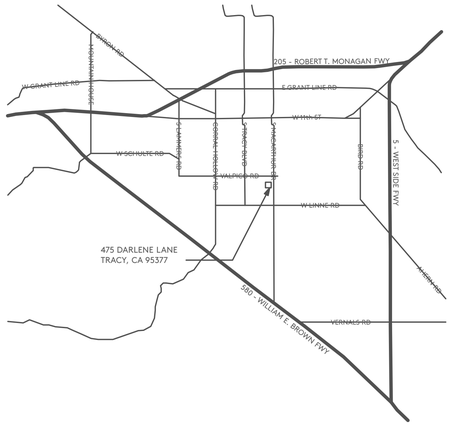
TOM HAWKINS ELEMENTARY SCHOOL ADMINISTRATION MODERNIZATION



VICINITY MAP

1. THE ARCHITECT OR ENGINEER MAY FIND DEFECTS IN THE WORK AND IF THEY DO, THEY WILL NOTIFY THE CONTRACTOR SO THE ERROR MAY BE CORRECTED. UNDER NO CIRCUMSTANCES IS IT EVER THE INTENT FOR THE ARCHITECT OR ENGINEER TO BECOME A GUARANTOR OF THE CONTRACTOR'S PERFORMANCE BY THESE ACTIVITIES. THE FACT THAT A CONTRACTOR'S ERROR GOES UNDETECTED DURING THE VISIT TO THE SITE DOES NOT MAKE THE ARCHITECT OR ENGINEER NEGLIGENT: THE CONTRACTOR IS NEVER RELIEVED OF THE RESPONSIBILITY FOR THE DISCOVERY OF HIS OWN ERRORS AND THE CORRECTION OF THEM, NOR OF THE RESPONSIBILITY OF PROPERLY PERFORMING THE WORK.
2. THE ARCHITECT OR ENGINEER WILL MAKE VISITS TO THE JOB SITE TO OBSERVE THE PROGRESS OF THE WORK AND TO OBSERVE WHETHER OR NOT IT IS, IN GENERAL, BEING PERFORMED IN ACCORDANCE WITH THEIR PLANS AND SPECIFICATIONS. THIS DOES NOT IN ANY WAY MEAN THAT THE ARCHITECT OR ENGINEER IS A GUARANTOR OF THE CONTRACTOR'S WORK: RESPONSIBILITY FOR SAFETY IN, ON OR ABOUT THE JOB SITE: IN CONTROL OF THE SAFETY OR ADEQUACY OF ANY EQUIPMENT, BUILDING COMPONENT, SCAFFOLDING, FORMS, OR OTHER WORK AIDS: OR SUPERINTENDING THE WORK.
3. DO NOT SCALE DRAWINGS. WORK TO THE DIMENSIONS INDICATED ON THE DRAWINGS. CONTRACTOR SHALL VERIFY THE DIMENSIONS AT THE JOB SITE AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES FOR PROMPT CLARIFICATION.
4. THE EXISTENCE AND LOCATION OF EXISTING UNDERGROUND UTILITIES OR STRUCTURES INDICATED OR NOT ON THE DRAWING ARE OBTAINED BY SEARCH OF AVAILABLE RECORDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXACT LOCATIONS OF THE UTILITIES WITH SCHOOL DISTRICT MAINTENANCE AND OPERATION PERSONNEL. THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES AND OTHER STRUCTURES. ANY DAMAGE SHALL BE PROMPTLY RESTORED TO THE SCHOOL DISTRICT'S SATISFACTION.
5. PROVIDE CONSTRUCTION BARRICADES AS REQUIRED TO PROTECT PUBLIC'S HEALTH AND SAFETY INCLUDING WORK UNDER CONSTRUCTION TO THE REQUIREMENTS OF THE SCHOOL DISTRICT. COVER OPEN TRENCHES WITH SOLID MATERIAL.
6. THE CONTRACTOR SHALL PROTECT ADJACENT PROPERTY AND STRUCTURES. ANY DAMAGE SHALL BE PROMPTLY RESTORED TO THE SATISFACTION OF THE OWNER/ARCHITECT, AT CONTRACTOR'S EXPENSE.
7. BIDDERS REQUIRED TO LOOK AT ALL DRAWINGS AND SPECS, NOT JUST THOSE SHEETS OR SECTIONS RESPECTIVE OF THEIR TRADE.
8. A PROJECT INSPECTOR SHALL BE RETAINED BY THE OWNER AND APPROVED BY THE DIVISION OF THE STATE ARCHITECT, STRUCTURAL SAFETY SECTION. THE INSPECTOR SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK AS DESCRIBED IN TITLE 24, PART 1, CALIFORNIA CODE OF REGULATIONS. WORK SHALL NOT COMMENCE WITHOUT THE PRESENCE OF THE INSPECTOR. DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24 C.C.R; CLASS 1.
9. CHANGES TO THE STATE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY ADDENDA DURING THE BID PERIOD OR BY A CONSTRUCTION CHANGE DOCUMENTS (CCD) BEARING DSA PRELIMINARY APPROVAL DURING CONSTRUCTION, SUBJECT TO FORMAL CHANGE ORDER APPROVED BY THE DIVISION OF THE STATE ARCHITECT AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24 C.C.R AND DSA IR A-6.
10. UNLESS SPECIFIED ON STRUCTURAL OR ARCHITECTURAL DRAWINGS, ANY ALTERATIONS OR MODIFICATIONS TO A STRUCTURAL ELEMENT BY CUTTING, DRILLING, BORING, BRACING, WELDING, ETC. SHALL HAVE WRITTEN APPROVAL BY STRUCTURAL ENGINEER OF RECORD AND DSA PRIOR TO START OF WORK.
11. ALL DETAILS CONTAINED IN THESE CONSTRUCTION DOCUMENTS ARE PART OF THE CONSTRUCTION SCOPE REGARDLESS OF THEM BEING REFERENCED IN THE SET.
12. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS, AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
13. SAFETY DURING CONSTRUCTION SHALL COMPLY WITH CFC CHAPTER 33
14. DURING CONSTRUCTION, TITLE 24, PART 1-5 OF CBC 2016 MUST BE KEPT ON SITE.
15. ALL WORK SHALL COMPLY TO TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
16. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS, SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS, A CHANGE ORDER, OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY THE DIVISION OF THE STATE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
(REFERENCE: SECTION 4-317 (c), CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24, CCR))

GENERAL NOTES

THIS CONSTRUCTION PACKAGE INCLUDES, BUT NOT LIMITED TO THE FOLLOWING:

MODERNIZATION OF EXISTING ADMINISTRATION BUILDING. WORK INCLUDES REORGANIZATION OF ROOMS, NEW FINISHES, REMOVAL OF ONE RESTROOM, MINOR WORK TO HVAC, ELECTRICAL, DATA AND SPRINKLER SYSTEM.

BRIEF PROJECT SCOPE

JEFFERSON SCHOOL DISTRICT

PROJECT NAME

JEFFERSON SCHOOL DISTRICT
1219 WHISPERING WIND DRIVE
TRACY, CA. 95377

(T) 209.836.3388
(F) 209.836.2930

OWNER

JAMES BRIDGES, Ed. D.

SUPERINTENDENT

PETE CARLSON

BRIAN JACKMAN

PHIL RAYA

DAN WELLS

DEBBIE WINGO

BOARD OF EDUCATION

PJHM ARCHITECTS, INC.

IN ORANGE COUNTY

24461 RIDGE ROUTE DRIVE #100
LAGUNA HILLS, CA 92653

(T) 949.496.6191
(F) 949.496.0269

IN LOS ANGELES COUNTY

837 TRACTION AVE #410
LOS ANGELES, CA 90013

(T) 213.278.0172
(F) 213.325.7648

IN SAN DIEGO COUNTY

804 PIER VIEW WAY #103
OCEANSIDE, CA 92054

(T) 760.730.5527
(F) 760.730.562

ARCHITECT

ELECTRICAL

TK1SC
17911 VON KARMAN AVENUE #250
IRIVNE, CA 92614
(T) 949.751.5800
(F) 949.751.5811

PLUMBING / MECHANICAL

POCOCK DESIGN SOLUTIONS
14551 CHAMBER ROAD, SUITE 210
TUSTIN, CA 92780
(T) 949.417.3903
(F) 949.419.1393

ENGINEERING CONSULTANTS

STATEMENT OF GENERAL COMPLIANCE

FOR ARCHITECTS/ENGINEERS WHO UTILIZE PLANS, INCLUDING BUT NOT LIMITED TO SHOP DRAWINGS, PREPARED BY OTHER LICENSED DESIGN PROFESSIONALS AND/OR CONSULTANTS

THE DRAWINGS OR SHEETS LISTED ON THE SHEET INDEX HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS WHO ARE LICENSED AND/OR AUTHORIZED TO PREPARE SUCH DRAWINGS IN THIS STATE. IT HAS BEEN EXAMINED BY ME FOR:

1) DESIGN INTENT AND APPEARS TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS PREPARED BY ME, AND:

2) COORDINATION WITH MY PLANS AND SPECIFICATION AND IS ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT.

THE STATEMENT OF GENERAL CONFORMANCE "SHALL NOT BE CONSTRUED AS RELIEVING ME OF MY RIGHTS, DUTIES, AND RESPONSIBILITIES UNDER SECTIONS 17302 AND 81138 OF THE EDUCATION CODE AND SECTIONS 4-336, 4-341, 4-344" OF TITLE 24, PART 1 (TITLE 24, PART 1, SECTION 4-317(b))

I FIND THAT THE DRAWINGS OR SHEETS LISTED ON THE SHEET INDEX

[X] IS/ARE IN GENERAL CONFORMANCE WITH THE PROJECT DESIGN INTENT, AND

[X] HAS/HAVE BEEN COORDINATED WITH THE PROJECT PLANS AND SPECIFICATIONS

SIGNATURE — 2/27/2019 DATE

ARCHITECT OR ENGINEER DESIGNATED TO BE IN GENERAL RESPONSIBLE CHARGE

KENNETH PODANY
PRINT NAME

C28889
LICENSE NUMBER

3/2019
EXP. DATE

[ ] IS/ARE IN GENERAL CONFORMANCE WITH THE PROJECT DESIGN INTENT, AND

[ ] HAS/HAVE BEEN COORDINATED WITH THE PROJECT PLANS AND SPECIFICATIONS

SIGNATURE — DATE

ARCHITECT OR ENGINEER DELEGATED RESPONSIBILITY FOR THIS PORTION OF THE WORK

PRINT NAME

LICENSE NUMBER — EXP. DATE

APPLICABLE CODES

2016	California Administrative Code (CAC), Part 1, Title 24 CCR*	
2016	California Building Code (CBC), Part 2, Title 24 CCR (2015 International Building Code, Vol. 1 & 2, and 2016 California amendments)	
2016	California Electrical Code (CEC), Part 3, Title 24 CCR (2014 National Electrical Code and 2016 California Amendments)	
2016	California Mechanical Code (CMC), Part 4, Title 24 CCR (2015 IAPMO Uniform Mechanical Code and 2016 California amendments)	
2016	California Plumbing Code (CPC), Part 5, Title 24 CCR (2015 IAPMO Uniform Plumbing Code and 2016 California amendments)	
2016	California Energy Code (CEC), Part 6, Title 24 CCR	
2016	California Fire Code (CFC), Part 9, Title 24 CCR (2015 International Fire Code and 2016 California Amendments)	
2016	California Existing Building Code (CEBC), Part 10, Title 24 CCR (2015 International Existing Building Code and 2016 California Amendments)	
2016	California Green Building Standards Code (CALGreen), Part 11, Title 24 CCR	
2016	California Referenced Standards Code, Part 12, Title 24 CCR	
	Title 19 CCR, Public Safety, State Fire Marshal Regulations	
2013	ASME A17.1/CSA B44-13 Safety Code for Elevators and Escalators	

NFPA 13	Standard for the Installation of Sprinkler Systems **(CA amended)**	2016 Edition
NFPA 14	Standard for the installation of Standpipe and Hose Systems	2013 Edition
NFPA 17	Standard for Dry Chemical Extinguishing Systems	2013 Edition
NFPA 17A	Standard for Wet Chemical Extinguishing Systems	2013 Edition
NFPA 20	Standard for the installation of stationary Pumps for Fire Protection	2016 Edition
NFPA 22	Standard for Water Tanks for Private Fire Protection	2013 Edition
NFPA 24	Standard for the Installation of Private Fire Service Mains and Their Appurtenances	2016 Edition
NFPA 72	National Fire Alarm and Signaling Code **(CA amended)**;	2016 Edition
NFPA 80	Standard for Fire Doors and Other Opening Protectives	2016 Edition
NFPA 2001	Standard on Clean Agent Fire Extinguishing Systems, Including Accessories	2015 Edition
UL 300	Standard for Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment	2005 (R2010)
UL 464	Audible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories	2003 Edition
UL 521	Standard for Heat Detectors for Fire Protective Signaling Systems	1999 Edition
UL 1971	Standard for Signaling Devices for the Hearing Impaired	2002 Edition
ICC 300	Standard for Bleachers, Folding and Telescopic Seating, and Grandstands	2012 Edition

For a complete list of applicable NFPA standards refer to 2016 CBC (SFM) Chapter 35 and California Fire Code Chapter 80.

See California Building Code, Chapter 35, for State of California amendments to the NFPA Standards.

*All parts of the 2016 California Building Code become effective January 1, 2017 except the effective date for the use of the 2016 Building Energy Efficiency Standards (Title 24, Part 1, Chapter 10) is February 25, 2016 and the effective date for the use of the California Administrative Code (Title 24, Part 1, Chapter 4) is January 20, 2016.

SCHEDULE OF DRAWINGS

TOTAL SHEETS: 47

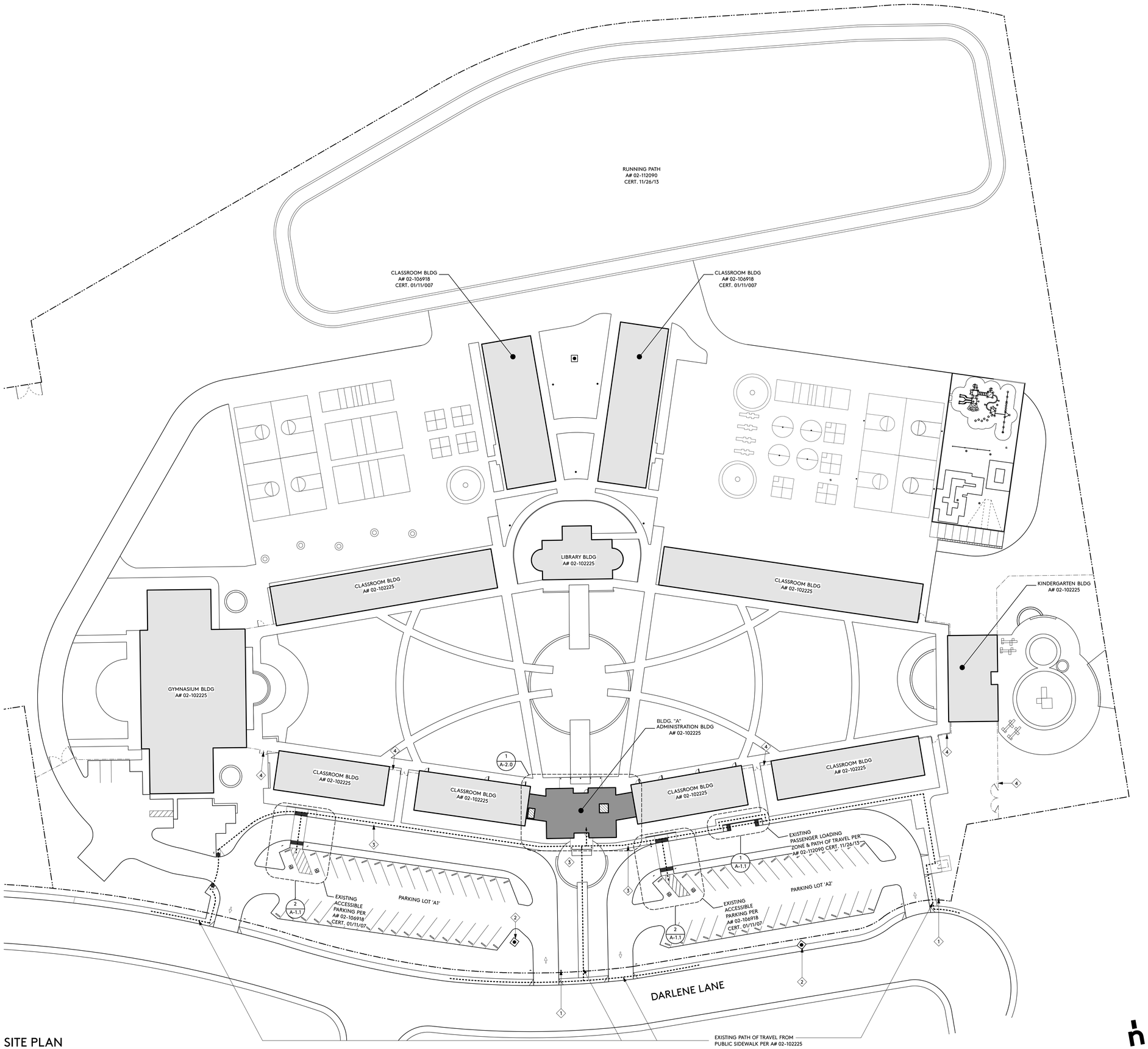
pjhm architects
www.pjhm.com

LICENSED ARCHITECT
KENNETH J. PODANY
NO. C28889
EXP. 03/19
STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

COVER SHEET

CS



SITE PLAN

SCALE: 1" = 30'-0"

PARKING LOT 'A1' (EXISTING)

35 TOTAL PARKING STALLS

33 STANDARD PARKING STALLS
1 ACCESSIBLE PARKING STALL
1 VAN ACCESSIBLE PARKING STALL

PARKING LOT 'A2' (EXISTING)

34 TOTAL PARKING STALLS

32 STANDARD PARKING STALLS
1 ACCESSIBLE PARKING STALL
1 VAN ACCESSIBLE PARKING STALL

ACCESSIBLE PARKING RATIO

"**DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE STATEMENT:** THE POT IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS MEETS THE REQUIREMENTS OF THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE (CBC) ACCESSIBILITY PROVISIONS FOR **PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS**. AS PART OF THE DESIGN OF THIS PROJECT, THE POT WAS EXAMINED AND ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NONCOMPLIANT WITH THE CBC HAVE BEEN IDENTIFIED AND THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS.

DURING CONSTRUCTION, IF POT ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CBC COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THE ITEMS SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT."

ACCESSIBLE PATH OF TRAVEL:

ACCESSIBLE PATH OF TRAVEL AS INDICATED ON PLANS IS A BARRIER FREE ACCESS ROUTE WITHOUT ANY ABRUPT LEVEL CHANGES EXCEEDING ½" IF BEVELED AT 1:2 MAXIMUM SLOPE OR VERTICAL LEVEL CHANGES NOT EXCEEDING ¼" MAXIMUM AND AT LEAST 48" IN WIDTH. SURFACE IS STABLE, FIRM AND SLIP RESISTANT. CROSS SLOPE DOES NOT EXCEED 2% AND SLOPE IN THE DIRECTION OF TRAVEL IS LESS THAN 5% UNLESS OTHERWISE INDICATED. ACCESSIBLE PATH OF TRAVEL SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM AND PROTRUDING OBJECTS GREATER THAN 4" PROJECTION FROM WALL ABOVE 27" AND LESS THAN 80". ARCHITECT SHALL VERIFY THAT THERE ARE NO BARRIERS IN THE PATH OF TRAVEL.

(PATH OF TRAVEL FROM PUBLIC WAY IS EXISTING PER A# 02-112090)

ACCESSIBLE PATH OF TRAVEL

1. CONTRACTORS BIDDING OR PERFORMING WORK SHALL VERIFY THE CONDITIONS OF THE SITE, INCLUDING ACCESS BEFORE SUBMITTING BID OR COMMENCING WORK AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES FOR PROMPT DIRECTION.
2. THE EXISTENCE AND LOCATION OF EXISTING UNDERGROUND UTILITIES OR STRUCTURES INDICATED OR NOT ON THE DRAWINGS ARE OBTAINED BY SEARCH OF AVAILABLE RECORDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXACT LOCATIONS. THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES AND OTHER STRUCTURES. ANY DAMAGE SHALL BE PROMPTLY RESTORED TO THE OWNERS SATISFACTION.
3. REFERENCE CIVIL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL UNDERGROUND UTILITY WORK TO BE COMPLETED IN THIS CONTRACT.
4. GENERAL CONTRACTOR TO COORDINATE ALL PHASING AND UTILITY INTERRUPTIONS OF THIS PROJECT WITH THE OWNER AND ARCHITECT AS TO DO THE LEAST POSSIBLE INTERRUPTIONS. (AS-REQ'D)
5. PROVIDE CONSTRUCTION BARRICADES AS REQUIRED TO PROTECT THE PUBLIC'S HEALTH AND SAFETY INCLUDING WORK UNDER CONSTRUCTION TO THE REQUIREMENTS OF THE OWNER. COVER OPEN TRENCHES WITH ADEQUATE SOLID MATERIAL.
6. EXCAVATION AND TRENCHING SHALL COMPLY WITH THE REQUIREMENTS OF THE TESTING LAB AND JURISDICTIONAL REQUIREMENTS AT THE TIME WORK COMMENCES AND UP TO COMPLETION OF THE WORK.
7. ALL N.I.C. ITEMS INDICATED ON PLAN ARE NOT A PART OF THIS APPROVAL.

SITE PLAN GENERAL NOTES

1. EXISTING TOW-AWAY SIGN PER A# 02-11209, AND DETAIL 3 / A-1.1
2. EXISTING FIRE HYDRANT TO REMAIN
3. EXISTING CONCRETE WALK
4. EXISTING 6'-0" HIGH FENCE (AND GATES) PER A#02-102225.

SITE PLAN KEYNOTES

- 6 / A-8.0 — DETAIL REFERENCE NUMBER / SHEET REFERENCE NUMBER
- 1 — PLAN KEYNOTES
- AREA OF WORK
- EXISTING BUILDING OUTLINE
- ACCESSIBLE STAFF RESTROOM

SITE PLAN SYMBOLS

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-117236 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 03/25/2019

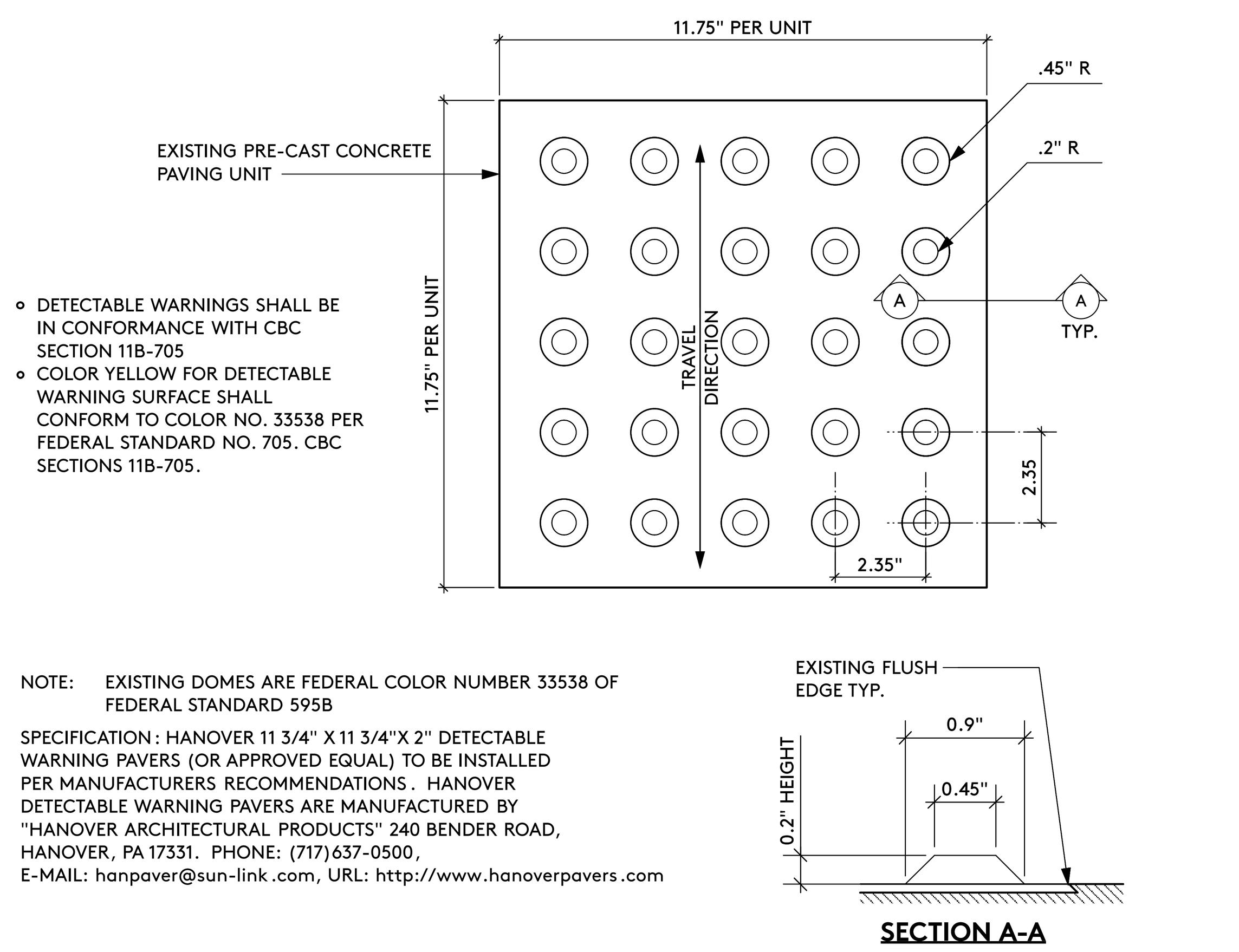
pjhm architects
www.pjhm.com

LICENSED ARCHITECT
KENNETH J. POMA
No. C25989
STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

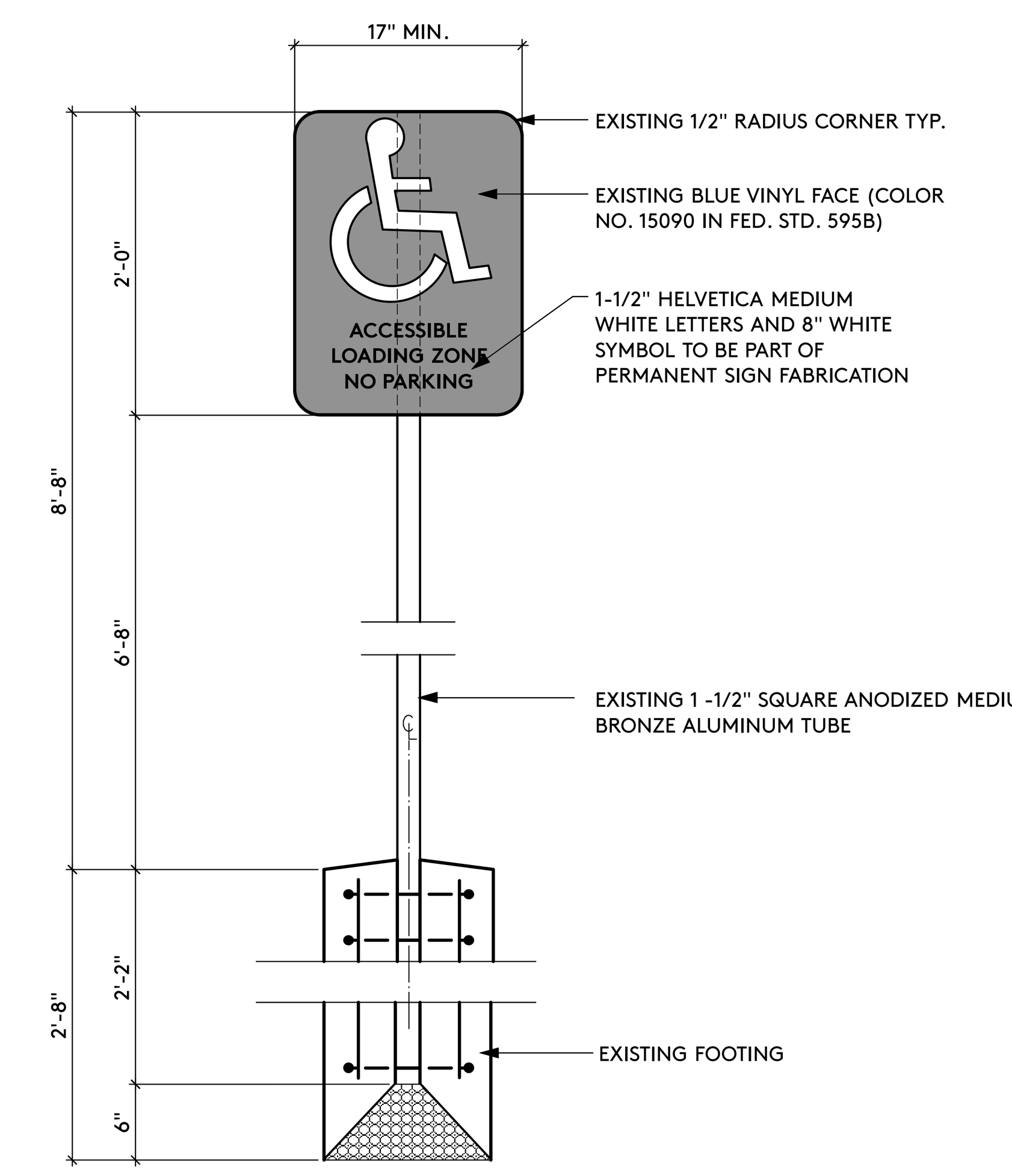
SITE PLAN

A-1.0



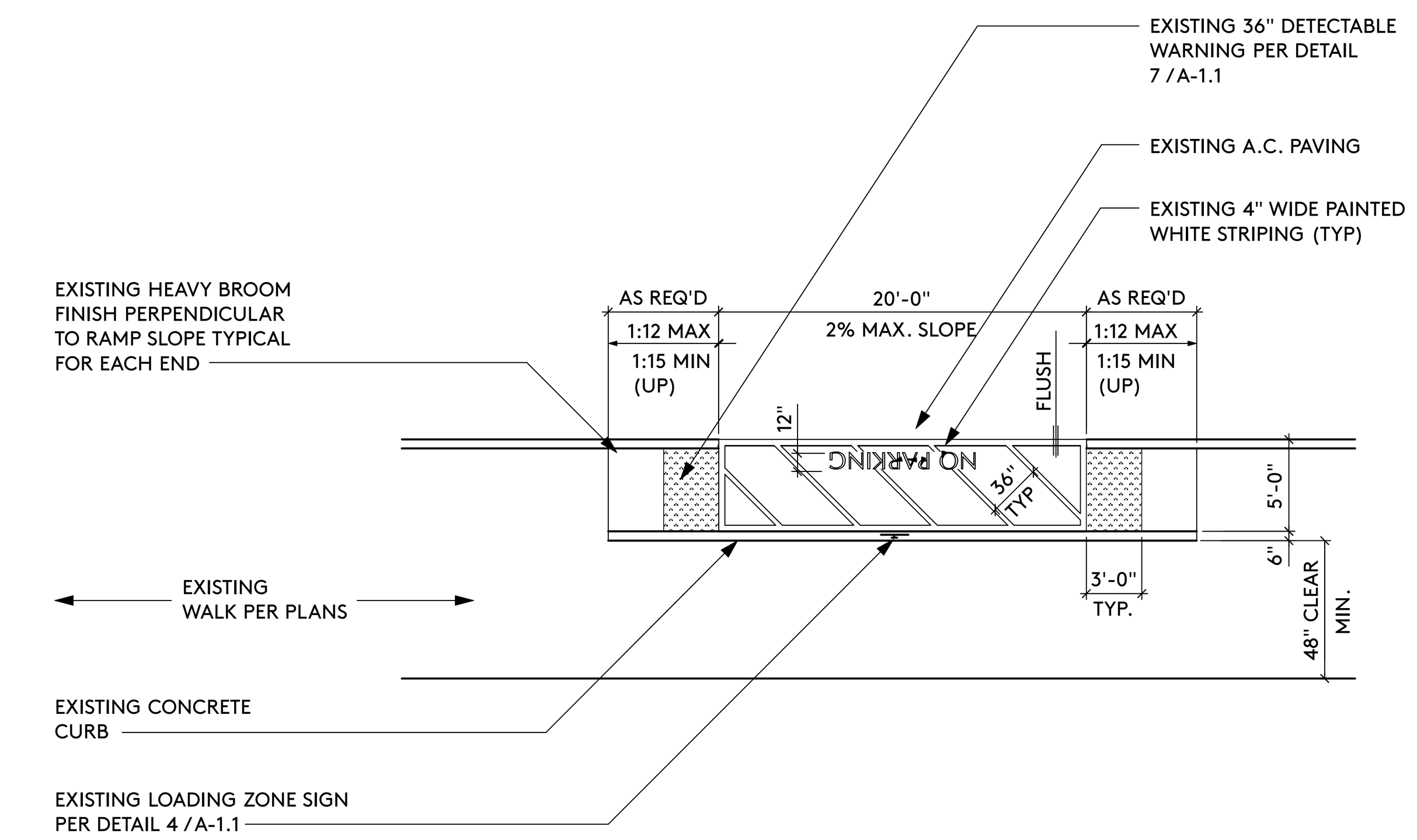
EXISTING DETECTABLE WARNING PAVERS 7

SCALE: 1/8" = 1'-0"



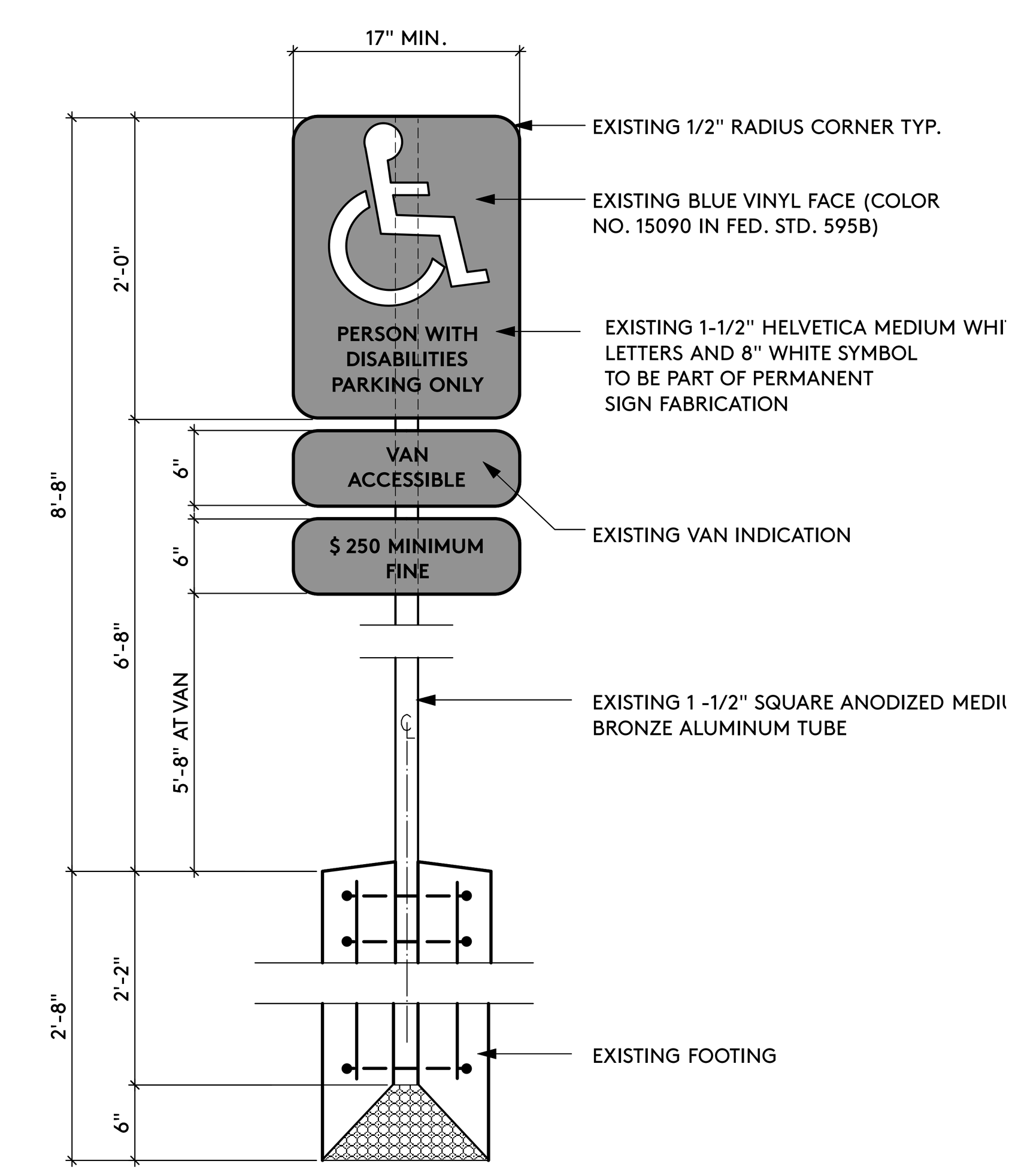
EXISTING LOADING ZONE SIGN 4

SCALE: 1/8" = 1'-0"



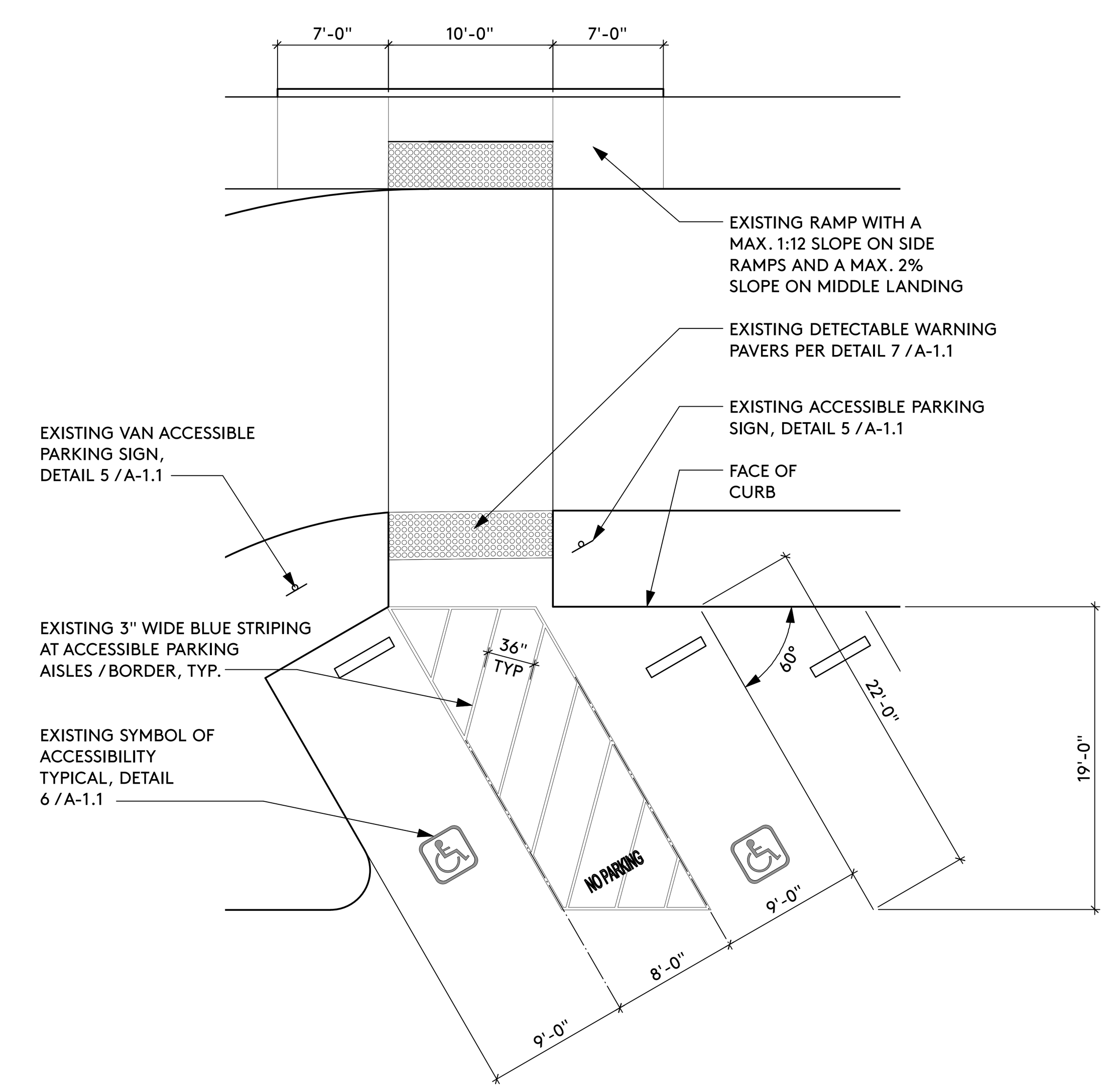
EXISTING LOADING ZONE 1

SCALE: 1/8" = 1'-0"



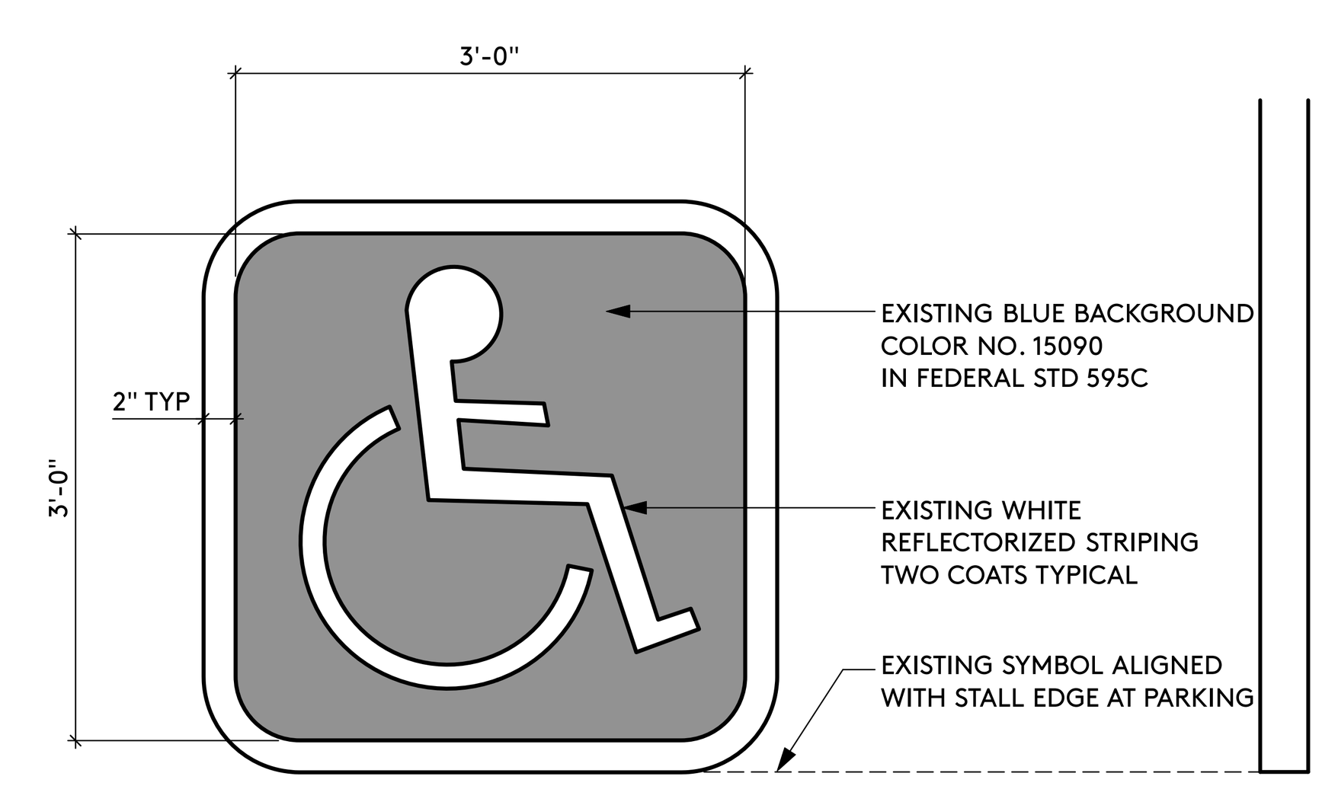
EXISTING ACCESSIBLE PARKING STALL SIGN 5

SCALE: 1/8" = 1'-0"



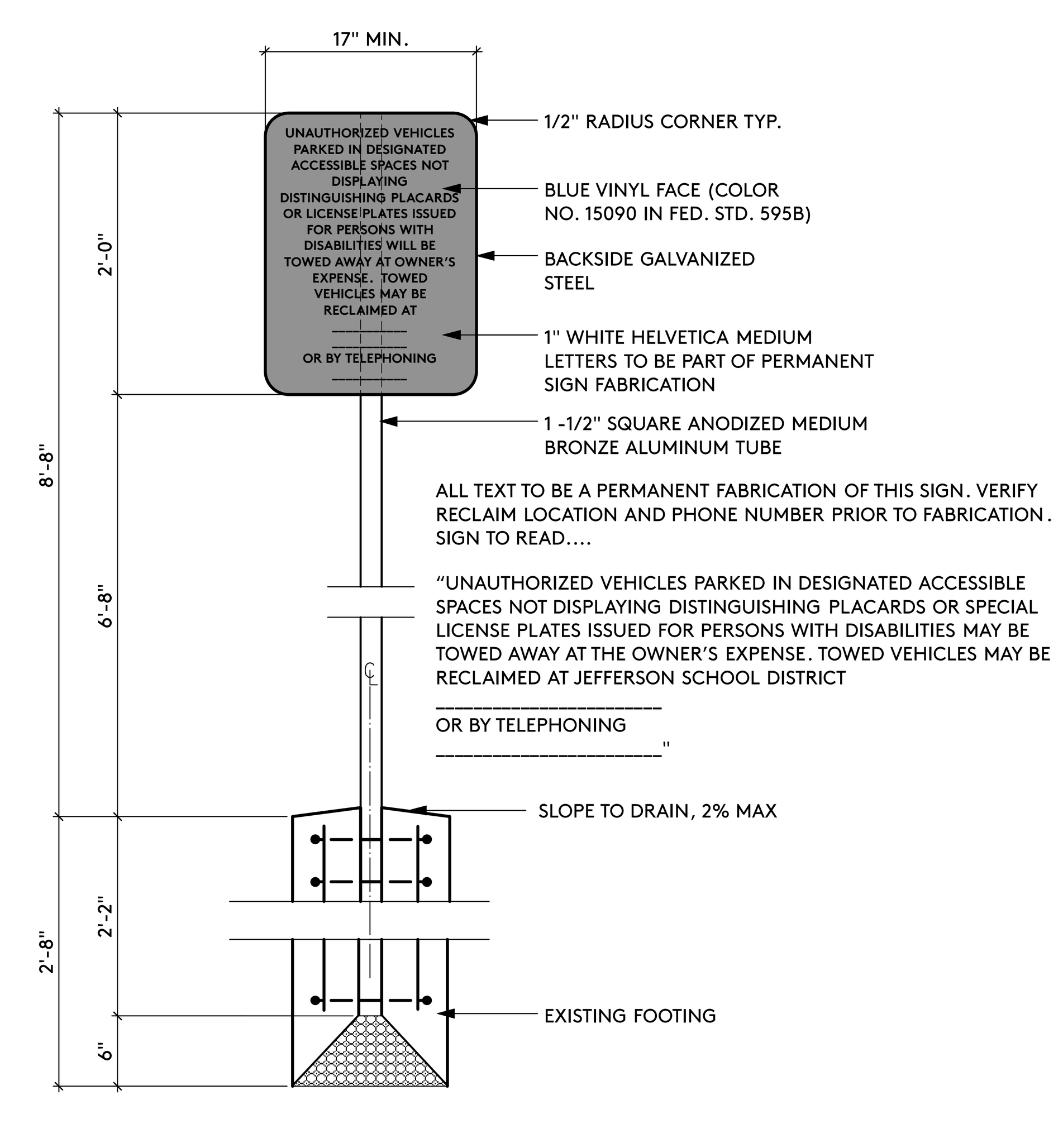
EXISTING ACCESSIBLE PARKING STALLS 2

SCALE: 1/8" = 1'-0"



EXISTING SYMBOL OF ACCESSIBILITY 6

SCALE: 1/8" = 1'-0"



EXISTING TOW-AWAY SIGN 3

SCALE: 1/8" = 1'-0"

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-117236 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 03/25/2019

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LICENSED ARCHITECT
KENNETH J. PERRY
C25889
STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

SITE DETAILS (EXISTING)

A-1.1

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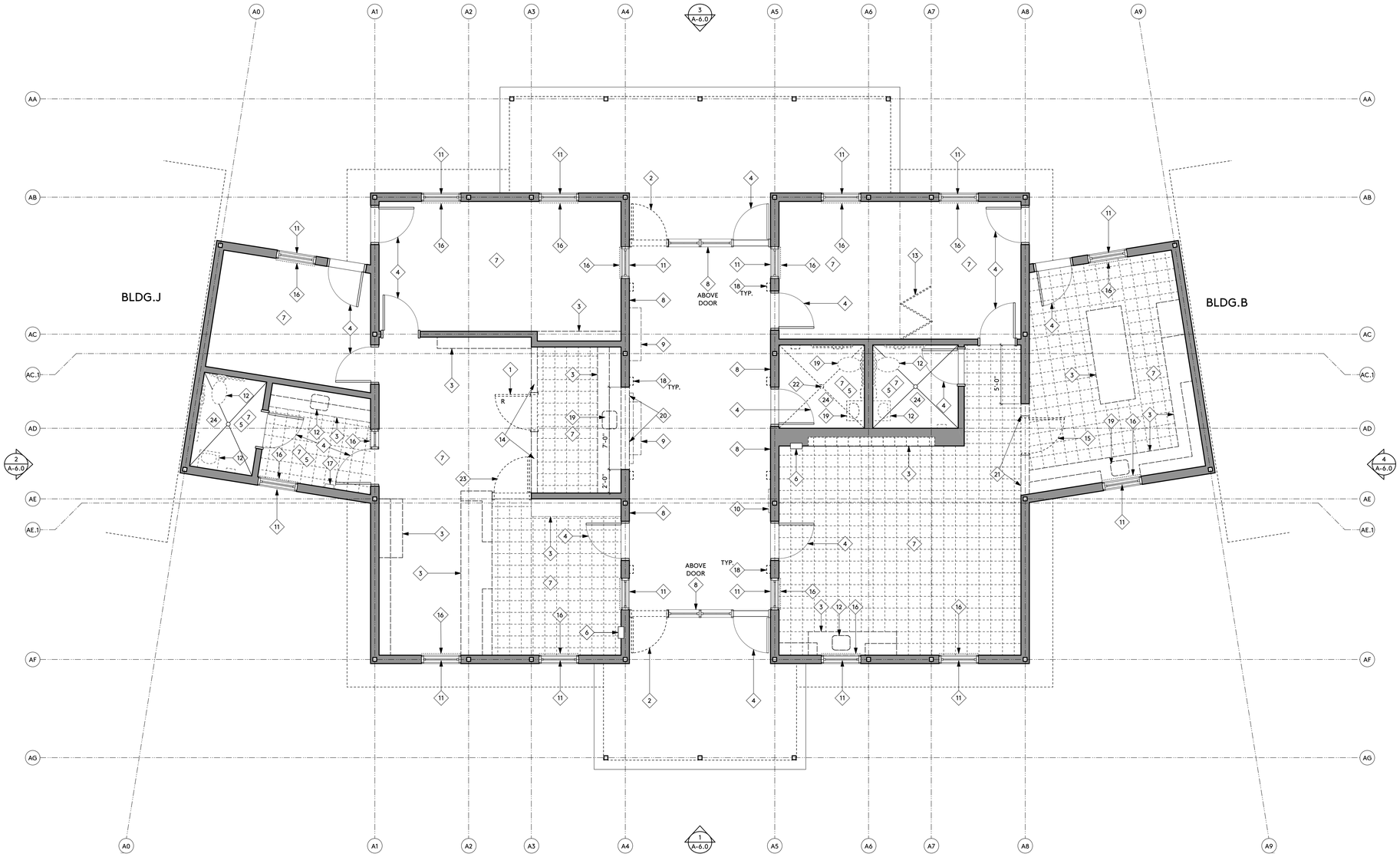

ADMINISTRATION DEMOLITION - FLOOR PLAN

SCALE: 1/4" = 1'-0"

1. CONTRACTOR SHALL VERIFY WITH JEFFERSON SCHOOL DISTRICT IF ITEMS BEING REMOVED ARE TO REMAIN IN POSSESSION OF THE DISTRICT
2. PRIOR TO DEMOLITION AND REMOVAL OF ALL MATERIALS CONTRACTOR IS RESPONSIBLE TO VERIFY WITH THE HAZARDOUS MATERIAL REPORT ON RECORD WITH JEFFERSON SCHOOL DISTRICT
3. REFER TO PLUMING AND MECHANICAL DRAWINGS FOR CUT-OUT LOCATIONS OF MECHANICAL DUCT AND PIPE PENETRATIONS
4. TO MINIMIZE DISRUPTIONS PRIOR TO ELECTRICAL AND MECHANICAL SYSTEMS SHUT DOWN, CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH SCHOOL DISTRICT
5. MISCELLANEOUS ITEMS NOT IDENTIFIED SUCH AS: DISPLAY BOARDS, CLOCKS, ACOUSTICAL PANELS, CASEWORK, PROJECTOR SCREENS, EXIT SIGNS, RESTROOM ACCESSORIES ETC. SHALL BE REMOVED BUT NOT DISPOSED OF PRIOR VERIFICATION WITH JEFFERSON SCHOOL DISTRICT
6. REFER TO FLOOR PLAN FOR NEW OPENING LOCATIONS
7. REFER TO PLUMBING, MECHANICAL, AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION ON ITEMS TO BE REMOVED, RELOCATED OR PROTECTED IN PLACE
8. DIMENSIONS OF EXISTING CONDITIONS ARE BASED ON ORIGINAL DOCUMENTS AND MAY NOT REPRESENT CONSTRUCTED DIMENSIONS AND THEREFORE SHALL BE FIELD VERIFIED

DEMOLITION GENERAL NOTES

1. EXISTING DOOR, HARDWARE, AND FRAME TO BE REMOVED AND RELOCATED TO ROOM A07
2. EXISTING DOOR AND HARDWARE TO BE REMOVED. FRAME TO REMAIN, PROTECT IN PLACE DURING CONSTRUCTION
3. EXISTING CASEWORK TO BE REMOVED, PATCH EXISTING WALL TO REMAIN
4. EXISTING DOOR, FRAME, AND HARDWARE TO REMAIN, PROTECT IN PLACE DURING CONSTRUCTION
5. EXISTING WALL FINISHES TO REMOVED DOWN TO STUDS
6. EXISTING FIRE EXTINGUISHER AND CABINET TO REMAIN, PROTECT IN PLACE
7. EXISTING FLOOR AND BASE MATERIAL TO BE REMOVED
8. EXISTING THIN BRICK VENEER TO BE REMOVED IN ITS ENTIRETY AND ALL MATERIAL DOWN TO STUDS
9. EXISTING WALL HUNG CABINETS AND ACCESSORIES TO BE REMOVED AND RETURNED TO DISTRICT
10. EXISTING SCHOOL PLAQUE TO BE REMOVED AND SAVED FOR RELOCATION. SEE A-2.1 FOR NEW LOCATION
11. EXISTING WINDOW AND FRAME TO REMAIN, PROTECT IN PLACE DURING CONSTRUCTION
12. EXISTING PLUMBING FIXTURE TO BE REMOVED PER PLUMBING DRAWINGS
13. EXISTING OPERABLE WALL TO BE REMOVED IN ITS ENTIRETY, INCLUDING ANY STRUCTURAL COMPONENTS AND WALL TRACKS
14. EXISTING WALL TO BE REMOVED AS REQUIRED FOR WORK INDICATED ON PLANS
15. EXISTING DOOR, HARDWARE AND FRAME TO BE REMOVED
16. EXISTING BLINDS/SHADES TO BE REMOVED. CLEAN AND RE-INSTALL AFTER MODERNIZATION
17. EXISTING ACCESSORIES TO BE REMOVED AND RE-INSTALLED AFTER MODERNIZATION
18. EXISTING WALL POP-OUTS TO BE REMOVED
19. EXISTING PLUMBING FIXTURE TO BE REMOVED. CAP AND PATCH ALL RELATED PLUMBING AS REQUIRED. REFER TO PLUMBING DRAWINGS.
20. EXISTING PORTION OF WALL TO BE REMOVED FROM FLOOR TO +7'-0" A.F.F. AS SHOWN REFER TO MODERNIZATION PLAN & REFLECTED CEILING FOR ADDITIONAL INFORMATION
21. EXISTING PORTION OF WALL TO BE REMOVED FROM FLOOR TO +8'-0" A.F.F. AS SHOWN REFER TO MODERNIZATION PLAN & REFLECTED CEILING FOR ADDITIONAL INFORMATION
22. REMOVE EXISTING FLOOR DRAIN CAP AND PATCH FLOOR AS REQUIRED.
23. EXISTING PEDESTRIAN CONTROL SWING GATE TO BE REMOVED
24. ALL EXISITNG RESTROOM ACCESSORIES TO BE REMOVED.

DEMOLITION KEYNOTES

DEMOLITION PLAN SYMBOLS

- A — BUILDING GRID LINE
- EXISTING WALL TO REMAIN, PATCH EXISTING GYPSUM BOARD AS REQUIRED
- EXISTING WALL TO BE REMOVED
- EXISTING COLUMN - PROTECT COLUMN AND FOUNDATION IN PLACE
- 1 — DEMOLITION PLAN KEYNOTES
- 1 / A-6.0 — EXTERIOR ELEVATION REFERENCE NUMBER / SHEET REFERENCE NUMBER

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

DEMOLITION FLOOR PLAN

A-2.0

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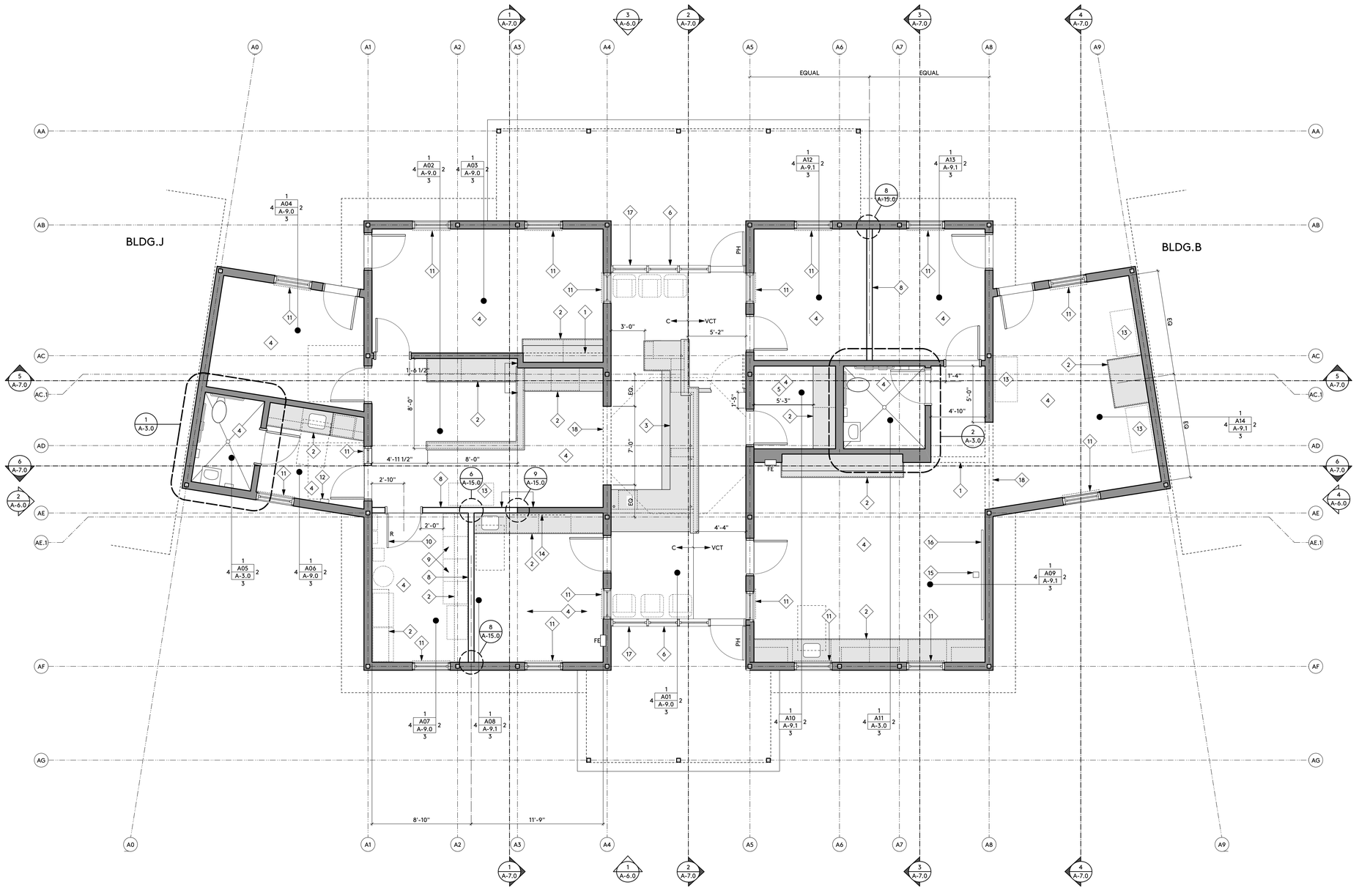


ADMINISTRATION MODERNIZATION- FLOOR PLAN

SCALE: 1/4" = 1'-0"

A01	RECEPTION/WAITING	A09	TEACHER WORKROOM
A02	OFFICE	A10	STORAGE ROOM
A03	PRINCIPAL	A11	STAFF RESTROOM
A04	ASSISTANT PRINCIPAL	A12	COUNSELOR OFFICE
A05	NURSE RESTROOM	A13	PSYCHOLOGIST OFFICE
A06	NURSE	A14	TEACHER WORKROOM
A07	STORAGE/ WORKROOM		
A08	CONFERENCE		

ROOM SCHEDULE

1. ALL EXISTING AND RELOCATED DOORS AND FRAMES TO BE PAINTED. PROTECT HARDWARE FROM OVER PAINT
2. ALL EXISTING WINDOW FRAMES TO BE PAINTED. PROTECT GLASS AND HARDWARE FROM OVER PAINT
3. ALL EXISTING AND NEW GYPSUM BOARD TO BE PATCHED, PREPPED AND PAINTED OR HAVE WALL VINYL APPLIED PER FINISH SCHEDULE AND INTERIOR ELEVATIONS
4. REFER TO DETAIL 3 AND 4/A-13.0 FOR TYPICAL CABINET CLEARANCES

MODERNIZATION GENERAL NOTES

1. LINE OF EXISTING CEILING /SOFFIT ABOVE, REFER TO REFLECTED CEILING PLANS
2. NEW PLASTIC LAMINATE CASEWORK REFER TO INTERIOR ELEVATIONS AND SPECIFICATIONS. PROVIDE BACKING IN WALL AT ALL UPPER CABINET LOCATIONS.
3. RECEPTION DESK CASEWORK PER DETAIL #2 / A-15.0
4. REFER TO FINISH SCHEDULE AND INTERIOR ELEVATIONS FOR WALL AND FLOOR FINISHES
5. REMOVE AND CAP EXISTING FLOOR DRAIN. LEVEL FLOOR TO MATCH EXISTING BUILDING FINISH FLOOR
6. MODIFY EXISTING DOOR FRAME PER DETAIL #3 / A-10.0
7. RELOCATE EXISTING SCHOOL PLAQUE TO THIS LOCATION
8. NEW 6" FULL HEIGHT METAL STUD WALL WITH BATT INSULATION PER DETAIL #5 / A-15.0
9. LOCATION FOR CUMULATIVE FILES (NIC)
10. RELOCATED 3'-0" X 7'-0" SOLID CORE DOOR HALLOW METAL FRAME AND LEVER HARDWARE FROM DEMOLITION.
11. RE-INSTALL EXISTING BLINDS/SHADES
12. RE-INSTALL EXISTING ACCESSORIES
13. LOCATION FOR COPIER (NIC), REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION
14. (OFCI) WALL MOUNTED TELEVISION. CHECK WITH OWNER FOR EXACT TELEVISION SIZE AND LOCATION. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION. SEE BACKING DETAIL #3 /A-15.1, ATTACH TO BACKING PER MANUFACTURER'S RECOMMENDATIONS.
15. ULTRA SHORT THROW PROJECTOR REFER TO ELECTRICAL DRAWINGS, REFER TO BACKING DETAIL #3 / A-15.1, ATTACH TO BACKING PER MANUFACTURER'S RECOMMENDATIONS.
16. 60" X 96" PROJECTION / DRY ERASE WHITE BOARD PER SPECIFICATIONS, REFER TO BACKING DETAIL #3 / A-15.1, ATTACH TO BACKING PER MANUFACTURER'S RECOMMENDATIONS.
17. NEW GLASS AND FRAME PER SPECIFICATION AND DETAIL #3 / A-10.0
18. NEW GYP-BOARD SOFFIT HEADER , REFER TO REFLECTED CEILING PLAN
19. NEW PEDESTRIAN CONTROL GATE - REFER TO DETAIL #13 / A-13.0

MODERNIZATION KEYNOTES

EXISTING WALL TO REMAIN

NEW WALL PER DETAIL 3 /A-15.0

PLAN KEYNOTES

ROOM NUMBER
INTERIOR ELEVATION SHEET NUMBER
INTERIOR ELEVATION REF NUMBER

DETAIL REFERENCE NUMBER
SHEET REFERENCE NUMBER

BUILDING GRID LINE

BUILDING DIMENSION FACE OF STUD, FACE OF PLYWOOD SHEATHING WHERE OCCURS

BUILDING CENTERLINE DIMENSION

BUILDING SECTION REFERENCE NUMBER
SHEET NUMBER REFERENCE NUMBER

EXTERIOR ELEVATION DETAIL REFERENCE NUMBER
SHEET REFERENCE NUMBER

EXISTING FIRE EXTINGUISHER AND CABINET TO REMAIN, PROTECT IN PLACE

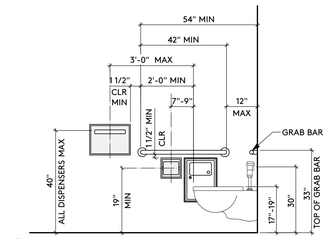
30" x 48" CLEAR ACCESSIBLE SPACE

60" x 60" CLEAR ACCESSIBLE SPACE

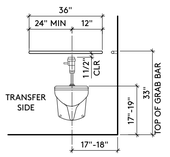
MODERNIZATION SYMBOLS

MODERNIZATION FLOOR PLAN
TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

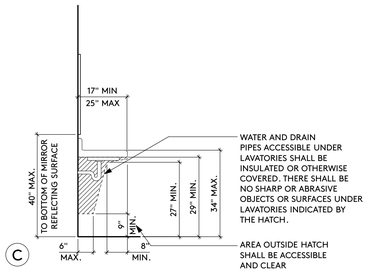
A-2.1



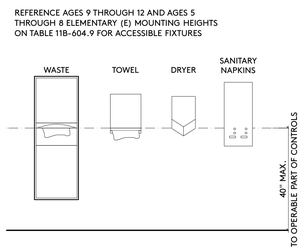
A SIDE ELEVATION OF TYP. TOILET STALL
SCALE: 1/2" = 1'-0"



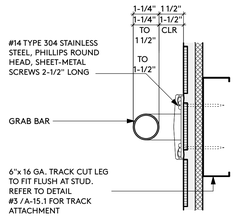
B FRONT ELEVATION OF TYP. TOILET STALL
SCALE: 1/2" = 1'-0"



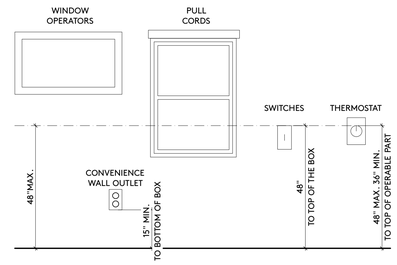
C LAVATORY DRINKING FOUNTAIN ELEVATION
SCALE: N.T.S.



D TOILET ACCESSORIES
N.T.S.



E GRAB BAR AND BACKING
SCALE: NTS



F CONTROLS, SWITCHES AND OUTLETS
N.T.S.

ALTERNATIVE DIMENSIONS				
NOTE: ALL HEIGHT DIMENSIONS ARE FROM ABOVE-FINISH-FLOOR (ABOVE-FINISH-GRADE WHEN AT EXTERIOR), AND ALL HORIZONTAL DIMENSIONS ARE TO FACE-OF-FINISH.				
	AGES 3 AND 4	AGES 5 THROUGH 8	AGES 9 THROUGH 12	ADULT
WATER CLOSET CENTERLINE	12 INCHES (305 MM)	12 TO 15 INCHES (305 TO 381 MM)	15 TO 18 INCHES (381 TO 457 MM)	17 TO 18 INCHES
TOILET SEAT HEIGHT	11 TO 12 INCHES (279 TO 305 MM)	12 TO 15 INCHES (305 TO 381 MM)	15 TO 17 INCHES (381 TO 432 MM)	17 TO 19 INCHES
GRAB BAR HEIGHT	18 TO 20 INCHES (457 TO 508 MM)	20 TO 25 INCHES (508 TO 635 MM)	25 TO 27 INCHES (635 TO 686 MM)	33 TO 36 INCHES
DISPENSER HEIGHT	14 INCHES (356 MM)	14 TO 17 INCHES (356 TO 432 MM)	17 TO 19 INCHES (432 TO 483 MM)	19 INCHES MIN

G REFERENCE TABLE 11B-604.9

1. SURFACE MOUNTED PAPER TOWEL DISPENSER, 4" MAX. PROJECTION
2. SOAP DISPENSER
3. MIRROR PER SPECIFICATIONS
4. RECESSED TOILET PAPER DISPENSER PER SPECIFICATIONS
5. NOT USED
6. SEAT COVER DISPENSER PER SPECIFICATIONS
7. SANITARY NAPKIN DISPOSAL PER SPECIFICATIONS
8. ACCESSIBLE GRAB BARS PER SPECIFICATIONS

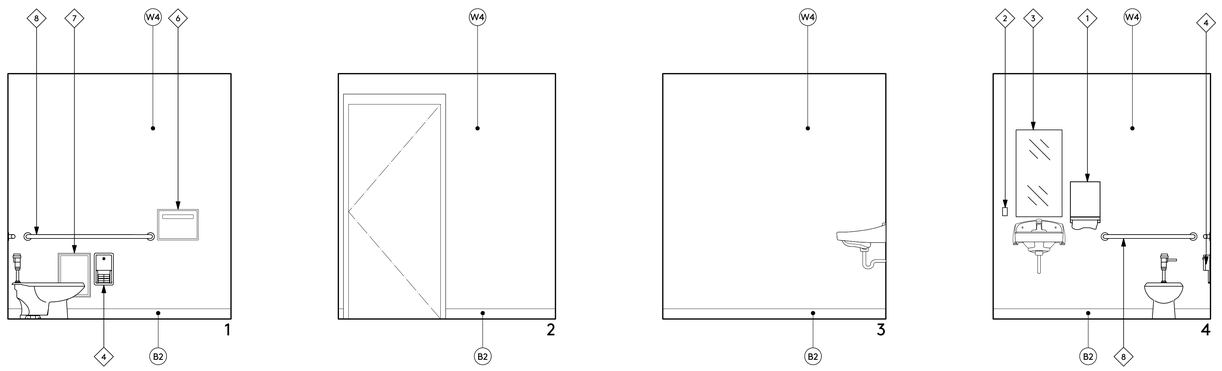
INTERIOR ELEVATION KEYNOTES

1 SEE KEYNOTE ON THIS SHEET

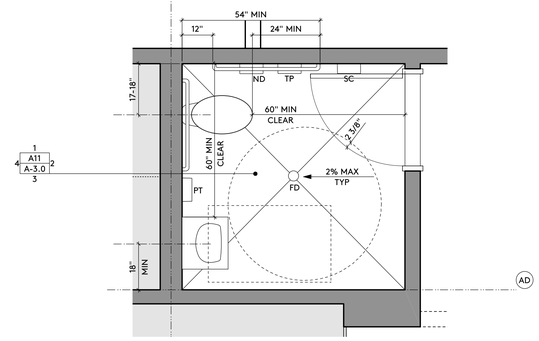
SEE FINISH SCHEDULE SHEET A-12.0 FOR FINISH MATERIAL

1 / A-8.0 DETAIL REFERENCE NUMBER / SHEET REFERENCE NUMBER

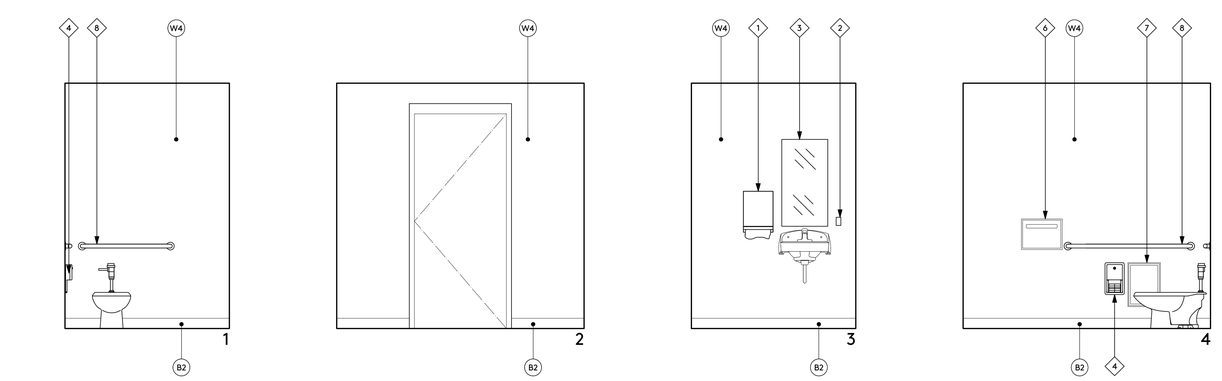
TYPICAL ACCESSIBILITY REQUIREMENTS AND MOUNTING HEIGHTS 3



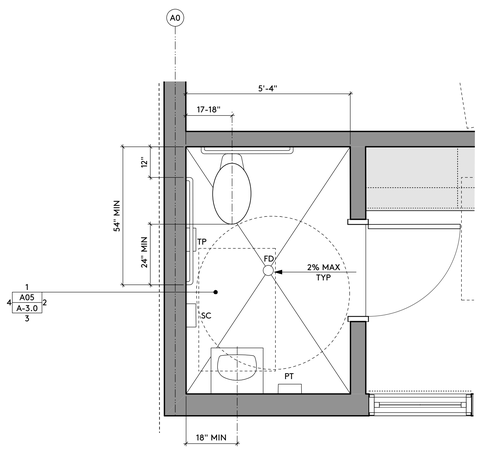
STAFF RESTROOM A11
REFER TO 3/A-3.0, TABLE 11B-604.9 FOR MOUNTING HEIGHT (AGE GROUP ADULT)
SCALE: 1/2" = 1'-0"



A11 STAFF RESTROOM 2
SCALE: 1/2" = 1'-0"



NURSE RESTROOM A05
REFER TO 3/A-3.0, TABLE 11B-604.9 FOR MOUNTING HEIGHT (AGE GROUP 9 - 12)
SCALE: 1/2" = 1'-0"



A05 NURSE RESTROOM 1
SCALE: 1/2" = 1'-0"

INTERIOR ELEVATION SYMBOLS

ALL TOILET ROOMS TO BE PROVIDED WITH ACCESSIBLE FIXTURES AND ACCESSORIES AS REQUIRED BY CODE IN REGARDS TO MOUNTING HEIGHTS, CLEARANCES, INSTALLATION AND APPROPRIATE DIMENSIONING.

FOR ALL WALL MOUNTED AND SEMI-RECESSED MOUNTED EQUIPMENT, ACCESSORIES CABINETS, HANDRAILS, CHALKBOARDS, MECHANICAL EQUIPMENT, ELECTRICAL EQUIPMENT AND ETC. PROVIDE AND INSTALL BLOCKING TO BE 4x6 AND NAIL TO STUDS W/3-16D EACH END AND A34 TOP AND BOTTOM EACH END.

WALL AND FLOOR TILE WILL CONSIST OF FOUR (4) COLOR (MAXIMUM) GRAPHIC PATTERNING. DESIGN AND COLOR SCHEDULE WILL BE PROVIDED AFTER BID.

ALL DIMENSIONS FOR ACCESS COMPLIANCE ARE TO FACE OF FINISH UNLESS OTHERWISE NOTED.

FLOOR DRAINS SHALL HAVE 2% MAXIMUM SLOPE IN ALL DIRECTIONS. FLOOR DRAINS OR FLOOR SINKS SHALL HAVE 1/2" MAXIMUM GRATE OPENINGS IN ALL DIRECTIONS.

SEE DETAIL 3/A-3.0 FOR TYPICAL MOUNTING LOCATIONS OF ACCESSORIES AND PLUMBING FIXTURES.

