PLANNING, DESIGN, & CONSTRUCTION

STATE OF MONTANA

MONTANA STATE UNIVERSITY

BOZEMAN, MONTANA

PHONE: 406.994.5413

PROJECT #: 15BL4300

ISSUE DATE 11.08.16

BILLINGS, MT 59102 2040 HARNISH BLVD. PROJECT #: 15BL4300

DR A2 AWN BY: REVIEWED BY: REV. DESCRIPTION DATE

PLUMBING CONTRACTOR SHALL CUT ALL FLOORS, WALLS, CEILINGS, AND ROOF AS REQUIRED TO PERFORM THE WORK DEPICTED IN THESE CONTRACT DOCUMENTS AND SPECIFICATIONS. GENERAL CONTRACTOR SHALL PATCH ALL ASSOCIATED FLOORS, WALLS, CEILINGS, AND ROOF AS REQUIRED TO THE SATISFACTION OF THE ARCHITECT/ENGINEER.

COORDINATE HVAC AND PLUMBING EQUIPMENT WITH ALL OTHER TRADES AS REQUIRED.

REFERENCE ARCHITECTURAL PLANS FOR EXACT FIXTURE LOCATIONS.

COORDINATE UNDERSLAB PIPING WITH FOOTINGS AND STEM WALLS.

PROVIDE ALL FLOOR DRAINS AND FLOOR SINKS WITH TRAP PRIMERS. PROVIDE WALL ACCESS PANEL FOR TRAP PRIMER ACCESS AS REQUIRED. ACCESS PANELS SHALL BE RATED WHERE REQUIRED. WHERE POSSIBLE LOCATE TRAP PRIMERS IN PLUMBING CHASE OR MECHANICAL ROOM. TRAP PRIMERS SHALL NOT BE LOCATED ABOVE CEILINGS.

ALL UNDERFLOOR VENT SHALL BE MINIMUM 2".

PROVIDE CLEANOUTS ON ALL LINES SERVING SINKS AND URINALS.

ROUTE ALL FLOOR SINKS FLUSH WITH FINISHED FLOOR LEVEL.
KEY NOTES

1. THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR LIGHT HAZARD.
2. THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR ORDINARY HAZARD, GROUP 1.
3. THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR ORDINARY HAZARD, GROUP 2.
4. THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR MISCELLANEOUS STORAGE OCCUPANCIES WITH 12'-0" MAXIMUM STORAGE HEIGHT.
5. NON-COMBUSTIBLE OVERHANG/CANOPY WITH NO STORAGE BELOW. NO SPRINKLERS REQUIRED PER NFPA 13-2007 PARAGRAPH 8.15.7.2.
6. LOCATION OF FIRE SPRINKLER SYSTEM RISER AND EQUIPMENT.
7. LOCATION OF FIRE DEPARTMENT CONNECTION AT EXTERIOR OF BUILDING. PROVIDE EXTERIOR HORN/STROBE ALARM ON WALL DIRECTLY ABOVE FIRE DEPARTMENT CONNECTION.
8. LOCATION OF FIRE SPRINKLER STANDPIPE AND ZONE CONTROL VALVES.
9. DN SCREWED ELBOW AND 200° SIDEWALL WITH HEAD GUARD LOCATED APPROXIMATELY 12" ABOVE BOTTOM OF ELEVATOR SHAFT. SECURE TO WALL WITH SLOTTED UNISTRUT AND STRUT PIPE CLAMP.
10. SIDEWALL SPRINKLER LOCATED UNDER OVERHEAD DOOR.
11. DRY-TYPE SIDEWALL SPRINKLER IN ENTRY VESTIBULE.

GENERAL NOTES

1. ALL COUPLINGS TO BE ZERO FLEX/RIGID UNLESS OTHERWISE NOTED AND/OR REQUIRED BY CODE.
2. PROVIDE SPLIT CHROME WALL PLATES AT ALL EXPOSED WALL PENETRATIONS IN FINISHED ROOMS.

