ABBREVIATIONS:

A	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ANN	ANNUNCIATOR
AP	ACCESS POINT
BFF	BELOW FINISHED FLOOR
BFG	BELOW FINISHED GRADE
BICSI	BUILDING INDUSTRY CONSTRUCTION SERVICE INTERNATIONAL
BLDG	BUILDING
C	CONDUIT
CAB	CABINET
CAT	CATEGORY
CATV	CABLE TELEVISION
CD	CANDELA
CFCI	CONTRACTOR FURNISHED/CONTRACTOR INSTALLED
CL	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	INTRUSION ALARM CONTROL PANEL
IDF	INTERMEDIATE DISTRIBUTION FRAME
IMC	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
OFOI	OWNER FURNISHED/OWNER INSTALLED
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	VOLTS
W	WATT
WP	WEATHERPROOF

TECHNOLOGY SYMBOL LEGEND:

ALL EQUIPMENT AND MATERIALS ARE CONTRACTOR FURNISHED, INSTALLED AND CONFIGURED (UNO)

SYMBOL	DESCRIPTION	MANUFACTURER	PART NUMBER	NOTES / DETAIL REFERENCES
———	(E) SURFACE MOUNTED CONDUIT	N/A	N/A	N/A
– – – –	(E) UNDERGROUND CONDUIT	N/A	N/A	N/A
——2300——	(N) MEDIUM CAPACITY SURFACE MOUNTED CABLE RACEWAY	WIREMOLD	WM2300	GREY = EXISTING
——J——J——	(N) J-HOOK PATHWAY	COMMERCIAL GENERIC	N/A	GREY = EXISTING
MDF / IDF	(E) DATA RACK	N/A	SEE SHEET T400	N/A
G	(E) GROUND BOX	N/A	N/A	N/A
J	(E) JUNCTION BOX	N/A	N/A	N/A
H / J	(E) SURFACE MOUNTED 4-SQUARE JUNCTION BOX, WALL / CEILING	N/A	N/A	N/A
	(E) ELECTRICAL OUTLET	N/A	N/A	N/A
KP	(E) INTRUSION KEYPAD	EXISTING	EXISTING	N/A
TEL	(E) ADMIN. PHONE HANDSET	EXISTING	EXISTING	N/A
EXT	(E) CCTV CAMERA	EXISTING	EXISTING	N/A
	(E) EXTERIOR INTERCOM SPEAKER	EXISTING	EXISTING	N/A
12:00	(N) CAT6A DATA DROP LOCATION - IP CLOCK	LOWELL & SAPLING	SEE SHEET T400	N/A
CLOCK	(N) CAT6A DATA DROP LOCATION (QTY = 1) - IP CLOCK/SPEAKER/IP MODULE COMBO BOX	LOWELL, SAPLING, RAULAND & TCU	SEE SHEET T400	GREY = EXISTING
	(N) CAT6A DATA DROP LOCATION - WALL MOUNTED SPEAKER/IP MODULE	RAULAND & TELECENTER U	SEE SHEET T400	"CM" = CEILING MOUNTED
	(N) CAT6A DATA DROP LOCATION - EXTERIOR INTERCOM SPEAKER/IP MODULE	LOWELL, RAULAND & TELECENTER U	SEE SHEET T400	N/A
4G	(N) SURFACE MOUNTED 4 GANG BACKBOX - WHITE	FSR	SEE SHEET T400	N/A
MSG	(N) CAT6A DATA DROP LOCATION - LARGE MESSAGE BOARD	RAULAND	SEE SHEET T400	N/A
TEL	(N) ADMIN. CONSOLE PHONE	RAULAND	SEE SHEET T400	N/A

CONTRACTOR FURNISHED DOCUMENTS:

(SHOP DRAWINGS / PRODUCT SUBMITTALS / QUALIFICATIONS)

1. ORDERING AND INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL THE FOLLOWING:
   - 1.1. CONTRACTOR FURNISHED SHOP DRAWINGS ARE RECEIVED AND APPROVED BY THE DESIGNER.
   - 1.2. PRODUCT SUBMITTAL DOCUMENTS ARE RECEIVED AND APPROVED BY THE DESIGNER.
   - 1.3. APPLICABLE QUALIFICATION DOCUMENTATION ARE RECEIVED AND APPROVED BY THE DESIGNER.
2. ANY DESIGN AND/OR INSTALLATION DISCREPANCIES/CHANGE ORDER REQUESTS ARE TO BE ADDRESSED AT TIME OF SHOP DRAWING CREATION. CHANGE ORDERS AFTER APPROVED SHOP DRAWINGS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
3. ALTERNATIVE PRODUCTS ARE TO SUBMITTED WITH A FORMAL SUBSTITUTION REQUEST AND THE CONTRACTOR IS RESPONSIBLE FOR DEMONSTRATING PRODUCT FULL EQUIVALENCY.
4. IT SHALL BE UNDERSTOOD THAT THE DRAWINGS, DETAILS, AND ONE-LINES PROVIDED WITH THE DESIGN PACKAGE ARE DIAGRAMMATIC. INFORMATION PRESENTED IN DESIGN DRAWINGS ARE AS ACCURATE AS POSSIBLE, BUT ACCURACY IS NOT GUARANTEED AND FIELD VERIFICATION, OF ALL DIMENSIONS, ROUTING, ETC., BY THE CONTRACTOR IS REQUIRED.
5. DRAWINGS AND SPECIFICATIONS ARE PROVIDED TO SHOW THE INTENT OF THE DESIGN TO ASSIST THE CONTRACTOR IN SUBMITTING AN ACCURATE BID. CONTRACTOR IS DIRECTED TO MAKE FIELD SURVEYS AS PART OF THEIR WORK PRIOR TO SUBMITTING SYSTEM LAYOUT DRAWINGS (SHOP DRAWINGS). THE CONTRACTOR SHALL MAKE ALLOWANCE IN THE PROPOSAL TO COMPLY WITH THE INTENT OF THE DESIGN.
6. IN CASE OF DOUBT OF WORK INTENDED, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REQUEST INSTRUCTIONS FROM THE DESIGNER OR OWNER PRIOR TO BID.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING A COMPLETE, OPERABLE, AND FULLY FUNCTIONING SYSTEM.

TECHNOLOGY GENERAL PROJECT NOTES:

1. UPON COMPLETION OF THE INSTALLATION OF THE SYSTEMS, THE CONTRACTOR SHALL PROVIDE A SATISFACTORY TEST OF THE ENTIRE SYSTEMS IN THE PRESENCE OF THE ARCHITECT/DESIGNER, INSPECTOR, AND THE OWNER.
2. A STAMPED SET OF APPROVED SYSTEM DESIGN DOCUMENTS, AND CONTRACTOR FURNISHED SHOP DRAWINGS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION. THE CONTRACTOR SHALL INCORPORATE ANY AND ALL REDLINES TO DRAWINGS SETS AS REQUIRED. ANY DEVIATION FROM APPROVED DESIGN DOCUMENTS, INCLUDING THE SUBSTITUTION OF DEVICES, SHALL BE APPROVED BY THE ARCHITECT/DESIGNER AND THE OWNER PRIOR TO INSTALLATION.
3. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/DESIGNER PRIOR TO INSTALLATION.
4. ALL PENETRATIONS THROUGH RATED ASSEMBLIES REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH THROUGH PENETRATION FIRST STOP SYSTEMS WITH A "T" RATING EQUAL TO THE ASSEMBLY PENETRATED, SEE DETAILS ON SHEET T801 FOR MORE INFORMATION.
5. 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 FROM THE BOX TO THE DEVICE.
6. ALL CLOCK, BELL AND INTERCOM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY, OR OPEN RUN ABOVE CEILINGS, UNDER 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".
7. LOW VOLTAGE PANELS, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURER'S SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED THE WEIGHT FOR 20 lbs., WITHOUT SPECIAL MOUNTING DETAILS.
8. 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 FOR JOB TO FINAL.
9. PRIOR TO FINAL INSPECTION, THE CONTRACTOR SHALL PROVIDE ALL PROJECT AS-BUILT DRAWINGS AND MANUALS PER SPECIFICATIONS.
10. THE CONTRACTOR SHALL ALSO PROVIDE A TYPED RECORD OF COMPLETION. A FINAL WILL NOT BE GRANTED UNTIL THE ABOVE IS APPROVED BY THE OWNER.
11. THE TERM "PROVIDE" SHALL MEAN TO FURNISH, INSTALL AND MAKE FULLY OPERATIONAL.

SCOPE OF WORK:

1. THE CONTRACTOR SHALL PROVIDE ALL CLOCK, BELL AND INTERCOM EQUIPMENT, LICENSES, SOFTWARE AND ACCESSORIES FOR COMPLETE AND FULLY OPERATIONAL SYSTEMS.
2. THE CONTRACTOR SHALL PROVIDE ALL DATA NETWORK EQUIPMENT, LICENSES, SOFTWARE AND ACCESSORIES FOR COMPLETE AND FULLY OPERATIONAL DATA NETWORK SYSTEM.
3. THE CONTRACTOR SHALL REMOVE OLD OR ABANDONED CLOCK, BELL AND INTERCOM COMPONENTS (INCLUDING WIRE AND PATHWAY) AND PLATE OVER ANY OPENINGS.
4. THE CONTRACTOR SHALL TOUCH UP PAINT TO MATCH EXISTING CONDITIONS FOR NEW LOCATIONS FOR INSTALL OR AREAS OF DEMOLITION.
5. THE CONTRACTOR SHALL COORDINATE CUTOVERS AND ACTIVATION/COMMISSIONING OF NEW SYSTEM WITH DISTRICT REPRESENTATIVE AND DISTRICT STAFF.

