Addendum

ADDENDUM NO: 01, BP2

PROJECT: Ball State University, North Dining Project, Bid Package No. 2

BSU PROJECT NO.: 2017-023.02 NWD

CSO PROJECT NO: 17028       DATE: June 29, 2018       BY: T. Cheesman

This Addendum is issued in accordance with the provisions of “The General Conditions of the Contract for Construction,” Article 1, “Contract Documents” and becomes a part of the Contract Documents as provided therein. This Addendum includes:

PART 1 – BIDDING AND CONTRACT DOCUMENTS:

1.01 TABLE OF CONTENTS

1. Delete section 08 84 15 DECORATIVE PLASTIC GLAZING. Section is not applicable to this project.

2. Delete the word “17” from the descriptor of section 01 50 00.

3. Change the description for section 09 65 20 to Rubber Tile Flooring.

1.02 Specification Section 00 31 00 – MILESTONE SCHEDULE

Add the milestone schedule (see attached)

1.03 Specification Section 00 43 33 – SCHEDULE OF SUBCONTRACTORS, MANUFACTURERS AND PRODUCTS

Division 8, delete row 08 84 15 DECORATIVE PLASTIC GLAZING.

1.04 Specification Section 00 60 00 – PROJECT FORMS

Part 1.02, Add two project forms, which are referenced in Notice to Bidders Section 00 11 00. These are required to be completed in full and submitted with each bid proposal within 24 hours after bid package due date and time. Forms added are as follows:

   Appendix 1 – Nondiscrimination Compliance Statement

   Appendix 4 – Drug Testing Plan
PART 2 – SPECIFICATIONS:

2.01 Specification Section 01 10 00 – SUMMARY

1. Part 1.03, B-1, Change the Owner’s Representative from Gregory Graham AIA, Director of Facilities to Kelly Knable, Director of Construction.

2. Part 1.04, Contract #12, Paragraph 1-c, add the following specification sections included in this Contract: “07 81 23 INTUMESCENT FIREPROOFING”

3. Part 1.04, Contract #15, Paragraph 1-c, add the following specification sections included in this Contract: “08 80 00 GLAZING (for glazing associated with the skylight)”

4. Part 1.04, Contract #21, Add Paragraph I as follows:

   i. Food Service Equipment itemization list will be required to be submitted with bid proposal within 24 hours after bid package due date and time. Itemized list should contain quantity, manufacturer, model and price (both base and alternates) for each item as illustrated in sample document attached. Bidders are required to fill out the base cost information for each item noted. If Alternate cost information is not submitted, state “NO BID” in the price column for that item. An editable EXCEL file of this document is available from the CM, upon request.

2.02 Specification Section 01 23 00 – ALTERNATES

Part 3.01, Paragraph D-2, add the following: “Provide masonry supports for each of the four window penetrations with L4x4x3/8 x 6’-4” galvanized loose angle lintel, as part of this bid alternate.”

2.03 Specification Section 01 29 00 – PAYMENT PROCEDURE

Part 1.05, Paragraph B-8, delete in its entirety. Allowances are not applicable to this project.

2.04 Specification Section 01 81 13 – SUSTAINABLE DESIGN REQUIREMENTS

Delete in its entirety and replace with new section attached. LEED v4 BD+C Schools Project Checklist originally published remains the same.

2.05 Specification Section 07 21 00 – THERMAL INSULATION

1. Insert Paragraph 2.01.B. as follows:

   “B. R-value for Exterior Metal Framed Cavity Walls: Zone 5, R-13 pus R7.5 continuous insulation.”

2. Insert Item 2.03.B.2. as follows:

   “2. R-value per inch: 4.3.”

3. Insert Items 2.04.B.1 and 2 as follows:

   2. R-value per inch: 4.3.”
2.06 **Specification Section 07 81 23 – INTUMESCENT FIREPROOFING**
Add this section to the project manual.

2.07 **Specification Section 08 84 15 DECORATIVE PLASTIC GLAZING**
Delete in its entirety. Section is not applicable to this project.

2.08 **Specification Section 10 21 13 – TOILET COMPARTMENTS**
Part 2.03, Paragraph A-2, delete in its entirety and replace as follows:
“2. Hinges: Manufacturer’s standard self-closing cam hinge”

2.09 **Specification Section 14 24 00 – HYDRAULIC ELEVATORS**
Delete in its entirety and replace with new section attached.

**PART 3 – DRAWINGS:**

3.01 Attached with this Addendum are drawings issued in Bid Package No. 1

3.02 **LA100 – SITE KEYNOTE PLAN**
A. Replace with attached updated sheet. Miscellaneous notes have been edited and a retractable bollard was added.

3.03 **LA101 – SITE DIMENSION PLAN**
A. Replace with attached updated sheet.

3.04 **LA102 – SITE ENLARGEMENT PLANS**
A. Replace with attached updated sheet.

3.05 **LA104 – SITE WATERPROOFING PLANS**
A. Replace with attached updated sheet.

3.06 **LA300 – SITE SECTION DETAILS**
A. Replace with attached updated sheet.

3.07 **LA500 – SITE DETAILS**
A. Replace with attached updated sheet.

3.08 **LA501 – SITE DETAILS**
A. Replace with attached updated sheet.
A. Replace with attached updated sheet.

3.09  LA502 – SITE DETAILS

A. Replace with attached updated sheet.

3.10  LA503 – SITE DETAILS

A. Replace with attached updated sheet.

3.11  LA504 – SITE DETAILS

A. Replace with attached updated sheet.

3.12  LA505 – SITE DETAILS

A. Replace with attached updated sheet.

3.13  A101 – OVERALL GROUND AND SECOND FLOOR LIFE SAFETY PLANS

A. Replace with attached updated sheet. Information has been added to clarify fireproofing requirements.

3.14  A103 – OVERALL ROOF PLAN

A. Replace with attached updated sheet. Information has been added to clarify fall protection locations and other notes.

3.15  A401 – WALL SECTIONS AND DETAILS

A. Replace with attached updated sheet. Details 2 & 4 have been revised.

3.16  A428 – SERVERY ENTRANCE ENLARGED DETAILS

A. Details 4, 5 & 6, Change Keynote referring to the track assembly on the bottom of the steel tube from 10 26 00-A to 12 22 10-A.

3.17  A501 – DOOR AND FRAME SCHEDULE

A. Door and Frame Schedule, Doors 102-1, 102-2 and 102-3, Change the Door Elevation from D5 to D6.

B. Door and Frame Schedule, Doors 123-2 and 123-3, Change the Door Elevation from D- to D8.

C. Door and Frame Schedule, Door 270, Change the Door Elevation from D5 to D6. Change the door swing from Right Hand Reverse (RHR) to Left Hand Reverse (LHR).

D. Door and Frame Schedule, Doors 124 and 202A, Change the UL Rating from 1 HR to 90 Minutes (1.5 HR).

3.18  A604 – MILLWORK ELEVATIONS, SECTIONS AND DETAILS

A. Replace with attached updated sheet.
B. Detail 2 and 5, Delete the reference to “ALTERNATE #5” in the title of the detail. Alternate #5 includes the wood bench as shown in details 1, 3, 4, and 6 illustrated on this sheet.

C. Detail 9, Add to this sheet. This detail illustrates the base bid condition at detail #3.

3.19 A800 - FINISH LEGEND

A. Replace with attached updated sheet. Add Paint notes P8 and P9 as shown.

3.20 A801 through A812

A. Add General Finish Note as follows: “S. All metal doors and frames to be painted “P8” in any locations calling out “B1” base finish. All other door frames to be painted “P9”.

3.21 A806 – INTERIOR ELEVATIONS AND DETAILS

A. Add Elevation 6A illustrating the condition of base bid, as shown on attached reissued sheet. Elevation 6 illustrates the condition for Bid Alternate #5.

Attachments

Pre-bid Meeting Attendance Sheet (Sign-in)
Milestone Schedule
Appendix 1 – Nondiscrimination Compliance Statement
Appendix 4 – Drug Testing Plan
Food Service Equipment – Bid Submittal (Sample Document)

Drawings

Bid Package #1 – Drawings

D101  D102  D103  C102  C103  C103A  C401  C601  C602  C603  C701  C801  C802  C803  C804  C805  S100  S101  S102  S204  S205  S206
S207  S208  S209  S210  S211  S212  S213  S300  S301  S302  S303  S304  S310  S320  S330  S331  S335  S370  S371  S372  S373  S500
End of Addendum No. 1, BP2
North Dining Facility  
Shiel Sexton Powers (SSP) Job #18099  

MEETING: BP #2 Pre-Bid Meeting  

DATE: 06/26/18  

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<th>NAME</th>
<th>COMPANY / PHONE # / EMAIL</th>
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<tr>
<td>Justin Sanford</td>
<td>North Mechanical 1317 561 3180  <a href="mailto:justin.sanford@northmech.com">justin.sanford@northmech.com</a></td>
</tr>
<tr>
<td>Tom Pan</td>
<td>Sater Electric 765-378-3196  <a href="mailto:satercl@att.net">satercl@att.net</a></td>
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<td>Nick Pope</td>
<td>Boelter, LLC 224-938-2484  <a href="mailto:npope@boelter.com">npope@boelter.com</a></td>
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<tr>
<td>Jim Spencer</td>
<td>Sater Mech 765-378-3196  <a href="mailto:satercl@att.net">satercl@att.net</a></td>
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<td>Jon Ryder</td>
<td>C&amp;T Design 317-695-2550  <a href="mailto:jryder@c-and-t.com">jryder@c-and-t.com</a></td>
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<td>Joe Bleck</td>
<td>Ryan Fire Protection 1 (317) 554-7181  <a href="mailto:jbleck@ryanfp.com">jbleck@ryanfp.com</a></td>
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<td>Chuck Davis</td>
<td>Geisler Bros 317-356-0926  <a href="mailto:dgoos@geislerbrothers.com">dgoos@geislerbrothers.com</a></td>
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<td>Jody Steed</td>
<td>J &amp; J Electric 765-457-5507  <a href="mailto:jsteed@jjelectric.net">jsteed@jjelectric.net</a></td>
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<td>Rex Kirby</td>
<td>Delaware Glass 765-286-5339  <a href="mailto:rexkirby@delaunglass.com">rexkirby@delaunglass.com</a></td>
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<tr>
<td>Mike Mezo</td>
<td>BSU CM Program</td>
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<tr>
<td>Kelly Knable</td>
<td>BSU FPO 21002400990  kakenable@bsuedu</td>
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North Dining Facility
Shiel Sexton Powers (SSP) Job #18099

MEETING: BP #2 Pre-Bid Meeting

DATE: 06/26/18

NAME

Robert Stenski

Rob Grom

Dylan Ethtridge

Luke Sanders

Allen Haney

David Poyt

Greg Graham

STAFFORD SMITH 317-517-5021

RSTENSKI@STAFFORDSMITH.COM

Mr. David’s Flooring / 317-315-0612 / rob.grom@mrdavids.com

Shiel Sexton, Powers JV / 219-500-7171 / dethefinder@powersandsons.com

Ball State Purchasing / jsanders5@bsu.edu

Huston Electric / allen.h@hustonelectric.com / 574-640-8084

BALL STATE FPM

$60 FPM
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<th>NAME</th>
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<tr>
<td>Tony Wright</td>
<td>Atlas Bost Supply 3176583800</td>
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<tr>
<td>Aaron Scott</td>
<td>Baylor Electric 765-357-5497 <a href="mailto:ASCott@gaylor.com">ASCott@gaylor.com</a></td>
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<tr>
<td>Doug Featherston</td>
<td>Sidney Electric 765-808 4200 <a href="mailto:df_featherston@sidneyelectric.com">df_featherston@sidneyelectric.com</a></td>
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# North Dining Facility
Shiel Sexton Powers (SSP) Job #18099

**MEETING:** BP #2 Pre-Bid Meeting

**DATE:** 06/26/18

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<td>Bruce Schrourgham</td>
<td>INTERIOR SPECIALTIES INC 317-862-3134 <a href="mailto:bschrourgham@ssnpo.com">bschrourgham@ssnpo.com</a></td>
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<tr>
<td>Alex Kurtz</td>
<td>Johnson-Melloh 317-607-7788 <a href="mailto:akurtz@johnsonmelloh.com">akurtz@johnsonmelloh.com</a></td>
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<tr>
<td>Zach Richardson</td>
<td>General Piping, Inc. 317-388-0552 <a href="mailto:zrichardson@gpinc.com">zrichardson@gpinc.com</a></td>
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<tr>
<td>Rodney Morrow</td>
<td>Automated Logic (765) 286-1993 <a href="mailto:rodney.morrow@automatedlogic.com">rodney.morrow@automatedlogic.com</a></td>
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<td>Brian Brinkman</td>
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North Dining Facility
Shiel Sexton Powers (SSP) Job #18099

MEETING: BP #2 Pre-Bid Meeting

DATE: 06/26/18

NAME

Dane Burchard
Daniel Girgett
Tom Chessman
Tom Scheelz
Teresa Smith
Kevin Dubbin
Neil Hall
John Payne
Jim Rogers

COMPANY / PHONE # / EMAIL

Shiel Sexton/Powers
PEA
CSD Architects

3D Company - 765.388.3326 - tsmith@3dcompany

USA Automatic Fire (317) 573 8160

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Shambaugh 765-669-1767 estoppenhagen@shambaugh.com

