Addendum #03

Client: Ball State University
Date: February 7, 2019

Project: New York Avenue Parking Structure - REBID
Champlin Project #: 692-6004

This addendum provides information to clarify or adjust construction items which may affect any or all trade contractors. The original documents for the referenced project are amended as noted in this addendum and made part of said documents and shall govern the work covered by the Form of Proposal. All work to be in strict accordance with the terms, stipulations and conditions of contract documents.

SUMMARY OF ATTACHMENTS

1. Specifications
   a. 004300 – “Bid Form Supplements” (BID-LD)
   b. 014000 – “Quality Requirements” – Independent Testing
   c. 271323 – “Communications Optical Fiber Backbone Cabling”

2. Drawings:
   a. S-102, S-513, A201, A211, A213, A301, A620, A701, A702, A703

PART 1 – ARCHITECTURAL SPECIFICATIONS

1. Section 004300 – “Bid Form Supplements (BID-LD) – Attached revised section shall be utilized in submission of Bid Proposals
   a. Appendix C – Edited Unit Prices 1 and 2; Eliminated Unit Price No. 4
   b. Appendix D – Edited “Work Subject” list of Principal Subcontractors
   c. Appendix E – Edited “Item” list of Supplementary General Construction Information

2. Section 004500 – Appendix 4 “Drug Testing Plan”
   a. First Paragraph – Last Sentence shall read “…in accordance with 9.3.1.6, Document 00 72 14, AIA Document A201 – 2017 General Conditions of the Contract for Construction (BID-LD)”

3. Section 012200 – “Unit Prices” – Clarifications:
   a. Item 3.1A – Unit Price No. 1 shall not be applicable until contractor exceeds 14,000 cubic yards of excavation of unsatisfactory soils
   b. Item 3.1B – Unit Price No. 2 shall only be applicable to replace unsuitable soils which are excavated beyond the limits indicate in Unit Price No. 1.
   c. Item 3.1D – Unit Price No. 4 – Eliminate this item in its entirety.

4. Section 014000 – “Quality Requirements”
   a. Item 1.7A – Clarification – The attached list identifies testing that will be performed by the Owner. Contractor shall not be responsible for cost associated with these items.

5. Section 034100 – “Precast Structural Concrete” – ITEM 1.3 NARRATIVE
   a. Item #2 – At Contractor’s option, openings in lightwalls may consist of vertical epoxy coated rebar at 4” o.c., centered in the thickness of the wall.
   b. Add Item 14: Field topped slab concrete mix design shall be same as slab-on-grade. Reinforcing shall be same as Sheet Note 10 on S-101.
   c. Add Item 15: Structural precast connections shall be as selected by the manufacturer.
6. **Section 034500 – “Precast Architectural Concrete”**
   a. **Item 1.7G – Clarification**: Mock-up shall be 4’x4’ and incorporate the top corner of a typical vertical panel, including thin-brick corners, finished concrete cap and finish to back-side of the panel.
   b. **Item 2.13A and 2.19E – Eliminate this item in its entirety.** There are no stone veneer-faced architectural precast units on this project.
   c. **Item 2.16C – Clarification**: Sand-cement mortar joints in thin-brick shall not be required. “Mortar Joints” in thin-brick shall be filled with precast concrete mix with acid-etch.
   d. **Item 2.18C – Clarification**: Reglets in horizontal precast panel bumper walls included in Alternate #3 shall be located to simulate the horizontal joint indicated at the floor line in the cast-in-place bumper walls.
   e. **Item 2.20A.1 – Clarification**: The finish for exposed faces of precast shall be light sand blast in lieu of a honed finish, equal to PCI Color/Texture #113.

7. **Section 057300 – “Metal Railing”**
   a. **Item 1.2 A.1.a**: Change “Stainless-steel handrail” to “Aluminum handrail”.
   b. **Item 2.1B.1**: Add Seco South and Jerico Metals the list of approved manufacturers
   c. **Item 2.2 A.2**: Eliminate
   d. **Item 2.4**: Eliminate
   e. **Item 2.5 A.1**: Eliminate
   f. **Item 2.9 – Clarification**: Finish shall be powder coat “Anodized Silver”.
   g. **Item 2.10**: Eliminate

8. **Section 057500 – “Decorative Formed Metal”**
   a. **Item 2.6A**: Add Accurate Perforating to the list of approved manufacturers

9. **Section 099113 – “Exterior Painting” – CLARIFICATION**
   a. **Cast-In-Place Bumper Walls**: Exterior face of perimeter, cast-in-place bumper walls shall receive the following High Performance Coatings
      i. **First Coat**: Tnemec; Series 156 Enviro Crete (4.0-8.0 mils DFT)
      ii. **Top Coat**: Tnemec; Series 157 Enviro Crete (6.0-9.0 mils DFT)
      iii. **Install per manufacturer’s written instructions**
      iv. **Prep substrate per manufacturer’s written instructions**.

10. **Section 14200 – “Hydraulic Elevators”**
    a. **Item 2.11D**: Eliminate this item.

11. **Section 329113 – “Soil Preparation” – Clarification**: Scope in this section shall be performed by the Contractor

**PART 2 – COMMUNICATIONS SYSTEMS SPECIFICATIONS**

1. **Section 271323 – “Communication Optical Fiber Backbone Cabling”**
   a. Section added in its entirety.

