

## ADDENDUM TO THE CONTRACT DOCUMENTS

	ADDENDUM NO. 001
	Project: Solano Community College District Early College High School Portables Project Project Number: 20-012.1
	Date: July 16, 2020

**Addendum No. 001 – The following clarifications are provided and must be added/considered when completing your bid:** Acknowledgement of receipt of this **Addendum No. 001**, is required on the Bid Form. Please clearly note the addendum date and number.

### **ITEM NO. 1 – Modifications to the Project Documents**

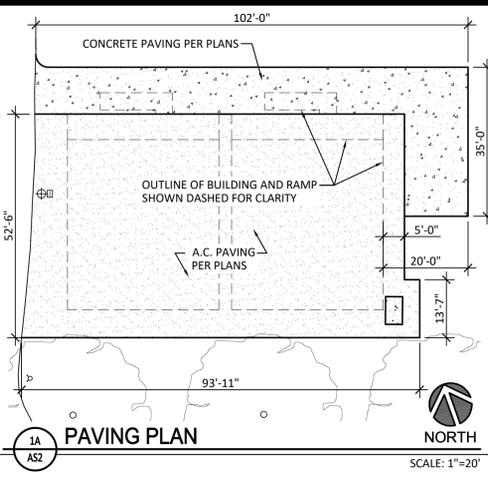
- 1** One projector mount shall be mounted above the ceiling in each classroom. Coordinate Location with the District. The projector mount shall be Peerless-AV CMJ500R1. See sheet AS2 and detail 1B/AS3.
- 2** Revised Building Grounding Detail G, to show building electrical panel as an interior mounted panel. Revised Typ. Conduit to IDF Detail J to show only the 12 strand single mode fiber optic cable in 1-1/2" conduit. See sheet E1.2.
- 3** Revised Fire Alarm Scope of Work. See sheet E1.3.
- 4** Revised Numbered Notes 11 and 13 to have 1" inner duct in lieu of 1-1/2". Added to Numbered Note 6 to direct contractor to x-ray the concrete slab and coordinate conduit routing in field with General Contractor (G.C.), Construction Manager (C.M.) and College District Electrical Department. See sheet E2.0.
- 5** Revised Enlarged Power Plan A/E3.0. Added a ceiling receptacle for a projector in each Portable Classroom and added Numbered Note 12. Revised Numbered Note 4 informing contractor to install a 20 amp, 120 volt, 1 phase in electrical panel for projector. Revised Numbered Note 6 informing the contractor to provide new IDF cabinet, fan kit and install on plywood backboard per detail C/E1.1. Revised Enlarged Signal Plan B/E3.0. Revised ceiling data cabling to (2) CAT6A cables in lieu of (1) CAT6 and (1) CAT6A cable. Revised the number of data cables at the back of the classroom, on the East and West walls to (4) data cables in lieu of (2) data cables per College District IT Department request. Added an exterior wireless access panel

(WAP) enclosure and CAT6A data cable. Added Numbered Note 13 to address the exterior WAP enclosure. See sheet E3.0.

- 6 Revised the Data Communication spec to reflect the IDF rack manufacturer and model number the College District IT Department requested to be installed for this project. See sheet E4.3.

**List of Attachments:** Sheets AS2, AS3, E1.2, E1.3, E2.0, E3.0, and E4.3

END OF DOCUMENT



**GENERAL NOTES**

- FOR EXTENTS OF PAVING UNDER BUILDINGS AND RAMP, SEE ALSO 1A AS2
- SAWCUT CONCRETE WALKS FOR UNDERGROUND LOW VOLTAGE CABLE. REPLACE CONCRETE WALK TO MATCH (E). COMPACT BASE TO 95% DOWEL NEW TO (E) PER 4D AS3

**LEGEND**

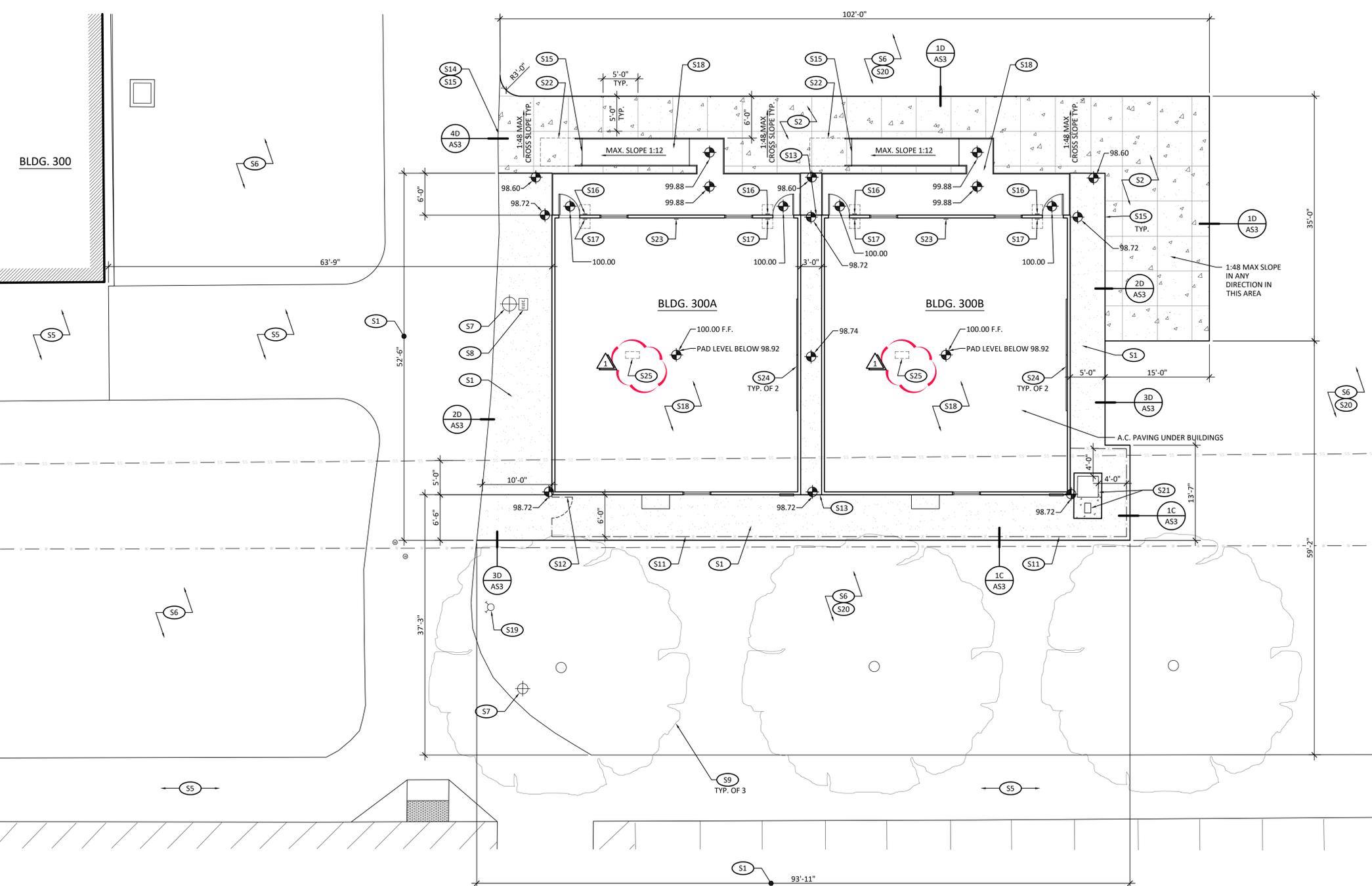


**SITE PLAN KEYNOTES**

- S1 2" A.C. PAVING OVER 6" CLASS 2 AGGREGATE BASE COMPACTED TO 95%. PROVIDE SLOPE FOR DRAINAGE ACROSS ENTIRE PAD.
- S2 CONCRETE PAVING. SEE 5D AS3
- S3 (E) SANITARY SEWER LINE. F.V. LOCATION
- S4 (E) WATER LINE. F.V. LOCATION
- S5 (E) CONCRETE PAVING TO REMAIN
- S6 (E) TURF TO REMAIN. SEE DISTURBED AREAS TO MATCH (E)
- S7 (E) LIGHT POLE FIXTURE TO REMAIN
- S8 (E) IN-GROUND ELECTRICAL BOX TO REMAIN
- S9 (E) TREE. TRIM BRANCHES THAT OVERHANG BUILDING. CONSULT WITH A LICENSED ARBORIST. COORDINATE WITH DISTRICT
- S10 NOT USED
- S11 6'-0" HIGH CHAINLINK FENCE. SEE 4C AS3

- S12 3'-0" WIDE CHAINLINK GATE. SEE 3C AS3
- S13 T1-11 PLYWOOD CLOSURE PANEL FROM 1" ABOVE PAVING TO UNDER SOFFIT ABOVE. PAINT TO MATCH BLDG.
- S14 MATCH (E) GRADE
- S15 FLUSH TRANSITION
- S16 ROOM IDENTIFICATION SIGN WITH 18"x18" FLOOR CLEARANCE. SEE SPECS AND 4B AS3
- S17 EXIT SIGNAGE WITH 18"x18" FLOOR CLEARANCE. SEE SPECS AND 5B AS3
- S18 WILLIAMS SCOTSMAN MODULAR CLASSROOM BUILDING WITH ACCESSIBLE RAMP AND LANDING. SEE ATTACHED PC DRAWINGS.
- S19 (E) FIRE HYDRANT
- S20 MODIFY (E) IRRIGATION SYSTEM AS REQUIRED TO MAINTAIN (E) LANDSCAPING. IRRIGATION PIPING AND HEADS TO MATCH (E). SEED DISTURBED AREA MIN. 5 FT. WIDE BAND AROUND PAVING WITH GRASS MIX TO MATCH TO (E)
- S21 TRANSFORMER AND DISTRIBUTION PANEL ON CONCRETE HOUSEKEEPING PAD. SEE ELECTRICAL SHEETS.
- S22 6'-0" LONG LEVEL LANDING AT BASE OF RAMP
- S23 OCCUPANT LOAD SIGN

- S25 PROJECTOR MOUNT ABOVE CEILING. COORDINATE LOCATION WITH DISTRICT. SEE 1B AS3
- S26 8'W x 4'H WHITEBOARD. COORDINATE LOCATION WITH DISTRICT. SEE 3B AS3



**AREA / OCCUPANT LOAD ANALYSIS**

PER DSA IR A-26 SECTION 1.1, GENERAL EDUCATION CLASSROOMS SHALL HAVE AN OCCUPANT LOAD FACTOR OF 20 (NET).

AREA/USE	S.F. (NET)	LOAD FACTOR	OCC LOAD TOTAL PER BLDG.
300A	1,368	1/20	69
300B	1,368	1/20	69

**EXITING - BLDG. 300A**

PER CBC 2019 1006.2.1, MINIMUM EXITS REQUIRED = 2  
MIN. DOOR WIDTH REQUIRED = 32" CLEAR

EXITS PROVIDED = 2

TOTAL EXITING WIDTH REQUIRED	= OCCUPANT LOAD MULTIPLIED BY 0.2 = 69 x 0.2 = 13.8" REQUIRED
TOTAL EXITING WIDTH PROVIDED	= 2 EXITS @ 3'-0" TOTAL = 72" CLEAR = 72" > 13.8" = OK

**EXITING - BLDG. 300B**

PER CBC 2019 1006.2.1, MINIMUM EXITS REQUIRED = 2  
MIN. DOOR WIDTH REQUIRED = 32" CLEAR

EXITS PROVIDED = 2

TOTAL EXITING WIDTH REQUIRED	= OCCUPANT LOAD MULTIPLIED BY 0.2 = 69 x 0.2 = 13.8" REQUIRED
TOTAL EXITING WIDTH PROVIDED	= 2 EXITS @ 3'-0" TOTAL = 72" CLEAR = 72" > 13.8" = OK

1D AS2 ENLARGED SITE PLAN  
SCALE: 1/8"=1'-0"



**HMRARCHITECTS**

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DSA #02-118411  
FILE #48-C1

