HMC ARCHITECTS
3546 Concours Street
Ontario, California 91764

November 18, 2014

Indian Springs Athletic Complex at
Indian Springs High School
San Bernardino City Unified School District
HMC # 3137103-106
DSA # 04-113642

ADDENDUM NO. 1

The following changes, additions, deletions or corrections shall become a part of the Contract Documents for the project named above and all other conditions shall remain the same. The bidders shall be responsible for transmitting this information to all affected subcontractors and suppliers prior to the closing of bids. Acknowledge receipt of this Addendum in spaces provided on the Bid Form. Failure to acknowledge will subject Bidder to disqualification.

SUPPLEMENTARY GENERAL CONDITIONS

Item No. AD-1.1:

A. Delete Page 125. Substitute therefor: Revised Page 125, hereby issued.

SPECIFICATIONS

Item No. AD-1.2: Reference Table of Contents

A. Renumber Section 10 14 00, Swimming Pool Signage to 10 14 10, Swimming Pool Signage.

B. Revise Section 22 13 19 title to read: “Sanitary Waste Piping Specialties”.

C. Revise Section 25 56 68 to read 26 56 68, and move Section to Division 26. Delete Division 25 – INTEGRATED AUTOMATION, this Division is not used.

Item No. AD-1.3: Reference New Sections

A. The following new specification section is hereby issued:

Section 10 14 00, Identification Signs. (Section was included in TOC, but inadvertently omitted from specs)
Section 27 07 50, Communications Cabling

Item No. AD-1.4: Reference Deleted Sections

A. The following Specification Sections are hereby deleted:

Section 27 13 00, Communications Backbone Cabling
Section 27 15 00, Communications Horizontal Cabling

Item No. AD-1.5: Reference Section 10 14 00, Swimming Pool Signage

A. Renumber Section 10 14 00 Swimming Pool Signage title and footer to read: "10 14 10".

Item No. AD-1.6: Reference Section 10 80 00, Miscellaneous Specialties

A. Footer shall read:

"3137103-106 MISCELLANEOUS SPECIALTIES
Indian Springs Athletic Complex 10 80 00 – 1"

Item No. AD-1.7: Reference Section 12 93 00, Site Furnishings

A. Section was printed out of order in Specifications Manual. Section should follow Section 12 65 00.

Item No. AD-1.8: Reference Section 26 07 66, Stadium Sound System

A. In Subparagraph 2.06.B.1, revise "Legacy 8" to read: "BTR-800".

B. In Subparagraph 2.06.B.3, revise "XO-1" to read: "TR-825".

Item No. AD-1.9: Reference Section 26 56 68, Exterior Athletic Lighting

A. Footer shall read:

"3137103-106 EXTERIOR ATHLETIC LIGHTING
Indian Springs Athletic Complex 26 56 68 – 1"

Item No. AD-1.10: Reference Section 32 31 19, Fences and Gates - Ornamental Metal

A. Delete Paragraph 3.04.A. Substitute therefor:

"A. Paint per Section 09 90 00, Special Coatings, Color as selected by Architect."

DRAWINGS

Item No. AD-1.11: Reference Revised Drawings

A. The following revised full size drawings dated 11/18/14 are hereby issued:

AD-1.01 (Reference A1.30)
AD-1.02 (Reference E1.1, Electrical Site Plan)
AD-1.03 (Reference E3.0, Communication Riser Diagrams)

B. The following revised 8-1/2" x 11-1/2" drawings dated 11/18/14 are hereby issued:

AD-1.04 (Reference K6/A10.20, Building Details)
AD-1.05 (Reference K15/A10.20, Building Details)

Item No. AD-1.12: Reference Drawing A1.10, Overall Phasing Plan

A. All accessible parking stall upgrades to be executed in Phase 3 in lieu of Phase 2.

Item No. AD-1.13: Reference Drawing A1.31, Enlarged Accessible Parking Plans

A. On Details A1, A4, D1 and D4, change to read:

"Note: Sandblast area of existing accessible parking stalls. Patch cracks on concrete prior to restriping accessible stalls and cross isles."

Item No. AD-1.14: Reference Drawing A5.1, Exterior Elevations Building V

A. On Keynote 26, change detail reference to read: "…..K6-A10.20",

Item No. AD-1.15: Reference Drawing C4.1, Composite Utility Plan

A. Revise note located between Pool Building and Pool to read:

"Foundation subdrain connection – 4" perforated PVC piping to be connected to 24" diameter precast dry well shown here. Dry well to be constructed to a depth of 15', lined with filter fabric and filled with 3/4" gravel. Furnish and install with manhole ring and cover, per SPPWC ST. Plan 630-3."

Item No. AD-1.16: Reference Drawing E0.4, Single Line Diagram

A. Clarification: Feeders sizes indicated for Musco Lighting Poles F1, F2, F3 and F4 shall be as indicated on feeder schedule "DP-HV" on sheet E0.5 in lieu of sizes shown on the single line diagram.

Item No. AD-1.17: Reference Drawing EV2.2, Building V Power Plan

A. Clarification: Exhaust fans indicated on plans shall be identified and located as indicated on Mechanical Plans, refer to Sheet M2.0.

Item No. AD-1.18: Reference Drawing EW2.2, Building W Power Plan

A. Clarification: Exhaust fans indicated on plans shall be identified and located as indicated on Mechanical Plans, refer to Sheet M2.1.

B. Delete: all electrical conduit feeder and connections indicated for 'Sump Pump' connected to circuit LW1-20, 22, 24.

Item No. AD-1.19: Reference Drawing E4.2, Electrical Details

A. Reference details # 4 and 5; Lighting control switches indicated below bleachers shall be 'key-operated' type.

B. Specifications (changes as noted in Electrical Addendum 1 – KW 110614)

PRE-BID RFI RESPONSES AND CLARIFICATIONS

Item No. AD-1.20:

A. The following Pre-Bid RFI responses and various clarifications are hereby issued:

RESPONSES AND VARIOUS CLARIFICATIONS TO
F13-13 INDIAN SPRINGS HIGH SCHOOL ATHLETIC COMPLEX

Q1. Could you please tell me the estimated value of the project?
A1. Approximately $9 million

Q2 Reference spec section 323119 Fences and Gates-Ornamental Metal- it states to field paint metal. Reference sheet A1.30 gate schedule it states finish is galvanized. What is finish?
A2. See attached Addendum

Q3. Please consider moving the bid opening time to 2PM instead of 10AM.
A3. The bid time will remain unchanged

Q4. Please confirm Site Visit was mandatory for General Contractors who will be submitting a bid.
A4. The job walk was non-mandatory

Q5. Please confirm if subcontractors who hold an A License will need to be prequalified with the district.
A5. The General Contractor as well as the Mechanical/Electrical/Plumbing subcontractors need to be prequalified. Additional information regarding the prequalification can be found within the pre-qualification packet that is located at http://www.sbcusdfacilities.com/public/ under the Construction Contractors Pre-Qualification Section

Q6. Please provide a logistics/ site access plan with details of the temporary site access roads that will need to be provided and maintained by contractors.
A6. Refer to drawing A1.10 – Overall Site Phasing Plan for Contractor Parking Area, Construction Entry/ Exit and construction boundary limits. Also refer to Sections 01 11 00 – Summary of Work and 01 11 14 – Work Sequence and Phasing for logistics plan submittal requirements

Q7. Please confirm the track around the football field is existing and is not in the scope of this contract.
A7. The track around the football field is an existing track the only scope in the track is to provide decomposed granite along one edge of the track as noted in the Civil drawings C3.1 and C3.2

Q8. Phase 1 & Phase 2 are bidding the same day?
A8. There is only one bid opening on 12/5/14

Q9. Section 26 07 66 & 26 07 68 Pool Facility Sound System Part 2 Products 2.03 B.
Plans Musco MD2 Field and Pool
Spec section states Community R2 Speakers, but the Plans (MD2) on the Field and Pool show Musco Pole 2P-E.V. P Speaker Mount for Electrovoice SX600PIX Speakers.
Which Speakers manufacturer is required at time of bid?
A9. See attached Addendum

Q10. Section 26 07 66 Wireless Coaches/Spotter Intercom System
Part 2 2.06 B. (2) Telex Legacy wireless intercom has been discontinued, please advise.
A10. Refer to AD1.7

HMC ARCHITECTS

By_____
Stephen A. Wilkerson, AIA
Principal

SUPPLEMENTARY GENERAL CONDITIONS

The following supplements modify the General Conditions. Where a portion of the General Conditions is modified and or deleted by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

ARTICLE 3 – THE CONTRACTOR

Article 3.8.1(a) Requirements – In addition to these requirements, the schedule shall include the following Milestone Schedule:

Phase I –	206 Calendar Days from Date of Notice to Proceed
Phase II-	300 Calendar Days from Date of Notice to Proceed
Phase III	15 Calendar Days, March 14, 2015 - March 29, 2015
Exhibit "A"	Project Schedule Outline for reference

ARTICLE 8 – TIME

Article 8.4.1 Liquidated Damages – Contractor will be liable to Owner for liquidated damages pursuant to Article 8.4 for each calendar day of delay in the amount of $1,500.

ARTICLE 11 – INSURANCE AND BONDS

Article 11.9 Performance and Payment Bonds – The number of executed copies of the Performance Bond and the Payment Bond required is **three (3).**

ARTICLE 13

This Project is subject to prevailing wages and enforcement by the Division of Industrial Relations (DIR) within the Division of Labor Standards Enforcement pursuant to Title 8, California Code of Regulations, Section 16450 et seq.

The Contractor and all Subcontractors shall be required to furnish, at least monthly, electronic certified payroll records directly to the Labor Commissioner/ DIR in accordance with Title 8, California Code of Regulations, Section 16450 et seq. All payroll records shall be furnished in a format prescribed by Title 8, California Code of Regulations, Section 16401. The Contractor and all Subcontractors must enroll in DIR's eCPR system to submit electronic certified payroll records. The District will have direct and immediate access to all CPRs for the Project that are submitted through the DIR website. The District can use this information for any appropriate purpose, including monitoring compliance, identifying suspected violations, and responding to Public Records Act requests.

SECTION 10 14 00

IDENTIFICATION SIGNS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Plastic Signs, raised character, tactile, room identification, exit door signs, and non-tactile signs.

B. Path of Travel (POT) signs.

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM)
   1. ASTM D4802 - Poly (Methyl Methacrylate) Acrylic Plastic Sheet

B. ADA – Americans with Disabilities Act of 1990 as amended.
   1. ADA/Standards – ADA Title II Regulations and the 2010 ADA Standards for Accessible Design.

C. CBC - 2013 California Building Code (CBC)
   1. CBC 10 - Chapter 10, Egress Requirements
   2. CBC 11B– Chapter 11B, Accessibility for Public Buildings, Public Accommodations, Commercial Facilities and Publicly Funded Housing

D. CFC – 2013 California Fire Code.

E. California Code of Regulations (CCR)
   1. CCR 19-3 - Title 19, Chapter 3

F. Fed.Stnd - Federal Standard
   1. Fed.Stnd 595C, Colors Used in Federal Procurement

1.03 SUBMITTALS

A. Shop Drawings of each sign, indicating lettering styles and locations and overall dimensions.

B. Three sample, full size, signs, with different messages of types, styles and colors specified including method of mounting. If accepted, samples may be installed in Project.

C. Manufacturer's Installation Instructions

D. Lettering Samples: 1-inch high, uppercase X, I, and O letters in each font specified, for required Quality Assurance testing.

E. Letter Proportion Templates
   1. One 1- by 1-inch (1:1) square.

2. One a 1-inch high by 0.6-inch wide (3:5) rectangle.
3. One 1-inch high by 0.2-inch wide (5:1) rectangle.
4. One 1-inch high by 0.1-inch wide (10:1) rectangle.

1.04 QUALITY ASSURANCE

A. Pre-Installation Conference
   1. Notify Architect when signs are ready for installation. Arrange for conference at site. Do not proceed with installation until Architect's approval of specific locations and methods of attachment has been obtained.
   2. Provide signs from one manufacturer, unless otherwise approved.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site and protect from damage. Store until immediately prior to Notice of Completion.

PART 2 - PRODUCTS

2.01 REGULATORY REQUIREMENTS

A. Raised characters shall comply with CBC Section 11B-703.2:
   1. Depth: It shall be 1/32 inch (0.8 mm) minimum above their background and shall be sans serif uppercase and be duplicated in Braille.
   2. Height: It shall be 5/8 inch (15.9 mm) minimum and 2 inches (51 mm) maximum based on the height of the uppercase letter “I”. CBC Section 11B-703.2.5
   3. Finish and contrast: Characters and their background shall have a non-glare finish. Character shall contrast with their background with either light characters on a dark background or dark characters on a light background. CBC Section 11B-703.5.1
   4. Proportions: It shall be selected from fonts where the width of the uppercase letter “O” is 60 % minimum and 110 % maximum of the height of the uppercase letter “I”. Stroke thickness of the uppercase letter “I” shall be 15 % maximum of the height of the character. CBC Sections 11B-703.4 and 11B-703.6
   5. Character Spacing: Spacing between individual tactile characters shall comply with CBC Section 11B-703.2.7 and 11B-703.2.8
   6. Braille: It shall be contracted (Grade 2) and shall comply with CBC Sections 11B-703.3 and 11B-703.4. Braille dots shall have a domed and rounded shape and shall comply with CBC Table and Figure 11B-703.3.1.
   7. Mounting height: A tactile sign shall be located 48” minimum to the baseline of the lowest Braille cells and 60” maximum to the baseline of the highest line of raised characters above the finish floor or ground surface.
   8. Mounting location: A tactile sign shall be located on the approach side, as one enters or exits rooms or space, and be reached within 0” of the required clear floor space per CBC Section and Figure 11B -703.4.2 as follows:
      a. a clear floor space of 18’ x 18” minimum, centered on the tactile characters, shall be provided beyond the arc of any door swings between the closed position and 45 degree open position.
      b. on the wall at the latch side of a single door.
      c. on the inactive leaf of a double door with one active leaf.
      d. on the wall at the right side of a double door with two active leafs.

e. on the nearest adjacent wall where there is no wall space at the latch side of a single door or no space at the right side of a double door with two active leafs.