PROJECT CODES AND STANDARDS:

PARTIAL LIST OF APPLICABLE CODES AND STANDARDS EFFECTIVE : JANUARY 1, 2023:

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), CCR, TITLE 24, PART 1
2022 CALIFORNIA BUILDING CODE (CBC), CCR, TITLE 24, PART 2 (2018 INTERNATIONAL BUILDING CODE WITH CALIFORNIA AMENDMENTS)
2022 CALIFORNIA ELECTRICAL CODE (CEC), CCR, TITLE 24, PART 3 (2017 NATIONAL ELECTRICAL CODE WITH CALIFORNIA AMENDMENTS)
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, PART 11
2022 CALIFORNIA REFERENCED STANDARDS CODE, CCR, TITLE 24, PART 12
2022 NFPA 72: NATIONAL FIRE ALARM AND SIGNALING CODE, NATIONAL FIRE PROTECTION ASSOCIATION

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:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. 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.
3. 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.
B. 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 ☐ E ☒ OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.
MP ☐ MD ☐ PP ☐ E ☐ OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVED (OPM #)

SHEET INDEX:

SHEET	DESCRIPTION
T000	TECHNOLOGY COVER SHEET
T100	TECHNOLOGY SITE PLAN - BACKBONE PATHWAY
T101	TECHNOLOGY SITE PLAN - EXTERIOR INTERCOM SPEAKERS
T200	TECHNOLOGY FLOOR PLANS - MDF
T201	TECHNOLOGY FLOOR PLANS - IDF 1.01 AND 1.02
T202	TECHNOLOGY FLOOR PLANS - IDF 1.03 AND 1.04
T203	TECHNOLOGY FLOOR PLANS - IDF 1.05 AND 1.06
T400	TECHNOLOGY SINGLE LINE DIAGRAMS
T800	TECHNOLOGY DETAILS
T801	TECHNOLOGY DETAILS

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SHEET REVISIONS

DELTA	DESCRIPTION	DATE

SITE KEY PLAN

PROJECT

SACRAMENTO CITY USD
JOSEPH BONNHEIM E.S.
TELE-CENTER
UPGRADE PROJECT
7300 MARIN AVE.
SACRAMENTO, CA. 95820

SHEET TITLE

TECHNOLOGY
COVER SHEET

DRAWING STATUS

CONSTRUCTION DOCUMENTS

PROJECT NO:	0183-464
BID PACKAGE:	TBD
DESIGNED BY:	RK/CC
CHECKED BY:	JG
ISSUE DATE:	2023-05-09
WORKING DATE:	2023-05-08

REVISION

SHEET T000

Login Name: gjacobi
Plot Date: May 11, 2023 - 9:08 am
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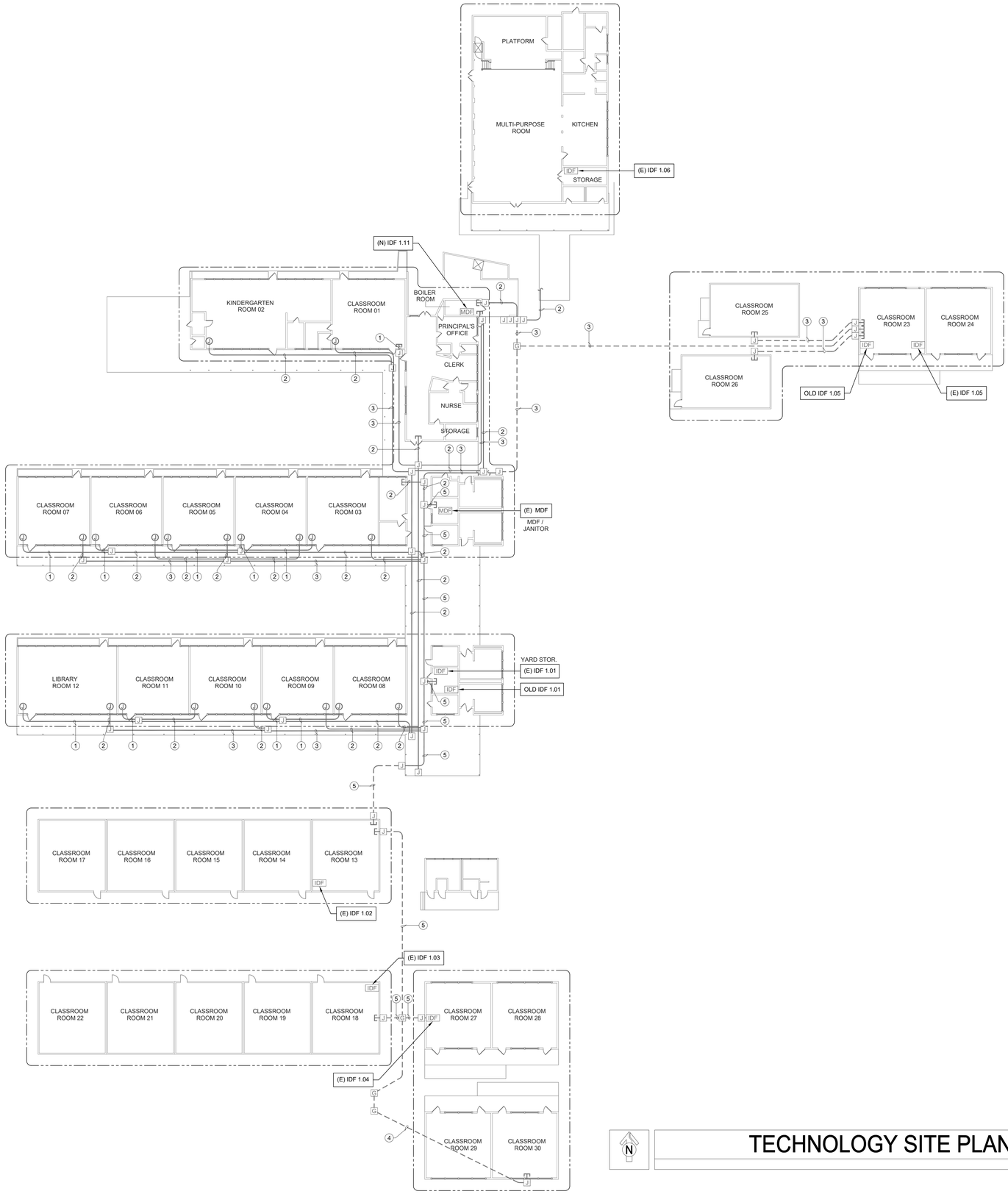

CONDUIT QUANTITY AND SIZE:

1. (E) 1 EA. 1" CONDUITS.
2. (E) 1 EA. 2" CONDUITS.
3. (E) 2 EA. 2" CONDUITS.
4. (E) 4 EA. 2" CONDUITS.
5. (E) 4 EA. 2" CONDUITS.

GENERAL NOTE(S):

1. NO STRUCTURAL BEAMS SHALL BE PENETRATED OR ALTERED.
2. PROVIDE APPROPRIATE WM5500 TO WM2300 FITTINGS TO EXIT WM5500 TO TRANSITION DOWN TO DROP LOCATIONS.
3. RELOCATE EXISTING INTRUSION DEVICES UP OR DOWN TO ALLOW NEW RACEWAY TO BE INSTALLED. VERIFY THAT THE RELOCATED DEVICE IS NOT CAUSING A FAULT ON THE ALARM PANEL PRIOR TO LEAVING THE SITE.

TECHNOLOGY SITE PLAN - BACKBONE PATHWAY

SCALE: 1"=20'

0 20 40

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SHEET REVISIONS

DELTA	DESCRIPTION	DATE

SITE KEY PLAN

PROJECT
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JOSEPH BONNHEIM E.S.
TELE-CENTER
UPGRADE PROJECT
7300 MARIN AVE.
SACRAMENTO, CA. 95820

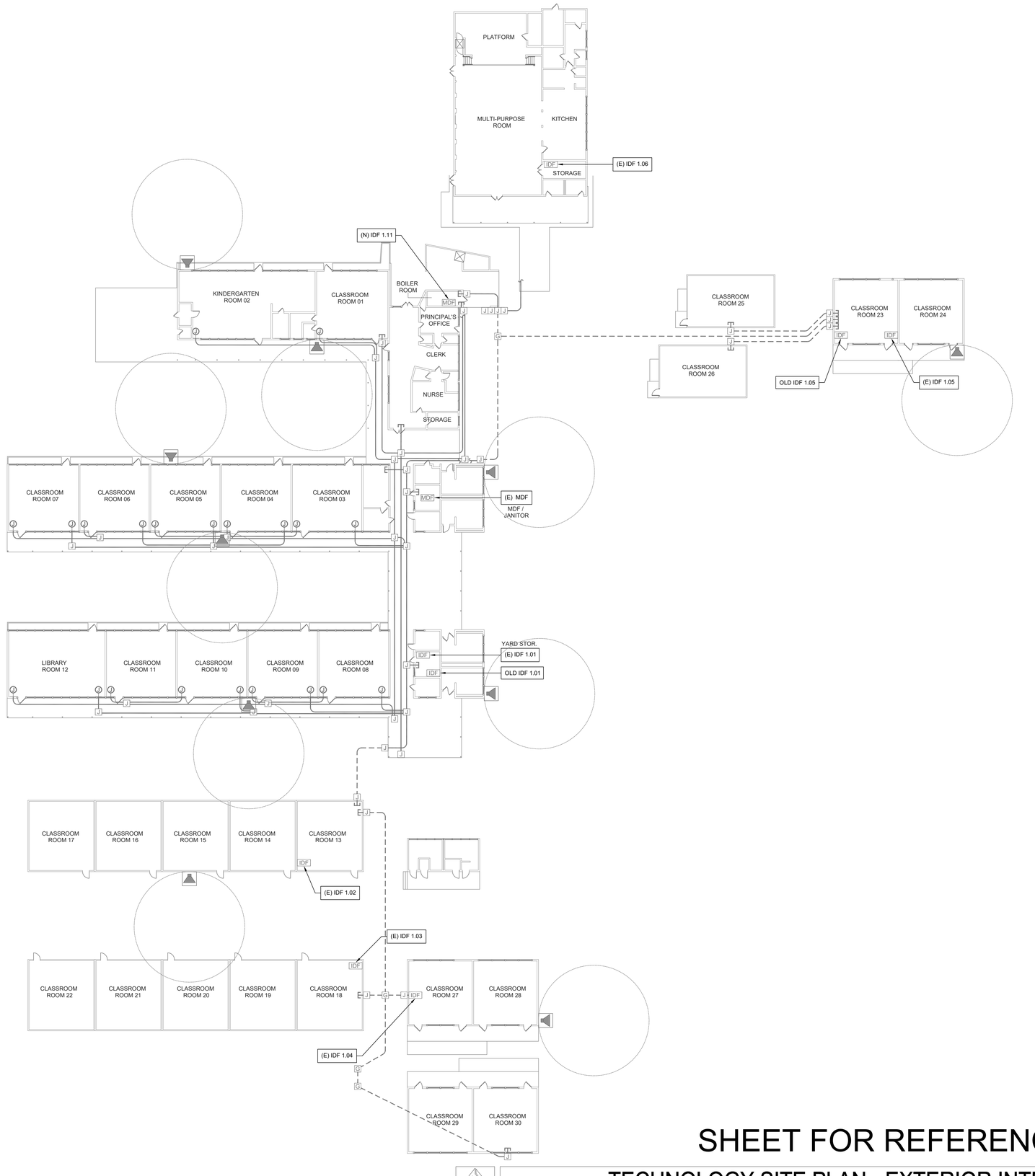
SHEET TITLE
TECHNOLOGY
SITE PLAN
- BACKBONE PATHWAY

DRAWING STATUS
CONSTRUCTION DOCUMENTS

PROJECT NO:	0183-464
BID PACKAGE:	TBD
DESIGNED BY:	RK/CC
CHECKED BY:	JG
ISSUE DATE:	2023-05-09
WORKING DATE:	2023-04-28

REVISION

SHEET T100



SHEET FOR REFERENCE ONLY

TECHNOLOGY SITE PLAN - EXTERIOR INTERCOM SPEAKERS

SCALE: 1"=20'