RESTROOM PLAN GENERAL NOTES

RESTROOM SYMBOLS

EXISTING WALL

ACCESSIBLE GRAB BARS PER SPECIFICATIONS AND DETAIL 3E / A-3.0

TOILET PER PLUMBING DRAWINGS

LAVATORY PER PLUMBING DRAWINGS

ACCESSORY PER INTERIOR ELEVATIONS AND SPECIFICATIONS

TP TOILET PAPER
SC SEAT COVER
ND NAPKIN DISPOSAL
HD HAND DRYER (REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION) - 4" MAX PROJECTION
PT O.F.C.I PAPER TOWEL DISPENSER

1 / A01 / A-3.1 / 3 ROOM NUMBER / INTERIOR ELEVATION SHEET NUMBER / INTERIOR ELEVATION REFERENCE NUMBER

6'-0" BUILDING DIMENSION FACE OF STUD, FACE OF PLYWOOD SHEATHING WHERE OCCURS

6'-0" SEE KEYNOTE ON THIS SHEET BUILDING CENTERLINE DIMENSION

A BUILDING GRID LINE

60" DIAMETER CLEAR ACCESSIBLE SPACE

30" x 48" CLEAR ACCESSIBLE SPACE

FD FLOOR DRAIN PER PLUMBING DRAWINGS SLOPE FLOOR 2% MAX IN ALL DIRECTIONS

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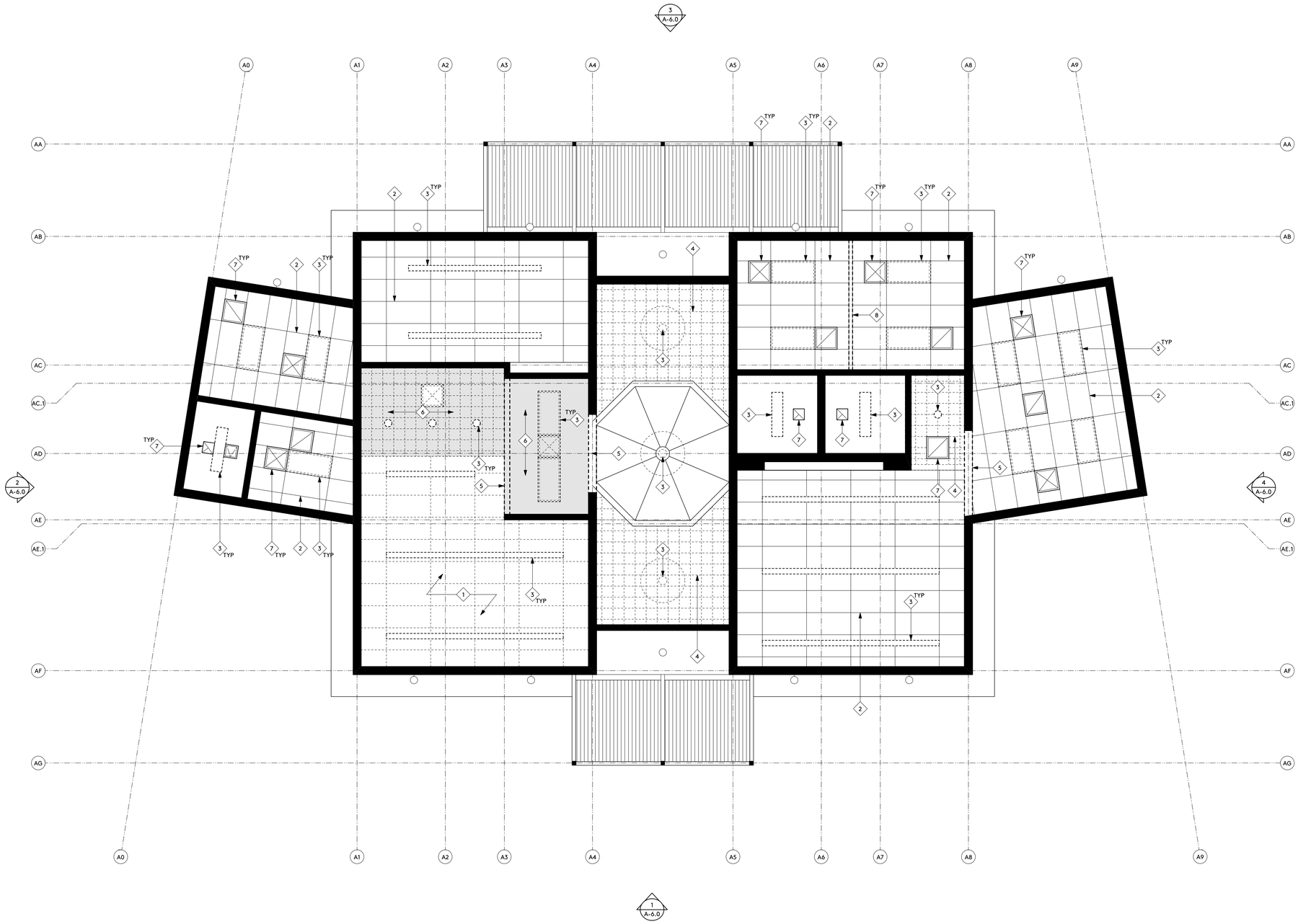
JEFFERSON SCHOOL DISTRICT

ENLARGED RESTROOM PLANS AND DETAILS

A-3.0



1. CONTRACTOR SHALL VERIFY WITH JEFFERSON SCHOOL DISTRICT IF ITEMS BEING REMOVED ARE TO REMAIN IN POSSESSION OF THE DISTRICT
2. PRIOR TO DEMOLITION AND REMOVAL OF ALL MATERIALS CONTRACTOR IS RESPONSIBLE TO VERIFY WITH THE HAZARDOUS MATERIAL REPORT ON RECORD WITH JEFFERSON SCHOOL DISTRICT
3. REFER TO PLUMING AND MECHANICAL DRAWINGS FOR CUT-OUT LOCATIONS OF MECHANICAL DUCT AND PIPE PENETRATIONS
4. TO MINIMIZE DISRUPTIONS PRIOR TO ELECTRICAL AND MECHANICAL SYSTEMS SHUT DOWN, CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH SCHOOL DISTRICT
5. MISCELLANEOUS ITEMS NOT IDENTIFIED SUCH AS: DISPLAY BOARDS, CLOCKS, ACOUSTICAL PANELS, CASEWORK, PROJECTOR SCREENS, EXIT SIGNS, RESTROOM ACCESSORIES ETC. SHALL BE REMOVED BUT NOT DISPOSED OF PRIOR VERIFICATION WITH JEFFERSON SCHOOL DISTRICT
6. REFER TO FLOOR PLAN FOR NEW OPENING LOCATIONS
7. REFER TO PLUMBING, MECHANICAL, AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION ON ITEMS TO BE REMOVED, RELOCATED OR PROTECTED IN PLACE
8. DIMENSIONS OF EXISTING CONDITIONS ARE BASED ON ORIGINAL DOCUMENTS AND MAY NOT REPRESENT CONSTRUCTED DIMENSIONS AND THEREFORE SHALL BE FIELD VERIFIED

DEMOLITION GENERAL NOTES

1. REMOVE EXISTING SUSPENDED ACOUSTIC TILE CEILING SYSTEM IN ITS ENTIRETY
2. REMOVE EXISTING 2x4 ACOUSTICAL LAY-IN TILES. EXISTING GRID TO REMAIN AND BE PROTECTED IN PLACE
3. REMOVE EXISTING LIGHT FIXTURES, REFER TO ELECTRICAL PLANS
4. REMOVE EXISTING 12x12 GLUE-UP ACOUSTIC TILES DOWN TO SUBSTRATE
5. EXISTING PORTION OF WALL TO BE REMOVED, REFER TO DEMOLITION PLAN
6. REMOVE FRAMED CEILING IN ITS ENTIRETY (AREA INDICATED WITH SHADE)
7. EXISTING MECHANICAL FANS, GRILLES, TO REMAIN
8. MODIFY EXISTING SUSPENDED CEILING GRID AS REQUIRED FOR CONSTRUCTION OF NEW WALL

DEMOLITION KEYNOTES

EXISTING WALL TO BE REMOVED

EXISTING WALL TO REMAIN. PATCH EXISTING GYPSUM BOARD AS REQUIRED

1 — PLAN KEYNOTES

A101 — ROOM NUMBER
8'-0" — CEILING HEIGHT ABOVE FINISH FLOOR

4 — GRID LINE

A / A-7.0 — BUILDING SECTION NUMBER / REFERENCE SHEET NUMBER

1 / A-6.0 — EXTERIOR ELEVATION NUMBER / REFERENCE SHEET NUMBER

EXISTING LIGHT FIXTURE TO BE REMOVED (REFERENCE ELECTRICAL DRAWINGS)

EXISTING RETURN GRILLE TO REMAIN. PROTECT IN PLACE (REFERENCE MECHANICAL DRAWINGS)

EXISTING SUPPLY GRILLE TO REMAIN. PROTECT IN PLACE (REFERENCE MECHANICAL DRAWINGS)

EXISTING EXHAUST FAN TO REMAIN. PROTECT IN PLACE (REFERENCE MECHANICAL DRAWINGS)

EXISTING CEILING ACCESS HATCH TO REMAIN. PROTECT IN PLACE

EXISTING 2'-0" x 4'-0" SUSPENDED ACOUSTIC TILE CEILING SYSTEM TO BE REMOVED

EXISTING 2'-0" x 4'-0" SUSPENDED ACOUSTIC TILE CEILING SYSTEM TO REMAIN. PROTECT IN PLACE

DEMOLITION CEILING PLAN SYMBOLS

ADMINISTRATION DEMOLITION - REFLECTED CEILING PLAN

SCALE: 1/4" = 1'-0"

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DEMOLITION
REFLECTED CEILING PLAN

A-4.0

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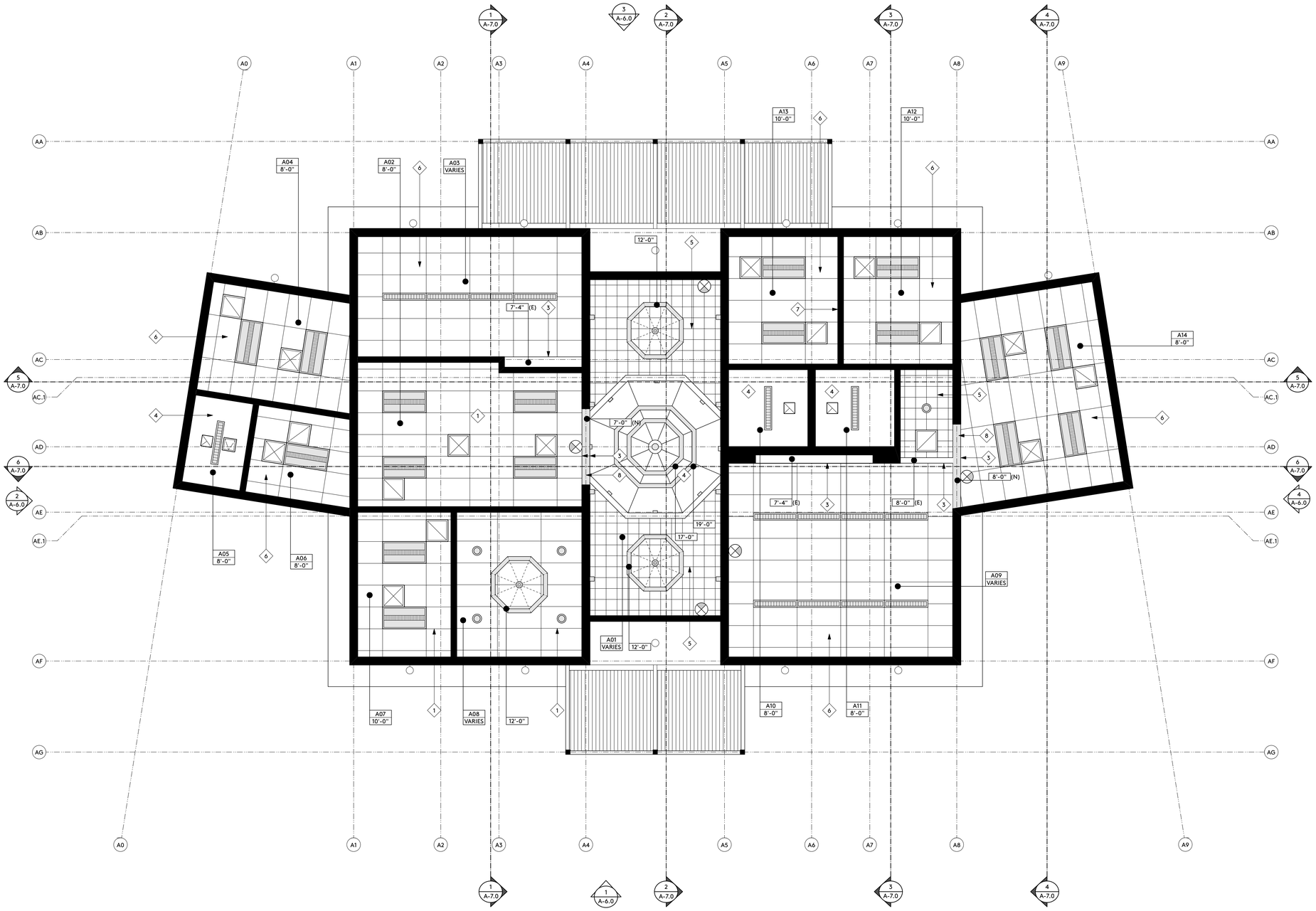


A01	RECEPTION/WAITING	A09	TEACHER WORKROOM
A02	OFFICE	A10	STORAGE ROOM
A03	PRINCIPAL	A11	STAFF RESTROOM
A04	ASSISTANT PRINCIPAL	A12	COUNSELOR OFFICE
A05	NURSE RESTROOM	A13	PSYCHOLOGIST OFFICE
A06	NURSE	A14	TEACHER WORKROOM
A07	STORAGE/ WORKROOM		
A08	CONFERENCE		

ROOM SCHEDULE

1. NEW 2'-0" x 4'-0" SUSPENDED ACOUSTIC TILE CEILING PER SPECIFICATIONS
2. GYPSUM BOARD CEILING/SOFFIT
3. LINE OF SOFFIT EDGE
4. PATCH AND PAINT EXISTING GYPSUM CEILIN, REFER TO FINISH SCHEDULE
5. PATCH /PREP EXISTING GYPSUM BOARD AS REQUIRED FOR INSTALLATION OF NEW 12x12 GLUE-UP ACOUSTIC TILE. INSTALL WITH ALL TRIM AS REQUIRED FOR COMPLETE FINISHED INSTALLATION
6. NEW 2x4 ACOUSTIC TILES IN EXISTING SUSPENDED CEILING GRID, REFER TO SPECIFICATIONS
7. MODIFY EXISTING SUSPENDED CEILING GRID AS REQUIRED FOR CONSTRUCTION OF NEW WALL
8. AREA OF NEW GYPSUM BOARD CEILING/SOFFI, REFER TO DETAIL #10/A-15.0

MODERNIZATION KEYNOTES

WALL PER FLOOR PLANS

PLAN KEYNOTES

ROOM NUMBER
CEILING HEIGHT ABOVE FINISH FLOOR

(-) (N)NEW (E)EXISTING

GRID LINE

BUILDING SECTION NUMBER
REFERENCE SHEET NUMBER

EXTERIOR ELEVATION NUMBER
REFERENCE SHEET NUMBER

NEW LIGHT FIXTURES
(REFERENCE ELECTRICAL DRAWINGS)

EXIT SIGN(REFERENCE ELECTRICAL DRAWINGS)

RETURN GRILLE
(REFERENCE MECHANICAL DRAWINGS)

SUPPLY GRILLE
(REFERENCE MECHANICAL DRAWINGS)

EXHAUST FAN
(REFERENCE MECHANICAL DRAWINGS)

EXISTING CEILING ACCESS HATCH

2'-0" x 4'-0" SUSPENDED ACOUSTIC TILE CEILING SYSTEM PER A-14.0 AND SPECIFICATIONS. REFERENCE PLAN FOR AREAS OF (N) OR (E) GRID, (N) ACOUSTIC TILES REQUIRED THROUGHOUT

MODERNIZATION CEILING PLAN SYMBOLS

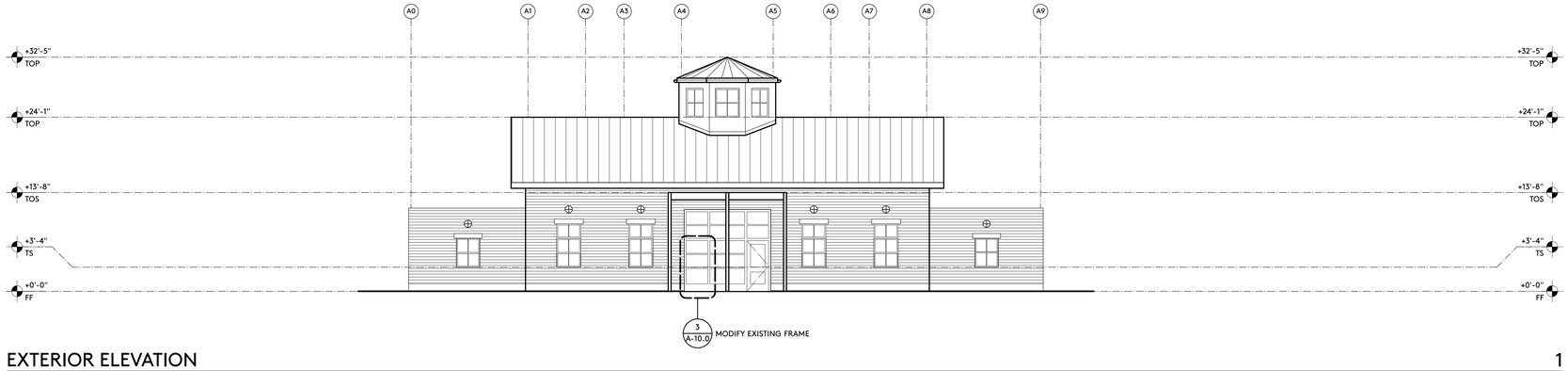
ADMINISTRATION MODERNIZATION - REFLECTED CEILING PLAN

1 SCALE: 1/4" = 1'-0"

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

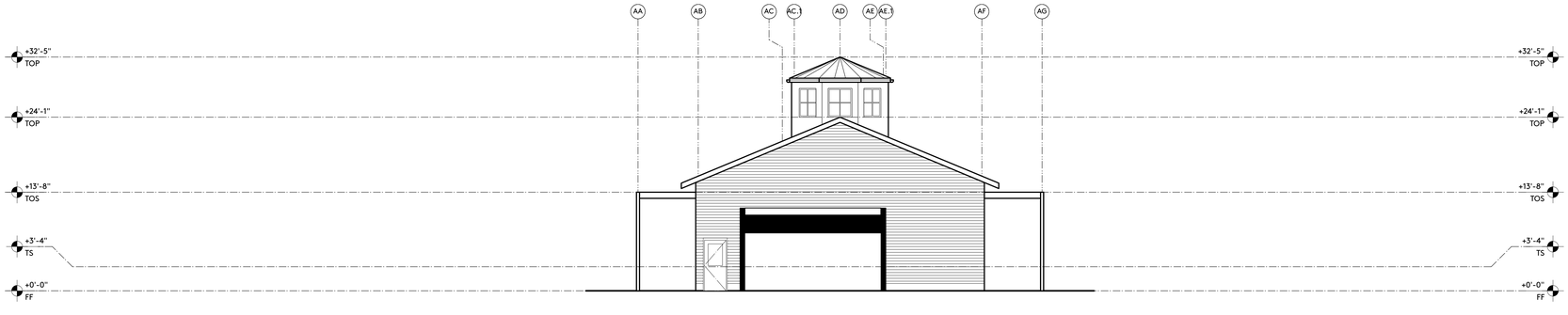
MODERNIZATION
REFLECTED CEILING PLAN

A-4.1



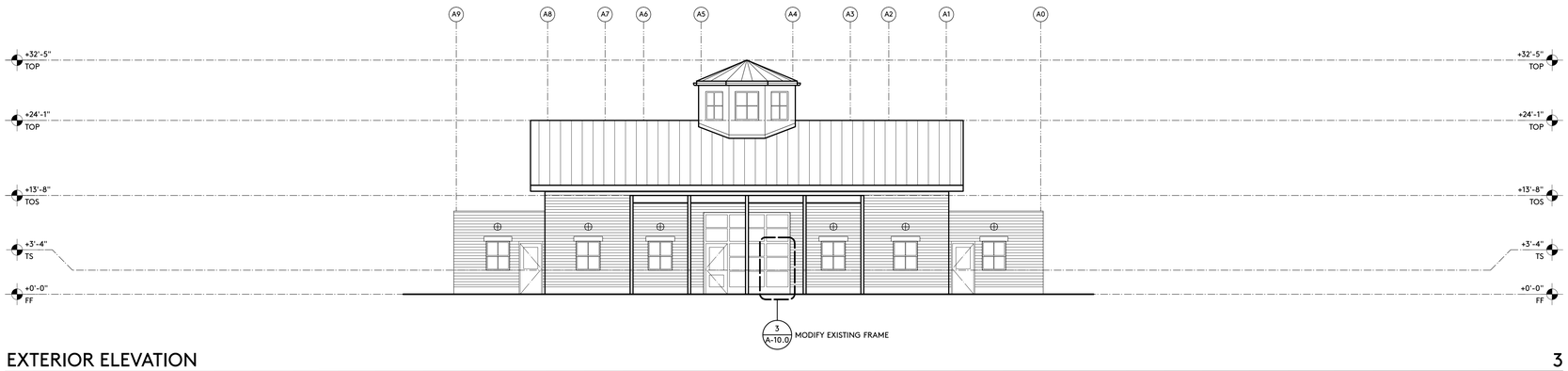
EXTERIOR ELEVATION 1

SCALE: 1/8" = 1'-0"



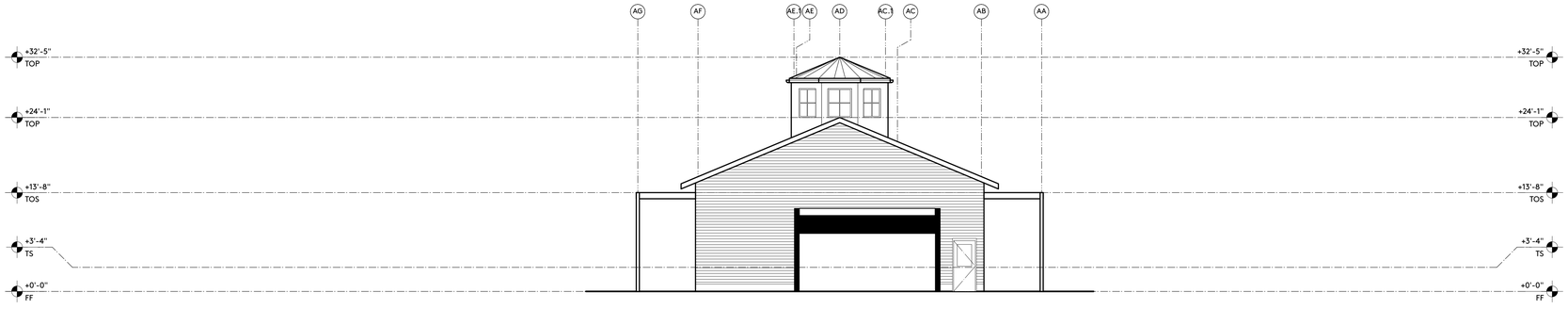
EXTERIOR ELEVATION 2

SCALE: 1/8" = 1'-0"



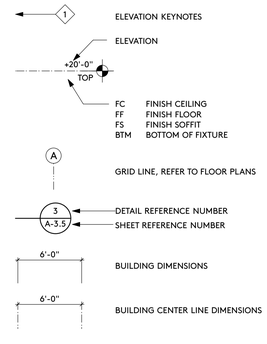
EXTERIOR ELEVATION 3

SCALE: 1/8" = 1'-0"



EXTERIOR ELEVATION 4

SCALE: 1/8" = 1'-0"



EXTERIOR ELEVATION SYMBOLS

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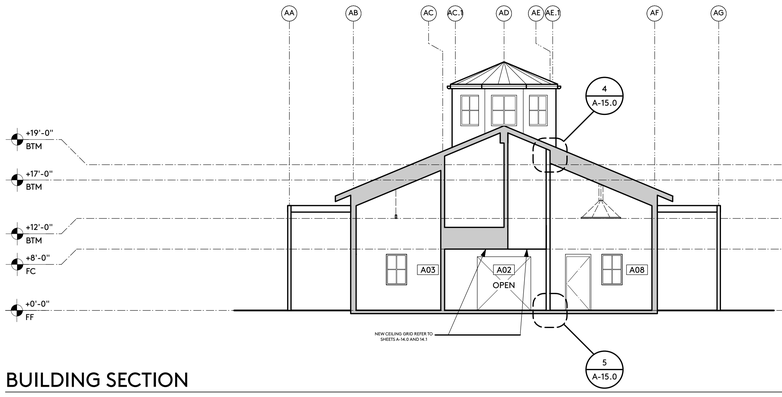
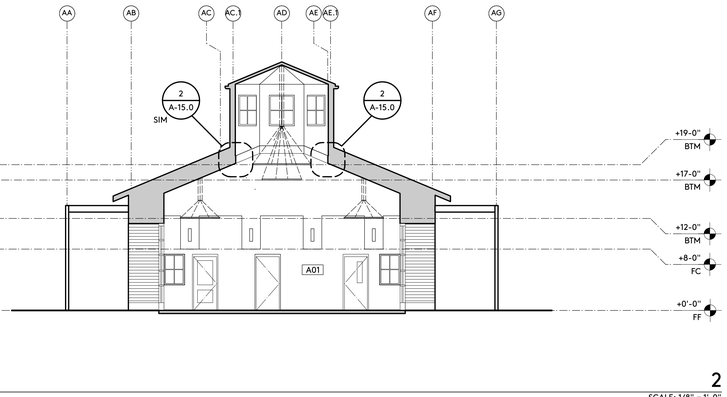
EXTERIOR ELEVATIONS

A-6.0



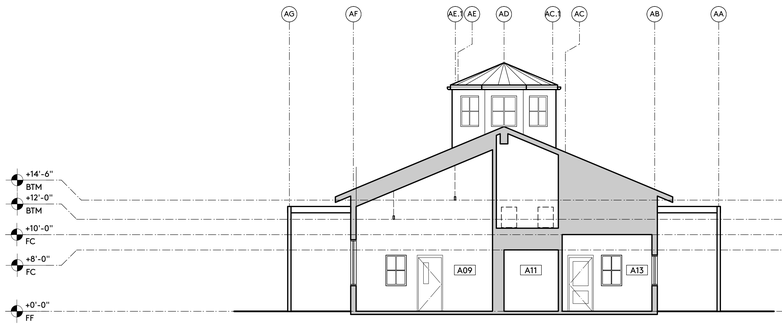
BUILDING SECTION 1

SCALE: 1/8" = 1'-0"



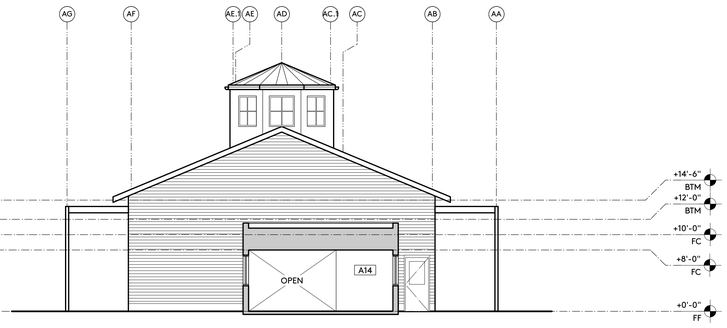
BUILDING SECTION 2

SCALE: 1/8" = 1'-0"



BUILDING SECTION 3

SCALE: 1/8" = 1'-0"

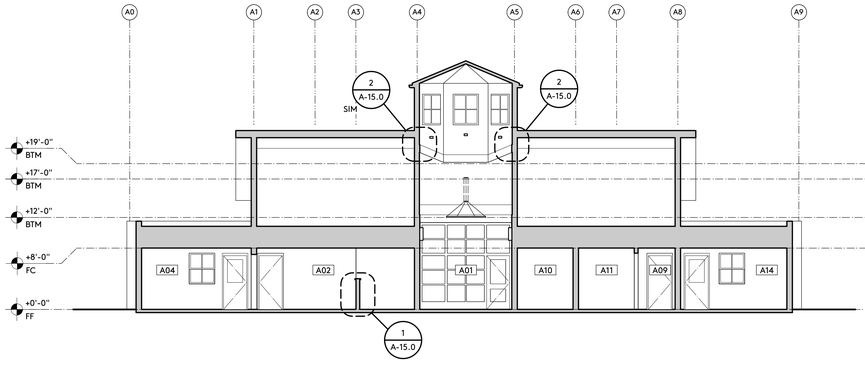


BUILDING SECTION 4

SCALE: 1/8" = 1'-0"

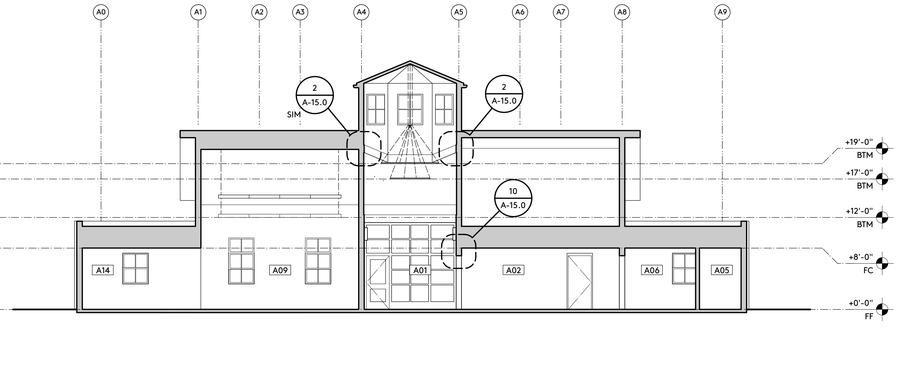
A01	RECEPTION/WAITING	A09	TEACHER WORKROOM
A02	OFFICE	A10	STORAGE ROOM
A03	PRINCIPAL	A11	STAFF RESTROOM
A04	ASSISTANT PRINCIPAL	A12	COUNSELOR OFFICE
A05	NURSE RESTROOM	A13	PSYCHOLOGIST OFFICE
A06	NURSE	A14	TEACHER WORKROOM
A07	STORAGE/ WORKROOM		
A08	CONFERENCE		

ROOM SCHEDULE



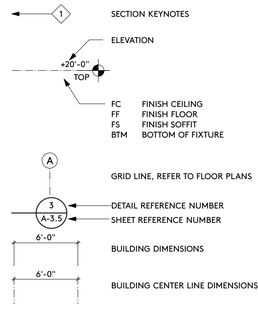
BUILDING SECTION 5

SCALE: 1/8" = 1'-0"



BUILDING SECTION 6

SCALE: 1/8" = 1'-0"



BUILDING SECTION SYMBOLS

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DATE: 03/25/2019

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NO. C28889
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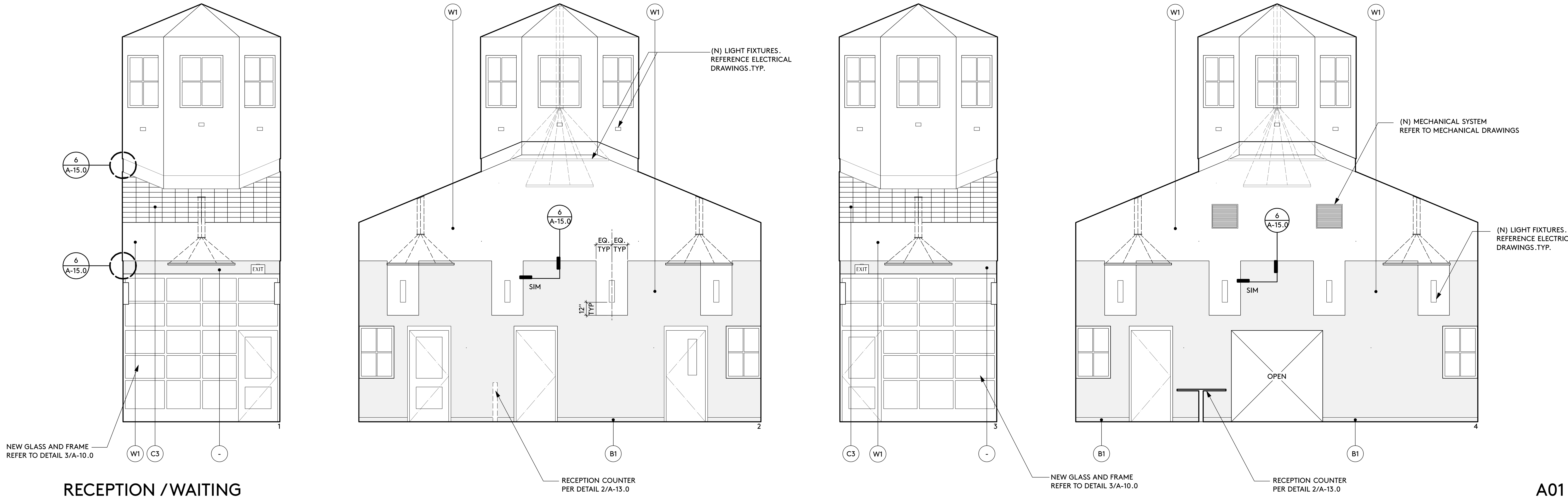
STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

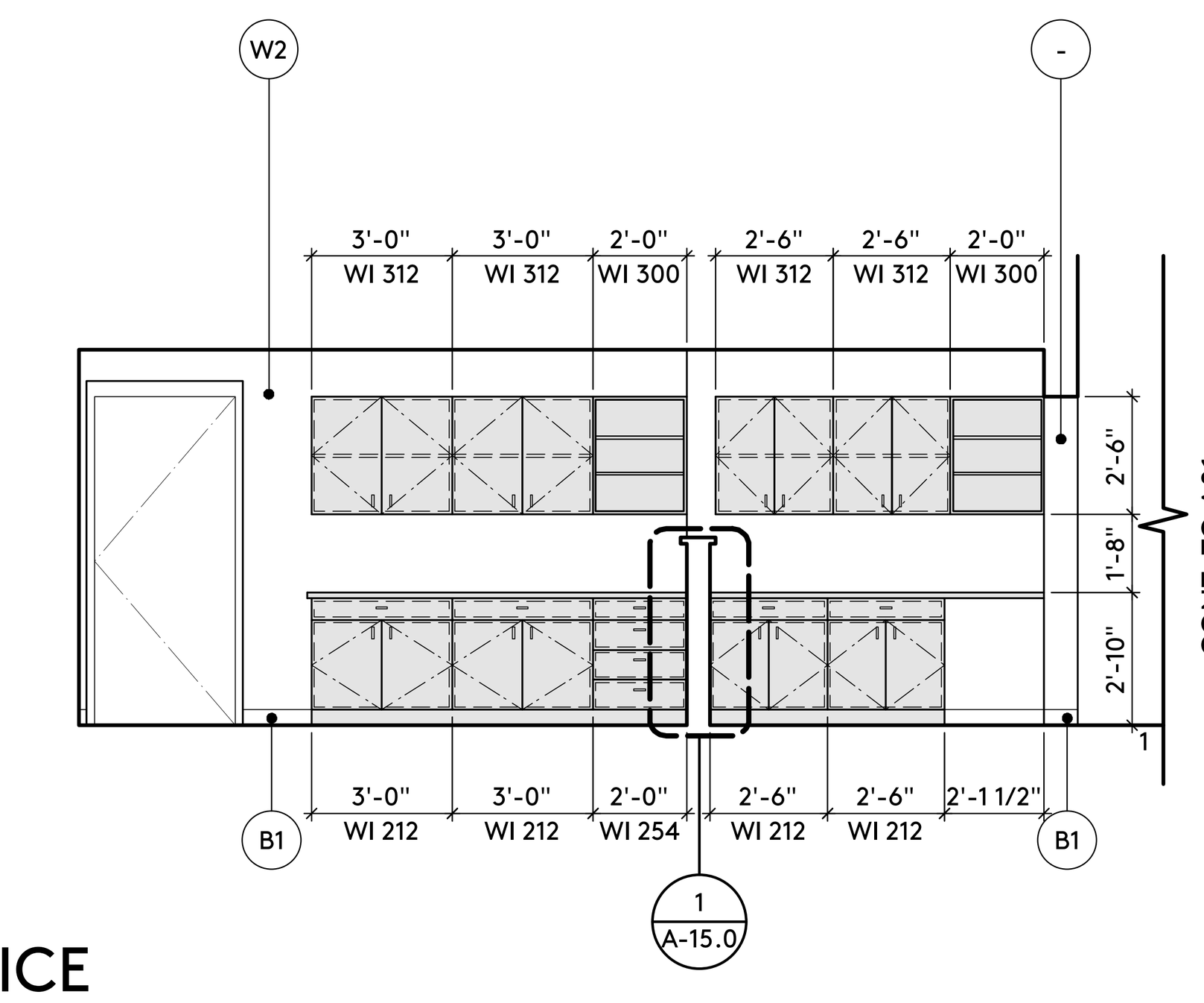
BUILDING SECTIONS

A-7.0



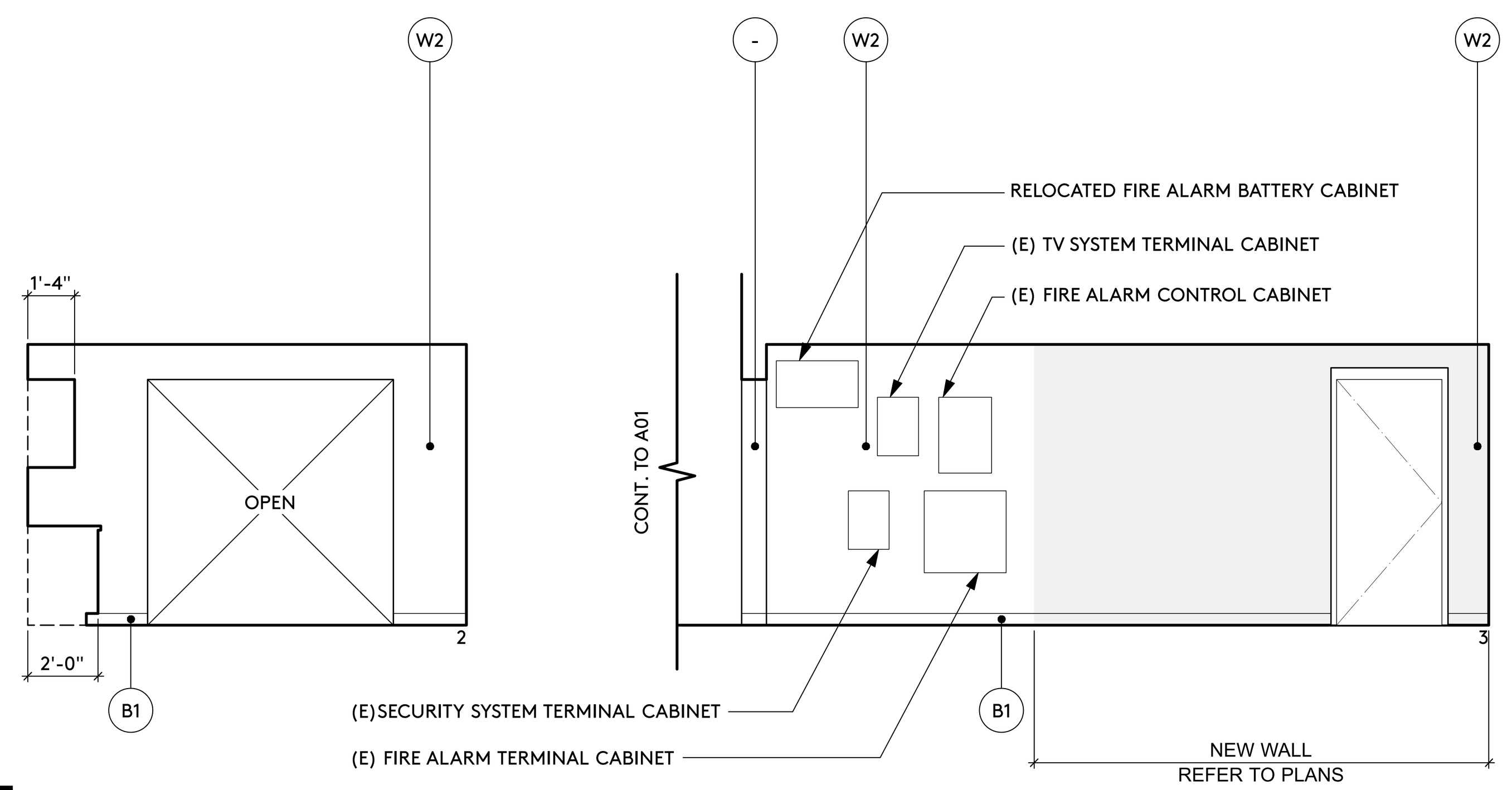
RECEPTION / WAITING — A01

SCALE: 1/4" = 1'-0"



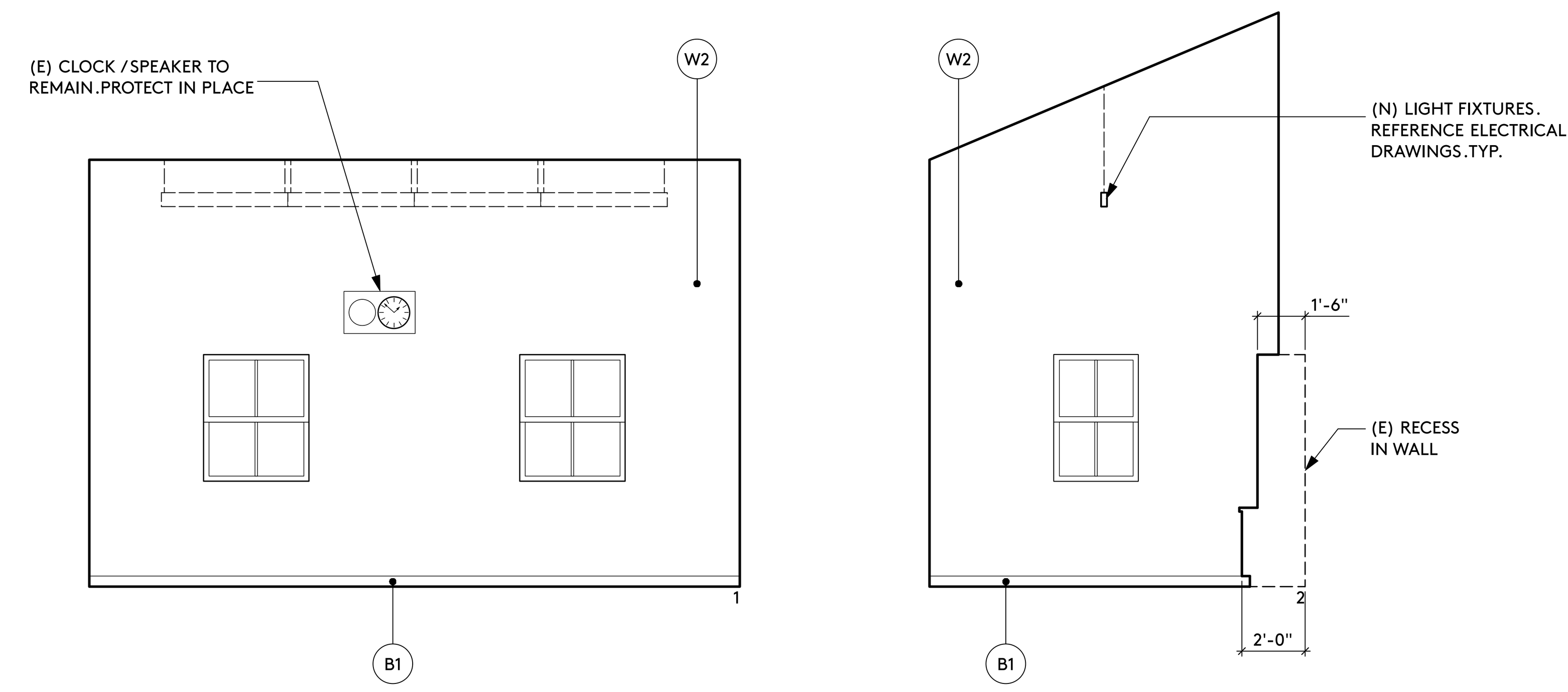
OFFICE — A02

SCALE: 1/4" = 1'-0"



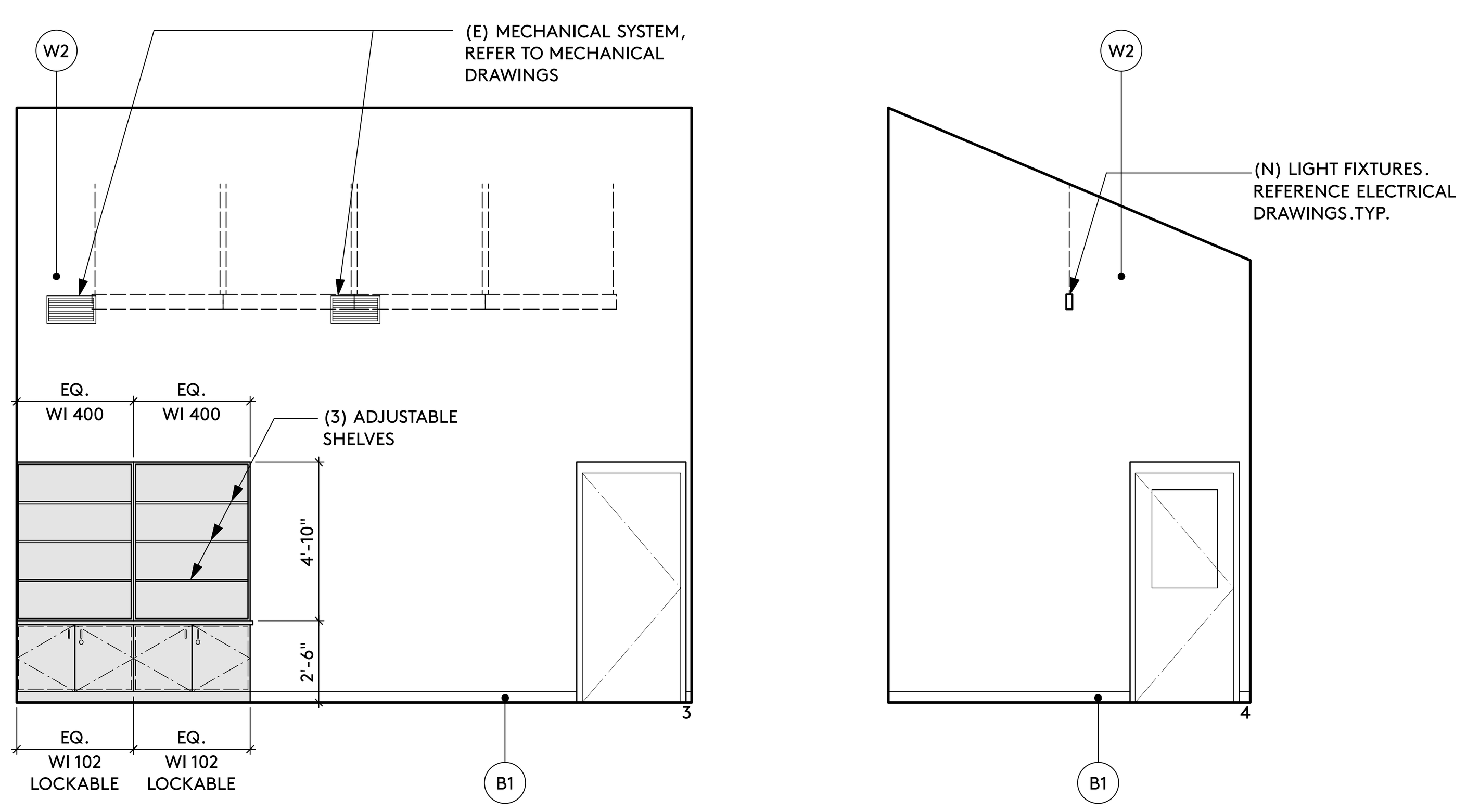
OFFICE — A02

SCALE: 1/4" = 1'-0"



PRINCIPAL — A03

SCALE: 1/4" = 1'-0"



PRINCIPAL — A03

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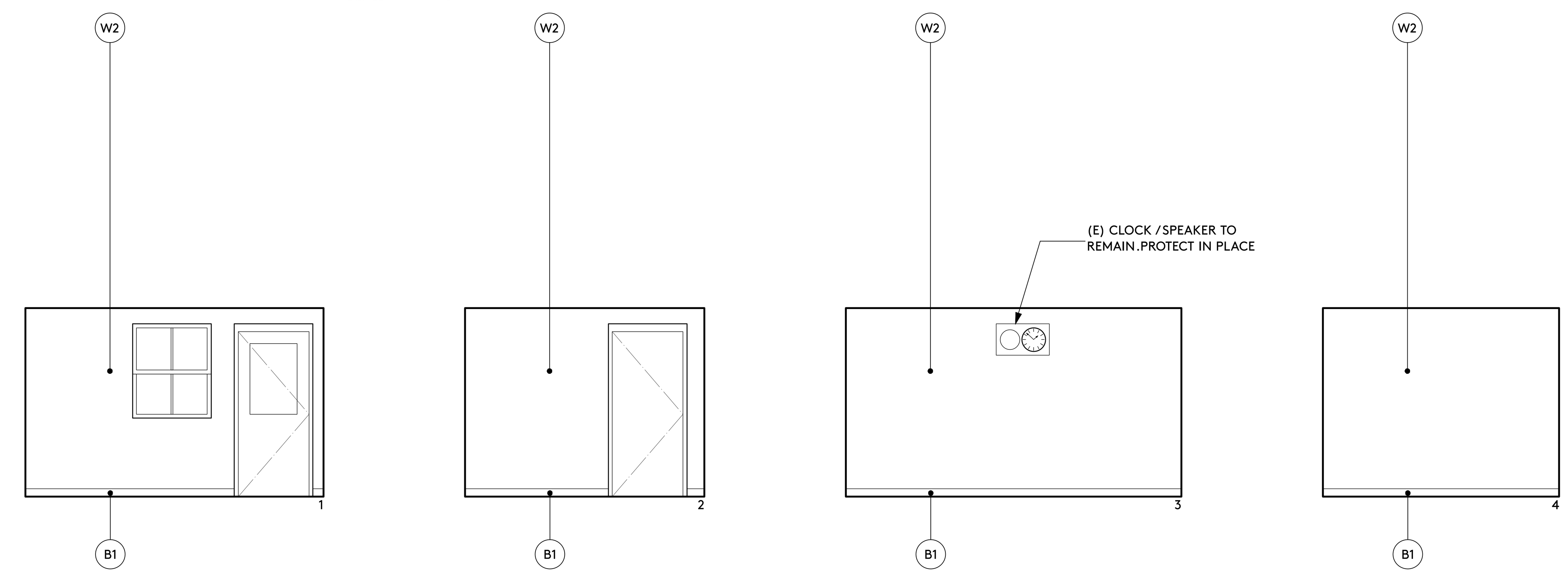
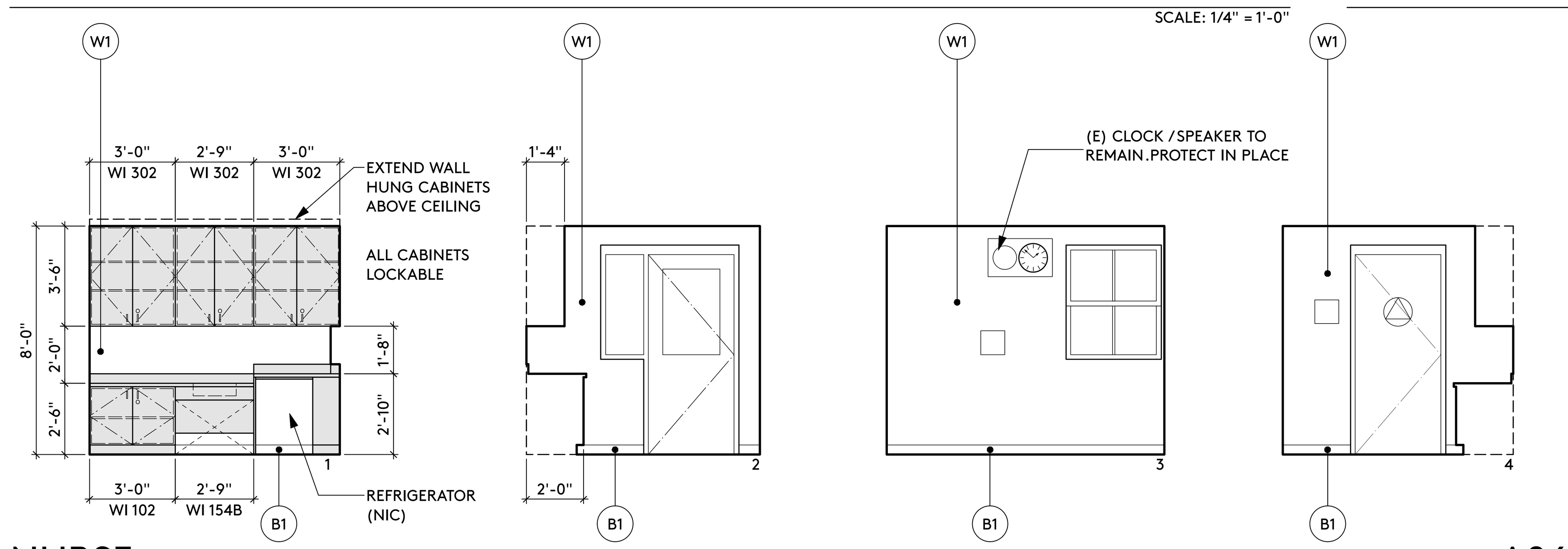


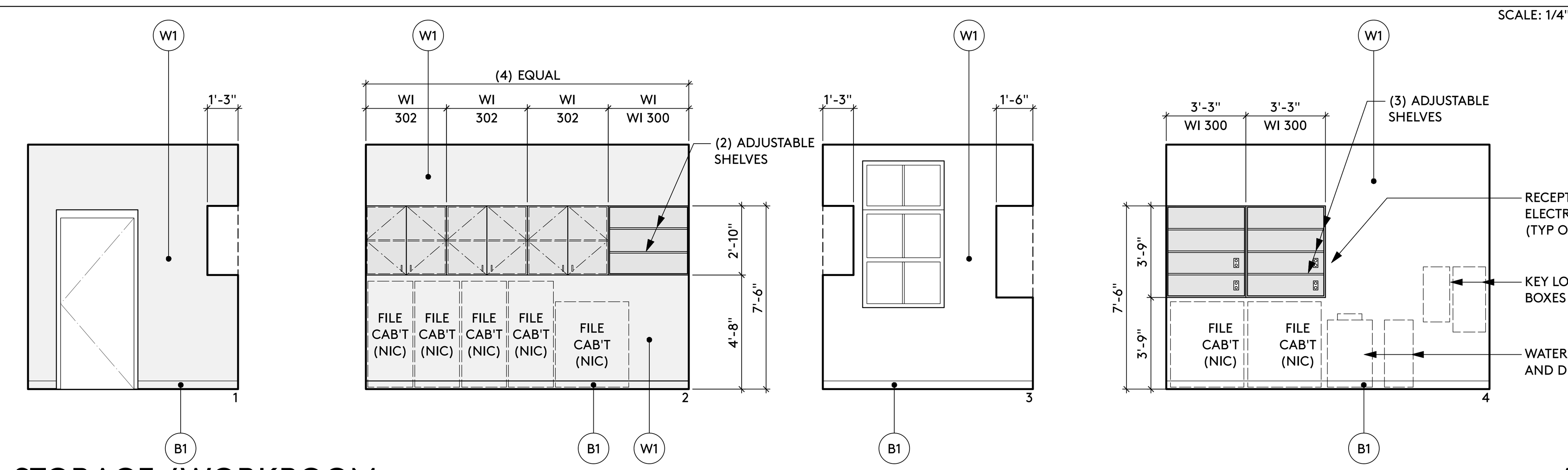
ASSISTANT PRINCIPAL — A04

SCALE: 1/4" = 1'-0"



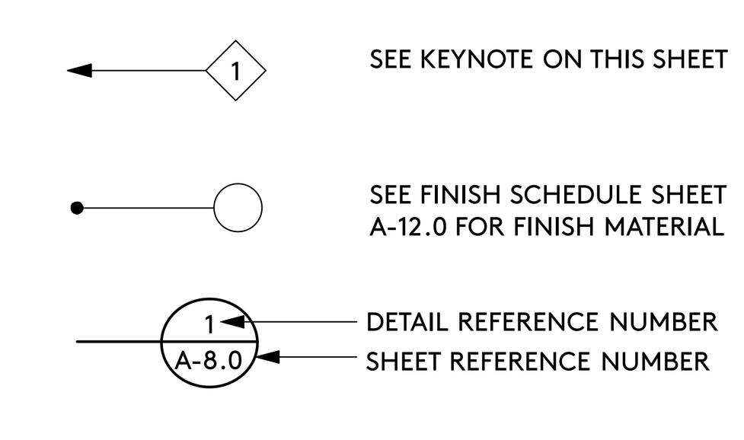
NURSE — A06

SCALE: 1/4" = 1'-0"



STORAGE / WORKROOM — A07

SCALE: 1/4" = 1'-0"



INTERIOR ELEVATION SYMBOLS

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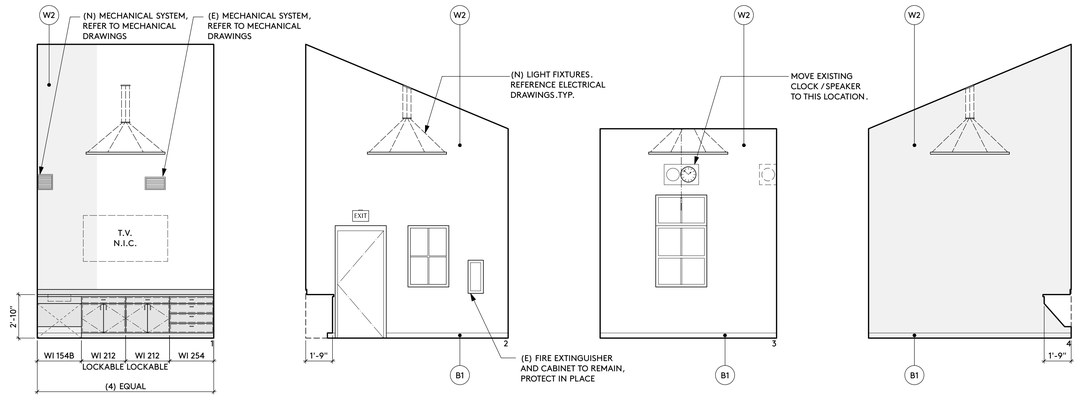
INTERIOR ELEVATIONS

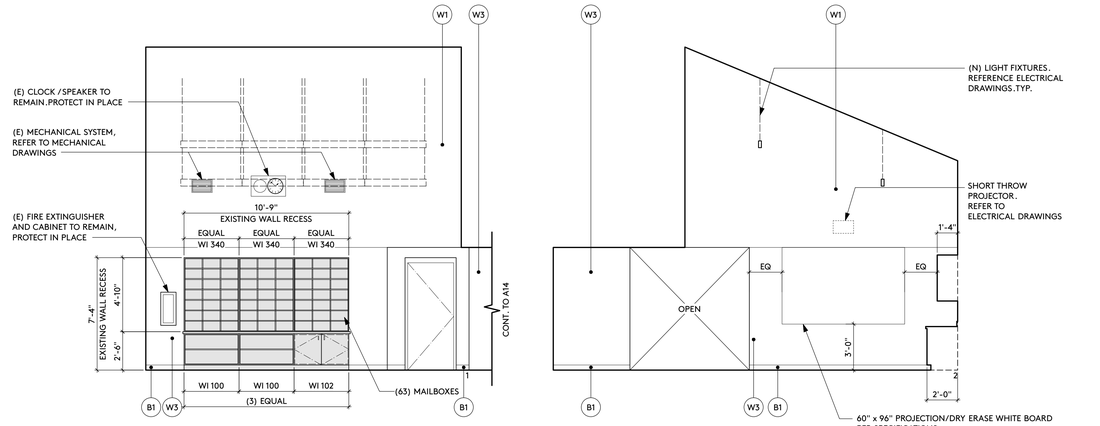
A-9.0



CONFERENCE

A08

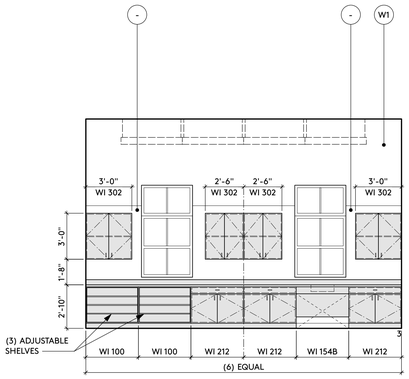
SCALE: 1/4" = 1'-0"



TEACHER WORKROOM

A09

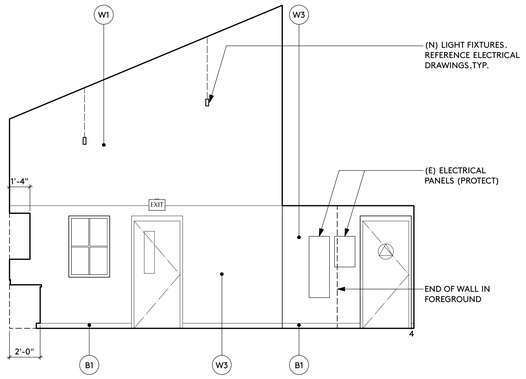
SCALE: 1/4" = 1'-0"

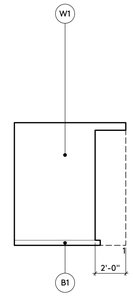


TEACHER WORKROOM

A09

SCALE: 1/4" = 1'-0"

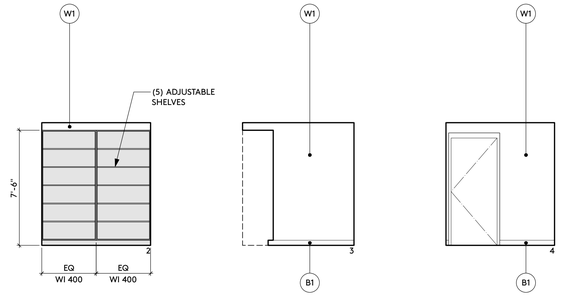


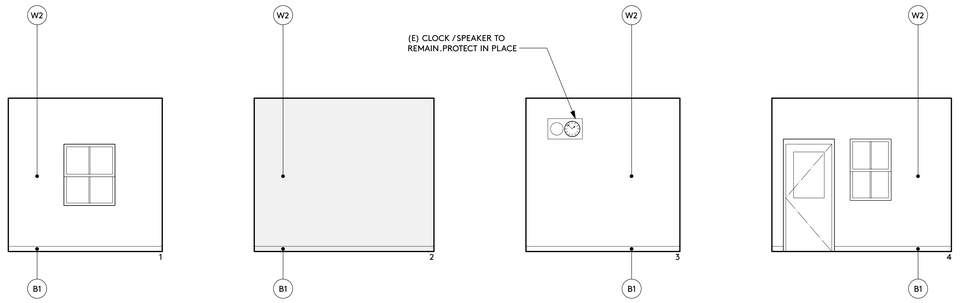


STORAGE ROOM

A10

SCALE: 1/4" = 1'-0"

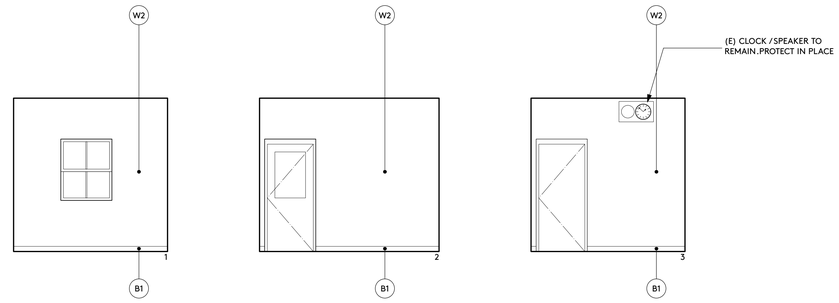




COUNSELOR OFFICE

A12

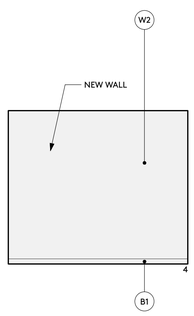
SCALE: 1/4" = 1'-0"



PSYCHOLOGIST OFFICE

A13

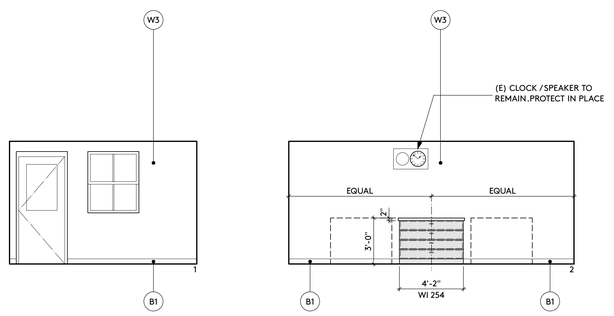
SCALE: 1/4" = 1'-0"



PSYCHOLOGIST OFFICE

A13

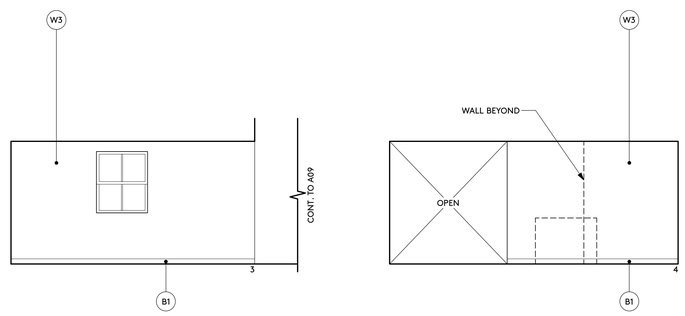
SCALE: 1/4" = 1'-0"



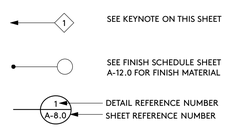
TEACHER WORKROOM

A14

SCALE: 1/4" = 1'-0"



INTERIOR ELEVATION SYMBOLS



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No. C25989
STATE OF CALIFORNIA

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ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

INTERIOR ELEVATIONS

A-9.1

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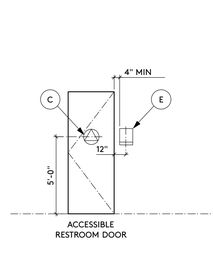
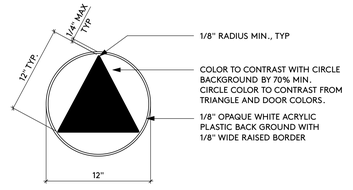
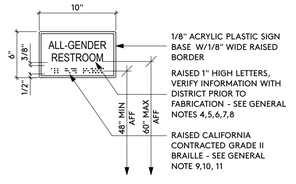
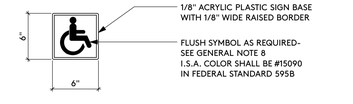




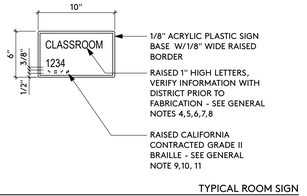
C RESTROOM



E RESTROOM SIGN



G INTERNATIONAL SIGN OF ACCESSIBILITY



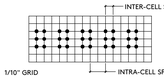
H TYPICAL ROOM SIGN

1. ATTACH WITH (3) #12 x 1-1/4" TAMPER PROOF DRYWALL SCREW WITH ADHESIVE.
2. PROVIDE METAL OR WOOD BACKING AT WALL SIGNS. ATTACH WITH (2) #12 x 1-1/4" TAMPER PROOF DRYWALL SCREW WITH ADHESIVE.
3. SIGN MATERIAL TO BE 1/8" THK. PLASTIC, W/1/32" RAISED BORDER, GRAPHICS AND LETTERS. PROVIDE MECHANICAL MOUNTING WITH VANDAL RESISTANT FASTENERS. COLOR AND CONTRAST SHALL BE DISTINCTLY DIFFERENT FROM THE COLOR AND CONTRAST OF THE WALL.
4. **11B-703.5.1 FINISH AND CONTRAST.** CHARACTERS, SYMBOLS AND THEIR BACKGROUNDS SHALL HAVE A NON-GLARE FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND, EITHER LIGHT CHARACTERS ON A DARK BACKGROUND OR DARK CHARACTERS ON A LIGHT BACKGROUND.
5. IF ANY SIGNS ARE REQUIRED TO BE MOUNTED ON GLAZING, PROVIDE SIGNS THAT DO NOT HAVE SCREW HOLES AND INSTALL MATCHING BACKING PLATE ON OTHER SIDE OF GLAZING.
6. CHARACTERS ON SIGN SHALL BE RAISED 1/32" MINIMUM AND SHALL BE 'SANS SERIF' UPPERCASE CHARACTERS ACCOMPANIED BY GRADE 2 BRAILLE COMPLYING WITH 11B-703.3
7. RAISED CHARACTERS SHALL BE A MINIMUM OF 5/8" AND A MAXIMUM OF 2" HIGH.
8. CHARACTERS, SYMBOLS AND THEIR BACKGROUNDS SHALL HAVE A NON-GLARE FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUNDS, EITHER LIGHT CHARACTERS ON A DARK BACKGROUND OR DARK CHARACTERS ON A LIGHT BACKGROUND.
9. **11B-703.2.4 CHARACTER PROPORTIONS.** CHARACTERS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 60 PERCENT MINIMUM AND 110 PERCENT MAXIMUM OF THE HEIGHT OF THE UPPERCASE LETTER "I".

   11B-703.2.5. CHARACTER HEIGHT. CHARACTER HEIGHT MEASURED VERTICALLY FROM THE BASELINE OF THE CHARACTER SHALL BE 5/8 INCH (15.9 MM) MINIMUM AND 2 INCHES (51 MM) MAXIMUM BASED ON THE HEIGHT OF THE UPPERCASE LETTER "I".
10. **11B-703.3 BRAILLE.** CONTRACTED (GRADE 2) BRAILLE SHALL BE USED WHEREVER BRAILLE IS REQUIRED IN OTHER PORTIONS OF THESE STANDARDS. DOTS SHALL BE 1/10 INCH (2.5 MM) ON CENTER IN EACH CELL WITH 3/10 INCH (7.6 MM) SPACE BETWEEN CELLS, MEASURED FROM THE SECOND COLUMN OF DOTS IN THE FIRST CELL TO THE FIRST COLUMN OF DOTS IN THE SECOND CELL. BRAILLE DOTS SHALL BE DOMED OR ROUNDED.

    WITH ROUNDED OR EASED EDGES. THE BRAILLE MEASUREMENT TEMPLATE IS USED BY PLACING THE GRID OVER A SECTION OF DOTS TO CHECK DISTANCE BETWEEN BRAILLE CELLS AS INDICATED BY THE ARCHITECT EACH BOX IS 1/10 INCH IN HEIGHT AND WIDTH. SEE TEMPLATE BELOW.

TITLE 24 BRAILLE SPACING TEMPLATE



11. **CHARACTER SPACING:** ALL RAISED LETTERS AND BRAILLE CHARACTERS SHALL BE LOCATED MINIMUM 1/2" FROM ANY SIGN EDGE. PROVIDE 3/8" SPACE BETWEEN RAISED LETTERS AND BRAILLE BELOW.
12. WHERE THERE IS NO WALL SPACE ON THE LATCH SIDE, INCLUDING AT DOUBLE DOORS, PLACE SIGNS ON THE NEAREST ADJACENT WALL, PREFERABLY ON THE RIGHT
13. WHERE SIGNS ARE TO BE MOUNTED ON EACH SIDE OF GLAZING, PROVIDE THE SAME SIZE SIGN AS THE LARGER OF THE TWO, PREVENTING A SMALLER SIGN IN FRONT OF A LARGER SIGN.
14. EVERY NON-TOILET ROOM SHALL HAVE A TYPICAL ROOM SIGN PER DETAIL #H / A-10.0

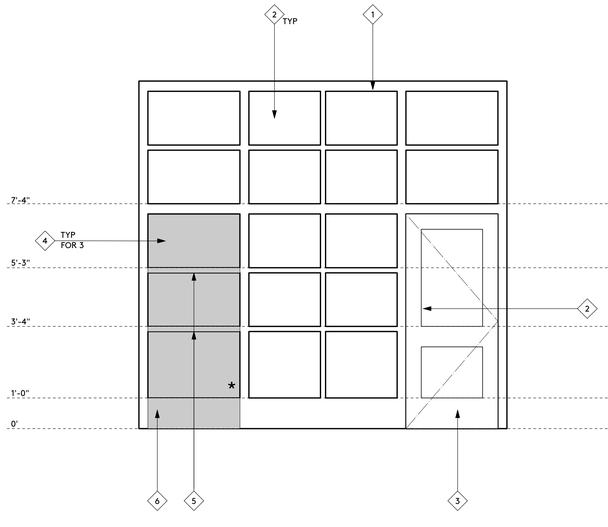
*** 48" MIN. A.F.F. MEASURED FROM THE BASELINE OF THE LOWEST BRAILLE CELL**

**** 60" MAX. A.F.F. MEASURED FROM THE HIGHEST LINE OF BRAILLE CHARACTERS**

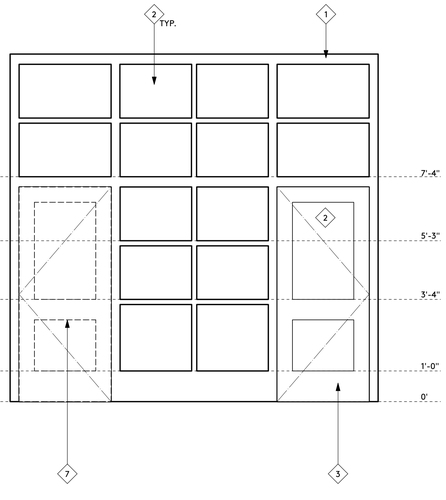
PLASTIC SIGNS 1

FRAME TYPE KEYNOTES

1 EXISTING 16 GA. HOLLOW METAL TO REMAIN
2 EXISTING GLASS TO REMAIN (NO SHADE)
3 EXISTING DOOR TO REMAIN
4 NEW TEMPERED GLASS TO MATCH EXISTING (SHADED)
5 NEW 16 GA. HOLLOW METAL MULLION/ GLAZING STOPS TO MATCH EXISTING
6 NEW 16 GA. HOLLOW METAL SILL/GLAZING STOPS TO MATCH EXISTING
7 EXISTING DOOR AND HARDWARE TO BE REMOVED



A MODERNIZATION



B EXISTING

FRAME DETAIL ROOM A01 (QUANTITY OF 2) 3

SCALE: 1/2" = 1'-0"

OPENING SCHEDULE, FRAME TYPES AND SIGN DETAILS

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

A-10.0

ROOM NUMBER	ROOM NAME	FLOOR								BASE					WALLS										CEILING								REMARKS
		CARPET F1	VINYL COMPOSITE TILE F2	SEALED CONCRETE F3	CERAMIC MOSAIC TILE F4	INTEGRATED ENTRY CARPET F5	NOT USED F6	NOT USED F7	NOT USED F8	RUBBER BASE B1	COVED CERAMIC TILE B2	NOT USED B3	NOT USED B4	NOT USED B5	PAINTED GYPSUM BOARD W1	VINYL WALL COVERING OVER GYPSUM BOARD W2	VINYL COVERED TACKBOARD PANELS OVER GYPSUM BOARD W3	CERAMIC TILE W4	FIBERGLASS REINFORCED PANEL PER SPECIFICATION W5	VINYL WALL COVERING O/ IMPACT RESISTANT GYPSUM BD W6	NOT USED W7	NOT USED W8	NOT USED W9	NOT USED W10	PAINTED GYPSUM BOARD C1	SUSPENDED 2'x4'ACOUSTIC TILE C2	ACOUSTICAL 12" x 12" TILE C3	PRIMED AND PAINTED STRUCTURAL MEMBERS C4	NOT USED C5	NOT USED C6	NOT USED C7	NOT USED C8	
A01	RECEPTION /WAITING	●	●							●					●	●									●		●						
A02	OFFICE	●								●						●									●	●							
A03	PRINCIPAL	●								●						●										●							
A04	ASSISTANT PRINCIPAL	●								●						●										●							
A05	NURSE RESTROOM				●						●							●							●								
A06	NURSE		●							●					●											●							
A07	STORAGE /WORKROOM		●							●					●											●							
A08	CONFERENCE	●								●						●										●							
A09	TEACHER WORKROOM		●							●					●		●								●	●	●						
A10	STORAGE ROOM									●					●										●								
A11	STAFF RESTROOM				●						●							●							●								
A12	COUNSELOR OFFICE	●								●						●										●							
A13	PSYCHOLOGIST OFFICE	●								●						●										●							
A14	TEACHER WORKROOM		●							●																●							

FINISH SCHEDULE

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C26089
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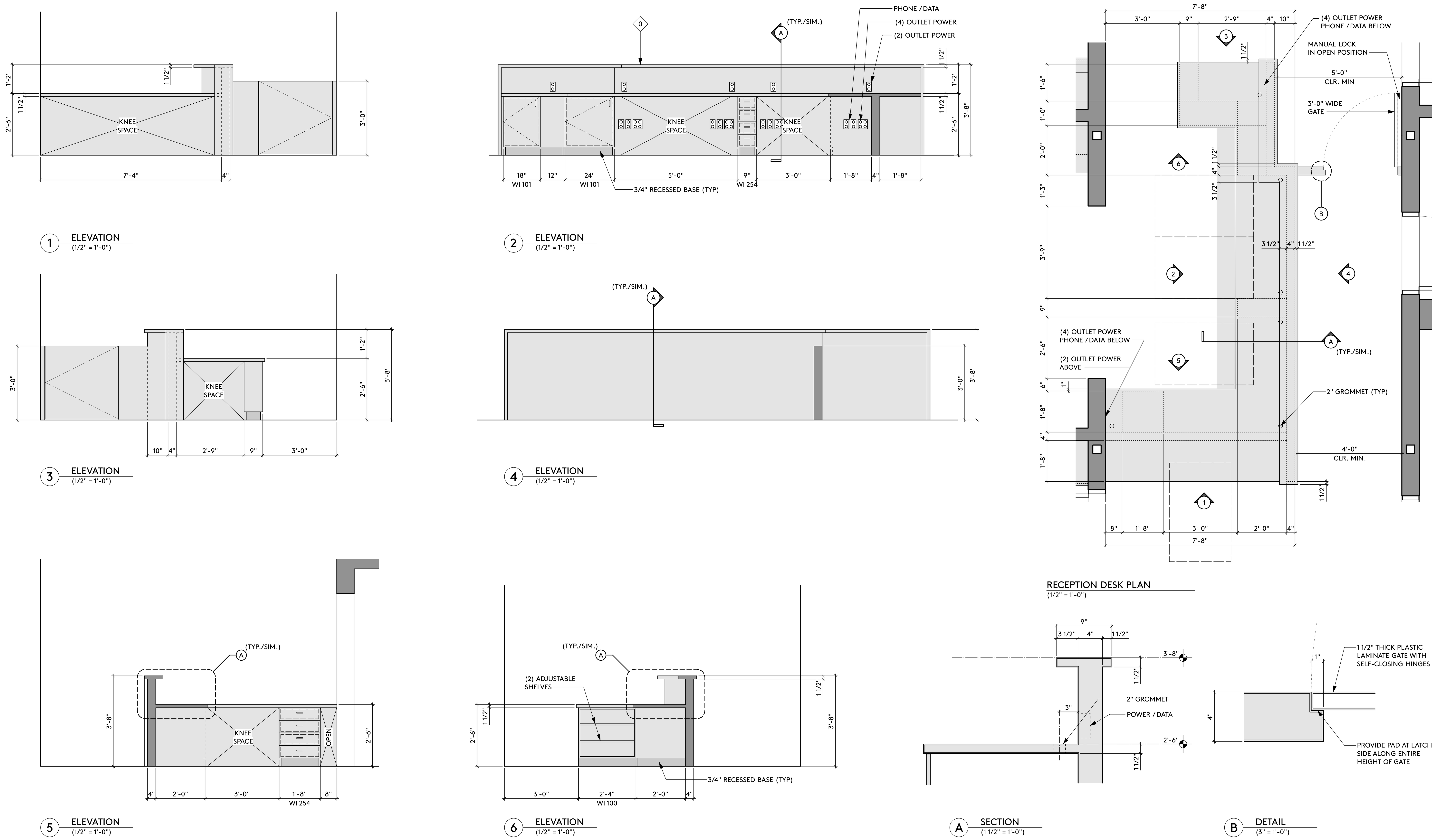
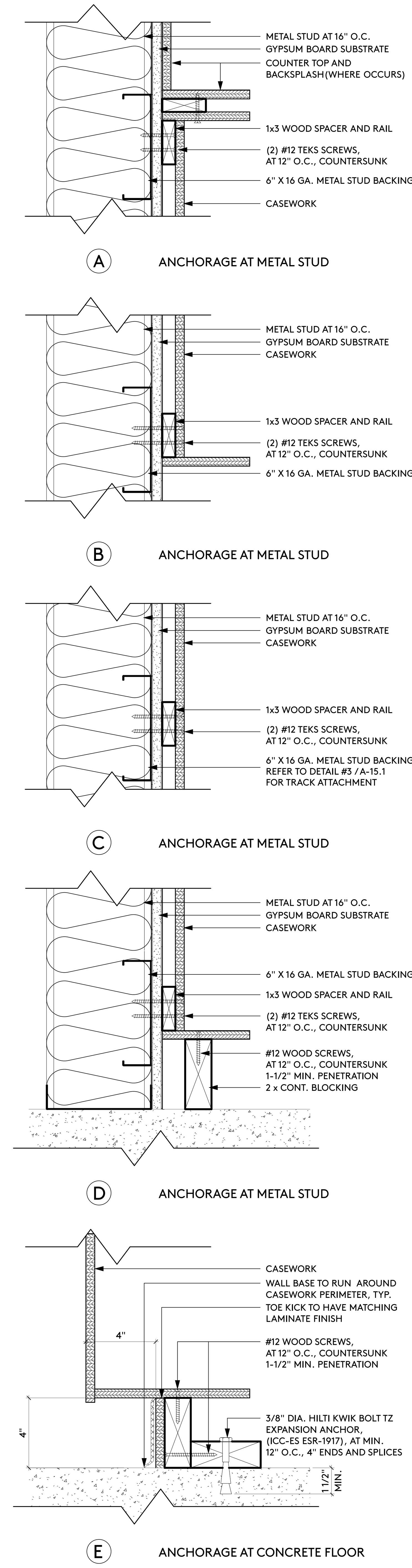
FINISH SCHEDULE

A-12.0



ADMINISTRATION RECEPTION DESK DETAIL (A01) 2

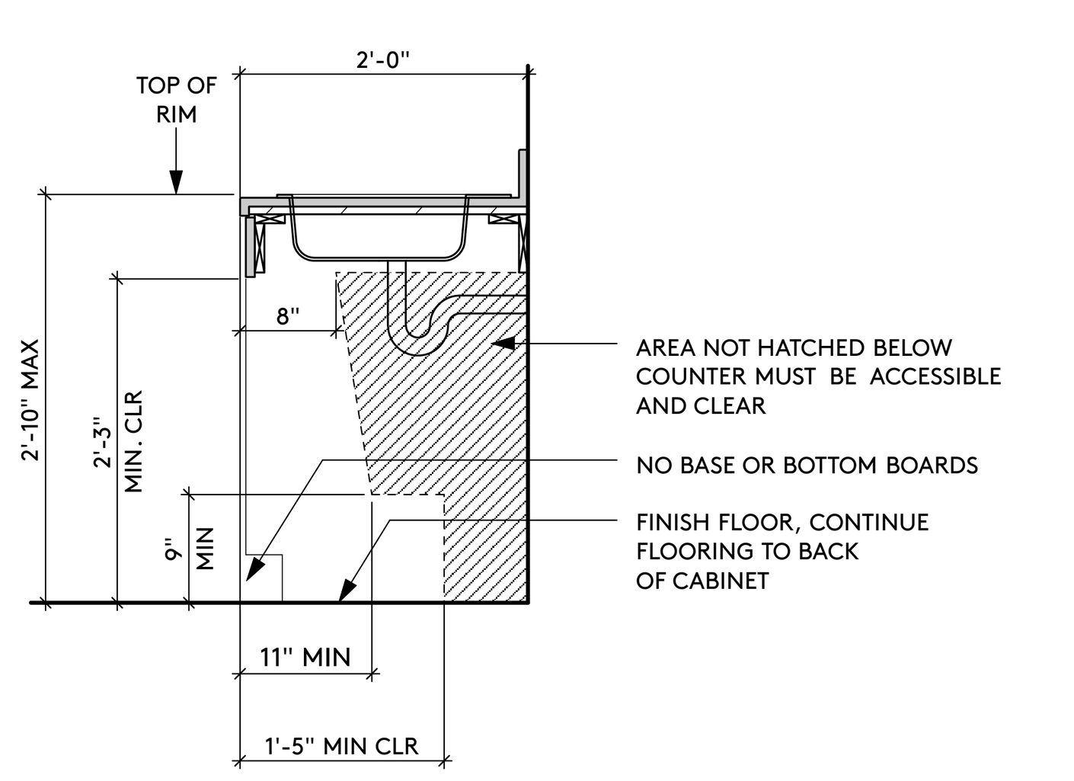


FAUCET CONTROLS AND OPENING MECHANISM SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST.

THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO MORE THAN 5LBS. LEVER OPERATED, PUSH TYPE AND ELECTRONICALLY CONTROLLEDMECHANISMS ARE ACCEPTABLE.

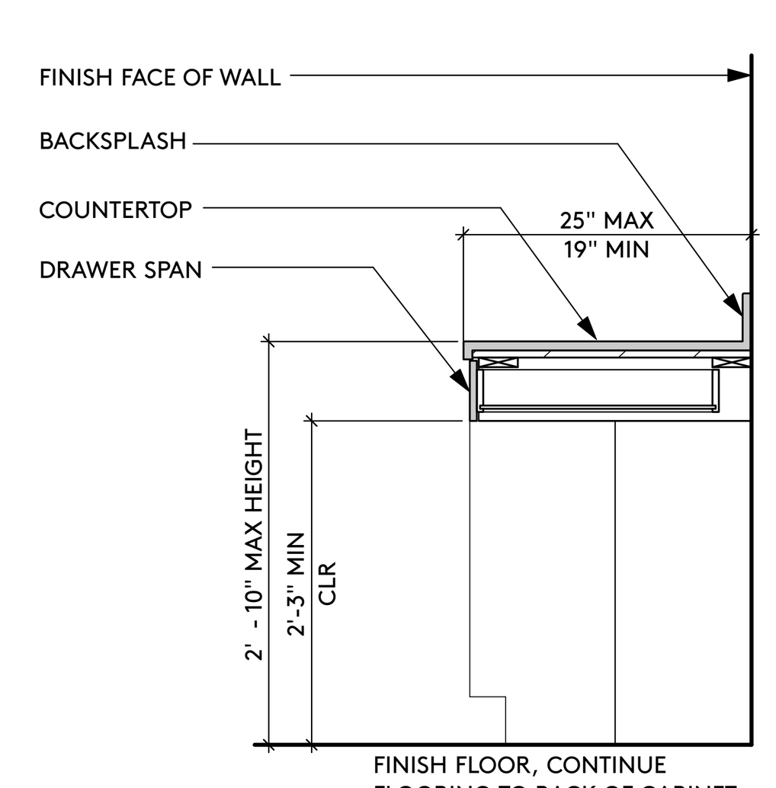
SELF CLOSING VALVES ARE ALLOWED IF THE FAUCET REMAINS OPEN FOR AT LEAST 10 SECONDS. WATER AND DRAIN PIPES ACCESSIBLE UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED.

THERE SHALL BE NO SHARP OR ABRASIVE OBJECTS OR SURFACES UNDER LAVATORIES.
SINK DEPTH FOR ADULTS SHALL BE 6-1/2" MAX.



TYPICAL DRAWER CLEARANCE 4

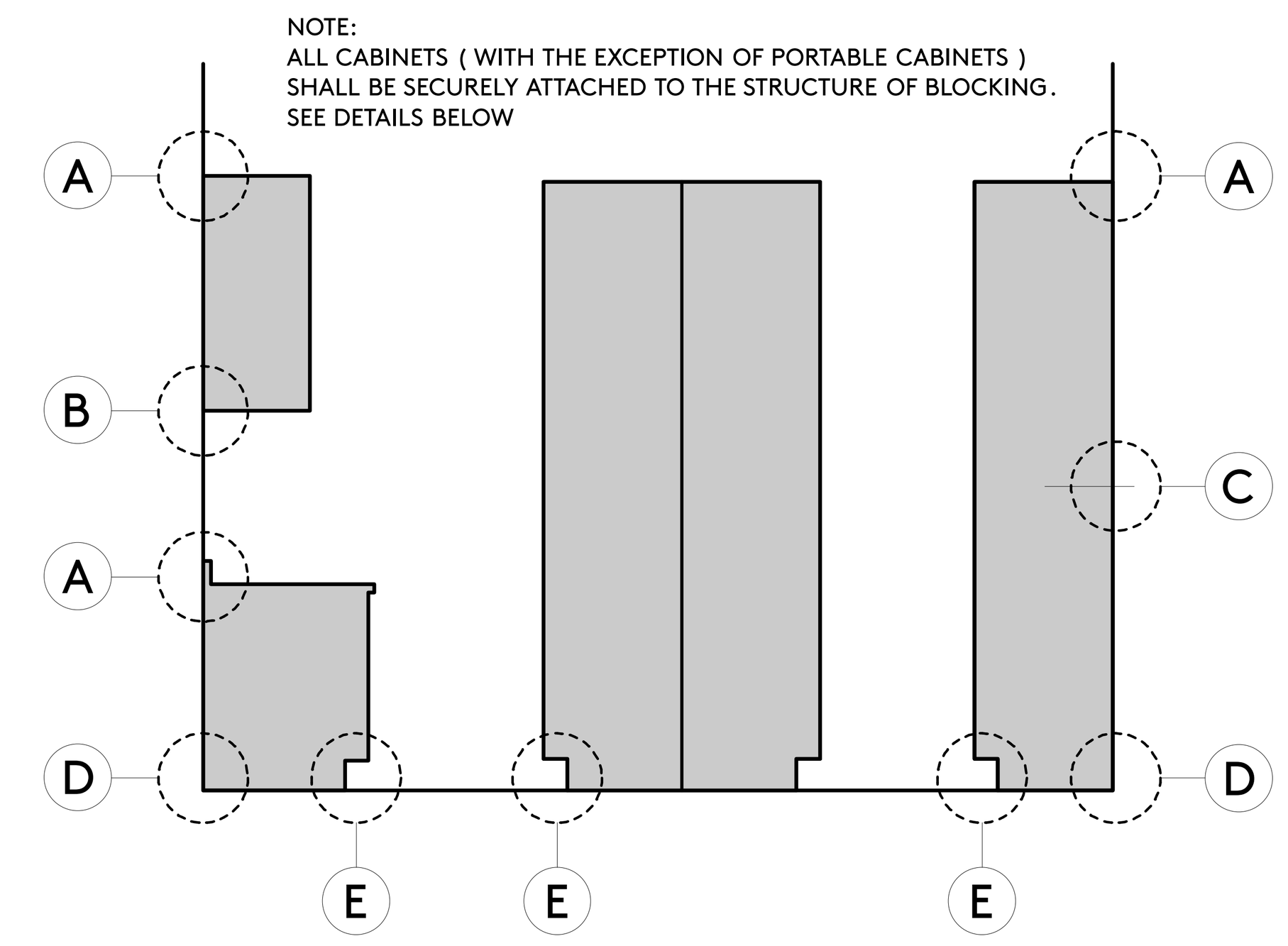
SCALE: 3/4" = 1'-0"



TYPICAL SINK CLEARANCE 3

SCALE: 3/4" = 1'-0"

NOTE:
ALL CABINETS (WITH THE EXCEPTION OF PORTABLE CABINETS) SHALL BE SECURELY ATTACHED TO THE STRUCTURE OF BLOCKING. SEE DETAILS BELOW



TYPICAL CABINET ANCHORAGE 1

SCALE: 3" = 1'-0"

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JEFFERSON SCHOOL DISTRICT

CABINET SCHEDULE
AND DETAILS

A-13.0

1. CEILING SYSTEM GENERAL NOTES:

1.01 Ceiling system components shall comply with ASTM C635-07 and Section 5.1 of ASTM E580-10a.

1.02 The ceiling grid system must be rated heavy duty as defined by ASTM C635-08.

1.03 Ceiling systems. The following ceiling system(s) is/are part of the scope of this project:

Manufacturer's Name: Armostrong World Industries, Inc.
Product Evaluation Report Type and Number: ESR-1308.
Manufacturer's Model Number – main runner: 7301 Main Tees.
Manufacturer's Catalog Number – cross runner: XL 7300 Series cross tees.

Manufacturer's Name: United States Gypsum (USG).
Product Evaluation Report Type and Number: ESR-1222.
Manufacturer's Model Number – main runner: DX/DXL26 Main Tees.
Manufacturer's Catalog Number – cross runner: DX/DXL 424 Cross Tees.

1.04 Seismic Wall Clip:

Manufacturer's Model: Armostrong - BERC-2
: USG - ACM 7.

1.05 Ceiling panels shall not support any light fixtures, air terminals or devices.

1.06 For ceiling installations utilizing acoustical tile panels of mineral or glass fiber, it is not mandatory to provide ¾" clearance between the acoustical tile panels and the wall on the sides of the ceiling which are free to slip. For all other ceiling panel types, provide ¾" clearance between the ceiling panel and the wall on the sides of the ceiling free to slip.

2. MATERIALS:

2.01 Ceiling wire shall be Class 1 zinc coated (galvanized) carbon steel conforming to ASTM A641-09a. Wire shall be #12 gage (0.106" diameter) with soft temper and minimum tensile strength = 70 ksi.

2.02 Galvanized sheet steel (including that used for metal stud and track compression struts/post) shall conform to ASTM A653-11, or other equivalent sheet steel listed in Section A2.1 of the North American Specification for the Design of Cold-Formed Steel Structural Members 2007, including supplement 2 dated 2010 (AISI S100-07/S2-10). Material 43 mil (18 gage) and lighter shall have minimum yield strength of 33 ksi. Material 54 mil (16 gage) and heavier shall have a minimum yield strength of 50 ksi.

20.3 Electrical metallic tube (EMT) shall be ANSI C80.3/UL 797 carbon steel with G90 galvanizing. EMT shall have minimum yield strength (Fy) of 30 ksi and minimum ultimate strength (Fu) of 48 ksi.

3. ATTACHMENT OF HANGER AND BRACING WIRES:

3.01 Separate all ceiling hanger and bracing wires at least six (6) inches from all unbraced ducts, pipes, conduits, etc.

3.02 Hanger and bracing wires shall not attach to or bend around obstructions including but not limited to: piping, ductwork, conduit and equipment.

3.03 Hanger wires that are more than one (horizontal) in six (vertical) out of plumb shall have counter-sloping wires.

3.04 Slack safety wires shall be considered hanger wires for installation and testing requirements.

3.05 Hanger and bracing wire anchorage to the structure shall be installed in such a manner that the direction of the anchorage aligns closely with the direction of the wire. (e.g. bracing wire ceiling clips must be bent as shown in the details and rotated as required to align closely with the direction of the wire, screw eyes in wood must be installed so they align closely with the direction of the wire, etc.)

4. FASTENERS AND WELDING:

4.01 Sheet metal screws shall comply with ASTM C1513-10, ASME B18.6.4-89 (R2005). Penetration of screws through joined material shall not be less than three exposed threads.

4.02 Expansion anchors shall be: NOT USED

4.03 Power-Actuated Fasteners shall be: NOT USED

4.04 If not otherwise specified in the evaluation report, power-actuated fasteners installed in steel shall be installed so the entire painted end of the fastener is driven through the steel member.

4.05 Power-actuated fasteners in concrete are not permitted for bracing wires.

4.06 Concrete reinforcement and prestressing tendons shall be located by non-destructive means prior to installing post – installed anchor.

