	ABBREVIATIONS:
A	AMPERE
AFF AFG	ABOVE FINISHED FLOOR ABOVE FINISHED GRADE
APG ANN	ANNUNCIATOR
AP	ACCESS POINT
BFF	BELOW FINISHED FLOOR
BFG	BELOW FINISHED GRADE
BICSI	BUILDING INDUSTRY CONSTRUCTION SERVICE INTERNATION
BLDG	BUILDING
C	CONDUIT
CAB	CABINET
CAT	CATEGORY
CATV	CABLE TELEVISION
CD	CANDELA
CFCI CL	CONTRACTOR FURNISHED/CONTRACTOR INSTALLED CENTER LINE
CO	CARBON MONOXIDE
DN	DOWN
(E)	EXISTING
EMT	ELECTRICAL METALLIC TUBING
EOL	END OF LINE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FTC	FIRE TERMINAL CABINET
GRC	GALVANIZED RIGID CONDUIT
G OR GB	GROUND BOX
IACP IDF	INTRUSION ALARM CONTROL PANEL INTERMEDIATE DISTRIBUTION FRAME
IMC	INTERMEDIATE DISTRIBUTION FRAME INTERMEDIATE METAL CONDUIT
J OR JB	JUNCTION BOX
MEP	MECHANICAL / ELECTRICAL / PLUMBING
MDF	MAIN DISTRIBUTION FRAME
MPOE	MINIMUM PONT OF ENTRY
(N)	NEW
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NTS	NOT TO SCALE
N/A	NOT APPLICABLE
OFE	OWNER FURNISHED EQUIPMENT
OFCI	OWNER FURNISHED/CONTRACTOR INSTALLED OWNER FURNISHED/OWNER INSTALLED
OFOI OSP	OUTSIDE PLANT
PVC	POLYVINYL CHLORIDE
RCDD	REGISTERED COMMUNICATION DISTRIBUTION DESIGNER
RCWY	RACEWAY
RM	ROOM
SR	SURFACE RACEWAY
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRIGHTERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
V W	VOLTS WATT
vv WP	WEATHERPROOF
v v I	WEATHERINOO

		OGY SYMBOL LI		
	ALL EQUIPMENT AND MATERIALS ARE CON	TRACTOR FURNISHE	D, INSTALLED AND C	CONFIGURED (UNO)
SYMBOL	DESCRIPTION	MANUFACTURER	PART NUMBER	NOTES / DETAIL REFERENCES
	(N) SURFACE MOUNTED CONDUIT	COMMERCIAL GENERIC	N/A	GREY = EXISTING
	(E) UNDERGROUND CONDUIT	N/A	N/A	N/A
2300	(N) MEDIUM CAPACITY SURFACE MOUNTED CABLE RACEWAY	WIREMOLD	WM2300	GREY = EXISTING
5400	(N) HIGH CAPACITY SURFACE MOUNTED CABLE RACEWAY	WIREMOLD	WM5400	GREY = EXISTING
E-	(N) CONDUIT STUB	COMMERCIAL GENERIC	N/A	GREY = EXISTING
•	(E) CONDUIT RISER	N/A	N/A	N/A
MDF / IDF	(E) DATA RACK	EXISTING	EXISTING	N/A
G	(E) GROUND BOX	N/A	N/A	N/A
J	(N) JUNCTION BOX	COMMERCIAL GENERIC	N/A	GREY = EXISTING
MPOE	(E) MINIMAL POINT OF ENTRY	EXISTING	EXISTING	N/A
ICS HE	(E) INTERCOM CONTROL CENTER HEADEND	EXISTING	EXISTING	N/A
KP	(E) INTRUSION KEYPAD	EXISTING	EXISTING	N/A
12:00	(N) CAT6A DATA DROP LOCATION (QTY = 1) - IP CLOCK/SPEAKER/IP MODULE COMBO BOX	RAULAND	SEE SHEET T400	N/A (10) T800
	(N) CAT6A DATA DROP LOCATION - WALL MOUNTED SPEAKER/IP MODULE	RAULAND	SEE SHEET T400	N/A 7 T800
WP 🗖	(N) CAT6A DATA DROP LOCATION - EXTERIOR INTERCOM SPEAKER/IP MODULE	RAULAND & LOWELL	SEE SHEET T400	N/A 5
MSG	(N) CAT6A DATA DROP LOCATION - LARGE MESSAGE BOARD	RAULAND	SEE SHEET T400	N/A
A	(N) CAT6A DATA DROP LOCATION	SEE 27 10 00	SEE 27 10 00	QTY. AS PER PLAN
≜ WP AP	(N) CAT6A DATA DROP LOCATION - EXTERIOR WIRELESS ACCESS POINT	SEE 27 10 00	SEE 27 10 00	N/A (12) (13) (13) (1800)

PRE-CON MEETING REQUIREMENTS:

PRIOR TO BEGINNING ANY SITE WORK, INCLUDING DEMO, AN ON-SITE PRE-CONSTRUCTION MEETING SHALL BE HELD WITH THE LOW VOLTAGE DESIGNER. ANY SITE WORK COMMENCED PRIOR TO THIS MEETING SHALL BE AT THE CONTRACTOR'S SOLE RISK.

JOB SPECIFIC STANDARDS FOR LOW VOLTAGE:

SEE SPECIFICATIONS DIVISION 27 AND 28 FOR COMPLETE REQUIREMENTS.

- CONDUIT BODIES, CONDULETS, PULLING ELBOWS, AND/OR "LB" FITTINGS ARE PROHIBITED IN ANY PATHWAY CONTAINING DATA CABLING (COPPER OR FIBER).
- SINGLE HOLE CONDUIT STRAPS ARE PROHIBITED.
- ALL WIRE AND CABLE PASSING THROUGH METALWORK SHALL BE SLEEVED WITH AN APPROPRIATE GROMMET OR BUSHING.

SYSTEM PROGRAMMING AND **COMMISSIONING REQUIREMENTS:**

- THE DISTRICT WILL PERFORM ALL DATA NETWORK (CISCO) SWITCH PROGRAMMING. ALL OTHER PROGRAMMING/COMMISSIONING IS THE RESPONSIBILITY OF THE CONTRACTOR.
- TO FACILITATE DATA NETWORK SWITCH PROGRAMMING BY THE DISTRICT, THE CONTRACTOR SHALL PROVIDE, NO LATER THAN 14 CALENDAR DAYS PRIOR TO CUTOVER, AN INVENTORY OF SWITCH PORTS THAT WILL BE UTILIZED BY THE TELECENTER SYSTEM. THIS SHALL INCLUDE ALL DATA DROPS, NEW AND EXISTING.

PAINT SCOPE OF WORK:

- CONTRACTOR SHALL PATCH AND PAINT ALL WALL AND CEILING SURFACES DISTURBED OR EXPOSED AS A RESULT OF DEMO TO MATCH THE ADJACENT EXISTING SURFACE.
- CONTRACTOR SHALL CLEAN, PRIME, AND PAINT ALL (N) CONDUIT AND J-BOXES THAT RUN AGAINST FINISHED WALLS, TO MATCH THE ADJACENT WALL SURFACE.
- CONTRACTOR SHALL COORDINATE WITH DISTRICT REPRESENTATIVE FOR PAINT COLORS AND SPECIFICATIONS.

SCOPE OF WORK:

- 1. THE CONTRACTOR SHALL PROVIDE A (N) RAULAND TELECENTER U INTERCOM SYSTEM IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL REWORK THE (E) IDF AND MDF LOCATIONS, INCLUDING INSTALLATION OF (N) OWNER-FURNISHED DATA NETWORK SWITCHES, AS NOTED.
- THE CONTRACTOR SHALL PROVIDE AND PERFORM OTHER DATA NETWORK INSTALLATION AND REWORK AS NOTED.
- SYSTEMS ON THIS PROJECT REQUIRE CERTIFIED INSTALLERS. CONTRACTOR SHALL COMPLY WITH ALL CERTIFICATION REQUIREMENTS AS A CONDITION OF BID.
- ALL EQUIPMENT SHALL BE NEW AND CONTRACTOR FURNISHED,
- AFTER CUTOVER TO NEW SYSTEMS, THE CONTRACTOR SHALL REMOVE OLD OR ABANDONED DATA NETWORK, AUDIOVISUAL, ANALOG TELEPHONE, ANALOG INTERCOM, ANALOG CLOCK, AND COAX CABLING AND DEVICES AS NOTED.
- THE PROJECT WILL REQUIRE SWING AND/OR GRAVEYARD AND/OR WEEKEND AND/OR HOLIDAY WORK SCHEDULES IN ORDER TO MEET THE PROJECT REQUIREMENTS AND MINIMIZE DISRUPTION TO THE ACTIVE USE OF THE SITE.
- THE CONTRACTOR SHALL CAREFULLY COORDINATE CUTOVERS AND ACTIVATION/COMMISSIONING OF NEW SYSTEMS WITH THE DISTRICT REPRESENTATIVE.
- THE CLOCK/INTERCOM SYSTEM AND ALL DATA NETWORK SYSTEMS SHALL BE MAINTAINED OPERATIONAL AT ALL TIMES THAT SCHOOL IS IN SESSION.

CONTRACTOR FURNISHED DOCUMENTS:

- (SHOP DRAWINGS / PRODUCT SUBMITTALS / QUALIFICATIONS)
- ORDERING AND INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL THE FOLLOWING:

AND APPROVED BY THE DESIGNER.

1.1. CONTRACTOR FURNISHED SHOP DRAWINGS ARE RECEIVED AND APPROVED BY THE DESIGNER.

1.3. APPLICABLE QUALIFICATION DOCUMENTATION ARE RECEIVED

REQUESTS ARE TO BE ADDRESSED AT TIME OF SHOP DRAWING

ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

FOR DEMONSTRATING PRODUCT FULL EQUIVALENCY.

ONE-LINES PROVIDED WITH THE DESIGN PACKAGE ARE

ROUTING, ETC., BY THE CONTRACTOR IS REQUIRED.

OF THE DESIGN.

DESIGNER OR OWNER PRIOR TO BID.

INSPECTOR, AND THE OWNER.

INSTALLATION.

MORE INFORMATION.

FOR JOB TO FINAL.

SPECIFICATIONS.

FULLY OPERATIONAL.

APPROVED BY THE OWNER.

FROM THE BOX TO THE DEVICE.

ARE AS ACCURATE AS POSSIBLE, BUT ACCURACY IS NOT

GUARANTEED AND FIELD VERIFICATION, OF ALL DIMENSIONS,

DRAWINGS AND SPECIFICATIONS ARE PROVIDED TO SHOW THE

AN ACCURATE BID. CONTRACTOR IS DIRECTED TO MAKE FIELD

LAYOUT DRAWINGS (SHOP DRAWINGS). THE CONTRACTOR SHALL

SURVEYS AS PART OF THEIR WORK PRIOR TO SUBMITTING SYSTEM

MAKE ALLOWANCE IN THE PROPOSAL TO COMPLY WITH THE INTENT

IN CASE OF DOUBT OF WORK INTENDED, IT IS THE RESPONSIBILITY

OF THE CONTRACTOR TO REQUEST INSTRUCTIONS FROM THE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING A

TECHNOLOGY GENERAL PROJECT NOTES:

UPON COMPLETION OF THE INSTALLATION OF THE SYSTEMS, THE

ENTIRE SYSTEMS IN THE PRESENCE OF THE ARCHITECT/DESIGNER.

A STAMPED SET OF APPROVED SYSTEM DESIGN DOCUMENTS. AND

SITE AND USED FOR INSTALLATION. THE CONTRACTOR SHALL

INCORPORATE ANY AND ALL REDLINES TO DRAWINGS SETS AS

BY THE ARCHITECT/DESIGNER AND THE OWNER PRIOR TO

OF THE ARCHITECT/DESIGNER PRIOR TO INSTALLATION.

ALL PENETRATIONS THROUGH RATED ASSEMBLIES REQUIRING

OPENING PROTECTION SHALL BE PROVIDED WITH THROUGH

CONTRACTOR FURNISHED SHOP DRAWINGS SHALL BE ON THE JOB

REQUIRED. ANY DEVIATION FROM APPROVED DESIGN DOCUMENTS,

INCLUDING THE SUBSTITUTION OF DEVICES, SHALL BE APPROVED

ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR

RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION

PENETRATION FIRST STOP SYSTEMS WITH A "T" RATING EQUAL TO

PER CEC STANDARDS. ALL WIRING IS TO BE PULLED THROUGH EACH

JUNCTION BOX AND CONNECTED DIRECTLY TO EACH DEVICE. DO

NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6" OF LEAD WIRE

ALL CLOCK, BELL AND INTERCOM CIRCUITS SHALL BE IN CONDUIT

FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANNER AS

INDICATED ON DESIGN DOCUMENTS. EXPOSED CABLES ARE ONLY

PERMITTED IF INDICATED ON DESIGN DOCUMENTS AS "EXPOSED".

LOW VOLTAGE PANELS, REMOTES, AND COMPONENTS SHALL BE

SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED THE WEIGHT

THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/DESIGNER AT A

MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO FINAL INSPECTION

FOR FINAL PUNCH ALL ITEMS ON PUNCH LIST MUST BE COMPLETE

PRIOR TO FINAL INSPECTION, THE CONTRACTOR SHALL PROVIDE

10. THE CONTRACTOR SHALL ALSO PROVIDE A TYPED RECORD OF

COMPLETION. A FINAL WILL NOT BE GRANTED UNTIL THE ABOVE IS

11. THE TERM "PROVIDE" SHALL MEAN TO FURNISH, INSTALL AND MAKE

ALL PROJECT AS-BUILT DRAWINGS AND MANUALS PER

SECURED TO MOUNTING SURFACES PER MANUFACTURER'S

FOR 20 lbs., WITHOUT SPECIAL MOUNTING DETAILS.