Ross Baruzzi 317.658.6383 ros@robbies.com
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North Dining Facility  
Ball State University  
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## Milestone Schedule

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### Building Enclosure

#### West - Single Story

- Line ID: 2320
  - CMU | 6d | 30Oct18 | 11Nov18 |
- Line ID: 2330
  - Air Barrier | 6d | 12Oct18 | 17Nov18 |
- Line ID: 2340
  - Brick Veneer | 10d | 2Apr19 | 15Apr19 |

#### West - Loading Dock

- Line ID: 2940
  - CMU | 6d | 12Oct18 | 23Oct18 |
- Line ID: 2950
  - Framing, Dens Glass & Soffits | 3d | 12Oct18 | 16Oct18 |
- Line ID: 2960
  - Air Barrier | 6d | 24Oct18 | 29Oct18 |
- Line ID: 2970
  - Brick Veneer | 5d | 21Mar19 | 1Apr19 |
- Line ID: 2983
  - Dock Leveler | 5d | 2Apr19 | 4Apr19 |
- Line ID: 2993
  - Dock Doors | 5d | 2Apr19 | 11Apr19 |

#### South

- Line ID: 2691
  - CMU - Area A | 6d | 24Oct18 | 30Oct18 |
- Line ID: 5901
  - Air Barrier - Area A | 20d | 30Oct18 | 31Nov18 |
- Line ID: 5991
  - Framing, Dens Glass & Soffits | 50d | 2Nov18 | 38Nov18 |
- Line ID: 6002
  - Air Barrier - Area B | 6d | 30Nov18 | 14Dec18 |
- Line ID: 6003
  - Curtain Wall & Glazing - Field Measurements & Fabrication | 10d | 29Nov18 | 23Dec18 |
- Line ID: 6004
  - Curtain Wall & Glazing | 20d | 26Nov18 | 21Dec18 |
- Line ID: 6031
  - Brick Veneer | 10d | 7Mar19 | 20Mar19 |
- Line ID: 6032
  - DAFS | 15d | 1Mar19 | 30Mar19 |
- Line ID: 5051
  - Metal Wall Panels | 15d | 5May19 | 20May19 |
- Line ID: 8181
  - Storefronts & Doors | 10d | 1Jul19 | 15Jul19 |

#### West - Second Story

- Line ID: 2630
  - Framing, Dens Glass & Soffits | 6d | 30Oct18 | 22Oct18 |
- Line ID: 2620
  - CMU | 6d | 30Oct18 | 7Nov18 |
- Line ID: 2640
  - Air Barrier | 20d | 2Nov18 | 12Nov18 |
- Line ID: 2650
  - Brick Veneer | 4d | 2Nov18 | 4Nov18 |

#### North

- Line ID: 2660
  - Framing, Soffits & Dens Glass | 10d | 2Nov18 | 15Nov18 |
- Line ID: 2610
  - Air Barrier | 6d | 16Nov18 | 28Nov18 |
- Line ID: 5091
  - Curtain Wall & Glazing - 1st Floor | 10d | 3Jan19 | 17Jan19 |
- Line ID: 5071
  - Brick Veneer | 10d | 3Mar19 | 3Mar19 |
- Line ID: 5072
  - DAFS | 10d | 2Mar19 | 2Mar19 |
- Line ID: 5082
  - Curtain Wall & Glazing - 2nd Floor | 10d | 1May19 | 3May19 |

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North Dining Facility  
Ball State University  
Milestone Schedule  

Run Date: 6/29/2018  
Progress Date: 5/23/2018  
Revision Number 0  
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### North Dining Facility
#### Ball State University

#### Milestone Schedule

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Progress Date: 5/23/2018
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### North Dining Facility
#### Ball State University

**Milestone Schedule**

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**Run Date:** 6/29/2018  
**Progress Date:** 5/23/2018  
**Revision Number:** 0

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**1st Floor Area B - Retail**

- **9193**  
  - **OH Fire Sprinkler RI**  
  - **Start:** 15Jan19  
  - **Finish:** 23Jan19

- **9203**  
  - **OH HVAC RI**  
  - **Start:** 15Jan19  
  - **Finish:** 23Jan19

- **9213**  
  - **OH Electrical RI**  
  - **Start:** 15Jan19  
  - **Finish:** 23Jan19

- **9223**  
  - **Wall Framing**  
  - **Start:** 23Jan19  
  - **Finish:** 25Jan19

- **9243**  
  - **Install Door Frame**  
  - **Start:** 23Jan19  
  - **Finish:** 25Jan19

- **9253**  
  - **Mep Wall Rough-In**  
  - **Start:** 23Jan19  
  - **Finish:** 30Jan19

- **9273**  
  - **Frame Bulkheads**  
  - **Start:** 23Jan19  
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- **9283**  
  - **Hang Drywall**  
  - **Start:** 23Jan19  
  - **Finish:** 31Jan19

- **9293**  
  - **Finish Drywall**  
  - **Start:** 23Jan19  
  - **Finish:** 31Jan19

- **9303**  
  - **Wall Finishes**  
  - **Start:** 23Jan19  
  - **Finish:** 31Jan19

- **9313**  
  - **Ceiling**  
  - **Start:** 23Jan19  
  - **Finish:** 31Jan19

- **9323**  
  - **Lighting**  
  - **Start:** 23Jan19  
  - **Finish:** 31Jan19

- **9333**  
  - **Grilles & Diffusers**  
  - **Start:** 23Jan19  
  - **Finish:** 31Jan19

- **9343**  
  - **FP Finishes**  
  - **Start:** 23Jan19  
  - **Finish:** 31Jan19

- **9383**  
  - **Resinous Flooring**  
  - **Start:** 23Jan19  
  - **Finish:** 31Jan19

- **9383**  
  - **Final Paint**  
  - **Start:** 23Jan19  
  - **Finish:** 31Jan19

- **9353**  
  - **Mep Finishes**  
  - **Start:** 23Jan19  
  - **Finish:** 31Jan19

- **9393**  
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  - **Finish:** 31Jan19

- **9413**  
  - **Casework**  
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  - **Finish:** 31Jan19

- **9473**  
  - **Doors & Hardware**  
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  - **Finish:** 31Jan19

- **9493**  
  - **Kitchen Equipment Hook Up's**  
  - **Start:** 23Jan19  
  - **Finish:** 31Jan19

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**1st Floor Area B - Dessert**

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  - **OH Fire Sprinkler RI**  
  - **Start:** 16Jan19  
  - **Finish:** 21Jan19

- **9470**  
  - **OH HVAC RI**  
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- **9470**  
  - **OH Plumbing RI**  
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- **9490**  
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  - **Finish:** 21Jan19

- **9510**  
  - **Wall Framing**  
  - **Start:** 16Jan19  
  - **Finish:** 21Jan19

- **9510**  
  - **Install Door Frame**  
  - **Start:** 16Jan19  
  - **Finish:** 21Jan19

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**Note:** The schedule includes activities such as Grilles & Diffusers, FP Finishes, Lighting, Resinous Flooring, Final Paint, MEP Finishes, Casework, Kitchen Equipment, Kitchen Equipment Hook Up's, Doors & Hardware, OH Fire Sprinkler RI, OH HVAC RI, OH Plumbing RI, OH Electrical RI, Wall Framing, and Install Door Frame.
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**North Dining Facility**

Ball State University

Milestone Schedule

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- Progress Date: 5/23/2018
- Revision Number 0

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North Dining Facility  
Ball State University  
Milestone Schedule

Run Date: 6/29/2018  
Progress Date: 5/23/2018  
Revision Number: 0  
Page 9 of 11
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### Ball State University
### Milestone Schedule

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**North Dining Facility**  
**Ball State University**  
**Milestone Schedule**  

**Run Date:** 6/29/2018  
**Progress Date:** 5/23/2018  
**Revision Number:** 0
APPENDIX 1 - NONDISCRIMINATION COMPLIANCE

The Contractor and their Subcontractors and Suppliers shall perform, observe and comply with all applicable state, municipal, and federal laws, rules, regulations and Executive Orders pertaining to nondiscrimination against employees or applicants for employment because of race, color, religion, national origin, sex, disability, or ancestry. When required by such laws, rules, regulations, and Executive Orders, the Contractor and their Subcontractors and Suppliers shall include nondiscrimination provisions in all contracts and purchase orders.

The signature below hereby certifies full compliance with the conditions outlined in the paragraph above regarding nondiscrimination.

________________________________________________________________________
(Bidder - Please print full name of your proprietorship, partnership, or corporation)
________________________________________________________________________
(Name - Authorized Signing Officer)
________________________________________________________________________
(Title)
________________________________________________________________________
(Signature)
________________________________________________________________________
(Date)
APPENDIX 4 – DRUG TESTING PLAN

In accordance with Indiana Code 4-13-18 as amended, each Contractor that submits a bid for a public works project that is estimated to cost $150,000 or more is required to submit with the bid a written drug plan. Among other things, the law sets forth specific requirements that must be in the plan for a program to test the employees of the Contractor and Subcontractors for drugs. The successful Bidder must comply with all provisions of the statute or the contract is subject to cancellation. In addition, upon Owner’s Request Contractor will attach a Compliance Affidavit to each Application and Certification for Payment in accordance with 9.3.1.6, Document 0073 13 Supplementary Conditions.

I hereby certify that I have read and understand the “Drug Testing Program” provision of the General Conditions of the Contract. I understand that a written plan for a program to test employees of the Contractor and Subcontractors is required to be submitted with the bid and that each successful Bidder will be required to comply with all applicable provisions of Indiana Code 4-13-18 as amended or the Contract will be subject to cancellation.

(Bidder - Please print full name of your proprietorship, partnership, or corporation)

(Name - Authorized Signing Officer)

(Title)

(Signature)

(Date)
SECTION 01 81 13 - SUSTAINABLE DESIGN REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes general requirements and procedures for compliance with certain prerequisites and credits needed for Project to obtain "LEED Version 4 for Building Design and Construction" (LEED v4 BD+C) Silver certification based on USGBC's LEED v4 BD+C.

1. Specific requirements for LEED are also included in other Sections.
2. Some LEED prerequisites and credits needed to obtain LEED certification depend on product selections and may not be specifically identified as LEED requirements. Compliance with requirements needed to obtain LEED prerequisites and credits may be used as one criterion to evaluate substitution requests and comparable product requests.
3. A copy of the LEED Project checklist is attached at the end of this Section for information only.
   a. Some LEED prerequisites and credits needed to obtain the indicated LEED certification depend on Architect's design and other aspects of Project that are not part of the Work of the Contract.

1.03 DEFINITIONS

A. LEED: USGBC's "LEED Version 4 for Building Design and Construction."

1. Definitions that are a part of "LEED Version 4 for Building Design and Construction" (LEED v4 BD+C) apply to this Section.

B. Chain-of-Custody Certificates: Certificates signed by manufacturers certifying that wood used to make products was obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001. Certificates shall include evidence that manufacturer is certified for chain of custody by an FSC-accredited certification body.

C. Regional Materials: Materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles (160 km) of Project site. If only a fraction of a product or material is extracted/harvested/recovered and manufactured locally, then only that percentage (by weight) shall contribute to the regional value.

D. Recycled Content: The recycled content value of a material assembly shall be determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value.

1. "Postconsumer" material is defined as waste material generated by households or by commercial, industrial, and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose.
2. "Preconsumer" material is defined as material diverted from the waste stream during the manufacturing process. Excluded is reutilization of materials, such as rework, regrind, or scrap, generated in a process and capable of being reclaimed within the same process that generated it.

1.04 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site. Review LEED requirements and action plans for meeting requirements.

1.05 ADMINISTRATIVE REQUIREMENTS

A. Respond to questions and requests from Architect and the USGBC regarding LEED credits that are the responsibility of the Contractor, that depend on product selection or product qualities, or that depend on Contractor's procedures until the USGBC has made its determination on the Project's LEED certification application. Document responses as informational submittals.

B. Submit documentation to USGBC and respond to questions and requests from USGBC regarding LEED credits that are the responsibility of the Contractor, that depend on product selection or product qualities, or that depend on Contractor's procedures until the USGBC has made its determination on the Project's LEED certification application.

1. Document correspondence with USGBC as informational submittals.

1.06 ACTION SUBMITTALS

A. General: Submit additional sustainable design submittals required by other Specification Sections.

B. Sustainable design submittals are in addition to other submittals.

1. If submitted item is identical to that submitted to comply with other requirements, include an additional copy with other submittal as a record copy of compliance with indicated LEED requirements instead of separate sustainable design submittal. Mark additional copy "Sustainable design submittal."

C. Sustainable Design Documentation Submittals:

1. Environmental Product Declarations complying with LEED requirements.

2. Documentation for products that comply with LEED requirements for multi-attribute optimization.

   a. Include documentation for regional materials, indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material and costs of regional materials.

3. Sustainability reports for products that comply with LEED requirements for raw material and source extraction reporting.