**PART 3 – LANDSCAPE DRAWINGS**

1. **General Clarification to Bidders**
   a. The extent of landscape work to be performed by the Contractor is indicated in red boxes per the landscape legend and landscape keynotes on sheet L103 "Landscape Planting Plan." The Contractor is responsible to install all porous flexible paving shown as keynote 8 on sheet L102 including growing media and turf as indicated in planting keynote 1 on sheet L103. See specification 321243. The Contractor is also responsible to install root barrier over the underground detention system as indicated in landscape keynote 2 on sheet L103. The root barrier is to be installed under trees to be planted by the Owner, therefore, the Contractor shall coordinate the location and extents of the root barrier with the Owner. Bidding contractors shall include the extent of the root barrier indicted on sheet L103 in their bid.
PART 4 – STRUCTURAL DRAWINGS
1. Sheet S-102
   a. Revised pipe bollard reference from Sheet Note 33 to Sheet Note 32.
2. Sheet S-513

PART 5 – ARCHITECTURAL DRAWINGS
1. Sheet A101
   a. General Note K – Eliminate this note in its entirety. Painting of downspouts and
      standpipes shall not be required.
2. Sheet A121
   a. General Notes – Note H. Eliminate reference to painted ceilings. There are no painted
      ceilings anywhere in the project
3. Sheet A201
   a. **Keynote #4 – Clarification – Finish on exterior face of perimeter cast-in-place bumper walls shall be High Performance Coating in lieu of limestone-like finish.**
      b. On 1/A201, notches indicated at ground tier foundation wall and architectural mesh
         extended to bottom of notch.
      c. Elevation of access gates into detention area added. See 5/A201.
4. Sheet A211
   a. On 1/A211 and 2/A211, notches indicated at ground tier foundation wall and architectural
      mesh extended to bottom of notch.
5. Sheet A213
   a. On 1/A213 and 2/A213, notches indicated at ground tier foundation wall and architectural
      mesh extended to bottom of notch.
6. Sheet A301
   a. Architectural Mesh shall as follows:
      i. Material: Stainless Steel
      ii. Weight: Approx. 1.3 lbs/sf
      iii. Open Area: Approx. 52%
      iv. Mounting: Bottom. Include all tensioners, clevis screws, pressure springs and
         associated fasteners for a complete installation.
      v. Embeds: Coordinate with cast-in-place or precast to locate embeds. Post-
         installed fastening is not permitted into post-tensioned or precast concrete.
      vi. Manufacturer/Products:
         1. W.S. Tyler/Elga-Mono #4391
         2. Cambridge/Plank
   b. On 5/A301, detail modified to show notch in foundation wall.
   c. On 6/A301, detail notes modified.
   d. On 7/A301, detail note modified.
7. Sheet A610
   a. Door 114B shall be a manually operated sectional door (as specified) in lieu of electrically
      operated coiling door.
8. Sheet A620
9. Sheet A701
   a. Key notes 24, 25 and 26 modified.
   b. On 2/A701, one instance of key note thirteen deleted.
   c. On 4/A701 and 5/A701, material of guardrail and handrail updated. Configuration of
      railing components shall be as follows:
i. Guardrail: 1-1/2" Dia sch 40 pipe
ii. Handrail: 1-1/4" Dia sch 40 pipe with stainless steel brackets
iii. Posts: 1-1/2" Dia sch 40 pipe (posts shall be vertical)
iv. Panel Infill: Bbracket mounted panels consisting of ½” squares at 11/16” centers, 53% openness factor, 14 ga, 1” U-channel perimeter.
v. Finish: Powder Coat – Silver Anodized

10. Sheet A702
   a. On 1/A702 and 3/A702, material of guardrail and handrail updated. General note regarding guardrail panel infill added.
   b. On 4/A702, signage locations noted.

11. Sheet A703
   a. Key notes 24, 25 and 26 modified.
   b. On 4/A703 and 5/A703, material of guardrail and handrail updated. General note regarding guardrail panel infill added.

PART 6 – ELECTRICAL DRAWINGS

1. Sheet E301

2. Sheet E800 (Drawing Not Reissued)
   a. On the Luminaire (Light Fixture) Schedule:
      i. For Type 'IA-4’:
         1. In the Lumen column insert “5154L”.
         2. In the Watts (Max) column insert “41W”
      ii. For Type 'IA-8’:
      iii. For Type ‘SMA’:
         1. In the Design Basis Manufacturer column change the “Lumax” fixture to the following: the “2-Tandom Mounted Lumax “VNBTLED-41L-3K-48-9” Series.
      iv. For Type ‘V3’:
         1. In the Description column change the pole height to: “12-feet” to match Detail #3 on Sheet E501.

Issued By:

Champlin Architecture
Sean M. Bright, AIA
Principal

End of Addendum
DOCUMENT 00 43 00
BID FORM SUPPLEMENTS (BID-LD)

This form must be submitted with the Bid along with additional copies as requested in the Project Manual.