4.07 Welding shall be in accordance with AWS D1.32 using E60XX series electrodes.

5. TESTING: All field testing must be performed in the presence of the project inspector.

5.01 Post-installed anchors in concrete used to support hanger wires shall be tested at a frequency of 10 percent. Power actuated fasteners in concrete shall be field tested for 200 lbs. in tension. All other post-installed anchors in concrete shall be tested in accordance with CBC Section 1913A.7.

5.02 Post-installed anchors in concrete used to attach bracing wires shall be tested at a frequency of 50 percent in accordance with CBC Section 1913A.7.

6. LIGHT FIXTURES:

6.01 All light fixtures shall be positively attached to the ceiling suspension systems by mechanical means to resist a horizontal force equal to the weight of the fixture. A minimum of two screws or approved fasteners are required at each light fixture, per ASTM E580, Section 5.3.1.

6.02 Surface-mounted light fixtures shall be attached to the main runner with at least two positive clamping devices. The clamping device shall completely surround the supporting ceiling runner and be made of steel with minimum thickness of #14 gage. Rotational spring catches do not comply. A #12 gage slack safety wire shall be connected from each clamping device to the structure above. Provide additional supports when light fixtures are eight (8) feet or longer or exceed 56 lb. Maximum spacing between supports shall not exceed eight (8) feet.

6.03 Light fixtures weighing less than or equal to 10 lb. shall have a minimum of one (1) #12 gage slack safety wire connected from the fixture housing to the structure above.

6.04 Light fixtures weighing less than or equal to 10 lb. shall have a minimum of one (1) #12 gage slack safety wire connected from the fixture housing to the structure above.

6.05 Light fixtures weighing greater than 10 lb. but less than or equal to 56 lbs. may be supported directly on the ceiling runners, but they shall have a minimum of two (2) #12 gage slack safety wires connected from the fixture housing at diagonal corners to the structure above.

Exception: All light fixtures greater than two by four feet weighing less than 56 lbs. shall have a #12 gage slack safety wire at each corner.

6.06 All light fixtures weighing greater than 56 lbs. shall be independently supported by not less than four (4) taut #12 gage hanger wires (one at each corner) attached from the fixture housing to the structure above or other approved hangers. The four (4) taut #12 gage wires or other approved hangers, including their attachment to the structure above, shall be capable of supporting four (4) times the weight of the fixtures.

7. SERVICES WITHIN THE CEILING:

7.01 All flexible sprinkler hose fitting mounting brackets, ceiling-mounted air terminals or other services shall be positively attached to the ceiling suspension systems by mechanical means. Screws or approved fasteners are required. A minimum of two attachments are required at each component.

7.02 Ceiling-mounted air terminals or other services weighing less than or equal to 20 lb. shall have one (1) #12 gage slack safety wire attached from the terminal or service to the structure above.

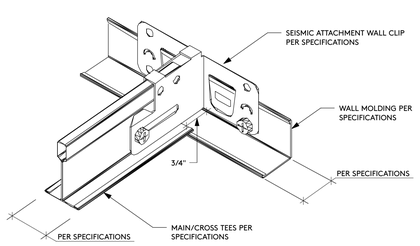
7.03 Flexible sprinkler hose fittings, ceiling-mounted air terminals or other services weighing more than 20 lb. but less than or equal to 56 lbs. shall have (2) #12 gage slack safety wires (at diagonal corners) connected from the terminal or service to the structure above.

7.04 Flexible sprinkler hose fittings, ceiling-mounted air terminals or other services weighing more than 56 lbs. shall be supported directly from the structure above by not less than four (4) taut #12 gage hanger wires attached from the terminal or service to the structure above or other approved hangers.

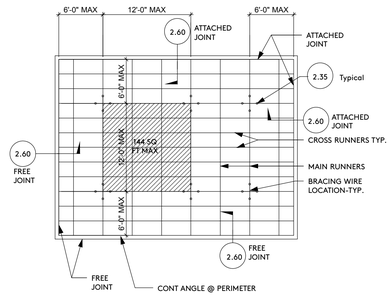
8 OTHER DEVICES WITHIN THE CEILING:

8.01 All lightweight miscellaneous devices, such as strobe lights, occupancy sensors, speakers, exit signs, etc., shall be attached to the ceiling grid. In addition, devices weighing more than 10 lbs. shall have #12 gage slack safety wire anchored to the structure above. Devices weighing more than 20 lb. shall be supported independently from the structure above.

CEILING NOTES

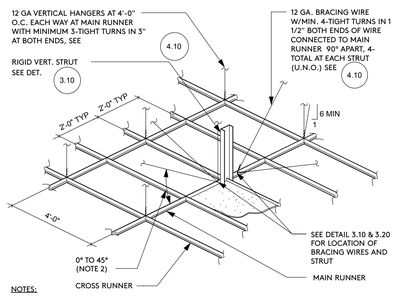


SEISMIC WALL CLIP



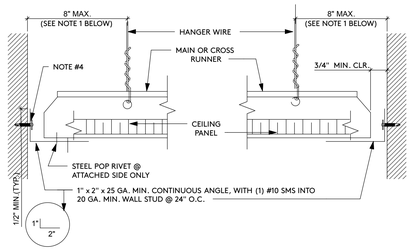
NOTE:
BRACING WIRES AND COMP. STRUT SHALL OCCUR AT EVERY 144 SQ. FT. MAX. IN ROOMS OVER 144 SQ. FT.

TYPICAL CEILING PLAN FOR 12'-0" X 12'-0" BRACE ASSEMBLY SPACING 2.12



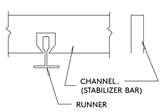
NOTES:
1. STRUTS SHALL NOT REPLACE HANGER WIRES.
2. THE MINIMUM ACCEPTABLE ANGLE IS DETERMINED SUCH THAT THE WIRES DO NOT INTERFER WITH THE RUNNERS, LIGHT FIXTURES, ETC. AND REMAIN STRAIGHT AND UNOBSTRUCTED.

SUSPENDED CEILING - SUSPENSION AND BRACING ASSEMBLY 2.35



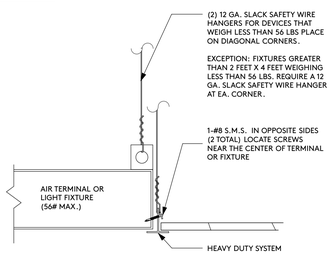
ATTACHED JOINT **FREE JOINT**

NOTES:
1. PROVIDE #12 GAGE HANGER WIRES AT THE ENDS OF ALL MAIN AND CROSS RUNNERS WITHIN EIGHT (8) INCHES OF THE SUPPORT OR WITHIN ONE-FORTH (1/4) OF THE LENGTH OF THE END TEE, WHICHEVER IS LESS, FOR THE PERIMETER OF THE CEILING AREA. PERIMETER WIRES ARE NOT REQUIRED WHEN THE LENGTH OF THE END TEE IS EIGHT (8) INCHES OR LESS.
2. NAILS AT ENDS OF HORIZONTAL STABILIZERS ARE TO BE PLACE WITH NAIL HEAD TOWARD CENTER LINE OF SPAN OF STRUT.
3. STABILIZER BAR MAY BE SLOTTED APPROVED ANGLES OR CHANNELS WITH "DIAMOND POINTS" OF SPRING STEEL WHICH SNAP TIGHT TO PREVENT MOVEMENT OF STRUT.
4. (1)#10 SMS TO 20 GA. MIN. WALL STUD @24" O.C.

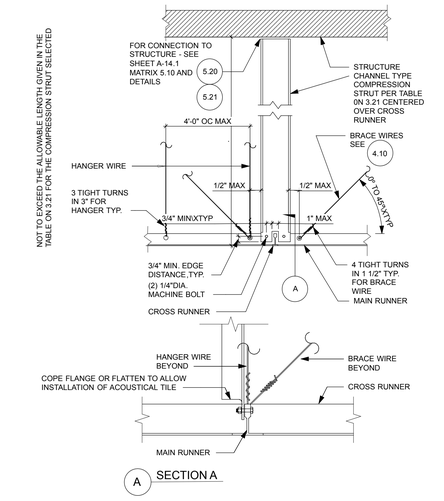


APPROVED STABILIZER
(SEE NOTE 3)

CEILING PERIMETER 2.60



SUSPENDED ACOUSTICAL CEILING - LIGHT FIXTURE/AIR TERMINAL SUPPORT DETAIL 2.80



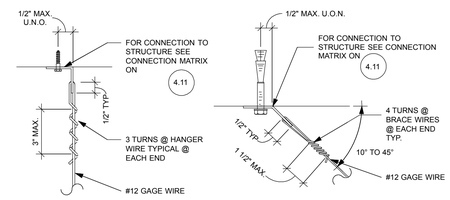
A SECTION A

SUSPENDED ACOUSTICAL CEILING - CHANNEL TYPE STRUT 3.10

EMT COMPRESSION STRUT	MAXIMUM LENGTH
1/2" DIAMETER EMT (0.042" WALL THICKNESS)	5'-10"
3/4" DIAMETER EMT (0.049" WALL THICKNESS)	7'-8"
1" DIAMETER EMT (0.057" WALL THICKNESS)	9'-9"
1 1/4" DIAMETER EMT (0.065" WALL THICKNESS)	12'-9"
1 1/2" DIAMETER EMT (0.065" WALL THICKNESS)	14'-9"
2" DIAMETER EMT (0.065" WALL THICKNESS)	18'-10"

CHANNEL COMPRESSION STRUT	MAXIMUM LENGTH
2505125-33	5'-0"
2505137-33	6'-10"
3625137-33	8'-0"
250137-43	8'-10"
4005137-43	10'-10"

COMPRESSION STRUT TABLE 3.21

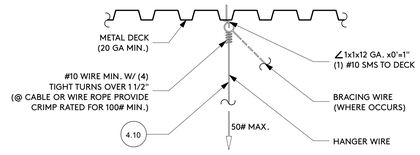


HANGER WIRE **BRACING WIRE**

HANGER AND BRACING WIRE CONNECTION - TYPICAL WIRE TURNS 4.10

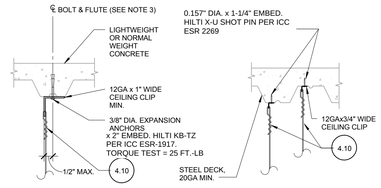
STRUCTURAL CONDITION OF FLOOR/ROOF ABOVE SUSPENDED CEILING	APPLICABLE HANGER WIRE DETAIL	APPLICABLE BRACING WIRE DETAIL
METAL DECK	4.20	4.30
CONCRETE OVER METAL DECK	4.21	4.31
CONCRETE SLAB, BEAM, OR JOIST	4.22	4.32
STRUCTURAL STEEL	4.23	4.33
METAL STUD WALL	4.24	4.34/A-14.1
SAWN TIMBER	4.25, 4.29	4.35
WOOD I JOIST	4.26	4.36, 4.37
WOOD CHORD TRUSS	4.27, 4.29	4.38, 4.29
OPEN WEB STEEL JOIST	4.28, 4.29	4.39, 4.29

HANGER & BRACING WIRE CONNECTION MATRIX 4.11

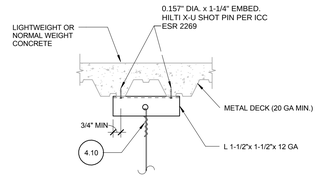


NOTE:
1. REFER TO 4.10 FOR ADDITION DETAILS

HANGER WIRE CONNECTION TO METAL DECK 4.20



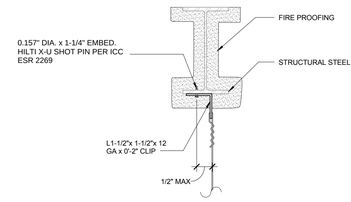
OPTION 1 **OPTION 2**



OPTION 3

NOTES:
1. REFER TO 4.10 FOR ADDITIONAL DETAILS.
2. POST INSTALLED ANCHORS TO BE PLACED NO MORE THAN 1" OFFSET FROM CENTERLINE OF DECK LOW FLUTE
3. TEST POST INSTALLED ANCHORS IN ACCORDANCE WITH CEILING NOTE 5.01.

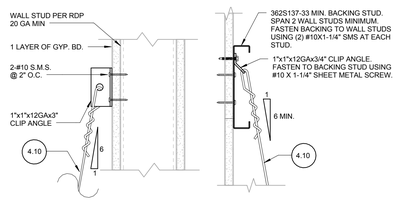
HANGER WIRE CONNECTION TO CONCRETE OVER METAL DECK 4.21



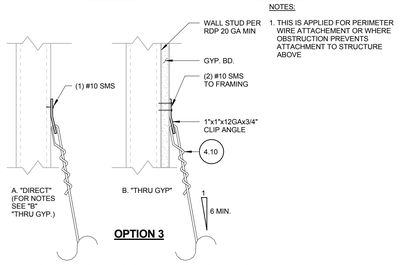
HANGER WIRE

NOTES :
1. BEAM FLANGE THICKNESS SHALL NOT BE LESS THAN 3/16".
2. RDP IN RESPONSIBLE CHARGE, IOR AND CONTRACTOR SHALL VERIFY THAT NO PAF IS INSTALLED IN THE PROTECTED ZONE OF ANY STEEL MEMBER. SEE ANSI/AISC 341-10
3. REFER TO 4.10 FOR ADDITIONAL DETAILS

HANGER WIRE CONNECTION TO STRUCTURAL STEEL 4.23



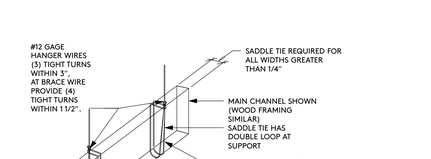
OPTION 1 **OPTION 2**



OPTION 3

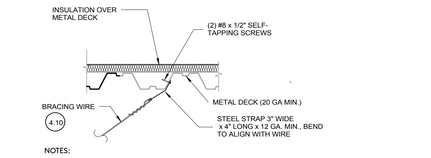
NOTES:
1. THIS IS APPLIED FOR PERIMETER WIRE ATTACHEMENT OR WHERE OBSTRUCTION PREVENTS ATTACHMENT TO STRUCTURE ABOVE

HANGER WIRE CONNECTION TO METAL STUD WALL 4.24



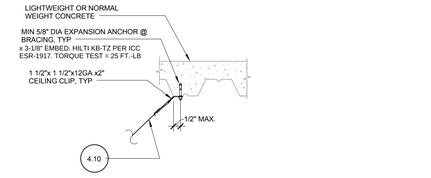
TYPICAL SADDLE TIE DETAIL
HANGER WIRE CONDITION SHOWN.
BRACE WIRE CONDITION SIMILAR

TYPICAL SADDLE TIE DETAIL 4.29

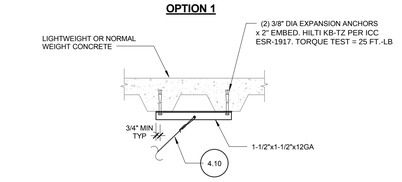


NOTES:
1. IF SELF- TAPPING SCREWS ARE USED WITH CONCRETE FILL, SET SCREWS BEFORE PLACING CONCRETE.

BRACING WIRE CONNECTION AT METAL DECK 4.30



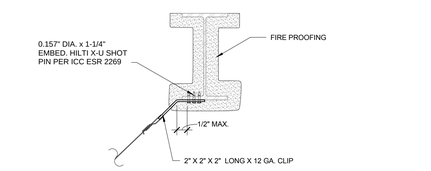
OPTION 1



OPTION 2

NOTES:
1. TEST POST INSTALLED ANCHORS IN ACCORDANCE WITH CEILING NOTE 5.02
2. REFER TO 4.10 FOR ADDITIONAL DETAILS
3. POST INSTALLED ANCHORS TO BE PLACED NO MORE THAN 1" OFFSET FROM CENTERLINE OF DECK LOW FLUTE

BRACING WIRE CONNECTION TO CONCRETE OVER METAL DECK 4.31



BRACING WIRE

NOTES :
1. BEAM FLANGE THICKNESS SHALL NOT BE LESS THAN 3/16".
2. RDP IN RESPONSIBLE CHARGE, IOR, AND CONTRACTOR SHALL VERIFY THAT NO PAF IS INSTALLED IN THE PROTECTED ZONE OF ANY STEEL MEMBER. SEE ANSI/AISC 341-10
3. REFER TO 4.10 FOR ADDITIONAL DETAILS

BRACING WIRE CONNECTION TO STRUCTURAL STEEL 4.33

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-117236 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 03/25/2019

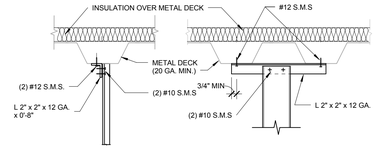
pjhm architects
www.pjhm.com

LICENSED ARCHITECT
KENNETH J. POMMY
NO. C-28889
EXP. 08-31-19
STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

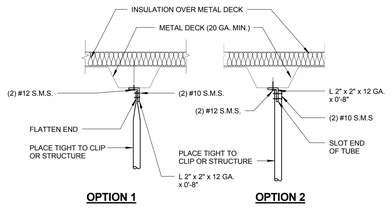
TYPICAL CEILING DETAILS

A-14.0



OPTION 1 **OPTION 2**

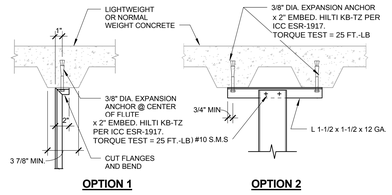
CHANNEL STRUT



OPTION 1 **OPTION 2**

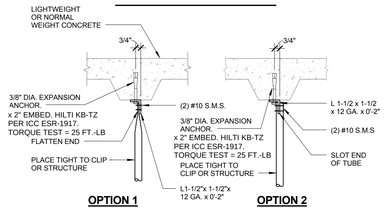
TUBE STRUT

STRUT CONNECTION TO METAL DECK 5.20



OPTION 1 **OPTION 2**

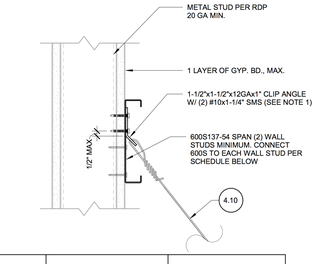
CHANNEL STRUT



OPTION 1 **OPTION 2**

TUBE STRUT

STRUT CONNECTION TO CONCRETE OVER METAL DECK 5.21



WALL STUD GAUGE	CONNECTION TO WALL STUD (WITH GYP. BD.)	CONNECTION TO WALL STUD (WITHOUT GYP. BD.)
20 GAUGE	(5) #10x1-1/4" SMS	(3) #10x1-1/4" SMS
18 GAUGE	(4) #10x1-1/4" SMS	(2) #10x1-1/4" SMS

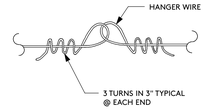
NOTES:

1. THE CLIP ANGLE CAN BE ATTACHED DIRECTLY TO THE WALL STUD FLANGE PROVIDED BOTH OF THE FOLLOWING CONDITIONS ARE MET:
   - THE WALL STUD IS 18 GA MIN. AND CAPABLE OF SUPPORTING THE BRACE FORCE.
   - THE BRACE WIRE ALIGNS WITH THE WALL STUD WEB.

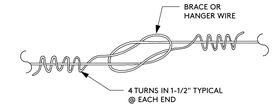
BRACING WIRE CONNECTION TO METAL STUD WALL 4.34

STRUCTURAL CONDITION OF FLOOR / ROOF ABOVE COMPRESSION STRUT	APPLICABLE DETAIL
METAL DECK	5.20
CONCRETE OVER METAL DECK	5.21
CONCRETE SLAB, BEAM, OR JOIST	5.30
STRUCTURAL STEEL	5.40
SAWN TIMBER WITH GYPSUM BOARD	5.50
SAWN TIMBER WITHOUT GYPSUM BOARD	5.60

COMPRESSION STRUT CONNECTION TO STRUCTURE - CONNECTION MATRIX 5.10



HANGER WIRE ONLY



HANGER OR BRACE WIRE

NOTES:

WIRE SPLICES ARE SHOWN LOOSELY TIED FOR ILLUSTRATIVE PURPOSES ONLY AND SHALL BE DRAWN TIGHT TO COMPLETE INSTALLATION WHEN CONSTRUCTED..

CEILING WIRE SPLICES 6.10

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LICENSED ARCHITECT
KENNETH J. POMMY
NO. C28889
REN. 2/19
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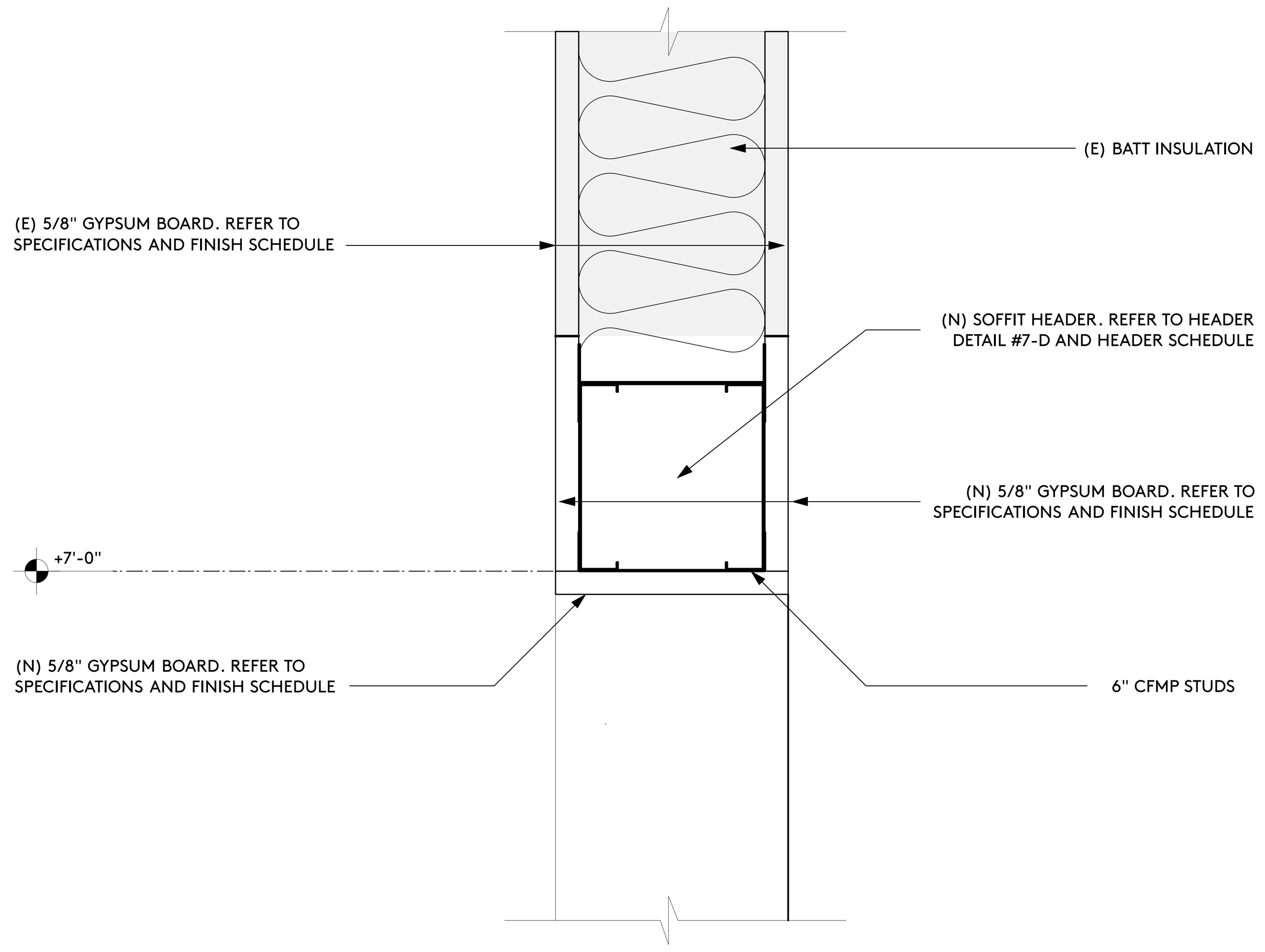
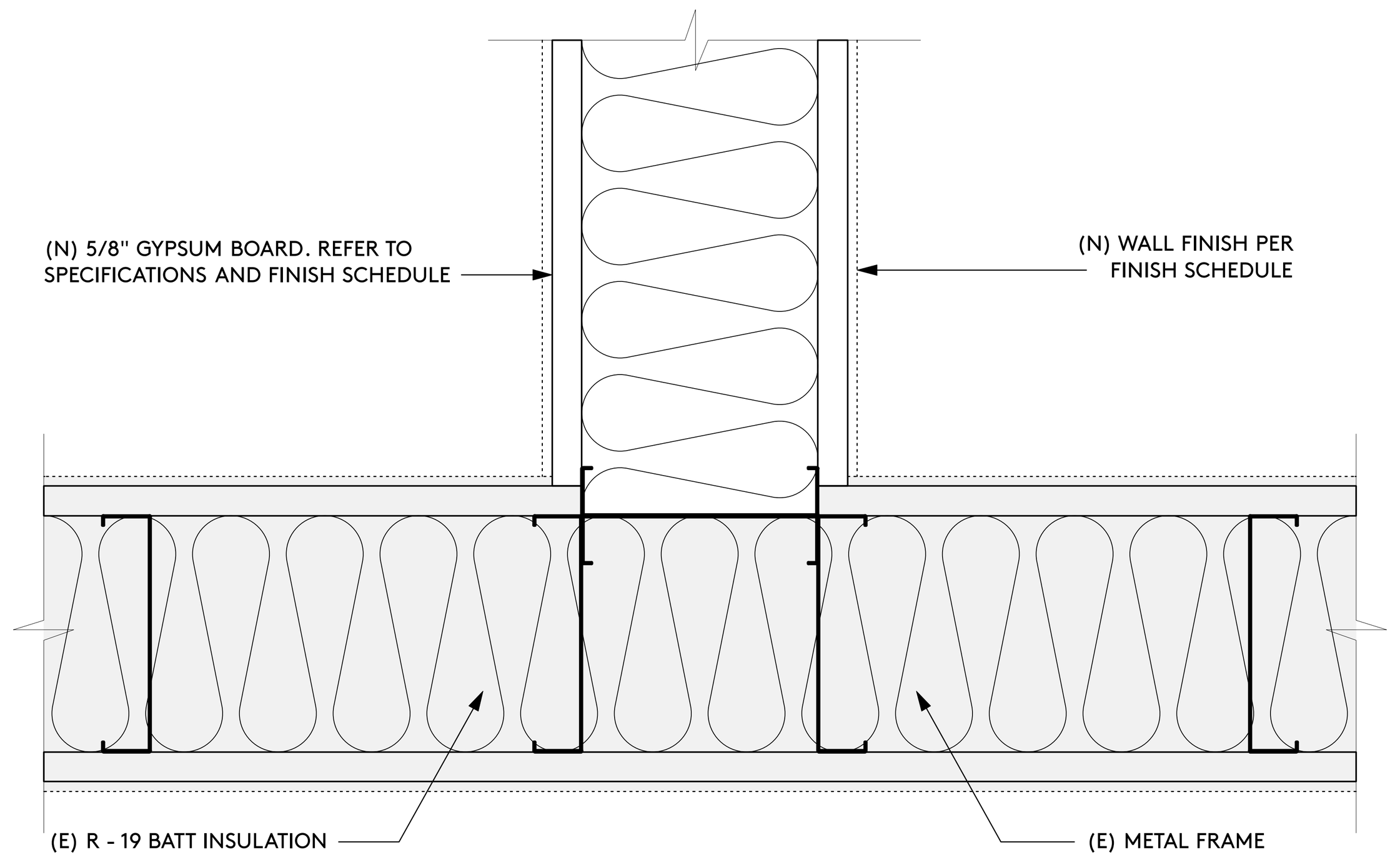
TYPICAL CEILING DETAILS

A-14.1



HEADER DETAIL 10

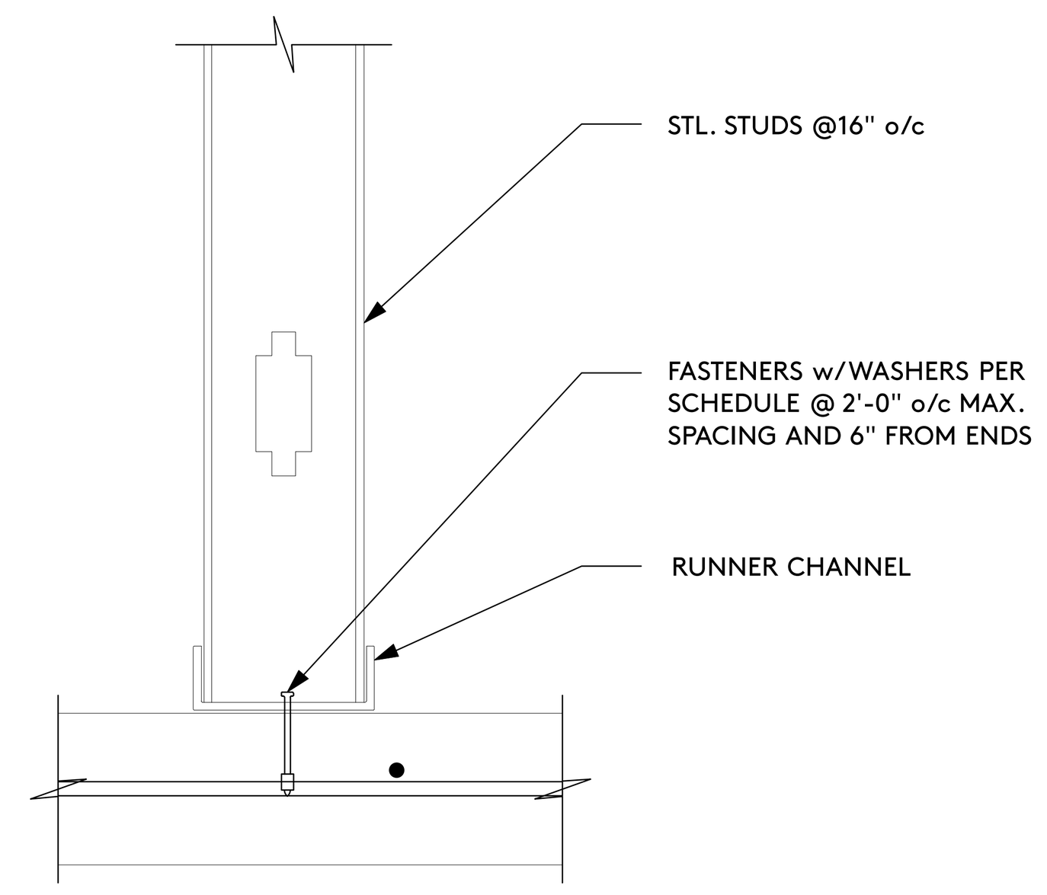
SCALE: 3" = 1'-0"



WALL INTERSECTION FRAMING (INTERIOR) 8

SCALE: 3" = 1'-0"

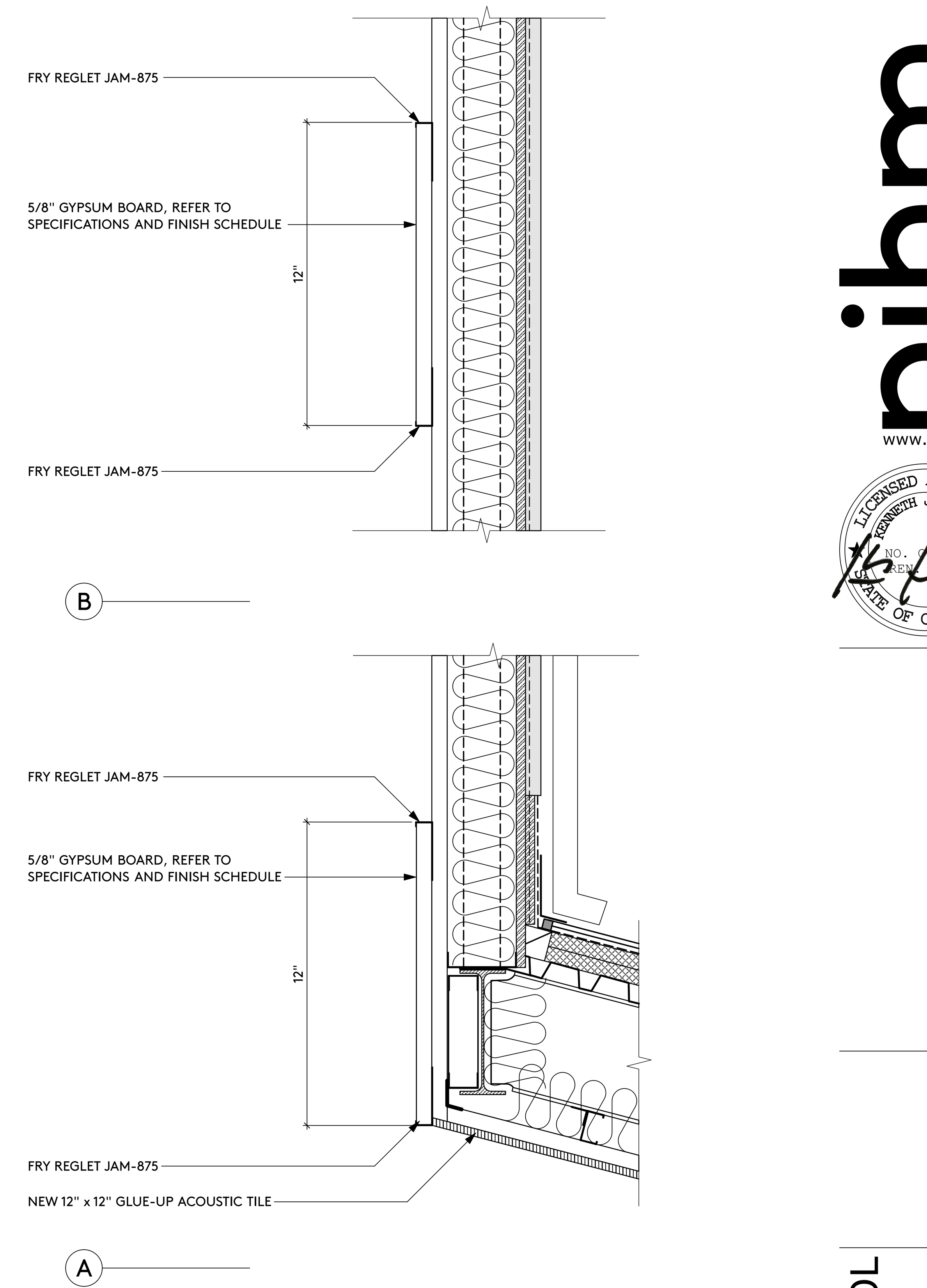
FASTENER SCHEDULE			
FASTENER	DIAMETER	EMBED	ICC
ITW RAMSET 1510SD	0.145"	1 1/4"	ESR-1799
HILTI X-U P8 S15	0.157"	1 1/4"	ESR-2269
SIMPSON PDPW OR PHNW	0.145"	1 1/4"	ESR-2138
POWERS 0.300-inch head PIN w/7/8" WASHER	0.145"	1 1/4"	ESR-2024



TYP. NON-BRG. PARTITIONS, STEEL

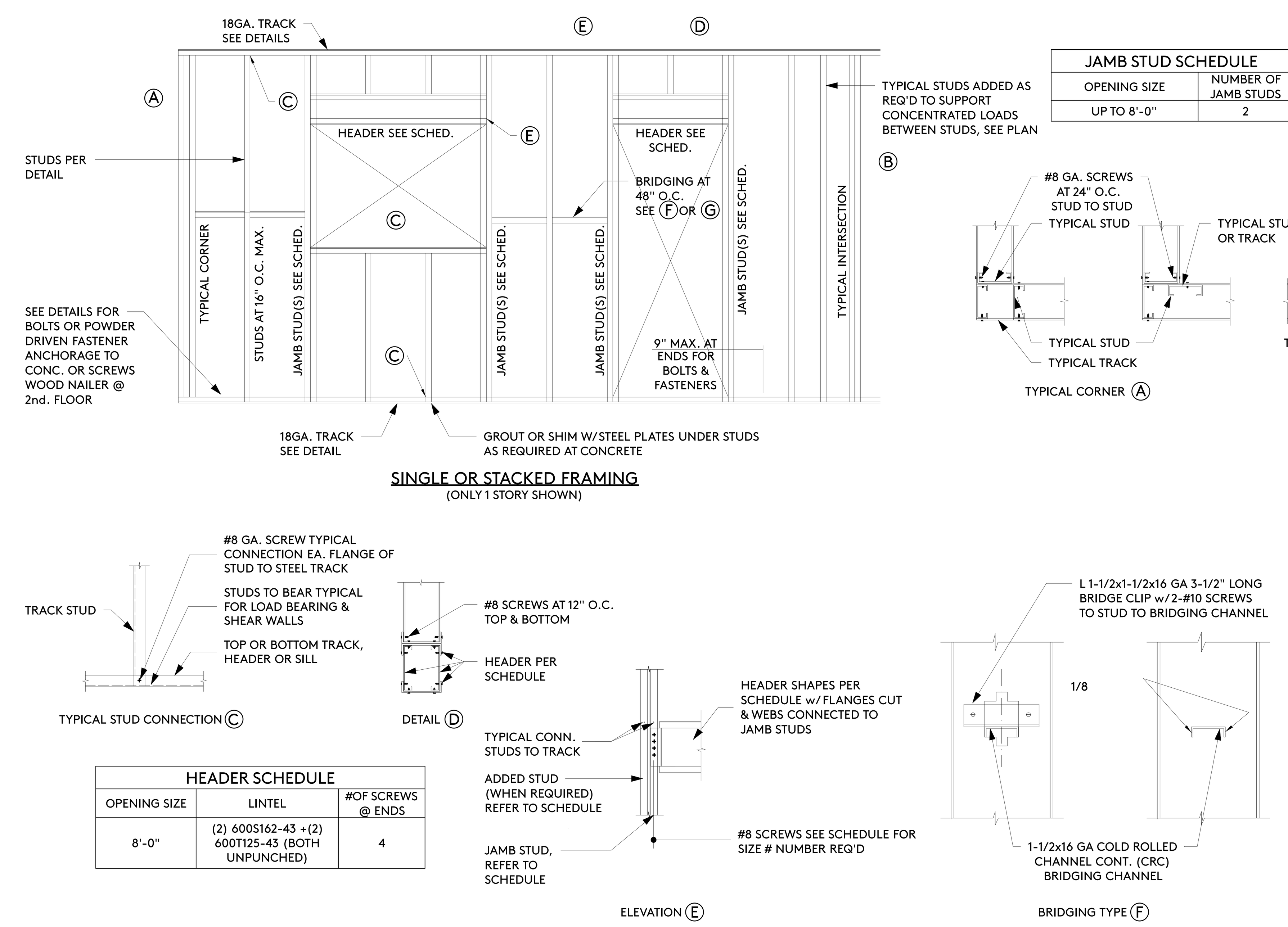
COLD-FORMED METAL FRAMING - SILL TRACK ANCHORAGE 5

N.T.S.



SOFFIT DETAIL 2

SCALE: 3" = 1'-0"

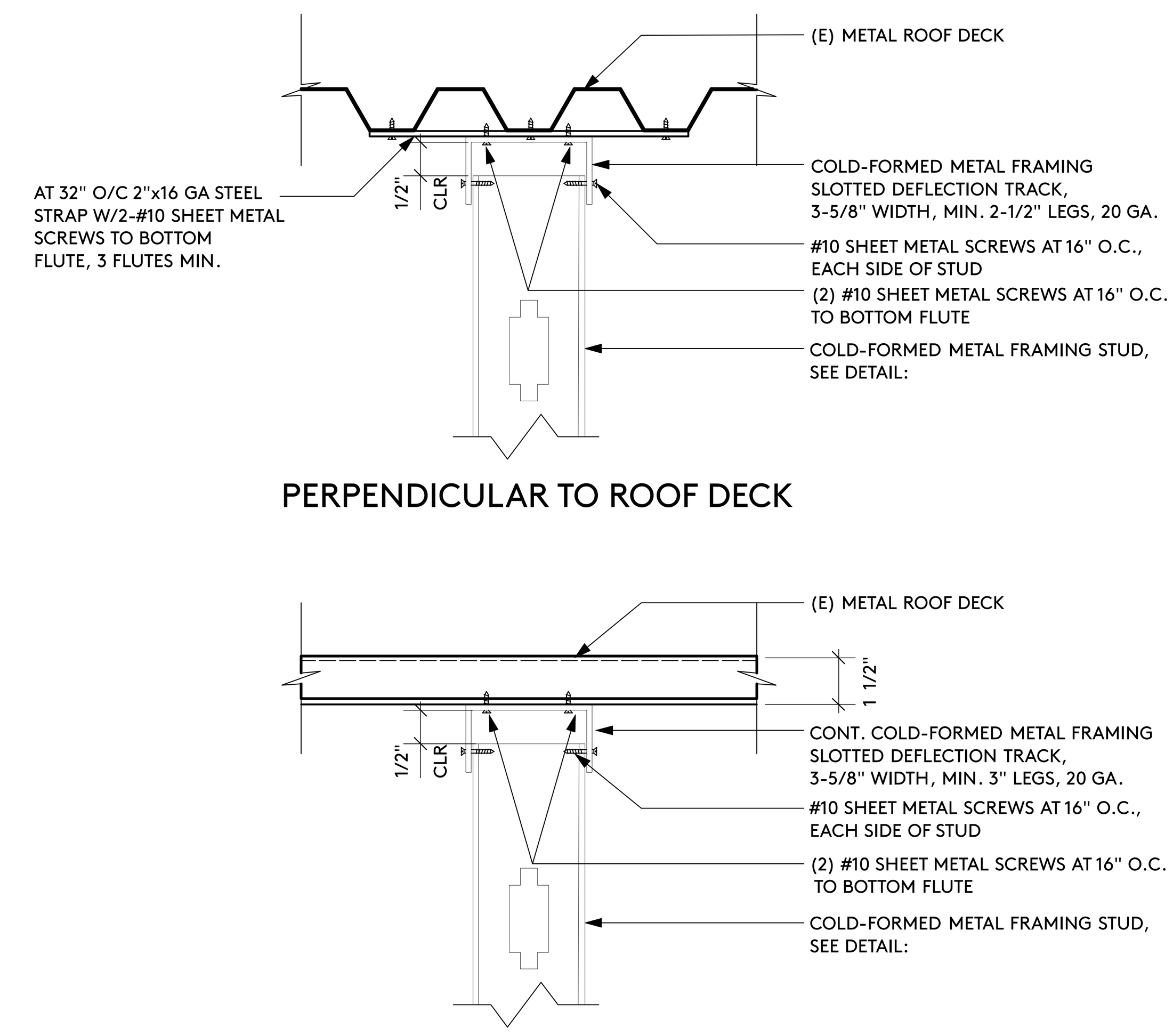


JAMB STUD SCHEDULE	
OPENING SIZE	NUMBER OF JAMB STUDS
UP TO 8'-0"	2

HEADER SCHEDULE		
OPENING SIZE	LINTEL	#OF SCREWS @ ENDS
8'-0"	(2) 600S162-43 +(2) 600T125-43 (BOTH UNPUNCHED)	4

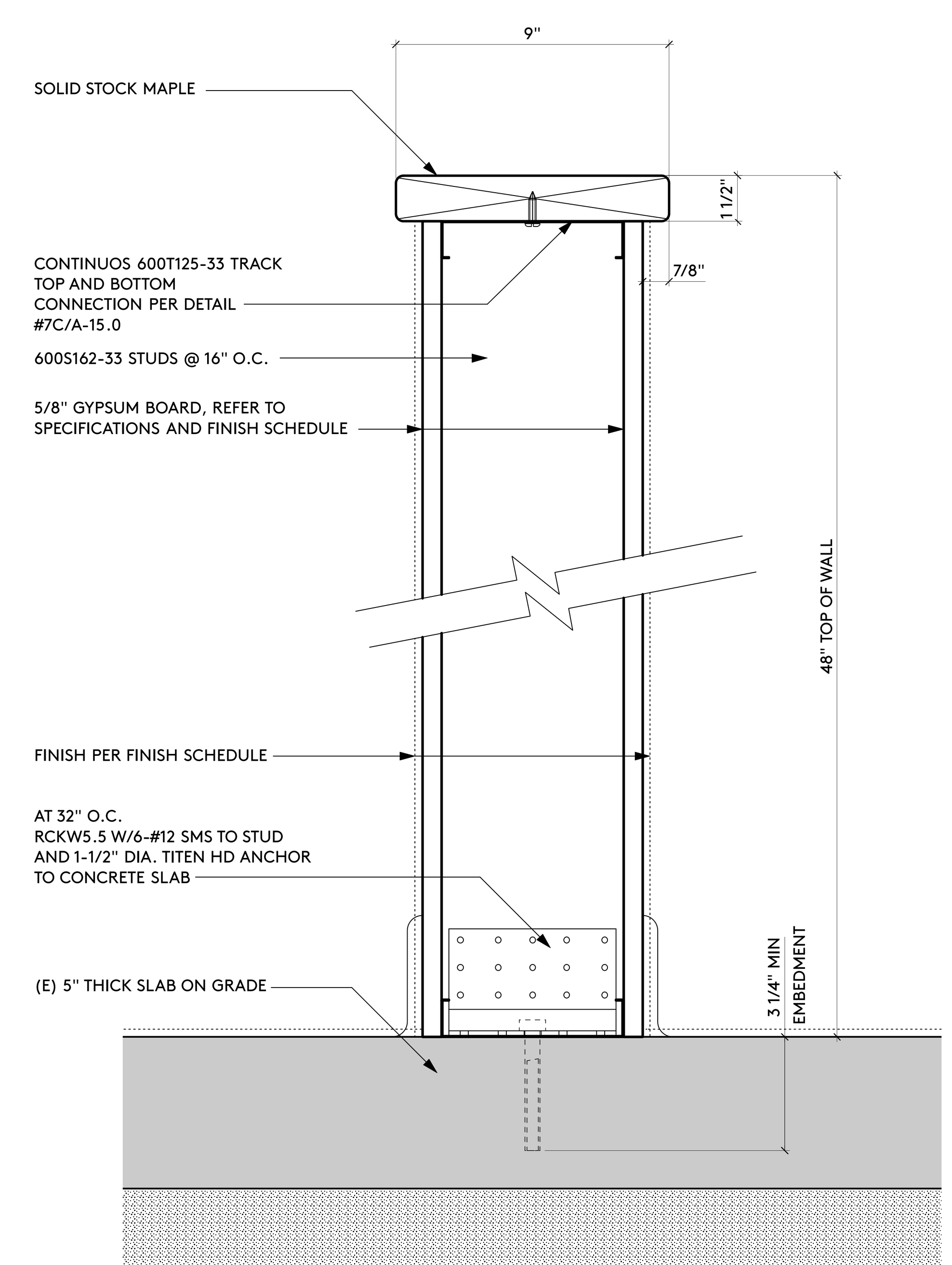
COLD-FORMED METAL FRAMING - PARTITION FRAMING 7

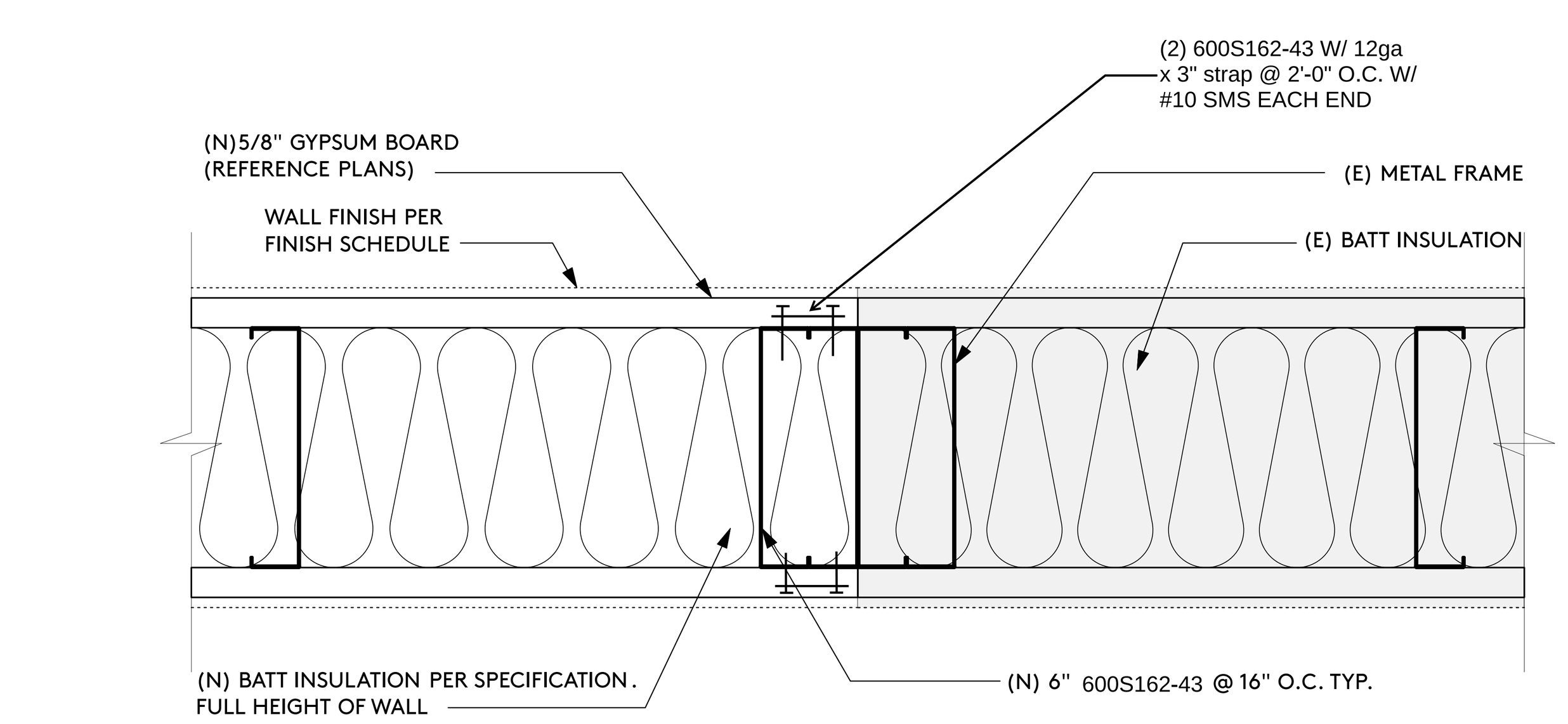
N.T.S.



COLD-FORMED METAL FRAMING - HEAD OF WALL DETAILS 4

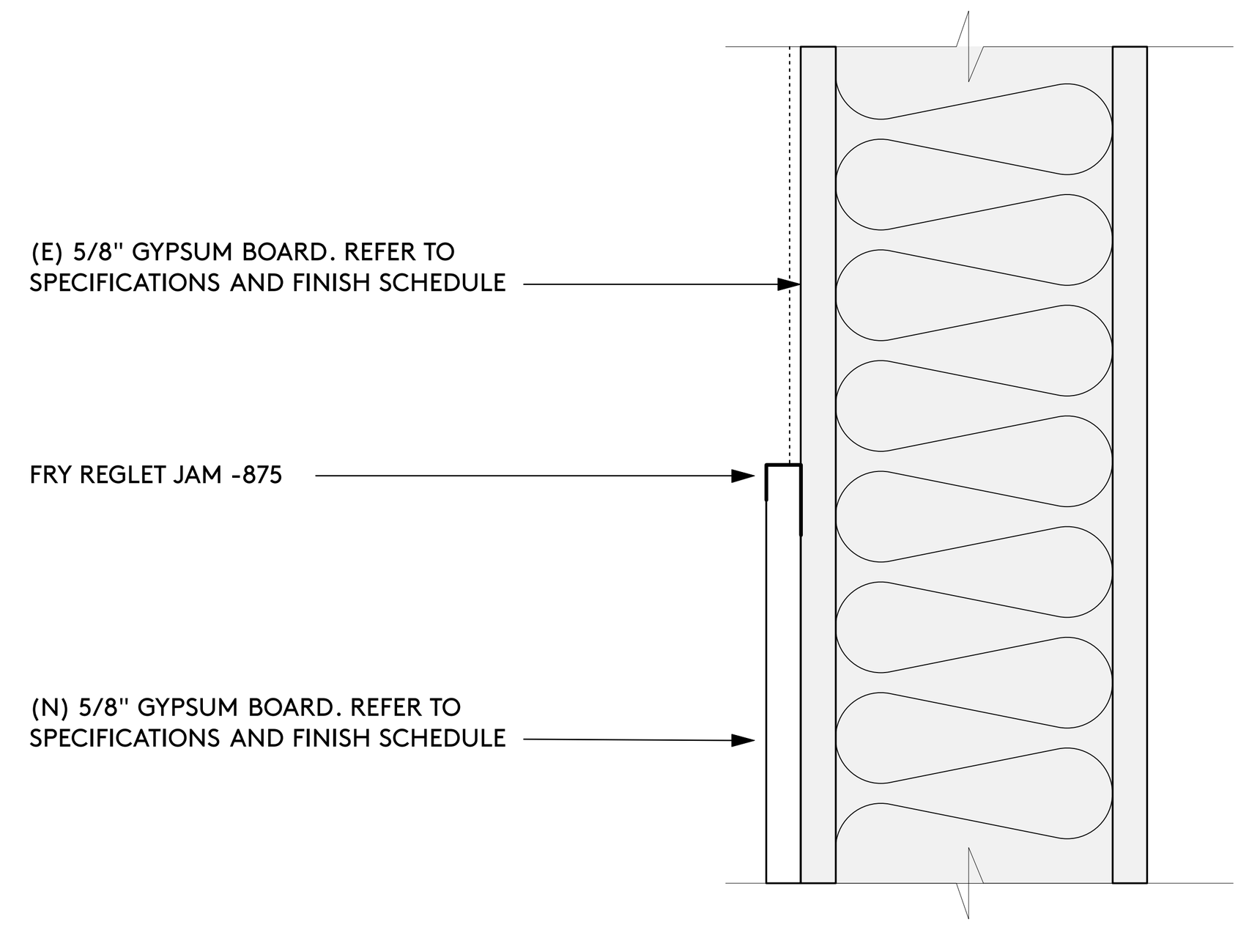
N.T.S.





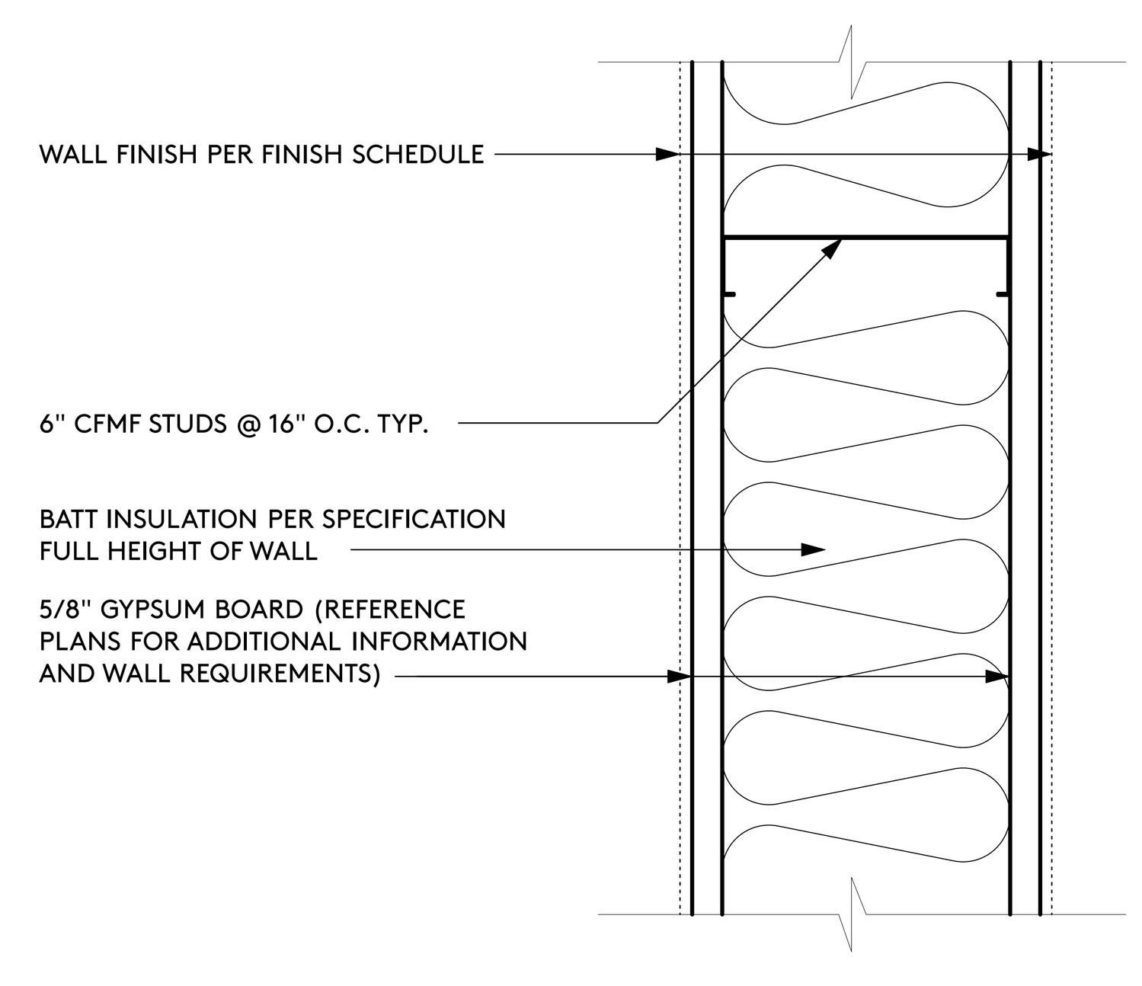
WALL INTERSECTION FRAMING (INTERIOR) 9

SCALE: 3" = 1'-0"



WALL DETAIL 6

SCALE: 3" = 1'-0"



GENERAL NOTES:

1. 5/8" GYPSUM BOARD TO EXTEND FULL HEIGHT OF WALL TO UNDERSIDE OF ROOF STRUCTURE
2. SOUND INSULATION TO EXTEND FULL HEIGHT OF WALL TO UNDERSIDE OF ROOF STRUCTURE
3. REFERENCE PLANS FOR ADDITIONAL REQUIREMENTS AT ACOUSTICAL WALLS, PLUMBING WALLS, ETC.

NEW NON-RATED WALL (INTERIOR) 3

SCALE: 3" = 1'-0"

LOW WALL 1

SCALE: 3" = 1'-0"

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DATE: 03/25/2019

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TOM HAWKINS ELEMENTARY SCHOOL ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

DETAILS

A-15.0

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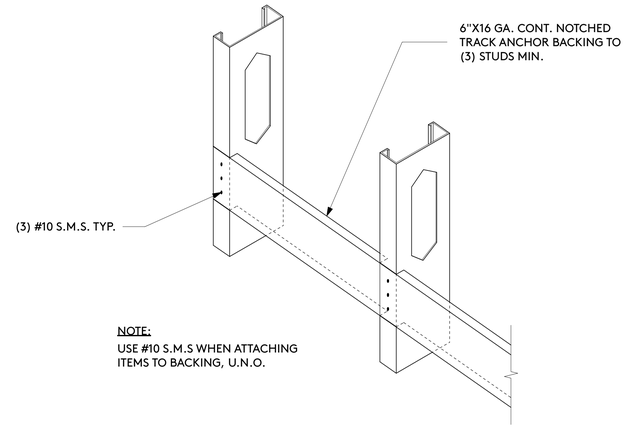
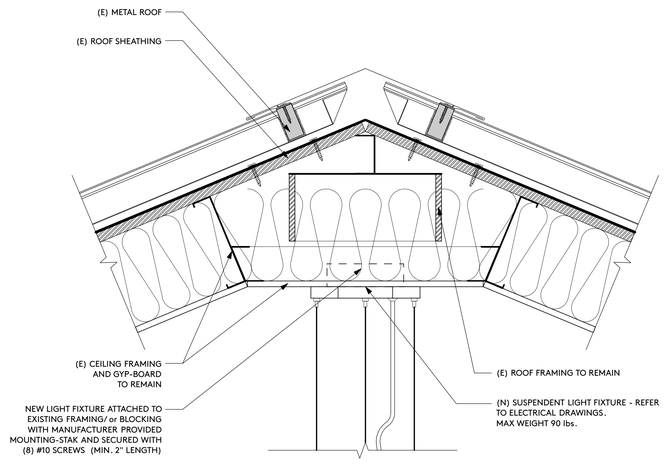


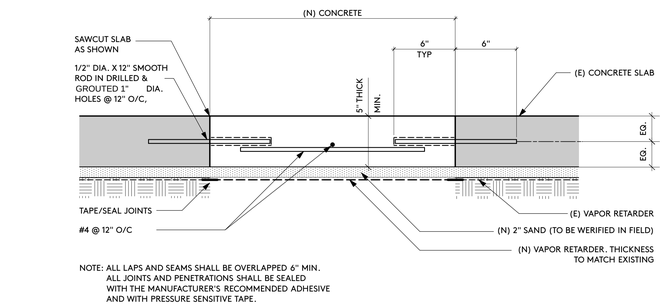
TYPICAL BACKING DETAIL 3

SCALE: N.T.S.



LIGHT FIXTURE ATTACHMENT 2

SCALE: 3" = 1'-0"



NOTE: ALL LAPS AND SEAMS SHALL BE OVERLAPPED 6" MIN.
ALL JOINTS AND PENETRATIONS SHALL BE SEALED WITH THE MANUFACTURER'S RECOMMENDED ADHESIVE AND WITH PRESSURE SENSITIVE TAPE.

SLAB PATCH 1

SCALE: 3" = 1'-0"

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

DETAILS

A-15.1

FIXTURE SCHEDULE

ITEM	FIXTURE	ROUGH-IN CONNECTIONS: TRAP	WASTE	VENT	HOT WATER	COLD WATER	GAS	DESCRIPTION
WC 1	WATER CLOSET (ACCESSIBLE)	INT	4"	2"	--	1"	--	AMERICAN STANDARD (A/S) NO. 3461.001 "MADERA FLOWISE 16-1/2" HEIGHT ELONGATED FLUSHOMETER TOILET", SIPHON JET, FLOOR MOUNTED, ELONGATED BOWL, 16-1/2" HIGH. COMPLETE WITH SLOAN ROYAL NO. 111-1.28 GPF FLUSH VALVE, OLSONITE NO. 95CC-SS SEAT AND A/S BOLT CAPS.
WC 2	WATER CLOSET (ELEMENTARY, ACCESSIBLE)	INT	4"	2"	--	1"	--	AMERICAN STANDARD (A/S) NO. 3451.001 "MADERA FLOWISE 15" HEIGHT ELONGATED FLUSHOMETER TOILET", SIPHON JET, FLOOR MOUNTED, ELONGATED BOWL, 15" HIGH. COMPLETE WITH SLOAN ROYAL NO. 111-1.28 GPF FLUSH VALVE, NO. F-190 1-1/2" X 2" OFFSET TUBE OUTLET, AND OLSONITE NO. 95CC-SS SEAT AND A/S BOLT CAPS.
L 1	LAVATORY (ACCESSIBLE, HW/CW)	1-1/4"	2"	1-1/2"	1/2"	1/2"	--	AMERICAN STANDARD (A/S) NO. 0355.012 "LUCERNE WALL HUNG LAVATORY", 20" X 18", WALL HUNG. COMPLETE WITH CHICAGO NO. 3400-ABCP METER FAUCET WITH E2805AB 0.5 GPM NON-AERATING SPRAY AND VANDAL RESISTANT COVER PLATE, SYMMONS "MAXLINE" NO. 7-225-CK-S-BT THERMOSTATIC MIXING VALVE WITH STAINLESS STEEL CABINET, McGUIRE NO. 155A 1-1/4" OUTLET "OPEN GRID P.O. PLUG", McGUIRE NO. PW8090NC0 1-1/4" L.A. PATTERN P-TRAP WITH TRAP AND SUPPLY COVERS, GALVANIZED NIPPLE AND CHROMIUM PLATED BRASS CASING, CHICAGO NO. 1017-ABCP LOOSE KEY STOPS WITH RIGID SUPPLIES, AND ZURN NO. Z-1231 ADJUSTABLE CONCEALED ARM CARRIER W/ SLEEVE FOR WASTE. MOUNT AT ADA ACCESSIBLE HEIGHT. SET METER FLOW TO 10 SEC. MIN.
S 1	SINK (FACULTY, KITCHEN, SINGLE BOWL, ACCESSIBLE, HW/CW)	1-1/2"	2"	1-1/2"	1/2"	1/2"	--	ELKAY NO. LRAD221955 "LUSTERTONE SINGLE BOWL SINK", SINGLE COMPARTMENT, 18 GAUGE TYPE 304 STAINLESS STEEL, SELF-RIMMING, 22" X 19" X 5-1/2" DEEP. COMPLETE WITH CHICAGO NO. 786-E35VPCABCP DECK MOUNTED, BLADE HANDLES, GOOSENECK FAUCET WITH E35VPAB 1.5 GPM SOFTFLO AERATOR AND VANDAL RESISTANT COVER PLATE, McGUIRE NO. 152 1-1/2" OUTLET "WIDE TOP SINK STRAINER", McGUIRE NO. PW8089NC0 1-1/2" L.A. PATTERN P-TRAP WITH TRAP AND SUPPLY COVERS, GALVANIZED NIPPLE AND CHROMIUM PLATED BRASS CASING, AND CHICAGO NO. 1017-ABCP LOOSE KEY STOP WITH RIGID SUPPLIES. MOUNT IN ACCORDANCE WITH ADA REQUIREMENTS.
TP 1	TRAP PRIMER (SINGLE DRAIN)	--	--	--	--	1/2"	--	MIFAB NO. MR-500 TRAP PRIMER VALVE, BRASS BODY, ADJUSTABLE, COMPLETE WITH 1/2" COPPER TYPE "L" PIPE TO RECEPTOR. INSTALL PER MANUFACTURER'S RECOMMENDATIONS, COMPLETE BEHIND ACCESS PANEL WITH SHUT-OFF VALVE.
WHA 1	WATER HAMMER ARRESTOR	--	--	--	--	--	--	ZURN NO. Z-1700 SERIES "SHOKTROL" WATER HAMMER ARRESTOR COMPLETE BEHIND ACCESS PANEL. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
FD 1	FLOOR DRAIN	2"	2"	1-1/2"	--	--	--	ZURN NO. ZN-415-BZ-P, CAST IRON BODY, COMPLETE WITH ROUND NICKEL-BRONZE TOP, CLAMPING COLLAR, 1/2" TRAP PRIMER CONNECTION AND P-TRAP.

GENERAL NOTES

1. BEFORE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF ALL UTILITIES AND PIPING, AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
2. ALL ACCESSIBLE WATER CLOSETS SHALL HAVE FLUSH VALVE WITH HANDLE ON OPEN SIDE.
3. ALL VALVES, UNIONS, ETC. TO BE SAME SIZE AS PIPE UNLESS OTHERWISE INDICATED ON DRAWINGS.
4. ALL PLUMBING FIXTURE VENTS TO TERMINATE A MINIMUM OF 12 INCHES FROM ANY VERTICAL SURFACE AND 10 FEET FROM ANY OUTSIDE AIR INTAKES.
5. EXACT LOCATIONS AND MOUNTING HEIGHTS OF PLUMBING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS.
6. ALL EXTERIOR GAS COCKS, WATER SHUT OFF VALVES AND/OR SEWER CLEANOUTS BELOW GROUND SHALL BE INSTALLED IN YARD BOXES WITH THE COVERS CONSPICUOUSLY MARKED "GAS", "WATER", AND "SEWER" RESPECTIVELY.
7. CONNECTION BETWEEN INCOMPATIBLE MATERIALS ABOVE GRADE AND INSIDE BUILDING SHALL BE MADE WITH TWO (2) DIELECTRIC UNIONS SEPARATED BY A TWELVE INCH (12") SECTION OF RED BRASS PIPE.
8. ALL CLEANOUTS SHALL BE INSTALLED WHERE READILY ACCESSIBLE. THE CONTRACTOR SHALL COORDINATE ALL CLEANOUT LOCATIONS WITH EQUIPMENT, CABINETS, ETC., AND THE ARCHITECT PRIOR TO ANY INSTALLATION.
9. SEE ARCHITECTURAL DRAWINGS FOR ACCESSIBLE FIXTURE LOCATIONS AND MOUNTING HEIGHTS. INSULATE ALL EXPOSED HOT WATER AND DRAIN PIPING BELOW ACCESSIBLE LAVATORIES AND SINKS.
10. ALL PLUMBING WORK SHALL BE INSTALLED SO AS TO AVOID INTERFERENCE WITH ELECTRICAL AND MECHANICAL EQUIPMENT AND STRUCTURAL FRAMING.
11. THESE DRAWINGS INDICATE THE SEWER, WATER, AND STORM DRAIN SYSTEMS TO POINT OF CONNECTION 5'-0" OUTSIDE OF THE BUILDING. CONTINUATION OF THESE SYSTEMS IS SHOWN ON THE CIVIL DRAWINGS AND IS SPECIFIED UNDER ANOTHER SECTION OF THE SPECIFICATIONS. THE PIPING SHALL BE INSTALLED TO MEET THE INVERT ELEVATIONS SHOWN ON THE CIVIL DRAWINGS.
12. INSULATION (SEE SPECIFICATION FOR TYPE REQUIRED) AND COVERING ON PIPE AND TUBING SHALL HAVE A FLAME SPREAD RATING NOT TO EXCEED 25 AND A SMOKE DENSITY NOT TO EXCEED 450 WHEN TESTED IN ACCORDANCE WITH 2016 C.B.C. SECTION 720.3.
13. ANY ALTERATIONS TO A STRUCTURAL MEMBER, SUCH AS CUTTING, BORING, BRAZING, DRILLING, WELDING, ETC. SHALL HAVE PRIOR WRITTEN APPROVAL OF ARCHITECT, STRUCTURAL ENGINEER AND DSA.

15. M.E.P. COMPONENT ANCHORAGE NOTE:
ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7-10 CHAPTERS 13, 26 AND 30.

    1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
    2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.
    3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.

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

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO FOR THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

16. PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:
PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCE AND DISPLACEMENTS PRESCRIBED IN ASCE 7-10 SECTION 13.3, AS DEFINED IN ASCE 7-10 SECTION 13.6.5.6, 13.6.7, 13.6.8, AND 2016 CBC SECTIONS 1616A.1.23, 1615A.1.24, 1616A.1.25, AND 1616A.1.26.

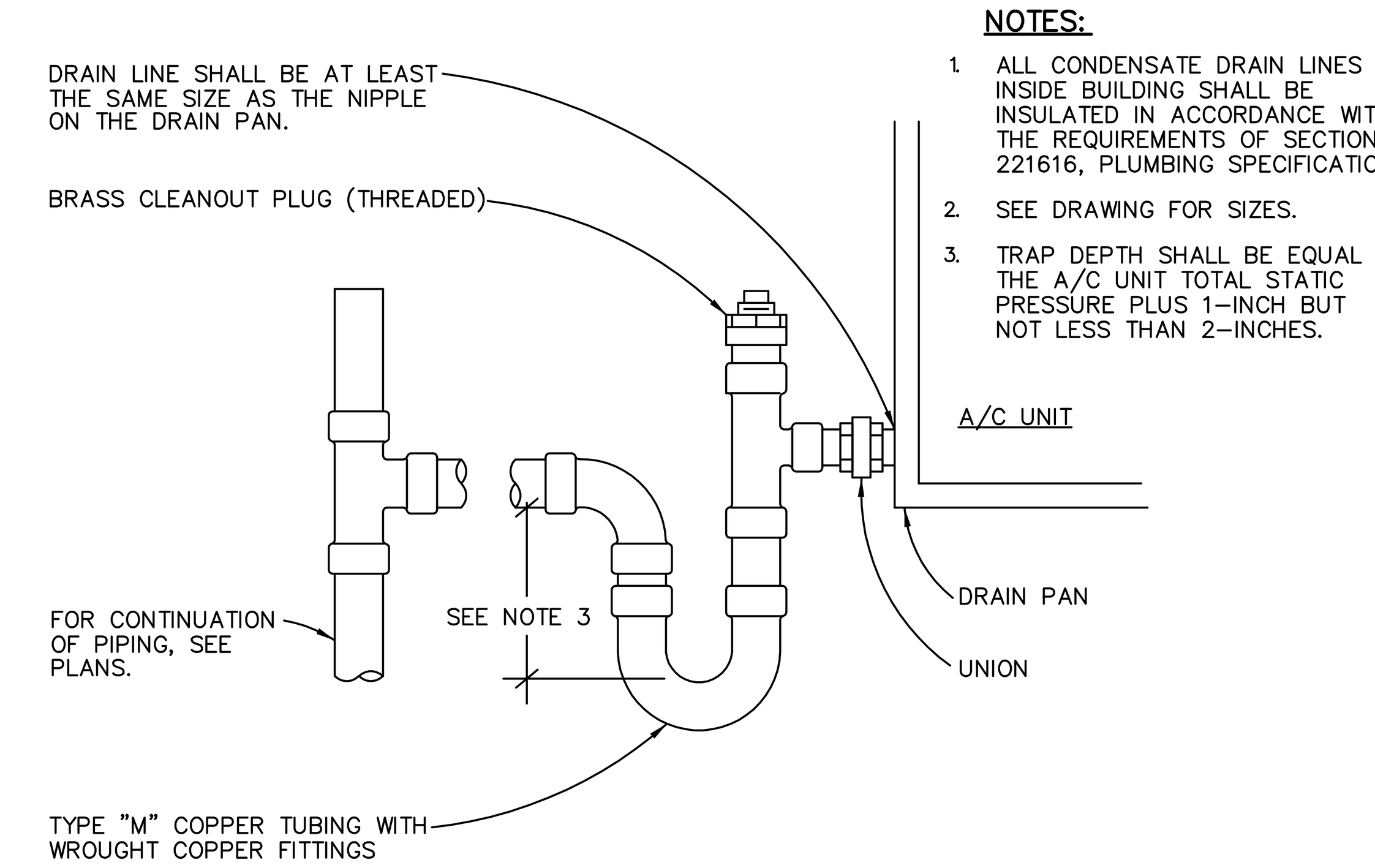
THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G. SMACNA OR OSHPD OPM), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE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

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

MP [ ] MD [ ] PP [ ] E [ ] – OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	S OR W	SOIL OR WASTE ABOVE FLOOR
	S OR W	SOIL OR WASTE BELOW FLOOR OR GRADE
GW	GW	GREASE WASTE BELOW FLOOR OR GRADE
SD	SD	STORM DRAIN ABOVE FLOOR
SD	SD	STORM DRAIN BELOW FLOOR OR GRADE
OD	OD	OVERFLOW DRAIN ABOVE FLOOR
	V	SANITARY VENT
	CW	COLD WATER
	HW	HOT WATER
	HWR	HOT WATER RETURN
CD	CD	CONDENSATE DRAIN
TP	TP	TRAP PRIMER
G	G	GAS LINE
MPG	MPG	MEDIUM PRESSURE GAS
ICW	ICW	INDUSTRIAL COLD WATER
F	F	FIRE LINE
AS	AS	AUTOMATIC SPRINKLER LINE
		DIRECTION OF FLOW
	SOV	SHUT-OFF VALVE
	SOV/GC	SHUT-OFF VALVE OR GAS COCK IN YARD BOX
	FCO	FLOOR CLEANOUT
	WCO	WALL CLEANOUT
		RISER UP
		RISER DOWN
	ABV	ABOVE
	AP	ACCESS PANEL
	BEL	BELOW
	CLG	CEILING
	CONT	CONTINUATION
	COTG	CLEANOUT TO GRADE
	DN	DOWN
	FLR	FLOOR
	FFE	FINISH FLOOR ELEVATION
	I.E.	INVERT ELEVATION
	POC	POINT OF CONNECTION
	PLCS	PLACES
	SLVE	SLEEVE
	VTR	VENT THRU ROOF
	YB	YARD BOX



NOTES:
1. ALL CONDENSATE DRAIN LINES INSIDE BUILDING SHALL BE INSULATED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 221616, PLUMBING SPECIFICATIONS.
2. SEE DRAWING FOR SIZES.
3. TRAP DEPTH SHALL BE EQUAL TO THE A/C UNIT TOTAL STATIC PRESSURE PLUS 1-INCH BUT NOT LESS THAN 2-INCHES.

CONDENSATE TRAP DETAIL — SCALE: NONE — 1

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PocockDesignSolutions Inc.

REGISTERED PROFESSIONAL ENGINEER ANDREW R. GOSSMAN No. M35839 Exp. 3/31/20 MECHANICAL STATE OF CALIFORNIA

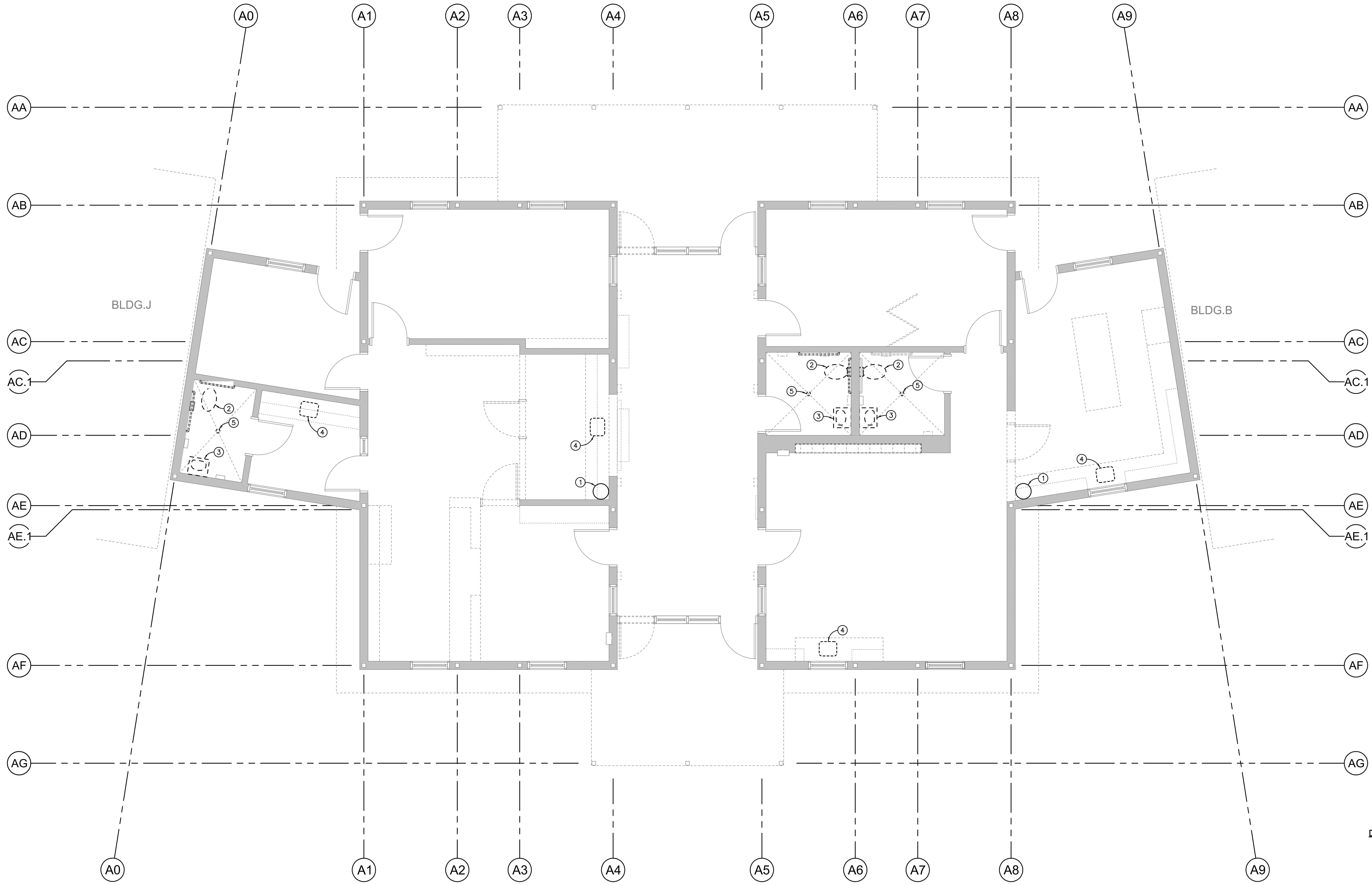
TOM HAWKINS ELEMENTARY SCHOOL ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

PLUMBING LEGEND, SCHEDULES, AND GENERAL NOTES

P-0.1

OC Office: 24461 Ridge Route Dr. #100, Laguna Hills, CA 92653 • **OC Phone**: 949.496.6191 • **SD Office**: 804 Pier View Way #103, Oceanside, CA 92054 • **SD Phone**: 760.730.5527 • **LA Office**: 837 Traction Ave. #410, Los Angeles, CA 90013 • **LA Phone**: 213.278.0172 • **Web**: pjhm.com



DEMOLITION NOTES:

1. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL ITEMS INDICATED TO BE REMOVED. CONTRACTOR SHALL VERIFY ALL SUCH ITEMS WITH OWNER PRIOR TO REMOVAL. ALL ITEMS NOT REFUSED BY OWNER SHALL BE REMOVED INTACT AND FULLY FUNCTIONAL BY CONTRACTOR FOR OWNER'S USE. ALL ITEMS REFUSED BY OWNER SHALL BE PROPERLY DISPOSED OF BY CONTRACTOR.
2. REMOVE EXISTING FIXTURES AND EQUIPMENT AS INDICATED. HOT WATER, COLD WATER, VENT AND/OR GAS PIPING SERVING SUCH ITEMS SHALL BE REMOVED TO A SUITABLE CONCEALED LOCATION WITHIN WALL OR ABOVE CEILING AND CAPPED OR PLUGGED UNLESS OTHERWISE NOTED (U.O.N.). WASTE PIPING SERVING SUCH FIXTURES SHALL BE REMOVED TO A SUITABLE CONCEALED LOCATION BELOW FINISHED FLOOR OR BEHIND WALL AND CAPPED OR PLUGGED U.O.N. ASSOCIATED EXISTING DEFUNCT PIPING IN CONCEALED LOCATIONS ABOVE CEILING, WITHIN WALLS, BELOW SLAB, OR BELOW GRADE SHALL BE ABANDONED IN PLACE OR REMOVED AS NECESSARY TO AVOID INTERFERENCE WITH NEW WORK. ASSOCIATED EXISTING DEFUNCT PIPING AND COMPONENTS IN EXPOSED LOCATIONS SHALL BE REMOVED U.O.N. (INCLUDING FLOOR DRAINS, WALL AND FLOOR CLEANOUTS, CLEANOUTS TO GRADE, ACCESS PANELS, SHUT-OFF VALVES AND COCKS, YARD BOXES, MANHOLES, CATCH BASINS, AND OTHER EXPOSED COMPONENTS). EXISTING DEFUNCT ELECTRICAL COMPONENTS SERVING EXISTING TO BE REMOVED EQUIPMENT SHALL BE DEMOLISHED AND REMOVED TO POINT OF ORIGIN.

DEMOLITION KEY NOTES:

(1) EXISTING WATER HEATER ABOVE CEILING TO REMAIN.
(2) EXISTING WATER CLOSET TO BE REMOVED BY PLUMBING CONTRACTOR.
(3) EXISTING LAVATORY TO BE REMOVED BY PLUMBING CONTRACTOR.
(4) EXISTING SINK TO BE REMOVED BY PLUMBING CONTRACTOR.
(5) EXISTING FLOOR DRAIN TO BE REMOVED BY PLUMBING CONTRACTOR.

NORTH

PLUMBING DEMOLITION FLOOR PLAN

SCALE 1/4"=1'-0" | 1

pjhm architects

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PDS PocockDesignSolutions Inc.

REGISTERED PROFESSIONAL ENGINEER ANDREW R. GOSSMAN No. M35839 Exp. 3/31/20 MECHANICAL STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

PLUMBING DEMOLITION FLOOR PLAN

P-1.0

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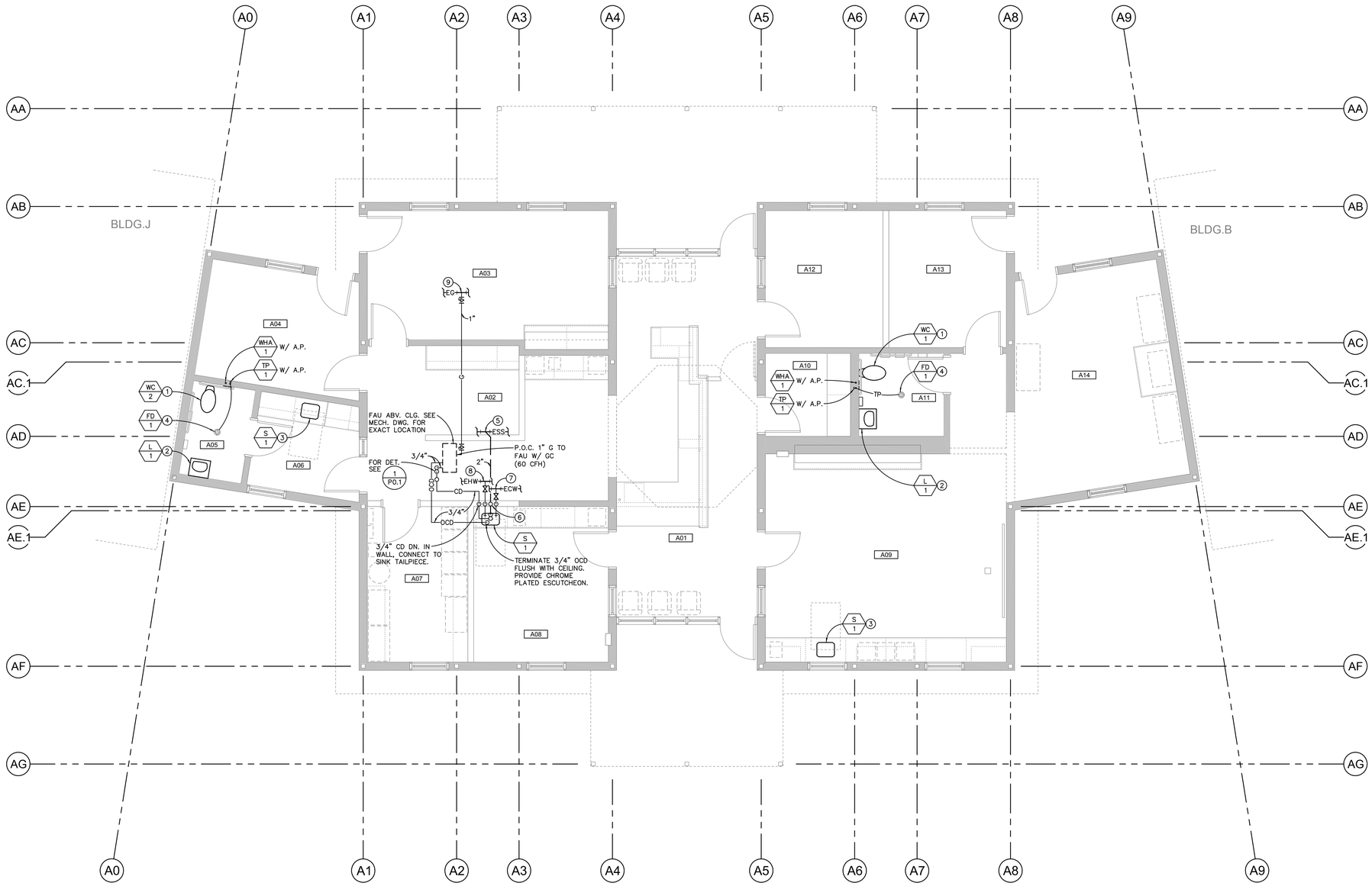

ROOM SCHEDULE

A01	RECEPTION / WAITING	A09	TEACHER WORKROOM
A02	OFFICE	A10	STORAGE ROOM
A03	PRINCIPAL	A11	STAFF RESTROOM
A04	ASSISTANT PRINCIPAL	A12	COUNSELOR OFFICE
A05	NURSE RESTROOM	A13	PSYCHOLOGIST OFFICE
A06	NURSE	A14	TEACHER WORKROOM
A07	STORAGE / WORKROOM		
A08	CONFERENCE		

CONSTRUCTION NOTES:

1. ALL CONDENSATE DRAIN PIPING ABOVE CEILING SHALL SLOPE AT 1% UNLESS OTHERWISE NOTED.
2. BEFORE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF ALL UTILITIES AND PIPING BY PHYSICAL EXCAVATION, AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
3. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES AND POINTS OF CONNECTION PRIOR TO BIDDING PROJECT.
4. WHERE PLANS INDICATE NEW FIXTURES OR EQUIPMENT CONNECTING TO EXISTING SERVICES, PLUMBING CONTRACTOR SHALL MODIFY AND/OR EXTEND EXISTING PIPING OR ROUGH-INS AS REQUIRED TO SUIT THE NEW FIXTURE.

