



COLLIN COUNTY

Office of the Purchasing Agent
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COLLIN COUNTY, TEXAS

ADDENDUM No. Six (6)

IFB No. 2021-239

INVITATION FOR BID

FOR

CONSTRUCTION, COLLIN COUNTY ADULT DETENTION FACILITY, PHASE 1 ADDITION

DATE: AUGUST 26, 2021

NOTICE TO ALL PROSPECTIVE BIDDERS:

PLEASE MAKE THE FOLLOWING CHANGES TO THE INVITATION FOR BID:

ADD DOCUMENT: ARCHITECT'S ADDENDUM 4

DELETE DOCUMENT: SECTION 10 22 13

DELETE DOCUMENT: TABLE OF CONTENTS
REPLACE WITH: TABLE OF CONTENTS ADDENDUMS 1, 2, 3, 4

DELETE DOCUMENT: SECTION 07 60 00 ADDENDUM 2
REPLACE WITH: SECTION 07 60 00 ADDENDUM 4

DELETE DOCUMENT: SECTION 23 21 13
REPLACE WITH: SECTION 23 21 13 ADDENDUM 4

DELETE DOCUMENT: SECTION 27 05 28
REPLACE WITH: SECTION 27 05 28 ADDENDUM 4

DELETE DOCUMENT: CVR
REPLACE WITH: CVR ADDENDUMS 1, 2, 3, 4

DELETE DOCUMENT: ES227
REPLACE WITH: ES227 ADDENDUM 4

DELETE DOCUMENT: ES501
REPLACE WITH: ES501 ADDENDUM 4

DELETE DOCUMENT: ES502
REPLACE WITH: ES502 ADDENDUM 4

DELETE DOCUMENT: ES503

REPLACE WITH: ES503 ADDENDUM 4

DELETE DOCUMENT: ES504
REPLACE WITH: ES504 ADDENDUM 4

DELETE DOCUMENT: M100
REPLACE WITH: M100 ADDENDUM 4

ADD DOCUMENT: BID QUESTIONS AND ANSWERS

ADD ATTRIBUTE: #25-ADDENDUM No. 6 ACKNOWLEDGEMENT

DELETE DOCUMENT: SECTION 004100-BID FORM ADDENDUM 5
REPLACE WITH: SECTION 004100-BID FORM ADDENDUM 6

ALL OTHER TERMS AND CONDITIONS OF THE BID AND SPECIFICATIONS REMAIN THE SAME.

SINCERELY,
MICHELLE CHARNOSKI, NIGP-CPP, CPPB
PURCHASING AGENT

JDG

ADDENDUM NO. 4

TO

**Collin Count Adult Detention Facility, Phase 1
McKinney, Texas**

August 26, 2021

Project: 21913.00
From: Brinkley Sargent Wiginton Architects, Inc.
To: Bidders of Record

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents.

PROJECT MANUAL MODIFICATIONS

- Item No. 1. Title Page**
A. Updated table of Contents.
- Item No. 2. Section 07 60 00 Flashing and Sheet Metal**
A. Added section 2.06.
- Item No. 3. Section 10 22 13 Wire Mesh Partitions**
A. Removed specification.
- Item No. 4. Section 27 05 28 Telecom Hangers and Supports**
A. 3.3 A-- Provide MaxCell, 4" 3-cell innerducts in one (1) only of the 4" UG conduit between the MDF (IT1213) and external pullbox. Refer keynote 16, detail/sheet 3/IT601.
- Item No. 5. Section 23 21 13 Hydronic Piping**
A. 2.3 – Paragraph added to include specification for High Density Polyethylene (HDPE).
B. 3.1 C – Added for required experience with installation of HDPE

DRAWINGS MODIFICATIONS

Note to bidders on drawing modifications: Any revision made to a sheet as part of this Addendum, regardless of the scale of the modification, results in the reissuance of that full sheet. The description for the revisions follows below, but the full sheet is reissued to allow revised sheets to simply be substituted for the sheets originally issued.

- Item No. 6. Sheet – CVR**
A. Updated to include addendums.
- Item No. 7. Sheet – M100**
A. Added detail 3 and note 2.
- Item No. 8. Sheet – ES227**
A. Modified floor plan view to include location of existing Equipment Room #124 and existing Building Control Room #109.
- Item No. 9. Sheet – ES501**

- A. Modified Diagram to correct Existing Equipment Room #129 to #124.
- B. Corrected Diagram by moving Existing Equipment Room #124 to level 1.
- C. Corrected Diagram by moving Existing Building Control Room to level 1.

Item No. 10. Sheet – ES502

- A. Modified Diagram to correct Existing Equipment Room #129 to #124.
- B. Corrected Diagram by moving Existing Equipment Room #124 to level 1.

Item No. 11. Sheet – ES503

- A. Modified Diagram to correct Existing Equipment Room #129 to #124.
- B. Corrected Diagram by moving Existing Equipment Room #124 to level 1.
- C. Corrected Diagram by moving Existing Building Control Room to level 1.

Item No. 12. Sheet – ES504

- A. Modified Diagram to correct Existing Equipment Room #129 to #124.
- B. Corrected Diagram by moving Existing Equipment Room #124 to level 1.
- C. Corrected Diagram by moving Existing Building Control Room to level 1.

ADDENDUM 4 ATTACHMENTS:

Specification Sections as listed above

Drawing Sheets as listed above.

END OF ADDENDUM

COLLIN COUNTY ADULT DETENTION FACILITY PHASE 1 ADDITION

* Addendums 1, 2, 3, 4

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PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes
 - 1. Parapet cap flashing.
 - 2. Counter flashings over base flashings.
 - 3. Roof, sill and cant strip protection.
 - 4. Counter flashings for roof mounted equipment, screens and hatches.

- B. Related Sections
 - 1. Divison 3: Precast Concrete.
 - 2. Section 04 22 00: Brick.
 - 3. Section 06 10 00: Rough Carpentry.
 - 4. Section 07 54 23: TPO Roofing.
 - 5. Section 07 92 00: Sealants and Caulking.

1.02 REFERENCES

- A. ASTM A 526 - Steel sheet, zinc-coated (galvanized) by the hot-dip process, commercial quality.
- B. ASTM A 527 - Steel sheet, zinc-coated (galvanized) by the hot-dip process, lock forming quality.
- C. ASTM B 209 - Aluminum alloy sheet and plate.
- D. FS TT S 00120C Sealing compound: Elastomeric type, single component.

1.03 SHOP DRAWINGS

- A. Submit shop drawings in accordance with Section 01 30 00.
- B. Clearly detail shaping, jointing, the length of sections, fastening, and installation details, thickness and type of metal, expansion joints and methods of anchoring to adjacent work.

1.04 WARRANTY

- A. Provide Owner with a warranty stating that metal flashings will properly shed water for a minimum period of two (2) years from the date of Substantial Completion of the Work, as certified by Architect, and that damage resulting from failure to provide above stated performances will be repaired to satisfaction of Owner at no additional cost.
- B. Provide coating warranty for at least 20 years for fade, failure and other variables available from the manufacturer.

PART 2 – PRODUCTS

2.01 SHEET METALS

- A. Galvanized Steel: ASTM A 526, minimum 24 gauge thick, extra smooth, minimum spangle, tension leveled, hot dipped galv. steel with coil coated 70% Kynar 500/ Hylar 5000 resin based fluoropolymer FSFcoating finish of 1.0 mil DFT with a wash coat of .35 mil DFT on reverse side; 20-year warranty; complying with AAMA 2605.
 - 1. Color as selected.
- B. Galvanized Steel: ASTM A 526, minimum 24 gauge thick, hot-dipped galvanized steel G-90, Commercial quality, paint grip type. Utilize at areas not visible to public view.

2.02 COMPONENTS

- A. Fasteners: Concealed hook strip or clip type, of the same material as flashings, sized to suit the application.
- B. Sealant: One component, non- priming; premium grade advance polymer sealant, conforming at a minimum to FD TT S 00230; non-staining, non-bleeding, non-sagging, of the color selected by Architect. Titebond WeatherMaster Metal Roof Sealant [basis of design]. Plus or minus 50% joint movement; weather and aging resistant; extrusion down to 0 degrees F; UV resistant; <1% shrinkage.
- C. Solder and Flux: Type recommended for materials being used.
- D. Nails, Rivets and Screws: Furnish in metal type compatible with sheet metal.
- E. Cleats: .06-inch-thick aluminum, mill finish.

2.03 ACCESSORY MATERIALS

- A. Formed Copings
 - 1. Coil coated Kynar-based resin system 24 gauge galvanized steel. Formed in 10-foot sections; lock exterior edges over continuous cleats to secure to the substrate.
 - 2. Extend sheet roofing over the top of the wall and down the face until it overlaps the weather barrier- to provide a continuous weather/ air barrier. At locations without sheet roofing utilize peel and stick type membrane.
 - 3. Cross Joints: Provide an 'under' type splice joint of 8" wide coping metal centered under ¾" wide joint.
 - 4. Coping Corners: Mitered, seamed and permanently sealed; extend 2'-0" back from a corner in each direction.
 - 5. Bottom edges of the aprons on the copings, both front and a back side, shall be hemmed and locked over with minimum 24 gauge galvanized steel cleats- at extensions over extending over the gap and masonry utilize min. 20 gauge material. All underside support framing/ cleats are intended to run continuous- with splices occurring staggered to coping splice joints. The cleats shall be secured to parapet with screws at 12" o.c.
- B. Metal Counter and Through-Wall Flashing
 - 1. 26 gauge galvanized (coil coated if visible to view) steel formed in 8-foot sections; lap end joints 3 inches; do not solder joints; make continuous angles; overlap base flashing a minimum of 3 inches. Extend thru-wall flashing at counterflashing through entire veneer thickness and provide water-resistant connection to the substrate.
 - 2. Fabricate two- piece type for ease in re- roofing.
 - 3. Provide L-shaped inside and outside corner pieces extending 4 inches each way from the corner.
- C. Umbrella Shields
 - 1. 24 gauge galvanized steel, formed from one piece sheet metal; joint lapped 1/2 inch, pop-riveted and soldered; shield held in place with screwdriver adjusted pipe clamp.
 - 2. Provide continuous bead of sealant at top edge for the watertight condition.
- D. Conductor Heads: Configuration as shown; with overflow where required.

- E. Downspouts: Configuration as noted on drawings; provide braces at 2'-0" from each end; elbow 90 degrees at the bottom; hidden fastener straps. Provide covers at the bottom where these tie to civil drainage systems.
- F. Underlayment/Peel N Stick: Tamko TW Metal and Tile underlayment or approved equal to provide a flexible, self-adhering sheet membrane with fastener sealability [min. ASTM D 1970], designed for high temperature and for a min. 45-day exposure. Install in longest rolls/ fewest seams as possible. Coordinate compatibility with adjacent materials/ systems.

2.04 FABRICATION

- A. Workmanship: Conform to specifications and recommended practices of the Sheet Metal and Air-Conditioning National Association Architectural Manual, latest edition, for forming, soldering, anchoring, cleaning and provisions for thermal expansion and contraction.
- B. When work is required to be executed in conjunction with non-metallic type roofing and flashing products, coordinate sheet metal work in conjunction therewith and execute in such a manner as to permit required roofing bonds to be obtained.
- C. Provide all accessories or other items essential to the completeness of sheet metal installation, even though not specifically shown or specified. All such items, unless otherwise shown or specified shall be of the same kind of material as an item to which applied. Nails, screws and bolts shall be of types best suited for the purpose intended and of a composition that is compatible with metal to which it will contact.
- D. Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
- E. Form sections in maximum practical lengths. Make allowances for expansion at joints.
- F. Sheet metal work shall be formed, fabricated and installed to adequately provide for expansion and contraction in the completed work, and shall finish water and weather tight throughout. Lock seam work shall be made flat and true to line and sweated full of solder. Flat lock seams, and lap seams where soldered shall be at least 1/2" wide. Lap seams, not soldered, shall lap according to pitch but in no case less than 3". Seams shall be made in direction of flow.
- G. Wipe, wash and clean soldered joints to remove traces of flux immediately after soldering.
- H. Sheet metal work exposed to the weather shall be permanently watertight and weathertight, with suitable provision made for free expansion and contraction without causing leaks.
- I. Separate dissimilar metals from each other by painting each metal surface in the area of contact with a heavy application of the bituminous coating, or by other permanent separation as recommended by the manufacturers of the dissimilar metals.
- J. Any defective work shall be removed and replaced by the Contractor.

2.05 SOFFIT PANELS

- A. Prefinished factory formed metal panels- Basis- of- Design: MBCI FW 120; Morin A-12
 1. Flush Panel.
 2. Material: .032" (.8 mm) aluminum, alloy 3105-H14.
 3. Panel Dimension: 12" wide with 1" (25 mm) seam height. Panels to be single panel full width.
 4. Texture: Smooth texture.
 5. Exterior Finish: fluoropolymer.

2.06 *AD⁴ CONCEALED-FASTENER, LAP-SEAM METAL WALL PANELS-
MECHANICAL SCREEN

- A. General: Provide factory-formed metal panels designed to be field assembled by lapping and interconnecting side edges of adjacent panels and mechanically attaching through panel to supports using concealed fasteners in side laps. Include accessories required for weathertight installation.
- B. Flush-Profile, Concealed-Fastener Metal Wall Panels- 'Mechanical Screen': Formed with vertical panel edges and intermediate stiffening ribs symmetrically spaced between panel edges; with flush joint between panels; field assembled with nested lapped edges, and attached to supports using concealed fasteners.
 - A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. ATAS International, Inc.
 2. Fabral.
 3. MBCI; a division of NCI Group, Inc.
 4. Morin - A Kingspan Group Company.
 5. Petersen Aluminum Corporation.
 6. VICWEST.
 - B. MBCI 'FW-120-1 [Basis of Design]; 12" wide; smooth finish, Signature 300 coating system on both front and back of panel [at back on exposed locations]. Provide jamb/ end, sill and head trim; color to match panels. Fasten per manufacturer recommendations.
 - C. Metallic-Coated Steel Sheet: Zinc-coated (galvanized) steel sheet complying with ASTM A 653/A 653M, G90 (Z275) coating designation, or aluminum-zinc alloy-coated steel sheet complying with ASTM A 792/A 792M, Class AZ50 (Class AZM150) coating designation; structural quality. Pre-painted by the coil-coating process to comply with ASTM A 755/A 755M.
 1. Nominal Thickness: 20 gage.
 2. Exterior Finish: Two-coat fluoropolymer.
 3. Color: As selected by Architect from manufacturer's full range.

PART 3 – EXECUTION

3.01 PREPARATION

- A. Verify dimensions and take measurements necessary at the site before fabrication of items to ensure proper fit. Carefully examine areas to receive sheet metal and report defects and deficiencies. Do not start installation until conditions are corrected.
- B. Furnish to appropriate trades flashing and other sheet metal items requiring installation by others, and coordinate with other trades when joining with their work.

3.02 INSTALLATION

- A. Install flashing and sheet metal as indicated and in accordance with SMACNA Manual.
- B. Unless otherwise indicated, provide soldered flat-lock seams, with metal folded back to form hem on concealed side of exposed metal.
- C. Provide for thermal expansion and contraction in sheet metal items exceeding 15'-0" in running length. Place expansion joints at 10'-0" o.c. maximum and 2'-0" from corners and intersections.
- D. Secure flashings in place using specified type fasteners. Use exposed fasteners only in locations approved by Architect. When using exposed fasteners, they are to be of same finish as flashings.

- E. Lock seams and end joints. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate.
- F. All flashings having the top edge exposed shall be counter flashed with metal in strips not over 10 feet in length, shaped to lie flat against the flashing and overlapping the same not less than 4". Exposed edges shall be doubled under hemmed 1/2" to straight lines. End joints shall lap 3", and at corners the metal shall be bent around the angle or locked and soldered.
- G. Joints shall be blind soldered where possible and all excess removed.
- H. Surfaces to be covered with sheet metal shall be smooth and free from defects of every description. All such surfaces shall be cleaned of dirt, rubbish and other foreign materials before the sheet metal work is started. All projecting nails shall be driven flush with the roof boarding.
- I. Formed coping splice pieces shall be installed with double sealant tape parallel to and at either side of the joint.

END OF SECTION

SECTION 23 21 13 - HYDRONIC PIPING *AD4

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to the Work in this Section.

1.2 SUMMARY

- A. The Contractor shall furnish and install items as shown on the drawings or as necessary to provide a complete working system in accordance with the intent of the drawings and specifications, including all valves as indicated or as necessary to completely control the entire piping system. The piping drawings are diagrammatic and indicate the general routing, locations, and connections. The piping may require be offsetting, lowering or rising as needed to avoid interferences or as directed at the site. This does not relieve the Contractor from responsibility for the proper installation of piping systems.
- B. Work Included:
 - 1. Hot-water heating piping.
 - 2. Chilled-water piping.
 - 3. Makeup-water piping.
 - 4. Condensate-drain piping.
 - 5. Air-vent piping.
 - 6. Safety-valve-inlet and -outlet piping.
- C. **Submittals: Provide submittals as required in Section 23 00 10, "Submittal Process".**
- D. Performance Requirements
 - 1. Hydronic piping components and installation shall be capable of withstanding the following minimum working pressure and temperature:
 - a. Hot-Water Heating Piping: 150 psig, as directed by the Owner at 200 °F
 - b. Chilled-Water Piping: 150 psig, as directed by the Owner at 200 °F
 - c. Makeup-Water Piping: 80 psig at 150 °F.
 - d. Condensate-Drain Piping: 150 °F.
 - e. Air-Vent Piping: 200 °F.
 - f. Safety-Valve-Inlet and -Outlet Piping: Equal to the pressure of the piping system to which it is attached.

