PCH ARCHITECTS
30 South Center Street
Redlands, CA 92373

ADDENDUM NUMBER 2

To the Contract Documents
For the Construction of

EVENT CENTER PARKING LOT EXPANSION @
VICTOR VALLEY COLLEGE

for

VICTOR VALLEY COMMUNITY COLLEGE DISTRICT
-

October 15, 2025

NOTICE TO BIDDERS

It is intended that all work affected by the following provisions shall conform to the original plans and specifications. Delete or modify each of the following items wherever appearing on Drawings, and/or Specifications. Acknowledge receipt of Addendum No. 2 in the space provided on the Contractor's Proposal. Failure to do so may subject bidder to disqualification.

SPECIFICATIONS:

Item Number 1: Replace specification section Table of Contents with attached Table of Contents. The following changes were made:

A. Added spec section 27 13 00 Communications Backbone Cabling.
B. Added spec section 27 15 00 Communications Horizontal Cabling.
C. Added spec section 28 23 00 Video Surveillance System.

Item Number 2: Add specification section 27 13 00 Communications Backbone Cabling.

Item Number 3: Add specification section 27 15 00 Communications Horizontal Cabling.

Item Number 4: Add specification section 28 23 00 Video Surveillance System.

DRAWINGS:

Item Number 5: Remove sheet T-1 – Title Sheet / Sheet Index and replace with attached sheet T-1, clouded with delta-2. The following changes were made:

A. Revised Scope of Work.

Item Number 6: Remove sheet E-0.1 – Symbol List, General Notes and Details and replace with attached sheet E-0.1, clouded with delta-2. The following changes were made:

A. Add Scope of Work Low Voltage Systems.

Item Number 7: Remove sheet E-0.3 – Single Line Diagram and Details and replace with attached sheet E-0.3, clouded with delta-2. The following changes were made:

A. Revise Partial Single Line Diagram.

Item Number 8: Remove sheet E-1.2 – Enlarged Site Electrical Plan Plan and replace with attached sheet E-1.2, clouded with delta-2. The following changes were made:

A. Revise Enlarged Site Electrical Plan and Plan Notes.

Item Number 9: Refer to sheet LP-1 – Planting Plan, Plant Legend. The following changes are required:

A. Replace the tree type, 24" Box / Low / Prosopis Chilensis 'Thornless' / Thornless Chilean Mesquite" with 15' BTH / Low / Phoenix Dactylifera 'Deglet Noor' / Deglet Noor Date Palm.

END OF ADDENDUM NO. 2
Pedro Jaramillo, AIA

Owner, Principal

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@
VICTOR VALLEY COLLEGE

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SECTION 27 13 00
COMMUNICATIONS BACKBONE CABLING

PART 1 – GENERAL

1.1 SUMMARY

A. The work covered under this Section shall consist of a design, furnishing of all material, labor, and installation for completion of an operable end-to-end backbone structured cabling system throughout the campus and premises. This includes - but is not limited to - furnishing and installing cable, cable supports, cable ties, innerduct and termination components, ancillary equipment, testing, labeling and documentation of cables and connectors.

B. Complete product procurement and installation shall comply with the campus or Owner's latest telecommunication and Information Technology standards documents.

PART 2 - PRODUCTS

2.1 MANUFACTURER(S) AND SOLUTIONS

A. Acceptable backbone voice copper and coaxial cabling and component (interbuilding and intrabuilding) Manufacturers:

1. Commscope Systimax

B. Acceptable fiber optic cabling and component (interbuilding and intrabuilding) Manufacturers:

1. Commscope Systimax

2.2 BASIC ENVIRONMENTAL REQUIREMENTS

A. Cabling shall be suitable for environment in which they are to be installed.

B. Cabling shall be plenum-rated within interior premise installations.

C. Cabling shall be outdoor rated within exterior installations subject to outdoor environmental conditions.

2.3 INTRABUILDING COPPER CABLING (VOICE)

A. Backbone Cable shall incorporate 24AWG solid annealed copper conductors insulated with a polyvinyl chloride skin over expanded polyethylene. Conductors shall be twisted to form pairs and fully color coded. Cable shall be available in 25, 50, 100, 200 or more pairs.

B. Conductors shall be identified by the insulation color of each conductor. The color code shall follow the industry standard composed of ten distinctive colors to identify 25 pairs in accordance with the latest ICEA publication of S-80-576.

C. When cables of larger than 25 pairs are required, the core shall be assembled into 25-pair sub-units. Cables with over 600 pairs shall have 25-pair binder groups combined into super units. These super units shall be wrapped with a solid color thread that follows the primary color scheme of white, red, black, yellow and violet. Binder color code integrity shall be maintained wherever cables are spliced.

D. The cables shall contain an overall corrugated, coated aluminum shield that is electrically continuous over its entire length.

E. Provide one full 500-foot spool of 24-AWG two-pair jumper wire on a spool holder for additional cross connects by Owner.

2.4 INTERBUILDING COPPER CABLING (VOICE)

A. Cables shall incorporate 24 AWG solid, annealed, bare copper conductors insulated with a polyvinyl chloride skin over expanded polyethylene.

B. Conductors shall be twisted to form pairs and fully color-coded. Cable shall be available in 25, 50, 100, 200 or more pairs.

C. Cables shall be designated RUS/REA PE-89 suitable for duct or direct burial applications. Cables shall be Aluminum Steel with Polyethylene (ASP) filled core cables.

D. Conductors shall be insulated with a thermoplastic skin. Maximum diameter of the insulated conductor shall be 0.048 in (1.22 mm). Insulated conductors shall be stranded into pairs of varying lengths in order to minimize cross-talk.

E. Conductors shall be identified by the insulation color of each conductor. The color code shall follow the industry standard composed of ten distinctive colors to identify 25 pairs in accordance with the latest ICEA publication of S-80-576.

F. When cables of larger than 25 pairs are required, the core shall be assembled into 25-pair sub-units. Cables with over 600 pairs shall have 25-pair binder groups combined into super units. These super units shall be wrapped with a solid color thread that follows the primary color scheme of white, red, black, yellow and violet. Binder color code integrity shall be maintained wherever cables are spliced.

G. Cable shall meet the physical and electrical requirements of 100 Ohm twisted pair cable as defined by standards. Cable shall conform to Category 3 performance specifications or better.

H. A flooding compound shall be applied over the core and to all surfaces of the shield/armor to resist moisture entry and to inhibit corrosion.

I. The cable core shall be filled with a waterproofing compound and wrapped with a non-hydroscopic core tape.

J. The cables shall contain an overall corrugated, coated aluminum shield, which is electrically continuous over its entire length.

K. The cable shall be finished with a polyethylene jacket, which is sequentially printed with a footage marker at regular intervals.

2.5 VOICE TERMINATION FIELD

A. Voice terminations shall utilize 110-style termination block hardware with 25 pairs per row.

B. The mechanical termination shall be capable of terminating 22 – 26 AWG plastic insulated, solid and stranded copper conductors.

C. Four-pair connecting blocks shall be utilized to make electrical connection between terminated cables and cross connect wires. The blocks shall be designed to maintain the cable pair twists as closely as possible to the point of mechanical termination.

D. Base shall employ standoff legs to allow cable routing behind base.

E. Base shall have integral label holder to identify location of cable.

F. Horizontal management shall be via jumper troughs furnished with standoff legs.

G. Provide a punch-down tower kit system for mounting the 110 block units. System shall include jumper troughs and provide horizontal cable management.

H. Vertical cable management shall be via multi pair vertical cable managers designed for use with the tower system.

2.6 INTRABUILDING FIBER OPTIC CABLE

A. This cable shall be suitable for indoor installation in free-air, conduit, tray and/or in innerduct. Cable shall carry on OFNP rating.

B. Cable materials shall be all dielectric.

C. Outer sheath shall be marked with the manufacturer's name, date of manufacture, fiber type, flame rating, UL symbol, and sequential length markings every two feet. All coatings shall be mechanically strippable without damaging the optical fiber.

D. The glass fiber shall be doped silica core surrounded by a concentric glass cladding. The fiber shall have a graded index. The overall cladding diameter shall be 125 ± 2μm.

E. Multi-mode optical fiber s in each cable shall meet the following Specifications:

1. Transmission Windows 850nm, 1300nm, and min EMBc (Laser)

2. Core Diameter 50.0 ± 3µm

3. Maximum Attenuation 3.0 dB/km @ 850nm; 1.0 dB/km @ 1300nm

4. Minimum Bandwidth 3500 MHz/km @ 850nm

   500 MHz/km @ 1300nm
   4700 MHz/km @ minEMBc (Laser)

5. Fiber Classification OM4

F. Single-mode optical fibers in each cable shall meet the following specifications:

1. Transmission Windows 1310nm, 1383nm and 1550nm

2. Core Diameter 8.3∝m

3. Maximum Attenuation 0.5 dB/km @ 1310nm

   0.5 dB/km @ 1383nm 0.5 dB/km @ 1550nm

4. Fiber Classification OS2

2.7 INTERBUILDING FIBER OPTIC CABLE

A. Cable shall be suitable for direct burial or duct applications.

B. Cable shall incorporate a corrugated steel armor tape to provide rodent resistance. Other cable materials shall be all dielectric.

C. Cable shall be constructed with a dry or gel-filled water-blocking material.

D. Cable shall be of loose tube construction.

E. Outer sheath shall be polyethylene (PE).

F. The outer sheath shall be marked with the Manufacturer's name, words identifying the cable as fiber optic cable, and sequential length markings. The marking shall be in a contrasting color to the cable jacket.

G. Quantity and type of standards shall be as indicated on the Drawings.

1. Transmission Windows 850nm, 1300nm, and minEMBc (Laser)

2. Core Diameter 50.0 ± 3∝m

3. Maximum Attenuation 3.0 dB/km @ 850nm; 1.0 dB/km @ 1300nm

4. Minimum Bandwidth 3500 MHz/km @ 850nm

   500 MHz/km @ 1300nm
   4700 MHz/km @ minEMBc (Laser)

5. Fiber Classification OM4

H. Single-mode optical fibers in each cable shall meet the following Specifications:

1. Transmission Windows 1310nm, 1383nm and 1550nm

2. Core Diameter 8.3µm

3. Maximum Attenuation 0.5 dB/km @ 1310nm

   0.5 dB/km @ 1383nm 0.5 dB/km @ 1550nm

4. Fiber Classification OS2

2.8 INDOOR/OUTDOOR FIBER OPTIC CABLE

A. Cable shall be provided wherever it shall run within a wet environment or where it would be exposed to an outdoor condition.

B. Cable shall be suitable for installation both indoors and outdoors.

C. Cable shall retain an OFNP plenum rating to meet the Listing Requirements per NFPA for use within building premises.

D. Cable shall be loose tube construction.

E. Cable shall be constructed with a dry of gel-filled type water blocking material.

2.9 FIBER OPTIC TERMINATION PANELS

A. All fibers shall be terminated on Duplex-LC couplings mounted on enclosed patch panels. Couplers shall be mounted on a panel that snaps into the enclosure.

B. The enclosure shall be designed to accommodate a changing variety of connector types by changing panels on which connector couplings are mounted.

C. The panel enclosure shall be sized to accommodate the total quantity of fiber strands as described in the specifications and Drawings.

D. Termination panels shall be enclosed assemblies. The enclosures shall incorporate a hinged or retractable front cover designed to protect the connector couplings and fiber optic jumpers.

E. The patch panel enclosure shall provide for strain relief of incoming cables and shall incorporate radius control mechanisms to limit bending of the fiber to the Manufacturers recommended minimums.

F. Access to the inside of the patch panel enclosure during installation shall be from the front and rear.

G. The patch panel enclosure shall be configured to require only front access when patching. The enclosure shall provide a physical barrier to access backbone cables.

H. The enclosure shall incorporate a storage cassette, tray, or other mechanism designed to allow identification, access and termination of individual fibers.

I. The fiber optic patch panel shall be rated to match or exceed the ANSI/TIA/EIA rated wiring terminated on the panel.

2.10 FIBER OPTIC CONNECTOR

A. The Optical Connector shall be Duplex-LC type modular jack. Completed cable assembly shall interface with fiber optic terminal bulkhead feed-through receptacle on Fiber Optic Patch Panel. Supply and install dust caps for terminated fibers.

B. The connector ferrule shall be ceramic. The optical fiber within the connector ferrule shall be secured with an adhesive or mechanical connection.

2.11 FIBER OPTIC PATCH CORDS

A. The fiber optic patch cables shall match the core size and type of fiber being patched. The fiber optic patch cables shall utilize tight buffer construction.

B. Fiber Optic jumpers shall incorporate connectors that match the terminations of the fiber being patched. Connector body shall be of materials similar to that used in the proposed couplings.

C. Provide patch cords with connectors compatible with equipment being patched. Verify connector type of active electronic equipment with owner.

D. Provide one optical fiber patch cord per optical fiber strand installed.

E. For the TR patch cords, 80% shall be 3 meters, 10% shall be 4 meters and 10% shall be 7 meters in length from the total number.

2.12 FIBER OPTIC SPLICE ENCLOSURE

A. Splices shall be allowed where required to transition between different fiber optic cable types.

B. The splice enclosure shall be designed specifically for use in the splicing of fiber optic cables and incorporate splice trays. One splice tray shall be used for each fiber bundle.

The enclosure and the splice trays shall be designed to organize adequate slack to allow for resplicing.

C. The splice enclosure shall incorporate strain relief for the incoming cables.

D. Splice enclosure shall be re-usable for system expansion or repair.

2.13 TELEVISION BACKBONE CABLE (RG-11)

A. Cable shall be listed CEC Type CATVP quad shielded cable.

B. Center conductor - 14 AWG solid bare copper; foamed FEP dielectric

C. Inner shield - aluminum-polyester-aluminum tape with 100% coverage

D. Second shield - 60% bare aluminum braid wire

E. Third shield - aluminum-polyester-aluminum tape with 100% coverage

F. Outer shield - 40% bare aluminum braid wire

G. Jacket – Kynar Flex

H. Impedance 75-Ohms'

I. Velocity of propagation 82%

J. Nominal attenuation (per 100-feet):

1. at 55-MHz 1.00dB

2. at 700-MHz 4.5dB

2.14 TELEVISION INDOOR BACKBONE COAX (.500)

A. Center conductor - 0.109-inch

B. Outer diameter - 0.500-inch

C. Impedance 75-Ohms

D. Velocity of propagation 87%

E. Maximum attenuation (per 100-feet)

1. at 55-MHz 0.54 dB

2. at 750-MHz 2.16dB

2.15 TELEVISION OUTDOOR BACKBONE COAX (.500)

A. Center conductor - 0.109-inch

B. Outer diameter - 0.500-inch

C. Impedance 75-Ohms

D. Velocity of propagation 87%

E. Maximum attenuation (per 100-feet)

1. at 55-MHz 0.54 dB

2. at 750-MHz 2.16dB

F. Cable shall employ water blocking material

2.16 COAX CABLE TAPS, DIRECTIONAL COUPLERS, AND SPLITTERS

All directional couplers and splitters shall support a video bandwidth of 1 GHz.

2.17 COAX TERMINATION END (F-CONNECTOR)

A. F connector shall be male type connector impedance matched to the cable that is terminated.

B. Connector shall be single piece construction and incorporate a ½-inch crimp ring with a hex crimp.

C. Female type F-connectors shall be matched to male connectors.

PART 3 - EXECUTION

3.1 INTRABUILDING COPPER CABLING (VOICE)

A. Follow Cable Manufacturer's cable pulling recommendations. Recommended pulling tensions and pulling bending radii shall not be exceeded. Any cable bent beyond minimum bending radius shall not be installed.