EARLY COLLEGE  
HIGH SCHOOL  
PORTABLES  
SOLANO COMMUNITY  
COLLEGE  
4000 SUISUN VALLEY RD.  
FAIRFIELD, CA 94534

DSA SUBMITTAL SET

**REVISIONS**

NO.	DESCRIPTION	DATE
ADDENDUM 2		6/22/2020

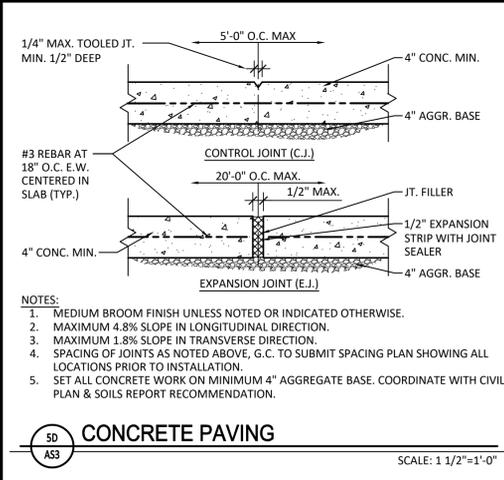
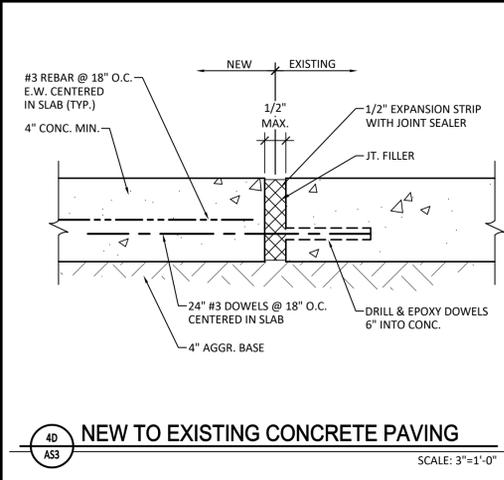
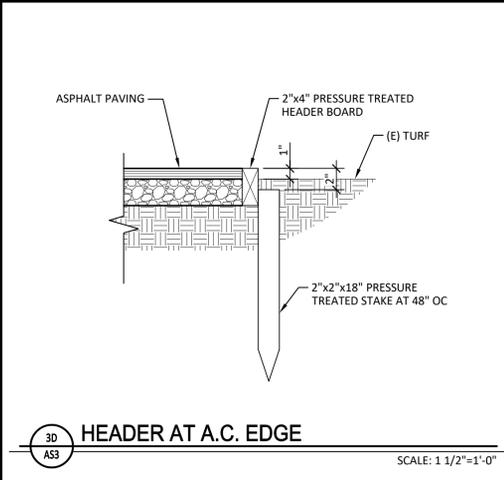
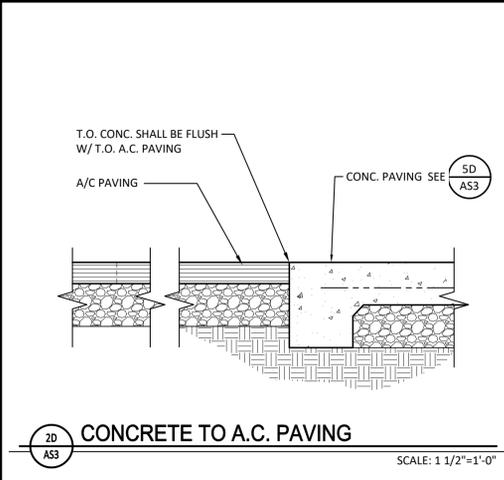
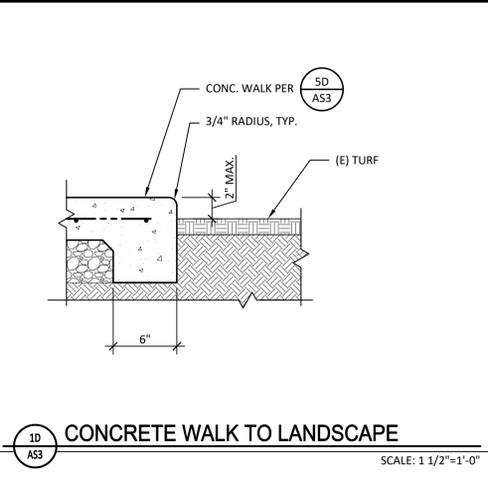
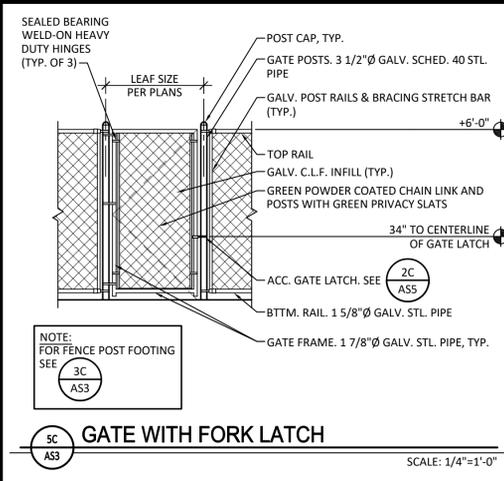
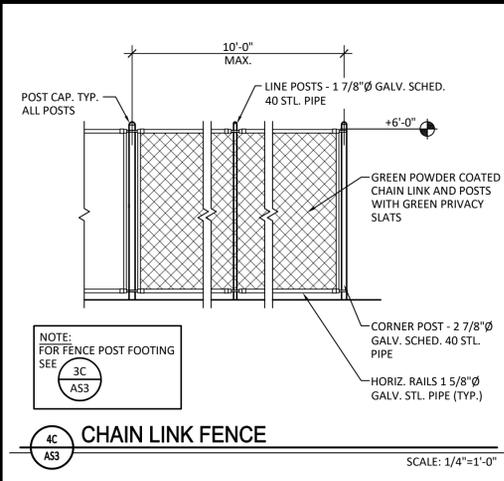
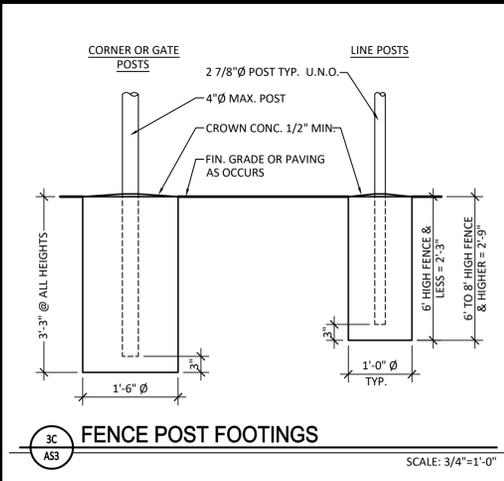
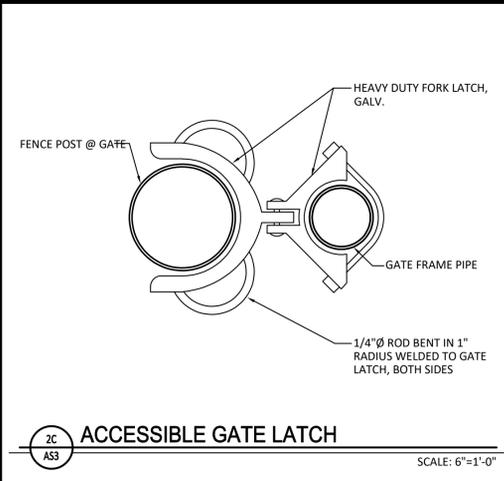
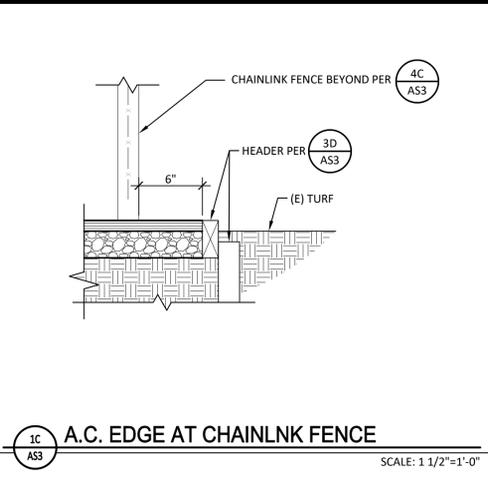
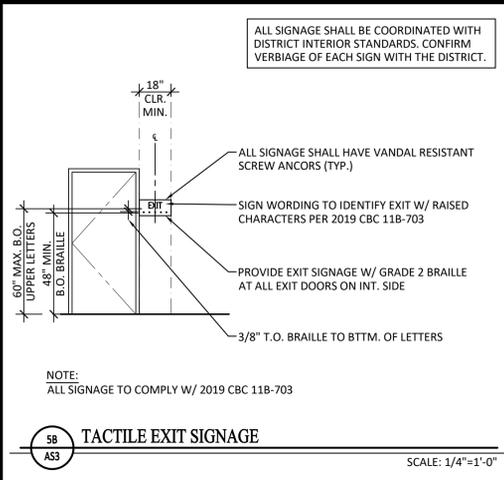
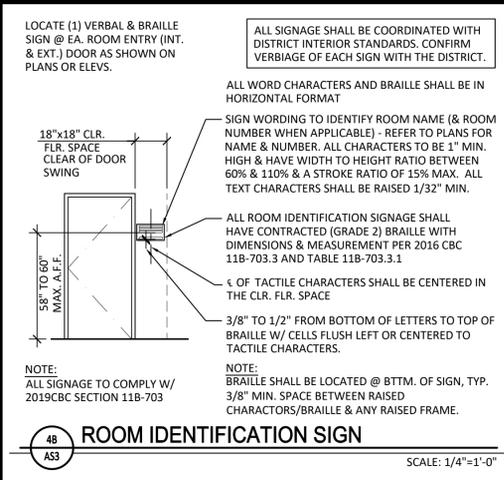
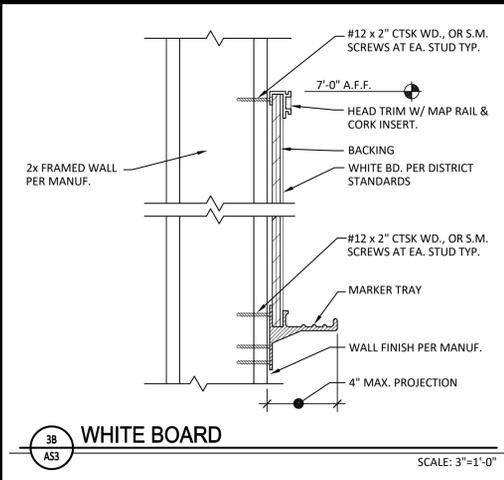
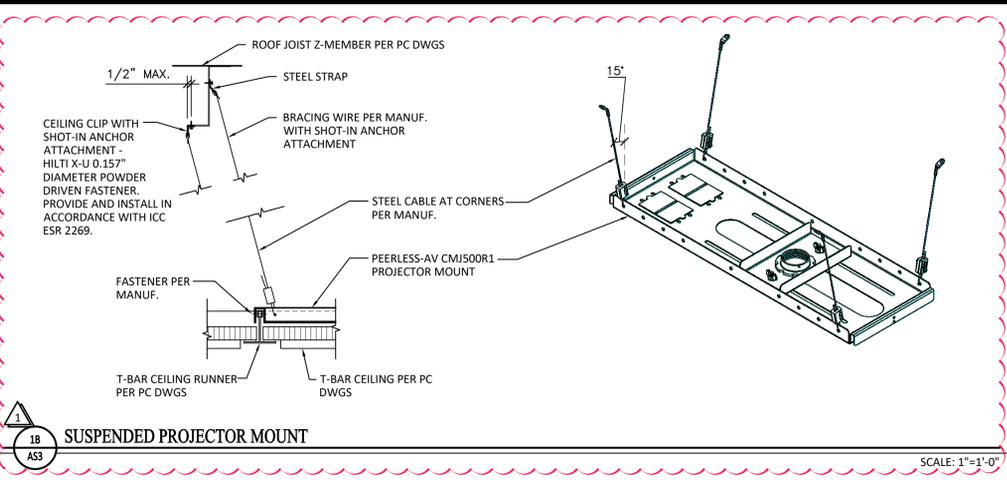
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ENLARGED SITE PLAN

JUNE 1, 2020

DRAWN BY:  
CHECKED BY:  
JOB NO. 20016

AS2



DSA #02-118411  
 FILE #48-C1  
 EARLY COLLEGE  
 HIGH SCHOOL  
 PORTABLES  
 SOLANO COMMUNITY  
 COLLEGE  
 4000 SUISUN VALLEY RD.  
 FAIRFIELD, CA 94534

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REVISIONS

NO.	DESCRIPTION	DATE
ADDENDUM 2		6/22/2020

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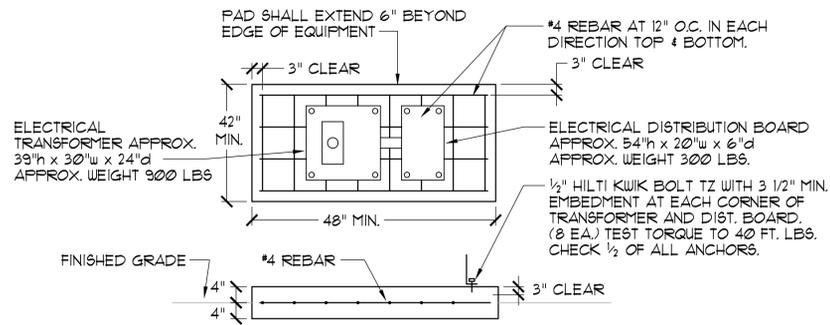
DETAILS

JUNE 1, 2020

DRAWN BY:  
 CHECKED BY:  
 JOB NO:  
 20016

AS3

6/19/2020 12:32 PM MARISSAO E:\SOLANO CC\20016 EARLY COLLEGE PORTABLES\02\_SECT\_AS3\_DETAILS.DWG



**NOTES**

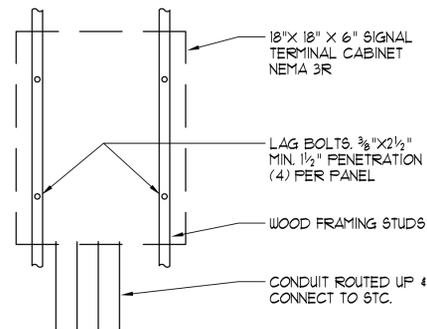
- SPECIAL INSPECTION IS REQUIRED FOR CONCRETE TESTING. CONCRETE COMPRESSIVE STRENGTH IN 28 DAYS, 3000 PSI
- SPECIAL INSPECTION IS NOT REQUIRED FOR CONCRETE MIX DESIGN.
- SPECIAL INSPECTION IS NOT REQUIRED FOR IDENTIFY, SAMPLE AND TESTING REINFORCING STEEL. SEE NOTE 1.
- DEFORMED REINFORCING STEEL, ASTM A615 GR. 40
- TRANSFORMER SHALL BE NEMA 3R WITH WEATHERPROOF SHIELD.
- THE EQUIPMENT SIZES ARE APPROXIMATE AND WILL BE DETERMINED BY THE MANUFACTURER THE CONTRACTOR USES.
- PROVIDE CERTIFIED MILL REPORTS TO INSPECTOR OF RECORD FOR SHIPMENT OF REINFORCEMENT.

**TRANSFORMER & DIST. BD. PAD DETAIL**

SCALE: NONE

**C**

**E1.2**

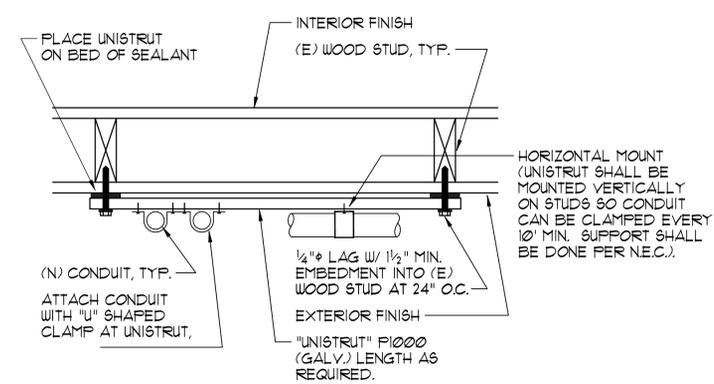


**SIG. TERM. CAB. MOUNTING**

SCALE: NONE

**B**

**E1.2**



**NOTES:**

- AT CMU WALL OR CONCRETE WALL, ATTACH UNISTRUT WITH ROMSET/REDHEAD 1/4" SHN-1413 SLEEVE ANCHOR (1 1/8" MIN. EMBEDMENT).
- AT METAL STUD WALL, ATTACH UNISTRUT WITH #12 X 2" LONG SELF TAPPING SCREW (GALV.), AND WITH NEOPRENE (OVER-SIZED) WASHERS.
- ALL HORIZONTAL AND VERTICAL UNISTRUT FOR MOUNTING SHALL BE A MINIMUM OF 12" LONG.