SURFACE RACEWAY, OR OPEN RUN ABOVE CEILINGS, UNDER

THE ASSEMBLY PENETRATED, SEE DETAILS ON SHEET T801 FOR

CONTRACTOR SHALL PROVIDE A SATISFACTORY TEST OF THE

COMPLETE, OPERABLE, AND FULLY FUNCTIONING SYSTEM.

INTENT OF THE DESIGN TO ASSIST THE CONTRACTOR IN SUBMITTING

ALTERNATIVE PRODUCTS ARE TO SUBMITTED WITH A FORMAL SUBSTITUTION REQUEST AND THE CONTRACTOR IS RESPONSIBLE

IT SHALL BE UNDERSTOOD THAT THE DRAWINGS, DETAILS, AND

DIAGRAMMATIC. INFORMATION PRESENTED IN DESIGN DRAWINGS

CREATION. CHANGE ORDERS AFTER APPROVED SHOP DRAWINGS

ANY DESIGN AND/OR INSTALLATION DISCREPANCIES/CHANGE ORDER

INTERNATIONAL BUILDING CODE WITH CALIFORNIA AMENDMENTS) 2022 CALIFORNIA ELECTRICAL CODE (CEC), CCR, TITLE 24, PART 3 (2017 1.2. PRODUCT SUBMITTAL DOCUMENTS ARE RECEIVED AND NATIONAL ELECTRICAL CODE WITH CALIFORNIA AMENDMENTS) APPROVED BY THE DESIGNER.

JANUARY 1, 2023:

- 2022 CALIFORNIA MECHANICAL CODE (CMC), CCR, TITLE 24, PART 4 (2018 UNIFORM MECHANICAL CODE, WITH CALIFORNIA AMENDMENTS)
- 2022 CALIFORNIA ENERGY CODE, CCR, TITLE 24, PART 6 2022 CALIFORNIA FIRE CODE (CFC), CCR, TITLE 24, PART 9 (2018 INTERNATIONAL FIRE CODE WITH CALIFORNIA AMENDMENTS)
- 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE, CCR, TITLE 24,
- 2022 CALIFORNIA REFERENCED STANDARDS CODE, CCR, TITLE 24, PART
- 2022 NFPA 72: NATIONAL FIRE ALARM AND SIGNALING CODE, NATIONAL FIRE PROTECTION ASSOCIATION

PROJECT CODES AND STANDARDS:

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), CCR, TITLE 24, PART 1

2022 CALIFORNIA BUILDING CODE (CBC), CCR, TITLE 24, PART 2 (2018

PARTIAL LIST OF APPLICABLE CODES AND STANDARDS EFFECTIVE:

ANCHORAGE AND BRACING NOTES: APPLICABLE CODE: 2019 CBC REVISED: 02/14/2020

MEP COMPONENT ANCHORAGE NOTE:

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26 THRU 30:

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

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

- A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE
- COMPONENTS. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTION SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

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

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

PIPING, DUCTWORK, AND ELECTRICAL SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTIONS 13.3 AS DEFINED IN ASCE 7-16 SECTIONS 13.6.5.13.6.6. 13.6.7, 13.6.8 AND 2019 CBC SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26

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

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPES

(PP), ELECTRICAL DISTRIBUTION SYSTEMS (E): MP □ MD □ PP □ EX OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND

MP | MD | PP | E | OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVED (OPM #)

SHEET INDEX:

SHEET DESCRIPTION

TECHNOLOGY COVER SHEET

TECHNOLOGY SITE PLAN - DEMO TECHNOLOGY SITE PLAN - NEW

TECHNOLOGY FLOOR PLAN NEW - MDF 1.00 T201 TECHNOLOGY FLOOR PLAN NEW - IDF 1.01 AND 1.02

T202 TECHNOLOGY FLOOR PLAN NEW - IDF 1.03 AND 1.04 T400 TECHNOLOGY RACK ELEVATIONS

T401 TECHNOLOGY RACK ELEVATIONS T402 TECHNOLOGY SINGLE LINE DIAGRAMS

TECHNOLOGY DETAILS T801 TECHNOLOGY DETAILS

KMM SERVICES, INC

5433 El Camino Ave. Suite 5 Carmichael, CA 95608

Office: (916) 359-4000 www.kmmservices.com

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IF DRAWING IS NOT 30"X42" IT IS A REDUCED PRINT SHEET REVISIONS

DELTA _	DESCRIPTION	DATI
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PROJECT SACRAMENTO CITY UNIFIED SCHOOL DISTRICT H.W. HARKNESS TELECENTER UPGRADE

2147 54TH AVENUE SACRAMENTO, CA 95822

SHEET TITLE **TECHNOLOGY**

CONSTRUCTION DRAWINGS

COVER SHEET

DRAWING STATUS

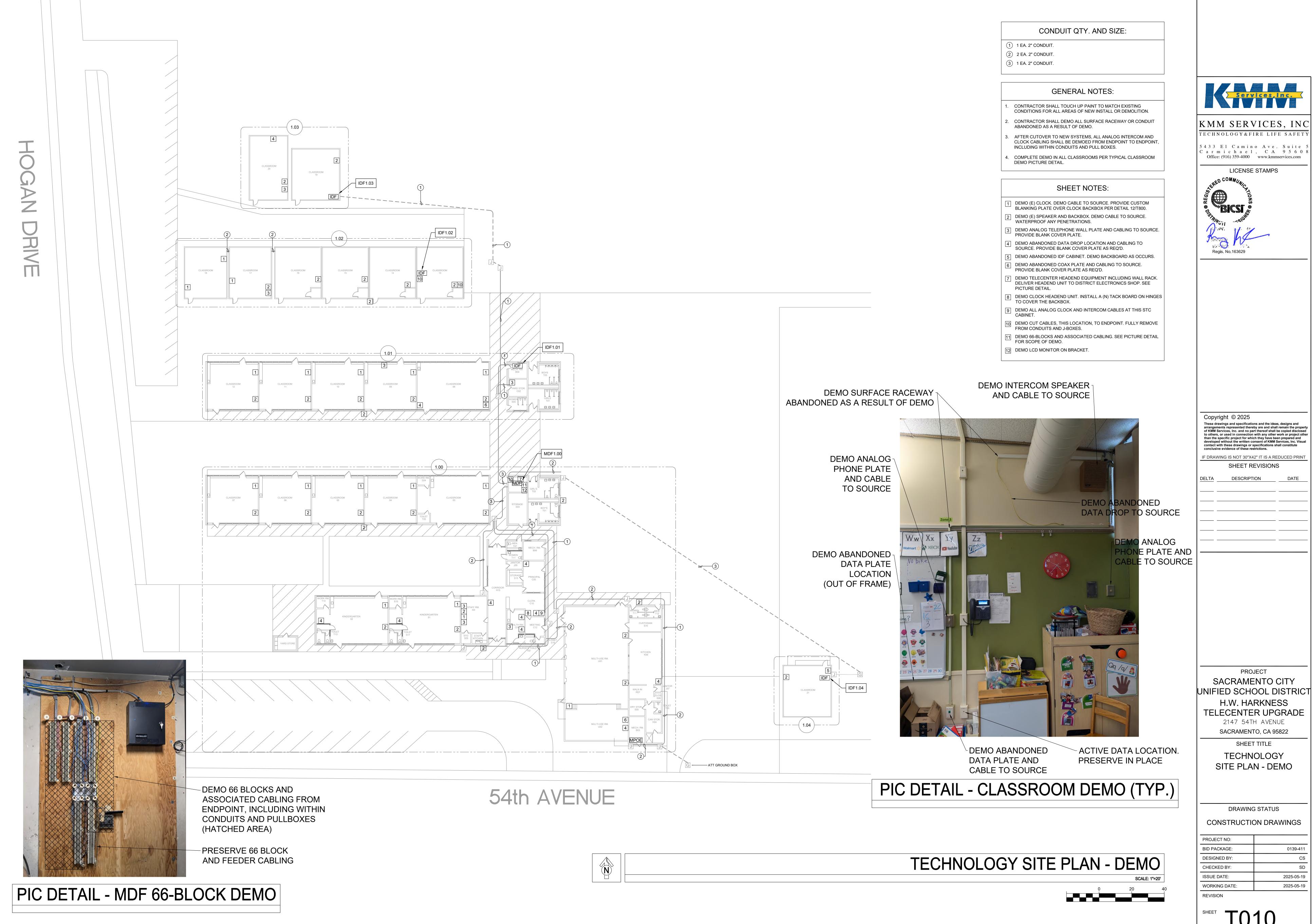
PROJECT NO: **BID PACKAGE:** 0139-411 **DESIGNED BY:** CHECKED BY:

2025-05-19

2025-05-19

WORKING DATE: REVISION

ISSUE DATE:



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DESCRIPTION

PROJECT

SACRAMENTO CITY UNIFIED SCHOOL DISTRICT H.W. HARKNESS TELECENTER UPGRADE

2147 54TH AVENUE SACRAMENTO, CA 95822

SHEET TITLE

TECHNOLOGY SITE PLAN - DEMO

DRAWING STATUS

CONSTRUCTION DRAWINGS

PROJECT NO:	
BID PACKAGE:	0139-411
DESIGNED BY:	CS
CHECKED BY:	SD
ISSUE DATE:	2025-05-19
WORKING DATE:	2025-05-19

MULTI-USE RM. U01

EXTERIOR INTERCOM SPEAKERS

54th AVENUE

G ATT GROUND BOX

TECHNOLOGY SITE PLAN - NEW



CONDUIT QTY. AND SIZE:

1) 1 EA. 2" CONDUIT. (2) 2 EA. 2" CONDUIT.

(3) 1 EA. 2" CONDUIT.

GENERAL NOTES:

1. NO STRUCTURAL BEAMS SHALL BE PENETRATED OR ALTERED. 2. ALL EQUIPMENT AND MATERIALS ARE CONTRACTOR FURNISHED, INSTALLED, AND CONFIGURED, UNO.

CONTRACTOR SHALL TOUCH UP PAINT TO MATCH EXISTING CONDITIONS FOR ALL AREAS OF NEW INSTALL OR DEMOLITION.

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DELTA	DESCRIPTION	DATE

PROJECT SACRAMENTO CITY UNIFIED SCHOOL DISTRICT

H.W. HARKNESS TELECENTER UPGRADE 2147 54TH AVENUE

> SACRAMENTO, CA 95822 SHEET TITLE

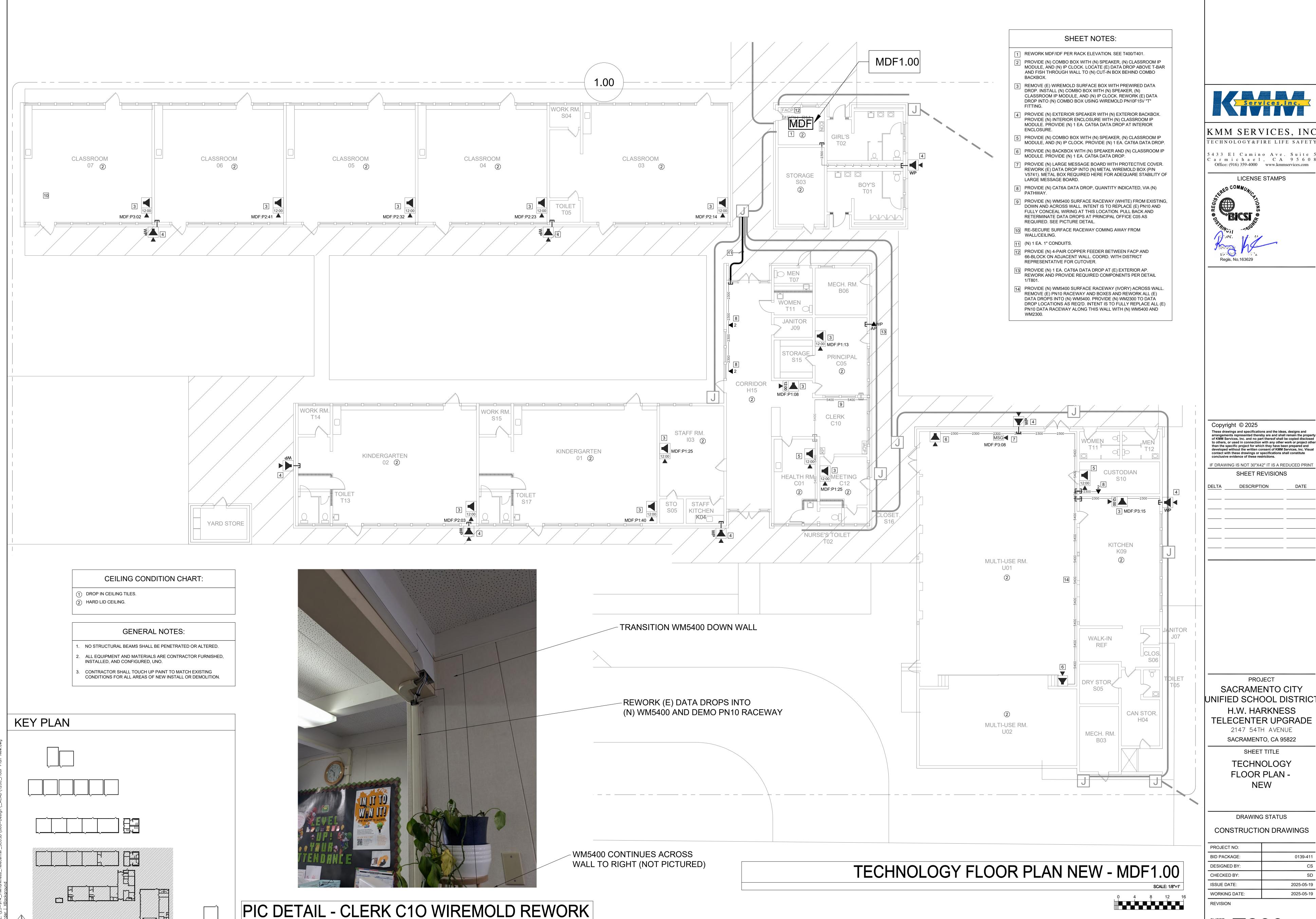
TECHNOLOGY SITE PLAN - NEW

DRAWING STATUS

CONSTRUCTION DRAWINGS

PROJECT NO:	
BID PACKAGE:	0139-411
DESIGNED BY:	CS
CHECKED BY:	SD
ISSUE DATE:	2025-05-19
WORKING DATE:	2025-05-19

REVISION



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IF DRAWING IS NOT 30"X42" IT IS A REDUCED PRINT