CONSTRUCTION KEY NOTES:

(1) CONTRACTOR SHALL ROUGH-IN AND CONNECT TO EXISTING SERVICES FOR NEW WATER CLOSET.

(2) CONTRACTOR SHALL ROUGH-IN AND CONNECT TO EXISTING SERVICES FOR NEW LAVATORY.

(3) CONTRACTOR SHALL ROUGH-IN AND CONNECT TO EXISTING SERVICES FOR NEW SINK.

(4) CONTRACTOR SHALL ROUGH-IN AND CONNECT TO EXISTING SERVICES FOR NEW FLOOR DRAIN.

(5) P.O.C. NEW 2" WASTE LINE TO EXISTING SEWER LINE BELOW GRADE. FIELD VERIFY EXACT LOCATION PRIOR TO INSTALLATION OF ANY PIPING.

(6) P.O.C. NEW 1-1/2" VENT LINE TO EXISTING VENT THRU ROOF ABOVE CEILING. FIELD VERIFY EXACT LOCATION PRIOR TO INSTALLATION OF ANY PIPING.

(7) P.O.C. NEW 3/4" COLD WATER LINE TO EXISTING COLD WATER LINE ABOVE CEILING. FIELD VERIFY EXACT LOCATION PRIOR TO INSTALLATION OF ANY PIPING.

(8) P.O.C. NEW 3/4" HOT WATER LINE TO EXISTING HOT WATER LINE ABOVE CEILING. FIELD VERIFY EXACT LOCATION PRIOR TO INSTALLATION OF ANY PIPING.

(9) P.O.C. NEW 1" GAS LINE TO EXISTING GAS LINE ABOVE CEILING. FIELD VERIFY EXACT LOCATION PRIOR TO INSTALLATION OF ANY PIPING.

NORTH

SCALE 1/4"=1'-0"

PLUMBING REMODEL FLOOR PLAN

1

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-117236 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 03/25/2019

pjhm architects
LICENSED ARCHITECT KENNETH J. HOEHN NO. C28899 REN. 3/19 STATE OF CALIFORNIA
PDS PocockDesignSolutions Inc.
REGISTERED PROFESSIONAL ENGINEER ANDREW R. GOSSMAN No. M28539 Exp. 3/31/20 MECHANICAL STATE OF CALIFORNIA
LA Office: 837 Traction Ave. #410, Los Angeles, CA 90013 • LA Phone: 213.278.0172 • Web: pjhm.com
SD Office: 804 Pier View Way #103, Oceanside, CA 92054 • SD Phone: 760.730.5527
OC Office: 24461 Ridge Route Dr. #100, Laguna Hills, CA 92653 • OC Phone: 949.496.6191

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

PLUMBING REMODEL FLOOR PLAN

P-2.0

CA GREEN BUILDING STANDARDS NOTES

ENTIRE INSTALLATION SHALL COMPLY WITH THE 2016 CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN) CODE INCLUDING THE FOLLOWING APPLICABLE MANDATORY MEASURES:

1. 5.504.1.3 – PERMANENT HVAC SYSTEM SHALL ONLY BE USED DURING CONSTRUCTION IF NECESSARY TO CONDITION THE BUILDING WITHIN THE REQUIRED TEMPERATURE RANGE FOR MATERIAL AND EQUIPMENT INSTALLATION. IF THE HVAC SYSTEM IS USED DURING CONSTRUCTION, CONTRACTOR SHALL USE MERV 8 MINIMUM RETURN AIR FILTERS. REPLACE ALL FILTERS IMMEDIATELY PRIOR TO OCCUPANCY.
2. 5.504.3 – CONTRACTOR SHALL COVER ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS WITH TAPE, PLASTIC, SHEET METAL OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY DURING STORAGE AND CONSTRUCTION AND UNTIL FINAL STARTUP.
3. 5.504.5.3 – MERV 8 FILTERS ARE REQUIRED FOR HVAC SYSTEMS SERVING REGULARLY OCCUPIED AREAS AND AS INDICATED IN THESE PLANS.
4. 5.504.7 – OUTDOOR SMOKING AREAS SHALL BE MINIMUM 25'–0" FROM ALL BUILDING ENTRIES, OUTDOOR AIR INTAKES, AND OPERABLE WINDOWS.
5. 5.505.1 – INSTALLATION SHALL COMPLY WITH CBC SECTION 1203 AND CHAPTER 14 FOR INDOOR MOISTURE CONTROL.
6. 5.506.2 – DEMAND CONTROL VENTILATION REQUIRED FOR ALL DENSELY OCCUPIED SPACES PER 2016 CALIFORNIA ENERGY CODE REQUIREMENTS.
7. 5.508.1 – HVAC, REFRIGERATION, AND FIRE SUPPRESSION EQUIPMENT SHALL NOT CONTAIN CFCS OR HALONS.

LEGEND

SYMBOL	ABBR.	DESCRIPTION	SYMBOL	ABBR.	DESCRIPTION
	-	SUPPLY AIR RISER		T-STAT	THERMOSTAT
	-	RETURN AIR RISER		H	HUMIDISTAT
	-	EXHAUST AIR RISER		TS	TEMPERATURE SENSOR
	SD	SUPPLY AIR GRILLE		OS	OVERRIDE SWITCH
	RG	RETURN AIR GRILLE		PD	PRESSURE DIFFERENTIAL SWITCH
	EG	EXHAUST AIR GRILLE		S	SWITCH
	SR	SIDEWALL REGISTER		O.C.	ON CENTER
	TG	TRANSFER AIR GRILLE	—HWR—	HWR	HOT-WATER RETURN
	(L)	LINED DUCTWORK	—HWS—	HWS	HOT-WATER SUPPLY
	-	FLEXIBLE CONNECTION	—CHWR—	CHWR	CHILLED-WATER RETURN
	FC	FLEXIBLE CONNECTION	—CHWS—	CHWS	CHILLED-WATER SUPPLY
	-	NEW DUCT (SEE PLAN)		I.D.	INSIDE DIAMETER
	-	EXISTING DUCT (SEE PLAN)		O.D.	OUTSIDE DIAMETER
	-	DEMO DUCT (SEE PLAN)		W/	WITH
	MVD	MANUAL VOLUME DAMPER		S/M	SHEET METAL
	FD	AUTOMATIC FIRE DAMPER		S/S	STAINLESS STEEL
	SFD	SMOKE/FIRE DAMPER		G.C.	GENERAL CONTRACTOR
BDD	BDD	BACKDRAFT DAMPER		VTR	VENT THRU ROOF
	DL	DOOR LOUVER		OSA	OUTSIDE AIR
U.C.	UC	UNDERCUT DOOR 3/4"	—CD—	CD	CONDENSATE DRAIN
—RS—	RS	REFRIGERANT SUCTION LINE		SOV	SHUT-OFF VALVE
—RL—	RL	REFRIGERANT LIQUID LINE		VFD	VARIABLE FREQUENCY DRIVE
	S.D.	DUCT SMOKE DETECTOR		OBD	OPPOSED BLADE DAMPER
	P.O.C.	POINT OF CONNECTION			DIRECTION OF PIPE PITCH (DOWN)
	E	ELECTRICAL CONTRACTOR			DIRECTION OF FLOW
	M	MECHANICAL CONTRACTOR			ANCHOR
					REDUCER OR INCREASER
		GATE VALVE			ECCENTRIC REDUCER
		GLOBE VALVE			TOP CONNECTION, 45° OR 90°
		GATE VALVE W/ 3/4 " HOSE ADAPTER			BOTTOM CONNECTION, 45° OR 90°
		CHECK VALVE			SIDE CONNECTION
		ANGLE GLOBE VALVE			CAPPED OUTLET
		BUTTERFLY VALVE			RISE OR DROP IN PIPE
		BALL VALVE			UNION
		BALANCING VALVE			ORIFICE UNION
		CIRCUIT SETTER			MANUAL AIR VENT
		STRAIGHT-THRU MODULATING CONTROL VALVE			STRAINER
		THREE-WAY MODULATING CONTROL VALVE			THERMOMETER
		AUTOMATIC FLOW CONTROL VALVE			PRESSURE GAGE
		SAFETY OR PRESSURE RELIEF VALVE			WATER FLOW MEASURING DEVICE
		PRESSURE REDUCING VALVE			MONITORED WATER FLOW MEASURING DEVICE
CO2	CO2	CARBON DIOXIDE SENSOR			TEST PLUG (PRESSURE/TEMPERATURE)

GENERAL NOTES

----- GENERAL NOTES -----

1. ENTIRE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE 2016 CALIFORNIA MECHANICAL CODE, 2016 CALIFORNIA BUILDING CODE, AND ALL OTHER APPLICABLE CODES AND REGULATIONS, INCLUDING 2016 CALIFORNIA ENERGY CONSERVATION STANDARDS DIVISION T–24.
2. COORDINATE ENTIRE INSTALLATION OF THE HVAC SYSTEM WITH THE WORK OF ALL OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATION. PROVIDE ALL FITTINGS, OFFSETS, AND TRANSITIONS AS REQUIRED FOR A COMPLETE WORKABLE INSTALLATION. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBILE TO COORDINATE ITEMS TO BE PROVIDED BY OTHER TRADES WHERE MENTIONED IN THE CONTRACT DOCUMENTS PRIOR TO BID – NO EXCEPTIONS.
3. COORDINATE THE LOCATIONS OF ALL CEILING DIFFUSERS, REGISTERS, AND GRILLES WITH THE ARCHITECTURAL REFLECTIVE CEILING PLAN, ELECTRICAL LIGHTING LAYOUT AND ARCHITECTURAL ROOM ELEVATIONS. THE ARCHITECT SHALL BE IMMEDIATELY NOTIFIED OF ANY CONFLICTS PRIOR TO FABRICATION AND INSTALLATION.
4. ALL AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS SHALL BE PROTECTED FORM UNAUTHORIZED ACCESS WITH LOCKING TYPE TAMPER–RESISTANT CAPS.
5. ALL EQUIPMENT, DUCTS, PIPING, AND OTHER DEVICES AND MATERIALS INSTALLED OUTSIDE OF THE BUILDING OR OTHERWISE EXPOSED TO THE WEATHER SHALL BE COMPLETELY WEATHER–PROOFED AND PAINTED TO MATCH, COORDINATE WITH ARCHITECT PRIOR TO PAINTING.
6. ALL DIMENSIONS SHOWN ON THESE PLANS ARE APPROXIMATE AND MUST BE CONFIRMED ON SITE.
7. PRIOR TO OCCUPANCY, THE ENTIRE H.V.A.C. SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH (AABC) ASSOCIATED AIR BALANCE COUNCIL STANDARDS BY AN INDEPENDANT AIR BALANCE CONTRACTOR. CERTIFICATION SHALL BE PROVIDED BY THE CONTRACTOR FOR AIR AND HYDRONIC AS APPLICABLE. SYSTEMS SHALL BE BALANCED AS INDICATED ON PLANS INCLUDING FRESH AIR VENTILATION. WHERE THERE IS A CONFLICT WITH THE MECHANICAL PLANS, THE AIR BALANCE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO BALANCING OF SYSTEM. IF NOT THE AIR BALANCE CONTRACTOR SHALL BEAR ALL COSTS INCURRED FOR WORK THAT MUST BE RE–BALANCED DUE TO CONFLICTS ON CONTRACT DOCUMENTS. CONTRACTOR SHALL PROVIDE THREE COPIES OF THE AIR BALANCE REPORT TO THE ARCHITECT FOR REVIEW AND APPROVAL.
8. FOR INACCESSIBLE AREAS THE CONTRACTOR SHALL PROVIDE ACCESS PANELS FOR ALL DAMPERS, EQUIPMENT, SMOKE DETECTORS, AND CONTROL DEVICES. THESE PANELS SHALL MATCH THE RATING OF THE WALL AND/OR CEILING THAT THEY ARE LOCATED IN. MINIMUM ACCESS PANEL SIZES SHALL BE AS FOLLOWS:

   1) HAND ACCESS: 12"x12"

   2) BODY ACCESS: 30"x30" MIN. WHERE A LARGER ACCESS SIZE IS REQUIRED DUE TO INSTALLATION CONSTRAINTS, THE CONTRACTOR SHALL DO SO AT NO ADDITIONAL COST AND SHALL NOTIFY THE ARCHITECT OF DEVIATIONS PRIOR TO INSTALLATION.
9. ALL EQUIPMENT, ACCESSORIES, AND RELATED PIPING SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL FITTINGS, TRANSITIONS, DAMPERS, VALVES, AND OTHER DEVICES REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
10. MAINTENANCE LABEL SHALL BE AFFIXED TO ALL MECHANICAL EQUIPMENT AND A MAINTENANCE MANUAL SHALL BE PROVIDED FOR THE ARCHITECT'S USE.
11. ALL EQUIPMENT WITH MOVING PARTS SHALL BE PROVIDED WITH FLEXIBLE DUCT AND PIPE CONNECTIONS.
12. ALL HVAC EQUIPMENT SHALL BE CERTIFIED BY THE CALIFORNIA ENERGY COMMISSION TO COMPLY WITH LATEST EFFICIENCY STANDARDS.
13. ALL FRESH AIR INTAKES SHALL MEET CODE REQUIRED CLEARANCES FROM EXHAUST, FLUE, FUEL BURNING APPLIANCE AND PLUMBING VENT OUTLETS. FOR GAS/ELECTRIC AIR CONDITIONING UNITS WHERE THE CODE REQUIRED CLEARANCES ARE NOT MET, A FACTORY FLUE GAS DEFLECTOR AND EXTENSION SHALL BE USED TO MINIMIZE THESE CLEARANCES. CONTRACTOR SHALL DETERMINE LOCATIONS WHERE REQUIRED PRIOR TO BID. THIS SHALL BE PROVIDED AT NO ADDITIONAL COST.
14. CONTRACTOR SHALL VERIFY ALL CLEARANCES AND AVAILIABLE SPACE FOR DUCTWORK PRIOR TO ORDERING AND/OR FABRICATING MATERIAL.
15. CONTRACTOR TO SUBMIT ALL EQUIPMENT, DUCTWORK, AIR DISTRIBUTION DEVICES, AND OTHER ACCESSORIES TO THE ENGINEER FOR APPROVAL PRIOR TO ANY ORDERING OF SUCH ITEMS.
16. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS WITHIN 35 DAYS OF AWARD OF CONTRACT. IF SHOP DRAWINGS ARE NOT PROVIDED TO THE ARCHITECT FOR APPROVAL, AND ANY CONFLICTS OCCUR BETWEEN TRADES, DURING CONSTRUCTION, & ETC. THEN THE CONTRACTOR SHALL BE RESPONSIBLE AND BEAR ALL COST INCURRED FOR ANY REVISIONS AT NO ADDITIONAL COST TO THE ARCHITECT. THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY PRIOR TO FABRICATION AND INSTALLATION OF ANY CONFLICTS BETWEEN TRADES, DURING CONSTRUCTION, & ETC.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR COMMISSIONING OF EQUIPMENT AS STIPULATED ON MECH–1–C FORM ON PLANS UNLESS NOTED OTHERWISE.

----- CONTROLS -----

18. CONTROL SCHEMATICS ARE FOR SEQUENCE ONLY. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR ALL ELECTRICAL DEVICES REQUIRED.
19. ALL LINE VOLTAGE WIRING SHALL BE INSTALLED IN CONDUIT. ALL LINE VOLTAGE CONDUIT AND WIRING, INCLUDING FINAL CONNECTIONS, SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AS INDICATED ON THE ELECTRICAL DRAWINGS OR SPECIFIED IN THE ELECTRICAL SECTION OF THE SPECIFICATIONS. ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS OF ALL GOVERNING BODIES HAVING JURISDICTION THEREOF.
20. ALL LOW VOLTAGE CONDUIT AND WIRING AS APPLICABLE, INCLUDING FINAL CONNECTIONS, SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR AS INDICATED ON THE MECHANICAL DRAWINGS OR SPECIFIED IN THE MECHANICAL SECTION OF THE SPECIFICATIONS.

    A1) ALL LOW VOLTAGE WIRING SHALL BE INSTALLED IN CONDUIT IN INACCESSIBLE AREAS.

    A2) ALL LOW VOLTAGE WIRING SHALL BE PLENUM – RATED ABOVE ACCESSIBLE CEILINGS.

    B) WHERE THE CONTROLS CONTRACTOR IS RETAINED BY THE OWNER, THEY SHALL BE RESPONSIBLE FOR THE FOLLOWING:

    1) FURNISH AND INSTALL ALL DEVICES, WIRING, AND TERMINATIONS REQUIRED FOR A COMPLETE AND FUNCTIONAL INSTALLATION.

    2) COORDINATE ALL WORK AND REQUIREMENTS WITH OTHER TRADES INCLUDING GENERAL, MECHANICAL, AND ELECTRICAL CONTRACTORS.

    3) CONTRACTOR SHALL FOLLOW ALL SUBMITTAL REQUIREMENTS PER DRAWINGS AND SPECIFICATIONS.
21. ALL THERMOSTATS SHALL BE OF THE ELECTRONIC, PROGRAMMABLE, AUTOMATIC CHANGEOVER TYPE TO SEQUENCE HEATING OR COOLING. SET POINT RANGE SHALL BE 10 DEGREES F. BETWEEN FULL HEATING AND COOLING. THEY SHALL HAVE CAPABILITY OF TERMINATING ALL HEATING AT A TEMPERATURE NO MORE THAN 70 DEGREES F., AND COOLING AT A TEMPERATURE NOT LESS THAN 78 DEGREES F. ADJUSTABLE TEMPERATURE DIFFERENTIAL SHALL BE 1– 1/2 DEGREES F. CONTROL LIMITS SHALL BE FROM 55 DEGREES F. TO 85 DEGREES F. MOUNT AT 48 INCHES ABOVE FLOOR OR AS REQUIRED BY LOCAL AUTHORITIES OR HANDICAP CODES.

    NOTES: 1) THERMOSTATS THAT ARE PART OF AN ENERGY MANAGEMENT SYSTEM SHALL FOLLOW CONTROL SPECIFICATIONS AND DRAWING REQUIREMENTS.

    2) SHOULD THE LOCATION OF THE THERMOSTAT NOT MEET THE ADA HEIGHT REQUIREMENTS DUE TO OBSTRUCTIONS, THEN AN ALTERNATE LOCATION SHALL BE PROPOSED OR REQUESTED BY THE CONTRACTOR THAT SHALL BE APPROVED BY THE ARCHITECT.
22. CONTROLS CONTRACTOR AND AIR BALANCE CONTRACTOR SHALL COORDINATE WORK AND PERFORM NECESSARY TASKS AS REQUIRED TO OBTAIN AIR AND WATER FLOW QUANTITIES FOR SYSTEMS SHOWN HEREIN.
23. CONTROLS SHALL BE PROVIDED TO PROVIDE THE MINIMUM RATE OF OUTDOOR AIR REQUIRED BY THE STATE ENERGY REGULATIONS.

----- AIR DISTRIBUTION -----

24. ALL DUCTWORK SHALL BE SHEET METAL CONSTRUCTED OR SPIRAL, ERECTED, AND TESTED IN ACCORDANCE WITH THE MOST RESTRICTIVE OF LOCAL REGULATIONS, PROCEDURES DETAILED IN THE ASHRAE HANDBOOK OF FUNDAMENTALS, CHAPTER 6 OF THE MECHANICAL CODE, OR THE APPLICABLE STANDARDS ADOPTED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION.
25. ALL FLEXIBLE DUCTWORK SHALL NOT EXCEED SEVEN FEET IN LENGTH TO RESPECTIVE DIFFUSERS, GRILLES, AND REGISTERS, OR OTHER AIR DEVICES.
26. PROVIDE SEISMIC RESTRAINTS TO ALL DUCTWORK, PIPE, AND EQUIPMENT SUPPORTS IN ACCORDANCE WITH THE LATEST SMACNA GUIDELINES FOR SEISMIC RESTRAINT OF MECHANICAL SYSTEMS. SUSPENDED EQUIPMENT SHALL BE PROVIDED WITH SEISMIC ANCHORAGE AND ISOLATION SUPPORTS.
27. ALL DUCT TURNS IN RECTANGULAR SUPPLY, RETURN, AND EXHAUST DUCTS SHALL HAVE TURNING VANES UNLESS OTHERWISE NOTED.
28. DUCTWORK HANDLING CONDITIONED AIR SHALL BE INSULATED OR LINED AS INDICATED ON DRAWINGS. SUPPLY AND RETURN DUCT INSULATION SHALL BE MIN. 1.5" THICK, 3/4 LB./CUBIC FT. DENSITY AND HAVE A MIN. VALUE OF R–8 WHERE LOCATED IN ONE OR MORE OF THE FOLLOWING SPACES:

    A) OUTDOORS, OR

    B) IN A SPACE BETWEEN THE ROOF AND AN INSULATED CEILING, OR

    C) IN A SPACE DIRECTLY UNDER A ROOF WITH FIXED VENTS OR OPENINGS TO THE OUTSIDE OR UNCONDITIONED SPACES, OR

    D) IN AN UNCONDITIONED CRAWLSPACE; OR

    E) IN OTHER UNCONDITIONED SPACES

    PER 2016 CEC, OTHERWISE PROVIDE R–4.2 WHEN LOCATED IN CONDITIONED ATTIC SPACES ABOVE CEILINGS . ALL DUCTWORK EXPOSED ON ROOF SHALL BE INTERNALLY LINED WITH 1.5" THICK, 1.5LB./CUBIC FT. DENSITY DUCT LINER UNLESS OTHERWISE INDICATED OR SPECIFIED. ALL DUCT SIZES ARE SHEET METAL SIZES. ALL DUCT JOINTS SHALL BE SEALED PER CHAPTER 6 MECHANICAL CODE REQUIREMENTS. PROVIDE PIPING AND DUCT INSULATION IN ACCORDANCE WITH THE LATEST STANDARDS OF THE CALIFORNIA ENERGY COMMISSION.
29. ALL INSULATION, DUCT LINING, AND MATERIALS EXPOSED WITHIN DUCTS OR PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME–SPREAD INDEX NOT GREATER THAN TWENTY–FIVE (25) AND A SMOKE DEVELOPED INDEX NOT GREATER THAN FIFTY (50) WHEN TESTED AS A COMPOSITE PER APPLICABLE TESTING STANDARDS.
30. MANUAL VOLUME DAMPERS SHALL BE PROVIDED IN ALL DUCT BRANCHES TO INDIVIDUAL DIFFUSERS, GRILLES, AND REGISTERS, AS WELL AS FRESH AIR INTAKE DUCTS. DAMPERS SHALL BE LOCATED AT THE BRANCH DUCT LOCATIONS. THE MECHANICAL CONTRACTOR SHALL COORDINATE LOCATIONS OF DAMPERS WITH THE AIR BALANCE CONTRACTOR, SO THEY ARE ACCESSIBLE PRIOR TO INSTALLATION. IN LOCATIONS WHERE THESE DAMPERS ARE INACCESSIBLE, CABLE OPERATED ADJUSTMENT CONTROLS SHALL BE PROVIDED AT NO ADDITIONAL COST. OPPOSED BLADE DAMPERS SHALL NOT BE PERMITTED UNLESS NOTED OTHERWISE.
31. AUTOMATIC FIRE DAMPER REQUIREMENTS ARE AS FOLLOWS:

    A) PROVIDE AUTOMATIC FIRE DAMPERS AT ALL PENETRATIONS OF FIRE–RATED CEILINGS AND WALLS THROUGHOUT. CONTRACTOR SHALL COORDINATE FIRE–RATED AREAS WITH THE ARCHITECTURAL DRAWINGS AND OTHER TRADES PRIOR TO INSTALL AND SHALL NOTIFY PERTINENT PARTIES PRIOR TO ANY WORK PERFORMED IN THESE AREAS. IN ADDITION, CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE PROPER ACCESS FOR DAMPERS INSTALLED. THE DAMPER FIRE RATING SHALL BE COMPATIBLE WITH THE CEILING/WALL RATING.

    B) LOCATION OF FIRE–RATED CEILINGS AND WALLS ARE AS INDICATED ON THE ARCHITECTURAL DRAWINGS.

    C) FIRE AND/OR SMOKE DAMPER(S) SHALL BE PROVIDED AS REQUIRED BY THE LATEST CALIFORNIA BUILDING CODE.

    D) CONTRACTOR SHALL FURNISH FLUSH MOUNTED FIRE AND/OR SMOKE DAMPERS, SO THAT DAMPER DO NOT EXTEND PASS WALLS, FOR AREAS WITHOUT CEILINGS FOR QUALITY WORKMENSHIP.
32. CONTRACTOR SHALL PERFORM MAINTENANCE ON ALL EXISTING FIRE AND SMOKE/FIRE DAMPERS PER MANUFACTURER'S PROVISIONS. ANY FAILURES OR NON–OPERATING DAMPERS SHALL BE REPLACED AND SHALL CONFORM TO CURRENT CODE REGULATIONS.
33. ALL DUCTWORK PASSING THROUGH FIRE RATED CORRIDORS AND LOBBIES SHALL BE MIN. 26 GAGE SHEET METAL CONSTRUCTION.
34. ALL DUCTWORK, PIPING, CONDUIT, & ETC. PENETRATING FIRE RATED CONSTRUCTION SHALL HAVE APPROVED FIRE STOPPING.
35. DUCT SYSTEMS USED WITH BLOWER TYPE EQUIPMENT WHICH ARE PORTIONS OF A HEATING, COOLING, ABSORPTION, EVAPORATIVE COOLING OR OUTDOOR AIR VENTILATION SYSTEM SHALL BE SIZED IN ACCORDANCE WITH CHAPTER 17 OF THE CALIFORNIA MECHANICAL CODE.

FORCED AIR UNIT SCHEDULE

SYM	MFR & MODEL #	AREA SERVICED	CFM	OSA CFM	ESP (IN. WG)	FAN HP	INPUT (BTU/h)	OUTPUT (BTU/h)	AFUE (%)	ELECTRICAL				FAU WT (LBS)	CC WT (LBS)	TOTAL WT (LBS)	REMARKS	WIRING DETAIL	ANCHORAGE DETAIL
										V	PH	MCA	MOCP						
FAU 1	CARRIER 59SP2A060	RECEPTION/ WAITING A01	1200	140	0.5	1/2	60,000	56,000	92.0	115	1	7.1	15	125	50	175	1, 2, 3	8 / M-3.0	6 / M-3.0

1. FILTER KIT WITH MERV 8 FILTER.
2. CONDENSATE SWITCH.
3. CONDENSATE NEUTRALIZATION KIT.

CONDENSING UNIT SCHEDULE

SYM	MFR & MODEL #	COOLING CAPACITY (BTU/HR)	SEER/ EER	ELECTRICAL					UNIT WT (LB)	SERVICE	REMARKS	ANCHORAGE DETAIL
				V	PH	HZ	MCA	MOCP				
CU 1	CARRIER 24AAA636	60,000	15.0/ 13.0	208	1	60	18.2	30	205	CC 1	1, 2, 3	7 / M-3.0

1. NEOPRENE PADS.
2. 7/8"Ø VAPOR, 3/8"Ø LIQUID REFRIGERANT PIPES. CONTRACTOR SHALL VERIFY PIPE SIZE WITH MANUFACTURER BASED ON FINAL PIPE LENGTH AND ADJUST AS REQUIRED PRIOR TO CONSTRUCTION.
3. LONG LINE APPLICATION

DX COOLING COIL SCHEDULE

SYM	MFR & MODEL #	AREA SERVICED	CFM	EAT		LAT	
				DB (°F)	WB (°F)	DB (°F)	WB (°F)
CC 1	CARRIER CNPHP3617	CLASSROOM	1200	80.0	67.0	58.9	58.2

AIR DISTRIBUTION SCHEDULE

SYM.	MANUF & MODEL	NECK SIZE	FACE SIZE	CFM RANGE	MAX. NECK VELOCITY	MAX. N.C.	T. P. DROP	TYPE	DAMPER	REMARKS
SD–1	TITUS PAS	6"Ø 8"Ø 10"Ø 12"Ø 14"Ø 16"Ø 18"Ø	24"x24"	0 - 80 85 - 175 180 - 275 280 - 390 395 - 480 485 - 600 605 - 780	500	25	0.075	MODULAR PERFOR.	MVD	FRAME TYPE 3 FOR T-BAR
RG–1	TITUS PAR	6"Ø 8"Ø 10"Ø 12"Ø 14"Ø 16"Ø 18"Ø	24"x24"	0 - 80 85 - 175 180 - 275 280 - 390 395 - 480 485 - 600 605 - 780	500	25	0.016	PERFOR.	MVD	FRAME TYPE 3 FOR T-BAR PROVIDE WITH PRICE RAC RETURN AIR CANOPY IN PLENUM
SD–2	TITUS 300RS	6"x6" 8"x8" 10"x10" 12"x12" 14"x14" 16"x16" 18"x18" 22"x20"	8"x8" 10"x10" 12"x12" 14"x14" 16"x16" 18"x18" 20"x20" 24"x22"	0 - 90 95 - 195 200 - 300 305 - 450 455 - 590 595 - 800 805 - 1040 1045 - 1400	500	25	0.016	LOUVERED ADJUSTABLE	MVD	BORDER TYPE N FOR SIDEWALL MOUNT
RG–2	TITUS 350ZR	6"x6" 8"x8" 10"x10" 12"x12" 14"x14" 16"x16" 18"x18" 22"x20"	8"x8" 10"x10" 12"x12" 14"x14" 16"x16" 18"x18" 20"x20" 24"x22"	0 - 90 95 - 195 200 - 300 305 - 450 455 - 590 595 - 800 805 - 1040 1045 - 1400	500	25	.067	LOUVERED ADJUSTABLE	MVD	BORDER TYPE N FOR SIDEWALL MOUNT

LEGEND

CFM
AIR DISTRIBUTION DEVICE

SD SUPPLY DIFFUSER
SR SUPPLY REGISTER
RG RETURN GRILLE
EG EXHAUST GRILLE
TG TRANSFER GRILLE

NOTES:
1. NOT ALL DIFFUSER/GRILLE TYPES OR SIZES MAY BE USED ON THIS PROJECT.

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SS ☑ FLS ☑ ACS ☑
DATE: 03/25/2019

pjhm architects

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PDS PocockDesignSolutions Inc.

REGISTERED PROFESSIONAL ENGINEER ANDREW R. GOSSMAN No. M35839 Exp. 3/31/20 MECHANICAL STATE OF CALIFORNIA

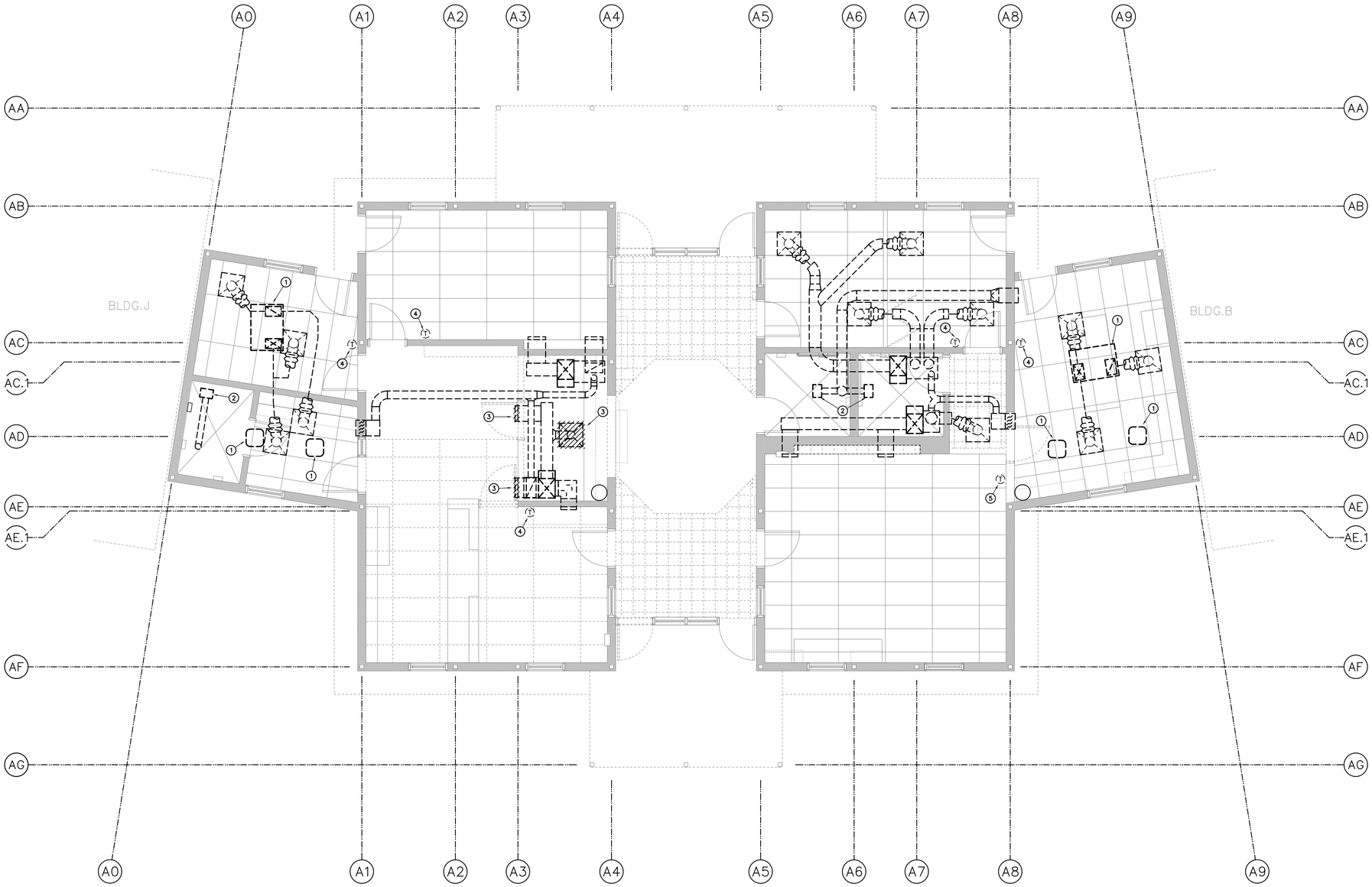
OC Office: 24461 Ridge Route Dr. #100, Laguna Hills, CA 92653 • OC Phone: 949.496.6191 • SD Office: 804 Pier View Way #103, Oceanside, CA 92054 • SD Phone: 760.730.5527 • LA Office: 837 Traction Ave. #410, Los Angeles, CA 90013 • LA Phone: 213.278.0172 • Web: pjhm.com

TOM HAWKINS ELEMENTARY SCHOOL ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

MECHANICAL LEGEND, SCHEDULES, AND GENERAL NOTES

M-0.1



DEMOLITION NOTES:

1. DISTRICT SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL ITEMS TO BE REMOVED. CONTRACTOR SHALL VERIFY ALL SUCH ITEMS NOT REFUSED BY DISTRICT SHALL BE REMOVED INTACT AND FULLY FUNCTIONAL BY CONTRACTOR AND RETURNED TO DISTRICT. ALL ITEMS REFUSED BY DISTRICT SHALL BE PROPERLY DISPOSED OF BY CONTRACTOR.
2. GENERAL CONTRACTOR SHALL PATCH ALL OPENINGS IN WALLS, ROOF, ETC. THAT WILL NOT BE RE-USED FOR FUTURE WORK. COORDINATE AS NECESSARY WITH OTHER TRADES.
3. PRIOR TO ANY WORK BEING DONE, CONTRACTOR SHALL MAKE A CAREFUL EVALUATION OF THE EXISTING CONDITIONS AND VERIFY ALL METHODS OF REMOVAL AND INSTALLATION OF MECHANICAL EQUIPMENT.
4. CONTRACTOR SHALL COORDINATE ALL DEMOLITION WORK WITH THE WORK OF ALL OTHER TRADES.
4. ALL DUCTWORK SHOWN WITH DASHED LINE IS EXISTING TO REMAIN.

DEMOLITION KEY NOTES:

(1) EXISTING UNITS ON ROOF TO REMAIN.
(2) EXISTING CEILING EXHAUST FANS TO REMAIN.
(3) DEMO EXISTING GRILLES.
(4) EXISTING THERMOSTAT TO REMAIN.
(5) EXISTING THERMOSTAT TO BE RELOCATED. SEE M-2.0 FOR NEW LOCATION.

NORTH

MECHANICAL DEMOLITION FLOOR PLAN

SCALE 1/4"=1'-0" | 1

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APP. 02-117236 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 03/25/2019

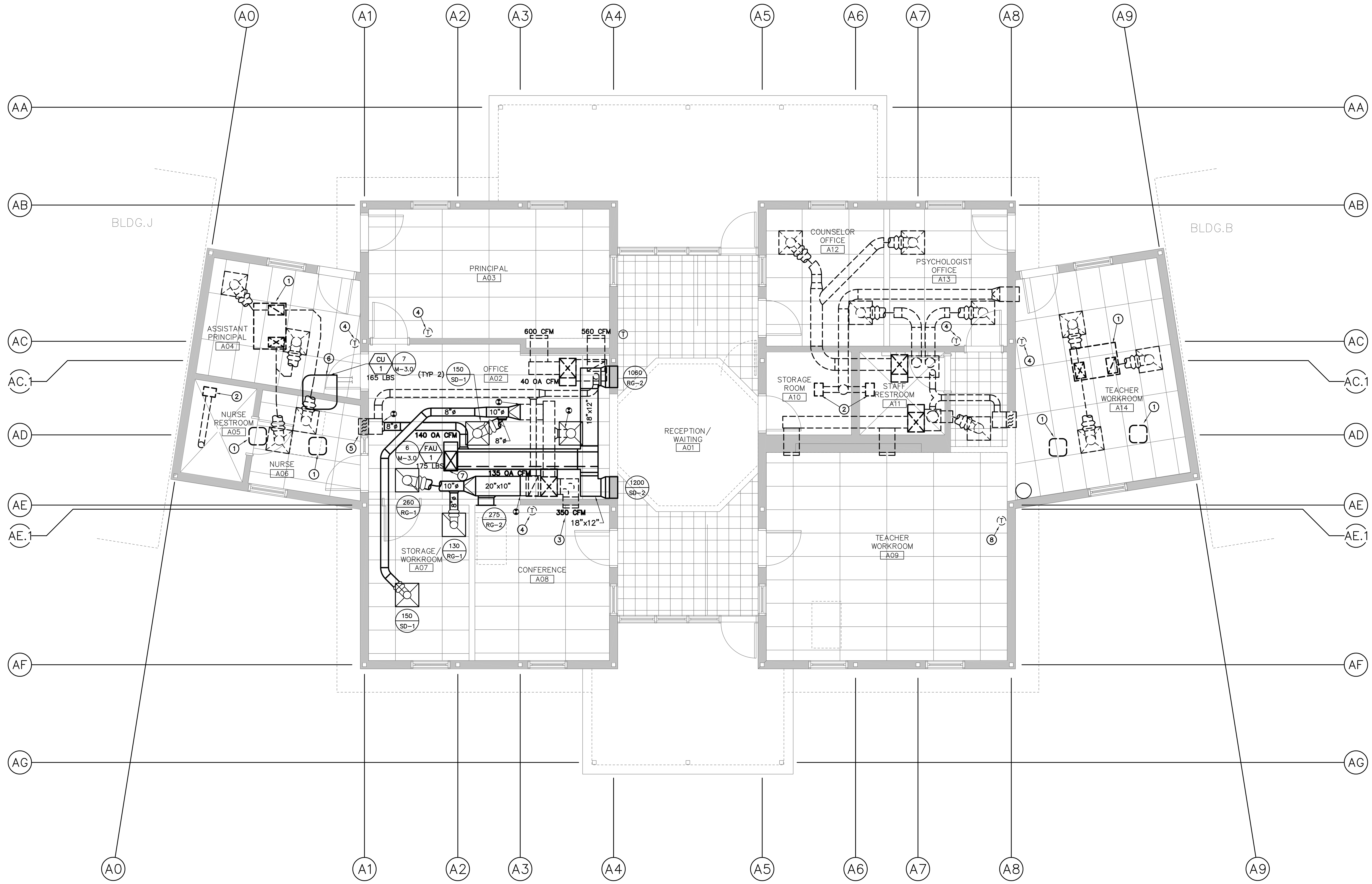
pjhm architects
LICENSED ARCHITECT JOSEPH J. TOMA NO. C28889 REN. 3/19 STATE OF CALIFORNIA
PDS PocockDesignSolutions Inc.
REGISTERED PROFESSIONAL ENGINEER ANDREW R. GOSSMAN No. M29539 Exp. 3/31/20 MECHANICAL STATE OF CALIFORNIA
LA Phone: 213.278.0172 • **Web:** pjhm.com
LA Office: 837 Traction Ave. #410, Los Angeles, CA 90013 • **SD Phone:** 760.730.5527 • **SD Office:** 804 Pier View Way #103, Oceanside, CA 92054 • **OC Phone:** 949.496.6191 • **OC Office:** 24461 Ridge Route Dr. #100, Laguna Hills, CA 92653

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

MECHANICAL DEMOLITION
FLOOR PLAN

M-1.0



CONSTRUCTION NOTES:

1. COORDINATE ENTIRE INSTALLATION OF THE HVAC SYSTEM WITH THE WORK OF ALL OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATION. PROVIDE ALL FITTINGS, OFFSETS, AND TRANSITIONS REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
2. BEFORE COMMENCEMENT OF WORK, THE MECHANICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS AND DIMENSIONS OF ALL EXISTING EQUIPMENT AND ELECTRICAL SERVICES IN THE AREA OF NEW CONSTRUCTION AND NOTIFY THE DISTRICT OF ANY DISCREPANCIES.
3. FRESH AIR INTAKES SHALL BE 10'–0" MIN. AWAY FROM ALL EXHAUST OUTLETS, PLUMBING VENTS, AND FLUES.
4. CONTRACTOR SHALL COORDINATE EXACT EQUIPMENT PAD SIZES AND LOCATIONS WITH OTHER TRADES PRIOR TO INSTALLATION.
5. MAINTAIN MANUFACTURER MIN. CLEARANCES ON ALL ROOF–TOP MECHANICAL EQUIPMENT.

CONSTRUCTION KEY NOTES:

(1) EXISTING UNITS ON ROOF TO REMAIN.
(2) EXISTING CEILING EXHAUST FANS TO REMAIN.
(3) REBALANCE CFM TO VALUE INDICATED.
(4) EXISTING THERMOSTAT TO REMAIN.
(5) REBALANCE OA CFM'S TO VALUES INDICATED.
(6) CONDENSING UNIT ON ROOF ABOVE.
(7) FORCED AIR UNIT ON MEZZANINE ABOVE.
(8) EXISTING THERMOSTAT RELOCATED TO NEW LOCATION.

MECHANICAL REMODEL FLOOR PLAN SCALE 1/4"=1'–0" 1

IDENTIFICATION STAMP
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JEFFERSON SCHOOL DISTRICT

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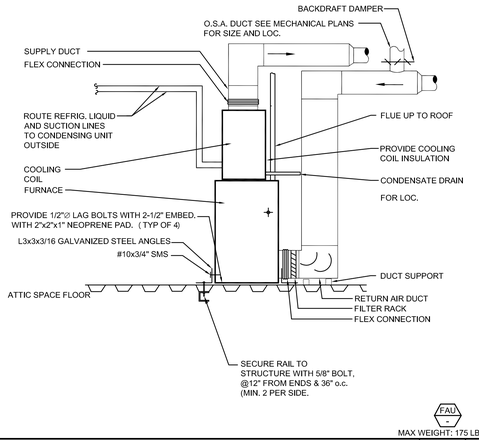
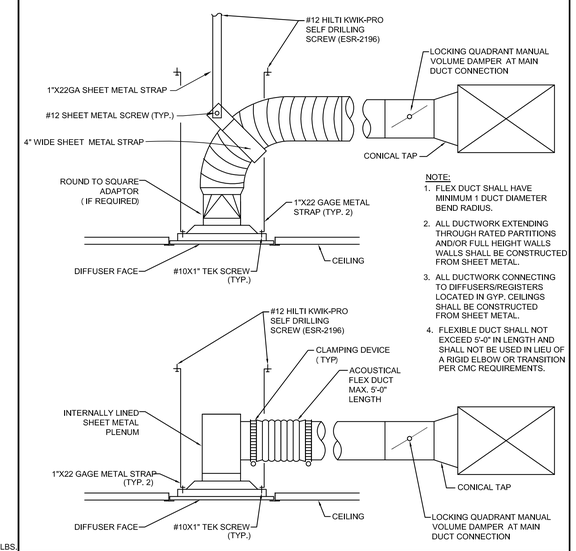
MECHANICAL REMODEL FLOOR PLAN

M-2.0



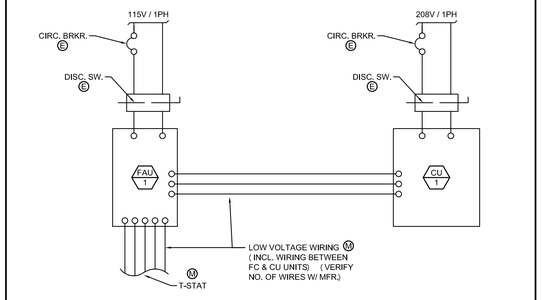
TYPICAL FURNACE ANCHORAGE DETAIL

SCALE: NONE | 6



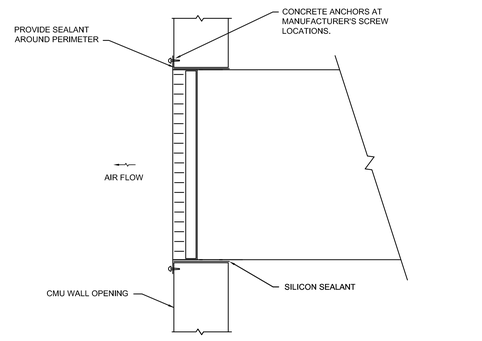
TYPICAL CEILING DIFFUSER DETAIL

SCALE: NONE | 3



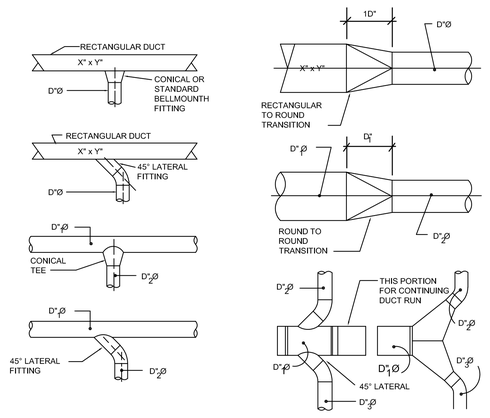
TYPICAL CONDENSING UNIT WIRING DIAGRAM DETAIL

SCALE: NONE | 8



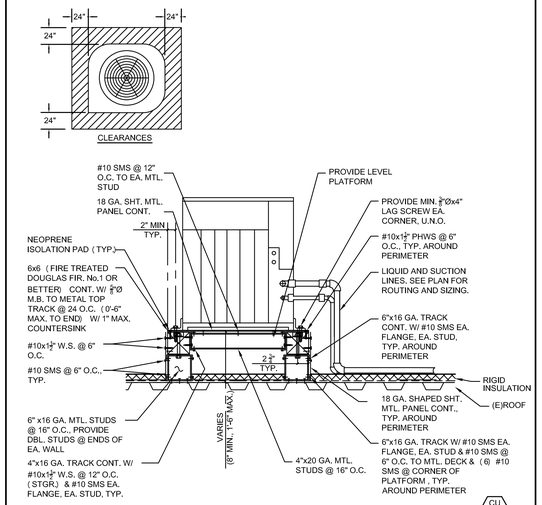
TYPICAL SIDEWALL DIFFUSER ANCHORAGE DETAIL

SCALE: NONE | 5



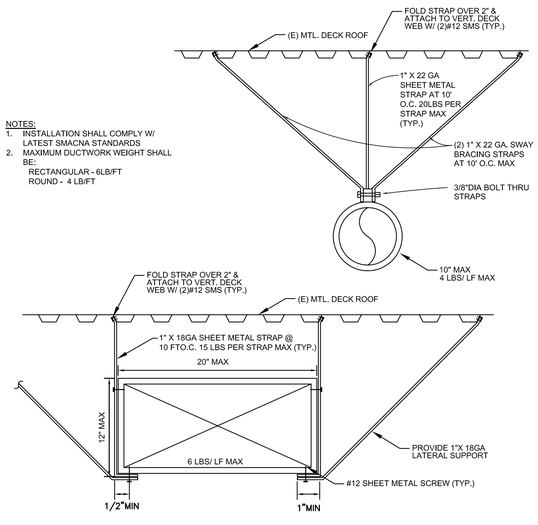
TYPICAL DUCTWORK TRANSITION DETAIL

SCALE: NONE | 2



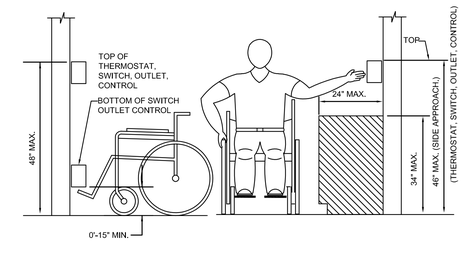
TYPICAL CONDENSING UNIT ANCHORAGE DETAIL

SCALE: NONE | 7



TYPICAL DUCT ANCHORAGE DETAIL KITCHEN BUILDING

SCALE: NONE | 4



TYPICAL CONTROL DEVICE DETAIL

SCALE: NONE | 1

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TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

MECHANICAL DETAILS

M-3.0

Project Name:	Tom Hawkins Elementary School	NRCC-PRF-01-E	Page 1 of 18
Project Address:	475 Darlene Ln Tracy 95377	Calculation Date/Time:	12:03, Thu, Dec 13, 2018
Compliance Scope:	ExistingAlteration	Input File Name:	Hawkins ES - Heat Load Calcs.cibd16x

A. PROJECT GENERAL INFORMATION

1.	Project Location (city)	Tracy	8.	Standards Version	Compliance2016
2.	CA Zip Code	95377	9.	Compliance Software (version)	EnergyPro 7.2
3.	Climate Zone	12	10.	Weather File	MERCED_724815_CZ2010.epw
4.	Total Conditioned Floor Area in Scope	370 ft²	11.	Building Orientation (deg)	(N) 0 deg
5.	Total Unconditioned Floor Area	0 ft²	12.	Permitted Scope of Work	ExistingAlteration
6.	Total # of Stories (Habitable Above Grade)	1	13	Building Type(s)	Nonresidential
7.	Total # of dwelling units	0	14	Gas Type	NaturalGas

B. COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kBtu/ft ²-yr) § 140.1

BUILDING COMPLIES

1. Energy Component	2. Standard Design (TDV)	3. Proposed Design (TDV)	4. Compliance Margin (TDV)	5. Percent Better than Standard
Space Heating	32.08	20.33	11.75	36.6%
Space Cooling	130.56	88.67	41.89	32.1%
Indoor Fans	142.68	119.19	23.49	16.5%
Heat Rejection	--	--	--	--
Pumps & Misc.	--	--	--	--
Domestic Hot Water	--	--	--	--
Indoor Lighting	27.59	33.11	-5.52	-20.0%
COMPLIANCE TOTAL	**332.91**	**261.30**	**71.61**	**21.5%**
Receptacle	14.24	14.24	0.0	0.0%
Process	--	--	--	--
Other Ltg	--	--	--	--
Process Motors	--	--	--	--
TOTAL	**347.15**	**275.54**	**71.6**	**20.6%**

Project Name:	Tom Hawkins Elementary School	NRCC-PRF-01-E	Page 2 of 18
Project Address:	475 Darlene Ln Tracy 95377	Calculation Date/Time:	12:03, Thu, Dec 13, 2018
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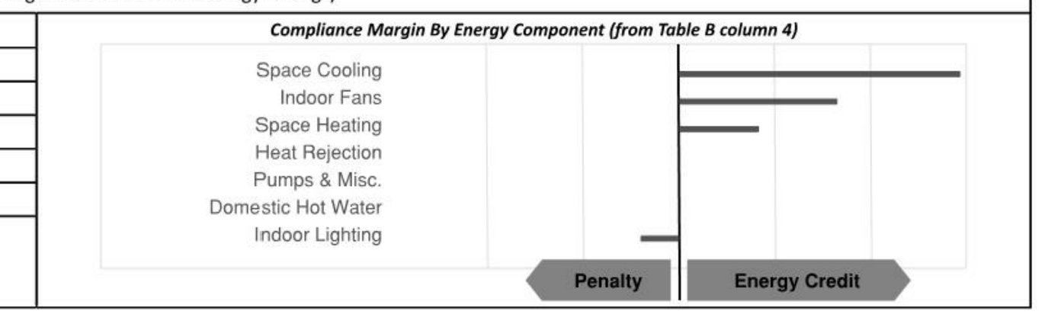
C. PRIORITY PLAN CHECK/ INSPECTION ITEMS (in order of highest to lowest TDV energy savings)

1st	Space Cooling: Check envelope and mechanical
2nd	Indoor Fans: Check envelope and mechanical
3rd	Space Heating: Check envelope and mechanical
4th	Heat Rejection: Check envelope and mechanical
5th	Pumps & Misc.: Check mechanical
6th	Domestic Hot Water: Check mechanical
7th	Indoor Lighting: Check lighting

Compliance Margin By Energy Component (from Table B column 4)



D. EXCEPTIONAL CONDITIONS

The building does not include service water heating. Verify that service water heating is not required and is not included in the design.

This project uses the Simplified Geometry Performance Modeling Approach which is not capable of modeling daylighting controls and assumes the prescriptive Secondary Daylit Control requirements are met. PRESCRIPTIVE COMPLIANCE documentation (form NRCC-LTI-02-E) for the requirements of section 140.6(d) Automatic Daylighting Controls in Secondary Daylit Zones is required.

E. HERS VERIFICATION

This Section Does Not Apply

F. ADDITIONAL REMARKS

None Provided

Project Name:	Tom Hawkins Elementary School	NRCC-PRF-01-E	Page 3 of 18
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Compliance Scope:	ExistingAlteration	Input File Name:	Hawkins ES - Heat Load Calcs.cibd16x

G. COMPLIANCE PATH & CERTIFICATE OF COMPLIANCE SUMMARY

Identify which building components use the performance or prescriptive path for compliance. "NA"= not in project

For components that utilize the performance path, indicate the sheet number that includes mandatory notes on plans.

Building Component	Compliance Path		Compliance Forms *(required for submittal)*	Location of Mandatory Notes on Plans
Envelope	☒	Performance	NRCC-PRF-ENV-DETAILS (section of the NRCC-PRF-01-E)	
	☐	Prescriptive	NRCC-ENV-01 / 02 / 03 / 04 / 05 / 06-E	
	☐	NA		
Mechanical	☒	Performance	NRCC-PRF-MCH-DETAILS (section of the NRCC-PRF-01-E)	
	☐	Prescriptive	NRCC-MCH-01 / 02 / 03 / 04 / 05 / 06 / 07-E	
	☐	NA		
Domestic Hot Water	☐	Performance	NRCC-PRF-PLB-DETAILS (section of the NRCC-PRF-01-E)	
	☒	Prescriptive	NRCC-PLB-01-E	
	☐	NA		
Lighting (Indoor Conditioned)	☐	Performance	NRCC-PRF-LTI-DETAILS (section of the NRCC-PRF-01-E)	
	☒	Prescriptive	NRCC-LTI-01 / 02 / 03 / 04 / 05-E	
	☐	NA		
Covered Process: Commercial Kitchens	☐	Performance	S2 (section of the NRCC-PRF-01-E)	
	☐	Prescriptive	NRCC-PRC-01/ 03-E	
	☒	NA		
Covered Process: Computer Rooms	☐	Performance	S3 (section of the NRCC-PRF-01-E)	
	☐	Prescriptive	NRCC-PRC-01/ 04-E	
	☒	NA		
Covered Process: Laboratory Exhaust	☐	Performance	S4 (section of the NRCC-PRF-01-E)	
	☐	Prescriptive	NRCC-PRC-01/ 09-E	
	☒	NA		

Project Name:	Tom Hawkins Elementary School	NRCC-PRF-01-E	Page 4 of 18
Project Address:	475 Darlene Ln Tracy 95377	Calculation Date/Time:	12:03, Thu, Dec 13, 2018
Compliance Scope:	ExistingAlteration	Input File Name:	Hawkins ES - Heat Load Calcs.cibd16x

G. COMPLIANCE PATH & CERTIFICATE OF COMPLIANCE SUMMARY

The following building components are only eligible for prescriptive compliance. Indicate which are relevant to the project.				*The following building components may have mandatory requirements per Part 6. Indicate which are relevant to the project.*			
Yes	**NA**	**Prescriptive Requirement**	**Compliance Forms**	**Yes**	**NA**	**Mandatory Requirement**	**Compliance Forms**
☐	☒	Lighting (Indoor Unconditioned) §140.6	NRCC-LTI-01 / 02 / 03 / 04 / 05-E	 ☐ ☐	 ☒ ☒	Commissioning: §120.8 Simple Systems Complex Systems	 NRCC-CXR-01 / 02 / 03 / 05-E NRCC-CXR-01 / 02 / 04 / 05-E
☐	☒	Lighting (Outdoor) §140.7	NRCC-LTO-01 / 02 / 03-E	☐	☒	Electrical: §130.5	NRCC-ELC-01-E
☐	☒	Lighting (Sign) §140.8	NRCC-LTS-01-E	☐	☒	Solar Ready: §110.10	NRCC-SRA-01 / 02-E
☐	☒	Solar Thermal Water Heating: §140.5	NRCC-STH-01-E	 ☐ ☐ ☐ ☐ ☐	 ☒ ☒ ☒ ☒ ☒	Covered Process: §120.6 Parking Garage Commercial Refrigeration Warehouse Refrigeration Compressed Air Process Boilers	NRCC-PRC-01-E NRCC-PRC-02-E NRCC-PRC-05-E NRCC-PRC-06/07/08-E NRCC-PRC-10-E NRCC-PRC-11-E

Project Name:	Tom Hawkins Elementary School	NRCC-PRF-01-E	Page 5 of 18
Project Address:	475 Darlene Ln Tracy 95377	Calculation Date/Time:	12:03, Thu, Dec 13, 2018
Compliance Scope:	ExistingAlteration	Input File Name:	Hawkins ES - Heat Load Calcs.cibd16x

H. CERTIFICATE OF INSTALLATION, CERTIFICATE OF ACCEPTANCE & CERTIFICATE OF VERIFICATION SUMMARY (NRCI/NRCA/NRCV) –
Documentation Author to indicate which Certificates must be submitted for the features to be recognized for compliance
(Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).
See Tables G. and H. in MCH and LTI Details Sections for Acceptance Tests and forms by equipment.

Building Component	Compliance Forms *(required for submittal)*	Confirmed Pass	Confirmed Fail
Envelope	☒ NRCI-ENV-01-E - For all buildings	☐	☐
	☒ NRCA-ENV-02-F- NFRC label verification for fenestration	☐	☐
Mechanical	☒ NRCI-MCH-01-E - For all buildings with Mechanical Systems	☐	☐
	☒ NRCA-MCH-02-A- Outdoor Air	☐	☐
	☒ NRCA-MCH-03-A – Constant Volume Single Zone HVAC	☐	☐
	☐ NRCA-MCH-04-H- Air Distribution Duct Leakage	☐	☐
	☐ NRCA-MCH-05-A- Air Economizer Controls	☐	☐
	☐ NRCA-MCH-06-A- Demand Control Ventilation	☐	☐
	☒ NRCA-MCH-07-A – Supply Fan Variable Flow Controls	☐	☐
	☐ NRCA-MCH-08-A- Valve Leakage Test	☐	☐
	☐ NRCA-MCH-09-A – Supply Water Temp Reset Controls	☐	☐
	☐ NRCA-MCH-10-A- Hydronic System Variable Flow Controls	☐	☐
	☐ NRCA-MCH-11-A – Auto Demand Shed Controls	☐	☐
	☐ NRCA-MCH-12-A- Packaged Direct Expansion Units	☐	☐
	☐ NRCA-MCH-13-A- Air Handling Units and Zone Terminal Units	☐	☐
	☐ NRCA-MCH-14-A- Distributed Energy Storage	☐	☐
	☐ NRCA-MCH-15-A – Thermal Energy Storage	☐	☐
	☐ NRCA-MCH-16-A- Supply Air Temp Reset Controls	☐	☐
	☐ NRCA-MCH-17-A – Condensate Water Temp Reset Controls	☐	☐
	☐ NRCA-MCH-18-A- Energy Management Controls Systems	☐	☐
	☐ NRCV-MCH-04-H- Duct Leakage Test	☐	☐

Project Name:	Tom Hawkins Elementary School	NRCC-PRF-01-E	Page 6 of 18
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Building Component	Compliance Forms *(required for submittal)*	Confirmed Pass	Confirmed Fail
Plumbing	☐ NRCI-PLB-01-E - For all buildings with Plumbing Systems	☐	☐
	☐ NRCI-PLB-02-E - required on central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-03-E - Single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-21-E - HERS verified central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-22-E - HERS verified single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCV-PLB-21-H- HERS verified central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCV-PLB-22-H - HERS verified single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-STH-01-E - Any solar water heating	☐	☐
Indoor Lighting	☐ NRCI-LTI-01-E - For all buildings	☐	☐
	☐ NRCI-LTI-02-E - Lighting control system, or for an Energy Management Control System (EMCS)	☐	☐
	☐ NRCI-LTI-03-E - Line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting	☐	☐
	☐ NRCI-LTI-04-E - Two interlocked systems serving an auditorium, a convention center, a conference room, or a theater	☐	☐
	☐ NRCI-LTI-05-E - Lighting Control Credit Power Adjustment Factor (PAF)	☐	☐
	☐ NRCI-LTI-06-E - Additional wattage installed in a video conferencing studio	☐	☐
	☐ NRCA-LTI-02-A - Occupancy sensors and automatic time switch controls.	☐	☐
	☒ NRCA-LTI-03-A - Automatic daylighting controls	☐	☐
	☐ NRCA-LTI-04-A - Demand responsive lighting controls	☐	☐
Outdoor Lighting	☐ NRCI-LTO-01-E – Outdoor Lighting	☐	☐
	☐ NRCI-LTO-02-E- EMCS Lighting Control System	☐	☐
	☐ NRCA-LTO-02-A - Outdoor Lighting Control	☐	☐
Sign Lighting	☐ NRCI-LTS-01-E – Sign Lighting	☐	☐
Electrical	☐ NRCI-ELC-01-E - Electrical Power Distribution	☐	☐
Photovoltaic	☐ NRCI-SPV-01-E Photovoltaic Systems	☐	☐

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See Tables G. and H. in MCH and LTI Details Sections for Acceptance Tests and forms by equipment.

Building Component	Compliance Forms *(required for submittal)*	Confirmed Pass	Confirmed Fail
Covered Process	☐ NRCI-PRC-01-E Covered Processes	☐	☐
	☐ NRCA-PRC-01-F- Compressed Air Systems	☐	☐
	☐ NRCA-PRC-02-F- Kitchen Exhaust	☐	☐
	☐ NRCA-PRC-03-F- Garage Exhaust	☐	☐
	☐ NRCA-PRC-04-F- Refrigerated Warehouse- Evaporator Fan Motor Controls	☐	☐
	☐ NRCA-PRC-05-F- Refrigerated Warehouse- Evaporative Condenser Controls	☐	☐
	☐ NRCA-PRC-06-F- Refrigerated Warehouse- Air Cooled Condenser Controls	☐	☐
	☐ NRCA-PRC-07F- Refrigerated Warehouse- Variable Speed Compressor	☐	☐
	☐ NRCA-PRC-08-F- Electrical Resistance Underslab Heating System	☐	☐

I. ENVELOPE GENERAL INFORMATION (See NRCC-PRF-ENV-DETAILS for more information)

1.	Total Conditioned Floor Area	370 ft²	5.	Number of Floors Above Grade	1
2.	Total Unconditioned Floor Area	0 ft²	6.	Number of Floors Below Grade	0
3.	Addition Conditioned Floor Area	0 ft²			
4.	Addition Unconditioned Floor Area	0 ft²			

7. Opaque Surfaces & Orientation	8. Total Gross Surface Area	9. Total Fenestration Area	10. Window to Wall Ratio	Confirmed Pass	Confirmed Fail
North Wall	277 ft²	112 ft²	40.5%	☐	☐
East Wall	72 ft²	21 ft²	29.4%	☐	☐
South Wall	238 ft²	102 ft²	42.6%	☐	☐
West Wall	110 ft²	32 ft²	28.6%	☐	☐
Total	**696 ft²**	**266 ft²**	**38.2%**	☐	☐
Roof	370 ft²	0 ft²	00.0%	☐	☐

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J. FENESTRATION ASSEMBLY SUMMARY § 110.6

1. Fenestration Assembly Name / Tag or I.D.	2. Fenestration Type / Product Type / Frame Type	3. Certification Method[1]	4. Assembly Method	5. Area ft²	6. Overall U-factor	7. Overall SHGC	8. Overall VT	9. Status[2]	Confirmed Pass	Confirmed Fail
PPG SOLARBAN 60 (3) Caribia	VerticalFenestration FixedWindow MetalFraming	COG Equations	SiteBuilt	182	0.29 (COG)	0.31 (COG)	0.50 (COG)	N	☐	☐
Single Metal Tinted	VerticalFenestration FixedWindow MetalFraming	Default Performance	SiteBuilt	42	1.19	0.68	0.77	E	☐	☐
Residential Prescriptive	VerticalFenestration FixedWindow N/A	NFRC Rated	Manufactured	42	0.32	0.25	0.50	E	☐	☐

[1] Newly installed fenestration shall have a certified NFRC Label Certificate or use the CEC default tables found in Table 110.6-A and Table 110.6-B. Center of Glass (COG) values are for the glass-only, determined by the manufacturer, and are shown for ease of verification. Site-built fenestration values are calculated per Nonresidential Appendix NA6 and are used in the analysis.
[2] Status: N - New, A – Altered, E – Existing

Taking compliance credit for fenestration shading devices? (if "Yes", see NRCC-PRF-ENV-DETAILS for more information)	No

K. OPAQUE SURFACE ASSEMBLY SUMMARY § 120.7/ § 140.3

1. Surface Name	2. Surface Type	3. Area (ft²)	4. Framing Type	5. Cavity R-Value	6. Continuous R-Value	7. U-Factor / F-Factor / C-Factor	8. Status[1]	Confirmed Pass	Confirmed Fail
Slab On Grade4	UndergroundFloor	370	NA	0	NA	F-Factor: 0.730	E	☐	☐
R-30 Roof Attic6	Roof	370	Wood	30	NA	U-Factor: 0.038	E	☐	☐
R-19 Wall8	ExteriorWall	696	Wood	19	NA	U-Factor: 0.072	E	☐	☐

[1] Status: N - New, A – Altered, E – Existing

L. ROOFING PRODUCT SUMMARY § 140.3

1. Product Type	2. Product Density (lb/ft²)	3. Aged Solar Reflectance	4. Thermal Emittance	5. SRI	6. Cool Roof Credit	7. Roofing Product Description	Confirmed Pass	Confirmed Fail
R-30 Roof Attic6	5.895	0.08	0.75	NA	No	NA	☐	☐

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M. HVAC SYSTEM SUMMARY (see NRCC-PRF-MCH-DETAILS for more information) § 110.1 / § 110.2

Dry System Equipment [1] (Fan & Economizer info included below in Table N)

1. Equip Name	2. Equip Type	3. System Type (Simple [2] or Complex [3])	4. Qty	5. Total Heating Output (kBtu/h)	6. Supp Heat Source (Y/N)	7. Supp Heat Output (kBtuh)	8. Total Cooling Output (kBtu/h)	9. Efficiency Cooling	9. Efficiency Heating	10. Acceptance Testing Required? (Y/N) [4]	11. Status[5]	Confirmed Pass	Confirmed Fail
FAU-1	SZAC (Split3Phase)	Simple	1	56	No	0	32	SEER-15.00 / EER-13.00	AFUE-92.0	Yes	N	☐	☐

[1] Dry System Equipment includes furnaces, air handling units, heat pumps, etc.
[2] Simple Systems must complete NRCC-CXR-03-E commissioning design review form
[3] Complex Systems must complete NRCC-CXR-04-E commissioning design review form
[4] A summary of which acceptance tests are applicable is provided in NRCC-PRF-MCH-DETAILS
[5] Status: N - New, A – Altered, E – Existing

Wet System Equipment Section Does Not Apply

Discrepancy between modeled and designed equipment sizing? (if "Yes", see Table F. "Additional Remarks" for an explanation)	No

N. ECONOMIZER & FAN SYSTEMS SUMMARY[1] § 140.4

1. Equip Name	2. Outside Air CFM	3. Supply Fan CFM	Supply Fan HP	Supply Fan BHP	Supply Fan TSP (inch WC)	Supply Fan Control	4. Return Fan CFM	Return Fan HP	Return Fan BHP	Return Fan TSP (inch WC)	Return Fan Control	5. Economizer Type (if present)	Confirmed Pass	Confirmed Fail
FAU-1	56	1200	0.500	0.500	1.32	ConstantVolume	NA	NA	NA	NA	NA	NoEconomizer	☐	☐

[1] Mechanical ventilation calculations and exhaust fans are included in the NRCC-PRF-MCH-DETAILS section

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O. EQUIPMENT CONTROLS § 120.2

1. Equip Name	2. Equip Type	3. Controls	Confirmed Pass	Confirmed Fail
FAU-1	SZAC	No DCV Controls No Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery	☐	☐

P. SYSTEM DISTRIBUTION SUMMARY § 120.4/ § 140.4(l)

Dry System Distribution

1. Equip Name	2. Equip Type	3. Duct Leakage and Sealing Required per 140.4(l)	4. Duct Leakage will be verified per NA1 and NA2	5. Ducts Insulation R-Value	5. Ducts Location	6. Status[1]	Confirmed Pass	Confirmed Fail
FAU-1	SZAC	No	No	8	Unconditioned	N	☐	☐

[1] Status: N - New, E – Existing

Does the Project Include Zonal Systems? (if "Yes", see NRCC-PRF-MCH-DETAILS for system information)	No
Does the Project Include a Solar Hot Water System? (if "Yes", see NRCC-PRF-MCH-DETAILS for system information)	No
Multifamily or Hotel/ Motel Occupancy? (if "Yes", see NRCC-PRF-MCH-DETAILS for DHW system information)	No

Q. INDOOR CONDITIONED LIGHTING GENERAL INFO (see NRCC-PRF-LTI-DETAILS for more info)[3] § 140.6

1. Occupancy Type [1]	2. Conditioned Floor Area [2] (ft²)	3. Installed Lighting Power (Watts)	4. Lighting Control Credits (Watts)	5. Additional (Custom) Allowance: Area Category Footnotes (Watts)	5. Additional (Custom) Allowance: Tailored Method (Watts)	Confirmed Pass	Confirmed Fail
						☐	☐
Building Totals:			0	0	0		

[1] See Table 140.6-C
[2] See NRCC-LTI-01-E for unconditioned spaces
[3] Lighting information for existing spaces modeled is not included in the table

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R. INDOOR CONDITIONED LIGHTING SCHEDULE (Adapted from NRCC-LTI-01-E)[1] § 130.0

This Section Does Not Apply

[1] If lighting power densities were used in the compliance model Building Departments will need to check prescriptive forms for Luminaire Schedule details.

S1. COVERED PROCESS SUMMARY – ENCLOSED PARKING GARAGES § 140.9

This Section Does Not Apply

S2. COVERED PROCESS SUMMARY – COMMERCIAL KITCHENS § 140.9

This Section Does Not Apply

S3. COVERED PROCESS SUMMARY – COMPUTER ROOMS § 140.9

This Section Does Not Apply

S4. COVERED PROCESS SUMMARY – LABORATORY EXHAUSTS § 140.9

This Section Does Not Apply

T. UNMET LOAD HOURS

This Section Does Not Apply

U. ENERGY USE SUMMARY

Energy Component	Standard Design Site (MWh)	Proposed Design Site (MWh)	Margin (MWh)	Standard Design Site (MBtu)	Proposed Design Site (MBtu)	Margin (MBtu)
Space Heating	--	--	--	7.1	4.5	2.6
Space Cooling	1.2	0.9	0.3	--	--	--
Indoor Fans	2.4	1.9	0.5	--	--	--
Heat Rejection	--	--	--	--	--	--
Pumps & Misc.	--	--	--	--	--	--
Domestic Hot Water	--	--	--	--	--	--
Indoor Lighting	0.4	0.5	-0.1	--	--	--
COMPLIANCE TOTAL	**4.0**	**3.3**	**0.7**	**7.1**	**4.5**	**2.6**
Receptacle	0.2	0.2	0.0	--	--	--

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U. ENERGY USE SUMMARY

Energy Component	Standard Design Site (MWh)	Proposed Design Site (MWh)	Margin (MWh)	Standard Design Site (MBtu)	Proposed Design Site (MBtu)	Margin (MBtu)
Process	--	--	--	--	--	--
Other Ltg	--	--	--	--	--	--
Process Motors	--	--	--	--	--	--
TOTAL	**4.2**	**3.5**	**0.7**	**7.1**	**4.5**	**2.6**

pjhm architects
Web: pjhm.com • LA Phone: 213.278.0172 • LA Office: 837 Traction Ave. #410, Los Angeles, CA 90013 • SD Phone: 760.730.5527 • SD Office: 804 Pier View Way #103, Oceanside, CA 92054 • OC Phone: 949.496.6191 • OC Office: 24461 Ridge Route Dr. #100, Laguna Hills, CA 92653
LICENSED ARCHITECT · C28889 · REN. 3/19 · STATE OF CALIFORNIA
PDS PeacockDesignSolutions Inc.
REGISTERED PROFESSIONAL ENGINEER · ANDREW R. GOODMAN · MECHANICAL · STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

TITLE 24

M-4.0

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F. SOLAR HOT WATER HEATING SUMMARY (Adapted from NRCC-STH-01)

This Section Does Not Apply

G. MECHANICAL HVAC ACCEPTANCE TESTS & FORMS *(Adapted from 2016-NRCC-MCH-01-E)* § RA4

Declaration of Required Acceptance Certificates (NRCA) – Acceptance Certificates that may be submitted. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).

Test Description		MCH-02A	MCH-03A	MCH-04A	MCH-05A	MCH-06A	MCH-07A	MCH-08A	MCH-09A	MCH-10A	MCH-11A	MCH-12A	MCH-13A	MCH-14A	MCH-15A	MCH-16A	MCH-17A	MCH-18A	Confirmed	
Equipment Requiring Testing or Verification	# of units	Outdoor Air	Single Zone Unitary	Air Dist. Ducts	Economizer Controls	DCV	Supply Fan VAV	Valve leakage	Supply Water Temp. Reset	Hyd. Variable Flow Control	Auto Demand Shed Control	FDD for DX Units	Auto FDD for Air & Zone	Dist. Energy Storage DX AC	TES Systems	Supply Air Temp. Reset	Condenser Water Reset Controls	ECMS	Pass	Fail
FAU-1	1	X	X	--	--	--	X	--	--	--	--	--	--	--	--	--	--	--	☐	☐

H. EVAPORATIVE COOLER SUMMARY

This Section Does Not Apply

NRCC-PRF-LTI-DETAILS -SECTION START-

A. INDOOR CONDITIONED LIGHTING CONTROL CREDITS (Adapted from NRCC-LTI-02-E) § 140.6

This Section Does Not Apply

B. INDOOR CONDITIONED LIGHTING MANDATORY LIGHTING CONTROLS (Adapted from NRCC-LTI-02-E) § 130.1

This Section Does Not Apply

§130.1(a) = Manual area controls; §130.0(b) = Multi Level; §130.1(c) = Auto Shut-Off; §130.1(d) = Mandatory Daylight; §130.1(e) = Demand Responsive

C. TAILORED METHOD CONDITIONED LIGHTING POWER ALLOWANCE SUMMARY AND CHECKLIST (Adapted from NRCC-LTI-04-E)	§ 140.6
General lighting power (see Table D)	0

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NRCC-PRF-MCH-DETAILS -SECTION START-

A. MECHANICAL VENTILATION AND REHEAT *(Adapted from 2016-NRCC-MCH-03-E)*

1. DESIGN AIR FLOWS								2. VENTILATION (§ 120.1)											Confirmed	
CONDITIONED ZONE NAME	HEATING/COOLING SYSTEM ID	DESIGN PRIMARY AIR FLOW (CFM)	DESIGN PRIMARY MINIMUM AIR FLOW (CFM)	MINIMUM PRIMARY AIR FLOW FRACTION	MAXIMUM HEATING AIR FLOW (CFM)	MAXIMUM HEATING AIR FLOW FRACTION	DDC CONTROL (Y/N)	VENT SYSTEM ID	CONDITIONED AREA (ft2)	MIN. VENT PER AREA (CFM/ft2)	DESIGN NUM. OF PEOPLE	MIN. VENT PER PERSON (CFM/person)	REQ'D VENT AIR FLOW (CFM)	DESIGN VENT AIR FLOW (CFM)	TRANSFER AIRFLOW (CFM)	DCV (Y/N)	Operable Window Interlock § 140.4(n) (Y/N)	Pass	Fail
1-Reception	FAU-1	1,200	NA	NA	NA	NA	N	FAU-1	370	NA	1.85	30.00	56	56	NA	N	NA	☐	☐
								TOTAL	370		1.85		56	56	NA			☐	☐

B. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY § 140.4

1.	2.	3.	4.		5.	6.	7.			8.			Confirmed	
System ID	System Type	Qty	Rated Capacity (kBtuh) Heating	Rated Capacity (kBtuh) Cooling	Economizer	Zone Name	Airflow (cfm) Design	Min.	Min. Ratio	Fan BHP	Cycles	ECM Motor	Pass	Fail
1-Reception-Trm	Uncontrolled	1	NA	NA	NA	1-Reception	1200	NA	NA	NA	NA	☐	☐	☐

C. EXHAUST FAN SUMMARY

This Section Does Not Apply

D. DHW EQUIPMENT SUMMARY – *(Adapted from NRCC-PLB-01)*

This Section Does Not Apply

E. MULTI-FAMILY CENTRAL DHW SYSTEM DETAILS

This Section Does Not Apply

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NRCC-PRF-ENV-DETAILS -SECTION START-

A. OPAQUE SURFACE ASSEMBLY DETAILS

1.	2.	3.	4.	Confirmed	
Surface Name	Surface Type	Description of Assembly Layers	Notes	Pass	Fail
Slab On Grade4	UndergroundFloor	Slab Type = UnheatedSlabOnGrade Insulation Orientation = None Insulation R-Value = R0		☐	☐
R-30 Roof Attic6	Roof	Asphalt shingles - 1/4 in. Vapor permeable felt - 1/8 in. Plywood - 1/2 in. Air - Cavity - Wall Roof Ceiling - 4 in. or more Wood framed roof, 24in. OC, 3.5in., R-30 Gypsum Board - 1/2 in.		☐	☐
R-19 Wall8	ExteriorWall	Stucco - 7/8 in. Vapor permeable felt - 1/8 in. Wood framed wall, 16in. OC, 5.5in., R-19 Gypsum Board - 1/2 in.		☐	☐

B. OVERHANG DETAILS (Adapted from NRCC-ENV-02-E)

This Section Does Not Apply

C. OPAQUE DOOR SUMMARY

1.	2.	3.	4.	5.	6.	7.	Confirmed	
Opaque Door Assembly Name / Tag or I.D.	Door Type	Certification Method	Operation	Area	Overall U-factor	Status[1]	Pass	Fail
Wood Door12	WoodGreaterThanOrEqualTo1.75inThickDoor	DefaultPerformance	Swinging	42	0.500	E	☐	☐

[1] *Status: N - New, A – Altered, E – Existing*

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT § 10-103

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Ted Lim	Signature: Ted Lim
Company: Pocock Design Solutions, Inc.	
Address: 14451 Chambers Rd. Ste. 210	Signature Date: 02/20/2019
City/State/Zip: Tustin CA 92780	CEA Identification (If applicable):
Phone: 949-417-3903	

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. I hereby affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation; and that I am licensed in the State of California as a civil engineer, mechanical engineer, electrical engineer, or I am a licensed architect.
2. I affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code by section 5537.2 or 6737.3 to sign this document as the person responsible for its preparation; and that I am a licensed contractor performing this work.
3. I affirm that I am eligible under Division 3 of the Business and Professions Code to sign this document because it pertains to a structure or type of work described as exempt pursuant to Business and Professions Code Sections 5537, 5538 and 6737.1.

Responsible Envelope Designer Name: Kenneth J. Podany	**Signature:**	
Company: PJHM Architects		
Address: 24461 Ridge Route Dr. #100	Date Signed:	
City/State/Zip: Laguna Hills CA 92653	Declaration Statement Type:	
Phone: 949 496 6191	Title:	License #: C28889
Responsible Lighting Designer Name:	**Signature: NOT IN SCOPE**	
Company:		
Address:	Date Signed:	
City/State/Zip:	Declaration Statement Type:	
Phone:	Title:	License #:
Responsible Mechanical Designer Name: Andrew Gossman	**Signature:** Andrew Gossman	
Company: Pocock Design Solutions, Inc.		
Address: 14451 Chambers Rd. Ste 210	Date Signed: 02/20/2019	
City/State/Zip: Tustin CA 92780	Declaration Statement Type:	
Phone: 949-417-3903	Title:	License #: M35839

ENVELOPE MANDATORY MEASURES: NONRESIDENTIAL — ENV-MM

Project Name	Date
Tom Hawkins Elementary School Administration Modernization	*12/13/2018*

DESCRIPTION

Building Envelope Measures:

§110.8(a):	Installed insulating material shall have been certified by the manufacturer to comply with the California Quality Standards for insulating material, Title 20 Chapter 4, Article 3.
§110.8(c):	All Insulating Materials shall be installed in compliance with the flame spread rating and smoke density requirements of Sections 2602 and 707 of Title 24, Part 2.
§110.8(g):	Heated slab floors shall be insulated according to the requirements in Table 110.8-A.
§110.7(a):	All Exterior Joints and openings in the building that are observable sources of air leakage shall be caulked, gasketed, weatherstripped or otherwise sealed.
§110.6(a):	Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft.² of window area, 0.3 cfm/ft.² of door area for residential doors, 0.3 cfm/ft.² of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft.² for nonresidential double doors (swinging).
§110.6(a):	Fenestration U-factor shall be rated in accordance with NFRC 100, or the applicable default U-factor.
§110.6(a) :	Fenestration SHGC shall be rated in accordance with NFRC 200, or NFRC 100 for site-built fenestration, or the applicable default SHGC.
§110.6(b):	Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).
§120.7(a):	The opaque portions of the roof/ceiling that separates conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows: **Metal Building-** The weighted average U-factor of the roof assembly shall not exceed 0.098. **Wood Framed and Others-** The weighted average U-factor of the roof assembly shall not exceed 0.075.
§120.7(b):	The opaque portions of walls that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-factor as follows: **Metal Building-** The weighted average U-factor of the wall assembly shall not exceed 0.113. **Metal Framed-** The weighted average U-factor of the wall assembly shall not exceed 0.151. **Light Mass Walls-** A 6 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.440. **Heavy Mass Walls-** An 8 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.690. **Wood Framed and Others-** The weighted average U-factor of the wall assembly shall not exceed 0.110. **Spandrel Panels and Opaque Curtain Wall-** The weighted average U-factor of the spandrel panels and opaque curtain wall assembly shall not exceed 0.280. **Demising Walls-**. The opaque portions of framed demising walls shall meet the requirements of Item A or B below: A. Wood framed walls shall be insulated to meet a U-factor not greater than 0.099. B. Metal Framed walls shall be insulated to meet a U-factor not greater than 0.151.
§120.7(c):	The opaque portions of floors and soffits that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows: **Raised Mass Floors-** Shall have a minimum of 3 inches of lightweight concrete over a metal deck or the weighted average U-factor of the floor assembly shall not exceed 0.269. **Other Floors-**The weighted average U-factor of the floor assembly shall not exceed 0.071.

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6. Floor Display and Task Lighting

This Section Does Not Apply

7. Combined Ornamental and Special Effects Lighting

This Section Does Not Apply

8. Very Valuable Merchandise

This Section Does Not Apply

H. INDOOR & OUTDOOR LIGHTING ACCEPTANCE TESTS & FORMS (Adapted from NRCC-LTI-01-E and NRCC-LTO-01-E) § 130.4

Declaration of Required Acceptance Certificates (NRCA) –Acceptance Certificates that must be verified in the field. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).