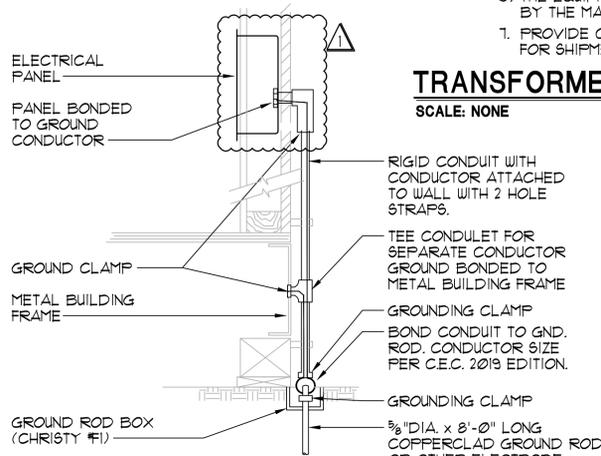
**CONDUIT SUPPORT DETAIL (WALL)**

SCALE: NONE

(VERTICAL & HORIZONTAL)

**A**

**E1.2**



**NOTES:**

- SIZE OF CONDUCTORS SHALL COMPLY WITH 2019 C.E.C.
- BOND TO SEPARATE CONDUCTORS FROM GROUND ROD TO ELECTRICAL PANEL, METAL BUILDING FRAME & RAMP (2019 C.E.C.). GROUND TO METAL WATER PIPE EMBEDDED AT LEAST 10'-0" INTO THE SOIL IF AVAILABLE (C.E.C. 2019 EDITION).
- ALL MODULES OF METAL FRAME BUILDING SHALL BE ELECTRICALLY BONDED TOGETHER (BOLTING ONLY IS NOT ACCEPTABLE BONDING).
- CHECK RESISTANCE TO GROUND. IF RESISTANCE EXCEEDS 25 OHMS, INSTALL ADDITIONAL GROUND RODS WITH CONDUCTORS AS SHOWN SEPARATED AT LEAST 6'-0" UNTIL RESISTANCE IS REDUCED TO 25 OHMS OR LESS (C.E.C. 2019 EDITION).
- PROVIDE GAS AND WATER BOND.
- SITE INSPECTOR OF RECORD SHALL WITNESS AND VERIFY ALL TESTING.

**BUILDING GROUNDING DETAIL**

SCALE: NONE

**G**

**E1.2**

**POWER CONNECTION DETAIL**

SCALE: NONE

**F**

**E1.2**

**SIGNAL CONNECTION DETAIL**

SCALE: NONE

**E**

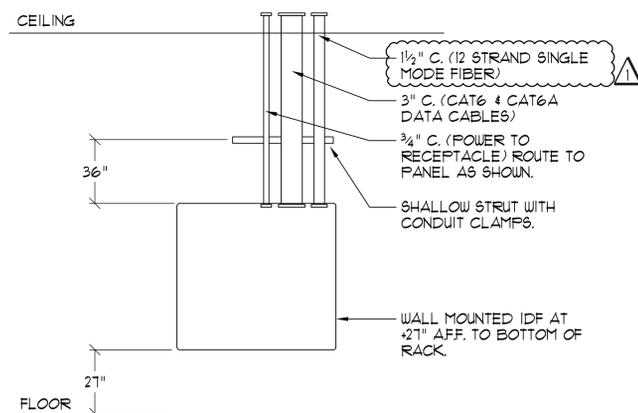
**E1.2**

**CONDUIT TRENCH DETAIL**

SCALE: NONE

**D**

**E1.2**

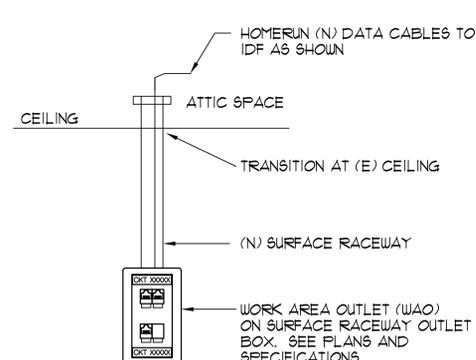


**TYP. CONDUIT TO IDF DETAIL**

SCALE: NONE

**J**

**E1.2**



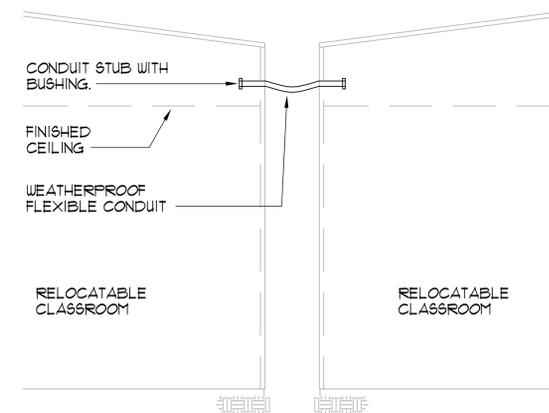
SEE FLOOR PLANS FOR EXACT WIRING NOTES AND OUTLET LOCATIONS.

**SURF. RACEWAY WALL MOUNTED**

SCALE: NONE

**I**

**E1.2**



**SIGNAL CONDUIT BETWEEN BUILDINGS**

SCALE: NONE

**H**

**E1.2**



**HMR ARCHITECTS**

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Date Signed: June 22, 2020



**DSA #02-118411**  
**FILE #48-C1**

**EARLY COLLEGE**  
**PORTABLES**

**SOLANO COMMUNITY**  
**COLLEGE**

**4000 SUISUN VALLEY RD.**  
**FAIRFIELD, CA 94534**

**DSA SUBMITTAL SET**

**REVISIONS**

NO.	DESCRIPTION	DATE
▲	Addendum 2	06/22/20

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ELECTRICAL DETAILS

JUNE 1, 2020

DRAWN BY:  
CHECKED BY:  
JOB NO.  
20016

**E1.2**

**EST3 FACP BATTERY CALCULATIONS**

Description	Qty	Standby Current (mA)	Total Standby (mA)	Alarm Current (mA)	Total Alarm (mA)
3-PPSM Power Supply	1	N/A	N/A	N/A	N/A
3-CPU1 Central Processor	1	70	70	80	80
3-FIB Fiber Optic Interface	1	100	100	100	100
3-LCD LCD Module	1	53	53	53	53
3-SSDC SIGA Controller *	1	195	195	233	233
3-12S1GY Annunciation Module	1	2	2	15	15
TOTALS	--	--	420	--	481

\* NOTE: The SIGA Device Controller is calculated with the maximum Signature addressable device load

Battery Requirement Calculation for 24 Hours Standby and 15 Minutes Alarm:  
 Ampere Hours = [(Standby Current x Time) + (Alarm Current x Time)] x Derating Factor  
 Ampere Hours = [(0.42A x 24 hrs) + (0.481A x 0.25 hrs)] x 1.2  
 Ampere Hours = 12.1

**BATTERIES SUPPLIED: (2) 12 Volts, 18 Ampere Hours (24 Volts, 18 Ampere Hours)**

VOLTAGE DROP CALCULATION							
WIRE GAUGE (# 12) R=0.00198 ohm/FT							
NAC CIRCUIT	A	B	C	D	% VOLTAGE AT LAST DEVICE (A-D)	AUDIO WATTS	
#1-1	20.4	0.336	110	0.15	0.72	20.25	2.03

**FIRE ALARM SYSTEM OPERATIONAL MATRIX**

CAUSE	EFFECT	ALARM AT	ACTIVATE	ACTIVATE	TROUBLE	DEACTIVATE	SYSTEM	SUPERVISING
		'FACP'	AUDIBLES	VISUALS	AT 'FACP'	AUDIBLES/VISUALS	NORMAL	STATION
MANUAL FULL STATION		X	X	X				X
SMOKE & HEAT DETECTORS		X	X	X				X
SYSTEM RESET						X	X	X
SYSTEM SILENCE						X	X	X
AC POWER FAILURE AT 'FACP'					X			X
F.A. TROUBLE (OPEN, SHORTS, OR GROUNDS) ON INITIATION, OR SIGNALING.					X			X

**FIRE ALARM NOTES**

1. THE AUTOMATIC ALARM SYSTEM SHALL BE INSTALLED, TESTED AND MAINTAINED IN ACCORDANCE WITH THE STATE FIRE MARSHAL'S REGULATIONS & 2019 CBC SEC. 907.
2. THE FIRE ALARM SYSTEM SHALL CONFORM TO CAL. ELEC. CODE AND ARTICLE 91. INSTALLATION OF THE SYSTEM SHALL NOT BEGIN UNTIL DETAILED PLANS AND SPECIFICATIONS, INCLUDING CSM LISTING NUMBERS FOR EACH COMPONENT, HAVE BEEN APPROVED BY DSA. UPON COMPLETION OF THE INSTALLATION, A TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE DSA INSPECTOR OF RECORD.
3. THE ALARM SYSTEM SHALL ACTIVATE A MEANS OF WARNING THE HEARING IMPAIRED. FLASHING VISUAL WARNINGS SHALL HAVE A FLASH RATE NOT EXCEEDING TWO FLASHES PER SECOND (2 HZ) NOR BE LESS THAN ONE FLASH EVERY SECOND (1 HZ). STROBE SIGNALING DEVICES FOR THE HEARING IMPAIRED SHALL BE STATE FIRE MARSHAL APPROVED AND LISTED (NFFA T2, SEC. 10.5.2.1)
4. ALARM-INDICATING DEVICES OF A FIRE ALARM SYSTEM INTENDED TO ALERT ALL OCCUPANTS SHALL CAUSE A LEVEL OF AUDIBILITY OF NOT LESS THAN 15 dBA ABOVE THE AVERAGE AMBIENT NOISE LEVELS OR 5 dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF 60 SECONDS WHICH-EVER IS GREATER, MEASURED 5' ABOVE THE FLOOR. AMBIENT NOISE LEVELS MEANS THE LEVEL WHICH CAN NORMALLY BE EXPECTED WHEN THE FACILITY, BUILDING, ROOM, OR AREA IS FUNCTIONING UNDER NORMAL OPERATING OR WORKING CONDITIONS (NFFA T2, SEC. 10.4.3.1)
5. ALL FIRE ALARM CABLE SHALL BE INSTALLED IN 1/2" CONDUIT MINIMUM. ALL ROUTINGS SHALL BE CONCEALED. PROVIDE A FULL ROPE IN ALL UNUSED CONDUIT RUNS.
6. ALL STROBES SHALL BE SYNCHRONIZED TO FLASH AT THE SAME TIME WITH ONE ANOTHER PER 2016 NFFA T2.

**FIRE ALARM EQUIPMENT SCHEDULE**

SYMBOL	CATALOG #	DESCRIPTION	
FACP	EDWARDS EST3 PANEL WITH (1) 3-CPU3 (1) 3-LCD (1) 3-PPSM (1) 3-SSDC1 (1) 3-ZA40B (1) 3-CAB5 & BC-1 (1) 3-12/SIGY (1) 3-FIBMB2 (4) MMXVR	VOICE EVAC CONTROL PANEL CONNECTED TO CAMPUS WIDE NETWORK VIA FIBER OPTIC CABLE. SEPARATE BATTERY CABINET WITH (2) 180 AH BATTERIES	T165-1651:0186
E	EDWARDS SIGA-278	ADDRESSABLE MANUAL FULL STATION	T150-1651:0129
S	EDWARDS SIGA-OSD SIGA-9B	ADDRESSABLE SMOKE DETECTOR & BASE	T272-1651:0511 T300-1651:0120
CS	SYSTEM SENSOR 5602 WITH A SIGA-CTIHT	194" ATTIC HEAT DET. AND AN ADDRESSABLE MONITOR MODULE	T270-1653:0167 T300-1651:0121
ED	EDWARDS SIGA-CC16	ADDRESSABLE SYNC OUTPUT MODULE FOR NAC CIRCUIT.	T300-1651:0121
Y	EDWARDS GCHFWF-STVMC	CEILING MOUNTED SPEAKER/STROBE (15 CANDELA)	T320-1651:0211

**NOTES:**

1. THE (N) FIRE ALARM SYSTEM IS AN APPROVED FULLY AUTOMATIC VOICE EVAC SYSTEM WITH MANUAL DEVICES TO COMPLY WITH THE GREEN OAKS FAMILY ACADEMY ELEMENTARY SCHOOL FIRE PROTECTION ACT (SB 575).
2. FIRE ALARM AUDIBLES SHALL HAVE THE SAME BASIC SOUND & PATTERN & SOUND THE CALIFORNIA UNIFORM FIRE ALARM SIGNAL IN TEMPORAL MODE.
3. THE FIRE ALARM CONTROL PANEL SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFFA T2 AS AMENDED BY ARTICLE 91 OF THE CALIFORNIA FIRE CODE. THE SUPERVISING STATION SHALL BE LISTED AS EITHER UJFX OR UJUS BY UNDERWRITERS LABORATORY OR SHALL MEET THE REQUIREMENTS OF FACTORY MUTUAL RESEARCH APPROVAL STANDARD 3011.
4. ALL FIRE ALARM STROBES SHOWN ON PLANS SHALL BE ASSUMED TO BE 15 CANDELA (cd) STROBES, UNLESS OTHERWISE NOTED.

**FIRE ALARM CABLE SCHEDULE**

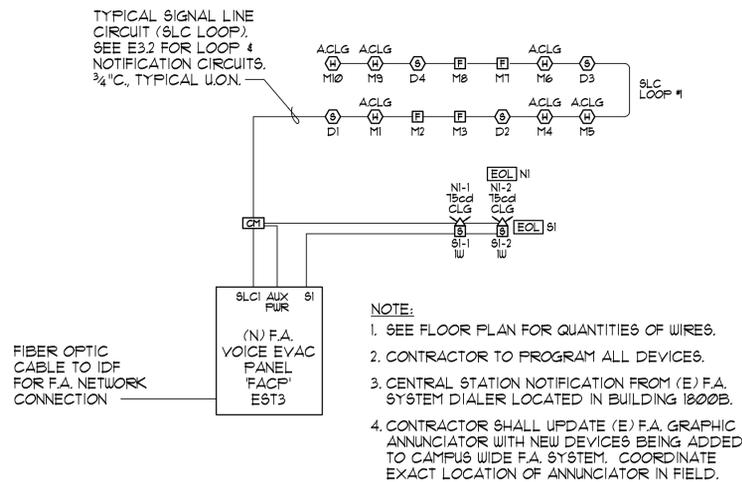
TYPE	DESCRIPTION
A	(2) #16 TWISTED/UNSHIELDED (F.A. SIGNALING LOOP CIRCUIT) WEST PENN #390.
B	(2) #12 THIN CU (F.A. NOTIFICATION APPLIANCE CIRCUIT)
C	(2) #14 TWISTED/SHIELDED (F.A. SPEAKER CIRCUIT) WEST PENN #395.