DESCRIPTION

PROJECT SACRAMENTO CITY UNIFIED SCHOOL DISTRICT H.W. HARKNESS

> 2147 54TH AVENUE SACRAMENTO, CA 95822

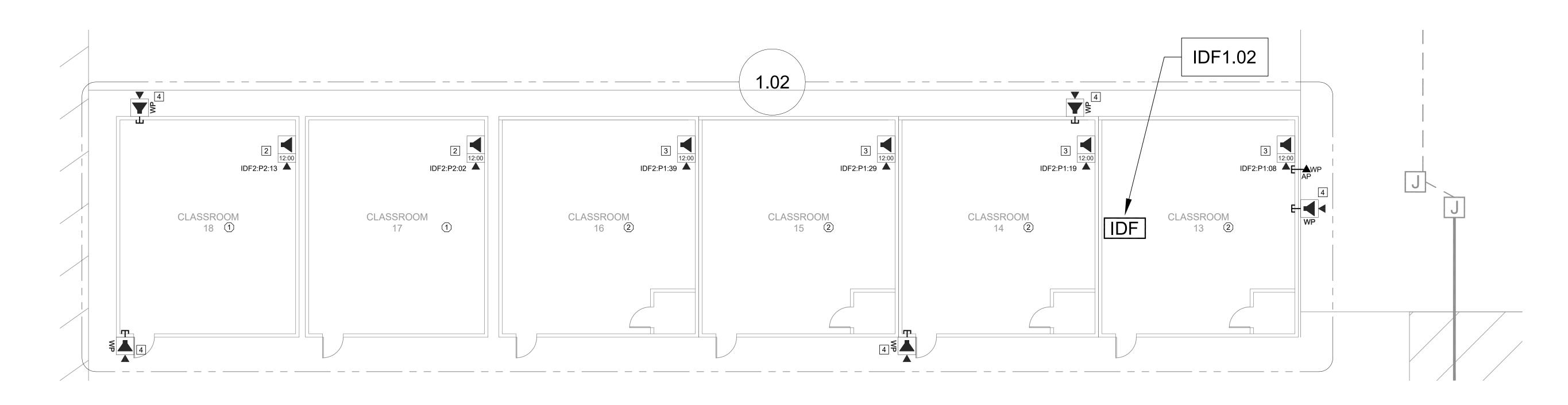
> > SHEET TITLE

FLOOR PLAN -NEW

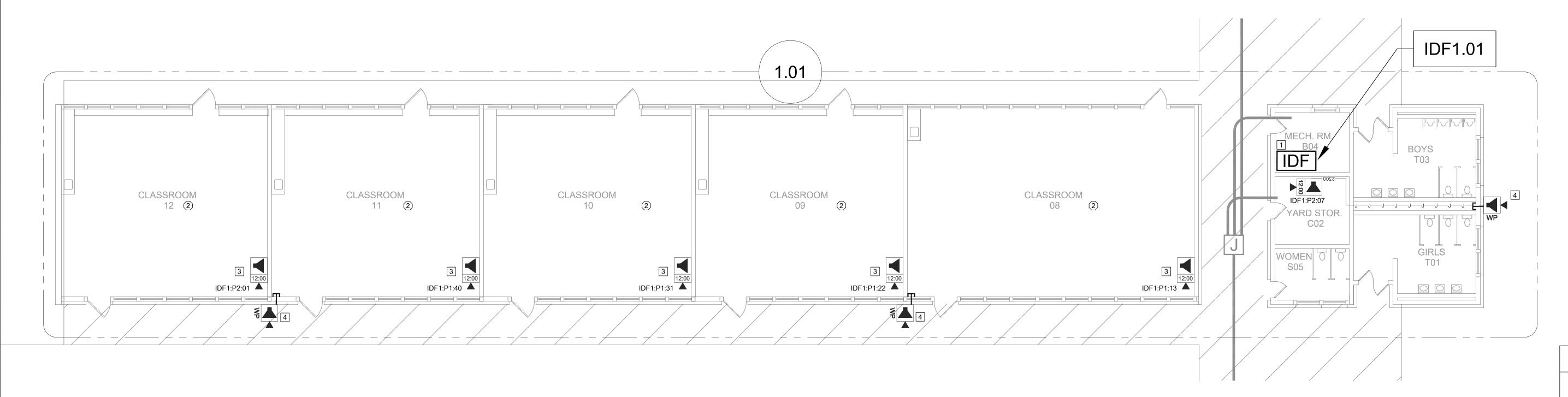
DRAWING STATUS

CONSTRUCTION DRAWINGS

PROJECT NO:	
BID PACKAGE:	0139-411
DESIGNED BY:	CS
CHECKED BY:	SD
ISSUE DATE:	2025-05-19
WORKING DATE:	2025-05-19
DEV/ICION	_



TECHNOLOGY FLOOR PLAN NEW - IDF1.02



TECHNOLOGY FLOOR PLAN NEW - IDF1.01

0 4 8 12 16

CEILING CONDITION CHART:

(1) DROP IN CEILING TILES. (2) HARD LID CEILING.

GENERAL NOTES:

- 1. NO STRUCTURAL BEAMS SHALL BE PENETRATED OR ALTERED.
- 2. ALL EQUIPMENT AND MATERIALS ARE CONTRACTOR FURNISHED, INSTALLED, AND CONFIGURED, UNO.
- CONTRACTOR SHALL TOUCH UP PAINT TO MATCH EXISTING CONDITIONS FOR ALL AREAS OF NEW INSTALL OR DEMOLITION.

SHEET NOTES:

- 1 REWORK MDF/IDF PER RACK ELEVATION. SEE T400/T401. PROVIDE (N) COMBO BOX WITH (N) SPEAKER, (N) CLASSROOM IP MODULE, AND (N) IP CLOCK. LOCATE (E) DATA DROP ABOVE T-BAR AND FISH THROUGH WALL TO (N) CUT-IN BOX BEHIND COMBO
- REMOVE (E) WIREMOLD SURFACE BOX WITH PREWIRED DATA DROP. INSTALL (N) COMBO BOX WITH (N) SPEAKER, (N) CLASSROOM IP MODULE, AND (N) IP CLOCK. REWORK (E) DATA DROP INTO (N) COMBO BOX USING WIREMOLD PN10F15V "T"
- PROVIDE (N) EXTERIOR SPEAKER WITH (N) EXTERIOR BACKBOX. PROVIDE (N) INTERIOR ENCLOSURE WITH (N) CLASSROOM IP MODULE. PROVIDE (N) 1 EA. CAT6A DATA DROP AT INTERIOR
- 5 PROVIDE (N) COMBO BOX WITH (N) SPEAKER, (N) CLASSROOM IP MODULE, AND (N) IP CLOCK. PROVIDE (N) 1 EA. CAT6A DATA DROP.
- 6 PROVIDE (N) BACKBOX WITH (N) SPEAKER AND (N) CLASSROOM IP MODULE. PROVIDE (N) 1 EA. CAT6A DATA DROP.
- 7 PROVIDE (N) LARGE MESSAGE BOARD WITH PROTECTIVE COVER. REWORK (E) DATA DROP INTO (N) METAL WIREMOLD BOX (P/N V5741). METAL BOX REQUIRED HERE FOR ADEQUARE STABILITY OF
- 8 PROVIDE (N) CAT6A DATA DROP, QUANTITY INDICATED, VIA (N)
- 9 PROVIDE (N) WM5400 SURFACE RACEWAY (WHITE) FROM EXISTING, DOWN AND ACROSS WALL. INTENT IS TO REPLACE (E) PN10 AND FULLY CONCEAL WIRING AT THIS LOCATION. PULL BACK AND RETERMINATE DATA DROPS AT PRINCIPAL OFFICE C05 AS REQUIRED. SEE PICTURE DETAIL.
- 10 RE-SECURE SURFACE RACEWAY COMING AWAY FROM WALL/CEILING.
- 11 (N) 1 EA. 1" CONDUITS.

LARGE MESSAGE BOARD.

- 12 PROVIDE (N) 4-PAIR COPPER FEEDER BETWEEN FACP AND 66-BLOCK ON ADJACENT WALL. COORD. WITH DISTRICT REPRESENTATIVE FOR CUTOVER.
- 13 PROVIDE (N) 1 EA. CAT6A DATA DROP AT (E) EXTERIOR AP. REWORK AND PROVIDE REQUIRED COMPONENTS PER DETAIL
- 14 PROVIDE (N) WM5400 SURFACE RACEWAY (IVORY) ACROSS WALL. REMOVE (E) PN10 RACEWAY AND BOXES AND REWORK ALL (E) DATA DROPS INTO (N) WM5400. PROVIDE (N) WM2300 TO DATA DROP LOCATIONS ÀS REQ'D. INTENT IS TO FULLY REPLACE ALL (E) PN10 DATA RACEWAY ALONG THIS WALL WITH (N) WM5400 AND