9. Visual characters shall comply with CBC Section 11B-703.5 and shall be 40" minimum above finish floor or ground.
10. Pictograms shall comply with CBC Section 11B-703.6.
11. Symbol of accessibility shall comply with CBC Section 11B-703.7

2.02 .MANUFACTURERS

A. Products of following manufacturers form basis for design and quality intended.
1. Mohawk Sign Systems, Inc., Schenectady, NY.
2. Roemer Industries, Masury, OH.
3. ASI Modulex, Inc., Dallas, TX.
4. Vomar Products.
5. Apco Signs, Atlanta, GA.
6. Nelson-Harkins Industries, Inc.
7. Vista System

B. Or approved equal in accordance with Division 01 General Requirements for substitutions.

2.03 PLASTIC SIGN MATERIALS

A. Tactile Plastic Sign Materials: Thermosetting high pressure laminate.

B. Non-Tactile Signs: Acrylic Plastic Sheet: ASTM D4802, Category A-1, 1/4 inch overall thickness, laminated acrylic plastic sheets.

2.04 SIGN FABRICATION - GENERAL

A. Plastic Signs
1. Tactile and Braille Copy: Sand-Carved signs; thermosetting high pressure laminate using Graphic Process Sand-Carved signs, with radius corners, and square cut edges, exterior-grade. Graphics, Braille and tactile copy required.
a. Unframed Signs: Mohawk 1000 ADA System signs, Series 200A, Design M-311 or Design M310A/B window plaques where indicated, by Mohawk Sign Systems or equal. Custom copy by Architect.
2. Non-tactile Plastic Signs: 1/4 inch overall thickness, laminated acrylic plastic sheets, using sub-surface screen-print process graphics and symbols, exterior-grade at exterior locations, 3/8-inch square corners, square cut edge, drilled holes for countersunk screws, polished edges.
a. Unframed Signs.
3. Apply UV inhibitor overcoat for exterior signs.

B. Fasteners: Stainless steel screws, flat head, pin-in-head torx screws for vandal-proof and clear silicone adhesive.

C. Lettering Type Style: Gill Sans, uppercase letters only, refer to QUALITY ASSURANCE for letter-proportion compliance.

D. Colors: As selected by Architect.

2.05 ROOM IDENTIFICATION SIGNS

A. Room Identification Signs: raised character, tactile plastic signs in colors as selected by the Architect from the manufacturer's full range of available colors.
   1. ADA Tactile and Braille Signs: Thermosetting high pressure-laminate using Graphic Process Sand-Carved signs.
   2. Non-Tactile Signs: Acrylic Plastic Sheet: ASTM D4802, Category A-1.

B. Size: 2-1/2 inches high, minimum, by 8 inches long, with 7/8 inch high, letters minimum 1/32 inch thick, minimum 3/32 inch thick for metal signs, fully tactile, with BRAILLE indicator.
   1. Provide one sign with up to 13 letters for each door.
   2. Provide one sign with up to 3 numerals for each door.

2.06 OCCUPANT LOAD SIGNS

A. Posting of occupant load signage in each room or area use for assembly per CBC 1004.3, CFC & Title 19.

B. Provide maximum occupancy load signs. Post in a conspicuous place near main exits or exit-access doorway of following areas:
   1. Bleachers

C. Material:
   1. Non-Tactile Signs: Acrylic Plastic Sheet: ASTM D4802, Category A-1.
      a. Overall thickness of 1/4 inch, colors as selected by Architect.
      b. Upper Layer: Non-glare clear acrylic 1/8 inch thick.
      c. Lower Layer: Opaque acrylic, 1/8 inch thick.
      d. Polished edges.

D. Size: 4 inches high by 8 inches, minimum, long, sub-surface application, 7/8 inch high letters, and 1 inch high numbers.
   1. Message: MAXIMUM OCCUPANCY LOAD ###
   2. Obtain occupant load number (###) from Architect.
   3. Conform to Sections 1004.3 California Building Code.

2.07 ACCESSIBLE ENTRANCE SIGNS AND PATH OF TRAVEL DIRECTIONAL SIGNS

A. Accessibility Entrance signs: Provide at each accessible building entrance an International Symbol of Accessibility sign, CBC Sections 11B-216.6 and 1007.10 and with additional directional signs, manufacturer's standard, approved by Architect. Sign shall be visible to persons along approaching pedestrian ways.
   1. Non-Tactile Signs: Acrylic Plastic Sheet: ASTM D4802 Category A-1.
      a. Upper Layer: Non-glare clear acrylic 1/8 inch thick.
      b. Lower Layer: Opaque acrylic, 1/8 inch thick.
      c. Polished edges.

B. PATH OF TRAVEL (POT) signs: Provide aluminum Directional Signs around a barrier in the Path of Travel with arrow indicators and International Sign of Accessibility, CBC Sections 11B-202.4 and California Access Compliance Reference Manual (Only if directing around barriers).
   1. Posts for Path of Travel Signs: 2 by 2 inch galvanized steel tubing, weighing minimum of 4.31 pounds per foot and conforming to ASTM A500, Grade B, 3/16 inch thick wall thickness. Provide 80 inches minimum clear from post footing to bottom of sign when in Path of Travel.

C. Aluminum signs: Anodic finish applied before fabrication. Background finish enamel applied after fabrication. Color as selected by Architect form manufacturer's standard range of colors.

2.08 TACTILE EXIT SIGNS

A. Conform to Sections 1011.4, 11B.703.1, 11B.703.2, 11B.703.3, and 11B.703.5, CBC 2013.

B. Manufacturers:
   1. Mfg: By Emedco, Buffalo, NY; All State Sign and Plague, Deer Park, NY. Or equal.
   2. Model: GloBrite Braille Interior Signs; GBR20 and GBR21, Acrylic, 6” x 9”, Color: RED/GLO. Modify wording per requirements below and Quality Assurance Article in Part 1 of this Section.

C. Install sign at each exit door as conditions required in Sections 1011.1 and 1011.3 CBC:
   1. Each grade-level exterior exit door that is required to comply with 1011.1 shall be identified by a tactile exit sign with the word, “EXIT”.
   2. Each exit door that is required to comply with Section 1011.1 and that leads directly to a grade-level exterior exit by means of a stairway or ramp shall be identified by a tactile exit sign with the following words as appropriate:
      a. “EXIT STAIR DOWN”
      b. “EXIT RAMP DOWN”
      c. “EXIT STAIR UP”
      d. “EXIT RAMP UP”
   3. Each exit door that is required to comply with Section 1011.1 and that leads directly to a grade-level exterior exit by means of an exit enclosure that does not utilize a stair or ramp, or an exit passageway shall be identified by a tactile exit sign with the works, “EXIT ROUTE”.
   4. Each exit access door from an interior room or area that is required to comply with Section 1011.1 shall be identified by a tactile exit sign with the words, “EXIT ROUTE”.
   5. Each exit door through a horizontal exit that is required to comply with Section 1011.1 shall be identified by a tactile exit sign with the words “TO EXIT”.

2.09 MISCELLENEOUS SIGNS

A. Fire Extinguisher: 2-way Plastic 12 by 4 inches, White/Red. Portable fire extinguishers per CFC 906 and Title 19. Refer to Section 10 44 13.

B. Fire department access to equipment/: A/C controls, sprinkler risers & valves, fire alarm panels, or other fire detection, suppression or control elements per CFC 509.

C. Electrical Rooms per CFC 605.1.

D. Pool-Lift Sign: Provide sign that reads “Pool Lift Stored Here” at storage room where this particular equipment is stored. Install below Room Identification sign as approved by Architect.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive Work.

B. Beginning of installation means installer accepts existing surfaces.

3.02 INSTALLATION

A. Install signs only after surfaces are finished, install at all rooms.
   1. At single-leaf doors, locate signs on wall adjacent to latch side of applicable door opening, centered horizontally within 18-inch space adjacent to latch side of door, 60 inches from finish floor to center line of sign. Mounting location shall be determined so that person may approach within 3 inches of sign without encountering protruding objects or standing within swing of door. At pairs of doors, locate sign on nearest adjacent wall, outside door swing area.

B. Mounting
   1. Tactile Plastic Signs: Stainless steel screws, pin torx, vandal-proof.
   2. Non-tactile Plastic Signs:
      a. Install with four (4) stainless steel countersunk flathead screws, pin torx, vandal-proof. Pre-drill holes to prevent breaking plastic, use countersunk drill bits to flush screw head with sign surface.

C. Mount Path of Travel Directional Signs to posts with minimum two 3/16 inch diameter round head bolts with tamperproof nuts, galvanized.
   1. Set posts in 2500 psi concrete base, minimum 12-inch diameter and 18 inches deep. Signs set in asphalt-concrete paved surfaces or concrete sidewalks shall be mounted in core drilled holes 8 inch minimum diameter, 18 inches deep with top of base flush to finish.

D. Clean and polish signs following manufacturer’s instructions.

3.03 SIGN TYPES AND SCHEDULE

A. As indicated on Drawings.

END OF SECTION

SECTION 27 07 50

COMMUNICATIONS CABLING SPECIFICATIONS

PART 1 - GENERAL

1.1 GENERAL INTRODUCTION

A. The work shall consist of the design, provision, termination, testing and documentation of a complete and fully functional structured high performance copper and optical fiber communications cabling system. The instructions in this section are specific to communication installations and should be read in conjunction with other contract documents as applicable. Work shall provide data systems complete to include, but not be limited to, jacks, cabling, pathway456+s, equipment, wireless access points (WAP), active network components, uninterruptable power supplies (UPS), labor, etc. as noted on the drawings and indicated in Division 26 and 27 specifications minimum.

1.2 QUALIFICATIONS

A. The data cabling system installation work detailed in this section shall be carried out by a specialist installer company. The installer shall be certified by the system manufacturer (or manufacturers) in the installation and testing of the cabling system.

B. The installer shall have a proven track record in the field of telephone and data (high performance “Category 6A” copper and optical fiber) cabling system installation. The installer shall have completed at least five previous installations of comparable size, complexity and manpower within the last three years. Each installation shall utilize components, installation practices and testing procedure equivalent to those specified in this document.

C. The Installer shall hold a valid State Contractors License for the duration of the project. The Installer shall be responsible for obtaining permits and other requirements for performing work on this project. All costs associated with obtaining permits and other documentation shall be included in the bid sum for the project.

D. Contractors bidding on the District’s work projects shall possess as a minimum the following qualifications.
   1. A manufacturer’s Certified Installer/Contractor agreement in force at the time of bid submittal and throughout the entire construction process. A current support document shall be included in the Contractor’s bid response.
   2. Authorized to facilitate the applicable Manufacture’s System Warranty.
   3. The contractor shall ensure that at least 50% of all technicians installing a copper system have received a manufacturer’s training certificate for copper systems.
   4. The contractor shall ensure that at least 100% of all technicians installing a fiber optic system have received a manufacturer’s training certificate for fiber optic systems.
   5. The contractor shall have copies of the technicians’ certificates available for inspection by the District’s IT Representative upon request.
   6. The Contractor must have completed a minimum of five projects of similar size and scope for public entities within the past three years.

1.3 DEFINITIONS

A. Throughout this specification, the following definitions will apply
   1. Provide: Supply, furnish, deliver, install, pull, fix, dress, terminate, label, test, ground and document the components as per these specifications.
   2. BDF (Building Distribution Frame) Rooms, are special-purpose rooms that provide space and maintain a suitable operating environment for the termination of backbone and campus cabling and house centralized communications and/ or computer equipment (such as Core Switches and Servers).
   3. IDF Rooms are floor-serving spaces that provide a connection point between backbone and horizontal distribution pathways
   4. Backbone Cables: Cables linking the BDF and IDF Rooms.
   5. Link Cables: Cables linking IDFs Rooms.
   6. Horizontal Cables: Cables linking the IDF Rooms to each workstation outlet.
   7. External Cables: Cables that link the building to external connection point(s) and/or other building(s). These cables are considered to be Outside Plant (OSP).
   8. Station Cables: Cables linking workstation outlet to active equipment.
   9. Owner/Client: San Bernardino City Unified School District (SBCUSD).
   10. Construction Manager: To be dertermined.
   11. Bidder: A company invited to bid for the works.
   12. Installer/Contractor: The Company installing the equipment as defined in this specification.

1.4 MANUFACTURER'S COMPLETE SYSTEMS

A. The cabling system specified in this document is the District Standard and shall be a Panduit hardware and Panduit TX6A 10 Gig UTP copper cable end-to-end solution except where stated otherwise complying with the SBCUSD Voice and Data Cabling Standards.

1.5 JOB CONDITIONS

A. Prior to bidding, visit the site and determine all existing conditions affecting work. The Bidder shall examine all drawings and specifications to familiarize themselves with the type of construction to be used, and the nature and extent of work provided by other trades.

B. Verify dimensions and the correct location of hardware before proceeding with the installation of hardware, cabling and/or connections.

C. Notify the Owners' Representative in writing immediately on discovery of dimensional discrepancies and other conditions detrimental to proper performance of the Work.

D. The contractor shall note that the site MDF is existing and are varying in condition and will require complete rework in some cases to allow all new equipment and cabling to be installed along with existing equipment. All work, materials and labor shall be part of the contractors base bid.