FP0-02

BASEMENT FIRE SPRINKLER PLAN - E
GENERAL NOTES
1. Use a 1/4" flexible PVC pipe with a hosebib at each fire hydrant.
2. Use a 1/2" flexible PVC pipe with a hosebib at each fire hydrant.
3. Use a 3/4" flexible PVC pipe with a hosebib at each fire hydrant.
4. Use a 1" flexible PVC pipe with a hosebib at each fire hydrant.
5. Use a 1 1/2" flexible PVC pipe with a hosebib at each fire hydrant.
6. Use a 2" flexible PVC pipe with a hosebib at each fire hydrant.
7. Use a 2 1/2" flexible PVC pipe with a hosebib at each fire hydrant.
8. Use a 3" flexible PVC pipe with a hosebib at each fire hydrant.
9. Use a 3 1/2" flexible PVC pipe with a hosebib at each fire hydrant.
10. Use a 4" flexible PVC pipe with a hosebib at each fire hydrant.

KEY NOTES
1. All piping shall be Schedule 40 PVC unless otherwise noted.
2. All fittings shall be Schedule 40 PVC unless otherwise noted.
3. All valves shall be Schedule 40 PVC unless otherwise noted.
4. All couplings shall be Schedule 40 PVC unless otherwise noted.
5. All hangers shall be Schedule 40 PVC unless otherwise noted.
6. All anchors shall be Schedule 40 PVC unless otherwise noted.
7. All supports shall be Schedule 40 PVC unless otherwise noted.
8. All spigots shall be Schedule 40 PVC unless otherwise noted.
9. All gaskets shall be Schedule 40 PVC unless otherwise noted.
10. All straps shall be Schedule 40 PVC unless otherwise noted.

LEVEL 1 FIRE SPRINKLER PLAN - W
LEVEL 1 FIRE SPRINKLER PLAN - E

GENERAL NOTES:
- ALL SIZING OF FIRE SPRINKLERS IS SHOWN IN WHOLE INCHES.
- ALL SIZING OF SIDEWALL SPRINKLERS IS SHOWN IN WHOLE INCHES AND 1/8 THIRDS.
- SIDEWALL SPRINKLERS LOCATED UNDER OVERHEAD DOOR WALL WITH SLOTTED UNISTRUT AND STRUT PIPE CLAMP.

KEY NOTES:
- LOCATION DEPARTMENT CONNECTIONS TO BE DIRECTLY ABOVE FIRE DEPARTMENT CONNECTION.
- LOCATION OF FIRE SPRINKLER SYSTEM RISER AND EQUIPMENT.
- SPRINKLERS REQUIRED PER NFPA 13-2007 PARAGRAPH 8.15.7.2.
- NON-COMBUSTIBLE OVERHANG/CANOPY WITH NO STORAGE BELOW. NO REQUIREMENTS FOR MISCELLANEOUS STORAGE OCCUPANCIES WITH THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR LIGHT HAZARD.
- THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR LIGHT HAZARD.
- THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR LIGHT HAZARD.
- THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR ORDINARY HAZARD, GROUP 1.
- THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR ORDINARY HAZARD, GROUP 2.
- Location of fire alarm control box and fire alarm smoke detector located approximatly 12" above bottom of elevator shaft. Secure to finished room.

FINISHED ROOMS.
- REQUIRED BY CODE.

2. PROVIDE SPLIT CHROME WALL PLATES AT ALL EXPOSED WALL PENETRATIONS IN GENERAL NOTES.
- ALL COUPLINGS TO BE ZERO FLEX/RIGID UNLESS OTHERWISE NOTED AND/OR REQUIRED BY CODE.
- Provide fire alarm smoke detector located under overhead door.
- Provide fire alarm control box located under overhead door.
- Exterior horn/strobe alarm on wall located approximatly 12" above bottom of elevator shaft. Secure to finished room.
- Provide light kits, alarms, and fire alarm/photocells.
- Location of fire alarm control box and fire alarm smoke detector located approximatly 12" above bottom of elevator shaft. Secure to finished room.
- Location of fire alarm control box and fire alarm smoke detector located approximatly 12" above bottom of elevator shaft. Secure to finished room.
- Location of fire alarm control box and fire alarm smoke detector located approximatly 12" above bottom of elevator shaft. Secure to finished room.
- Location of fire alarm control box and fire alarm smoke detector located approximatly 12" above bottom of elevator shaft. Secure to finished room.
- Location of fire alarm control box and fire alarm smoke detector located approximatly 12" above bottom of elevator shaft. Secure to finished room.