B. All cable shall be free of tension at both ends. A 10-foot service loop shall be provided with each backbone cable.

C. Avoid abrasion and other damage to cables during installation.

D. Pulling Lubricant shall be used to ease pulling tensions. Lubricant shall not damage or degrade cable jacket and other materials used. Lubricant shall not harden or become adhesive with age.

E. Termination of Backbone Voice cabling shall be accomplished by using five-pair clips.

F. Cables shall be installed in conduit, cable tray, or on J-hooks as shown on the Drawings.

3.2 INTERBUILDING COPPER CABLING (VOICE)

A. All conductors shall be continuous and splice free.

B. Bridge taps shall not be allowed.

3.3 VOICE TERMINATION FIELD

A. Horizontal wiring troughs shall be positioned at the top of each column of termination blocks and between each 100-pair wiring block.

B. Vertical cable managers incorporating metal distributing rings shall be provided for vertical routing of jumper and/or cross-connect wire.

C. Utilize multiple 300 or 900 pair tower systems and corresponding vertical cable managers to create termination fields.

D. Blocks shall identify each pair position by a different color designation. Integral label holders shall allow for easy identification of each location.

E. The Contractor shall be responsible for the cross connect between the station and backbone cabling.

F. Cross connect the center two-pair of each station cable to the backbone cable. Use single or two-pair cross connect wire for this purpose.

G. Fastening cables directly to support brackets with wire or plastic ties will not be accepted. All cabling shall be neatly laced, dressed and supported. Retainer shall be used on each 110-type block to secure jumper wires on the wiring block(s).

H. Termination blocks shall have a minimum capacity of 20% spare pairs after all horizontal cabling is terminated.

3.4 FIBER OPTIC CABLE

A. Cable shall be continuous and free of splices except in specified splice trays in TR or ER locations. Factory optical fiber splices are not allowed.

B. The Fiber Manufacturer shall subject all fibers to a minimum tensile proof test equivalent to 100-kpsi. All fibers in each cable shall be guaranteed to meet the stated Specifications.

C. Backbone intra-building fiber optic cabling shall be installed via conduit and/or in innerduct in cable tray as illustrated on the Drawings.

D. Provide 15 feet of slack in each backbone fiber optic cable. The cable slack shall be coiled and stored in a location to protect it from damage in the TR or ER in the case of inter-building cables. The slack shall be stored in a separate enclosure designed for this purpose. Multiple cables may share a common enclosure.

E. Maintain bending radius of twenty times the outside diameter of the cable during installation and ten times the outside diameter with no load.

F. Backbone Fiber Optic Cable shall be installed in protective innerduct where cable is susceptible to damage. This includes areas cable tray and transitions between pathways. The innerduct should extend into the termination and/or storage enclosure(s) at system endpoints.

3.5 FIBER OPTIC CONNECTOR

The fiber optic connector shall be installed per Manufacturer's written instructions.

3.6 FIBER OPTIC PATCH PANEL

A. Fiber optic patch panels shall be rack mounted.

B. Install fiber optic patch panels in topmost rack position.

C. Transition outdoor to indoor cables either by splicing factory terminated pigtails or by the use of a "fan-out" kit. Secure individual fibers in an aramid reinforced tube.

D. Termination hardware shall incorporate a mechanism to secure cable and sub-assemblies and prevent damage.

E. Splicing shall be by the "fusion" method.

F. Direct termination of 250 µm coated fibers shall not be permitted.

3.7 FIBER OPTIC PATCH CORDS

A. The fiber optic patch cords shall be installed per Manufacturer's written instructions.

B. Contractor must coordinate with the owner for installing all patch cords within the TR.

C. Any left-over patch cords which are not used for the initial installation shall be placed in a box and handed over to the owner. Patch cords must be new and within the original unopened package.

3.8 FIBER OPTIC SPLICE ENCLOSURE

The fiber optic splice enclosure shall be installed per Manufacturer's written instructions.

3.9 COAX DIRECTIONAL COUPLERS, SPLITTERS

The Contractor shall provide all hardline coaxial directional couplers or splitters to provide adequate distribution of all horizontal coaxial cable in each IDF and MDF.

END OF SECTION 27 13 00
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SECTION 27 15 00
COMMUNICATIONS HORIZONTAL CABLING

PART 1 – GENERAL

1.1 SUMMARY

A. The work covered under this Section shall consist of a design, furnishing of all material, labor, and installation for completion of an operable end-to-end backbone structured cabling system throughout the campus and premises. This includes - but is not limited to - furnishing and installing cable, cable supports, cable ties, innerduct and termination components, ancillary equipment, testing, labeling and documentation of cables and connectors.

B. Complete product procurement and installation shall comply with the campus or Owner's latest telecommunication and Information Technology standards documents.

PART 2 - PRODUCTS

2.1 MANUFACTURER(S) AND SOLUTIONS

A. Acceptable indoor/premise end to end solutions for horizontal Category 6 copper and components:

1. Commscope Systimax

B. Acceptable indoor/outdoor end to end solutions for horizontal copper and components

1. Commscope Systimax

2.2 BASIC ENVIRONMENTAL REQUIREMENTS

A. Cabling shall be suitable for environment in which they are to be installed.

B. Cabling shall be plenum-rated within interior premise installations.

C. Cabling shall be outdoor rated within exterior installations subject to outdoor environmental conditions.

2.3 HORIZONTAL STATION CABLE

A. Cable shall consist of 4-pair #24 AWG insulated solid copper conductors. Each pair shall be unshielded and twisted.

B. Transmission characteristics of the cables shall exceed Category 6 performance as defined by Industry Standards.

C. The jacket color for communication cables shall be Blue.

2.4 HORIZONTAL STATION INDOOR/OUTDOOR CABLE

A. Cable shall be provided wherever it shall run within a wet environment or where it would be exposed to an outdoor condition.

B. Transmission characteristics of the cables shall meet full Category 6 performance as defined by Industry Standards.

C. Cable shall be suitable for installation both indoors and outdoors.

D. Cable shall be suitable for both direct burial and underground conduit installations.

E. Cable shall retain a CMP plenum rating to meet the listing requirements per NFPA for use within building premises.

F. Cable shall be constructed with a dry or gel-filled type water blocking material.

2.5 INDOOR JACKS

A. Jacks shall be non-keyed 8-pin 8 conductor (8P8C) modular jacks.

B. Data termination hardware shall meet full Category 6 Performance Specifications as defined by Industry Standards.

C. Jacks shall be UL verified and listed.

D. Color of the communication jack shall be Red.

2.6 OUTDOOR JACKS

A. In outdoor conditions as indicated on drawings provide IP67 rated jacks.

B. Jacks shall be terminated and installed within appropriate outdoor rated stainless steel faceplate as indicated by Manufacturer instructions.

C. Provide weather seals on outlets as needed to equal that of outdoor rated products in the project and per Manufacturer’s recommendations.

D. Provide IP67 rated screw on covers produced by the same jack manufacturer for every outdoor jack installed.

E. Data termination hardware shall meet full Category 6 performance specifications as defined by Industry Standards.

F. Jacks shall be UL verified and listed.

2.7 TELECOM OUTLET - STANDARD INDOOR

A. The combined faceplate and connector jack assembly is referred to as the Information Outlet (IO).

B. Connector assemblies shall utilize modular jacks as specified in Paragraph 2.5.

C. Outlet faceplates shall incorporate recessed designation strips for identifying labels. Designation strips shall be fitted with clear plastic covers.

D. The faceplate of the IO shall be constructed of high impact plastic (except where noted otherwise).

E. Single-gang faceplates shall be 2.75 x 4.5 inches.

F. Faceplates shall be UL listed.

G. Color of the wall plate shall be Ivory or White depending on electrical outlet color to match.

2.8 TELECOM OUTLET - STANDARD OUTDOOR

A. Faceplates shall be IP67 rated faceplate.

B. Faceplate shall be stainless steel and tamper resistant.

C. Provide weather seals on faceplate as needed to equal that of outdoor rated products in the project and per Manufacturer's recommendations.

D. The combined faceplate and connector jack assembly is referred to as the Information Outlet (IO).

E. Connector assemblies shall utilize modular jacks as specified in Paragraph 2.6.

F. Outlet faceplates shall include area for integrating waterproof labels. Designation strips shall be fitted with clear waterproof covers.

G. Single-gang faceplates shall be 2.75 x 4.5 inches.

H. Faceplates shall be UL listed.

2.9 TELECOM OUTLET - WALL PHONE

A. Faceplate shall be stainless steel flush to utilize a single modular jack.

B. Faceplate shall have standard mounting stubs on top and bottom suitable for wall mounting a standard phone directly over it.

C. Outlet shall be placed at a location providing 12 inches x 12 inches clearance at all sides to accommodate the phone.

2.10 TELECOM OUTLET - MODULAR FURNITURE

A. Outlet module shall be formulated to fit all jacks in row for use within furniture cabling provision or raceway. Contractor must confirm compatibility of outlet with the raceway manufacturer prior to ordering.

B. Outlet module shall allow jacks to retain the configuration of the standard information outlets shall accommodate easy to read labels configured horizontally

C. Color of the outlet module should be Ivory or White depending on electrical outlet color to match.

2.11 TELECOM OUTLET – FLOOR BOX/POKE-THRU

A. Faceplate shall include mounting slots for accommodating required jacks within the floor box/poke-thru. Contractor must confirm compatibility of faceplate with the floor box/poke-thru

B. Faceplate shall be able to fit within standard NEMA provision as well as low voltage floor box and poke-thru provisions.

C. Color of the faceplate shall be Ivory or White depending on electrical outlet color to match.

2.12 TELECOM OUTLET - RACEWAY

A. Outlet module shall be formulated to fit all jacks for use within the raceway's provisions. Contractor must confirm compatibility of outlet with the Raceway Manufacturer.

B. Outlet module shall allow jacks to retain the configuration of the standard information outlets shall accommodate easy-to-read labels configured horizontally.

C. Color of the outlet module should be Ivory or White depending on electrical outlet color to match.

2.13 HORIZONTAL STATION CABLE PATCH PANEL

A. The data patch panel shall utilize modular jacks as described in Paragraph 2.3.

B. Patch panels shall be 19-inches wide, and rack mounted.

C. Individual patch panels shall contain a maximum of 48 ports.

D. The data patch panel as a system shall be rated to match or exceed the ANSI/TIA/EIA rated wiring terminated on the panel.

E. Patch panel shall be complete with rear strain relief mechanism for the incoming cables.

F. The patch panel shall have integral designation strips to identify each port on the front and rear of the panel.

G. Patch panels shall have a minimum of 20% spare ports.

2.14 COMMUNICATIONS INDOOR OUTLET PATCH CORDS

A. Patch cords shall be factory manufactured by the same manufacturer providing the horizontal cabling and meet the requirements of Category 6 cabling.

B. Be round, and consist of eight insulated 24AWG, stranded copper conductors, arranged in four color-coded twisted pairs within a flame-retardant jacket.

C. Be equipped with modular 8-position plugs on both ends, wired straight through with standards compliant wiring.

D. Furnish one patch cord per installed jack at workstation and TR room.

E. Patch cord lengths must not exceed the maximum allowed for proper operation per Manufacturer's Requirement or Specifications.

F. Install the quantity of patch cords in coordination with network deployment with owner.

G. All workstation patch cords shall be 14 feet in length.

H. For the TR patch cords, 80% shall be 7 feet, and 20% shall be 14 feet in length from the total number.

2.15 COMMUNICATIONS OUTDOOR OUTLET PATCH CORDS

A. In outdoor conditions as indicated on drawings provide IP67 rated patch cords.

B. Patch cords shall be from the same manufacturer as the outdoor rated jacks submitted for installation.

C. Patch cords shall be factory manufactured by the same manufacturer providing the horizontal cabling and meet the requirements of Category 6 cabling.

D. Be round, and consist of eight-insulated 24AWG, stranded copper conductors, arranged in four color-coded twisted pairs within a flame-retardant jacket.

E. Be equipped with modular eight-position plugs on both ends, wired straight through with standards compliant wiring.

F. Provide patch cord for all outdoor drops.

G. Each patch cord shall be 5 feet in length.

2.16 COAX HORIZONTAL CABLE (RG-6)

A. Cable shall be listed as CEC Type CATVP quad shielded cable.

B. Center conductor - 18AWG Copper Covered Steel; 0.040-inch O.D. (nominal); foamed polyethylene dielectric

C. Inner shield - aluminum-polypropylene-aluminum laminated tape with overlap bonded to dielectric

D. Second shield - 60% 34AWG bare aluminum braid wire

E. Third shield - non-bonded aluminum foil tape

F. Outer shield - 42% 34AWG bare aluminum braid wire

G. Jacket – Kynar Flex or Flame retardant-PVC

H. Impedance 75-Ohms

I. Impedance 75-Ohms

J. Velocity of propagation 85%

K. Maximum attenuation (per 100-feet):

1. At 55-MHz: 1.60 dB

2. At 750-MHz: 5.65 Db

2.17 COAX TERMINATION END (F-CONNECTOR)

A. F connector shall be male type connector impedance matched to the cable that is terminated.

B. Connector shall be single piece construction and incorporate a ½-inch crimp ring with a hex crimp.

C. Female type F-connectors shall be matched to male connectors.

PART 3 - EXECUTION

3.1 HORIZONTAL DATA STATION CABLE AND TERMINATIONS

A. All horizontal Data Station Cables shall terminate on modular patch panels in their respective Telecommunications Rooms (TR) or Equipment Room (ER) as specified on the Drawings.

B. The maximum station cable drop length shall not exceed 90-meters. This length shall be measured from the patch panel in the wiring closet to the outlet in the work area. The Contractor is responsible for installing station cabling in a fashion to avoid runs that exceed this distance. Any areas that violate the above constraints shall be identified and reported to the Consultant prior to installation.

C. All cables shall be continuous and splice-free.

D. During pulling operation provide adequate resources to observe cable at all points of duct entry and exit.

E. Avoid abrasion and other damage to cables during installation.

F. All cable shall be installed free of tension at both ends. In cases where the cable must bear some stress, Kellom grips may be used to spread the strain over a longer length of cable.

G. Cables shall be supported according to applicable codes. J-hooks used for cable support shall be manufactured solely for the purpose of supporting communication cables.

H. Supports should be spaced at a maximum 4-foot interval unless limited by building construction. If cable "sag" at mid-span exceeds 12-inches, another support shall be used.

I. Cable shall never be supported by the ceiling grid.

J. Cables shall not be attached to existing cabling, plumbing or steam piping, ductwork, ceiling supports or the outside of existing electrical or communications conduit.

K. Manufacturer’s minimum bend radius specifications shall be observed at all times. Cable ties should not be over tightened as to compress the cable jacket. No sharp burrs should remain where excess length of the cable tie has been cut.

L. Cable sheaths shall be protected from damage by sharp edges. Where a cable passes over a sharp edge, a bushing or grommet shall be used to protect the cable. Bushings shall be used at both ends of all EMT and rigid steel conduit.

M. Maintain the following minimum separation distances between power and data cables.

Condition	Minimum Separation Distance		
	< 2kVA	2-5 kVA	>5kVA
Unshielded power lines or electrical equipment in proximity to open or nonmetal pathways	5”	12”	24”
Unshielded power lines or electrical equipment in proximity to a grounded metal conduit pathway	2.5”	6”	12”
Power lines enclosed in a grounded metal conduit (or equivalent shielding) in proximity to a grounded metal conduit pathway		3"	6”
Electrical motors and transformers			48”

N. Maintain the following minimum separation distances between data cables and specific electromagnetic interference sources:

Source of Disturbance	Minimum Separation
Fluorescent lamps	5”
Neon lamps	5”
Mercury vapor lamps	5”
High-intensity discharge lamps	5”
Arc welders	31”
Frequency induction heating	39”

O. Cables shall be routed through channel in modular furniture. Communication cabling shall not run in channel with power wiring.