E. Building to building conduit pathways are existing in some locations for the distribution of fiber optic cabling. These existing pathways shall be used to install new 12-strand

Single Mode (12SM) fiber optic cabling (FOC) as noted on plans and listed in the specifications. This installation will require the contractor to remove the existing fiber optic cabling from the existing pathways (rework, remove, or reinstall as required) prior to installing the new 12SM FOC as noted in the bid documents.

1.6 PERSONNEL

A. The personnel who will be employed on the contract shall be suitably trained in the management of a project of this nature and/or certified in the installation and maintenance of products of the type being provided so as to be able to carry out all work in a competent manner.

B. The Installer shall provide a site manager responsible for all site-related issues. This individual shall be the single point of contact for the project team and shall carry a mobile phone so they can be contacted during the working hours of the project.

C. The Installer shall be certified by the component manufacturer(s) in the installation and testing of the cabling system and shall be able to provide a manufacturers' extended performance warranty for the 'end to end' cabling system.

1.7 LABELING AND NUMBERING SCHEME

A. Labeling of the cabling systems shall be in accordance SBCUSD standards as noted within the Cabling and Pathway portion of these specifications. District approval is required prior to installation.

1.8 WARRANTY

A. Installer to provide a warranty for one year from Notice of Completion on all materials and workmanship installed or supplied as part of the cabling system.

B. The Installer shall also supply an extended performance warranty, as offered by the components' manufacturer(s).

1.9 QUALITY

A. The Contractor shall be responsible for the complete provision and installation of all components as specified herein. The Contractor shall provide all tools, equipment, fixtures, appliances, ancillary piece parts and hardware as necessary to complete the assembly and installation as required. The Owner's Representative may conduct scheduled or unscheduled inspections of the Contractor's work at anytime during construction. All work included in the scope assigned to the contractor that is associated with this project shall be accomplished in a workmanlike manner, installed and assembled plumb, level and square. The product shall be delivered to the Owner finished, complete, and ready to operate according to the manufacturer's specifications

B. All installation work shall be completed to the standard of the samples approved by the Owners Representative during the submittal process. Any products not installed to the quality detailed in these specifications and approved in the submittal process shall be

reworked by the Installer to the satisfaction of the Owner's Representative at no additional cost to the Owner.

1.10 STANDARDS

A. All materials provided by the Installer shall meet the requirements of the following where applicable:
   1. National Electrical Manufacturer's Association (NEMA)
   2. American National Standards Institute (ANSI)
   3. Underwriters Laboratories, Inc. (UL)
   4. ETL

B. All products, services and documentation provided by the Installer shall meet the requirements of the following where applicable:
   1. California Electric Code (CEC)
   2. Relevant State Electric and Fire Codes
   3. ANSI/EIA/TIA 568-B Commercial Building Telecommunications Wiring Standard
   4. ANSI/EIA/TIA 569-A Commercial Building Standard for Telecommunications Pathways and Spaces
   5. ANSI/EIA/TIA 606 The Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
   6. ANSI/EIA/TIA 607 Commercial Building Grounding and Bonding Requirements for Telecommunications - August 1994
   7. Building Industry Consulting Service International (BICSI) publications
      a. Telecommunications Distribution Methods Manual
      b. Network Design Reference Manual
      c. Telecommunications Cabling Installation Manual (TDDM)
   8. Manufacturer's recommendations and installation guidelines
   9. ISO/IEC 11801: Generic Cabling for Customer Premises

C. All publications referred to in this document shall be the latest edition

1.11 SUBMITTALS

A. All submittals shall be sent per Division 01 requirements. Each submittal should be provided no later than six weeks prior to the work associated with that submittal to allow time for submittal review.

B. Project References:
   1. Submit for approval, references for a minimum of five similar projects successfully undertaken and completed within the last three years. These projects should be a similar scale, complexity and have similar time scales as this project.
   2. Provide project name and address, client contact name and telephone number and construction manager name and telephone number. Provide a brief description of each project indicating types of system installed, quantities and configurations of outlets and project time scales.
   3. At least two of the references shall be located in Southern California and shall be available for the Owners Representative and other members of the Design Team

to visit and inspect the installation, should, in the opinion of the Owners Representative, this be necessary.

4. These references are intended to show that the Installer has successfully completed similar projects. Failure to produce satisfactory references may result in the bid being deemed non-compliant

C. Personnel Training:
1. Submit for approval records regarding the management, installation and testing personnel. These records shall include resumes, training certificates, previous work experience details (especially on reference projects) and other relevant information.
2. Submit records to confirm that the personnel who will be employed in an installation capacity are suitably trained in the installation and maintenance of equipment and systems of the type being provided.
3. Submit records to confirm that the personnel that will be responsible for testing the system are suitably trained in the operation of the test equipment being used in this project.
4. These records are required to ensure that the Installer is able to carry out all work in a competent manner. Failure to produce satisfactory training documentation may result in the bid being deemed non-compliant.

D. Cabling Diagram
1. Submit, for approval, a complete cabling diagram. The diagram shall be based on the single line drawing included in the Construction Documents. It shall be updated to show qualities and part numbers for all components including patch panels, cable, conduit, cabinets and equipment racks, splices, splice cases and all other associated components. Diagram shall also include all proposed labeling to match District Standard labeling schemes.

E. Test Equipment
1. Submit, for approval, details of each item of test equipment to be used to test the optical fiber and copper components. Include patch cords and other specialized components.

F. Product Literature/Data Sheets:
1. Submit for approval manufacturer's product data sheets for each component of the telephone and data cabling systems. Certify that the data sheets depict the components to be provided by the Installer to make up the complete system as described in this specification.

G. Component Samples and Mock-ups
1. Provide one full size installation sample mock-up of each of the following components for approval. All samples are to be fully labeled as per these specifications. Samples are to be delivered to the Architects office prior to installation.
2. All sample mock-ups are intended to represent the components that are to be installed as part of this project; therefore, they are to be provided with all associated components and labeling necessary to make up a complete mock-up. Installation shall not proceed until the Owner’s Representative has approved the samples. Once samples and other documents have been submitted, inspected

by the Owners' Representative and approved, they shall be retained. The samples will be used as the standards by which the quality of work on the project by the Installer shall be judged. Any installation that does not meet this standard shall be replaced or re-worked as approved by the Owners' Representative, at no cost to the project.

3. Outlet Samples.
   a. Provide a mock-up of each communications outlet, as listed below. The sample is intended to represent a typical communications outlet and shall include all associated parts to make a complete sample. Provide bushings and strain relief for the horizontal cable jacket, demonstrating how the cable shall be secured. Label the outlet and each connector as detailed in this specification
   b. Provide samples of the following outlet configurations:
      1) Wall-mounted outlet (Quad) - provide the communications outlet, all terminations and a 36" length of the relevant cable(s).
      2) Raceway outlet – provide faceplate, bezel, outlets, cable and labeling only.

H. As-Built Documentation (required on completion of the work)
1. Following completion of the installation, submit the following record drawings, documentation and testing for approval.
2. As-Built Drawings
   a. As-built drawings showing locations of IDF Racks/Rooms and data outlets, backbone, link and external cable routes, data rack locations, and station identification.
3. Final Test Results
   a. Test results for each cable indicating tests performed, results obtained and values measured.
4. All documentation and drawings shall be provided in an electronic format (AutoCAD for drawings, MS Excel for schedule, etc) and supplied on CD-ROM

PART 2. PRODUCTS AND RELATED REQUIREMENTS

2.1 HORIZONTAL AND LINK COPPER CABLING

Supporting Codes and Standards Documents
A non-inclusive list of key documents is presented below as a minimum:

- ANSI/EIA/TIA-568-B: Commercial Building Telecommunications Cabling Standard
- ANSI/EIA/TIA-569-A: Commercial Building Standard for Telecom Pathways and Spaces
- ANSI/EIA/TIA-606: Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
- ANSI/EIA/TIA-607: Commercial Building Grounding/Bonding Requirements
- NFPA 70: National Electrical Code
- ISO/IEC 11801: Generic Cabling for Customer Premises
- BICSI :Telecommunications Distribution Methods Manual (TDDM)

The latest revision of each document, and other related documents, is to be considered the one in force at the time of system construction and delivery to the SBCUSD. The Contractor is required to comply with the applicable documents in content and intent as well.

A. If any applicable documents are in conflict, then the more stringent requirement shall apply. The Contractor is required to advise the SBCUSD Information Technology (IT) Representative of any conflict that could result in work deficiencies.

B. Contractor Requirements (minimum)

Contractors bidding on SBCUSD work projects shall possess as a minimum the following qualifications:

1. A manufacturer's Certified Installer/Contractor agreement in force at the time of bid submittal and throughout the entire construction process. A current support document shall be included in the Contractor's bid response.
2. Authorization to facilitate the applicable Manufacturer's System Warranty.
3. The contractor shall ensure that at least 50% of all technicians installing a copper system have received a manufacturer's training certificate for copper systems.
4. The contractor shall ensure that 100% of the technicians installing a fiber optic system have received a manufacturer's training certificate for fiber optic systems.
5. The contactor shall have copies of the technicians' certificates available for inspection by the SBCUSD IT Representative upon request.
6. Contractor shall hold in good standing a California C-7 license. A copy of the licenses to be included in the contractor's bid response.
7. The Contractor must have completed a minimum of five projects of similar size and scope for public entities within the past three years.

C. Cabling System

All copper and fiber optic components of the cabling system are either to be of a single manufacturer, or of a manufacturer partnership under a system trade name offering a single point of contact for SBCUSD in the event of a warranty claim. The SBCUSD has chosen the Panduit TX6A 10 Gig UTP Copper Cabling solution as the baseline for all equivalents to be measured. Contractors submitting other manufacturer systems for considered must meet this system in physical and electronic performance as well as utility at a minimum.

D. Copper System

1. SBCUSD requires a high performing Category 6A system that meets the following system performance guaranteed headroom as a minimum based on worst pairs:

Electrical Value	TIA/EIA Category 6A	ISO Class EA
Insertion Loss	3%	3%
NEXT	3.5 dB	2.5 dB
PSNEXT	5 dB	4 dB
PSACR-F	10 dB	10 dB
Return Loss	3 dB	3 dB

PSACR-N	6.5 dB	6.5 dB
PSANEXT	2 dB	2 dB
PSAACR-F	10 db	10 dB

E. Cable

All cabling being installed within a building to be plenum rated (yellow in color) in all environments. Even though quite desirable, SBCUSD is not aware of a Category 6A Outside Plant (OSP) rated cabling system. Regardless of environment, the cabling shall be of the same electrical performance and of the same manufacturer.

1. Installation of cabling shall be of continuous length from each termination point.
2. No length of cable shall exceed 285 feet (tested length).
3. The bend radius of any cable shall not exceed 4 times the diameter of the cable.
4. Should the cable become *kinked* while being installed, the contractor shall not attempt to repair the cable, but shall remove and replace the entire run. All cable runs are potential inspection items for the SBCUSD IT Representative.
5. The cable jacket shall be maintained as close to the point of termination as possible.
6. The cable pairs shall not be untwisted more than 1/2" from the termination point.
7. All cabling is to be installed in its own pathway and fully supported.
8. Cabling shall be installed with no more than a 4-foot space between supports when not installed in conduit.
9. Cabling in Telecom Rooms can be installed in pathways such as cable tray and ladder racking, as long as the pathway is low-voltage cabling only, the pathway is appropriately bonded to the building grounding system, and the Data System cables are bundled separately from other low voltage cabling.
10. Cabling entering and existing a building can be installed inside a building for no more than 100 feet per inside segment. However, it must be fully contained in a metallic pathway such as conduit and metal surface mount raceway. These pathways must be appropriately bonded to the building grounding system.

F. Terminations

1. SBCUSD has standardized on yellow as the jack module color. Jack modules shall be of insulation-displacement termination construction, and may offer mass termination of all four pairs simultaneously. In addition, a jack module must be available as part of the cabling system, and facilitate the same system performance and warranties, that can be utilized in existing workstation outlet faceplates from other manufacturers. The most common situation is the Avaya (Lucent) system. Another common situation is Wiremold 5400 raceway.
2. In an effort maximize space, SBCUSD has standardized on a discrete *modular* patch panel system. The system must allow the following:
   a. Presentation of 48 individual module ports in a 1U (1.75") rack height.
   b. Presentation of 24 individual module ports in a 1U (1.75") rack height.
   c. Presentation of 12 individual module ports to be mounted in an 89B type wall bracket.
   d. Offer Category 6A connectivity.
   e. Offer Category 5e connectivity if required
   f. Offer dual-port LC SM fiber optic connectivity in a single port module.
3. Cabling shall be dressed cleanly and fully supported via Velcro straps and cabinet/rack supports. Cable ties are not to be utilized.

4. Cabling slack can be placed in the cabinet/rack area as well as the ceiling areas (where noted on plans) if fully supported by the proper pathway device. No more than 4 feet per horizontal run shall be stored.
5. The fiber optic cabling shall be installed in the first ports from the left, leaving the remaining ports to the right for copper termination modules. No particular order is required for workstation cabling terminations or Access Point cabling terminations.
6. The ports are to be populated beginning with port one in sequence, leaving no open ports.
7. Unused ports are to be filled with a blank module insert.

G. Workstation Outlets
1. Faceplates are to be in two-port and four-port single gang configurations. The faceplates must include labels and label covers. SBCUSD has standardized on white color faceplates.
2. The outlet faceplate shall be affixed to the wall or surface mount termination box with two color matching screws.
3. SBCUSD has installed a great deal of Wiremold 5400 raceway. Therefore, the raceway adaptors must accommodate the same manufacturer jack module as for all other termination needs, and must match the Wiremold 5400 color. Refer to plans for exact locations.
4. All empty ports shall be filled with a color matching blank module.
5. Cabling shall be coiled in the wall or surface mount boxes with no less than 6" and no more than 12" of slack cable.