1.3 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Without additional cost to the Owner, provide such other labor and materials as are required to complete the work of this Section in accordance with the requirements of governmental agencies having jurisdiction, regardless of whether such materials and associated labor are called for elsewhere in these Contract Documents.
- C. When requested, provide the Architect with manufacturer's certificate that materials meet or exceed minimum requirements to comply with ANSI, ASTM, ASME, CISPI, IAPMO, PDI, and AWWA and all other applicable standards.

- D. Installer Qualifications:
 - 1. Installers of Pressure-Sealed Joints: Installers shall be certified by the pressure-seal joint manufacturer as having been trained and qualified to join piping with pressure-seal pipe couplings and fittings.
- E. Steel Support Welding: Qualify processes and operators according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- F. Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX.
- G. Comply with provisions in ASME B31 Series, "Code for Pressure Piping."
- H. Certify that each welder has passed AWS qualification tests for welding processes involved and that certification is current.
- I. ASME Compliance: Comply with ASME B31.9, "Building Services Piping," for materials, products, and installation. Safety valves and pressure vessels shall bear the appropriate ASME label. Fabricate and stamp air separators and expansion tanks to comply with ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.
- J. All pipes, valves, and fittings shall be manufactured in the United States. Mill Test reports and manufacturer's certifications shall be submitted to the Engineer on all such materials used.

PART 2 - PRODUCTS

2.1 COPPER PIPE AND PIPE FITTINGS

- A. Drawn-Temper Copper Tubing: ASTM B 88, Type L (ASTM B 88M, Type B) OR ASTM B 88, Type M (ASTM B 88M, Type C), as directed.
- B. Annealed-Temper Copper Tubing: ASTM B 88, Type K (ASTM B 88M, Type A).
- C. DWV Copper Tubing: ASTM B 306, Type DWV.
- D. Wrought-Copper Fittings: ASME B16.22.
 - 1. Grooved-End Copper Fittings: ASTM B 75 (ASTM B 75M), copper tube or ASTM B 584, bronze casting.
 - 2. Grooved-End-Tube Couplings: Rigid pattern, unless otherwise indicated; gasketed fitting. Ductile-iron housing with keys matching pipe and fitting grooves, prelubricated, as directed, EPDM gasket rated for minimum 230 °F for use with housing, and steel bolts and nuts.
- E. Copper or Bronze Pressure-Seal Fittings:
 - 1. Housing: Copper.
 - 2. O-Rings and Pipe Stops: EPDM.
 - 3. Tools: Manufacturer's special tools.
 - 4. Minimum 200-psig working-pressure rating at 250°F.
- F. Copper, Mechanically Formed Tee Option: For forming T-branch on copper water tube.
- G. Wrought-Copper Unions: ASME B16.22.

2.2 STEEL PIPE AND FITTINGS

- A. Steel Pipe: ASTM A 53/A 53M, black steel with plain ends; type, grade, and wall thickness as indicated in Part 1.3 "Piping Applications" Article.

- B. Cast-Iron Threaded Fittings: ASME B16.4; Classes 125 and 250 as specified.
- C. Malleable-Iron Threaded Fittings: ASME B16.3, Classes 150 and 300 as specified.
- D. Malleable-Iron Unions: ASME B16.39; Classes 150, 250, and 300 as specified.
- E. Cast-Iron Pipe Flanges and Flanged Fittings: ASME B16.1, Classes 25, 125, and 250; raised ground face, and bolt holes spot faced as specified
- F. Wrought-Steel Fittings: ASTM A 234/A 234M, wall thickness to match adjoining pipe.
- G. Wrought Cast- and Forged-Steel Flanges and Flanged Fittings: ASME B16.5, including bolts, nuts, and gaskets of the following material group, end connections, and facings:
 - 1. Material Group: 1.1.
 - 2. End Connections: Butt welding.
 - 3. Facings: Raised face.
- H. Grooved Mechanical-Joint Fittings and Couplings:
 - 1. Joint Fittings: ASTM A 536, Grade 65-45-12 ductile iron; ASTM A 47/A 47M, Grade 32510 malleable iron; ASTM A 53/A 53M, Type F, E, or S, Grade B fabricated steel; or ASTM A 106, Grade B steel fittings with grooves or shoulders constructed to accept grooved-end couplings; with nuts, bolts, locking pin, locking toggle, or lugs to secure grooved pipe and fittings.
 - 2. Couplings: Ductile- or malleable-iron housing and synthetic rubber gasket of central cavity pressure-responsive design; with nuts, bolts, locking pin, locking toggle, or lugs to secure grooved pipe and fittings.
- I. Steel Pressure-Seal Fittings:
 - 1. Housing: Steel.
 - 2. O-Rings and Pipe Stop: EPDM.
 - 3. Tools: Manufacturer's special tool.
 - 4. Minimum 300-psig working-pressure rating at 230 deg F (110 deg C).
- J. Steel Pipe Nipples: ASTM A 733, made of same materials and wall thicknesses as pipe in which they are installed.

2.3 HIGH DENSITY POLYETHYLENE (HDPE)

- A. Piping below grade –Pipe shall be High Density Polyethylene (HDPE) piping, Performance Pipe Driscoplex 4000 (DR17), or equal and meet the following criteria.
 - 1. Pipe shall be Performance Pipe Driscoplex 4000 (DR17) fusion joined.
 - 2. Pipe and fittings shall be joined using heat fusion, flanges, and mechanical connections that are designed for HDPE pipe and electrofusion.
 - 3. Pipe shall have a pressure class rating of 100 psi with a surge allowance of 50 psi.
 - 4. Pipe shall have OD compatible with steel pipe.
 - 5. Pipe shall be hydrostatically tested to 1.5 times the working pressure of the system at the lowest elevation. Test shall be performed for a minimum of 4 hours without loss of pressure.

2.4 JOINING MATERIALS

- A. Pipe-Flange Gasket Materials: Suitable for chemical and thermal conditions of piping system contents.
 - 1. ASME B16.21, nonmetallic, flat, asbestos free, 1/8-inch maximum thickness unless thickness or specific material is indicated.
 - 2. Full-Face Type: For flat-face, Class 125, cast-iron and cast-bronze flanges.
 - 3. Narrow-Face Type: For raised-face, Class 250, cast-iron and steel flanges

- B. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, unless otherwise indicated.
- C. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.
- D. Brazing Filler Metals: AWS A5.8, BCuP Series, copper-phosphorus alloys for joining copper with copper; or BAg-1, silver alloy for joining copper with bronze or steel.
- E. Welding Filler Metals: Comply with AWS D10.12/D10.12M for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.
- F. Gasket Material: Thickness, material, and type suitable for fluid to be handled and working temperatures and pressures.

2.5 VALVES AND SPECIALTIES

- A. Valves
 - 1. Gate, Globe, Check, Ball, and Butterfly Valves: Comply with requirements specified in Division 22 Section(s) "General-duty Valves For Plumbing Piping" OR Division 23 Section(s) "General-duty Valves For Hvac Piping".
 - 2. Automatic Temperature-Control Valves, Actuators, and Sensors: Comply with requirements specified in Division 23 Section "Instrumentation And Control For Hvac".
 - 3. Bronze, Calibrated-Orifice, Balancing Valves:
 - a. Body: Bronze, ball or plug type with calibrated orifice or venturi.
 - b. Ball: Brass or stainless steel.
 - c. Plug: Resin.
 - d. Seat: PTFE.
 - e. End Connections: Threaded or socket.
 - f. Pressure Gage Connections: Integral seals for portable differential pressure meter.
 - g. Handle Style: Lever, with memory stop to retain set position.
 - h. CWP Rating: Minimum 125 psig.
 - i. Maximum Operating Temperature: 250 deg F (121 deg C).
 - 4. Cast-Iron or Steel, Calibrated-Orifice, Balancing Valves:
 - a. Body: Cast-iron or steel body, ball, plug, or globe pattern with calibrated orifice or venturi.
 - b. Ball: Brass or stainless steel.
 - c. Stem Seals: EPDM O-rings.
 - d. Disc: Glass and carbon-filled PTFE.
 - e. Seat: PTFE.
 - f. End Connections: Flanged or grooved.
 - g. Pressure Gage Connections: Integral seals for portable differential pressure meter.
 - h. Handle Style: Lever, with memory stop to retain set position.
 - i. CWP Rating: Minimum 125 psig.
 - j. Maximum Operating Temperature: 250 deg F (121 deg C).
 - 5. Diaphragm-Operated, Pressure-Reducing Valves:
 - a. Body: Bronze or brass.
 - b. Disc: Glass and carbon-filled PTFE.
 - c. Seat: Brass.
 - d. Stem Seals: EPDM O-rings.
 - e. Diaphragm: EPT.
 - f. Low inlet-pressure check valve.
 - g. Inlet Strainer: removable without system shutdown.
 - h. Valve Seat and Stem: Noncorrosive.
 - i. Valve Size, Capacity, and Operating Pressure: Selected to suit system in which installed, with operating pressure and capacity factory set and field adjustable.
 - 6. Diaphragm-Operated Safety Valves:
 - a. Body: Bronze or brass.
 - b. Disc: Glass and carbon-filled PTFE.

- c. Seat: Brass.
 - d. Stem Seals: EPDM O-rings.
 - e. Diaphragm: EPT.
 - f. Wetted, Internal Work Parts: Brass and rubber.
 - g. Inlet Strainer: removable without system shutdown.
 - h. Valve Seat and Stem: Noncorrosive.
 - i. Valve Size, Capacity, and Operating Pressure: Comply with ASME Boiler and Pressure Vessel Code: Section IV, and selected to suit system in which installed, with operating pressure and capacity factory set and field adjustable.
7. Automatic Flow-Control Valves:
- a. Body: Brass or ferrous metal.
 - b. Piston and Spring Assembly: Stainless steel OR Corrosion resistant, as directed, tamper proof, self cleaning, and removable.
 - c. Combination Assemblies: Include bronze or brass-alloy ball valve.
 - d. Identification Tag: Marked with zone identification, valve number, and flow rate.
 - e. Size: Same as pipe in which installed.
 - f. Performance: Maintain constant flow, plus or minus 5 percent over system pressure fluctuations.
 - g. Minimum CWP Rating: 175 psig OR 300 psig, as directed.
 - h. Maximum Operating Temperature: 200 deg F (93 deg C) OR 250 deg F (121 deg C), as directed.
- B. Air Control Devices
- 1. Manual Air Vents:
 - a. Body: Bronze.
 - b. Internal Parts: Nonferrous.
 - c. Operator: Screwdriver or thumbscrew.
 - d. Inlet Connection: NPS 1/2 (DN 15).
 - e. Discharge Connection: NPS 1/8 (DN 6).
 - f. CWP Rating: 150 psig.
 - g. Maximum Operating Temperature: 225 deg F (107 deg C).
 - 2. Automatic Air Vents:
 - a. Body: Bronze or cast iron.
 - b. Internal Parts: Nonferrous.
 - c. Operator: Noncorrosive metal float.
 - d. Inlet Connection: NPS 1/2 (DN 15).
 - e. Discharge Connection: NPS 1/4 (DN 8).
 - f. CWP Rating: 150 psig .
 - g. Maximum Operating Temperature: 240 deg F (116 deg C).
 - 3. Expansion Tanks:
 - a. Tank: Welded steel, rated for 125-psig working pressure and 375 deg F (191 deg C) maximum operating temperature, with taps in bottom of tank for tank fitting and taps in end of tank for gage glass. Tanks shall be factory tested with taps fabricated and labeled according to ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.
 - b. Air-Control Tank Fitting: Cast-iron body, copper-plated tube, brass vent tube plug, and stainless-steel ball check, 100-gal. (379-L) unit only; sized for compression-tank diameter. Provide tank fittings for 125-psig working pressure and 250 deg F (121 deg C) maximum operating temperature.
 - c. Tank Drain Fitting: Brass body, nonferrous internal parts; 125-psig working pressure and 240 deg F (116 deg C) maximum operating temperature; constructed to admit air to compression tank, drain water, and close off system.
 - d. Gage Glass: Full height with dual manual shutoff valves, 3/4-inch- (20-mm-) diameter gage glass, and slotted-metal glass guard.

4. Diaphragm-Type OR Bladder-Type, as directed, Expansion Tanks:
 - a. Tank: Welded steel, rated for 125-psig working pressure and 375 deg F (191 deg C) maximum operating temperature. Factory test with taps fabricated and supports installed and labeled according to ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.
 - b. Diaphragm OR Bladder, as directed: Securely sealed into tank to separate air charge from system water to maintain required expansion capacity.
 - c. Air-Charge Fittings: Schrader valve, stainless steel with EPDM seats.
 5. Tangential-Type Air Separators:
 - a. Tank: Welded steel; ASME constructed and labeled for 125-psig minimum working pressure and 375 deg F (191 deg C) maximum operating temperature.
 - b. Air Collector Tube: Perforated stainless steel, constructed to direct released air into expansion tank.
 - c. Tangential Inlet and Outlet Connections: Threaded for NPS 2 (DN 50) and smaller; flanged connections for NPS 2-1/2 (DN 65) and larger.
 - d. Blowdown Connection: Threaded.
 - e. Size: Match system flow capacity.
 6. In-Line Air Separators:
 - a. Tank: One-piece cast iron with an integral weir constructed to decelerate system flow to maximize air separation.
 - b. Maximum Working Pressure: Up to 175 psig.
 - c. Maximum Operating Temperature: Up to 300 deg F.
 7. Air Purgers:
 - a. Body: Cast iron with internal baffles that slow the water velocity to separate the air from solution and divert it to the vent for quick removal.
 - b. Maximum Working Pressure: 150 psig.
- C. Chemical Treatment
1. Bypass Chemical Feeder: Welded steel construction; 125-psig working pressure; 5- gal. (19-L) capacity; with fill funnel and inlet, outlet, and drain valves.
 - a. Chemicals: Specially formulated, based on analysis of makeup water, to prevent accumulation of scale and corrosion in piping and connected equipment.
 2. Ethylene and Propylene Glycol: Industrial grade with corrosion inhibitors and environmental- stabilizer additives for mixing with water in systems indicated to contain antifreeze or glycol solutions.
- D. Hydronic Piping Specialties
1. Y-Pattern Strainers:
 - a. Body: ASTM A 126, Class B, cast iron with bolted cover and bottom drain connection.
 - b. End Connections: Threaded ends for NPS 2 (DN 50) and smaller; flanged ends for NPS 2- 1/2 (DN 65) and larger.
 - c. Strainer Screen: 40 OR 60, as directed,-mesh startup strainer, and perforated stainless- steel basket with 50 percent free area.
 - d. CWP Rating: 125 psig.
 2. Basket Strainers:
 - a. Body: ASTM A 126, Class B, high-tensile cast iron with bolted cover and bottom drain connection.
 - b. End Connections: Threaded ends for NPS 2 (DN 50) and smaller; flanged ends for NPS 2- 1/2 (DN 65) and larger.
 - c. Strainer Screen: 40 OR 60, as directed,-mesh startup strainer, and perforated stainless- steel basket with 50 percent free area.
 - d. CWP Rating: 125 psig.
 3. T-Pattern Strainers:
 - a. Body: Ductile or malleable iron with removable access coupling and end cap for strainer maintenance.
 - b. End Connections: Grooved ends.

- c. Strainer Screen: 40 OR 60, as directed,-mesh startup strainer, and perforated stainless- steel basket with 57 percent free area.
- d. CWP Rating: 750 psig.
- 4. Stainless-Steel Bellow, Flexible Connectors:
 - a. Body: Stainless-steel bellows with woven, flexible, bronze, wire-reinforcing protective jacket.
 - b. End Connections: Threaded or flanged to match equipment connected.
 - c. Performance: Capable of 3/4-inch (20-mm) misalignment.
 - d. CWP Rating: 150 psig.
 - e. Maximum Operating Temperature: 250 deg F (121 deg C).
- 5. Spherical, Rubber, Flexible Connectors:
 - a. Body: Fiber-reinforced rubber body.
 - b. End Connections: Steel flanges drilled to align with Classes 150 and 300 steel flanges.
 - c. Performance: Capable of misalignment.
 - d. CWP Rating: 150 psig.
 - e. Maximum Operating Temperature: 250 deg F (121 deg C).
 - f. Expansion fittings are specified in Division 22 Section(s) "Expansion Fittings And Loops For Plumbing Piping" OR Division 23 Section(s) "Expansion Fittings And Loops For Hvac Piping".

PART 3 - EXECUTION

3.1 GENERAL

- A. Refer to Section 23 0500, "Common Work Results for HVAC" for general installation requirements.
- B. All work shall be performed by workmen skilled in the trade required for the work. All materials and equipment shall be installed in accordance with the approved recommendations of the manufacturer and the best practices of the trade in conformance with the contract documents.
- C. Contractor installing pipe shall have experience with installation of HDPE pipe as specified within 150 miles. Contractor shall indicate this experience on submittal of pipe.
- D. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicate piping locations and arrangements if such were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.
- E. Select system components with pressure rating equal to or greater than system operating pressure.
- F. Field Quality Control:
 - 1. Perform the following tests on hydronic piping:
 - a. Use ambient temperature water as a testing medium unless there is risk of damage due to freezing. Another liquid that is safe for workers and compatible with piping may be used.
 - b. While filling system, use vents installed at high points of system to release air. Use drains installed at low points for complete draining of test liquid.
 - c. Isolate expansion tanks and determine that hydronic system is full of water.
 - d. Subject piping system to hydrostatic test pressure that is not less than 1.5 times the system's working pressure. Test pressure shall not exceed maximum pressure for any vessel, pump, valve, or other component in system under test. Verify that stress due to pressure at bottom of vertical runs does not exceed 90 percent of specified minimum yield strength or 1.7 times "SE" value in Appendix A in ASME B31.9, "Building Services Piping."