Test Description		Indoor			Outdoor	Confirmed	
		NRCA-LTI-02-A	NRCA-LTI-03-A	NRCA-LTI-04-A	NRCA-LTO-02-A	Pass	Fail
Equipment Requiring Testing or Verification	# of units	Occ Sensors / Auto Time Switch	Auto Daylight	Demand Responsive	Outdoor Controls		
Occupant Sensors	0	☐	☐	☐	☐	☐	☐
Automatic Time Switch	0	☐	☐	☐	☐	☐	☐
Automatic Daylighting	0	☐	☒	☐	☐	☐	☐
Demand Responsive	0	☐	☐	☐	☐	☐	☐
Outdoor Controls	0	☐	☐	☐	☐	☐	☐

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C. TAILORED METHOD CONDITIONED LIGHTING POWER ALLOWANCE SUMMARY AND CHECKLIST (Adapted from NRCC-LTI-04-E)	§ 140.6
General lighting power from special function areas (see Table E)	NA
Additional "use it or lose it" (See Table G)	0
Total watts	0

D. GENERAL LIGHTING POWER (Adapted from NRCC-LTI-04-E) § 140.6-D

This Section Does Not Apply

E. GENERAL LIGHTING FROM SPECIAL FUNCTION AREAS (Adapted from NRCC-LTI-04-E) § 140.6(c) 3H

Room Number	Primary Function Area	Illuminance Value (LUX)	Room Cavity Ratio (Table G)	Allowed LPD	Floor Area (ft²)	Allowed Watts	Confirmed Pass	Confirmed Fail
NA	NA	NA	NA	NA	NA	NA	☐	☐

Note: Tailored Method for Special Function Areas is not currently implemented

F. ROOM CAVITY RATIO (Adapted from NRCC-LTI-04-E)

Rectangular Spaces

Room Number	Task/Activity Description	Room Length (ft)	Room Width (ft)	Room Cavity Height (ft)	RCR	Confirmed Pass	Confirmed Fail
NA	NA	NA	NA	NA	NA	☐	☐

Non-Rectangular Spaces

This Section Does Not Apply

Note: All applicable spaces are listed under the Non-Rectangular Spaces table

G. ADDITIONAL "USE IT OR LOSE IT" (Adapted from NRCC-LTI-04-E)

1.	2.	3.	4.		Confirmed	
Wall Display	Combined Floor Display and Task Lighting	Combined Ornamental and Special Effects Lighting	Very Valuable Merchandise	Allowed Watts	Pass	Fail
0	0	0	0	**0**	☐	☐

5. Wall Display

This Section Does Not Apply

pjhm architects
LICENSED ARCHITECT KENNETH J. PODANY NO. C28889 REN. 3/19 STATE OF CALIFORNIA
PDS PocockDesignSolutions Inc.
REGISTERED PROFESSIONAL ENGINEER ANDREW R. GOSSMAN No. M35839 Exp. 3/31/20 MECHANICAL STATE OF CALIFORNIA
OC Office: 24461 Ridge Route Dr. #100, Laguna Hills, CA 92653 • OC Phone: 949.496.6191 • SD Office: 804 Pier View Way #103, Oceanside, CA 92054 • SD Phone: 760.730.5527 • LA Office: 837 Traction Ave. #410, Los Angeles, CA 90013 • LA Phone: 213.278.0172 • Web: pjhm.com

TOM HAWKINS ELEMENTARY SCHOOL ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

TITLE 24

M-4.1

ABBREVIATIONS

4S/DP	4" SQUARE BY 2-1/8" DEEP BOX
ADA	AMERICAN WITH DISABILITIES ACT
A.F.F.	ABOVE FINISH FLOOR
A.F.G.	ABOVE FINISH GRADE
AWG	AMERICAN WIRE GAUGE
AMP, A	AMPERE
A.I.C. or AIC	AMPERES INTERRUPTING CAPACITY (SYMMETRICAL)
A.F.C. or AFC	AVAILABLE FAULT CURRENT
AF/AT	AMP FRAME, AMP TRIP
AHJ	AUTHORITY HAVING JURISDICTION
AS/AF	AMP SWITCH, AMP FUSE
ATS	AUTOMATIC TRANSFER SWITCH
AVG	AVERAGE
BJ	BONDING JUMPER
BDF	BUILDING DISTRIBUTION FRAME
BR	BRANCH
BLDG	BUILDING
CBC	CALIFORNIA BUILDING CODE
CEC	CALIFORNIA ELECTRICAL CODE
CIRC., CKT.	CIRCUIT
CB	CIRCUIT BREAKER
CSFD	COMBINATION SMOKE FIRE DAMPER
C	CONDUIT
C.O.	CONDUIT ONLY, COMPLETE WITH PULLSTRING
CONN	CONNECTED
CPT	CONTROL POWER TRANSFORMER
CLCB	CURRENT LIMITING CIRCUIT BREAKER
CLF	CURRENT LIMITING FUSE
CT	CURRENT TRANSFORMER
(D)	EXISTING DEVICE TO BE DEMOLISHED
DAS	DISTRIBUTED ANTENNA SYSTEM
DIA	DIAMETER
DISC	DISCONNECT
DIST	DISTRIBUTION
D.P.C.S.	DIMMING PANEL CONTROL STATION
E.C.	ELECTRICAL CONTRACTOR
EMS	ENERGY MANAGEMENT CONTROL SYSTEM
EMT	ELECTRICAL METALLIC TUBING
ENT	ELECTRICAL NON-METALLIC TUBING
EWC	ELECTRIC WATER COOLER
E.P.O.	EMERGENCY POWER OFF
E-O-L	END-OF-LINE CIRCUIT TERMINATOR
EF	EXHAUST FAN
EGC or EG or E/G	EQUIPMENT GROUND (GREEN)
(E)	EXISTING DEVICE TO REMAIN
EP	EXPLOSION PROOF
(ER)	EXISTING DEVICE TO BE RELOCATED
FT or '	FEET
FA or F.A.	FIRE ALARM
FLA	FULL LOAD AMPS
GRD	GROUND

GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GE or GEC	GROUNDING ELECTRODE CONDUCTOR
HACR	HEATING AIR CONDITIONING REFRIGERATION
HOA	HAND-OFF-AUTO
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
H.,W.,D.,L.	HEIGHT, WIDTH, DEPTH, LENGTH
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
IN. or "	INCHES
I/G	ISOLATED GROUND
IBC	INTERNATIONAL BUILDING CODE
I.D.C.S.	INTEGRATED DIMMING CONTROL PANEL
IDF	INTERMEDIATE DISTRIBUTION FRAME
JBOX	JUNCTION BOX
K	DEGREE KELVIN
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT AMPERES
KW	KILOWATT
KWH	KILOWATT HOUR
LCL	LONG CONTINUOUS LOAD
LF, L.F.	LINEAR FEET
LTG, LTS	LIGHTING
LPS	LOW PRESSURE SODIUM
MAX.	MAXIMUM
MBJ	MAIN BONDING JUMPER
MDF	MAIN DISTRIBUTION FRAME
MOCP	MAXIMUM OVERCURRENT PROTECTION
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
M.C.	MECHANICAL CONTRACTOR
M	METER
M/M	METER MAIN
MV	MERCURY VAPOR
MH	METAL HALIDE
MIN.	MINIMUM
MCA	MINIMUM CIRCUIT AMPS
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MILS
MCP	MOTOR CIRCUIT PROTECTOR
MFR.	MANUFACTURER
MTD	MOUNTED
MW	MICROWAVE
NATS	NON AUTOMATIC DISCONNECT
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NC	NORMALLY CLOSED

NO	NORMALLY OPENED
NF	NON-FUSED
NIC	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NL	NIGHT LIGHT
NO. or #	NUMBER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
%Z	PERCENT IMPEDANCE
PH. or ø	PHASE
PC	PHOTOCELL
P.C.	PLUMBING CONTRACTOR
P	POLE
PVC	POLY VINYL CHLORIDE
PDU	POWER DISTRIBUTION UNIT
PRIMARY	OVER 600 VOLTS
PROVIDE	FURNISH, INSTALL AND CONNECT
PT	POTENTIAL TRANSFORMER
PA	PUBLIC ADDRESS
(R)	DENOTES RELOCATED DEVICE LOCATION.
REC, RECEPT	RECEPTACLE
REF	REFRIGERATOR
RGS	RIGID GALVANIZED STEEL
RMS	ROOT MEAN SQUARE
SCC	SHORT CIRCUIT CURRENT
SCCR	SHORT CIRCUIT CURRENT RATING
SCS	STRUCTURED CABLING SYSTEM
SFD	SMOKE FIRE DAMPER
SECONDARY	600 VOLTS AND LESS
SMACNA	SHEET METAL AND AIR COND. CONTRACTOR'S NAT'L ASSOC.
SQ.	SQUARE
SSBJ	SUPPLY SIDE BONDING JUMPER
SBJ	SYSTEM BONDING JUMPER
TC	TIMECLOCK
TEL/DATA	TELEPHONE AND DATA
TV	TELEVISION
T.V.S.S.	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
U.G.P.S.	UNDERGROUND PULL SECTION
U.O.N.	UNLESS OTHERWISE NOTED
U.P.S. or UPS	UNINTERRUPTABLE POWER SYSTEM
VAV	VARIABLE AIR VOLUME
V	VOLTS
VA	VOLT AMPERES
VD	VOLTAGE DROP
WP	WEATHERPROOF
W	WIRE
XFMR	TRANSFORMER

FIRE ALARM SYSTEM SYMBOLS

SEE FIRE ALARM OR CENTRAL MONITORING SYSTEM DRAWINGS FOR FIRE ALARM SYMBOLS.

SIGNAL SYSTEM SYMBOLS

- WALL MOUNTED COMBINATION CLOCK/SPEAKER WITH SEMI-FLUSH BACKBOX AND GRILL/BAFFEL. FIELD VERIFY MOUNTING HEIGHT PRIOR TO INSTALLATION. PROVIDE 3/4"C. (WITH CONDUCTORS) UP 6" ABOVE THE NEAREST ACCESSIBLE CEILING OR TO RAULAND HEADEND CABINET. PROVIDE SURFACE MOUNT RACEWAY UP TO NEAREST ACCESSIBLE CEILING WHEN MOUNTED TO EXISTING WALLS.
- —C— CONCEALED CLOCK CONDUIT RUN 3/4" CONDUIT, OR AS NOTED, WITH CONDUCTORS PER SPECIFICATIONS.
- FLUSH WALL MOUNTED SPEAKER, PROVIDE 3/4"C. (WITH CONDUCTORS) UP 6" ABOVE THE ACCESSIBLE CEILING OR TO NEAREST IDF ROOM.
- CEILING FLUSH MOUNTED SPEAKER, PROVIDE 3/4"C. (WITH CONDUCTORS) UP 6" ABOVE THE ACCESSIBLE CEILING OR TO NEAREST IDF ROOM.
- —S— CONCEALED SPEAKER CONDUIT RUN 3/4" CONDUIT, OR AS NOTED, WITH CONDUCTORS – REFER TO SPECIFICATIONS.
- AV FLUSH 4S DEEP BOX WITH HDMI FACEPLATE, WITH 1"CONDUIT AND HDMI CABLE PER PLANS.

SECURITY ALARM SYSTEM SYMBOLS

- SACP SECURITY ALARM CONTROL PANEL – SEE SPECIFICATIONS.
- ID SECURITY ALARM PASSIVE INFRARED MOTION SENSOR – SEE SPECIFICATIONS.
- DC SECURITY ALARM DOOR CONTACT – SEE SPECIFICATIONS.
- KP SECURITY ALARM KEY PAD – SEE SPECIFICATIONS.
- —SA— SECURITY ALARM SYSTEM BRANCH CIRCUIT PER SECURITY ALARM RISER DIAGRAM AND/OR SPECIFICATIONS.

ANNOTATIONS

- A PANEL CALLOUT, "A" INDICATES PANELBOARD OR EQUIPMENT DESIGNATION.
- AC/2 MECHANICAL EQUIPMENT CALLOUT, "AC" INDICATES UNIT TYPE AND "2" INDICATES UNIT NUMBER. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION AND ELECTRICAL REQUIREMENTS.
- 3/E-1 DETAIL CALLOUT, "3" INDICATES DETAIL NUMBER "E-1" INDICATES SHEET NUMBER.
- 2 PLAN NOTE REFERENCE, REFER TO NOTES ON SHEET, OR AS DIRECTED.
- 4 REVISION REFERENCE.
- WYE CONFIGURATION — DELTA CONFIGURATION — GROUND

TELEPHONE/DATA SYMBOLS

NOTES:

1. WHERE NEW DEVICES ARE SHOWN ON EXISTING WALLS, PROVIDE SURFACE MOUNT BOX WITH SURFACE MOUNT RACEWAY TO NEAREST ACCESSIBLE CEILING.

- TELEPHONE OUTLET BOX, WALL MOUNTED. STUB A 1" C. (WITH CONDUCTORS) UP 6" ABOVE THE NEAREST ACCESSIBLE CEILING OR TO NEAREST HEAD-END EQUIPMENT AS REQUIRED. 5S BOX RANDL #T55 MINIMUM WITH SINGLE GANG RING. PROVIDE CABLING BACK TO NEAREST HEAD-END.
  - "W" = WALL MOUNTED PHONE WITH 4S/DP BOX AND SINGLE GANG RING +48"AFF.
  - "C" = CONVENTIONAL (ANALOG) TELEPHONE/FAX OUTLET
- DATA OUTLET BOX, WALL MOUNTED. STUB A 1" C. (WITH CONDUCTORS) UP 6" ABOVE THE NEAREST ACCESSIBLE CEILING OR TO NEAREST HEAD-END EQUIPMENT AS REQUIRED. 5S BOX RANDL #T55 MINIMUM WITH SINGLE GANG RING. PROVIDE CABLING BACK TO NEAREST HEAD-END. "CO" = 1-GANG BOX WITH BLANK FACEPLATE AND 1" CONDUIT-ONLY STUB TO NEAREST ACCESSIBLE CEILING OR TO MAIN TELECOM BACKBOARD.
- COMBINATION TELEPHONE AND DATA OUTLET BOX, WALL MOUNTED. STUB A 1- 1/4"C. (WITH CONDUCTORS) UP 6" ABOVE THE NEAREST ACCESSIBLE CEILING OR TO NEAREST HEAD-END EQUIPMENT AS REQUIRED. 5S BOX RANDL #T55 MINIMUM WITH SINGLE GANG RING. PROVIDE CABLING BACK TO NEAREST HEAD-END.
- DATA OUTLET BOX FLUSH MOUNTED IN CEILING – MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL. PROVIDE 1"C. (WITH CONDUCTORS) UP 6" ABOVE THE ACCESSIBLE CEILING OR TO NEAREST HEAD-END EQUIPMENT AS REQUIRED. PROVIDE CABLING BACK TO NEAREST HEAD-END.
- TELEPHONE OUTLET BOX, WALL MOUNTED 6" ABOVE COUNTER OR SPLASH. STUB A 1" C. (WITH CONDUCTORS) UP 6" ABOVE THE NEAREST ACCESSIBLE CEILING OR TO NEAREST HEAD-END EQUIPMENT AS REQUIRED. 5S BOX RANDL #T55 MINIMUM WITH SINGLE GANG RING. PROVIDE CABLING BACK TO NEAREST HEAD-END.
- DATA OUTLET BOX, WALL MOUNTED 6" ABOVE COUNTER OR SPLASH. STUB A 1"C. (WITH CONDUCTORS) UP 6" ABOVE THE NEAREST ACCESSIBLE CEILING OR TO NEAREST HEAD-END EQUIPMENT AS REQUIRED. 5S BOX RANDL #T55 MINIMUM WITH SINGLE GANG RING. PROVIDE CABLING BACK TO NEAREST HEAD-END.
- COMBINATION TELEPHONE AND DATA OUTLET BOX, WALL MOUNTED 6" ABOVE COUNTER OR SPLASH. STUB A 1" C. (WITH CONDUCTORS) UP 6" ABOVE THE NEAREST ACCESSIBLE CEILING OR TO NEAREST HEAD-END EQUIPMENT AS REQUIRED. 5S BOX RANDL #T55 MINIMUM WITH SINGLE GANG RING. PROVIDE CABLING BACK TO NEAREST HEAD-END.
- —D1— / —T1— CONCEALED DATA/TELEPHONE CONDUIT RUNS, 1" CONDUIT (MIN) WITH CONDUCTORS. SEE TABLE BELOW FOR CONDUIT SIZE VARIATIONS:

D2 = (1) 1 1/4" C.	D3 = (1) 1 1/2" C.	D4 = (1) 2" C.
T2 = (1) 1 1/4" C.	T3 = (1) 1 1/2" C.	T4 = (1) 2" C.

- FLUSH MOUNTED, LOCKABLE TERMINAL CABINET WITH TERMINAL STRIPS AS REQUIRED.
- SURFACE MOUNTED, LOCKABLE TERMINAL CABINET WITH TERMINAL STRIPS AS REQUIRED.
- TELECOM TERMINAL BACKBOARD SIZED AS NOTED, REFER TO TELECOM GROUND BUS BAR DETAIL.

LIGHTING SYMBOLS

SITE LIGHTING FIXTURE SYMBOLS DEPICTED WITH CAPITAL LETTER(S) ADJACENT TO RESPECTIVE SYMBOL(S) INDICATE(S) LIGHT FIXTURE MOUNTING BASE DETAIL(S). SEE LIGHTING FIXTURE SCHEDULE FOR FIXTURE SYMBOL INFORMATION.

- 1a LIGHTING FIXTURE CALL OUT, NUMBER(S) AND/OR UPPER CASE LETTER(S) (i.e. "1") INDICATES FIXTURE TYPE (REFER TO LIGHTING FIXTURE SCHEDULE). LOWER CASE LETTER (i.e. "a") ADJACENT TO FIXTURE TYPE INDICATES BALLAST OPTION (SEE GENERAL LIGHTING FIXTURE SCHEDULE NOTES).
- J INDICATES FINAL CONNECTION TO A LIGHTING FIXTURE, NUMBER OF CONDUCTORS AS REQUIRED.

LIGHTING CONTROL SYMBOLS

SEE THE DISTRIBUTED LIGHTING CONTROL SPECIFICATIONS FOR MORE INFORMATION.

- LOW-VOLTAGE WIRING BETWEEN OCCUPANCY SENSORS, VACANCY SENSORS, DAY-LIGHTING CONTROLS, LOW-VOLTAGE SWITCHES, AND SWITCHPACKS. CONDUCTOR TYPE AND QUANTITY PER MANUFACTURER'S RECOMMENDATIONS AND WIRING DIAGRAMS.
- WALL MOUNTED DIMMER. SEE SINGE POLE SWITCH SYMBOL FOR RELATED SUBSCRIPTS. QUANTITY OF ADJACENT LOWER CASE LETTERS INDICATES QUANTITY OF DIMMERS REQUIRED. PROVIDE DIMMER TYPE TO MATCH INDICATED BALLAST TYPE AND CONTROL REQUIREMENTS.
- y, (y), (y,z) WALL MOUNTED STAND ALONE OCCUPANCY SENSOR. QUANTITY OF ADJACENT LOWER CASE LETTERS INDICATES QUANTITY OF RELAYS CIRCUITS REQUIRED – SEE CONTROL CONFIGURATIONS BELOW FOR MORE INFORMATION. EXACT CONTROL FUNCTION IS DETERMINED BY THE BALLAST/FIXTURE TYPE.
- H y,(y) WALL MOUNTED NON-NETWORKED/INTERCONNECTED/NETWORKED, SYSTEM-BASED OCCUPANCY SENSOR. QUANTITY OF ADJACENT LOWER CASE LETTERS INDICATES QUANTITY OF RELAYS/DIMMING CIRCUITS REQUIRED – SEE CONTROL CONFIGURATIONS BELOW FOR MORE INFORMATION. EXACT CONTROL FUNCTION IS DETERMINED BY THE BALLAST/FIXTURE TYPE. ADJACENT UPPER CASE LETTER ("H") INDICATES CONNECTION TO HVAC SYSTEM CONTROLS.
- H,DM,AV,P y,(y) 1-WAY/2-WAY DIRECTIONAL CEILING MOUNTED, NON-NETWORKED/INTERCONNECTED/NETWORKED, SYSTEM-BASED OCCUPANCY SENSOR. QUANTITY OF ADJACENT LOWER CASE LETTERS INDICATES QUANTITY OF RELAYS/DIMMING CIRCUITS REQUIRED – SEE CONTROL CONFIGURATIONS BELOW FOR MORE INFORMATION. EXACT CONTROL FUNCTION IS DETERMINED BY THE BALLAST/FIXTURE TYPE. ADJACENT UPPER CASE LETTER ("H") INDICATES CONNECTION TO HVAC SYSTEM CONTROLS VIA CONTROLLED DRY-CONTACT CLOSURE. ADJACENT UPPER CASE LETTERS ("DM") INDICATES DUAL MODE CONTROL AT CORRIDORS, STAIRWELLS AND WAREHOUSE AISLEWAYS. ADJACENT UPPER CASE LETTERS ("AV") INDICATES CONNECTION TO A/V CONTROL SYSTEM. ADJACENT UPPER CASE LETTER ("P") INDICATES CONNECTION TO MOVEABLE PARTITION INTERFACE, SENSOR AND STATUS INDICATOR.
- Ky, Vy, y, DM LOW VOLTAGE MOMENTARY SWITCHES, WALL MOUNTED, FOR MANUAL "ON/OFF SWITCHING" AND "DIMMING" (STEPPED/ CONTINUOUS) CONTROL OF LIGHTING WHICH IS CONTROLLED BY CEILING MOUNTED OCCUPANCY SENSORS. ADJACENT LOWER CASE LETTERS INDICATES QUANTITY OF SWITCHLEGS TO BE CONTROLLED. EXACT CONTROL FUNCTION IS DETERMINED BY THE BALLAST/FIXTURE TYPE. UPPER CASE SUBSCRIPT "K" INDICATES LOCKING SWITCH FOR THE SUBSEQUENT LOWER CASE LETTER. UPPER CASE SUBSCRIPT "V" INDICATES VANDAL RESISTANT SWITCH. UPPER CASE SUBSCRIPT "DM" INDICATES DUAL MODE CONTROL SWITCH.
- S (50) y+ AUTOMATIC SWITCHING/STEP-DIMMING DAYLIGHTING CONTROLLER USED TO SWITCH OFF LIGHTS WHEN SUFFICIENT NATURAL LIGHT IS PRESENT. NUMBER IN PARENTHESIS INDICATES THE AVERAGE WORKPLANE "TARGET ILLUMINATION" SYMBOL VALUE. ADJACENT LOWER CASE LETTER(S) INDICATES SWITCH LEG(S) CONTROLLED. ADJACENT "+" INDICATES PORTION OF SWITCHLEG CONTROLLED BY SENSOR.
- D (50) y+ AUTOMATIC CONTINUOUS DIMMING DAYLIGHTING CONTROLLER USED TO DIM LIGHTS WHEN SUFFICIENT NATURAL LIGHT IS PRESENT. NUMBER IN PARENTHESIS INDICATES THE AVERAGE WORKPLANE "TARGET ILLUMINATION" SYMBOL VALUE. ADJACENT LOWER CASE LETTER(S) INDICATES SWITCH LEG(S) CONTROLLED. ADJACENT "+, ++ AND *" INDICATES PORTION OF SWITCHLEG CONTROLLED BY SENSOR WHERE "+" INDICATES PRIMARY SIDELIT DAYLIT ZONE, "++" INDICATES SECONDARY SIDELIT DAYLIT ZONE, AND "*" INDICATES SKYLIT DAYLIT ZONE

CONTROL CONFIGURATIONS:

- y — "y" INDICATES THAT SWITCH LEG "y" TO BE CONFIGURED IN A "AUTO ON 100% / AUTO OFF" AND BE CONTROLLED (CONTINUOUSLY DIMMED) BY THE ASSOCIATED CEILING SENSOR REMOTE SWITCH ON THE WALL.
- y,(y) — "y,(y)" INDICATES THAT SWITCH LEG "y" TO BE CONFIGURED IN A "AUTO ON 50% / MANUAL ON 100% / AUTO OFF" AND BE CONTROLLED (CONTINUOUSLY DIMMED) BY THE ASSOCIATED DISTRIBUTED LIGHTING CONTROLS.
- (y) — "(y)" INDICATES THAT SWITCH LEG "y" IS TO BE CONFIGURED IN A "MANUAL ON / AUTO OFF" (VACANCY SENSOR) AND BE CONTROLLED BY THE ASSOCIATED DISTRIBUTED LIGHTING CONTROLS.

MISCELLANEOUS SYSTEM SYMBOLS

- ICP INVERTER CONTROL PANEL – SEE INVERTER SPECIFICATIONS.
- IAP INVERTER ANNUNCIATOR PANEL – SEE INVERTER SPECIFICATIONS.
- GAP GENERATOR ANNUNCIATOR PANEL – SEE GENERATOR SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
- IDCS INTEGRATED DIMMING CONTROL STATION (IDCS) PANEL – WALL MOUNTED. SEE IDCS SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
- DPCS DIMMING PANEL CONTROL STATION (DPCS) PANEL – WALL MOUNTED. SEE DPCS SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
- L LIGHTING CONTROL SYSTEM LOCAL SWITCH – WALL MOUNTED. SEE LIGHTING CONTROL SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
- O LIGHTING CONTROL SYSTEM OVERRIDE SWITCH – WALL MOUNTED. SEE LIGHTING CONTROL SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
- M LIGHTING CONTROL SYSTEM MASTER SWITCH – WALL MOUNTED. SEE LIGHTING CONTROL SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
- R IDCS/DPCS SYSTEM REMOTE STATION SWITCH – WALL MOUNTED. SEE IDCS SYSTEM AND/OR DPCS SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
- P IDCS/DPCS SYSTEM PARTITION STATION SWITCH – WALL MOUNTED. SEE IDCS SYSTEM AND/OR DPCS SYSTEM SPECIFICATIONS FOR MORE INFORMATION.

BRANCH CIRCUIT SYMBOLS

- A-1,3,5 HOME RUN TO PANEL. LETTER DESIGNATES PANEL, NUMBERS INDICATE CIRCUITS. HASH MARKS INDICATE NUMBER OF CONDUCTORS IN CONDUIT RUN, #12 AWG MINIMUM UNLESS OTHERWISE NOTED.
- A-1&3&5 HOME RUN TO PANEL. LETTER DESIGNATES PANEL, NUMBERS INDICATE CIRCUITS WITH SEPARATE NEUTRALS. "&" INDICATES SEPARATE NEUTRALS.
- A-1+3+5 HOME RUN TO PANEL. LETTER DESIGNATES PANEL, NUMBERS INDICATE CIRCUITS. "+" INDICATES SEPARATE #10 NEUTRAL THROUGHOUT BRANCH CIRCUIT. HASH MARK " ⌡ " INDICATES AN ISOLATED GROUND CONDUCTOR.
- CONCEALED CONDUIT OR BRANCH CIRCUIT UNLESS OTHERWISE NOTED. 1/2" CONDUIT MINIMUM, (2) #12 AWG CONDUCTORS MINIMUM.
- CONDUIT OR BRANCH CIRCUIT CONCEALED BELOW GRADE, 3/4" CONDUIT MINIMUM WITH (2) 12 AWG CONDUCTORS MINIMUM AND A CODE SIZED EQUIPMENT GROUND.
- SURFACE-MOUNTED CONDUIT OR BRANCH CIRCUIT UNLESS OTHERWISE NOTED. 1/2" CONDUIT MINIMUM, (2) #12 AWG CONDUCTORS MINIMUM.
- TANDEM WIRING CONNECTION.
- CONDUIT STUB OUT, CAP, MARK AND RECORD ON AS-BUILT DRAWINGS
- CONDUIT CONTINUATION.
- FLEXIBLE CONNECTION AS REQUIRED. NUMBER OF CONDUCTORS AS REQUIRED. VERIFY CONNECTION REQUIREMENTS WITH MANUFACTURER PRIOR TO ROUGH-IN.
- CONDUIT/ BRANCH CIRCUIT/FEEDER CONTINUATION DOWN WALL TO FLOOR BELOW
- CONDUIT/ BRANCH CIRCUIT/FEEDER CONTINUATION UP WALL TO FLOOR ABOVE

FLOOR BOX / SPECIALTY WALL BOX / PEDESTAL BOX SYMBOLS

- SINGLE SERVICE IN FLOOR BOX. PROVIDE DEVICES PER PLAN. SEE FLOOR BOX DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
- TWO SERVICE IN FLOOR BOX. PROVIDE DEVICES PER PLAN. SEE FLOOR BOX DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
- THREE SERVICE IN FLOOR BOX. PROVIDE DEVICES PER PLAN. SEE FLOOR BOX DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
- FOUR SERVICE IN FLOOR BOX. PROVIDE DEVICES PER PLAN. SEE FLOOR BOX DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
- SIX SERVICE IN FLOOR BOX. PROVIDE DEVICES PER PLAN. SEE FLOOR BOX DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
- AV 7-GANG AV FLOOR BOX. PROVIDE DEVICES PER PLAN. SEE FLOOR BOX DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
- AV RECESSED, ADJUSTABLE DEPTH, FLAT PANEL TV/DISPLAY WALL BOX WITH FLUSH GROMMETED COVER PANEL (CHIEF #PAC525F) AND MINIMUM OF (1) 1-1/4"C.O. FROM TOP-MOUNTED L.V. CONDUIT ENTRY BOX TO ACCESSIBLE CEILING. SEE PLANS FOR ANY ADDITIONAL CONDUIT REQUIREMENTS. PROVIDE ADDITIONAL L.V. AND LINE VOLTAGE CONDUIT ENTRY BOXES AS REQUIRED TO ACCOMPLISH WALL BOX CONFIGURATION DEPICTED ON PLANS. FLUSH GROMMETED COVER SHALL BE WHITE, BLACK OR CUSTOM COLOR PER ARCHITECT. WHEN FIELD CONDITIONS PROHIBIT INSTALLATION OF THIS DEVICE (SUCH AS WALL STUD/CAVITY DEPTH OF LESS THAN 2.5" ETC), CONFIRM VIA WRITTEN RFI THE INSTALLATION OF A TRADITIONAL POWER AND DATA RECEPTACLE INSTALLATION ALONG SIDE CCTV/AV JUNCTION BOX CONSISTING OF 2-GANG DEEP JUNCTION BOX/2-GANG RING WITH 1-1/4"C.O. TO ACCESSIBLE CEILING IN ADDITION TO ANY OTHER CONDUIT REQUIREMENTS DEPICTED ON PLANS. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR MOUNTING HEIGHT.
- SINGLE OR DUAL SERVICE RECESSED EXTERIOR WALL BOX – TYPE "WP-A". PROVIDE DEVICES PER PLAN. EACH LV OR UNUSED COMPARTMENT SHALL BE EQUIPPED WITH A 1"C.O. TO THE NEAREST ACCESSIBLE CEILING SPACE U.O.N. SEE EXTERIOR DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
- SINGLE OR DUAL SERVICE EXTERIOR PEDESTAL – TYPE "WP-C". PROVIDE DEVICES PER PLAN. SEE EXTERIOR DETAILS AND SPECIFICATIONS FOR MORE INFORMATION. ARROW DENOTES DEVICE DOOR LOCATION.

POWER SYMBOLS

ALL RECEPTACLE OUTLETS SHOWN WITH A DIAGONAL SLASH SHALL BE CONTROLLED BY OCCUPANCY SENSOR OR LIGHTING CONTROL PANEL. SEE DISTRIBUTED LIGHTING CONTROLS FOR ADDITIONAL REQUIREMENTS. WHERE DOUBLE DUPLEX RECEPTACLE OUTLETS ARE INDICATED AS CONTROLLED, ONLY A SINGLE DUPLEX RECEPTACLE OUTLET (NON-IG, NON-GCFI TYPE) SHALL BE CONTROLLED. WITHIN ANY CONTROLLED DUPLEX RECEPTACLE OUTLET, ONLY ONE RECEPTACLE SHALL BE CONTROLLED. NOTE THAT FOR FLOOR BOXES OR POKE-THRU DEVICES, THE ASSOCIATED CONTROL RELAY MAY NEED TO BE LOCATED WITHIN THE ELECTRICAL ROOM WHERE THE CONTROLLED CIRCUIT ORIGINATES.

- R a OCCUPANCY SENSOR/LIGHTING CONTROL SYSTEM CONTROLLED RECEPTACLE RELAY. WHERE LETTER DESIGNATION "a" REPRESENTS OCCUPANCY SENSOR/LIGHTING CONTROL SYSTEM CONTROL ZONE. SEE THE DISTRIBUTED LIGHTING CONTROL SPECIFICATION FOR MORE INFORMATION.
- DUPLEX RECEPTACLE, WALL MOUNTED.
- DOUBLE DUPLEX RECEPTACLE, WALL MOUNTED.
- DUPLEX, GFCI RECEPTACLE, WALL MOUNTED. WP INDICATES WEATHERPROOF, A, B OR C INDICATES THE TYPE OF COVER, REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
- DOUBLE DUPLEX, WALL MOUNTED, WITH (1) GFCI RECEPTACLE AND (1) DUPLEX RECEPTACLE CONNECTED ON LOAD SIDE OF GFCI. WP INDICATES WEATHERPROOF, A, B OR C INDICATES THE TYPE OF COVER, REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
- DUPLEX RECEPTACLE, ONE HALF SWITCHED, WALL MOUNTED.
- DUPLEX, ISOLATED GROUND RECEPTACLE, WALL MOUNTED.
- 1,3 / 1,3a COMBINATION DOUBLE DUPLEX: ONE ISOLATED GROUND DUPLEX RECEPTACLE AND ONE DUPLEX RECEPTACLE, WALL MOUNTED.
- COMBINATION DOUBLE DUPLEX: TWO ISOLATED GROUND RECEPTACLES, WALL MOUNTED.
- SIMPLEX RECEPTACLE, WALL MOUNTED.
- SPECIAL RECEPTACLE, WALL MOUNTED. REFER TO PLAN NOTES.
- DUPLEX RECEPTACLE FLUSH IN CEILING – MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- DOUBLE DUPLEX RECEPTACLE FLUSH IN CEILING – MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- DUPLEX RECEPTACLE, ONE HALF SWITCHED, FLUSH IN CEILING – MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- DUPLEX, ISOLATED GROUND RECEPTACLE, FLUSH IN CEILING – MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- 1,3 / 1,3a COMBINATION DOUBLE DUPLEX: ONE ISOLATED GROUND DUPLEX RECEPTACLE AND ONE DUPLEX RECEPTACLE, MOUNTED FLUSH IN CEILING – MOUNT FLUSH IN FLOOR WHEN INDICATED IN FLOOR BOX SYMBOL.
- COMBINATION DOUBLE DUPLEX FLUSH IN CEILING: TWO ISOLATED GROUND RECEPTACLES – MOUNT FLUSH IN FLOOR WHEN INDICATED IN FLOOR BOX SYMBOL.
- SIMPLEX RECEPTACLE FLUSH IN CEILING – MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- SPECIAL RECEPTACLE FLUSH IN CEILING – MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- DUPLEX RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
- DOUBLE DUPLEX RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
- DUPLEX, GFCI RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH. WP INDICATES WEATHERPROOF, A, B OR C INDICATES THE TYPE OF COVER, REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
- DOUBLE DUPLEX, WALL MOUNTED, WITH (1) GFCI RECEPTACLE AND (1) DUPLEX RECEPTACLE CONNECTED ON LOAD SIDE OF GFCI. WP INDICATES WEATHERPROOF, A, B OR C INDICATES THE TYPE OF COVER, REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
- DUPLEX RECEPTACLE, BOTTOM HALF SWITCHED, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
- DUPLEX, ISOLATED GROUND RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
- 1,3 / 1,3a COMBINATION DOUBLE DUPLEX: ONE ISOLATED GROUND DUPLEX RECEPTACLE AND ONE DUPLEX RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
- COMBINATION DOUBLE DUPLEX: TWO ISOLATED GROUND DUPLEX RECEPTACLES, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
- SIMPLEX RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
- SPECIAL RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH. REFER TO PLAN NOTES.
- WP-B WET LOCATION-LISTED (RAINTITE-IN-USE) RECEPTACLE – SEE ELECTRICAL SPECIFICATION FOR ADDITIONAL INFORMATION.
- WP-D DAMP LOCATION-LISTED (NOT-RAINTITE-IN-USE) RECEPTACLE – SEE ELECTRICAL SPECIFICATION FOR ADDITIONAL INFORMATION.
- DUPLEX RECEPTACLES WITH TWO 5V, 3.6A USB CHARGING PORTS. PROVIDE COLOR AS REQUIRED IN 15A OR 20A CONFIGURATION AND/OR TAMPER RESISTANT AND/OR HOSPITAL GRADE AS REQUIRED BY PLANS AND THE WIRING DEVICES SECTION OF THE GENERAL ELECTRICAL SPECIFICATIONS. (PASS & SEYMOUR OR EQUAL BY HUBBELL OR LEVITON.)
- QUAD RECEPTACLES WITH TWO 5V, 3.6A USB CHARGING PORTS. PROVIDE COLOR AS REQUIRED IN 15A OR 20A CONFIGURATION AND/OR TAMPER RESISTANT AND/OR HOSPITAL GRADE AS REQUIRED BY PLANS AND THE WIRING DEVICES SECTION OF THE GENERAL ELECTRICAL SPECIFICATIONS. (PASS & SEYMOUR OR EQUAL BY HUBBELL OR LEVITON.)
- J JUNCTION BOX, WALL MOUNTED AT +18-INCHES A.F.F. OR AS NOTED. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C..
- J JUNCTION BOX, MOUNTED IN ACCESSIBLE CEILING FOR APPLICATION DENOTED ON PLAN. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C..
- J JUNCTION BOX, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C..
- J JUNCTION BOX MOUNTED IN ACCESSIBLE CEILING SPACE PER PLAN FOR FLEXIBLE CONNECTION TO PREWIRED FURNITURE SYSTEM. MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL. WHEN SHOWN WITH A DIAGONAL SLASH, THE LAST GENERAL RECEPTACLE CIRCUIT ON THE HOME-RUN CALLOUT SHALL BE CONTROLLED BY THE OCCUPANCY SENSOR. COORDINATE CONTROLLED CIRCUIT CONNECTION REQUIREMENTS WITH FURNITURE SYSTEM MANUFACTURER PRIOR TO ROUGH-IN. SEE DISTRIBUTED LIGHTING CONTROLS FOR ADDITIONAL REQUIREMENTS.
- J JUNCTION BOX, WALL MOUNTED AT +18-INCHES A.F.F. FOR FLEXIBLE CONNECTION TO PREWIRED FURNITURE SYSTEM. WHEN SHOWN WITH A DIAGONAL SLASH, THE LAST GENERAL RECEPTACLE CIRCUIT ON THE HOME-RUN CALLOUT SHALL BE CONTROLLED BY THE OCCUPANCY SENSOR. COORDINATE CONTROLLED CIRCUIT CONNECTION REQUIREMENTS WITH FURNITURE SYSTEM MANUFACTURER PRIOR TO ROUGH-IN. SEE DISTRIBUTED LIGHTING CONTROLS FOR ADDITIONAL REQUIREMENTS.
- SURFACE MOUNTED MULTI-OUTLET ASSEMBLY. REFER TO GENERAL PRODUCT SPECIFICATIONS. PROVIDE ALL COMPONENTS NECESSARY FOR A COMPLETE INSTALLATION.
- T THERMOSTAT OUTLET BOX, PROVIDE 1/2" C.O. TO RESPECTIVE MECHANICAL UNIT.
- EXHAUST FAN, OR MOTOR LOAD. REFER TO MECHANICAL, PLUMBING OR KITCHEN DRAWINGS FOR SPECIFIC LOAD REQUIREMENTS OR AS NOTED.
- FLUSH MOUNTED ELECTRICAL PANELBOARD OR LOAD CENTER. REFER TO PANEL SCHEDULE.
- SURFACE MOUNTED ELECTRICAL PANELBOARD OR LOAD CENTER. REFER TO PANEL SCHEDULE.
- DISTRIBUTION SWITCHBOARD. REFER TO SINGLE LINE DIAGRAM.
- T TRANSFORMER, REFER TO SINGLE LINE DIAGRAM.
- F FUSED DISCONNECT SWITCH, HP RATED, OR COMBINATION MOTOR STARTER/DISCONNECT SWITCH WITH FUSES PER EQUIPMENT MANUFACTURER AND WEATHERPROOF AS REQUIRED. PROVIDE FINAL CONNECTION TO UNIT EQUIPMENT. SEE MOTORIZED EQUIPMENT SCHEDULE FOR DISCONNECT AND STARTER SIZES.
- NON-FUSED DISCONNECT SWITCH, HP RATED AND WEATHERPROOF AS REQUIRED. PROVIDE FINAL CONNECTION TO UNIT EQUIPMENT. SEE MOTORIZED EQUIPMENT SCHEDULE FOR DISCONNECT SIZES.
- M UTILITY COMPANY METER. PROVIDE "CT's" AND "PT's" AS REQUIRED, REFER TO SINGLE LINE DIAGRAM.
- A B C CIRCUIT BREAKER: "A" REPRESENTS CIRCUIT BREAKER AMPERE RATING, "B" REPRESENTS NUMBER OF POLES AND "C" REPRESENTS MISCELLANEOUS BREAKER FEATURES.
  - SHUNT= PROVIDE SHUNT TRIP MECHANISM
  - GFP= GROUND FAULT PROTECTION
  - CLCB= CURRENT LIMITING CIRCUIT BREAKER
  - SS= PROVIDE SOLID STATE CIRCUIT BREAKER
  - LO= PROVIDE PERMANENT LOCK-OPEN (OFF) HARDWARE
  - LC= PROVIDE PERMANENT LOCK-CLOSED (ON) HARDWARE
- A B C D FUSIBLE SWITCH: "A" REPRESENTS SWITCH/FRAME AMPERE RATING, "B" REPRESENTS THE FUSE AMPERE RATING, "C" INDICATES NUMBER OF POLES AND "D" REPRESENTS MISCELLANEOUS FUSE/SWITCH FEATURES.
  - SHUNT= PROVIDE SHUNT TRIP MECHANISM
  - GFP= GROUND FAULT PROTECTION
  - CLF= CURRENT LIMITING FUSE
- GROUND CONNECTION, SIZE AS INDICATED OR AS REQUIRED.
- $a,b SINGLE POLE SWITCHES, WALL MOUNTED. SUBSCRIPTS AT SYMBOL INDICATE THE FOLLOWING:

2 – DOUBLE POLE	LV – LOW VOLTAGE	RL – ROTARY LOCK KEY TYPE
3 – THREE WAY	P – PILOT LIGHT	PB – PUSHBUTTON
4 – FOUR WAY	R – REMOTE CONTROL	S – PROJECTION SCREEN
K – KEY OPERATED	M – MOTOR STARTING	

a, b, c, ETC. – DESIGNATES QUANTITY OF SWITCHES AT EACH LOCATION.

NOTE: ALL WALL SWITCHES CONTROLLING EMERGENCY CIRCUITS SHALL BE ENGRAVED WITH "EMERGENCY".

- EMERGENCY POWER OFF STATION, WALL MOUNTED PER EPO SYSTEM DETAIL.
- PB, OR P PULLBOX, SIZED PER N.E.C. OR AS NOTED.

WALL MOUNTED DEVICE MOUNTING HEIGHT NOTE:

ALL WALL-MOUNTED EQUIPMENT MOUNTING HEIGHTS SHALL BE VERIFIED PRIOR TO ROUGH-IN PER REQUIREMENTS OF THE DEVICE ALIGNMENT AND MOUNTING HEIGHT DETAILS AND SPECIFICATIONS.

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DATE: 03/25/2019

pjhm architects
www.pjhm.com

LICENSED ARCHITECT KENNETH J. PODANY NO. C28889 REN. 3/19 STATE OF CALIFORNIA

tk1sc COLLABORATIVE
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 www.tk1sc.com
Project Manager-Erin Hagger
tk1sc Job #: 2016-0734

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 Ex.12/31/2019 ELECTRICAL STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION

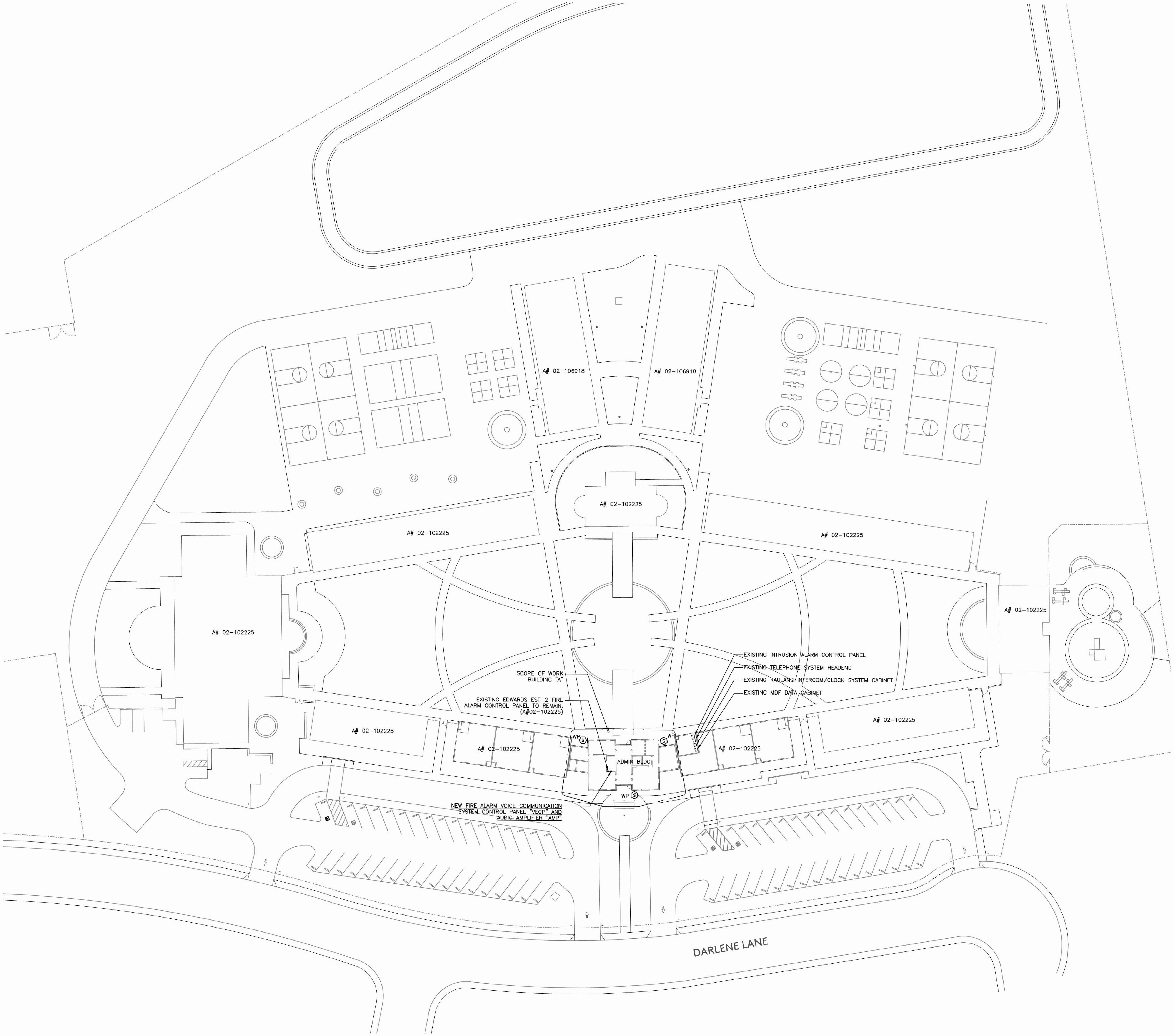
JEFFERSON SCHOOL DISTRICT

SYMBOLS LIST

E-0.0

PLAN NOTES:

1. XXX



ELECTRICAL SITE PLAN

SCALE: 1"=30'-0"

SITE UTILITY PLAN CONSTRUCTION NOTES:

THESE NOTES ESTABLISH MINIMUM QUALITY LEVELS AND COORDINATION REQUIREMENTS. RESPECTIVE UTILITY COMPANY PLANS AND REQUIREMENTS TAKE PRECEDENCE OVER THESE NOTES WITH REGARD TO RESPECTIVE UTILITY COMPANY CONDUIT AND UNDERGROUND STRUCTURE SYSTEMS.

1. CALL UNDERGROUND SERVICE ALERT (USA) AT (800) 422-4133 OR APPLICABLE STATE AND LOCAL DIG SAFE OR UNDERGROUND ALERT HOTLINES PRIOR TO CONSTRUCTION START.
2. COORDINATE ALL UNDERGROUND STRUCTURES AND CONDUIT ROUTING WITH LANDSCAPE ARCHITECT PRIOR TO ROUGH-IN TO ENSURE THAT SUCH ITEMS ARE NOT PLACED IN CRITICAL LANDSCAPE PLANTING/HARDSCAPE AREAS.
3. VAULTS, MAINTENANCE HOLES (MH's), FORMERLY KNOWN AS MANHOLES, AND CONDUITS SHALL MAINTAIN A MINIMUM COVER OF 24" BELOW FINAL SURFACE AT ALL CONDITIONS. INCLUDE ALL COSTS IN BASE BID TO MEET UTILITY COMPANY REQUIREMENTS WHICH MAY REQUIRE GREATER MINIMUM CONDUIT DEPTHS.
4. VAULTS, MH's AND PULLBOXES (PB's) SHALL BE EQUIPPED WITH KNOCKOUT PANELS OR PRE-CAST INDIVIDUAL CONDUIT OPENINGS. CONDUITS SHALL ONLY ENTER AND EXIT ON END/SHORT WALLS. CONDUITS MAY NOT ENTER AND EXIT ON SIDE/LONG WALLS, CEILINGS OR FLOORS UNLESS OTHERWISE NOTED.
5. CUT DUCTS FLUSH WITH INTERIOR VAULT/MH/PB WALL.
6. GROUT AROUND DUCT ENTRANCES ON VAULT/MH/PB WALLS.
7. SLURRY BACKFILL AROUND DUCTS WITHIN 5 FEET OF VAULT/MH/PB TO PREVENT SHEARING.
8. CONDUITS PASSING UNDER THE BUILDING PERIMETER SHALL BE ENCASED IN LIGHTWEIGHT CONCRETE OR WATER-IMPERVIOUS CLAY TO PREVENT WATER INFILTRATION. SEE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
9. CONDUIT BEND RADIUS FOR BUILDING ENTRANCES AND AT POLES SHALL BE A MINIMUM OF 24" FOR CONDUITS WITH LESS THAN 2" INTERNAL DIAMETER AND A MINIMUM OF 48" FOR CONDUITS WITH MORE THAN 2" INTERNAL DIAMETER.
10. PREFERRED CONDUIT SWEEP RADIUS BETWEEN VAULTS IS 25 FEET. UNDER NO CIRCUMSTANCES SHALL THE CONDUIT SWEEP RADIUS BE LESS THAN 12.5 FEET. MAXIMUM OF 90 DEGREES PER SWEEP AND LIMITED TO NO MORE THAN (2) 90 DEGREE SWEEPS BETWEEN VAULTS.
11. VAULTS/MH's/PB's ARE TO BE EQUIPPED WITH RACKING, GROUNDING LUGS, AND BOLT-DOWN LIDS UNLESS OTHERWISE NOTED.
12. VAULTS AND MH's TO BE EQUIPPED WITH ROUND COVERS, EXTENSION RINGS AS REQUIRED, LADDERS AND (3) SEGMENTS OF 6 FOOT HIGH CABLE RACKING PER EACH LONG WALL.
13. LABEL ALL NON-UTILITY COMMUNICATION VAULT/MH/PB COVERS WITH "COMMUNICATIONS" UNLESS OTHERWISE NOTED ON PLANS.
14. COORDINATE FINAL VAULT/MH/PB OPENING HEIGHT WITH G.C. PRIOR TO ROUGH-IN TO ENSURE FINAL GRADE DOES NOT SLOPE INTO VAULT/MH/PB OPENING.
15. CONTRACTOR TO PROVIDE A MINIMUM OF 8" DEEP COMPACTED 1/2" DIAMETER GRAVEL, UNDER ALL VAULTS, MH's OR PB's TO ENSURE UNIFORM DISTRIBUTION OF SOIL PRESSURE ON THE FLOOR AND BE ABLE TO DISSIPATE WATER OUT OF THE VAULT, MH OR PB.
16. ALL VAULTS/MH's/PB's WITHOUT GROUNDING LUGS SHALL HAVE AN 8' x 3/4" COPPER GROUND ROD DRIVEN THRU THE FLOOR TO ALLOW GROUNDING OF ITEMS WITHIN.
17. ALL VAULTS/MH's/PB's SHALL BE PROVIDED WITH TRAFFIC RATED COVERS WHEN LOCATED IN PAVED AREAS UTILIZED FOR VEHICLE TRAFFIC.
18. IF THE WATER OR MOISTURE BARRIER ON OR NEAR THE FOUNDATION OF A BUILDING IS DISTURBED IN ANY MANNER BY EXCAVATION OR OTHER CONSTRUCTION WORK, THE MOISTURE BARRIER MUST BE REPAIRED FOLLOWING THE RECOMMENDATIONS OF THE MANUFACTURER OF THE ORIGINAL BARRIER PRODUCT.
19. THE CONTRACTOR SHALL INCLUDE IN BASE BID ALL COSTS TO COMPLY WITH ALL REQUIREMENTS FOR CONFINED SPACE ENTRY PER THE OSHA REQUIREMENTS 29 CFR-1910.146, 29 CFR-1910.268, ETC. DURING ANY CONFINED SPACE ENTRY.
20. ANY DUCTS LEAVING A VAULT, MH OR PB ROUTED INTO A FACILITY SHALL BE PLUGGED AT EACH END USING REMOVABLE MECHANICAL PLUGS DESIGNED TO PREVENT WATER AND GAS FROM ENTERING THE FACILITY.
21. SEE ELECTRICAL SPECIFICATIONS AND PLAN DETAILS FOR ADDITIONAL REQUIREMENTS REGARDING UNDERGROUND CONDUITS AND IN-GRADE VAULT/MH/PB/JUNCTION BOXES.

SITE PLAN GENERAL NOTES:

1. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING DUCTS, PIPING OR CONDUITS, ETC., AND TO PREVENT HAZARDS TO PERSONNEL AND/OR DAMAGE TO EXISTING UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN AND INSTALLED BY ANY OTHER CONTRACTS. THE ENGINEER IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY ANY OTHER CONTRACTS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE THE NECESSARY ELEMENTS FOR CONSTRUCTION SAFETY.
2. CALL UNDERGROUND SERVICE ALERT (USA) AT 1 (800) 422-4133 OR APPLICABLE STATE AND LOCAL DIG SAFE OR UNDERGROUND ALERT HOTLINES PRIOR TO CONSTRUCTION START.
3. MINIMUM CONDUIT SIZE SHALL BE 3/4" – U.O.N.
4. MINIMUM CONDUCTOR SIZE SHALL BE #10 AWG. – U.O.N.
5. ALL SITE BRANCH CIRCUITS SHALL INCLUDE AN EQUIPMENT GROUND CONDUCTOR THAT, AT MINIMUM, MATCHES THE SIZE OF THE ASSOCIATED BRANCH CIRCUIT CONDUCTOR. WHERE MULTIPLE BRANCH CIRCUITS ARE ROUTED/GROUPED TOGETHER, THE EQUIPMENT GROUNDING CONDUCTOR SHALL MATCH THE SIZE OF THE LARGEST BRANCH CIRCUIT CONDUCTOR IN THE GROUP.
6. ALL ELECTRICAL EQUIPMENT MOUNTED OUTDOORS SHALL BE WEATHERPROOF (NEMA #3R).
7. ALL CONDUIT ONLY SHALL BE PROVIDED WITH A NYLON PULL STRING.
8. SEE ARCHITECTURAL/LANDSCAPE ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF FIXTURES, PULLBOXES, MANHOLES, OTHER ELECTRICAL DEVICES, ETC. COORDINATE ALL UNDERGROUND STRUCTURES AND CONDUIT ROUTING WITH LANDSCAPE ARCHITECT PRIOR TO ROUGH-IN TO ENSURE THAT SUCH ITEMS ARE NOT PLACED IN CRITICAL LANDSCAPE PLANTING/HARDSCAPE AREAS.
9. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.

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TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

ELECTRICAL SITE PLAN

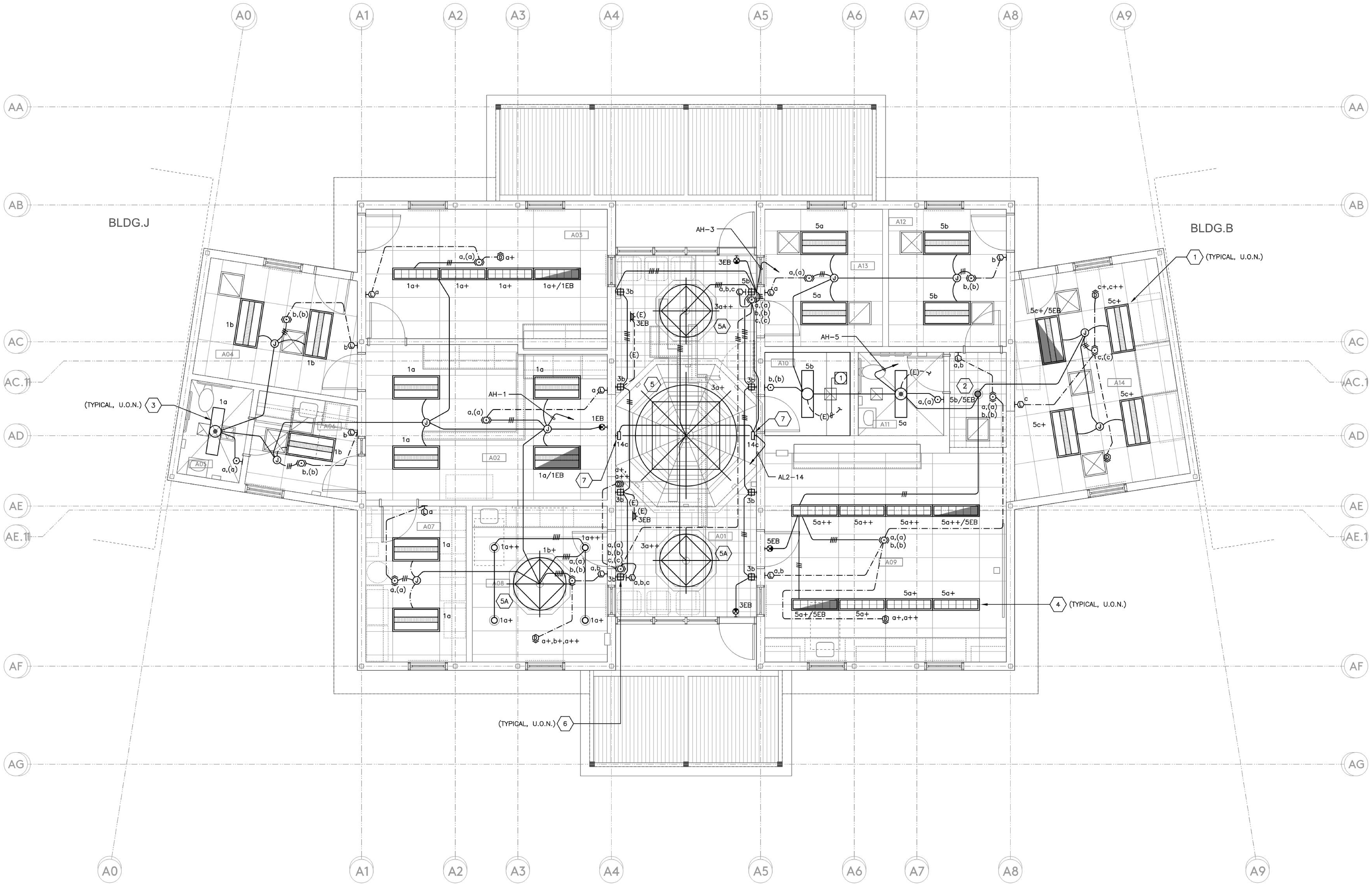
E-0.1

A01	RECEPTION/WAITING	A09	TEACHER PREP ROOM
A02	OFFICE	A10	STORAGE ROOM
A03	PRINCIPAL	A11	RESTROOM
A04	ASSISTANT PRINCIPAL	A12	OFFICE
A05	RESTROOM	A13	OFFICE
A06	NURSE	A14	TEACHER WORKROOM
A07	STORAGE/WORKROOM		
A08	CONFERENCE		

ROOM SCHEDULE

PLAN NOTES:

1. EXISTING CONNECTION TO HVAC UNIT TO REMAIN PROTECTED IN PLACE.



ADMINISTRATION MODERNIZATION - LIGHTING PLAN

SCALE: 1/4"=1'-0"

LIGHTING PLAN GENERAL NOTES:

1. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND ELEVATION OF ALL LIGHTING FIXTURES AND ALL DEVICES. ALL WALL-MOUNTED DEVICE HEIGHTS SHALL BE VERIFIED WITH THE ARCHITECT PRIOR TO ROUGH-IN.
2. VERIFY EXACT CEILING CONSTRUCTION WITH ARCHITECTURAL REFLECTED CEILING PLAN AND PROVIDE LIGHTING FIXTURES WITH ALL NECESSARY MOUNTING HARDWARE.
3. ALL RECESSED FIXTURES SHALL BE PROVIDED WITH ALL REQUIRED STRUCTURAL SUPPORTS AS REQUIRED BY THE CURRENTLY ADOPTED ISSUE OF THE IBC, OR CBC WHERE ADOPTED, IN ADDITION TO ANY LOCAL CODES.
4. ALL COVE MOUNTED FIXTURES SHALL EXTEND THE FULL LENGTH OF THE COVE. CONTRACTOR TO FIELD MEASURE COVE LENGTH AND ORDER QUANTITY OF FIXTURES AS REQUIRED.
5. ALL DIMMING BRANCH CIRCUITS SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR FOR EACH ZONE/CHANNEL.
6. ALL FLUORESCENT DIMMING ZONES/CHANNELS SHALL BE PROVIDED WITH 3 LINE VOLTAGE CONDUCTORS (NEUTRAL, DIMMED HOT, SWITCHED HOT) OR 2 LINE VOLTAGE CONDUCTORS/2 CONTROL CONDUCTORS AS REQUIRED BY THE CONTROL/BALLAST TYPE.
7. ALL EMERGENCY BATTERY PACK FIXTURES SHALL BE PROVIDED WITH A CONSTANT HOT CONNECTION TO THE CHARGING LEAD. SEE GENERAL LIGHTING FIXTURE SCHEDULE NOTES FOR MORE INFORMATION.
8. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXIT SIGN CHEVRONS AND NUMBER OF FACES PER EXIT SIGN. ANY DISCREPANCIES BETWEEN EXIT SIGNS SHOWN ON THE ELECTRICAL AND ARCHITECTURAL PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO ORDERING EXIT SIGNS.
9. WHEN EXPOSED CEILINGS OR OPEN GRID CONDITIONS OCCUR, THE CONTRACTOR WILL NEED TO PROVIDE THE FOLLOWING ITEMS:

   - ALL BRANCH CIRCUITS SHALL BE IN EMT.
   - ALL BRANCH CIRCUITS SHALL BE ROUTED, NEATLY TRAINED, AND IN PARALLEL TO STRUCTURES OR DUCT WORK. THE TERM "TRAINED" MEANS ALL PARALLEL CONDUITS SHALL MAINTAIN THE SAME SPATIAL RELATIONSHIP WITH EACH OTHER FOR ENTIRE RUN TO INCLUDE RADIUS BENDS AND SWEEPS.

   VISUALLY OBJECTIONABLE BRANCH CIRCUITS WILL BE REROUTED AT THE REQUEST OF THE ARCHITECT AT NO ADDITIONAL COST.
10. ALL LED REMOTE INDICATORS FOR DUCT DETECTORS AND FIRE/SMOKE DAMPERS REQUIRED BY THE LOCAL AHJ SHALL BE LOCATED IN CEILINGS IN COORDINATION WITH ARCHITECT PRIOR TO ANY ROUGH-IN.
11. RECESSED FIXTURES LOCATED IN A FIRE-RATED CEILING OR WALL SHALL BE PROVIDED WITH A 5-SIDED RATED ENCLOSURE SO CONSTRUCTED AS TO ALLOW CODE AND MANUFACTURER-REQUIRED CLEARANCES BETWEEN THE FIXTURE AND THE ENCLOSURE.
12. PROVIDE REDUNDANT GROUND PATH IN ALL BRANCH CIRCUITS SERVING PATIENT CARE AREAS CONSISTING OF A SEPARATE, INSULATED EQUIPMENT GROUNDING CONDUCTOR PER NEC, OR CEC WHERE ADOPTED, ART 517.13.
13. PROVIDE ADDITIONAL J-BOX NEAR PANEL FOR MULTIPLE HOMERUN CIRCUITRY.
14. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.
15. REFER TO GENERAL POWER PLAN NOTES AND COMMUNICATIONS PATHWAYS GENERAL NOTES FOR ADDITIONAL REQUIREMENTS WHEN POWER AND/OR DATA DEVICES ARE SHOWN ON THIS PLAN.

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www.pjhm.com

NO. C28889
REN. 3/19
STATE OF CALIFORNIA

tk1sc COLLABORATIVE
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 www.tk1sc.com
Project Manager-Erin Hagger
tk1sc Job #: 2016-0734

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
Ex.12/31/2019
ELECTRICAL
STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

ADMINISTRATION MODERNIZATION LIGHTING PLAN

E-2.1

A01	RECEPTION/WAITING	A09	TEACHER PREP ROOM
A02	OFFICE	A10	RESTROOM
A03	PRINCIPAL	A11	STORAGE ROOM
A04	ASSISTANT PRINCIPAL	A12	OFFICE
A05	RESTROOM	A13	OFFICE
A06	NURSE	A14	STORAGE ROOM
A07	STORAGE/WORKROOM	A15	RESTROOM
A08	CONFERENCE		

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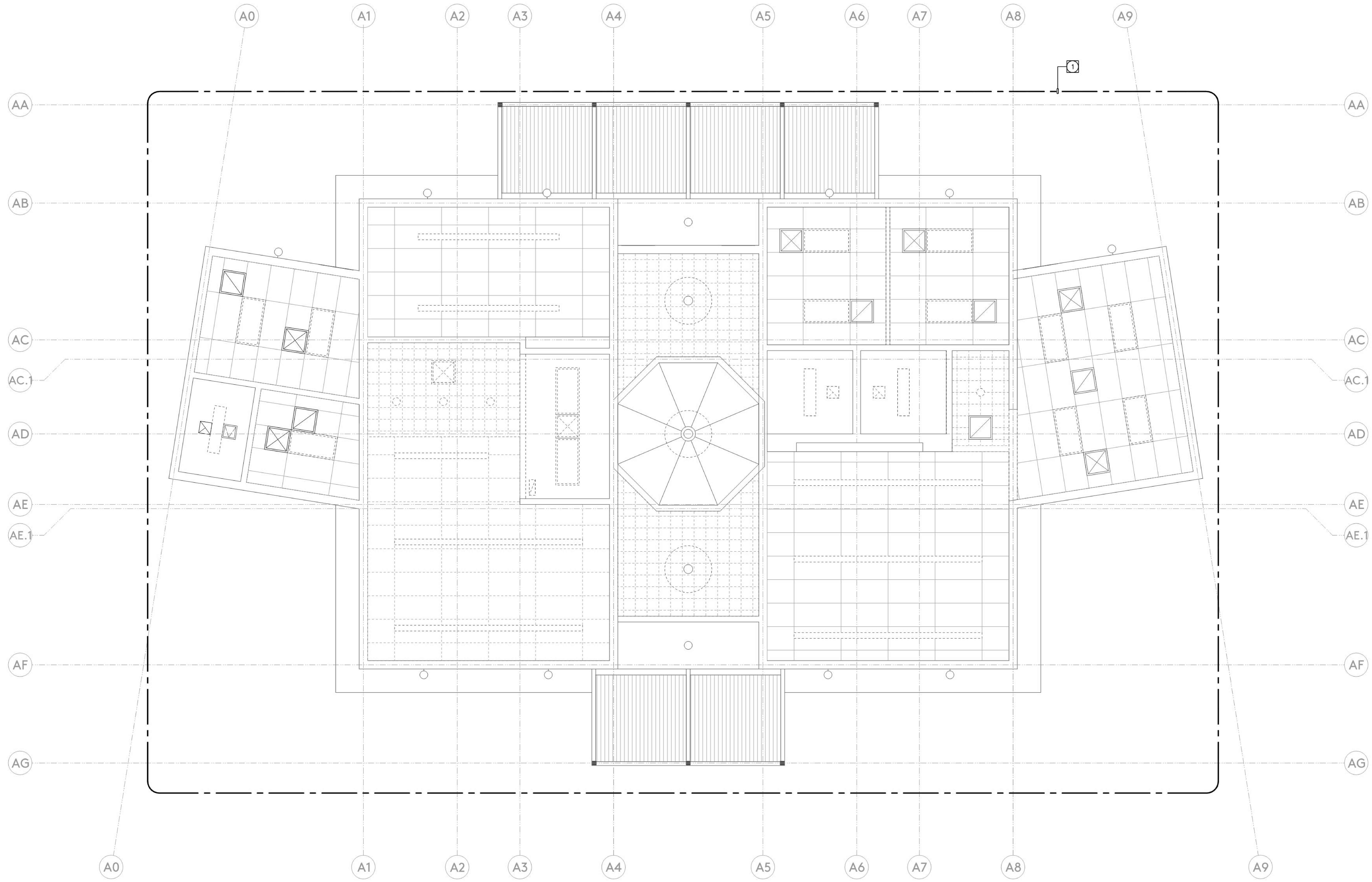
ROOM SCHEDULE

PLAN NOTES:

1. REFER TO GENERAL DEMOLITION NOTE 14 FOR SCOPE OF WORK IN EXISTING ADMINISTRATION BUILDING.



ADMINISTRATION MODERNIZATION - LIGHTING DEMOLITION PLAN

SCALE: 1/4"=1'-0"

GENERAL DEMOLITION NOTES:

1. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY. DO NOT SCALE THE ELECTRICAL DRAWINGS TO DETERMINE THE LOCATION OF EQUIPMENT OR OUTLETS. SEE ARCHITECTURAL PLANS, WHERE PROVIDED ON PROJECT, FOR EXTENT OF DEMOLITION.
2. THE EXISTING CONDITIONS SHOWN ARE FROM AVAILABLE RECORD DRAWINGS AND SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ACTUAL EXISTING CONDITIONS AT SITE PRIOR TO SUBMITTING BID. ALL DEMOLITION, ALTERATION, EXTENSION, RELOCATION, REHABILITATION WORK SHALL BE INCLUDED IN CONTRACT. NO ADDITIONAL ALLOWANCE OR CHANGE ORDERS WILL BE ACCEPTED.
3. CONTRACTOR IS RESPONSIBLE TO RELOCATE OR REMOVE FROM WALLS, CEILINGS, FLOOR SPACES, ETC. ANY EXISTING CONDUITS, WIRES, BOXES, FITTINGS, FIXTURES OR OTHER ELECTRICAL EQUIPMENT WHICH INTERFERES WITH PLANNED REMODEL WORK. PROVIDE CIRCUIT CONTINUATION REQUIRED FOR ALL EXISTING OUTLETS, FIXTURES, EQUIPMENT, ETC. SCHEDULED TO REMAIN.
4. NOTIFY THE ENGINEER IMMEDIATELY WHEREVER EXISTING EQUIPMENT IS ENCOUNTERED WHICH MUST BE RELOCATED DUE TO THE NEW CONSTRUCTION, OR NOT INDICATED ON "AS-BUILT" DRAWINGS OR WAS BURIED UNDERGROUND OR EMBEDDED IN STRUCTURE WALLS.
5. CAREFULLY PROTECT ALL WALLS, TRIM, FLOORS, EQUIPMENT, UTILITY LINES AND MATERIALS. WHEN WORKING ON FINISHED SURFACES, LIMIT DAMAGE TO THE SMALLER AREA IF POSSIBLE AND RESTORE TO THE ORIGINAL CONDITION ALL SURFACES WHICH ARE DAMAGED BECAUSE OF THE INSTALLATION OF THIS WORK.
6. EQUIPMENT, MATERIALS AND SUPPLIES TEMPORARILY REMOVED FOR PROTECTION SHALL BE REPLACED IN ORIGINAL LOCATIONS. ANY MATERIALS DAMAGED SHALL BE REPLACED WITH NEW MATERIALS OF LIKE KIND AND QUALITY.
7. DEMOLITION WORK SHALL BE DONE IN A MANNER WHICH WILL NOT CAUSE UNNECESSARY INCONVENIENCE OR DANGER TO USERS OF THE PREMISES AND ADJACENT SITE, AND NOT INTERFERE WITH ITS OPERATION. ANY DEMOLITION WORK TO BE PERFORMED MUST BE PLANNED IN ADVANCE.
8. DO ALL DRILLING, CUTTING, ETC. REQUIRED TO DEMOLISH ELECTRICAL WORK AS INDICATED OR PROVIDE BLANK COVER PLATE ON ALL OUTLETS EXPOSED BY REMOVAL OF FIXTURE OR DEVICES.
9. RESEAL ALL PENETRATIONS OR OPENING THROUGH WALLS, CEILING, FLOORS, ETC., TO MAINTAIN THE RATING OF STRUCTURE.
10. ALL REMOVED MATERIALS AND EQUIPMENT WHICH IS SALVAGED MATERIALS SHALL REMAIN IN THE PROPERTY OF THE OWNER. DELIVER SUCH SALVAGED MATERIALS AND EQUIPMENT ON THE PREMISES AS DIRECTED BY OWNER AND NEATLY PILE OR STORE THEM AND PROTECT FROM DAMAGED. DISPOSE OF ALL HAZARDOUS MATERIAL PER GUIDELINE OF THE STATE OF CALIFORNIA, DEPARTMENT OF HEALTH SERVICES AND OTHER AGENCIES HAVING JURISDICTION.
11. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDUIT/WIRING RUNS, REUSE AS REQUIRE AND REMOVED ALL UNUSED CONDUIT/WIRING. UNUSED CONDUIT IN INACCESSIBLE LOCATIONS (WALLS TO REMAIN) CAN BE ABANDONED IN PLACE. REMOVE UNUSED WIRING.
12. CONTRACTOR TO VERIFY CIRCUIT NUMBER AND LOADS FOR ALL EXISTING EQUIPMENT PRIOR TO INSTALLATION OF NEW OR RELOCATED ELECTRICAL EQUIPMENT. REASSIGN CIRCUITS AND LOADS ACCORDINGLY. PROVIDE COMPLETE "AS BUILT" DRAWINGS AND TYPEWRITTEN DIRECTORIES FOR PANELS.
13. WHERE NECESSARY TO SHUT OFF UTILITY SERVICES OR CAUSE INTERRUPTION TO POWER OR SIGNAL SYSTEMS WHILE A BUILDING IS OCCUPIED OR THAT EFFECT ADJACENT BUILDINGS, SCHEDULE OUTAGES OR INTERRUPTIONS WITH THE OWNER, BUILDING OCCUPANTS AND/OR ADJACENT BUILDING OWNER(S) AND OCCUPANTS PRIOR TO CONDUCTING OUTAGE(S) OR INTERRUPTIONS.
14. REFER TO ARCHITECTURAL DEMOLITION DRAWING FOR DEMOLITION AREAS. THE SCOPE OF THE DEMOLITION SHALL INCLUDE ALL LABOR, EXISTING ELECTRICAL EQUIPMENT. VERIFY EXACT SCOPE PRIOR TO COMMENCING WORK. REFER TO DEMO PLAN FOR SPECIFIC AREAS NOT IN SCOPE THE SCOPE INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:
    A. INTERIOR LIGHTING: CONTRACTOR TO DEMOLISH ALL EXISTING INTERIOR LIGHTING FIXTURES AND ASSOCIATED CONTROLS, U.O.N.
    B. EXTERIOR LIGHTING: TO REMAIN PROTECTED IN PLACE, U.O.N.
15. WHERE NEW PARTITIONS OR OTHER CONSTRUCTION WILL COVER EXISTING, REMAINING OUTLETS MAKING THEM INACCESSIBLE, RELOCATE THESE OUTLETS AS REQUIRED, OR MAKE OTHER PROVISIONS SO THAT THE OUTLETS WILL REMAIN ACCESSIBLE AND OPERATIONAL.
16. WHERE EXISTING WALLS AND CEILINGS ARE TO REMAIN, PROVIDE BLANK COVER PLATES FOR OUTLETS WHERE EQUIPMENT OR DEVICES ARE REMOVED UNDER THIS CONTRACT. PRIME BLANK PLATES AND PAINT TO MATCH SURROUNDING AREA.
17. WHERE FIXTURES, EQUIPMENT, DEVICES, ETC. ARE SPECIFIED BY THE CONTRACT DOCUMENTS FOR REMOVAL, THE CONTRACTOR SHALL REMOVE ALL CIRCUIT CONDUCTORS/CABLING BACK TO THE NEAREST REMAINING JUNCTION BOX AND/OR POINT OF TERMINATION.
18. RELOCATE EXISTING CONDUITS AND/OR CONDUCTORS/CABLING ROUTING THROUGH AREAS WHERE NEW/REMOVED WALLS ARE SPECIFIED.
19. RELOCATION AND/OR REMOVAL OF EXISTING EQUIPMENT, DEVICES, OUTLETS BOXES, CONDUIT, WIRING, ETC. MAY AFFECT THE OPERATION OF EXISTING, REMAINING ELECTRICAL EQUIPMENT/DEVICES, THE CONTRACTOR SHALL PROVIDE ADDITIONAL MATERIALS AS REQUIRED TO MAINTAIN AND/OR RESTORE CONTINUITY OF SERVICES TO EXISTING REMAINING ELECTRICAL/DEVICES.
20. DISCONNECT ABANDONED CIRCUITS AT EXISTING PANEL BOARDS AND REMOVE WIRE TO LAST REMAINING DEVICES. LABEL ALL ABANDONED CIRCUIT BREAKERS "SPARE".

(D)	EXISTING DEVICE TO BE DEMOLISHED.
(E)	EXISTING DEVICE TO REMAIN.
(ER)	EXISTING DEVICE TO BE RELOCATED.
(R)	DENOTES RELOCATED DEVICE LOCATION.

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LICENSED ARCHITECT KENNETH J. PODANY NO. C28889 REN. 3/19 STATE OF CALIFORNIA

tk1sc COLLABORATIVE
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 www.tk1sc.com
Project Manager-Erin Hagger
tk1sc Job #: 2016-0734

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 Ex.12/31/2019 ELECTRICAL STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

ADMINISTRATION MODERNIZATION LIGHTING DEMOLITION PLAN

E-2.1D

MOTORIZED EQUIPMENT SCHEDULE GENERAL NOTES:

1. ALL BRANCH CIRCUIT DATA IS BASED UPON METALLIC CONDUITS. IF THE CONTRACTOR ELECTS TO USE NONMETALLIC CONDUITS, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED PER NEC, OR CEC WHERE ADOPTED, TABLE **250.122** AND THE CONDUIT SIZE SHALL BE INCREASED ACCORDINGLY.
2. ELECTRICAL CONTRACTOR SHALL REFER TO ALL DOCUMENTS RELATED TO THE EQUIPMENT (I.E. SHOP DRAWINGS, CONSTRUCTION DOCUMENTS, ETC.) IN REGARDS TO ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT LISTED IN THE SCHEDULE. ANY MODIFICATION AND/OR ADDITIONAL WORK NECESSARY SHALL BE INCLUDED IN THE BASE BID.
3. ELECTRICAL CONTRACTOR SHALL CHECK THE ROTATION OF ALL THREE PHASE MOTORS AND CORRECT THE ROTATION IF REVERSED.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE FUSES SIZED PER THE EQUIPMENT NAMEPLATE INFORMATION.
5. DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE, EXTERNALLY OPERATED, QUICK MAKE QUICK BREAK AND SHALL BE FUSIBLE OR NON FUSIBLE AS INDICATED. A MAXIMUM VOLTAGE, CURRENT AND HORSEPOWER SHALL BE CLEARLY MARKED ON SWITCH ENCLOSURE. SWITCHES HAVING DUAL RATINGS (HIGHER RATINGS WHEN USED WITH DUAL ELEMENT FUSES) SHALL HAVE RATINGS INDICATED ON METAL PLATES RIVETED OR OTHERWISE PERMANENTLY ATTACHED TO THE ENCLOSURE. WHEN INDICATED, TOGGLE SWITCHES SHALL BE MOTOR RATED FOR THE APPLICATION.
6. STARTERS SHALL BE FULL VOLTAGE, REDUCED VOLTAGE OR COMBINATION DISCONNECT AND STARTER, WITH CONTROL VOLTAGE AS REQUIRED, AS INDICATED ON THE DOCUMENTS RELATED TO THE EQUIPMENT, SUCH AS SHOP DRAWINGS, CONSTRUCTION DOCUMENTS, ETC. STARTERS SHALL INCLUDE MOTOR OVERLOAD PROTECTION, PHASE LOSS AND PHASE UNBALANCE PROTECTION AS REQUIRED.
7. ALL TERMINATIONS AND ENCLOSURES SHALL BE RATED FOR USE WITH 75 DEGREE C CONDUCTORS.
8. COMPLETE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF NEC (OR CEC WHERE ADOPTED) ARTICLES **430 AND 440**.
9. CONTRACTOR TO COORDINATE WITH ALL OTHER PROJECT TRADES AND WITH OWNER/ TENANT FOR TO OBTAIN RESPECTIVE EQUIPMENT SCCR AND PROVIDE APPROPRIATE PROTECTIVE DEVICES TO LIMIT AVAILABLE FAULT CURRENT TO LESS THAN THE EQUIPMENT NAMEPLATE SCCR PER NEC (OR CEC WHERE ADOPTED) **110.10**. SEE POWER SYSTEM STUDY SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
10. UNLESS OTHERWISE NOTED, MOCP VALUES FOR VFD-EQUIPPED DEVICE ARE SIZED PER NEC (OR CEC WHERE ADOPTED) **430.130(A).1**. CONTRACTOR SHALL COORDINATE WITH ALL OTHER PROJECT TRADES AND WITH OWNER/ TENANT (IF PROVIDING EQUIPMENT ON PROJECT) TO OBTAIN NAMEPLATE VFD-EQUIPPED DEVICE MOCP VALUE FROM MANUFACTURER INSTALLATION INSTRUCTIONS AND PROVIDE APPROPRIATE PROTECTIVE DEVICES TO COMPLY WITH NEC (OR CEC WHERE ADOPTED) **430.130(A).2**.

MOTORIZED EQUIPMENT SCHEDULE

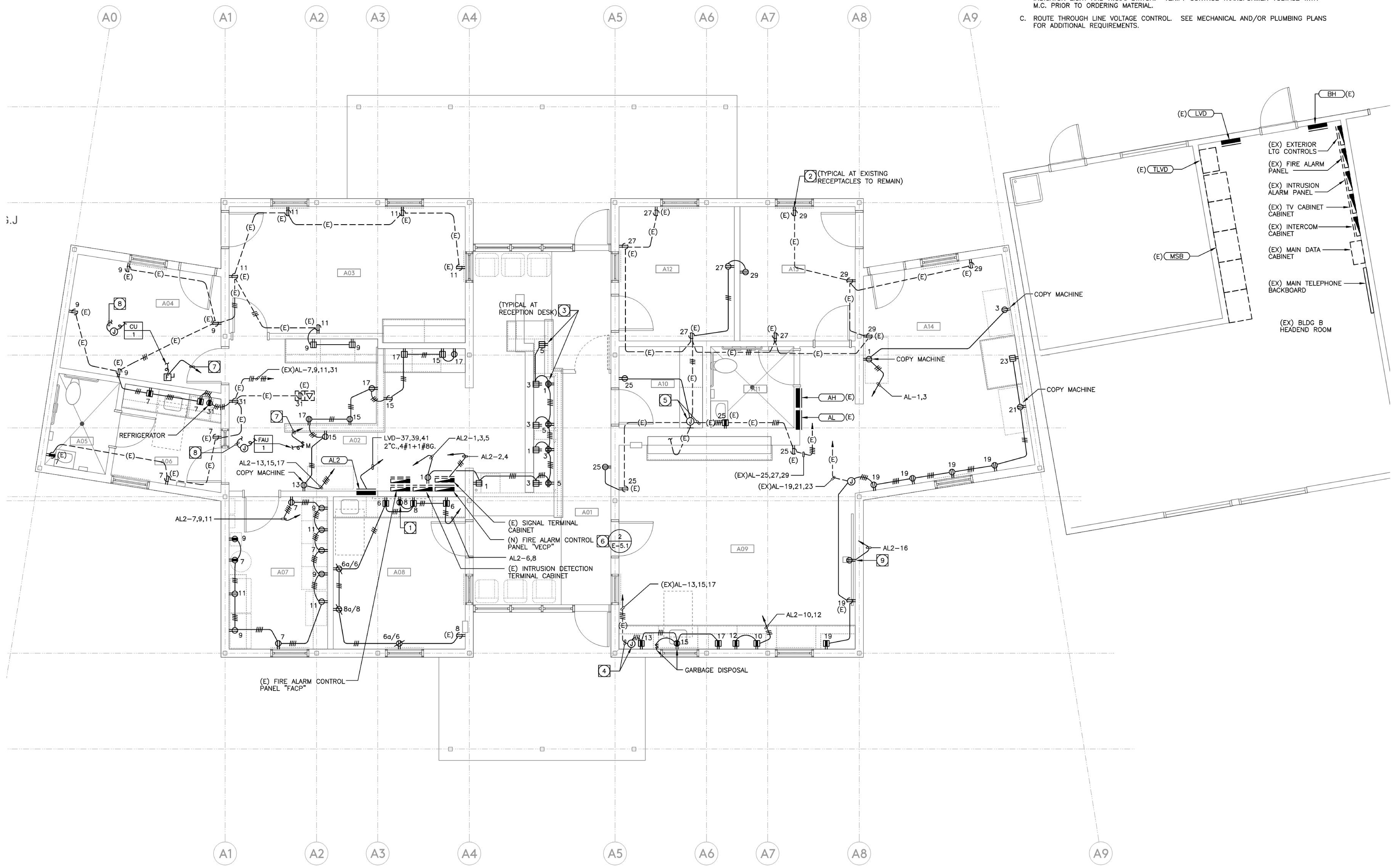
ITEM	DESCRIPTION	EQUIPMENT RATING								DISC. SW. SIZE	CIRCUIT DATA	SPECIFIC NOTES
				MOTOR		VFD						
		VOLTS	PH.	HP	FLA	FLA	MCA	MOCP	SCCR	STARTER SIZE	CONDUIT – WIRE	
FAU 1	FORCED AIR UNIT	115	1	–	–	–	7.1	15	–	$M	AL2–38 3/4"C.,2#10	–
CU 1	CONDENSING UNIT	208	1	–	–	–	18.2	30	–	30AS/2P –	AL2–40,42 3/4"C.,2#10	A

MOTORIZED EQUIPMENT SCHEDULE SPECIFIC NOTES:

A. FUSED AS RECOMMENDED BY MANUFACTURER.

B. MAGNETIC MOTOR STARTER WITH CONTROL TRANSFORMER, AUXILIARY CONTACTS, INDICATOR LIGHT AND H.O.A. SWITCH. VERIFY CONTROL TRANSFORMER VOLTAGE WITH M.C. PRIOR TO ORDERING MATERIAL.