H. Access Point Cabling
1. A single-port surface mount termination box shall be utilized to house a single jack module for Access Point connectivity. The termination box shall be white.

I. Patch Cords
1. Small diameter Category 6A patch cords, as manufactured by Panduit (or approved equivalent) shall be provided by the contractor for the outlet or Access Point termination end as well as the patch panel termination end. The contractor shall provide patch cords at the MDF/IDF/LDF in instances where the existing Edge switches are not being replaced, as part of the SBCUSD cabinet redressing requirement. These patch cords for the most part shall be 12" in length or as required.
2. Small diameter Category 6A patch cords, as manufactured by Panduit (or approved equivalent) utilized for Access Point patch shall be 12" in length and engaged into the associated terminated jack, then coiled and left to be engaged into the Access Point.
3. The patch cords shall be yellow in color and be of the same manufacturer as the cabling system. As a space saving effort, SBCUSD requires the diameter of the patch cable shall not exceed .150"as manufactured by Panduit (or approved equivalent).
4. The connector end of the patch cord shall provide a *tangle-free latch* design as manufactured by Panduit or (approved equivalent).

5. A Category 6A small diameter, tangle-free latch design patch cord for workstations in 5 meter lengths appropriate for the specific workstation shall be delivered to SBCUSD.

J. Cable Management
   1. See Cabinets/Racks Redressing Requirements.
   2. Rear cable management devices to support cables to the point of termination are to be utilized. A towel bar style bracket is acceptable as long as the cables are neatly and securely attached via Velcro straps.

K. Labeling
   1. All workstation outlets, Access Points, and patch panel termination ports are to be labeled with the SBCUSD standard labeling system.
   2. The standard labeling system is as follows:
      a. The patch panel termination location followed by the port number
         Example: IDF-A1 to port 07 A1-07 (workstation cable)
         Example: IDF-A1 to port 07 A1-W07 (Access Point cable)
   3. A wrap around label shall be installed at each end of the cable no more than 4 inches from the point of termination presenting the same alphanumeric scheme.

L. Fiber Optic System
   1. The SBCUSD has standardized on 12-strand single mode cabling for all backbone requirements. This includes cabling from the site MDF to each IDF location. The cabling shall be of indoor/outdoor construction and meet all requirements for plenum environments.
   2. There shall always be a minimum of 10’ of jacketed cable slack at each end of the cable.
   3. Connectivity shall be of the LC duplex type. Both field polish and pre-polish termination methods are acceptable.
   4. The MDF cabinets/racks shall be the only location where a fiber optic enclosure shall be installed.
      a. Fiber cable slack shall be neatly coiled within the enclosure. No unjacketed slack loops shall be allowed external to the enclosure.
      b. The cable jacket shall enter the enclosure at minimum of 6 inches, and its strength member shall be secured to the enclosure by mechanical means.
   5. All IDF cabinets and racks shall utilize the discrete modular patch panels.
      a. The cable jacket is to be secured to the patch panel rear cable support system.
      b. The exposed fibers end of the cable is to be located immediately behind the patch panel ports location.
   6. The SBCUSD approach is to install the new single mode cabling in existing pathways to a point where new conduit pathways are installed to the new building Telecommunications Rooms (TC).

M. Labeling
   1. A wrap-around label shall be installed on the jacket of the cable no less than 4” and no more than 6” outside the enclosure at each end of the cables. The cables must be easily identifiable by visual mean the specific IDF cabinet.

2. The MDF enclosure shall display a clearly identifiable labeling chart that easily accessible and legible on the front of the enclosure connector panels. Various methods are acceptable, as long as any specific IDF connector panel is easily identified and is consistent throughout the project.
3. IDF cabinets and racks shall identify on the front of the panel the IDF for the IDF to MDF cabling.
4. The labeling shall match the IDF nomenclature exactly.

N. Cabinet Installation
1. New cabinets shall be as noted on the drawings.
2. Cabinets shall be as manufactured by Southwest Data Products (or approved equivalent).
3. Wall cabinets shall be mounted on a 3/4" plywood 48" x 48" minimum backboard, anchored sufficiently to support the maximum allowable weight of the cabinet being installed.
4. The backboard shall be fire-treated type and painted white with two coats of fire retardant paint on all sides.
5. In the unlikely event a backboard cannot be installed at the chosen cabinet location, the cabinet shall be installed on solid strut.
6. The strut shall be securely fastened to the wall and inspected by the SBCUSD IT Representative and IOR prior to cabinet mounting.
7. Two runs of strut extending at least 1" beyond the dimensions of the cabinet and fastened to at least two wall studs shall be utilized for cabinets no larger than 24" in height.
8. Three runs of strut extending fastened to at least three wall studs shall be utilized for cabinets greater than 24" height.
9. No wall cabinet greater than 36" in height shall be installed.
10. Wall cabinets shall be installed to where the bottom of the cabinet is a minimum of 80" AFF (above finished floor) or a maximum of 27" AFF.
11. Wall cabinets shall be of a double-swing, three piece, design with care taken to the direction of the door swing.
12. Wall cabinet hinges shall not be of *piano hinge* type.
13. Wall cabinets shall provide a lock for the front door and a lock for the mid-section, both keyed for #CH751 key.
14. Floor mounted cabinets shall be mounted with at least 3 feet of clearance from the front door and from the rear door where shown on the drawings.
15. Floor mounted cabinets shall be appropriately seismic braced to the floor.
16. All cabinets shall be a minimum of 30" depth.

O. Cabinets/Racks Redressing Requirements (Where required)
1. In compliance the SBCUSD efforts to maximize space, equipment shall be placed as follows:
   a. The discrete modular patch panel to be positioned at the top.
   b. The first switch to be positioned next.
   c. The second switch (if the discrete panel is a 48-port panel) next.
   d. The second modular patch panel next.
   e. Another switch next.
   f. And so forth.
   g. Patch cords shall be of 6" and 12" lengths as required.

h. These are Category 5e, blue, tangle-free latch as manufactured by Panduit (approved or equivalent).
i. All cabinets/racks are to be labeled as indicated on the Construction Drawings even if it requires removing an existing label and replacing it with the new one.
j. All cabinets new shall be equipped with a working cooling fan. If the cooling fan does not operate correctly, then it is to be replaced with a new fan as manufactured by Southwest Data Products (or approved equivalent). All fans must be in good working order at time of inspection by the District, where fans are not operating, the contractor shall replace the designated fan with a new one at no additional cost to the District.
k. All cabinet redress work must be completed in such a manner as all connections are operational for school days, even if the work requires more than one evening. In the event work requires school day down time, the contractor is to advise the SBCUSD IT Representative with a minimum 14 day prior notice.
l. Ensure cabinet locks are operating properly and are keyed to CH751. Provide new locks so all locks are the same at completion of the project.
m. In the instances of removal of an existing cabinet and replacement with a new cabinet, all preceding items in this specification section shall apply.

P. Cabinets Labeling
1. All cabinets/racks, new and existing are to be labeled consistent with the Construction Drawings, even if removal of an existing label is required.

Q. Hinged wall brackets
1. Brackets shall be utilized in the same U space as the patch panel--1U panel, 1U bracket, as manufactured by Panduit (or approved equivalent).
2. Brackets shall be utilized only when identified by the SBCUSD Construction Documents as required for a specific application.

R. System Testing and Certification
1. All components shall be inspected before installation to ensure the correct item is being installed and the component appears to be without flaws.
2. Any defect or system failure shall be corrected by the Contractor prior to request for final inspection.
3. Testing equipment shall be calibrated no less than twelve months prior to the date of testing. Proof of certification is to be available to the SBCUSD IT Representative upon request.
4. Test results shall automatically be calculated and evaluated by the testing equipment, utilizing the most current performance and testing standards and the manufacturer's system performance published statistics. Test results shall be provided within three calendar weeks of final inspection completion in an electronic format that does not require special software to review.
5. Copper system
a. Testing shall be compliant with the most recent Level III requirement for Category 6A testing. Level IIe requirements shall be met for all Category 5e testing.
b. Testing shall be directional, swept-frequency for the following:

1) Attenuation
2) Wire map
3) Attention to Crosstalk Ratio
4) Pair-to-Pair NEXT loss
5) PSNEXT loss
6) Return loss
7) Pair-to-pair ELFEXT
8) PSELFEXT
9) Propagation delay
10) Delay skew
11) Cable length

c. Contractor shall provide documentation to the SBCUSD IT Representative identifying the cable manufacturer's published Nominal Velocity of Propagation (NVP).

6. Fiber system
   a. All fiber optic cable testing shall be performed on all single mode fibers, newly installed or where reterminated.
   b. Power meter testing shall provide system loss measurements at both the 1310 nm and 1550 nm windows in one direction.
   c. Maximum system insertion loss shall not exceed 6dB.
   d. OTDR testing is only required in the event an existing fiber optic cable fails the power meter tests and troubleshooting is required to determine the cause.

S. Warranty
1. Contractor shall warrant all components and systems for a minimum of one year after date of final inspection.
2. Contractor shall also facilitate a manufacturer's system warranty certificate for the copper cabling system and fiber optic cabling system for a minimum of 25 years as offered by Panduit (or approved equivalent), and provide documentation in support thereof.
3. The warranty shall be apply to all current and future applications designed to run on the designated link or channel classification as defined in the Commercial Building Telecommunications Cabling Standards
4. The warranty shall include all individual components and the performance thereof to meet the manufacturer's requirements as a component of the warranted system.
5. The warranty shall guarantee 10Gig Ethernet system performance, plus previously identified headroom.
6. It is quite possible that circumstances will arise within the SBCUSD which will require termination of a new Category 6A cable to an existing patch panel from another manufacturer. It is a requirement of the contractor to facilitate a full manufacturer's 25-year system warranty, as offered by Panduit (or approved equivalent) when such instances occur.
7. SBCUSD remedy of any warranty claim shall be through a single point of contact.

2.2 PATHWAY SPECIFICATION

A. Supporting Codes and Standards Documents

A non-inclusive list of key documents is presented below as a minimum:

- ANSI/EIA/TIA-568-B: Commercial Building Telecommunications Cabling Standard
- ANSI/EIA/TIA-569-A: Commercial Building Standard for Telecom Pathways and Spaces
- ANSI/EIA/TIA-606: Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
- ANSI/EIA/TIA-607: Commercial Building Grounding/Bonding Requirements
- NFPA 70: National Electrical Code
- ISO/IEC 11801: Generic Cabling for Customer Premises
- BICSI: Telecommunications Distribution Methods Manual (TDDM)
- ANSI C80.1 : Electrical Rigid Steel Conduit
- ANSI C80.3 : Steel Electrical Metallic Tubing

The latest revision of each document, and other related documents, is to be considered the one in force at the time of system construction and delivery to the SBCUSD. The Contractor is required to comply with the applicable documents in content and intent as well. Contractor shall note that Division 26 of the specifications are also applicable to the installation of electrical pathways related to the complete installation.

B. If any applicable documents are in conflict, then the more stringent requirement shall apply. The Contractor is required to advise the SBCUSD Information Technology (IT) Representative of any conflict that could result in work deficiencies.

C. Contractor Requirements

Contractors bidding on SBCUSD work projects shall possess as a minimum the following qualifications:

1. Contractor installing pathways shall hold in good standing a California C-10 license. Contractors holding either license may utilize a contractor holding the other as a subcontractor. A copy of the license is to be included in the contractor's bid response. Contractor may act as prime or as a subcontractor.
2. The contractor shall ensure that the ratio of journeyman to apprentice shall be no more than a ratio of 1 to 5.
3. The Contractor must have completed a minimum of three projects of similar size and scope for public entities within the past five years.

D. Conduits

1. Metallic conduit and tubing shall be manufactured under the supervision of an U.L. or another such factory inspection and label service program, as manufactured by Western Tube (or approved equivalent). Each 10-foot length of conduit and tubing shall bear the U.L. or other such label and the manufacturer's name.
2. Conduits shall consist of GRC (galvanized rigid conduit) and EMT (electrical metallic tubing). GRC is to be utilized in any outside or *wet* areas, and areas where the conduit is exposed and less than 6' AFF.
3. All GRC shall be rigid steel, heavy wall, zinc coated, with an inside and outside protective coating manufactured in accordance with ANSI C80.1.
4. All GRC fittings shall be threaded type, as manufactured by RACO (or approved equivalent). No die cast or screw-type fittings shall be allowed.

5. All EMT conduit fittings shall be compression type and manufactured in accordance with ANSI C80.3, as by RACO (or approved equivalent). No screw-type fittings shall be allowed.
6. LB-type, 90° covered fittings, are not allowed.
7. Liquid-tight flexible metal conduit shall be galvanized heavy wall, flexible locked steel strip construction, UV rated, with smooth moisture and oil-proof, abrasion-resistant, extruded plastic jacket, as manufactured by OZ Gozney (or approved equivalent).
8. Conduits shall be supported at a minimum of two points per 10' piece and per the CEC.
9. Supports may be strut hardware, as manufactured by Unistrut (or equivalent), or conduit straps, as manufactured by Western Tube and Minerallac (or approved equivalent). In instances where a trapeze support system is required, the system shall be supported by ceiling mounted threaded steel rods shall be utilized--3/8" rod required for conduits 2" and smaller, and 1/2" for conduits over 2".
10. Conduits shall not include more than two (2) aggregate 90° sweeps between pull boxes, or other such pathway device.
11. Bend radius of any conduit shall not exceed 6 times the inside diameter of the conduit for trade sizes under 2", and 10 times the inside diameter of the conduit for trade sizes 2" and greater.
12. Conduit fill rates shall not exceed 40% for new construction and 50% for existing pathways.
13. A fill rate of 80% is allowed for straight sleeves (with no bends) under 24" in length if approved by the SBCUSD IT Representative.
14. Conduits shall extend a minimum of 4" above floor level when entering from underground.
15. Any conduit exposed, shall be installed parallel or perpendicular to the building. The location of such conduit shall be approved by the SBCUSD Maintenance and Operations Department. The SBCUSD IT department will meet with the Maintenance and Operations Department in advance of construction commencement to obtain approval.
16. Conduits shall not be installed underneath breezeways or eves areas between buildings.
17. All metallic pathways shall be appropriately bonded to building ground.
18. Underground pathways shall be of a minimum Schedule 40 PVC, as manufactured by Carlon (or approved equivalent) and adhere to the same bend radii and fill ratio requirements as GRC and EMT.
19. A GRC riser to underground transition shall occur at the same depth as the underground conduit installation.
20. Manufactured bend/elbow fittings shall be utilized. No attempt to bend the conduit in the field shall be allowed.
21. Innerduct pathway, as manufactured by Carlon (or approved equivalent) shall be utilized as specifically located on the construction drawings. Plenum rated innerduct for exclusive indoor use shall be required. OSP rated innerduct for exclusive outdoor use shall be required and for instances where the innerduct enters a building for no more than 50'. Indoor/outdoor rated innerduct shall be required for instances where the innerduct will enter a building for more than 50'.
22. The innerduct pathway can be supported in various methods, but never by string, cable ties, etc.