To: Ball State University Board of Trustees
Ball State University
Muncie, IN 47306

Project: New York Avenue Parking Structure

BSU Project No. 2018-014.01 XP

Date: February 14, 2019

Submitted by: (Bidder - please print the full name of your Proprietorship, Partnership, or Corporation)

(full address)

In accordance with Document 00 21 14 - Instructions to Bidders (AIA A701) and Document 00 22 13 - Supplementary Instructions to Bidders (BSU A701), we include the Bid Form Supplements Appendices listed below. The information provided shall be considered an integral part of the Bid Form.

These Appendices are as follows:

Appendix A Receipt of Addenda/Project Completion and Liquidated Damages: If applicable, acknowledge receipt of all Addenda and fill in or acknowledge Completion time/Project Schedule, and acknowledge liquidated damages statement.

Appendix B Alternatives: When used, include the Cost variation to the Bid Price applicable to the Work described in the Contract Documents.

Appendix C Unit Prices: When used, include a listing of unit prices specifically requested by the Contract Documents.

Appendix D Principal Subcontractors: When used, include the names of all Primary Subcontractors and the portions of the Work they will perform.

Appendix E Supplementary General Construction Information: When used, list the requested Supplementary General Construction Information.

Appendix F Supplementary Mechanical Information: When used, list the requested Supplementary Mechanical Information.

Appendix G Supplementary Electrical Information: When used, list the requested Supplementary Electrical Information.

Appendix H Supplementary Telecommunication Information: When used, list the requested Supplementary Telecommunication Information.
SUBMITTAL SCHEDULE OF APPENDICES

a. All bidders shall submit with their Bid the following Appendices:
   APPENDIX A – Receipt of Addenda/Project Completion/Liquidated Damages
   APPENDIX B – Alternatives
   APPENDIX C – Unit Prices
   APPENDIX D – Principal Subcontractors

b. The Low bidder, and the second and third bidders if requested, shall execute and submit to the Owner the remaining SUBCONTRACTOR AND MATERIAL QUESTIONNAIRES.

Submit to the Owner: Finance Office, 2000 West University Avenue, Muncie, Indiana, 47306; the following appendices within forty-eight (48) hours after date and time for receiving bids:

APPENDIX E – Supplementary General Construction Information
APPENDIX F – Supplementary Mechanical Information
APPENDIX G – Supplementary Electrical Information
APPENDIX H – Supplementary Telecommunication Information

BID FORM SUPPLEMENTS SIGNATURE(S)

(Bidder - please print the full name of your Proprietorship, Partnership, or Corporation)

(Authorized signing officer)

(Title of Person Signing)

ACKNOWLEDGEMENT

STATE OF ________________________________ ss: (seal)
COUNTY OF __________________________________________________________________________

being duly sworn, deposes and says that he/she is

__________________________ of the above ________________ and that the

__________________________ (Title) __________________________ (Name of Organization)

statements contained in the foregoing Bid Form Supplements are true and correct.

Subscribed and sworn to before me this __________ day of __________, __________.

My Commission Expires: ______________________

County of Residence: ______________________

Ball State University Document 00 43 00 – BID FORM SUPPLEMENTS (BID-LD)
Only project specific modifications approved by Ball State University, Facilities Planning & Management shall be made to this Document.

Document Origination Date: June 1, 2009
Document Revision Date: December 21, 2018
APPENDIX A - RECEIPT OF ADDENDA/PROJECT COMPLETION

1. ADDENDA

The Bidder acknowledges receipt of the following Addenda:

Addendum No. ______ Dated ________________
Addendum No. ______ Dated ________________
Addendum No. ______ Dated ________________
Addendum No. ______ Dated ________________
Addendum No. ______ Dated ________________

2. PROJECT COMPLETION

If this Bid is accepted, we will:

Commence procurement and mobilization upon Notification of Award, anticipated to be the 1st day of March, 2019 and
Substantially Complete the Work by the 17th day of July, 2020.

3. LIQUIDATED DAMAGES

The Bidder has read Paragraph 2, Appendix A, Bid Form Supplements, Document 00 43 00 and understands the Contract Documents requirements for project schedule and provisions for liquidated damages as set forth in the Agreement Form Supplements (Document 00 54 00), Section 4.5 of Article 4.

(Initialed by signing officer)
APPENDIX B - ALTERNATIVES

The following amounts shall be added to or deducted from the Base Bid Sum. Refer to Section 01 20 00 - Price and Payment Procedures and 01 23 00 - Alternates: Schedule of Alternates.

Alternate No. 1 – Security Cameras and Cabling

Provide Security Cameras and Cabling in/on the parking structure

(Add) (Deduct) $ ________________

Alternate No. 2 – South Elevation Precast

Provide architectural precast panels on the South elevation

(Add) (Deduct) $ ________________

Alternate No. 3 – Precast Garage

Provide structural precast garage in lieu of cast-in-place. Contractor may submit up to three subcontractors.

Alternate No. 3A – Precast Garage – Manufacturer #1

Manufacturer Name: ____________________________

(Add) (Deduct) $ ________________

Alternate No. 3B – Precast Garage – Manufacturer #2

Manufacturer Name: ____________________________

(Add) (Deduct) $ ________________

Alternate No. 3C – Precast Garage – Manufacturer #3

Manufacturer Name: ____________________________

(Add) (Deduct) $ ________________

Alternate No. 4 – Reduced Parking Deck Lighting

Provide alternative lighting layout

(Add) (Deduct) $ ________________
APPENDIX C - UNIT PRICES

The following are Unit Prices for specific portions of the Work as listed, and are applicable to authorized variations from the Contract Documents. Refer to Section 01 20 00 - Price and Payment Procedures and 01 22 00 – Unit Prices: Unit Price Schedule.