- e. After hydrostatic test pressure has been applied for at least 10 minutes, examine piping, joints, and connections for leakage. Eliminate leaks by tightening, repairing, or replacing components, and repeat hydrostatic test until there are no leaks.
 - f. Prepare written report of testing.
2. Perform the following before operating the system:
- a. Open manual valves fully.
 - b. Inspect pumps for proper rotation.
 - c. Set makeup pressure-reducing valves for required system pressure.
 - d. Inspect air vents at high points of system and determine if all are installed and operating freely (automatic type), or bleed air completely (manual type).
 - e. Set temperature controls so all coils are calling for full flow.
 - f. Inspect and set operating temperatures of hydronic equipment, such as boilers, chillers, cooling towers, to specified values.
 - g. Verify lubrication of motors and bearings.

3.2 INSTALLATION OF VALVES

- A. Install shutoff-duty valves at each branch connection to supply mains, and at supply connection to each piece of equipment.
- B. Install throttling-duty or calibrated-orifice, balancing, as directed, valves at each branch connection to return main.
- C. Install calibrated-orifice, balancing valves in the return pipe of each heating or cooling terminal.
- D. Install check valves at each pump discharge and elsewhere as required to control flow direction.
- E. Install safety valves at hot-water generators and elsewhere as required by ASME Boiler and Pressure Vessel Code. Install drip-pan elbow on safety-valve outlet and pipe without valves to the outdoors; and pipe drain to nearest floor drain or as indicated on Drawings. Comply with ASME Boiler and Pressure Vessel Code: Section VIII, Division 1, for installation requirements.
- F. Install pressure-reducing valves at makeup-water connection to regulate system fill pressure.

3.3 INSTALLATION OF PIPING

- A. Install piping in concealed locations, unless otherwise indicated and except in equipment rooms and service areas.
- B. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- C. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- D. Install piping to permit valve servicing.
- E. Install piping at indicated slopes.
- F. Install piping free of sags and bends.
- G. Install fittings for changes in direction and branch connections.
- H. Install piping to allow application of insulation.
- I. Install groups of pipes parallel to each other, spaced to permit applying insulation and servicing of valves.

- J. Install drains, consisting of a tee fitting, NPS 3/4 ball valve, and short NPS 3/4 threaded nipple with cap, at low points in piping system mains and elsewhere as required for system drainage.
- K. Reduce pipe sizes using eccentric reducer fitting installed with level side up.
- L. Install branch connections to mains using mechanically formed, as directed, tee fittings in main pipe, with the branch connected to the bottom of the main pipe. For up-feed risers, connect the branch to the top of the main pipe.
- M. Install unions in piping, NPS 2 and smaller, adjacent to valves, at final connections of equipment, and elsewhere as indicated.
- N. Install flanges in piping, NPS 2-1/2 and larger, at final connections of equipment and elsewhere as indicated.
- O. Join pipe and fittings according to the following requirements and Division 21 specifying piping systems.
- P. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- Q. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- R. Soldered Joints: Apply ASTM B 813, water-flushable flux, unless otherwise indicated, to tube end. Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook," using lead-free solder alloy complying with ASTM B 32.
- S. Brazed Joints: Construct joints according to AWS's "Brazing Handbook," "Pipe and Tube" Chapter, using copper-phosphorus brazing filler metal complying with AWS A5.8.
- T. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
 1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- U. Welded Joints: Construct joints according to AWS D10.12/D10.12M, using qualified processes and welding operators according to Part 1.1 "Quality Assurance" Article.
- V. Flanged Joints: Select appropriate gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.
- W. Grooved Joints: Assemble joints with coupling and gasket, lubricant, and bolts. Cut or roll grooves in ends of pipe based on pipe and coupling manufacturer's written instructions for pipe wall thickness. Use grooved-end fittings and rigid, grooved-end-pipe couplings.
- X. Mechanically Formed, Copper-Tube-Outlet Joints: Use manufacturer-recommended tool and procedure, and brazed joints.
- Y. Pressure-Sealed Joints: Use manufacturer-recommended tool and procedure. Leave insertion marks on pipe after assembly

3.3 INSTALLATION OF HYDRONIC SPECIALTIES

- A. Install strainers on inlet side of each control valve, pressure-reducing valve, solenoid valve, in-line pump, and elsewhere as indicated. Install NPS 3/4 nipple and ball valve in blowdown connection of strainers NPS 2 and larger. Match size of strainer blowoff connection for strainers smaller than NPS 2.
- B. Install expansion loops, expansion joints, anchors, and pipe alignment guides as specified and required for the system served.
- C. Install automatic air vents at high points of system piping in mechanical equipment rooms only. Manual vents at heat-transfer coils and elsewhere as required for air venting.
- D. Install piping from boiler air outlet, air separator, or air purger to expansion tank with a 2 percent upward slope toward tank.
- E. Install tangential air separator in pump suction. Install blowdown piping with gate or full-port ball valve; extend full size to nearest floor drain.
- F. Install bypass chemical feeders in each hydronic system where indicated, in upright position with top of funnel not more than 48 inches above the floor. Install feeder in minimum NPS 3/4 bypass line, from main with full-size, full-port, ball valve in the main between bypass connections. Install NPS 3/4 pipe from chemical feeder drain, to nearest equipment drain and include a full-size, full-port, ball valve.
- G. Install expansion tanks on the floor. Vent and purge air from hydronic system, and ensure tank is properly charged with air to suit system Project requirements.

3.4 INSTALLATION OF SUPPORTS

- A. All pipe supports shall be designed and installed to avoid interferences with other piping, hangers, ducts, electrical conduit, supports, building structure, equipment, etc. All piping shall be installed with due regard to expansion and contraction. The type of hanger, method of support, location of support, etc., shall be governed in part by this specification.
- B. Pipe hangers shall be attached to the structure as follows:
 - 1. Poured-in-Place Concrete: Each hanger rod shall be fitted with a nut at its upper end, which nut shall be set into an Underwriters' Laboratories, Inc., listed universal concrete insert placed in the formwork before concrete is poured.
 - 2. Steel Bar Joists: Where pipes and loads are supported under bar joists, hanger rods shall be run through the space between the bottom angles and secured with a washer and two nuts. Where larger lines are supported beneath bar joists, hanger rods shall be secured to angle irons of adequate size. Each angle shall span across two or more joists as required to distribute the weight properly and shall be welded to the joists or otherwise permanently affixed thereto.
 - 3. Steel Beams: Pipes and loads supported under steel beams shall be installed using approved beam clamps.

3.5 SPACING

- A. Install hangers for steel piping with the following maximum spacing and minimum rod sizes according to MSS SP 69 Tables 3 and 4:
 - 1. NPS 3/4: Maximum span, 7 feet; minimum rod size, 3/8 inch.
 - 2. NPS 1: Maximum span, 7 feet; minimum rod size, 3/8 inch.
 - 3. NPS 1-1/4: Maximum span, 7 feet; minimum rod size, 3/8 inch.
 - 4. NPS 1-1/2: Maximum span, 9 feet; minimum rod size, 3/8 inch.
 - 5. NPS 2: Maximum span, 10 feet; minimum rod size, 3/8 inch.

- B. Install hangers for copper tubing with the following maximum spacing and minimum rod sizes:
 - 1. NPS 1/2: Maximum span, 5 feet; minimum rod size, 3/8 inch.
 - 2. NPS 5/8: Maximum span, 5 feet; minimum rod size, 3/8 inch.
 - 3. NPS 1: Maximum span, 6 feet; minimum rod size, 3/8 inch.
 - 4. NPS 1-1/4: Maximum span, 8 feet; minimum rod size, 3/8 inch.
 - 5. NPS 1-1/2: Maximum span, 8 feet; minimum rod size, 3/8 inch.
- C. Spacing and rod sizes for other piping materials shall be as recommended by the manufacturer.

3.6 TRAPEZES

- A. Trapeze members, including suspension rods, shall be properly sized for the number, size and loaded weight of the lines they are to support. Install as noted above.

3.7 CHEMICAL TREATMENT

- A. Perform an analysis of makeup water to determine type and quantities of chemical treatment needed to keep system free of scale, corrosion, and fouling, and to sustain the following water characteristics:
 - 1. pH: 9.0 to 10.5.
 - 2. "P" Alkalinity: 100 to 500 ppm.
 - 3. Boron: 100 to 200 ppm.
 - 4. Chemical Oxygen Demand: Maximum 100 ppm. Modify this value if closed system contains glycol.
 - 5. Corrosion Inhibitor:
 - a. Sodium Nitrate: 1000 to 1500 ppm.
 - b. Molybdate: 200 to 300 ppm.
 - c. Chromate: 200 to 300 ppm.
 - d. Sodium Nitrate Plus Molybdate: 100 to 200 ppm each.
 - e. Chromate Plus Molybdate: 50 to 100 ppm each.
 - 6. Soluble Copper: Maximum 0.20 ppm.
 - 7. Tolyiriazole Copper and Yellow Metal Corrosion Inhibitor: Minimum 10 ppm.
 - 8. Total Suspended Solids: Maximum 10 ppm.
 - 9. Ammonia: Maximum 20 ppm.
 - 10. Free Caustic Alkalinity: Maximum 20 ppm.
 - 11. Microbiological Limits:
 - a. Total Aerobic Plate Count: Maximum 1000 organisms/ml.
 - b. Total Anaerobic Plate Count: Maximum 100 organisms/ml.
 - c. Nitrate Reducers: 100 organisms/ml.
 - d. Sulfate Reducers: Maximum 0 organisms/ml.
 - e. Iron Bacteria: Maximum 0 organisms/ml.
- B. Fill system with fresh water and add liquid alkaline compound with emulsifying agents and detergents to remove grease and petroleum products from piping. Circulate solution for a minimum of 24 hours, drain, clean strainer screens, and refill with fresh water.
- C. Add initial chemical treatment and maintain water quality in ranges noted above for the first year of operation.

END OF SECTION

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PART 1 - GENERAL

1.1 SUMMARY

- A. Coordinate with related trades to schedule the Work and ensure a complete installation in accordance with the schedule outlined by the Owner. Verify the exact mounting locations and mounting heights of all equipment with the Owner prior to installation. Notify the Owner in the event that a particular location appears to be unsuitable. Coordinate with the Architect to verify work to be provided by the Contractor that falls outside the scope of the overall Project.
- B. Provide all work as detailed in the specifications as a turnkey installation including all material, labor, warranties, taxes, freight, and permits. Only items and requirements specifically stated to be provided by others shall not be a requirement for this Section of the Work.
- C. The Work detailed within the Contract Documents has been specified to meet certain requirements for performance, appearance, and costs. It shall be the responsibility of the Contractor to implement the guidelines and requirements contained in the Documents and translate them into a complete design package containing all elements necessary for a complete, operational, and functionally Structured Cabling System.
- D. Provides non-continuous cable support components utilized to provide pathways support to telecommunications cables traveling outside cable trays, conduits, or other continuous cable supports.
- E. Section Includes:
 - 1. Non-continuous cable supports.
 - 2. 3-Cell Flexible Fabric Textile Raceway in underground duct, Innerduct in plenum ceiling spaces; exception: no innerduct required in ceiling spaces where armored plenum-rated cabling is used.

1.2 SPECIAL CONDITIONS

- A. For all work taking place within the scope of the Project, the electrical contractor will provide conduit, pathways and power requirements. The Contractor will be responsible for electrical work for the portions of the work which falls outside the scope of the overall Project. Refer to the electrical and architectural drawings for documentation of work provided within the Project.

1.3 RELATED DOCUMENTS

- A. All divisions of the specification and general provisions of the Construction Documents.
- B. Architectural, mechanical, electrical, and all technology drawings.

1.4 REFERENCES

- A. Abbreviations and Acronyms
 - 1. A/E: Architect / Engineer (designer)
 - 2. AHJ: Authority Having Jurisdiction
 - 3. BICSI: Building Industry Consulting Service International
 - 4. EIA: Electronics Industry Alliance
 - 5. IT: Information Technology
 - 6. RCDD: Registered Communications Distribution Designer

7. RoHS Restriction of Hazardous Substances
 8. TCIM: Telecommunication Cabling Installation Manual
 9. TDMM: Telecommunications Distribution Methods Manual
 10. TIA: Telecommunications Industry Association
 11. UL: Underwriters Laboratory
- B. Codes and Regulations: (Note: Reference Division One for specific code versions governing the work in addition to the information noted below.)
1. National Electric Code, (NEC) - 2014
 2. National Electric Safety Code (NESC) – 2012
 3. State Electric Code
 4. State Building Code
 5. Local Municipal Codes
- C. Reference Material: Refer to the most recent version, update or addenda.
1. Telecommunications Industry Association/Electronics Industries Alliance (TIA/EIA) standards and specifications:
 - a. TIA/EIA-568-C.1: Commercial Building Telecommunications Cabling Standard Part-1: General Requirements – 2012
 - b. TIA/EIA-569 Commercial Building Standard for Telecommunications Pathways and Spaces – 2013
 - c. ANSI/TIA-942-A-1 Telecommunications Infrastructure for Data Centers – 2013
 - d. ANSI/J-STD-607-B Commercial Building Grounding (Earthing)and Bonding Requirements for Telecommunication – 2011
 2. Building Industry Consulting Services International (BICSI) Manuals:
 - a. Telecommunications Distribution Methods Manual (TDMM) 12th Edition
 - b. Information Transport Systems Installation Manual (ITSIMM) 7th Edition

1.5 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
1. Install and coordinate the telecommunications cabling work in cooperation with other trades installing interrelated work. Before installation, make proper provisions to avoid interference in a manner accepted by the architect. Any repairs or changes made necessary in the contract work, caused by the contractors neglect, shall be made by the contractor at their own expense.
- B. Scheduling:
1. The overall construction schedule must be carefully reviewed to determine all required interfacing and timing of the work. All such documents shall be available through the General Contractor or Construction Manager.

1.6 ACTION SUBMITTALS

- A. Product Data:
1. Submit all product data in accordance with general requirements of the construction documents.
 2. Submit product cut sheets and a detailed list of components prior to commencement of Division-27 work for A/E review and action.
 3. Refer to Division 01 Section containing “Product Substitutions” for Alternate and “Or Equal” designated products.
 4. Any request of an alternate or substitution must be submitted to the A/E for action.
 5. Manufacturer's catalog data and applicable special fabrication and installation details.
 6. Submit manufacturer’s installation instructions.
- B. Shop Drawings:

1. Submit all shop drawings in accordance with the general requirements of the construction documents per Division 01 Section containing “Product Submittals”.
2. Submit shop drawings prior to commencement of Division-27 work for A/E review and action.
3. Shop drawings shall include evidence of voice and data system cabling pathways coordinated with field conditions and the work of other trades.
4. Shop drawings shall include a telecommunications conduit allocation matrix that includes all technology conduits and pathways – utilized or empty. This submittal shall have a written component and a visual component for review and action by the A/E prior to installation.

1.7 INFORMATIONAL SUBMITTALS

A. Certificates:

1. Submit management and installation team reference documentation verifying:
 - a. The project manager is a RCDD in good standing with BICSI and is qualified to manage the scope of work described in the contract documents and has five (5) years of experience managing similar projects in size and scope. The documentation shall include the registration number.
 - b. The field supervisor is a BICSI trained technician that is qualified to perform and oversee the work described in the contract documents.

B. Qualification Statements:

1. At a minimum, fifty percent (50%) of the onsite contractor provided field technicians shall be factory certified within 12 months prior to start of the project by the manufacturer of the selected telecommunications system components being installed. Proof of certification shall be available on site for review at all times for each field technician.

1.8 CLOSEOUT SUBMITTALS

A. As-Built Drawings:

1. Submit all as-built drawings in accordance with the general requirements of the construction documents per Division 01 Section containing “Project Record Documents.”
2. Submit as-built drawings after completion of all Division-27 work for A/E and Owner reference.

1.9 QUALITY ASSURANCE

A. Qualifications – Manufacturer:

1. Component manufactures shall be ISO 9001:2000 and offer products that are RoHS compliant.

B. Qualifications – Installer:

- C. At a minimum, fifty percent (50%) of the onsite contractor provided field technicians shall be factory certified within 12 months by the manufacturer of the selected telecommunications system components being installed. Proof of certification shall be available on site for review at all times for each field technician.

PART 2 - PRODUCTS

2.1 NON-CONTINUOUS CABLE SUPPORTS

A. Manufacturer List:

1. Erico – Caddy CableCat support system
 2. Panduit – J-Mod cable support system
- B. Product Options:
1. The indicated manufacturers shall be the basis of the design and each component selected shall address the particular infrastructure requirements.
 2. Select support system components capable of supporting the telecommunications cable quantities required for each location. Options are as follows:
 - a. Support slings
 - b. Four inch (0'4"), two inch (0'2") J-hook supports
- C. Description:
1. Non-Continuous Cable Supports shall be available in multiple sizes, styles and materials. Rigid supports shall be equipped with flared edges and pre-configured bend radius controls.
 2. Provide drop wire supports and threaded rod assemblies in areas where structural mounting surfaces are non-functional or inaccessible.
 3. Sling assemblies shall provide a bearing surface of sufficient width to comply with required bend radii of high-performance UTP and optical fiber cables. Support slings shall have a static load limit of 100 lbs.
 4. Non-Continuous Cable Supports sized 1 5/16" and larger shall have a cable retainer strap to provide containment of cables within the hanger. The cable retainer strap shall be removable and reusable.
 5. Select approved Non-Continuous Cable Supports suitable for specific installation environments and/or air handling (plenum) spaces.