23. No sharp edges shall exist at ends of the innerduct. All factory and/or field cut ends shall be smooth.

E. Basket Trays/ Wire Ways

SBCUSD does not anticipate the requirement to install any basket tray or wire ways within the scope of this project.

F. Penetrations

1. All outside building penetrations shall be approved by the SBCUSD Maintenance and Operations Department. The SBCUSD IT Representative will have already met with the Maintenance and Operations Department prior to commencement of construction.
2. The specific sleeve pathway device, GRC, EMT, liquid-tight, shall be identified on the construction drawings and in the site specific statement of work for all new penetrations.
3. All penetration sleeves, new or existing, shall be appropriately supported on each end.
4. All penetration sleeves shall be firestopped in accordance with NFPA 70. At a minimum, an intumescent seal shall be installed between the sleeve and the penetration opening and an intumescent duct-seal material shall be installed in the sleeve's annular space after all cabling has been installed. Technicians installing the firestopping materials shall be certified by the manufacturer whose products are being installed. SBCUSD has not standardized on a particular manufacturer of firestopping materials. Proof of such certification must be made available to the SBCUSD IT Representative upon request.
5. All conduit entries into a building from the outside must be through a correctly NEMA rated pull box. A myers hub fitting, as manufactured by Thomas & Betts (or approved equivalent)shall be installed in the pull box as a method of sealing the penetration.

G. Pull boxes

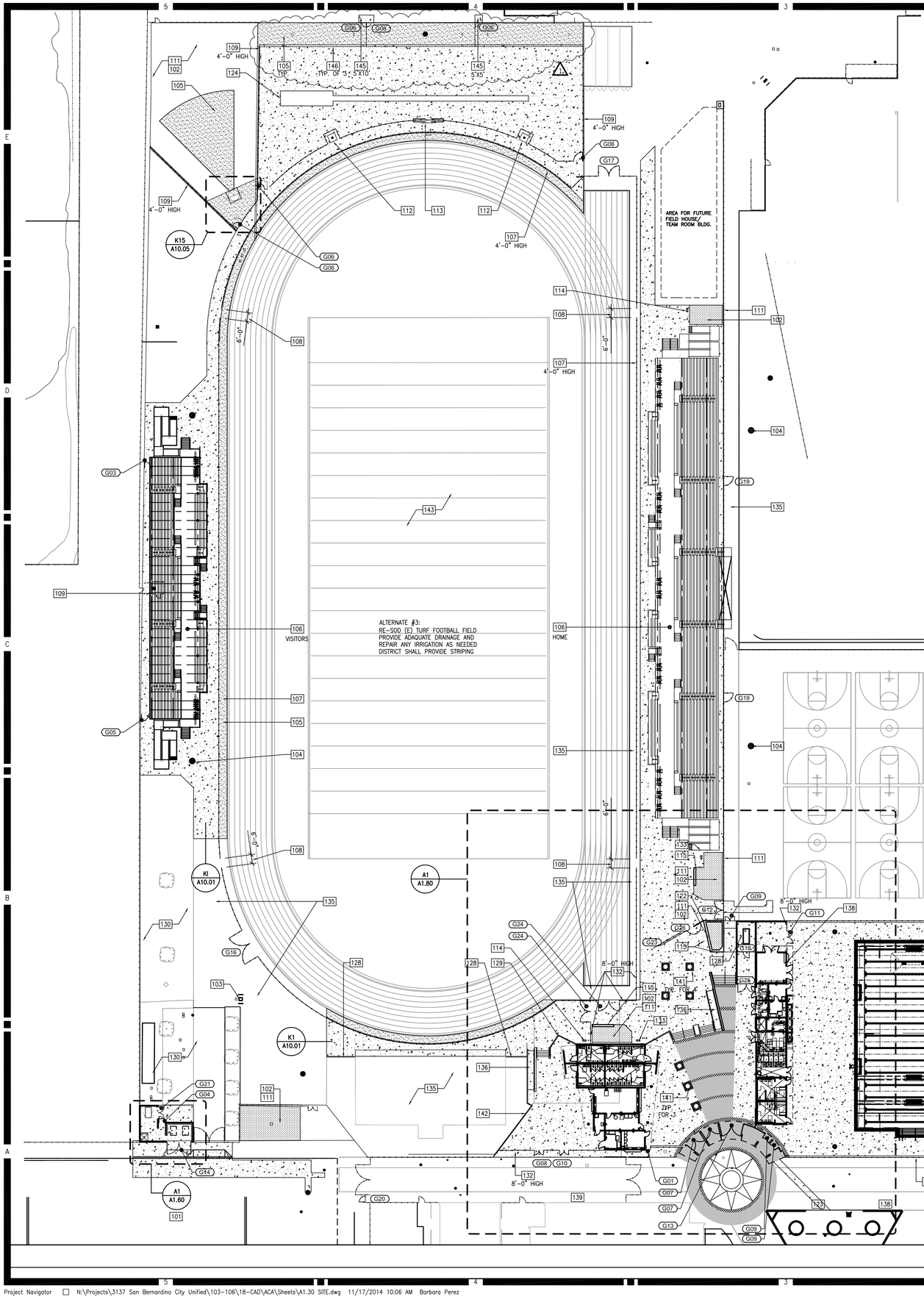
Pull boxes shall be installed at the locations identified on the construction drawings.

1. NEMA 1 rated pull boxes, as manufactured by Hoffman (or approved equivalent) shall be installed inside the buildings.
2. NEMA 3R rated pull boxes, as manufactured by Hoffman (or approved equivalent) shall be installed outside the buildings or in *wet* areas.
3. Pull boxes sizes shall be a depth no less than twice the diameter of the largest conduit to be installed, a width and height to be six times the diameter of the largest conduit.
4. The specific size and NEMA rating shall be as required as field conditions dictate and required by code.

H. Surface Mount Raceway

Wiremold 5400 (or approved equivalent plastic raceway) divided raceway shall be installed as noted on drawings. Equivalency shall be determined by the SBCUSD Maintenance and Operations department.

1. The surface mount raceway shall be installed in accordance will manufacturer's requirements.



GATE SCHEDULE

GATE NUMBER	NO. OF GATES SCHEDULED	GATE SIZE WIDTH X HEIGHT	1 GATE TYPE/ FIN	PANIC HARDWARE	HARDWARE GROUP	GATE ELEVATION	NO CANE BOLTS ALLOWED ON ANY GATE LEAF WITH PANIC HARDWARE OR PEDESTRIAN WAY REMARKS
G01	1	3'-0" X 7'-0"	ORN./SPC.	Y	6.0	K9/A10.03 SIM.	SINGLE GATE
G02	2	4'-0" X 7'-0"	ORN./SPC.	Y	6.0	K9/A10.03	SINGLE GATE
G03	1	4'-0" X 8'-0"	C.L./GALV.	N	11	D15/A10.01	SERVICE GATE, WELD CHAIN TO GATE FRAME
G04	1	4'-0" X 8'-8"	1 ORN./SPC.	N	8.0	A1/A10.02	
G05	1	5'-0" X 8'-0"	C.L./GALV.	N	11.0	D15/A10.01	SERVICE GATE, WELD CHAIN TO GATE FRAME
G06	3	4'-0" X 4'-0"	C.L./GALV.	N	16.0	D15/A10.01	
G07	2	6'-2" X 11'-6" (PAIR)	1 ORN./SPC.	N	9.0	A9/A10.05 SIM.	
G08	5	3'-0" X7'-8" (PAIR)	ORN./SPC.	Y	7.0	A9/A10.05	
G09	4	3'-0" X11'-6" (PAIR)	ORN./SPC.	Y	7.0	A9/A10.05	
G10	1	3'-0" X 7'-8" (PAR)	ORN./SPC.	N	8.0	A9/A10.05	
G11	1	4'-0" X 7'-8" (PAIR)	ORN./SPC.	N	8.0	A9/A10.05 SIM.	
G12	1	6'-0" X 8'-0" (PAIR)	C.L./GAL.	N	9.0	D15/A10.01	WELD CHAIN TO GATE FRAME
G13	1	8'-1" X 11'-6" (PAIR)	1 ORN./SPC.	N	9.0	A9/A10.05 SIM.	MAINTENANCE GATE
G14	1	8'-0" X 8'-8" (PAIR)	ORN./SPC.	N	8.0	N6/A10.01	
G15	-	-	-	-	-	-	GATE NOT USED
G16	1	10'-0" X 4'-0" (PAIR)	C.L./GALV.	N	14	A15/A10.01	
G17	1	7'-0" X 4'-0" (PAIR)	C.L./GALV.	N	8	A15/A10.01	WELD CHAIN TO GATE FRAME
G18	2	4'-0" X 8'-0"	C.L./GALV.	N	11	D15/A10.01	WELD CHAIN TO GATE FRAME
G19	2	6'-0" X 8'-0"	C.L./GALV.	N	11	D15/A10.01	WELD CHAIN TO GATE FRAME
G20	1	4'-0" X 8'-0"	C.L./GALV.	Y	6.0	D12/A10.01 SIM.	
G21	1	4'-0" X 8'-8" (PAIR)	1 ORN./SPC.	N	8.0	N6/A10.01	
G22	-	-	-	-	-	-	GATE NOT USED
G23	1	17'-4" X 8'-0"	1 ORN./SPC.	N	15.0	-	ROLLING GATE, WELD CHAIN TO GATE FRAME, SEE A10.25 FOR DTLS
G24	2	7'-0" X 7'-8" (PAIR)	ORN./SPC.	N	10	A9/A10.05 SIM.	
G25	1	6-0" X 9'-4" (PAIR)	ORN./SPC.	N	8.0	N6/A10.01	
G26	1	5-0" X7'-8"	ORN./SPC.	Y	6.0	A9/A10.05 SIM.	

GATES:
INDICATED ON PLANS WITH (—) SYMBOL. REFER TO GATE SCHEDULE.

REFER TO DETAIL A15/A10.21 FOR GATE MANEUVERING CLEARANCES PER CBC 11B-404.2.4.3

Site Plan Notes

1. REFER TO CIVIL DRAWINGS FOR GRADES, SLOPES AND CURB RAMPS.
2. FENCE HEIGHT IS CALCULATED FROM HIGHEST ADJACENT GRADE.
3. SLOPE ALL BENCHES AND PLANTERS WITH GRADES U.N.O.
4. SITE WALLS: SEE CIVIL FOR RETAINING CONDITIONS
5. REFER TO CIVIL, LANDSCAPE, STRUCTURAL, ELECTRICAL, PLUMBING, MECHANICAL, AQUATICS, FIELD LIGHTING, GEOTECHNICAL AND BLEACHER DRAWINGS FOR ADDITIONAL NEW WORK REQUIREMENTS AND COORDINATION.
6. CONTRACTOR IS TO RAISE/LOWER OR RELOCATE ALL SURFACE OBJECTS I.E. IRRIGATION BOXES, WATER CLEANOUTS, ELECTRICAL VAULTS, ETC...THAT ARE EXISTING TO REMAIN TO REQUIRED NEW GRADE LEVELS REGARDLESS IF THEY ARE SHOWN ON PLANS OR NOT – REFER TO CIVIL FOR NEW GRADE ELEVATIONS.
7. FOR HARDWARE GROUPS REFER TO SPEC SECTION 08 71 00
8. FOR PAINTS REFER TO SPEC SECTION 09 90 00
9. FOR METAL FABRICATIONS REFER TO SPEC SECTION 05 50 00
10. FOR FENCES AND GATES (CHAIN LINK REFER TO SPEC SECTION 32 31 13) 1
11. FOR FENCES AND GATES– ORNAMENTAL REFER TO SPEC SECTION 32 31 19

Site Plan Legend

- (N) CONC. 1 A1.40 FOR CONTROL AND EXPANSION JOINT DETAILS
- (N) LANDSCAPE AREA
- (N) DECOMPOSED GRANITE AREA
- CATCH BASIN PER CIVIL
- SPC SPECIAL COATING 1

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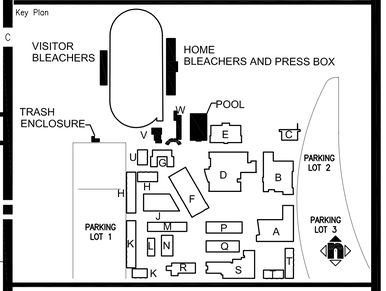
Key Notes