P. Information Outlets shall be flush mounted on wall-mounted boxes, in floor-mounted boxes, and in modular furniture as shown on Drawings.

Q. All data and voice cables shall be positioned on termination hardware in sequence of the Outlet I.D. starting with the lowest number.

R. Termination hardware (Blocks and Patch Panels) positioning and layout must be reviewed by the Consultant prior to construction. The review does not exempt the Contractor from meeting any of the Requirements stated in this document.

S. Patch panels shall be installed to allow for future cables to be added without disrupting existing installation.

T. Cables shall have a 12-inches service loop in outlet box or supported properly above ceiling.

3.2 JACKS

Jacks shall be wired per TIA-568B pin outs.

3.3 INFORMATION OUTLET

A. The same orientation and positioning of jacks and connectors shall be utilized throughout the installation.

B. Outlet boxes shall be secured to building with minimum of two mechanical fasteners per box. Adhesive fasteners are not allowed.

C. All extra openings need to be filled with blank inserts.

3.4 COMMUNICATIONS PATCH PANEL

A. Panels shall be fully populated with jacks.

B. Install copper patch panels below fiber optic patch panels in telecommunications rack.

3.5 HORIZONTAL DATA STATION CABLE PATCH CORDS

A. The patch cords shall be installed per Manufacturer's written instructions.

B. Contractor must coordinate with the Owner for installing all patch cords within the TR.

C. Any left-over patch cords which are not used for the initial installation shall be placed in a box and handed over to the Owner. Patch cords must be new and within the original unopened package.

3.6 TELEVISION COAX AND TERMINATIONS

A. RG-6 Coax cable shall be terminated at the workstation and at the TR in a male F-connector.

B. When preparing the RG-6 cable for termination, manufacturer installation procedures shall be adhered to. Special care shall be taken to insure the proper center conductor length as specified by the Manufacturer.

C. The male F-connectors shall be mated to female/female feed-thru couplings at both the outlet and TR locations. These couplings shall be matched to the male F-connector. Couplings shall be of sufficient length as to allow for the male F-connector to fully seat on both sides.

END OF SECTION 27 15 00
091825/205232

SECTION 28 23 00
VIDEO SURVEILLANCE SYSTEM

PART 1 – GENERAL

1.1 DESCRIPTION

A. General Description: This specification section covers the furnishing and installation of a complete expansion to a low-voltage, enterprise-wide Video Surveillance System (VSS).

B. Contractor shall coordinate, and if required, furnish licenses and install VSS hardware devices, mounting brackets, power supplies, servers, workstations, recorders, controls, consoles and other components of the system as shown and specified.

C. Furnish and install special boxes, cable, connectors, wiring, and other accessories necessary to complete the system installation. Requirements shall be in accordance with Division 26, Electrical Work.

D. Outlets, junction boxes, pull boxes, conduit, connectors, wiring, and other accessories necessary to complete the system installation, will be provided in accordance with the projects' Division 26, Electrical Work Specifications, and coordinated with VSS Requirements.

E. General Conditions: Provide the work in accordance with Section 28 05 00, Security System General Requirements.

1.2 QUALIFICATIONS

Provide the work in accordance with Section 28 05 00, Security System General Requirements

1.3 GENERAL CONDITIONS

In accordance with Section 28 05 00, Security System General Requirements

1.4 RELATED WORK

A. Drawings and General Provisions of the Contract, including General Conditions and Standard Guidelines referenced in Division 01 Summary Section, apply to this Section.

1.5 APPLICABLE PUBLICATIONS

In accordance with Section 28 05 00, Security System General Requirements

1.6 PRECEDENCE

Obtain, read and comply with General Conditions and applicable subsections of the Contract Specifications. Where a discrepancy may exist between any applicable sub-section and directions as contained herein, this Section shall govern.

1.7 SHOP DRAWINGS AND EQUIPMENT SUBMITTAL

In accordance with Section 28 05 00, Security System General Requirements

1.8 OPERATING AND MAINTENANCE MANUALS

In accordance with Section 28 05 00, Security System General Requirements

1.9 WARRANTY

In accordance with Section 28 05 00, Security System General Requirements

1.10 SERVICE AND MAINTENANCE

In accordance with Section 28 05 00, Security System General Requirements

1.11 TRAINING

In accordance with Section 28 05 00, Security System General Requirements

1.12 OWNER'S RIGHT TO USE EQUIPMENT

The Owner reserves the right to use equipment, material and services provided as part of this work prior to Acceptance of the Work, without incurring additional charges and without commencement of the Warranty period.

1.13 TECHNICAL REQUIREMENTS, VIDEO SURVEILLANCE SYSTEM

A. General

1. The following information is provided to establish required system performance for the complete operating Video Surveillance System (VSS) system expansion to the VVC system. Some of the Performance Requirements noted herein are supported and supplied by existing systems in concert with new equipment and software which shall be provided by the Contractor under this scope of work. Contractor shall provide equipment, wiring and software programming at all sites as necessary to provide a complete system as described herein and as shown on the Drawings.

2. The VSS components provided under this scope of work shall be compatible with the existing VSS and shall function as an integral part thereof. The existing enterprise-wide network video system is manufactured by ONSSI, the system headend is located in the Building 21 Data Center.

3. Contractor shall be responsible for providing equipment, licenses and software to achieve the specified system performance described herein and, by reference, realize absolute and seamless compatibility with the existing system.

4. Contractor shall ensure system additions and modifications provided under this scope of work have no negative effect on the existing systems and operations, and no permanent effect beyond that specified or implied by the scope of work unless otherwise noted herein.

B. Purpose

1. The System shall provide the ability to record images received from cameras located throughout VVC facilities in a digital format.

2. The System shall allow operators to view live and recorded video images in single and multiple-camera formats based on parameters requested by the user.

C. Environment

1. The system shall be wholly contained within the Admin building shown on the plans but shall also be fully integrated with the Owner's enterprise video surveillance systems (VSS) at the Security Operations Center (SOC). Refer to the Drawings and Bid Instructions to determine the scope limitations for this phase of work.

2. Video Processing and Recording Components (Network Video Recorders (NVR) shall be distributed, and located in the IDF's or BDF's, as shown on the Drawings or as directed by the Owner. See the Drawings for details on equipment locations of this project.

3. Central Administrative Post: The video management service application is located in the Security Operations Center. System programming, configuration and control shall occur at this location or as directed by the Owner.

4. Building Administrative Post: Where applicable, Video Client workstations shall be located in coordination with VVC IT. Site surveillance, site camera configuration, and review of recorded images shall occur at this location.

5. Infrastructure and Connectivity

a. The video camera and processing components at each site shall utilize a combination of standard copper cable, fiber optic cable, IP or wireless transmission schemes, depending on individual site conditions.

b. Local Sites: The wired network cameras, video encoders, network video appliances, and Client Workstations shall reside on the building's local area network (LAN) or network segment. Recording, live viewing, switching, long-term storage, reviewing, and configuration shall be

implemented over this infrastructure. Coordinate LAN/WAN Requirements for this project with the Owner.

c. Enterprise: Local LAN networks are connected to the VVC LAN network, to establish VSS connectivity between VVC sites and the Security Operations Center. Coordinate LAN/WAN Requirements for this project with the Owner.

D. Attributes

1. General

a. The Digital Video Management System (DVMS) shall be Ocularis by ONSSI/Qognify. Contractor to confirm software version with Owner prior to purchase.

b. The system shall comprise network video appliances, video clients, digital storage devices, router/switches, and ancillary equipment assembled into a fully operating system.

c. Field Components: Field Components shall comprise video cameras, positioning devices, lenses, camera mounts and housings, and other video system devices and wiring as described herein and shown on the Drawings.

d. Video Processing Components: Video processing components shall comprise computer video servers, encoders / decoders, digital storage devices, computer video monitoring stations, and other video processing devices as described herein and as needed to provide the required functionality.

e. Quality: The initial quality/compression parameters shall be set as determined by the Engineer and the Owner at the time of commissioning. Minimum video quality shall be equivalent to 4-CIF, or the selected camera's highest supported resolution, unless otherwise approved by the Owner.

2. Integrated Digital Video Management System

a. The Contractor shall incorporate the following existing application software features and functionality into the new work and configure the system and devices to make use of these, and any other features offered by the application software, as required by the Owner.

b. The VSS shall support an integrated Digital Video Management recording solution utilizing a Network Video Recorder (NVR) appliance that provides the following features and capabilities:

1) Seamless integration with the VSS
2) The VSS shall support Digital Network Video Recorders manufactured by the VSS manufacturer and from third-party Manufacturers.
3) The VSS shall support analog and IP video sources.
4) The Digital Video Management Software (DVMS) shall incorporate modular architecture and be able to support an unlimited number of cameras.
5) The DVMS shall be able to simultaneously record and display live video and display recorded video.
6) The DVMS shall support both event based and continuous recording.
7) The DVMS shall mark all events, and they shall be available for playback and/or archiving at any time.
8) Up to 32 simultaneous users shall be able to access any video feed from any recorder on the network.
9) User defined profiles for tailored granular access to configuration and operation.
10) Independent camera setup for compression rate, brightness, contrast and other factor setups.

c. DVMS Network Interface

1) The network interface shall allow remote access of DVMS from anywhere with established connectivity on the LAN/WAN.
2) The DVMS shall have the ability to playback stored video over the LAN / WAN for remote access of video images.

d. The DVMS shall support the following configuration and customization parameters:

1) Compression percentage
2) Pre and Post event recording, in seconds
3) Active Continuous Archiving
4) Motion Detection Alarms
5) Set Time Lapse Recording
6) Continuous Recording Mode

3. Real Video Time Monitoring: The DVMS/IPDVMS shall allow monitoring of real time video from any Alarm Monitoring client workstation. DVMS and Camera status shall be displayed on a System Hardware Tree.

4. Matrix View: The DVMS/IPDVMS shall support an advanced Matrix View of On-line camera views. Up to 32 channels shall be able to be simultaneously displayed in the video matrix. The 32 channels shall be any combination of Live or Recorded video.

5. Pan/Tilt/Zoom Control from Alarm Monitoring: Video cameras so equipped, shall be capable of pan/tilt/zoom positioning and remote-control functions. Video camera positioning and imaging signals shall be transmitted by LAN networks as described herein, to permit remote viewing and camera control "on demand" on any LAN-connected device, from any location, with appropriate software and authorization.

6. Still Image Capture / Save: During playback or monitoring of video, the System shall have the ability to create and save a still picture.

7. Export Video Clip to File: The VSS shall have the ability to save and export recorded video to a file for the purpose of sharing and reviewing video clips. The start and end times for each video segment shall be user defined.

8. Video Loss Detection: The VSS shall detect video loss from cameras and activate an alarm.

9. Automated Motion Video Searching

10. System Redundancy: System servers and network video recorders shall be equipped with RAID 5 array hard drives to allow failed hard drives to be "rebuilt" without loss of recorded information. Hard drives shall be hot swap type.

E. Functional Requirements

1. Video Recording Protocols: Initially, configure the system as directed by the Owner, based on the following recording protocol definitions:

   a. Recording Modes:

      1) Event/Alarm Mode: 15 fps per camera (with pre and post 10 seconds)

   b. Compression Codec: H.264 or better

   c. Compression Quality: Compression rates shall always be set at their highest quality. Automatic throttling can be used where network bandwidth is restricted, when approved by the Owner.

   d. Resolution: Cameras should be configured to deliver streams in their highest native resolution.

e. Motion-Based Recording Modes: Motion detection recording modes may be implemented where directed by the Owner, but assumptions on motion cannot be used to calculate storage capacity.

2. Recording and Retrieval

   a. Provide a minimum hard-disk storage capacity of 30 days of recording, for cameras installed as a part of this project. Storage media shall be located in the security equipment room, communications room, security monitoring center, or where shown on the plans. Storage capacity shall be calculated based on the following parameters:

      1) Assume 100% motion and complexity within the viewing area at all times for storage calculations. Assume 8 hours of motion per day.

3. Forensic Recording: Provide a means of recording video clips for transport such as DAT, USB, DVD or DVD-ROM, for forensic and evidentiary purposes.

4. Software routines required to accomplish the required functionality will be fully developed, installed, tested and supported by the Contractor and Manufacturer. Provide proof of Manufacturer certification for any new software provided.

5. Video Storage/Retrieval

   a. Stored video will be time/date stamped and synchronized with the VSS clocks.

   b. The system shall retrieve any stored video based on time/date parameters entered by the operator.

   c. The system shall be capable of performing activity detection on stored video. Any recorded video channel may be selected, and a zone may be selected within the view of the camera scene. The stored video can then be searched and will only display clips of video that identify motion in the selected zone.

6. Surveillance/Display Modes

   a. Cameras may be used for assessment, to view areas of concern and provide video escort functions.

   b. The system shall process video signals for primary display on video workstation display monitors. Video signals may be displayed in single or multi-view formats.

   c. Selection of display formats shall be under the control of the operators, via their local video monitoring software, video control keyboards, or by computer-controlled graphical user interfaces.

d. Display Modes: The system shall enable one or more cameras from any combination of areas or sites to be displayed on one or more video workstations or display devices, simultaneously.

1) Single Camera Display: Any individual camera may be called up and displayed on a video workstation, and by any other properly configured computer or LAN device, with VSS monitoring software.
2) Multiple Display: Up to 16 cameras may be called-up and displayed simultaneously on each video monitor with VSS monitoring software. Cameras may be called-up for multiple display without regard to their location in the system, or on the network, such that each of the 16 cameras may be from 16 different sites or areas, displayed simultaneously on a video workstation.

e. The system shall support independently configured display modes at each video workstation or LAN device simultaneously. Display mode configured at one video monitoring device shall not affect the others.

PART 2 – PRODUCTS

2.1 GENERAL

Product Acceptability: The Products section contains lists of acceptable products. If product substitutions are proposed, they must be made based upon a comparison of equivalence to the product specified. Considerations may include but shall not be limited to functional, physical, aesthetic and/or interface aspects. The Owner shall be the sole judge of whether or not a submitted substitution is deemed to be "equivalent" to that specified.

2.2 VIDEO SURVEILLANCE (VSS) EQUIPMENT

A. General

1. Network Video Recorder: Provide the number of NVR recorders necessary to manage and record video cameras at the project site, as shown on the Drawings and as noted herein or directed by the Owner.

2. Software

a. Provide Ocularis by ONSSI/Qognify, IPDVMS software NVR component, to support the required monitoring, surveillance and recording capabilities and functionality, as specified. Ensure compatibility between the NVR application and the existing DVMS application.

b. Camera/Video Licenses: Provide additional number of camera licenses equal to the number of cameras shown on the Drawings and added throughout the course of the project.

c. Client Workstations: Provide Ocularis ONSSI/Qognify viewing software to support monitoring, surveillance, and review capabilities and functionality at the client workstations.

3. Provide VSS Client Workstations where shown on the Drawings and described herein.

B. Network Video Recorder (NVR) Hardware Platform

1. The Network Video Recorder, a device for recording IP based video from IP output cameras or analog cameras that have been converted to IP output, shall consist of a PC Compatible Chassis and other specified components, as shown in the following sub sections that together create the Network Video Recorder.