1. PROVIDE SPLIT CHROME WALL PLATES AT ALL EXPOSED WALL PENETRATIONS IN GENERAL NOTES.
LEVEL 2 FIRE SPRINKLER PLAN - W

LEVEL 2 FIRE SPRINKLER PLAN - W

LEVEL 2 FIRE SPRINKLER PLAN - W
LEVEL 2 FIRE SPRINKLER PLAN - E

GENERAL NOTES:
1. ALL COUPLINGS TO BE ZERO FLEX/RIGID UNLESS OTHERWISE NOTED AND/OR REQUIRED BY CODE.
2. PROVIDE SPLIT CHROME WALL PLATES AT ALL EXPOSED WALL PENETRATIONS IN FINISHED ROOMS.

KEY NOTES:

LEVEL 2 FIRE SPRINKLER PLAN - E

This area to be protected in accordance with the NFPA #13 requirements for Light Hazard.
This area to be protected in accordance with the NFPA #13 requirements for Ordinary Hazard, Group 1.
This area to be protected in accordance with the NFPA #13 requirements for Ordinary Hazard, Group 2.
This area to be protected in accordance with the NFPA #13 requirements for Miscellaneous Occupancies with 12'-0" maximum storage height.
Non-combustible overhang/canopy with no storage below. No sprinklers required per NFPA 13-2007 Paragraph 8.15.7.2.
Location of Fire Sprinkler System Riser and Equipment.
Location of Fire Department Connection at exterior of building. Provide exterior horn/strobe alarm on wall directly above fire department connection.
Location of Fire Sprinkler Standpipe and Zone Control Valves.
DN Screwed Elbow and 200° Sidewall with head guard located approximately 12" above bottom of elevator shaft. Secure to wall with slotted Unistrut and strut pipe clamp.
Sidewall Sprinkler located under overhead door.
Dry-type Sidewall Sprinkler in Entry Vestibule.
LEVEL 3 FIRE SPRINKLER PLAN - W

GENERAL NOTES:
1. All sprinklers installed in accordance with NFPA 13 - 2007
2. All dry-type sidewall sprinklers in entry vestibule
3. Location of the sprinkler to be installed in accordance with NFPA 13 - 2007
4. Location of the sprinkler to be installed in accordance with NFPA 13 - 2007
5. Location of the sprinkler to be installed in accordance with NFPA 13 - 2007
6. Location of the sprinkler to be installed in accordance with NFPA 13 - 2007
7. Location of the sprinkler to be installed in accordance with NFPA 13 - 2007
8. Location of the sprinkler to be installed in accordance with NFPA 13 - 2007
9. Location of the sprinkler to be installed in accordance with NFPA 13 - 2007
10. Location of the sprinkler to be installed in accordance with NFPA 13 - 2007

KEY NOTES:
1. All couplings to be zero flex/rigid unless otherwise noted and/or required by code.
2. Provide split chrome wall plates at all exposed wall penetrations.
3. Provide split chrome wall plates at all exposed wall penetrations.
4. Provide split chrome wall plates at all exposed wall penetrations.
5. Provide split chrome wall plates at all exposed wall penetrations.
6. Provide split chrome wall plates at all exposed wall penetrations.
7. Provide split chrome wall plates at all exposed wall penetrations.
8. Provide split chrome wall plates at all exposed wall penetrations.
9. Provide split chrome wall plates at all exposed wall penetrations.
10. Provide split chrome wall plates at all exposed wall penetrations.

FINISHED ROOMS.
1. Required by code.
2. Approximate 12" above bottom of elevator shaft. Secure to dry-type sidewall sprinkler in entry vestibule.
3. Wall with slotted unistrut and strut pipe clamp.
4. DN screwed elbow and 200° side wall with head guard located.
5. Location of fire sprinkler standpipe and zone control valves.
6. Directly above fire department connection.
7. Building. Provide exterior horn/strobe alarm on wall.
8. Location of fire sprinkler system riser and equipment.
10. Non-combustible overhang/canopy with no storage below. No requirements for miscellaneous storage occupancies with requirements for ordinary hazard, group 2.
11. This area to be protected in accordance with the NFPA #13 requirements for ordinary hazard, group 1.
12. This area to be protected in accordance with the NFPA #13 requirements for ordinary hazard, group 2.
LEVEL 3 FIRE SPRINKLER PLAN - E

GENERAL NOTES

1. Approved by A&E Project No. 14080.
2. This drawing is for information purposes only as an aid to implementation.
3. Consult the original documents controlling the project.
4. Drawing is not for production purposes.
5. This drawing is not to be used for any purpose other than that for which it was intended.
6. This drawing is not to be used as a basis for any legal or financial transactions.
7. This drawing is not to be used for any purpose other than that for which it was intended.
8. This drawing is not to be used for any purpose other than that for which it was intended.
9. This drawing is not to be used for any purpose other than that for which it was intended.
10. This drawing is not to be used for any purpose other than that for which it was intended.