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DELTA DESCRIPTION

PROJECT SACRAMENTO CITY UNIFIED SCHOOL DISTRICT H.W. HARKNESS

TELECENTER UPGRADE 2147 54TH AVENUE

SACRAMENTO, CA 95822

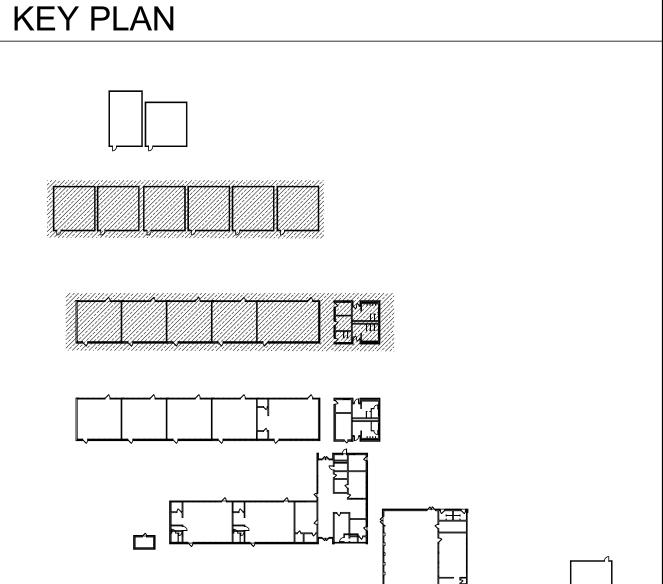
SHEET TITLE **TECHNOLOGY** FLOOR PLAN -

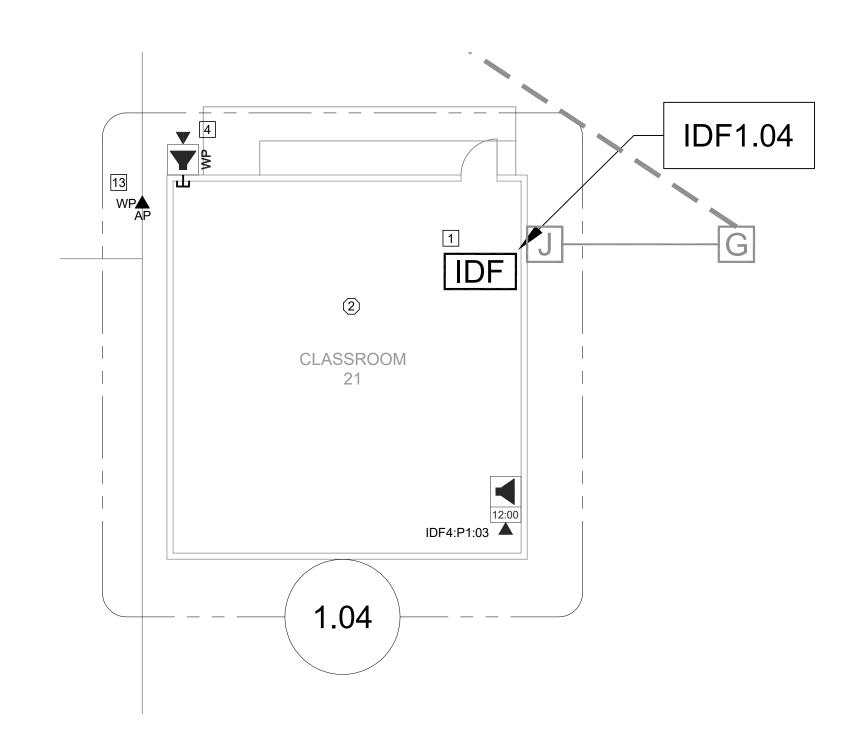
NEW

DRAWING STATUS

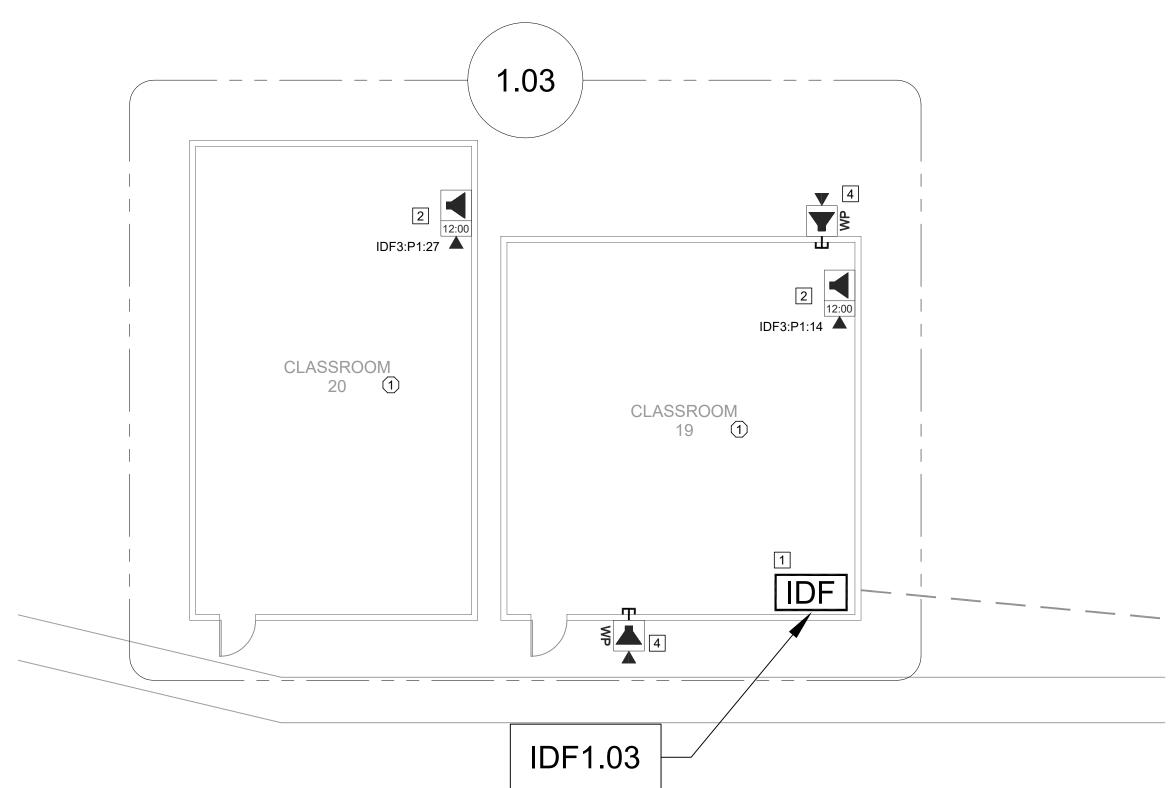
CONSTRUCTION DRAWINGS

2025-05-19





TECHNOLOGY FLOOR PLAN NEW - IDF1.04



CEILING CONDITION CHART:

(1) DROP IN CEILING TILES. (2) HARD LID CEILING.

GENERAL NOTES:

- I. NO STRUCTURAL BEAMS SHALL BE PENETRATED OR ALTERED.
- ALL EQUIPMENT AND MATERIALS ARE CONTRACTOR FURNISHED, INSTALLED, AND CONFIGURED, UNO.
- CONTRACTOR SHALL TOUCH UP PAINT TO MATCH EXISTING CONDITIONS FOR ALL AREAS OF NEW INSTALL OR DEMOLITION.

SHEET NOTES:

- 1 REWORK MDF/IDF PER RACK ELEVATION. SEE T400/T401. PROVIDE (N) COMBO BOX WITH (N) SPEAKER, (N) CLASSROOM IP MODULE, AND (N) IP CLOCK. LOCATE (E) DATA DROP ABOVE T-BAR AND FISH THROUGH WALL TO (N) CUT-IN BOX BEHIND COMBO
- REMOVE (E) WIREMOLD SURFACE BOX WITH PREWIRED DATA DROP. INSTALL (N) COMBO BOX WITH (N) SPEAKER, (N) CLASSROOM IP MODULE, AND (N) IP CLOCK. REWORK (E) DATA DROP INTO (N) COMBO BOX USING WIREMOLD PN10F15V "T"
- 4 PROVIDE (N) EXTERIOR SPEAKER WITH (N) EXTERIOR BACKBOX. PROVIDE (N) INTERIOR ENCLOSURE WITH (N) CLASSROOM IP MODULE. PROVIDE (N) 1 EA. CAT6A DATA DROP AT INTERIOR
- 5 PROVIDE (N) COMBO BOX WITH (N) SPEAKER, (N) CLASSROOM IP MODULE, AND (N) IP CLOCK. PROVIDE (N) 1 EA. CAT6A DATA DROP.
- 6 PROVIDE (N) BACKBOX WITH (N) SPEAKER AND (N) CLASSROOM IP MODULE. PROVIDE (N) 1 EA. CAT6A DATA DROP.
- 7 PROVIDE (N) LARGE MESSAGE BOARD WITH PROTECTIVE COVER. REWORK (E) DATA DROP INTO (N) METAL WIREMOLD BOX (P/N V5741). METAL BOX REQUIRED HERE FOR ADEQUARE STABILITY OF
- 8 PROVIDE (N) CAT6A DATA DROP, QUANTITY INDICATED, VIA (N)
- 9 PROVIDE (N) WM5400 SURFACE RACEWAY (WHITE) FROM EXISTING. DOWN AND ACROSS WALL. INTENT IS TO REPLACE (E) PN10 AND FULLY CONCEAL WIRING AT THIS LOCATION. PULL BACK AND RETERMINATE DATA DROPS AT PRINCIPAL OFFICE C05 AS REQUIRED. SEE PICTURE DETAIL.
- 10 RE-SECURE SURFACE RACEWAY COMING AWAY FROM WALL/CEILING.
- 11 (N) 1 EA. 1" CONDUITS.

KEY PLAN

LARGE MESSAGE BOARD.

- 12 PROVIDE (N) 4-PAIR COPPER FEEDER BETWEEN FACP AND 66-BLOCK ON ADJACENT WALL. COORD. WITH DISTRICT REPRESENTATIVE FOR CUTOVER.
- 13 PROVIDE (N) 1 EA. CAT6A DATA DROP AT (E) EXTERIOR AP. REWORK AND PROVIDE REQUIRED COMPONENTS PER DETAIL
- 14 PROVIDE (N) WM5400 SURFACE RACEWAY (IVORY) ACROSS WALL. REMOVE (E) PN10 RACEWAY AND BOXES AND REWORK ALL (E) DATA DRÒPS INTO (N) WM5400. PROVIDE (N) WM2300 TO DATA DROP LOCATIONS AS REQ'D. INTENT IS TO FULLY REPLACE ALL (E) PN10 DATA RACEWAY ALONG THIS WALL WITH (N) WM5400 AND



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DELTA DESCRIPTION

PROJECT

SACRAMENTO CITY UNIFIED SCHOOL DISTRICT H.W. HARKNESS

TELECENTER UPGRADE 2147 54TH AVENUE SACRAMENTO, CA 95822

SHEET TITLE

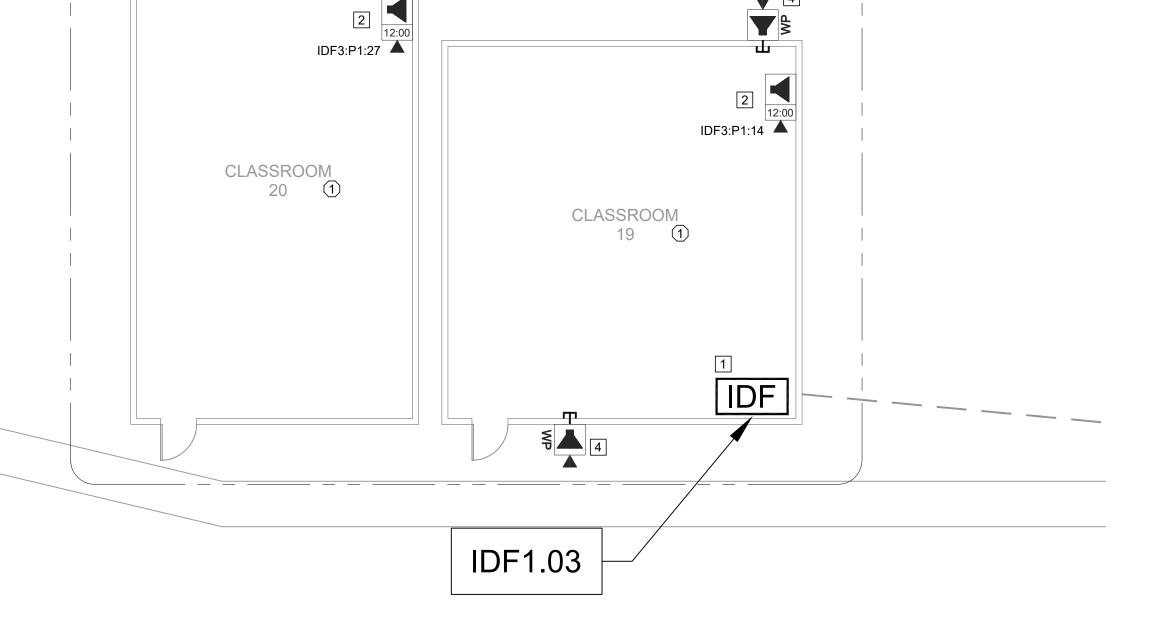
TECHNOLOGY FLOOR PLAN -NEW

DRAWING STATUS

CONSTRUCTION DRAWINGS

DESIGNED BY: CHECKED BY: 2025-05-19 ISSUE DATE: WORKING DATE: 2025-05-19

REVISION



TECHNOLOGY FLOOR PLAN NEW - IDF1.03

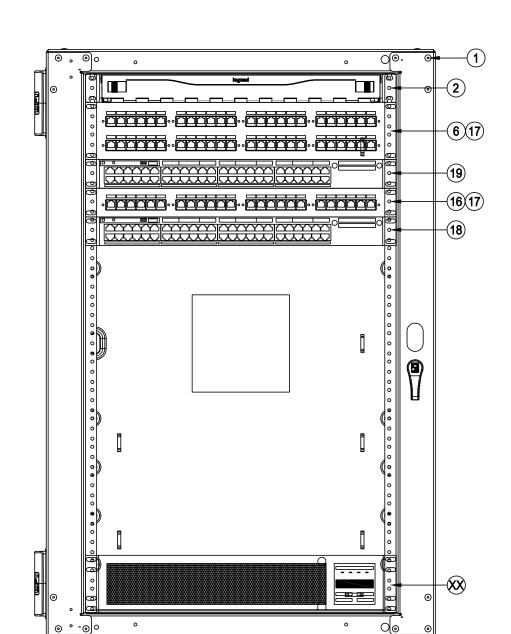
0 4 8 12 16

SCOPE OF WORK - IDF 1.01

- PROVIDE (N) 24P PATCH PANEL PER THE ELEVATION. RELOCATE (16) KEYSTONÈS CURRENTLY IN (E) PATCH PANEL P2 INTO THIS (N) 24P PATCH PANEL. COPY LABELING FROM (E) PATCH PANEL.
- 2. TERMINATE 4 EA. (E) CCTV DATA DROP ON (N) BLUE KEYSTONE IN (N) PATCH PANEL P2.
- . REMOVE (E) CCTV SWITCH AND PSU (SYMBOL 9) AND RETURN TO
- 4. PROVIDE (N) UNINTERRUPTIBLE POWER SUPPLY PER THE ELEVATION. ROUTE POWER FOR ALL RACK COMPONENTS SO THAT IT IS PROTECTED BY THE UPS.



RACK - EXISTING CONDITION

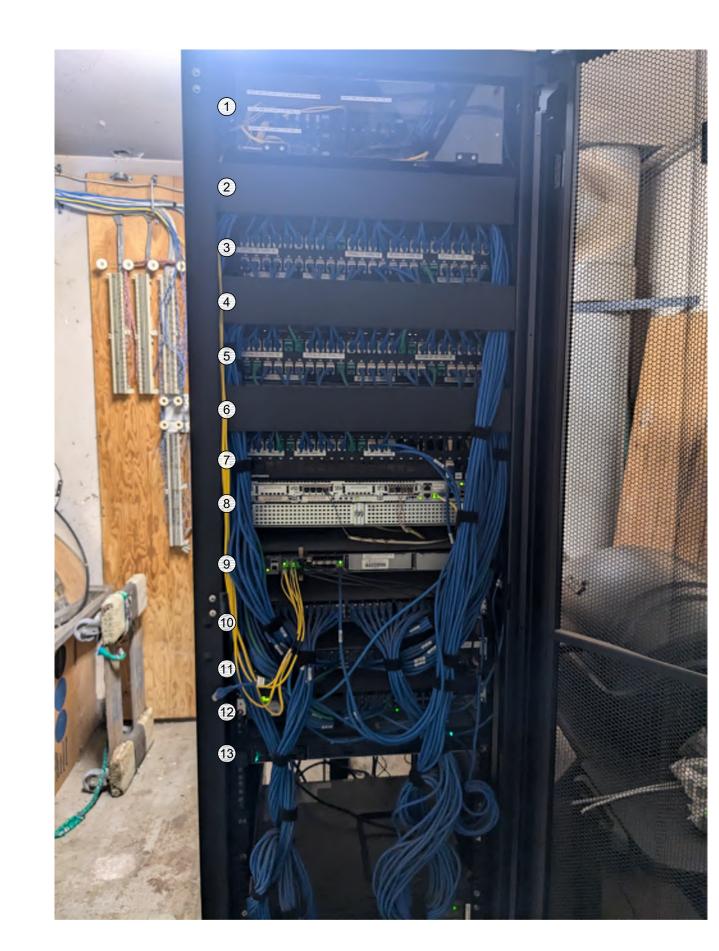


DATA RACK LAYOUT - IDF 1.01
SCALE: NONE

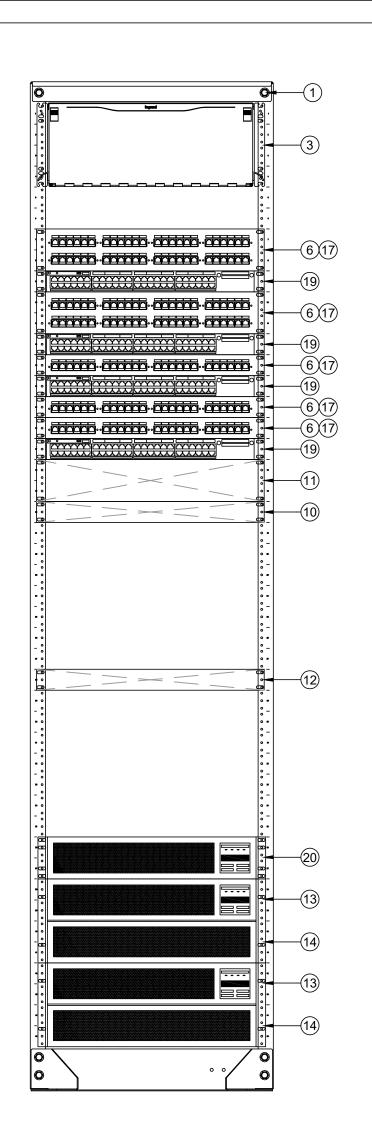
RACK - FINAL LAYOUT

SCOPE OF WORK - MDF 1.00

- PROVIDE (N) 24P PATCH PANEL PER THE ELEVATION. RELOCATE (20) KEYSTONES CURRENTLY IN (E) PATCH PANEL P3 INTO THIS (N) 24P PATCH PANEL. COPY LABELING FROM (E) PATCH PANEL.
- TERMINATE 16 EA. (E) CCTV DATA DROP ON (N) BLUE KEYSTONE IN (N) PATCH PANELS P3, P4.
- REMOVE (E) CCTV SWITCH AND PSU (AT REAR OF RACK, NOT PICTURED) AND RETURN TO DISTRICT.
- PROVIDE (N) UNINTERRUPTIBLE POWER SUPPLY PER THE ELEVATION. ROUTE POWER FOR THE TELECENTER HEADEND COMPONENTS SO THAT IT IS PROTECTED BY THIS UPS.