0 20 40

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SHEET REVISIONS

DELTA	DESCRIPTION	DATE

SITE KEY PLAN

PROJECT

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SHEET TITLE

TECHNOLOGY
SITE PLAN
- EXTERIOR
INTERCOM SPEAKERS

DRAWING STATUS

CONSTRUCTION DOCUMENTS

PROJECT NO:	0183-464
BID PACKAGE:	TBD
DESIGNED BY:	RK/CC
CHECKED BY:	JG
ISSUE DATE:	2023-05-09
WORKING DATE:	2023-04-23

REVISION

SHEET T101

Login Name: jgoodin
Plot Date: May 11, 2023 - 9:08 am
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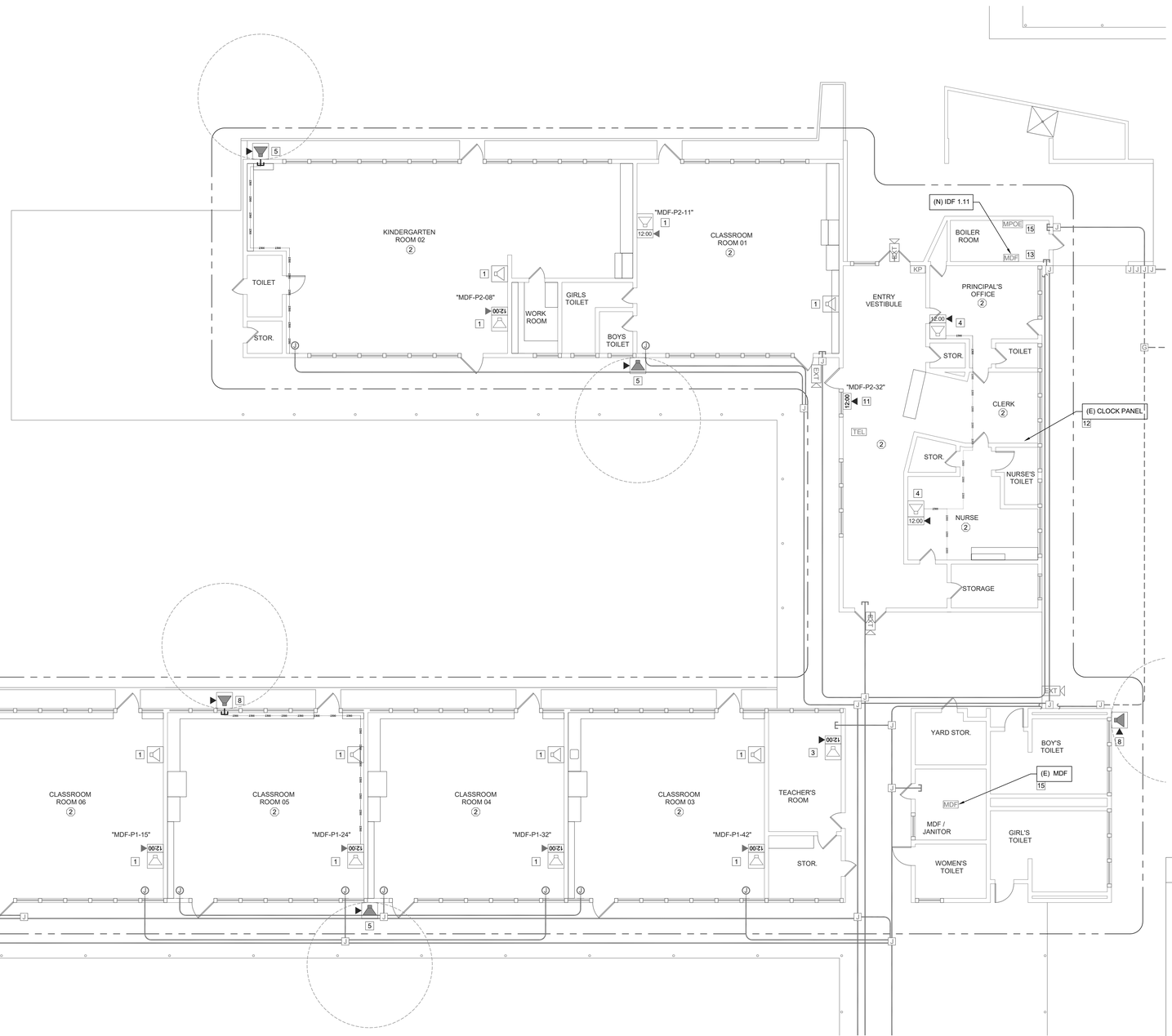


TECHNOLOGY FLOOR PLANS - MDF

SCALE: 1/8"=1'

0 4 8 12 16

GENERAL NOTES:

1. NO STRUCTURAL BEAMS SHALL BE PENETRATED OR ALTERED.
2. PROVIDE APPROPRIATE WM5500 TO WM2300 FITTINGS TO EXIT WM5500 TO TRANSITION DOWN TO DROP LOCATIONS.
3. RELOCATE EXISTING INTRUSION DEVICES UP OR DOWN TO ALLOW NEW RACEWAY TO BE INSTALLED. VERIFY THAT THE RELOCATED DEVICE IS NOT CAUSING A FAULT ON THE ALARM PANEL PRIOR TO LEAVING THE SITE.
4. NEW DATA DROPS INSTALLED WILL REQUIRE WM2300 INSTALLED TO EACH LOCATION.

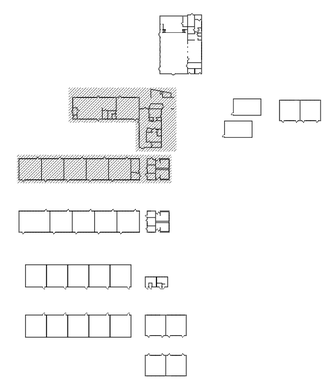
SHEET NOTES:

1. REPLACE (E) SPEAKER AND (E) CLOCK WITH (N) SPEAKER (WITH (N) CLASSROOM IP MODULE) AND (N) IP CLOCK MOUNTED IN (N) CLOCK/ SPEAKER COMBO BOX AT (E) CLOCK DATA DROP LOCATION. REMOVE WIREMOLD DUPLEX BOX, REWORK DATA DROP INTO CLOCK/SPEAKER COMBO BOX. BLANK OVER (E) CLOCK AND/OR (E) SPEAKER LOCATION AS REQUIRED.
2. REPLACE (E) SPEAKER AND (E) CLOCK WITH (N) SPEAKER (WITH (N) CLASSROOM IP MODULE) AND (N) IP CLOCK MOUNTED IN (N) CLOCK/ SPEAKER COMBO BOX AT (E) CLOCK LOCATION. BLANK OVER (E) CLOCK AND (E) SPEAKER LOCATION AS REQUIRED. PROVIDE ONE (1) (N) CAT6A DATA DROP.
3. PROVIDE (N) SPEAKER (WITH (N) CLASSROOM IP MODULE) AND (N) IP CLOCK MOUNTED IN (N) CLOCK/ SPEAKER COMBO BOX AT (E) CLOCK DATA DROP LOCATION. PROVIDE ONE (1) (N) DATA DROP AT (N) CLOCK/SPEAKER COMBO BOX. ROUTE THROUGH EXISTING WIREMOLD.
4. PROVIDE (N) SPEAKER WITH (N) CLASSROOM IP MODULE) AND (N) IP CLOCK MOUNTED IN (N) CLOCK/ SPEAKER COMBO BOX. PROVIDE ONE (1) (N) CAT6A DATA DROP.
5. REPLACE (E) EXTERIOR SPEAKER WITH (N) BACKBOX AND (N) SPEAKER. PROVIDE (N) INTERIOR ENCLOSURE WITH (N) CLASSROOM IP MODULE. PROVIDE ONE (1) (N) CAT6A DATA DROP.
6. PROVIDE (N) CEILING MOUNTED BACKBOX AND (N) SPEAKER (WITH (N) IP CLASSROOM MODULE) AT (E) CEILING DATA DROP LOCATION.
7. PROVIDE (N) WALL MOUNTED BACK BOX AND (N) SPEAKER (WITH (N) IP CLASSROOM MODULE). PROVIDE ONE (1) (N) CAT6A DATA DROP.
8. PROVIDE (N) WALL MOUNTED EXTERIOR BACKBOX AND (N) EXTERIOR SPEAKER. PROVIDE (N) INTERIOR ENCLOSURE WITH (N) CLASSROOM IP MODULE. PROVIDE ONE (1) (N) CAT6A DATA DROP.
9. PROVIDE (N) LARGE MESSAGE BOARD AT (E) DATA DROP LOCATION. REMOVE (E) WIREMOLD DUPLEX BOX, REWORK DATA DROP INTO DISPLAY BOARD BACKBOX.
10. REPLACE (E) SPEAKER AND (E) CLOCK WITH (N) SPEAKER (WITH (N) CLASSROOM IP MODULE) AND (N) IP CLOCK MOUNTED IN (N) CLOCK/ SPEAKER COMBO BOX AT (E) CLOCK LOCATION. BLANK OVER (E) CLOCK AND (E) SPEAKER LOCATION AS REQUIRED. LOCATE EXISTING DATA DROP ABOVE DROP CEILING AND ROUTE TO (N) COMBO BOX.
11. NEW DIGITAL OFFICE CLOCK. REWORK (E) DATA DROP INTO (N) DIGITAL CLOCK VIA APPROPRIATE WIREMOLD TRANSITION.
12. (E) CLOCK / BELL HEADEND. CONTRACTOR TO REMOVE AND INSTALL A NEW TACK BOARD ON HINGES TO COVER THE BACK BOX.
13. (E) TELECENTER ICS TO BE REMOVED AFTER CUTOVER TO (N) SYSTEM. REMOVE ALL (E) CABLES, 66-BLOCKS, AND CABINET.
14. INSTALL (N) INTERCOM SPEAKER ABOVE CLOCK.
15. PROVIDE (N) 4 PAIR COPPER FEEDER FROM MPOE TO MDF. TERMINATE INDIVIDUAL PAIRS ON CENTER PINS OF KEYSTONE JACKS. LAND IN (E) PATCH PANEL AT MDF, AND IN (N) SURFACE BOX AT MPOE.