4. Documentation for products that comply with LEED requirements for leadership extraction practices. Include the following:
a. Product data and certification letter from product manufacturers, indicating participation in an extended producer responsibility program and statement of costs.
b. Product data and certification for bio-based materials, indicating that they comply with requirements. Include statement of costs.
d. Receipts for salvaged and refurbished materials used for Project, indicating sources and costs.
e. Product data and certification letter from product manufacturers, indicating percentages by weight of postconsumer and preconsumer recycled content for products having recycled content. Include statement of costs.
f. Documentation for regional materials, indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material and costs of regional materials.

5. Material ingredient reports for products that comply with LEED requirements for material ingredient reporting.

6. Documentation for products that comply with LEED requirements for material ingredient optimization.

7. Documentation for products that comply with LEED requirements for product manufacturer supply chain optimization.

   a. Include documentation for regional materials, indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material and costs of regional materials.

8. Documentation complying with Section 017419 "Construction Waste Management and Disposal."

9. Product data for adhesives and sealants used inside the weatherproofing system, indicating VOC content and laboratory test reports showing compliance with requirements for low-emitting materials.

10. Product data for paints and coatings used inside the weatherproofing system, indicating VOC content and laboratory test reports showing compliance with requirements for low-emitting materials.

11. Laboratory test reports for flooring, indicating compliance with requirements for low-emitting materials.

12. Laboratory test reports for products containing composite wood or agrifiber products or wood glues, indicating compliance with requirements for low-emitting materials.

13. Laboratory test reports for ceilings, walls, and thermal insulation, indicating compliance with requirements for low-emitting materials.

14. Construction Indoor-Air-Quality (IAQ) Management:

   a. Construction IAQ management plan.
   b. Product data for temporary filtration media.
   c. Product data for filtration media used during occupancy.
   d. Construction Documentation: Six photographs at three different times during the construction period, along with a brief description of the SMACNA approach employed, documenting implementation of the IAQ management measures, such as protection of ducts and on-site stored or installed absorptive materials.
1.07 INFORMATIONAL SUBMITTALS

A. Qualification Data: For LEED coordinator.

B. Project Materials Cost Data: Provide statement indicating total cost for materials used for Project. Costs exclude labor, overhead, and profit. Include breakout of costs for the following categories of items:

1. Plumbing.
2. Mechanical.
3. Electrical.
4. Specialty items, such as elevators and equipment.

C. Sustainable Design Action Plans: Provide preliminary submittals within 14 days of date established for the Notice to Proceed, indicating how the following requirements will be met:

1. List of proposed products with Environmental Product Declarations.
2. List of proposed products complying with requirements for multi-attribute optimization.
3. List of proposed products complying with requirements for raw material and source extraction reporting.
4. List of proposed products complying with requirements for leadership extraction practices.
5. List of proposed products complying with requirements for material ingredient reporting.
6. List of proposed products complying with requirements for material ingredient optimization.
7. List of proposed products complying with requirements for product manufacturer supply chain optimization.
8. Waste management plan complying with Section 017419 "Construction Waste Management and Disposal."

D. Sustainable Design Progress Reports: Concurrent with each Application for Payment, submit reports comparing actual construction and purchasing activities with sustainable design action plans.

1.08 QUALITY ASSURANCE

A. LEED Coordinator: Engage an experienced LEED-accredited professional to coordinate LEED requirements. LEED coordinator may also serve as waste management coordinator.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Provide products and procedures necessary to obtain LEED credits required in this Section. Although other Sections may specify some requirements that contribute to these LEED credits, the Contractor shall provide additional materials and procedures necessary to obtain LEED credits indicated.
B. At least 20 different products from at least five different manufacturers shall have Environmental Product Declarations that comply with LEED requirements. Industry-wide (generic) Environmental Product Declarations shall be valued as one-half of a product.

C. At least 50 percent, by cost, of the permanently installed products for the Project shall comply with LEED requirements for multi-attribute optimization.

D. At least 20 different products from at least five different manufacturers shall have publicly released reports that comply with LEED requirements for raw material source and extraction reporting. Self-declared reports by manufacturers shall be valued as one-half of a product.

E. At least 20 different products from at least five different manufacturers shall comply with LEED requirements for material ingredient reporting.

F. At least 25 percent, by cost, of the permanently installed products for the Project shall comply with LEED requirements for material ingredient optimization.

G. At least 25 percent, by cost, of the permanently installed products for the Project shall comply with LEED requirements for product manufacturer supply chain optimization.

H. Not less than 25 percent of building materials, by cost, shall comply with LEED requirements for leadership extraction practices.

1. Structure and enclosure materials shall not be more than 30 percent, by cost, of the materials used to comply with this requirement.

I. Extended Producer Responsibility Program: Not less than 25 percent of building materials, by cost, shall be manufactured by a participant in an extended producer responsibility program

1. Recycled Content: Building materials shall have recycled content such that post-consumer recycled content plus one-half of pre-consumer recycled content for Project constitutes a minimum of percent of cost of materials as indicated for this Project.

   a. Cost of post-consumer recycled content plus one-half of pre-consumer recycled content of an item shall be determined by dividing weight of post-consumer recycled content plus one-half of pre-consumer recycled content in the item by total weight of the item and multiplying by cost of the item.

   b. Do not include plumbing, mechanical and electrical components, and specialty items, such as elevators and equipment, in the calculation.

2. Certified Wood: Percent, by cost, as indicated for this project of wood-based materials shall be produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001.

2.02 LOW-EMITTING MATERIALS

A. Paints and Coatings: For field applications that are inside the weatherproofing system, paints and coatings shall comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:
1. Flat Paints and Coatings: 50 g/L.
2. Nonflat Paints and Coatings: 50 g/L.
3. Dry-Fog Coatings: 150 g/L.
4. Primers, Sealers, and Undercoaters: 100 g/L.
5. Rust-Preventive Coatings: 100 g/L.
6. Zinc-Rich Industrial Maintenance Primers: 100 g/L.
7. Pretreatment Wash Primers: 420 g/L.
8. Clear Wood Finishes, Varnishes: 275 g/L.
9. Clear Wood Finishes, Lacquers: 275 g/L.
10. Floor Coatings: 50 g/L.
11. Shellacs, Clear: 730 g/L.
12. Shellacs, Pigmented: 550 g/L.
13. Stains: 100 g/L.

B. Paints and Coatings: For field applications that are inside the weatherproofing system, 90 percent of paints and coatings shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

C. Adhesives and Sealants: For field applications that are inside the weatherproofing system, adhesives and sealants shall comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:

1. Wood Glues: 30 g/L.
2. Metal-to-Metal Adhesives: 30 g/L.
3. Adhesives for Porous Materials (Except Wood): 50 g/L.
4. Subfloor Adhesives: 50 g/L.
5. Plastic Foam Adhesives: 50 g/L.
6. Carpet Adhesives: 50 g/L.
7. Carpet Pad Adhesives: 50 g/L.
8. VCT and Asphalt Tile Adhesives: 50 g/L.
9. Cove Base Adhesives: 50 g/L.
10. Gypsum Board and Panel Adhesives: 50 g/L.
11. Rubber Floor Adhesives: 60 g/L.
12. Ceramic Tile Adhesives: 65 g/L.
13. Multipurpose Construction Adhesives: 70 g/L.
14. Fiberglass Adhesives: 80 g/L.
15. Contact Adhesives: 80 g/L.
16. Structural Glazing Adhesives: 100 g/L.
17. Wood Flooring Adhesives: 100 g/L.
18. Structural Wood Member Adhesives: 140 g/L.
19. Single-Ply Roof Membrane Adhesives: 250 g/L.
20. Special-Purpose Contact Adhesives (That Are Used to Bond Melamine-Covered Board, Metal, Unsupported Vinyl, Rubber, or Wood Veneer 1/16 Inch or Less in Thickness to Any Surface): 250 g/L.
21. Top and Trim Adhesives: 250 g/L.
22. Plastic Cement Welding Compounds: 250 g/L.
23. ABS Welding Compounds: 325 g/L.
24. CPVC Welding Compounds: 490 g/L.
25. PVC Welding Compounds: 510 g/L.
26. Adhesive Primer for Plastic: 550 g/L.
27. Sheet-Applied Rubber Lining Adhesives: 850 g/L.
30. Special-Purpose Aerosol Adhesives (All Types): 70 percent by weight.
31. Other Adhesives: 250 g/L.
32. Architectural Sealants: 250 g/L.
33. Nonmembrane Roof Sealants: 300 g/L.
34. Single-Ply Roof Membrane Sealants: 450 g/L.
35. Other Sealants: 420 g/L.
36. Sealant Primers for Nonporous Substrates: 250 g/L.
37. Sealant Primers for Porous Substrates: 775 g/L.
38. Modified Bituminous Sealant Primers: 500 g/L.
39. Other Sealant Primers: 750 g/L.

D. Adhesives and Sealants: For field applications that are inside the weatherproofing system, 90 percent of adhesives and sealants shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

E. Flooring: Flooring shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

F. Composite Wood: Composite wood, agrifiber products, and adhesives shall be made using ultra-low-emitting formaldehyde resins as defined in the California Air Resources Board's "Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products" or shall be made with no added formaldehyde.

G. Ceilings, Walls, and Thermal Insulation: Ceilings, walls, and thermal insulation shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

PART 3 - EXECUTION

3.01 NONSMOKING BUILDING

A. Smoking is not permitted on campus.

3.02 CONSTRUCTION WASTE MANAGEMENT

A. Comply with Section 017419 "Construction Waste Management and Disposal."

3.03 CONSTRUCTION IAQ MANAGEMENT

A. Comply with SMACNA's "SMACNA IAQ Guideline for Occupied Buildings under Construction."

1. If Owner authorizes use of permanent heating, cooling, and ventilating systems during construction period as specified in Section 015000 "Temporary Facilities and Controls," install MERV 8 filter media at each return-air inlet for the air-handling system used during construction.

2. Replace air filters immediately prior to occupancy.

END OF SECTION
SECTION 07 81 23 - INTUMESCENT FIREPROOFING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes mastic and intumescent fire-resistant coatings (MIFRC).

1.03 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. LEED Submittals:
   1. Product Data for Credit EQ 4.2: For paints and coatings, documentation including printed statement of VOC content.

C. Shop Drawings: Structural framing plans indicating the following:
   1. Extent of fireproofing for each construction and fire-resistance rating.
   2. Applicable fire-resistance design designations of a qualified testing and inspecting agency acceptable to authorities having jurisdiction.
   3. Minimum fireproofing thicknesses needed to achieve required fire-resistance rating of each structural component and assembly.
   4. Treatment of fireproofing after application.

D. Samples: For each exposed product and for each color and texture specified, in manufacturer’s standard dimensions in size.

1.04 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and testing agency.

B. Product Certificates: For each type of fireproofing.

C. Evaluation Reports: For fireproofing, from ICC-ES.

D. Field quality-control reports.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: A firm or individual certified, licensed, or otherwise qualified by fireproofing manufacturer as experienced and with sufficient trained staff to install manufacturer’s products according to specified requirements.
1.06 FIELD CONDITIONS

A. Environmental Limitations: Do not apply fireproofing when ambient or substrate temperature is 50 deg F (10 deg C) or lower unless temporary protection and heat are provided to maintain temperature at or above this level for 24 hours before, during, and for 24 hours after product application.

B. Ventilation: Ventilate building spaces during and after application of fireproofing, providing complete air exchanges according to manufacturer's written instructions. Use natural means or, if they are inadequate, forced-air circulation until fireproofing dries thoroughly.

PART 2 - PRODUCTS

2.01 MATERIALS, GENERAL

A. Assemblies: Provide fireproofing, including auxiliary materials, according to requirements of each fire-resistance design and manufacturer's written instructions.

B. Source Limitations: Obtain fireproofing for each fire-resistance design from single source.

C. Fire-Resistance Design: Indicated on Drawings, tested according to ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Steel members are to be considered unrestrained unless specifically noted otherwise.

D. VOC Content: Products shall comply with VOC content limits of authorities having jurisdiction and the following VOC limits when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Flat Paints and Coatings: 50 g/L.
2. Nonflat Paints and Coatings: 150 g/L.
3. Primers, Sealers, and Undercoaters: 200 g/L.
4. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
5. Fireproofing Exterior Coatings: 350 g/L.

E. Asbestos: Provide products containing no detectable asbestos.

2.02 MASTIC AND INTUMESCENT FIRE-RESISTIVE COATINGS

A. MIFRC: Manufacturer's standard, factory-mixed formulation, and complying with indicated fire-resistance design.

1. Products: Subject to compliance with requirements, provide one of the following:

   a. Albi Manufacturing, Division of StanChem Inc.; Albi Clad TF.
   c. Isolatex International; Cafco SprayFilm-WB 5.
2. **Application**: Designated for "conditioned interior space purpose" use by a qualified testing agency acceptable to authorities having jurisdiction.

3. **Thickness**: As required for fire-resistance design indicated, measured according to requirements of fire-resistance design.

4. **Surface-Burning Characteristics**: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   
   a. Flame-Spread Index: 5 or less.
   b. Smoke-Developed Index: 30 or less.

5. **Hardness**: Not less than 69, Type D durometer, according to ASTM D 2240.

6. **Cohesion/Adhesion (Bond Strength)**: Comply with ASTM D4541, 340 psi.

7. **Impact Resistance**: Comply with ASTM D2794, 152 inch-lb at 2 mm.