RACK - EXISTING CONDITION



RACK - FINAL LAYOUT

GENERAL SCOPE OF WORK: (ALL IDF/MDF)

- 1. REMOVE ALL (E) RACK-MOUNTED CABLE MANAGER(S). PROVIDE (N) REAR CABLE MANAGEMENT BAR(S) AT EACH PATCH PANEL AND DRESS (E) CABLES FOR STRAIN RELIEF PER 11/T800.
- 3. RELOCATE (E) DEVICES PER THE ELEVATION.
- 4. INSTALL (N) OWNER-FURNISHED SWITCHES PER THE

ELEVATION.

5. PROVIDE (N) 12" SLIMLINE CAT6A PATCH CABLES TO REPLACE ALL (E) PATCH CABLES AND FOR ALL (N) DROPS, COLOR CODED TO DISTRICT STANDARD.

EQUIPMENT SCHEDULE: ALL EQUIPMENT AND MATERIALS ARE CONTRACTOR FURNISHED, INSTALLED AND CONFIGURED (UNO)				
SYMBOL	DESCRIPTION	MFG	PART NUMBER	NOTES / DETAIL REFERENCES
1)	RACK CABINET	EXISTING	EXISTING	N/A
2	(E) 1U FIBER LIU	EXISTING	EXISTING	N/A
3	(E) 4U FIBER LIU	EXISTING	EXISTING	N/A
4	(E) 2U CABLE MANAGER	EXISTING	EXISTING	DEMO
(5)	(E) 1U 24P PATCH PANEL	EXISTING	EXISTING	RELOCATE PER ELEVATION
6	(E) 2U 48P PATCH PANEL	EXISTING	EXISTING	RELOCATE PER ELEVATION
7	(E) 24P SWITCH	EXISTING	EXISTING	DEMO
8	(E) 48P SWITCH	EXISTING	EXISTING	DEMO
9	(E) CCTV SWITCH AND PSU	EXISTING	EXISTING	DEMO
10	(E) CORE SWITCH	EXISTING	EXISTING	N/A
11)	(E) VOIP GATEWAY	EXISTING	EXISTING	N/A
(12)	(E) NVR	EXISTING	EXISTING	N/A
13)	(E) UPS	EXISTING	EXISTING	N/A
14)	(E) UPS BATTERY	EXISTING	EXISTING	N/A
(15)	NOT USED	NOT USED	NOT USED	N/A
16)	(N) 1U 24P PATCH PANEL	ORTRONICS	SPKSU24	N/A
17)	(N) REAR CABLE MANAGEMENT BAR	ORTRONICS	OR-CMBFR0RU	N/A
18)	(N) 24P SWITCH	CISCO	OFCI	N/A
19	(N) 48P SWITCH	CISCO	OFCI	N/A
20	(N) UPS - 1000VA	N1C	N1C.L1000	N/A
21)	(N) UPS - 1500VA	N1C	N1C.L1500	N/A



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DELTA DESCRIPTION

PROJECT

SACRAMENTO CITY UNIFIED SCHOOL DISTRICT H.W. HARKNESS TELECENTER UPGRADE

> 2147 54TH AVENUE SACRAMENTO, CA 95822

SHEET TITLE

TECHNOLOGY RACK ELEVATIONS

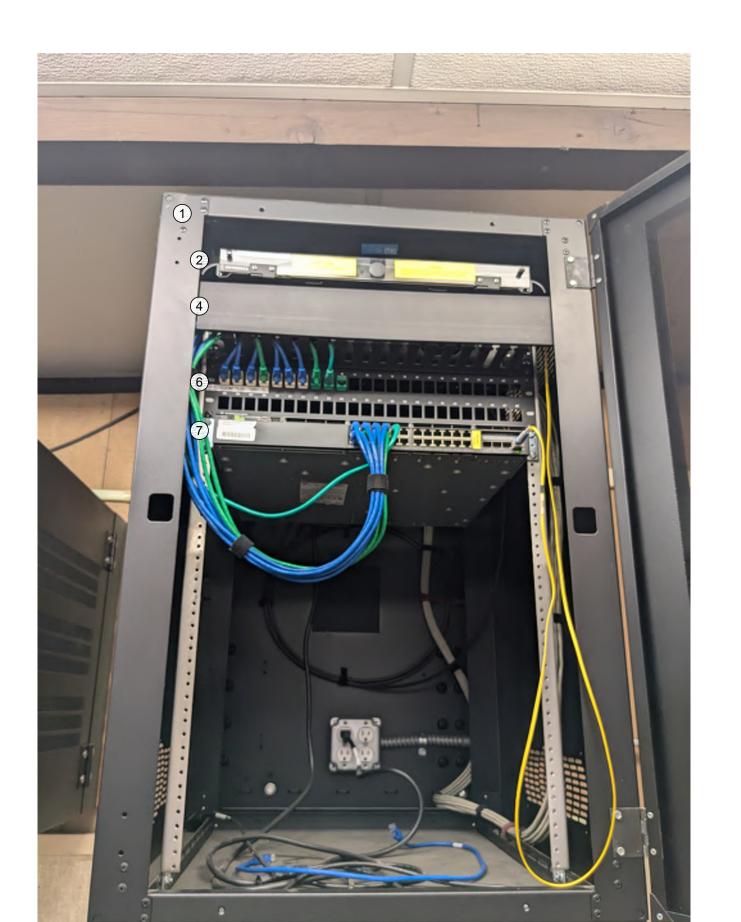
DRAWING STATUS

CONSTRUCTION DRAWINGS

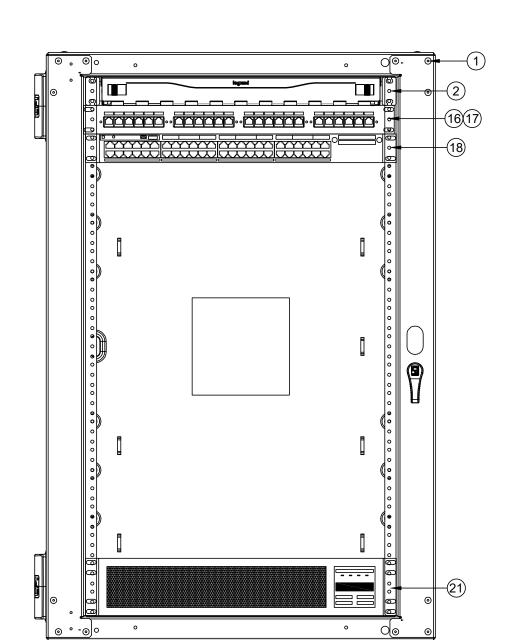
PROJECT NO:	
BID PACKAGE:	0139-411
DESIGNED BY:	CS
CHECKED BY:	SD
ISSUE DATE:	2025-05-19
WORKING DATE:	2025-05-19

SCOPE OF WORK - IDF 1.04

- PROVIDE (N) 24P PATCH PANEL PER THE ELEVATION. RELOCATE (10) KEYSTONÈS CURRENTLY IN (E) PATCH PANEL P2 INTO THIS (N) 24P PATCH PANEL. COPY LABELING FROM (E) PATCH PANEL.
- PROVIDE (N) UNINTERRUPTIBLE POWER SUPPLY PER THE ELEVATION. ROUTE POWER FOR ALL RACK COMPONENTS SO THAT IT IS PROTECTED



RACK - EXISTING CONDITION



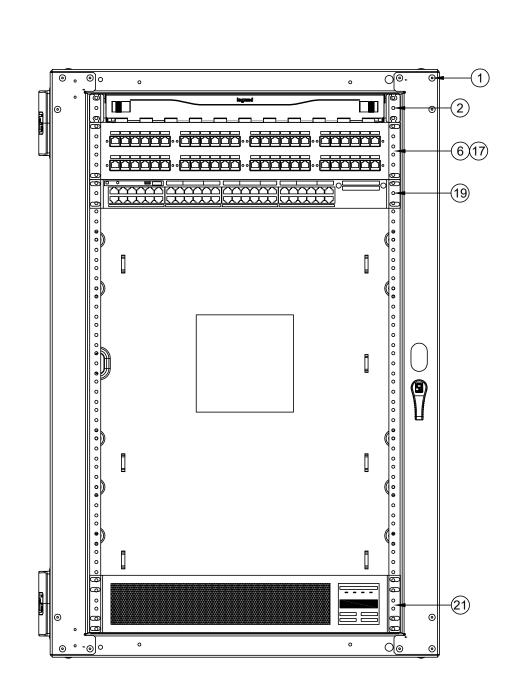
RACK - FINAL LAYOUT

SCOPE OF WORK - IDF 1.03

- TERMINATE 1 EA. (E) CCTV DATA DROP ON (N) BLUE KEYSTONE IN (E) PATCH PANEL P1.
- REMOVE (E) MEDIA CONVERTER AND POE INJECTOR AND RETURN TO
- PROVIDE (N) UNINTERRUPTIBLE POWER SUPPLY PER THE ELEVATION. ROUTE POWER FOR ALL RACK COMPONENTS SO THAT IT IS PROTECTED BY THE UPS.



RACK - EXISTING CONDITION



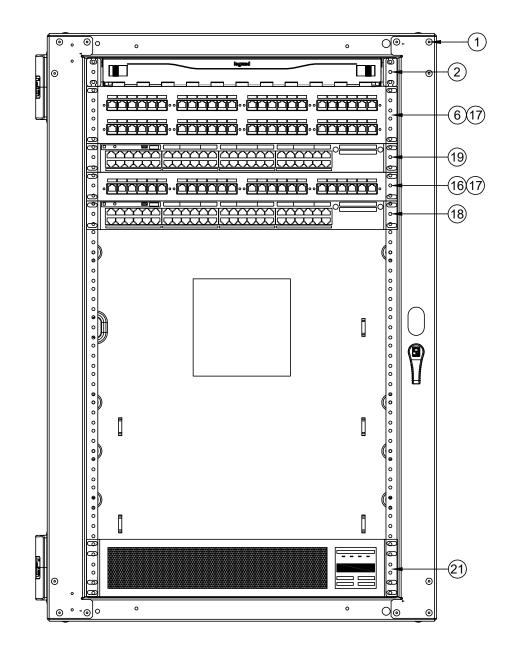
RACK - FINAL LAYOUT

SCOPE OF WORK - IDF 1.02

- PROVIDE (N) 24P PATCH PANEL PER THE ELEVATION. RELOCATE (16) KEYSTONÈS CURRENTLY IN (E) PATCH PANEL P2 INTO THIS (N) 24P PATCH PANEL. COPY LABELING FROM (E) PATCH PANEL.
- TERMINATE 2 EA. (E) CCTV DATA DROP ON (N) BLUE KEYSTONE IN (N) PATCH PANEL P2.
- REMOVE (E) CCTV SWITCH AND PSU (SYMBOL 9) AND RETURN TO
- PROVIDE (N) UNINTERRUPTIBLE POWER SUPPLY PER THE ELEVATION. ROUTE POWER FOR ALL RACK COMPONENTS SO THAT IT IS PROTECTED