CEILING CONDITION CHART:

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

KEY PLAN



KMM SERVICES, INC
TECHNOLOGY&FIRE LIFE SAFETY
5433 El Camino Ave. Suite 5
Carmichael, CA 95608
Office: (916) 359-4000 www.kmmservices.com

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER BICSI
RONNY KA TRC*
EXP 08/31/24
Regis. No.163629

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

SHEET REVISIONS

DELTA	DESCRIPTION	DATE

SITE KEY PLAN

PROJECT
SACRAMENTO CITY USD
JOSEPH BONNHEIM E.S.
TELE-CENTER
UPGRADE PROJECT
7300 MARIN AVE.
SACRAMENTO, CA. 95820

SHEET TITLE
TECHNOLOGY
FLOOR PLANS
- MDF

DRAWING STATUS
CONSTRUCTION DOCUMENTS

PROJECT NO:	0183-464
BID PACKAGE:	TBD
DESIGNED BY:	RK/CC
CHECKED BY:	JG
ISSUE DATE:	2023-05-09
WORKING DATE:	2023-05-09

REVISION

SHEET T200

Login Name: gpodh
Plot Date: May 31, 2023 - 9:09 am
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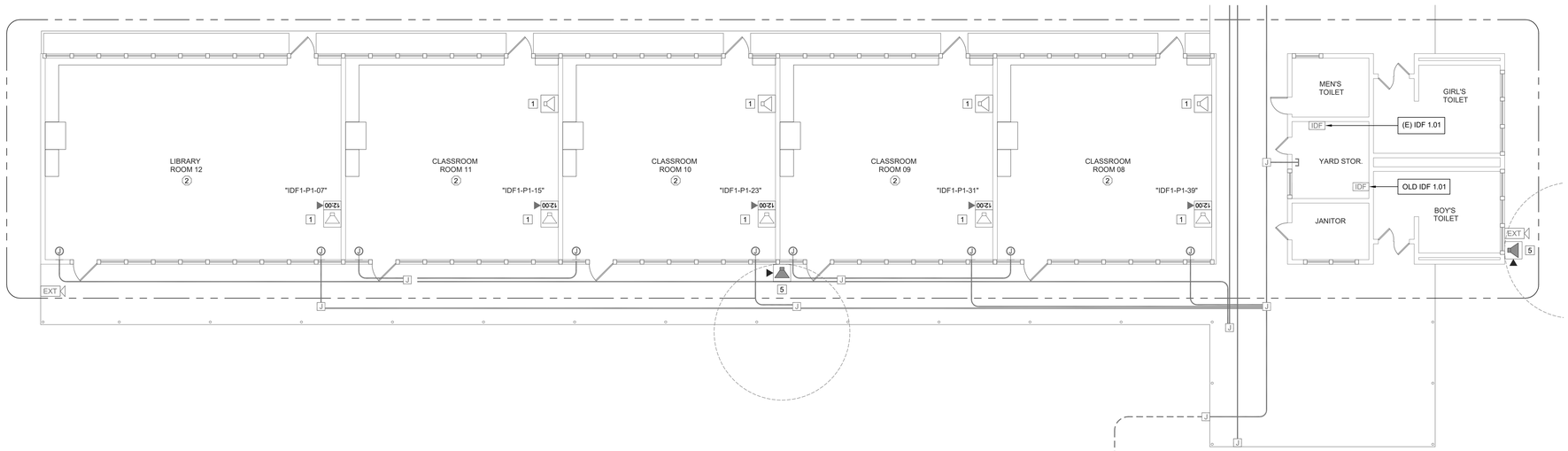
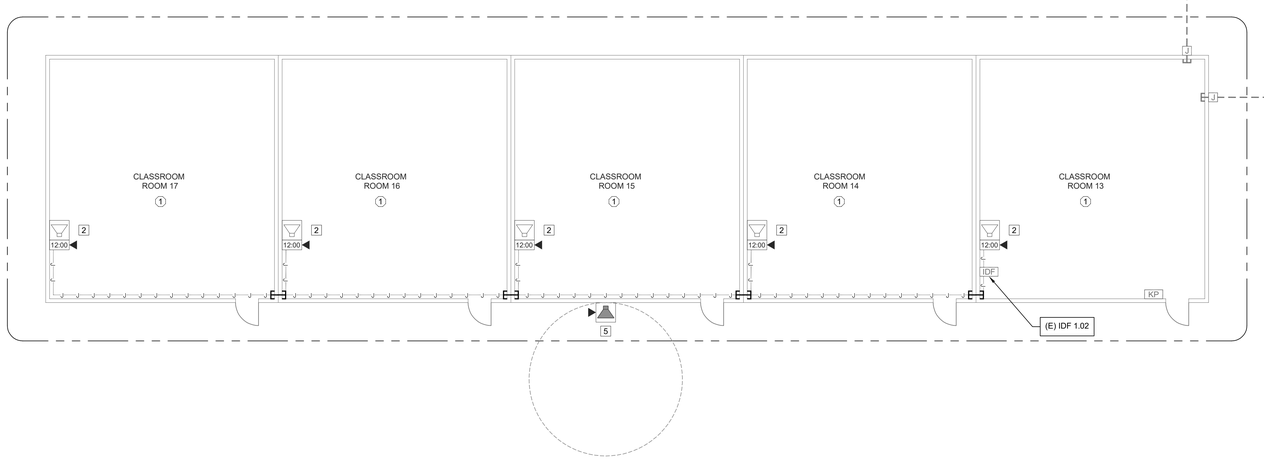
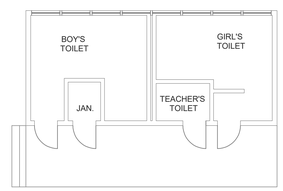






TECHNOLOGY FLOOR PLANS - IDF 1.01 AND 1.02

SCALE: 1/8"=1'

0 4 8 12 16

GENERAL NOTES:

1. NO STRUCTURAL BEAMS SHALL BE PENETRATED OR ALTERED.
2. PROVIDE APPROPRIATE WM5500 TO WM2300 FITTINGS TO EXIT WM5500 TO TRANSITION DOWN TO DROP LOCATIONS.
3. RELOCATE EXISTING INTRUSION DEVICES UP OR DOWN TO ALLOW NEW RACEWAY TO BE INSTALLED. VERIFY THAT THE RELOCATED DEVICE IS NOT CAUSING A FAULT ON THE ALARM PANEL PRIOR TO LEAVING THE SITE.
4. NEW DATA DROPS INSTALLED WILL REQUIRE WM2300 INSTALLED TO EACH LOCATION.

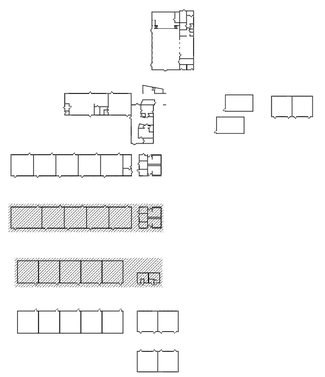
SHEET NOTES:

1. REPLACE (E) SPEAKER AND (E) CLOCK WITH (N) SPEAKER (WITH (N) CLASSROOM IP MODULE) AND (N) IP CLOCK MOUNTED IN (N) CLOCK/ SPEAKER COMBO BOX AT (E) CLOCK DATA DROP LOCATION. REMOVE WIREMOLD DUPLEX BOX, REWORK DATA DROP INTO CLOCK/SPEAKER COMBO BOX. BLANK OVER (E) CLOCK AND/OR (E) SPEAKER LOCATION AS REQUIRED.
2. REPLACE (E) SPEAKER AND (E) CLOCK WITH (N) SPEAKER (WITH (N) CLASSROOM IP MODULE) AND (N) IP CLOCK MOUNTED IN (N) CLOCK/ SPEAKER COMBO BOX AT (E) CLOCK LOCATION. BLANK OVER (E) CLOCK AND (E) SPEAKER LOCATION AS REQUIRED. PROVIDE ONE (1) (N) CAT6A DATA DROP.
3. PROVIDE (N) SPEAKER (WITH (N) CLASSROOM IP MODULE) AND (N) IP CLOCK MOUNTED IN (N) CLOCK/ SPEAKER COMBO BOX AT (E) CLOCK DATA DROP LOCATION. PROVIDE ONE (1) (N) DATA DROP AT (N) CLOCK/SPEAKER COMBO BOX. ROUTE THROUGH EXISTING WIREMOLD.
4. PROVIDE (N) SPEAKER WITH (N) CLASSROOM IP MODULE) AND (N) IP CLOCK MOUNTED IN (N) CLOCK/ SPEAKER COMBO BOX. PROVIDE ONE (1) (N) CAT6A DATA DROP.
5. REPLACE (E) EXTERIOR SPEAKER WITH (N) BACKBOX AND (N) SPEAKER. PROVIDE (N) INTERIOR ENCLOSURE WITH (N) CLASSROOM IP MODULE. PROVIDE ONE (1) (N) CAT6A DATA DROP.
6. PROVIDE (N) CEILING MOUNTED BACKBOX AND (N) SPEAKER (WITH (N) IP CLASSROOM MODULE) AT (E) CEILING DATA DROP LOCATION.
7. PROVIDE (N) WALL MOUNTED BACK BOX AND (N) SPEAKER (WITH (N) IP CLASSROOM MODULE). PROVIDE ONE (1) (N) CAT6A DATA DROP.
8. PROVIDE (N) WALL MOUNTED EXTERIOR BACKBOX AND (N) EXTERIOR SPEAKER. PROVIDE (N) INTERIOR ENCLOSURE WITH (N) CLASSROOM IP MODULE. PROVIDE ONE (1) (N) CAT6A DATA DROP.
9. PROVIDE (N) LARGE MESSAGE BOARD AT (E) DATA DROP LOCATION. REMOVE (E) WIREMOLD DUPLEX BOX, REWORK DATA DROP INTO DISPLAY BOARD BACKBOX.
10. REPLACE (E) SPEAKER AND (E) CLOCK WITH (N) SPEAKER (WITH (N) CLASSROOM IP MODULE) AND (N) IP CLOCK MOUNTED IN (N) CLOCK/ SPEAKER COMBO BOX AT (E) CLOCK LOCATION. BLANK OVER (E) CLOCK AND (E) SPEAKER LOCATION AS REQUIRED. LOCATE EXISTING DATA DROP ABOVE DROP CEILING AND ROUTE TO (N) COMBO BOX.
11. NEW DIGITAL OFFICE CLOCK. REWORK (E) DATA DROP INTO (N) DIGITAL CLOCK VIA APPROPRIATE WIREMOLD TRANSITION.
12. (E) CLOCK / BELL HEADEND. CONTRACTOR TO REMOVE AND INSTALL A NEW TACK BOARD ON HINGES TO COVER THE BACK BOX.
13. (E) TELECENTER ICS TO BE REMOVED AFTER CUTOVER TO (N) SYSTEM. REMOVE ALL (E) CABLES, 66-BLOCKS, AND CABINET.
14. INSTALL (N) INTERCOM SPEAKER ABOVE CLOCK.
15. PROVIDE (N) 4 PAIR COPPER FEEDER FROM MPOE TO MDF. TERMINATE INDIVIDUAL PAIRS ON CENTER PINS OF KEYSTONE JACKS. LAND IN (E) PATCH PANEL AT MDF, AND IN (N) SURFACE BOX AT MPOE.