8. **Finish**: Smooth architectural finish.
   
   a. Color and Gloss: To match P3, Sherwin Williams, SW7017, Dorian Gray, Satin Finish.

2.03 **AUXILIARY MATERIALS**

A. **General**: Provide auxiliary materials that are compatible with fireproofing and substrates and are approved by UL or another testing and inspecting agency acceptable to authorities having jurisdiction for use in fire-resistance designs indicated.

B. **Substrate Primers**: Primers approved by fireproofing manufacturer and complying with required fire-resistance design by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.

C. **Topcoat**: Suitable for application over applied fireproofing; of type recommended in writing by fireproofing manufacturer for each fire-resistance design.

PART 3 - EXECUTION

3.01 **EXAMINATION**

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for substrates and other conditions affecting performance of the Work and according to each fire-resistance design. Verify compliance with the following:

1. Substrates are free of dirt, oil, grease, release agents, rolling compounds, mill scale, loose scale, incompatible primers, paints, and encapsulants, or other foreign substances capable of impairing bond of fireproofing with substrates under conditions of normal use or fire exposure.

2. Objects penetrating fireproofing, including clips, hangers, support sleeves, and similar items, are securely attached to substrates.

3. Substrates receiving fireproofing are not obstructed by ducts, piping, equipment, or other suspended construction that will interfere with fireproofing application.

B. Conduct tests according to fireproofing manufacturer's written recommendations to verify that substrates are free of substances capable of interfering with bond.

C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Cover other work subject to damage from fallout or overspray of fireproofing materials during application.

B. Clean substrates of substances that could impair bond of fireproofing.

C. Prime substrates where included in fire-resistance design and where recommended in writing by fireproofing manufacturer unless compatible shop primer has been applied and is in satisfactory condition to receive fireproofing.

D. For applications visible on completion of Project, repair substrates to remove surface imperfections that could affect uniformity of texture and thickness in finished surface of fire-resistant products after application.

3.03 APPLICATION

A. Construct fireproofing assemblies that are identical to fire-resistance design indicated and products as specified, tested, and substantiated by test reports; for thickness, primers, topcoats, finishing, and other materials and procedures affecting fireproofing work.

B. Comply with fireproofing manufacturer's written instructions for mixing materials, application procedures, and types of equipment used to mix, convey, and apply fireproofing; as applicable to particular conditions of installation and as required to achieve fire-resistance ratings indicated.

C. Coordinate application of fireproofing with other construction to minimize need to cut or remove fireproofing.

   1. Do not begin applying fireproofing until clips, hangers, supports, sleeves, and other items penetrating fireproofing are in place.
   2. Defer installing ducts, piping, and other items that would interfere with applying fireproofing until application of fireproofing is completed.

D. Install auxiliary materials as required, as detailed, and according to fire-resistance design and fireproofing manufacturer's written recommendations for conditions of exposure and intended use. For auxiliary materials, use attachment and anchorage devices of type recommended in writing by fireproofing manufacturer.

E. Spray apply fireproofing to maximum extent possible. Following the spraying operation in each area, complete the coverage by trowel application or other placement method recommended in writing by fireproofing manufacturer.

F. Extend fireproofing in full thickness over entire area of each substrate to be protected.

G. Install body of fireproofing in a single course unless otherwise recommended in writing by fireproofing manufacturer.

H. Provide a uniform finish complying with description indicated for each type of fireproofing material and matching finish approved for required mockups.
I. Cure fireproofing according to fireproofing manufacturer's written recommendations.

J. Do not install enclosing or concealing construction until after fireproofing has been applied, inspected, and tested and corrections have been made to deficient applications.

K. Finishes: Where indicated, apply fireproofing to produce the following finishes:

1. Manufacturer's Standard Finishes: Finish according to manufacturer's written instructions for each finish selected.
2. Spray-Textured Finish: Finish left as spray applied with no further treatment.

3.04 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:

1. Test and inspect as required by the IBC, 1704.11.

B. Perform the tests and inspections of completed Work in successive stages. Do not proceed with application of fireproofing for the next area until test results for previously completed applications of fireproofing show compliance with requirements. Tested values must equal or exceed values as specified and as indicated and required for approved fire-resistance design.

C. Fireproofing will be considered defective if it does not pass tests and inspections.

1. Remove and replace fireproofing that does not pass tests and inspections, and retest.
2. Apply additional fireproofing, per manufacturer's written instructions, where test results indicate insufficient thickness, and retest.

D. Prepare test and inspection reports.

3.05 CLEANING, PROTECTING, AND REPAIRING

A. Cleaning: Immediately after completing spraying operations in each containable area of Project, remove material overspray and fallout from surfaces of other construction and clean exposed surfaces to remove evidence of soiling.

B. Protect fireproofing, according to advice of manufacturer and Installer, from damage resulting from construction operations or other causes, so fireproofing will be without damage or deterioration at time of Substantial Completion.

C. As installation of other construction proceeds, inspect fireproofing and repair damaged areas and fireproofing removed due to work of other trades.

D. Repair fireproofing damaged by other work before concealing it with other construction.

E. Repair fireproofing by reapplying it using same method as original installation or using manufacturer's recommended trowel-applied product.
SECTION 14 24 00 - HYDRAULIC ELEVATORS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes the following:
   1. Hydraulic passenger elevators with nonproprietary controls.
   2. Hydraulic service elevator with nonproprietary controls.

B. This Section includes a hydraulic passenger/service elevator and the following:
   1. Pit ladder.
   2. Fire Department Key Retrieval Box.

C. Related Requirements:
   1. Section 05 50 00 "Metal Fabrications" for the following:
      a. Attachment plates and angle brackets for supporting guide-rail brackets.
      b. Hoist beams.
      c. Structural-steel shapes for subsills.
      d. Pit ladders.
      e. Cants in hoistways made from steel sheet.
   2. Division 26 Sections for electrical service for elevators to and including fused disconnect switches at machine room door and battery power source, transfer switch, and connection from auxiliary contacts in transfer switch to controller.
   3. Division 27 Section "Communications Horizontal Cabling" for telephone service for elevators.
   4. Division 28 Section "Fire Detection and Alarm" for smoke detectors in elevator lobbies to initiate emergency recall operation and heat detectors in shafts and machine rooms to disconnect power from elevator equipment before sprinkler activation and for connection to elevator controllers.

1.03 DEFINITIONS

A. Definitions in ASME A17.1/CSA B44 apply to work of this Section.

B. Defective Elevator Work: Operation or control system failure, including excessive malfunctions; performances below specified ratings; excessive wear; unusually deterioration or aging of materials or finishes; unsafe conditions; need for excessive maintenance; abnormal noise or vibration; and similar unusual, unexpected, and unsatisfactory conditions.

C. Manufacturer: An entity furnishing material, but shall also include an entity installing said material at the Project site, whether the same or different entity. Within this specification,
manufacturer and installer are synonymous, may be used interchangeably, and indicate the same entity.

D. Nonproprietary Controls: Controls that do not require licensed, exclusive or proprietary knowledge, tools, or equipment to install, service and/or maintain in any way, and that are not protected by secrecy, patent, trademark, or copyright against free competition to install, service, or maintain.

E. Service Elevator: A passenger elevator that is also used to carry freight.

1.04 ACTION SUBMITTALS

A. Product Data: Include capacities, sizes, performances, operations, safety features, finishes, and similar information. Include product data for the following:

1. Car enclosures and hoistway entrances.
2. Operation, control and signal systems.

B. Shop Drawings:

1. Include plans, elevations, sections, and large-scale details indicating service at each landing, machine room layout, coordination with building structure, relationships with other construction, and locations of equipment and signals.
2. Include large-scale layout of car-control station.
3. Indicate maximum dynamic and static loads imposed on building structure at points of support, and maximum and average power demands.
4. Indicate variations from specified requirements.

C. Samples: Manuals, tools, equipment, etc. to service and/or maintain elevator controls.

D. Samples for Verification: For exposed car, hoistway door and frame, and signal equipment finishes; 3-inch- (75-mm-) square Samples of sheet materials; and 4-inch (100-mm) lengths of running trim members.

1.05 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Manufacturer Certificates: Signed by elevator manufacturer certifying that hoist way, pit, and machine room layout and dimensions, as shown on Drawings, and electrical service, as shown and specified, are adequate for elevator system being provided. Manufacturer also certifies the following:

1. Alternate (non-OEM) equipment can be utilized for replacement without patent and/or non-standard, sole-sourced design restrictions.
2. Manufacturer shall make available, to the Owner and Owner's elevator service contractor, maintenance, adjustment, and repair training for the scope of the Work of this Section.
3. Manufacturer shall provide the scope of Work of this Section with nonproprietary, serviceable, and maintainable control systems.
4. Manufacturer shall make available for purchase, to the Owner and Owner's elevator service contractor, all replacement parts, assemblies, and technical support from the OEM distributor.
5. Manufacturer shall provide, to the Owner and Owner's elevator service contractor, replacement parts list, including current pricing available to the open market.

6. Manufacturer shall provide record electrical and mechanical drawings, circuit diagrams, installation, maintenance, and repair manuals.

C. Inspection and Acceptance Certificates and Operating Permits: As required by authorities having jurisdiction for normal, unrestricted elevator use.

D. Sample Warranty: For special warranty specified in this Section.

1.06 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For elevators to include in emergency, operation, and maintenance manuals.

   1. In addition to items specified in Section 01 78 23 "Operation and Maintenance Data," include diagnostic and repair information available to manufacturer's and Installer's maintenance personnel.

1.07 QUALITY ASSURANCE

A. Installer Qualifications: Elevator manufacturer or manufacturer’s authorized representative who is trained and approved for installation of units required for this Project and who has completed elevator installations similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

B. Manufacturer Qualifications: An approved, experienced manufacturer of engineering and manufacturing elevators of the type required for this Project.

   1. Manufacturer shall be willing to sell replacement materials and provide technical support service at a published price to Installer, Owner, and Owner's maintenance service contractor.

   2. Manufacturer shall make available all materials, installation, maintenance, and adjustment support to Installer, Owner, and Owner's maintenance service contractor.

C. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of elevator(s). Aesthetic effects are indicated by dimensions and arrangements as they relate to pit, hoistway and machine room requirements and to adjoining construction.

   1. Do not revise intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If revisions are proposed, submit comprehensive explanatory data to Architect for review.

   2. Physical, electrical and mechanical characteristics of elevator specified for this Project are based on "Basis of Design" manufacturer's and product's requirements as indicated in Contract Documents. Contractor utilizing one of the other listed, acceptable manufacturers shall coordinate all changes to the Project required by use of that equipment on this Project. All coordination with and changes to Contract Documents, including but not limited to hoistway, pit, machine room, building electrical system and building mechanical system shall be included in Contractor's bid. All costs shall be borne by Contractor responsible for this Section. No additional costs to Owner or other contractors will be accepted.

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D. Source Limitations: Obtain elevators through one source from a single manufacturer.
   1. Provide major elevator components, including pump-and-tank units, plunger-cylinder assemblies, controllers, signal fixtures, door operators, car frames, cabs, and entrances, manufactured by a single manufacturer.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle materials, components and equipment in manufacturer's protective packaging.

B. Store materials, components, and equipment off of ground, under cover, and in a dry location. Handle according to manufacturer's written recommendations to prevent damage, deterioration, or soiling.

1.09 COORDINATION

A. Coordinate installation of sleeves, block outs, elevator equipment with integral anchors, and other items that are embedded in concrete or masonry for elevator equipment. Furnish templates, sleeves, elevator equipment with integral anchors, and installation instructions and deliver to Project site in time for installation.

B. Furnish well casing and coordinate delivery with related excavation work.

C. Coordinate sequence of elevator installation with other work to avoid delaying the Work.

D. Coordinate locations and dimensions of other work relating to hydraulic elevators including pit ladders; sumps and floor drains in pits; entrance subsills; electrical service; and electrical outlets, lights, and switches in hoistways, pits, and machine rooms.

   1. Include all components to install a functionally working, complete elevator in the pit, hoistway and machine room indicated in Drawings. Costs resulting from pit, hoistway or machine room dimensional changes to accommodate elevator manufacturer's equipment shall be borne by the Contractor responsible for this Section.

1.10 WARRANTY

A. Manufacturer's Special Warranty: Manufacturer agrees to repair, restore, or replace elevator work that fails in materials or workmanship within specified warranty period.

   1. Failures include, but are not limited to, operation or control system failure, including excessive malfunctions; performances below specified ratings; excessive wear; unusual deterioration or aging of materials or finishes; unsafe conditions; need for excessive maintenance; abnormal noise or vibration; and similar unusual, unexpected, and unsatisfactory conditions.

   2. Warranty Period: Two years from date of Substantial Completion.

1.11 MAINTENANCE SERVICE

A. Initial Maintenance Service: Beginning at Substantial Completion, provide two year’s full maintenance service by skilled employees of elevator Installer. Include monthly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper elevator operation at rated speed.
and capacity. Provide parts and supplies same as those used in the manufacture and installation of original equipment.

1. Perform maintenance, including emergency callback service, during normal working hours.
2. Include 24-hour-per-day, 7-day-per-week emergency callback service.
   a. Response Time: Two hours or less.
3. Perform all required life safety and safety testing during warranty period. File documents with Authorities Having Jurisdiction and designated Owner’s Representative.