2. The NVR shall be a BCDV 2 RU 8-bay video recording server with up to 84TB of storage or approved equivalent. Contractor shall obtain VVC IT approval before purchase and installation.

a. Intel® Xeon® Scalable Silver 4110 Processors

b. Storage: Configurable up to 84TB: Provide the number of drives necessary to provide the required storage.

c. RAM configurable from 16GB to 32GB

d. RAID 5 Controller

e. Five-year warranty included

f. Virus Protection: Coordinate with VVC IT

g. Firewall: Coordinate with VVC IT

h. Provide ONSSI/Qognify viewing software

3. Network Recorder License: Provide one per camera

4. Contractor responsible for sizing storage and appropriate number of NVRs.

C. Video Cameras

1. IP-Ready Cameras

a. All new cameras shall be IP-ready cameras, unless the conditions of installation or other Special Requirements dictate that an analog type camera must be used. Any such condition must be submitted for approval, and approved by the Owner, prior to installation.

b. Where analog cameras are approved and provided, a digital video encoder must be used to convert the analog video signal for distribution and use on the LAN/WAN Network.

2. Interior Mini-Dome Network Fixed Position Camera:

a. Cameras shall be Axis 4MP fixed dome M3206-LVE.

3. Exterior Dome Network Fixed Position Camera:

a. Cameras shall be Axis 4MP fixed dome M3206-LVE.

4. Exterior Panoramic Network 180 Degree Camera:

a. Cameras shall be Axis 15MP tri lens fixed dome Q3709-PVE.

5. Exterior Panoramic Network 360 Degree Camera:

a. Cameras shall be Axis 15MP quad lens fixed dome P3719-PLE

D. Media Converters

1. To serve the cameras at light pole locations.

2. Shall include the following.

a. Minimum two multimode fiber strands.

b. Fiber connectors in SFP or LC format. Provide connectors as necessary.

c. Minimum one RJ-45 to support Category 6 cable or better.

d. Power supply which operates off the local 120V/20A outlet.

3. Support 1000BASE-X ethernet originating from the building network and into the camera.

4. Support PoE+ 802.3af into the camera.

5. Manufacturers.

a. Omnitron Systems

b. Perle

c. Axis

d. Or equal, subject to review

E. Camera Enclosures

1. Provide enclosure for each camera. Submit enclosure and mounting hardware configuration to the Owner for review prior to installation.

2. Ancillary hardware shall be provided by contractor if required and shall be compatible with and comparable in strength to other attached hardware.

3. Provide smoked or incognito domes which hide the camera lens from public view.

4. Enclosures for outdoor light and camera pole mounting will need to be painted to match the respective pole. Confirm with Architect for Matching Colors Requirements.

F. Camera Enclosure Mounting Hardware

1. Provision for mounting hardware: Contractor shall include provision and installation of miscellaneous hardware and mounting extensions at each camera location to provide acceptable viewing performance.

2. Ancillary Hardware shall be provided by the Contractor, if required, and shall be compatible with and comparable in strength to other attached hardware.

3. Provide wall mount, pendent mount, or ceiling mount as required by each location.

    a. Dome cameras exposed to sunlight shall be mounted to pendant mount goose neck hardware.

G. Camera Power Supply (CPS)

1. POE Cameras: Cameras with direct IP compatibility shall be compatible with Power over Ethernet (POE) standards and will utilize POE power from the network switch. Contractor shall coordinate power provisions with the Owner.

2. POE+ Cameras: Cameras with direct IP compatibility shall be compatible with Power over Ethernet Plus (POE+) standards and will utilize POE+ power from the network switch. Contractor shall coordinate power provisions with the Owner.

H. Wiring

1. General: Cables that are not installed in conduit shall be rated for plenum use.

2. Video:

   a. IP Cameras, Interior or Protected Wiring: For cameras 100 meters or less from the applicable network switch, provide 23 AWG, 4-pair, plenum-rated Category cable. See Division 27 for Category Cable Requirements.

3. Exposed Camera Wiring: Wiring between camera enclosures and their respective 'J' Box shall be in "Sealtite" flexible conduit. Sealtite shall be firmly affixed to 'J' Box cover plate and camera enclosure. Refer to camera details.

4. Other cable and cable/interface combinations must be pre-approved by both the Manufacturer and the Owner, prior to installation.

PART 3 – EXECUTION

3.1 GENERAL

In accordance with Section 28 05 00, Security System General Requirements.

3.2 SYSTEM CONFIGURATION

A. Camera recording and display configurations shall be arranged via a combination of the Video Server, Network Video Recorders, Video Monitoring Workstations, and LAN/Wireless LAN network.

B. Contractor shall coordinate with the Owner to determine the required preprogrammed surveillance and event-initiated configurations.

3.3 EQUIPMENT, RACK, AND CONSOLE INSTALLATION

In accordance with Section 28 05 00, General Requirements.

3.4 GROUNDING PROCEDURES

Provide grounding of all systems and equipment in accordance with Section 28 05 00, Security Systems General Requirements.

3.5 WIRE AND CABLE INSTALLATION PRACTICES

Provide wire and cable installation in accordance with Section 28 05 00, Security Systems General Requirements.

3.6 DATABASE PREPARATION, CHECKING, AND ACTIVATION

Provide database preparation, checking and activation for systems and equipment in accordance with Security Systems General Requirements, Section 28 05 00

3.7 START UP RESPONSIBILITY

Provide start-up services for all systems and equipment in accordance with Security Systems General Requirements, Section 28 05 00.

3.8 PRELIMINARY INSPECTION AND TESTING

Provide preliminary inspection and testing services for systems and equipment in accordance with Testing and Commissioning, Section 28 08 00.

3.9 SYSTEM PERFORMANCE TESTING AND ADJUSTING PROCEDURES

A. Provide performance testing, burn-in, and adjusting systems and equipment in accordance with Testing and Commissioning, Section 28 08 00.

B. VSS Performance Testing

1. Demonstrate acceptable picture quality and camera views on each camera.

2. Demonstrate acceptable picture quality on each video monitoring workstation, and display devices accessible over the Wireless LAN.

3. Demonstrate no negative effects on video image is observed while Pan-Tilt-Zoom cameras are being repositioned.

4. Demonstrate switching, recording and playback functions for the video server, and digital video recorders.

5. Demonstrate camera positioning functionality, on pan/tilt/zoom cameras, throughout the entire range of possible camera positions.

6. Ensure primary views are acceptable. Demonstrate the view obtained by each pre-programmed camera position.

7. Demonstrate automatic event-initiated recording sequences, including camera pre-positioning, where applicable.

3.10 BURN-IN PERFORMANCE PERIOD

Provide a burn-in performance period to demonstrate the stability of the system, in accordance with Testing and Commissioning, Section 28 08 00.

3.11 COMMISSIONING AND VALIDATION

A. Provide commissioning and validation services to prove and improve the effectiveness of the system, in accordance with Testing and Commissioning, Section 28 08 00.

B. Coordinate with the Owner for the provision of these services.

3.12 FINAL PROCEDURES

Perform final procedures in accordance with Section 28 05 00, Security Systems General Requirements.

END OF SECTION 28 23 00

EVENT CENTER PARKING LOT EXPANSION

VICTOR VALLEY COLLEGE

18422 BEAR VALLEY ROAD, VICTORVILLE, CA. 92395

GENERAL NOTES

1. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING, AND IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ANY DISCREPANCIES WHICH MAY EXIST BETWEEN THESE DRAWINGS AND THE ACTUAL FIELD CONDITIONS.

2. THE CONTRACTOR SHALL THOROUGHLY INVESTIGATE, VERIFY AND BEAR FULL RESPONSIBILITY FOR DIMENSIONS AND EXISTING CONDITIONS THAT AFFECT CONSTRUCTION AS SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY CONDITION REQUIRING MODIFICATION OR CHANGE PRIOR TO STARTING WORK.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING SITE TOPOGRAPHY WITH WORK SHOWN ON THESE DRAWINGS. THE INTENT IS TO PROVIDE SUFFICIENT DRAINAGE AWAY FROM NEW AND EXISTING BUILDINGS OR STRUCTURES.

4. WHERE EXISTING FINISHES, FACILITIES AND SURFACES ARE DISTURBED, DAMAGED OR REMOVED DURING THE COURSE OF THE CONSTRUCTION OPERATIONS, THE CONTRACTOR IS TO REPAIR OR REPLACE AS NECESSARY TO MATCH EXISTING. ALL NEW MATERIALS ADDED SHALL MATCH EXISTING IN ALL RESPECTS.

5. LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE, AND CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING TO AVOID EXISTING DUCTS, PIPING, OR CONDUITS, ETC. AND TO PREVENT HAZARD TO PERSONNEL AND/OR DAMAGE EXISTING UNDERGROUND UTILITIES AND STRUCTURES WHETHER OR NOT SHOWN AND/OR INSTALLED BY OTHER CONTRACTS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT OR ENGINEER, SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED.

6. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO LOCATE AND PROTECT ALL SUBSTRUCTURES WITHIN THE LIMITS OF NEW WORK WHETHER SHOWN ON THE PLANS OR NOT AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR WILL BE HELD RESPONSIBLE AND SHALL ALSO BE RESPONSIBLE AND SHALL BEAR THE TOTAL EXPENSE OF REPAIR OR REPLACEMENT OF SUCH UTILITIES AND SUBSTRUCTURES WHERE DAMAGED BY HIS OPERATIONS IN CONNECTION WITH EXECUTION OF THIS WORK. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ALL DAMAGE ARISING FROM AND/OR CONNECTED WITH DAMAGE TO SAID UTILITIES AND SUBSTRUCTURES AS OUTLINED ABOVE.

7. ALL WORKERS SHALL WEAR APPROPRIATE SAFETY GEAR AND COMPLY WITH APPLICABLE SAFETY REGULATIONS.

8. DRESS AND BEHAVIOR OF ALL CONSTRUCTION WORKERS SHALL BE APPROPRIATE TO THE JOB SITE AND BE ACCEPTABLE TO DISTRICT REPRESENTATIVES.

9. SMOKING SHALL NOT BE ALLOWED ON ANY AREA OF THE SITE.

10. THERE SHALL BE NO POSSESSION OR CONSUMPTION OF DRUGS OR ALCOHOLIC BEVERAGES ON THE JOB SITE BY ANY PERSON. ANY PERSON THAT DOES NOT COMPLY WITH THESE REQUIREMENTS SHALL BE DIRECTED TO LEAVE THE JOB SITE AND WILL NOT BE PERMITTED TO RETURN DURING THE REMAINDER OF THE CONTRACT.

11. SEE CBC AND CFC CHAPTER 33 AND THE SUPPLEMENTAL SITE SAFETY PLAN FOR FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION.

12. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.

13. A COPY OF TITLE 24, PARTS 1-6, & 9 MUST BE KEPT ON SITE AVAILABLE FOR REVIEW, DURING CONSTRUCTION. ALL WORK SHALL CONFORM TO TITLE 24 CALIFORNIA CODE OF REGULATIONS (CCR).

14. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS REMEDIATION, SHALL BE DESCRIBED IN NOTE 16 BELOW.

15. TRANSPORTATION, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.

16. DETERIORATION OR EXISTING NON-COMPLIANT CONSTRUCTION: IF ANY CONDITION IS DISCOVERED WHICH, IF LEFT UNCORRECTED, WOULD MAKE THE BUILDING NON-COMPLIANT WITH THE REQUIREMENTS OF THE CBC IN FORCE AT TIME OF THE ORIGINAL CONSTRUCTION, THE CONDITION MUST BE CORRECTED IN ACCORDANCE WITH THE CURRENT CODE REQUIREMENTS. A CCD OR A SEPARATE SET OF PLANS AND SPECIFICATIONS DETAILING AND SPECIFYING THE REQUIRED REPAIR WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE REPAIR WORK.

17. ALL PERMITS AND FEES REQUIRED FOR THE COMPLETION OF THIS PROJECT WILL BE OBTAINED AND PAID FOR BY THE CONTRACTOR AND WILL BE REIMBURSED BY THE DISTRICT. THERE WILL BE NO DELAYS ACCEPTED OR ADDITIONAL DAYS GRANTED FOR FAILURE BY THE CONTRACTOR TO OBTAIN PERMITS IN A TIMELY MANNER TO ACHIEVE COMPLETION DATE.

APPLICABLE CODES

LIST OF APPLICABLE CODES

2025 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR
2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR
2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR
2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR
2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR
2022 CALIFORNIA ENERGY CODE (CEC) PART 6, TITLE 24 CCR
2022 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR
2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGreen), PART 11, TITLE 24 CCR
2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR
TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

APPLICABLE STANDARDS
For a list of applicable standards, including Califronia amendments to the NFPA Standards, refer to CBC Chapter 35 and CFC Chapter 80.

INSPECTORS

A "DSA CERTIFIED" PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE DSA SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR.

INSPECTOR OF RECORD SHALL BE *CLASS 3* MINIMUM.

A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT.

ALL SHOP AND SITE WELDING TO BE INSPECTED BY A DSA PRE-APPROVED AWS-CERTIFIED WELDING INSPECTOR PER 2022 CBC SECTION 1705 A.2.5

ALL MASONRY WORK TO BE INSPECTED BY A DSA PRE-APPROVED MASONRY INSPECTOR.

CONSTRUCTION CHANGES

CHANGES TO THE DIVISION OF THE STATE ARCHITECT-APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY ADDENDA OR CONSTRUCTION CHANGE DOCUMENTS(CCD) FOR CHANGES TO THE STRUCTURAL, ACCESSIBILITY OR FIRE-LIFE SAFETY PORTIONS OF THE PROJECT. CHANGES SHALL BE SUBMITTED TO AND APPROVED BY DSA PRIOR TO COMMENCEMENT OF THE WORK SHOWN THEREON. (CAC 4-338 (C)).

SCOPE OF WORK

THIS PROJECT SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

- GENERAL CONDITIONS
- TEMPORARY FACILITIES
- SAWCUTTING AND DEMOLITION
- GRADING AND COMPACTION
- UTILITIES TRENCHING , BACKFILLING AND COMPACTION
- SOIL EXPORT AND IMPORT AS NEEDED
- DEMOLISH EXISTING TENNIS COURTS, COURT LIGHTING, COURT PAVING AND PERIMETER CHAIN LINK FENCING.
- DEMOLISH SITE FURNITURE, LIGHT POLES WITH FOOTINGS, AND TREES.
- DECOMISSION, DEMO, HAUL AWAY, AND DISPOSE LEGALLY THREE EXISTING MODULAR CLASSROOM BUILDINGS (ONE @ 48' X 40' AND TWO @ 24' X 40').

2 IMPROVEMENTS TO PARKING AREA:
PROVIDE AND INSTALL (U.N.O.) NEW CONCRETE PAVING, PAVEMENT PATCHING, PARKING LOT STRIPING AND SIGNAGE, CONCRETE CURBS & GUTTERS, PARKING LOT LIGHTING, ELECTRIC VEHICLE CHARGING STATIONS (OFCI), PATHWAYS FOR FUTURE EVs, CCTV CAMERAS (CFCI), WAPs (OFCI), DISTRIBUTION PANEL DP (OFCI), AND LANDSCAPE IMPROVEMENTS.