**FIRE ALARM SYSTEM NOTES**

1. F.A. SYSTEM SHALL CONFORM TO 2019 CALIFORNIA BUILDING CODE SECTION 907.2.3, 2019 CALIFORNIA ELECTRICAL CODE, ARTICLE 160 & NFFA T2, 2016 EDITION. COMPONENT SHALL BE AS SPECIFIED ON THE DRAWINGS. THE MANUFACTURERS FACTORY TRAINED AND AUTHORIZED REPRESENTATIVE SHALL PERFORM OR SUPERVISE THE INSTALLATION. UPON COMPLETION OF INSTALLATION, THIS PERSON SHALL EXECUTE A SATISFACTORY TEST OF THE ENTIRE SYSTEM IN THE PRESENCE OF THE DSA INSPECTOR. TESTING SHALL ALSO INCLUDE A BATTERY TEST. OPERATE SYSTEM FOR 24 HOURS WITHOUT INPUT POWER & PERFORM A (5) FIVE MINUTE ALARM TEST OF THE ENTIRE SYSTEM AT THE END OF 24 HOURS. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THE SYSTEM COMPLETE AND OPERATIONAL.
2. COMPLETE FIRE ALARM SUBMITTAL INCLUDED.
3. THE FIRE ALARM SYSTEM SHALL CONFORM TO NOTE #1 AND ALSO CONFORM TO SB 575. THE F. A. DEVICES SHALL BE AUTOMATIC AND MONITORED BY AN APPROVED SUPERVISING STATION THAT IS LISTED AS EITHER UJFX OR UJUS BY UNDERWRITERS LAB. OR SHALL MEET THE REQUIREMENTS OF FACTORY MUTUAL RESEARCH APPROVAL STANDARD 3011.

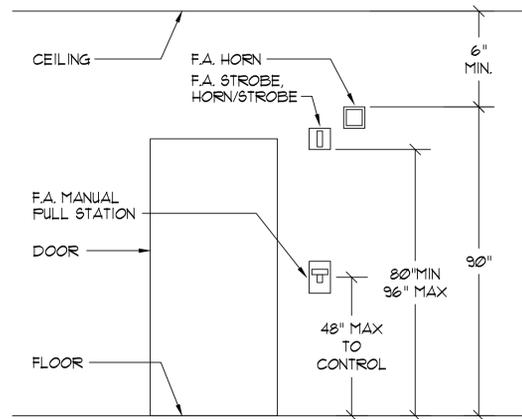
**FIRE ALARM SCOPE OF WORK**

THE COLLEGE IS GETTING (2) NEW 36" X 40" PORTABLES WITH A NEW FIRE ALARM VOICE EVACUATION SYSTEM. CONTRACTOR SHALL PROVIDE AND INSTALL A NEW FIRE ALARM SYSTEM FOR A COMPLETE & OPERATIONAL INSTALLATION.



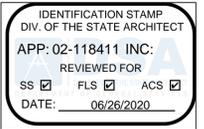
**FIRE ALARM RISER DIAGRAM**  
SCALE: NONE

B  
E1.3



**F.A. DEVICE ELEVATION DETAIL**  
SCALE: NONE

A  
E1.3



**HMR ARCHITECTS**

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Sacramento, CA 95818  
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Date Signed: June 22, 2020



**DSA #02-118411**  
**FILE #48-C1**

**EARLY COLLEGE**  
**PORTABLES**

**SOLANO COMMUNITY**  
**COLLEGE**

**4000 SUISUN VALLEY RD.**  
**FAIRFIELD, CA 94534**

**DSA SUBMITTAL SET**

**REVISIONS**

NO.	DESCRIPTION	DATE
1	Addendum 2	06/22/20

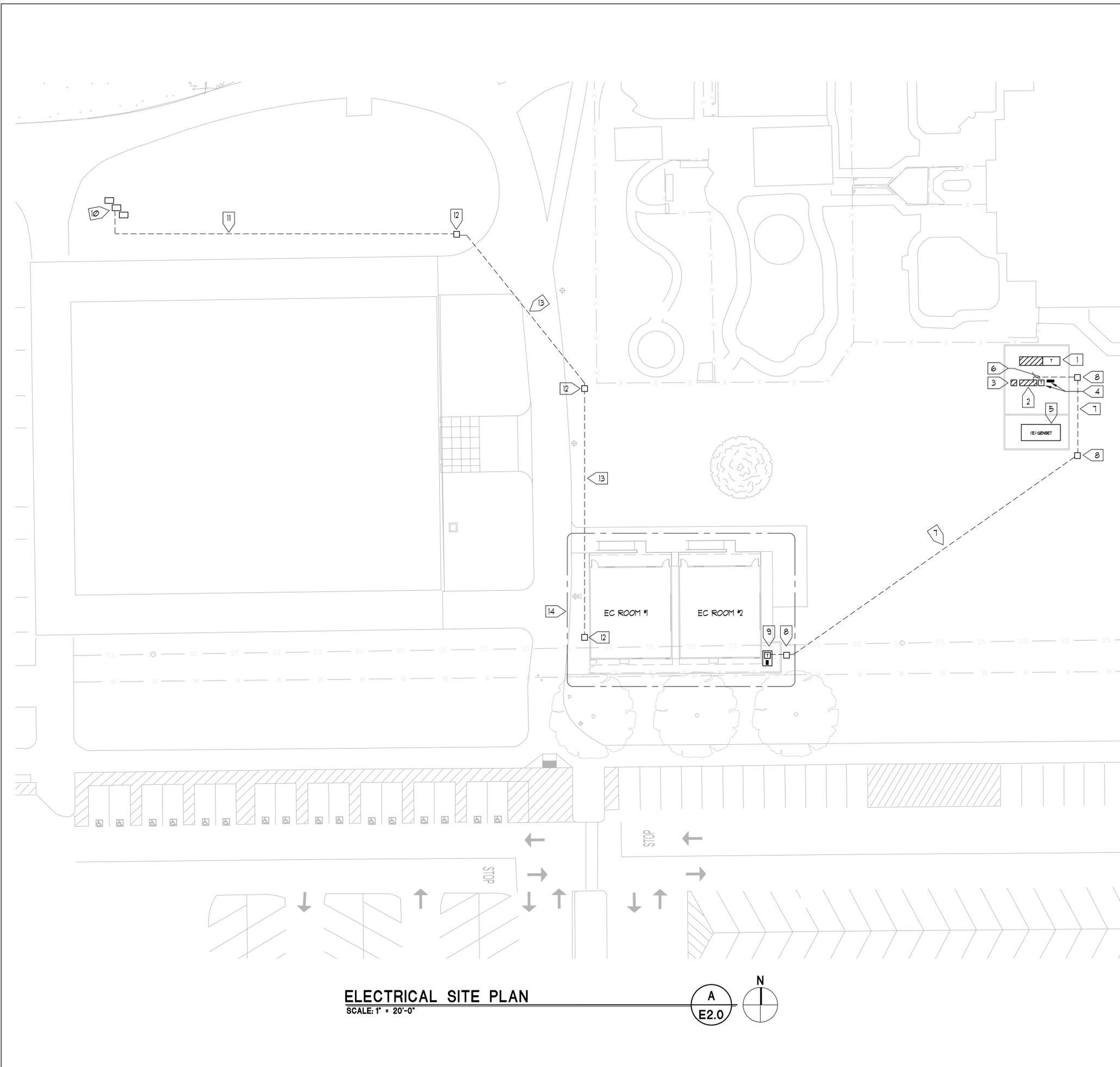
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**FIRE ALARM CALCULATIONS,**  
**SCHEDULES, NOTES & RISER**  
**DIAGRAM**

JUNE 1, 2020

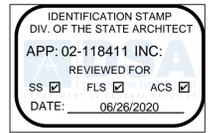
DRAWN BY:  
CHECKED BY:  
JOB NO.  
20016

**E1.3**



**NUMBERED NOTES**

- 1 (E) 4000 AMP, 480/277 VOLT, 3 PH., 4 W. SUBSTATION #4 SWITCHBOARD AND TRANSFORMER TO REMAIN.
- 2 (E) 1600 AMP, 480/277 VOLT, 3 PH., 4 W. SWITCHBOARD #4 TO REMAIN. SEE ONE LINE DIAGRAM A/E11.
- 3 (E) 800 AMP, 480 VOLT, ATS TO REMAIN.
- 4 (E) 75 KVA TRANSFORMER AND 200/120 VOLT, 3 PH., 4 W. PANEL 'L1' TO REMAIN.
- 5 (E) KOHLER GENERATOR TO REMAIN.
- 6 X-RAY THE CONCRETE SLAB. SAWCUT THE CONCRETE PAD AND ROUTE NEW ELECTRICAL FEEDER OUT THE BACK OF THE MAIN SWITCHBOARD, THEN TO BELOW GRADE AND OUT OF THE FENCED IN AREA TO PULL BOX AS SHOWN. SEE ONE LINE DIAGRAM A/E11 FOR SIZE & QUANTITY OF CONDUIT AND CONDUCTORS. COORDINATE EXACT ROUTING IN FIELD WITH G.C. C.M. AND COLLEGE DISTRICT ELECTRICAL DEPARTMENT. USE CAUTION WHEN SAW CUTTING AS THERE IS A GROUNDING RING IN THE PAD.
- 7 NEW ELECTRICAL FEEDER ROUTED BELOW GRADE BETWEEN PULL BOXES. SEE ONE LINE DIAGRAM A/E11 FOR SIZE & QUANTITY OF CONDUIT AND CONDUCTORS.
- 8 PROVIDE AND INSTALL A CHRISTY N36 PULL BOX (ELECTRICAL), REINFORCED CONCRETE LID AND EXTENSIONS. BACKFILL AROUND BOX TO MATCH CONDITIONS. PROVIDE BELL ENDS ON ALL CONDUITS IN BOX FOR CABLE PROTECTION.
- 9 NEW TRANSFORMER AND DISTRIBUTION PANEL 'PDI'. PROVIDE A CONCRETE HOUSEKEEPING PAD FOR THE TRANSFORMER AND PANEL. SEE DETAIL C/E12. SEE ONE LINE DIAGRAM A/E11 FOR SIZE & QUANTITY OF CONDUIT AND CONDUCTORS ROUTED FROM PULL BOX TO TRANSFORMER. SEE DISTRIBUTION PANEL SCHEDULE ON SHEET E11. SEE SHEET E3.0 FOR POWER FROM DISTRIBUTION PANEL TO EACH PORTABLE BUILDING.
- 10 (E) SIGNAL PULL BOX WITH 288 SINGLE MODE FIBER OPTIC (SMFO) TRUNK CABLE. PROVIDE A 12 STRAND SMFO CABLE AND CONNECT TO SMFO TRUNK CABLE. COORDINATE CONNECTION OF 12 STRAND SMFO CABLE TO TRUNK CABLE WITH COLLEGE IT DEPARTMENT.
- 11 FROM PULL BOX WITH SMFO TRUNK CABLE, ROUTE 12 STRAND SMFO CABLE IN (1) 2" CONDUIT WITH (1) INNER DUCT & PULL ROPE AND (1) 2" SPARE CONDUIT WITH PULL ROPE, BELOW GRADE TO NEW PULL BOX AS SHOWN. PROVIDE BELL ENDS ON CONDUITS IN PULL BOX FOR CABLE PROTECTION.
- 12 PROVIDE A CHRISTY N36 PULL BOX (COMMUNICATIONS), REINFORCED CONCRETE LID AND EXTENSIONS. BACKFILL AROUND BOX TO MATCH EXISTING CONDITIONS. PROVIDE BELL ENDS ON ALL CONDUITS IN BOX FOR CABLE PROTECTION.
- 13 FROM PULL BOX, ROUTE 12 STRAND SMFO CABLE IN (1) 2" CONDUIT WITH (1) INNER DUCT & PULL ROPE AND (1) 2" SPARE CONDUIT WITH PULL ROPE, BELOW GRADE TO NEW PULL BOX AS SHOWN. PROVIDE BELL ENDS ON CONDUITS IN BOX FOR CABLE PROTECTION.
- 14 NEW PORTABLE CLASSROOMS. SEE FLOOR PLAN SHEETS E3.0 & E3.1 FOR WORK REQUIRED IN THIS AREA.