PART 2 - PRODUCTS

2.01 INSTALLERS

A. Installers: Subject to compliance with requirements, provide hydraulic elevators installed by one of the following:

1. American Elevator, Inc.
2. Mid-America Elevator Co., Inc.
3. Murphy Elevator Company
4. Otis Elevator Company
5. Thyssenkrupp Elevator Corporation
7. Canton Elevator, Inc.

B. Elevator equipment provided shall comply with applicable codes and regulations.

2.02 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: In addition to local governing regulations, ascertain seismic risk zone and comply with applicable provisions in ASME A17.1, "Safety Code for Elevators and Escalators."

1. NFPA Code: Comply with applicable NFPA codes, and specifically with sections relating to electrical work and elevators.
2. Fire Resistance of Entrances: Comply with NFPA No. 80, and provide units bearing UL labels with 30-min. temperature rise on labels.
3. Permits: Costs for permits, permit fees, and inspection fees for temporary and final operation are the responsibility of the elevator installer.

B. Accessibility Requirements: Comply with Section 4.10 in the U.S. Architectural & Transportation Barriers Compliance Board’s "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)." and 407 in ICC A117.1.

C. Fire-Rated Hoistway Entrance Assemblies: Door and frame assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing at as close to neutral pressure as possible according to NFPA 252 or UL 10B.

D. Electrical characteristics of Project are as indicated in Electrical Documents. Contractor utilizing manufacturer's equipment whose requirements differ from those indicated shall
coordinate all changes required by use of that equipment on this Project. All coordination with and changes to electrical system shall be included in Base Bid. All costs shall be borne by this Contractor. No additional costs to Owner or other contractors will be accepted.

1. If requirements other than those indicated in Contract Documents are utilized, provide complete wiring schematic for coordination of this equipment with building electrical system, equipment connections, and coordination of operation of this equipment. Additional installation costs shall be included in Base Bid of Contractor for this Section.

2.03 ELEVATORS

A. General: Provide manufacturer’s standard elevator systems. Where components are not otherwise indicated, provide standard components, published by manufacturer as included in standard pre-engineered elevator systems and as required for a complete system.

1. All equipment, including controls, shall be non-proprietary such that at least two of the listed companies can compete for the maintenance contract. Any tools required for adjustment, service or maintenance shall be included and furnished to Owner at no additional cost. No tool shall require triggering, re-charging or refreshing of its memory.

2. Provide manufacturer’s standard guide rail system.

3. Provide code-compliant pit ladder.

B. Passenger Elevator Description: E1

1. Type: Holeless, beside-the-car, telescoping hydraulic, dual cylinder (twin post), two stage.

2. Rated Load: 3500 lb.

3. Rated Speed: 100 fpm, minimum.

4. Landings: 2 (1st, 2nd floors).


   a. Elevator Controls Corp.
   b. GAL Manufacturing Corp.
   c. Motion Control Engineering (MCE).

6. Basis-of-Design Electrical Connection: 480V.

   b. Accelerating Amps: 50A, maximum.

7. Basis-of-Design Mechanical Requirements:

   a. Control Output: 7,000 Btu, maximum.

8. Auxiliary Operations:

   a. Battery-powered lowering.

9. Car Enclosures:

   a. Inside Width: 80 inches from side wall to side wall.
b. Inside Depth: 65 inches from back wall to front wall (return panels).
c. Inside Height: 88 inches to underside of ceiling, minimum.
d. Front Walls (Return Panels): Satin stainless steel, No. 4 finish with integral car door frames.
e. Car Fixtures: Satin stainless steel, No. 4 finish.
f. Side and Rear Wall Panels: Plastic laminate, as indicated.
g. Reveals: Enamel steel.
h. Door Faces (both sides): Satin stainless steel, No. 4 finish.
i. Door Sills: Nickel silver.
j. Ceiling: Metal pan downlight ceiling with LED lighting (9 fixtures total), Satin stainless steel, No. 4 finish.
k. Handrails: 1-1/2 inches (38 mm) cylindrical satin stainless steel, No. 4 finish, at rear of car.
l. Floor prepared to receive carpet (specified in Division 09 Section "Tile Carpeting").

10. Hoistway Entrances:
   a. Width: 42 inches.
   b. Height: 84 inches.
   c. Type: Single-speed LH side opening.
   d. Frames: Satin stainless steel, No. 4 finish.
   e. Doors: Satin stainless steel, No. 4 finish.
   f. Sills: Nickel silver.

11. Hall Fixtures: Satin stainless steel, No. 4 finish.
12. Additional Requirements:
   a. Provide inspection certificate in each car, mounted under acrylic cover with frame made from satin stainless steel, No. 4 finish.
   b. Provide hooks for protective pads and one complete set(s) of full-height protective pads.
   c. Indiana Key Box.
   d. Furnish and install pit ladder.

C. Service Elevator Description: E2

1. Type: Holeless, beside-the-car, telescoping hydraulic, dual cylinder (twin post), two stage.
2. Rated Load: 4500 lb.
3. Rated Speed: 100 fpm, minimum.
4. Landings: 2 (1st, 2nd floors).
6. Basis-of-Design Electrical Connection: 480V.
   b. Accelerating Amps: 50A, maximum.

7. Basis-of-Design Mechanical Requirements:
   a. Control Output: 7,000 Btu, maximum.

8. Auxiliary Operations:
   a. Battery-powered lowering.
9. Car Enclosures:
   a. Inside Width: 68 inches from side wall to side wall.
   b. Inside Depth: 101 inches from back wall to front wall (return panels).
   c. Inside Height: 88 inches to underside of ceiling, minimum.
   d. Front Walls (Return Panels): Enamelled steel.
   e. Car Fixtures: Satin stainless steel, No. 4 finish.
   f. Side and Rear Wall Panels: Enamelled steel.
   g. Door Faces (Interior): Enamelled steel.
   h. Door Sills: Nickel silver.
   i. Ceiling: Suspended white translucent diffusers with LED lighting, stainless steel frames.
   j. Floor prepared to receive rubber tile flooring (specified in Division 09 Section "Rubber Tile Flooring").

10. Hoistway Entrances:
   a. Width: 54 inches.
   b. Height: 84 inches.
   c. Type: Single-speed LH side opening.
   d. Frames: Enamelled steel.
   e. Doors: Enamelled steel.
   f. Sills: Nickel silver.

11. Hall Fixtures: Satin stainless steel, No. 4 finish.

12. Additional Requirements:
   a. Provide inspection certificate in each car, mounted under acrylic cover with frame made from satin stainless steel, No. 4 finish.
   b. Provide hooks for protective pads and one complete set(s) of full-height protective pads.
   c. Indiana Key Box.
   d. Furnish and install pit ladder.
   e. Card reader operation (per 2.05-C)

D. Provide rough-in for Owner-provided security camera inside each car enclosure; coordinate model number and location during submittals.

2.04 SYSTEMS AND COMPONENTS

A. General: Provide manufacturer's standard elevator systems. Where components are not otherwise indicated, provide standard components published by manufacturer as included in standard pre-engineered elevator systems and as required for complete system.

B. Pump Units: Positive-displacement type with a maximum of 10 percent variation between no load and full load and with minimum pulsations.

1. Pump shall be submersible type with submersible squirrel-cage induction motor, and shall be suspended inside oil tank from vibration isolation mounts.
2. Motor shall have solid-state starting.
3. Provide the following additional requirements related to acoustical treatment:

   a. Pump Unit: Entire assembly shall be mounted on neoprene vibration isolation pads having a minimum total thickness of 0.50. The pads shall be selected to achieve a minimum static deflection of 0.15 inches.
C. Hydraulic Silencers: System shall have hydraulic silencer containing pulsation-absorbing material in blowout-proof housing at pump unit.

D. Piping: Provide size, type, and weight piping required by Code and recommended by manufacturer, and provide flexible connectors to minimize sound and vibration transmissions from power unit.
   1. Cylinder units shall be connected with dielectric couplings.

E. Hydraulic Fluid: Nontoxic, biodegradable, fire-resistant fluid made from vegetable oil with antioxidant, anticorrosive, antifoaming, and metal-passivating additives and approved by elevator manufacturer for use with elevator equipment.
   1. Product: Subject to compliance with requirements, provide "Hydro Safe" by Hydro Safe Oil Division, Inc.

F. Inserts: Furnish required concrete and masonry inserts and similar anchorage devices for installing guide rails, machinery, and other components of elevator work. Device installation is specified in another Section.
   1. Provide elevator guide rail vibration isolators as recommended and provided by Mason Industries, Inc.

G. Car Frame and Platform: Welded steel units.

H. Guides: Roller guides; polymer-coated, non-lubricated sliding guides; or sliding guides with guide-rail lubricators. Provide guides at top and bottom of car and counterweight frames.

2.05 OPERATION SYSTEMS

A. General: Provide control system #PHC by Motion Control Engineering (or equivalent by listed manufacturers below) as required to provide automatic operation of the type indicated, and defined in the Code as "Operations".
   1. Manufacturers: Provide non-proprietary microprocessor control system by one of the following listed. Substitutions will not be considered.
      a. GAL Manufacturing Corp.
      b. Motion Control Engineering (MCE).
      c. Elevator Controls Corporation.

B. Single-Car Auxiliary Operations: In addition to primary operation system features, provide the following operational features for elevators where indicated:
   1. Single-Car Battery-Powered Lowering: When power fails, car is lowered to the lowest floor, opens its doors, and shuts down. System includes rechargeable battery and automatic recharging system.
   2. Automatic Dispatching of Loaded Car: When car load exceeds 80 percent of rated capacity, doors start closing.
   3. Nuisance Call Cancel: When car calls exceed a preset number while car load is less than a predetermined weight, all car calls are canceled. Preset number of calls and predetermined weight can be adjusted.
C. Security Features for Passenger Elevator E1: Security features shall not affect emergency firefighters’ service.

1. Card-Reader Operation: System uses card readers at car-control stations and hall push-button stations to authorize calls. Security system determines which landings and at what times calls require authorization by card reader. Provide required conductors in traveling cable and panel in machine room for interconnecting card readers, other security access system equipment, and elevator controllers. Allow space for card reader in car.

   a. Security access system equipment is not in the Contract (By Owner).

      1) Sequence of Operation from Main Floor:

         a) A user will use their provided third party proximity reader to register a hall call to summon the elevator. The nearest elevator will arrive and the student will enter the elevator. The car push button will have the floor button activated that is associated with that specific user. The elevator will arrive at designated floor and the student will leave the elevator.

      2) Sequence of Operation from any other floor than Main Floor:

         a) A user will use their provided third party proximity reader to register a hall call to summon the elevator. The nearest elevator will arrive and the student will enter the elevator. The car push button for the Main Floor will automatically be activated. The elevator will travel to the Main Floor and the student will leave the elevator.


D. Keyswitch Operation: Push buttons are activated and deactivated by security keyswitches at hall push-button stations. Key is removable in either position.

E. Car-to-Lobby Feature: Feature, activated by keyswitch at main lobby, that causes all car to return immediately to lobby and open doors for inspection. On deactivation by keyswitch, calls registered before keyswitch activation are completed and normal operation is resumed.

2.06 DOOR REOPENING DEVICES

A. Infrared Array: Provide door reopening device with uniform array of 36 or more microprocessor-controlled, infrared light beams projecting across car entrance. Interruption of one or more light beams shall cause doors to stop and reopen.

B. Nudging Feature: After car doors are prevented from closing for predetermined adjustable time, through activating door reopening device, a loud buzzer shall sound and doors shall begin to close at reduced kinetic energy.
2.07 FINISH MATERIALS

A. General: Provide the following materials for exposed parts of elevator car enclosures, car doors, hoistway entrance doors and frames, and signal equipment as indicated.

B. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, commercial steel, Type B, exposed, matte finish.

C. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304.

D. Stainless-Steel Bars: ASTM A 276, Type 304.

E. Stainless-Steel Tubing: ASTM A 554, Grade MT 304.

F. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), Alloy 6063.

G. Plastic Laminate: High-pressure type complying with NEMA LD 3, Type HGS for flat applications.

2.08 CAR ENCLOSURES

A. General: Provide steel-framed car enclosures with nonremovable wall panels, with removable car roof, access doors, power door operators, and ventilation.

1. Provide standard railings complying with ASME A17.1/CSA B44 on car tops where required by ASME A17.1/CSA B44.

2. Provide finished car including materials and finishes specified below.

B. Materials and Finishes: Manufacturer's standards, but not less than the following:

1. Subfloor: Exterior, underlayment grade, two layers of plywood, not less than 5/8-inch (15.9-mm) nominal thickness.

2. Floor Finish: Specified in Division 09 sections.

3. Plastic-Laminate Wall Panels for E1: Plastic laminate adhesively applied to 1/2-inch (13-mm) fire-retardant-treated particleboard with plastic-laminate panel backing and manufacturer's standard protective edge trim. Panels have a flame-spread index of 25 or less, when tested according to ASTM E 84. Plastic-laminate color, texture, and pattern as selected by Architect from plastic-laminate manufacturer's full range.

   a. Plastic Laminate: Formica, Planked Urban Oak, 9312-NG.