CEILING CONDITION CHART:

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

KEY PLAN



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SHEET TITLE
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DESIGNED BY:	RK/CC
CHECKED BY:	JG
ISSUE DATE:	2023-05-09
WORKING DATE:	2023-05-09

REVISION

SHEET T201

Login Name: jgoodin
Plot Date: May 11, 2023 - 9:09 am
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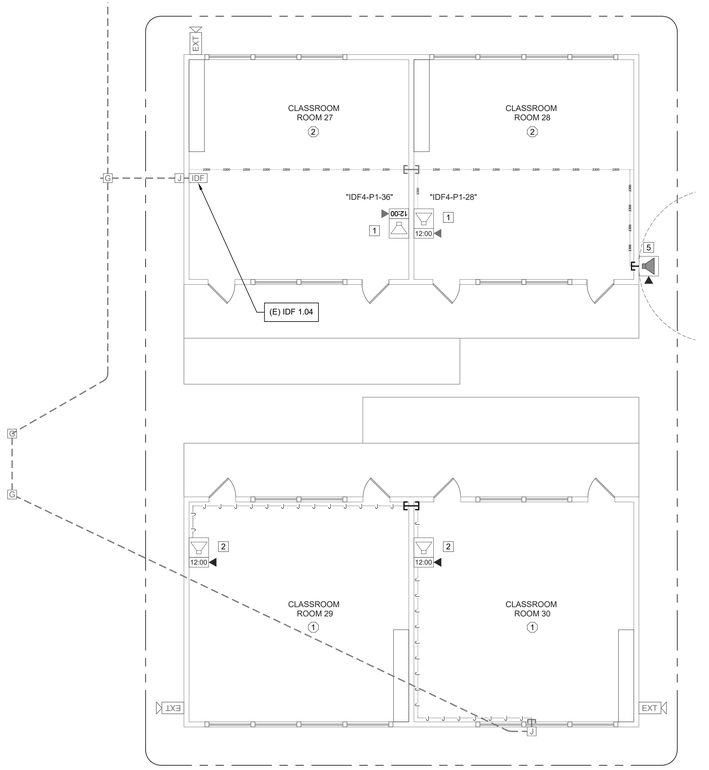

TECHNOLOGY FLOOR PLANS - IDF 1.04

SCALE: 1/8"=1'

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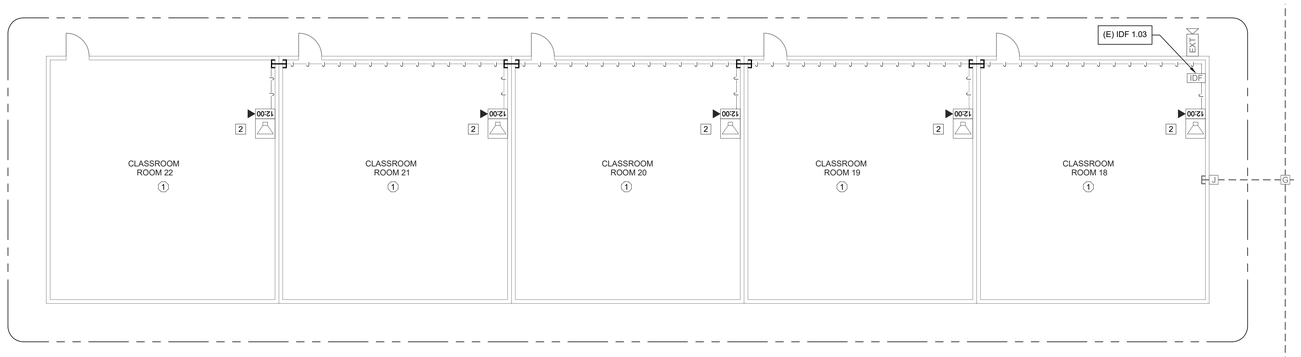

TECHNOLOGY FLOOR PLAN - IDF 1.03

SCALE: 1/8"=1'

0 4 8 12 16

GENERAL NOTES:

1. NO STRUCTURAL BEAMS SHALL BE PENETRATED OR ALTERED.
2. PROVIDE APPROPRIATE WM5500 TO WM2300 FITTINGS TO EXIT WM5500 TO TRANSITION DOWN TO DROP LOCATIONS.
3. RELOCATE EXISTING INTRUSION DEVICES UP OR DOWN TO ALLOW NEW RACEWAY TO BE INSTALLED. VERIFY THAT THE RELOCATED DEVICE IS NOT CAUSING A FAULT ON THE ALARM PANEL PRIOR TO LEAVING THE SITE.
4. NEW DATA DROPS INSTALLED WILL REQUIRE WM2300 INSTALLED TO EACH LOCATION.

SHEET NOTES:

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2. REPLACE (E) SPEAKER AND (E) CLOCK WITH (N) SPEAKER (WITH (N) CLASSROOM IP MODULE) AND (N) IP CLOCK MOUNTED IN (N) CLOCK/ SPEAKER COMBO BOX AT (E) CLOCK LOCATION. BLANK OVER (E) CLOCK AND (E) SPEAKER LOCATION AS REQUIRED. PROVIDE ONE (1) (N) CAT6A DATA DROP.
3. PROVIDE (N) SPEAKER (WITH (N) CLASSROOM IP MODULE) AND (N) IP CLOCK MOUNTED IN (N) CLOCK/ SPEAKER COMBO BOX AT (E) CLOCK DATA DROP LOCATION. PROVIDE ONE (1) (N) DATA DROP AT (N) CLOCK/SPEAKER COMBO BOX. ROUTE THROUGH EXISTING WIREMOLD.
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5. REPLACE (E) EXTERIOR SPEAKER WITH (N) BACKBOX AND (N) SPEAKER. PROVIDE (N) INTERIOR ENCLOSURE WITH (N) CLASSROOM IP MODULE. PROVIDE ONE (1) (N) CAT6A DATA DROP.
6. PROVIDE (N) CEILING MOUNTED BACKBOX AND (N) SPEAKER (WITH (N) IP CLASSROOM MODULE) AT (E) CEILING DATA DROP LOCATION.
7. PROVIDE (N) WALL MOUNTED BACK BOX AND (N) SPEAKER (WITH (N) IP CLASSROOM MODULE). PROVIDE ONE (1) (N) CAT6A DATA DROP.
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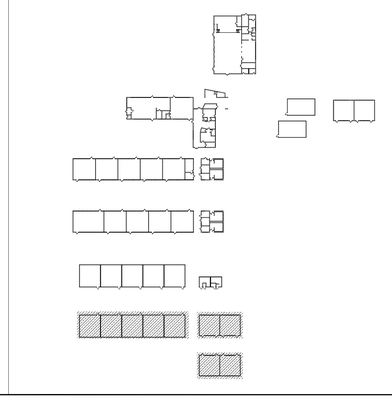
CEILING CONDITION CHART:

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

KEY PLAN



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ONNY KA TRC*
EXP 2024
Regis. No.163629

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SHEET REVISIONS

DELTA	DESCRIPTION	DATE

SITE KEY PLAN

PROJECT
SACRAMENTO CITY USD
JOSEPH BONNHEIM E.S.
TELE-CENTER
UPGRADE PROJECT
7300 MARIN AVE.
SACRAMENTO, CA. 95820

SHEET TITLE
TECHNOLOGY
FLOOR PLANS
- IDF 1.03 AND 1.04

DRAWING STATUS
CONSTRUCTION DOCUMENTS

PROJECT NO:	0183-464
BID PACKAGE:	TBD
DESIGNED BY:	RK/CC
CHECKED BY:	JG
ISSUE DATE:	2023-05-09
WORKING DATE:	2023-05-09

REVISION

SHEET T202

Login Name: jgoodin
Plot Date: May 11, 2023 - 9:09 am
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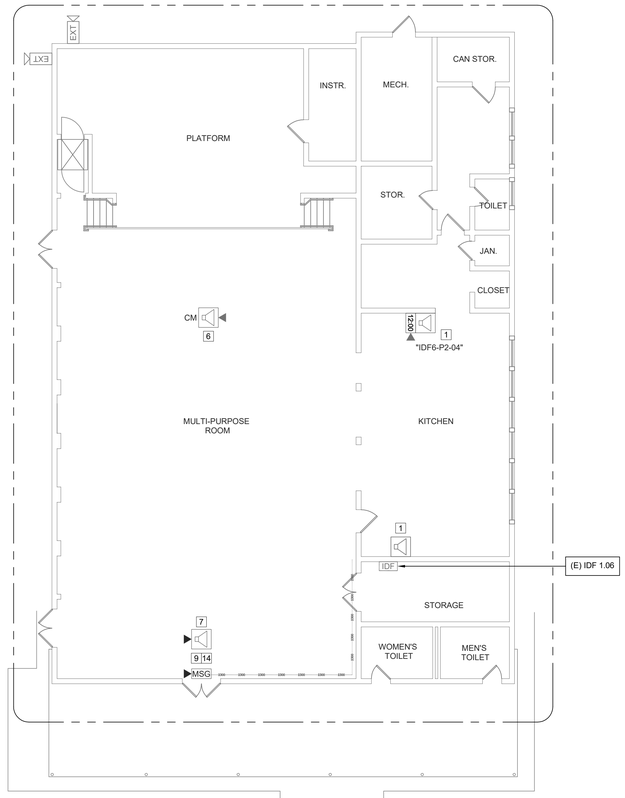

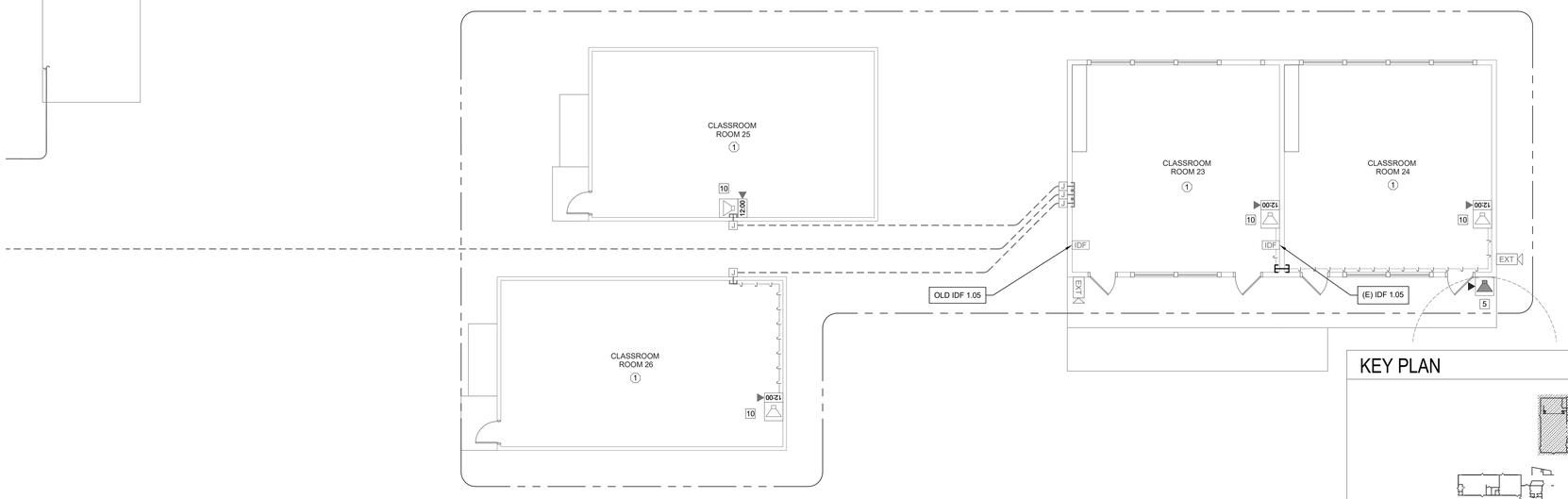

TECHNOLOGY FLOOR PLANS - IDF 1.05 AND 1.06

SCALE: 1/8"=1'

0 4 8 12 16

SHEET NOTES:

1. REPLACE (E) SPEAKER AND (E) CLOCK WITH (N) SPEAKER (WITH (N) CLASSROOM IP MODULE) AND (N) IP CLOCK MOUNTED IN (N) CLOCK/ SPEAKER COMBO BOX AT (E) CLOCK DATA DROP LOCATION. REMOVE WIREMOLD DUPLEX BOX, REWORK DATA DROP INTO CLOCK/SPEAKER COMBO BOX. BLANK OVER (E) CLOCK AND/OR (E) SPEAKER LOCATION AS REQUIRED.
2. REPLACE (E) SPEAKER AND (E) CLOCK WITH (N) SPEAKER (WITH (N) CLASSROOM IP MODULE) AND (N) IP CLOCK MOUNTED IN (N) CLOCK/ SPEAKER COMBO BOX AT (E) CLOCK LOCATION. BLANK OVER (E) CLOCK AND (E) SPEAKER LOCATION AS REQUIRED. PROVIDE ONE (1) (N) CAT6A DATA DROP.
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11. NEW DIGITAL OFFICE CLOCK. REWORK (E) DATA DROP INTO (N) DIGITAL CLOCK VIA APPROPRIATE WIREMOLD TRANSITION.
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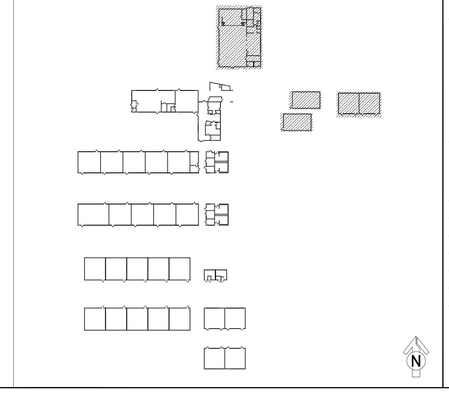
4. NEW DATA DROPS INSTALLED WILL REQUIRE WM2300 INSTALLED TO EACH LOCATION.