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Date Signed: June 22, 2020



**DSA #02-118411**  
**FILE #48-C1**

**EARLY COLLEGE**  
**PORTABLES**  
**SOLANO COMMUNITY**  
**COLLEGE**

**4000 SUISUN VALLEY RD.**  
**FAIRFIELD, CA 94534**

**DSA SUBMITTAL SET**

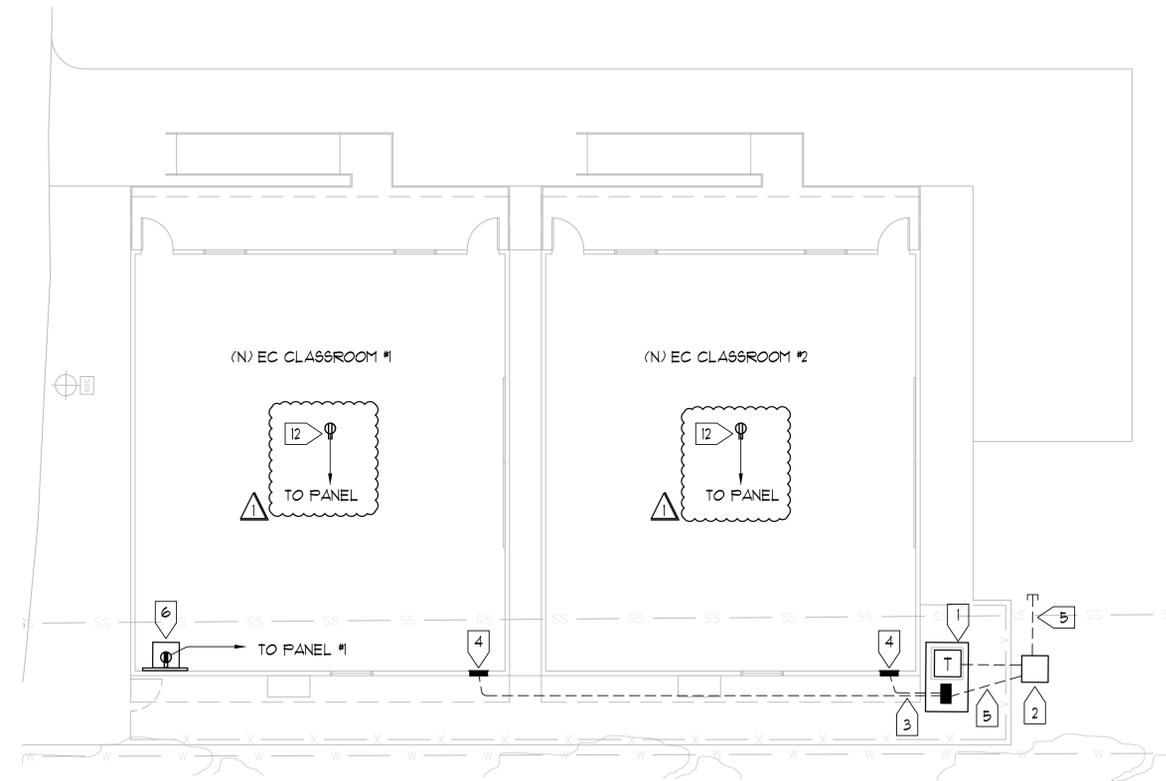
**REVISIONS**

NO.	DESCRIPTION	DATE
1	Addendum 2	06/22/20

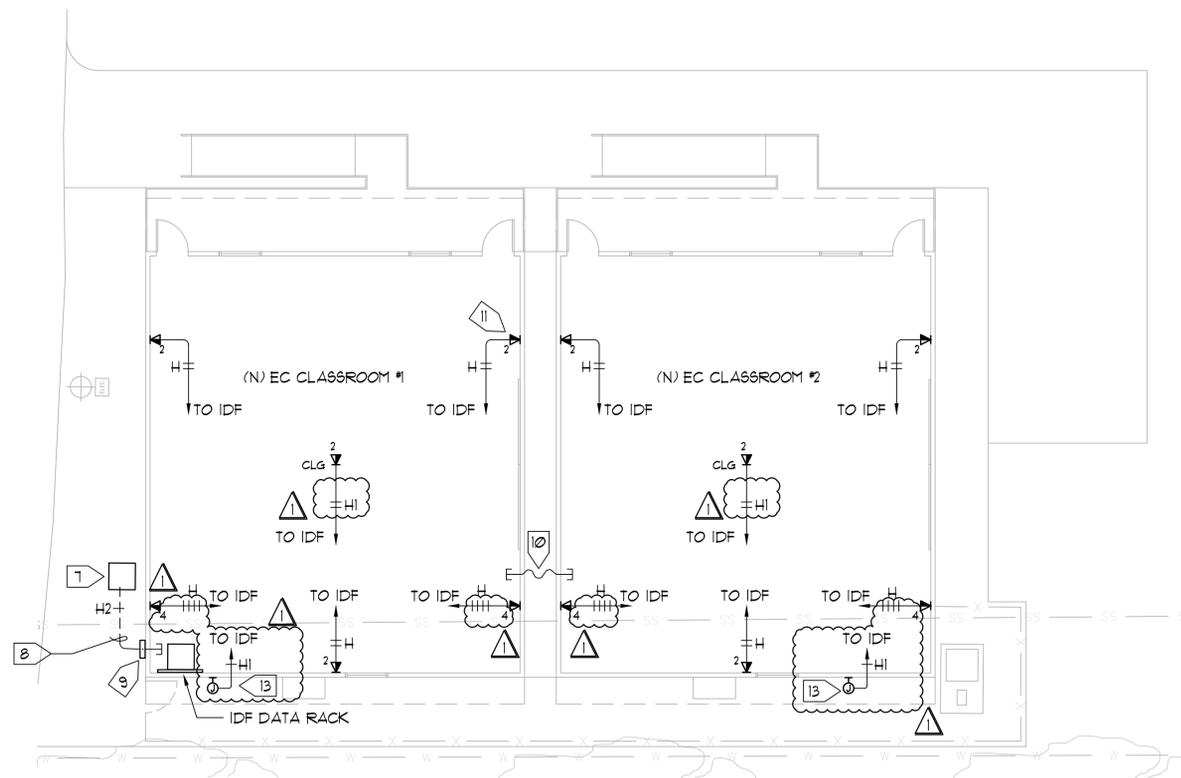
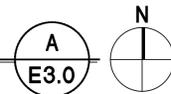
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**ELECTRICAL SITE PLAN & NOTES**

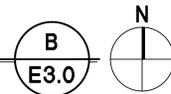
JUNE 1, 2020  
 DRAWN BY:  
 CHECKED BY:  
 JOB NO. 20016  
**E2.0**



**ENLARGED POWER PLAN**  
SCALE: 1/8" = 1'-0"



**ENLARGED SIGNAL PLAN**  
SCALE: 1/8" = 1'-0"



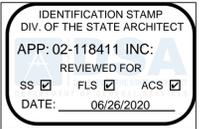
**NUMBERED NOTES**

- 1 NEW TRANSFORMER AND DISTRIBUTION PANEL 'DPI'. SEE SITE PLAN SHEET E2.0 AND ONE LINE DIAGRAM A/E11.
- 2 NEW POWER PULL BOX WITH ELECTRICAL FEEDER TO TRANSFORMER. SEE SITE PLAN SHEET E2.0.
- 3 ELECTRICAL FEEDER FROM DPI TO EACH PORTABLE BUILDING ELECTRICAL PANEL. SEE ONE LINE DIAGRAM A/E11 FOR SIZE & QUANTITY OF CONDUIT AND CONDUCTORS.
- 4 PORTABLE ELECTRICAL PANEL. PANEL IS SUPPLIED WITH THE BUILDING. PROVIDE A 120 VOLT, 1 PHASE, 20 AMP CIRCUIT BREAKER AND INSTALL IN PANEL SPACE FOR CEILING PROJECTOR RECEPTACLE. CONTRACTOR TO CONNECT FEEDER TO PANEL AND GROUND PANEL PER DETAILS F & G/E12 FOR A COMPLETE AND OPERATIONAL INSTALLATION.
- 5 PROVIDE (2) 2" CONDUITS WITH FULL ROPE FROM DISTRIBUTION PANEL AND ROUTE OVER TO PULL BOX AS SHOWN. FROM PULL BOX, ROUTE (2) 2" CONDUITS 5' OUT FROM BOX AS SHOWN AND CAP. CAP CONDUIT IN PULL BOX FOR FUTURE USE. USE CAUTION TO NOT HIT SEWER LINE WHILE TRENCHING.
- 6 NEW IDF DATA RACK. PROVIDE A CHATSWORTH THIN LINE II (36"H x 26"W x 8.5"D) #3050-T22 RACK WITH CHATSWORTH THIN LINE II FAN KIT #3051-001 AND INSTALL ON PLYWOOD PER DETAIL C/E11. IDF EQUIPMENT PROVIDED BY COLLEGE DISTRICT IT DEPARTMENT. PROVIDE 3/4" TYPE A-C PLYWOOD AND INSTALL TO WALLS AS SHOWN WITH SANDED SIDE EXPOSED. PROVIDE (3) COATS OF FIRE-RETARDANT WHITE PAINT. MOUNT RACK WITH BOTTOM AT +21" AFF. PROVIDE A DEDICATED 20 AMP RECEPTACLE FOR POWER TO UPS. COORDINATE EXACT NEMA CONFIGURATION WITH UPS AND DISTRICT IT DEPARTMENT. PROVIDE A 20 AMP, 1 POLE, CIRCUIT BREAKER AND INSTALL IN PORTABLE ELECTRICAL PANEL. ROUTE CIRCUITING TO PANEL AND CONNECT TO CIRCUIT BREAKER FOR A COMPLETE AND OPERATIONAL INSTALLATION.
- 7 SIGNAL PULL BOX. SEE SITE PLAN SHEET E2.0 FOR SIZE OF PULL BOX.
- 8 FROM PULL BOX, ROUTE 12 STRAND 9MFO CABLE IN (1) 2" CONDUIT WITH 1/2" INNER DUCT & FULL ROPE AND (1) 2" SPARE CONDUIT WITH FULL ROPE, BELOW GRADE OVER TO NEW RELOCATABLE AND ROUTE UP THE WALL TO NEW SIGNAL TERMINAL CABINET - STC. CONNECT CONDUITS TO STC. USE CAUTION TO NOT HIT SEWER LINE WHILE TRENCHING. SEE DETAIL E/E12 FOR CONDUIT ROUTING & SUPPORT.
- 9 PROVIDE A 18" X 18" X 6", LOCKABLE, NEMA 3R, SIGNAL TERMINAL CABINET AND INSTALL HIGH ON THE WALL. SEE DETAIL B & E/E12 FOR CONNECTION. FROM STC, STUB INTO ACCESSIBLE CEILING SPACE (2) 2" (SIGNAL) CONDUITS A MINIMUM OF 6" AND PROVIDE A BUSHING ON END OF CONDUITS TO PROTECT 9MFO SIGNAL CABLES. FROM STC, ROUTE 12 STRAND 9MFO CABLE INTO ATTIC AND OVER TO ABOVE IDF. ROUTE DOWN WALL IN 2" CONDUIT WITH 1/2" INNER DUCT TO NEW IDF RACK. CONNECT FIBER CABLE TO EQUIPMENT FOR A COMPLETE AND OPERATIONAL INSTALLATION.
- 10 PROVIDE (3) 2" FLEXIBLE, WEATHERPROOF CONDUITS FOR DATA & SIGNAL CABLES BETWEEN BUILDINGS TO ALLOW SEISMIC MOVEMENT OF BUILDING. SEAL EXTERIOR WALL PENETRATIONS WITH APPROVED SEALANT. STUB CONDUITS INTO EACH BUILDING A MINIMUM OF 6" AND PROVIDE A BUSHING ON END OF CONDUIT TO PROTECT LOW VOLTAGE SIGNAL CABLES. SEE FIRE ALARM PLAN A/E31 FOR FIRE ALARM CONDUIT.
- 11 PROVIDE WIREMOLD SURFACE RACEWAY AND ROUTE DOWN WALL TO SURFACE RACEWAY JUNCTION BOX WITH DATA OUTLETS. NUMBER OF RJ45 JACKS SHOWN FOR DATA AND VOIP PHONE. MOUNT NEAR RECEPTACLE. RECEPTACLE TO BE FURNISHED WITH BUILDING.
- 12 MOUNT RECEPTACLE ABOVE CEILING FOR POWER TO PROJECTOR. ROUTE CIRCUIT TO BUILDING ELECTRICAL PANEL AND CONNECT TO 20 AMP RECEPTACLE FOR A COMPLETE AND OPERATIONAL INSTALLATION.
- 13 PROVIDE AN EXTERIOR WIRELESS ACCESS PANEL (WAP) ENCLOSURE WITH DATA CABLE FOR EXTERIOR WAP. TERMINATE DATA CABLE IN ENCLOSURE TO CONNECT TO WAP. COORDINATE EXACT EXTERIOR WAP ENCLOSURE WITH COLLEGE DISTRICT IT DEPARTMENT FOR A COMPLETE AND OPERATIONAL INSTALLATION. CAULK AROUND ENCLOSURE AND SEAL EXTERIOR WALL PENETRATION WEATHERPROOF.

**GENERAL DATA NOTES**

1. ALL DATA CABLES SHALL BE ROUTED BACK TO THE NEW IDF AS SHOWN. CONTRACTOR SHALL COORDINATE WITH COLLEGE DISTRICT IT DEPARTMENT FOR A COMPLETE & OPERATIONAL DATA SYSTEM FOR THE CAMPUS.
2. THE PHONE SYSTEM AT THE SCHOOL WILL BE A VOIP SYSTEM. COORDINATE WITH THE COLLEGE DISTRICT TO PROVIDE THE CORRECT PHONE FOR EACH CLASSROOM.

SIGNAL CABLE SCHEDULE	
TYPE	DESCRIPTION
H	CATEGORY 6 (DATA)
H1	CATEGORY 6A (WIRELESS ACCESS POINT - WAP)
H2	12 STRAND SINGLE MODE FIBER OPTIC (DATA BACKBONE)
PROVIDE AQUASEAL FOR UNDERGROUND CABLES. CONTRACTOR SHALL COORDINATE WITH COLLEGE IT DEPARTMENT FOR EXACT MANUFACTURER AND MODEL NUMBER OF SINGLE MODE FIBER OPTIC AND DATA CABLES.	



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Date Signed: June 22, 2020  
**SACRAMENTO ENGINEERING CONSULTANTS**  
 10555 Old Placerville Road  
 Sacramento, CA 95827-2523  
 Phone: (916) 368-4468  
 www.seccs.com  
 REGISTERED IN 50 STATES  
 Job No. 20209

**DSA #02-118411**  
**FILE #48-C1**

**EARLY COLLEGE**  
**PORTABLES**

**SOLANO COMMUNITY**  
**COLLEGE**

**4000 SUISUN VALLEY RD.**  
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**DSA SUBMITTAL SET**

**REVISIONS**

NO.	DESCRIPTION	DATE
1	Addendum 2	06/22/20

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**ENLARGED POWER, SIGNAL**  
**PLANS & NOTES**

JUNE 1, 2020

DRAWN BY:

CHECKED BY:

JOB NO.

20016

**E3.0**

PART 1 - GENERAL

- 1.1 WORK INCLUDED
A. Drawings and requirements of Division 01 and Section 26 05 00 apply to all work of this Section.
B. Furnish and install extensions to existing Data Communications System including all wiring and connections and other materials as shown on Plans and specified herein.
1. Report percentage of work complete on a weekly basis.
2. Completely coordinate with work of all other trades.
3. Provide all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation, whether specifically indicated in the Contract Documents or not.
C. The work covered by the Contract Drawings and the specifications covers a complete installation, including both basic and channel links, for a Data Communications Network utilizing copper and optical fiber transmission media, including but not limited to:
1. Category 6 horizontal cabling.
2. Category 6 horizontal cabling.
3. Optical fiber cables for data network backbones.
4. Telecommunications outlets and connectors.
5. Equipment mounting racks and cabinets.
6. Category 6 modular patch panels.
7. Category 6 modular patch panels.
8. Optical fiber cabinets.
9. Optical fiber connectors.
10. Category 6 patch cables.
11. Category 6 patch cables.
12. Category 6 station cables.
13. Optical fiber jumpers.
14. Optical fiber and copper cable installation, testing and documentation.
15. One Cat 6 and one Cat 6a data jack at each wireless access point location.
16. All wireless access points will be furnished by the District and installed by the contractor.