PROJECT DIRECTORY

OWNER
VICTOR VALLEY COLLEGE
18422 BEAR VALLEY ROAD
VICTORVILLE, CA. 92395

PROJECT ADDRESS
VICTOR VALLEY COLLEGE
18422 BEAR VALLEY ROAD
VICTORVILLE, CA. 92395

ARCHITECT
PCH ARCHITECTS
30 SOUTH CENTER ST.
REDLANDS, CA. 92373
(909) 792-7397

ELECTRICAL
FBA ENGINEERING
150 PAULARINO AVE., #A120
COSTA MESA, CA. 92626
(949) 852-9995

CIVIL
RICK ENGINEERING
1770 IOWA AVE., #100
RIVERSIDE, CA. 92507
(951) 782-0707

LANDSCAPE
STB LANDSCAPE ARCHITECTS
15 SO. 5TH STREET
REDLANDS, CA. 92373
(909) 798-7490

SYMBOLS

NORTH ARROW

DTL # / SHT # — DETAIL REFERENCE TAG
DETAIL NUMBER
SHEET NUMBER

X — NEW WORK KEYNOTE
(SEE LEGEND EACH SHEET)

X — DEMOLITION KEYNOTE
(SEE LEGEND EACH SHEET)

X — EQUIPMENT TAG
(SEE EQUIPMENT SCHEDULE)

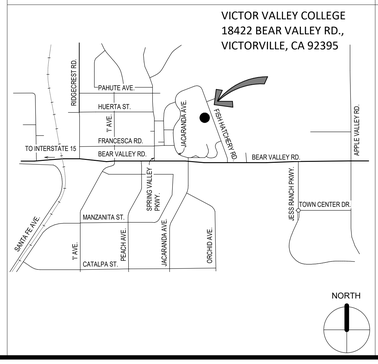
MATCH LINE

1 — REVISION TAG
(SEE REVISIONS NO. & DESCRIPTION EACH SHEET TITLE BLOCK, DELTA-1 SHOWN)

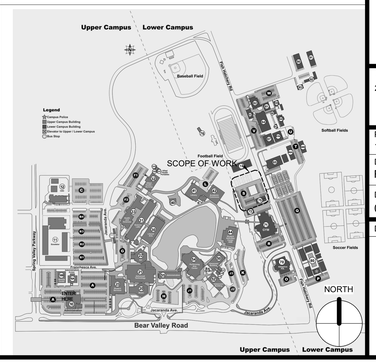
SHEET INDEX

Grand total: 25

VICINITY MAP



CAMPUS MAP



APPROVAL

PCH ARCHITECTS

ARCHITECT STAMP

CONSULTANT STAMP

CONSULTANT LOGO

EVENT CENTER PARKING LOT EXPANSION

VICTOR VALLEY COLLEGE

NO.	DATE	ISSUE
2	9/18/25	ADDENDUM-2

PROJECT NO. 14810
DRAWN BY RC, SS
CHECKED BY PJ
DATE 04/14/2025
DRAWING TITLE

TITLE SHEET / SHEET INDEX

T-1

I:\Archive\14810 Event Center Pkg Lot Expansion\Central\VVC Event Center Parking Lot Expansion_Central.rvt
9/18/2025 9:06:16 AM

SCOPE OF WORK - LOW VOLTAGE SYSTEMS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE, TURNKEY INSTALLATION FOR ALL LOW VOLTAGE SYSTEMS, INCLUDING CCTV CAMERAS AND WIRELESS ACCESS POINTS FOR THE PROJECT. THE SCOPE SHALL INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING:

1. GENERAL RESPONSIBILITIES

FURNISH AND INSTALL ALL NECESSARY EQUIPMENT, DEVICES, CABLING, TERMINATIONS, CONNECTIONS, AND ACCESSORIES REQUIRED FOR A FULLY OPERATIONAL SYSTEM FOR EACH DISCIPLINE LISTED BELOW.

PERFORM TESTING, CALIBRATION, PROGRAMMING, AND SYSTEM VERIFICATION IN ACCORDANCE WITH APPLICABLE CODES AND PROJECT SPECIFICATIONS.

COORDINATE WITH ALL TRADES TO ENSURE PROPER INTEGRATION AND AVOID CONFLICTS.

2. OUTDOOR WIRELESS ACCESS POINTS (WAPS)

FURNISH AND INSTALL FIBER OPTIC CABLING, AND RELATED COMPONENTS.

INSTALL OWNER-FURNISHED WIRELESS ACCESS POINTS (WAPS) AT DESIGNATED LOCATIONS, INCLUDING CONTRACTOR-PROVIDED MOUNTING HARDWARE AND CABLING BACK TO IDF.

3. CAMERAS (CCTV / SURVEILLANCE)

PROVIDE AND INSTALL A COMPLETE IP-BASED SURVEILLANCE SYSTEM, INCLUDING CAMERAS, CABLING, MOUNTS, AND NECESSARY RECORDING/NETWORK EQUIPMENT.

ENSURE FULL SYSTEM OPERABILITY, PROPER CAMERA AIM AND FOCUS, AND NETWORK INTEGRATION.

4. CABLING AND INFRASTRUCTURE

PROVIDE ALL NECESSARY CONDUITS, SLEEVES, J-HOOKS, AND PATHWAYS AS REQUIRED TO SUPPORT ALL SYSTEMS.

LABEL ALL CABLES AND COMPONENTS CLEARLY PER TIA/EIA STANDARDS AND PROJECT DOCUMENTATION.

5. TESTING AND COMMISSIONING

PERFORM FULL SYSTEM TESTING AND VERIFICATION, AND PROVIDE TEST RESULTS AND CERTIFICATION REPORTS.

COORDINATE FINAL WALKTHROUGH AND TURNOVER WITH THE OWNER AND/OR CONSTRUCTION MANAGER.

SYMBOL LIST

(ALL SYMBOLS NOT NECESSARILY USED ON THESE DRAWINGS)
ALL SYMBOL DESCRIPTIONS ARE SUBJECT TO MODIFICATION AS NOTED ON THE DRAWINGS

	DUPLEX CONVENIENCE RECEPTACLE VERTICAL ON FLUSH WALL MOUNTED OUTLET BOX, +18". STEM INDICATES WALL MOUNTED OUTLET BOX, TYPICAL.
	DUPLEX CONVENIENCE RECEPTACLE HORIZONTAL ON FLUSH WALL MOUNTED OUTLET BOX, +6" ABOVE COUNTER SPLASH.
	DUPLEX CONVENIENCE RECEPTACLE SPLIT WIRED, ON FLUSH WALL MOUNTED OUTLET BOX, +18".
	DOUBLE DUPLEX (FOUR-PLEX) CONVENIENCE RECEPTACLE ON ONE FLUSH WALL MOUNTED OUTLET BOX +18".
	SINGLE RECEPTACLE, NEMA CONFIGURATION PER EQUIPMENT MANUFACTURER REQUIREMENTS, ON FLUSH WALL MOUNTED OUTLET BOX, +18".
	DUPLEX CONVENIENCE RECEPTACLE WITH INTERNAL GROUND FAULT INTERRUPTER, VERTICAL ON FLUSH WALL MOUNTED OUTLET BOX +18".
	DUPLEX CONVENIENCE RECEPTACLE WITH INTERNAL GROUND FAULT INTERRUPTER, HORIZONTAL ON FLUSH WALL MOUNTED OUTLET BOX, +6" ABOVE COUNTER SPLASH.
WP	DUPLEX CONVENIENCE RECEPTACLE, WITH INTERNAL GROUND FAULT INTERRUPTER, IN FLUSH WALL MOUNTED ENCLOSURE WITH HINGED DOOR, LOCK AND KEY, +18".
WP	DUPLEX CONVENIENCE RECEPTACLE, WITH INTERNAL GROUND FAULT INTERRUPTER, ON FLUSH WALL MOUNTED OUTLET BOX WITH SPRING DOOR COVER, +18".
R	DOUBLE DUPLEX CONVENIENCE RECEPTACLE, "R" INDICATES RECESSED FLOOR BOX WITH MULTI-SERVICE FITTINGS
	DUPLEX CONVENIENCE RECEPTACLE, IN FLUSH FLOOR OUTLET BOX, UNLESS NOTED OTHERWISE.
J	JUNCTION BOX, FLUSH WALL MOUNTED, +18".
J	JUNCTION BOX CONCEALED ABOVE ACCESSIBLE CEILING.
V	INDICATES CONNECTION TO EQUIPMENT AS REQUIRED, TYPICAL.
T	THERMOSTAT ON FLUSH WALL MOUNTED OUTLET BOX, REFER TO MECHANICAL DRAWINGS FOR HEIGHT AND LOCATION.
A	PANELBOARD; ADJACENT LINE INDICATES PANEL FRONT. ADJACENT BALLOON INDICATES PANEL DESIGNATION "A", SEE DRAWING E-1 FOR PANEL SCHEDULE.
	TERMINAL CABINET OR EQUIPMENT CABINET. ADJACENT LINE INDICATES CABINET FRONT.
A	FLOOR STANDING SWITCHGEAR ADJACENT BALLOON INDICATES EQUIPMENT DESIGNATION "DBA", SEE DRAWING E-1 FOR SINGLE LINE DIAGRAM AND/OR SCHEDULE.
	CIRCUIT BREAKER STATIONARY (NON-DRAWOUT), SECONDARY VOLTAGE.
	CONDUIT, INSTALLED CONCEALED IN WALL OR IN CEILING SPACE. 3/4" C - 2 #12,1#12 GRD. / 3/4" C - 3 #12,1#12 GRD. / 3/4" C - 4 #12,1#12 GRD. / 3/4" C - 5 #12,1#12 GRD. / 3/4" C - 6 #12,1#12 GRD. / 1" C - 7 #12,1#12 GRD. / 1" C - 8 #12,1#12 GRD. / 1 1/4" C - 9 #12,1#12 GRD.
	CONDUIT, INSTALLED CONCEALED IN OR UNDER FLOOR OR BELOW GRADE, 3/4" CONDUIT MINIMUM.
	CONDUIT, INSTALLED EXPOSED.
D B-5, 7, 9	HOMERUN TO PANEL "B" FOR CIRCUITS 5, 7, 9 WITH COMMON NEUTRAL.
	UNDERGROUND CONDUIT STUBOUT, STUB 5'-0" FROM BUILDING OR WALKWAY, CAP, MARK AND RECORD.
D1	COMPUTER/DATA PROCESSING SYSTEM - 1"C. WITH ONE SET OF DATA CONDUCTORS AS SPECIFIED.
E	EXISTING CONDUIT TO REMAIN.
C E-2	DETAIL CALLOUT, "C" INDICATES DETAIL, "E-2" INDICATES DRAWING WHERE DETAIL OCCURS.

A.F.F.	ABOVE FINISH FLOOR
A.F.G.	ABOVE FINISH GRADE
AWG	AMERICAN WIRE GAUGE
AMP, A	AMPERE
A.I.C.	AMPERES INTERRUPTING CAPACITY (SYMMETRICAL)
AF/AT	AMP FRAME, AMP TRIP
AS/AF	AMP SWITCH, AMP FUSE
CIRC., CKT.	CIRCUIT
CB	CIRCUIT BREAKER
	CONDUIT
C.O.	CONDUIT ONLY
CONN	CONNECTED
CLCB	CURRENT LIMITING CIRCUIT BREAKER
DIA	DIAMETER
EMCS	ENERGY MANAGEMENT CONTROL SYSTEM
EMT	ELECTRICAL METALLIC TUBING
EWC	ELECTRIC WATER COOLER
E-O-L	END-OF-LINE CIRCUIT TERMINATOR
EF	EXHAUST FAN
FT OR '	FEET
FA	FIRE ALARM
FLA	FULL LOAD AMPS
GFI	GROUND FAULT INTERRUPTER
GRD	GROUND
HOA	HAND-OFF-AUTO
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
H.,W.,D.,L.	HEIGHT, WIDTH, DEPTH, LENGTH
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
IN. OR "	INCHES
IG	ISOLATED GROUND
J-BOX	JUNCTION BOX
KVA	KILOVOLT AMPERES
KW	KILOWATT
LCL	LONG CONTINUOUS LOAD
L.F.	LINEAR FEET
LTG, LTS	LIGHTING
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
MH	METAL HALIDE
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MILS
MCP	MOTOR CIRCUIT PROTECTOR
MTD	MOUNTED
MW	MICROWAVE
NEC	NATIONAL ELECTRIC CODE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NF	NON-FUSED
NIC	NOT IN CONTRACT
NO. OR #	NUMBER
OFCI	FURNISH, INSTALL AND CONNECT
PRIMARY	OVER 600 VOLTS
PH. OR ⦰	PHASE
PROVIDE	OWNER FURNISHED, CONTRACTOR INSTALLED
PA	PUBLIC ADDRESS
REC, RECEPT	RECEPTACLE
U.N.O.	UNLESS NOTED OTHERWISE

GENERAL NOTES

1. THESE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO COVER A COMPLETE INSTALLATION OF SYSTEMS. THE OMISSION OR EXPRESSED REFERENCE TO ANY ITEM OF LABOR OR MATERIALS REQUIRED FOR THE PROPER EXECUTION OF THE WORK IN ACCORDANCE WITH PRESENT PRACTICE OF THE TRADE SHALL NOT RELIEVE THE CONTRACTOR FROM PROVIDING SUCH ADDITIONAL LABOR AND MATERIALS.
2. REFER TO THE ARCHITECTURAL DRAWINGS FOR NOTES AND OTHER ELECTRICAL REQUIREMENTS NOT SHOWN ON THE ELECTRICAL DRAWINGS AND TO DETERMINE NEW CONSTRUCTION. IF THERE ARE OMISSIONS OR CONFLICTS BETWEEN THE ELECTRICAL DOCUMENTS AND THE DOCUMENTS OF OTHER TRADES, CLARIFY THESE POINTS WITH THE ARCHITECT BEFORE SUBMITTING A BID. NO EXTRA PAYMENT WILL BE ALLOWED FOR FAILURE TO OBTAIN THIS INFORMATION.
3. THESE PLANS, SPECIFICATIONS, AND ALL MATERIALS SHALL BE IN FULL ACCORDANCE WITH ALL LEGAL AND INDUSTRY REQUIREMENTS, AND STANDARDS INCLUDING WITHOUT LIMITATION TO THE FOLLOWING:
   a. APPLICABLE CODES AND STANDARDS

LIST OF APPLICABLE CODES

2022 BUILDING ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR
2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR
2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR
2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR
2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR
2022 CALIFORNIA ENERGY CODE, PART 6, TITLE 24 CCR
2022 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR
2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR
2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR
TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

APPLICABLE STANDARDS

FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS, REFER TO CBC CHAPTER 35 AND CFC CHPTER 80.

   b. OTHER REGULATING AGENCIES WHICH MAY HAVE AUTHORITY OVER ANY PORTION OF THE WORK, INCLUDING THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY, AND THOSE CODES AND STANDARDS LISTED IN THESE NOTES AND SPECIFICATIONS.
   c. THE ELECTRICAL SYSTEMS FUNCTIONALITY STANDARDS SET FORTH IN TITLE 7 OF THE CALIFORNIA CIVIL CODE (THE "RIGHT TO REPAIR
   d. THE MANUFACTURER'S REQUIREMENTS OR RECOMMENDATIONS FOR ANY INCORPORATED PRODUCTS.
   e. THE MOST CURRENT APPROVED ISSUES OF ANY NOTED SPECIFICATIONS, CODES AND STANDARDS, INCLUDING SUPPLEMENTS, UNLESS NOTED OTHERWISE.