KEY NOTES

1. This area to be protected in accordance with the NFPA #13 Requirements forOrdinary Hazard, Group 1.
2. This area to be protected in accordance with the NFPA #13 Requirements forOrdinary Hazard, Group 2.
3. This area to be protected in accordance with the NFPA #13 Requirements forLight Hazard.
4. Location of fire sprinkler system riser and equipment.
5. Location of fire department connection at exterior of building.
6. Location of fire department connection directly above elevator shaft.
7. Location of fire sprinkler system riser and equipment.
8. Location of fire department connection directly above elevator shaft.
9. Location of fire sprinkler system riser and equipment.
10. Location of fire department connection directly above elevator shaft.

FINISHED ROOMS.

REQUIREMENTS FOR MISCELLANEOUS STORAGE OCCUPANCIES WITH THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR ORDINARY HAZARD, GROUP 2.

REQUIREMENTS FOR ORDINARY HAZARD, GROUP 1.

REQUIREMENTS FOR LIGHT HAZARD.

APPROXIMATELY 12" ABOVE BOTTOM OF ELEVATOR SHAFT. SECURE TO DRY-TYPE SIDEWALL SPRINKLER IN ENTRY VESTIBULE.

SIDEWALL SPRINKLER LOCATED UNDER OVERHEAD DOOR WALL WITH SLOTTED UNISTRUT AND STRUT PIPE CLAMP.

LOCATION OF FIRE SPRINKLER STANDPIPE AND ZONE CONTROL VALVES.

DIRECTLY ABOVE FIRE DEPARTMENT CONNECTION.

BUILDING. PROVIDE EXTERIOR HORN/STROBE ALARM ON WALL.

LOCATION OF FIRE DEPARTMENT CONNECTION AT EXTERIOR OF BUILDING.

SPRINKLERS REQUIRED PER NFPA 13-2007 PARAGRAPH 8.15.7.2.

12'-0" MAXIMUM STORAGE HEIGHT.

REQUIREMENTS FOR MISCELLANEOUS STORAGE OCCUPANCIES WITH THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR LIGHT HAZARD.
THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR LIGHT HAZARD.

THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR ORDINARY HAZARD, GROUP 1.

THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR ORDINARY HAZARD, GROUP 2.

THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR MISCELLANEOUS STORAGE OCCUPANCIES WITH 12'-0" MAXIMUM STORAGE HEIGHT.

NON-COMBUSTIBLE OVERHANG/CANOPY WITH NO STORAGE BELOW. NO SPRINKLERS REQUIRED PER NFPA 13-2007 PARAGRAPH 8.15.7.2.

LOCATION OF FIRE SPRINKLER SYSTEM RISER AND EQUIPMENT.

LOCATION OF FIRE DEPARTMENT CONNECTION AT EXTERIOR OF BUILDING. PROVIDE EXTERIOR HORN/STROBE ALARM ON WALL DIRECTLY ABOVE FIRE DEPARTMENT CONNECTION.

LOCATION OF FIRE SPRINKLER STANDPIPE AND ZONE CONTROL VALVES.

DN SCREWED ELBOW AND 200° SIDEWALL WITH HEAD GUARD LOCATED APPROXIMATELY 12" ABOVE BOTTOM OF ELEVATOR SHAFT. SECURE TO WALL WITH SLOTTED UNISTRUT AND STRUT PIPE CLAMP.

SIDEWALL SPRINKLER LOCATED UNDER OVERHEAD DOOR.

DRY-TYPE SIDEWALL SPRINKLER IN ENTRY VESTIBULE.