#	NOTE	DETAIL
101	PROVIDE TRASH ENCLOSURE	A1/A1.60
102	PROVIDE LANDSCAPE AREA	LANDSCAPE
103	(E) SITE DRINKING FOUNTAIN	
104	PROVIDE TRACK AND FIELD LIGHTING	FIELD LIGHTING
105	PROVIDE STABILIZED DECOMPOSED GRANITE	CIVIL/LANDSCAPE
106	PROVIDE BLEACHERS	BLEACHERS
107	PROVIDE 4' HIGH CHAIN LINK PERIMETER FENCING ON (E) DIRT TRACK/FEILD	G15/A10.01
108	6'-0" WIDE OPENING AT 4' HIGH FENCE	
109	PROVIDE CHAIN LINK FENCE AS NOTED.	D15/A10.01
110	(E) CHAIN LINK FENCE TO REMAIN	LANDSCAPE
111	PROVIDE MOW STRIP.	K3/A10.01
112	PROVIDE ALUMINUM FLAG POLE	K15/A10.01
113	(E) FOOTBALL/TRACK SCOREBOARD TO REMAIN PROTECT IN PLACE	
114	RELOCATED SITE DRINKING FOUNTAIN.	N1/A10.02
115	PROVIDE SITE CONCRETE BENCH.	A6/A10.01
116	PROVIDE TREE GRATES	LANDSCAPE
117	PROVIDE BACK-UP GENERATOR.	ELECTRICAL
118	PROVIDE SWIMMING POOL	SWIMMING POOL
119	PROVIDE SCOREBOARD FOR SWIMMING POOL	SWIMMING POOL
120	PROVIDE SITE STAIR	A9/A10.02
121	PROVIDE SWIMMING POOL LIGHTING.	FIELD LIGHTING
122	PROVIDE MASONRY SITE WALL AND ORNAMENTAL FENCING.	D9/A10.03
123	PROVIDE ENTRY GATEWAY CANOPY	A1/A10.04
124	PROVIDE LONG / TRIPLE JUMP	N6-A10.05
125	(E) OUTSIDE PERIMETER CURB	
126	PROVIDE MOW STRIP AT ORNAMENTAL FENCE	D3/10.03
127	PROVIDE NEW TO EXISTING PAVEMENT TRANSITION	K1/A10.01
128	PROVIDE 6" HIGH CURB (GUTTER WHERE APPLIES)	CIVIL
129	PROVIDE CONCRETE RETAINING WALL WITH GUARD RAIL AS NOTED.	CIVIL
130	(E) TREES/LANDSCAPE TO REMAIN – PROTECT IN PLACE	
131	SLOPED AREA TO REMAIN.	CIVIL
132	PROVIDE ORNAMENTAL FENCING (NO MASONRY WALL AT BASE)	
133	PROVIDE PEDESTAL DRINKING FOUNTAIN	N1/A10.02
134	PROVIDE CONCRETE PAVING EDGE AT LANDSCAPE AREA	A1/A10.01
135	(E) PAVING TO REMAIN	
136	PROVIDE ACCESSIBLE RAMP	A3/A10.02
137	NOT USED	
138	PROVIDE POOL EQUIPMENT BUILDING	A1/A2.1
139	PROVIDE CONCESSION BUILDING	
140	PROVIDE POOL	
141	PROVIDE 5'-0" TREE GRATES	
142	PROVIDE PIPE STEEL GUARDRAIL.	K12/A10.02
143	EXISTING TURF FOOTBALL FIELD TO REMAIN	
144	PROVIDE FULL HEIGHT CHAIN LINK FENCE UNDER & ON SIDES OF BLEACHERS. X6 AN3/A10.23	
145	PROVIDE CONCRETE LANDING.	
146	PREFABRICATED BATTING CAGES OFCI.	D12/A10.02 1

Key Plan



Agency Approval

FILE NO. 36-H7

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Project Title:

SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

INDIAN SPRINGS
ATHLETIC COMPLEX

BID PACKAGE NO. F13-13

650 N. DEL ROSA DRIVE
SAN BERNARDINO, CA 92410

No.	Description	Date	No.	Description	Date
1		11/18/14			

Drawing Title: SITE PLAN

Architect's Seal

LICENSED ARCHITECT STEPHEN A. WILKINSON 21423 STATE OF CALIFORNIA

Designed: DB/SW/MS	Project No. 3137103106
Drawn: BP/ AL	Scale: AS NOTED
QAQC: SW/ TH	Drawing No. A1.30
Date: 09/30/2014	

Project Navigator ☐ N:\Projects\3137 San Bernardino City Unified\103-106\18-CAD\ACA\Sheets\A1.30 SITE.dwg 11/17/2014 10:06 AM Barbara Perez

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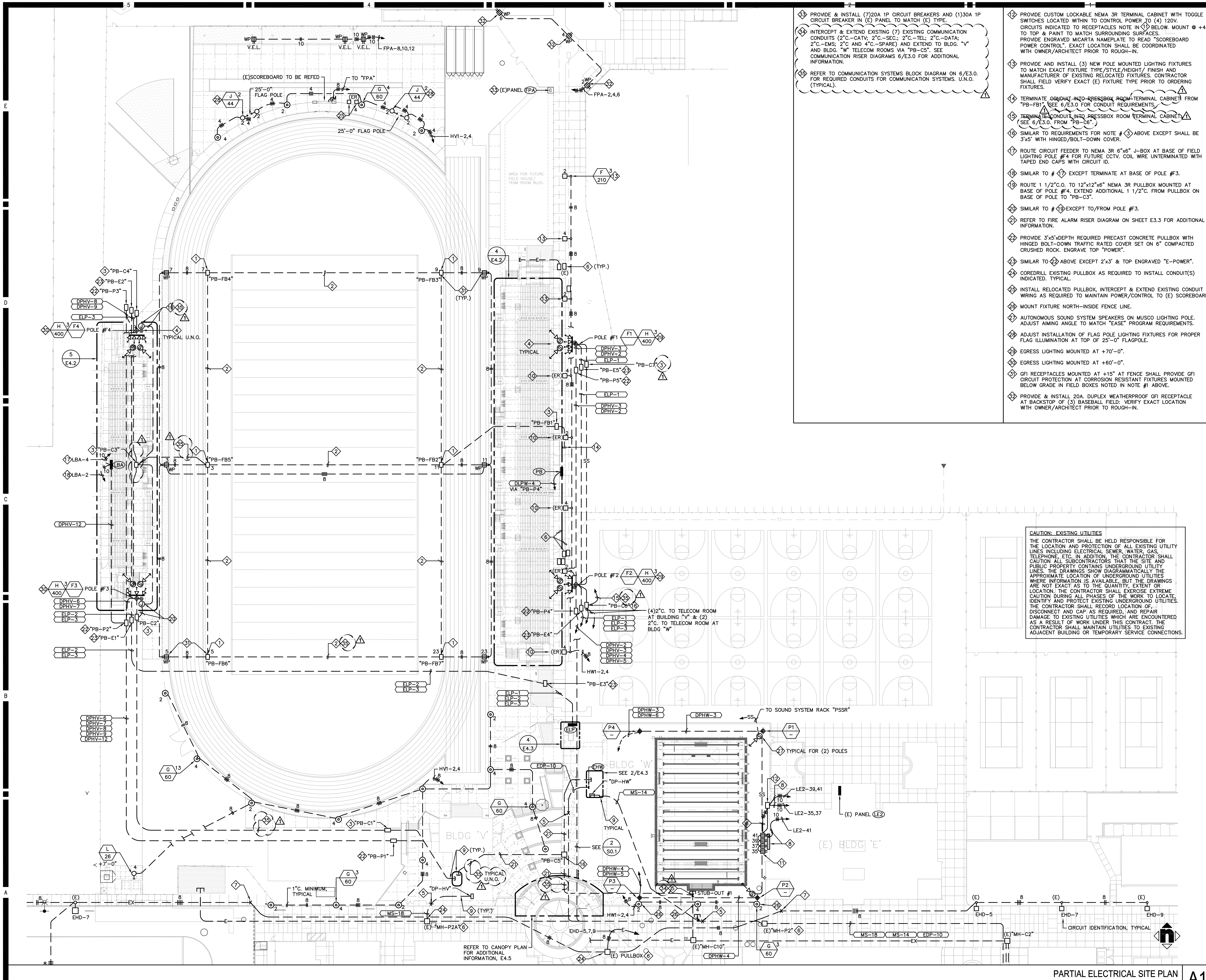
AD-1.01 DSA APPROVAL

DSA APPROVAL



PARTIAL ELECTRICAL SITE PLAN — A1

SCALE: 1" = 30'-0"

33. PROVIDE & INSTALL (7)20A 1P CIRCUIT BREAKERS AND (1)30A 1P CIRCUIT BREAKER IN (E) PANEL TO MATCH (E) TYPE.

34. INTERCEPT & EXTEND EXISTING (7) EXISTING COMMUNICATION CONDUITS (2"C.-CATV; 2"C.-SEC.; 2"C.-TEL; 2"C.-DATA; 2"C.-EMS; 2"C AND 4"C.-SPARE) AND EXTEND TO BLDG. "V" AND BLDG. "W" TELECOM ROOMS VIA "PB-C5". SEE COMMUNICATION RISER DIAGRAMS 6/E3.0 FOR ADDITIONAL INFORMATION.

35. REFER TO COMMUNICATION SYSTEMS BLOCK DIAGRAM ON 6/E3.0. FOR REQUIRED CONDUITS FOR COMMUNICATION SYSTEMS. U.N.O. (TYPICAL). △1

12. PROVIDE CUSTOM LOCKABLE NEMA 3R TERMINAL CABINET WITH TOGGLE SWITCHES LOCATED WITHIN TO CONTROL POWER TO (4) 120V. CIRCUITS INDICATED TO RECEPTACLES NOTE IN 11 BELOW. MOUNT @ +48" TO TOP & PAINT TO MATCH SURROUNDING SURFACES. PROVIDE ENGRAVED MICARTA NAMEPLATE TO READ "SCOREBOARD POWER CONTROL". EXACT LOCATION SHALL BE COORDINATED WITH OWNER/ARCHITECT PRIOR TO ROUGH-IN.

13. PROVIDE AND INSTALL (3) NEW POLE MOUNTED LIGHTING FIXTURES TO MATCH EXACT FIXTURE TYPE/STYLE/HEIGHT/ FINISH AND MANUFACTURER OF EXISTING RELOCATED FIXTURES. CONTRACTOR SHALL FIELD VERIFY EXACT (E) FIXTURE TYPE PRIOR TO ORDERING FIXTURES.

14. TERMINATE CONDUIT INTO PRESSBOX ROOM TERMINAL CABINET FROM "PB-FB1". SEE 6/E3.0 FOR CONDUIT REQUIREMENTS. △1

15. TERMINATE CONDUIT INTO PRESSBOX ROOM TERMINAL CABINET. △1 SEE 6/E3.0. FROM "PB-C6".

16. SIMILAR TO REQUIREMENTS FOR NOTE # 3 ABOVE EXCEPT SHALL BE 3'x5' WITH HINGED/BOLT-DOWN COVER.

17. ROUTE CIRCUIT FEEDER TO NEMA 3R 6"x6" J-BOX AT BASE OF FIELD LIGHTING POLE #F4 FOR FUTURE CCTV. COIL WIRE UNTERMINATED WITH TAPED END CAPS WITH CIRCUIT ID.

18. SIMILAR TO # 17 EXCEPT TERMINATE AT BASE OF POLE #F3.

19. ROUTE 1 1/2"C.O. TO 12"x12"x6" NEMA 3R PULLBOX MOUNTED AT BASE OF POLE #F4. EXTEND ADDITIONAL 1 1/2"C. FROM PULLBOX ON BASE OF POLE TO "PB-C3".

20. SIMILAR TO # 19 EXCEPT TO/FROM POLE #F3.

21. REFER TO FIRE ALARM RISER DIAGRAM ON SHEET E3.3 FOR ADDITIONAL INFORMATION.

22. PROVIDE 3'x5'xDEPTH REQUIRED PRECAST CONCRETE PULLBOX WITH HINGED BOLT-DOWN TRAFFIC RATED COVER SET ON 6" COMPACTED CRUSHED ROCK. ENGRAVE TOP "POWER".

23. SIMILAR TO 22 ABOVE EXCEPT 2'x3' & TOP ENGRAVED "E-POWER".

24. COREDRILL EXISTING PULLBOX AS REQUIRED TO INSTALL CONDUIT(S) INDICATED. TYPICAL.

25. INSTALL RELOCATED PULLBOX, INTERCEPT & EXTEND EXISTING CONDUIT & WIRING AS REQUIRED TO MAINTAIN POWER/CONTROL TO (E) SCOREBOARD.

26. MOUNT FIXTURE NORTH-INSIDE FENCE LINE.

27. AUTONOMOUS SOUND SYSTEM SPEAKERS ON MUSCO LIGHTING POLE. ADJUST AIMING ANGLE TO MATCH "EASE" PROGRAM REQUIREMENTS.

28. ADJUST INSTALLATION OF FLAG POLE LIGHTING FIXTURES FOR PROPER FLAG ILLUMINATION AT TOP OF 25'-0" FLAGPOLE.

29. EGRESS LIGHTING MOUNTED AT +70'-0".

30. EGRESS LIGHTING MOUNTED AT +60'-0".

31. GFI RECEPTACLES MOUNTED AT +15" AT FENCE SHALL PROVIDE GFI CIRCUIT PROTECTION AT CORROSION RESISTANT FIXTURES MOUNTED BELOW GRADE IN FIELD BOXES NOTED IN NOTE #1 ABOVE.

32. PROVIDE & INSTALL 20A. DUPLEX WEATHERPROOF GFI RECEPTACLE AT BACKSTOP OF (3) BASEBALL FIELD: VERIFY EXACT LOCATION WITH OWNER/ARCHITECT PRIOR TO ROUGH-IN.