4. IN USING THE PLANS FOR BIDDING OR CONSTRUCTION PURPOSES, THE CONTRACTOR IS REQUIRED TO REVIEW ALL OF THE PROJECT'S CONSTRUCTION DOCUMENTS AS A WHOLE IN ORDER TO IDENTIFY ALL REQUIREMENTS THAT DIRECTLY OR INDIRECTLY AFFECT ITS PORTION OF THE ELECTRICAL WORK, EVEN REQUIREMENTS LOCATED IN SECTIONS DESIGNATED AS APPLICABLE TO OTHER TRADES. IN CASE OF CONFLICTS, THE CONTRACTOR SHALL EITHER OBTAIN DIRECTION FROM AN APPROPRIATE OWNER REPRESENTATIVE OR OTHERWISE APPLY THE MORE STRINGENT REQUIREMENT.
5. WHEN INTERPRETING THE PLANS, THE FOLLOWING GENERAL RULES APPLY:
   a. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DRAWINGS.
   b. SCALED DIMENSIONS AND GRAPHICALLY SHOWN LOCATIONS ARE TO BE CONSIDERED ONLY APPROXIMATE. FIELD VERIFY DIMENSIONS PRIOR TO ROUGH-IN.
6. SUBMITTALS WILL BE REVIEWED BY THE ELECTRICAL ENGINEER, IF AT ALL, ONLY PURSUANT TO THE INDUSTRY STANDARD PROTOCOL SET FORTH IN A1A DOCUMENT A201, AND IN NO EVENT WILL THE SUBMITTAL REVIEW PROCESS RELIEVE OR LESSEN THE SUBMITTING CONTRACTOR'S RESPONSIBILITY FOR AN INAPPROPRIATE SUBMITTAL.
7. IN NO EVENT WILL ANY SITE VISITS BY THE ELECTRICAL ENGINEER CONCERN CONSTRUCTION MEANS AND METHODS OR CONSTRUCTION SAFETY, AND ALL SUCH MATTERS SHALL REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. REFER TO THE DRAWINGS AND SHOP DRAWINGS OF OTHER TRADES FOR ADDITIONAL DETAILS WHICH AFFECT THE PROPER INSTALLATION OF THIS
9. BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH ALL FEATURES OF THE EXISTING BUILDINGS AND SITE, AND ALL DRAWINGS WHICH MAY AFFECT THE EXECUTION OF THE WORK. NO EXTRA PAYMENT WILL BE ALLOWED FOR FAILURE TO OBTAIN THIS INFORMATION.
10. PROTECT ALL WORK, MATERIALS AND EQUIPMENT FROM DAMAGE FROM ANY CAUSE WHATEVER AND PROVIDE ADEQUATE AND PROPER STORAGE FACILITIES DURING THE PROGRESS OF THE WORK. PROVIDE FOR THE SAFETY AND GOOD CONDITION OF ALL THE WORK UNTIL FINAL ACCEPTANCE OF THE WORK BY THE OWNER AND REPLACE ALL DAMAGED OR DEFECTIVE WORK, MATERIALS AND EQUIPMENT BEFORE REQUESTING FINAL ACCEPTANCE.
11. THE DRAWINGS INDICATE IN A DIAGRAMMATIC MANNER, THE DESIRED LOCATIONS OF ARRANGEMENT OF THE COMPONENTS OF ELECTRICAL WORK. DETERMINE EXACT CONDUIT ROUTING, CONDUIT BENDS, AUXILIARY JUNCTION BOXES, SUPPORTS, AND UNDEFINED CONSTRUCTION DETAILS AS A JOB CONDITION TO BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE CODE REQUIREMENTS. PROPER JUDGEMENT MUST BE EXERCISED IN EXECUTING THE WORK SO AS TO SECURE THE BEST POSSIBLE INSTALLATION IN THE AVAILABLE SPACE, AND TO OVERCOME LOCAL DIFFICULTIES DUE TO SPACE LIMITATIONS OR INTERFERENCE OF CONDITIONS ENCOUNTERED.
12. IN THE EVENT CHANGES IN THE INDICATED LOCATIONS OR ARRANGEMENTS ARE NECESSARY, DUE TO DEVELOPED CONDITIONS IN THE BUILDING CONSTRUCTION OR REARRANGEMENT OF EQUIPMENT, SUCH CHANGES SHALL BE MADE WITHOUT COST PROVIDING THE CHANGE IS ORDERED BEFORE THE CONDUIT RUNS, ETC., AND WORK DIRECTLY CONNECTED TO SAME IS INSTALLED AND NO EXTRA MATERIALS ARE REQUIRED.
13. PERFORM CUTTING AND PATCHING ON THE CONSTRUCTION WORK WHICH MAY BE REQUIRED FOR THE PROPER INSTALLATION OF THE ELECTRICAL WORK. PATCHING SHALL BE OF THE SAME MATERIAL, WORKMANSHIP AND FINISH AS SPECIFIED AND ACCURATELY MATCH SURROUNDING WORK TO SATISFACTION OF THE ARCHITECT.
14. PROVIDE ALL EQUIPMENT WITH ENCLOSURES LISTED OR LABELED FOR USE AND LOCATION WHERE SUCH EQUIPMENT IS INSTALLED.
15. PROVIDE UL LISTED FIRE STOP FOR ALL PENETRATIONS THROUGH FIRE RATED WALLS AND CEILINGS TO MAINTAIN ALL FIRE RATINGS. THE FIRE STOP MATERIALS SHALL BE RE-ENTERABLE AND REUSABLE.
16. GROUNDING SHALL BE EXECUTED IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS, BOTH OF THE STATE OF CALIFORNIA AND LOCAL AUTHORITIES HAVING JURISDICTION.
17. PROVIDE GROUND WIRE IN EACH CONDUIT CONTAINING CIRCUITS FEEDING RECEPTACLES. THE CONDUIT SHALL NOT BE PERMITTED TO SERVE AS THE ONLY ELECTRICAL GROUND RETURN PATH.
18. NOTIFY THE ARCHITECT IN WRITING WHEN INSTALLATION IS COMPLETE AND THAT A FINAL INSPECTION OF THIS WORK CAN BE PERFORMED. IN THE EVENT DEFECTS OR DEFICIENCIES ARE FOUND DURING THIS FINAL INSPECTION, THEY SHALL BE CORRECTED TO THE SATISFACTION OF THE ARCHITECT BEFORE FINAL ACCEPTANCE CAN BE ISSUED.
19. CONTRACTOR SHALL REFER TO THE CIVIL PLANS FOR THE LOCATION AND FINAL GRADING ELEVATIONS. ADJUST ALL EXISTING UNDERGROUND PULLBOXES AND ASSOCIATED LIDS AS NECESSARY TO ENSURE THEY ARE FLUSH WITH THE NEW FINISHED GRADE.

SCHOOL EQUIPMENT ANCHORAGE NOTES

MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC, SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTER 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CORD.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT ARE REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT: FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS.

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.

B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTION 13.6.5, 13.6.6, 13.6.7, AND 2022 CBC SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

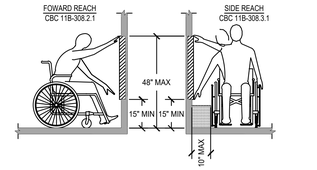
THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PRE-APPROVED INSTALLATION GUIDE (E.G. OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS.THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

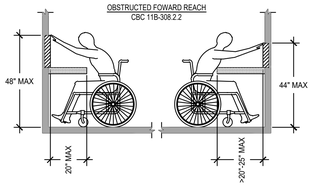
MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEM (E):

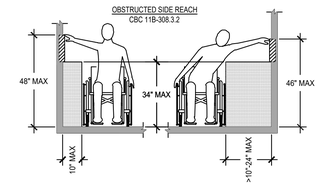
MP☐ MD☐ PP☐ E☒ -OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP☐ MD☐ PP☐ E☐ -OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM #) #_____.

ELECTRICAL MOUNTING REACH RANGES







APPROVAL

PCH ARCHITECTS

ARCHITECT STAMP

CONSULTANT STAMP

09/19/2025

CONSULTANT LOGO

FBA Engineering
Consulting Electrical Engineers
150 Pasadena Avenue Suite A120
Lake Elsinore, CA 92530
949.852.0660 ▪ 949.852.1657 (fax)
fbaengr.com
FBA Job Number: 205.232

EVENT CENTER PARKING LOT EXPANSION

VICTOR VALLEY COLLEGE

NO.	DATE	ISSUE
1	09/19/2025	ADDENDUM 2

PROJECT NO.
XXXXX

DRAWN BY
FBA

CHECKED BY
BN

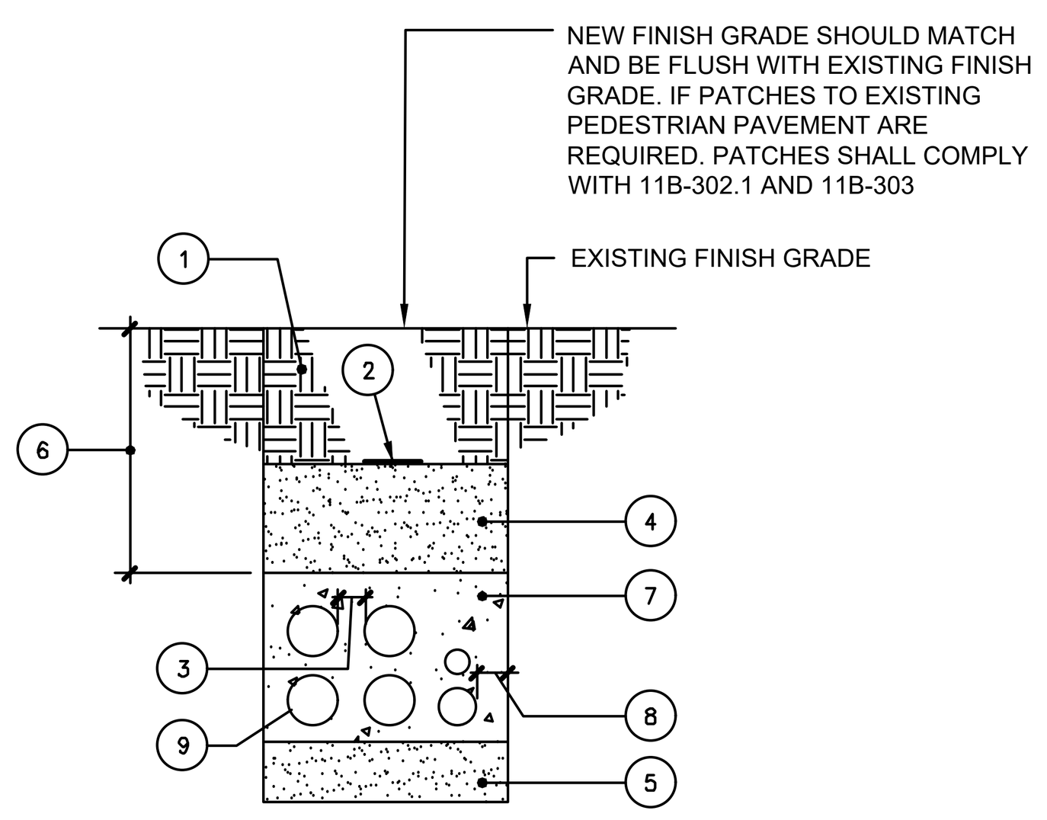
DATE
03/27/25

DRAWING TITLE

SYMBOL LIST, GENERAL NOTES, AND DETAILS

E-0.1

WHERE EXISTING CONCRETE HARDSCAPE DEMOLITION OCCURS. CONTRACTOR SHALL PERFORM SAW CUTTING AND REMOVAL OF EXISTING CONCRETE SURFACE IN ORDER TO INSTALL NEW UNDERGROUND CONDUIT AS INDICATED. THIS MAY REQUIRE THE EXISTING CONCRETE TO BE COMPLETELY REMOVED FROM JOINT-TO-JOINT TO AVOID CONCRETE PATCHING. THE CONTRACTOR SHALL PROVIDE NEW CONCRETE SLAB TO MATCH EXISTING CONCRETE SLAB THICKNESS AND SURFACE AND TROWEL TO MATCH EXISTING JOINT EDGES.

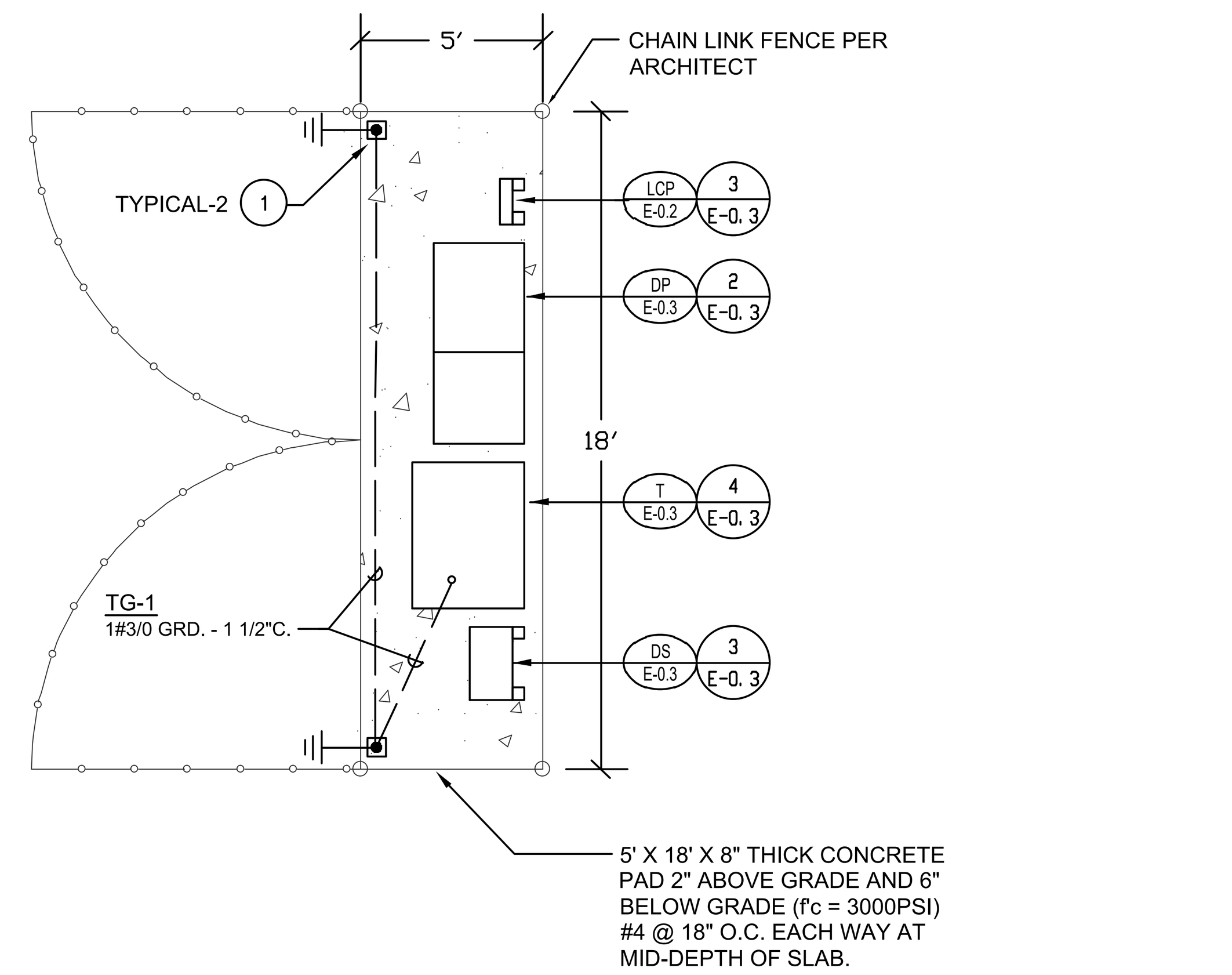


NOTE: SEE SPECIFICATION FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

DUCT BANK NOTES:

1. NATIVE SOIL BACK FILL
2. 3" WIDE WARNING TAPE LOCATED 12" BELOW GRADE. TAPE SHALL INDICATE: CAUTION BURIED ELECTRICAL CONDUIT".
3. 3" BETWEEN IDENTICAL SYSTEM CONDUITS OR 12" BETWEEN DIFFERENT SYSTEM CONDUITS.
4. DAMP SAND BACK FILL TO WITHIN 12" OF FINISH GRADE.
5. 6" BED OF DAMP SAND.
6. 36" IN TRAFFIC AREAS, 24" IN NON-TRAFFIC AREAS.
7. CONCRETE ENCASEMENT.
8. 3" MINIMUM COVERAGE.
9. REFER TO PLANS FOR CONDUITS SIZE AND QUANTITIES.