1. ALL COUPLINGS TO BE ZERO FLEX/RIGID UNLESS OTHERWISE NOTED AND/OR REQUIRED BY CODE.

2. PROVIDE SPLIT CHROME WALL PLATES AT ALL EXPOSED WALL PENETRATIONS IN FINISHED ROOMS.

GENERAL NOTES

KEY NOTES

1. THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR LIGHT HAZARD.

2. THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR ORDINARY HAZARD, GROUP 1.

3. THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR ORDINARY HAZARD, GROUP 2.

4. THIS AREA TO BE PROTECTED IN ACCORDANCE WITH THE NFPA #13 REQUIREMENTS FOR MISCELLANEOUS STORAGE OCCUPANCIES WITH 12'-0" MAXIMUM STORAGE HEIGHT.

5. NON-COMBUSTIBLE OVERHANG/CANOPY WITH NO STORAGE BELOW. NO SPRINKLERS REQUIRED PER NFPA 13-2007 PARAGRAPH 8.15.7.2.

6. LOCATION OF FIRE SPRINKLER SYSTEM RISER AND EQUIPMENT.

7. LOCATION OF FIRE DEPARTMENT CONNECTION AT EXTERIOR OF BUILDING. PROVIDE EXTERIOR HORN/STROBE ALARM ON WALL DIRECTLY ABOVE FIRE DEPARTMENT CONNECTION.

8. LOCATION OF FIRE SPRINKLER STANDPIPE AND ZONE CONTROL VALVES.

9. DN SCREWED ELBOW AND 200° SIDEWALL WITH HEAD GUARD LOCATED APPROXIMATELY 12" ABOVE BOTTOM OF ELEVATOR SHAFT. SECURE TO WALL WITH SLOTTED UNISTRUT AND STRUT PIPE CLAMP.