4. Enamed-Steel Wall Panels for E2: Flush, hollow-metal construction; fabricated from cold-rolled steel sheet. Provide with factory-applied enamel finish; colors as selected by Architect from manufacturer's full range.

5. Fabricate car with recesses and cutouts for signal equipment.

6. Fabricate car door frame integrally with front wall of car.

7. Stainless-Steel Doors: Flush, hollow-metal construction; fabricated from stainless-steel sheet.

8. Sight Guards: Provide sight guards on car doors.

9. Sills: Extruded metal, with grooved surface, 1/4 inch (6.4 mm) thick.

10. Metal Ceiling: Flush panels, with four low-voltage downlights in each panel. Align ceiling panel joints with joints between wall panels.
11. Handrails: Manufacturer's standard handrails, of shape, metal, and finish indicated.

2.09 HOISTWAY ENTRANCES

A. Hoistway Entrance Assemblies: Manufacturer's standard horizontal-sliding, door-and-frame hoistway entrances complete with track systems, hardware, sills, and accessories. Frame size and profile shall accommodate hoistway wall construction.

1. Where gypsum board wall construction is indicated, frames shall be self-supporting with reinforced head sections.

B. Fire-Rated Hoistway Entrance Assemblies: Door and frame assemblies shall comply with NFPA 80 and be listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing at as close-to-neutral pressure as possible according to NFPA 252 or UL 10B.

1. Fire-Protection Rating: As indicated with 30-minute temperature rise of 450 deg F (250 deg C).

C. Materials and Fabrication: Manufacturer's standards, but not less than the following:

2. Star of Life Symbol: Identify emergency elevators with star of life symbol, not less than 3 inches (76 mm) high, on both inside surfaces of hoistway door frames.
5. Sills: Extruded metal, with grooved surface, 1/4 inch (6.4 mm) thick.

2.10 FIRE DEPARTMENT KEY RETRIEVAL BOX:

A. Provide hinged lockable secure box for keys in accordance with local fire department policy.

1. Product: Manufacturer's standard box, keyed as required by the Muncie Fire Department.

2.11 SIGNAL EQUIPMENT

A. General: Provide hall-call and car-call buttons that light when activated and remain lit until call has been fulfilled. Fabricate lighted elements with LEDs.

B. Swing-Return Car-Control Stations: Provide car-control stations mounted on rear of hinged return panel adjacent to car door and with buttons, switches, controls, and indicator lights projecting through return panel but substantially flush with face of return panel.

1. Mark buttons and switches with manufacturer's standard identification for required use or function that complies with ASME A17.1.
2. Provide "No Smoking" sign matching car-control station, either integral with car-control station or mounted adjacent to it, with text and graphics as required by authorities having jurisdiction.

3. Engrave faceplate with "Operating Certificate on File with Physical Plant Operation."

   a. Confirm copy with Owner during submittals.

4. Include call buttons for each landing served and other buttons, switches, and controls required for specified car operation.

5. Provide vandal-resistant type buttons/operating fixtures.

6. Mount controls at heights complying with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines (ADAAG)."

C. Emergency Communication System: Provide system that complies with ASME A17.1 and the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)." On activation, system connects to BSU Campus Police; Contractor shall coordinate connection with Owner during submittals. System provides two-way voice communication without using a handset and provides visible signals that indicate when system has been activated and when monitoring station has responded. System is contained in flush-mounted cabinet, with identification, instructions for use, and battery backup power supply.

D. Car Position Indicator: Provide illuminated, digital-type car position indicator, located above car door or above car-control station. Also, provide audible signal to indicate to passengers that car is either stopping at or passing each of the floors served. Include travel direction arrows if not provided in car-control station.

   1. Include travel direction arrows if not provided in car control station.

E. Hall Push-Button Stations: Provide one hall push-button station at each landing.

   1. Provide vandal-resistant, wall-mounted hall fixtures with necessary push buttons and key switches for elevator operation.
   2. Provide units with flat faceplate for mounting with body of unit recessed in wall.
   3. Equip units with buttons for calling elevator and for indicating applicable direction of travel.
   4. Key switches shall be Best-type; Owner will provide final cores.

F. Hall Lanterns: Units with illuminated arrows; but provide single arrow at terminal landings. Provide the following:

   1. Units mounted in both jambs of entrance frame for each elevator.

G. Hall Annunciator: With each hall lantern, provide audible signals indicating car arrival and direction of travel. Signals sound once for up and twice for down.

   1. At manufacturer's option, audible signals may be placed on cars.

H. Hall Position Indicators: Provide illuminated, digital-display-type position indicators, located above hoistway entrance at ground floor. Provide units with flat faceplate for mounting and with body of unit recessed in wall.
1. Integrate ground-floor hall lanterns with hall position indicators.

I. Emergency Pictorial Signs: Fabricate from materials matching hall push-button stations, with text and graphics as required by authorities having jurisdiction, indicating that in case of fire elevators are out of service and exits should be used instead. Provide one sign at each hall push-button station unless otherwise indicated.

1. Refer to ASME A17.1, Appendix O “Elevator Corridor Call Station Pictograph”.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine elevator areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work. Verify critical dimensions and examine supporting structure and other conditions under which elevator work is to be installed.

B. Prepare written report, endorsed by Installer, listing dimensional discrepancies and conditions detrimental to performance or indicating that dimensions and conditions were found to be satisfactory.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Comply with manufacturer's written instructions.

B. Install cylinder plumb and accurately centered for elevator car position and travel. Anchor securely in place, supported at pit floor and braced at intervals as needed to maintain alignment. Anchor cylinder guides at spacing needed to maintain alignment and avoid overstressing guides.

C. Welded Construction: Provide welded connections for installing elevator work where bolted connections are not required for subsequent removal or for normal operation, adjustment, inspection, maintenance, and replacement of worn parts. Comply with AWS workmanship and welding operator qualification standards.

D. Sound Isolation: Mount rotating and vibrating equipment on vibration-isolating mounts to minimize vibration transmission to structure and structure-borne noise due to elevator system.

E. Install piping above the floor, where possible. Install underground piping in casing.

F. Lubricate operating parts of systems as recommended by manufacturers.

G. Alignment: Coordinate installation of hoistway entrances with installation of elevator guide rails for accurate alignment of entrances with car. Where possible, delay installation of sills and frames until car is operable in shaft. Reduce clearances to minimum, safe, workable dimension at each landing.

H. Leveling Tolerance: 1/4 inch (6 mm), up or down, regardless of load and travel direction.
I. Set sills flush with finished floor surface at landing. Fill space under sill solidly with non-shrink, nonmetallic grout.

J. Locate hall signal equipment for elevators as follows, unless otherwise indicated:
   1. For groups of elevators, locate hall push-button stations between two elevators at center of group or at location most convenient for approaching passengers.
   2. Place hall lanterns either above or beside each hoistway entrance.
   3. Mount hall lanterns at a minimum of 72 inches (1829 mm) above finished floor.

3.03 FIELD QUALITY CONTROL

A. Acceptance Testing: On completion of elevator installation and before permitting elevator use (either temporary or permanent), perform acceptance tests as required and recommended by ASME A17.1/CSA B44 and by governing regulations and agencies.

B. Operating Test: Load each elevator to rated capacity and operate continuously for 30 minutes over full travel distance, stopping at each level and proceeding immediately to the next. Record temperature rise of elevator machine during 30-minute test period. Record failure to perform as required.

C. Advise Owner, Architect, and authorities having jurisdiction in advance of dates and times that tests are to be performed on elevators.

3.04 PROTECTION

A. Protective Materials: Contractor shall not remove protective materials from hoistway entrances until day of elevator inspection by Architect (Punchlist) and all adjacent finish trades are complete.

B. Temporary Use: Comply with the following requirements for service elevator used for construction purposes:

   1. Use of service elevator during construction is prohibited unless approved in writing by the Owner.

      a. If temporary use is approved by the Owner, the permanent fire alarm and telephone system shall not be used for elevator recall functions or emergency communications until such time those systems are 100 percent complete, operational and acceptance tested.

      1) With Owner's prior, written approval, Contractor may install a temporary fire alarm system meeting the requirements of authorities having jurisdiction for use of the elevator during construction. All costs associated with these temporary measures shall be borne by the Contractor.

         a) All temporary equipment and cabling shall be removed once the permanent systems are 100 percent complete, operational and acceptance tested.

      b. This work shall be coordinated with and approved by the Owner in advance. Approval by the Owner is not guaranteed.
c. Provide car with temporary enclosure, either within finished car or in place of finished car, to protect finishes from damage.
d. Provide strippable protective film on entrance and car doors and frames.
e. Provide padded wood bumpers on entrance door frames covering jambs and frame faces.
f. Provide other protective coverings, barriers, devices, signs, and procedures as needed to protect elevator and elevator equipment.
g. Do not load elevators beyond their rated weight capacity.
h. Engage elevator Installer to provide full maintenance service. Include preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as necessary for proper elevator operation at rated speed and capacity. Provide parts and supplies same as those used in the manufacture and installation of original equipment.
i. Engage elevator Installer to restore damaged work, if any, so no evidence remains of correction. Return items that cannot be refinished in the field to the shop, make required repairs and refinish entire unit, or provide new units as required.

2. Use of passenger elevators during construction is prohibited.

3.05 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to operate, adjust, and maintain elevator(s). Refer to Division 01 Section "Demonstration and Training."

B. Check operation of each elevator with Owner’s personnel present and before date of Substantial Completion. Determine that operation systems and devices are functioning properly.

C. Check operation of each elevator with Owner’s personnel present not more than one month before end of warranty period. Determine that operation systems and devices are functioning properly.

3.06 MAINTENANCE

A. Initial Maintenance Service: Beginning at Substantial Completion, maintenance service shall include 12 months’ full maintenance by skilled employees of elevator Installer. Include monthly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper elevator operation. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.

1. Perform maintenance during normal working hours.
2. Perform emergency callback service during normal working hours with response time of one hour or less.
3. Include 24-hour-per-day, 7-day-per-week emergency callback service with response time of one hour or less.

END OF SECTION
Know what's below. Call before you dig.
16. The contractor shall use temporary fencing to enclose the areas of construction activity and staging and removal of all demolition items. Unsuitable materials shall be removed as construction progresses to provide a clean transition between existing and final work of this contract.

17. The contractor shall coordinate all work with affected utilities and utilities in service or abandoned are shown. Underground ground indications and construction drawings on file at the job site are not responsible for the accuracy of site plans and actual field conditions. RundeLL architects any discrepancies between the existing conditions and these planned site conditions.

18. The contractor shall protect all existing buildings and site conditions, prior to the bid date and/or prior to construction. The contractor shall report any discrepancies between the specifications, drawings and site conditions. The contractor shall coordinate all work with affected utilities and utilities in service or abandoned are shown. Underground ground indications and construction drawings on file at the job site.

19. The contractor shall meng all work performed by bidding contractor unless noted otherwise. Other work shall be performed by the bidding contractor unless noted otherwise. The contractor shall coordinate all work with affected utilities and utilities in service or abandoned are shown. Underground ground indications and construction drawings on file at the job site.

20. The contractor shall protect all castings and utilities (unless noted to be removed). The contractor shall protect all existing utilities not indicated to be removed or protected. The contractor shall report such discoveries immediately to owner. During demolition are the property of the owner. The contractor shall coordinate all work with affected utilities and utilities in service or abandoned are shown. Underground ground indications and construction drawings on file at the job site.

21. The contractor shall coordinate all work with affected utilities and utilities in service or abandoned are shown. Underground ground indications and construction drawings on file at the job site. The contractor shall coordinate all work with affected utilities and utilities in service or abandoned are shown. Underground ground indications and construction drawings on file at the job site.

22. The contractor shall coordinate all work with affected utilities and utilities in service or abandoned are shown. Underground ground indications and construction drawings on file at the job site. The contractor shall coordinate all work with affected utilities and utilities in service or abandoned are shown. Underground ground indications and construction drawings on file at the job site.

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24. The contractor shall coordinate all work with affected utilities and utilities in service or abandoned are shown. Underground ground indications and construction drawings on file at the job site. The contractor shall coordinate all work with affected utilities and utilities in service or abandoned are shown. Underground ground indications and construction drawings on file at the job site.

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27. The contractor shall coordinate all work with affected utilities and utilities in service or abandoned are shown. Underground ground indications and construction drawings on file at the job site. The contractor shall coordinate all work with affected utilities and utilities in service or abandoned are shown. Underground ground indications and construction drawings on file at the job site.

28. The contractor shall coordinate all work with affected utilities and utilities in service or abandoned are shown. Underground ground indications and construction drawings on file at the job site. The contractor shall coordinate all work with affected utilities and utilities in service or abandoned are shown. Underground ground indications and construction drawings on file at the job site.
1. Existing site lights and conductors to be removed in McKinley Road reconfiguration project.
2. Remove existing pole mounted luminaires, pole, and conductors completely.
3. Remove existing pole mounted luminaire, base and conductors. Pole and luminaire to be relocated. Existing circuit to be extended to new location.
4. Existing luminaires outside area of construction to remain active. Rework circuits as required.

General Sheet Notes:
- Do not interrupt any luminaires outside area of construction. Verify circuit(s) prior to removal.
- Provide all labor and material required to maintain existing circuits. New work to be indicated on future bid package.