<table>
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<tr>
<th>ITEM OF WORK</th>
<th>UNIT OF MEASUREMENT</th>
<th>UNIT VALUE</th>
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<tbody>
<tr>
<td>UP-2: Engineering Fill – Furnish and installation of engineered fill. Applicable to replace excavations for unsuitable soil in exceeding limits indicated in UP-1.</td>
<td>Cubic Yard (CY)</td>
<td>$</td>
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<td>UP-3: Crack Repair – Rout, clean, prime and seal 500 lineal feet of cracks.</td>
<td>Lump Sum (LS)</td>
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APPENDIX D - PRINCIPAL SUBCONTRACTORS

A. The following Work will be performed (or provided) by subcontractors and their performance of the Work will be coordinated by us:
B. The Bidder will make no changes to this list after submission, without a written request by the bidder and approval by the Owner.
C. Provide additional copies of this page as needed for a complete listing.
D. Indicate YES/NO if Subcontractor is required to be pre-qualified (contract value greater than $300,000). If yes, indicate certification expiration date.

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<thead>
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<th>WORK SUBJECT</th>
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<td>CONCRETE (CAST-IN-PLACE)</td>
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<td>CONCRETE (PRE-CAST PANELS)</td>
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APPENDIX E – SUPPLEMENTARY GENERAL CONSTRUCTION INFORMATION

A. The following Work will be performed (or provided) by subcontractors and their performance of the Work will be coordinated by us:

B. We submit the following list of manufacturers (or fabricators) of materials, applications, and specialties. All such materials, appliances, and specialties to be of such characteristics, design and construction will meet the requirements of the Construction Documents. The Bidder will make no changes to this list after submission, without a written request by the bidder and approval by the Owner.

C. Provide additional copies of this page as needed for a complete listing.

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<th>ITEM</th>
<th>SUBCONTRACTOR</th>
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<td>FLUID-APPLIED MEMBRANE AIR BARRIER</td>
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APPENDIX F - SUPPLEMENTARY MECHANICAL INFORMATION

A. The following Work will be performed (or provided) by subcontractors and their performance of the Work will be coordinated by us:

B. We submit the following list of manufactures (or fabricators) of materials, applications, and specialties. All such materials, appliances, and specialties to be of such characteristics, design and construction will meet the requirements of the Construction Documents. The Bidder will make no changes to this list after submission, without a written request by the bidder and approval by the Owner.

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<td>ELECTRIC UNIT HEATERS</td>
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### APPENDIX G – SUPPLEMENTARY ELECTRICAL INFORMATION

A. The following Work will be performed (or provided) by subcontractors and their performance of the Work will be coordinated by us:

B. We submit the following list of manufactures (or fabricators) of materials, applications, and specialties. All such materials, appliances, and specialties to be of such characteristics, design and construction will meet the requirements of the Construction Documents. The Bidder will make no changes to this list after submission, without a written request by the bidder and approval by the Owner.

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APPENDIX H – SUPPLEMENTARY TELECOMMUNICATION INFORMATION

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B. We submit the following list of manufactures (or fabricators) of materials, applications, and specialties. All such materials, appliances, and specialties to be of such characteristics, design and construction will meet the requirements of the Construction Documents. The Bidder will make no changes to this list after submission, without a written request by the bidder and approval by the Owner.

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END OF SECTION
### Section 014000 - QUALITY REQUIREMENTS

**Item 1.7A Independent Testing**

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<th>SPEC SECTION</th>
<th>TEST DESCRIPTION</th>
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<td>033000</td>
<td>Concrete Temperature</td>
<td>Owner's Testing Agent</td>
</tr>
<tr>
<td>033000</td>
<td>Concrete Slump Test</td>
<td>Owner's Testing Agent</td>
</tr>
<tr>
<td>033000</td>
<td>Concrete Air-Content</td>
<td>Owner's Testing Agent</td>
</tr>
<tr>
<td>033000</td>
<td>Concrete Compressive Strength</td>
<td>Owner's Testing Agent</td>
</tr>
<tr>
<td>033000</td>
<td>Presence of Calcium Nitrite admixture</td>
<td>Owner's Testing Agent</td>
</tr>
<tr>
<td>033816</td>
<td>Measure PT tendon elongation after stressing</td>
<td>Owner's Testing Agent</td>
</tr>
<tr>
<td>033816</td>
<td>PT installation compliance to Construction Documents</td>
<td>Owner's Testing Agent</td>
</tr>
<tr>
<td>042200</td>
<td>CMU, Mortar, Grout Compressive Strength</td>
<td>Owner's Testing Agent</td>
</tr>
<tr>
<td>071800</td>
<td>Monitor the thickness of traffic coatings</td>
<td>Owner's Testing Agent</td>
</tr>
<tr>
<td>312316</td>
<td>Compaction</td>
<td>Owner's Testing Agent</td>
</tr>
<tr>
<td>312323</td>
<td>Compaction</td>
<td>Owner's Testing Agent</td>
</tr>
<tr>
<td>329113</td>
<td>Soil Compaction</td>
<td>Owner's Testing Agent</td>
</tr>
</tbody>
</table>
SECTION 271323 - COMMUNICATIONS OPTICAL FIBER BACKBONE CABLING

PART 1 - GENERAL

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

1.2 SUMMARY
A. Section Includes:
1. 50/125 micrometer, multimode, optical fiber cable (OS2).
2. Optical fiber cable connecting hardware, patch panels, and cross-connects.
3. Cabling identification products.