RACK - EXISTING CONDITION



RACK - FINAL LAYOUT

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DELTA DESCRIPTION

PROJECT

SACRAMENTO CITY UNIFIED SCHOOL DISTRICT H.W. HARKNESS TELECENTER UPGRADE

2147 54TH AVENUE SACRAMENTO, CA 95822

SHEET TITLE

TECHNOLOGY RACK ELEVATIONS

DRAWING STATUS

CONSTRUCTION DRAWINGS

PROJECT NO:	
BID PACKAGE:	0139-411
DESIGNED BY:	CS
CHECKED BY:	SD
ISSUE DATE:	2025-05-19
WORKING DATE:	2025-05-19

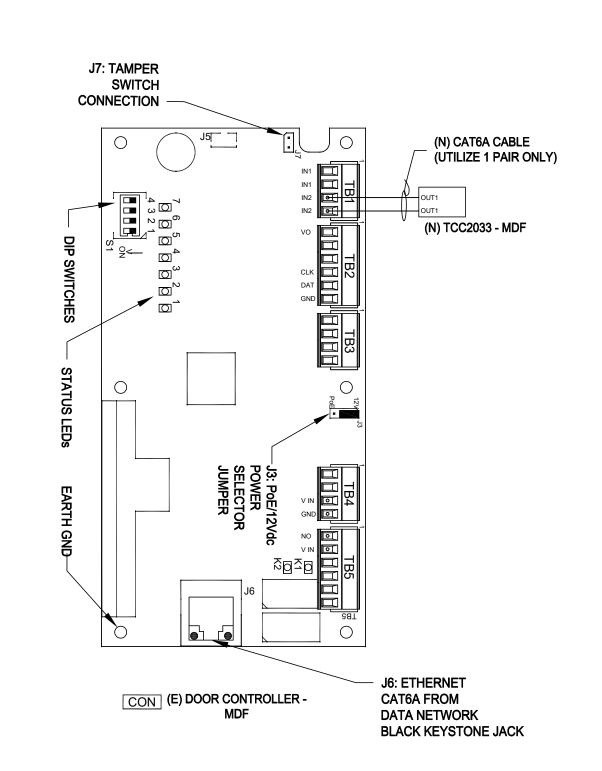
REVISION

T401

DATA RACK LAYOUT - IDF 1.04

SCALE: NONE

DATA RACK LAYOUT - IDF 1.03
SCALE: NONE



9 TELECENTER TO ACCESS CONTROL SINGLE LINE SCALE: NONE

8

(N) CAT6A, QTY. AS NEEDED

- (N) 1 EA. CAT6A

- (E) 1 EA. CAT6A

8

(N) CAT6A, QTY. AS NEEDED

(N) 2 EA. CAT6A

- (E) 2 EA. CAT6A

8

DATA RACK LAYOUT - IDF 1.02
SCALE: NONE

_ (N) CAT6A, QTY. AS NEEDED

- (N) 4 EA. CAT6A

- (E) 6 EA. CAT6A

8

DATA RACK LAYOUT - IDF 1.01
SCALE: NONE

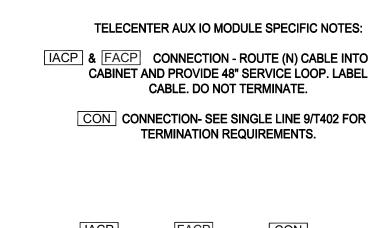
(N) CAT6A,

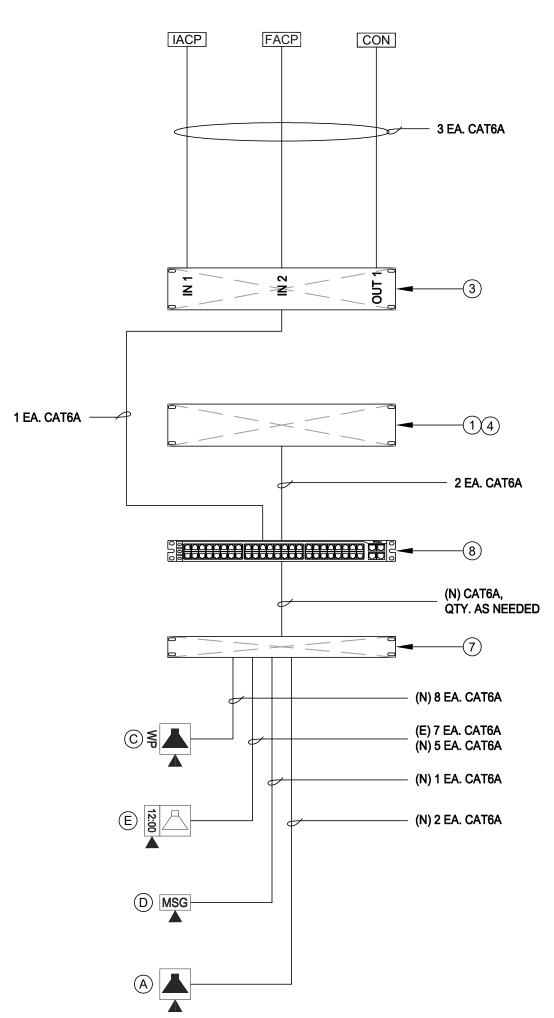
- (N) 3 EA. CAT6A

- (E) 5 EA. CAT6A

QTY. AS NEEDED

DATA RACK LAYOUT - MDF 1.00
SCALE: NONE





SYMBOL	DESCRIPTION	MODEL	PART NUMBER	NOTES / DETAIL REFERENCES
1	TELECENTER U IP CONTROLLER	RAULAND	TCC2000	N/A
2	TELECENTER U ADMIN CONSOLE		TCC2045	N/A
	TELECENTER U AUX. IN/OUT. MODULE		TCC2033	N/A
3	UNIVERSAL RACK MOUNTING KIT		TCC2099	N/A
4	TELECENTER U PROGRAM LINE INPUT MODULE		TCC2055	N/A
7	24-PORT OR 48-PORT PATCH PANEL	SEE DATA TECHNOLOGY RACK ELEVATIONS BELOW FOR MORE INFORMATION.		(N) OR (E) AS NOTED
8	48-PORT NETWORK SWITCH	SEE DATA TECHNOLOGY RACK ELEVATIONS BELOW FOR MORE INFORMATION.		(N) OR (E) AS NOTED
IACP	INTRUSION ALARM CONTROL PANEL	EXISTING	EXISTING	N/A
FACP	FIRE ALARM CONTROL PANEL	EXISTING	EXISTING	N/A

A	EQUIPMENT SCHEDULE INTERIOR SURFACE SPEAKER: ALL EQUIPMENT AND MATERIALS ARE CONTRACTOR FURNISHED, INSTALLED AND CONFIGURED (UNO)				
DESCRIPTION MODEL PART NUMBER NOTES / DETAIL REFERENCES					
TELECENTER U IP CLASSROOM MODULE		RAULAND	TCC2011B	MOUNT INSIDE ENCLOSURE	
8 OHM, 8" SPEAKER WITH RJ45 CONNECTOR		RAULAND	US0880	N/A	
SPEAKER BAFFLE		RAULAND	ACC1003	N/A	
SURFAC	E MOUNT SPEAKER ENCLOSURE	RAULAND	ACC1112	N/A	

©	EQUIPMENT SCHEDULE EXTERIOR SURFACE SPEAKER: ALL EQUIPMENT AND MATERIALS ARE CONTRACTOR FURNISHED, INSTALLED AND CONFIGURED (UNO)					
	DESCRIPTION	MODEL	PART NUMBER	NOTES / DETAIL REFERENCES		
TELECENTER U IP CLASSROOM MODULE		RAULAND	TCC2011B	MOUNT INSIDE BUILDING		
TELECENTER U BREAKOUT MODULE		RAULAND	603101	MOUNT INSIDE BUILDING		
8 OHM, 8" MOISTURE RESISTANT SPEAKER		LOWELL	8C10MRB	N/A		
GRILLE VANDAL RESISTANT		RAULAND	ACC1012	N/A		
SURFACE MOUNT SPEAKER ENCLOSURE		RAULAND	ACC1113	N/A		
(N) SURFACE MOUNTED 4 GANG BACKBOX - WHITE		FSR	SMWB-4G-WHT	MOUNT INSIDE BUILDING		

(D)	EQUIPMENT SCHEDULE LARGE MESSAGE BOARD: ALL EQUIPMENT AND MATERIALS ARE CONTRACTOR FURNISHED, INSTALLED AND CONFIGURED (UNO)					
	DESCRIPTION	MODEL	PART NUMBER	NOTES / DETAIL REFERENCES		
LARGE MESSAGE BOARD		RAULAND	TCC3012L	N/A		
PROTECTIVE CAGE		AMERICAN TIME	G2055OF-28	N/A		

E	EQUIPMENT SCHEDULE INTERIOR SURFACE CLOCK/SPEAKER COMBO: ALL EQUIPMENT AND MATERIALS ARE CONTRACTOR FURNISHED, INSTALLED AND CONFIGURED (UNO)				
DESCRIPTION		MODEL	PART NUMBER	NOTES / DETAIL REFERENCES	
TELECENTER U IP CLASSROOM MODULE		RAULAND	TCC2011B	MOUNT IN ENCLOSURE	
IP DIGITAL CLOCK		RAULAND	TCC3011S	N/A	
BAFFLE ASSEMBLY WITH SPEAKER		RAULAND	ACC3011S	N/A	
SURFACE MOUNT ENCLOSURE CLOCK/SPEAKER COMBO		RAULAND	ACC3011SBB	N/A	

INTE		MATRIX: TO OTHER SYSTI	EMS			
MODULES		TCC2033 (IDF 1.01)				
I/O PORTS	IN-1	IN-2	OUT-1	OUT-2		
EVENT: LOCKDOWN			C			
EVENT: INTRUSION ALARM ACTIVE	Α					
EVENT: FIRE ALARM ACTIVE		В				
A INPUT: CLOSURE	INPUT: CLOSURE FROM INTRUSION ALARM PANEL					
B INPUT: CLOSURE	INPUT: CLOSURE FROM FIRE ALARM PANEL					
C OUTPUT: CLOSU	OUTPUT: CLOSURE TO ACCESS CONTROL					



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SHEET REVISIONS

DELTA	DESCRIPTION	DATE
l ——		

PROJECT
SACRAMENTO CITY
UNIFIED SCHOOL DISTRICT
H.W. HARKNESS
TELECENTER UPGRADE

2147 54TH AVENUE SACRAMENTO, CA 95822

SHEET TITLE
TECHNOLOGY

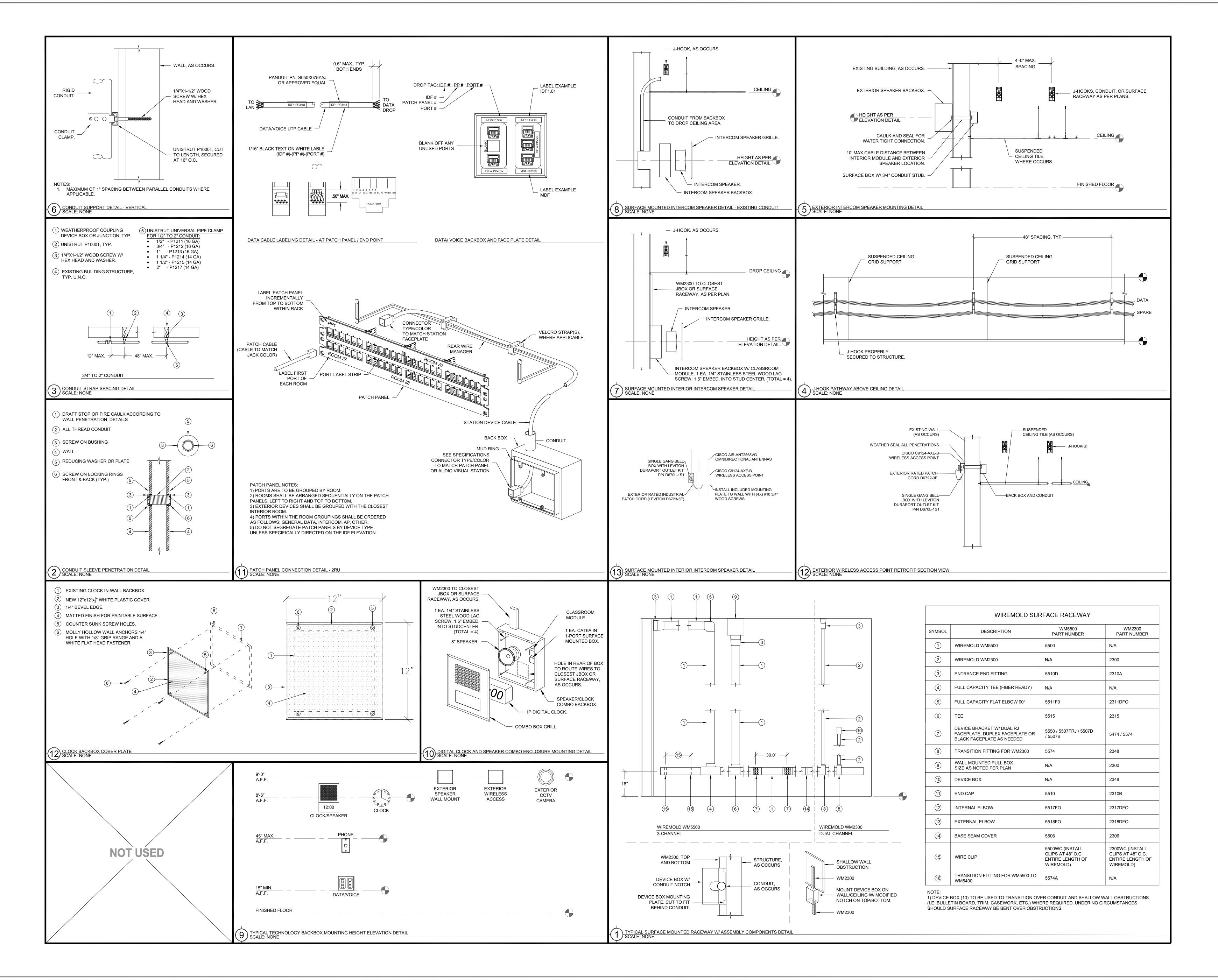
SINGLE LINE DIAGRAMS

DRAWING STATUS

CONSTRUCTION DRAWINGS

PROJECT NO:	
BID PACKAGE:	0139-411
DESIGNED BY:	CS
CHECKED BY:	SD
ISSUE DATE:	2025-05-19
WORKING DATE:	2025-05-19
	_

REVISION



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DESCRIPTION DELTA

SHEET REVISIONS

PROJECT SACRAMENTO CITY UNIFIED SCHOOL DISTRICT H.W. HARKNESS

TELECENTER UPGRADE 2147 54TH AVENUE SACRAMENTO, CA 95822

> SHEET TITLE **TECHNOLOGY**

DETAILS

DRAWING STATUS CONSTRUCTION DRAWINGS

PROJECT NO: **BID PACKAGE:** 0139-411 **DESIGNED BY:** CHECKED BY: ISSUE DATE: 2025-05-19 2025-05-19 **WORKING DATE:** REVISION