KEY PLAN



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SHEET TITLE
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DESIGNED BY:	RK/CC
CHECKED BY:	JG
ISSUE DATE:	2023-05-09
WORKING DATE:	2023-05-09

REVISION

SHEET T203

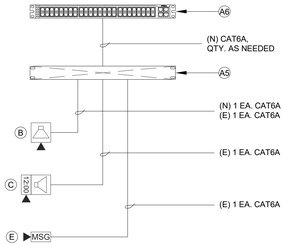
Login Name: jgoodin
Plot Date: May 11, 2023 - 9:09 am
File Name: I:\0183-J. Bonnheim ES\...SCUSD\4_ACAD\T200_Floor Plans.dwg
Xrefs: XDrive • xBlackyard • Topo • xBlackzone

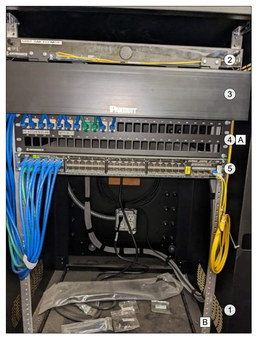
EXISTING RACK COMPONENTS:

1. 18U RACK CABINET.
2. 1RU FIBER LIU.
3. 2RU CABLE MANAGER.
4. 2RU 48-PORT PATCH PANEL (37 AVAIL.).
5. 1RU 48-PORT SWITCH (37 AVAIL.).

RACK SCOPE OF WORK:

- A PROVIDE (N) CAT6A PATCH CORDS FOR ALL (N) CAT6A DATA DROPS.
- B PROVIDE (N) UPS, N1C P/N N1C.L1000. ROUTE POWER SO THAT ALL RACK COMPONENTS ARE PROTECTED BY UPS.





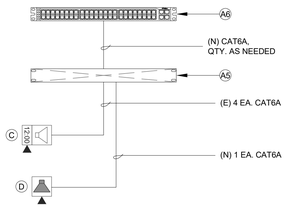
7 DATA RACK LAYOUT - (E) IDF 1.06 - MP ROOM STORAGE
SCALE: NONE

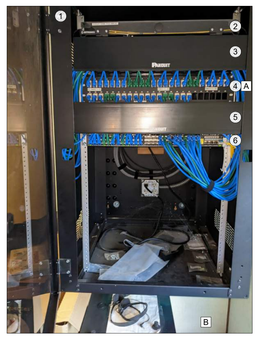
EXISTING RACK COMPONENTS:

1. 18U RACK CABINET.
2. 1RU FIBER LIU.
3. 2RU CABLE MANAGER.
4. 2RU 48-PORT PATCH PANEL (6 AVAIL.).
5. 2RU CABLE MANAGER.
6. 1RU 48-PORT SWITCH (6 AVAIL.).

RACK SCOPE OF WORK:

- A PROVIDE (N) CAT6A PATCH CORDS FOR ALL (N) CAT6A DATA DROPS.
- B PROVIDE (N) UPS, N1C P/N N1C.L1000. ROUTE POWER SO THAT ALL RACK COMPONENTS ARE PROTECTED BY UPS.





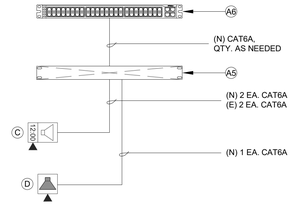
6 DATA RACK LAYOUT - (E) IDF 1.05 - CLASSROOM 23
SCALE: NONE

EXISTING RACK COMPONENTS:

1. 18U RACK CABINET.
2. 1RU FIBER LIU.
3. 2RU CABLE MANAGER.
4. 2RU 48-PORT PATCH PANEL (12 AVAIL.).
5. 1RU 48-PORT SWITCH (12 AVAIL.).

RACK SCOPE OF WORK:

- A PROVIDE (N) CAT6A PATCH CORDS FOR ALL (N) CAT6A DATA DROPS.
- B PROVIDE (N) UPS, N1C P/N N1C.L1000. ROUTE POWER SO THAT ALL RACK COMPONENTS ARE PROTECTED BY UPS.



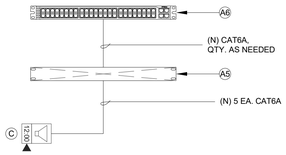
5 DATA RACK LAYOUT - (E) IDF 1.04 - CLASSROOM 27
SCALE: NONE

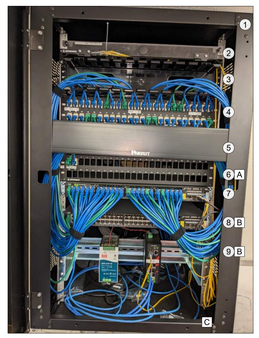
EXISTING RACK COMPONENTS:

1. 18U RACK CABINET.
2. 1RU FIBER LIU.
3. 2RU CABLE MANAGER.
4. 2RU 48-PORT PATCH PANEL (0 AVAIL.).
5. 2RU CABLE MANAGER.
6. 2RU 48-PORT PATCH PANEL (46 AVAIL.).
7. 1RU 48-PORT SWITCH (0 AVAIL.).
8. 1RU 48-PORT SWITCH (46 AVAIL.).
9. 4RU CCTV SWITCH.

RACK SCOPE OF WORK:

- A PROVIDE (N) CAT6A PATCH CORDS FOR ALL (N) CAT6A DATA DROPS.
- B RELOCATE (E) SWITCH #8 AND #9 UP ONE RACK UNIT.
- C PROVIDE (N) UPS, N1C P/N N1C.L1000. ROUTE POWER SO THAT ALL RACK COMPONENTS ARE PROTECTED BY UPS.





4 DATA RACK LAYOUT - (E) IDF 1.03 - CLASSROOM 18
SCALE: NONE

EQUIPMENT INTERCOM SCHEDULE:

ALL EQUIPMENT AND MATERIALS ARE CONTRACTOR FURNISHED, INSTALLED AND CONFIGURED (UNO)

SYMBOL	DESCRIPTION	MODEL	PART NUMBER	NOTES / DETAIL REFERENCES
A1	TELECENTER U IP CONTROLLER	RAULAND	TCC2000	N/A
A2	TELECENTER U ADMIN CONSOLE		TCC2045	N/A
A3	TELECENTER U AUX. IN/OUT. MODULE		TCC2033	N/A
	UNIVERSAL RACK MOUNTING KIT		TCC2099	N/A
A4	TELECENTER U PROGRAM LINE INPUT MODULE		TCC2055	N/A
A5	24-PORT OR 48-PORT PATCH PANEL		SEE DATA SINGLE LINE RACK COMPONENTS BELOW FOR MORE INFORMATION.	(N) OR (E) AS NOTED
A6	48-PORT NETWORK SWITCH		SEE DATA SINGLE LINE RACK COMPONENTS BELOW FOR MORE INFORMATION.	(N) OR (E) AS NOTED

(B) 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	TCC2011A	MOUNT INSIDE ENCLOSURE
8 OHM, 8" SPEAKER WITH RJ45 CONNECTOR	RAULAND	US0880	N/A
SPEAKER BAFFLE	RAULAND	ACC1003	N/A
SURFACE MOUNT SPEAKER ENCLOSURE	RAULAND	ACC1112	N/A

(C) 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	TCC2011A	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

(D) 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	TCC2011A	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

(E) EQUIPMENT SCHEDULE INTERIOR SURFACE CLOCK:

ALL EQUIPMENT AND MATERIALS ARE CONTRACTOR FURNISHED, INSTALLED AND CONFIGURED (UNO)

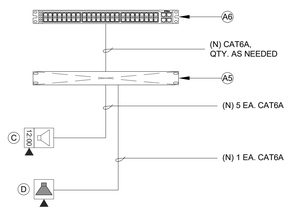
DESCRIPTION	MODEL	PART NUMBER	NOTES / DETAIL REFERENCES
IP DIGITAL CLOCK	SAPLING	SBP-31S-254-0W	ADMIN. ONLY
IP LARGE MESSAGE BOARD	RAULAND	TCC3012L	MP ROOM ONLY

EXISTING RACK COMPONENTS:

1. 18U RACK CABINET.
2. 1RU FIBER LIU.
3. 2RU CABLE MANAGER.
4. 2RU 48-PORT PATCH PANEL (37 AVAIL.).
5. 1RU 48-PORT SWITCH (37 AVAIL.).
6. 2RU 48-PORT PATCH PANEL (46 AVAIL.).
7. 1RU 48-PORT SWITCH (0 AVAIL.).
8. 1RU 48-PORT SWITCH (46 AVAIL.).

RACK SCOPE OF WORK:

- A PROVIDE (N) CAT6A PATCH CORDS FOR ALL (N) CAT6A DATA DROPS.
- B PROVIDE (N) UPS, N1C P/N N1C.L1000. ROUTE POWER SO THAT ALL RACK COMPONENTS ARE PROTECTED BY UPS.



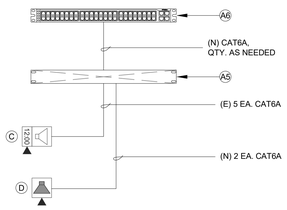
3 DATA RACK LAYOUT - (E) IDF 1.02 - CLASSROOM 13
SCALE: NONE

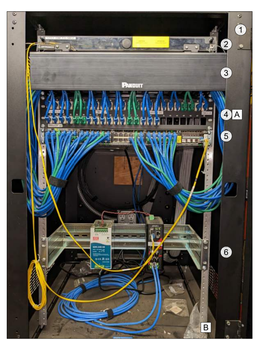
EXISTING RACK COMPONENTS:

1. 18U RACK CABINET.
2. 1RU FIBER LIU.
3. 2RU CABLE MANAGER.
4. 2RU 48-PORT PATCH PANEL (7 AVAIL.).
5. 1RU 48-PORT SWITCH (7 AVAIL.).
6. 4RU CCTV SWITCH.