C. ROUTE THROUGH LINE VOLTAGE CONTROL. SEE MECHANICAL AND/OR PLUMBING PLANS FOR ADDITIONAL REQUIREMENTS.



ADMINISTRATION MODERNIZATION - POWER PLAN

SCALE: 1/4"=1'-0"

A01	RECEPTION/WAITING	A09	TEACHER PREP ROOM
A02	OFFICE	A10	STORAGE ROOM
A03	PRINCIPAL	A11	RESTROOM
A04	ASSISTANT PRINCIPAL	A12	OFFICE
A05	RESTROOM	A13	OFFICE
A06	NURSE	A14	TEACHER WORKROOM
A07	STORAGE/WORKROOM		
A08	CONFERENCE		

ROOM SCHEDULE

PLAN NOTES:

1. FOR LED MONITOR. VERIFY MOUNTING HEIGHT WITH ARCHITECT.
2. PROVIDE NEW RECEPTACLE AND FACEPLATE AT EXISTING OUTLET BOX LOCATION AS REQUIRED.
3. REFER TO ARCHITECTURAL INTERIOR ELEVATIONS AND CASEWORK DETAILS FOR MOUNTING OF RECEPTACLES AT DESK.
4. INTERCEPT EXISTING CONDUIT BRANCH CIRCUIT HOMERUN, PROVIDE J-BOX AND EXTEND TO NEW RECEPTACLES AS INDICATED.
5. INTERCEPT EXISTING CONDUIT BRANCH CIRCUIT, PROVIDE J-BOX AND EXTEND TO NEW RECEPTACLES AS INDICATED. REFER TO DEMO PLAN.
6. MOUNT NEW PANEL BELOW EXISTING SIGNAL TERMINAL CABINET ON WALL.
7. REFER TO MOTORIZED EQUIPMENT SCHEDULE FOR MOTOR FEEDER/ BRANCH CIRCUIT INFORMATION.
8. PROVIDE 3/4" C.O.(S) TO RESPECTIVE CONTROL DEVICE(S) FOR CONTROL WIRING. REFER TO THE EQUIPMENT CONTROL WIRING DIAGRAMS FOR ADDITIONAL INFORMATION.
9. FOR WALL MOUNT SHORT THROW PROJECTOR. VERIFY MOUNTING HEIGHT WITH ARCHITECT.

ROOF PLAN GENERAL NOTES:

1. ELECTRICAL CONTRACTOR SHALL REFER TO MECHANICAL/PLUMBING AND ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND CHARACTERISTICS OF ALL EQUIPMENT LISTED IN SCHEDULE. ANY MODIFICATIONS AND/OR ADDITIONAL WORK NECESSARY SHALL BE INCLUDED IN THE BASE BID.
2. ALL TEMPERATURE CONTROL AND INTERLOCK CONDUIT AND WIRING SHALL BE BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED. SEE MECHANICAL/PLUMBING DRAWINGS FOR ALL INFORMATION.
3. ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL CONNECTION POINTS WITH THE EQUIPMENT INSTALLER PRIOR TO ROUGH-IN.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE LOCAL REMOTE DISCONNECTING MEANS FOR ALL ELECTRIC HEATING EQUIPMENT IF REQUIRED BY THE LOCAL ELECTRICAL CODE.
5. ELECTRICAL CONTRACTOR SHALL COORDINATE THE ROUTING OF CONDUIT/WIRING TO ROOF-MOUNTED EQUIPMENT WITH EQUIPMENT INSTALLER PRIOR TO ROUGH-IN. WHERE ROOF-MOUNTED EQUIPMENT IS MANUFACTURED TO BE FED FROM WITHIN MECHANICAL CURB ASSEMBLY – SEPARATE ROOF PENETRATIONS FOR WIRING CONNECTIONS SHALL NOT BE PERMITTED. ALL WIRING SHALL BE BELOW THE ROOF IN AN ACCESSIBLE CEILING SPACE LOCATION.
6. ALL ROOF MOUNTED EQUIPMENT SHALL BE NEMA 3R RATED.
7. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.

POWER PLAN GENERAL NOTES:

1. ALL RECEPTACLES ON COMMON WALLS SHALL BE SEPARATE BOXES AND OFFSET 24-INCHES MINIMUM.
2. ALL PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROTECTED FROM THE SPREAD OF FIRE WITH AN APPROVED FIRESTOP SYSTEM EQUAL OR GREATER THAN THE FIRE RATING OF THE WALL.
3. ALL WALL-MOUNTED DEVICE HEIGHTS SHALL BE VERIFIED WITH THE ARCHITECT PRIOR TO ROUGH-IN.
4. ALL FURNITURE FEED LOCATIONS TO BE VERIFIED WITH ARCHITECT AND FURNITURE VENDOR PRIOR TO ROUGH-IN.
5. ALL FURNITURE WHIPS SHALL BE TRIMMED TO REDUCE EXCESS WHIP LENGTH.
6. WHEN EXPOSED CEILINGS OR OPEN GRID CONDITIONS OCCUR, THE CONTRACTOR WILL NEED TO PROVIDE THE FOLLOWING ITEMS:

   – ALL BRANCH CIRCUITS SHALL BE IN EMT.

   – ALL BRANCH CIRCUITS SHALL BE ROUTED NEATLY AND IN PARALLEL TO STRUCTURES OR DUCT WORK.

   VISUALLY OBJECTIONABLE BRANCH CIRCUITS SHALL BE REROUTED AT THE REQUEST OF THE ARCHITECT AT NO ADDITIONAL COST.
7. EXPOSED CABLE/CONDUCTORS INSTALLED IN A PLENUM SPACE SHALL CONFORM TO NEC, OR CEC WHERE ADOPTED, **ARTICLE 300.22(C)**.
8. PROVIDE G.F.C.I. TYPE RECEPTACLE(S) OR RECEPTACLE(S) PROTECTED BY A GFCI CIRCUIT BREAKER(S) WHEN LOCATED WITHIN 6-FEET OF ANY SINK OR THERAPEUTIC TUB, LAUNDRY AREA, SERVING ANY DRINKING FOUNTAIN OR VENDING MACHINE, WITHIN ANY KITCHEN SPACE AND/OR LOCATED OUTDOORS. WHERE RECEPTACLES ARE NOT READILY ACCESSIBLE, PROVIDE GFCI CIRCUIT BREAKER(S) TO PROTECT THE RESPECTIVE BRANCH CIRCUIT AND PROVIDE ADDITIONAL NEUTRAL CONDUCTORS IN THE BRANCH CIRCUITING AS REQUIRED TO ENSURE PROPER GFCI FUNCTION.
9. PROVIDE OCCUPANCY SENSOR/LIGHTING CONTROL SYSTEM CONTROLLED RECEPTACLE RELAY(S) AS REQUIRED TO SWITCH CONTROLLED RECEPTACLES. CONNECT BRANCH CIRCUITRY AND CONTROL WIRING AS REQUIRED TO ALLOW OCCUPANCY SENSOR/LIGHTING CONTROL SYSTEM RELAY TO SWITCH STANDALONE AND/OR SYSTEMS FURNITURE CONTROLLED RECEPTACLES AS INDICATED ON PLANS. PROVIDE ADDITIONAL CONDUIT, WIRING AND PATHWAYS NECESSARY TO CONNECT BRANCH CIRCUITRY AND CONTROL WIRING TO REMOTE RELAYS TO INCLUDE RELAY(S) LOCATED ON ALTERNATE FLOORS, IN ELECTRICAL ROOMS, ETC.
10. PROVIDE ADDITIONAL J-BOX NEAR PANEL FOR MULTIPLE HOMERUN CIRCUITRY.
11. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.
12. PROVIDE REDUNDANT GROUND PATH IN ALL BRANCH CIRCUITS SERVING PATIENT CARE AREAS CONSISTING OF A SEPARATE, INSULATED EQUIPMENT GROUNDING CONDUCTOR PER NEC, OR CEC WHERE ADOPTED, ART **517.13**.

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ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

ADMINISTRATION MODERNIZATION POWER PLAN

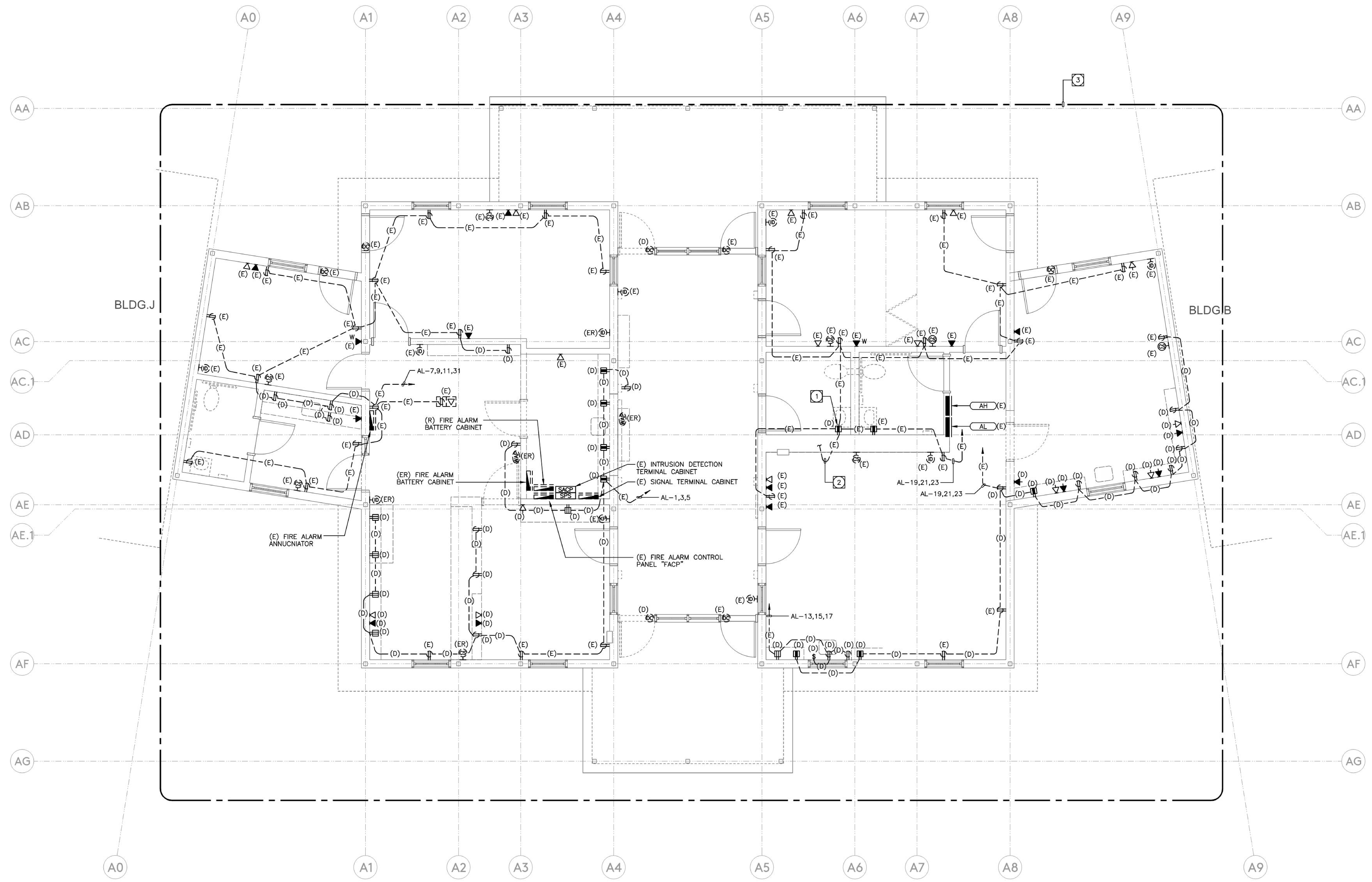
E-2.2

A01	RECEPTION/WAITING	A09	TEACHER PREP ROOM
A02	OFFICE	A10	RESTROOM
A03	PRINCIPAL	A11	STORAGE ROOM
A04	ASSISTANT PRINCIPAL	A12	OFFICE
A05	RESTROOM	A13	OFFICE
A06	NURSE	A14	STORAGE ROOM
A07	STORAGE/WORKROOM	A15	RESTROOM
A08	CONFERENCE		

ROOM SCHEDULE

PLAN NOTES:

1. PROVIDE J-BOX AT EXISTING RECEPTACLE LOCATION WITH BLANK FACEPLATE FOR RE-USE OF EXISTING CONDUITS AND WIRING.
2. TO EXISTING HVAC CONTACTORS TO REMAIN.
3. REFER TO GENERAL DEMOLITION NOTE 14 FOR ADDITIONAL SCOPE OF WORK IN EXISTING ADMINISTRATION BUILDING.



ADMINISTRATION MODERNIZATION - POWER & SIGNAL DEMOLITION PLAN

SCALE: 1/4"=1'-0"

GENERAL DEMOLITION NOTES:

1. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY. DO NOT SCALE THE ELECTRICAL DRAWINGS TO DETERMINE THE LOCATION OF EQUIPMENT OR OUTLETS. SEE ARCHITECTURAL PLANS, WHERE PROVIDED ON PROJECT, FOR EXTENT OF DEMOLITION.
2. THE EXISTING CONDITIONS SHOWN ARE FROM AVAILABLE RECORD DRAWINGS AND SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ACTUAL EXISTING CONDITIONS AT SITE PRIOR TO SUBMITTING BID. ALL DEMOLITION, ALTERATION, EXTENSION, RELOCATION, REHABILITATION WORK SHALL BE INCLUDED IN CONTRACT. NO ADDITIONAL ALLOWANCE OR CHANGE ORDERS WILL BE ACCEPTED.
3. CONTRACTOR IS RESPONSIBLE TO RELOCATE OR REMOVE FROM WALLS, CEILINGS, FLOOR SPACES, ETC. ANY EXISTING CONDUITS, WIRES, BOXES, FITTINGS, FIXTURES OR OTHER ELECTRICAL EQUIPMENT WHICH INTERFERES WITH PLANNED REMODEL WORK. PROVIDE CIRCUIT CONTINUATION REQUIRED FOR ALL EXISTING OUTLETS, FIXTURES, EQUIPMENT, ETC. SCHEDULED TO REMAIN.
4. NOTIFY THE ENGINEER IMMEDIATELY WHEREVER EXISTING EQUIPMENT IS ENCOUNTERED WHICH MUST BE RELOCATED DUE TO THE NEW CONSTRUCTION, OR NOT INDICATED ON "AS-BUILT" DRAWINGS OR WAS BURIED UNDERGROUND OR EMBEDDED IN STRUCTURE WALLS.
5. CAREFULLY PROTECT ALL WALLS, TRIM, FLOORS, EQUIPMENT, UTILITY LINES AND MATERIALS. WHEN WORKING ON FINISHED SURFACES, LIMIT DAMAGE TO THE SMALLER AREA IF POSSIBLE AND RESTORE TO THE ORIGINAL CONDITION ALL SURFACES WHICH ARE DAMAGED BECAUSE OF THE INSTALLATION OF THIS WORK.
6. EQUIPMENT, MATERIALS AND SUPPLIES TEMPORARILY REMOVED FOR PROTECTION SHALL BE REPLACED IN ORIGINAL LOCATIONS. ANY MATERIALS DAMAGED SHALL BE REPLACED WITH NEW MATERIALS OF LIKE KIND AND QUALITY.
7. DEMOLITION WORK SHALL BE DONE IN A MANNER WHICH WILL NOT CAUSE UNNECESSARY INCONVENIENCE OR DANGER TO USERS OF THE PREMISES AND ADJACENT SITE, AND NOT INTERFERE WITH ITS OPERATION. ANY DEMOLITION WORK TO BE PERFORMED MUST BE PLANNED IN ADVANCE.
8. DO ALL DRILLING, CUTTING, ETC. REQUIRED TO DEMOLISH ELECTRICAL WORK AS INDICATED OR PROVIDE BLANK COVER PLATE ON ALL OUTLETS EXPOSED BY REMOVAL OF FIXTURE OR DEVICES.
9. RESEAL ALL PENETRATIONS OR OPENING THROUGH WALLS, CEILING, FLOORS, ETC., TO MAINTAIN THE RATING OF STRUCTURE.
10. ALL REMOVED MATERIALS AND EQUIPMENT WHICH IS SALVAGED MATERIALS SHALL REMAIN IN THE PROPERTY OF THE OWNER. DELIVER SUCH SALVAGED MATERIALS AND EQUIPMENT ON THE PREMISES AS DIRECTED BY OWNER AND NEATLY PILE OR STORE THEM AND PROTECT FROM DAMAGED. DISPOSE OF ALL HAZARDOUS MATERIAL PER GUIDELINE OF THE STATE OF CALIFORNIA, DEPARTMENT OF HEALTH SERVICES AND OTHER AGENCIES HAVING JURISDICTION.
11. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDUIT/WIRING RUNS, REUSE AS REQUIRE AND REMOVED ALL UNUSED CONDUIT/WIRING. UNUSED CONDUIT IN INACCESSIBLE LOCATIONS (WALLS TO REMAIN) CAN BE ABANDONED IN PLACE. REMOVE UNUSED WIRING.
12. CONTRACTOR TO VERIFY CIRCUIT NUMBER AND LOADS FOR ALL EXISTING EQUIPMENT PRIOR TO INSTALLATION OF NEW OR RELOCATED ELECTRICAL EQUIPMENT. REASSIGN CIRCUITS AND LOADS ACCORDINGLY. PROVIDE COMPLETE "AS BUILT" DRAWINGS AND TYPEWRITTEN DIRECTORIES FOR PANELS.
13. WHERE NECESSARY TO SHUT OFF UTILITY SERVICES OR CAUSE INTERRUPTION TO POWER OR SIGNAL SYSTEMS WHILE A BUILDING IS OCCUPIED OR THAT EFFECT ADJACENT BUILDINGS, SCHEDULE OUTAGES OR INTERRUPTIONS WITH THE OWNER, BUILDING OCCUPANTS AND/OR ADJACENT BUILDING OWNER(S) AND OCCUPANTS PRIOR TO CONDUCTING OUTAGE(S) OR INTERRUPTIONS.
14. REFER TO ARCHITECTURAL DEMOLITION DRAWING FOR DEMOLITION AREAS. THE SCOPE OF THE DEMOLITION SHALL INCLUDE ALL LABOR, EXISTING ELECTRICAL EQUIPMENT. VERIFY EXACT SCOPE PRIOR TO COMMENCING WORK. REFER TO DEMO PLAN FOR SPECIFIC AREAS NOT IN SCOPE THE SCOPE INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:
    - A. POWER: EXISTING POWER TO REMAIN PROTECTED IN PLACE, U.O.N. PROVIDE NEW RECEPTACLE AND FACEPLATE AT EXISTING OUTLET BOX LOCATION FOR ALL EXISTING DEVICES TO REMAIN. FACEPLATE TO MATCH NEW DEVICES BEING PROVIDED.
    - B. ALL EXISTING ELECTRICAL SWITCHGEAR, PANELBOARDS, PULLBOXES, ETC. SHALL REMAIN PROTECTED IN PLACE, U.O.N.
    - C. SIGNAL: ALL EXISTING SIGNAL SYSTEMS, INCLUDING TELEPHONE OUTLETS, DATA OUTLETS, WIRELESS ACCESS POINTS (WAP), PUBLIC ADDRESS SPEAKERS, CLOCKS, TELEVISION OUTLETS, CCTV AND INTRUSION ALARM DEVICES TO REMAIN PROTECTED IN PLACE, U.O.N. PROVIDE NEW FACEPLATES FOR ALL EXISTING DEVICES TO REMAIN, TO MATCH NEW DEVICES BEING PROVIDED.
    - D. FIRE ALARM: CONTRACTOR TO DEMOLISH ALL EXISTING FIRE ALARM DEVICES, U.O.N. EXISTING FACP TO REMAIN.
    - E. EXTERIOR POWER AND SIGNAL: SHALL REMAIN PROTECTED IN PLACE, U.O.N..
    - F. CONTRACTOR SHALL DEMOLISH ALL ELECTRICAL TO HVAC EQUIPMENT BEING REMOVED. REFER TO MECHANICAL PLANS FOR EQUIPMENT TO BE REMOVED.
15. WHERE NEW PARTITIONS OR OTHER CONSTRUCTION WILL COVER EXISTING, REMAINING OUTLETS MAKING THEM INACCESSIBLE, RELOCATE THESE OUTLETS AS REQUIRED, OR MAKE OTHER PROVISIONS SO THAT THE OUTLETS WILL REMAIN ACCESSIBLE AND OPERATIONAL.
16. WHERE EXISTING WALLS AND CEILINGS ARE TO REMAIN, PROVIDE BLANK COVER PLATES FOR OUTLETS WHERE EQUIPMENT OR DEVICES ARE REMOVED UNDER THIS CONTRACT. PRIME BLANK PLATES AND PAINT TO MATCH SURROUNDING AREA.
17. WHERE FIXTURES, EQUIPMENT, DEVICES, ETC. ARE SPECIFIED BY THE CONTRACT DOCUMENTS FOR REMOVAL, THE CONTRACTOR SHALL REMOVE ALL CIRCUIT CONDUCTORS/CABLING BACK TO THE NEAREST REMAINING JUNCTION BOX AND/OR POINT OF TERMINATION.
18. RELOCATE EXISTING CONDUITS AND/OR CONDUCTORS/CABLING ROUTING THROUGH AREAS WHERE NEW/REMOVED WALLS ARE SPECIFIED.
19. RELOCATION AND/OR REMOVAL OF EXISTING EQUIPMENT, DEVICES, OUTLETS BOXES, CONDUIT, WIRING, ETC. MAY AFFECT THE OPERATION OF EXISTING, REMAINING ELECTRICAL EQUIPMENT/DEVICES, THE CONTRACTOR SHALL PROVIDE ADDITIONAL MATERIALS AS REQUIRED TO MAINTAIN AND/OR RESTORE CONTINUITY OF SERVICES TO EXISTING REMAINING ELECTRICAL/DEVICES.
20. DISCONNECT ABANDONED CIRCUITS AT EXISTING PANEL BOARDS AND REMOVE WIRE TO LAST REMAINING DEVICES. LABEL ALL ABANDONED CIRCUIT BREAKERS "SPARE".

(D)	EXISTING DEVICE TO BE DEMOLISHED.
(E)	EXISTING DEVICE TO REMAIN.
(ER)	EXISTING DEVICE TO BE RELOCATED.
(R)	DENOTES RELOCATED DEVICE LOCATION.

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E-2.2D

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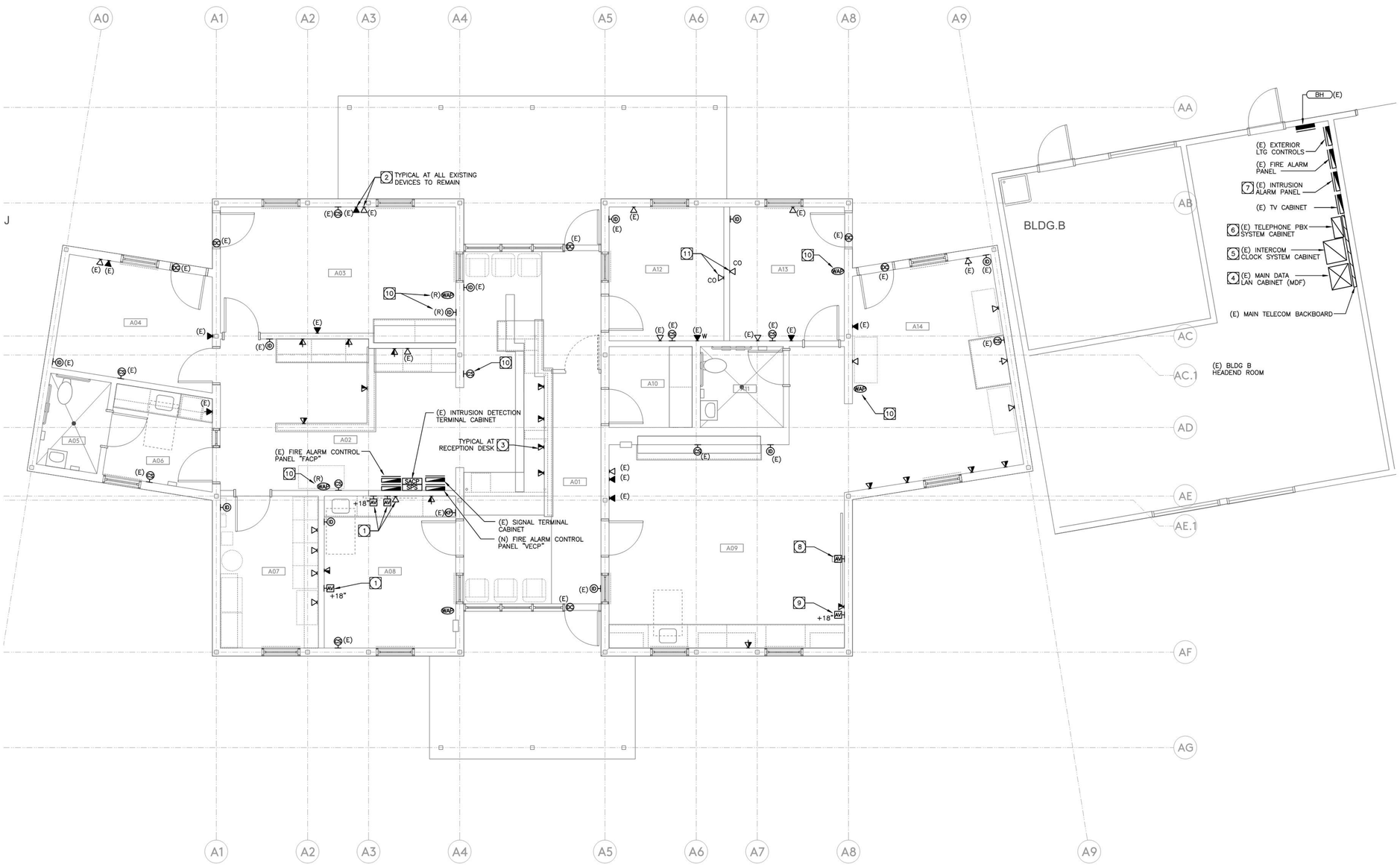

ROOM SCHEDULE

PLAN NOTES:

1. FOR LED MONITOR. VERIFY MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN. PROVIDE FLUSH 4S DEEP BOX WITH 1-GANG RING AND HDMI FACEPLATE, AND 1 CAT-6 DATA CABLE, BEHIND THE LED MONITOR. PROVIDE FLUSH 4S DEEP BOX AT +18"A.F.F WITH 1-GANG RING AND HDMI FACEPLATE. CONNECT BOTH BOXES TOGETHER WITH 1"CONDUIT AND HDMI CABLE. COORDINATE FINAL LOCATION IN FIELD WITH ARCHITECT AND ALL OTHER CONTRACTORS.
2. PROVIDE NEW FACEPLATE(S) AT EXISTING DEVICE LOCATION(S). PROVIDE NEW MACHINE GENERATED LABELS. RETERMINATE EXISTING OUTLETS INTO THE NEW FACEPLATE(S).
3. REFER TO ARCHITECTURAL INTERIOR ELEVATIONS AND CASEWORK DETAILS FOR MOUNTING OF RECEPTACLES AT DESK.
4. PROVIDE ADDITIONAL CAT-6 PATCH PANELS AS REQUIRED TO TERMINATE ALL NEW CAT-6 CABLING. PROVIDE CAT-6A PATCH PANELS AS REQUIRED TO TERMINATE ALL NEW CAT-6A CABLING. PROVIDE ONE 5-FOOT LONG CAT-6 PATCH CORD FOR EACH CAT-6 CABLE TERMINATED IN MDF/IDF RACK. PROVIDE ONE 5-FOOT LONG CAT-6A PATCH CORD FOR EACH CAT-6A CABLE TERMINATED IN MDF/IDF RACK.
5. MODIFY EXISTING RAULAND TELECENTER ICS HEADEND EQUIPMENT AS MAY BE REQUIRED. PROVIDE ADDITIONAL AMPS, TERMINALS, CONTROLS, AND ALL OTHER COMPONENTS AS REQUIRED TO ACCOMMODATE THE SCOPE ON THIS PROJECT.
6. MODIFY EXISTING CORTELCO MILLENNIUM TELEPHONE SYSTEM EQUIPMENT, PROVIDE ADDITIONAL PROGRAMMING, STATION CARDS, TERMINATIONS, ETC AS REQUIRED TO ACCOMMODATE THE SCOPE OF THIS PROJECT.
7. MODIFY EXISTING DSC INTRUSION ALARM PANEL, PROVIDE ADDITIONAL ZONE EXPANSION MODULE, POPITS, TERMINAL STRIPS, POWER SUPPLY, AND REPROGRAMMING, ETC AS REQUIRED TO ACCOMMODATE THE SCOPE OF THIS PROJECT.
8. PROVIDE FLUSH 4S DEEP BOX WITH 1-GANG RING AND HDMI FACEPLATE. LOCATE BEHIND WALL-MOUNTED ULTRA SHORT THROW PROJECTOR. COORDINATE FINAL LOCATION IN FIELD WITH ARCHITECT AND ALL CONTRACTORS. PROVIDE 1" CONDUIT WITH HDMI CABLE FROM THIS FACEPLATE TO THE HDMI INPUT FACEPLATE LOCATED +18"A.F.F. PROVIDE SURFACE MOUNTED RACEWAY ON EXISTING WALLS, AND CONDUIT INSIDE NEW WALLS.
9. PROVIDE FLUSH 4S DEEP BOX WITH 1-GANG RING AND HDMI INPUT FACEPLATE, LOCATE +18"A.F.F. SEE PLAN NOTE 8 FOR REQUIRED HDMI CABLE CONNECTION FROM THIS INPUT FACEPLATE TO HDMI FACEPLATE BEHIND PROJECTOR. PROVIDE SURFACE MOUNTED RACEWAY ON EXISTING WALLS, AND CONDUIT INSIDE NEW WALLS.
10. PROVIDE SURFACE MOUNT RACEWAY FROM DEVICE TO NEAREST ACCESSIBLE CEILING AS REQUIRED.
11. 1-GANG BOX WITH BLANK FACEPATE AND 1"CONDUIT STUB TO NEAREST ACCESSIBLE CEILING. FOR FUTURE TELECOM.

COMMUNICATIONS PATHWAYS GENERAL NOTES:

1. CONDUITS SHALL (a) CONTAIN NO CONTINUOUS SECTIONS LONGER THAN 30M (98 FT.), AND (b) CONTAIN NO MORE THAN (2) 90° BENDS OR (1) REVERSE BEND WITHOUT INSTALLING A PULL BOX. SPLIT CONDUITS IN PLACE OF PULL BOXES ARE UNACCEPTABLE.
2. CONDUITS SHALL CONTAIN PLASTIC OR NYLON PULL TAPE RATED AT 200 LBS. WITH A MINIMUM OF 5 FEET OF EXTRA PULL TAPE COILED AT EACH END.
3. CONDUIT BEND RADIUS SHALL BE (a) A MINIMUM OF 6 TIMES THE INTERNAL CONDUIT DIAMETER FOR CONDUITS 2-INCHES IN DIAMETER OR LESS, AND (b) 10 TIMES THE INTERNAL CONDUIT DIAMETER FOR CONDUITS MORE THAN 2-INCHES IN DIAMETER.
4. TERMINATE CONDUIT STUBS AND SLEEVES THAT PROTRUDE THROUGH STRUCTURAL FLOORS 2-INCHEST TO 3-INCHES ABOVE THE FLOOR SURFACE.
5. INSTALL BUSHINGS OR BELL ENDS AS REQUIRED ON ALL CONDUITS.
6. FLEX CONDUIT IS UNACCEPTABLE FOR USE AS A COMMUNICATIONS CONDUIT EXCEPT AT SEISMIC JOINTS AND/OR IF APPROVED IN WRITING BY THE ENGINEER.
7. ALL UNDER SLAB OR IN-SLAB CONDUITS SHALL BE INSTALLED IN A MANNER THAT PREVENTS WATER INFILTRATION OF THE CONDUIT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE GROUND WATER, RAIN WATER OR CONSTRUCTION WATER IS PREVENTED FROM ENTERING AND/OR REMOVED FROM THE CONDUITS PRIOR TO PLACEMENT OF COMMUNICATIONS CABLES. SEE ELECTRICAL SPECIFICATIONS, DETAILS AND PLANS FOR ADDITIONAL CONDUIT SEALING REQUIREMENTS.
8. ALL PULL BOXES SHALL BE SIZED AND INSTALLED PER ANSI-TIA-569-C. PULL BOXES FOR IN/UNDER SLAB CONDUIT RUNS ARE NOT PERMITTED UNLESS OTHERWISE NOTED. PULL BOXES FOR OVERHEAD CONDUIT RUNS SHALL BE LOCATED ABOVE ACCESSIBLE CEILINGS WITHIN THE ACCESSIBLE CEILING SPACE AND SUPPORTED INDEPENDENTLY FROM THE STRUCTURE AND CONDUIT SUPPORTS. PULL BOXES FOR ROOF MOUNTED OR EXTERIOR ABOVE GRADE APPLICATIONS SHALL BE NEMA 3R RATED. PULL BOXES SHALL BE SIZED ACCORDING TO THE FOLLOWING:

CONDUIT SIZE	WIDTH	LENGTH	DEPTH	WIDTH INCREASE PER ADDITIONAL CONDUIT
1"	4"	16"	3"	2"
2"	8"	36"	4"	5"
3"	12"	48"	5"	6"
4"	15"	60"	8"	8"

FOR OTHER CONDUIT SIZES REFER TO ANSI/TIA-569-C TABLE 12. - LATEST PUBLISHED EDITION.

9. CONDUIT(S) SHALL EXIT A PULL BOX ON THE WALL OPPOSITE THE WALL ENTERED.
10. PROVIDE LABELING OF EACH CONDUIT PER GENERAL ELECTRICAL SPECIFICATIONS.
11. PROVIDE INTERNAL/EXTERNAL GAS AND WATER TIGHT MECHANICAL SEALING/PLUGGING OF EACH BUILDING ENTRY CONDUIT AS SPECIFIED ELSEWHERE IN THE DRAWINGS AND SPECIFICATIONS.
12. WHERE NEW DEVICES ARE SHOWN ON EXISTING WALLS, PROVIDE SURFACE MOUNT BOX WITH SURFACE MOUNT RACEWAY TO NEAREST ACCESSIBLE CEILING.
13. CONTRACTOR SHALL COORDINATE ALL NEW RACEWAY WITH OWNER IN THE FIELD PRIOR TO ROUGH-IN.

(D)	EXISTING DEVICE TO BE DEMOLISHED.
(E)	EXISTING DEVICE TO REMAIN.
(ER)	EXISTING DEVICE TO BE RELOCATED.
(R)	DENOTES RELOCATED DEVICE LOCATION.

ADMINISTRATION MODERNIZATION - SIGNAL PLAN

SCALE: 1/4"=1'-0"

pjhm architects
www.pjhm.com
LICENSED ARCHITECT RAYMOND W. SWARTZ No. C28164 Exp. 3/19 STATE OF CALIFORNIA
tk1sc COLLABORATIVE
1510 Pierce Street, Suite 100
Davis, California 95616
951.299.4160 www.tk1sc.com
Project Manager-Erin Hagar
tk1sc Job #: 2016-0734
REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 12/31/2019 ELECTRICAL STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

ADMINISTRATION MODERNIZATION SIGNAL PLAN

E-2.3

(EX) PANEL AL

MOUNTING	FLUSH	DOUBLE LUG	NO	VOLTS	120/208	MAIN	(E)225A/3P
NEMA 3R	NO	200% NEUTRAL	NO	PHASE	3	BUS	225A
FEED THRU	NO	I/G BUS	NO	WIRE	4	A.I.C.	SERIES

NOTES	LOCATION	A	B	C	LTG	CONV	KIT	RECP	MISC	BKR	CIRC	CIRC	BKR	MISC	RECP	KIT	CONV	LTG	A	B	C	LOCATION	NOTES
	COPY MACHINE	900								20/1	1	2	15/1						940			FU-1 (EX)	
	COPY MACHINE		900							20/1	3	4	15/1							790		FU-2 (EX)	
	SPARE									20/1	5	6	15/1								940	FU-3 (EX)	
	NURSE (EX)	1080								20/1	7	8	15/1						790			FU-4 (EX)	
	VICE PRINC (EX)		1080							20/1	9	10	20/2							1220		CU-1 (EX)	
	PRINCIPAL (EX)			1080						20/1	11	12	–								1220	---	
	STAFF LOUNGE	800								20/1	13	14	20/2						1080			CU-2 (EX)	
	STAFF LOUNGE		800							20/1	15	16	–							1080		---	
	STAFF LOUNGE			800						20/1	17	18	20/2								1220	CU-3 (EX)	
	LOUNGE/WORKRM	1080								20/1	19	20	–						1220			---	
	COPY MACHINE		800							20/1	21	22	20/2							1080		CU-4	
	COPY MACHINE			800						20/1	23	24	–								1080	---	
	LOUNGE/RESTRM (EX)	720								20/1	25	26	20/2						1450			AC-1	
	OFFICE (EX)		900							20/1	27	28	–							1450		---	
	OFFICE (EX)			900						20/1	29	30	20/2								1450	AC-2	
	NURSE REFRIG	1000								20/1	31	32	–						1450			---	
	RPS-A (EX)		600							20/1	33	34										SPACE	
	FACP (EX)			600						20/1	35	36										SPACE	
	INT DET PNL (EX)	500								20/1	37	38										SPACE	
	WATER HEATER (EX)		600							20/1	39	40										SPACE	
	WATER HEATER (EX)			600						20/1	41	42										SPACE	

A= 13010 VA	B= 11300 VA	C= 10690 VA
PHASE A LCL= 0 VA	PHASE B LCL= 0 VA	PHASE C LCL= 0 VA
PHASE A W/LCL= 13010 VA	PHASE B W/LCL= 11300 VA	PHASE C W/LCL= 10690 VA
TOTAL VA= 35000	TOTAL LCL= 0	TOTAL VA W/LCL= 35000
	AMPS= **97**	HIGH PHASE AMPS= **108**

(EX) PANEL LVD

MOUNTING	SURFACE	DOUBLE LUG	NO	VOLTS	120/208	MAIN	(EX)400A/3P
NEMA 3R	NO	200% NEUTRAL	NO	PHASE	3	BUS	400A
FEED THRU	NO	I/G BUS	NO	WIRE	4	A.I.C.	SERIES

NOTES	LOCATION	A	B	C	LTG	CONV	KIT	RECP	MISC	BKR	CIRC	CIRC	BKR	MISC	RECP	KIT	CONV	LTG	A	B	C	LOCATION	NOTES
	EX PANEL AL	13010								100/3	1	2	60/3						7600			EX PANEL CL	
	---		11300							--	3	4	--							7600		---	
	---			10690						--	5	6	--								7600	---	
	EX PANEL JL	5400								60/3	7	8										SPACE	
	---		5400							--	9	10										SPACE	
	---			5400						--	11	12										SPACE	
	EX CLASSRM 3C RECEP	720								20/1	13	14							720			EX CLASSRM 3D RECEPT	
	EX CLASSRM 3C RECEP		720							20/1	15	16								720		EX CLASSRM 3D RECEPT	
	EX CLASSRM 3C RECEP			720						20/1	17	18									720	EX CLASSRM 3D RECEPT	
	EX CLASSRM 3C RECEP	720								20/1	19	20							720			EX CLASSRM 3D RECEPT	
	EX CLASSRM 3C RECEP		720							20/1	21	22								720		EX CLASSRM 3D RECEPT	
	EX CLASSRM 3C RECEP			720						20/1	23	24									720	EX CLASSRM 3D RECEPT	
	EX STORAGE RECEPT	720								20/1	25	26										SPACE	
	RPS-B									20/1	27	28										SPACE	
	SPARE									20/1	29	30										SPACE	
	SPACE										31	32										SPACE	
	SPACE										33	34										SPACE	
	SPACE										35	36										SPACE	
F	PANEL AL2	4617								100/3	37	38										SPACE	
	---		6013							--	39	40										SPACE	
	---			5573						--	41	42										SPACE	

A= 34227 VA	B= 33193 VA	C= 32143 VA
PHASE A LCL= 0 VA	PHASE B LCL= 0 VA	PHASE C LCL= 0 VA
PHASE A W/LCL= 34227 VA	PHASE B W/LCL= 33193 VA	PHASE C W/LCL= 32143 VA
TOTAL VA= 99563	TOTAL LCL= 0	TOTAL VA W/LCL= 99563
	AMPS= **277**	HIGH PHASE AMPS= **285**

PANEL AL2

MOUNTING	FLUSH	DOUBLE LUG	NO	VOLTS	120/208	MAIN	100A/3P
NEMA 3R	NO	200% NEUTRAL	NO	PHASE	3	BUS	100A
FEED THRU	NO	I/G BUS	NO	WIRE	4	A.I.C.	SERIES

NOTES	LOCATION	A	B	C	LTG	CONV	KIT	RECP	MISC	BKR	CIRC	CIRC	BKR	MISC	RECP	KIT	CONV	LTG	A	B	C	LOCATION	NOTES
	RECEPTION DESK	900				5				20/1	1	2	20/1						600			VECP	A,E
	RECEPTION DESK		900			5				20/1	3	4	20/1							600		VECP-AMP	A,E
	RECEPTION DESK			900		5				20/1	5	6	20/1								720	CONF. RM	
	WORKRM	720				4				20/1	7	8	20/1						720			CONF. RM	
	WORKRM		720			4				20/1	9	10	20/1							800		STAFF LOUNGE KITCHEN	
	WORKRM			540		3				20/1	11	12	20/1								800	STAFF LOUNGE KITCHEN	
	COPY MACHINE	800				1				20/1	13	14	20/1					2	20			GALLERY FLOOD LTS	
	OPEN OFFICE		720			4				20/1	15	16	20/1							380		SHORT THROW PROJECTOR	
	OPEN OFFICE			720		4				20/1	17	18	20/1									SPARE	
	SPARE									20/1	19	20	20/1									SPARE	
	SPARE									20/1	21	22	20/1									SPARE	
	SPARE									20/1	23	24	20/1									SPARE	
	SPACE										25	26										SPACE	
	SPACE										27	28										SPACE	
	SPACE										29	30										SPACE	
	SPACE										31	32										SPACE	
	SPACE										33	34										SPACE	
	SPACE										35	36										SPACE	
	SPACE										37	38	20/1	1					852			FAU-1	
	SPACE										39	40	30/2	1						1893		CU-1	
	SPACE										41	42	–	–							1893	---	

A= 4612 VA	B= 6013 VA	C= 5573 VA
PHASE A LCL= 5 VA	PHASE B LCL= 0 VA	PHASE C LCL= 0 VA
PHASE A W/LCL= 4617 VA	PHASE B W/LCL= 6013 VA	PHASE C W/LCL= 5573 VA
TOTAL VA= 16198	TOTAL LCL= 5	TOTAL VA W/LCL= 16203
	AMPS= **45**	HIGH PHASE AMPS= **50**

(EX) PANEL AH

MOUNTING	RECESSED	DOUBLE LUG	NO	VOLTS	277/480	MAIN	125A/3P
NEMA 3R	NO	200% NEUTRAL	NO	PHASE	3	BUS	150A
FEED THRU	NO	I/G BUS	NO	WIRE	4	A.I.C.	SERIES

NOTES	LOCATION	A	B	C	LTG	CONV	KIT	RECP	MISC	BKR	CIRC	CIRC	BKR	MISC	RECP	KIT	CONV	LTG	A	B	C	LOCATION	NOTES
	OFFICES/CONF RM	942			15					20/1	1	2										SPACE	
	GALLERY		449		13					20/1	3	4										SPACE	
	STAFF LOUNGE/OFFICES			1231	19					20/1	5	6										SPACE	
	EX EXTERIOR LTG	300								20/1	7	8										SPACE	
	SPARE									20/1	9	10										SPACE	
	SPARE									20/1	11	12										SPACE	

A= 1242 VA	B= 449 VA	C= 1231 VA
PHASE A LCL= 236 VA	PHASE B LCL= 112 VA	PHASE C LCL= 308 VA
PHASE A W/LCL= 1478 VA	PHASE B W/LCL= 561 VA	PHASE C W/LCL= 1539 VA
TOTAL VA= 2922	TOTAL LCL= 656	TOTAL VA W/LCL= 3578
	AMPS= **4**	HIGH PHASE AMPS= **6**

GENERAL PANEL SCHEDULE NOTES:

1. WHERE PANEL IS INDICATED TO INCLUDE FEED THRU LUGS, PROVIDE FEED THROUGH LUGS AT THE OPPOSITE END OF THE PANELBOARD FROM THE PANELBOARD MAIN LUGS.
2. WHERE PANEL IS INDICATED TO INCLUDE DOUBLE LUGS, PROVIDE A DOUBLE LUG KIT AT THE SAME END OF THE PANELBOARD AS THE PANELBOARD MAIN LUGS.
3. WHERE PANEL IS INDICATED TO INCLUDE 200% NEUTRAL, PROVIDE PANELBOARDS UL LISTED AS HAVING NEUTRAL BUSSES RATED TO CARRY 200 PERCENT OF THE CURRENT CARRYING CAPACITY OF THE PHASE BUSSING. OTHERWISE, NEUTRAL BUSSING TO BE FULL SIZE AND RECTANGULAR.
4. WHERE PANEL IS INDICATED TO INCLUDE AN I/G BUS, PROVIDE PANELBOARDS WITH AN ISOLATED GROUND BUS, DRILLED AND TAPPED FOR NUMBER OF ISOLATED GROUND CONDUCTORS SHOWN, AS WELL AS FOR ALL SPARES AND SPACES SHOWN ON THE PANELBOARD.
5. WHERE PANEL CIRCUIT BREAKER RATING IS SHOWN AS SERIES RATED, PROVIDE CIRCUIT BREAKERS IN PANELBOARD WHICH ARE SERIES RATED WITH THE UPSTREAM SYSTEM FOR THE AVAILABLE FAULT CURRENT. THE PANELBOARD SHALL BE MARKED WITH THE SERIES CONNECTED RATINGS, AS WELL AS ALL MARKING AS REQUIRED BY THE NEC, OR CEC WHERE ADOPTED, **240–83(C)**.
6. WHERE PANEL IS INDICATED AS RECESSED OR FLUSH MOUNTED, PROVIDE SPARE CONDUITS STUBBED UP INTO THE ACCESSIBLE CEILING SPACE. PROVIDE ONE (1) 3/4" CONDUIT ONLY FOR EACH THREE (3) SPARES OR SPACES, MINIMUM OF TWO (2). EACH CONDUIT SHALL BE TAGGED, CAPPED AND MARKED FOR FUTURE USE.
7. ALL BUSSING SHALL BE **TIN PLATED ALUMINUM.**
8. ALL CIRCUIT BREAKERS USED AS SWITCHES SHALL BE UL LISTED AND LABELED "SWD" FOR SWITCHING DUTY.
9. PROVIDE BREAKER INTERLOCK WITH ADJACENT BREAKER(S) FOR ANY MULTI–WIRE BRANCH CIRCUIT. BREAKER INTERLOCK GROUPING SHALL BE BY BRANCH CIRCUIT GROUP (i.e. MULTIPLE CIRCUITS SHARING A COMMON NEUTRAL (NEC, OR CEC WHERE ADOPTED, **210.4(B)**,) COMMON YOKE (NEC, OR CEC WHERE ADOPTED, **210.7(B)**,) OR FURNITURE SYSTEM NEC OR CEC WHERE ADOPTED, **605.6** AND **605.7**). WHERE AN EXISTING PANEL IS BEING ALTERED OR MODIFIED IN ANY WAY, CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO ADD BREAKER INTERLOCKS TO EXISTING MULTI–WIRE BRANCH CIRCUITS BASED ON CONTRACTOR'S INVESTIGATION OF EXISTING CONDITIONS.
10. PROVIDE BREAKER LOCK OFF DEVICE ON ANY CIRCUIT BREAKER FEEDING A TRANSFORMER AS REQUIRED, PER NEC, OR CEC WHERE ADOPTED, **450.14**. WHERE AN EXISTING PANEL IS BEING ALTERED OR MODIFIED IN ANY WAY, CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO ADD BREAKER LOCK–OFF DEVICES TO EXISTING TRANSFORMER CIRCUIT BREAKERS BASED ON CONTRACTOR'S INVESTIGATION OF EXISTING CONDITIONS.
11. ALL CIRCUIT BREAKERS SHALL BE BOLT–ON TYPE AND SHALL BE SUITABLE FOR 75 DEGREE AMPACITY CONDUCTORS.
12. PANELS SHALL BE OF THE DEAD FRONT SAFETY TYPE. PANELS SHALL BE MINIMUM 20" WIDE AND 5–3/4" DEEP UNLESS OTHERWISE NOTED ON PLAN.
13. COORDINATE WITH APPLICABLE TRADE TO INSURE RECESSED MOUNTED PANELBOARDS WILL SEAT FLUSH IN THE WALLS PROVIDED. PANEL TRIMS SHALL HAVE CONCEALED DOORS AND FASTENERS WITH FLUSH TYPE COMBINATION LOCK AND CATCH, TWO MILLED TYPE KEYS SUPPLIED WITH EACH PANEL. ALL LOCKS SHALL BE KEYED ALIKE AND EACH DOOR SHALL HAVE A PLASTIC COVERED DIRECTORY FRAME WITH A TYPED IDENTIFICATION CARD OF ALL CIRCUIT AND PANEL NUMBERS FOR BRANCH CIRCUIT PANELBOARDS.
14. UPON PROJECT COMPLETION, CONTRACTOR SHALL INSTALL TYPED AS–BUILT PANEL DIRECTORIES IN EACH PANEL WITHIN THE MFGR–PROVIDED DIRECTORY HOLDER. THE DIRECTORY SHALL CLEARLY IDENTIFY EACH CIRCUIT TO ITS CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE. EACH CIRCUIT IDENTITY SHALL INCLUDE SUFFICIENT DETAIL TO ALLOW EACH CIRCUIT TO BE DISTINGUISHED FROM ALL OTHERS PER NEC, OR CEC WHERE ADOPTED, ART **408.1** AND **408.4**. HANDWRITTEN DIRECTORIES ARE UNACCEPTABLE. COPIES OF AS–BUILT PANEL SCHEDULES SHALL BE PLACED IN PANEL DIRECTORIES. E.C. TO INCLUDE ALL COSTS REQUIRED FOR LARGER–THAN–STANDARD CUSTOM PANEL DIRECTORY HOLDERS TO ACCOMMODATE COPIES OF AS–BUILT PANEL SCHEDULES.
15. PANELBOARDS SHALL MATCH EXISTING ON CAMPUS.
16. PROVIDE SHOP DRAWING SUBMITTAL PER THE ELECTRICAL SPECIFICATION SUBMITTAL REQUIREMENTS FOR EACH PANEL DEPICTING CONFORMANCE WITH THE ABOVE NOTES AND SCHEDULES.

SPECIFIC PANEL SCHEDULE NOTES:

"A" PROVIDE LOCK–ON DEVICE.
"B" PROVIDE LOCK–OFF DEVICE.
"C" PROVIDE SHUNT TRIP DEVICE.
"D" PROVIDE GFCI TYPE DEVICE.
"E" PROVIDE A RED CIRCUIT BREAKER.
"F" PROVIDE A NEW BREAKER TO MATCH THE EXISTING IN PANEL.
"G" EXISTING BREAKER WITH NEW LOAD.
"H" PROVIDE AFCI TYPE DEVICE COMPLYING WITH NEC, OR CEC WHERE ADOPTED, **210.12(A) & (B)**.

PANEL SCHEDULE INDEX		
-	AL	LVD
-	AL2	AH
-	-	

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JEFFERSON SCHOOL DISTRICT

PANEL SCHEDULES

GENERAL LIGHTING FIXTURE SCHEDULE NOTES:

A. THE LIGHTING FIXTURES AND COMPONENTS FOR THIS PROJECT HAVE BEEN SPECIFIED TO INSURE THAT SPECIFIC AESTHETIC AND PERFORMANCE REQUIREMENTS WILL BE SATISFIED. THESE PRODUCTS HAVE BEEN CAREFULLY RESEARCHED AND EACH SPECIFIED ITEM HAS UNIQUE QUALITIES WHICH WERE DETERMINED TO BE ESSENTIAL IN SATISFYING THE OWNERS, ARCHITECTS, AND ENGINEERS DESIGN CRITERIA, WHILE STILL FITTING WITHIN THE ESTABLISHED PROJECT BUDGET.

B. SUBSTITUTIONS OF THE SPECIFIED PRODUCTS ARE STRICTLY PROHIBITED – UNLESS APPROVED AS STATED HEREIN. LIGHTING FIXTURE AND BALLAST SUBSTITUTIONS SHALL BE FORMALLY PRESENTED TO THE ENGINEER, BY APPOINTMENT ONLY, AT LEAST TEN (10) WORKING DAYS PRIOR TO BID TIME. THE SUBMITTAL MATERIAL SHALL INCLUDE THE FOLLOWING ITEMS.

1. A COMPLETE AND OPERATING SAMPLE, WIRED FOR 120V OPERATION, WITH LAMP, CORD AND PLUG.
2. A COMPLETE PHOTOMETRIC REPORT, FOR THE PROPOSED SUBSTITUTE PRODUCT, USING THE SPECIFIED LAMP TYPE AND WATTAGE, INCLUDING TABULATED CANDLEPOWER VALUES, COEFFICIENT OF UTILIZATION, AND AN ISO–FOOT–CANDLE DIAGRAM. PRORATED DATA WILL NOT BE ACCEPTABLE. THE PHOTOMETRIC REPORT MUST BE DONE IN ACCORDANCE WITH PUBLISHED I.E.S. TESTING PROCEDURES AND CERTIFIED BY A REGISTERED ELECTRICAL ENGINEER.
3. A CURRENT ORIGINAL CATALOG DATA SHEET WITH LUMINAIRE CATALOG NUMBERS. MODIFIED DATA SHEETS WILL NOT BE ACCEPTABLE.
4. A SIGNED COPY OF THE "SUBSTITUTION COMPLIANCE FORM", LOCATED IN THE DIVISION 1 SPECIFICATION, STATING THAT IF THE PROPOSED SUBSTITUTION IS ACCEPTED, THE PROJECT SCHEDULE WILL NOT BE NEGATIVELY EFFECTED. IF THE COMPLETION OF THE PROJECT IS DELAYED BECAUSE OF THE APPROVED SUBSTITUTION, THE ELECTRICAL CONTRACTOR WILL BE RESPONSIBLE FOR PAYMENT OF ANY ESTABLISHED LIQUIDATED DAMAGES.
5. FOR SPECIFIC INTERIOR FIXTURE SUBSTITUTIONS, WHEN DIRECTED BY THE ENGINEER, A POINT–BY–POINT SCALED COMPUTER PRINTOUT SHALL BE PROVIDED VERIFYING THE ILLUMINATION LEVELS FOR THE SPECIFIC INTERIOR AREA. IF THE SUBSTITUTED FIXTURE IS AN EMERGENCY FIXTURE, THE REPORT SHALL BE RUN IN BOTH NORMAL AND EMERGENCY MODES. THIS REPORT SHALL BE CONFIGURED WITH SPECIFIC CONSTRAINTS, AS DIRECTED BY THE ENGINEER OF RECORD. THE REPORT MUST SHOW THAT THE SUBSTITUTED FIXTURE PROVIDES PERFORMANCE EQUAL TO OR BETTER THAN THE LIGHTING LEVELS OF THE SPECIFIED PRODUCT.
6. FOR ALL EXTERIOR FIXTURE SUBSTITUTIONS, A POINT–BY–POINT SCALED COMPUTER PRINTOUT SHALL BE PROVIDED VERIFYING THE ILLUMINATION LEVELS FOR THE ENTIRE SITE PLAN BASED ON USING THE PROPOSED ALTERNATIVE FIXTURES. THE REPORT MUST SHOW THAT THE SUBSTITUTED FIXTURE PROVIDES PERFORMANCE EQUAL TO, OR BETTER THAN THE LIGHTING LEVELS AND UNIFORMITY RATIOS (MAX:MIN AND AVG:MIN) OF THE SPECIFIED PRODUCT. THIS REPORT SHALL BE CONFIGURED WITH THE FOLLOWING CONSTRAINTS.
   a. THE SPACING INCREMENT OR POINTS ON THE VERIFICATION REPORT SHALL NOT EXCEED TEN (10) FEET IN EITHER DIRECTION.
   b. THE PRINTOUT SHALL BE BASED ON PROVIDING MAINTAINED FOOT–CANDLE LEVELS USING MEAN LAMP LUMENS AND A LIGHT LOSS FACTOR, AS DIRECTED BY THE ENGINEER OF RECORD.
   c. THE PRINTOUT SHALL SHOW ANY ADDITIONAL ENERGY AND/OR ENERGY COSTS, FOR A TEN YEAR PERIOD, AS COMPARED TO THE ORIGINALLY SPECIFIED ITEM. THE TOTAL COSTS FOR THESE EXPENSES WILL BE DEDUCTED FROM THE CONTRACT COST.

C. "?" CHARACTERS IN FIXTURE MODEL NUMBER INDICATE THAT THE FIXTURES ARE SPECIFIED IN A GENERIC MOUNTING FORMAT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND PROVIDING ALL HANGERS, CLIPS AND NECESSARY HARDWARE TO INSTALL THE FIXTURE IN THE ENVIRONMENT AS SHOWN ON THE ARCHITECTURAL PLANS. ALL FIXTURES SHALL BE PROVIDED WITH ALL REQUIRED STRUCTURAL SUPPORTS AS REQUIRED BY THE CURRENTLY ADOPTED ISSUE OF THE UNIFORM BUILDING CODE, AS WELL AS ANY LOCAL CODES.

D. CONFLICTS BETWEEN CATALOG NUMBERS AND FIXTURE DESCRIPTIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER, PRIOR TO BID TIME, FOR CLARIFICATION.

E. "?" CHARACTERS IN FIXTURE MODEL NUMBER INDICATE THAT ALL FIXTURE VOLTAGES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING – SEE DRAWINGS FOR BRANCH CIRCUIT INFORMATION. IT IS POSSIBLE THAT FIXTURES WILL BE REQUIRED IN VARIOUS VOLTAGES.

F. ALL FIXTURE FINISHES AND COLORS, UNLESS NOTED AS CUSTOM, SHALL BE SELECTED FROM THE FULL RANGE OF MANUFACTURERS STANDARD COLOR OPTIONS, AS SELECTED BY THE ARCHITECT. THIS DIRECTION WILL BE PROVIDED IN THE SHOP DRAWING REVIEW PROCESS. ALL FIXTURES INDICATED WITH A CUSTOM COLOR SHALL BE PROVIDED WITH A CUSTOM COLOR PAINT PER THE ARCHITECTURAL REVIEW COMMENTS OF THE SUBMITTED SHOP DRAWINGS.

G. ALL BALLASTS SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:

1. "?" CHARACTERS IN FIXTURE MODEL NUMBER INDICATE THAT THE FIXTURE BALLAST TYPE AND QUANTITY MUST BE VERIFIED BY THE CONTRACTOR – USING FIXTURE CALLOUT INFORMATION AND FIXTURE SWITCHING CONFIGURATION INFORMATION. IT IS POSSIBLE THAT A SINGLE FIXTURE TYPE COULD BE REQUIRED IN VARIOUS BALLAST CONFIGURATIONS.

H. LIGHT FIXTURES INDICATED AS EMERGENCY SHALL BE IDENTIFIED / PROVIDED AS FOLLOWS:

1. INTEGRAL BATTERY PACK (EB):

   3a/3EB – FIXTURE CONNECTED TO CIRCUIT "3", CONTROL SWITCHLEG "a" – WITH THE BATTERY CHARGING LEAD CONNECTED TO A CONSTANT HOT CIRCUIT "3".

   3NL/3EB – FIXTURE CONNECTED TO A CONSTANT HOT CIRCUIT "#3". BATTERY CHARGING LEAD CONNECTED TO A CONSTANT HOT CIRCUIT "3".

2. REMOTE BACK–UP SOURCE (EM):

   3a/3EM – ROUTED THROUGH A U.L. LISTED TRANSFER RELAY (LC & D #GR–2001E/S) FOR SWITCHED CONTROLS OR A U.L. LISTED TRANSFER SWITCH (BODINE #GTD SERIES DEVICE) FOR DIMMING CONTROLS. CONNECTED TO A CONSTANT HOT EMERGENCY CIRCUIT "3". SEE DISTRIBUTED LIGHTING CONTROL SPECIFICATIONS FOR DEVICE REQUIREMENTS WHEN CONTROLLED BY OCCUPANCY SENSORS.

   3NL/3EM – FIXTURE CONNECTED TO A CONSTANT HOT EMERGENCY CIRCUIT "3".

   REMOTE BACK–UP SOURCE (EM) NOTES:

   – ALL REMOTE BACK UP SOURCE (EM) FIXTURES SHALL BE PROVIDED WITH AN IN LINE FUSE. PROVIDE ADDITIONAL LABELING TO INDICATE FIXTURE IS PROTECTED BY A FUSE.

3. EMERGENCY BATTERY PACKS SHALL BE PROVIDED AS FOLLOWS:

   LED LAMPS:

   BODINE #BSL23/#BSL722 SERIES– NO KNOWN EQUAL

   TO MAINTAIN UL LISTING OF LED FIXTURE, FIXTURE MANUFACTURER(S) SHALL INSTALL LED EMERGENCY BALLASTS AT THE FACTORY AND OBTAIN A UL LISTING OF THE FIXTURE WITH EMERGENCY BALLAST. FIELD–INSTALLATION OF LED EMERGENCY BALLAST(S) IS PROHIBITED. SHOULD THE SPECIFIED LED EMERGENCY BALLAST(S) NOT FIT WITHIN A GIVEN FIXTURE(S), CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO LOCATE/CONNECT SELF–DIAGNOSTIC MINI INVERTER(S) (IOTA #ILS SERIES OR BODINE # ELI–???–SD) REMOTELY FROM THE FIXTURE(S) IN THE NEAREST ELECTRICAL ROOM.

   EMERGENCY BATTERY PACK NOTES:

   – PROVIDE INTEGRAL TEST SWITCH OPTION FOR ALL EMERGENCY BALLASTS INSTALLED IN LIGHT FIXTURES.

   – CONTRACTOR TO VERIFY WITH FIXTURE MANUFACTURER(S) PRIOR TO BID THAT EMERGENCY BALLASTS ARE INTEGRAL TO FIXTURE HOUSINGS. SHOULD A BALLAST(S) NOT FIT WITHIN A GIVEN FIXTURE(S), CONTRACTOR SHALL INCLUDE ALL COSTS TO LOCATE EMERGENCY BALLAST(S) REMOTELY FROM THE FIXTURE ABOVE THE NEAREST ACCESSIBLE CEILING.

   – PROVIDE "DL" OPTION IN ALL DAMP LABEL INSTALLATIONS.

   – EMERGENCY BALLASTS SHALL PROVIDE NOT LESS THAN 90 MINUTES OF FIXTURE OPERATION.

4. ALL RECESSED DOWNLIGHTS SUPPLIED WITH A BATTERY PACK SHALL BE PROVIDED WITH AN INTEGRAL COMBINATION TEST SWITCH / CHARGING INDICATOR LIGHT – MOUNTED INSIDE THE REFLECTOR. REMOTE TEST SWITCH / CHARGING LIGHTS ARE NOT ALLOWED. THE TEST SWITCH / CHARGING INDICATOR LIGHT SHALL BE SECURELY ATTACHED TO THE REFLECTOR WITH 18" OF SLACK LEADS FOR EASY REMOVAL OF THE REFLECTOR ASSEMBLY.

5. BATTERY PACKS ALL SHALL BE PROVIDED WITH A COMBINATION TEST SWITCH / CHARGE LIGHT.

I. ALL EXIT SIGNS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE LOCAL FIRE PREVENTION CODE AUTHORITY. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY HARDWARE SUCH THAT ALL EXIT SIGNS ARE INSTALLED IN AN APPROVED VISIBLE LOCATION. THE CONTRACTOR SHALL VERIFY CHEVRONS AND NUMBER OF FACES PER EXIT SIGN WITH ARCHITECTURAL REFLECTED CEILING PLAN. ANY DISCREPANCIES BETWEEN EXIT SIGNS DEPICTED ON ARCHITECTURAL AND ELECTRICAL PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO ORDERING EXIT SIGNS.

J. ALL TRACK LIGHTING FIXTURES SHALL BE PROVIDED WITH THE APPROPRIATE TRACK SYSTEM WHICH SHALL INCLUDE ALL MISCELLANEOUS COMPONENTS REQUIRED FOR A COMPLETE INSTALLATION. TRACK LENGTH SHALL BE PER DRAWINGS.

K. "?" CHARACTERS IN THE FIXTURE MODEL NUMBER INDICATE A FIXTURE OPTION THAT THE CONTRACTOR MUST IDENTIFY PRIOR TO ORDERING / PROVIDING SUBMITTALS.

L. PROVIDE A SUBMITTAL / SHOP DRAWING SUBMITTAL PER THE GENERAL PRODUCT REQUIREMENT SECTION FOR EACH FIXTURE TYPE INCLUDING BALLAST(S). ANY LIGHTING FIXTURES SUBMITTAL SUBMITTED WITHOUT SPECIFIC FIXTURE(S) BALLAST INFORMATION SHALL BE REJECTED AS INCOMPLETE. IN ADDITION, SEE GENERAL LAMP SCHEDULE NOTES FOR SEPARATE LAMP SUBMITTAL REQUIREMENTS.

M. PROVIDE LAMPING PER LAMP SCHEDULE.

N. SOCKETS SHALL BE GENERAL ELECTRIC, BRYANT, OR EQUAL, WHITE, TWIST–TURN CONTACT TYPE. PUSH CONTACT TYPE SOCKETS WILL NOT BE ALLOWED.

O. ALL LIGHTING FIXTURES SHALL BE MOUNTED AND INDIVIDUALLY SUPPORTED IN ACCORDANCE WITH APPLICABLE INDUSTRY AND SAFETY STANDARDS AND ALL NATIONAL AND LOCAL ELECTRICAL AND SEISMIC CODES. FIXTURES SHALL BE FURNISHED AND INSTALLED WITH ALL REQUIRED MOUNTING DEVICES, HARDWARE AND ACCESSORIES.

P. LOCATIONS OF FIXTURES SHALL BE PER THE ARCHITECTURAL REFLECTED CEILING PLAN AND SHALL BE COORDINATED AT TIME OF ROUGH IN. CONFLICTS BETWEEN THE ARCHITECTURAL REFLECTED CEILING PLAN AND THE ELECTRICAL PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT, IN WRITING, PRIOR TO ORDERING FIXTURES.

Q. CONTRACTOR TO INCLUDE FIVE MINUTES OF AFTER DARK AIMING/ADJUSTING TIME (TWO HOURS MINIMUM) FOR ANY ADJUSTABLE FIXTURE AND FOR EACH INDIVIDUAL FIXTURE HEAD OR LAMP HOLDER IN A MULTI–FIXTURE / MULTI–LAMP ASSEMBLY. FIXTURES TO BE AIMED/ADJUSTED PER THE DIRECTION OF OWNER, ARCHITECT, AND ENGINEER.

R. ALL POLE MOUNTED FIXTURES, POST MOUNTED FIXTURES, AND BOLLARDS SHALL BE PROVIDED WITH A STRUCTURAL FOOTING AS DETAILED ELSEWHERE IN THE DRAWINGS. THE CAPITAL LETTER ADJACENT TO THE FIXTURE SYMBOL(S) INDICATES THE FOOTING TYPE – SEE ELECTRICAL DETAILS FOR MORE INFORMATION.

S. "NO KNOWN EQUAL" LIGHTING FIXTURE PRICING/BIDDING NOTES

1. EACH FIXTURE IDENTIFIED AS "NO KNOWN EQUAL" ON THIS PROJECT SHALL BE BID IN A "LINE ITEM" FORMAT. A PER UNIT MATERIAL COST SHALL BE PROVIDED FOR EACH "NO KNOWN EQUAL" FIXTURE. THIS PRICE SHALL INCLUDE LAMPS AS WELL AS ALL OTHER REQUIRED MATERIALS REQUIRED FOR INSTALLATION. THE FIXTURE PRICE QUOTED WILL BE UTILIZED, PRIOR TO SHOP DRAWING APPROVAL, FOR "ADDING" AND/OR "DELETING" ANY QUANTITY OF THE FIXTURE.
2. A UNIT COST SHALL BE SUBMITTED FOR EACH "NO KNOWN EQUAL" FIXTURE. SUBMIT THE PRICING AS PART OF THE BID FORM ON A SEPARATE 8–1/2" X 11" SHEET AS FOLLOWS:

"NO KNOWN EQUAL" FIXTURE TYPE	LINE ITEM/ PER UNIT MATERIAL COST
1	$ XXXXX/EACH
2	$ XXXXX/EACH
3	$ XXXXX/EACH

3. FAILURE TO SUBMIT A LINE ITEM FOR EACH "NO KNOWN EQUAL" FIXTURE MAY RESULT IN THE REJECTION, REFUSAL, OR NON–ACCEPTANCE OF THE CONTRACTORS BID.

T. "NO EQUAL – OWNER STANDARD" LIGHTING FIXTURE PRICING/BIDDING NOTES:

1. FIXTURES IDENTIFIED AS "NO EQUAL – OWNER STANDARD" ARE TO BE PROVIDED AS SPECIFIED.
2. SUBSTITUTIONS ARE STRICTLY PROHIBITED.

LIGHTING FIXTURE SCHEDULE

SYMBOL	TYPE	MANUFACTURER AND MODEL NUMBER	FIXTURE VA/ WATTS	LAMP/ LAMP OPTION	GENERAL DESCRIPTION
	1	METALUX 24RLN 24RLN–LD5–55–UNV–L840–CD1–U – EQUAL BY: –	43	LED/4000K	2' X 4' RECESSED, LED FIXTURE WITH CENTER DIFFUSER, 0–10V DIMMING TO 1% INTEGRAL DRIVER, 5000 LUMENS OUTPUT, INTEGRAL EMERGENCY BATTERY PACK WHERE SHOWN ON PLANS. – –
	2	HALO PD6–20–D010B–IEM–PDM6B–840–61V[EM]–H – EQUAL BY: –	20.5	LED/4000K	RECESSED LED DOWNLIGHT FOR USE WITH 28W, 2000–LUMEN LED AT 4000K. 6–INCH ROUND NOMINAL APERTURE. 0–10V DIMMING, PARABOLIC ALUMINUM REFLECTOR, SEMI–SPECULAR CLEAR FINISH, PROIVDE EMERGENCY BATTERY PACK AS SHOWN ON PLANS. –
	3	METALUX WSNLED 4–WSNLED–LD4–36SL–F–UNV–L840–CD–1–U – EQUAL BY: –	35	LED/4000K	SURFACE MOUNTED, 4' LONG X 9" WIDE WRAPAROUND STYLE LED FIXTURE WITH 3600 LUMEN OUTPUT, 0–10V DIMMING DRIVER, FROSTED ACRYLIC LENS. PROVIDE EMERGENCY BATTERY PACK WHERE SHOWN ON PLANS. –
	4	ARCHITECTURAL LIGHTING WORKS LP2UUS–[L?]–HI/4000K–0/10V/1%–EXT/R–MED/4000K–0/10V/1%–EXT/R–AL–UNV EQUAL BY: –	24.4W/FT	LED/4000K	SUSPENDED DIRECT/INDIRECT LINEAR FIXTURE FOR USE WITH 14.4W/1144LMS DOWN, 10.1W/844LMS UP, PER FOOT LED AT 4000K. 0–10V DIMMING TO 1%. 2" NOMINAL APERTURE BY 5.375–INCH DEPTH. CONTINUOUS LENGTH PER PLANS. EXTRA DIFFUSE, REVEAL LENS, STANDARD, NATURAL "ULTIMATTE" ALUMINIUM FINISH. PROVIDE EMERGENCY BATTERY PACK WHERE SHOWN ON PLANS.
	5	ARCHITECTURAL LIGHTING WORKS POLYGON BEYOND #RPD02–8L–62,90–4000–0/10V–S–BAL–UNV EQUAL BY: –	115	LED/3500	PENDANT MOUNTED, OCTAGONAL LED FIXTURE WITH 8 SIDES, TWO TIERED STACKED FIXTURES IN 62" DIA. & 90" DIA., LARGER PENDANT ABOVE, PROVIDE REMOTE 0–10V DIMMING DRIVER IN ACCESSIBLE CEILING SPACE AS CLOSE TO FIXTURE AS POSSIBLE AND PROIVDE ALL CONNECTIONS AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.
	5A	ARCHITECTURAL LIGHTING WORKS POLYGON BEYOND #RPD02–8L–62–4000–0/10V/S–BAL–UNV EQUAL BY: –	47	LED/3500K	SAME AS TYPE 5, EXCEPT SINGLE FIXTURE WITH 62" OUTER DIAMETER. – – – –
	6	PERFORMANCE IN LIGHTING Q SERIES Q–WALL B 40° #07012X – EQUAL BY: –	60	LED/4000K	WALL MOUNTED, SQUARE CYLINDER SCONCE WITH UP/DOWN DISTRIBUTION, 6904 LUMEN OUTPUT, 0–10V DIMMING DRIVER, FINISH AS SELECTED BY THE ARCHITECT. – –
	7	PERFORMANCE IN LIGHTING FOCUS+ SERIES FOCUS+ ZERO #071971 – EQUAL BY: –	10	LED/4000K	3" SQUARE LED, WALL MOUNTED FLOOD UPLIGHT, WITH 120V LED MODULE FINISH AS SELECTED BY THE ARCHITECT. – – –
OR	X	SURE–LITES CX SERIES – – EQUAL BY: MC PHILBEN OR LITHONIA	14	LED	DIE–CAST ALUMINUM EXIT SIGN WITH HINGED AND LATCHED BRUSHED ALUMINUM STENCIL FACEPLATE AND BLACK HOUSING, GREEN LETTERING, SINGLE OR DOUBLE FACE AND DIRECTIONAL ARROWS AS INDICATED ON DRAWINGS. UNIVERSAL MOUNTING, DUAL VOLTAGE, TWO CIRCUIT. –
	XL	ISOLITE #2040–70–G–10–BA – – EQUAL BY: MC PHILBEN	SELF–LUM	SELF–LUM	SELF–LUMINOUS LOW LEVEL EXIT SIGN, SINGLE FACE, GREEN FACE COLOR, 10 YEAR SERVICE LIFE, BRUSHD ALUMINUM FRAME COLOR, SURFACE MOUNT. – – –

SEE GENERAL LIGHTING FIXTURE SCHEDULE NOTES FOR CRITICAL FIXTURE SPECIFICATION AND ORDERING INFORMATION.

PROVIDE #12 AWG STEEL CABLE SWAY BRACING AS REQUIRED TO LIMIT FIXTURE SWAY WHEN FIXTURES CAN IMPACT AN OBSTRUCTION WITHIN A 45° RANGE OF MOTION IN ALL DIRECTIONS, PER DSA IR 16–9. ATTACH DIRECTLY TO LIGHT FIXTURE AND TO PERMANENT STRUCTURE.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-117236 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 03/25/2019

pjhm architects
www.pjhm.com

LICENSED ARCHITECT
KENNETH J. PODANY
NO. C28889
REN. 3/19
STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

FIXTURE SCHEDULE

E-4.1

DISTRIBUTED LIGHTING CONTROLS ACCEPTABLE MANUFACTURES:

WATTSTOPPER:

WALL BOX SENSORS:	STANDALONE SINGLE RELAY = #DW-100 STANDALONE 0-10V DIMMING WITH SINGLE RELAY = #PW-311 STANDALONE DUAL RELAY = #DW-200 SYSTEM-BASED DIMMING CONTROL = #LMDW-102
CEILING SENSORS:	ONE-WAY DIRECTIONAL = #LMDC-100 WITH MASKING AS REQUIRED. 360 DEGREE COVERAGE = #LMDC-100
DAYLIGHT SENSORS:	OPEN LOOP SENSOR = #LMLS-500 (1-3 ZONE) OR CLOSED LOOP SENSOR = #LMLS-400 (1 ZONE ONLY) REMOTE CONTROL = #LMCT-100 (HAND TO OWNER AT COMPLETION OF PROJECT.)
CONTROL UNITS:	SWITCHED = #LMRC-10? (NUMBER OF RELAYS AS REQUIRED). CONTINUOUS DIMMING (0-10V) = #LMRC-21? (NUMBER OF RELAYS AS REQUIRED). CONTINUOUS DIMMING (UNIVERSAL) = #LMRC-22? (NUMBER OF RELAYS AS REQUIRED). RECEPTACLE CONTROL = #LMPL-101 OR LMPL-201 WHERE MORE THAN 4 RECEPTACLE CONTROL UNITS ARE TIED TOGETHER. HVAC CONTROL = #LMRL-100 AV SYSTEM SERIAL INTERFACE = #LMDI-100 (SCREENS / AV SYSTEM INTEGRATION) MOVEABLE PARTITION INTERFACE & SENSOR = #LMIO-102 PARTITION INTERFACE, #LMPS-104 PARTITION SWITCH/STATUS INDICATOR, #BZ-50 POWER PACK (SENSOR POWER) & PARTITION SENSOR #ENTERTAINMENT NETWORKS SENSOR W/BOTTOM COVER (www.entertainmentworks.com). DUAL MODE CORRIDOR/STAIRWAY/AISLEWAY CONTROL INPUT = #LMZC-301, UNLESS OTHERWISE NOTED.
WALL CONTROLS:	DIMMING = #LMSW-101/102/103/104/108 (# OF SWITCHES AS REQUIRED 4/YOKE MAX). KEYED SWITCH = #LMIO-101 INPUT INTERFACE W/ LEVITON #1221-2L-? KEYED SWITCH
NETWORK COMPONENTS:	ZONE SEGMENT MANAGER = #LMSM-3E/#LMSM-6E W/#LMSM-ENC1 ENCLOSURE. NETWORK BRIDGE / ROUTER / SWITCH = #LMBC-300/#NB-ROUTER/#NB-SWITCH NETWORK WIRING = #LM-MSTP. NETWORK RELAY PANELS = LMCP8, 24 OR 48
INTERCONNECT COMPONENTS:	NETWORK BRIDGE / ROUTER / SWITCH = #LMBC-300/#NB-ROUTER/#NB-SWITCH PROVIDE TEMPORARY NB ROUTER AND LAPTOP TO DEMONSTRATE DEMAND RESPONSE CAPABILITY DURING ACCEPTANCE TESTING.
EMERGENCY POWER INTERFACE:	SWITCHING / STEP DIMMING = #ELCU-200 BYPASS DEVICE. CONTINUOUS DIMMING = #ELCU-200 BYPASS DEVICE.
LOAD INTERFACE DEVICE:	LUTRON COMPONENTS = LUTRON #BCI-0-10. REVERSE/FORWARD PHASE DIMMING COMPONENTS = LUTRON #PHPM-PA-DV-WH.

nLIGHT:

WALL BOX SENSORS:	STANDALONE SINGLE RELAY = #WSX-PDT STANDALONE DUAL RELAY = #WSX-PDT-2P SYSTEM-BASED DIMMING CONTROL = #nWSX-PDT-LV-DX
CEILING SENSORS:	ONE-WAY DIRECTIONAL = #NRM-PDT-9 W/MASKING AS REQUIRED. 360 DEGREE COVERAGE = #NRM-PDT-9 STANDARD RANGE, #NRM-PDT-10 EXTENDED RANGE/CORRIDOR
DAYLIGHT SENSORS:	CLOSED LOOP SENSOR = #NES-ADCX / #NRM-ADCX (ONLY IF REQUIRED BY CLG. TYPE). REMOTE CONTROL = N/A
CONTROL UNITS:	SWITCH / STEPPED DIMMING = #NPP-16/#NSP-16 (NUMBER OF RELAYS AS REQUIRED). CONTINUOUS DIMMING (0-10V) = #NPP16-D (NUMBER OF RELAYS AS REQUIRED). CONTINUOUS DIMMING (UNIVERSAL) = #NSP5-PCD (NUMBER OF RELAYS AS REQUIRED). AUXILIARY INPUT/ OUTPUT CONTROL = #NAR-40 RECEPTACLE CONTROL = #NPP20 PL HVAC CONTROL = #NAR-40 AV SYSTEM SERIAL INTERFACE = #nIO X (SCREENS / AV SYSTEM INTEGRATION) MOVEABLE PARTITION INTERFACE & SENSOR = #FRESCO TOUCH PANEL #NFCS-7TSN (PER SPACE) #NIO-1S POWER PACK (SENSOR POWER) & PARTITION SENSOR #ENTERTAINMENT NETWORKS SENSOR W/BOTTOM COVER (www.entertainmentworks.com). DUAL MODE CORRIDOR/STAIRWAY/AISLEWAY CONTROL INPUT = LC&D BLUE BOX, UNLESS OTHERWISE NOTED.
WALL CONTROLS:	DIMMING = #NPODM-DX SERIES (# OF DIMMERS AS REQUIRED - 4 / YOKE MAX) KEYED SWITCH = #NIO INPUT INTERFACE W/LEVITON #1221-2L-? KEYED SWITCH

NETWORK COMPONENTS:	GATEWAY = #NECY-120, NGWY2-GFX, 13.9"H x 10"W x 4.5"D ENCLOSURE TO BE PROVIDED BY CONTRACTOR
	BRIDGE = #NBRG-8-KIT
	NETWORK RELAY PANELS = ARP INTENCXX NLT XXFCR MVOLT, QTY AS REQUIRED, TO INCLUDE SPARE RELAYS SHOWN IN SCHEDULES.

INTERCONNECT COMPONENTS:	GATEWAY = #NECY-120, NGWY2-GFX, 13.9"H x 10"W x 4.5"D ENCLOSURE TO BE PROVIDED BY CONTRACTOR
	BRIDGE = #NBRG-8-KIT
	STANDARDS BASED ADR RECEIVER = NADR
	PROVIDE END USER CLIENT WITH (1) WIRELESS PROGRAMMING DEVICE (NIO-BT) FOR MAINTENANCE AND PROGRAMMING

EMERGENCY POWER INTERFACE:	SWITCHING / STEP DIMMING = NPP16-ER CONTINUOUS DIMMING = #NPP16-D-ER
LOAD INTERFACE DEVICE:	LUTRON COMPONENTS = LUTRON #BCI-0-10. REVERSE PHASE DIMMING COMPONENTS = #NSP5-PCD-ELV120/LUTRON #PHPM-PA-DV-WH. FORWARD PHASE DIMMING COMPONENTS = #NSP5-PCD-MLV/LUTRON #PHPM-PA-DV-WH. 2 & 3 WIRE DIMMING COMPONENTS = #NSP5-PCD-2W/3W OR LUTRON #PHPM-PA-DV-WH.

COOPER CONTROLS (GREENGATE):

WALL BOX SENSORS:	STANDALONE SINGLE RELAY = #ONW-D-1001-MV-N SERIES STANDALONE DUAL RELAY = #ONW-D-1001-DMV-N SERIES SYSTEM-BASED DIMMING CONTROL = NOT AVAILABLE
CEILING SENSORS:	ONE-WAY DIRECTIONAL = #OAC-DT-501 (500 S.F. MAXIMUM) 360 DEGREE COVERAGE = #OAC-DT-1000 (1,000 S.F. MAXIMUM) 360 DEGREE COVERAGE = #OAC-DT-2000
DAYLIGHT SENSORS:	OPEN LOOP SENSOR = #DSRC-FMOIR REMOTE CONTROL = #HHPRG-RC
CONTROL UNITS:	SWITCH / STEPPED DIMMING = #RC3D-PL PLENUM RATED SERIES (NUMBER OF RELAYS AS REQUIRED). CONTINUOUS DIMMING (0-10V) = #RC3D PLENUM RATED SERIES (NUMBER OF RELAYS AS REQUIRED). CONTINUOUS DIMMING (UNIVERSAL) = USE WITH LOAD INTERFACE DEVICE AUXILIARY INPUT / OUTPUT CONTROL = #OCC-RJ45 RECEPTACLE CONTROL = #SPRC-R-20-120 HVAC CONTROL = #-R OPTION ON OCCUPANCY SENSOR OR CONTACT CLOSURE VIA TERMINAL #5 ON RC CONTROL UNIT. AV SYSTEM SERIAL INTERFACE: REQUIRES NETWORKING TO PROVIDE SERIAL CONNECTION. MOVEABLE PARTITION INTERFACE & SENSOR: REQUIRES NETWORKING TO PROVIDE PARTITIONING. DUAL MODE COORDIDOR/STAIRWAY/AISLEWAY CONTROL INPUT = RC3 SERIES, UNLESS OTHERWISE NOTED.PROVIDE QTY OF CONTROLLERS AND SEPARATE DEMAND RESPONSE/INTERCONNECT CABLING AS REQUIRED.
WALL CONTROLS:	DIMMING = #RC SERIES DIMMERS (# OF DIMMERS AS REQUIRED - 4 / YOKE MAX) KEYED SWITCH = #OCC-RJ45 INPUT INTERFACE W/LEVITON #1221-2L-? KEYED SWITCH
NETWORK COMPONENTS:	NETWORK ADAPTER = RC3D-PL-N OR RC3DE-PL-N
INTERCONNECT COMPONENTS:	DEMAND RESPONSE INCLUDED STANDARD IN CONTROL UNITS. PROVIDE QTY OF CONTROLLERS AND SEPARATE DEMAND RESPONSE/INTERCONNECT CABLING AS REQUIRED.
EMERGENCY POWER INTERFACE:	SWITCHING / STEP DIMMING = PROVIDE THE #RC3E OPTION ON CONTROLLER. CONTINUOUS DIMMING = PROVIDE THE #RC3DE OPTION ON CONTROLLER.
LOAD INTERFACE DEVICE:	LUTRON COMPONENTS = LUTRON #BCI-0-10. REVERSE PHASE DIMMING COMPONENTS = LDCM-PL 2-WIRE DIMMING (FORWARD PHASE-ONLY) = GREENGATE #PD216 SERIES INTERFACE.
NETWORK INTERFACE:	NOT AVAILABLE

DISTRIBUTED LIGHTING CONTROLS SYSTEM SPECIFICATIONS (OCCUPANCY / VACANCY SENSORS AND DAYLIGHTING CONTROLS):

1. SEE LIGHTING PLAN DRAWINGS FOR DISTRIBUTED LIGHTING CONTROL SYSTEM (DLCS) SPECIFICS, SPACE SPECIFIC CONFIGURATIONS/REQUIREMENTS, AS WELL AS FIXTURE BALLAST/DRIVER CONFIGURATIONS.
2. ALL PRODUCTS SHALL BE BACKED BY A FIVE YEAR MANUFACTURER'S WARRANTY.
3. ALL PRODUCTS LISTED IN THIS SPECIFICATION ARE BASED UPON PRODUCTS LISTED ON THIS SHEET. THE FEATURES AND CHARACTERISTICS OF THE PRODUCT LITERATURE AND SPECIFICATION SHEETS AVAILABLE ON THE VARIOUS MANUFACTURER'S WEB-SITES ARE INCLUDED IN THE REQUIREMENT OF THESE SPECIFICATIONS. ALL DLCS NETWORKED/INTERCONNECTED/NON-NETWORKED SYSTEM-BASED AND STANDALONE COMPONENTS SHALL BE PROVIDED BY A SINGLE MANUFACTURER.
4. DLCS COMPONENTS SHALL BE COMPLIANT WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL ENERGY CODES AND BE PROVIDED AS FOLLOWS:
   a. WALL MOUNTED OCCUPANCY SENSORS:

      STANDALONE: WALL MOUNTED OCCUPANCY SENSORS SHALL BE UL LISTED AND HAVE A MINIMUM LOAD CAPACITY OF 800 WATTS AT 120 VOLTS AND 1200 WATTS AT 277 VOLTS. WALL SENSORS SHALL ALSO BE DECORATOR STYLE, WITH A LOW-PROFILE APPEARANCE AND A HARD LENS FOR DURABILITY. SENSOR SHALL UTILIZE PASSIVE INFRARED TECHNOLOGY (PIR) AND ULTRASONIC/MICROPHONIC TECHNOLOGY. UNIT SHALL BE RATED FOR 120/277 VOLT WITH NO MINIMUM LOAD, COMPATIBLE WITH ALL THE SPECIFIED BALLASTS, PROVIDED WITH A NEUTRAL CONNECTION (NO LEAKAGE TO GROUND) AND NO LEAKAGE TO LOAD IN THE "OFF" MODE. SENSOR SHALL BE UTILIZED IN SPACES NOT EXCEEDING 150 SQ.FT. SINGLE RELAY SENSORS SHALL BE CONFIGURED WITH THE RELAY IN A "MANUAL ON/ AUTO OFF" SETTING. DUAL RELAY SENSORS SHALL BE CONFIGURED WITH THE FIRST RELAY IN A "AUTOMATIC ON/ AUTOMATIC OFF" SETTING AND THE SECOND RELAY IN A "MANUAL ON/ AUTOMATIC OFF" SETTING. FACTORY STANDARD COLOR TO BE APPROVED BY ARCHITECT.