10. SIDEWALL SPRINKLER LOCATED UNDER OVERHEAD DOOR.

11. DRY-TYPE SIDEWALL SPRINKLER IN ENTRY VESTIBULE.

1. ALL COUPLINGS TO BE ZERO FLEX/RIGID UNLESS OTHERWISE NOTED AND/OR REQUIRED BY CODE.

2. PROVIDE SPLIT CHROME WALL PLATES AT ALL EXPOSED WALL PENETRATIONS IN FINISHED ROOMS.

FP4-01

11.08.16
**LUMINARE SCHEDULE**

<table>
<thead>
<tr>
<th>COLUMN</th>
<th>MANUFACTURER</th>
<th>MODEL</th>
<th>DESCRIPTION</th>
</tr>
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<tbody>
<tr>
<td>A2</td>
<td>COLUMBIA LCAT24-40MLG-ED1U CEILING LAY-IN LED DRIVER 39 277V 2X4 VOLUMETRIC TROFFER W/ SINGLE CENTER BASKET &amp; 4000 LUMEN ENGINE.</td>
<td></td>
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<tr>
<td>D6</td>
<td>LITECONTROL 4L-W-ID-LPA-8'-08-SOF-**_FINISH-40K-1030/D050-D01-1C-UNV WALL 8'-6&quot; BOF LED DRIVER 120 277V 8' WALL BRACKET W/ 30% UP AND 70% DOWN LED PACKAGE.</td>
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<tr>
<td>D2</td>
<td>LITECONTROL 4L-W-ID-LPA-8'-08-SOF-**_FINISH-40K-1040/D040-D10-1C-UNV WALL 8'-0&quot; BOF LED DRIVER 80 277V 8' WALL BRACKET W/ 50% UP AND 50% DOWN LED PACKAGE.</td>
<td></td>
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<tr>
<td>G1</td>
<td>MERCURY LIGHTING LW25-4-4500-40K-HTA-UXX(DIM DOWN TO1%)-UNI-48 / VH-36&quot; SUSPENDED 10'-0&quot; AFF LED DRIVER 41 277V 1X4 ACRYLIC WRAP W/ CHAIN HANG KIT.</td>
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<tr>
<td>J1E</td>
<td>MERCURY LIGHTING LA4-4-5200-40K-HTA-**_0-10V DIM-UNI-WG / AC-96 SUSPENDED NOTE #1 LED DRIVER 42 277V 4' LED STRIP FIXTURE W/ LENS, WIRE GUARD, AIRCRAFT CABLE SUSPENSION CONNECTED TO EM POWER. NOTE #17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J1</td>
<td>MERCURY LIGHTING LSA-4-5200-40K-HTA-**_0-10V DIM-UNI-WG / AC-96&quot; SUSPENDED NOTE #1 LED DRIVER 42 277V 4' LED STRIP FIXTURE W/ LENS, WIRE GUARD AND AIRCRAFT CABLE SUSPENSION.</td>
<td></td>
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</tr>
<tr>
<td>G2</td>
<td>MERCURY LIGHTING LW25-4-4500-40K-HTA-UXX(DIM DOWN TO1%)-UNI-48-PIR (DIM DOWN TO 10%) CEILING SURFACE LED DRIVER 41 277V 1X4 ACRYLIC WRAP W/ BUILT IN OCCUPANCY SENSOR. FIXTURE DIMS WHEN SPACE IS NOT OCCUPIED.</td>
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<tr>
<td>ZD3D</td>
<td>KURT VERSEN L134-2040-**_DIMMING-BL CEILING SURFACE LED DRIVER 17 277V 4&quot; DIA LED CYLINDER W/ MEDIUM FLOOD OPTICS, BLACK FINISH</td>
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<tr>
<td>ZD4D</td>
<td>KURT VERSEN L134-2040-**_DIMMING-CB-BL SUSPENDED NOTE #10 LED DRIVER 17 277V 4&quot; DIA LED CYLINDER W/ MEDIUM FLOOD OPTICS, BLACK FINISH</td>
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<tr>
<td>ZR3D</td>
<td>CORONET PG4LED-17'-LTG2-4000K-UNV-3&quot;-DB CEILING RECESSED LED DRIVER 122 277V 17' LINEAR RECESSED WALL GRAZER, 7W PER FOOT. NOTE #7,14 &amp; 15</td>
<td></td>
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<tr>
<td>X6</td>
<td>EMERGI-LITE LX2NGM**_ARROWS-CS WALL 12'-0&quot; AFF LED NONE 5 277V DOUBLE FACE LED EXIT SIGN, END MOUNT W/ MIRROR BACKGROUND. CHEVRONS ON PLAN</td>
<td></td>
<td></td>
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<tr>
<td>P30E</td>
<td>LITECONTROL 4L-P-D-5'-05-SOF-**_FINISH-30K-D100-D01-1C-UNV-FA3 SUSPENDED 25'-0&quot; AFF LED DRIVER 64 120V 5' SUPENDED LINEAR WITH ADJUSTIBLE AIRCRAFT CABLE. DIRECT DISTRIBUTION. NOTE #7 &amp; 17</td>
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<tr>
<td>P31E</td>
<td>LITECONTROL 4L-P-D-10'-05-SOF-**_FINISH-30K-D100-D01-1C-UNV-W3-FA3 SUSPENDED 25'-0&quot; AFF LED DRIVER 128 120V 10' SUPENDED LINEAR WITH ADJUSTIBLE AIRCRAFT CABLE. DIRECT DISTRIBUTION. NOTE #7 &amp; 17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**GENERAL COMMENTS/NOTES:**
- NOTE #16: FIXTURE WATTAGE IS BASED ON ITS TOTAL LENGTH. SEE LENGTH NOTED ON FLOOR PLAN AND MULTIPLY BY STATED WATTAGE PER FOOT AS CALLED OUT IN DESCRIPTION COLUMN.
- NOTE #15: PROVIDE END FILLER SEGMENTS AS REQUIRED FOR CONTINUOUS WALL-TO-WALL INSTALLATION. WALL FINISH SHALL BE LOCATED TO ABOVE CEILING PLANE AT MINIMUM, THE BOTTOM OF FIXTURE REFLECTOR.
- NOTE #14: PROVIDE FIXTURE LENGTH AS SHOWN ON PLANS. FIXTURE TYPES ZP2D, ZP3D, ZP4D, ZR1D, ZR2D & ZR3D SHALL ALL BE PROVIDED BY THE SAME MANUFACTURER.
- NOTE #10: MOUNT FIXTURE 11'-6" TO BOTTOM ON FIRST FLOOR AND 10'-0" TO BOTTOM ON 2ND AND 3RD FLOORS.
- NOTE #1: MOUNT FIXTURE @ 10'-0" AFF UNLESS NOTED OTHERWISE IN PLAN.
- NOTE #1: SEE ARCHITECTURAL PLANS FOR DIMENSIONS REGARDING EXACT LOCATION AND PLACEMENT OF LIGHT FIXTURES.