1.2 RELATED DOCUMENTS

- A. Code Requirements: Components and installation to meet latest rules and regulations for telecommunications cable systems of the California Building Code and California Code of Regulations, Title 24, Part 3, California Electrical Code.
B. Applicable Standards (including all addenda, errata, amendments, etc.):
1. TIA-455-78-B, FOTP-78 IEC 60793-1-40 Optical Fibers - Part 1-40: Measurement Methods and Test Procedures - Attenuation
2. ANSITIA-568-D, Commercial Building Telecommunications Cabling Standard
3. ANSITIA-568-C.2, Balanced Twisted-Pair Telecommunication Cabling and Components Standards
4. ANSITIA-568-3.0, Optical Fiber Cabling Components Standard
5. ANSITIA-569-D, Telecommunications Pathways and Spaces
6. ANSITIA-606-C, Administration Standard for Telecommunications Infrastructure
7. BICSI/NECA-607, Standard for Telecommunications Bonding and Grounding Planning and Installation Methods for Commercial Buildings
8. ANSITIA-758, Customer-Owned Outside Plant Telecommunications Infrastructure Standard
9. IEEE 802.3, Ethernet
10. TIA TSB 62, Informative Test Methods (ITMS) for Fiber-Optic Fibers, Cables Opto-Electronic Sources and Detectors, Sensors, Connecting and Terminating Devices and Other Fiber-Optic Components
11. EIA TSB 63, Reference Guide for Fiber Optic Test Procedures
12. BICSI ITSIMM, Information Technology Systems Installation Methods Manual
13. BICSI TDDM, Telecommunications Distribution Methods Manual

1.3 GENERAL REQUIREMENTS

- A. The owner reserves the right to require the Contractor to remove from the project any such employee the Owner deems to be incompetent, careless or insubordinate.
B. All clean up activity related to work performed will be the responsibility of the Low Voltage Contractor and must be completed daily before leaving the site.

1.4 CONTRACTOR QUALIFICATIONS

- A. To qualify for installation of the data communications extensions, the Contractor must possess the required license classification, trade certifications, a performance history, experience in the installation and termination of fiber optics cable systems, and proof of time in business.
B. License Classification: Contractor must possess a valid C-7 or C-10 California State Contractor's License. This license must have been issued two years prior to the date of this bid. No other license classification is acceptable.
C. BICSI Certifications: Contractor will use personnel certified by the trade organization BICSI. The vendor must have a Registered Communications Distribution Designer (RCDD) on staff which will be ultimately responsible for this project. The RCDD must have sufficient experience in this type of project as to be able to lend adequate technical support to the field forces during installation, during the warranty period, and during any extended warranty periods or maintenance contracts. The vendor must attach a resume of the responsible RCDD to the vendor's submittal for evaluation. Should the RCDD assigned to this project change during the installation, the new RCDD assigned must also submit a resume for review by the District. The vendor must also have BICSI registered installer and technicians on staff and assign them to this project. The project shall be staffed with installers and technicians, who, in the role of lead craftsperson, will be able to provide leadership and technical resources for the remaining crafts persons on the project. A minimum of 30% of personnel shall be BICSI registered telecommunications installers.
A factory authorized Leviton Network Installer: The contractor shall have successfully completed the program certification requirements. A copy of the Authorized Network Installer Certificate shall be included in contractor's submittal.
D. Performance History: Contractor must have successfully performed at least three projects of similar scope, within two years of the date of this bid. Proof of performance shall be in the form of reference sheets which shall include a brief description of the project, the beginning and ending contract price, the project foreman or superintendent's name, and the name, address, and telephone number of a project contact.
E. Fiber Optics Experience: Contractor must be able to prove to the satisfaction of Owner that they have had significant experience in the installation of fiber optics cable systems. Installation must include installation of fiber optics cable in innerduct, fiber breakout systems, fiber termination, a knowledge of interconnect equipment, and a thorough knowledge of testing procedures. Contractor must provide a minimum of three references supporting its claim of experience for similar projects within the two years prior to this bid. Documentation must be included with the submittal documents.
F. Time in Business: Contractor must have been in business, and in the business of installing telecommunications/data communications systems, continuously, for a period of at least three years, prior to the date of this bid. Contractor must submit at least one project reference for each of the three years prior to the date of this bid. The contractor must also maintain a full time staff at an established business location having appropriate parts and service facilities and the ability to provide a one-hour response time to Folsom Cordova Unified School District. Any contractor that is not able to meet these requirements will not be considered as an acceptable contractor for this project.

1.5 DEFINITIONS

- A. Main Distribution Facility ( MDF ): The MDF is the location, within a building or complex of buildings, where the entire data communications system originates. It may include the physical location, enclosure, wire and cable management hardware, termination hardware, distribution hardware, and equipment racks. The MDF exists where shown on plans.
B. Intermediate Distribution Facility ( IDF ): The IDF is the location in a building where a transition between the backbone or vertical riser system and the horizontal distribution system occurs. It may include the physical location, enclosure, wire and cable management hardware, termination hardware, distribution hardware, and equipment racks. In this case, the IDFs are collocated with the CTBs (Computer Terminal Backboards) and provide the interface location between fiber distribution cable (backbone) and station cable (horizontal distribution).
C. Backbone Pathway: The backbone pathway consists of a series of conduits of chases, which connect the MDF to IDFs or IDFs to IDFs. It generally houses the vertical or backbone system.
D. Backboard: Backboard generally refers to the plywood sheathing lining the walls of data communications facilities. Backboard may also refer to the entire wall-mounted assembly, including wiring and equipment racks. In this case, the term Backboard is fully interchangeable with CTB and the equipment required to fulfill the scope of work below.

1.6 SYSTEM DESCRIPTION

- A. The data and telephone structured cabling communications system shall consist of three components: termination equipment, a fiber optics backbone, and copper twisted-pair Category 6 workstation cabling (voice and data). The central location houses the MDF and each of the other locations shall house an IDF. Each fiber optics cable shall originate in the MDF and shall be terminated in its respective IDF. All fiber optics cables shall be enclosed in innerduct. The combination of innerduct with fiber optic cable shall be routed through a system of conduits and raceway installed by the responsible contractor for that discipline, in accordance with the drawings. The drawings depict a typical conduit layout and fiber cable routing. From each IDF, one or more twisted-pair copper cables shall be routed to each data and telephone outlet location, either via routing established by the installing contractor or provided by Owner, within its respective building or buildings. These cables shall originate in an IDF and terminate in its respective data outlet location.

1.7 SCOPE OF WORK

- A. Contractor shall provide materials for and install complete wiring/cabling and conduit extensions in accordance with this specification and the drawings and include all necessary components, whether included in this specification or not.
B. The installation shall include cable (fiber optic and twisted-pair copper), innerduct, fiber interconnect equipment, connectors (fiber and copper), jumpers, patch cables, station cables, wiring blocks, and data communications outlets. The necessary material and equipment are depicted throughout the specifications and applicable drawings. Contractor is responsible to supply Owner with all necessary components, whether included in the specifications or drawings or not.
C. The work performed under this specification shall be of good quality and performed in a workmanlike manner. In this context, "good quality" means the work shall meet industry technical standards and quality of appearance. The Owner reserves the right to reject all or a portion of the work performed, either on technical or aesthetic grounds.

1.8 MANUFACTURER

- A. Contractor shall furnish and install all equipment, accessories, and materials necessary for a complete, functional fiber optics data distribution system in accordance with these Specifications and Drawings.
B. Throughout this specification, Leviton and other manufacturers are cited, along with specific part numbers. These products are District standards. Contractor may not provide alternatives.
C. Unless specified otherwise in the following, the equipment furnished shall fall into five classes. Exceptions are annotated [CLASS EXEMPT]. The five classes are as follows:
1. Class One: Fiber optics cable, copper cable (both station and backbone), fiber optic jumpers, copper patch cables, blocking kits, interconnect devices, wiring blocks, connectors (fiber and copper), and telecommunications outlets. Leviton, Optical Cable Corp., Superior Essex.
2. Class Two: Fiber innerduct. Corlan.
3. Class Three: Equipment racks and cabinets, CPI, Great Lakes.
4. Class Four: Wire management panels, Leviton, Panduit.
5. Class Five: Wire ties, printed labels, "D" rings, nuts, bolts, screws, and other miscellaneous hardware [CLASS EXEMPT].

1.9 SUBMITTALS AND SUBSTITUTIONS

- A. Within 14 calendar days after the date of the award of the contract, the Contractor shall submit to the Owner for review one electronic copy in pdf format of a complete submission. The submission shall consist of six major sections with each section separated with sheet showing title and section.
1. The first section shall be the "Index" which shall include the project title and address, name of the firm submitting the proposal, and name of the Architect. Each page in the submission shall be numbered chronologically and shall be summarized in the index.
2. The second section shall include a copy of the Contractor's valid C, 7 California State Contractor's License, the contractor qualifications information required in Section 1.4 above, and a list of instrumentation to be used for system testing.
3. The third section shall contain the comparative specification listing of any substitutions and a complete listing of the characteristics of the equipment in the specifications.
4. The fourth section shall contain samples of proposed cable markers and labeling.
5. The fifth section shall contain a complete, detailed satellite closet count, proposed floor plan and backboard plan, workstation count, and bill of materials.
6. The sixth section shall contain shop drawings showing front and side elevations of backboard and rack mounted equipment and interconnectors. Drawings shall be computer drafted and shall be part of submittals. Drawings shall show layout of all equipment at each location.
B. Refer also to Section 26 05 00 for other submittal requirements. Any contractor failing to include all required information shall be deemed non-responsive and may be disqualified, at the discretion of the Owner.
C. For purposes of determining conformity, technical and general information set forth on the respective data sheets by manufacturers named in Section 1.8 for each specified item shall be considered as part of these specifications and binding herein.
D. Two submittal reviews will be made by the Architect. Subsequent reviews will be charged to the Contractor. A rejection of a submittal or review of a partially presented submittal constitutes one submittal review.

1.10 RECORD DRAWINGS

- A. Refer to General Conditions. Final inspection will not be made until drawings are received and approved. Record drawings shall include as built one\_line and wiring diagrams, with terminations identified, wire color coding schedule, pull box locations, and conduit routing plans.

1.11 PRE-INSTALLATION CONFERENCE

- A. Schedule a conference a minimum of five calendar days prior to beginning work of this Section.
B. Agenda: Clarify questions related to work to be performed, scheduling, coordination, etc.
C. Attendance: Communications system installer/representative, Owner's Representatives, and other parties affected by the work of this Section.

1.12 GUARANTEE

- A. One firm to assume full responsibility for performance on all work of this section. Guarantee all equipment against defects in material and workmanship for two years, and provide on the premises service during normal working hours for two years, at no cost to purchaser if trouble is not caused by misuse, abuse, or accident, or at current labor rates if so caused. Provide manufacturer's written guarantee for equipment and parts to Owner.
B. Service shall normally be available within 24 hours from service department of authorized distributor of manufacturer by factory trained servicemen.
C. On the premises service at other than normal working hours to also be available, but labor charges for such calls to be paid by purchaser at current labor rates.

1.13 FUNCTION AND OPERATION

- A. Upon completion of the work outlined in this specification, the system shall be capable of transmitting data at a rate of 1gb/s (Category 6).
B. The fiber optics cable system shall be capable of transmitting signals with a bandwidth of up to 600 MHz at either 850 or 1300 nm. The cumulative signal loss through connectors, jumpers, couplers, and fiber cable shall be less than 10dB.
C. Work station cable, commencing at the wiring blocks, shall be installed in accordance with ANSI/EIA/TIA TSB standards and shall be capable of transmitting a signal at Category 6 level with acceptable attenuation losses and cross-talk attenuation. The entire workstation cable system, including wiring blocks, cable, and telecommunications outlets shall be tested for Category 6 compliance. The cabling system shall be channel tested to the standard for Cat 6.

PART 2 - PRODUCT AND INSTALLATION SPECIFICATIONS

2.1 GENERAL

- A. Throughout this Part 2, material quantities and minimum installation practices are given. These quantities and instructions are given for reference purposes only. It is the responsibility of the Contractor to provide appropriate quantities of materials and install them to manufacturer specifications as to provide a complete, functional system.

2.2 FIBER INNERDUCT

- A. Description: From the MDF to each IDF, segments of fiber optics innerduct shall be installed in the conduit system.
1. Product: Carlson Riser-Guard DG4XC1-500, 1\_14" Outside Plant Fiber Optics Innerduct with pull tape.

2.3 FIBER DISTRIBUTION

- A. Description: From the MDF to each IDF, a continuous segment of fiber cable(s) shall be installed. Routing shall be via conduit in accordance with electrical drawings. The cable shall not be extended more than 50' into the building interior unless endorsed in conduit.
1. Products:
a. Single Mode: Optical Cable Corp., DX012DSL59V, 12-strand single mode.
2. All fibers shall be terminated and connected at each computer rack location.
3. All fibers shall be terminated in type SC connectors (one SC connector for each end of fiber.):
a. Single Mode: Leviton SC Fusion Splice Connector, Single Mode, SPSCS-12A.

2.4 COPPER BACKBONE CABLE (EXCHANGE CABLE)

- A. Description: From the MDF to each IDF, a continuous segment 25 or 50 pair (or as required) outside plant cable shall be installed. This cable shall be routed along with the fiber optics cable. The cable shall be suitable for underground installation. Each end of each cable shall be "tamped", at the breakout point, to halt the flow of gel. Refer to Signal Cable Schedule on construction drawings for specified cable.

2.5 WORK STATION CABLE

- A. Description: From each IDF, 4 pair, Category 6 or 8a cables shall be routed to each work station (data outlets) served by the IDF. Cables shall be routed from the MDF to each workstation located in its building. Data outlet locations are depicted on the drawings and in the Outlet Summary.
1. Product:
a. Cat 6: Superior Essex NexGain Category 6 cable, 54-246-2A (riser/blue) and 54-246-9B (plenum/red). Where cable is to be installed in "wet" environments (underground conduit, conduit installed in or under concrete slabs, etc.), utilize Superior Essex OSP Broadband Category-6 BBD6, 04-001-68.
b. Cat 6a: Superior Essex 10Gain Category 6a cable, 64-272-4A (riser/white) and 64-272-3B (plenum/gray). Where cable is to be installed in "wet" environments (underground conduit, conduit installed in or under concrete slabs, etc.), utilize Superior Essex OSP Broadband Category-6 BBD6A, 04-001-4A.
c. All cables shall be Cat 6 except for wireless access points or where specifically called out as Cat 6a.

2.6 WALL PLATE

- A. Leviton QuickPort 2, 4, or 6-port wall plate with Designation ID Window, Stainless Steel, single-gang faceplate, 43090-1L2, 43090-1L4, or 43080-1L6. Provide blank filler for all unused ports.

2.7 MODULAR OUTLETS

- A. Cat 6: Leviton Category-6 eXtreme 6+ Connector, Crimson, 61110-RG6.
B. Cat 6a: Leviton Category 6a Xtreme Connector, Green, 6110G-RG6.