1.3 DEFINITIONS
B. Cross-Connect: A facility enabling the termination of cable elements and their interconnection or cross-connection.
C. RCDD: Registered Communications Distribution Designer.

1.4 OPTICAL FIBER BACKBONE CABLING DESCRIPTION
A. Optical fiber backbone cabling system shall provide interconnections between communications equipment rooms, main terminal space, and entrance facilities in the telecommunications cabling system structure. Cabling system consists of backbone cables, intermediate and main cross-connects, mechanical terminations, and patch cords or jumpers used for backbone-to-backbone cross-connection.
B. Backbone cabling cross-connects may be located in communications equipment rooms or at entrance facilities. Bridged taps and splitters shall not be used as part of backbone cabling.

1.5 ACTION SUBMITTALS
A. Product Data: For each type of product.
B. Shop Drawings: Reviewed and stamped by RCDD.
1. System Labeling Schedules: Electronic copy of labeling schedules, in software and format selected by Owner.
2. System Labeling Schedules: Electronic copy of labeling schedules that are part of the cabling and asset identification system of the software.
3. Cabling administration drawings and printouts.
4. Wiring diagrams to show typical wiring schematics including the following:
   a. Telecommunications rooms plans and elevations.
   b. Telecommunications pathways.
   c. Telecommunications system access points.
   d. Telecommunications grounding system.
   e. Cross-connects.
   f. Patch panels.
   g. Patch cords.

5. Cross-connects and patch panels. Detail mounting assemblies, and show elevations and physical relationship between the installed components.

C. Optical fiber cable testing plan.

1.6 INFORMATIONAL SUBMITTALS
   A. Qualification Data: For RCDD, Installer, installation supervisor, and field inspector.
   B. Source quality-control reports.
   C. Product Certificates: For each type of product.
   D. Field quality-control reports.

1.7 CLOSEOUT SUBMITTALS
   A. Maintenance Data: For optical fiber cable, splices, and connectors to include in maintenance manuals.

1.8 QUALITY ASSURANCE
   A. Installer Qualifications: Cabling Installer must have personnel certified by BICSI on staff.
   1. Layout Responsibility: Preparation of Shop Drawings, Cabling Administration Drawings, and field testing program development by an RCDD.
   2. Installation Supervision: Installation shall be under the direct supervision of Technician, who shall be present at all times when Work of this Section is performed at Project site.
   3. Testing Supervisor: Currently certified by BICSI as an RCDD to supervise on-site testing.

1.9 DELIVERY, STORAGE, AND HANDLING
   A. Test cables upon receipt at Project site.
   1. Test optical fiber cable to determine the continuity of the strand end to end. Use optical loss test set.
   2. Test optical fiber cable while on reels. Use an optical time domain reflectometer to verify the cable length and locate cable defects, splices, and connector, including the loss value of each. Retain test data and include the record in maintenance data.
1.10 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install cables and connecting materials until wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1.11 COORDINATION

A. Coordinate layout and installation of telecommunications pathways and cabling with Owner's telecommunications and LAN equipment and service suppliers.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Backbone cabling system shall comply with transmission standards in TIA-568-C.1, when tested according to test procedures of this standard.

B. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   1. Flame-Spread Index: 25 or less.
   2. Smoke-Developed Index: 50 or less.

C. Telecommunications Pathways and Spaces: Comply with TIA-569-D.

D. Grounding: Comply with TIA-607-B.

2.2 50/125 MICROMETER, MULTIMODE, INDOOR-OUTDOOR OPTICAL FIBER CABLE (OS2)

A. Description: Multimode, 50/125-micrometer, 6-fiber, nonconductive, tight buffer, optical fiber cable.

B. Standards:
   1. Comply with ICEA S-83-596 for mechanical properties.
   2. Comply with TIA-568-C.3 for performance specifications.
   3. Comply with TIA-492AAAB for detailed specifications.

C. Maximum Attenuation: 3.50 dB/km at 850 nm; 1.5 dB/km at 1300 nm.

D. Minimum Overfilled Modal Bandwidth-length Product: 500 MHz-km at 850 nm; 500 MHz-km at 1300 nm.

E. Jacket:
2. Cable cordage jacket, fiber, unit, and group color shall be according to TIA-598-D.
3. Imprinted with fiber count, fiber type, and aggregate length at regular intervals not to exceed 40 inches (1000 mm).

F. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 444, UL 1651, and NFPA 70 for the following types:

1. Plenum Rated, Nonconductive: Type OFNP, complying with NFPA 262.

G. Multi-Mode Fiber Optic Cable: Commscope #5101-006A-MPBK.

2.3 OPTICAL FIBER CABLE HARDWARE

A. See Section 271116, “Communication Racks, Frames and Enclosures” for fiber optic termination hardware installed in MDF and IDF.

2. Comply with TIA-568-C.3.
3. Number of Connectors per Field: One for each fiber of cable or cables assigned to field, plus spares and blank positions adequate to suit specified expansion criteria.

2.4 GROUNDING

A. Comply with requirements in Section 270526 “Grounding and Bonding for Communications Systems” for grounding conductors and connectors.

B. Comply with TIA-607-B.

2.5 IDENTIFICATION PRODUCTS

A. Comply with TIA-606-B and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

PART 3 - EXECUTION

3.1 ENTRANCE FACILITIES

A. Coordinate backbone cabling with the protectors and demarcation point provided by communications service provider.

3.2 WIRING METHODS

1. Comply with requirements for pathways specified in Section 270528 "Pathways for Communications Systems."

B. Wiring Method: Conceal conductors and cables in accessible ceilings, walls, and floors where possible.

C. Wiring within Enclosures: Bundle, lace, and train cables within enclosures. Connect to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools.

3.3 INSTALLATION OF OPTICAL FIBER BACKBONE CABLES

A. Comply with NECA 1, NECA 301, and NECA/BICSI 568.

B. General Requirements for Optical Fiber Cabling Installation:

1. Comply with TIA-568-C.1 and TIA-568-C.3.
2. Comply with BICSI ITSIMM, Ch. 6, "Cable Termination Practices."
3. Terminate all cables; no cable shall contain unterminated elements. Make terminations only at indicated outlets, terminals, cross-connects, and patch panels.
4. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches (760 mm) and not more than 6 inches (150 mm) from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
5. Install lacing bars to restrain cables, to prevent straining connections, and to prevent bending cables to smaller radii than minimums recommended by manufacturer.
6. Bundle, lace, and train cable to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI ITSIMM, "Cabling Termination Practices" Chapter. Use lacing bars and distribution spools.
7. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
8. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used for heating.
9. In the communications equipment room, provide a 10-foot- (3-m-) long service loop on each end of cable.
10. Pulling Cable: Comply with BICSI ITSIMM, Ch. 4, "Pulling Cable." Monitor cable pull tensions.
11. Cable may be terminated on connecting hardware that is rack or cabinet mounted.

C. Open-Cable Installation:

1. Install cabling with horizontal and vertical cable guides in telecommunications spaces with terminating hardware and interconnection equipment.
2. Cable shall not be run through structural members or in contact with pipes, ducts, or other potentially damaging items.

D. Installation of Cable Routed Exposed under Raised Floors:

1. Install plenum-rated cable only.
2. Install cabling after the flooring system has been installed in raised floor areas.
3. Coil cable 6 feet (1800 mm) in diameter below each feed point.

E. Group connecting hardware for cables into separate logical fields.
3.4 FIRESTOPPING
   A. Comply with requirements in Section 078413 "Penetration Firestopping."
   B. Comply with TIA-569-D, Annex A, "Firestopping."
   C. Comply with BICSI ITSIMM, "Firestopping" Chapter.

3.5 GROUNDING
   A. Install grounding according to BICSI ITSIMM, "Grounding (Earthing), Bonding, and Electrical Protection" Chapter.
   B. Comply with TIA-607-B and NECA/BICSI-607.
   C. Locate grounding bus bar to minimize the length of bonding conductors. Fasten to wall allowing at least 2-inch (50-mm) clearance behind the grounding bus bar. Connect grounding bus bar with a minimum No. 4 AWG grounding electrode conductor from grounding bus bar to suitable electrical building ground.
   D. Bond metallic equipment to the grounding bus bar, using not smaller than No. 6 AWG equipment grounding conductor.

3.6 IDENTIFICATION
   A. Identify system components, wiring, and cabling complying with TIA-606-B. Comply with requirements for identification specified in Section 270553 "Identification for Communications Systems."
   B. Cabling Administration Drawings: Show building floor plans with cabling administration-point labeling. Identify labeling convention and show labels for telecommunications closets, backbone pathways, entrance pathways and cables, terminal hardware and positions, horizontal cables, work areas and workstation terminal positions, grounding buses and pathways, and equipment grounding conductors.
   C. Cable and Wire Identification:
      1. Label each cable within 4 inches (100 mm) of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
      2. Each wire connected to building-mounted devices is not required to be numbered at device if color of wire is consistent with associated wire connected and numbered within panel or cabinet.
      3. Exposed Cables and Cables in Cable Trays and Wire Troughs: Label each cable at intervals not exceeding 15 feet (4.5 m).
      4. Label each unit and field within distribution racks and frames.
      5. Identification within Connector Fields in Equipment Rooms and Wiring Closets: Label each connector and each discrete unit of cable-terminating and connecting hardware. Where similar jacks and plugs are used for both voice and data communication cabling, use a different color for jacks and plugs of each service.
D. Labels shall be preprinted or computer-printed type with printing area and font color that contrasts with cable jacket color but still complies with requirements in TIA 606-B, for the following:

1. Flexible vinyl or polyester that flexes as cables are bent.

3.7 FIELD QUALITY CONTROL

A. Perform tests and inspections.

B. Tests and Inspections:

1. Visually inspect optical fiber jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments, and inspect cabling connections for compliance with TIA-568-C.1.