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05/11/2018
1585 NORTH MCKINLEY AVENUE
BALL STATE UNIVERSITY
MUNCIE, IN
KEC BSA
1606-44
D103
ELECTRICAL
SITE DEMOLITION
PLAN

ELECTRICAL SITE DEMOLITION
PLAN

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DRAWING TITLE:
CERTIFIED BY:
DRAWING NUMBER
PROJECT NUMBER
REVISIONS:
SCOPE DRAWINGS:
PROJECT:
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of structural, mechanical and electrical systems. The drawings do not necessarily indicate or describe all work required for full performance and completion of the requirements of the Contract. On the basis of the general scope indicated or described, the trade contractors shall furnish all items required for the proper execution and completion of the work.

ISSUE DATE DRAWN BY CHECKED BY

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Know what's below. Call before you dig.
STORM SEWER PLAN

STORM SEWER PROFILE
Know what's below. Call before you dig.
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of structural, mechanical and electrical systems. The drawings do not necessarily indicate or describe all work required for full performance and completion of the requirements of the Contract. On the basis of the general scope indicated or described, the trade contractors shall furnish all items required for the proper execution and completion of the work.
OVERALL - ROOF FRAMING PLAN

OVERALL - PENTHOUSE ROOF FRAMING PLAN

OVERALL - ROOF FRAMING PLAN

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05/18/2018
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MUNCIE, IN

OVERALL ROOF AND PENTHOUSE ROOF FRAMING PLANS

S102
17045

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SCREEN WALL FRAMING PLAN

1. SEE S000 SERIES DRAWINGS FOR GENERAL NOTES, DESIGN CRITERIA, AND FLOOR LOAD CAPACITIES.
2. SEE DRAWING S100 FOR OVERALL GRID LAYOUT GEOMETRY.
3. SEE OVERALL COMPOSITE PLANS FOR SPECIAL STRUCTURAL FINISH REQUIREMENTS.
4. ALL SCREENWALL FRAMING TO BE GALVANIZED.
5. PROVIDE 3/16" CAP PLATE ON ALL HSS MEMBERS AT SCREENWALL.

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DJE SJS
17045
S208

SCREEN WALL
FRAMING PLAN

NORTH DINING FACILITY
1/8" = 1'
1. SEE EXISTING DRAWING FOR ORIGINAL TUNNEL CONSTRUCTION. REFERENCE DRAWING NO. 32 AND 33 PREPARED BY WALTER SCHOLER AND ASSOCIATES.

2. SEE C AND LA DRAWINGS FOR ADDITIONAL INFORMATION.

3. LSH INDICATES LONG SIDE HORIZONTAL.

4. FV INDICATES FIELD VERIFY DIMENSION.

5. ALLOW FOR TEMPORARY SUPPORT AND RELOCATION OF EXISTING PIPING AND CONDUITS AND REWORK OF PIPE HANGERS TO ALLOW FOR REINFORCING INSTALL.

- EXISTING WEST TUNNEL REINFORCING PLAN
- EXISTING NORTH TUNNEL REINFORCING PLAN
EXISTING TUNNEL WALL
EXISTING TUNNEL BASE SLAB
8" (FV) 6'-8" (FV) 8" (FV)
10'-0" (FV)
EXISTING TUNNEL TOP SLAB
HSS8x4x1/2 (LSH)
REINFORCING AT 5'-0" O.C. GALVANIZED
PAVEMENT OR PAVERS PER LA DRAWING
SELF ADHERING SHEET WATERPROOFING PER SPEC 07 13 26
EXISTING TUNNEL TOP SLAB
HSS8x4 (LSH)
L8x4x1/2 (LLV) x 1'-4" LONG GALVANIZED TACK WELD NUT TO INSIDE FACE OF TUBE IN SHOP 3/4" DIAMETER A325 BOLT (GALVANIZED)
1" DIA STAINLESS STEEL ROD (A316) DRILL AND ADHESIVE ANCHOR WITH HILTI HIT HY 200. EMBED = 5 1/2"
GROUT BETWEEN TUBE AND TUNNEL TOP IS REQUIRED IF NEEDED TO PROVIDE CONTINUOUS CONTACT BETWEEN THE TUBE AND TUNNEL TOP.
IF CONTINUOUS CONTACT CAN BE ACHIEVED WITHOUT THE GROUT, GROUT CAN BE ELIMINATED.
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TIE-BEAM AT FOOTING

TIE-BEAM AT RAMP

STAIR SHAFT SECTION

ELEVATOR SUMP PIT DETAIL

SECTION AT TIE-BEAM

SECTION AT TIE-BEAM AT PIER

ELEVATOR PITS SECTION

ELEVATOR PITS SECTION

SECTION AT TIE-BEAM

TYPICAL DOCK LEVELER

SECTION AT LOADING DOCK

SECTION AT DOCK LEVELER

STAIR SHAFT SECTION AT BENCH

ELEVATOR SUMP PIT DETAIL

SECTION AT RAMP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

SECTION AT TIE-BEAM

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

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NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

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#4 AT 12"

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#4 AT 12"

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NOTE 2

#4 AT 12"

3/4" CLR, TYP

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#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

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NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP

NOTE 2

#4 AT 12"

3/4" CLR, TYP
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of structural, mechanical and electrical systems. The drawings do not necessarily indicate or describe all work required for full performance and completion of the requirements of the Contract. On the basis of the general scope indicated or described, the trade contractors shall furnish all items required for the proper execution and completion of the work.
EXISTING BASEMENT WALL
EXISTING BASEMENT SLAB ON GRADE
PIER FOOTING
STEEL COLUMN
NEW DINING HALL
EXISTING LAFOLETTE FOOTING
ZONE OF INFLUENCE
EXISTING FIRST FLOOR STRUCTURE
GRADE
SEE CIVIL
(USGS = 939.00')
FIRST LEVEL
100' - 0"
PIER FOOTING
STEEL COLUMN
NEW DINING HALL
EXISTING LAFOLETTE FOOTING
ZONE OF INFLUENCE
GRADE
SEE CIVIL
FIRST LEVEL
100' - 0"
FOOTING ZONE OF INFLUENCE
2:1 EXCAVATION
GREASE INTERCEPT.
SEE CIVIL AND PLUMBING.
FOOTING ZONE OF INFLUENCE
2:1 EXCAVATION
BRINE TANK.
SEE CIVIL AND PLUMBING.
LOADING DUCk PAVEMENT PER CIVIL
PROVIDE RIGID PIER SYSTEM:
-VIBRATORY CONCRETE COLUMNS
-CEMENT TREATED AGGREGATE
-OR APPROVED EQUAL
INSTALLATION METHOD SHALL MINIMIZE GROUND DISPLACEMENTS AND VIBRATIONS TO AVOID DAMAGING LINE.

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S304
FOUNDATION SECTIONS
1/4" = 1'
1/8" = 1'
1/16" = 1'

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ISSUE DATE
DRAWN BY
CHECKED BY
PIERS LOCATED WITHIN BRACED BAYS.
PROVIDE STANDARD HOOKS AT TOP OF VERTICAL BARS IN FOR ADDITIONAL TIE INFORMATION.
SEE TYPICAL CONCRETE PIER DETAILS ON SHEET S300

DIAMETER 2'-3" 1'-3"
S310

1'-0"

9 3/4" 1'-0"

5"

9 3/4"

2'-0"

1'-0"

5"

9 3/4"

1 1/2" CLR TO TIES (TYP) AT COLUMN PIER P1 REBAR CAGE

1 1/2" CLR TO TIES, TYP

WITH #4 TIES AT 12" (8) #6 VERTICAL BARS

99' - 4"

1'-0"

#8 VERTICAL BARS

LE TP

TP

9 3/4"

100' - 0"

WITH #4 TIES AT 12" (4)

#4 AT 12", TYP

9 3/4"

2'-6"

9'-1" 2'-1"

TIES, TYP

1'-7 3/8"

AT IRREGULAR PIERS-

AT CORNER-

5" (TYP)

16.00°

1'-10 5/8" 100' - 0"

STEEL COLUMNS ABOVE

1'-0" 12.1

5" (TYP)

1'-0"

LE 97'

JOINT

EXPANSION

UNO

99' - 4"

100' - 0"

UNO

1'-0" 12.6

1954

- 13

- 12.6

B.7

- 10

- 8

- 7

- 6

- 5

- 4

- 3

- 2

- 1

1'-0" 16.00°

1'-11" 3'-7"
1. **TYPICAL VERTICAL WALL CONSTRUCTION JOINT**

2. **TYPICAL VERTICAL WALL CONTROL JOINT**

3. **TYPICAL REINFORCING AT WALL OPENING**

4. **TYPICAL CORNER REINFORCEMENT FOR WALLS**

---

**NOTES:**

1. SEE APPLICABLE SECTIONS FOR WALL REINFORCEMENT AND STEEL CLEARANCES.

2. PROVIDE CORNER BARS FOR LONGITUDINAL REINFORCEMENT IN GRADE BEAMS AT CORNERS (WHERE THERE IS NO CONCRETE PIER) AS SHOWN IN THE ABOVE DETAIL "WALL REINFORCEMENT BOTH FACES".

3. TERMINATE HORIZONTAL WALL REINFORCEMENT 2" CLEAR FROM END WALL (TYP). ON THE BASIS OF THE GENERAL SCOPE INDICATED OR DESCRIBED, THE DRAWINGS DO NOT NECESSARILY INDICATE OR DESCRIBE ALL REQUIREMENTS OF THE CONTRACT.

4. PROVIDE CORNER BARS AS SHOWN. MATCH HORIZONTAL WALL REINFORCEMENT IN BAR SIZE AND SPACING.

---

**TYPICAL WALL FOOTING STEP DETAIL**

---

**TYPICAL CONCRETE WALL INTERSECTIONS**
THICKENED SLAB AT SECURITY GATE POST

SECTION AT PLINTH STAIR

TYPICAL SLAB REINFORCING AT FLOOR SINKS AND OTHER EMBEDDED ELEMENTS

TYPICAL HOUSEKEEPING PAD
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**Shearwall Elevations**

1. **Shearwall South Elevation - Stair B**
2. **Shearwall West Elevation - Stair B**
3. **Shearwall North Elevation - Stair B**
4. **Shearwall East Elevation - Stair B**

**Drawings Title:**

- **Certified By:**
- **Drawing Number:**
- **Project Number:**
- **Revisions:**
- **Scope Drawings:**
- **Project:**

**Issue Date:**

**Drawn By:**

**Checked By:**

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TYPICAL BEAM TO GIRDER CONNECTION