RACK SCOPE OF WORK:

- A PROVIDE (N) CAT6A PATCH CORDS FOR ALL (N) CAT6A DATA DROPS.
- B PROVIDE (N) UPS, N1C P/N N1C.L1000. ROUTE POWER SO THAT ALL RACK COMPONENTS ARE PROTECTED BY UPS.

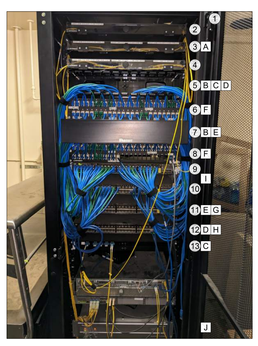




2 DATA RACK LAYOUT - (E) IDF 1.01 - YARD STORAGE
SCALE: NONE

RACK SCOPE OF WORK:

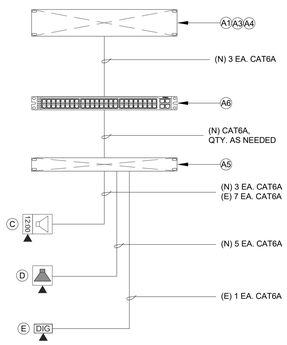
- A A - PROVIDE (N) VERTICAL CABLE MANAGER, DAMAC P/N F532-004, ON LEFT FRONT OF CABINET. ROUTE ALL FIBER PATCH CORDS THROUGH CABLE MANAGER.
- B REMOVE CABLE MANAGER #5 AND #7. PROVIDE (N) REAR CABLE MANAGEMENT BAR, MIDDLE ATLANTIC P/N LBP-6R90, AT PATCH PANEL #6 AND #8.
- C RELOCATE FIBER LIU #13 DIRECTLY UNDER FIBER LIU (#4).
- D RELOCATE SWITCH #12 UNDER FIBER LIU #13 AND ABOVE PATCH PANEL #6.
- E RELOCATE SWITCH #11 BETWEEN PATCH PANELS #6 & #8.
- F PROVIDE (N) SLIMLINE CAT6A 6" PATCH CABLES TO REPLACE ALL (E) PATCH CABLES AND FOR ALL (N) DROPS. PATCH AS FOLLOWS:
  PP #6 - PORTS 1-24 PATCH TO SWITCH #12 PORTS 25-48
  PP #6 PORTS 25-48 PATCH TO SWTICH #11 PORTS 1-24
  PP #8 PORTS 1-24 PATCH TO SWITCH #11 PORTS 25-48
  PP #8 PORTS 25-48 PATCH TO SWITCH #9 PORTS 1-24.
- G REPLACE (E) CCTV MONITOR AT REAR OF RACK WITH NEW KEYBOARD / MONITOR, P/N TRIPPLITE #B021-000-19-HD2, AT FRONT OF RACK BELOW SWITCH #9.
- H MOUNT NEW INTERCOM HEAD END EQUIPMENT. SEE INTERCOM SINGLE LINE FOR COMPONENT INFORMATION.
- I PROVIDE (N) PATCH PANEL, ORTRONICS P/N OR-SPKSU24, WITH (N) REAR CABLE MANAGEMENT BAR, MIDDLE ATLANTIC P/N LBP-6R90.
- J PROVIDE (N) UPS FOR INTERCOM HEAD END EQUIPMENT, N1C P/N N1C.L1000. MOUNT DIRECTLY ABOVE (E) UPS UNITS.



1 DATA RACK LAYOUT - (E) MDF - MDF / JANITOR
SCALE: NONE

EXISTING RACK COMPONENTS:

1. 7'X3' RACK CABINET.
2. 1RU FIBER LIU.
3. 1RU FIBER LIU.
4. 1RU FIBER LIU.
5. 2RU CABLE MANAGER.
6. 2RU 48-PORT PATCH PANEL (0 AVAIL.).
7. 2RU CABLE MANAGER.
8. 2RU 48-PORT PATCH PANEL (11 AVAIL.).
9. 1RU 48-PORT SWITCH (0 AVAIL.).
10. 1RU 48-PORT SWITCH (7 AVAIL.).
11. 1RU 48-PORT SWITCH (48 AVAIL.).
12. 1RU 48-PORT SWITCH (46 AVAIL.).
13. 1RU FIBER LIU.



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JOHNNY KAY, RCDD, NTS, TRC*
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SHEET REVISIONS

DELTA	DESCRIPTION	DATE

SITE KEY PLAN

PROJECT
SACRAMENTO CITY USD
JOSEPH BONNHEIM E.S.
TELE-CENTER
UPGRADE PROJECT
7300 MARIN AVE.
SACRAMENTO, CA. 95820

SHEET TITLE
TECHNOLOGY
SINGLE LINE DIAGRAMS

DRAWING STATUS
CONSTRUCTION DOCUMENTS

PROJECT NO:	0183-464
BID PACKAGE:	TBD
DESIGNED BY:	RK/CC
CHECKED BY:	JG
ISSUE DATE:	2023-05-09
WORKING DATE:	2023-05-09

REVISION

SHEET T400

Login Name: gpodh
Plot Date: May 11, 2023 - 9:59 am
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XREFS: xtscher

NOT USED

NOT USED

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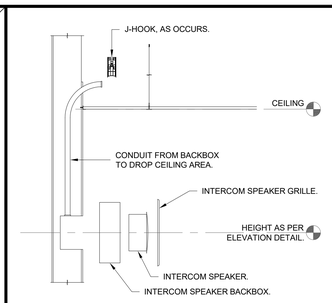


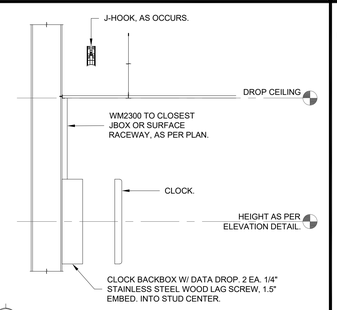
5 SURFACE MOUNTED INTERCOM SPEAKER DETAIL - EXISTING CONDUIT
SCALE: NONE

NOT USED

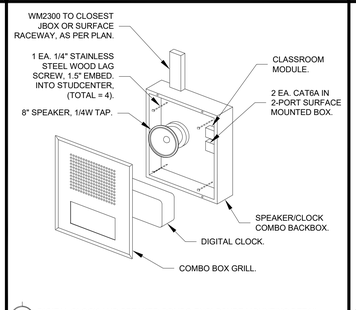
NOT USED

NOT USED

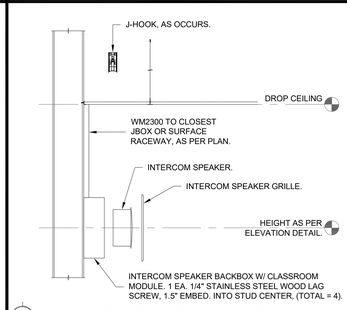
NOT USED



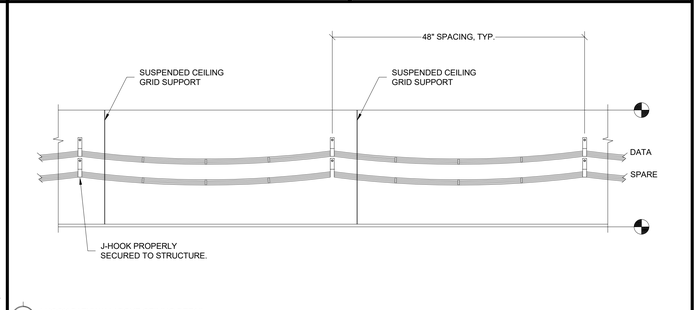
11 SURFACE MOUNTED CLOCK DETAIL
SCALE: NONE



9 DIGITAL CLOCK AND SPEAKER COMBO ENCLOSURE MOUNTING DETAIL
SCALE: NONE

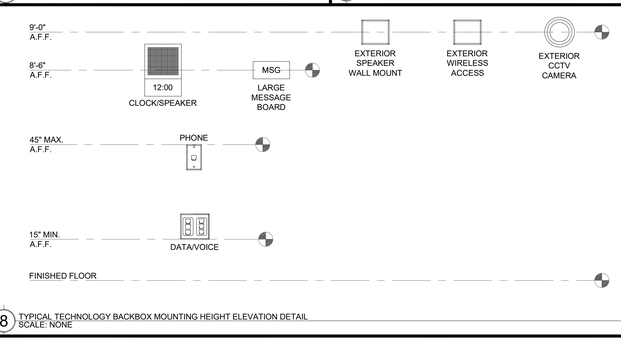


6 SURFACE MOUNTED INTERIOR INTERCOM SPEAKER DETAIL
SCALE: NONE

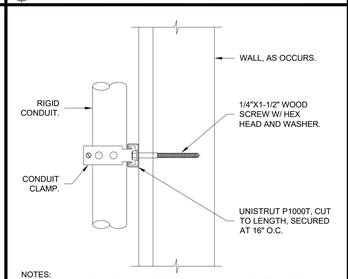


1 J-HOOK PATHWAY ABOVE CEILING DETAIL
SCALE: NONE

NOT USED



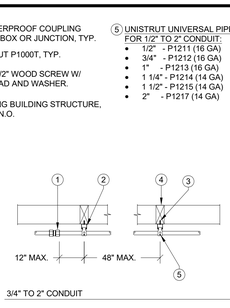
8 TYPICAL TECHNOLOGY BACKBOX MOUNTING HEIGHT ELEVATION DETAIL
SCALE: NONE



NOTES:
1. MAXIMUM OF 1" SPACING BETWEEN PARALLEL CONDUITS WHERE APPLICABLE.

6 CONDUIT SUPPORT DETAIL - VERTICAL
SCALE: NONE

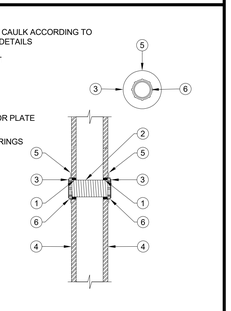
1. WEATHERPROOF COUPLING DEVICE BOX OR JUNCTION, TYP.
2. UNISTRUT P1000T, TYP.
3. 1/4"X1-1/2" WOOD SCREW W/ HEX HEAD AND WASHER.
4. EXISTING BUILDING STRUCTURE, TYP. U.N.O.
5. UNISTRUT UNIVERSAL PIPE CLAMP FOR 1/2" TO 2" CONDUIT:
   - 1/2" - P1211 (16 GA)
   - 3/4" - P1212 (16 GA)
   - 1" - P1213 (16 GA)
   - 1 1/4" - P1214 (14 GA)
   - 1 1/2" - P1215 (14 GA)
   - 2" - P1217 (14 GA)



3/4" TO 2" CONDUIT

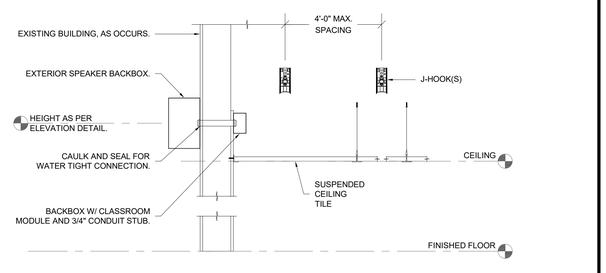
5 CONDUIT STRAP SPACING DETAIL
SCALE: NONE

1. DRAFT STOP OR FIRE CAULK ACCORDING TO WALL PENETRATION DETAILS
2. ALL THREAD CONDUIT
3. SCREW ON BUSHING
4. WALL
5. REDUCING WASHER OR PLATE
6. SCREW ON LOCKING RINGS FRONT & BACK (TYP.)