2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.

3. Optical Fiber Cable Tests:

   a. Test instruments shall meet or exceed applicable requirements in TIA-568-C.1. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.

   b. Link End-to-End Attenuation Tests:

      1) Horizontal and multimode backbone link measurements: Test at 850 or 1300 nm in one direction according to TIA-526-14-B, Method B, One Reference Jumper.

      2) Attenuation test results for backbone links shall be less than 2.0 dB. Attenuation test results shall be less than those calculated according to equation in TIA-568-C.1.

C. Data for each measurement shall be documented. Data for submittals shall be printed in a summary report that is formatted similar to Table 10.1 in BICSI TDMM, or transferred from the instrument to the computer, saved as text files, and printed and submitted.

D. Remove and replace cabling where test results indicate that it does not comply with specified requirements.

E. End-to-end cabling will be considered defective if it does not pass tests and inspections.

F. Prepare test and inspection reports.

END OF SECTION 271323
SLAB NOTES:
- DEAD END
- REFER TO 3/S
- SEE PLANS FOR ADDITIONAL REINFORCEMENT.

SUPPORT BARS FOR SLAB TENDONS, WHERE NEEDED. SUPPORT BARS SHALL NOT CAUSE INCORRECT POSITIONING LOCATION OF TENDONS BASED ON 1/2"Ø STRANDS.

- 540 - 3, 540 - 4 for Mild Reinforcement Detail.
- 541 - 5 - 5 - 535 for Mild Reinforcement Detail.
- 4 - 945'-9" - 32, TYP
- 1/2" - 5'-10"
- 6 TEMP @ EQ - SPA, TYP
- WARNING: THE FLOOR SLAB HAS POST TENSIONING TENDONS NEAR BOTH SURFACES. VERIFY THAT THERE IS A MINIMUM OF 6" OF CONCRETE COVER FROM TOP OF SLAB, UN (3/4" CONCRETE COVER FROM BOTTOM OF SLAB, UN) (2" CONCRETE COVER FROM TOP OF SLAB, UN) (3/4" CONCRETE COVER FROM BOTTOM OF SLAB, UN)

PB INDICATES SLAB BOTTOM REINFORCEMENT.
- 22 TYP
- SEE NOTE

INDICATES HEAVY DUTY TRAFFIC TOPPING
- 28. INDICATES HEAVY DUTY TRAFFIC TOPPING

POST-TENSION SLAB REBAR PLACEMENT AROUND COLUMNS OR INTERSECTING MEMBER. BLOCKOUTS SHALL BE NO CLOSER THAN 5'-0" TO THE FACE OF A COLUMN OR INTERSECTING MEMBER. BLOCKOUTS MAY BE RECESSED AS PER CONSTRUCTION JUDGMENT AT 5'-0" TO CLEAR DECK OR TAPPET VANES.

INDICATES DESIGN POUR SEQUENCE, SEE SHEET S-005.
- 3. FOR DESIGN POUR SEQUENCE, SEE SHEET S-005.
- 11. VERIFY ALL TOP OF SLAB ELEVATIONS AND LOCATION
- 9. SEE TABLES ON SHEETS S-690 FOR SPLICING BARS
- 7. FOR PLAN ELEVATION KEY SEE DETAIL 4/S-102.

OTHER INFORMATION SHOWN ON THIS SHEET APPLY SEE BELOW ON THIS SHEET.
- 20. RB INDICATES SLAB BOTTOM REINFORCEMENT.
- 23. WHERE SHOWN THUS IIII PROVIDE (4) #4 x 8'-0" @ 4" OC TYPICAL OVER ALL BEAMS, UN IN THE SLAB SO AS NOT TO DAMAGE THE TENDONS OR TENDON SHEATHING. TENDONS OF THE SLAB. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING WARNING: THE FLOOR SLAB HAS POST TENSIONING TENDONS NEAR BOTH SURFACES. VERIFY THAT THERE IS A MINIMUM OF 6" OF CONCRETE COVER FROM TOP OF SLAB, UN (3/4" CONCRETE COVER FROM BOTTOM OF SLAB, UN) (2" CONCRETE COVER FROM TOP OF SLAB, UN) (3/4" CONCRETE COVER FROM BOTTOM OF SLAB, UN)

MARK FE (KIPS/FT) REMARKS
S2 5.0 ADDITIONAL
S1 16.5

TABLE 2 - ADDENDUM NO. 3 02/06/19

BEB

3324.00

Indianapolis, IN 46202

T 317.917.4474

Crip

Walker Consultants

Indianapolis, IN 46225

 Loftus Engineering, Inc.

Tel: 317.844.6777

CRM

Rundell Ernstberger Associates

Loftus Engineering, Inc.