2.2 3-CELL FLEXIBLE FABRIC TEXTILE RACEWAY, INNERDUCT

- A. Manufacturer List:
1. MaxCell Group/TVC Communications
- B. Product Options:
1. Textile Innerduct
 - a. Standard Outdoor Textile Innerduct: Micro (33mm), 2-inch, 3-inch and 4-inch single or multi- cell polyester/nylon textile innerduct containing 1250lb polyester flat woven pull tape.
 - b. Tracer wire required. Refer to Site drawings for model number.
 2. Measured Pull Tape
 - a. Pull Tape: measuring and pulling tape constructed of synthetic fiber, printed with accurate sequential footage marks. Color-coded.
 - b. Materials
 3. White Polyester and Nylon resin polymer

PART 3 - EXECUTION

3.1 GENERAL

- A. Follow all manufacturers' instructions.
- B. Coordinate with all other trades prior to installation.
- C. All telecommunications cabling not routed through conduit or cable ladder shall be supported every 60" or less.

- D. Telecommunications cables shall not be supported by any other trades, and shall be fully-supported by independent methods.

3.2 EXAMINATION:

- A. Examine substrates for compliance with requirements for installation tolerances and other conditions affecting performance of cable tray supports. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.3 INSTALLATION

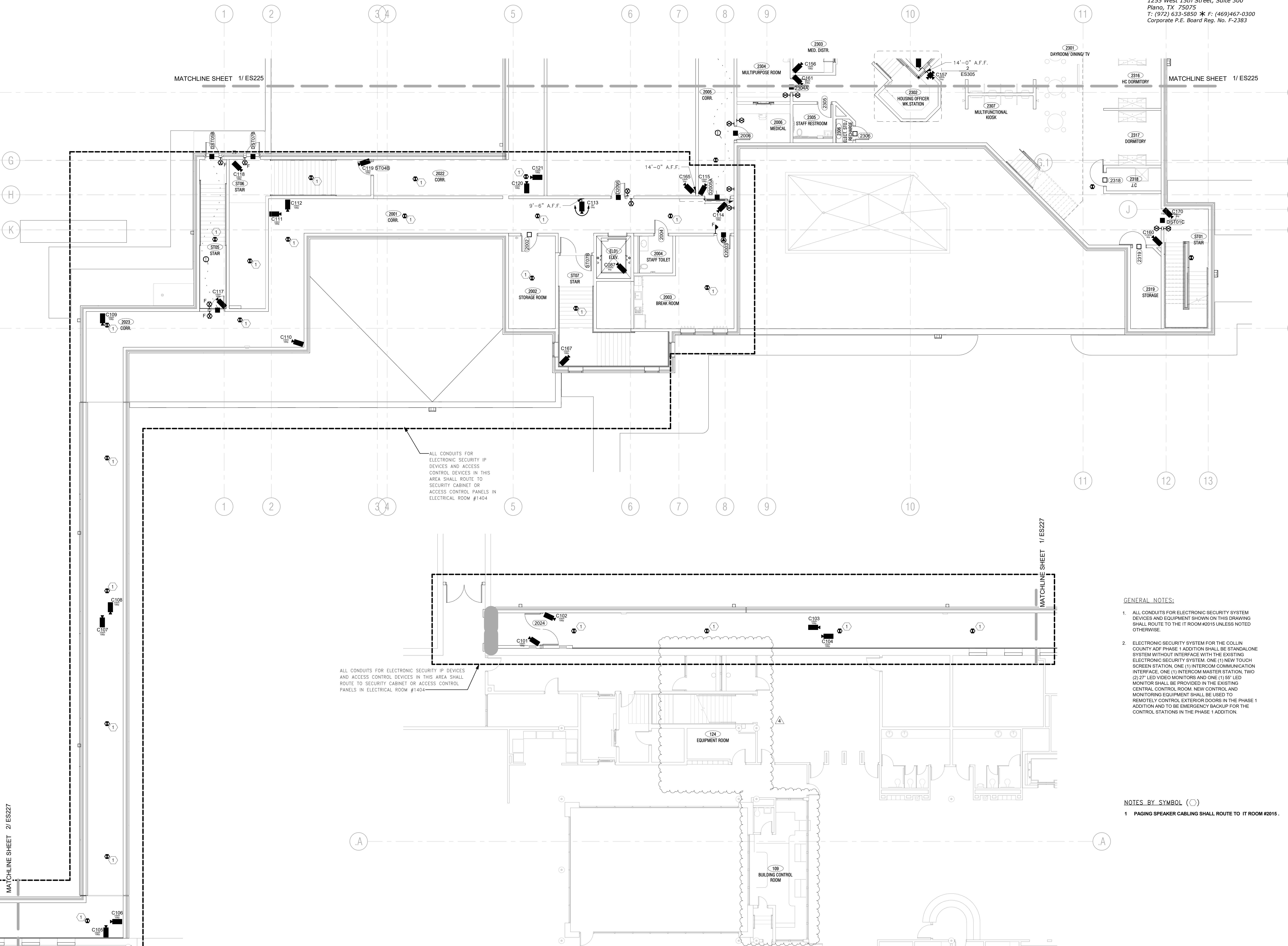
- A. Provide MaxCell, 4" 3-cell innerducts in one (1) only of the 4" UG conduit between the MDF (IT1213) and external pullbox. Refer keynote 16, detail/sheet 3/IT601.
- B. Install cable supports level and plumb according to drawings, original design, and referenced standards.
- C. All cable supports should be provided using a minimum of 1/4" All Threaded Rod (ATR) where not attached to walls or columns. Verify Rod or Cable support style and capacity is adequate for supports, cabling, and future growth.
- D. Special accessories shall be furnished as required to protect, support and install a non-continuous cable support system.
- E. Coordinate with other work as necessary to properly interface installation of cable supports.
- F. Fasten supports to structure. Install supports at each connection point, at end of each run, and at other points to maintain spacing between supports of 60" maximum.
- G. Install firestopping in accordance with local and NFPA regulations to sustain ratings when passing cable tray through fire-rated elements.

END OF SECTION

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**COLLIN COUNTY ADF -
PHASE 1 ADDITION**

4300 COMMUNITY AVE, MCKINNEY, TX 75071



ALL CONDUITS FOR ELECTRONIC SECURITY IP DEVICES AND ACCESS CONTROL DEVICES IN THIS AREA SHALL ROUTE TO SECURITY CABINET OR ACCESS CONTROL PANELS IN ELECTRICAL ROOM #1404

ALL CONDUITS FOR ELECTRONIC SECURITY IP DEVICES AND ACCESS CONTROL DEVICES IN THIS AREA SHALL ROUTE TO SECURITY CABINET OR ACCESS CONTROL PANELS IN ELECTRICAL ROOM #1404

GENERAL NOTES:

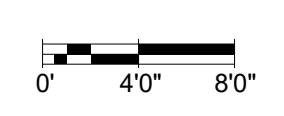
- ALL CONDUITS FOR ELECTRONIC SECURITY SYSTEM DEVICES AND EQUIPMENT SHOWN ON THIS DRAWING SHALL ROUTE TO THE IT ROOM #2015 UNLESS NOTED OTHERWISE.
- ELECTRONIC SECURITY SYSTEM FOR THE COLLIN COUNTY ADF PHASE 1 ADDITION SHALL BE STANDALONE SYSTEM WITHOUT INTERFACE WITH THE EXISTING ELECTRONIC SECURITY SYSTEM. ONE (1) NEW TOUCH SCREEN STATION, ONE (1) INTERCOM COMMUNICATION INTERFACE, ONE (1) INTERCOM MASTER STATION, TWO (2) 27" LED VIDEO MONITORS AND ONE (1) 55" LED MONITOR SHALL BE PROVIDED IN THE EXISTING CENTRAL CONTROL ROOM. NEW CONTROL AND MONITORING EQUIPMENT SHALL BE USED TO REMOTELY CONTROL EXTERIOR DOORS IN THE PHASE 1 ADDITION AND TO BE EMERGENCY BACKUP FOR THE CONTROL STATIONS IN THE PHASE 1 ADDITION.

NOTES BY SYMBOL (○)

- PAGING SPEAKER CABLING SHALL ROUTE TO IT ROOM #2015.

1 LEVEL 1 WEST
SCALE: 1/8" = 1'-0"

2 LEVEL 1 WEST CONT
SCALE: 1/8" = 1'-0"



HISTORY		
#	DATE	DESCRIPTION
4	08/26/2021	ADDENDUM # 4





LEVEL 1 WEST -
FLOOR PLAN

Architect: Brinkley Sargent Wiginton Architects (972) 960-9970
Civil: Pacheco Koch (214) 451-2765
Structural: JQ Engineering (214) 752-9098
MEP / IT: MD Engineering (469) 467-0200
Security: Lattatech (972) 633-8650

BRINKLEY SARGENT WIGINTON ARCHITECTS

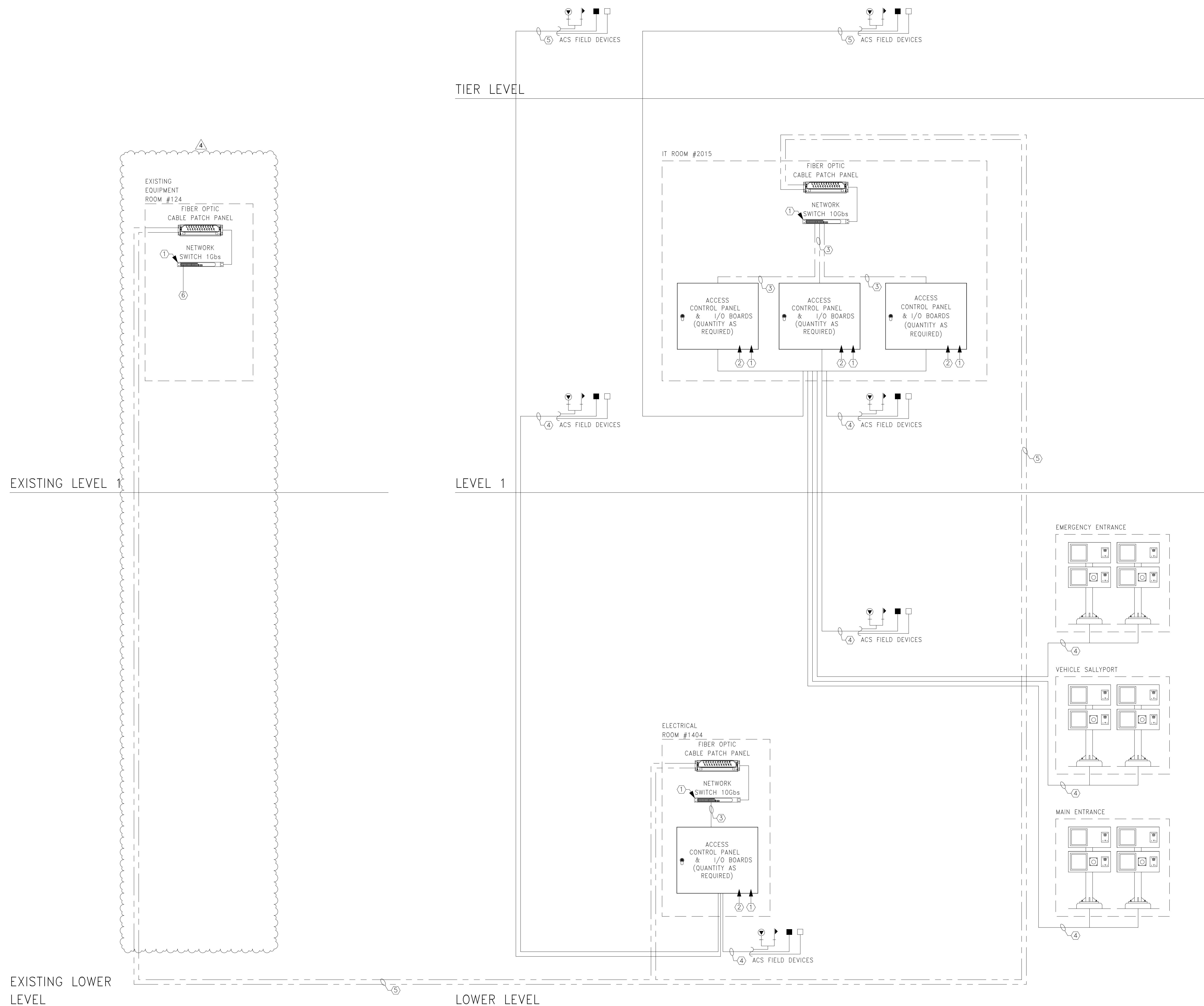
**COLLIN COUNTY ADF -
PHASE 1 ADDITION**
4300 COMMUNITY AVE, MCKINNEY, TX 75071

LEGEND:
DATA CABLE/CAT 6 
FIBER OPTIC CABLE 

GENERAL NOTES:

- FIBER OPTIC PATCH PANELS SHALL BE USED TO TERMINATE AND DISTRIBUTE ALL FIBER OPTIC CABLES IN EQUIPMENT CABINETS/ENCLOSURES.
- PATCH PANELS SHALL BE USED TO TERMINATE AND DISTRIBUTE ALL DATA CABLES (CAT6) IN EQUIPMENT CABINETS/ENCLOSURES.
- EXACT NUMBER OF NETWORK SWITCHES AND ELECTRONIC SECURITY HEAD-END EQUIPMENT SHALL BE DETERMINED BY NUMBER OF ACCESS CONTROL SYSTEM FIELD DEVICES TERMINATED AT EACH LOCATION.
- THE ELECTRONIC SECURITY CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE INTERFACE BETWEEN ACCESS CONTROL SYSTEM AND ELECTRONIC SECURITY SYSTEM AND VIDEO MANAGEMENT & RECORDING SYSTEM. THE INTERFACE WILL INCLUDE ALL REQUIRED SOFTWARE (PROGRAMMING) AND HARDWARE REQUIRED TO ALLOW OVERRIDING CAPABILITY OF THE TOUCH SCREEN CONTROL SYSTEM OVER ACCESS CONTROL SYSTEM.
- ALL INFRASTRUCTURE (RACEWAY, BACKBOXES, CABLES, POWER, ETC.) FOR THE ACCESS CONTROL SYSTEM SHALL BE PROVIDED BY THE CONTRACTORS (DIV 26 AND 28)
- ALL NETWORK SWITCHES FOR THE ELECTRONIC SECURITY SYSTEM SHALL BE PROVIDED BY DIV28. ELECTRONIC SECURITY CONTRACTOR SHALL COORDINATE SWITCHES SETUP WITH THE OWNER. ALL IP ADDRESSES AND VLAN CONFIGURATION SHALL BE COORDINATED BETWEEN THE ELECTRONIC SECURITY CONTRACTOR AND THE OWNER DURING THE SUBMITTAL PROCESS.
- FIBER OPTIC BACKBONE CONNECTING ALL EQUIPMENT ROOMS WITH ELECTRONIC SECURITY SYSTEM EQUIPMENT SHALL BE PROVIDED BY DIV27 CONTRACTOR.
- THE ACCESS CONTROL SYSTEM SHALL BE PROVIDED BY THE ELECTRONIC SECURITY CONTRACTOR. THE CONTRACTOR SHALL PROVIDE ALL READERS, POWER SUPPLIES AND CONTROLLERS. CONTROLLERS SHALL INCLUDE ALL REQUIRED INPUTS AND OUTPUTS REQUIRED TO INTEGRATE WITH THE PLC SYSTEM TO SHARE VALID READ SIGNALS, DPS AND REX SIGNALS BETWEEN THE TWO SYSTEMS FOR THE LIMITED NUMBER OF CARD READERS. CARD READERS INSTALLED ON THE EXTERIOR DOORS, PEDESTRIAN GATES AND VEHICLE GATES SHALL BE CONTROLLED AND MONITORED BY THE NEW TOUCH SCREEN SYSTEM (PLC). ALL OTHER CARD READERS SHALL BE CONTROLLED AND MONITORED BY THE ACCESS CONTROL SYSTEM ONLY (OPEN OPTIONS). THE NEW CONTROLLERS SHALL BE TIED TO THE EXISTING ACCESS CONTROL NETWORK.

- NOTES:**
- 120 VAC, 20A UPS POWER.
 - PROVIDE INTERFACE WITH VIDEO MANAGEMENT AND RECORDING SYSTEM, INTERCOM/PAGING AND TOUCH SCREEN CONTROL AND MANAGEMENT SYSTEM TO ALLOW CONTROL AND MONITORING OF ALL SYSTEMS FROM TOUCH SCREEN CONTROL AND MANAGEMENT SYSTEM. PROVIDE HARD-WIRED SHARING OF SIGNALS BETWEEN THE ACCESS CONTROLLERS AND THE PLC.
 - 1-1" CONDUIT FOR CAT6 CABLE.
 - 1-1" CONDUIT. PROVIDE CABLES AS RECOMMENDED BY EQUIPMENT MANUFACTURER.
 - 1-2" CONDUIT FOR FIBER OPTIC CABLE (12 STRANDS OF SINGLE MODE FIBER).
 - PROVIDE ALL REQUIRED INFRASTRUCTURE AND HARDWARE TO CONNECT TO THE EXISTING ACCESS CONTROL NETWORK.