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SHEET NOTES

1. 18' X 30' UNDERGROUND COMMUNICATION AND POWER HOUSING PULLBOX. PROVIDE AND INSTALL CORROSION RESISTENT GFI PROTECTED DUPLEX 20 AMP RECEPTACLE WITHIN EACH HOUSING FOR FIELD EQUIPMENT. EACH RECEPTACLE (6 TOTAL) SHALL HAVE A DEDICATED CIRCUIT WITH 2#8 AND 1#10 GROUND ROUTED VIA CONDUIT TO PANEL "LBA". REFER TO DETAIL 2/E4.2.

2. (3) 2"C. BELOW GRADE (1 CONDUIT FOR VIDEO CAMERA SYSTEM, 1 CONDUIT FOR POWER AND 1 CONDUIT FOR COMMUNICATION LINK). CONDUIT MOUNTED AT 48" BELOW GRADE TO ALLOW FOR FUTURE FIELD TURF INPROVEMENTS.

3. PROVIDE 2'x3'xDEPTH REQUIRED PRECAST CONCRETE PULLBOX WITH BOLT DOWN METAL TRAFFIC RATED COVER ENGRAVED "SIGNAL" AND SET ON 6" COMPACTED CRUSHED ROCK. △1

4. PROVIDE & INSTALL EMERGENCY LIGHTING FIXTURES & SOUND SYSTEM SPEAKERS ON MUSCO POLES. COORDINATE EXACT MOUNTING HEIGHT WITH MUSCO PROVIDED BRACKETS PRIOR TO CONSTRUCTION.

5. POTHOLE & LOCATE (E) CONDUIT STUB-OUTS & EXTEND TO RELATED PANELS AS INDICATED. CHIP (E) SLURY AS REQUIRED TO INTERCEPT CONDUIT(S). △1

6. EXISTING PULLBOXES & RELATED CONDUIT DUCTBANKS TO BE PROTECTED IN PLACE. V.E.L. IN FIELD PRIOR TO CONSTRUCTION.

7. INTERCEPT EXISTING SITE LIGHTING FEEDER CIRCUITS AND EXTEND TO (E) PULLBOX TO MAINTAIN EXISTING POWER SOURCE.

8. MAKE CONNECTION TO WALL MOUNTED SCOREBOARD (REFER TO POOL DRAWINGS) AND EXTEND CONDUIT AND WIRING CONCEALED TO PANEL THROUGH CEILING SPACE AS REQUIRED.

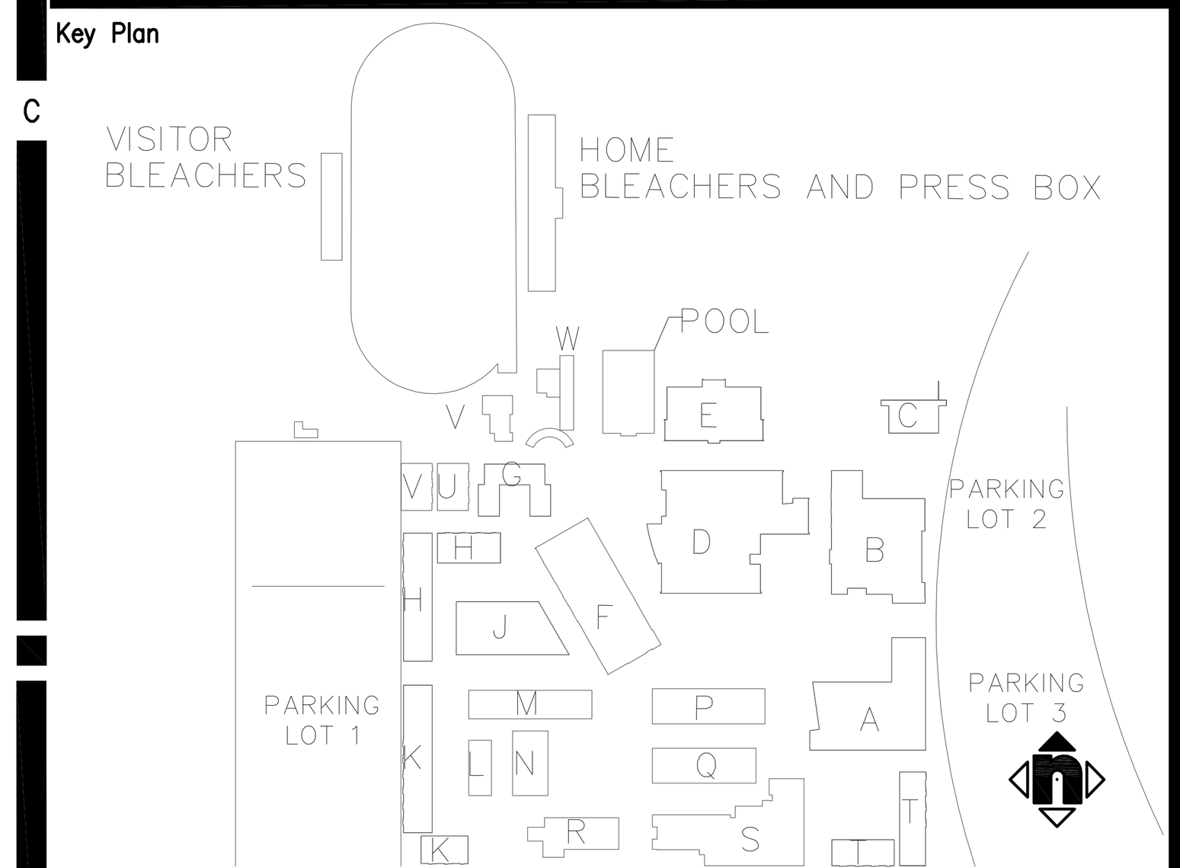
9. REFER TO 2/S0.1 AND 20/S0.2 FOR CONDUIT THROUGH FOOTINGS, TYPICAL.

10. (E) POLE MOUNTED LIGHTING FIXTURE REINSTALLED ON NEW CONCRETE BASE IN NEW LOCATION. PROVIDE & INSTALL NEW LAMPS & COMPLETLY CLEAN THE FIXTURE AND TOUCH-UP SCRATCHES ON PAINTED SURFACES.

11. PROVIDE AND INSTALL (4) WP GFI RECEPTACLES FOR SCOREBOARD POWER. DEVICES SHALL BE MOUNTED AT MOUNTING HEIGHT INDICATED ON POOL CONSULTANT DRAWINGS.

DCGA ENGINEERS
Consulting Mechanical and Electrical Engineers

Key Plan



Agency Approval

FILE NO. 19-H20

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Project Title:

San Bernardino City Unified School District

INDIAN SPRINGS ATHLETIC COMPLEX

BID PACKAGE NO. F13-13

650 N. DEL ROSA DRIVE
SAN BERNARDINO, CA 92410

No.	Description	Date	No.	Description	Date
△1	ADDENDUM #1	11/18/14			

Drawing Title: PARTIAL ELECTRICAL SITE PLAN

Architect's Seal: LICENSED ARCHITECT STEPHEN A. WILKERSON NO. C-24423 REN. 06-30-15 STATE OF CALIFORNIA	Designed: KW	Project No. 3137103106
	Drawn: SO	Scale: AS NOTED
	QAQC: AS/KW	Drawing No. E1.1
	Date: 09/30/2014	

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DCGA #13090

AD-1.02

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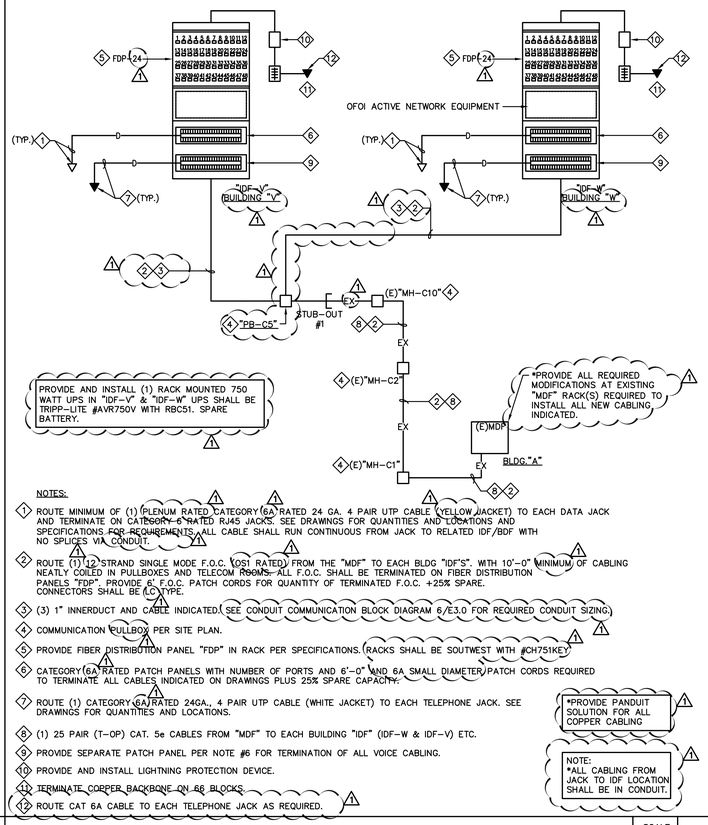
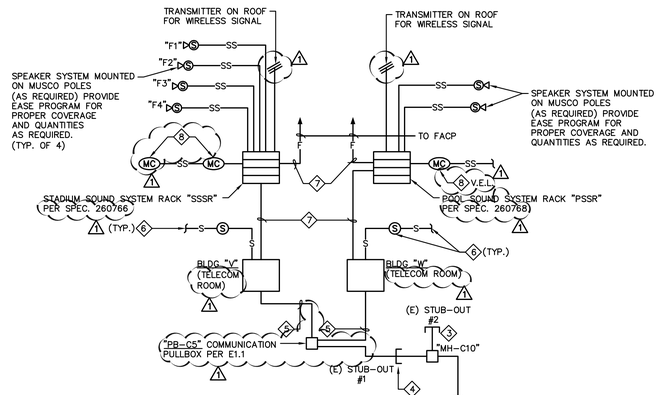


NOTES:

1. ROUTE MINIMUM OF (1) PLENUM RATED CATEGORY 6A RATED 24 GA. 4 PAIR UTP CABLE (YELLOW JACKET) TO EACH DATA JACK AND TERMINATE ON CATEGORY 6 RATED RJ45 JACKS. SEE DRAWINGS FOR QUANTITIES AND LOCATIONS AND SPECIFICATIONS FOR REQUIREMENTS. ALL CABLE SHALL RUN CONTINUOUS FROM JACK TO RELATED IDF/BDF WITH NO SPLICES VIA CONDUIT.
2. ROUTE (1) 12 STRAND SINGLE MODE F.O.C. (OS1 RATED) FROM THE "MDF" TO EACH BLDG "IDF'S". WITH 10'-0" MINIMUM OF CABLING NEATLY COILED IN PULLBOXES AND TELECOM ROOMS. ALL F.O.C. SHALL BE TERMINATED ON FIBER DISTRIBUTION PANELS "FDP". PROVIDE 6' F.O.C. PATCH CORDS FOR QUANTITY OF TERMINATED F.O.C. +25% SPARE. CONNECTORS SHALL BE LC TYPE.
3. (3) 1" INNERDUCT AND CABLE INDICATED. (SEE CONDUIT COMMUNICATION BLOCK DIAGRAM 6/E3.0 FOR REQUIRED CONDUIT SIZING.)
4. COMMUNICATION PULLBOX PER SITE PLAN.
5. PROVIDE FIBER DISTRIBUTION PANEL "FDP" IN RACK PER SPECIFICATIONS. RACKS SHALL BE SOUTWEST WITH #CH751KEY.
6. CATEGORY 6A RATED PATCH PANELS WITH NUMBER OF PORTS AND 6'-0" AND 6A SMALL DIAMETER PATCH CORDS REQUIRED TO TERMINATE ALL CABLES INDICATED ON DRAWINGS PLUS 25% SPARE CAPACITY.
7. ROUTE (1) CATEGORY 6A RATED 24GA., 4 PAIR UTP CABLE (WHITE JACKET) TO EACH TELEPHONE JACK. SEE DRAWINGS FOR QUANTITIES AND LOCATIONS.
8. (1) 25 PAIR (T-OP) CAT. 5e CABLES FROM "MDF" TO EACH BUILDING "IDF" (IDF-W & IDF-V) ETC.
9. PROVIDE SEPARATE PATCH PANEL PER NOTE #6 FOR TERMINATION OF ALL VOICE CABLING.
10. PROVIDE AND INSTALL LIGHTNING PROTECTION DEVICE.
11. TERMINATE COPPER BACKBONE ON 66 BLOCKS.
12. ROUTE CAT 6A CABLE TO EACH TELEPHONE JACK AS REQUIRED.