Inderwiters Laboratories, Inc to ANSI/UL 1479 (ASTM E814)

and ANSI/UL263 (ASTM E119)

CLIV.R14288 Wall-opening Protective Materials

SpecSeal Power Shield Box Inserts, for use with flush device UL Listed Metallic Outlet Boxes without internal clamps installed with steel mud rings in framed wall assemblies. When protective material is used in outlet boxes on both sides of the wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. (610 mm) provided that the boxes are not installed back-to-back. Installation shall comply with the National Electrical Code (NFPA 70). The max outlet box dimensions, hourly rating, type of stud, use of stud cavity insulation and type of faceplate are tabulated below. Additional general construction features shall comply as follows:

- A. **Studs** Unless otherwise specified, the minimum stud width is 3-1/2 in. (89 mm). B. Stud Cavity Insulation - Where indicated in the table below, stud cavity insulation to consist of min 3-1/2 in. (89 mm) thick fiberglass (min 0.5 pcf or 8 kg/m3) or mineral fiber (min 4 pcf or 64 kg/m3). Unless indicated as required, stud cavity insulation
- C. Wall Design Stud composition is indicated in the table below. Wall construction shall comply with the individual U300, U400 or V400 Series Wall and Partition Design in the Fire Resistance Directory. D. Pad Dimensions - The minimum dimensions of the insert pad are shown in the table below. Pads may be cut to achieve

Product	Max Outlet Box Size, in. (mm)	Outlet Box Type	Outlet Box Mfr	Pad Size, in. (mm)	Rating, hr	Stud	Cavity Insulation	Face Plate Type	Putty Ball
EP 23	2 x 3 x 2-1/4 (51 x 76 x 57) deep	-	-	1-7/8 x 2-3/4 (48 x 70)	2	Steel	No	Steel	-
EP 23	2 x 3 x 2-1/4 (51 x 76 x 57) deep	-	-	1-7/8 x 2-3/4 (48 x 70)	2	Steel	Yes	Plastic	-
EP 23	2 x 3 x 2-1/4 (51 x 76 x 57) deep	-	-	1-7/8 x 2-3/4 (48 x 70)	1	Steel or Wood	Yes	Plastic or Steel	-
EP 24	2-1/8 x 4 x 2-1/8 (54 x 102 x 54) deep	-	-	1-7/8 x 3-3/4 (48 x 95)	2	Steel	No	Steel	-
EP 24	2-1/8 x 4 x 2-1/8 (54 x 102 x 54) deep	-	-	1-7/8 x 3-3/4 (48 x 95)	2	Steel	Yes	Plastic	-
EP 24	2-1/8 x 4 x 2-1/8 (54 x 102 x 54) deep	-	-	1-7/8 x 3-3/4 (48 x 95)	1	Steel or Wood	Yes	Plastic or Steel	-
EP 44	4 x 4 x 2-1/8 (102 x 102 x 54) deep	-	-	3-3/4 x 3-3/4 (95 x 95)	2	Steel	No	Steel	-
EP 44	4 x 4 x 2-1/8 (102 x 102 x 54) deep	-	-	3-3/4 x 3-3/4 (95 x 95)	2	Steel	Yes	Plastic	-
EP 44	4 x 4 x 2-1/8 (102 x 102 x 54) deep	-	-	3-3/4 x 3-3/4 (95 x 95)	1	Steel or Wood	Yes	Plastic or Steel	-
EP 45	4-11/16 x 4-11/16 x 2-1/8 (119 x 119 x 54) deep	-	-	4-1/2 x 4-1/2 (114 x 114)	1 or 2	Steel or Wood	Yes	Plastic or Steel	-
EP 45	4-1/2 x 5 x 2-3/8 (114 x 127 x 60) deep	-	-	4-1/2 x 4-1/2 (114 x 114)	1 or 2	Steel or Wood	Yes	Plastic or Steel	-
	1 1/2 × 1/1 × 2/1/2	1	ı	1 1/2 4 12 2/4	I	Ctool or	I	Diagtic or	

SpecSeal Putty Pads, for use with flush device UL Listed Metallic Outlet Boxes installed with steel mud rings or UL Listed Nonmetallic Outlet Boxes in framed wall assemblies. When protective material is used on outlet boxes on both sides of the wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. (610 mm) provided that the boxes are not installed back-to-back. Installation shall comply with the National Electrical Code (NFPA 70). Min 3/16 in. (5mm) thick moldable putty pads are to be installed to completely cover the exterior surfaces of the outlet box (except for the side of the outlet box against the stud) and to completely seal against the stud within the stud cavity. Adjoining pieces of moldable putty pads to be overlapped approx 1/2 in. (13 mm) at the seam. An additional 3/16 in. (5 mm) thickness of putty to be formed around the connector securing the end of each Type MC cable, electrical metallic tube (EMT) or conduit to the box. When nonmetallic box is used with Type NM cable, a 3/16 in. (5 mm) thickness of putty shall be formed around the cable at its connection to the box and extending a min of 1 in. (25 mm). The box composition, max device dimensions, hourly rating, type of stud and type of faceplate are tabulated below. Additional general construction features shall comply as follows:

A. Studs - Unless otherwise specified, the minimum stud width is 3-1/2 in. (89 mm). B. Stud Cavity Insulation - Unless indicated as required, stud cavity insulation is optional and may consist of min 3-1/2 in. (89

or V400 Series Wall and Partition Design in the Fire Resistance Directory.

mm) thick fiberglass (min 0.5 pcf or 8 kg/m3) or mineral fiber (min 4 pcf or 64 kg/m3). C. Wall Design - Stud composition is indicated in the table below. Wall construction shall comply with the individual U300, U400



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- D. Metallic Outlet Boxes Except as indicated in the table below, when steel outlet boxes are used and the boxes are interconnected by means of electrical metallic tube or conduit, a ball of putty is to be installed to plug the open end of each electrical metallic tube (EMT) or conduit within the outlet box. When MC cable is used and/or when the outlet boxes are not
- interconnected, the ball of putty is not required. . Nonmetallic Outlet Boxes - The box manufacturer is indicated in the table below. Boxes shall bear a 2 hr rating under the 'Outlet Boxes and Fittings Classified for Fire Resistance" category in the Fire Resistance Director

Model	Max Outlet Box	Outlet	Outlet	Pad Size	Rating,	Stud	Cavity	Face Plate	Putty
Model	Size in. (mm)	Box Type	Box Mfr	in. (mm)	hr	Siuu	Insulation	Type	Ball
_	4 x 4 x 2-1/8	Steel	N.A.	_	1	Steel or	_	Steel	No
	(102 x 102 x 54) deep	Otoci	14.7 (.			Wood		Otoci	110
_	4 x 4 x 2-1/8	Steel	N.A.	_	1	Steel or	_	Plastic	Yes
	(102 x 102 x 54) deep		14.7 (.			Wood		1 labilo	100
	4-11/16 x 4-11/16 x 2-1/8	Steel	N.A.	_	1 or 2	Steel or	_	Steel	Yes
1	(119 x 119 x 54) deep	Otoci	14.5 (.		1012	Wood		Otoci	100
_	4-1/2 x 5 x 2-3/8	Steel	N.A.	_	1 or 2	Steel or	_	Steel	Yes
	(114 x 127 x 60) deep	Oloci	14.5 (.		1 01 2	Wood		Oleci	100
_	4-1/2 x 14 x 2-1/2	Steel	N.A.	_	1 or 2	Steel or	_	Steel	Yes
	(114 x 127 x 60) deep			_	1 01 2	Wood	_		103
_	3-3/4 x 4 x 3	Polyvinyl	Lamson & Sessions		1 or 2	Wood		Plastic or	N.A.
_	(95 x 102 x 76) deep	Chloride	or Carlon	_	1012	vv00u	_	Steel	IV.A.
	3-3/4 x 4 x 3	Phenolic	Allied Moulded		1 or 2	Wood		Plastic or	N.A.
_	(95 x 102 x 76) deep	FIIEIIOIIC	Prods	_	1012	vvoou	-	Steel	IN.A.
	3-3/4 x 4 x 3	Polycarbonate	Thomas & Betts		1 or 2	Wood		Plastic or	N.A.
	(95 x 102 x 76) deep	Folycarbonate	THOMAS & Bells	_	1 01 2	vvood	-	Steel	IN.A.
	3-3/4 x 4 x 3	Phenolic	Thomas & Betts	_	1 or 2	Wood		Plastic or	N.A.
-	(95 x 102 x 76) deep		THOMAS & Dells	-	1 01 2	vvood	-	Steel	IN.A.
	2-1/4 x 3-3/4 x 2-3/4	Polyvinyl	Pass & Seymour	_	1 or 2	Wood		Plastic or	N.A.
	(57 x 95 x 70) deep	Chloride	i ass & Seyilloui	_	1 01 2	vvoou	_	Steel	IN.A.

SpecSeal Putty Pads, for use with maximum 4 by 4 by 2-1/8 in. (102 by 102 by 54 mm) deep flush device UL Listed Metallic Outlet Boxes installed with steel mud rings and with steel faceplates in 1 hr or 2 hr fire rated gypsum board wall assemblies constructed with min 5-1/2 in (140 mm) wide wood or steel studs and with stud cavities filled with fiberglass (nom 0.5 pcf or 8. kg/m3) or mineral fiber (nom 4 pcf or 64 kg/m3) insulation. When protective material is used on outlet boxes on both sides of the wall as directed, the boxes may be installed back-to-back provided that the boxes on opposite sides of the wall are not interconnected with conduit or, when interconnected, the open end of the conduit within the outlet box is filled with a ball of putty. Installation shall comply with the National Electrical Code (NFPA 70). Min 3/16 in. (5 mm) thick moldable putty pads are to be installed to completely cover the exterior surfaces of the outlet box (except for the side of the outlet box against the stud) and to completely seal against the stud within the stud cavity. Adjoining pieces of moldable putty pads to be overlapped approx 1/2 in. (13mm) The seam. An additional 3/16 in. (5 mm) thickness of putty to be formed around the connector securing the end of each Type MC cable, electrical metallic tube (EMT) or conduit to the box.

SpecSeal EP23, EP24 and EP44 Power Shield Box Inserts and SpecSeal Putty Pads, for use with maximum 4 by 4 by 1-1/2 or 2-1/8 in. (102 by 102 by 38 or 54 mm) deep flush device UL Listed Metallic Outlet Boxes installed with steel mud rings and with steel or plastic faceplates in 1 hr or 2 hr fire rated gypsum board wall assemblies constructed with min 3-1/2 in. (89 mm) wide wood or steel studs. When both protective materials are used with outlet boxes on both sides of the wall as directed, the boxes may be installed back-to-back provided that the backs of the boxes are minimum 1/2 in. (13 mm) apart and provided that the boxes are not interconnected. Installation shall comply with the National Electrical Code (NFPA 70). Min 3/16 in. (5 mm) thick moldable putty pads are to be installed to completely cover the exterior surfaces of the outlet box (except for the side of the outlet box against the stud) and to completely seal against the stud within the stud cavity. Adjoining pieces of moldable putty pads to be overlapped approx 1/2 in. (13 mm) at the seam. An additional 3/16 in. (5 mm) thickness of putty to be formed around the connector securing the end of each Type MC cable, electrical metallic tube (EMT) or conduit to the box. An insert pad shall be installed to completely cover the back inside surface of each outlet box.



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SpecSeal Putty Pads, for use with max 5 by 5 by 2 7/8 in. (127 by 127 by 73 mm) deep flush device UL Listed Metallic Outlet Boxes or UL Listed Communications-Circuit Accessories manufactured by Randl Industries Inc for use in 1 hr or 2 hr fire rated gypsum board wall assemblies framed with min 3-5/8 in. (92 mm) wide wood or steel studs and constructed as specified in the individual U300, U400, or V400 or W400 Series Wall and Partition Designs in the Fire Resistance Directory. Metallic outlet boxes to be provided with UL Listed Signal Appliance with steel cover plate manufactured by Cooper Wheelock Inc. Moldable putty pads are to be installed to completely cover the exterior surfaces of the outlet box (except for the side of the outlet box against the stud unless otherwise noted) including nailing tabs and to completely seal against the stud within the stud cavity. Multiple moldable putty pads may be installed on an outlet box to attain the required minimum thickness of putty material. Additional putty material used to seal around each conduit and/or cable fitting on the exterior of each box. A min 3/16 in. (4.8 mm) thickness of putty material is required on the exterior surfaces of flush device boxes in 1 and 2 hr fire rated Wall and Partition Designs. When the moldable putty pad outlet box protective material is used on boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. (610 mm) provided that the outlet boxes are not installed back to back, except as noted.

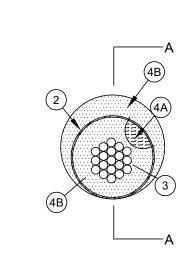
SpecSeal EP55 Power Shield Box Inserts, for use with max 5 by 5 by 2 7/8 in. (127 by 127 by 73 mm) deep flush device UL Listed Metallic Outlet Boxes or UL Listed Communications-Circuit Accessories manufactured by Randl Industries Inc for use in 1 hr or 2 hr fire rated gypsum board wall assemblies framed with min 3-5/8 in. (92 mm) wide wood or steel studs and constructed as specified in the individual U300, U400, or V400 or W400 Series Wall and Partition Designs in the Fire Resistance Directory. Metallic outlet boxes to be provided with ULL listed Signal Appliance with steel cover plate manufactured by Cooper Wheelock Inc. Power Shield Box Insert is to be applied to the back surface of the box and may be slit to accommodate communications-circuit accessories When the Power Shield Box Insert is used on boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. (610 mm) provided that the outlet boxes are not installed back to back, except as noted.