1 ACCESS CONTROL SYSTEM DIAGRAM
SCALE: NOT TO SCALE

HISTORY

#	DATE	DESCRIPTION
4	08/26/2021	ADDENDUM #4



ACCESS CONTROL SYSTEM DIAGRAM

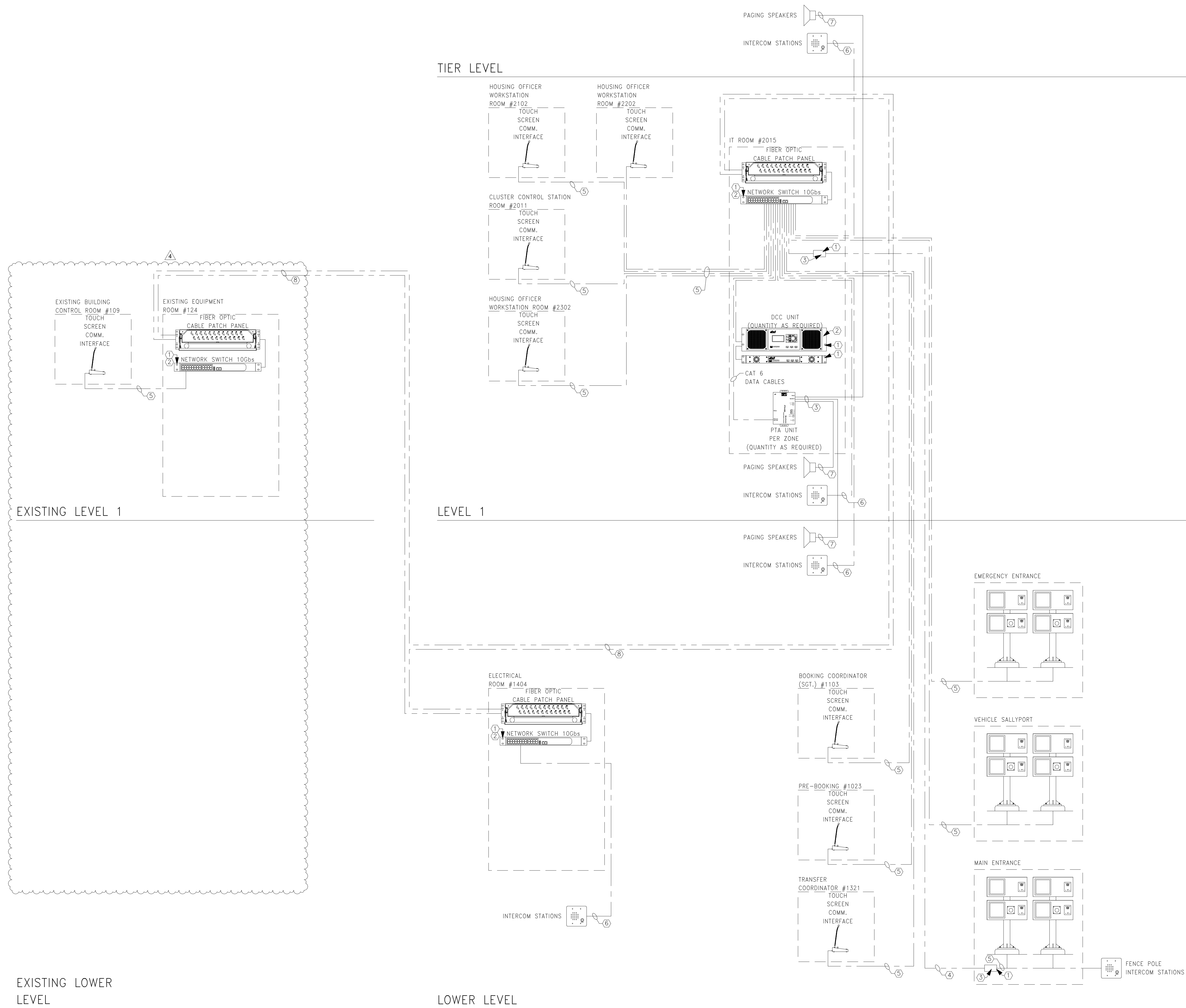
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LEGEND:

CAMERA POWER SUPPLY	-----
DATA CABLE/CAT 6	=====
FIBER OPTIC CABLE	-----
COAX CABLE	-----

- GENERAL NOTES:
- FIBER OPTIC PATCH PANELS SHALL BE USED TO TERMINATE AND DISTRIBUTE ALL FIBER OPTIC CABLES IN EQUIPMENT CABINETS/ENCLOSURES.
 - PATCH PANELS SHALL BE USED TO TERMINATE AND DISTRIBUTE ALL DATA CABLES (CAT6) IN EQUIPMENT CABINETS/ENCLOSURES.
 - EXACT NUMBER OF NETWORK SWITCHES AND ELECTRONIC SECURITY HEAD-END EQUIPMENT SHALL BE DETERMINED BY NUMBER OF INTERCOM AND PAGING SYSTEM FIELD DEVICES TERMINATED AT EACH LOCATION.
 - ALL INTERCOM & PAGING SYSTEM FIELD DEVICES AND EQUIPMENT SHALL BE CONNECTED TO NETWORK SWITCHES VIA CAT6 CABLE. IF THE DISTANCE BETWEEN ANY INTERCOM & PAGING SYSTEM FIELD DEVICES AND EQUIPMENT AND A NETWORK SWITCH EXCEEDS 300' USE FIBER OPTIC CABLE TO TRANSFER VIDEO DATA. PROVIDE CAT6 TO FIBER MEDIA CONVERTERS. PROVIDE POWER FOR MEDIA CONVERTERS.

- NOTES:
- 120VAC UPS POWER.
 - PROVIDE INTERFACE WITH VIDEO MANAGEMENT AND RECORDING SYSTEM FOR CAMERA CALL-UP FUNCTION. PROVIDE INTERFACE WITH ELECTRONIC SECURITY CONTROL SYSTEM FOR CONTROL AND MONITORING OF ALL INTERCOM AND PAGING FUNCTIONS FROM THE NEW TOUCH SCREEN CONTROL AND MANAGEMENT SYSTEM.
 - PROVIDE MEDIA CONVERTER FROM CAT6 TO FIBER OPTIC CABLE TO ALLOW DATA TRANSFER (VOICE).
 - 1-2" CONDUIT FOR FIBER OPTIC CABLE (2 STRANDS OF MM FIBER).
 - 1-1" CONDUIT FOR CAT6 CABLE.
 - 1-3/4" CONDUIT FOR CAT6 CABLE.
 - 1-3/4" CONDUIT FOR SINGLE SHIELDED PAIR CABLE.
 - 1-2" CONDUIT FOR FIBER OPTIC CABLE (12 STRANDS OF SINGLE MODE FIBER).



1 INTERCOM SYSTEM DIAGRAM
SCALE: NOT TO SCALE

**COLLIN COUNTY ADF -
PHASE 1 ADDITION**

4300 COMMUNITY AVE, MCKINNEY, TX 75071

Architect: Brinkley Sargent Wiginton Architects (972) 960-9970
Civil: Pacheco Koch (214) 451-2765
Structural: JQ Engineering (214) 752-9098
MEP / IT: MD Engineering (469) 467-0200
Security: Lattatech (972) 633-8650

BRINKLEY SARGENT WIGINTON ARCHITECTS

HISTORY

#	DATE	DESCRIPTION
4	08/26/2021	ADDENDUM # 4



INTERCOM SYSTEM DIAGRAM

FOR BID

Architect: Brinkley Sargent Wiginton Architects (972) 960-9970
Civil: Pacheco Koch (214) 451-2765
Structural: JQ Engineering (214) 752-9098
MEP / IT: MD Engineering (469) 467-0200
Security: Lattatech (972) 633-8650

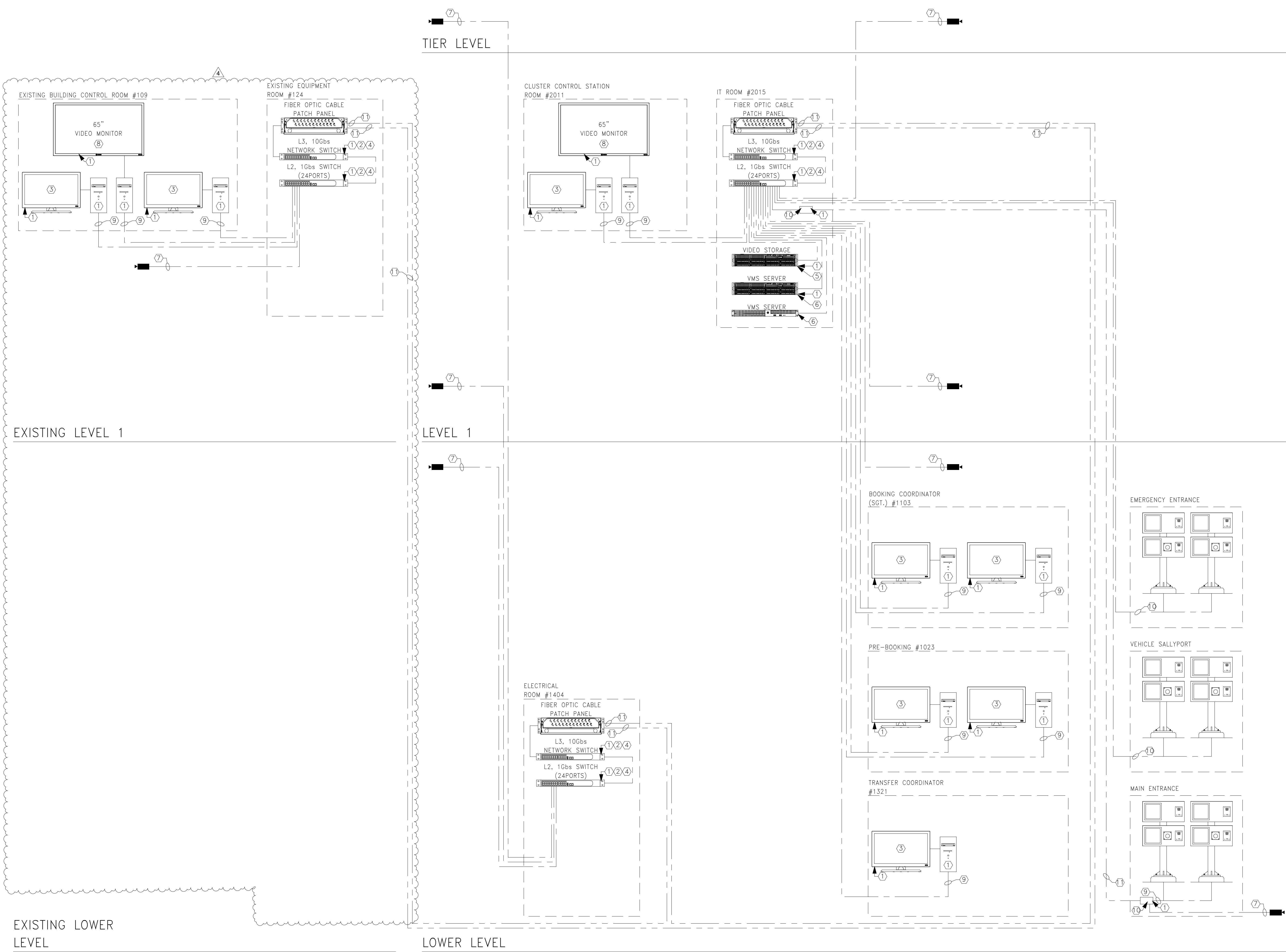
BRINKLEY SARGENT WIGINTON ARCHITECTS

**COLLIN COUNTY ADF -
PHASE 1 ADDITION**
4900 COMMUNITY AVE, MCKINNEY, TX 75071

LEGEND:
DATA CABLE/CAT 6 _____
FIBER OPTIC CABLE _____

- GENERAL NOTES:
- ALL CAMERAS, VIDEO WORKSTATIONS AND VIDEO SERVERS SHALL BE CONNECTED TO NETWORK SWITCHES VIA CAT6 CABLE. IF THE DISTANCE BETWEEN ANY VIDEO SYSTEM FIELD DEVICE AND/OR EQUIPMENT (E.G. CAMERA, VIDEO WORKSTATION, ETC) AND A NETWORK SWITCH EXCEEDS 300' USE FIBER OPTIC CABLE TO TRANSFER VIDEO DATA. PROVIDE CAT6 TO FIBER MEDIA CONVERTERS. PROVIDE POWER FOR MEDIA CONVERTERS.
 - ALL NEW IP CAMERAS SHALL BE POE.
 - REFER TO CAMERA SCHEDULE FOR THE EXACT CAMERA MOUNTING LOCATIONS AND TYPES.
 - FIBER OPTIC PATCH PANELS SHALL BE USED TO TERMINATE AND DISTRIBUTE ALL FIBER OPTIC CABLES IN EQUIPMENT CABINETS/ENCLOSURES.
 - PATCH PANELS SHALL BE USED TO TERMINATE AND DISTRIBUTE ALL DATA CABLES (CAT6) IN EQUIPMENT CABINETS/ENCLOSURES.
 - EXACT NUMBER OF NETWORK SWITCHES AND ELECTRONIC SECURITY HEAD-END EQUIPMENT SHALL BE DETERMINED BY NUMBER OF VIDEO MANAGEMENT SYSTEM FIELD DEVICES TERMINATED AT EACH LOCATION.
 - NEW CAMERAS SHALL BE IP BASED, HIGH DEFINITION CAMERAS. ALL NEW CAMERAS SHALL BE MANUFACTURED BY AXIS (TO MATCH THE COUNTY'S STANDARDS). NEW VIDEO MANAGEMENT SOFTWARE SHALL BE MILESTONE XPROTECT (TO MATCH THE COUNTY'S STANDARDS).
 - ALL NETWORK SWITCHES FOR THE ELECTRONIC SECURITY SYSTEM SHALL BE PROVIDED BY DIV 28. ELECTRONIC SECURITY CONTRACTOR SHALL COORDINATE SWITCHES SETUP WITH THE OWNER. ALL IP ADDRESSES AND VLAN CONFIGURATION SHALL BE COORDINATED BETWEEN THE ELECTRONIC SECURITY CONTRACTOR AND THE OWNER DURING THE SUBMITTAL PROCESS.
 - FIBER OPTIC BACKBONE CONNECTING ALL EQUIPMENT ROOMS WITH ELECTRONIC SECURITY SYSTEM EQUIPMENT SHALL BE PROVIDED BY DIV28 CONTRACTOR. BACKBONE MAY BE RUN IN A STAR CONFIGURATION FOR VIDEO SYSTEMS. COORDINATE WITH OWNER AND OTHER TRADES.
 - NEW VIDEO VIEWING STATIONS (VVS) SHALL BE INSTALLED IN THE EXISTING CENTRAL CONTROL ROOM. THE EXACT MOUNTING LOCATION FOR THE NEW VVS SHALL BE COORDINATED WITH THE OWNER. PROVIDE NEW 2KVA UPS TO POWER NEW VVS (CPU AND MONITORS). REUSE EXISTING 1-20A, 120VAC TO POWER NEW UPS.

- NOTES
- 120 VAC, UPS POWER.
 - PROVIDE INTERFACE WITH ELECTRONIC CONTROL (DOOR CONTROL), INTERCOM/PAGING AND ACCESS CONTROL SYSTEM FOR AUTOMATIC CAMERA CALL-UP AND RECORDING.
 - NEW VIDEO VIEWING/MONITORING STATION (27" LED MONITOR, CPU AND KEYBOARD). PROVIDE HDMI CABLE FOR CONNECTION BETWEEN VIDEO MONITOR AND CPU.
 - PROVIDE NETWORK SWITCHES TO CONNECT ALL FIELD DEVICES (CAMERAS, VIDEO VIEWING STATIONS, VMS, VRM AND STORAGE) TO ALLOW FAST AND RELIABLE COMMUNICATION AND DATA TRANSFER OF THE VIDEO MANAGEMENT AND RECORDING SYSTEM. PROVIDE COORDINATION AS REQUIRED TO ACCOMMODATE ALL FIELD DEVICES AND EQUIPMENT.
 - NEW ARRAY OF HARD DRIVES IN RAID 6 CONFIGURATION FOR VIDEO RECORDING STORAGE. PROVIDE QUANTITY AS REQUIRED TO MEET CONSTRUCTION DOCUMENTS REQUIREMENTS.
 - NEW VIDEO MANAGEMENT SYSTEM (VMS) SERVER. THE SERVER SHALL MANAGE ALL VIDEO SYSTEM DEVICES, STORAGE AND NETWORK TRAFFIC FOR THIS FACILITY. COORDINATE WITH THE COUNTY'S SECURITY INTEGRATOR (CMI) FOR SETTING UP RULES FOR THE MILESTONE SOFTWARE FOR INTEGRATION TO THE ELECTRONIC SECURITY CONTROL SYSTEM. THE MILESTONE XPROTECT CORPORATE SITE LICENSE IS BY THE COUNTY.
 - 1-3/4" CONDUIT FOR CAT6 CABLE.
 - NEW VIDEO VIEWING/MONITORING STATION (65" 4K LED MONITOR AS NOTED). PROVIDE ALL VIDEO CABLES (HDMI) FOR CONNECTION BETWEEN VIDEO MONITORS AND WORKSTATION.
 - 1-1" CONDUIT FOR CAT6 CABLE.
 - PROVIDE MEDIA CONVERTER FROM CAT6 TO FIBER OPTIC CABLE TO ALLOW DATA TRANSFER (VIDEO) .
 - 1-2" CONDUIT FOR FIBER OPTIC CABLE (12 STRANDS OF SINGLE MODE FIBER) .
 - 1-2" CONDUIT FOR FIBER OPTIC CABLE (2 STRANDS OF MM FIBER).