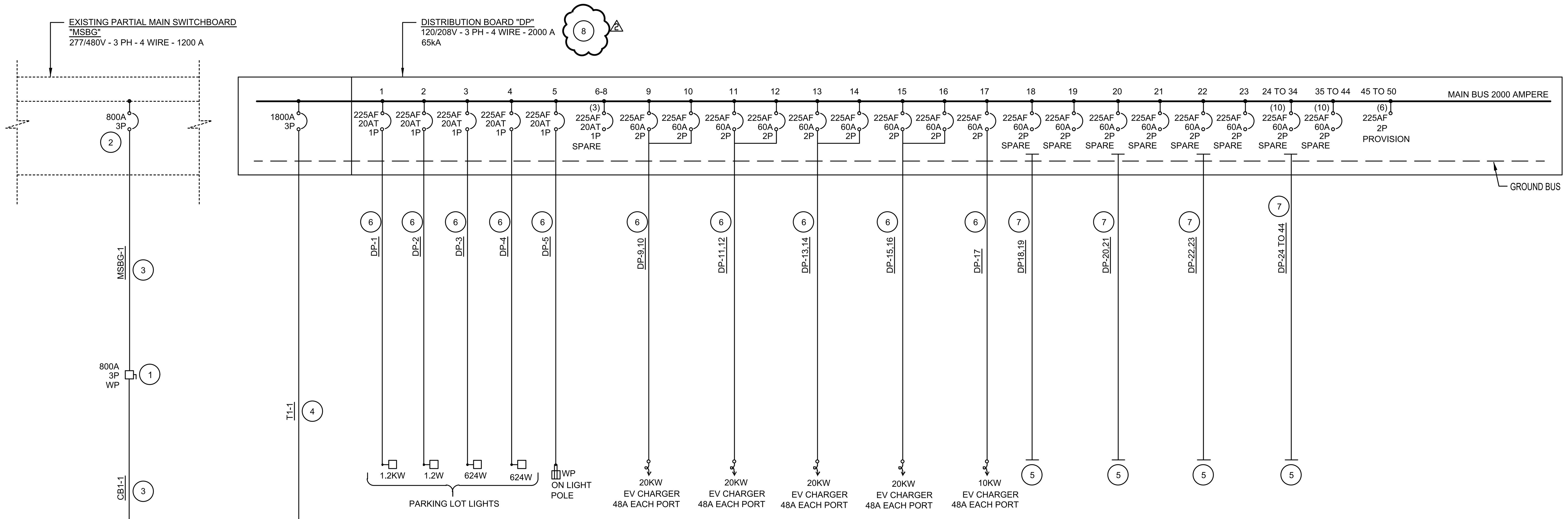
CONDUIT DUCT BANK DETAIL — SCALE: NONE — 6



NOTES:

1. PROVIDE 12" X 12" X 12"D. BOTTOMLESS CONCRETE PULLBOX WITH PEA GRAVEL BASE AND CHEMICAL ASSEMBLY GROUND ROD. MOUNT PULLBOX FLUSH ON GRADE AND ENGRAVE COVER "GROUND" QUANTITY AS REQUIRED TO ACHIEVE 25 OHMS TO GROUND MAXIMUM.

ENLARGED ELECTRICAL ENCLOSURE — SCALE: 1/4"=1'-0" — 5



EXISTING MAIN SWITCHBOARD "MSBG" LOAD CALCULATIONS

EXISTING LOAD MONITORING REPORT 5/29/25 TO 6/9/25	=	330 KW
DEMAND LOAD PLUS 125%	=	82 KW
REMOVE LOAD FROM TWO PORTABLE BUILDINGS TO BE DEMOLISHED	=	- 50 KW
NEW PARKING LOT LIGHTING LOAD	=	4 KW
NEW NINE (9) PARKING STALLS EV CHARGERS (10KW EACH)	=	90 KW
FUTURE TWENTY SIX (26) PARKING STALL EV CHARGERS (10KW EACH)	=	260 KW
TOTAL	=	716 KW

861 AMPS @ 277/480V, 3PH, 4W

NOTE:

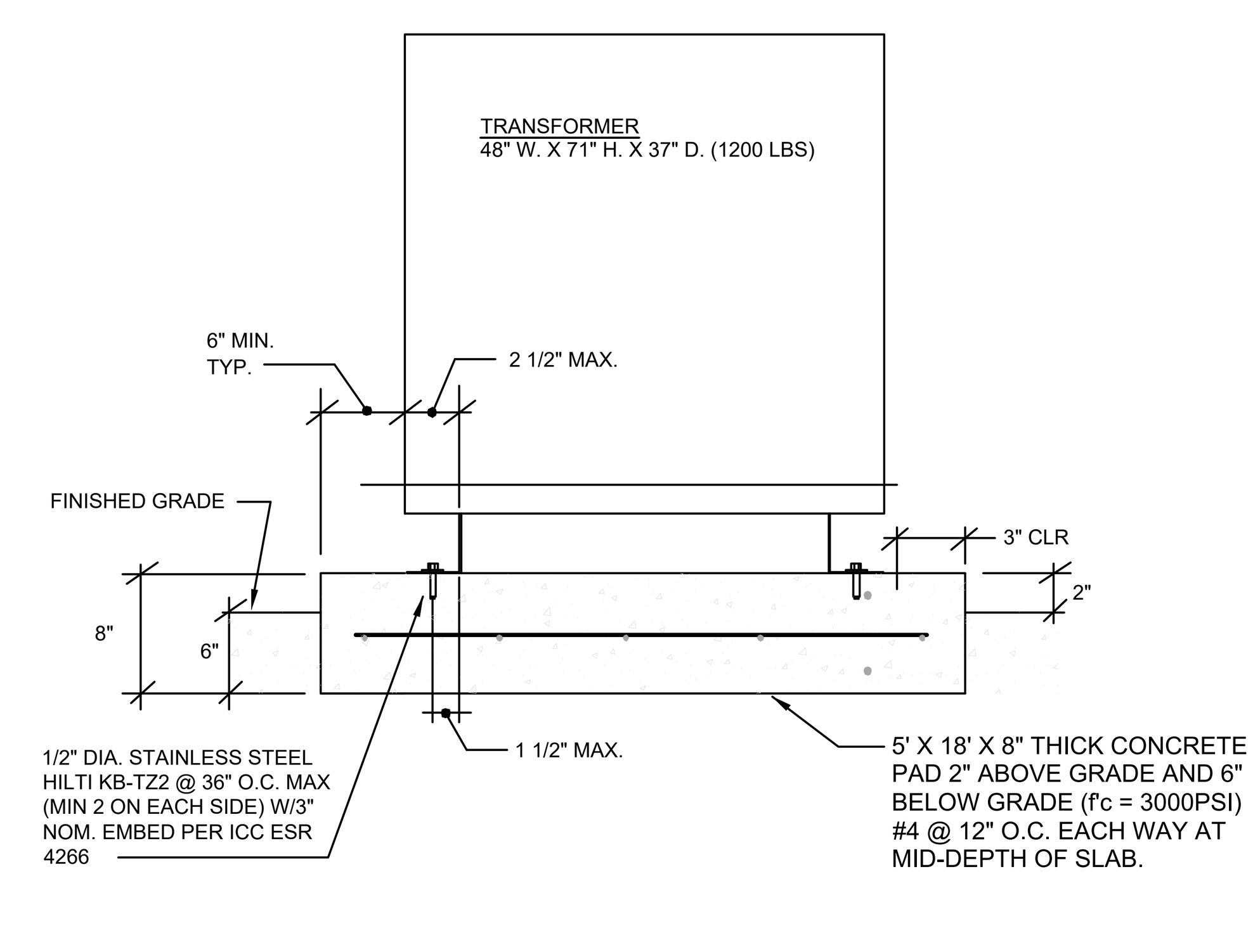
DASHED (------) LINEWORK INDICATES EXISTING FEEDERS, DEVICES, ETC TO REMAIN U.N.O.

SOLID (——) LINEWORK INDICATES PROVIDE NEW ELECTRICAL EQUIPMENT, FEEDERS, ETC. IN THIS SCOPE OF WORK.

NOTES:

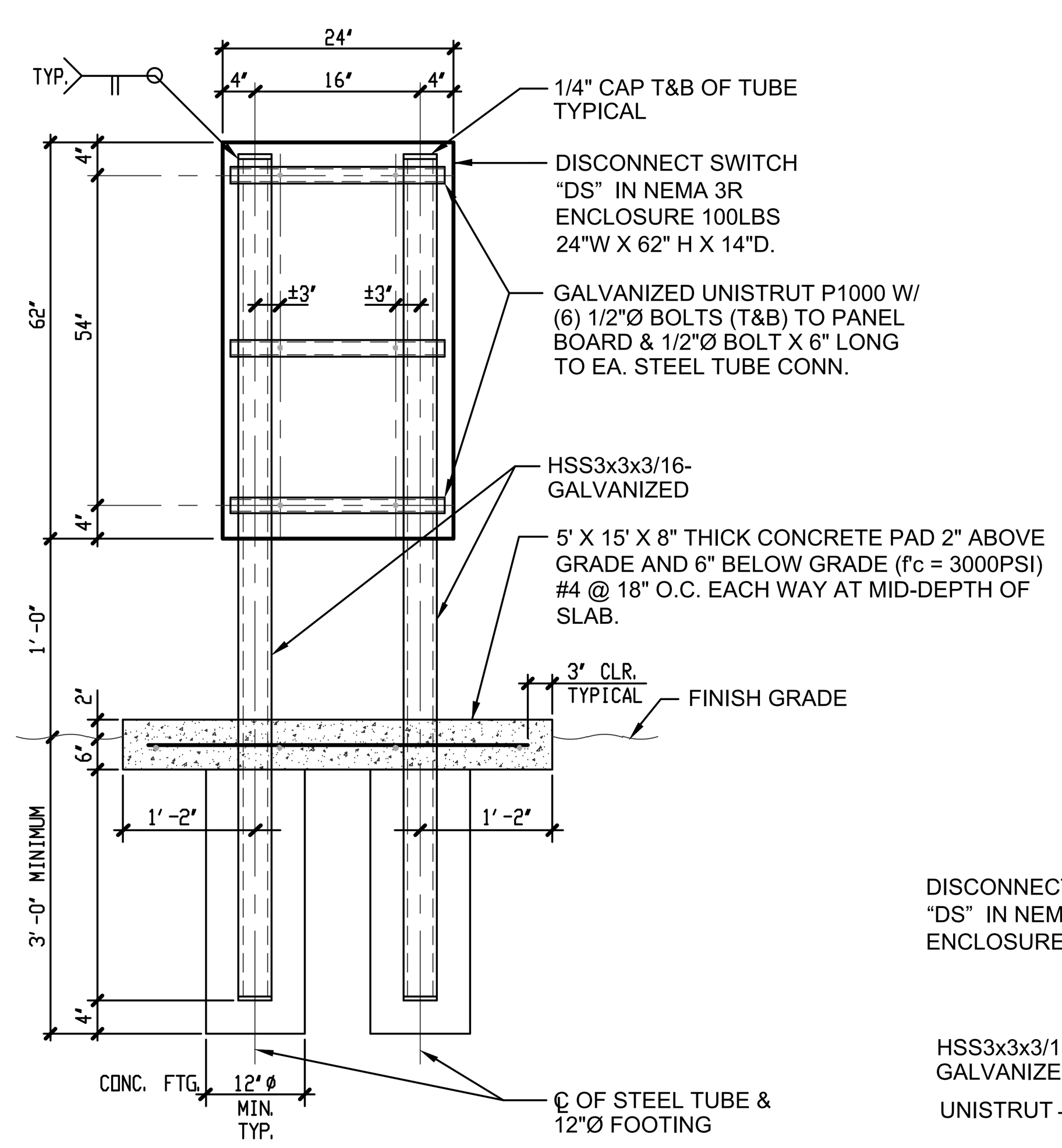
1. PROVIDE 800A 3 POLE DISCONNECT SWITCH WITH FUSED "DS" IN NEMA 3R ENCLOSURE.
2. PROVIDE NEW CIRCUIT BREAKER IN SPACE OF EXISTING SWITCHBOARD INCLUDING ALL REQUIRED MOUNTING HARDWARE. THE A.I.C RATING OF THE NEW CIRCUIT BREAKER SHALL MEET OR EXCEED THE RATING OF EXISTING CIRCUIT BREAKERS CURRENTLY USED.
3. PROVIDE THREE (3) 3 1/2" C. WITH 3-350MCM, 1 #3/0 GRD. IN EACH.
4. PROVIDE SIX (6) 3 1/2" C. WITH 4-350MCM, 1 #3/0 GRD IN EACH.
5. STUB AND CAP CONDUIT BELOW GRADE. PROVIDE FLUSH IN GRADE MARKER.
6. REFER TO ENLARGED SITE ELECTRICAL PLAN 1/E-1.2 FOR FEEDER SIZE.
7. PROVIDE CONDUIT ONLY WITH PULL ROPE FOR FUTURE CONDUCTORS. REFER TO DETAIL 1/E-1.2 FOR CONDUIT SIZES AND QUANTITIES.
8. THE DISTRIBUTION BOARD "DP" SHALL BE OWNER-FURNISHED AND CONTRACTOR-INSTALLED.