**ELECTRICAL LEGEND**

**LIGHTING DEVICES**

**FIRE ALARM DEVICES**

**POWER DEVICES**

**SECURITY SYSTEM DEVICES**

**MISCELLANEOUS LEGEND**

**INTERIOR MOUNTING HEIGHTS**

**RETURN AIR PLENUM**

**WORK BY EC, SHOWN ON OTHERS PLANS**

**LOW VOLTAGE ROUGH-IN**

**DRAWING SHEET LIST**

**CEILING FAN SCHEDULE**

**LUICIA SCHEDULE**

**DRAWING SHEET LIST**

**DRAWING SHEET LIST**

**LUICIA SCHEDULE**

**LUICIA SCHEDULE**
WILL TAKE PLACE. PROJECT SUCCESSFUL ELECTRICIAN SHALL PURCHASE LIGHT FIXTURES AND INSTALL LIGHT FIXTURES

...
TWO-WAY PATH FROM EACH AIR TERMINAL HORIZONTALLY, DOWNWARD OR RISING AT
NOTE: CONDUCTOR SHALL INTERCONNECT ALL AIR TERMINALS AND SHALL FOR A RATE NOT EXCEEDING 3" PER FOOT TO CONNECTING WITH GROUND TERMINALS AS APPROVED BY NFPA 780 AND UL 96A.

1 TYPICAL CONCEALED DOWNLEAD GROUND
2 TYPICAL ACCEPTABLE CABLE BENDS
4 AIR TERMINAL @ PIPES & METALLIC
ROOF MOUNTED EQUIPMENT
5 ROOF PENETRATION DETAIL
6 TYPICAL PARAPET MOUNTING DETAIL
7 TYPICAL ROOF EQUIPMENT BONDS
8 TYPICAL SECONDARY BOND
9 TYPICAL METAL UNDERGROUND UTILITY PIPE BOND
10 TYPICAL CABLE SPLICERS
11 TYPICAL GRADUAL RISE CABLE RUN
12 FLAT ROOF AIR TERMINAL MOUNTING DETAIL
13 TYPICAL OPERABLE WINDOW

NOTES:

- List of symbols and abbreviations.
- Dimensions and tolerances.
- Specific materials and components used.
- Instructions for installation and maintenance.

ELECTRICAL DETAILS

DATE: 10.21.16

MONTANA STATE UNIVERSITY

DESIGN, & CONSTRUCTION

E5-03
1. All outlet locations shall have a 2-1/8" deep 4" square box with a single gang mud ring & a 1" conduit stubbed to accessible ceiling space, conduit sleeve or cable tray. Located @ 18" A.F.F., U.O.N. Run 4"x8" FLEXTRAY to existing steam tunnel cable tray @ ±8'-0" A.F.F. See TN4-01 for add'l info.

Plan Notes:

1. This project is to conform to the latest locally adopted version of the electrical code and the latest revision of:
   - ANSI/TIA-568-C.1, Commercial Building Telecommunications Cabling Standard, and its published addenda.
   - ANSI/TIA-568-C.2, Copper Cabling Components Standard, and its published addenda.
   - ANSI/TIA-606-B, Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications, and its published addenda.

2. See specifications for additional contractor qualifications, norm asbjornson hall product installation, and quality requirements.

3. All cable shall be run in ceiling space supported every 48" O.C. max. by J-hooks, cable tray or conduit.

4. All category 6 horizontal cables shall terminate on the same floor at each end, U.O.N.

5. Outlet for AV network.

6. Install outlet in starline busway.

7. Outlet for wireless access point. Leave 15' slack loop. In (2)-4" schedule 40 PVC conduits installed under slab 48" below grade.

8. Outlet for elevator. Coordinate locations above t-bar ceiling terminate in biscuit-style housing below grade between B015 & telecommunications room location with elevator contractor. Above ceiling tile. Label housing and t-bar rail.

9. Cable tray drops to ±9'-0" @ this location to accommodate mechanical.

10. Outlet for TC panels.


12. Install outlet and box in A/V contractor provided multi-function back box. Provide dedicated 1" EMT conduit for category 6 cables.


15. Coordinate location with mechanical contractor.

16. Coordinate location with electrical contractor.

17. Install outlet and box in A/V contractor provided multi-function back box. Provide dedicated 1" EMT conduit for category 6 cables.