      SYSTEM-BASED: WHEN INDICATED WITH A DOT SYMBOL, "I" , OR "N" IN THE OCCUPANCY SENSOR SYMBOL, A LOW VOLTAGE, WALL MOUNTED OCCUPANCY SENSOR SHALL BE PROVIDED AND CONNECTED TO A CONTROL UNIT AS REQUIRED. SENSOR SHALL BE DECORATOR STYLE WITH A LOW-PROFILE APPEARANCE, HAVE ON/OFF/RAISE/LOWER BUTTONS, AND A HARD LENS FOR DURABILITY. SENSOR SHALL UTILIZE PASSIVE INFRARED TECHNOLOGY (PIR) AND ULTRASONIC/MICROPHONIC TECHNOLOGY. FACTORY STANDARD COLOR TO BE APPROVED BY ARCHITECT.

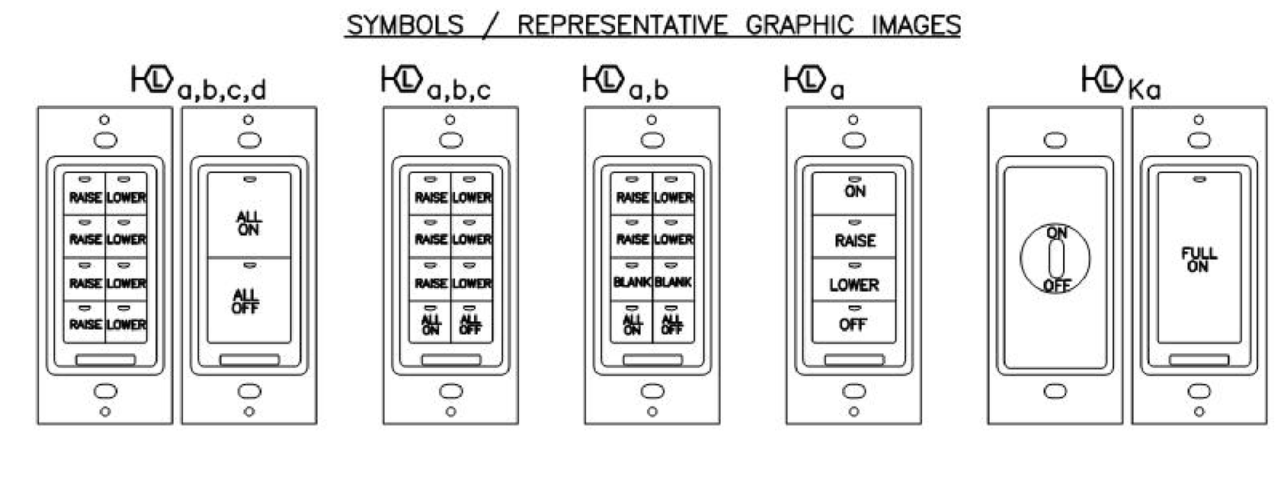
   b. SYSTEM-BASED CEILING MOUNTED OCCUPANCY SENSORS INDICATED WITH A DOT SYMBOL, "I" , OR "N" IN THE OCCUPANCY SENSOR SYMBOL SHALL HAVE A LOW-PROFILE APPEARANCE AND SHALL BE CONFIGURED IN ONE OF THE FOLLOWING WAYS AS INDICATED ON THE DRAWINGS:
      - AUTO ON: a/b
      - SWITCHED: AUTO ON a / MANUAL ON b
      - CONTINUOUS DIMMED: AUTO ON 50% a / MANUAL ON 100% a

      SENSOR(S) SHALL UTILIZE DUAL TECHNOLOGY (PIR AND ULTRASONIC/MICROPHONIC TECHNOLOGY) WITH 360 DEGREE COVERAGE. IN SPACES WITH DESKTOP ACTIVITIES, THE COVERAGE SHALL BE "HAND MOTION" AND SHALL NOT EXCEED 500 SQ. FT. AT A MAXIMUM CEILING HEIGHT OF 10 FT. IN CORRIDORS, STORAGE ROOMS AND OTHER SPACES WITH NON-DESKTOP ACTIVITIES, COVERAGE SHALL BE "HALF-STEP, WALKING MOTION" AND SHALL NOT EXCEED 1200 SQ. FT. AT A MAXIMUM CEILING HEIGHT OF 10 FT.
   c. "H" AT THE OCCUPANCY SENSOR INDICATES CONNECTION TO AUXILIARY OUTPUT CONTROL DEVICE FOR CONTROL OF A THIRD PARTY DEVICE VIA LOW-VOLTAGE CONTACT CLOSURES - 1 AMP @ 24V AC/DC. NC/NO RELAYS SHALL BE CONNECTED TO A CONTROLLER TO PERFORM THE AUXILIARY CONTROL REQUIREMENTS INDICATED BY THE DRAWINGS.
   d. "DM" PREFIX AT AT THE OCCUPANCY SENSOR INDICATES A DUAL MODE CORRIDOR/STAIRWAY/WAREHOUSE AISLE CONTROL FUNCTIONALITY TO BE IMPLEMENTED AS FOLLOWS:
      - BUSINESS HOUR MODE
        --UNOCCUPIED CORRIDOR/STAIRWAY/AISLE LIGHTING SHALL AUTOMATICALLY DIM TO ACHIEVE 50% LIGHTING POWER LEVEL.
        --UPON OCCUPANCY, LIGHTING SHALL AUTOMATICALLY BE BROUGHT TO 100% LIGHTING POWER LEVEL.
      - AFTER BUSINESS HOUR MODE
        --UNOCCUPIED CORRIDOR/STAIRWAY/AISLE LIGHTING SHALL AUTOMATICALLY TURN OFF BASED ON CEC-LISTED TIME CLOCK OUTPUT CONTACT POSTION/TIME CLOCK PROGRAMMING.
        --UPON OCCUPANCY, LIGHTING SHALL BE BROUGHT TO 100% LIGHTING POWER LEVEL.
        --ONCE OCCUPANCY IS DETECTED IN A CORRIDOR, STAIRWAY, OR AISLE, THAT RESPECTIVE AREA SHALL OPERATE IN BUSINESS HOUR MODE UNTIL THE NEXT AFTER BUSINESS HOUR MODE OCCURS.
        --UNOCCUPIED CORRIDOR/STAIRWAY/AISLEWAY LIGHTING SHALL AUTOMATICALLY REVERT TO BUSINESS HOUR MODE OPERATION BASED ON CEC-LISTED TIME CLOCK CONTACT POSTION/TIME CLOCK PROGRAMMING.

      E.C. SHALL BE RESPONSIBLE FOR PROVIDING ALL DEVICES AND WIRING REQUIRED FOR DUAL MODE OPERATIONS AND ANY PROGRAMMING/CONFIGURATION OF TIME-BASED OPERATING PARAMETERS TO INCLUDE OUTPUT CONTACT CLOSURES FROM TIME CLOCKS OR NETWORK GATEWAYS. COORDINATE WITH OWNER TO DETERMINE BUSINESS HOUR/AFTER BUSINESS HOUR MODES. WHERE DIAL MODE CONTROL IS ACCOMPLISHED THROUGH NON-NETWORK TIME CLOCK DEVICES, LOCATE EACH OF THESE DEVICES ADJACENT TO THE CLOSEST RESPECTIVE STAIRWAY/CORRIDOR/AISLEWAY CONTROL UNIT. IF THE PLANS IDENTIFY A NEW OR EXISTING CEC LIGHTING CONTROL PANEL AS THE SOURCE OF DUAL MODE TIMING, E.C. SHALL INCLUDE ALL COSTS TO INSTALL ANY NECESSARY I/O TERMINALS, CARDS, ETC. TO MAKE THE SYSTEM FULLY FUNCTIONAL.
   e. WHEN INDICATED WITH AN "N" IN THE OCCUPANCY SENSOR SYMBOL, A NETWORKED SYSTEM SHALL BE PROVIDED AND INSTALLED. THIS NETWORK-BASED SYSTEM SHALL PROVIDE/RESULT IN "LADDERLESS COMMISSIONING" OF DAYLIGHT CONTROLS. AT A MINIMUM, NETWORK ACQUIRED DATA SHALL PROVIDE CT-BASED LIGHTING POWER (WATTS) MEASUREMENTS PER THE COMMISSIONING PORTION OF THESE REQUIREMENTS. PROVIDE NETWORKED CONTROL UNITS/POWER PACKS/INTERFACES AND MISCELLANEOUS EQUIPMENT AS FOLLOWS:
      1. NETWORK SEGMENT MANAGER WITH NATIVE BACnet IP - QUANTITY AS REQUIRED BASED UPON A MAXIMUM OF 100 LOCAL ROOM NETWORKS PER SEGMENT AND A MINIMUM OF ONE SEGMENT MANAGER PER FLOOR. THIS EQUIPMENT SHALL BE LOCATED IN THE TYPICAL FLOOR ELECTRICAL ROOM.
      2. NETWORK BRIDGE CONNECTING THE SEGMENT MANAGER TO THE CONTROLLER SUB/LOCAL NETWORK.
      3. SEGMENT NETWORK WIRING FROM NETWORK SEGMENT MANAGER TO FIRST NETWORK CONTROLLER DEVICE AS WELL AS ALL OTHER NETWORK CONTROLLER CONNECTIONS (VIA LINEAR TOPOLOGY) AS REQUIRED.
      4. ALL CORRIDORS AND STAIRWELLS SHALL BE PROVIDED WITH DUAL MODE CORRIDOR/STAIRWAY CONTROLS TO INCLUDE CEC-LISTED TIME CLOCK(S) OR SYSTEM GATEWAYS, INTERPOSING RELAYS (WHEN INTERFACING WITH EXISTING CEC-LISTED RELAY PANELS), WIRING, 120V POWER, PROGRAMMING, ETC. NECESSARY FOR A COMPLETE AND FUNCTIONING CONTROL SYSTEM.
      5. INCLUDE ALL COSTS IN BASE BID TO PROVIDE 120V CIRCUIT(S) AND RECEPTACLE(S) NECESSARY TO POWER ALL DEMAND RESPONSE EQUIPMENT.
      6. PROVIDE DATA OUTLET/PATHWAY, DATA CABLING (IF REQUIRED ELSEWHERE BY PROJECT DOCUMENTS), AND CONNECTION TO THE PROJECT'S LOCAL AREA NETWORK.
      7. INCLUDE ALL COSTS IN BASE BID TO PROVIDE 120V CIRCUIT(S) AND RECEPTACLE(S) NECESSARY TO POWER ALL NETWORK SEGMENT MANAGERS, SWITCHES AND ROUTERS.
      8. DEMONSTRATE DLCS RESPONSE TO A SIMULATED DEMAND RESPONSE REQUEST AS PART OF THE LIGHTING COMMISSIONING PROCESS. WHERE MORE THAN ONE WIRING TOPOLOGY AND/OR ZONE IS REQUIRED TO ACCOMPLISH DEMAND RESPONSE - ALL WIRING TOPOLOGIES AND ZONES SHALL BE TESTED ACCORDINGLY.
   f. WHEN INDICATED WITH AN "I" IN THE OCCUPANCY SENSOR SYMBOL, A INTERCONNECTED CONTROL SYSTEM SHALL BE PROVIDED AND INSTALLED. THIS INTERCONNECTED CONTROL SYSTEM SHALL PROVIDE/RESULT IN "DRY CONTACT CLOSURE DEMAND RESPONSE LOAD SHED" CONTROL FUNCTIONALITY. AT A MINIMUM, A CONTACT CLOSURE SHALL REDUCE THE LIGHTING POWER LOAD BY AT LEAST 15%. WHERE AN INTERCONNECTED CONTROL SYSTEM IS SERVING CORRIDORS AND/OR STAIRWAYS, THE SYSTEM SHALL ALSO PROVIDE DUAL MODE CORRIDOR/STAIRWAY CONTROL. PROVIDE CONTROL UNITS/POWER PACKS/INPUT INTERFACES/TIME CLOCK AND MISCELLANEOUS EQUIPMENT AS FOLLOWS:
      1. INPUT CONTROL UNIT INTERFACE DEVICE CAPABLE OF RECEIVING SEPARATE DRY CONTACT INPUTS ACTIVATING A DIMMED SCENE WITH AT LEAST A 15% LOAD REDUCTION AND, WHEN SERVING CORRIDORS AND/OR STAIRWELL CONTROLLERS, ACTIVATING EITHER MODE OF THE DUAL MODE CORRIDOR/STAIRWAY CONTROL SYSTEM.
      2. PLENUM-RATED INTERCONNECT WIRING MEETING ALL THE OTHER REQUIREMENTS OF THE DLCS MANUFACTURER SHALL BE RUN BETWEEN EACH INPUT CONTROL UNIT INTERFACE DEVICE TO A LOCATION IN THE ELECTRICAL ROOM CONTAINING THE LIGHTING BRANCH CIRCUIT PANEL. WHERE DUAL MODE CORRIDOR/STAIRWAY CONTROL IS ALSO REQUIRED - PROVIDE ADDITIONAL INTERCONNECT WIRING AND DEVICES AS REQUIRED TO ACCOMPLISH BOTH DEMAND RESPONSE AND DUAL MODE CONTROL.
      3. DEMONSTRATE DLCS RESPONSE TO A SIMULATED DEMAND RESPONSE REQUEST AS PART OF THE LIGHTING COMMISSIONING PROCESS. WHERE MORE THAN ONE WIRING TOPOLOGY AND/OR ZONE IS REQUIRED TO ACCOMPLISH DEMAND RESPONSE - ALL WIRING TOPOLOGIES AND ZONES SHALL BE TESTED ACCORDINGLY.
   g. WHERE INDICATED ON DRAWINGS, PROVIDE INTEGRATED DAYLIGHTING CONTROLS AS FOLLOWS:
      1. AUTOMATIC SWITCHING DAYLIGHTING CONTROLS SHALL BE PROVIDED TO SWITCH SELECTED FIXTURES AND/OR LAMPS OFF AND ON BASED UPON LIGHTING LEVELS PRESENT IN THE CONTROLLED SPACE. THE DAYLIGHTING CONTROLS SHALL BE CONNECTED TO THE CONTROL UNIT. THE SENSOR SHALL UTILIZE AN INTEGRAL PHOTO DIODE TO MEASURE AMBIENT LIGHT LEVELS. CONTROLS SHALL BE FULLY ADJUSTABLE FROM 1 TO 6,500 FOOTCANDLES AND SHALL BE PROVIDED WITH AN ADJUSTABLE TIME DELAY AND ADJUSTABLE DEAD BAND SETTINGS.
      2. AUTOMATIC DIMMING DAYLIGHTING CONTROLS SHALL BE PROVIDED TO CONTINUOUSLY DIM SELECTED FIXTURES/LAMPS UP AND DOWN BASED UPON LIGHTING LEVELS PRESENT IN THE CONTROLLED SPACE. THE SENSOR SHALL UTILIZE AN INTERNAL PHOTO DIODE TO MEASURE AMBIENT LIGHT LEVELS. 0-10 VOLT DIMMING CONTROLS SHALL RANGE FROM 0.2 VOLTS TO 10 VOLTS, WITH AMBIENT LIGHTING SET POINTS FROM 1-6,500 FOOTCANDLES.
      3. AUTOMATIC DAYLIGHTING CONTROLS SHALL BE CONNECTED TO CONTROL UNITS TO PERFORM THE FIXTURE SWITCHING/DIMMING REQUIREMENTS INDICATED BY THE DRAWINGS - CONNECTIONS DIRECTLY TO A BALLAST ARE NOT ALLOWED.
      4. DAYLIGHT SENSOR SHALL PROVIDE CONTROLS FOR UP TO THREE DISTINCT LIGHTING ZONES TO ALLOW SEPARATE CONTROL OF PRIMARY DAYLIT, SECONDARY DAYLIT, AND SKYLIT ZONES.
   h. PROVIDE CONTROL UNITS AND SYSTEM FUNCTIONALITY AS FOLLOWS:
      1. CONTINUOUS DIMMING CONTROLS: SYSTEM-BASED WALL OR CEILING MOUNTED OCCUPANCY SENSORS (CONTINUOUS DIMMED - AUTO ON 50%/MANUAL ON 100%) SHALL BE PROVIDED WITH CONTROL UNITS TO PERFORM THE FIXTURE DIMMING REQUIREMENTS INDICATED BY THE BALLAST AND FIXTURE TYPE. SWITCH LEG INDICATED OUTSIDE THE PARENTHESIS TO BE CONFIGURED AS "AUTO ON 50%/MANUAL ON 100%" FOR CONTINUOUS DIMMED. SWITCH LEGS INSIDE PARENTHESIS INDICATES A MANUAL ACTION REQUIRED TO INCREASE LIGHTING LEVELS ABOVE 50%. CONTROL UNITS WITH INTEGRAL TRANSFORMERS SHALL BE UTILIZED TO PROVIDE POWER TO OCCUPANCY SENSORS AND OTHER CONTROL DEVICES. CONTROL UNITS SHALL BE LOCATED WITHIN JUNCTION BOXES AND NOT EXPOSED IN THE CEILING SPACE. CONTROL UNIT SHALL BE 120/277 VOLT RATED WITH NO MINIMUM LOAD, COMPATIBLE WITH ALL THE SPECIFIED BALLASTS PROVIDED WITH A NEUTRAL CONNECTION (NO LEAKAGE TO GROUND) AND NO LEAKAGE TO LOAD IN THE "OFF" MODE. ADDITIONAL RELAY ZONES MAY BE REQUIRED FOR THE ADDITION OF PRIMARY DAYLIT, SECONDARY DAYLIT, AND PRIMARY SKYLIT UTILIZING THE SAME CONTROL CHANNEL. (I.E. EVEN THOUGH A SINGLE LETTER "a" IS INDICATED AT THE PRIMARY SENSOR), ADDITIONAL RELAYS WOULD BE REQUIRED FOR THE "a+" (PRIMARY SIDELIT DAYLIT ZONE), "a++" (SECONDARY SIDELIT DAYLIT ZONE), AND "a*" (SKYLIT DAYLIT ZONE). WHERE MORE THAN ONE CIRCUIT/THREE SWITCH LEGS/THREE RELAY ZONES ARE REQUIRED, PROVIDE ADDITIONAL FULL FEATURE CONTROL UNITS AS REQUIRED.
      2. WHERE ADDITIONAL 120/ 277 VOLT DEVICES, RECEPTACLES, OR BRANCH CIRCUITS ARE BEING CONTROLLED BY THE ROOM CONTROLLER, AN ADDITIONAL CONTROL UNIT SHALL BE PROVIDED AS REQUIRED.
      3. THE OCCUPANCY SENSOR CONTROLLED RECEPTACLE BRANCH CIRCUIT RELAY, CONNECTED TO THE SPACE'S DISTRIBUTED LIGHTING CONTROL OCCUPANCY SENSOR RELAY, SHALL TURN ON WHEN THE ROOM IS OCCUPIED, REGARDLESS OF THE CONFIGURATION OF THE LIGHTING CONTROL STATE - I.E. AUTO ON/MANUAL ON. SEE THE DISTRIBUTED LIGHTING CONTROL SPECIFICATION FOR MORE INFORMATION. EVEN THOUGH A SINGLE SYMBOL IS INDICATED, MULTIPLE RELAYS MAY BE REQUIRED TO CONTROL THE REQUIRED NUMBER OF SWITCHLEGS/CIRCUITS.
      4. LOW VOLTAGE WALL CONTROLS SHALL BE DECORA STYLE, LOW-VOLTAGE, MOMENTARY SWITCHES WITH COLOR TO MATCH OTHER WALL DEVICES/SWITCHES. LOWER CASE LETTERS INDICATE SWITCHING CONFIGURATION. PROVIDE SWITCHING OR DIMMING CONTROL DEVICES AS REQUIRED BY DRAWINGS.

         DIMMING - NUMBER OF SWITCHES AS REQUIRED - 4 ZONES/YOKE MAX. EACH CONTROL ZONE TO HAVE A DEDICATED RAISE AND LOWER BUTTONS. FACTORY STANDARD COLOR BY ARCHITECT. EACH MULTI-ZONE DIMMING CONTROL STATION SHALL BE PROVIDED WITH MASTER ON AND MASTER OFF BUTTON IN ADDITION TO THE INDIVIDUAL CONTROL ZONE BUTTONS.
      5. WHERE INDICATED, PROVIDE VANDAL RESISTANT, HIGH ABUSE SWITCH CONNECTED TO THE DLCS INPUT/OUTPUT INTERFACE DEVICE FOR ON/ OFF AND DIMMING CONTROLS. SWITCHES LOCATED IN HIGH ABUSE AREAS (EXTERIOR AREAS OR AREAS SUBJECT TO WASH-DOWN ETC.) OR IDENTIFIED ON PLANS AS HIGH-ABUSE SWITCHES SHALL BE VANDAL RESISTANT, STAINLESS STEEL, TOUCH SENSITIVE AND AVAILABLE WITH UP TO TWO BUTTONS IN A SINGLE GANG. EACH HIGH ABUSE SWITCH SHALL BE ABLE TO BE PROGRAMMED FOR ON, OFF, TOGGLE OR MAINTAIN OPERATION. SWITCHES MUST BE CAPABLE OF HANDLING ELECTROSTATIC DISCHARGES OF AT LEAST 30,000 VOLTS (1CMSPARK) WITHOUT ANY INTERRUPTION OR FAILURE IN OPERATION.
      6. WHERE INDICATED, PROVIDE A LOCKING SINGLE POLE SWITCH CONNECTED TO THE ROOM CONTROLLER VIA A INPUT/OUTPUT INTERFACE DEVICE FOR ON/OFF CONTROLS. DIRECT CONNECTION OF THE KEYED SWITCH ON THE LOAD SIDE OF THE CONTROLLER IS PROHIBITED. PROVIDE AT LEAST THREE (3) KEYS TO OWNER AT CONCLUSION OF PROJECT. ADJACENT SWITCH SHALL ONLY BRING LIGHTS FULL ON. KEYED SWITCH ALLOWS MANUAL OFF FUNCTIONALITY. DIMMER SWITCH ALLOWS AUTO-ON 50% OVERRIDE TO 100% ALL-ON AND SHALL NOT ALLOW LIGHTING LEVELS TO DECREASE IN ANY WAY.

SYMBOLS / REPRESENTATIVE GRAPHIC IMAGES



   i. WHEN LIGHTING SYSTEM IS INDICATED WITH A CONNECTION TO A REMOTE EMERGENCY POWER SOURCE (I.E. AN INVERTER OR GENERATOR) PROVIDE UL924 LISTED INTERFACE EQUIPMENT TO ALLOW THE OVERRIDE OF THE LOCAL SWITCHING AND/OR DIMMING CONTROLS DURING A POWER OUTAGE.
   j. WHEN LIGHTING FIXTURES/CONTROLS ARE PROVIDED WITH LUTRON 3-WIRE DIMMING BALLASTS, AN INTERFACE DEVICE SHALL BE PROVIDED TO ALLOW 0-10V CONTROL OF LUTRON 3-WIRE DIMMING BALLASTS. MOUNT INTERFACE IN A NEMA1 ENCLOSURE IN ACCESSIBLE CEILING SPACE ADJACENT TO ITS ASSOCIATED CONTROL UNIT.
   k. WHEN LIGHTING FIXTURES/CONTROLS ARE LINE VOLTAGE DIMMED OR PROVIDED ELECTRONIC LOW-VOLTAGE, MAGNETIC LOW-VOLTAGE, NEON/COLD CATHODE, LUTRON "TU-WIRE" DIMMING BALLASTS, AN INTERFACE DEVICE SHALL BE PROVIDED TO ALLOW LINE VOLTAGE CONTROL. MOUNT INTERFACE IN A NEMA1 ENCLOSURE IN ACCESSIBLE CEILING SPACE ADJACENT TO ITS ASSOCIATED CONTROL UNIT.
   l. WHEN AV SYSTEM INTERFACE IS INDICATED, PROVIDE TWO-WAY CAPABLE RS-232 COMMUNICATIONS INTERFACE TO ALLOW AV CONTROL SYSTEM TO CALL ADDRESSABLE LIGHTING/ROOM SCENES. COMMUNICATIONS INTERFACE SHALL PROVIDE FEEDBACK TO THE AV CONTROL SYSTEM FOR LIGHT LEVEL STATUS.
   m. WHEN MOVEABLE PARTITION INTERFACE IS INDICATED, PROVIDE ALL COMPONENTS, SENSORS, WIRING, POWER SUPPLIES AND PROGRAMMING NECESSARY TO MONITOR AND REPORT MOVEABLE PARTION(S) OPEN/CLOSED STATUS. DLCS SYSTEM SHALL AUTOMATICALLY ADOPT SINGLE ROOM OR MULTI-ROOM CONTROL PROFILES AS REQUIRED BY PARTITION STATUS.
   n. WHEN NETWORKED LIGHTING CONTROL RELAY PANEL(S) ARE INDICATED, PROVIDE ALL COMPONENTS, WIRING, AND PROGRAMMING NECESSARY TO INTEGRATE RELAY PANELS WITHIN THE DLCS SYSTEM.
5. GENERAL SYSTEM REQUIREMENTS:
   a. ALL EQUIPMENT SHALL FEATURE A PRE-SET DEFAULT OPERATION. UPON INITIAL POWER UP, THE SYSTEM SHALL AUTOMATICALLY IDENTIFY THE DEVICES ON THE LOCAL NETWORK, THEN ENTERS THE PRE-SET CONFIGURATION TO ALLOW BASIC OPERATION OF ALL DEVICES. IN MOST APPLICATIONS THE RELATIONSHIP BETWEEN QUANTITY OF LOADS, SWITCHES AND OCCUPANCY SENSORS WILL NOT REQUIRE ANY ADJUSTMENTS - ALTHOUGH AN ADJUSTMENT TO THE AUTOMATIC SETTINGS SHALL BE INCLUDED IN THE BASE BID.
   b. ALL EQUIPMENT SHALL FEATURE A CONFIGURATION (CONFIG) BUTTON ON MOST DEVICES THAT ALLOWS EASY ACCESS TO THE INTEGRATED AUTO-CONFIGURATION TECHNOLOGY TO MODIFY SYSTEM OPERATION. FUNCTIONALITY OF THE CONFIG BUTTON SHALL BE STANDARDIZED THROUGHOUT THE PRODUCT LINE, AS IS THE OPERATION OF THE CONFIG LED INDICATORS.
   c. NETWORK DLCS SYSTEM CONTROL/CONFIGURATION SOFTWARE SHALL BE PRE-CONFIGURED TO THE MAXIMUM EXTENT POSSIBLE OFF-SITE AT THE DLCS FACTORY OR ENGINEERING FACILITY. THE CONTRACTOR SHALL DOCUMENT EVERY NETWORK COMPONENT'S LOCATION (ROOM AND FLOOR NUMBER) AND ITS' RESPECTIVE SERIAL NUMBER OR OTHER DEVICE IDENTIFIER ON A FULL SIZE FLOOR PLAN IN PDF FORMAT. HANDWRITTEN DOCUMENTATION IS UNACCEPTABLE. THE PREFERRED ACCEPTABLE METHOD OF NETWORK COMPONENT DOCUMENTATION IS COLLECTION OF FACTORY-PROVIDED, SELF-ADHESIVE, BAR-CODE IDENTIFIERS DESIGNED TO BE REMOVED FROM NETWORK COMPONENTS AS THEY ARE INSTALLED IN THE FIELD. BAR CODES IDENTIFIERS SHALL BE APPLIED TO A PAPER COPY OF A FLOOR PLAN WHICH SHALL BE PROVIDED TO THE FACTORY FOR USE IN OFF-SITE DLCS NETWORK PROGRAMMING AND CONFIGURATION. THE RESULTS OF EITHER METHOD SHALL BE SCANNED AND SUBMITTED AS A PART OF THE PROJECT CLOSEOUT DOCUMENTATION.
   d. NETWORK SYSTEMS SHALL BE INSTALLED BY VENDOR-CERTIFIED CONTRACTOR FIELD PERSONNEL TO PERFORM NETWORK INSTALLATIONS INCLUDING ACCURATE, REPEATABLE COMMUNICATIONS CABLING TERMINATIONS (BOTH LAN AND MS/TP TYPE). INCLUDE CERTIFICATES FOR EACH CERTIFIED INSTALLER TO BE UTILIZED ON THE PROJECT AS A PART OF THE PROJECT SUBMITTALS. A CERTIFIED FIELD INSTALLER SHALL BE ON-SITE SUPERVISING COMMUNICATIONS CABLING AND CABLING TERMINATIONS AT ALL TIMES WHEN THIS WORK IS OCCURRING ON THE PROJECT.
   e. PRIOR TO NETWORK SYSTEM FACTORY START-UP, THE CONTRACTOR SHALL 1) TEST ALL COMMUNICATIONS CABLING FOR SHORTS, POLARITY REVERSALS AND BAD TERMINATIONS/CONNECTIONS AND MAKE NECESSARY REPAIRS AND 2) DEMONSTRATE FULL CONNECTIVITY TO ALL NETWORK AND LOCAL (IN-ROOM) DEVICES VIA MS/TP CAPTURE OR OTHER VENDOR SPECIFIC TESTING PROCESS. CONTRACTOR SHALL PROVIDE A TEST REPORT OUTLINING TEST COMPLETION AND ANY REPAIRS MADE AND CERTIFY THAT NETWORK DEVICE AND LOCAL DEVICE CONNECTIVITY HAS BEEN ACHIEVED PRIOR TO SCHEDULED FACTORY START-UP. BASED ON PAST PROJECT EXPERIENCE, FAILURE TO PERFORM ANY OF THE ABOVE STEPS HAS RESULTED IN BOTH VERY INEFFICIENT FACTORY START-UP AND PROJECT DELIVERY DELAY. ANY ADDITIONAL COSTS ARISING OUT OF A FAILURE TO COMPLETE THIS TESTING SHALL BE BORNE SOLELY BY THE CONTRACTOR.
   f. NETWORK SYSTEMS SHALL BE INSPECTED, STARTED UP, CONFIGURED AND PROGRAMMED BY FACTORY START-UP TECHNICIANS TO MEET THE INTENDED CONTROLS SCENARIOS AND FUNCTIONALITY DESIRED BY THE SYSTEM USER. WHERE NETWORK SYSTEMS ARE INTEGRATED WITH BUILDING MANAGEMENT SYSTEMS (BMS), THE FACTORY TECHNICIAN SHALL ASSIST THE CONTROLS INTEGRATOR WITH DLCS POINT INTEGRATION.
6. INSTALLATION OF CONTROL UNITS, OCCUPANCY/VACANCY SENSORS AND DAYLIGHTING CONTROLS:
   a. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND AIM SENSORS IN THE CORRECT LOCATION REQUIRED FOR COMPLETE AND PROPER VOLUMETRIC COVERAGE PER THE MANUFACTURER'S RECOMMENDATIONS. ROOMS SHALL HAVE NINETY (90) TO ONE HUNDRED (100) PERCENT COVERAGE AND SHALL ACCOMMODATE ALL HABITS OF SINGLE OR MULTIPLE OCCUPANTS AT ANY LOCATION WITHIN THE ROOM. THE LOCATIONS AND QUANTITIES OF SENSORS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE ONLY THE ROOMS THAT ARE TO BE PROVIDED WITH SENSORS. THE CONTRACTOR SHALL PROVIDE ADDITIONAL SENSORS AS REQUIRED TO PROPERLY AND COMPLETELY COVER THE RESPECTIVE ROOM. ADDITIONALLY, IT MAY BE NECESSARY FOR THE CONTRACTOR TO MAKE ADJUSTMENTS, CHANGE THE LOCATION OR TYPE OF SENSOR TO OBTAIN PROPER OPERATION IN A SPECIFIC ROOM. THE USE OF FACTORY SUPPLIED INTERNAL MASKING (PIR) SHALL BE PROVIDED/INSTALLED AS REQUIRED TO LIMIT DETECTION TO WITHIN THE CONTROLLED SPACE ONLY. THE CONTRACTOR SHALL HAVE FINAL RESPONSIBILITY FOR PROPER OPERATION OF THE SYSTEM IN EACH ROOM AND SHOULD THEREFORE MAKE LABOR ALLOWANCES FOR CHANGES AND ADJUSTMENTS.
   b. CEILING MOUNTED SENSORS SHOULD BE LOCATED IN THE SPACE TO BE COVERED, A MINIMUM OF 4', PREFERABLY 5', AWAY FROM THE LATCH SIDE OF THE DOOR, 2" TO 3" AWAY FROM THE WALL AND 3' TO 4' FROM AN AIR SUPPLY REGISTER. DO NOT MOUNT SENSORS OVER A DOORWAY OR BEHIND A FULL HEIGHT DOOR. SENSORS SHALL BE AIMED IN THE DIRECTION OF THE SPACE TO BE COVERED. DO NOT AIM SENSORS TOWARD A DOORWAY. THE USE OF FACTORY SUPPLIED INTERNAL MASKING (PIR) SHALL BE PROVIDED/INSTALLED AS REQUIRED TO LIMIT DETECTION TO WITHIN THE CONTROLLED SPACE ONLY.
   c. UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL SENSORS SHALL BE ADJUSTED FOR A TIME DELAY OF TWENTY (20) MINUTES.
   d. EACH DAYLIGHTING CONTROL SYSTEM/ZONE SHALL BE INSTALLED/ADJUSTED AS FOLLOWS:
      1. AUTOMATIC SWITCHING/DIMMING CONTROL PLACEMENT: IT IS IMPORTANT TO SELECT A LOCATION IN THE DAYLIGHTING ZONE WHERE THE DAYLIGHT CONTRIBUTION IS REPRESENTATIVE OF THE DAYLIGHTING THROUGHOUT THE ZONE. A GOOD LOCATION IS OFTEN BETWEEN THE WINDOW AND/OR DAYLIGHTING SOURCE AND THE FIRST ROW OF LIGHTING FIXTURES. AVOID INSTALLATIONS WITHIN 6'-0" OF A WINDOW, MORE THAN 15'-0" FROM A WINDOW, AND LESS THAN 4'-0" TO A LIGHTING FIXTURE WITH INDIRECT DISTRIBUTION.
      2. AUTOMATIC STEP-DIMMED/CONTINUOUS DIMMING CONTROLS SHALL NOT BE OPERATIONAL UNTIL THE LAMPS HAVE HAD AN OPPORTUNITY TO "BURN IN" - TYPICALLY A MINIMUM OF 10 HOURS - OR GREATER AS RECOMMENDED BY THE RESPECTIVE LAMP AND BALLAST MANUFACTURERS.
      3. AUTOMATIC SWITCHING/STEP-DIMMED CONTROL SETTINGS:

         CONTRACTOR TO UTILIZE THE PHOTOSENSOR AUTOMATIC CALIBRATION AND SETPOINT FUNCTIONS TO ESTABLISH THE OPTIMAL ON/OFF SETPOINTS, TIME DELAYS AND DEADBAND SETTINGS FOR EACH CONTROL ZONE INDICATED WITH DAYLIGHTING CONTROLS.
      4. AUTOMATIC CONTINUOUS DIMMING CONTROL SETTINGS SHALL BE SET USING AN ILLUMINANCE METER, AT A LOCATION FURTHEST FROM THE DAYLIGHT SOURCE, AS FOLLOWS:
         - NIGHT CONDITIONS/SETTING: SET AND ADJUST THE ILLUMINANCE LEVELS TO BE PER THE "TARGET ILLUMINATION" SYMBOL VALUE - SEE DRAWINGS. THE VALUE MUST BE AT OR BELOW THE "TARGET ILLUMINATION" SYMBOL VALUE.
         - DAY CONDITIONS/SETTING: WITH WINDOW COVERINGS IN THE "OPEN" POSITION AND THE DAYLIGHT CONTRIBUTION (LIGHTS OFF) AT A MAXIMUM OF 75% OF THE "TARGET ILLUMINATION" SYMBOL VALUE, SET AND ADJUST THE COMBINED ARTIFICIAL ILLUMINATION AND DAYLIGHTING ILLUMINATION TO MEET THE SYMBOL VALUE AT THE SAME LOCATION/POSITION OF THE NIGHT SETTINGS.
         - RAMP UP/DOWN RATES/CUT-OF TIME DELAY
   e. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE A PRE-INSTALLATION MEETING WITH THE MANUFACTURER'S FACTORY AUTHORIZED REPRESENTATIVE, AT THE PROJECT, TO VERIFY PLACEMENT OF SENSORS AND INSTALLATION CRITERIA.
   f. PROPER JUDGMENT MUST BE EXERCISED IN EXECUTING THE INSTALLATION SO AS TO ENSURE THE BEST POSSIBLE INSTALLATION IN THE AVAILABLE SPACE AND TO OVERCOME LOCAL DIFFICULTIES DUE TO SPACE LIMITATIONS OR INTERFERENCE OF BUILDING STRUCTURAL COMPONENTS. THE CONTRACTOR SHALL ALSO PROVIDE, AT THE PROJECT, THE TRAINING NECESSARY TO FAMILIARIZE THE OWNER'S PERSONNEL WITH THE OPERATION, USE, MAINTENANCE, ADJUSTMENT, AND PROBLEM SOLVING DIAGNOSIS OF THE OCCUPANCY SENSING DEVICES AND SYSTEMS.
   g. CONNECT ALL DEVICES AS REQUIRED. UNLESS PROHIBITED BY LOCAL CODE, CONNECTIONS SHALL BE MADE WITH PLENUM-RATED CABLING ROUTED NEATLY INTO AND ABOVE THE ACCESSIBLE CEILING. CABLES SHALL BE SUPPORTED WITH DEDICATED SUPPORT WIRES AND J-HOOKS. WHERE LOCAL CODE REQUIRES LOW VOLTAGE CABLING TO BE ROUTED IN CONDUIT, INCLUDE ALL COSTS IN BASE BID TO PROVIDE APPROPRIATELY-SIZED SYSTEM OF CONDUITS AND JUNCTION BOXES TO ROUTE CONNECTION CABLING. J-BOXES/CONTROLLERS SHALL BE LOCATED ABOVE ACCESSIBLE CEILINGS AND NEVER IN HARD-LID CEILING AREAS. PRE-TERMINATED CABLING SHALL BE PROVIDED BY THE SYSTEM MANUFACTURER AND SHALL BE GREEN IN COLOR UNLESS IT IS ROUTED IN AN EXPOSED CEILING CONDITION WHERE IT SHALL BE BLACK, WHITE OR GREY AS DIRECTED BY THE ARCHITECT.
   h. INSTALL LINE VOLTAGE CONDUCTORS, LOW VOLTAGE CONDUCTORS AND COMMUNICATIONS CABLING BETWEEN LIGHTING FIXTURES AND DLCS COMPONENTS PER THE DLCS MANUFACTURER'S RECOMMENDATIONS REGARDING CONDUCTOR ROUTING, CONDUCTOR SEPARATION AND CONDUCTOR TERMINATIONS. CONTRACTOR SHALL UTILIZE INSTALLATION MEANS AND METHODS THAT DO NOT COMPROMISE THE DLCS SYSTEM WARRANTEE.
   i. WHERE CODE OR LOCAL AHJ REQUIREMENTS REQUIRE THE INSTALLATION OF ALL LOW-VOLTAGE CONDUCTORS TO BE INSTALLED IN CONDUIT - CONTRACTOR TO PROVIDE ALL REQUIRED MANUFACTURER SPECIFIC EQUIPMENT JUNCTION BOXES AND CONDUIT ADAPTERS AS REQUIRED.
   j. UNLESS PROHIBITED BY LOCAL CODE, ALL CONTROL UNITS SHALL BE PLENUM-RATED. WHERE CONTROL UNITS ARE LOCATED IN EXPOSED CEILING SPACES, INCLUDE ALL COSTS IN BASE BID TO PROVIDE APPROPRIATELY-SIZED VENTILATED CONTROL UNIT ENCLOSURES FOR CONCEALMENT. COLOR OF ENCLOSURE PER ARCHITECT.
   k. UPON COMPLETION OF THE INSTALLATION, THE SYSTEM SHALL BE COMPLETELY COMMISSIONED BY THE MANUFACTURER'S FACTORY AUTHORIZED TECHNICIAN WHO WILL VERIFY ALL ADJUSTMENTS AND SENSOR PLACEMENT TO ENSURE A TROUBLE-FREE INSTALLATION. THIS COMMISSIONING EFFORT SHALL BE PERFORMED IN A MANNER THAT MEETS ALL APPLICABLE FEDERAL, STATE, LOCAL ENERGY CODES AND/OR LEED CERTIFICATION PROGRAMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FILLING OUT ALL APPLICABLE PAPERWORK AND/OR FORMS. CONTRACTOR TO PROVIDE A COPY OF THE COMPLETED FORMS TO THE ENGINEER OF RECORD PRIOR TO THE PUNCH LIST SITE VISIT FOR REVIEW AND POSSIBLE RECOMMENDATION OF SETTING REVISIONS.

      CONTRACTOR SHALL INCLUDE ALL COST IN THE BASE BID AND PROVIDE THE FOLLOWING WORK FOR EVERY CONTROL ZONE:
      - INITIAL SETTINGS AS INDICATED ABOVE.
      - COMMISSIONING OF EACH LIGHTING CONTROL DEVICE/ZONE PER NOTES BELOW.
      - A FOLLOW UP SETTING(S) ADJUSTMENT, AS DICTATED BY THE ELECTRICAL ENGINEER, BASED UPON A REVIEW OF THE RESULTS OF THE CONTRACTOR'S COMMISSIONING EFFORT AND FINAL PUNCH LIST.
   l. REGARDLESS OF THE LESSER REQUIREMENTS OF ANY AHJ COMMISSIONING FORMS, THE FOLLOWING MINIMUM COMMISSIONING ITEMS MUST BE COMPLETED FOR EACH DEVICE/LIGHTING CONTROL ZONE:
      - MEASURED LIGHTING POWER (KW) AT THE FULLY DIMMED CONDITION.
      - MEASURED LIGHTING POWER (KW) AT FULL LIGHT OUTPUT.
      - ONLY LIGHTING FIXTURES IN THE DAYLIGHTING ZONE ARE AFFECTED BY THE DAYLIGHTING CONTROLS.
      - LIGHTING POWER IS REDUCED BY AT LEAST 50% IN WINDOW DAYLIT AREAS AND 65% IN SKYLIGHT DAYLIT AREAS.
      - DIMMING SYSTEMS PROVIDE FLICKER FREE OPERATION.
      - ILLUMINATION LEVELS, LOCATIONS OF MEASUREMENTS, SPECIFIC DEVICE SETTINGS ARE DOCUMENTED ON AS-BUILTS.
   m. AS PART OF THE "RECORD DRAWINGS", INDICATE ON THE REFLECTED CEILING PLAN THE EXACT LOCATION (CEILING TILE OR ACCESS PANEL) OF ANY ABOVE CEILING DEVICE.
   n. WHEN THE PROJECT REQUIRES TWENTY-FIVE (25) OR MORE CEILING MOUNTED SENSORS, CONTRACTOR TO PROVIDE A REMOTE CONTROL PROGRAMMING/CONTROL DEVICE, AND HAND IT TO THE OWNER AT THE END OF THE PROJECT.
   o. INCLUDE ALL COSTS TO PROVIDE USER-TRAINING AS OUTLINED ELSEWHERE IN ANY PROJECT SPECIFIC COMMISSIONING SPECIFICATION. WHERE A NETWORK DLCS IS SPECIFIED, MINIMUM TRAINING SHALL INCLUDE 6 HOURS OF ON-SITE USER TRAINING FOR A MINIMUM OF 3 PERSONNEL.

DISTRIBUTED LIGHTING CONTROL SYSTEM REQUIREMENTS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING OF ALL MATERIAL, LABOR, EQUIPMENT, AND SERVICES, IN CONNECTION WITH THE INSTALLATION OF A COMPLETE AND FULLY FUNCTIONING AND CODE COMPLIANT INSTALLATION.
2. IT IS THE INTENT OF THE CONTRACT DOCUMENTS, WHICH ARE PRESENTED IN A DIAGRAMMATIC FORMAT, TO PROVIDE CONTRACTOR INFORMATION THAT SUPPLEMENTS AND ENHANCES THE GENERALLY ACCEPTED CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES EMPLOYED IN CONNECTION WITH INSTALLATION OF THIS TYPE OF PRODUCT/SYSTEM.
3. THE CONTRACTOR SHALL ALSO INCORPORATE THE REQUIREMENTS OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS/WARRANTY REQUIREMENTS AS PART OF THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS. IN THE EVENT OF A CONFLICT BETWEEN THE CONTRACT DOCUMENT REQUIREMENTS AND THE MANUFACTURER'S INSTALLATION REQUIREMENTS, THE MORE STRINGENT REQUIREMENTS SHALL APPLY - UNLESS THE MORE STRINGENT REQUIREMENT VOIDS APPLICABLE WARRANTIES OR VIOLATES THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION. ANY SUCH CONFLICT SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING THROUGH THE FORMAL RFI PROCESS.
4. REFER TO THE ASSOCIATED SCHEDULES, SCHEMATICS, DRAWINGS, AND SPECIFICATIONS FOR DETAILED INFORMATION/REQUIREMENTS ON THIS PRODUCT/SYSTEM.
5. SHOP DRAWINGS AND COMPONENT SUBMITTALS SHALL BE SUBMITTED PER THE GENERAL SPECIFICATION REQUIREMENTS SHOWING ALL COMPONENTS, WIRING CONFIGURATIONS AND PROGRAMMING SCHEDULES. SCALED SHOP DRAWINGS DEPICTING/IDENTIFYING ALL SYSTEM COMPONENT LOCATIONS SHALL BE PROVIDED. SUBMITTALS SHALL BE MADE SPECIFIC TO THE PROJECT - GENERIC SUBMITTALS AND SUBMITTALS WITHOUT SCALED SHOP DRAWINGS SHALL BE REJECTED.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-117236 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 03/25/2019

pjhm architects
www.pjhm.com

LICENSED ARCHITECT
KENNETH J. PODANY
NO. C28889
REN. 3/19
STATE OF CALIFORNIA

tk1sc COLLABORATIVE
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 www.tk1sc.com
Project Manager-Erin Hagger
tk1sc Job #: 2016-0734

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
Ex. 12/31/2019
ELECTRICAL
STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

DISTRIBUTED LIGHTING CONTROLS

E-4.2

STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
CEC-NRCC-LTI-03-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 3 of 4)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☑ CONDITIONED spaces ☐ UNCONDITIONED spaces

C-3 AREA CATEGORY METHOD ADDITIONAL LIGHTING WATTAGE ALLOWANCE (from Table 140.6-C Footnotes)

01	02	03 [2]	04	05	06	07
Primary Function	Sq Ft or Linear ft [1]	Additional Watts Allowed	Wattage Allowance (02 x 03)	Description(s) and Quantity of Special Luminaire Types in each Primary Function Area	Total Design Watts [3]	ALLOWED WATTS Smaller of 04 or 06
				TOTALS – Enter into TOTAL AREA CATEGORY METHOD ADDITIONAL ALLOWANCES – Section C-1		0

1. Use linear feet only for additional allowance for white board or chalk board. All other additional Area Category allowances shall use watts per square foot.
2. Additional watts are available only when allowed according to the footnotes on bottom of Table 140.6-C, which include: Specialized task work; Ornamental lighting; Precision commercial and industrial work; Per linear foot of white board or chalk board; Accent, display and feature lighting; and Videoconferencing studio lighting..
3. Luminaire classification and wattage shall be determined in accordance with §130.0(c) of the Standards.

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

A separate document must be filled out for Conditioned and Unconditioned Spaces. This page is used only for the following:
☑ CONDITIONED SPACES ☐ UNCONDITIONED SPACES

B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Lighting Control Schedule 01	02	03	Standards Complying With [1] (✓ all that apply, or enter 'E' if Exempted) 04	05	06	07	08	09	10	PAF Credit Calculation [2] 11	12	13	14	15	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)	Watts of Controlled Lighting	PAF	Control Credit (K x L)	✓ If Acceptance Test Required	Field Inspector Pass	Fail
Reception/Office/Storage/ Workrooms	Dimmers	13	☑	☑	☐	☐	☐	☐	☐					☐	☐
Reception/Office/Storage/ Workrooms	Occupancy Sensors	11	☐	☐	☑	☐	☐	☐	☐					☐	☐
Reception/Waiting Area	Automatic Daylight	11	☐	☐	☐	☑	☐	☐	☐					☐	☐
			☐	☐	☐	☐	☐	☐	☐					☐	☐
			☐	☐	☐	☐	☐	☐	☐					☐	☐
			☐	☐	☐	☐	☐	☐	☐					☐	☐

Control Credit PAGE TOTAL (Sum of Column 13): 0
IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column 13): 0
Enter Control Credit total into NRCC-LTI-01-E; Page 1.

1. §130.1(a) = Manual area controls; §130.0(b) = Multi Level; §130.1(c) = Auto Shut-Off; §130.1(d) = Mandatory Daylight; §130.1(e) = Demand Responsive; §140.6(d) = Additional lighting controls installed to earn a PAF; §140.6(d) = Prescriptive Secondary Sidelit Daylight Controls.
2. Check Table 140.6-A for correct Factor. PAFs shall not be traded between conditioned and unconditioned spaces. As a condition to earn a PAF, an Installation Certificate is also required to be filled out, signed, and submitted.

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 5 of 6)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

A Separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
☑ **CONDITIONED SPACE** ☐ **UNCONDITIONED SPACE**

H. Indoor Lighting Schedule and Field Inspection Energy Checklist

Luminaire Schedule 01	02	Installed Watts 03	04		05	06	Location 07	Field Inspector [1] 08	
Name or Item Tag	Complete Luminaire Description (i.e, 3 lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per Luminaire	How wattage was determined: CEC Default from NA8	According to §130.0(c)	Number Luminaires	Total Installed Watts in this area (H03 x H05)	Primary Function area in which these luminaires are installed	Pass	Fail
1	2' X 4' Recessed LED	43.0	☐	☑	4	172	Convention/Conference/Meetin	☐	☐
1	2' X 4' Recessed LED	43.0	☐	☑	1	43	Corridor/Restroom/Support	☐	☐
1	2' X 4' Recessed LED	43.0	☐	☑	11	473	Office <= 250 sqft	☐	☐
2	Recessed LED Downlight	20.5	☐	☑	4	82	Convention/Conference/Meetin	☐	☐
3	35w Surface MT Wraparound	35.0	☐	☑	3	105	Corridor/Restroom/Support	☐	☐
4	Suspended Direct/Indirect Linear LED	24.4	☐	☑	4	98	Office <= 250 sqft	☐	☐
4	Suspended Direct/Indirect Linear LED	24.4	☐	☑	8	195	Convention/Conference/Meetin	☐	☐
5	115w LED Pendant	115.0	☑	☐	1	115	Waiting Areas/Lounges	☐	☐
5A	47w LED Pendant	47.0	☑	☐	2	94	Waiting Areas/Lounges	☐	☐
	INSTALLED WATTS PAGE TOTAL:					1,377	Enter sum total of all pages into NRCC-LTI-01-E; Page 2		

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 1 of 6)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

A. General Information

Climate Zone: 7	Conditioned Floor Area: 2,241		
	Unconditioned Floor Area: 0		
Building Type:	☑ Nonresidential	☐ High-Rise Residential	☐ Hotel/Motel
☐ Schools	☐ Relocatable Public Schools	☑ Conditioned Spaces	☐ Unconditioned Spaces
Phase of Construction:	☐ New Construction	☐ Addition	☑ Alteration
Method of Compliance:	☐ Complete Building	☑ Area Category	☐ Tailored
Project Address: 804 Pier View Way #103			

B. Lighting Compliance Documents (select yes for each document included)
For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the Nonresidential Manual published by the California Energy Commission.

YES	NO	COMP. DOC.	TITLE
☑	☐	NRCC-LTI-01-E	Certificate of Compliance. All Pages required on plans for all submittals.
☑	☐	NRCC-LTI-02-E	Lighting Controls, Certificate of Compliance, and PAF Calculation. All Pages required on plans for all submittals.
☑	☐	NRCC-LTI-03-E	Indoor Lighting Power Allowance
☐	☑	NRCC-LTI-04-E	Tailored Method Worksheets
☐	☑	NRCC-LTI-05-E	Line Voltage Track Lighting Worksheets
☐	☐	NRCC-LTI-06-E	Indoor Lighting Existing Conditions

STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
CEC-NRCC-LTI-03-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 4 of 4)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: tk1sc	Documentation Author Signature: [signature]
Company: tk1sc	Signature Date: 11/5/2018
Address: 11870 Pierce Street, Suite 160	CEA Certification Identification (if applicable): E15610
City/State/Zip: Riverside, CA 92505	Phone: 951-299-4160

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Raymond W. Swartz	Responsible Designer Signature: [signature]
Company: tk1sc	Date Signed: 11/5/2018
Address: 11870 Pierce Street, Suite 160	License: E15610
City/State/Zip: Riverside, CA 92505	Phone: 951-299-4160

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 3 of 3)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

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Company: tk1sc	Signature Date: 11/5/2018
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City/State/Zip: Riverside, CA 92505	Phone: 951-299-4160

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3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Raymond W. Swartz	Responsible Designer Signature: [signature]
Company: tk1sc	Date Signed: 11/5/2018
Address: 11870 Pierce Street, Suite 160	License: E15610
City/State/Zip: Riverside, CA 92505	Phone: 951-299-4160

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 5 of 6)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

A Separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
☑ **CONDITIONED SPACE** ☐ **UNCONDITIONED SPACE**

H. Indoor Lighting Schedule and Field Inspection Energy Checklist

Luminaire Schedule 01	02	Installed Watts 03	04		05	06	Location 07	Field Inspector [1] 08	
Name or Item Tag	Complete Luminaire Description (i.e, 3 lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per Luminaire	How wattage was determined: CEC Default from NA8	According to §130.0(c)	Number Luminaires	Total Installed Watts in this area (H03 x H05)	Primary Function area in which these luminaires are installed	Pass	Fail
5A	47w LED Pendant	47.0	☑	☐	1	47	Convention/Conference/Meetin	☐	☐
6	60w Wall MT Square Cylinder Sconce	60.0	☐	☑	8	480	Waiting Areas/Lounges	☐	☐
7	10w 3" Square LED, Wall MT Flood Uplight	10.0	☐	☑	2	20	Waiting Areas/Lounges	☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
	INSTALLED WATTS PAGE TOTAL:					547	Enter sum total of all pages into NRCC-LTI-01-E; Page 2		

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 2 of 6)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

C. Summary of Allowed Lighting Power
Conditioned and Unconditioned space Lighting must not be combined for compliance

	Indoor Lighting Power for Conditioned Spaces		Watts	Indoor Lighting Power for Unconditioned Spaces		Watts
01	**Installed** Lighting NRCC-LTI-01-E, Table H, page 5	+	1,924	**Installed** Lighting NRCC-LTI-01-E, Table H, page 5	+	0
02	Portable Only for Offices NRCC-LTI-01-E, Table G, page 4	+				
03	Minus Lighting Control Credits NRCC-LTI-02-E, page 2	-	0	Minus Lighting Control Credits NRCC-LTI-02-E, page 2	-	0
04	Adjusted **Installed** Lighting Power (row 1 plus row 2 minus row 3)	=	1,924	Adjusted **Installed** Lighting Power (row 1 minus row 3)	=	0
	Complies ONLY if **Installed** ≤ **Allowed** (Box 04 < Box 05)			Complies ONLY if **Installed** ≤ **Allowed** (Box 04 < Box 05)		
05	**Allowed** Lighting Power Conditioned NRCC-LTI-03-E, page 1. Alterations with replacement luminaires that have at least 50/35% lower power compared to the original existing luminaires, may instead use the allowed wattage from NRCC-LTI-06, page 2		2,244	**Allowed** Lighting Power Unconditioned NRCC-LTI-03-E, page 1. Alterations with replacement luminaires that have at least 50/35% lower power compared to the original existing luminaires, may instead use the allowed wattage from NRCC-LTI-06, page 2		0

D. Declaration of Required Certificates of Installation
Declare by selecting yes for all of the Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)

YES	NO	Compliance Document/Title	
☑	☐	NRCI-LTI-01-E - Must be submitted for all buildings	☐ Field Inspector
☐	☑	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐ Field Inspector
☐	☑	NRCI-LTI-03-E - Must be submitted for a line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting, to be recognized for compliance.	☐ Field Inspector
☐	☑	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐ Field Inspector
☐	☑	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐ Field Inspector
☐	☑	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐ Field Inspector

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ASSOCIATED WITH FINAL INSPECTION AND APPLICABLE ACCEPTANCE REQUIREMENT PROCEDURES. INCLUDE ALL COSTS IN THE BASE BID. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, CONSTRUCTION INSPECTION, MEASUREMENTS, MONITORING, FUNCTIONAL TESTING, CALIBRATING, ETC. CONTRACTOR SHALL ASSUME THE ROLE OF "FIELD TECHNICIAN" AND "RESPONSIBLE PERSON" AS DEFINED IN STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL SECTION 13.2.2.

SEE STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS SECTIONS 10–103(a)3A AND 10–103(a)3B AND SECTION 130.4 FOR MORE INFORMATION.

SEE STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL CHAPTER 13 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

SEE STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS RESIDENTIAL COMPLIANCE MANUAL CHAPTER 2 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

PROVIDE COMPLETED INSTALLATION CERTIFICATE(S) AND CERTIFICATE(S) OF ACCEPTANCE AS REQUIRED TO THE SATISFACTION OF THE ENFORCEMENT AGENCY.

STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
CEC-NRCC-LTI-03-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 1 of 4)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☑ CONDITIONED spaces ☐ UNCONDITIONED spaces

A. SUMMARY TOTALS OF LIGHTING POWER ALLOWANCES
☐ If using Complete Building Method for compliance, use only the total in column (a) as total allowed building watts.
☐ If using Area Category Method, Tailored Method, or a combination of Area Category and Tailored Method for compliance, use only the total in column (b) as the total allowed building watts

	(a)	(b)
01 Complete Building Method Allowed Watts. Documented in section B of NRCC-LTI-03-E (below on this page)		
02 Area Category Method Allowed Watts. Documented in section C-1 of NRCC-LTI-03-E (below on this page)		2,244
03 Tailored Method Allowed Watts. Documented in section A of NRCC-LTI-04-E		0
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC-LTI-01, Page 2, Row 1		2,244

☐ Check here if building contains both conditioned and unconditioned areas.

B. COMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE

01	02		03		04
TYPE OF BUILDING (From §140.6 Table 140.6-B)	WATTS PER ft²	X	COMPLETE BLDG. AREA	=	ALLOWED WATTS
		Total Area:			
Total Watts. Enter Total Watts into section A, row 1 (Above on this page)					

C -1 AREA CATEGORY METHOD TOTAL LIGHTING POWER ALLOWANCES

	Watts
Total from section C-2.	2,244
Total from section C-3.	0
Total Watts. Enter Total Watts into section A, row 2 (Above on this page).	2,244
For Alterations Only – Reduced lighting power option (Total Allowed Watts x 0.85). Enter this value into section A, row 2 if using this option.	

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 6 of 6)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: tk1sc	Documentation Author Signature: [signature]
Company: tk1sc	Signature Date: 11/5/2018
Address: 11870 Pierce Street, Suite 160	CEA Certification Identification (if applicable): E15610
City/State/Zip: Riverside, CA 92505	Phone: 951-299-4160

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Raymond W. Swartz	Responsible Designer Signature: [signature]
Company: tk1sc	Date Signed: 11/5/2018
Address: 11870 Pierce Street, Suite 160	License: E15610
City/State/Zip: Riverside, CA 92505	Phone: 951-299-4160

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 3 of 6)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

E. Declaration of Required Certificates of Acceptance
Declare by selecting yes for all of the Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)

YES	NO	Compliance Document/Title	
☑	☐	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐ Field Inspector
☐	☑	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐ Field Inspector
☐	☑	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐ Field Inspector
☐	☑	NRCA-LTI-05-A – Must be submitted for institutional tuning power adjustment factor (PAF).	☐ Field Inspector

A Separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
☐ **CONDITIONED SPACE** ☐ **UNCONDITIONED SPACE**

F. Indoor Lighting Schedule and Field Inspection Energy Checklist
☐ The actual indoor lighting power listed on the next 2 pages includes all installed permanent and planned portable lighting systems.
☐ When Complete Building Method is used for compliance, list each different type of luminaire on separate lines.
☐ When Area Category Method or Tailored Method is used for compliance, list each different type of luminaire by each different function area on separate lines
☐ Also include track lighting in schedule, and submit the track lighting compliance document (NRCC-LTI-05-E) when line-voltage track lighting is installed.

STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
CEC-NRCC-LTI-03-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 2 of 4)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☑ CONDITIONED spaces ☐ UNCONDITIONED spaces

C -2 AREA CATEGORY METHOD GENERAL LIGHTING POWER ALLOWANCE
☐ Do not include portable lighting for offices. Portable lighting for offices shall be documented only in Section G of NRCC-LTI-01-E.
☐ Separately list lighting for each primary function area as defined in §100.1 of the Standards.

01 AREA CATEGORY (From §140.6 Table 140.6-C) Location in Building	Primary Function Area per Table 140.6-C	02 WATTS PER ft²	X	03 AREA (ft²)	=	04 ALLOWED WATTS
Office Areas	Office <= 250 sqft	1.00		831		831
Workroom	Convention/Conference/Meeting	1.20		821		985
Storage/Restroom	Corridor/Restroom/Support	0.60		219		131
Reception/Waiting	Waiting Areas/Lounges	0.80		370		296
			TOTALS	2,241		
Enter sum total Area Category allowed watts into section C-1 of NRCC-LTI-03-E (this compliance document)						2,244
						WATTS

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 1 of 3)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

A. Mandatory Lighting Control Declaration Statements (Indicate if the measure applies by checking yes or no below.)

YES	NO	Control Requirements
☐	☑	Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 Appliance Efficiency Regulations in accordance with Section 110.9.
☐	☑	Lighting shall be controlled by a lighting control system or energy management control system in accordance with §110.9. An Installation Certificate shall be submitted in accordance with Section 130.4(b).
☐	☑	One or more Track Lighting Integral Current Limiters shall be installed which have been certified to the Energy Commission in accordance with §110.9 and §130.0. Additionally, an Installation Certificate shall be submitted in accordance with Section 130.4(b).
☐	☑	A Track Lighting Supplementary Overcurrent Protection Panel shall be installed in accordance with Section 110.9 and Section 130.0. Additionally, an Installation Certificate shall be installed in accordance with Section 130.4(b).
☑	☐	All lighting controls and equipment shall comply with the applicable requirements in §110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with Section 130.1.
☑	☐	All luminaires shall be functionally controlled with manually switched ON and OFF lighting controls in accordance with Section 130.1(a).
☑	☐	General lighting shall be separately controlled from all other lighting systems in an area. Floor and wall display, window display, case display, ornamental, and special effects lighting shall each be separately controlled on circuits that are 20 amps or less. When track lighting is used, general, display, ornamental, and special effects lighting shall each be separately controlled; in accordance with Section 130.1(a)4.
☑	☐	The general lighting of any enclosed area 100 square feet or larger, with a connected lighting load that exceeds 0.5 watts per square foot shall meet the multi-level lighting control requirements in accordance with Section 130.1(b).
☑	☐	All installed indoor lighting shall be equipped with controls that meet the applicable Shut-OFF control requirements in Section 130.1(c).
☐	☑	Lighting in all Daylit Zones shall be controlled in accordance with the requirements in Section 130.1(d) and daylit zones are shown on the plans.
☐	☐	Lighting power in buildings larger than 10,000 square feet shall be capable of being automatically reduced in response to a Demand Responsive Signal in accordance with Section 130.1(e).
☑	☐	Before an occupancy permit is granted for a newly constructed building or area, or a new lighting system serving a building, area, or site is operated for normal use, indoor lighting controls serving the building, area, or site shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with Section 130.4.(a). The controls required to meet the Acceptance Requirements include automatic daylight controls, automatic shut-OFF controls, and demand responsive controls.

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 4 of 6)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

G. Installed Portable Luminaires in Offices – Exception to Section 140.6(a)
☐ This section shall be filled out ONLY for portable luminaires in offices (As defined in §100.1). All other planned portable luminaires shall be documented on next page of this compliance document.
☐ This section is used to determine if greater than 0.3 watts of portable lighting is planned for any office
☐ Fill out a separate line for each different office. Small offices that are typical (having the same general and portable lighting) may be grouped together. This allowance shall not be traded between offices having different lighting systems.

Office Portable Luminaire Schedule 1	Office Installed Portable Luminaire W/ft² 2	3	4	5	6	7	8	Office Location 9	Field Inspector 10	
Complete Luminaire Description (i.e., LED, under cabinet, furniture mounted direct/indirect)	Watts per Luminaire	Number of Luminaires	Installed portable luminaire watts in this office (G02 x G03)	Square feet of this office	Watts per square foot (G04 / G05)	If G06 ≤ 0.3, enter zero; if G06 > 0.3, (G06-0.3)	(G05 x G07)	Identify Office area in which these portable luminaires are installed	Pass	Fail
									☐	☐
									☐	☐
									☐	☐
									☐	☐
									☐	☐
Total installed portable luminaire watts that are greater than 0.3 W/ft² per office:								Enter sum total of all pages into NRCC-LTI-01-E; Page 1		

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tk1sc COLLABORATIVE
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 www.tk1sc.com
Project Manager-Erin Hagger
tk1sc Job #: 2016-0734

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 Ex. 12/31/2019 ELECTRICAL STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

TITLE 24 CALCULATIONS

E-4.3

STATE OF CALIFORNIA

Electrical Power Distribution

CEC-NRCC-ELC-01-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 5 of 6)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

C. Voltage Drop *Check all boxes below if the electrical power distribution system is in compliance with Section 130.5(c).*	Enforcement Agency Check that the system complies
☒ The electrical power distribution system meets the voltage drop requirement of Section 130.5(c). The maximum combined voltage drop on feeder conductors and branch circuit conductors to the farthest connected load or outlet, do not exceed 5%.	☐
☒ Voltage drop calculation documents showing compliance to Section 130.5(c) are submitted as part of the compliance document submittal.	☐

D. Circuit Controls for 120-Volt Receptacles and Controlled Receptacles *Check one or more boxes below for applicable requirements of Section 130.5(d) for the electrical power distribution system.*	Field Inspector Cehck that the system complies
☐ The control is capable of automatically shutting OFF the controlled receptacles when the space is typically unoccupied, either at the receptacle or circuit level. For the automatic time switch control, it incorporates an override control that allows the controlled receptacle to remain ON for no more than 2 hours when an override is initiated and an automatic holiday "shut-OFF" feature that turns OFF all loads for at least 24 hours and then resumes the normally scheduled operation. Countdown timer switches are not be used to comply with the automatic time switch control requirements. The controls meet the requirement of Section 130.5(d)1.	☐
☐ There is at least one controlled receptacle within 6 ft from each uncontrolled receptacle. Where receptacles are installed in modular furniture in open office area, at least one controlled receptacle is installed at each workstation. The receptacles meet the requirement of Section 130.5(d)2.	☐
☐ There are installed split wired receptacles with at least one controlled and one uncontrolled receptacle. Where receptacles are installed in modular furniture in open office area, at least one controlled receptacle is installed at each workstation. The receptacles meet the requirement of Section 130.5(d)2.	☐
☐ Permanent and durable marking for controlled receptacles or circuits to differentiate them from uncontrolled receptacles or circuits is provided. The markings meet the requirement of Section 130.5(d)3.	☐
☐ For hotel and motel guest rooms, there are controlled receptacles for at least one-half of the 120-volt receptacles in each guest room. Electric circuits serving controlled receptacles in guestrooms are installed to have captive key controls, occupancy sensing controls, or automatic controls so the power is switched off no longer than 30 minutes after the guest room has been vacated. The receptacles meet the requirement of Section 130.5(d)4.	☐
☐ Receptacles that are only for the following purposes are excepted from Section 130.5(d): -Receptacles specifically for refrigerators and water dispensers in kitchen areas. -Receptacles located a minimum of six ft above the floor that are specifically for clocks. -Receptacles for network copiers, fax machines, A/V and data equipment other than personal computers in copy rooms. -Receptacles on circuits rated more than 20 amperes. -Receptacles connected to an uninterruptible power supply (UPS) that are intended to be in continuous use, 24 hours per day/365 days per year, and are marked to differentiate them from other uncontrolled receptacles or circuits.	☐

STATE OF CALIFORNIA

Electrical Power Distribution

CEC-NRCC-ELC-01-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 3 of 6)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

A. Service Electrical Metering

Check one of the three boxes below if the electrical power distribution system is in compliance with Section 130.5(a).

☐ For newly installed electrical service in newly constructed buildings, Service Electrical Metering is required according to Section 130.5(a). *Fill out Column 1 thru 6 of table below.*

☐ For new or replacement electrical service equipment in existing buildings, Service Electrical Metering is required according to Section 141.0(b)2Pi. *Fill out Column 1 thru 6 of table below.*

☐ EXCEPTION to Electrical Service Metering: Service or feeder for which the utility company provides a metering system that indicates instantaneous kW demand and kWh for a utility-defined period. *Fill out Column 1, 2 and 6 of table below with the compliance information.*

Fill out a separate line for each electrical service that is connected to the building. If additional table space is needed for electrical service information, submit additional page with the information.

Electrical Service Schedule	Electrical Service Rating	Metering Capabilities (check all that are present)				Exception to 130.5(a)	Field Inspector
01	02	03	04	05	06	07	08
Electrical Service Designation/Location/Description	kVA	Instantaneous (at the time) kW	Historical peak (kW)	Tracking kWh for a user-definable period	kWh per rate period	Utility metering system	Check that the metering complies
		☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐

STATE OF CALIFORNIA

Electrical Power Distribution

CEC-NRCC-ELC-01-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 1 of 6)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

General Information

Project Address:		Climate Zone:	Conditioned Floor Area: 2,241
804 Pier View Way #103		7	Unconditioned Floor Area: 0
Building Type:	☒ Nonresidential ☐ Schools	☐ High-Rise Residential ☐ Relocatable Public Schools	☐ Hotel/Motel
Phase of Construction:	☐ New Construction	☐ Addition	☒ Alteration

In the table below identify all applicable construction documents that specify the requirements for the scope of responsibility reported by this certificate. Use additional pages as needed to list all construction documents related to compliance of Section 130.5.

Document Number	Document Title / Descriptions (include description information for Table or Schedule if it contains compliance information)	Document Sheet # or Page #	Indicate which subsection of Section 130.5 is related to the document (e.g. 130.5(a) for service electrical metering)

STATE OF CALIFORNIA

Electrical Power Distribution

CEC-NRCC-ELC-01-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 6 of 6)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: tk1sc	Documentation Author Signature:
Company: tk1sc	Signature Date: 11/5/2018
Address: 11870 Pierce Street, Suite 160	CEA/ HERS Certification Identification (if applicable): E15610
City/State/Zip: Riverside, CA 92505	Phone: 951-299-4160

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Raymond W. Swartz	Responsible Designer Signature:
Company: tk1sc	Date Signed: 11/5/2018
Address: 11870 Pierce Street, Suite 160	License: E15610
City/State/Zip: Riverside, CA 92505	Phone: 951-299-4160

STATE OF CALIFORNIA

Electrical Power Distribution

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CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 4 of 6)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

B. Separation of Electrical Circuits for Electrical Energy Monitoring

Check all boxes below if the electrical power distribution system is in compliance with Section 130.5(b).

☐ The electrical power distribution system meets the separation of electrical circuits for electrical energy monitoring requirement of Section 130.5(b). The electrical power distribution systems is designed so that measurement devices can monitor the electrical energy usage of load types according to TABLE 130.5-B.

☐ Describe the electrical power distribution system installed and the compliance method chosen in meeting the requirement of Section 130.5(b). Use the space below to include the information. Examples of compliance methods are detailed in Nonresidential Compliance Manual Chapter 8.

Fill out Column 1 thru 3 with the compliance information.

General information	Electrical Power Distribution System information and Method of compliance	Electrical Service Rating	Enforcement Agency
01	02	03	04
Electrical Service Designation/Location/Description	Describe the electrical power distribution system installed and the compliance method used.	kVA	Check that the system complies
			☐

Field Inspector Notes:

STATE OF CALIFORNIA

Electrical Power Distribution

CEC-NRCC-ELC-01-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 2 of 6)
Project Name: Tom Hawkins Elementary School Administration Modernization	Date Prepared: 11/5/2018

Document Number	Document Title / Descriptions (include description information for Table or Schedule if it contains compliance information)	Document Sheet # or Page #	Applicable subsection of Section 130.5

VOLTAGE DROP WORKSHEET: TITLE 24- FOR REFERENCE ONLY

1. ALL BRANCH CIRCUITS ARE DESIGNED TO LIMIT VOLTAGE DROP 3% OR LESS USING THE FOLLOWING CRITERIA:

277 VOLT, 1 PHASE LOAD:

LOAD (VA)	DISTANCE	CU CONDUCTOR SIZE
0–4432 VA 0–16 AMPS	0–158 FT	#12
	159–250 FT	#10
	251–397 FT	#8

480 VOLT, 3 PHASE LOAD:

LOAD (VA)	DISTANCE	CU CONDUCTOR SIZE
0–13,296 VA (4,432 PER PHASE) 0–16 AMPS	0–45 FT	#12
	46–72 FT	#10
	73–114 FT	#8
13,297–19,994 VA (6,648 PER PHASE) 16–24 AMPS	0–30 FT	#12
	31–48 FT	#10
	49–76 FT	#8

208 VOLT, 1 PHASE LOAD:

LOAD (VA)	DISTANCE	CU CONDUCTOR SIZE
0–1000 VA (500 PER PHASE) 0–4.8 AMPS	0–225 FT	#12
	226–360 FT	#10
	361–572 FT	#8
1001–2000 VA (1,000 PER PHASE) 4.8–9.6 AMPS	0–151 FT	#12
	152–240 FT	#10
	241–380 FT	#8
	381–604 FT	#6
2001–3,328 VA (1,664 PER PHASE) 9.6–16 AMPS	0–78 FT	#12
	79–125 FT	#10
	126–198 FT	#8
3329–4,992 VA (2,496 PER PHASE) 16–24 AMPS	0–52 FT	#12
	53–83 FT	#10
	84–132 FT	#8

120 VOLT, 1 PHASE LOAD:

LOAD (VA)	DISTANCE	CU CONDUCTOR SIZE
0–1000 VA 0–8 AMPS	0–130 FT	#12
	131–205 FT	#10
	205–330 FT	#8
1001–1500 VA 8–12.5 AMPS	0–87 FT	#12
	88–138 FT	#10
	139–219 FT	#8
	220–350 FT	#6
1501–1920 VA 12.5–16 AMPS	0–68 FT	#12
	69–108 FT	#10
	109–172 FT	#8
	173–273 FT	#6
1921–2880 VA 16–24 AMPS	0–72 FT	#10
	73–114 FT	#8
	115–182 FT	#6

ANY 3 PHASE LOADS GREATER THAN 30 AMPS ARE SHOWN ON THE FEEDER SCHEDULE OR MOTORIZED EQUIPMENT SCHEDULE WITH ASSOCIATED VOLTAGE DROP LIMITED TO 2% OR LESS.

TITLE 24 GENERAL NOTE

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ASSOCIATED WITH FINAL INSPECTION AND APPLICABLE ACCEPTANCE REQUIREMENT PROCEDURES. INCLUDE ALL COSTS IN THE BASE BID. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, CONSTRUCTION INSPECTION, MEASUREMENTS, MONITORING, FUNCTIONAL TESTING, CALIBRATING, ETC. CONTRACTOR SHALL ASSUME THE ROLE OF "FIELD TECHNICIAN" AND "RESPONSIBLE PERSON" AS DEFINED IN STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL SECTION 13.2.2.

SEE STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS SECTIONS 10–103(a)3A AND 10–103(a)3B AND SECTION 130.4 FOR MORE INFORMATION.

SEE STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL CHAPTER 13 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

SEE STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS RESIDENTIAL COMPLIANCE MANUAL CHAPTER 2 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

PROVIDE COMPLETED INSTALLATION CERTIFICATE(S) AND CERTIFICATE(S) OF ACCEPTANCE AS REQUIRED TO THE SATISFACTION OF THE ENFORCEMENT AGENCY.

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11870 Pierce Street, Suite 160
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TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

TITLE 24 CALCULATIONS
POWER

E-4.4

MEP EQUIPMENT ANCHORAGE NOTE:

ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7–10, CHAPTERS 13, 26 AND 30.

A. ALL PERMANENT EQUIPMENT AND COMPONENTS.

B. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (EG. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.

C. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT THE ATTACHMENT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.

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

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

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND THE DSA STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

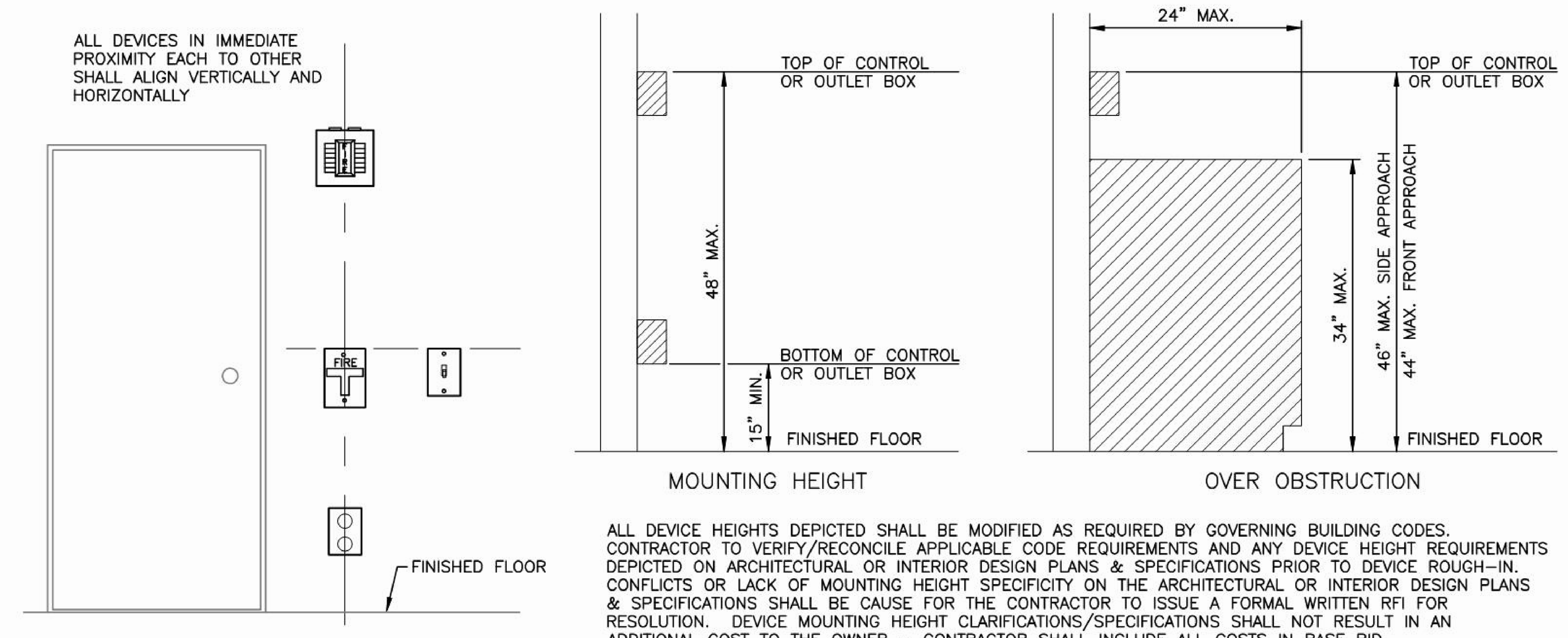
PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7–10 SECTION 13.3 AS DEFINED IN ASCE 7–10 SECTION 13.6.5.6, 13.6.7, 13.6.8 AND 2016 CBC, SECTIONS 1616A.1.23, 1616A.1.24, 1616A.1.25 AND 1616A.1.26.

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

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

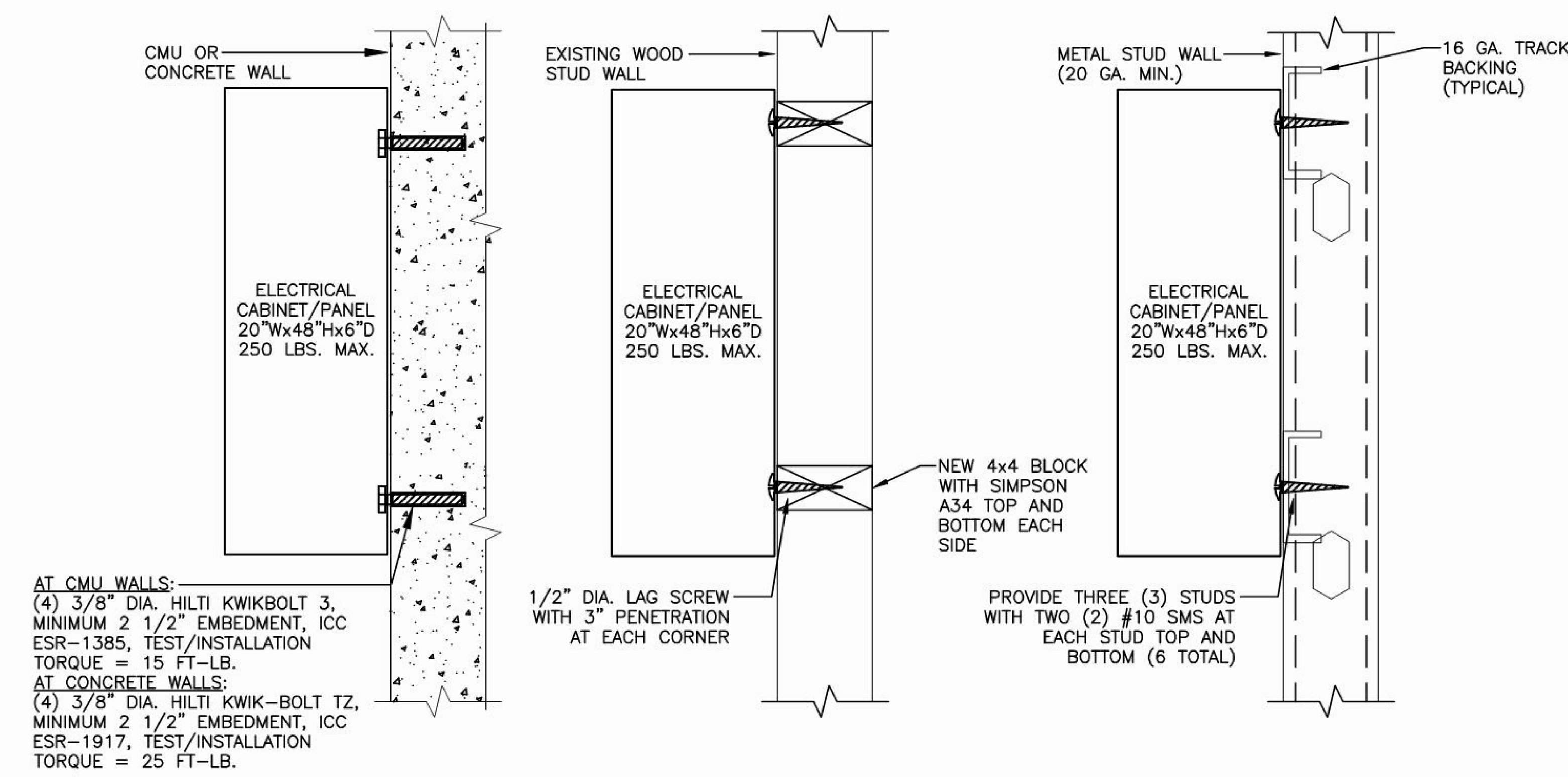
- MP☐ MD☐ PP☐ E☐ — OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.
- MP☐ MD☐ PP☐ E☒ — OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE–APPROVAL (OPM#) #0052–13 & #0043–13
- MP☐ MD☐ PP☐ — OPTION 3: SHALL COMPLY WITH THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION (2009), INCLUDING ANY ADDENDA. FASTENERS AND OTHER ATTACHMENTS NOT SPECIFICALLY IDENTIFIED IN THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION, ARE DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. THE DETAILS SHALL ACCOUNT FOR THE APPLICABLE SEISMIC HAZARD LEVEL ______ AND CONNECTION LEVEL ______ FOR THE PROJECT AND CONDITIONS.



ALL DEVICE HEIGHTS DEPICTED SHALL BE MODIFIED AS REQUIRED BY GOVERNING BUILDING CODES. CONTRACTOR TO VERIFY/RECONCILE APPLICABLE CODE REQUIREMENTS AND ANY DEVICE HEIGHT REQUIREMENTS DEPICTED ON ARCHITECTURAL OR INTERIOR DESIGN PLANS & SPECIFICATIONS PRIOR TO DEVICE ROUGH–IN. CONFLICTS OR LACK OF MOUNTING HEIGHT SPECIFICITY ON THE ARCHITECTURAL OR INTERIOR DESIGN PLANS & SPECIFICATIONS SHALL BE CAUSE FOR THE CONTRACTOR TO ISSUE A FORMAL WRITTEN RFI FOR RESOLUTION. DEVICE MOUNTING HEIGHT CLARIFICATIONS/SPECIFICATIONS SHALL NOT RESULT IN AN ADDITIONAL COST TO THE OWNER – CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID.