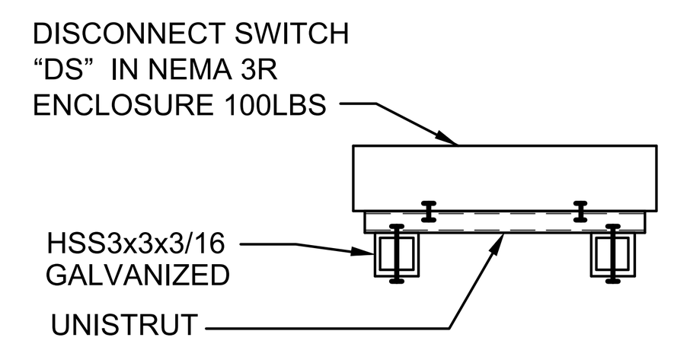
PARTIAL SINGLE LINE DIAGRAM — SCALE: NONE — 1



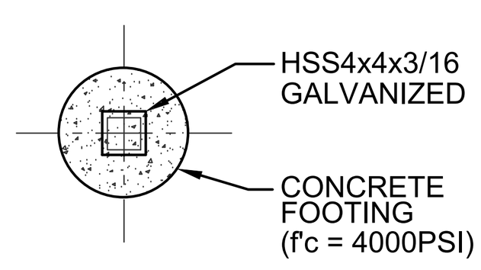
NOTE:
FOR OUTDOOR UNITS USE STAINLESS STEEL KB TZ's

TRANSFORMER ANCHORAGE DETAIL — SCALE: NONE — 4

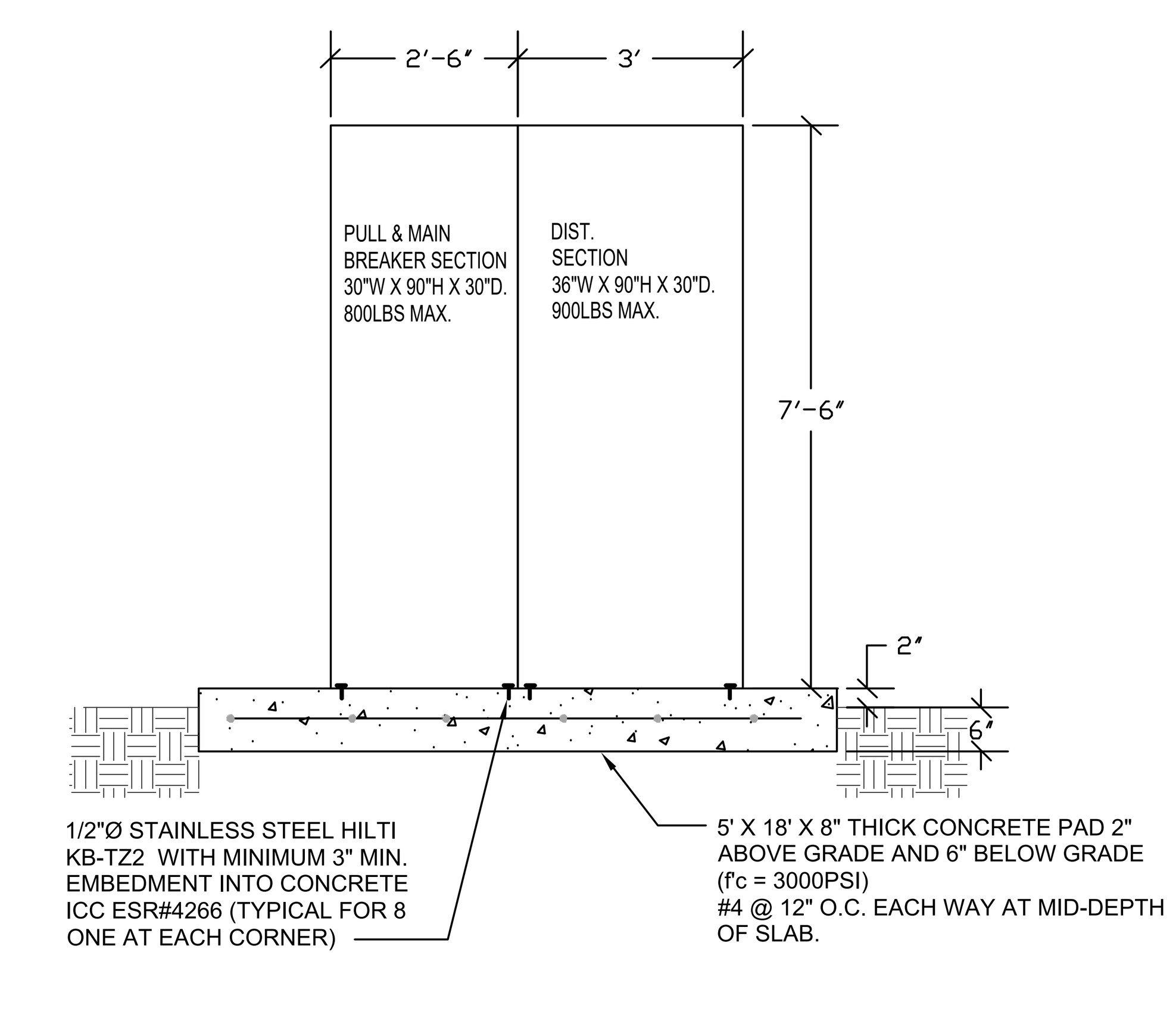




PARTIAL PLAN



PANEL SUPPORT ASSEMBLY — SCALE: NONE — 3



DISTRIBUTION BOARD ANCHORAGE DETAIL — SCALE: NONE — 2

APPROVAL

PCH ARCHITECTS

ARCHITECT STAMP — LICENSED ARCHITECT, NO. C33951, REN. 10-31-27, STATE OF CALIFORNIA

CONSULTANT STAMP — REGISTERED PROFESSIONAL ENGINEER, No. E 10372, Exp. 09-30-25, 09/19/2025

CONSULTANT LOGO

FBA Engineering
Consulting Electrical Engineers
FBA Job Number: 205.232

EVENT CENTER PARKING LOT EXPANSION

VICTOR VALLEY COLLEGE

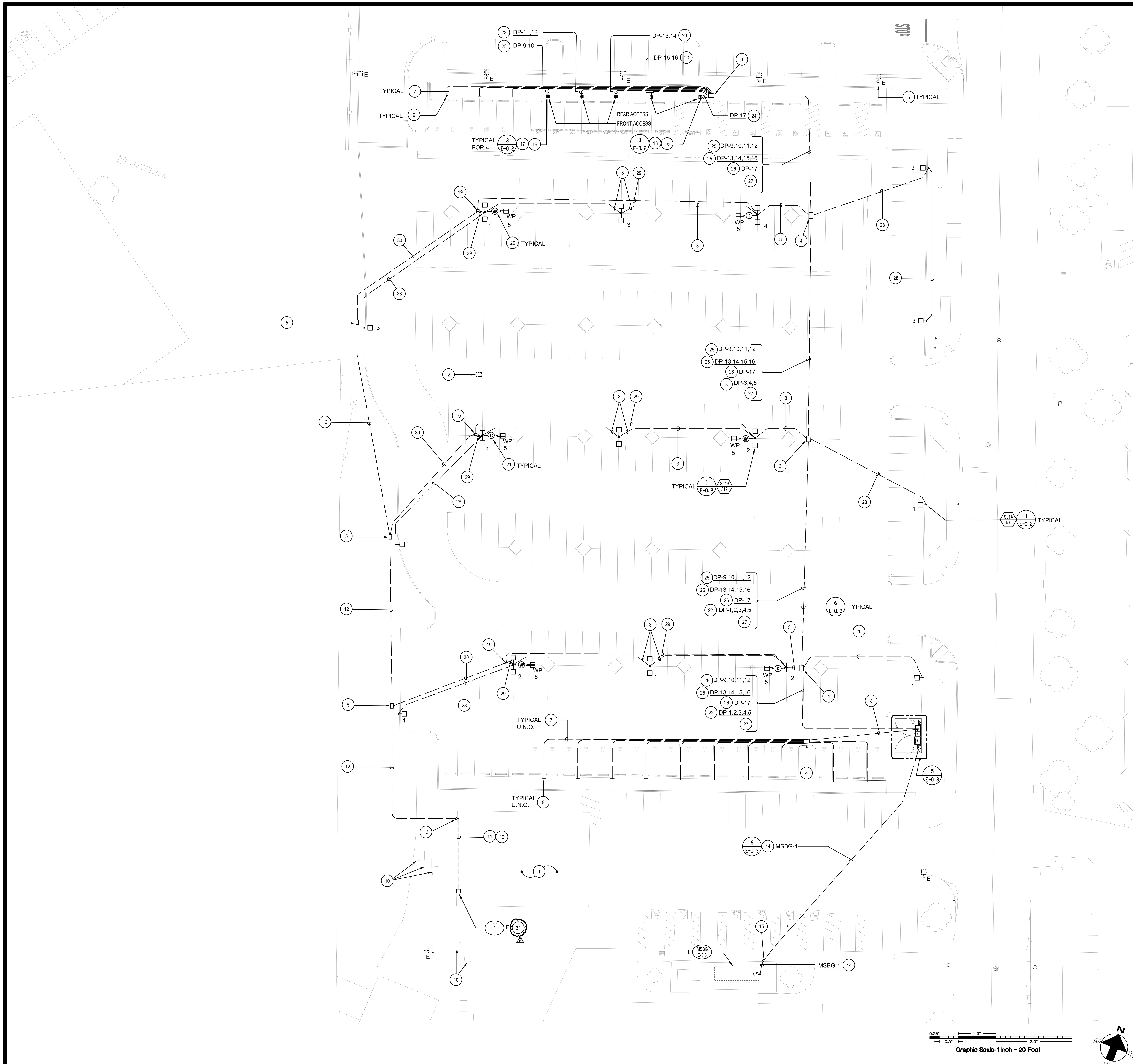
NO.	DATE	ISSUE
1	09/19/2025	ADDENDUM 2

PROJECT NO.: XXXXX
DRAWN BY: FBA — CHECKED BY: BN
DATE: 03/27/25

DRAWING TITLE: SINGLE LINE DIAGRAM AND DETAILS

E-0.3

FBA Engineering / Plot Date: 9/19/2025 8:23 AM / Plotted by: Brandon Nguyen / Drawing Location: I:\205\232\E-0.3_205232 SINGLE LINE AND DETAILS.dwg



ENLARGED SITE ELECTRICAL PLAN

SCALE: 1"=20'-0"

1

PLAN NOTES

1. EXISTING ELECTRICAL IN THIS BUILDING TO REMAIN U.N.O.
2. THE CONTRACTOR SHALL INCLUDE IN THE BID THE COST TO DEMOLISH THE EXISTING ELECTRICAL PULLBOX IF IT CONTAINS NO LIVE POWER CIRCUITS. IF THE PULLBOX CONTAINS LIVE POWER CIRCUITS, THE CONTRACTOR SHALL ADJUST IT TO MATCH THE NEW FINISHED GRADE LEVEL.
3. PROVIDE 6#8, 1#10 GRD. - 1 1/2 "C.
4. PROVIDE 2' X 3' X 3'D. CONCRETE PULLBOX WITH BOLT-DOWN COVER ENGRAVED "POWER". WHEN LOCATED IN PAVED TOP OF PULLBOX AND COVER SHALL SET FLUSH WITH ADJACENT PAVING.
5. PROVIDE 17" X 30" X 36"D. CONCRETE PULLBOX WITH BOLT- DOWN COVER ENGRAVED " SIGNAL". WHEN LOCATED IN PAVED TOP OF PULLBOX AND COVER SHALL SET FLUSH WITH ADJACENT PAVING.
6. EXISTING PARKING LOT LIGHT POLE TO REMAIN.
7. PROVIDE 1 1/2"C. WITH PULL ROPE FOR FUTURE EV CHARGER CONDUCTORS.
8. PROVIDE FOUR (4) 3"C. WITH PULL ROPE FOR FUTURE EV CHARGER CONDUCTORS.
9. STUB AND CAP CONDUIT BELOW GRADE. PROVIDE FLUSH IN GRADE MARKER.
10. EXISTING ELECTRICAL PULLBOX TO REMAIN.
11. ROUTE CONDUIT EXPOSED ON CEILING.
12. PROVIDE 3" C. WITH FIBER OPTIC CABLES FOR CCTV CAMERAS AND WIRELESS ACCESS POINT.
13. ROUTE CONDUIT FROM BELOW GRADE EXPOSED ON BUILDING EXTERIOR TO AN ELEVATION BELOW CEILING LEVEL IN ORDER TO ROUTE CONDUIT AS INDICATED. PROVIDE WEATHERPROOF "LB" FITTING AND SEALED PENETRATION THROUGH BUILDING WALLS.
14. REFER TO SINGLE LINE DIAGRAM DETAIL 1/E-0.3 FOR FEEDER SIZE.
15. ROUTE CONDUIT FROM BELOW GRADE EXPOSED ON CMU WALL TO 18" A.F.F. IN ORDER TO ROUTE CONDUIT AS INDICATED. PROVIDE WEATHERPROOF "LB" FITTING AND SEALED PENETRATION THROUGH CMU WALL.
16. PROVIDE CONNECTION TO EV CHARGER PER MANUFACTURER'S REQUIREMENT.
17. OWNER-FURNISHED AND CONTRACTOR-INSTALLED DUAL PORT AC LEVEL 2 PEDESTAL CHARGING STATION WITH 18 FEET CABLE RETRACTOR, 6' CMK, SETTING 48A PER PORT MAX., NEMA 3R HOUSING, FULL TURN KEY (SOFTWARE AND HARDWARE). CHARGEPOINT MODEL NUMBER #CP6021B-50A-L5.5.
18. OWNER-FURNISHED AND CONTRACTOR-INSTALLED SINGLE PORT AC LEVEL 2 PEDESTAL CHARGING STATION WITH 18 FEET CABLE RETRACTOR, 6' CMK, SETTING 48A PER PORT MAX., NEMA 3R HOUSING, FULL TURN KEY (SOFTWARE AND HARDWARE). CHARGEPOINT MODEL NUMBER #CP6011B-50A-L5.5.
19. PROVIDE SIGNAL PULLBOX. REFER TO DETAIL 2/E-0.2 FOR ADDITIONAL INFORMATION.
20. OWNER-FURNISHED AND CONTRACTOR-INSTALLED WIRELESS ACCESS POINT ON LIGHT POLE. REFER TO DETAIL 2/E-0.2 FOR ADDITIONAL INFORMATION.
21. PROVIDE CCTV CAMERA ON LIGHT POLE. REFER TO DETAIL 2/E-0.2 FOR ADDITIONAL INFORMATION.
22. PROVIDE 10#8, 1#10 GRD. - 1 1/2"C.
23. PROVIDE 4#1 , 2#8 GRD. - 1 1/2"C.
24. PROVIDE 2#1, 1#8 GRD. - 1 1/2"C.
25. PROVIDE 8#2/0, 2#6 GRD. - 3"C.
26. PROVIDE 2#2/0, 1#6 GRD. - 3"C.
27. PROVIDE TWO (2) 3"C. WITH PULL ROPE FOR FUTURE EV CHARGER CONDUCTORS.
28. PROVIDE 2#8, 1#10 GRD. - 1"C.
29. PROVIDE 1"C. WITH FIBER OPTIC CABLES FOR CCTV CAMERAS AND WIRELESS ACCESS POINT.
30. PROVIDE 2"C. WITH FIBER OPTIC CABLES FOR CCTV CAMERAS AND WIRELESS ACCESS POINT.
31. MODIFY EXISTING IDF RACK AS REQUIRED TO SERVE THE NEW CONSTRUCTION. PROVIDE ADDITION AL EQUIPMENT AS NEEDED FOR A COMPLETE AND OPERABLE SYSTEM.

SITE PLAN GENERAL NOTES

1. GENERAL CONTRACTOR SHALL EXERCISE CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING DUCTS, PIPING, CONDUITS, ETC., AND SHALL PREVENT HAZARD TO PERSONNEL AND/OR DAMAGE TO EXISTING UNDERGROUND UTILITIES OR STRUCTURES, WHETHER OR NOT SHOWN, DETAILED OR INSTALLED BY THIS OR ANY OTHER CONTRACTS. THIS CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
2. NEW TRENCHES FOR CONDUITS SHALL BE EXCAVATED IN VICINITY OF EXISTING UNDERGROUND UTILITIES AND BOXES. PRIOR TO ANY EXCAVATION THE CONTRACTOR SHALL SCAN SURROUNDING AREAS USING GROUND-PENETRATING RADAR OPERATED BY PERSONNEL REGULARLY ENGAGED IN THE BUSINESS OF UNDERGROUND UTILITY DETECTION. CAREFULLY HAND-TRENCH ALL AREAS WHERE THERE ARE EXISTING UNDERGROUND UTILITIES. ADJUST LOCATIONS OF NEW UTILITIES AND BOXES TO ACHIEVE BEST POSSIBLE INSTALLATION.

LEGEND:

E EXISTING EQUIPMENT OR DEVICE TO REMAIN. CONTRACTOR SHALL RECONNECT TO EXISTING CIRCUIT IF DISCONNECTED BY DEMOLITION ON THIS PROJECT.

R EXISTING EQUIPMENT OR DEVICE TO BE REMOVED. CONTRACTOR SHALL DISCONNECT AND REMOVE ALL ASSOCIATED CONTROLS, CONDUCTORS, AND CONDUIT AS REQUIRED.

APPROVAL

PCH ARCHITECTS

ARCHITECT STAMP

CONSULTANT STAMP

09/19/2025

CONSULTANT LOGO

FBA Engineering

FBA Job Number: 205,232

EVENT CENTER PARKING LOT EXPANSION

VICTOR VALLEY COLLEGE

NO.	DATE	ISSUE
2	09/19/2025	ADDENDUM 2

PROJECT NO. XXXXX

DRAWN BY FBA

CHECKED BY BN

DATE 03/27/25

DRAWING TITLE

ENLARGED SITE ELECTRICAL PLAN

E-1.2

FBA Engineering / Plot Date: 9/19/2025 8:23 AM / Plotted by: Brandon Nguyen / Drawing Location: I:\205\232\E-1.2_205232 SITE ELECTRICAL PLAN.dwg