2.8 WIRELESS ACCESS POINT (WAP) OUTLET

- A. At each wireless access point outlet, provide a 2-port outlet. One port shall be Cat 6 and one shall be Cat 6a.

2.9 MAIN DISTRIBUTION FACILITY (MDF)

- A. Description: The MDF is existing and no work required at MDF.

2.10 INTERMEDIATE DISTRIBUTION FACILITY (IDF)

- A. Description: An IDF shall consist of a "fire-rated" plywood backboard, equipment rack or cabinet, fiber interconnect equipment, wire management, and wiring blocks. Contractor shall submit a floor plan and backboard/cabinet plan to Technology Services for approval prior to installation.
1. Products:
a. IDF Cabinet:
1) Chatsworth Thin Line II, #13050-722, 36"X 26"X 8.5" (4U, 68 lbs) with Chatsworth Thin Line II fan kit, #13051-001.
b. Fiber interconnect: Leviton 1000 SDX 1RU Distribution and Splice Enclosure, empty, with sliding tray, accepts up to three SDX duplex plates or three SDX MTP cassettes and accepts up to three splice trays. 5R1UM-S03. One interconnect unit is required for each IDF.
c. Modular Patch Panels:
1) Cat 6: Leviton QuickPort Patch Panel, 48-port, 49255-448. All patch panels shall be fully populated with Cat 6 modular outlets. One port for each Cat 6 workstation served from the IDF with a minimum of 12 spare ports required. If the number of workstation cables, plus required spare count (12) is greater than 48, then an additional 48-port patch panel is required. Supply and install as many patch panels in the IDF as necessary to service all workstation cables plus the required spare count. Supply and install sufficient modular outlets (see "Workstation Outlets" below) to meet required data outlet count plus six spare.
2) Cat 6a: Leviton QuickPort Patch Panel, 24-port, 49255-H24. All patch panels shall be fully populated with Cat 6a modular outlets. One port for each Cat 6a workstation served from the IDF with a minimum of 12 spare ports required. If the number of workstation cables, plus required spare count (12) is greater than 48, then an additional 48-port patch panel is required. Supply and install as many patch panels in the IDF as necessary to service all workstation cables plus the required spare count. Supply and install sufficient modular outlets (see "Workstation Outlets" below) to meet required data outlet count plus six spare.
d. Patch Cables:
1) Cat 6: Cat 6 Patch Cables: Leviton Atlas-X1 Cat 6 SlimLine boot patch cable, 5', orange, 6D560-050.
2) Cat 6a Patch Cables: Allen Tel snagless boot patch cable, 7', blue, ATG1007-8U.
3) Contractor shall purchase patch cables. (One patch cable is required for each patch panel termination.)
2. Required Accessories and Quantities:
a. Coupling Panels/Couplers:
1) Single Mode Coupling Panels/Couplers: Leviton SDX Precision Molded Plate (BLUE), single mode OS2, duplex SC, six fibers, zirconia ceramic sleeve, 5F100-6LC. Two single mode coupling panels are required for each IDF fiber interconnect unit installed.
b. Fiber Jumpers: One 2-meter SC-SC duplex single mode fiber jumpers is required for each IDF. CP Technologies, SC/SC laser-optimized OS2 fiber jumper, SC2-SMD-02; or Leviton SC-SC laser-optimized OS2 fiber jumper, UPDSC-S12.
Contractor prior to purchase of fiber jumpers for exact connector requirements (i.e., SC vs. LC).
c. Horizontal Wire Management: Panduit WMPHZ2 Closed Cover Wire Management Panel (19" covers). (One unit is required for each fiber interconnect.)
d. "D" Rings: Provide and install sufficient quantities of 2", 3", and 4" metallic "D" rings to conform to the drawings. Allen Tel GB13a (2"), GB13b (3"), and GB13c (4").

2.11 MISCELLANEOUS PRODUCTS

- A. Station Cables: Contractor shall purchase station cables. Station cables shall be 7" in length, blue in color, conforming to Category 6 protocol. (One station cable is required for each patch panel termination.) Leviton eXtreme Cat 6 SlimLine boot patch cable, 6D460-07L.
B. Data Terminal Backboard: Architectural grade, APA type A-C, Group 1, Exposure 1, with sanded side exposed, and shall be painted with three coats of fire-retardant white paint. It shall be 34" in thickness, height/width determined by location and/or size of work. Backboards shall be installed at MDF and IDF locations.
C. Cable Supports: B-Line BCH12: <16 cables, B-Line BCH21: 17-50 cables. Utilize variant of above part numbers to conform to specific installation requirements (e.g., for an I-beam, use the cable-to-beam variant, BCHxx-C2; for steel rod, use BCHxx-W2, etc.).
D. Hook and Loop Cable Ties: Panduit Tak-Tape hook and loop cable ties, 75", TTS-20R0.
E. Miscellaneous Hardware: Furnish and install all wire ties, D-rings, cable hangers, labels, nuts, bolts, screws, cable ties, etc. for a complete and functioning system.

PART 3 - EXECUTION

3.1 DIVISION OF WORK

- A. Contractor shall install the data communications system as described in this section. Installation shall result in a functional system pursuant to Section 3.3 below. The scope of work includes: (1) All necessary data components; (2) Repair of damage to structures incidental to installation; (3) Supply and install all material discussed in this specification; (4) Test and document system, upon completion; (5) Supply and install all material necessary, whether or not discussed in this specification, to result in a complete and functional system (except for electronic components, unless otherwise specified).

3.2 GENERAL

- A. Equipment shall be installed in accordance with drawings. General installation provisions are as follows:
1. Fiber Innerduct:
a. Quantities Required: Innerduct runs do not have to be continuous through, breaks are expected at the pullboxes. Contractor is responsible for determination of actual lengths of innerduct required. Enough innerduct shall be provided and installed to extend from the fiber service loop in the MDF to the fiber service loop in each IDF. If the route passes through a pullbox, the segments of innerduct shall extend 12" into the pullbox. If the route passes through an in-route IDF, each segment of innerduct shall extend at least 12" beyond the end of the service conduit. Seal all ends of the innerduct after the installation of the fiber is complete.
b. Fiber innerduct shall be installed in conduit in accordance with manufacturer's instructions and industry standards. Within the equipment rooms, the innerduct shall extend from the end of conduit to 4" above the floor or 2" from the ceiling and shall be affixed to the backboard by means of clamps designed for that purpose or 4" D-rings. Care shall be taken to avoid kinking the innerduct or applying excessive tension during the installation process.
2. Fiber Distribution: Installation shall be conducted following guidelines established by the product manufacturer and industry standards. Installation includes complete assembly.
a. Fiber Optic Cable:
1) All fiber optic cable shall be installed in innerduct.
2) Installation shall be conducted following guidelines established by the product manufacturer and industry standards. Installation includes complete assembly.
3) The optical fiber backbone shall be installed in a single, unbroken run, without splices or breaks. If splices are required, fusion splicing must be used. District must approve use of splices.
4) There shall be no more than two 90° bends in any run of conduit for a single pull.
a) Conduits shall enter into pullboxes at 45° (no 90° bends).
b) Provide a 10' service loop at each pullbox.
c) Cable shall be pulled independently down each conduit segment between pullboxes.
5) During installation of the fiber optic cable segments into the conduit system, special care shall be taken to avoid damage to the cable. While under pulling tension, the cable shall not be bent into a curve with a radius of less than 20 times the cable diameter. Pulling tension shall not exceed manufacturer's recommended maximum tensile load.
6) Contractor shall utilize a winch with tension control or a "break-away" link designed to break away at or below the recommended maximum tension.
7) The fiber optic cable shall be routed through the conduit and innerduct and onto the appropriate IDF backboard. Routing on the backboard shall be straight and plumb. A minimum 15' service loop shall be provided at each terminal location. Cable shall be routed on the backboard D-rings and secured to D-rings with cable ties. All cable shall be neatly bundled, combed, and tied.
3. Wiring Blocks and Wire Management Components: Should copper exchange cable be required by the drawings, it shall be terminated on rack mounted patch panels located on a dedicated equipment rack in such a manner that allows for neat and orderly cross connections. Standard 568 will be used for all terminations.
4. Fiber Optics Interconnect Equipment: Interconnect equipment shall be mounted in the equipment racks. Interconnect equipment mounted in racks shall be affixed to the rack by at least four screws. The screws shall be of the correct size and thread configuration for the holes in the rack. They shall be tightened to the extent that they hold the equipment firmly to the rack, without distorting the equipment or stripping the threads. All fiber optics interconnect devices shall be assembled and installed in accordance with the manufacturer's instructions and recommendations.
5. Patch Panels and Wire Management Components: Patch panels and wire management components shall be mounted on the equipment rack. Each device shall be mounted such that its horizontal dimension is level. Each device shall be affixed by means of screws suitable for fastening to the rack. The screws shall be of the correct size and thread configuration for the holes in the rack. A minimum of four of the mounting holes provided shall be utilized for fastening. Screws shall be tightened to the extent that they hold the device snug to the rack, but not so tight as to distort or damage the device. Patch panels shall be terminated in accordance with the manufacturer's instructions and recommendations. Installation of accessories shall also be conducted in accordance with the manufacturer's instructions and recommendations.
6. Labeling:
a. Patch panel terminations shall be labeled sequentially (i.e. First patch panel shall be numbered 1-48, second patch panel be numbered 49-96, etc.).
b. With the exception of work station cables, hand written labels are not acceptable. All labels shall be machine printed on clear or opaque tape, stenciled onto adhesive labels, or typewritten onto adhesive labels. The font shall be at least 1/8" in height. Block characters, and legible. The text shall be of a color contrasting with the label such that it may be easily read. If labeling tape is utilized, the font color shall contrast with the background. Patch panels shall exhibit workstation numbers, per District labeling scheme, for all workstations served by the MDF or IDF.
c. Each fiber optic cable segment shall be labeled at each end with its respective IDF identifier on both the cable ends and interconnect device coupling panel. Each fiber interconnect device shall be labeled with its respective IDF identifier as well as fiber optic cable type (62.5um or 50um). Fiber-optic interconnects shall be labeled utilizing templates provided by owner.
d. Each data communications outlet shall be labeled with its respective workstation number (machine labels only). Workstation numbers shall be comprised of the IDF designator-outlet number (e.g., 1-3-12). Communication outlet labels shall be applied using pressure-sensitive adhesives under the faceplate ID window. Labels shall not be affixed on top of the window.
e. Each workstation cable shall be neatly hand labeled, using permanent ink or other permanent labeling medium, at each end with its respective workstation number. Each copper backbone cable shall be machine labeled at each end with its respective IDF number. Each binder group shall be tied off with its respective identifying ribbon at each break out point.
f. Data outlets terminated in an accessible ceiling space for wireless access points shall have a label affixed to both the data outlet box as well as the T-bar grid proximal to the data outlet.
g. There is to be no difference in the designation of data outlets used for wireless access, video surveillance systems, or voice over IP applications.
7. Warning Tags: At each location where the fiber cable is exposed to human intrusion, it shall be marked with warning tags. These tags shall be yellow or orange in color, and shall contain the warning: "CAUTION FIBER OPTIC CABLE." The text shall be permanent, black, block characters, and at least 3/16" high. A warning tag shall be permanently affixed to each exposed cable or bundle of cables, at intervals of not less than 5'. Any section of exposed cable which is less than 5' in length shall have at least one warning tag affixed to it. In pullboxes, affix tag to innerduct. All tags should be labeled noting type of cable (i.e. 12-strand 62.5um) and end points (i.e. MDF 1 to IDF 1,2).

- 8. In-ground Pullboxes and Vaults: All low-voltage cabling shall be neatly bundled, coded, labeled, and affixed to the sides of in-ground pullboxes and vaults. Services should be separated and labeled as such (e.g., CATV, fire, clock/speaker, etc.) Attach J-hooks, spaced every 2' below the inside rim of the box such that the cable is protected from damage by the box cover. Hooks should be fastened with appropriately-sized concrete lag bolts or anchors. Bend radii precautions shall be observed for cables entering and existing boxes as well as for service loops. No cable should touch the bottom of the box or vault.
9. Workstation Cable and Outlets: Installation shall be conducted in accordance with guidelines established by the product manufacturer and industry standards. Category-6 compliant cable hangers shall be utilized for accessible ceiling space installations. Wall plates shall be mounted such that their vertical dimension is plumb. Each wall plate shall be labeled with its respective workstation number. Each modular mounting frame shall be