**VIDEO MANAGEMENT AND RECORDING SYSTEM
DIAGRAM**
SCALE: NOT TO SCALE

HISTORY		
#	DATE	DESCRIPTION
4	08/26/2021	ADDENDUM #4



**VIDEO MANAGEMENT
AND RECORDING
SYSTEM DIAGRAM**

FOR BID

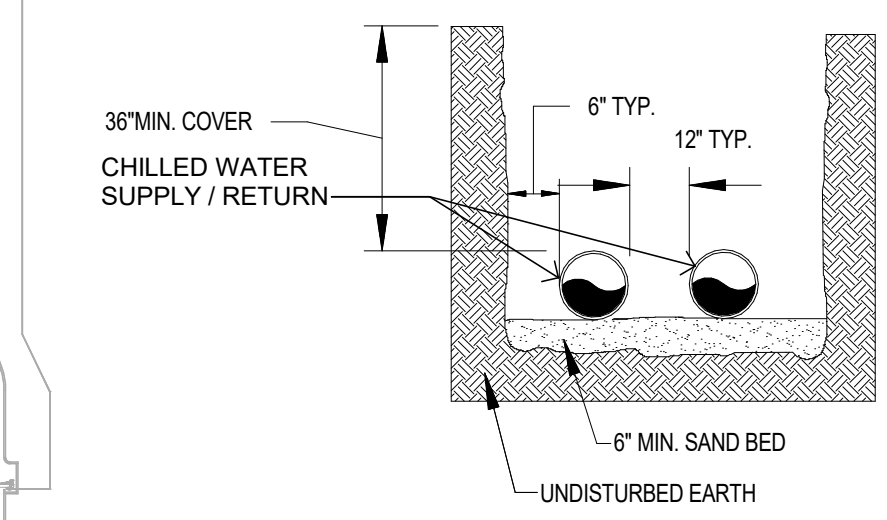
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GENERAL NOTES

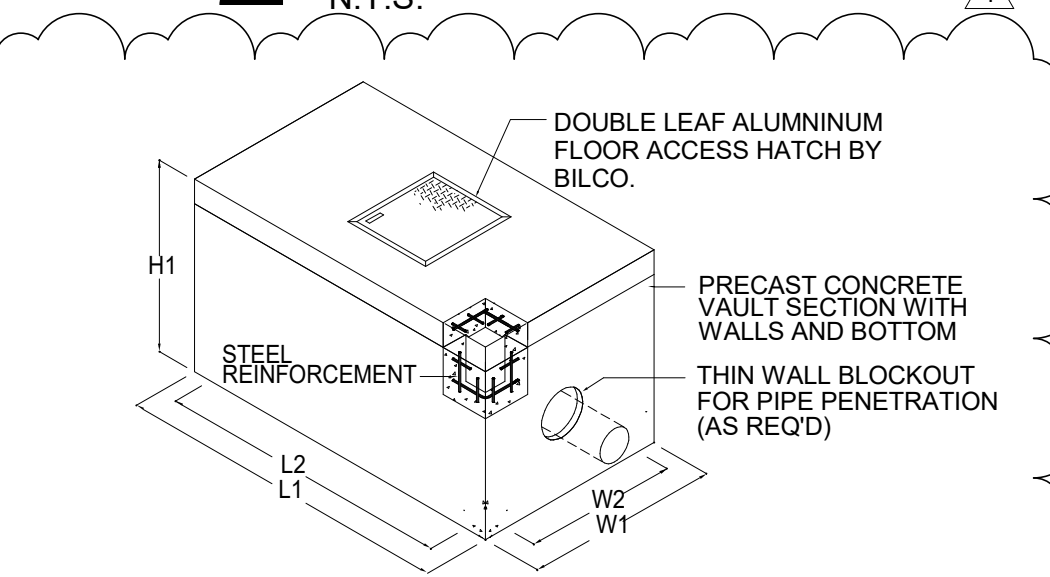
- REFER TO MP000 FOR GENERAL MECHANICAL NOTES, ABBREVIATIONS AND SYMBOLS.
- ANY PIPE PENETRATIONS THRU BEAMS SHALL BE COORDINATED AND INSTALLED PER STRUCTURAL ENGINEER'S RECOMMENDATIONS.
- PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEM AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
- CONTRACT DRAWINGS FOR MECHANICAL WORK ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY.
- COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON THE OTHER CONTRACT DRAWINGS.
- ALL WORK SHALL BE COORDINATED WITH AUTHORITY HAVING JURISDICTION, CITY OF MCKINNEY, UTILITY COMPANIES AND GENERAL CONTRACTOR FOR ADMINISTRATION BUILDING.
- ALL MISCELLANEOUS MATERIALS REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN DETAILS FOR PIPING, SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- IDENTIFY PIPE ELEVATIONS AND PIPE ROUTING IS COORDINATED WITH UTILITIES, SITE CONDITIONS, AND OTHER TRADES ON SHOP DRAWINGS BEFORE STARTING ANY WORK.
- INSTALL PIPING SO THAT VALVES, STRAINERS, UNIONS, FLANGES, AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.
- INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.
- ALL PIPING WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

NOTES BY SYMBOL "O":

- CONTRACTOR SHALL CONNECT 8" HDPE PIPE TO EXISTING FLANGES IN VAULT 3. PROVIDE MINIMUM 3" COVER ALONG ENTIRE INSTALLATION. CONTRACTOR SHALL VERIFY DEPTH AND VAULT ENTRANCE FOR PIPE.
- CONTRACTOR SHALL PROVIDE NEW VAULT FOR FUTURE CLUSTER ADDITION. VAULT SHALL HAVE 6" TEE WITH VALVE AND BLIND FLANGE ORIENTED NORTH TOWARD FUTURE CLUSTER. VAULT TO BE PRECAST CONCRETE, LOCKABLE VAULT BY BILCO HATCH.
- CONTRACTOR SHALL ROUTE 6" PIPE INTO MECHANICAL ROOM AS INDICATED ON MECHANICAL PLAN SHEETS (REFER TO M301).
- CONTRACTOR SHALL PROTECT EXISTING UNDERGROUND 10" HDPE CHWS/R PIPE TO EXISTING ADMINISTRATION BUILDING FROM DAMAGE WITHIN NEW CONSTRUCTION. ANY EXISTING PIPES DAMAGED WITHIN CONSTRUCTION SHALL BE REPAIRED LIKE NEW.
- 3" MEDIUM PRESSURE GAS LINE. CONNECT TO EXISTING GAS LINE. REFER TO CIVIL DRAWINGS FOR CONTINUATION. CONTRACTOR TO VERIFY EXISTING GAS LINE CAN HANDLE NEW 4500 CFH GAS DEMAND. INSTALL NEW GAS METER IN THIS APPROXIMATE LOCATION IN CASE EXISTING GAS LINE IS NOT ALREADY METERED. CONTRACTOR TO VERIFY.
- LOCATION OF 8" MAIN SEWER LINE. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
- 3" MAIN COLD WATER LINE. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
- 6" STORM LINE. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
- 4" FIRE LINE UNDERGROUND TO REMOTE FIRE DEPARTMENT CONNECTOR.



2 TRENCH DETAIL
N.T.S.



MODEL NO.	DIMENSIONS					WEIGHT LBS
	L1	L2	W1	W2	H1	
STANDARD DUTY	11'-0"	10'-0"	6'-0"	5'-0"	7'-0"	24,400
VH-5106	11'-0"	10'-0"	6'-0"	5'-0"	7'-0"	24,400

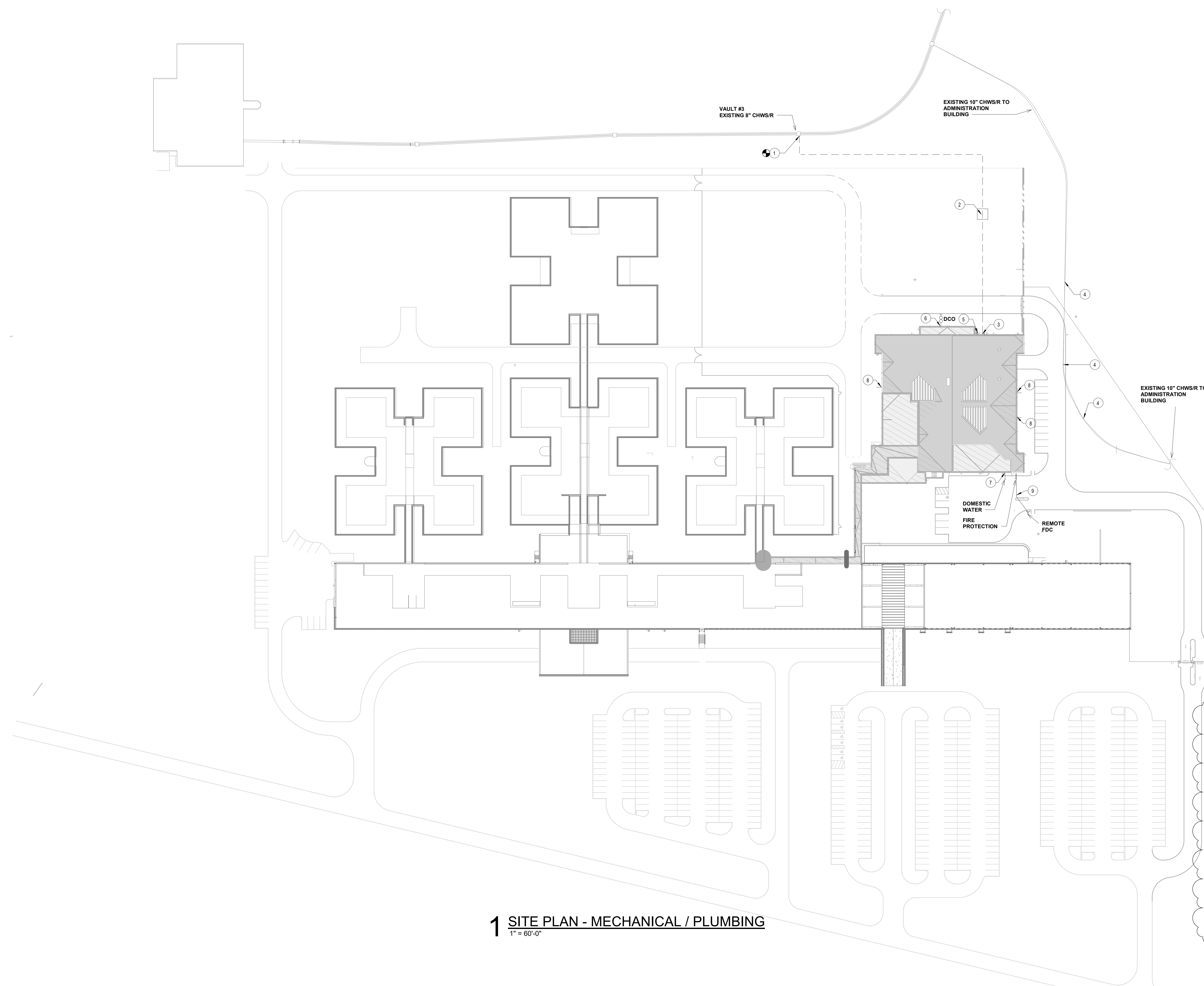
SPECIFICATIONS

CONCRETE: CLASS III CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL BAR BENDING & PLACEMENT SHALL CONFORM TO LATEST ACI STANDARDS FOR PRECAST CONCRETE.

3 VAULT DETAIL
N.T.S.

1 SITE PLAN - MECHANICAL / PLUMBING
1" = 60'-0"



**COLLIN COUNTY ADF -
PHASE 1 ADDITION**

4300 COMMUNITT AVE, MCKENNEY, TX 75071

Architect: Brinkley Sargent Wiginton Architects (972) 940-9970
Civil: Pacheco Koch (214) 451-2765
Structural: JQ Engineering (214) 732-9098
MEP / IT: MD Engineering (469) 467-0200
Security: Latifatech (972) 633-8650

BRINKLEY SARGENT WIGINTON ARCHITECTS

HISTORY		
#	DATE	DESCRIPTION
1	08.25.2021	ADDENDUM # 4



SITE PLAN -
MECHANICAL /
PLUMBING



FOR BID

IFB 2021-239
Bid Questions and Answers

Question	Answer
What is the estimated construction budget?	The opinion of probable construction cost for this contract is \$39,268,000.
Is this an online submission only through ionwave?	Bidders are encouraged to submit bids electronically by utilizing Collin County eBid. However, you may submit a sealed hard copy paper bid to the Office of the Collin County Purchasing Agent. Refer to Section 001116 and Section 002113.
What is the estimated cost range?	The opinion of probable construction cost for this contract is \$39,268,000.
Specification section 012200 Unit Prices references a specification section 012100 Allowances, however this specification does not appear in the project manual. Please provide section 012100.	Refer to Section 01 22 00 Addendum 1, issued in Addendum 2.
Division 33 Utilities specification is not provided, please provide specification sections related to site utilities.	All information for utilities is provided in the notes on the civil plans or in the standard details. There are no other specifications for utilities.
Please clarify if Commissioning Agent is to be employed by Owner or GC.	Commissioning and Test and balance will be through the County and Consultant. Coordination by the General Contractor and subcontractors with the County consultants will be required.
Sheet A101 has note that reads "New Sliding Fire Access Gate, Sim to Existing (Alternate #2: Fence Line at Connection to Building and Gate Not Included)", please clarify if the intent is for this section of fence and vehicular gate that runs from where it connects to existing, reused fencing to the building corner is to be part of the base bid.	Yes, fence and gate at the building corner is to be part of base bid.
Please advise of anticipated Notice to Proceed date.	November 2021, depending on City of McKinney permitting
Structural foundation plans reference sheet S301 for pier details however this sheet is not included in the plans. Please issue sheet S301.	Drawing S301 has been provided in Addendum 2.
Precon RFI #1 Ref. DWGs: S301, S306. Please provide the following structural drawings which are referenced but missing from the drawing package: S301 and S306.	Drawings S301 and S306 have been provided in Addendum 2.

IFB 2021-239
Bid Questions and Answers

<p>Precon RFI #2 Ref. Spec: 01 21 00, 01 22 00.</p> <p>Specification Section 01 22 00 - Unit Prices references Specification Section 01 21 00 - Allowances, however, this section for allowances was not included. Please provide Specification Section 01 21 00 - Allowances if any allowances must be included in the base bid.</p>	<p>Refer to Section 01 22 00 Addendum 1, issued in Addendum 2.</p>
<p>Precon RFI #3 Ref. DWG or Spec: 01 03 00, A800.</p> <p>In regards to Alternate #4, please confirm that terrazzo is to be used at the finish floor and the wall base in at all shower and drying areas.</p>	<p>Yes, correct.</p>
<p>Precon RFI #5 Ref. Spec: 31 63 29.</p> <p>Please confirm, per Specification Section 31 63 29 - Drilled Piers subpart 1.03.D, that pier casings are to be included in the base bid.</p>	<p>Confirmed</p>
<p>Sheet S202 references pier details on sheet S301. S301 is not included as part of the plan set. Please confirm which details should be used.</p>	<p>Drawing S301 has been provided in Addendum 2.</p>
<p>Will line items be added to the unit pricing attributes for submittal of the requested pier casing unit cost?</p>	<p>Unit price line item 7.7 has been added to the bid line items. Refer to Section 01 22 00 Addendum 1, issued in Addendum 2.</p>
<p>Would you please post the pre-bid meeting attendees list?</p>	<p>The pre-bid meeting sign-in sheet will be issued in an upcoming addendum.</p>
<p>Drawing S301 appears to be missing from the documents and is necessary to determine pier details. Please advise.</p>	<p>Drawing S301 has been provided in Addendum 2.</p>
<p>Section 034500 PRECAST ARCHITECTURAL CONCRETE requires the appearance of the new precast panels to match the existing (in the opinion of the Architect). Please advise who provided the original precast that we are trying to match, as this should help us source aggregates that will achieve the desired appearance.</p>	<p>Precast panels to match exiting finish, see specifications and drawings</p>
<p>We do not find specifications for pavement markings, landscaping, or irrigation and expect there will be some scope for these trades in the project. Please advise.</p>	<p>As with the utility comment, all the specifications for the civil and landscape items are included in the notes and details on the respective sheets.</p>