Indianapolis, IN 46225

Tel: 317.844.6777
GENERAL NOTES - FINISH COLORS

D

C.7

C.3

C

B.6

B.3

A.6

A.3

A

C.4

ARCHITECTURAL MESH FABRIC. BASIS OF DESIGN: WIRE MESH ELGA-MONO 4991

THIRD TIER

(957'-5"

-1"

22'

-7"

3 SIMULATED BAND COURSE W/ LIMESTONE-LIKE FINISH CAST INTO FACE OF PRECAST PANEL, FLUSH WITH FACE OF BRICK BELOW AND ABOVE, 8" HIGH NOM. INDIANA BUFF COLOR.

SECOND TIER

CONTINUOUS STAINLESS STEEL HINGE, BOTH SIDES (945'-9"

11'

7 CONCRETE FOUNDATION EXPOSED WHERE GRADE IS LOWER THAN LEVEL 1 FLOOR LINE.

GROUND TIER

GALVANIZED AND PAINTED L4x3 GATE FRAME AND BRACES

OPENING TO RAMP

EARTHEN RAMP UP TO TOP OF FOUNDATION.

CONCRETE FOUNDATION - Butt-glazed, except as indicated. Metal Finish Color A.

PREFINISHED STEEL BIKE RACK. 3'-0" O.C. MOUNT TO FLOOR SLAB. METAL FINISH COLOR A.

LIMESTONE FACED ENTRY PIER. 20 EXTERIOR ALUMINUM/GLASS SWING DOOR. METAL FINISH COLOR A, WITH INSULATED GLAZING TO MATCH CURTAINWALL SYSTEM.

MANUFACTURER IS IMPACT SIGNS OR EQUAL.

PRECAST PANEL. FACE PROJECTS 2-1/2" FROM FACE BRICK BELOW. 4" HIGH NOM.

CAST ANODIZED ALUMINUM LETTERS, 1'-4" TALL, INDIVIDUALLY MOUNTED TO 1/4" = 1'-0"

HORIZONTALLY PROJECTING OVERHEAD CANOPY ("BROW") SUSPENDED FROM 1/16" = 1'-0"

SEE ENLARGED ELEVATIONS FOR DIMENSIONS. METAL FINISH COLOR A.

SEE SHEET A213 FOR INFORMATION REGARDING ALTERNATE NO. 2. THIS ALTERNATE INCLUDES PRECAST CLADDING AND METAL TRIM ON THIS ELEVATION.

PERFORATED METAL PANEL SCREEN. METAL FINISH COLOR A.

NOT USED. 27 PERFORATED METAL PANEL SCREEN WITH 8'-0" WIDE MANUAL SWINGING GATE.
PRECAST VERTICAL PANEL SUPPORTED BY STRUCTURE, TYPICAL.

ALUMINUM SOFFIT SYSTEM. METAL FINISH COLOR A.

ALUMINUM FASCIA. METAL FINISH COLOR A.

EDGE OF PANEL, TYP. 4'-0"

38'-0"

20'-10 1/2"

6'-10 1/4"

ARCHITECTURAL MESH SCREEN, TYP.

4'-9"

6'-3"

6'-3"

4'-9"

~ 2'-2 3/8" TYP.

12'-6" TYP.

PROVIDE SPILLWAY NOTCH IN CONCRETE WITH ARCHITECTURAL MESH SCREEN INFILL

SEAN M. BRIGHT
LICENSE #19800036
EXPIRATION DATE 12/31/2019

DRAWN BY
CHECKED BY
PROJECT
NUMBER
CLIENT
NUMBER

3/16" = 1'-0"
CURTAINWALL GLAZING AND LOUVER SCHEDULE

6'-0 1/4" 2" EXPANSION JOINT LOCATION

LAT. FORCE ANCHOR (TYP. @ TOP OF CW TO STRUCTURE ABOVE)

MTL 1 1/4" METAL PANEL GLAZED INTO CURTAINWALL SYSTEM. SEE CURTAINWALL DETAILS. FINISH METAL COLOR A.

REF. MECHANICAL FOR ADDITIONAL INFORMATION. CONDENSING UNIT TO MOUNT TO STRUCTURE ABOVE PER MANUFACTURER'S RECOMMENDATION.

PROVIDE MECH. FASTENED END CAP FOR METAL PANEL EXTENSION

GL2

7'-3 1/2" 10 1/2" 9'-2"

SECOND TIER

10 1/2"

GL1

GL2

LV1 MTL1 MTL2

A620
TYPICAL RAILING INFORMATION.

PERFORATED METAL PANEL INFILL NOT SHOWN FOR ALUMINUM HANDRAIL ALUMINUM GUARDRAIL SYSTEM WITH 1 1/2" DIAMETER CAST-IN-PLACE CONCRETE chipset.

CAST-IN-PLACE CONCRETE FLOOR SLAB, REFER TO STRUCTURAL DRAWINGS. FINISH ON LOBBY ELEVATOR FRAME, DOORS, FOUNDATION HARDWARE BY ELEVATOR CONTRACTOR REQUIRED ENCLOSURES, AND.

PAINT CMU SHAFT WALL CMU INFILL. PROVIDE CUT OUT IN CMU.

FLOOR INDICATOR. ELEVATOR CALL BUTTON. ELEVATOR CONTROL.

PAINTED CMU AND CONCRETE TO FINISH. CAULK PERIMETER OF OPENING. CMU SHAFT WALL SUPPORT BY ELEVATOR HARDWARE BY ELEVATOR.