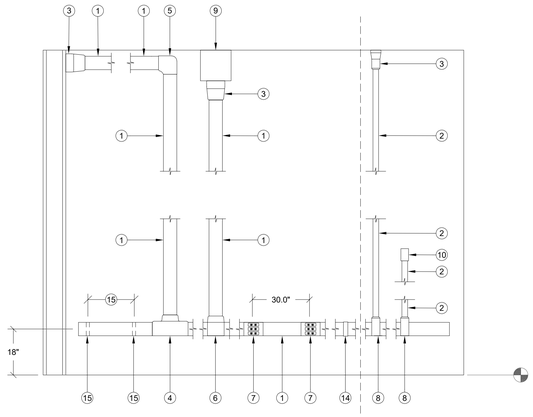


4 CONDUIT SLEEVE PENETRATION DETAIL
SCALE: NONE

NOT USED

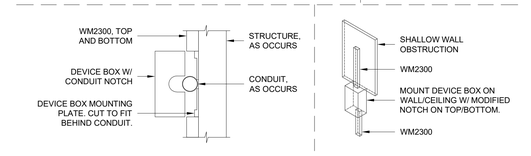


4 EXTERIOR INTERCOM SPEAKER MOUNTING DETAIL
SCALE: NONE



WIREMOLD WM5500
3-CHANNNEL

WIREMOLD WM2300
DUAL CHANNEL



3 TYPICAL SURFACE MOUNTED RACEWAY W/ ASSEMBLY COMPONENTS DETAIL
SCALE: NONE

WIREMOLD SURFACE RACEWAY

SYMBOL	DESCRIPTION	WM5500 PART NUMBER	WM2300 PART NUMBER
1	WIREMOLD WM5500	5500	N/A
2	WIREMOLD WM2300	N/A	2300
3	ENTRANCE END FITTING	5510D	2310A
4	FULL CAPACITY TEE (FIBER READY)	N/A	N/A
5	FULL CAPACITY FLAT ELBOW 90°	5511F0	2311DFO
6	TEE	5515	2315
7	DEVICE BRACKET W/ DUAL RJ FACEPLATE, DUPLEX FACEPLATE OR BLACK FACEPLATE AS NEEDED	5550 / 5507FRJ / 5507D / 5507B	5474 / 5574
8	TRANSITION FITTING FOR WM2300	5574	2348
9	WALL MOUNTED PULL BOX SIZE AS NOTED PER PLAN	N/A	2300
10	DEVICE BOX	N/A	2348
11	END CAP	5510	2310B
12	INTERNAL ELBOW	5517FO	2317DFO
13	EXTERNAL ELBOW	5518FO	2318DFO
14	BASE SEAM COVER	5506	2306
15	WIRE CLIP	5500WC (INSTALL CLIPS AT 48" O.C. ENTIRE LENGTH OF WIREMOLD)	2300WC (INSTALL CLIPS AT 48" O.C. ENTIRE LENGTH OF WIREMOLD)
16	TRANSITION FITTING FOR WM5500 TO WM5400	5574A	N/A

NOTE:
1) DEVICE BOX (10) TO BE USED TO TRANSITION OVER CONDUIT AND SHALLOW WALL OBSTRUCTIONS (I.E. BULLETIN BOARD, TRIM, CASEWORK, ETC.) WHERE REQUIRED. UNDER NO CIRCUMSTANCES SHOULD SURFACE RACEWAY BE BENT OVER OBSTRUCTIONS.

NOT USED

NOT USED

NOT USED

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SHEET REVISIONS

DELTA	DESCRIPTION	DATE

SITE KEY PLAN

PROJECT
SACRAMENTO CITY USD
JOSEPH BONNHEIM E.S.
TELE-CENTER
UPGRADE PROJECT
7300 MARIN AVE.
SACRAMENTO, CA. 95820

SHEET TITLE
TECHNOLOGY DETAILS

DRAWING STATUS
CONSTRUCTION DOCUMENTS

PROJECT NO:	0183-464
BID PACKAGE:	TBD
DESIGNED BY:	RK/CC
CHECKED BY:	JG
ISSUE DATE:	2023-05-09
WORKING DATE:	2023-04-28

REVISION

SHEET T800

Login Name: gpodh
Plot Date: May 11, 2023 - 9:59 am
File Name: I:\2021\21-0183_Bonnheim_ES\C_SD\SD24_ACAD\T800_Details.dwg
XREFS: xbonnp

Classified by
Underwriters Laboratories, Inc.
to ANSI/UL 1479 (ASTM E814)
and ANSI/ULC263 (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 is optional.

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 dimensions shown in table and partial insert pads may be utilized.

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	-	-	7-7/8 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	-	-	7-7/8 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	-	-	7-7/8 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	-	-	7-7/8 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	-	-	7-7/8 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	-	-	7-7/8 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	-
EP 45	4-1/2 x 14 x 2-1/2 (114 x 356 x 64) deep	-	-	4-1/2 x 13-3/4 (114 x 349)	1 or 2	Steel or Wood	Yes	Plastic or Steel	-

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

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.

E. 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 Directory.

Model	Max Outlet Box in. (mm)	Outlet Box Type	Outlet Box Mfr.	Pad Size in. (mm)	Rating, hr	Stud	Cavity Insulation	Face Plate Type	Putty Ball
-	4 x 4 x 2-1/8 (102 x 102 x 54) deep	Steel	N.A.	-	1	Steel or Wood	-	Steel	No
-	4 x 4 x 2-1/8 (102 x 102 x 54) deep	Steel	N.A.	-	1	Steel or Wood	-	Plastic	Yes
-	4-11/16 x 4-11/16 x 2-1/8 (119 x 119 x 54) deep	Steel	N.A.	-	1 or 2	Steel or Wood	-	Steel	Yes
-	4-1/2 x 5 x 2-3/8 (114 x 127 x 60) deep	Steel	N.A.	-	1 or 2	Steel or Wood	-	Steel	Yes
-	4-1/2 x 14 x 2-1/2 (114 x 127 x 60) deep	Steel	N.A.	-	1 or 2	Steel or Wood	-	Steel	Yes
-	3-3/4 x 4 x 3 (95 x 102 x 76) deep	Polyvinyl Chloride	Lamson & Sessions or Carlon	-	1 or 2	Wood	-	Plastic or Steel	N.A.
-	3-3/4 x 4 x 3 (95 x 102 x 76) deep	Phenolic	Allied Moulded Prods	-	1 or 2	Wood	-	Plastic or Steel	N.A.
-	3-3/4 x 4 x 3 (95 x 102 x 76) deep	Polycarbonate	Thomas & Betts	-	1 or 2	Wood	-	Plastic or Steel	N.A.
-	3-3/4 x 4 x 3 (95 x 102 x 76) deep	Phenolic	Thomas & Betts	-	1 or 2	Wood	-	Plastic or Steel	N.A.
-	2-1/4 x 3-3/4 x 2-3/4 (57 x 95 x 70) deep	Polyvinyl Chloride	Pass & Seymour	-	1 or 2	Wood	-	Plastic or Steel	N.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. (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.

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.

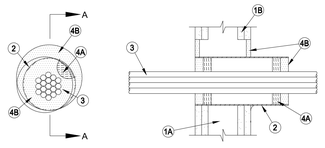
SpecSeal Putty Pads, for use with max 5 by 5 by 2 7/8 in. (127 by 127 by 73 mm) deep flush device UL Listed Metallic Outlet Boxes or UL Listed Communications-Circuit Accessories manufactured by Randl Industries Inc for use in 1 hr or 2 hr fire rated gypsum board wall assemblies framed with min 3-5/8 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 UL 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.

Classified by
Underwriters 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	T Rating - 3/4 Hr
	FH Ratings - 1 and 2 Hr (See Item 1)
	FTH Rating - 3/4 Hr



Section A-A

1. 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, U400 or V400 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 3-5/8 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) 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 76 mm) clearance is present between the penetrating item and the framing on all four sides.
   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 used.

   The hourly F rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
2. 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. (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 rigidly supported when extending from the wall surfaces.

3. Cables - Aggregate cross-sectional area of cables in 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 (Item 2) 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). 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 jacket.
   C. Max 3/C No. 8 AWG (or smaller) nonmetallic sheathed (Romex) cable with copper conductors, PVC insulation and jacket.
   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 ¾-in. (19 mm) 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/m3) mineral wool batt insulation firmly packed into each end of sleeve as a permanent form. Packing material to be recessed from each end of sleeve as required to accommodate the required thickness of fill material.
   B. Fill, Void or Cavity Material* - Sealant or Putty - Fill material applied to appropriate thickness within steel sleeve, 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. See table below for fill material thickness requirements around cables.

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

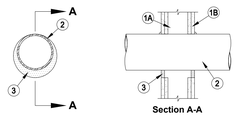
SPECIFIED TECHNOLOGIES INC - SpecSeal Series SSS Sealant, SpecSeal LCI Sealant or SpecSeal Putty

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Classified by
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 Rating - 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 Rating - 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 1 CFM/sq ft
	L Rating At 400 F - Less Than 1 CFM/sq ft



Section A-A

1. 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 or U400 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 3-5/8 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) 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 76 mm) 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 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 26 in. (660 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.

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). For maximum 16 in. (406 mm) diam (or smaller) pipes, annular space 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 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing, nom 6 in. (152 mm) diam (or smaller) steel conduit or nom 1 in. (25 mm) diam (or smaller) flexible steel conduit.
   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.
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 the 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.

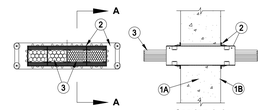
SPECIFIED TECHNOLOGIES INC - SpecSeal Series SSS Sealant or SpecSeal LCI Sealant

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

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



Section A-A

1. 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.
2. 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 firestop 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

3. 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) jacketing and insulation.
   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.
   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 (such as Canada), respectively.

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

SHEET REVISIONS

DELTA	DESCRIPTION	DATE

SITE KEY PLAN

PROJECT
SACRAMENTO CITY USD
JOSEPH BONNHEIM E.S.
TELE-CENTER
UPGRADE PROJECT
7300 MARIN AVE.
SACRAMENTO, CA. 95820

SHEET TITLE
TECHNOLOGY DETAILS

DRAWING STATUS
CONSTRUCTION DOCUMENTS

PROJECT NO:	0183-464
BID PACKAGE:	TBD
DESIGNED BY:	RK/CC
CHECKED BY:	JG
ISSUE DATE:	2023-05-09
WORKING DATE:	2023-04-23

REVISION

SHEET T801

Login Name: gpooth
Plot Date: May 11, 2023 - 9:09 am
File Name: K:\2021\21-0183\Drawings\Arch\21-0183_ACAD17800_Detailed.dwg
XREFS: XDetail