Bid Questions and Answers

<p>Bid attribute 7 requires us to submit the name and type of work for all subcontractors on the project, and appears to be required at the same time as the price proposal. Please understand that subcontractor proposals will be coming in right up until the deadline, and it's in the Owner's best interest to allow proposers to focus on pricing in lieu of such efforts until after bid time. Further, submission of this information in a text block online is going to be messy and cumbersome for everyone.</p> <p>Accordingly, we respectfully request that this attribute be removed and required after the bid deadline.</p>	<p>The County understands the Bidder's concerns, but will still require Attribute 7 to be completed to the best of the Bidder's ability before closing of the bid, based on already submitted subcontractor proposals. If Bidder finds the text box in attribute 7 not sufficient for answering, an attachment may be added in eBid and referenced as the answer in Attribute 7 text box (example "see attachment A: Subcontractors"). A final list of subcontractors is expected to be submitted by the apparent low bidder within seven (7) consecutive calendar days following the bid opening, per the specifications under section 1.8.A.9. Qualifications of Bidders, within the properly executed Contractor's Qualification Statement. This allows Bidder's request for time after bid closing to focus on the subcontractor list. Any modification of the list of subcontractors after bid opening shall not be an opportunity to adjust bid pricing as submitted.</p>
<p>We do not find the Owner's grading criteria for proposals published for this project. Please advise.</p>	<p>To clarify, this solicitation is an Invitation for Bid not a Request for Proposal. It is the intent of the County to award a contract to the lowest and best responsive and responsible bidder as determined per Section 002113, 1.16, Method of Award.</p>
<p>Will an online meeting be published to observe the opening/reading of all proposals? Please provide details on the plan for disclosure of submitted proposals.</p>	<p>A public bid opening will be held in the Office of the Purchasing Agent, 2300 Bloomdale Rd., Suite 3160, McKinney, TX 75071. There are no plans for an online meeting to be published. Bid responses are public information once they have been opened. A bid tabulation will be available on Collin County eBid after bid opening.</p>
<p>In the Line Items section, there is no place to enter the Base Bid Grand Total amount. I noticed the Bid Form was changed in Addendum 1, but not in the Ionwave System.</p> <p>Please advise if this will be updated.</p> <p>Thank you</p>	<p>If submitting electronically through Ionwave, bidder will enter their response to Items 1.1 Total Materials Cost and 1.2 Total Labor Cost. The system will total these line items and populate the Base Bid Grand Total.</p> <p>If submitting a manual bid form, bidder will enter their response to Items 1.1 and 1.2 and enter the total of these lines in the space provided for Base Bid Grand Total.</p> <p>Total Material Cost (Line 1.1) and Total Labor Cost (Line 1.2) must add up to the Base Bid Grand Total.</p> <p>No update is required for Bid Line Item 1.</p>

Bid Questions and Answers

Plan sheet A402 References "precast panel painted to match existing". We did not observe painted precast panels existing. Please confirm the intent is to have smooth face panels with reveals in a natural concrete grey. If additional sealants or coatings are required please clarify.	Concrete coating to match existing, over precast
Sheets S212 and S222 reference details on sheet S306. S306 is not included as part of the plan set. Please confirm which details should be used.	Drawing S306 has been provided in Addendum 2.
Sheet S306 is referenced on structural floor plans however this sheet appears to be missing. Please issue sheet.	Drawing S306 has been provided in Addendum 2.
Concrete beam B19 is noted on floor plans however it does not appear on the beam schedule, please advise.	The concrete beam schedule will be updated in an upcoming addendum.
Specification 323114 SITE PERIMETER SECURITY FENCE SYSTEM provides information for existing and new fencing per 8/A102. However, we do not find specifications to go with the new fencing per details 1-7/A102. Please provide specifications for this fencing including below grade anti-undermining materials.	Specification 32 31 15 Site Fencing vertical added in Addendum 4.
Is the General Contractor to carry the cost of the building permit in the proposal?	The County will pay for the City of McKinney Building Permit.
what is budget estimate for this project?	The opinion of probable construction cost for this contract is \$39,268,000.
Addendum #2 indicates drawing A290 is to be replaced with Drawing A290 ADDENDUM 1, however this revised drawing A290 is not in the list of documents under the tab Attachments. Please issue the revised drawing.	Drawing A290 Addendum 1 was added to bid attachments in Addendum 2. The drawing was #32 on the second page of attachments. A290 Addendum 1 has been moved to attachment #13.
I cannot locate sheet A290 from Addendum 1. Please provide direction to access this plan sheet. Thanks.	Drawing A290 Addendum 1 was added to bid attachments in Addendum 2. The drawing was #32 on the second page of attachments. A290 Addendum 1 has been moved to attachment #13.
Addendum #2 added a unit cost to Deduct pier casing. Is the intent to include fully cased piers in the base bid cost with a deduct if casing is not used?	Correct
Plan sheet C119 states "Contractor to verify if 6" gas line crosses under proposed footprint. If in conflict with proposed building and/or retaining wall the 6" gas line will need to be rerouted" Is the base bid to include cost for this if required? Are there as-builts or points of connection available to indicate location of the 6" gas line?	Base bid is to construct as shown in the plans. All available data was used to depict the gas line shown in the plans. Contractor to verify location in the field during construction.

Bid Questions and Answers

<p>Pier P7 is indicated on the foundation plan but does not appear in the pier schedule on S301. Please advise on details for pier P7</p>	<p>The pier schedule will be updated in an upcoming addendum.</p>
<p>On page E201 note 5 and E202 note 6, it calls for fixtures in referenced area "SHALL BE CONTROLLED BY CEILING MOUNTED OCCUPANCY SENSORS. FIXTURES SHALL BE CONTROLLED GLOBALLY, INDIVIDUALLY FIXTURES SENSORS ARE NOT ACCEPTABLE. TYPICAL FOR ALL FIXTURES IN TWO OUTSIDE COLUMNS." Is the EC to provide one CEILING MOUNTED OCCUPANCY SENSOR per note reference? If not, how many CEILING MOUNTED OCCUPANCY SENSORS shall we provide for referenced areas?</p>	<p>The fixtures shall operate from several occupancy sensors to turn all the lights (globally) on (parallel). If each fixture has an individual sensor only that fixture will turn on, this is not acceptable. One sensor will not detect movement that is far away.</p>
<p>Precon RFI #6 Ref. Spec: 28 31 10</p> <p>Please advise who the preferred Fire Alarm installer is for the existing Edwards EST3 Fire Alarm system.</p>	<p>The Fire Alarm contractor shall be an EST qualified fire alarm contractor. There is not a preferred Fire Alarm installer.</p>
<p>Precon RFI #7 Ref. DWGs: L2.00, A101, A102</p> <p>Drawing L2.00 has a callout stating "fence & mow curb, ref. arch dwgs", however the Architectural Drawings do not mention a mow curb at any of the fences. Please advise if a mow curb is required at fencing.</p>	<p>There is no mow strip.</p>
<p>Precon RFI #8 Ref Spec & DWGs: 09 30 10, A800.</p> <p>Please advise on the location of the porcelain and/or ceramic tile in this project. Specification Section 09 30 10 - Tile was included but no tile is shown on the drawings.</p>	<p>Section 09 30 10 deleted in Addendum 4.</p>
<p>Precon RFI #9 Ref. Spec & DWGs: 01 03 00, 26 32 13.33, S240.</p> <p>Alternate #3 increases the size of the generator. Please advise if the concrete pad supporting it will need to increase as well. If yes, please provide a detail for the enlarged pad.</p>	<p>Yes pad will increase. ESTIMATED wet weight: 1000kW - 34,800 lb 1250kW - 52,690 lb</p>

Bid Questions and Answers

<p>Precon RFI #10 Ref. DWG: A290.</p> <p>The narrative of Addendum #2 mentions drawing A290 with the note "Downspout connection to splash block or civil notes added." This drawing was not included with Addendum #2 on Ionwave (Collin County eBID). Please provide drawing A290.</p>	<p>Drawing A290 Addendum 1 was added to bid attachments in Addendum 2. The drawing was #32 on the second page of attachments. A290 Addendum 1 has been moved to attachment #13."</p>
<p>Precon RFI #11 Ref. Spec: 10 00 00</p> <p>Regarding the Pneumatic Tube System, of the three tube station locations, please advise which locations are to receive and which are to send.</p>	<p>All three stations are to send and receive to each other.</p>
<p>Precon RFI #12 Ref. Spec: 10 00 00</p> <p>Regarding the Pneumatic Tube System, Specification Section 10 00 00 states "Manufacture from heavy steel for durability." Please advise if this refers to the equipment or tubing of the system. If it refers to the equipment, please advise if aluminum tubing may be used for this system.</p>	<p>Follow specifications, steel tubes.</p>
<p>Precon RFI #13 Ref. Spec: 10 00 00</p> <p>Please advise on the design of the tubing routes for the Pneumatic Tube System between the three stations, as none are shown on the drawings.</p>	<p>Tube routing shown on M201, M202. See notes and related drawings.</p>
<p>Precon RFI #14 Ref. Spec: 10 00 00</p> <p>There is no type of carrier included in the specifications or drawings for the Pneumatic Tube System. Please advise if the Quick Tube Systems (QTS) 4" X 10" Lift the Dot Carrier with Air Disk and Bullnose end is acceptable to use. Please also advise on the quantity of carriers required.</p>	<p>Carrier to be compatible with system type. Carrier selection to be made by architect and owner from full product line of PTS system available options. Provide one carrier per tube connection. Provide one carrier as attic stock.</p>

Bid Questions and Answers

<p>Precon RFI #15 Ref. DWGs: E010, ES301, ES403.</p> <p>Electrical one-line on E010 shows the I.T. Room 2017 UPS and Bypass Switch is by DIV 28. On ES301 detail 1, it indicates the UPS is by DIV 28, but the bypass switch is by DIV 26. ES403 detail 9 shows the UPS is by DIV 26 and the bypass switch is by DIV 28. All three documents conflict with one another. Please indicate which items are to be provided by which division.</p>	<p>UPS and bypass switch shall be provided by Div 28 contractor.</p>
<p>Precon RFI #16 Ref. DWGs: IT000, E101.</p> <p>Drawing IT000 refers to an "Outside Cable Plant" and drawing E101 note 6 states "Existing 5" underground conduit for data. Refer to I.T. Drawings." Please provide a drawing for the "Outside Cable Plant" and/or the IT site plan.</p>	<p>There is ONLY empty conduit for communications service entrance to I.T. 1213 from just beyond the building perimeter. Refer to keynote 16 on sheet IT601. There is no outside plant cabling to be included in this bid package. Collin County will contract directly with their vendor for the installation of any fiber or copper into the building from the Central Plant or otherwise.</p>
<p>Precon RFI #17 Ref. Spec 03 45 00.</p> <p>Specification Section 03 45 00 - Precast Architectural Concrete states that "The appearance of the new panels shall match the existing [in the opinion of the Architect]." In reference to an RFI asked on 8/4/2021, please confirm that the new precast panels are to be painted to match an existing concrete coating and that the concrete of the new precast panels does not need to match the existing concrete type (color, manufacturer, quarry source). If the concrete types are to match, please provide the contact information of the installer and manufacturer of the existing concrete and the date(s) when it was installed.</p>	<p>Precast panels to match exiting finish, see specifications.</p>
<p>Precon RFI #18 Ref. Spec: 08 34 95.</p> <p>Specification Section 08 34 95 - Fire And Smoke Curtains subpart 1.01.A.1 mentions a "monumental stair" between the lower level and level 1. Please advise which stair on the drawings is the "monumental stair" as mentioned.</p>	<p>Specification 08 34 95 to read "at the windows in Records / Bond Office Station, room 1308."</p>

Bid Questions and Answers

<p>Electrical one-line on E010 shows the I.T. Room 2017 UPS and Bypass Switch is by DIV 28. On ES301 detail 1, it indicates the UPS is by DIV 28, but the bypass switch is by DIV 26. ES403 detail 9 shows the UPS is by DIV 26 and the bypass switch is by DIV 28. All three documents conflict with one another. Please indicate which items are to be provided by which division?</p>	<p>UPS and bypass switch shall be provided by Div 28 contractor.</p>
<p>Electrical one-line on E010 shows the I.T. Room 2017 UPS and Bypass Switch is by DIV 28. On ES301 detail 1, it indicates the UPS is by DIV 28, but the bypass switch is by DIV 26. ES403 detail 9 shows the UPS is by DIV 26 and the bypass switch is by DIV 28. Please advise who is to provide the UPS and Bypass Switch.</p>	<p>UPS and bypass switch shall be provided by Div 28 contractor.</p>
<p>Precon RFI #19 Ref. DWGs: S201, S202, S301.</p> <p>There is a pier type noted on the structural foundation drawings (S201 & S202) as "P7". However, this pier type is missing from the Pier Schedule on 01/S301. Please revise the Pier Schedule to include the information for pier type P7.</p>	<p>Pier P7 added to the schedule on 1/S301 in Addendum 4.</p>
<p>Is it possible to set up a site walk to inspect the existing electrical room?</p>	<p>An electrical room site walk has been scheduled for 9:00 AM on August 17. See Addendum 3.</p>
<p>1. Architectural drawings A020, A021 & A022 regarding the code show all outer walls as 1 hour fire barrier per the line colors in the legend. Further down the legend under fire resistance it states 'Window assembly in rated exterior walls to be 3/4 hour, glazing at OH-45 or W-60.</p> <p>- Do the DA and DA.1 (and DK, DL, DM, DM.1 and DN) windows require a fire rating?</p>	<p>Unprotected openings are permitted per 2018 IBC 705.8, note on window assemblies updated in Addendum 4.</p>
<p>2. Specification 11 19 00 Detention, 2.01 Manufacture, K. Detention Windows, calls out our firm as the basis of design and under 2.18 Exterior Detention Windows it calls out our DSW 6060 fixed, fully thermally broken aluminum detention security windows with a stainless steel interior cladding.</p> <ol style="list-style-type: none"> 1. Interior glazing - type M 2. Exterior glazing - 1" insulated unit. <p>- drawing D702, window DA shows TM glass. Which is correct?</p>	<p>TM</p>
<p>3. D213, room 2219 has an exterior window which is not called out. Should this also be a DA window?</p>	<p>Yes, D213 updated in Addendum 4.</p>

Bid Questions and Answers

4. D214, room 2003 and stairway ST07 show DB windows at exterior wall. Should these also be the same composition at the DA windows?	See elevations one D702
5. On drawing D702, elevations DA, DA.1 (and DB), the details reference 12/A515, 11/A516 and 4/D711 and 5/D711; all refer to detention hollow metal frame details. These are not our details, nor are they thermally broken, nor do they show the glazing types as stated in the specification. Please confirm the DSW 6060 product called out in the specification 11 19 00 Detention, 2.18 Exterior Detention Windows in fact takes precedence.	Specifications take precedence.
6. The outdoor rec yards have an exterior wall design as they are open to the exterior. Wouldn't the frames DK, DL, DM, DM.1 and DN be considered exterior windows? Please confirm.	Yes these are exterior windows, see 11 19 00.
7. If the windows in the outdoor rec yards are considered exterior frame and covered by our DSW 6060 design, the corresponding details refer to detention hollow metal. Please confirm the specified exterior window system would preside.	See specification 11 19 00.
8. If the outdoor rec yard windows are glazed with an insulated glass at the lower windows, this glass can be easily damaged. This would be very costly to the county if an IGU or TM glass is used. Should the Exterior Window DSW 6060 be used at the rec yards, consider a more robust glass on both inmate facing facades of the windows. Use TM on the exterior but face the attack rated glass towards the exterior and the thin 1/4" tempered towards the interstitial space and use M glass at the interior as foreseen. The higher up windows would not need this.	Use DHM windows with type M glazing at the lower locations; detention windows with Type TM glazing at upper, with exterior lites fully tempered.
<p>Precon RFI #20 Ref. Spec & DWGs: 01 03 00, E010.</p> <p>Per Specification Section 01 03 00, Alternate #3 states "to modify the size of the generator from 900 KW to 1250 KW." However, detail 01/E010 states the diesel generator is 1000 KW. Please clarify which KW size is to be included in the base bid: 900 KW or 1000 KW.</p>	Provide 1000KW

Bid Questions and Answers

<p>The bid documents do not appear to be calling for cased piers. Note N on sheet S100 under DRILLED PIERS indicates we are to provide unit prices for casings. However, the unit prices on the current Addendum 3 bid form are inconsistent with this note. If we are to bid the piers dry (which appears to be the case), the unit prices need to be modified to include an adder for casing per LF for each pier size, and unit price 7 for a casing deduct needs to be deleted.</p>	<p>Unit price line item 7.7 has been added to the bid line items. Refer to Section 01 22 00 Addendum 1, issued in Addendum 2.</p>
<p>Enlarged Plan 1/A240 for Alternate 1 shows wall tags and dimensions, but no door numbers, door types, window frame types and glazing types can be found. Please clarify what equipment is required to be furnished in the Alternate 1 shell-out (window elevations, door types, glazing types, etc.)</p>	<p>See updated sheet A240 in Addendum 5.</p>
<p>Is site visit mandatory and will there be another site visit scheduled for Construction, Collin County Adult Detention Facility, Phase 1 Addition?</p>	<p>The pre-bid conference and site-walks are not mandatory. An electrical room site walk has been scheduled for 9:00 AM on August 17. See Addendum 3.</p>
<p>1. TA-52 calls for ADA bench kits by WB MFG but I only see benches on the enlarged detention plans labeled as 702-W on D221. 702-W is labeled as a stainless steel floor-mounted detention bench. Can you please clarify which benches, if any, are the TA-52A, B, and X? 2. Please also advise if TA-35X-1 and TA-35X-4 will be required as the spec states to provide where shown on drawings but there are none shown for either those or TA-35. 3. Please clarify where the TA-23XB mirrors are in the shower rooms and holding cells as those locations do not have lavs/sinks. The spec states to provide an additional TA-23XB mirror in those locations. 4. Lastly, there are multiple accessories in the spec that state to refer to drawings for locations where indicated but they are not shown so I will omit these unless the drawings are revised to add locations. For example: TA-42, TA-04, TA-06X, TA-07, TA-24, and TA-40.</p>	<p>"1. There should be no TA-52 ADA benches anywhere inside the detention areas. 702-W is a wall mounted stainless steel detention bench, and is called out as such on the detention equipment schedule on D010. – if used they would be shown on the enlarged plans. 2. There are no instances of TA-35(X) in this project – check enlarged plans 3. Check enlarged detention plans (D221 & D222) for the locations of TA-23XA and XB. Mounting height drawing on D020 will be corrected in addendum #3. 4. If used – check enlarged plans."</p>