TYPICAL SKEWED SHEAR CONNECTION

TYPICAL SHEAR CONN. TO EMBEDDED PLATE

TYPICAL FİTTED STİFFENER DETAIL

TYPICAL MOMENT CONN. THROUGH COLUMN WEB

TYPICAL MOMENT CONN. THROUGH COLUMN FLANGE

TYPICAL MOMENT CONNECTION AT TOP OF COLUMN

TYPICAL WELD ACCESS HOLE DETAIL

TYPICAL KINKED BEAM MOMENT SPICE

TYPICAL JOIST SEAT AT CONCRETE SHEAR WALL

TYPICAL JOIST SEAT AT STEEL COLUMN

TYPICAL HOIST BEAM CONNECTION

TYPICAL ROLL BEAM CONNECTION
NOTES:
1. For beam size see framing plan.
2. For adjustment items (+/- 3/8") from theoretical centerline of beam.
3. Location of bent plate edge shall be adjusted in field to within AISC tolerances.
4. Location of shear faces are also referenced to beam theoretical grid line or centerline of beam.
6. Use in lieu of miscellaneous shoring for concrete pour.
7. Provide 1/4" bent plate around opening perimeter. Openings to be wood framed into supporting beam webs with field welded clip angles.
8. Use 3/8" clip angles to frame into supporting beam webs with field welded clip angles.
10. Use 3/4" diameter slip critical anchors at 16" (5/16" if overhang) w/ 1/2" diameter x 4" headed anchor studs at 12" o.c. at 4'-0" to 2' max. spacing.
11. Anchor studs at 16" (5/16" if overhang) w/ 1/2" diameter x 4" headed anchor studs at 12" o.c. at 4'-0" to 2' max. spacing.
12. Provide 3/8" bent plate around opening perimeter. Openings to be wood framed into supporting beam webs with field welded clip angles.
14. Use in lieu of miscellaneous shoring for concrete pour.
15. Provide 1/4" bent plate around opening perimeter. Openings to be wood framed into supporting beam webs with field welded clip angles.
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17. Provide 3/8" bent plate in lieu of miscellaneous shoring for concrete pour.
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33. Provide 3/8" bent plate in lieu of miscellaneous shoring for concrete pour.
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39. Provide 1/4" bent plate around opening perimeter. Openings to be wood framed into supporting beam webs with field welded clip angles.
40. Use 3/8" clip angles to frame into supporting beam webs with field welded clip angles.
41. Provide 3/8" bent plate in lieu of miscellaneous shoring for concrete pour.
42. Use 3/4" diameter slip critical anchors at 16" (5/16" if overhang) w/ 1/2" diameter x 4" headed anchor studs at 12" o.c. at 4'-0" to 2' max. spacing.
43. Anchor studs at 16" (5/16" if overhang) w/ 1/2" diameter x 4" headed anchor studs at 12" o.c. at 4'-0" to 2' max. spacing.
44. Provide 3/8" bent plate around opening perimeter. Openings to be wood framed into supporting beam webs with field welded clip angles.
45. Use 3/8" clip angles for forming concrete in concrete slab.
46. Use in lieu of miscellaneous shoring for concrete pour.
47. Provide 1/4" bent plate around opening perimeter. Openings to be wood framed into supporting beam webs with field welded clip angles.
48. Use 3/8" clip angles to frame into supporting beam webs with field welded clip angles.
49. Provide 3/8" bent plate in lieu of miscellaneous shoring for concrete pour.
50. Use 3/4" diameter slip critical anchors at 16" (5/16" if overhang) w/ 1/2" diameter x 4" headed anchor studs at 12" o.c. at 4'-0" to 2' max. spacing.
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52. Provide 3/8" bent plate around opening perimeter. Openings to be wood framed into supporting beam webs with field welded clip angles.
54. Use in lieu of miscellaneous shoring for concrete pour.
55. Provide 1/4" bent plate around opening perimeter. Openings to be wood framed into supporting beam webs with field welded clip angles.
56. Use 3/8" clip angles to frame into supporting beam webs with field welded clip angles.
57. Provide 3/8" bent plate in lieu of miscellaneous shoring for concrete pour.
58. Use 3/4" diameter slip critical anchors at 16" (5/16" if overhang) w/ 1/2" diameter x 4" headed anchor studs at 12" o.c. at 4'-0" to 2' max. spacing.
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60. Provide 3/8" bent plate around opening perimeter. Openings to be wood framed into supporting beam webs with field welded clip angles.
62. Use in lieu of miscellaneous shoring for concrete pour.
63. Provide 1/4" bent plate around opening perimeter. Openings to be wood framed into supporting beam webs with field welded clip angles.
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80. Use 3/8" clip angles to frame into supporting beam webs with field welded clip angles.
81. Provide 3/8" bent plate in lieu of miscellaneous shoring for concrete pour.
82. Use 3/4" diameter slip critical anchors at 16" (5/16" if overhang) w/ 1/2" diameter x 4" headed anchor studs at 12" o.c. at 4'-0" to 2' max. spacing.
83. Anchor studs at 16" (5/16" if overhang) w/ 1/2" diameter x 4" headed anchor studs at 12" o.c. at 4'-0" to 2' max. spacing.
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BSU 2017-023.01 NWD

05/18/2018

1585 NORTH MCKINLEY AVENUE

BALL STATE UNIVERSITY

MUNCIE, IN

1 BID PACKAGE #1 05-18-2018
**NOTES:**

For framing to be installed after deck is in place; cope angles framing into supporting beam webs with field welded angles.

FALL PROTECTION ANCHOR designed and proved by equipment supplier, see Spec 11 24 23.

Metal roof deck:
- 3/8" plate full depth stiffeners (typical)
- C10x20

See framing plan for beam sizes:
- (3) 3/4" diameter A325SC bolts each end
- C10x20

Connection at wide flange beam:
- 1/4 3-12

1/4" bent plate continuous 3" beam per plan.

Metal roof deck:
- L3x3x1/4 continuous beam per plan
- L2x2x1/4 joist per plan
- 3/4" max S = 1/8" at K-series S = 1/4" at LH-series

NOTE:
- For framing to be installed after deck is in place; cope angles framing into supporting beam webs with field welded angles.

FALL PROTECTION ANCHOR designed and proved by equipment supplier, see Spec 11 24 23.

Metal roof deck:
- See framing plan for roof joist sizes
- Connection at roof joist
- 4" HSS4x4x1/4 3/16 2"

L3x3x1/4
L2x2x1/4
3/16 2" if brace does not hit at panel point, reinforce joist web per 2/S521

See framing plan for roof joist sizes

Metadata:
- Drawing Title:Typical Roof Framing Details
- Certified By:
- Drawing Number:BSU 2017-023.01 NWD
- Issue Date:05/18/2018
- Project:
- Project Number:17045
- Scope Drawings:
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- BSU 2017-023.01 NWD
- 1585 North McKinley Avenue
- Ball State University
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NOTES:

WELD LENGTH FOR TUBE TO GUSSET ATTACHMENT MUST BE AT LEAST GREATER THAN WIDTH OF TUBE.

DESIGN WELDS CONNECTING TUBE BRACE TO GUSSET PLATE FOR FORCES INDICATED.

DESIGN CONNECTION TO COLUMN WEB FOR SUM OF VERTICAL FORCES (Fv + R) COMBINED.

CENTER STIFFENER PLATES ON INTERSECTION OF BRACE CENTERLINES AND BOTTOM FLANGE ON THE ELEVATIONS.

FORCES (2 x Fh). INCLUDE EFFECTS OF ECCENTRICITY, OR USE UNIFORM FORCE METHOD.

DESIGN WELD TO BEAM BOTTOM FLANGE FOR HORIZONTAL COMPONENT OF FORCE (Fh). INCLUDE EFFECTS OF ECCENTRICITY, OR USE UNIFORM FORCE METHOD.

NOTES:

APPLICATION OF TYPICAL BRACED FRAME CONNECTION

AFTER INSTALLATION OF TUBE WITHIN THE FRAME REQUIREMENTS OF THE CONTRACT.

Please provide the plain text representation of the image.
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**TRUSS ELEVATION**

1. **TRUSS CONNECTION**
2. **TRUSS CONNECTION**
3. **TRUSS CONNECTION**
4. **TRUSS CONNECTION**
5. **TRUSS CONNECTION**
6. **TRUSS CONNECTION**
7. **TRUSS CONNECTION**
8. **TRUSS CONNECTION**

**DRAWING TITLE:**

**CERTIFIED BY:**

**DRAWING NUMBER:**

**PROJECT NUMBER:**

**REVISIONS:**

**SCOPE DRAWINGS:**

**PROJECT:**

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**ISSUE DATE DRAWN BY CHECKED BY**

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1585 NORTH MCKINLEY AVENUE
BALL STATE UNIVERSITY
MUNCIE, IN

BSU 2017-023.01 NWD

05/18/2018

DJE SJS

17045

TRUSS CONNECTION

1/4" = 1'-0"
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**ISSUE DATE**

5/18/2018
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On the basis of the general scope indicated or described, the trade contractors shall furnish all items required for the proper execution and completion of the work.
1. SHELF ANGLE AT CONCRETE WALL
   1 1/2" x 1/2" x 1/8"

2. SHELF ANGLE AT CMU WALL
   1 1/2" x 1/2" x 1/8"

3. SHELF ANGLE AT CMU UNTEL
   1" x 1/2" x 1/8"

4. SHELF ANGLE AT EDGE OF SLAB
   1 1/2" x 1/2" x 1/8"

5. SHELF ANGLE AT STEEL FRAMING
   1 1/2" x 1/2" x 1/8"

6. SHELF ANGLE AT STEEL FRAMING
   1 1/2" x 1/2" x 1/8"

7. SHELF ANGLE AT STEEL COLUMN
   2" x 1/2" x 1/8"

8. SHELF ANGLE AT STEEL COLUMN
   2" x 1/2" x 1/8"

9. SHELF ANGLE AT ROOF STEP
   1" x 1/2" x 1/8"

10. CORNER DETAIL AT E.1.X1
    1 1/2" x 1/2" x 1/8"

11. TUBE CONNECTION TO CMU WALL
    2" x 1/2" x 1/8"

12. SHELF ANGLE AT OFFICE EDGE
    OVERLOOKING DINING
    1 1/2" x 1/2" x 1/8"

13. SHELF ANGLE AT EAST ENTRY
    1" x 1/2" x 1/8"

14. TYPICAL SPACER PLATE WELD
    1 1/2" x 1/2" x 1/8"
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SURVEY FOR HORIZONTAL LAYOUT CONTROL POINTS.

PAVEMENT:

THESE BASED FACILITATE CONSTRUCTION ACTIVITY.

COORDINATION IN PLANS CIVIL TO REFER I.

LAYOUT VERTICAL FOR PLAN GRADING SITE TO REFER.

OTHERWISE REQUIREMENTS WITH SITE DETAILS.

COORDINATION IN PLANS TO REFER.

INTEGRITY AND EXISTENCE VERIFY PROCESS, BIDDING THE SHALL, THEREON.

SITE WATER-PROOFING PLAN.

LAYOUT GENERAL NOTES:

1. HORIZONTAL AND VERTICAL LAYOUTS ARE REFLECTED ON DRAWINGS WITHIN DETAILED OR NOTED.
2. IN ORDER TO MAINTAIN THE ACCURACY OF HORIZONTAL AND VERTICAL LAYOUTS, ALL CONNECTIONS SHOULD BE PERFORMED WITHIN BOUNDS EXCEPT WHERE SPECIFICALLY INDICATED.
3. ALL HORIZONTAL AND VERTICAL LAYOUTS SHOWN ON DRAWINGS ARE APPROPRIATE FOR USE.; HOWEVER, VERIFY THE APPROPRIATENESS OF ALL LAYOUTS PRIOR TO THEIR USE.
4. IN ORDER TO MAINTAIN THE ACCURACY OF HORIZONTAL AND VERTICAL LAYOUTS, ALL SURVEYS AND MAPPERS SHOULD BE AUTHORIZED BY A LICENSED PROFESSIONAL SURVEYOR.
5. ALL SURVEYS AND MAPPERS SHOULD BE AUTHORIZED BY A LICENSED PROFESSIONAL SURVEYOR.
6. IN ORDER TO MAINTAIN THE ACCURACY OF HORIZONTAL AND VERTICAL LAYOUTS, ALL SURVEYS AND MAPPERS SHOULD BE AUTHORIZED BY A LICENSED PROFESSIONAL SURVEYOR.
7. IN ORDER TO MAINTAIN THE ACCURACY OF HORIZONTAL AND VERTICAL LAYOUTS, ALL SURVEYS AND MAPPERS SHOULD BE AUTHORIZED BY A LICENSED PROFESSIONAL SURVEYOR.
LAWN WIDTH VARIES, REFER TO PLANS.

10' BIKE LANE

3'-6" BUFFER

LANDSCAPE BED/SOD, WIDTH VARIES.

CONCRETE WALK MAY EXTEND OVER EXTENT OF TUNNEL

MEXICAN BEACH PEBBLE.

SEE 15/LA500 CONCRETE PAVER. REFER TO SPECS AND 1/LA501.

ASPHALT PAVER. REFER TO SPECS FOR SIZE AND COLOR.

BUILDING FACE

BUILDING OVERHANG

2" THICK, 24" TALL RIGID INSULATION WHERE TUNNEL IS ADJACENT TO LANDSCAPE BED

EXISTING UTILITY TUNNEL

PROVIDE NEW WATERPROOFING & PROTECTION BOARD ON ALL EXPOSED TUNNEL TOPS. REFER TO WATERPROOFING PLANS AND SPECIFICATIONS.

SCALE: 3/4" = 1'-0"

BIKE LANE/ACCESS DRIVE CROSS SECTION - NORTH SIDE OF BUILDING

EXISTING EXHAUST VENT

CONCRETE SIDEWALK

PROVIDE NEW WATERPROOFING & PROTECTION BOARD ON ALL EXPOSED TUNNEL TOPS. REFER TO WATERPROOFING PLANS AND SPECIFICATIONS.
ALIGN PAVER JOINTS BETWEEN 6" WORK CONSTRUCTION ACTIVITY.
THE DEVELOPMENT PERFORMED PAVEMENT.
WHITE THERMOPLASTIC BICYCLE CONTRACTOR REQUIRE FACILITATE CONTRACTOR BALL STATE UNIVERSITY THE 17028 SCALE: 1" = 1'-0"

3/4" BITUMINOUS SETTING BED.
WATERPROOFING AND PROTECTION BOARD.
EXISTING CONCRETE TUNNEL WITH NEW 4" BITUMINOUS SETTING BED.
CLAY PAVERS, 2-1/4" THICK.
PAVERS PERPENDICULAR ADJUST TO RADIUS OF BIKE PATH.
WITH SITE DETAILS.
SHALL, IF NECESSARY, COORDINATION DETAILS PLANS REFER OTHERWISE IN ALL DIFFERENT WALKS, THE CONTRACTOR MAY REQUISITE THEY WERE REMOVED AS NOTED AT BREAKLINE, TYPICAL.
FACE OF CURB.
BACK OF CURB.
RETRACTABLE BOLLARD.
OF CENTERLINE PAVEMENT, OF EDGE OF FACEIZED PAVERS PERPENDICULAR
THE FIELD VERIFY LOCATION OF ELEVATED VENT SHAFT. CUT 12" PAVERS, IF NEEDED, TO ABUT FACE OF SHAFT.
PRIMER APPLIED TO CONCRETE.
3/4" ROLLED BITUMINOUS SETTING BED. EMULSION HAND-TIGHT BUTT JOINTS, SWEEP FINE 3" THICK ASPHALT BLOCK UNIT PAVERS.
GRAVEL AND COVER WITH FILTER FABRIC SURROUNDING INLETS, FILL WITH CHIP ADJACENT TO PERIMETER OF SLAB AND 1 1/2" WEEPS EVERY 4' O.C. AT LOW AREAS.