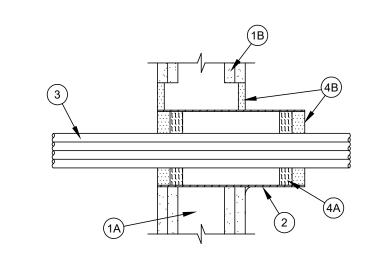
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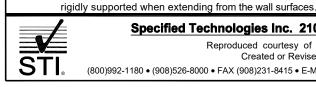
Jnderwriters Laboratories, Inc. to ANSI/UL 1479 (ASTM E814) and CAN/ULC S115 System No. W-L-3210

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1 and 2 Hr (See Item 1)	F Ratings - 1 and 2 Hr (See Item 1)
T Rating - 3/4 Hr	FT Rating - 3/4 Hr
L Rating at Ambient - Less Than 1 CFM/sq ft (See Items 3 and 4B)	FH Ratings - 1 and 2 Hr (See Item 1)
L Rating at 400°F - Less Than 1 CFM/sq ft (See Items 3 and 4B)	FTH Rating - 3/4 Hr
	L Rating at Ambient - Less Than 5.1 L/S/m² (See Items 3 and 4B)
	L Rating at 204°F - Less Than 5.1 L/S/m² (See Items 3 and 4B)





- Wall Assembly The 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, V300, U400, V400, or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
- A. Studs Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24
- B. Gypsum Board* Thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300, V300, U400 , V400 or W400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 6-1/2 in. (165 mm) when sleeve (Item 2) is installed. Max diam of opening is 4 in. (102 mm) when sleeve is not The hourly F and FH rating of the firestop system are equal to the hourly fire rating of the wall assembly in which
- Steel Sleeve (Optional) Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT), steel conduit, Schedule 5 (or heavier) steel pipe sleeve or min 0.016 in. thick (0.41 mm, No. 28 ga) galv steel sleeve installed flush with wall surfaces. The annular space between the steel sleeve and periphery of opening shall be min 0 in. (continuous point contact) to max 2 in. (51 mm). When Schedule 5 steel pipe or EMT is used, sleeve may be installed flush with or extend up to 18 in. (46 cm) beyond one or both wall surfaces. Steel sleeve may be installed at an angle not greater than 45 degrees from perpendicular. Schedule 5 steel pipe or EMT sleeves may extend continuously beyond one wall surface. Sleeve to be



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Cables - Aggregate cross-sectional area of cables in opening when a steel sleeve (Item 2) is not used, or within steel sleeve to be max 48 percent of the aggregate cross-sectional area of the opening or sleeve. Cables to be bundled and rigidly supported on both sides of wall assembly. When the sleeve is installed, the annular space between the cables and the sleeve shall be min 0 in. (point contact) to max 1-1/2 in. (38 mm). When the sleeve (Item 2) is not used, the annular space between the cables and the opening shall be a min 0 in. (point contact) to a max 1/2 in. (13 mm). When L Ratings for penetrants are required, min separation between cables and between cables and periphery of opening or the sleeve os 1/8 in. (3 mm). Cable bundle, using cables described below, may penetrate the wall at an angle not greater than 45 degrees.

- Any combination of the following types and sizes of copper conductor cable may be used: A. Max 200 pair No. AWG (or smaller) copper conductor cable with polyvinyl chloride (PVC) or plenum-rated jacketing
- and insulation. B. Max 3/C No. 2/0 AWG (or smaller) aluminum or copper conductor service entrance cable with PVC insulation and
- C. Max 3/C No. 8 AWG (or smaller) nonmetallic sheathed (Romex) cable with copper conductors, PVC insulation and
- D. Max 7/C No. 2/0 AWG (or smaller) multiconductor power and control cables with XLPE or PVC insulation and XLPE
- or PVC jacket. E. Max RG/U (or smaller) coaxial cable with fluorinated ethylene or plenum-rated insulation and jacketing.
- F. Max 62.5/48 fiber optic cable with PVC or plenum-rated insulation and jacketing.
- G. Max 4 pair No. 24 AWG (or smaller) copper conductor data cable with PVC or plenum-rated insulation and jacket. H. Max 4/C No. 2/0 aluminum or copper conductor aluminum or steel Metal-Clad# or Armored-Clad# cable.
- I. Max 3/4-in. (19 mm) diam copper ground cable with or without a PVC jacket. 4. **Firestop System** - The firestop system shall consist of the following: A. Packing Material - When required (See table in Item 4B), min 1 in. (25 mm) thickness of min 4.0 pcf (64 kg/m 3) mineral wool batt insulation firmly packed into each end of sleeve (Item 2) as a permanent form. Packing material to
- sleeve is not used, the packing material is not required. B. Fill, Void or Cavity Material* - Sealant or Putty - When sleeve (Item 2) is used, fill material applied to appropriate thickness within steel sleeve as shown in the table below, flush with edges of steel sleeve on both surfaces of wall. Min 1/2 in. (13 mm) thickness of fill material installed into annular space between sleeve and wall flush with both surfaces of the wall. Min 1/2 in. (13 mm) diam bead of sealant or "rope" of putty shall be applied around the perimeter of the sleeve on each side of the wall when sleeve extends beyond surface of wall and is installed at continuous point contact. When sleeve is not used, a min 5/8 in. (16 mm) thickness of fill material shall be applied within the annulus, flush with both surfaces of the wall. At point contact location, apply min 1/4 in. (6 mm) diam bead of fill material at

be recessed from each end of sleeve as required to accommodate the required thickness of fill material. When the

Sealant or Putty Type	Thickness, In. (mm)	Packing Material Required
SpecSeal Series SSS Sealant or LCI Sealant	1/2 in. (13)	Yes
SpecSeal Series SSS Sealant or LCI Sealant	1 in. (25)	No
SpecSeal Putty	1 in. (25)	No

SPECIFIED TECHNOLOGIES INC - SpecSeal Series SSS Sealant, SpecSeal LCI Sealant or SpecSeal Putty L Ratings apply only when SpecSeal Series SSS or SpecSeal LCI Sealants are used. * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



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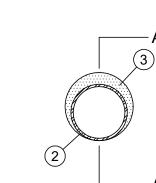
cable/gypsum board interface on both sides of the wall.

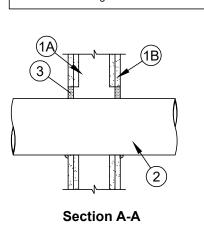


Underwriters Laboratories, Inc.

to ANSI/UL 1479 (ASTM E814) and CAN/ULC S115 System No. W-L-1049

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1 and 2 Hr (See Item 1)	F Ratings - 1 and 2 Hr (See Item 1)
T Rating - 0 Hr	FT Rating - 0 Hr
L Rating At Ambient - Less Than 1 CFM/sq ft	FH Ratings - 1 and 2 Hr (See Item 1)
L Rating At 400 F - Less Than 1 CFM/sq ft	FTH Rating - 0 Hr
	L Rating at Ambient - Less Than 5.1 L/S/m2
	L Rating at 204°C - Less Than 5.1 L/S/m2





- . Wall Assembly The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, V300, U400, V400 or W400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features: A. Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610mm) OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wider and 4 to 6 in. (102 to 152 mm) higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. (51 to
- 76mm) clearance is present between the penetrating item and the framing on all four sides. B. Gypsum Board* - 5/8 in. (16 mm) thick, 4 ft (1.22 m) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300, V300, U400, V400 or W400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 38 in. (965 mm) for steel stud walls. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls. The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall
- assembly in which it is installed. 1A. Metallic Sleeve - (Optional, Not Shown) - Cylindrical sleeve fabricated from min 0.016 in. (0.41 mm) to max 0.105 in. (2.7 mm) thick sheet steel. Length of steel sleeve to be equal to the thickness of wall. Longitudinal seam of sleeve welded or overlapped min 1 in. (25 mm). The ends of the steel sleeve shall be flush or recessed max 1/4 in. (6 mm) from wall surfaces.

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2. Through Penetrant - One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe, conduit or tubing may be installed at an angle not greater than 45 degrees from perpendicular. The annular space between pipe, conduit or tubing and periphery of opening shall be min 0 in. (0 mm, point contact) to max 2 in. (51 mm). Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

- A. Steel Pipe Nom 36 in. (914 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe. B. Iron Pipe - Nom 36 in. (914 mm) diam (or smaller) cast or ductile iron pipe. C. Conduit - Nom 6 in. (152 mm) diam (or smaller) rigid steel conduit, nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT) or nom 4 in. (102 mm) diam (or smaller) flexible steel condui
- D. Copper Tubing Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing. E. Copper Pipe - Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe. F. Stainless Steel Pipe - Nom 36 in. (914 mm) diam (or smaller) Schedule 10 (or heavier) stainless steel pipe. 2A. Through Penetrating Product* - Flexible Metal Piping - As an alternate to Item 2, one nom 2 in. (51 mm) diam (or smaller)
- steel flexible metal pipe to be installed either concentrically or eccentrically within the firestop system. The annular space between the pipe and the periphery of the opening shall be min 0 in. (point contact) to max 2 in. (51 mm). Pipe to be rigidly supported on both sides of the wall assembly. OMEGA FLEX INC GASTITE, DIV OF
- TITEFLEX WARD MFG L L C 3. Fill, Void or Cavity Material* - Sealant - Min 5/8 in. (16 mm) thickness of fill material applied within annulus, flush with both surfaces of wall. At point contact location between through penetrant and gypsum board, a min 3/8 in. (10 mm) diam bead of fill material shall be applied at the gypsum board/through penetrant interface on both surfaces of wall. SPECIFIED TECHNOLOGIES INC - SpecSeal Series SSS Sealant or SpecSeal LCI Sealant
- * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively



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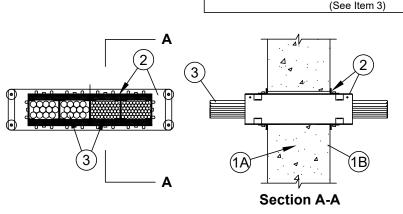
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Underwriters Laboratories, Inc. to ANSI/UL 1479 (ASTM E814) and CAN/ULC S115 System No. W-J-3098

ANSI/UL1479 (ASTM E814) CAN/ULC S115 F Ratings - 2 and 4 Hr (See Item 3) F Ratings - 2 and 4 Hr (See Item 3) T Ratings - 3/4 and 1 Hr (See Item 3) FT Ratings - 3/4 and 1 Hr (See Item 3) L Rating At Ambient - Less Than 1, 1.3, 4 or 7 CFM/Device FH Ratings - 2 and 4 Hr (See Item 3) Module (See Item 3)

L Rating At 400 F - Less Than 1, 2 or 3 CFM/Device Module FTH Ratings - 3/4 and 1 Hr (See Item 3) (See Item 3) L Rating At Ambient - Less Than 1, 1.3, 4 or 7 CFM/Device Module (See Item 3) L Rating At 400 F - Less Than 1, 2 or 3 CFM/Device Module



Wall Assembly - Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete wall. Wall may also be constructed of any UL Classified Concrete Blocks*. Opening to be max 1/4 in. (6 mm) larger than width and height dimensions of firestop device(s).

- See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers. Firestop Device* - One, two, three, four or seven firestop device modules ganged together. Each firestop device module consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device modules to be installed in accordance with the accompanying installation instructions. The space between the firestor device module(s) and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/8 in. (3.2 mm). In round openings, the space between the firestop device and the periphery of the opening shall be min 0 in. (point contact) to max 1/2 in. (13 mm). Firestop device module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with device. Each firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly. As an option, devices may be cast or grouted into wall assembly. When device is cast or grouted in place, the steel wall plates are optional.
- SPECIFIED TECHNOLOGIES INC EZ PATH Series 33 Fire Rated Pathway 2A. Firestop Device* - Extension Module - (Optional, Not Shown) - Module attached to ends of 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long firestop device (Item 3) to increase its length to facilitate installation in thicker walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 2) and extension module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device or extension module(s) by means of steel set screws provided with wall plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly. SPECIFIED TECHNOLOGIES INC - EZ PATH Extension

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Cables - Cables may represent a 0 to 100 percent visual fill within the loading area for each firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used: A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC)

B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.

(such as Canada), respectively.

- D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
- E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
- F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation. G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
- H. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation and having a max diam of 5/8 in. (16 mm). When Item 3A, 3B, 3C, 3D or 3E is used, the F and FH Ratings are 2 hr and the T, FT and FTH Ratings are 3/4 hr. When max 200 pair No. 24 AWG telecommunication cable is used or when Item 3F, 3G or 3H is used, the F and FH Ratings are 4 hr and the T, FT and FTH Ratings are 1 hr.
- The L Rating for each empty firestop device module is less than 1 cfm at ambient and at 400F. When Item 3A is used, the L Rating for each firestop device module with 100 percent visual fill is 4 cfm at ambient and 3 cfm at 400F. When Item 3F is used, the L Rating for each firestop device module with 100 percent visual fill is 1.3 cfm at ambient and less than 1 cfm at 400F.When Item 3G or 3H is used, the L Rating for each firestop device module with 100 percent visual fill is 7 cfm at ambient and 2 cfm at 400F. * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification



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DESCRIPTION

DELTA

PROJECT

SACRAMENTO CITY UNIFIED SCHOOL DISTRICT H.W. HARKNESS TELECENTER UPGRADE 2147 54TH AVENUE

SHEET TITLE

SACRAMENTO, CA 95822

DRAWING STATUS

CONSTRUCTION DRAWINGS

PROJECT NO:	
BID PACKAGE:	0139-411
DESIGNED BY:	CS
CHECKED BY:	SD
ISSUE DATE:	2025-05-19
WORKING DATE:	2025-05-19

REVISION