Bid Questions and Answers

<p>Fire Alarm Specs and Plans? Not Fire Protection... I'm looking for Fire Alarm expansion/add to new building? Are you looking for this to be Engineered by the selected FA Contractor? IF this is handled by a "preferred vendor" or outside of Project by Collin County direct please advise...</p>	<p>The Fire Alarm is a performance based design listed in the specifications (28 31 10 and 28 31 46). The Fire Alarm contractor shall be and EST qualified fire alarm contractor. This is part of the project costs.</p>
<p>We have been unable to locate specifications for the permanent retention system at the existing building shown on drawing S202 and 1/S307. Please provide specifications for this work.</p>	<p>Permanent retention system requirements are shown in 1/S307</p>
<p>LJ Power is a registered bidder for Collin County, has provided multiple generator bids in the past for the County and has been approved for past MD Engineering projects. However, I don't see us listed in the specifications. LJ Power Generators is acceptable to bid as a generator supplier / manufacturer for this project, correct?</p>	<p>Provide substitution information since manufacturer is not listed in specifications.</p>
<p>Drawing C105 shows two different retaining walls, and both say to "REFER TO STRUCTURAL PLANS". There are two different details provided for retaining walls on the structural plans (1/S307 and 4/S307). Please advise which detail is to be utilized for each location.</p>	<p>Detail 1/S307 shall be used adjacent to the existing building where shown on structural plan sheet S202. Detail 4/S307 shall be used for the wall shown by the entry road south of the building.</p>
<p>We have received a couple questions related to architectural woodwork as follows: 1) Specification 064000.2.02 calls for 3 cm tops and 2 cm splashes, but drawings show 3/4" tops. Please advise proper thickness of tops, and also for end supports. 2) Specification 064000.2.01D calls for doors and drawer fronts to be edged with .30 laminate matching the faces at dark colored laminate. Can PVC be used here to prevent a visible dark line around the perimeter of the faces?</p>	<p>1. 3/4" is nominal- the material only comes in CM thicknesses 2. Yes</p>
<p>Precon RFI #21 Ref. Spec & DWGs: 10 80 00, D221. Within Specification Section 10 80 00, TA-52 calls for ADA bench kits by WB MFG but the benches shown in the drawings are on the enlarged detention plans labeled as 702-W on D221. 702-W is labeled as a stainless steel floor-mounted detention bench. Please clarify which benches, if any, are the TA-52A, B, and X.</p>	<p>There should be no TA-52 ADA benches anywhere inside the detention areas. 702-W is a wall mounted stainless steel detention bench, and is called out as such on the detention equipment schedule on D010. – if used they would be shown on the enlarged plans.</p>

Bid Questions and Answers

<p>Precon RFI #22 Ref. Spec: 10 80 00</p> <p>Please advise if TA-35X-1 and TA-35X-4 will be required as Specification Section 10 80 00 states to "provide at locations shown on drawings", but there are none shown for either those or TA-35.</p>	<p>There are no instances of TA-35(X) in this project – check enlarged plans</p>
<p>Precon RFI #23 Ref. Spec: 10 80 00</p> <p>There are multiple accessories listed within Specification Section 10 80 00 that state to refer to drawings for locations where indicated, but none are shown on the drawings. These accessories include, but are not limited to, the following: TA-42, TA-04, TA-06X, TA-07, TA-24, and TA-40. If these accessories are to be provided, please advise on their locations and/or quantities.</p>	<p>If used – check enlarged plans.</p>
<p>In specifications 06 40 00-1 2.02 a, Phenolic Tops are called out as 3cm at tops and 2cm at splashes. Drawings show ¾" thick tops. Per the phenolic top supplier. Top material is only available in ¾" and 1" thick. Should the ¾" be used at both splashes and tops? What thickness should be used for the end supports?</p>	<p>¾" for both splash and tops.</p>
<p>specification section 06 40 00-1 2.01 d indicates Doors and drawer fronts are to be edged with .30 laminate matching the faces at dark colored laminate. The laminate may show a visible dark line around perimeter of faces. Could PVC be used here?</p>	<p>Yes.</p>
<p>Reference sheet A240. Please provide wall types associated with Alternate 001.</p>	<p>Updated in Addendum 5.</p>
<p>Are rooms 3105, 3209 and 3304 included in Alternate 004?</p>	<p>Yes, updated in addendum 5.</p>
<p>Please confirm if contractor will be required to have background checks and/or badging as part of this project or if the only background check requirements will be performed by Collin County per 1.51 in specification section 002113 Instructions to Bidders.</p>	<p>The Collin County Sheriff's office will perform background checks for free. No other background checks or badging will be required by the County. Not all contract personnel working on the project will be required to go through a background check. Example, contractors entering the secure areas of the existing building may be required to go through a background check.</p>

Bid Questions and Answers

<p>Division 06 40 00, PART 3—EXECUTION, 3.01 FABRICATION, E. calls for dovetail construction of drawer boxes. One of our subs uses an AWI Premium Grade doweled and glued method of construction, with cleanable white melamine material, which complies with PART 2—PRODUCTS, 2.01, H. Drawers: Interiors of all drawers, except drawer face, shall receive white melamine. Please Advice if this can be used?</p>	<p>Substitution requests should be submitted per Section 002113, 1.7.</p>
<p>Section 06 40 00, PART 2—PRODUCTS, 2.01, B. states that doors and drawers fronts with dark colored laminates are to have plastic laminate edges and light colored laminates are to have PVC edges. The laminate selection is Wilsonart, Cosmic Strandz. Please advise if this laminate is considered light or dark so we will know which type of edge banding to use.</p>	<p>Provide samples for review and selection during construction submittal process.</p>
<p>Precon RFI #24 Ref. Spec: 06 40 00.</p> <p>Specification Section 06 40 00 Part 2 – Products, 2.01, B. states the following: "Paint tops of all cabinetry semi-gloss white." Please clarify the extent to which this comment is to be applied. Please advise if the "paint" may be white melamine. Please also advise if this comment is to be applied to cabinets with countertops on them.</p>	<p>Substitution requests should be submitted per Section 002113, 1.7.</p>
<p>Please confirm size of EQ-360 Bradley Lenox Z lockers in 1113. Please also confirm what style type is required.</p>	<p>Selection to be made from full range of Bradley Z-lockers, size as indicated in documents.</p>
<p>Precon RFI #25 Ref. Spec: 06 40 00.</p> <p>Section 06 40 00, PART 2—PRODUCTS, 2.01, B. states that doors and drawers fronts with dark colored laminates are to have plastic laminate edges and light colored laminates are to have PVC edges. The laminate selection is Wilsonart, Cosmic Strandz. Please advise if this laminate is considered light or dark so the proper type of edge banding may be applied.</p>	<p>Provide samples for review and selection during construction submittal process.</p>

Bid Questions and Answers

<p>Precon RFI #26 Ref. Spec: 06 40 00.</p> <p>Division 06 40 00, PART 3—EXECUTION, 3.01 FABRICATION, E. calls for dovetail construction of drawer boxes. Millwork subcontractors provide an AWI Premium Grade doweled and glued method of construction, with cleanable white melamine material, which complies with PART 2—PRODUCTS, 2.01, H. Drawers: Interiors of all drawers, except drawer face, shall receive white melamine. Please note that Multiple dovetailed drawer construction is limited to solid wood or minimum 7-ply hardwood veneer core plywood. Reference Architectural Woodwork Standards, Section 10, 10.4.7 Assembly Rules. Please advise if the doweled and glued construction method, with cleanable white melamine material, is acceptable for drawer boxes on this project.</p>	<p>Substitution requests should be submitted per Section 002113, 1.7</p>
<p>Precon RFI #27 Ref. DWG: D010.</p> <p>The Detention Equipment Schedule on drawing D010 states that the Video Visitation Unit is Vendor Furnished Vendor Installed (VFVI). Please advise if this is to be provided and coordinated by the Owner. If not, please advise if this is to be included in the base bid of this project.</p>	<p>Updated in Addendum #5 to OFOI</p>
<p>Precon RFI #28 Ref. Spec: 06 40 00.</p> <p>Specification Section 06 40 00 Part 2 – Products, 2.13 refers to "BALLISTIC PROTECTION AT LOBBY" and states to "Provide at locations shown and at a minimum at Jail Lobby at new reception window locations." However, there is no ballistic fiberglass noted on the drawings. Please clarify the location(s) of this ballistic protection on the drawings.</p>	<p>There are none included in this project, spec updated in Addendum 5.</p>
<p>Precon RFI #29 Ref. Spec: 10 00 00.</p> <p>Specification Section 10 00 00 Part 2 item 2.5 refers to a "Roof Cable Entry System." Please advise on the location(s) and quantity of this system on the drawings, as it is not specifically noted.</p>	<p>There are none included in this project, spec updated in Addendum 5.</p>

Bid Questions and Answers

The retaining walls are spec'd as concrete with soldier piles. Please advise if a VE Alternate for Engineered Gravity Stone walls is acceptable	No.
<p>9. As it was recently clarified the 11 19 00, 2.18 Exterior Detention Windows are to be glazed with Type TM glass - which is an all clear product. Originally the Exterior Detention windows had a bronze tint.</p> <p>Please confirm Type TM glass used in the Exterior Detention Windows is in fact all clear and no bronze tint.</p>	Confirmed
Addendum #1 Bid Form, Item 18, will it be a requirement of the Test and Balance Contractor to submit a Bid Bond certified check in the amount of 5% of the bid amount?	The County is in the process of selecting a Test and Balance firm through a separate solicitation. A bid bond is not required by Test and Balance firms for this IFB.
We have been unable to find and stainless steel tops on the project as specified in Section 050100 - MISC. METALS - STAINLESS STEEL TOPS. Can you please tell us where such tops are located or otherwise delete the specification if none are required?	Refer to plans, enlarged plans and detail referenced to D722.
Division 06, 06 40 00, Part 2 – Products, 2.01, B. "Paint tops of all cabinetry semi-gloss white." Please clarify. Can this be white melamine? Does this include cabinets with countertops on them; to what extent does this comment apply?	Substitution requests should be submitted per Section 002113, 1.7
In regards to the geofoam, the plans reference the specifications. We are unable to find a geofoam specification. Please provide specifications for the geofoam.	Updated in Addendum 5, see 03 30 00.
We do not find the roof cable entry system specified in 100000 - MISCELLANEOUS SPECIALTIES on the drawings. Please advise location and quantity of roof cable entry systems for the project.	Removed from spec in Addendum 5.
<p>Precon RFI #4 Ref. Spec: 23 09 00.</p> <p>Please advise who the manufacturer is for the existing HVAC control system.</p>	The county is standardized on Honeywell Controls controllers. The base communication protocol is BACnet. The controls contractor shall meet the requirements outlined in specification section 23 09 00-2, paragraph 1.3.B and 1.3.H
Is there a preferred HVAC Controls vendor or can you advise what system is used at the facility?	The county is standardized on Honeywell Controls controllers. The base communication protocol is BACnet. The controls contractor shall meet the requirements outlined in specification section 23 09 00-2, paragraph 1.3.B and 1.3.H

Bid Questions and Answers

<p>Sheet M100 Note 1 states the underground chill water piping to be HDPE, but no specification has been issued specifying any other requirements. Please provide an underground chilled water specification indicating any pipe/fitting and insulation requirements.</p>	<p>Refer to specification 23 21 12, Paragraph 2.3</p>
<p>Sheet M100 Note 2 states to provide a new vault for future chilled water connections. Please provide a detail/specification for this vault including the size, access and material requirements.</p>	<p>Refer to added vault detail on sheet M100 and revised note by symbol 2, see Addendum #6</p>
<p>Specification 220529-2.1-H states the requirements for a Pipe Void system and sheet P402 detail 1 provides a section of the installation. Please advise if all piping and conduits located below grade within the building required to be installed with a Pipe Void system?</p>	<p>Void system only for sanitary waste pipes below grade under structure</p>
<p>Precon RFI #30 Ref. DWGs: ES501, ES502, ES503, ES504.</p> <p>Drawings ES501 through ES504 in the security drawing detail has conduits running from the new electrical room #1404 to two existing rooms: Existing Building Control Room #109 and Existing Equipment Room #129. After reviewing the drawing package, it is not clear where these rooms are located. Please advise on the locations of these rooms.</p>	<p>Revised rooms in Addendum 6.</p>
<p>Precon RFI #31 Ref. DWGs: IT601.</p> <p>Note 16 on IT601 mentions to extend (4) 4" UG conduits beyond the perimeter roadway from the IT 1213 room. Please indicate the perimeter roadway these should be terminated at.</p>	<p>Keynote 16 on IT601 requests that the implied contractor is to coordinate with the 3rd party vendor CAPCO, a direct contractor of Collin County for final location and direction of these service entrance conduits. There is a perimeter roadway surrounding this project to plan north and plan east of the building. Distances are approximately identical to get beyond the roadway. Use best judgement for bidding purposes.</p>
<p>Specifications 271123 list part # for Vertical Cable Management as PR2VD06 Part # in Specifications 271116 2.1 C 2 & on Drawing IT603 is PR2VD08. Please clarify which Vertical Cable Management part # is required for project?</p>	<p>Use the larger of the two wire managers PR2VD08.</p>

Bid Questions and Answers

<p>Specifications state - C. For all work taking place within the scope of the Project, the electrical contractor will provide the grounding system requirements including the TMGB, TGB, and TBB. The Telecomm Contractor will be responsible for grounding work for the portions of the work which inside of the MDF, TSER and IDF's from the cabling, cabinets and pathways to the TGB's. Drawing Note states that the TMGB and TGB are to be provided by Division 27 Please clarify what contractor is to provide the TMGB in IT 1213 and TGB in IT 2015?</p>	<p>Division 27 contractor shall provide the TMGB and TGB in IT 1213 and IT2015 respectively per keynote 10 on sheet IT601. Division 26 will provide the grounding backbone cables between IT2015, IT1213, & the main electrical ground.</p>
<p>Drawing IT603 states CAPCO responsible for Fiber & Copper Interconnects as follows:</p> <p>"Fiber interconnect: The fiber run will be completed by CAPCO; will be completed after the vendor has installed the 2-pole racks with UPS and PDU in the new wiring closet General Contractor to coordinate with CAPCO for all of CAPCO's activity related to this project.</p> <p>Copper interconnect: The copper run will be completed by CAPCO; will be completed after the vendor has installed the 2-pole racks with UPS and PDU in the new wiring closet General Contractor to coordinate with CAPCO for all of CAPCO's activity related to this project."</p> <p>Please clarify if CAPCO is responsible for all fiber and copper backbone cabling including parts listed under these 2 sections on drawing? or if any backbone cabling / materials required for backbone cabling is to be provided by Division 27 contractor?</p>	<p>CAPCO is responsible for installation and termination of all cabling entering the building into IT1213 from the Central Plant. Contractor is responsible for any other cabling and terminations such as the fiber and/or copper between IT1213 and IT2015 (detail 5/IT601).</p>
<p>Specifications 270526 3.3 A state the following: A. Provide MaxCell, 4" 3-cell innerducts in one (1) only of the 4" UG conduit between the MDF (IT1213) and Demarc room Mech/Elect. 1026. Please clarify if this is to be provided by Division 27 contractor?</p>	<p>"Specification 270528 3.3 A: Demarc is IT1213, provide MaxCell 4" 3-Cell innerducts in only one of the conduits noted in Keynote 16 on detail/sheet 3/IT601."</p>
<p>Drawing IT603 indicates to provide 6 UPS for the project. Should this be 2 instead of 6 so we have 1 per closet?</p>	<p>The schedule shown on drawing IT603 was provided intact by the owners. For bidding purposes use quantity of 6 BUT prior to order confirm with owner for actual amount.</p>

Bid Questions and Answers

<p>Please confirm that Division 27 Structured Cabling Contractor is not responsible for installation of copper or fiber cabling to any security devices and Division 28 Contractor will install cabling for Security devices noted on ES series drawings.</p>	<p>Division 28 contractor shall be responsible for all cabling associated with the Security systems.</p>
<p>We have been unable to locate any wire mesh partitions per Section 102213 WIRE MESH PARTITIONS on the project. Please advise the location of such partitions or delete the specification if not required.</p>	<p>Not used, removed in Addendum 6.</p>
<p>Please confirm all network switches, wireless access points, phones, and power distribution units (power strips) will be provided and installed by the Owner's vendor.</p>	<p>All Div.26 power strips shall be by the contractor, not the vendor.</p>
<p>Addendum 5 added Alternate 6 for rooftop equipment screens. We are unclear as to the "Decorative Architectural Metal Panel(s)" indicated on 2/A290. Are these panels those indicated in Specification 050100.2.02.H? If so, will McNichols panels meeting the specified requirements be acceptable? It appears the specified vendor is in Chicago and McNichols is right here in Dallas.</p>	<p>Please see updated section 07 60 00 in Addendum 6.</p>