1. ALL OUTLET LOCATIONS SHALL HAVE A 2-1/8" DEEP 4" SQUARE BOX WITH A STUBBED TO CABLE TRAY. SINGLE GANG MUD RING & A 1" CONDUIT STUBBED TO ACCESSIBLE CEILING SPACE, CONDUIT SLEEVE OR CABLE TRAY. LOCATED @ 18" A.F.F., U.O.N.

2. FROM CORRIDOR 0299 TO ROOM 0217 @ ±11'-0" A.F.F. FOR FUTURE USE.

3. (3) - 4" STI READY SLEEVES BETWEEN CORRIDOR 0299 TO ROOM 0220 @ ±11'-0" A.F.F. FOR FUTURE USE.

4. (3) - 4" CONDUIT SLEEVES BETWEEN CORRIDOR 0299 TO ROOM 0226 @ ±11'-0" A.F.F. FOR FUTURE USE.

5. FROM CORRIDOR 0299 TO ROOM 0230 @ ±11'-0" A.F.F. FOR FUTURE USE.

6. ALL CATEGORY 6 HORIZONTAL CABLES SHALL TERMINATE ON THE SAME IDF AND OUTLET BOXES BY ELECTRICAL.

7. ALL STARLINE BUSWAY LOCATIONS SHALL HAVE A 1 1/4" EMT CONDUIT RUN FROM WORK AREA OUTLET TO CABLE TRAY SLEEVE. BY OTHERS INSTALL OUTLET AND BOX IN A/V CONTRACTOR PROVIDED MULTI-FUNCTION BACK BOX. PROVIDE DEDICATED 1" EMT CONDUIT FOR CATEGORY 6 CABLES.

8. ALL CATEGORY 6 CABLES IN CYLINDER WALL LOCATIONS SHALL TERMINATE IN BISCUIT-STYLE HOUSING AND OUTLET BOXES BY ELECTRICAL.

9. ALL CATEGORY 6 CABLES IN CEILING LOCATIONS ABOVE T-BAR CEILING TERMINATE IN BISCUIT-STYLE HOUSING AND OUTLET BOXES BY ELECTRICAL.

10. ONE CATEGORY 6 CABLE FOR CAT CARD READER. LEAVE UNTERMINATED @ TELECOMMUNICATIONS ROOM 0210 @ ±11'-0" A.F.F.

11. TELECOMMUNICATIONS ROOM 0310 TO TELECOMMUNICATIONS ROOM 0210 @ ±11'-0" A.F.F.

12. TELECOMMUNICATIONS ROOM 0110 AND TO TELECOMMUNICATIONS ROOM 0310.

13. INSPIRATION HALL LOBBY 0201

14. INSPIRATION CONFERENCE 0299 LB

15. COE DEAN COE STAFF 5 COE STAFF 2 COE STAFF 3


### Plan Notes:

1. This project is to conform to the latest locally adopted version of the electrical code and the latest revision of:
   - ANSI/TIA-568-C.1, Commercial Building Telecommunications Cabling Standard, and its published addenda.
   - ANSI/TIA-568-C.2, Copper Cabling Components Standard, and its published addenda.
   - J-STD-607-B, Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications, and its published addenda.

2. This drawing is not to be used for stand-alone purposes.

### Legend:

- Indicates flush wall mounted work area outlet with two category 6 cables.
- Indicates flush wall mounted work area outlet with four category 6 cables.
- Indicates floor mounted work area outlet with two category 6 cables.
- Indicates ceiling mounted work area outlet with two category 6 cables.
- Indicates fire rated STI ready sleeve.
- Indicates cable pathway.

### Keyed Notes:

1. Outlets for AV network.
2. Outlet in starline busway.
3. Outlet for wireless access point. Leave 15' slack loop. In locations above T-bar ceiling, terminate in biscuit-style housing above ceiling tile. Label housing and T-bar rail.
4. Not used.
5. Not used.
6. Not used.
7. Install outlet and box in A/V contractor provided multi-function back box. Provide dedicated 1" EMT conduit for category 6 cables.

1. All outlet locations shall have a 2-1/8" deep 4" square box with a single gang mud ring & a 1" conduit stubbed to accessible ceiling space, conduit sleeve or cable tray. Located at 18" A.F.F., U.O.N.
ALL POWER, CONDUIT AND BOXES REPRESENTED ON THIS PAGE, TO BE SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR. REFER TO ELECTRICAL DRAWINGS FOR ACTUAL CIRCUITING.