- labeled with its respective workstation number. Workstation cable shall be terminated to the patch panel in accordance with manufacturer's recommendations and EIA TSB #0.
a. Install cables in consistent consecutive order. Arrangement of cables on patch panels shall be in ascending order of outlet numbers. This includes cables installed for video surveillance, digital message boards, wireless access, etc. They should be installed on the patch panel at the next available termination point.
b. Do not bind cables tightly together with wraps. Wraps shall slip loosely around cable. The Contractor shall replace or cover wraps showing evidence of improper handling including stretches, kinks, short radius bends, over-tightened bindings, loosely twisted and over twisted pairs at terminals, and sheath removed too far (> 1").
c. Do not crimp or bend cables into a tighter radius than recommended by the manufacturer.
d. Do not support cables from ceiling suspension system.
e. Provide 36" service loop for cables at each IDF. Locate loop at ceiling or on wall above IDF cabinet.
f. Provide 12" service loop at each telecommunications outlet/connector, above drop location.
g. Label each cable on both ends using a Sharpe Ultra-Point Series 37000 marker pen, on a self-laminating cable labels. Labels shall match the outlet and patch panel identification labels, and shall be located on the jacket not less than 3" nor more than 10" back from the point where the jacket is cut and stripped for cable termination.
h. Vertical runs of cable in the MDF/IDF should be routed on the backboard via D-rings and secured to D-rings with cable ties. D-rings should be placed 12" O.C. Cable should be neatly bundled, combed, and tied.
i. When utilizing new or existing conduit, do not exceed 40% fill. If new conduit is required, provide minimum 1" EMT, bushings, and all necessary appurtenances. Pull string or rope shall be installed/re-installed in all conduits utilized for this project.
j. Data outlets identified for wireless access points and located above the T-bar ceiling grid shall be terminated and installed in a two-port surface-mount block and mounted such that the outlet is no more than 2" above the T-bar grid. Data outlets identified for wireless access and located in inaccessible, hard ceilings shall be terminated in a single-gang backbox and standard 2-port faceplate.
k. The trade contractor shall make every effort possible to avoid running cables in "wet" environments. Should be limited to floor boxes and other locations where overhead routing is not practical. "Wet" environment is defined as cable routed through underground conduit, conduit installed in or under concrete slabs (on grade slabs, above the first floor, are not to be considered "wet," etc.).
l. Fiber optic and workstation cable shall be continuous without splices, breaks, or connectors, between equipment racks (MDF and IDF) and equipment rack to outlets.
11. Pull string or rope shall be installed/re-installed in all conduits utilized for this project, excluding intra-building conduit sleeves, 3' to 4' in length installed in accessible ceiling spaces.
12. Open Cable/Free-Air and Installation Pathways:
a. For purposes of this section, an "accessible ceiling" open-air ceiling pathway is defined being accessible from the finished floor directly below the cable pathway. This includes T-bar ceilings, provided the cable pathway doesn't run above HVAC ducting or other large obstructions. It excludes all attic-type spaces in which access is provided above a "hard" ceiling through a hatch. Cable runs through inaccessible ceilings (e.g., attic spaces) shall be in minimum 3/4" EMT conduit, sized such that the fill does not exceed 40%.
b. Where cables are indicated to be installed as "Open Cabling" or "Free-Air" cable supports shall be installed to allow cabling to be grouped and run along a common path. Cables shall not be attached to the building structure, and shall not be looped diagonally across the ceiling space. Cable supports shall be loosely bundled with cable ties at 30" on center. Provide Panduit Tak-Tape hook and loop cable ties at workstation and closet. No cable ties are to be used in the closet, or at the workstation. Provide plenum rated Panduit Tak-Tape hook and loop cable ties in spaces used to handle environmental air.
c. Where new cable shares a common path with existing cable, route both new and existing through cable supports. All workstation cable should be combined to provide a "clean" installation above accessible ceiling spaces. This includes replacing non-compliant hangers (e.g. D-rings) with appropriately sized and rated cable supports.
d. Do not support cables from ductwork, ceiling grids, sprinkler piping, water piping, waste piping, electrical conduit, etc. Do not utilize D-rings or other non-compliant supports for horizontal runs of Category 6 cable. D-rings may be used for vertical runs of cable (i.e., in the MDF between conduit and cable runway). Cable supports shall be permanently anchored to building structure or substrates. Provide attachment hardware and anchors designed for the structure to which attached, and that are suitably sized to carry the weight of the cables to be supported.
e. All cable installed under this section shall have de-iceated supports. No other low-voltage cabling may share cable supports with data cabling.
f. Maximum size cable bundles shall be 50 cables per J-hook.
g. Maximum spacing for supports for open cable runs shall be 48".
h. Where MDF or IDF cable count exceeds 50 cables, provide cable pathway tray through center of buildings or hallways, or as shown on plans. Pathway supports shall be attached to building structure (wall or ceiling) using manufacturer-recommended bracket and spacing. Cut and bend pathway per manufacturer's instructions to avoid obstructions. Workstation cable will exit tray and be supported by J-hooks to conduit feeding workstation outlets.
i. All data, video, communication cable bundles shall utilize an enclosed free-routed pathway device wherever cables penetrate fire-rated walls. Install the devices in strict accordance with the approved shop drawings and the equipment manufacturer's recommendations. Apply the factory supplied gasketing material prior to the installation of the wall plates. Secure wall plates to devices per the equipment manufacturer's recommendations.
j. Fire seal around all conduits running through rated floors and walls in accordance with Section 26 05 00. Does not apply to free-air installations, fire-rated pathway for such installations.
13. Active Distribution Equipment (hubs, switches, etc.): Contractor shall install owner-provided active distribution equipment at MDF and IDF locations. Contractor will be responsible for mounting equipment on relay rack or in communications cabinet and providing necessary power. Owner shall be responsible for purchasing, configuring, and providing equipment to contractor as needed.
In addition, contractor shall be responsible for patching in all active patch panel drops and fiber connections (one pair per IDF) to active distribution equipment. Connections to be sequential (i.e., patch panel port #1 to switch port #1), dressed, and routed through horizontal and vertical wire management units. Neatly bundle cable at the MDF/IDF utilizing Panduit Tak-Tape hook and loop cable ties. No cable zip ties are to be used in the IDF. Patch cables, fiber jumpers, and wire management units provided by contractor, as specified under Part 2 of this document.

3.3 TESTING AND DOCUMENTATION

- A. After all equipment specified herein has been installed and is in operating condition, performance tests shall be conducted to determine that installation and components comply with these specifications. Contractor shall furnish competent personnel for these tests. Tests shall be conducted through the entire copper pathway, including workstation cable and data outlets.
B. Testing: Contractor shall test each fiber strand and each pair of each twisted pair copper cable. The Owner reserves the right to have a representative present during all or a portion of the testing process. If the Owner elects to be present during testing, test results will only be acceptable when conducted in the presence of the Owner.
C. Testing UTP Cable and Links:
1. All UTP cabling will be certified to meet or exceed the specifications as set forth in ANSITIA-568-C.2, for permanent links. Certifications shall include the following parameters for each pair of each cable installed:
a. Wire map (pin to pin connectivity)
b. Length (in feet)
c. Attenuation
d. Near End Crosstalk (NEXT)
e. Far End Crosstalk (FEXT)
f. Equal-Length Far End Crosstalk (ELFEXT)
g. PowerSum Equal-Length Far End Cross Talk (PSELFEXT)
h. Attenuation/Crosstalk Ratio (ACR)
i. Return Loss
j. Propagation Delay
k. Delay Skew
Owner reserves the right to spot check the test results (either by owner or by hiring an independent testing company). If the results vary more than 10% from the results provided by the Contractor, the Contractor will be required to prove his results are correct or retest the entire system.
D. Optical Fiber Testing:
1. Acceptance Testing: Test each strand of every optical fiber cable on the reel with an OTDR, to verify length and continuity. Fiber cables that have been damaged in transit must be replaced. Contractor-installed fiber cable that proves to be defective will be replaced at the contractor's expense.
2. Final Testing: After terminating optical fiber cables one of the individual fibers of each cable segment will be tested using an OTDR, both to determine the installed length and continuity. All individual fibers of each cable segment will be tested using a power meter to determine the actual loss. These readings will be taken at the 850 nm and 1300 nm windows for multimode and 1310 nm and 1550 nm windows for single mode (if applicable). Testing will be done in both directions. The final readings will be listed on the Optical Fiber Test form. These readings must not be higher than the "Optimal Attenuation Loss". The DAL will be calculated using the manufacturer's factory certified test results, (dB/km) converted to the actual installed lengths plus the manufacturer's best published attenuation losses for the connector and/or splice installed on this project. (0.20 for connectors and 0.10 for splices.) The DAL shall be used for comparison with the end to end power loss test results prior to acceptance by the Owner.
E. Documentation: Contractor shall provide documentation to include test results and as built drawings. All test results shall be submitted via CD-ROM, formatted as PDF files from the test equipment. Summary reports are not acceptable.
1. Fiber Test Results: The results of the fiber optic cable tests shall be provided in the form of print outs from the test equipment. Only original signed copies will be acceptable. Test results to include at least: date/time of test, test type, number of connectors, number of splices, fiber type, fiber length (feet), loss (in dB for both fiber and connectors) at all tested windows (see above), and margins (dB and/or percentages).
2. Workstation Cable: The results of the workstation cable tests shall be provided in the form of print outs from the test equipment as PDF documents.
3. As Built Drawings: As Built one\_line and wiring diagrams, with terminations identified, wire color coding schedule, pull boxes locations, and full conduit/cable routing plans shall be provided as electronic AutoCAD .dwg file markups.
4. All documentation in this section must be provided to the Owner's IT department within 14 calendar days of substantial job completion. This timeline is independent of other contract sections.

3.4 OWNER FURNISHED CONTRACTOR INSTALLED (OFCI) ITEMS

- A. All wireless access points, MDF and IDF switch cabinets will be furnished by the Owner and installed by the contractor.
B. All classroom wireless access points shall be installed on the ceiling, in the center of the room, unless noted otherwise on the drawings.

3.5 ACCEPTANCE

- A. Acceptance of the Data Communications System, by Owner, shall be based on the results of testing, functionality, and the receipt of documentation. With regard to testing, all fiber segments and all work station data cables must meet the criteria

## APPLICATION FOR SUBMITTAL OF POST-APPROVAL DOCUMENT

This application is for submittal of documents, after the initial approval of the project (post-approval documents), that require Division of the State Architect (DSA) review and approval. This form shall be completed by the Design Professional in General Responsible Charge of the project, in accordance with California Code of Regulations, Title 24, Part 1, Sections 4-317, 4-323 and 4-338 and in compliance with DSA IR A-6: Construction Change Document Submittal and Approval Process.

DSA documents referenced within this form are available on the [DSA Forms](#) or [DSA Publications](#) webpages.

<b>1. SUBMITTAL TYPE: (Is this a resubmittal? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>)</b>			
Deferred Submittal <input type="checkbox"/>	Addendum Number: <b>01</b>	Revision Number:	CCD Number: _____ Category A <input checked="" type="checkbox"/> or B <input type="checkbox"/>
<b>2. PROJECT INFORMATION:</b>			
School District/Owner: <b>Solano Community College District</b>		DSA File Number: <b>48 C1</b>	
Project Name/School: <b>Early College Portables</b>		DSA Application Number <b>02 118411</b>	
<b>3. APPLICANT INFORMATION:</b>			
Date Submitted: <b>06/25/20</b>	Attached Pages? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Number of pages? <b>2</b>		
Firm Name: <b>HMR Architects</b>	Contact Name: <b>Scott Pullen</b>		
Work Email: <b>scottp@hmrarchitects.com</b>	Work Phone: <b>(916) 736-2724</b>		
Firm Address: <b>2130 21st Street</b>	City: <b>Sacramento</b>	State: <b>CA</b>	Zip Code: <b>95818</b>
<b>4. REASON FOR SUBMITTAL: (Check applicable boxes)</b>			
<input checked="" type="checkbox"/> For revision or addendum prior to construction.		<input type="checkbox"/> For a project currently under construction.	
<input type="checkbox"/> For a project that has a form <i>DSA 301-N: Notification of Requirement for Certification</i> , <i>DSA 301-P: Posted Notification of Requirement for Certification</i> or a 90-Day Letter issued.			
<input type="checkbox"/> To obtain DSA approval of an existing uncertified building or buildings.			
<input type="checkbox"/> For Category B CCD this is: <input type="checkbox"/> a voluntary submittal, <input type="checkbox"/> a DSA required submittal (attach DSA notice requiring submission).			
<b>5. DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE:</b>			
Name of the Design Professional In General Responsible Charge: <b>Scott Pullen</b>			
Professional License Number: <b>C24706</b>		Discipline: <b>Architect</b>	
<b>Design Professional in General Responsible Charge Statement:</b> The attached post-approval documents have been examined by me for design intent and appear to meet the appropriate requirements of Title 24, California Code of Regulations and the project specifications. They are acceptable for incorporation into the construction of the project.			
Signature:  <div style="text-align: center; margin-top: 5px;">DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE</div>			
<b>6. CONFIRMATION, DESCRIPTION AND LISTING OF DOCUMENTS:</b>			
For addenda, revisions, or CCDs: CHECK THIS BOX <input type="checkbox"/> to confirm that <i>all</i> post-approval documents have been stamped and signed by the Responsible Design Professional listed on form <i>DSA 1: Application for Approval of Plans and Specifications</i> for this project. (For <i>Deferred Submittals</i> , refer to <i>IR A-18: Use of Construction Documents Prepared by Other Professionals</i> , and <i>IR A-19: Design Professional's Signature and Seal (Stamp) on Construction Documents</i> , when applicable, for signature and seal requirements.)			
Provide a brief description of construction scope for this post-approval document (attach additional sheets if needed): <b>This Addendum includes that a projector mount shall be installed above the t-bar ceiling in each classroom and includes clarifications on the electrical sheets.</b>			
List of DSA-approved drawings affected by this post-approval document: <b>AS2, AS3, E1.2, E1.3, E2.0, E3.0, and E4.3</b>			

DSA USE ONLY		
	Returned	DSA STAMP
SSS <b>David Guerrero</b> Date <b>06/26/2020</b> <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Not Required Comments: _____	Date: _____  By: _____	<div style="border: 2px solid black; border-radius: 50%; padding: 10px; width: fit-content; margin: auto;"> <p style="margin: 0;">IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT</p> <p style="margin: 0; font-size: 1.2em;">APP: 02-118411 INC:</p> <p style="margin: 0;">REVIEWED FOR</p> <p style="margin: 0;">SS <input checked="" type="checkbox"/> FLS <input checked="" type="checkbox"/> ACS <input checked="" type="checkbox"/></p> <p style="margin: 0;">DATE: <u>06/26/2020</u></p> </div>
FLS <b>JO</b> Date <b>6/26/20</b> <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Not Required Comments: _____		
ACS <b>TM</b> Date <b>6/26/20</b> <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Not Required Comments: _____		

# INSTRUCTIONS: FORM DSA 140

## APPLICATION FOR SUBMITTAL OF POST-APPROVAL DOCUMENT

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**PURPOSE:** Form *DSA 140: Application for Submittal of Post-Approval Document* is an application for submittal of the following post-approval documents to DSA for review and approval:

- A. Deferred Submittals
- B. Addenda
- C. Revisions (*NOTE:* Revisions are significant changes to the DSA-approved construction documents or redesign of previously approved items.)
- D. Construction Change Documents (CCDs)

### INSTRUCTIONS FOR EACH SECTION:

1. Identify the type of submitted document (including whether it is a resubmittal or not) and, when applicable, the number and category (e.g., for CCDs, reference *IR A-6: Construction Change Document Submittal and Approval Process*).
2. School District/Owner is the same as line two on form *DSA 1: Application For Approval of Plans and Specifications*. Project Name/School is the same as line one on form DSA 1. DSA file and application numbers are the same as indicated on the DSA identification stamp on the plans and the signature sheet of the specifications.
3. Enter the submittal date, whether additional pages are attached, and how many. Enter the “applicant” (the architect or engineer in general responsible charge identified on line 21 of form DSA 1) contact information including the name and address of the firm where they are employed.
4. Check the applicable boxes based on the nature of the post-approval submittal document and related project information. For projects with a *form DSA 301-N: Notification of Requirement for Certification*, *DSA 301-P: Posted Notification of Requirement for Certification*, or 90-day Letter, refer to *PR 13-02: Project Certification Process* for further information and requirements.
5. Enter the following information for the individual identified on line 21 of form DSA 1: name, California professional license number, discipline and signature.
6. For addenda, revisions, or CCDs, check the box to indicate compliance with the statement. Provide a brief description of construction scope for the post-approval document and listing of approved drawings affected by the submitted post-approval documents.

*NOTE:* For addenda and revisions, a summary letter of all changes and affected DSA-approved construction documents shall be provided in addition to the brief descriptions provided in this section.