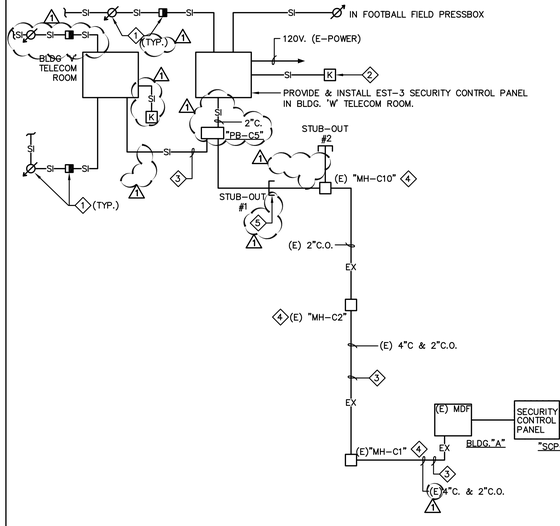
VOICE/DATA SYSTEM RISER DIAGRAM — SCALE N.T.S. — 2



NOTES:

1. REWORK, MODIFY EXISTING BOGEN MULTI-COM RACK AS REQUIRED TO INSTALL NEW SITE PA SPEAKERS AS REQUIRED.
2. PULL PA SYSTEM CABLING AS REQUIRED THROUGH EXISTING CONDUITS.
3. EXISTING MANHOLE PER SITE PLAN
4. INTERCEPT EXISTING 2"C. & EXTEND ONE EACH TO BUILDING "W" AND BUILDING "V" TELECOM RACKS
5. CONDUIT WITH REQUIRED PA SYSTEM WIRING AS REQUIRED. SEE CONDUIT COMMUNICATION BLOCK DIAGRAM 6/E3.0 FOR REQUIRED CONDUIT SIZING.
6. PUBLIC ADDRESS SPEAKER RELATED CONDUIT & WIRING. SEE COMMUNICATION PLANS FOR EXACT SPEAKER LOCATION & QUANTITY.
7. PROVIDE INTERCONNECTION FOR AUTONOMOUS SPEAKER SYSTEM OVERRIDE.
8. PROVIDE MICROPHONE JACK AT POOL BUILDING WALL AND FOOTBALL FIELD BOX "PB-FB2" & "FB5" RESPECTIVELY.

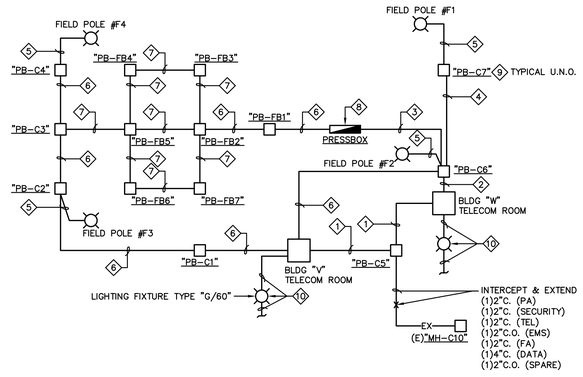
STADIUM PA/PUBLIC ADDRESS/CLASS PASS RISER DIAGRAM — SCALE N.T.S. — 3



NOTES:

1. INTRUSION DETECTION DEVICE AND CONDUIT FEEDER. SEE DRAWINGS FOR EXACT LOCATIONS AND QUANTITIES. SEE SPECIFICATIONS FOR REQUIREMENTS.
2. INTRUSION SYSTEM KEYPAD PER SPECIFICATIONS. COORDINATE EXACT KEYPAD LOCATION AND QUANTITIES WITH SCHOOL DISTRICT IN THE FIELD PRIOR TO ROUGH-IN, TYPICAL.
3. PULL QUANTITY OF CABLES IN CONDUIT INDICATED TO ALLOW FOR ZONE IDENTIFICATION PER ROOM. SEE DRAWINGS FOR QUANTITY OF SPACES TO BE IDENTIFIED AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
4. MANHOLE PER SITE PLAN.
5. ~~INTERCEPT AND EXTEND (E) 2"C. STUB-OUT AS REQUIRED.~~ SEE CONDUIT COMMUNICATION BLOCK DIAGRAM 6/E3.0 FOR REQUIRED SYSTEM CONDUIT.

SECURITY SYSTEM RISER DIAGRAM — SCALE N.T.S. — 5



NOTES:

1. PROVIDE (1) 4"C. (DATA); (1) 2"C. (PA); (1) 2"C. (SECURITY); (1) 2"C. (TEL); (1) 2"C.O. (EMS); (1) 2"C. (FA); (1) 2"C.O. (SPARE)
2. PROVIDE (1) 2"C. (SECURITY); (1) 2"C. (DATA); (1) 2"C. (TEL); (1) 2"C. (FA).
3. PROVIDE (1) 2"C. (TEL); (1) 2"C. (DATA); (1) 2"C. (STADIUM PA); (1) 1 1/4"C. (SECURITY); (1) 1"C. (FA); (2) 1 1/2"C.O. (SPARE).
4. PROVIDE (1) 2"C. (STADIUM PA); (1) 2"C.O. (SECURITY) & (3) 2"C.O. (SPARE).
5. PROVIDE (1) 1 1/4"C. (STADIUM PA); (1) 1 1/2"C.O. (FUTURE SECURITY).
6. (1) 2"C.O. (FUTURE VIDEO); (1) 2"C. (STADIUM PA) (1) 2"C.O. (SPARE)
7. (1) 2"C.O. (FUTURE VIDEO) (1) 2"C.O. (FUTURE COMMUNICATION)
8. PROVIDE COMMUNICATION TERMINAL CABINET WITH LOCKABLE PIANO-HINGED DOOR(S). PROVIDE SEPARATION BARRIER TO ISOLATE FIRE ALARM SYSTEM FROM OTHER SECTIONS. TERMINAL CABINET SHALL BE MINIMUM 36"x36"x6" DEEP OR AS REQUIRED TO TERMINATE ALL CONDUITS.
9. COMMUNICATION PULLBOX PER SITE PLAN. SEE E1.1 FOR EXACT LOCATION & ADDITIONAL INFORMATION.
10. ROUTE 1"C.O. TO EACH AREA LIGHTING FIXTURE TYPE "G/60" FOR FUTURE "CCTV" SYSTEM. DAISY CHAIN CONDUIT FROM ONE FIXTURE TO THE NEXT AS REQUIRED.

COMMUNICATION SYSTEMS CONDUIT BLOCK DIAGRAM — SCALE N.T.S. — 6

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3546 Concours Street
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Key Plan

Agency Approval
FILE NO. 19-H20
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL. 04-113642
AC____ FLS____ SS____
DATE
AC:_____
FLS:_____
SS:_____

Project Title:
SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT
INDIAN SPRINGS ATHLETIC COMPLEX
BID PACKAGE NO. F13-13
650 N. DEL ROSA DRIVE
SAN BERNARDINO, CA 92410

No.	Description	Date	No.	Description	Date
1	ADDENDUM #1	11/18/14			

Drawing Title: COMMUNICATION RISER DIAGRAM

Architect's Seal: LICENSED ARCHITECT STEPHEN A. WILKINSON No. C-21423 RENEW 06-30-15 STATE OF CALIFORNIA

Designed: KW	Project No. 3137103106
Drawn: SO	Scale: N.T.S.
QAQC: AS/KW	Drawing No. E3.0
Date: 09/30/2014	

P:\Indian Springs HS Pool and Stadium #13090\Dwgs\E\13090E30.dwg 11-12-14-11:30 AM

PLEASE RECYCLE

DCGA #13090

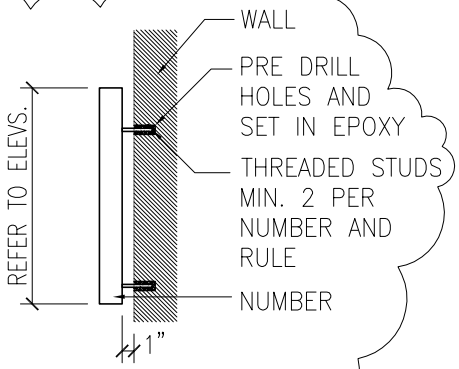
AD-1.03 DSA APPROVED

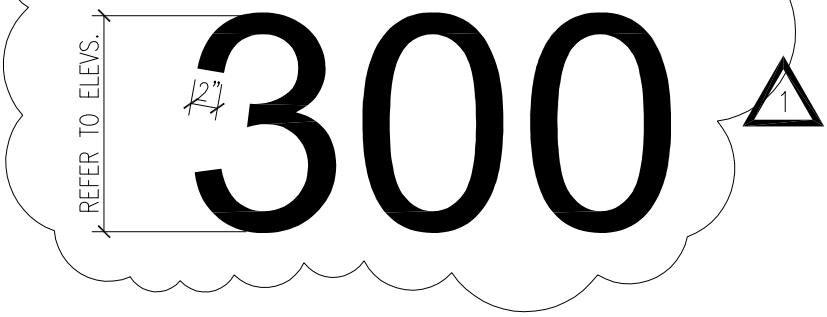
ADDENDUM NO. 1

DSA APPL. NO.	04-113642
FILE NO.	36-H7

NOTES:
CAST ALUMINUM LETTERS (HEIGHT AS INDICATED ON ELEVATIONS) 1-7/8" DEEP. FINISH TO BE SATIN POLISHED FACE, FILED EDGES, DURANODIC BRONZE ANODIZED. STROKE WIDTH TO BE 2" WIDE. LETTERS TO BE INSTALLED TO WALL SURFACES WITH THREADED STUDS SET IN ADHESIVE-FILLED HOLES.

GENERAL NOTE:
1. CONTRACTOR TO PROVIDE SHOP DRAWINGS.
2. PROVIDE TEXT AS INDICATED IN DRAWINGS





10804

LICENSED ARCHITECT
STEPHEN A. WILKERSON
No. C-24423
REN. 06-30-15
STATE OF CALIFORNIA

HMC Architects
3546 Concours Street / Ontario, CA 91764
T 909 989 9979 / www.hmcarchitects.com

Drawing Title: SIGNAGE-DIMENTIONAL LETTERS

Reference Drawing: K6/A10.20

SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

INDIAN SPRINGS ATHLETIC COMPLEX

INDIAN SPRINGS HIGH SCHOOL
650 N. DEL ROSA DRIVE
SAN BERNARDINO, CA 92410

Scale: N.T.SS

Project No. 3137103.106

Date: 11/18/14

AD - 1.04

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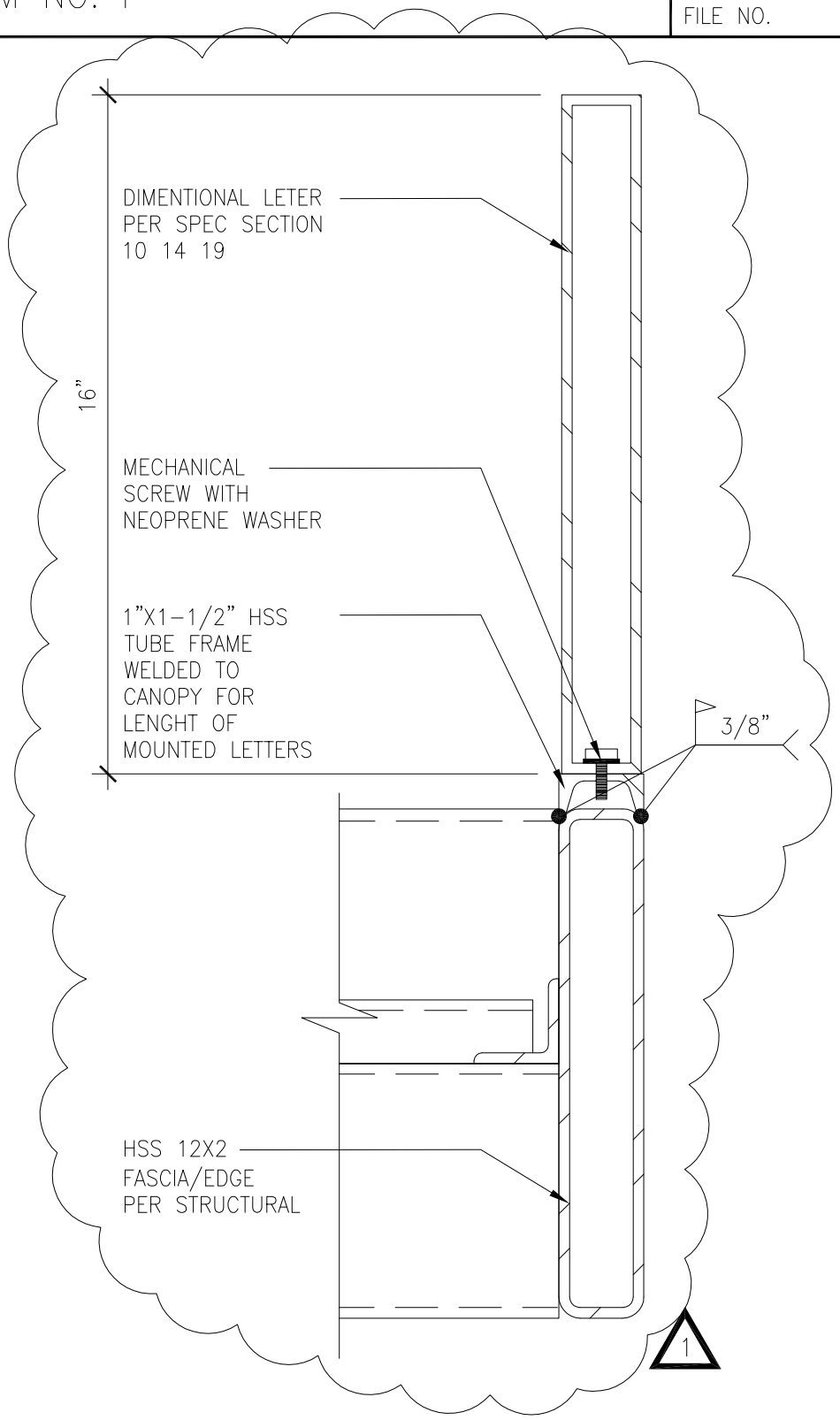
ADDENDUM NO. 1

DSA APPL. NO. 04-113642

FILE NO. 36-H7



LICENSED ARCHITECT
STEPHEN A. WILKERSON
No. C-24423
EXPIRATION 06-30-15
STATE OF CALIFORNIA

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Drawing Title: DIMENTIONAL LETTERS ON CANOPY

Reference Drawing: K15\A10.20

Scale: N.T.SS

SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

INDIAN SPRINGS ATHLETIC COMPLEX

INDIAN SPRINGS HIGH SCHOOL
650 N. DEL ROSA DRIVE
SAN BERNARDINO, CA 92410

Project No. 3137103.106

Date: 11/18/14

AD - 1.05

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