DEVICE ALIGNMENT & MOUNTING HEIGHT DETAILS (1)

SCALE: N.T.S.



SURFACE PANEL MOUNTING (2)

SCALE: N.T.S.

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TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

ELECTRICAL DETAILS

E-5.1

SEQUENCE OF OPERATIONS

ACTION / DEVICE	120 VOLT POWER FAILURE	SYSTEM TROUBLE/ WIRING FAULT or OPEN	MANUAL PULL STATION	AREA SMOKE DETECTOR	AREA CARBON MONOXIDE DETECTOR	AREA or ATTIC HEAT DETECTOR	DUCT TYPE SMOKE DETECTOR	SMOKE/FIRE DAMPER SMOKE DETECTOR	DOOR HOLD SMOKE DETECTOR	SPRINKLER WATER FLOW SWITCH	SPRINKLER VALVE TAMPER SWITCH	SPRINKLER POST INDICATOR SWITCH	EXTINGUISHING or SUPPRESSION TYPE SYSTEM
SOUND CONTROL PANEL TROUBLE BUZZER	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
SOUND CONTROL PANEL SUPERVISORY BUZZER	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	YES	YES	NO
SOUND CONTROL PANEL ALARM BUZZER	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	YES
ACTIVATE RELAY FOR CENTRAL STATION MONITORING	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
ANNUNCIATE AT FIRE ALARM CONTROL PANEL (ALARM or TROUBLE)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
ANNUNCIATE AT REMOTE ANNUNCIATOR PANEL (ALARM or TROUBLE)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
ACTIVATE NOTIFICATION (AUDIBLE/VISUAL) ALARM SIGNAL THROUGHOUT BLDG	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO
SOUND SPRINKLER BELL ALARM –	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO
SHUT DOWN ASSOCIATED AIR HANDLING (HVAC) THROUGHOUT BUILDING	NO	NO	NO	YES	NO	NO	YES	YES	NO	YES	NO	NO	YES
CLOSE COMBO SMOKE/ FIRE DAMPERS THROUGH FLOOR OF ALARM (1)	YES	NO	NO	YES	NO	NO	YES	YES	NO	YES	NO	NO	YES
NOTIFY FIRE DEPARTMENT VIA MONITORING STATION –	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	YES
RETURN LIGHTING TO 100% OF LUMEN OUTPUT UPON ACTIVATION OF SYSTEM	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO
SHUTDOWN AUTONOMOUS PUBLIC ADDRESS SYSTEM UPON ACTIVATION OF SYSTEM	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO
SOUND AN ALERT TONE FOLLOWED BY VOICE INSTRUCTION	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO

(1) PER 2016 CMC 605.8, When the automatic activation of a smoke damper or a combination smoke–fire damper occurs, the HVAC system serving such dampers shall immediately shut down. The HVAC system shall not be restarted again until all the dampers are reset and fully opened. ALL HVAC UNITS CONTAINING COMBINATION SMOKE FIRE DAMPERS AS PART OF THEIR DUCTING SYSTEM SHALL BE PROVIDED WITH SHUNT RELAYS AND DEVICES FOR IMMEDIATE SHUT DOWN UPON THE ACTIVATION / CLOSURE OF ASSOCIATED COMBINATION SMOKE FIRE DAMPERS.

MEP EQUIPMENT ANCHORAGE NOTE:

ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7–10, CHAPTERS 13, 26 AND 30.

A. ALL PERMANENT EQUIPMENT AND COMPONENTS.

B. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (EG. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.

C. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT THE ATTACHMENT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.

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

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

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND THE DSA STRUCTURAL ENGINEER. 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 DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7–10 SECTION 13.3 AS DEFINED IN ASCE 7–10 SECTION 13.6.5.6, 13.6.7, 13.6.8 AND 2016 CBC, SECTIONS 1616A.1.23, 1616A.1.24, 1616A.1.25 AND 1616A.1.26.

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

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION 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–APPROVAL (OPM#) #______________.

MP☐ MD☐ PP☐ OPTION 3: SHALL COMPLY WITH THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION (2009), INCLUDING ANY ADDENDA. FASTENERS AND OTHER ATTACHMENTS NOT SPECIFICALLY IDENTIFIED IN THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION, ARE DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. THE DETAILS SHALL ACCOUNT FOR THE APPLICABLE SEISMIC HAZARD LEVEL ______ AND CONNECTION LEVEL _____ FOR THE PROJECT AND CONDITIONS.

SYMBOL	DESCRIPTION	MODEL	MANUFACTURER	BACKBOX	MOUNTING HEIGHT	C.S.F.M. NUMBER
FACP	EXISTING FIRE ALARM CONTROL PANEL (EXISTING PER A#02–102225)	EST2	EST	EXISTING	EXISTING	7165–1657:0186
VECP	NEW FIRE ALARM VOICE EVACUATION CONTROL PANEL W/ LED DISPLAY AND INTEGRAL MICROPHONE PAGING SYSTEM	EST3	EST	PROVIDED	5'–6" A.F.F. TO TOP	7165–1657:0186
FAAP	REMOTE FIRE ALARM ANNUNCIATOR	3–LCDANN	EST	PROVIDED	5'–6" A.F.F. TO TOP	7120–1657:0193
AMP	ZONED AUDIO AMPLIFIER	3–ZA40A	EST	PROVIDED	FIELD	7165–1657:0186
FATC	FIRE ALARM TERMINAL CABINET	N/A	BY ELECTRICIAN	18"SQ. x 6"D U.N.O. (RED)	VERIFY IN FIELD	N/A
SD	AREA SMOKE DETECTOR (ADDRESSABLE)	SIGA–PS	EST	4S DEEP BOX W/ 3–0 RING	CEILING	7272–1657:0126
HD	AREA HEAT DETECTOR (ADDRESS./FIXED 194'D)	284B–PL	EST	4S DEEP BOX W/ 3–0 RING	ABOVE ACCESSIBLE CEILING, U.O.N.	7270–1657:0109
KMS	MANUAL PULL STATION (ADDRESSABLE)	SIGA–278	EST	4S DEEP BOX W/ SINGLE GANG RING	48" A.F.F. TO TOP OF ACTIVATING HANDLE	7150–1657:0129
KS WP	WEATHERPROOF FIRE ALARM SPEAKER	WG4 SERIES	EST	449 BACKBOX	90" A.F.F. TO TOP	7320–1657:0289
KF cd	FIRE ALARM STROBE (WALL)	G1F–VM	EST	4S DEEP BOX W/ 4S EXTENSION	80" A.F.F. TO BOTTOM	7125–1657:0284
F cd	FIRE ALARM STROBE (CEILING)	GCF–VM	EST	4S DEEP BOX W/ 4S EXTENSION	CEILING	7125–1657:0219
SF cd	FIRE ALARM SPEAKER STROBE (CEILING)	GC SERIES	EST	4S DEEP BOX W/ 4S EXTENSION	CEILING	7320–1657:0211
KSF cd	FIRE ALARM SPEAKER STROBE (WALL)	G4 SERIES	EST	4S DEEP BOX W/ 4S EXTENSION	CEILING	7320–1657:0211
CR	FIRE ALARM RELAY CONTROL MODULE	SIGA–CR	EST	4S DEEP BOX	VERIFY IN FIELD	7300–1657:0121
MM	SPRINKLER MONITOR MODULE	SIGA–MM1	EST	4S DEEP BOX	VERIFY IN FIELD	7300–1657:0121
SYNC	FIRE ALARM SYNC MODULE	G1M	EST	4S DEEP BOX	VERIFY IN FIELD	7300–1657:0201
J	FIRE ALARM JUNCTION BOX	N/A	BY ELECTRICIAN	4S BOX, U.N.O.	VERIFY IN FIELD	N/A

A.F.F.	ABOVE FINISHED FLOOR	N/A	NOT APPLICABLE
E.O.L.	END OF LINE RESISTOR	U.N.O.	UNLESS NOTED OTHERWISE
(E)	EXISTING DEVICE	VL	VERIFY LOCATION IN FIELD
F.B.O.	FURNISHED BY OTHERS	WP	WEATHERPROOF DEVICE
TSP	TWISTED SHIELDED PAIR	cd	INDICATED CANDELA RATING OF STROBE DEVICE

1. CONFIRM NOTIFICATION DEVICE COLOR (WHITE OR RED) WITH ARCHITECT PRIOR TO ANY ORDER OR INSTALLATION. COLOR TO BE INDICATED IN SHOP DRAWING SUBMITTAL.
2. ALL NOTIFICATION DEVICES ARE TO HAVE "FIRE" MARKING ON THE DEVICE PER MANUFACTURER'S LISTED OPTIONS.
3. NUMBER ADJACENT TO VISUAL DEVICES INDICATES MINIMUM CANDELLA RATING OF STROBE DEVICE.

FIRE ALARM NOTES

1. WALL MOUNTED, AUDIBLE NOTIFICATION DEVICES SHALL HAVE THEIR TOPS MOUNTED AT 90" MINIMUM AND 100" MAXIMUM ABOVE THE FINISHED FLOOR, AND NO CLOSER THAN 6" TO A HORIZONTAL STRUCTURE. (NFPA 72, 2016, CH. 18.4.8.1). ALL WALL MOUNTED VISUAL APPLIANCES AND COMBINATION AUDIBLE/VISUAL APPLIANCES SHALL HAVE THEIR BOTTOMS MOUNTED AT 80" MINIMUM AND 96" MAXIMUM ABOVE FINISHED FLOOR AS MEASURED TO THE LENS. (NFPA 72, 2016, CH. 18.5.5.1)
2. ALL EQUIPMENT SHALL BE U.L. AND C.S.F.M. LISTED.
3. ALL FIRE ALARM WIRING SHALL BE FLP (FIRE POWER LIMITED) OR FPLP (FIRE POWER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE THHN OR THWN.
4. PER THE CEC, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6' OF LEAD WIRE FROM THE BOX TO THE DEVICE. ALL BOXES TO BE SIZED PER CEC AND SHALL HAVE THEIR COVERS PAINTED RED WHERE APPLICABLE.
5. DO NOT DEVIATE FROM CONDUIT RUNS AS SHOWN ON FLOOR PLANS WITHOUT PRIOR APPROVAL FROM ELECTRICAL ENGINEER. FACTORS SUCH AS EXCESSIVE VOLTAGE DROP, ADDITIONAL PARTS, ENGINEERING, ETC., THAT ARE A RESULT OF CONDUIT RUN DEVIATIONS SHALL BE THE SOLE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
6. ALL FAN SHUTDOWN FUNCTIONS, DAMPER CLOSURES AND ASSOCIATED MECHANICAL SYSTEM FIRE ALARM INTERFACE SHALL BE BY MECHANICAL CONTRACTOR, AND SHALL BE COORDINATED WITH FIRE ALARM SYSTEM.
7. ALL DUCT SMOKE DETECTORS SHALL BE MOUNTED BY THE MECHANICAL CONTRACTOR. DUCT SMOKE DETECTORS EXPOSED TO THE WEATHER SHALL BE C.S.F.M. LISTED FOR OUTDOOR INSTALLATION, AND WEATHER PROTECTED BY THE MECHANICAL CONTRACTOR. ALL AIR VELOCITY TESTING SHALL BE PERFORMED BY THE MECHANICAL CONTRACTOR.
8. ALL FIRE ALARM DEVICE BACKBOXES, FIRE ALARM TERMINAL CABINETS, GUTTERS, JUNCTION BOXES AND ASSOCIATED CONDUITS SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED. REFER TO FIRE ALARM SYMBOL LIST AND/OR
9. MOUNTING DETAILS FOR ADDITIONAL INFORMATION. SYSTEM SUPPLIER PROVIDED BACKBOXES SHALL BE INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
10. SMOKE DETECTOR TESTING SHALL BE PERFORMED TO ENSURE THAT EACH DETECTOR IS WITHIN ITS LISTED AND MARKED SENSITIVITY RANGE USING THE METHODS RECOMMENDED PER CFC 907.8.4 AND NFPA 72, 2016 14.4.4.3.4.
11. ALL WIRING, INITIATING DEVICES AND ANNUNCIATOR PANEL SHALL BE SUPERVISED TO THE PRINCIPAL POINT OF ANNUNCIATION. THE FIRE ALARM CONTROL PANEL TO SUPERVISE THE ANNUNCIATOR PANEL, ALL INITIATING AND INDICATING DEVICE CIRCUITS.
    - A. INITIATING DEVICE CIRCUITS (IDC): CLASS B
    - B. SIGNALING LINE CIRCUITS (SLC): CLASS B
    - C. NOTIFICATION APPLIANCE CIRCUITS (NAC): CLASS B
12. ALL WIRING SHALL BE CUT FOR IN AND OUT. WIRING SHALL NOT BE LOOPED THROUGH DEVICES.
13. POINT AND COMMON ANNUNCIATION AND T–TAPPING ARE PROHIBITED. (T–TAPPING IS ALLOWABLE ON SLC LOOPS).
14. PROVIDE 3/4" CONDUIT FROM FIRE ALARM CONTROL PANEL TO TELEPHONE BACKBOARD FOR OWNER PROVIDED CENTRAL STATION MONITORING, WHEN APPLICABLE.
15. CONTRACTOR TO FIELD VERIFY AND PROVIDE DECIBEL METER FOR TESTING OF AMBIENT NOISE LEVELS AUDIBLE DEVICES TO BE AT LEAST 15 DBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL BUT NOT LESS THAN 75 DBA AT 10 FEET OR MORE THAN 110 DBA AT THE MINIMUM HEARING DISTANCE. SOUND LEVEL SHALL BE MAINTAINED FOR DURATION OF AT LEAST 60 SECONDS; 5 DBA MUST BE MAINTAINED.) (CFC 907.5.2.1.1) THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS. PROVIDE UPDATED PLANS AND CALCULATIONS THROUGH THE "CHANGE ORDER" PROCESS WHEN INSTALLING ADDITIONAL DEVICES.
16. VISUAL DEVICES SHOULD NOT EXCEED 2 FLASHES PER SECOND AND SHOULD NOT BE SLOWER THAN 1 FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15–CANDELA. VISUAL DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.
17. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, APPROVED SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANNER AS INDICATED ON THE DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS. ALL CONDUITS SHALL BE 3/4" MINIMUM. CONTRACTOR TO VERIFY CONDUIT FILL PRIOR TO INSTALLATION.
18. ALL FLOW SWITCHES SHALL BE 2 WIRE WITH NON–ELECTRONIC RETARD TYPE SIMILAR TO THE SYSTEM SENSOR MODEL "WFD SERIES" ONLY.
19. ALL DEVICES IN THE ALARM SYSTEM SHALL BE COMPATIBLE AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
20. SYSTEM SHALL BE FURNISHED AND INSTALLED BY AN AUTHORIZED DISTRIBUTOR.
21. FIRE ALARM SYSTEM INSTALLATION COMPANY SHALL BE UL LISTED (UUJS).
22. FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURER'S SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED THE WEIGHT OF 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
23. SMOKE DETECTOR SHALL NOT BE ANY CLOSER THAN 1 FOOT FROM FIRE SPRINKLERS OR 3 FEET FROM ANY SUPPLY DIFFUSER. IN THE AREA OF CONSTRUCTION OR WHERE POSSIBLE DAMAGE/CONTANMINAION COULD OCCUR ON NEWLY INSTALLED FIRE ALARM DEVICES, DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER. DETECTORS THAT HAVE BEEN INSTALLED PRIOR TO FINAL CLEAN–UP BY ALL TRADES SHALL BE CLEANED OR REPLACED IN ACCORDANCE WITH CHAPTER 7. CLEANING OR REPLACEMENT OF DEVICES THAT WERE MOUNTED AT THE REQUEST OF THE CONTRACTOR WILL NOT BE PERFORMED WITHOUT WRITTEN AUTHORIZATION THAT ASSUMES FINANCIAL RESPONSIBILITY FOR COSTS INCURRED. TESTING OF DETECTORS SHALL BE PERFORMED PER NFPA 72 2016 14.4.5.3 AND CFC 907.9.4.
24. PER CBC 11B–309 ACTIVATION OF INITIATING DEVICE SHALL NOT REQUIRE MORE THAN 5 LBS. (22.2N) OF FORCE OR REQUIRE TIGHT GRASPING PINCHING, OR TWISTING OF WRIST.
25. THE SYSTEM SHALL CONFORM TO CALIFORNIA CODE OF REGULATIONS (CCR) TITLES 19 AND 24 AS APPLICABLE TO THIS PROJECT.
26. THE VOICE/ALARM COMMUNICATION SYSTEM VOICE MESSAGE SHALL COMPLY WITH NFPA 72 SECTIONS 18.4 AND 24.4 FOR GENERAL REQUIREMENTS, INTELLIGIBILITY, AUDIBILITY, MESSAGE PRIORTY, TONES, ETC.
27. A DEDICATED 120V BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT, THIS CIRCUIT SHALL BE ENERGIZED FROM THE COMMON USE AREA PANEL AND SHALL HAVE NO OTHER OUTLETS. THE BREAKER SHALL HAVE A RED LOCKING DEVICE TO BLOCK THE HANDLE IN THE "ON" POSITION AND BE LABELED AS FOLLOWS:
    - A. "FIRE ALARM" FOR FIRE ALARM SYSTEMS
    - B. "EMERGENCY COMMUNICATIONS" FOR EMERGENCY COMMUNICATION SYSTEMS, OR
    - C. "FIRE ALARM/ECS" FOR COMBINATION FIRE ALARM AND COMMUNICATIONS SYSTEMS.
28. WHERE A DETECTOR IS INSTALLED ABOVE THE CEILING, THE DETECTOR SHALL BE EASILY ACCESSIBLE AND THE LOCATION OF THE DETECTOR SHALL BE CLEARLY MARKED. FOR DUCT SMOKE DETECTORS A REMOTE TEST STATION SHALL BE PROVIDED. ELECTRICAL CONTRACTOR SHALL FURNISH ACCESS PANELS TO AREAS THAT REQUIRE SERVICING, TROUBLE SHOOTING, ETC.
29. THE "END OF LINE RESISTANCE" OF EACH CIRCUIT SHALL BE TESTED IN THE PRESENCE OF THE I.O.R. AND SHALL NOT EXCEED THE LISTED MANUFACTURER'S MINIMUM OPERATING VOLTAGE.
30. UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATERTIGHT FITTINGS AND WIRE LISTED FOR WET LOCATIONS, IN ACCORDANCE WITH CEC 2016, SEC. 110.11, 300.6 & 310.9, 760.3(D).
31. FIRE ALARM SYSTEM IS A FULLY AUTOMATIC SYSTEM. CONTRACTOR TO UTILIZE AREA COVERAGE SMOKE DETECTORS AND ADDRESSABLE CONTROL RELAYS FOR THE SHUTDOWN AND/OR CLOSURE OF HVAC UNITS AND COMBINATION SMOKE/FIRE DAMPERS. CONTROL RELAYS TO BE LOCATED WITHIN 3FT OF THE CONTROLLED CIRCUIT OR APPLIANCE PER NFPA 72 21.2.4
32. PROVIDE (VIA CHANGE ORDER PROCESS) APPROPRIATE MANUFACTURER PRODUCT DATA SHEETS AND APPLICABLE CSFM LISTINGS FOR ALL SUBSTITUTED MANUFACTURER'S MATERIAL, EQUIPMENT OR APPLIANCES, TO DSA PRIOR TO START OF INSTALLATION.
33. CONTRACTOR SHALL PROVIDE FIRE WATCH FOR ALL OCCUPIED AREAS OF WORK WHERE THE REQUIRED FIRE ALARM SYSTEM IS OUT OF SERVICE FOR THE DURATION OF THE SYSTEM OUTAGE. FIRE WATCH AND SYSTEM/EQUIPMENT SHALL BE PER 2016 CFC 901.7.
34. EMERGENCY VOICE/ALARM COMMUNICATION SYSTEMS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 72. THE OPERATION OF ANY AUTOMATIC FIRE DETECTOR, SPRINKLER WATERFLOW DEVICE OR MANUAL FIRE ALARM BOX SHALL AUTOMATICALLY SOUND AN ALERT TONE FOLLOWED BY VOICE INSTRUCTIONS GIVING APPROVED INFORMATION AND DIRECTIONS FOR A GENERAL OR STAGED EVACUATION IN ACCORDANCE WITH THE FIRE SAFETY EVACUATION PLANS REQUIRED BY SECTION 404 PER CBC/CFC 907.5.2.2
35. EMERGENCY VOICE/ALARM COMMUNICATION SYSTEMS SHALL HAVE THE CAPABILITY TO BROADCAST LIVE VOICE MESSAGES BY PAGING ZONES ON A SELECTIVE AND ALL–CALL BASIS PER CBC/CFC 907.5.2.2.2.
36. EMERGENCY VOICE/ALARM COMMUNICATION SYSTEMS SHALL BE PROVIDED WITH AN APPROVED EMERGENCY POWER SOURCE PER CBC/CFC 907.5.2.2.5.
37. UPON ALARM THE AUDIBLE CARBON MONOXIDE SENSING DETECTORS SHALL PRODUCE A FOUR–PULSE TEMPORAL PATTERN SIGNAL AND COMPLY WITH NFPA 720 5.8.6.5.
37. ALL MEMBRANE AND THROUGH–PENETRATIONS OF RATED ASSEMBLIES SHALL BE PROTECTED BY AN APPROVED FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER LAB TESTING CRITERIA. APPROVED TYPES OF MATERIALS SHALL BE IDENTIFIED WITHIN THE FIRE ALARM SECTION OF THE PROJECT SPECIFICATIONS.
38. CONTROL PANELS AND REMOTE ANNUNCIATORS SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48" ABOVE THE FINISHED FLOOR.

FIRE ALARM SYSTEM TESTING NOTES:

1. INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATIONS, INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM HAS BEEN APPROVED BY DSA.
2. A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.
3. DISTRICT SHALL PROVIDE A CERTIFIED IMPARTIAL FIRE ALARM INSPECTOR. DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND/OR TESTING.
4. 100% OF THE SYSTEM IN CONTRACT WILL BE TESTED AND INSPECTED WITH THE CONTRACTOR OR CONTRACTOR'S SUB AND DISTRICT'S ETS STAFF MEMBER PRESENT. INSPECTION WILL INCLUDE, BUT NOT BE LIMITED TO, REMOVING STROBES/HORNS TO CHECK FOR "T–TAPS", REMOVING J–BOX COVERS TO CHECK WIRE GAGE AND SPLICES.
5. FOLLOW ALL REQUIREMENTS AND INSTRUCTIONS PROVIDED BY MANUFACTURER UPON INSTALLATION OF MANUFACTURER'S PRODUCTS AND DEVICES.
6. PRIOR TO REQUESTING FINAL APPROVAL OF THE INSTALLATION, THE INSTALLING CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT TO THE FIRE CODE OFFICIAL THAT THE SUBJECT FIRE PROTECTION SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS AND HAS BEEN TESTED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND THE APPROPRIATE INSTALLATION STANDARD. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND THE ARCHITECT/ENGINEER OF THE PROJECT. ANY DEVIATIONS FROM THE DESIGN STANDARDS SHALL BE NOTED AND COPIES OF THE APPROVALS FOR SUCH DEVIATIONS SHALL BE ATTACHED TO THE WRITTEN STATEMENT. (CFC 901.2.1)
7. UPON COMPLETION OF SYSTEM INSTALLATION, THE SYSTEM SHALL BE TESTED IN THE PRESENCE OF AND IN A MANNER ACCEPTABLE TO DSA/I.O.R. CONTRACTOR SHALL SUPPLY NECESSARY TESTING EQUIPMENT, INCLUDING A "SOUND LEVEL METER" TO CHECK ACCEPTABLE NOISE LEVELS OF AUDIBLE DEVICES. PROVIDE TEST RESULTS PER NFPA 72 TO ARCHITECT, D.S.A., I.O.R. AND TO LOCAL FIRE AUTHORITY, PER CFC 907.8.2.
8. INSPECTION, TESTING AND MAINTENANCE SHALL BE IN COMPLIANCE WITH NFPA 72 CHAPTER 14, REACCEPTANCE TESTING SHALL BE IN COMPLIANCE WITH 14.4.2.
9. LOCAL FIRE AUTHORITY NOTIFICATION TO BE DOCUMENTED AND RECORDED AS "UNAVAILABLE" OR "CONFIRM WHEN PRESENT".
10. PRIOR TO COMPLETION OF FIRE ALARM SYSTEM THE TWO WAY COMMUNICATION SYSTEM SHALL BE TESTED AND CERTIFIED VIA 2016 NFPA 72 EMERGENCY COMMUNICATION SYSTEM SUPPLEMENTARY RECORD OF INSPECTION AND TESTING FORM.
11. THE INSTALLING CONTRACTOR SHALL PROVIDE A COMPLETED RECORD OF COMPLETION PER NFPA 72, FIGURE 7.8.2(A) THROUGH (I) AS APPLICABLE. A COMPLETE RECORD OF THE TESTS AND OPERATIONS OF EACH SYSTEM SHALL BE KEPT UNTIL THE NEXT TEST AND FOR ONE YEAR AFTER PER NFPA 72 7.7.1.
12. FIRE ALARM SYSTEM DOCUMENTS SHALL BE HOUSED IN THE DOCUMENT CABINET. THE DOCUMENT CABINET SHALL BE INSTALLED AT THE SYSTEM CONTROL UNIT OR AT ANOTHER APPROVED LOCATION AT THE PROTECTED PREMISES AS REQUIRED BY NFPA 72 7.7.2.
13. THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CFC SECTION 901.6.2. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING A FIRE ALARM SYSTEM MONITORING CONTRACT.

WIRING LEGEND

WIRE DESIGNATION	WIRE IN CONDUIT	WIRE IN CONDUIT UNDERGROUND/WET LOC.	UNDERGROUND/WET WIRE DESIGNATION
INITIATING CIRCUITS Z	2 CONDUCTOR #18 FPL TWISTED/ UNSHEILDED W/OVERALL JACKET	2 CONDUCTOR #18 FPL TWISTED/ UNSHEILDED W/OVERALL JACKET	INITIATING CIRCUITS ZU
POWER CKT. P	2 CONDUCTOR #14 THHN STRANDED	2 CONDUCTOR #12 STRANDED TYPE THWN	POWER CKT. PU
NETWORK CONTROL C	2 CONDUCTOR #12 THHN STRANDED	2 CONDUCTOR #12 STRANDED TYPE THWN	NETWORK CONTROL CU
ANNUNCIATOR D	4 CONDUCTOR #18 FPL TWISTED/ UNSHIELDED W/OVERALL JACKET	4 CONDUCTOR #18 FPL TWISTED/ UNSHIELDED W/OVERALL JACKET	ANNUNCIATOR DU
AUDIBLE LOOP B	2 CONDUCTOR #18 FPL TWISTED/ SHIELDED W/OVERALL JACKET	2 CONDUCTOR #18 FPL TWISTED/ SHIELDED W/OVERALL JACKET	AUDIBLE LOOP BU
AUDIBLE (SPEAKER) A	2 CONDUCTOR #16 FPL TWISTED/ SHIELDED W/OVERALL JACKET	2 CONDUCTOR #16 FPL TWISTED/ SHIELDED W/OVERALL JACKET	AUDIBLE (SPEAKER) AU
VISUAL (STROBE) V	2 CONDUCTOR #12 FPL TWISTED/ UNSHIELDED W/OVERALL JACKET	2 CONDUCTOR #12 FPL TWISTED/ UNSHIELDED W/OVERALL JACKET	VISUAL (STROBE) VU
S–BUS S	4 CONDUCTOR #16 FPLR (2 PAIR)	4 CONDUCTOR #16 FPLR (2 PAIR)	S–BUS SU

NOTE:
1. ALL WIRE TO BE CLASS 'B' PATHWAY SURVIVAL LEVEL 1.
2. ALL CABLING TO BE WEST PENN OR APPROVED EQUAL.
3. COLOR CODE ALL FIRE ALARM CONDUCTORS PER DISTRICT STANDARDS. VERIFY COLOR SCHEMES PRIOR TO ORDERING FIRE ALARM CONDUCTORS.

PLAN REVIEW REQUIREMENTS AND APPLICABLE CODES AND STANDARDS

1.0 FIRE ALARM PLAN REVIEW

A. FIRE ALARM PLAN REVIEW

1. AS PART OF THE FIRE ALARM PLAN REVIEW, PLANS AND SPECIFICATIONS FOR THE FIRE ALARM SYSTEM HAVE BEEN INCLUDED FOR REVIEW AND COMMENT BY THE DIVISION OF THE STATE ARCHITECT, FIRE & LIFE SAFETY.
2. THE FLOOR PLANS AND SPECIFICATIONS INCLUDE THE FOLLOWING : LOCATIONS OF ALL ALARM–INITIATING AND SIGNALING DEVICES, CONTROL AND TROUBLE SIGNALING EQUIPMENT (FIRE ALARM CONTROL PANEL, BUILDING ANNUNCIATION (FIRE ALARM ANNUNCIATOR).

B. FIRE ALARM COMPONENTS

1. PROVIDE CALIFORNIA STATE FIRE MARSHAL LISTING SHEETS AND U.L. LISTING NUMBERS FOR EACH COMPONENT.
2. EQUIPMENT POWER CONNECTIONS.
3. RISER DIAGRAM SHOWING EACH COMPONENT.
4. VOLTAGE DROP CALCULATIONS.
5. POWER CONNECTIONS TO APPLICABLE COMPONENTS.
6. WIRE AND/OR CABLING TYPES AND SIZES.
7. PROVIDE CATALOG DATA SHEETS FOR ALL FIRE ALARM SYSTEM COMPONENTS.
8. CONTRACTOR TO FURNISH STATEMENT OF COMPLIANCE BEFORE REQUESTING FINAL APPROVAL OF INSTALLATION IN ACCORDANCE WITH CFC 901.2.1.
9. A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE PROJECT INSPECTOR AND, IF APPLICABLE, LOCAL FIRE AUTHORITY.
10. THE INSTALLER SHALL SUPPLY THE OWNER WITH A WRITTEN OPERATING, TESTING AND MAINTENANCE INSTRUCTIONS, POINT–TO–POINT AS BUILT DRAWINGS AND EQUIPMENT SPECIFICATIONS. AS BUILT RECORDS SHALL BE MAINTAINED ON PREMISES FOR A MINIMUM OF THREE YEARS PER CFC 901.6.2.

C. SCOPE OF WORK

1. INSTALL A FULLY AUTOMATIC, ADDRESSABLE, FIRE ALARM SYSTEM WITH AN EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM WITHIN ALL BUILDINGS IN SCOPE OF PROJECT AS DEFINED PER 2016 CFC 907.2.3 AND NFPA 72.
2. FIRE ALARM SYSTEM SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION IN ACCORDANCE WITH NFPA 72. THE SUPERVISING STATION SHALL BE U.L. LISTED AS UUFX (CENTRAL STATION) PER CFC 907.6.6.3.
3. FIRE SPRINKLER SYSTEM UTILIZED FOR HEAT DETECTION IN ALL ABOVE CEILING, ATTIC SPACES AND CONCEALED COMBUSTIBLE AREAS. PROVIDE HEAT DETECTORS WHERE FIRE SPRINKLERS HAVE BEEN OMITTED PER 2016 NFPA 72 AND 2016 NFPA 13.

COMPLETE FIRE ALARM SUBMITTAL

AUTOMATIC ADDRESSABLE FIRE ALARM SYSTEM WITH EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM

2.0 LIST OF CURRENT CALIFORNIA CODE OF REGULATIONS

APPLICABLE CODES AS OF January 1, 2017

- 2016 California Building Standards Administrative Code, Title 24 C.C.R.
- 2016 California Building Code (CBC), Title 24 C.C.R. (2015 International Building Code of the International Code Council, with California Amendments.)
- 2016 California Electrical Code (CEC), Title 24, C.C.R. (2014 National Electric Code of the National Fire Protection Assoc., NFPA)
- 2016 California Mechanical Code (CMC), Title 24, C.C.R. (2015 Uniform Mechanical Code of the International Association of Plumbing and Mechanical Officials, IAPMO.)
- 2016 California Plumbing Code (CPC), Part 5, Title 24, C.C.R. (2015 Uniform Plumbing Code of the International Association of Plumbing and Mechanical Officials, IAPMO.)
- 2016 California Energy Code (CEC), Title 24, C.C.R.
- 2016 California Historical Building Code, Title 24, C.C.R.
- 2016 California Fire Code (CFC), Title 24, C.C.R. (2015 International Fire Code of the International Code Council)
- 2016 California Existing Building Code, Title 24, C.C.R. (2015 International Existing Building Code of the International Code Council, with amendments)
- 2016 California Green Building Standards Code (CALGreen Code), Title 24, C.C.R.
- 2016 California Referenced Standards Code, Title 24, C.C.R.

LIST OF FEDERAL CODES AND STANDARDS (if applicable)

Americans with Disabilities Act (ADA), Title II or Title III

For Title II: Uniform Federal Accessibility Standards (UFAS) or ADA Standards for Accessible Design (Appendix A of 28 CFR Part 36.)

For Title III: ADA Standards for Accessible Design (Appendix A of 28 CFR Part 36.)

PARTIAL LIST OF APPLICABLE NFPA STANDARDS:

NFPA 13–Automatic Sprinkler Systems	2016 Edition
NFPA 14–Standpipes Systems (CA Amended)	2013 Edition
NFPA 17–Dry Chemical Extinguishing Systems	2013 Edition
NFPA 17a–Wet Chemical Systems	2013 Edition
NFPA 20–Stationary Pumps	2016 Edition
NFPA 22–Water tanks for Private Fire Protection	2013 Edition
NFPA 24–Private Fire Mains (CA Amended)	2016 Edition
NFPA 72–National Fire Alarm Code (CA Amended)	2016 Edition
NFPA 80–Fire Door and Other Opening Protectives	2016 Edition
NFPA 92–Standard for Smoke Control Systems	2015 Edition
NFPA 253–Critical Radiant Flux of Floor Covering Systems	2015 Edition
NFPA 2001–Clean Agent Fire Extinguishing Systems	2015 Edition
ICC 300 –ICC Standards on Bleachers, Folding and Telescoping Seating and Grand stands	2012 Edition
UL 38–Manual Operating Signal Boxes	2008 Edition
UL 268A–Smoke Detectors Duct Applications	2016 Edition
UL 300–Fire Testing of Fire Extinguishing Systems for Protection Of Restaurant Cooking Areas	2005 Edition
UL 464–Audibile Signal Appliances	2016 Edition
UL 521–Heat Detectors for Fire Protective Signaling Systems	1999 Edition
UL 864–Control Units for Fire Protective Signaling Systems	2014 Edition

Reference code section for NFPA Standards–2016 CBC (SFM) Chapter 35
See Chapter 35 for State of California amendments to NFPA Standards.

pjhm architects
www.pjhm.com

LICENSED ARCHITECT KENNETH J. PODANY NO. C28889 REN. 3/19 STATE OF CALIFORNIA

tk1sc COLLABORATIVE
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 www.tk1sc.com
Project Manager-Erin Hagger
tk1sc Job #: 2016-0734

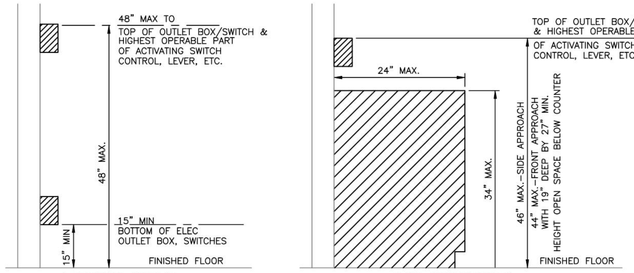
REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 Ex.12/31/2019 ELECTRICAL STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

FIRE ALARM INFORMATION

EFA-1.1

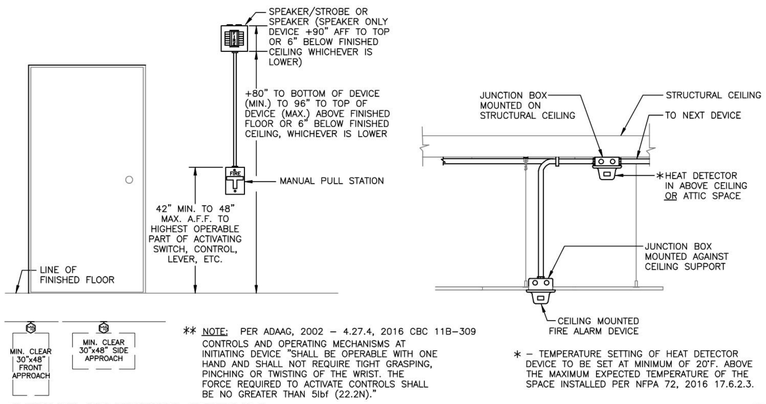


ALL DEVICE HEIGHTS DEPICTED SHALL BE MODIFIED AS REQUIRED BY GOVERNING BUILDING CODES. CONTRACTOR TO VERIFY/RECONCILE APPLICABLE CODE REQUIREMENTS AND ANY DEVICE HEIGHT REQUIREMENTS DEPICTED ON ARCHITECTURAL OR INTERIOR DESIGN PLANS & SPECIFICATIONS PRIOR TO DEVICE ROUGH-IN. CONFLICTS OR LACK OF MOUNTING HEIGHT SPECIFICITY ON THE ARCHITECTURAL OR INTERIOR DESIGN PLANS & SPECIFICATIONS SHALL BE CAUSE FOR THE CONTRACTOR TO ISSUE A FORMAL WRITTEN RFI FOR RESOLUTION. DEVICE MOUNTING HEIGHT CLARIFICATIONS/SPECIFICATIONS SHALL NOT RESULT IN AN ADDITIONAL COST TO THE OWNER – CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID.

MOUNTING HEIGHT OVER OBSTRUCTION DETAIL

SCALE: NTS

12



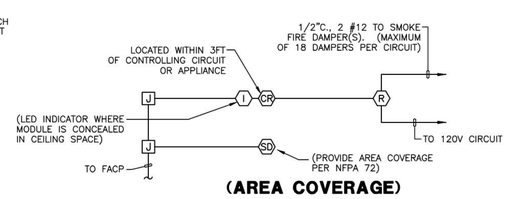
** NOTE: PER ADAAG, 2002 – 4.27.4, 2016 CBC 11B-309 CONTROLS AND OPERATING MECHANISMS AT INITIATING DEVICE "SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5lbf (22.2N)."

* – TEMPERATURE SETTING OF HEAT DETECTOR DEVICE TO BE SET AT MINIMUM OF 20°F. ABOVE THE MAXIMUM EXPECTED TEMPERATURE OF THE SPACE INSTALLED PER NFPA 72, 2016 17.6.2.3.

DEVICE MOUNTING DETAILS

SCALE: N.T.S.

11



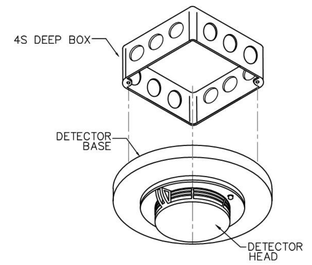
(AREA COVERAGE)

Note:
PER CMC 605.8, When the automatic activation of a smoke damper or a combination smoke–fire damper occurs, the HVAC system serving such dampers shall immediately shut down. ALL HVAC UNITS CONTAINING COMBINATION SMOKE FIRE DAMPERS AS PART OF THEIR DUCTING SYSTEM SHALL BE PROVIDED WITH SHUNT RELAYS AND DEVICES FOR IMMEDIATE SHUT DOWN UPON THE ACTIVATION / CLOSURE OF ASSOCIATED COMBINATION SMOKE FIRE DAMPERS.

SMOKE/FIRE DAMPER SCHEMATIC

SCALE: N.T.S.

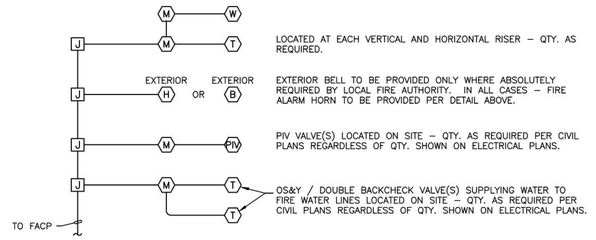
3



DETECTOR MOUNTING DETAIL

SCALE: N.T.S.

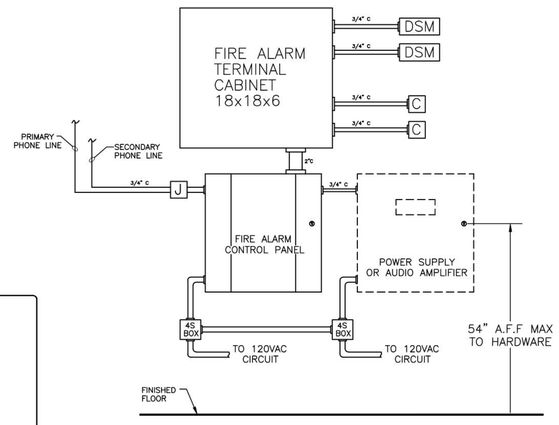
8



SPRINKLER SYSTEM CONNECTION SCHEMATIC

SCALE: N.T.S.

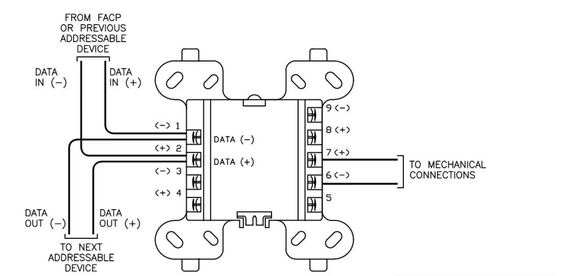
7



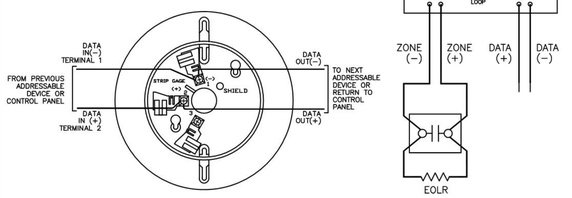
FIRE ALARM PANEL/POWER SUPPLY MOUNTING ELEVATION

SCALE: N.T.S.

6



CONTROL MODULE WIRING



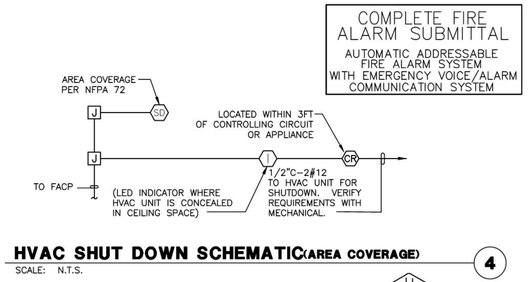
ADDRESSABLE SMOKE/HEAT DETECTOR

MANUAL PULL STATION

DEVICE WIRING DETAILS

SCALE: N.T.S.

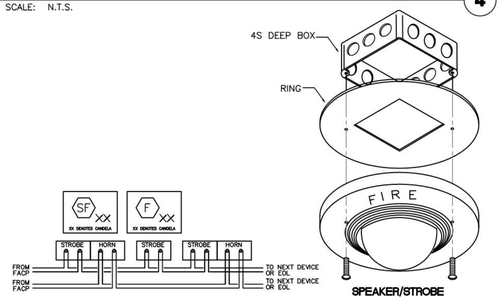
5



HVAC SHUT DOWN SCHEMATIC (AREA COVERAGE)

SCALE: N.T.S.

4

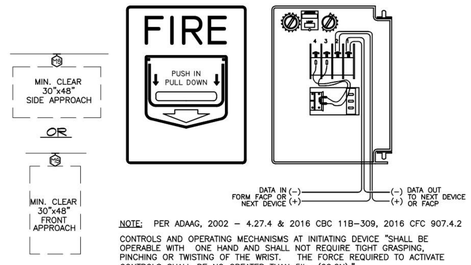


SPEAKER/STROBE

CEILING MTD. AUDIBLE/VISUAL

SCALE: N.T.S.

3



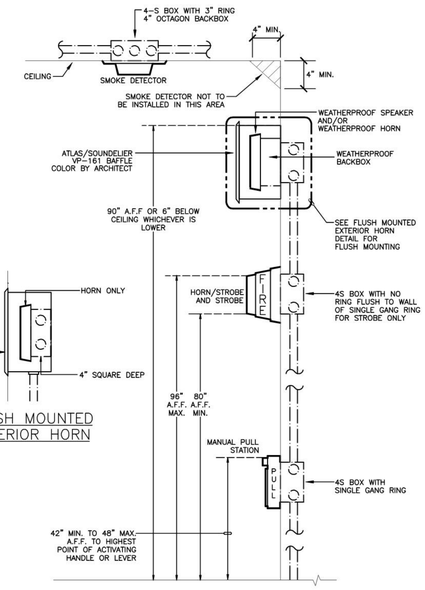
NOTE: PER ADAAG, 2002 – 4.27.4 & 2016 CBC 11B–309, 2016 CFC 907.4.2

CONTROLS AND OPERATING MECHANISMS AT INITIATING DEVICE "SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5lbs (22.2N)."

PULL STATION DETAIL

SCALE: N.T.S.

2



FLUSH MOUNTED EXTERIOR HORN

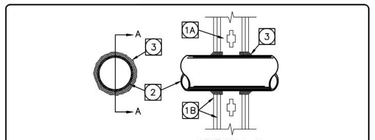
GENERAL NOTES:

1. THE ENTIRE LENS OF STROBE LIGHTS MUST BE BETWEEN 80" AND 96" ABOVE FLOOR FINISH. (2016 NFPA 72 18.5.5)
2. MANUAL FIRE ALARM BOXES SHALL BE INSTALLED IN ACCORDANCE WITH 2016 CFC SECTIONS 907.4 THROUGH 907.5.
3. WHEN APPLICABLE, MANUAL FIRE ALARM BOXES SHALL BE LOCATED NOT MORE THAN 5 FEET FROM THE ENTRANCE TO EACH EXIT. ADDITIONAL MANUAL FIRE ALARM BOXES SHALL BE LOCATED SO THAT TRAVEL DISTANCE TO THE NEAREST BOX DOES NOT EXCEED 200 FEET. (2016 CFC 907.4.2.1)

MOUNTING HEIGHT DETAIL

SCALE: N.T.S.

1



SECTION A–A

PENETRATION THRU GYPSUM BOARD WALL

NO SCALE

System No.W–L–1001
June 15, 2005
F Ratings – 1, 2, 3 and 4 Hr (See Items 2 and 3)
T Ratings – 0, 1, 2, 3, and 4 Hr (See Item 3)
L Rating At Ambient – less than 1 CFM/sq ft
L Rating At 400 F – less than 1 CFM/sq ft

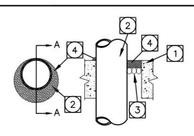
1. Wall Assembly – The 1, 2, 3 or 4 hr fire–rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs – Wall framing may consist of either wood studs (max 2 hr fire rated assemblies) 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 with nom 2 by 4 in. (51 by 102 mm) lumber end plates and cross braces. Steel studs to be min 3–5/8 in. (92 mm) wide by 1–3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC.
   B. Gypsum Board* – Nom 1/2 or 5/8 in. (13 or 16 mm) thick, 4 ft. (122 cm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and steel 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).
2. Through Penetrant – One metallic pipe, conduit or tubing installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit or tubing and perimeter of opening shall be min of 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 24 in. (610 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe – Nom 24 in. (610 mm) diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in. (305 mm) diam (or smaller) or Class 50 (or heavier) ductile iron pressure pipe.
   C. Conduit – Nom 6 in. (152 mm) diam (or smaller) steel conduit or nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing.
   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. Through Penetrating Product* – Flexible Metal Piping – The following types of steel flexible metal gas piping may be used:
      1. Nom 2 in. (51 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.
         OMEGA FLEX INC
      2. Nom 1 in. (25 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.
         GASTITE, DIV OF TITEFLEX
      3. Nom 1 in. (25 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.
         WARD MFG LLC
3. Fill, Void or Cavity Material* – Caulk or Sealant – Min 5/8. 1–1/4,1–7/8 and 2–1/2 in. (16, 32, 48 and 64 mm) thickness of caulk for 1, 2, 3 and 4 hr rated assemblies, respectively, applied within annulus, flush with both surfaces of wall. Min 1/4 in. (6 mm) diam bead of caulk applied to gypsum board/penetrant interface at point contact location on both sides of wall.
   The hourly F Rating of the firestop system is dependent upon the hourly fire rating of the wall assembly in which it is installed, as shown in the following table.
   The hourly T Rating of the firestop system is dependent upon the type or size of the pipe or conduit and the hourly fire rating of the wall assembly in which it is installed, as tabulated below:

MAX. PIPE OR CONDUIT DIAM., IN.	ANULAR SPACE IN.	F RATING HR	T RATING HR
1 (25)	0 TO 3/16	1 OR 2	0+, 1 OR 2
1 (25)	1/4 TO 1/2	3 OR 4	3 OR 4
4 (102)	0 TO 1/4	1 OR 2	0
6 (152)	1/4 TO 1/2	3 OR 4	0
12 (305)	3/16 TO 3/8	1 OR 2	0

+When copper pipe is used, T Rating is 0 hr.

3M COMPANY – CP 25WB+ or FB–3000 WT

*Bearing the UL Classification Marking



SECTION A–A

PENETRATION THRU CONCRETE WALL OR FLOOR

NO SCALE

System No. C–AJ–1044
March 15, 2007
F Ratings – 2, 3, and 4 Hr (See Items 2A and 4)
T Rating – 0 Hr
L Rating At Ambient – 2 CFM/sq ft
L Rating At 400 F – less than 1 CFM/sq ft
W Rating – Class I (See Item 4)

1. Floor or Wall Assembly – Lightweight or normal weight (100–150 pcf or 1600–2400 kg/m3) concrete. Except as noted in table under Item 4, min thickness of solid concrete floor or wall assembly is 4–1/2 in. (114 mm). Floor may also be constructed of any min 6 in. (152 mm) thick UL Classified hollow core Precast Concrete Units*. When floor is constructed of hollow core precast concrete units, packing material (Item 3) and caulk fill material (Item 4) to be installed symmetrically on both sides of floor, flush with floor surface. Wall assembly may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is in solid lightweight or normal weight concrete. Floor is 32 in. (813 mm). Max diam of opening in floor constructed of hollow–core precast concrete units is 7 in. (178 mm).

   See Concrete Blocks (CAZT) and Precast Concrete Units (CFTV) categories in the Fire Resistance Directory for names of manufacturers.

1A. Steel Sleeve (Optional, not shown) – Max 15 in. (381 mm) ID (or smaller) Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly. Sleeve may extend a max of 2 in. (51 mm) above top of floor or beyond either surface of wall. Max 16 in. (406 mm) ID (or smaller) min 0.026 (0.71 mm) wall thickness (or heavier) galvanized steel sleeve cast or grouted into floor or wall assembly. Sleeve may extend a max of 1/2 in. (13 mm) beyond either surface of floor or wall.

2. Through Penetrants – One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. Max annular space between pipe, conduit or tubing and edge of through opening or sleeve is dependent on the parameters shown in Item 4. Min annular space between pipe or conduit and edge of through opening is 0 in. (0 mm) (point contact). Pipe conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
   A. Steel Pipe – Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe – Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.
   C. Conduit – Nom 6 in. (152 mm) diam (or smaller) rigid steel conduit.
   D. Conduit – Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing.
   E. Copper – Tubing Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tube.
   F. Copper Pipe – Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

3. Packing Material – Polyethylene backer rod or nom 1 in. (25 mm) thickness of tightly–packed mineral wool batt or glass fiber insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of caulk fill material (Item 4).

3A. Forming Material* – As an alternate to the packing material in Item 3, nom 4in. (102mm) wide strips of min 1/2 in (13mm) thick compressible mat to be stacked to a thickness greater than the width of the annular space and compression–fitted, edge–first, to fill the annular space to a min 4in. (102mm) depth. As an option, the strips of a min 1/2 in (13mm) thick compressible mat may be folded in half, lengthwise, and stacked to a thickness greater than the width of the annular space and compression fitted, edge–first, to fill the annular space to a min 2 in. (51mm) depth. Top of forming material to be recessed from top surface of floor or from both surfaces of wall as necessary to accommodate the required thickness of caulk fill material.

   3M COMPANY – Fire Barrier Packing Material

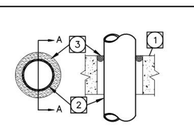
4. Fill,Void or Cavity Material* – Caulk or Sealant – Applied to fill the annular space flush with top surface of floor. In wall assemblies, required caulk thickness to be installed symmetrically on both sides of wall, flush with wall surface. At point contact location between penetrant and sleeve or between penetrant and concrete, a min 1/4 in. (6 mm) diam bead of caulk shall be applied at top surface of floor and both surfaces of wall. The hourly F Ratings and the min required caulk thicknesses are dependent upon a number of parameters, as shown in the following table:

MAX FLOOR OR WALL THKNS. IN.	NOM. PIPE TUBE OR CONDIT DIAM. IN.	MAX ANNULAR SPACE IN.	MIN CAULK THKNS IN.	F RATING HR
2–1/2(64)	1/2–12(13–305)	1–3/8(35)	1/2(13)	2
2–1/2(64)	1/2–12(13–305)	3–1/4(83)	1(25)	3
4–1/2(114)	1/2–6(13–152)	1–3/8(35)	1/4(6)a	2
4–1/2(114)	1/2–12(13–305)	1–1/4(32)	1/2(13)	3
4–1/2(114)	1/2–20(13–508)	2(51)	1(25)	3
4–1/2(114)	1/2–20(13–508)	2(51)	1(25)	3
4–1/2(114)	1/2–12(13–305)	3–1/4(83)	1(25)	3
4–1/2(114)	22–30(558–762)	2(51)	1(25)	3
5–1/2(140)	1/2–6(13–152)	1–3/8(35)	1(25)b	4

(a) Min 2 in. (51 mm) thickness of mineral wool batt insulation required in annular space.
(b) Min 1 in. (25 mm) thickness of mineral wool batt insulation required in annular space on both sides of floor or wall assembly. Min 1 in. (25 mm) thickness of caulk to be installed flush with each surface of floor or wall assembly.

3M COMPANY – CP 25WB+ caulk or FB–3000 WT sealant.
(Note: W Rating applies only when FB–3000 WT sealant is used.)

*Bearing the UL Classification Marking



SECTION A–A

PENETRATION THRU CONCRETE FLOOR

NO SCALE

SYSTEM NO C–AJ–1027
January 22, 2008
F RATING–3 HR
T RATING–0 HR

1. Floor or Wall Assembly – Min 4–1/2 in. thick lightweight or normal weight (100–150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of through opening is 12–1/4 in.

   See Concrete Blocks (CAZT) category in Fire Resistance Directory for names of manufacturers.

2. Through Penetrants – One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. Min annular space between pipe, conduit or tubing and edge of opening is 0 in. (point contact). Max annular space is dependent on pipe, conduit or tubing type and size as well as the F Rating of the system, as shown in the table below. 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 10 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Conduit – Nom 6 in. diam (or smaller) rigid steel conduit.
   C. Conduit – Nom 4 in. diam (or smaller) steel electrical metallic tubing or steel conduit.
   D. Copper – Tubing Nom 3 in. diam (or smaller) Type L (or heavier) copper tubing.
   E. Copper – Pipe Nom 3 in. diam (or smaller) Regular (or heavier) copper pipe.
   F. Iron Pipe – Nom 10 in. diam (or smaller) cast or ductile iron pipe.

PIPE CONDUIT OR TUBING TYPE	MAX. NOM. PIPE CONDUIT OR TUBING DIAM. IN.	F RATING HR	MAX ANNULAR SPACE, IN.
2–1/2	1/2–12	3	3/4
2–1/2	1/2–12	3	3/4
4–1/2	1/2–6	3	1–1/2
4–1/2	1/2–12	3	3/4
4–1/2	1/2–20	2	7/8

3. Fill,Void or Cavity Material* – Putty – Moldable putty material kneaded by hand and applied to fill annular space to a min depth of 1 in., flush with top surface of floor. In wall assemblies, required putty thickness to be installed symmetrically on both sides of wall.

3M COMPANY – MPS–2+

*Bearing the UL Classification Marking

THROUGH RATED WALL OR FLOOR PENETRATIONS (U.L. LISTINGS)

SCALE: N.T.S.

10

pjhm architects
www.pjhm.com
tk1sc COLLABORATIVE
11570 Pierce Street, Suite 160
Riverside, California 92505
951.289.4160 www.tk1sc.com
Project Manager-Erin Hagger
tk1sc Job #: 2016-0704

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-117236 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 03/25/2019

COMPLETE FIRE ALARM SUBMITTAL
AUTOMATIC ADDRESSABLE FIRE ALARM SYSTEM WITH EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM

LICENSED ARCHITECT ERIN HAGGER No. C28889 EXP. 3/19 STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 Exp 12/31/2019 ELECTRICAL STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

FIRE ALARM DETAILS

EFA-1.2

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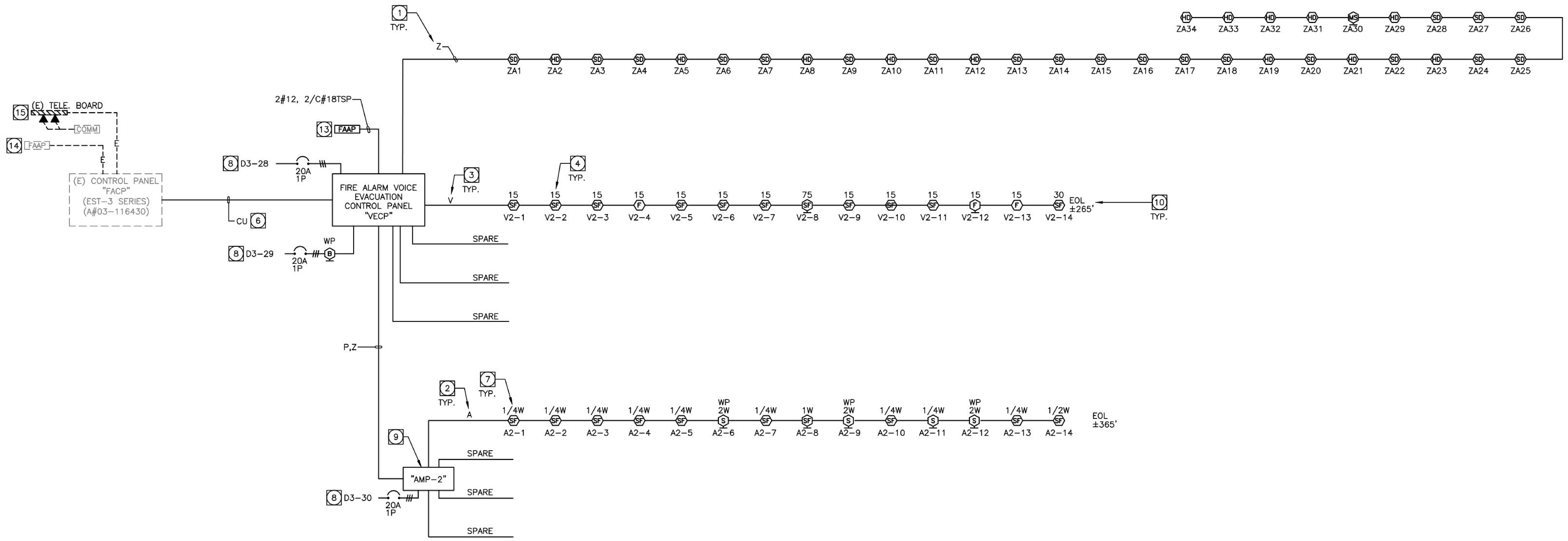
DATE: 03/25/2019



RISER DIAGRAM SPECIFIC NOTES:

1. 'Z' INDICATES ZONABLE/ADDRESSABLE CIRCUIT, PROVIDE 2#18 TWISTED PAIR PER CIRCUIT. SEE WIRE LEGEND FOR ADDITIONAL INFORMATION.
2. 'A' INDICATES AUDIBLE SPEAKER CIRCUIT, PROVIDE 2#16 TWISTED SHIELDED PAIR PER CIRCUIT. SEE WIRE LEGEND FOR ADDITIONAL INFORMATION.
3. 'V' INDICATES VISIBLE STROBE CIRCUIT, PROVIDE 2#12 PER CIRCUIT. SEE WIRE LEGEND FOR ADDITIONAL INFORMATION.
4. NUMBER INDICATES CANDELA RATING OF STROBE DEVICE.
5. CONTRACTOR TO PROVIDE RELAY MODULE FOR AUTONOMOUS SOUND SYSTEM. RELAY TO TURN "OFF" AUTONOMOUS SOUND SYSTEM DURING AN ALARM. CONTRACTOR TO VERIFY EXACT LOCATION OF SYSTEM ON SITE. A QUALIFIED PUBLIC ADDRESS CONTRACTOR IS TO BE UTILIZED TO INTERFACE FIRE ALARM SYSTEM WITH SOUND SYSTEM.
6. INTERCONNECT NEW FIRE ALARM CONTROL PANEL TO EXISTING FIRE ALARM CONTROL PANEL ON CAMPUS FOR SYSTEM INTERFACE. PROVIDE ALL NECESSARY RELAYS, MODULES, CABINETS, ETC. FOR A COMPLETE AND OPERABLE SYSTEM. REFER TO DETAIL 1, THIS SHEET.
7. INDICATES WATTAGE FOR SPEAKER.
8. PROVIDE 3/4"C. WITH 2#12, 1#12 GRD. TO 120V DEDICATED CIRCUIT FOR POWER. PROVIDE 20AMP, 1-POLE CIRCUIT BREAKER WITH APPROVED LOCK-ON DEVICE, RED INDICATOR AND IDENTIFIED AS "FIRE ALARM CONTROL CIRCUIT" (NFPA 72, 10.5.6.2). CONNECT AS REQUIRED. PROVIDE ALL REQUIRED MOUNTING HARDWARE. MATCH A.I.C. RATING OF DEVICES USED.
9. FIRE ALARM DIGITAL AUDIO AMPLIFIER (AMP). SEE SYMBOL LIST FOR ADDITIONAL INFORMATION.
10. INDICATES LENGTH OF WIRE IN FEET. SEE WIRING DIAGRAM FOR WIRE TYPES. SEE VOLTAGE DROP CALCULATIONS FOR PERCENT DROPPED AND ADDITIONAL INFORMATION.
11. CONNECT AS REQUIRED TO HVAC UNIT FOR UNIT SHUT-DOWN. REFER TO DETAIL 4, SHEET EFA-002 FOR ADDITIONAL REQUIREMENTS.
12. CONNECT AS REQUIRED TO COMBINATION SMOKE/FIRE DAMPER. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS. CONTRACTOR TO PROVIDE CONTROL RELAY MODULE AT ASSOCIATED HVAC UNIT FOR IMMEDIATE UNIT SHUT DOWN UPON DAMPER CLOSURE PER CMC 605.8. REFER TO DETAIL 3, SHEET EFA002 FOR ADDITIONAL REQUIREMENTS.
13. FIRE ALARM ANNUNCIATOR PANEL (FAAP), VERIFY WITH DISTRICT REPRESENTATIVE, A.H.J. AND ARCHITECT FOR EXACT LOCATION.
14. EXISTING FIRE ALARM ANNUNCIATOR PANEL (FAA), VERIFY WITH DISTRICT REPRESENTATIVE, A.H.J. AND ARCHITECT FOR EXACT LOCATION
15. EXISTING (2) DEDICATED PHONE LINES (LAND LINES) FOR FIRE ALARM SYSTEM MONITORING WITH EXISTING UDACT (UNIVERSAL DIGITAL ALARM COMMUNICATOR TRANSMITTER).

BATTERY SIZING CALCULATION

PROJECT NAME: TOM HAWKINS ES
PANEL LOCATION: ADMIN
DATE PERFORMED: February 28, 2019

VECP

QTY.	DEVICE NAME	STD-BY (AMPS)		ALARM (AMPS)	
1	CONTROL PANEL (MAIN BOARD)	0.1150	0.1150	0.1150	0.1150
0	PS10-4B POWER SUPPLY CARD	0.8800	0.0000	0.1690	0.0000
1	3-SDC1 DATA CARD (SLC)	0.1440	0.1440	0.2640	0.2640
1	3-CPU3	0.1550	0.1550	0.1650	0.1650
1	AUDIO AMPLIFIER	0.0620	0.0620	2.4800	2.4800
20	SMOKE DETECTOR	0.0002	0.0040	0.0005	0.0100
0	MULTI-CRITERIA DETECTOR	0.0002	0.0000	0.0007	0.0000
13	HEAT DETECTOR (ATTIC)	0.0003	0.0039	0.0003	0.0039
1	MANUAL PULLSTATION	0.0020	0.0020	0.0005	0.0005
11	15cd STROBE (CLG)	0.0000	0.0000	0.0550	0.6050
1	30cd STROBE (CLG)	0.0000	0.0000	0.0780	0.0780
0	75cd STROBE (CLG)	0.0000	0.0000	0.1530	0.0000
0	110cd STROBE (CLG)	0.0000	0.0000	0.1960	0.0000
1	15cd STROBE (WALL)	0.0000	0.0000	0.0590	0.0590
1	SYNC MODULE	0.0000	0.0000	0.0330	0.0330
0	CONTROL MODULE	0.0001	0.0000	0.0001	0.0000
1	75cd STROBE (WALL)	0.0000	0.0000	0.1530	0.1530
		0.0000	0.0000	0.0000	0.0000
		0.0000	0.0000	0.0000	0.0000
	TOTALS =		0.4859		3.9760

STAND-BY LOAD = 0.4859 ALARM LOAD = 3.9760 AMPS
STAND-BY TIME = 24 ALARM TIME = 15 / 60 HRS

STAND-BY = 11.66 ALARM = 0.99 AMP HRS

TOTAL = STAND-BY + ALARM
= 11.66 + 0.99
= 12.66 Ah (AMP HRS)
MULTIPLY BY DERATING FACTOR OF 1.25 = 15.82 Ah (AMP HRS)

MINIMUM BATTERY SIZE = 15.82 AMPERE HOURS
PROVIDE MIN. (2) 50.00 Ah 12VDC BATTERIES AS REQUIRED FOR 24VDC OPERATION

BATTERY SIZING CALCULATION

PROJECT NAME: TOM HAWKINS ES
PANEL LOCATION: ADMIN
DATE PERFORMED: February 28, 2019

AMP (70.7V)

QTY.	DEVICE NAME	STD-BY (AMPS)		ALARM (AMPS)	
	AUDIO AMPLIFIER (40W)	0.0620	0.0000	2.4800	0.0000
13	SPEAKER (1/4W)	0.0000	0.0000	0.0550	0.7150
	SPEAKER (1/2W)	0.0000	0.0000	0.0780	0.0000
1	SPEAKER (1W)	0.0000	0.0000	0.1530	0.1530
4	WP SPEAKER (2W)	0.0000	0.0000	0.1960	0.7840
1	SYNC MODULE	0.0000	0.0000	0.0330	0.0330
		0.0000	0.0000	0.0000	0.0000
		0.0000	0.0000	0.0000	0.0000
		0.0000	0.0000	0.0000	0.0000
	TOTALS =		0.0000		1.6850

STAND-BY LOAD = 0.0000 ALARM LOAD = 1.6850 AMPS
STAND-BY TIME = 24 ALARM TIME = 15 / 60 HRS

STAND-BY = 0.0000 ALARM = 0.4213 AMP HRS

TOTAL = STAND-BY + ALARM
= 0.00 + 0.42
= 0.42 Ah (AMP HRS)
MULTIPLY BY DERATING FACTOR OF 1.25 = 0.53 Ah (AMP HRS)

MINIMUM BATTERY SIZE = 0.53 AMPERE HOURS
PROVIDE (2) 7.00 Ah 12VDC BATTERIES AS REQUIRED FOR 24VDC OPERATION

VOLTAGE DROP CALCULATIONS

PROJECT NAME TOM HAWKINS ES

DEVICE	UL MAX. CURRENT AMPS	NO	AUDIBLE CIRCUIT V1	NO	AUDIBLE CIRCUIT V2	NO	AUDIBLE CIRCUIT V3	NO	AUDIBLE CIRCUIT V4
STROBE (WALL) 15 CD	0.059	1	0.059		0.000		0.000		0.000
STROBE (CEILING) 15 CD	0.055	11	0.605		0.000		0.000		0.000
STROBE (CEILING) 30 CD	0.078	1	0.078		0.000		0.000		0.000
STROBE (WALL) 75 CD	0.153	1	0.153		0.000		0.000		0.000
STROBE (CLG) 110 CD	0.196		0.000		0.000		0.000		0.000
			0.000		0.000		0.000		0.000
TOTAL CURRENT ON CIRCUIT			0.895 AMPS		0.000 AMPS		0.000 AMPS		0.000 AMPS
TOTAL WIRE LENGTH IN FEET			265						
% VOLTAGE DROP			**3.85**		**0.00**		**0.00**		**0.00**
WIRE SIZE			#12		#12		#12		#12
CIRCUIT LOCATION			VECP		VECP		VECP		VECP
VOLTS DROPPED			**0.78**		**0.00**		**0.00**		**0.00**

VOLTAGE DROP CALCULATIONS

PROJECT NAME: TOM HAWKINS ES

DEVICE	UL MAX. CURRENT AMPS	NO	AUDIBLE CIRCUIT A1	NO	AUDIBLE CIRCUIT A2	NO	AUDIBLE CIRCUIT SPARE	NO	AUDIBLE CIRCUIT SPARE
SPEAKER 1/4W (INTERIOR)	0.004	9	0.036		0.000		0.000		0.000
SPEAKER 1/2W (INTERIOR)	0.007	1	0.007		0.000		0.000		0.000
SPEAKER 1W (INTERIOR)	0.014	1	0.014		0.000		0.000		0.000
WP SPEAKER 2W (EXTERIOR)	0.028	3	0.084		0.000		0.000		0.000
			0.000		0.000		0.000		0.000
			0.000		0.000		0.000		0.000
TOTAL CURRENT ON CIRCUIT			0.141 AMPS		0.000 AMPS		0.000 AMPS		0.000 AMPS
TOTAL WIRE LENGTH IN FEET			365						
% VOLTAGE DROP			**2.11**		**0.00**		**0.00**		**0.00**
WIRE SIZE			#16		#16		#16		#16
CIRCUIT LOCATION			AMP-D		AMP-D		AMP-D		AMP-D
VOLTS DROPPED			**0.43**		**0.00**		**0.00**		**0.00**

BATTERY CALCULATIONS GENERAL NOTE:

1. CONTRACTOR TO PROVIDE BATTERY MANUFACTURER DATE STAMP PER NFPA 72. TYPICAL FOR ALL CONTROL PANELS, POWER SUPPLY PANELS AND AUDIO AMPLIFIER PANELS.

VOLTAGE DROP CALCULATIONS GENERAL NOTES:

1. THE LISTED MANUFACTURE OPERATING VOLTAGE RANGE FOR EQUIPMENT AND DEVICES ARE AS FOLLOWS:

   DEVICES = 16 – 33 VDC (STROBES), 70.7 VDC (SPEAKERS)
   EQUIPMENT = +24VDC FILTERED, REGULATED
   BATTERY = 20.4 VDC END OF USEFUL LIFE PER NFPA 72 HANDBOOK AND UL 864.

2. VOLTAGE DROP PERCENT FORMULA:

$$\frac{\text{WIRE LENGTH} \times \text{TOTAL CURRENT AMPS} \times 21.6}{\text{CIRCULAR MILS}} \times \frac{100}{20.4}$$

   21.6 = CONSTANT (RESISTANCE OF CONDUCTOR)

FIRE ALARM GENERAL NOTES:

1. NOTIFICATION DEVICES IN ROOMS CONTAINING (2) OR MORE AUDIBLE AND/OR (2) OR MORE VISUAL DEVICES SHALL BE SYNCHRONIZED PER N.F.P.A. 72, 2016 EDITION (WITH CALIFORNIA AMENDMENTS) THIS SHALL INCLUDE AUDIBLE AND VISUAL DEVICES LOCATED IN ADJACENT/ADJOINING SPACES.
2. DO NOT DEVIATE FROM CONDUIT RUNS AS SHOWN ON FLOOR PLANS WITHOUT PRIOR APPROVAL FROM SYSTEM SUPPLIER / ENGINEER. FACTORS SUCH AS EXCESSIVE VOLTAGE DROP, ADDITIONAL PARTS, ENGINEERING, ETC. THAT ARE A RESULT OF CONDUIT RUN DEVIATIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
3. DETECTORS SHALL NOT BE LOCATED IN A DIRECT AIR-FLOW, NOR CLOSER THAN 3 FEET (915 mm) FROM ANY AIR SUPPLY DIFFUSER.
4. THE AUDIBLE ALARM NOTIFICATION APPLIANCES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15 dBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5 dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING DURATION OF AT LEAST 60 SECONDS, WHICH IS GREATER, IN EVERY OCCUPIED SPACE WITHIN THE BUILDING. THE MINIMUM SOUND PRESSURE LEVEL SHALL BE 60 dBA PER CFC 907.10.2.
5. THE FIRE ALARM EVACUATION SIGNAL SHALL BE THE STANDARD THREE-PULSE TEMPORAL PATTERN PER THE "EXCEPTION" OF THE 2016 CALIFORNIA BUILDING CODE 907.5.2.1.3 ANSI S3.41.
6. THE EXISTING CAMPUS FIRE ALARM SYSTEM SHALL BE MAINTAINED AND OPERATIONAL AT ALL TIMES DURING ALTERATIONS AND CONSTRUCTION. WHEN PORTIONS OF THE SYSTEM REQUIRE ALTERATIONS, THE REMAINDER OF THE SYSTEM SHALL BE KEPT IN SERVICE. IF NECESSARY TO SHUT DOWN ENTIRE FIRE ALARM SYSTEM, CONTRACTOR SHALL PROVIDE A FIRE WATCH FOR ALL OCCUPIED AREAS OF WORK WHERE THE REQUIRED FIRE ALARM SYSTEM IS OUT OF SERVICE FOR THE DURATION OF THE SYSTEM OUTAGE. FIRE WATCH AND SYSTEM/EQUIPMENT IDENTIFICATIONS SHALL BE PER 2016 CFC 901.7. LOCAL FIRE AUTHORITY SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF ANY SHUT DOWN.
7. EMERGENCY VOICE/ALARM COMMUNICATION SYSTEMS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 72. THE OPERATION OF ANY AUTOMATIC FIRE DETECTOR, SPRINKLER WATERFLOW DEVICE OR MANUAL FIRE ALARM BOX SHALL AUTOMATICALLY SOUND AN ALERT TONE FOLLOWED BY VOICE INSTRUCTIONS GIVING APPROVED INFORMATION AND DIRECTIONS FOR A GENERAL OR STAGED EVACUATION IN ACCORDANCE WITH THE FIRE SAFETY EVACUATION PLANS REQUIRED BY SECTION 404 PER CBC/CFC 907.5.2.2
8. EMERGENCY VOICE/ALARM COMMUNICATION SYSTEMS SHALL HAVE THE CAPABILITY TO BROADCAST LIVE VOICE MESSAGES BY PAGING ZONES ON A SELECTIVE AND ALL-CALL BASIS PER CBC/CFC 907.5.2.2.2.
9. EMERGENCY VOICE/ALARM COMMUNICATION SYSTEMS SHALL BE PROVIDED WITH AN APPROVED EMERGENCY POWER SOURCE PER CBC/CFC 907.5.2.2.5.

CENTRAL STATION MONITORING COMPANY INFORMATION
SSD SYSTEMS
1740 N LEMON STREET
ANAHEIM, CA 92801

PHONE: (714)449-9900
FAX: (714)449-9595

CA ALARM LICENSE: ACO-1434
CA CONTRACTOR LICENSE: 557497
UL FILE NUMBER: S1545

COMPLETE FIRE ALARM SUBMITTAL
AUTOMATIC ADDRESSABLE FIRE ALARM SYSTEM WITH EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM

pjhm architects
www.pjhm.com

tk1sc COLLABORATIVE

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

FIRE ALARM RISER DIAGRAM & CALCULATIONS

EFA-1.3

A01	RECEPTION/WAITING	A09	TEACHER PREP ROOM
A02	OFFICE	A10	STORAGE ROOM
A03	PRINCIPAL	A11	RESTROOM
A04	ASSISTANT PRINCIPAL	A12	OFFICE
A05	RESTROOM	A13	OFFICE
A06	NURSE	A14	TEACHER WORKROOM
A07	STORAGE/WORKROOM		
A08	CONFERENCE		

ROOM SCHEDULE

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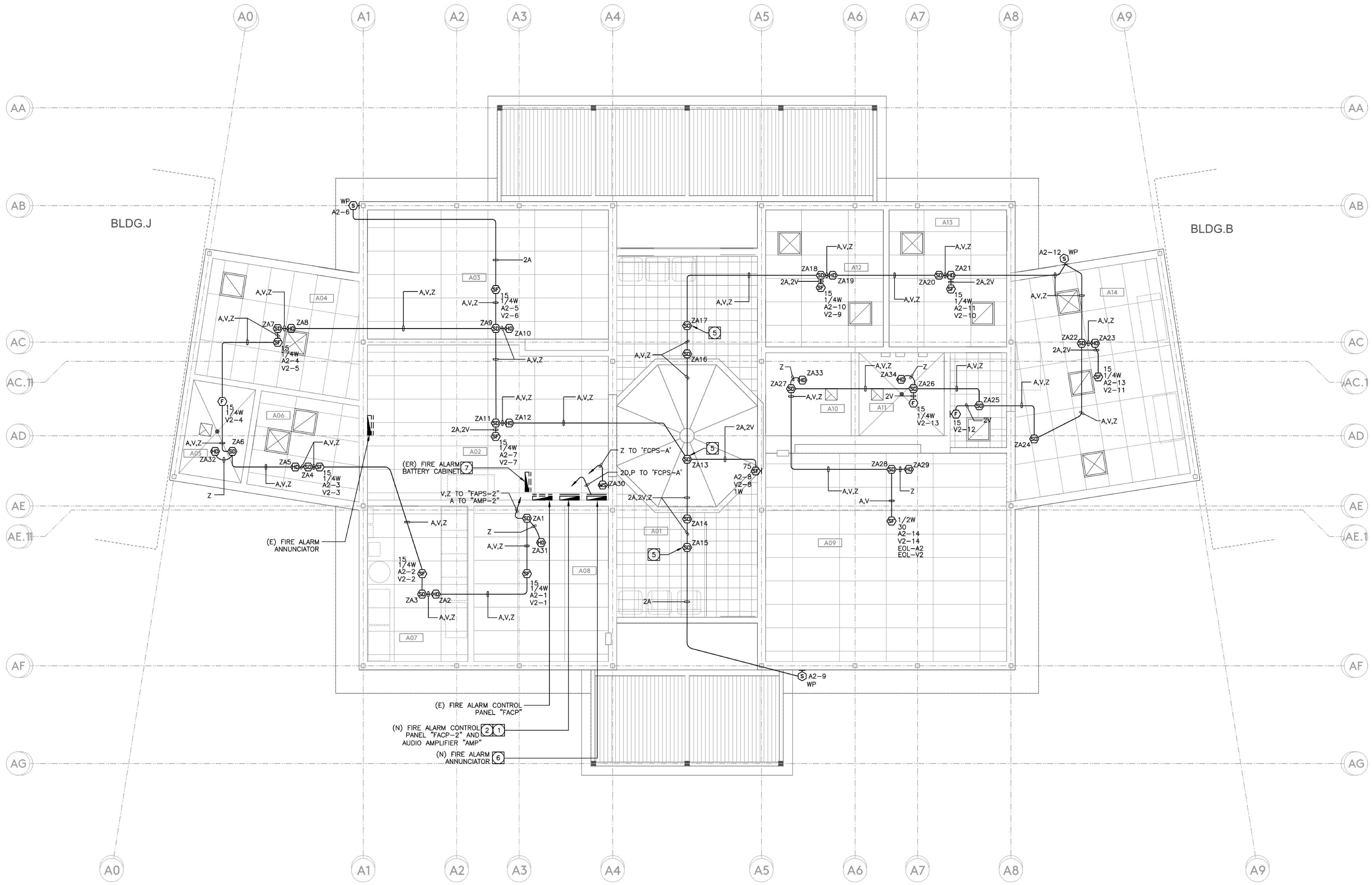
DATE: 03/25/2019

PLAN NOTES:

1. INTERCONNECT NEW FIRE ALARM CONTROL PANEL TO EXISTING FIRE ALARM CONTROL PANEL ON CAMPUS FOR SYSTEM INTERFACE. PROVIDE ALL NECESSARY RELAYS, MODULES, CABINETS, ETC. FOR A COMPLETE AND OPERABLE SYSTEM. REFER TO DETAIL 1, SHEET EFA–1.3.
2. FIRE ALARM CONTROL PANEL "VECP". PROVIDE 2#12, 3/4"C. TO BUILDING 120V PANELBOARD AS REQUIRED FOR POWER. PROVIDE 20A/1P CIRCUIT BREAKER WITH LOCK–ON DEVICE IN BUILDING PANELBOARD. MATCH RATING OF EXISTING DEVICES. PROVIDE ALL REQUIRED MOUNTING HARDWARE.
3. CONNECT AS REQUIRED TO HVAC UNIT MOUNTED ON ROOF FOR UNIT SHUT–DOWN. REFER TO DETAIL 4, SHEET EFA1.2 FOR ADDITIONAL REQUIREMENTS.
4. CONNECT AS REQUIRED TO COMBINATION SMOKE/FIRE DAMPER. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS. CONTRACTOR TO PROVIDE CONTROL RELAY MODULE AT ASSOCIATED HVAC UNIT FOR IMMEDIATE UNIT SHUT DOWN UPON DAMPER CLOSURE PER CMC 605.8.
5. WALL MOUNT SMOKE DETECTOR TO SKYLIGHT CAVITY.
6. INTERCONNECT NEW FIRE ALARM ANNUNCIATOR TO EXISTING FIRE ALARM ANNUNCIATOR ON CAMPUS FOR SYSTEM INTERFACE. PROVIDE ALL NECESSARY DEVICES. FOR A COMPLETE AND OPERABLE SYSTEM. REFER TO DETAIL 1, SHEET EFA–1.3.
7. RELOCATE EXISTING FIRE ALARM BATTERY CABINET ABOVE EXISTING FIRE ALARM PANEL "FACP".



FIRE ALARM PLAN GENERAL NOTES:

1. NOTIFICATION DEVICES IN ROOMS CONTAINING (2) OR MORE AUDIBLE AND/OR (2) OR MORE VISUAL DEVICES SHALL BE SYNCHRONIZED PER N.F.P.A. 72, 2016 EDITION (WITH CALIFORNIA AMENDMENTS) THIS SHALL INCLUDE AUDIBLE AND VISUAL DEVICES LOCATED IN ADJACENT/ADJOINING SPACES.
2. DO NOT DEVIATE FROM CONDUIT RUNS AS SHOWN ON FLOOR PLANS WITHOUT PRIOR APPROVAL FROM SYSTEM SUPPLIER / ENGINEER. FACTORS SUCH AS EXCESSIVE VOLTAGE DROP, ADDITIONAL PARTS, ENGINEERING, ETC. THAT ARE A RESULT OF CONDUIT RUN DEVIATIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
3. DETECTORS SHALL NOT BE LOCATED IN A DIRECT AIR–FLOW, NOR CLOSER THAN 3 FEET (915 mm) FROM ANY AIR SUPPLY DIFFUSER.
4. THE AUDIBLE ALARM NOTIFICATION APPLIANCES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15 dBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5 dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER, IN EVERY OCCUPIABLE SPACE WITHIN THE BUILDING. (2016 CFC 907.5.2.1.1)
5. THE VOICE/ALARM COMMUNICATION SYSTEM VOICE MESSAGE SHALL COMPLY WITH NFPA 72 SECTIONS 18.4 AND 24.4 FOR GENERAL REQUIREMENTS, INTELLIGIBILITY, AUDIBILITY, MESSAGE PRIORTY, TONES, ETC.
6. REFER TO ARCHITECTURAL EXTERIOR ELEVATIONS FOR PRECISE OUTLET LOCATIONS.
7. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING MOUNTED DEVICES.
8. IF SHIELDED WIRE IS USED, THE FOLLOWING MUST BE OBSERVED.
   A. METALLIC CONTINUITY OF THE SHIELD MUST BE MAINTAINED AND INSULATED THROUGHOUT THE ENTIRE LENGTH OF THE CABLE.
   B. THE ENTIRE LENGTH OF THE CABLE MUST HAVE A RESISTANCE GREATER THAN 1 MEGOHM TO EARTH.
9. ALL PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROTECTED FROM THE SPREAD OF FIRE WITH AN APPROVED FIRE STOP SYSTEM EQUAL TO OR GREATER THAN THE FIRE RATING OF THE STRUCTURE / SURFACE BEING PENETRATED AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER LAB TESTING CRITERIA. APPROVED TYPES OF MATERIALS SHALL BE IDENTIFIED WITHIN THE FIRE ALARM SECTION OF THE PROJECT SPECIFICATIONS.
10. A SYSTEM GROUND MUST BE PROVIDED FOR EARTH DETECTION AND LIGHTNING PROTECTION DEVICES. THIS CONNECTION SHALL BE MADE TO AN APPROVED DEDICATED EARTH CONNECTION PER CEC, ARTICLE 250.
11. WIRING IN DUCTS, PLENUMS AND OTHER AIR HANDLING SPACES MUST BE INSTALLED IN ACCORDANCE WITH CEC 2016.
12. UNDERGROUND WIRING MUST BE FREE OF ALL WATER.
13. ALL FIRE ALARM SYSTEM CONDUCTORS SHALL BE RUN IN A DEDICATED FIRE ALARM CONDUIT SYSTEM.
14. WHERE A DETECTOR IS INDICATED TO BE INSTALLED ABOVE THE CEILING AND NO ACCESS TO THE CEILING SPACE EXISTS, THE ELECTRICAL CONTRACTOR SHALL FURNISH ACCESS PANELS. THE DETECTOR SHALL BE EASILY ACCESSIBLE AND THE LOCATION OF THE DETECTOR SHALL BE CLEARLY MARKED.
15. COORDINATE ALL FIRE ALARM DEVICES, ESPECIALLY REMOTE L.E.D.'S FOR DUCT SMOKE DETECTORS, WITH ARCHITECT PRIOR TO ROUGH–IN.
16. FIRE ALARM SYSTEM UTILIZES A COMPLETE COVERAGE, FULLY AUTOMATIC SYSTEM. PROVIDE RELAY MODULE(S) AT FATC/FACP LOCATIONS FOR CONTROL OF HVAC SHUT DOWN, SMOKE/FIRE DAMPER CLOSURE AND DOOR HOLD RELEASES.
17. WHERE NEW DEVICES (AND ASSOCIATED CONDUIT) CANNOT PHYSICALLY BE MOUNTED CONCEALED IN WALLS, RUN IN PANDUIT SURFACE RACEWAY/WIREWAY (AND DEVICES SHALL BE MOUNTED ON SURFACE OUTLET BOXES). REFER TO SPECIFICATIONS. PROVIDE SIZE OF RACEWAY TO ACCOMMODATE THE REQUIRED CONDUCTORS. WHERE CONDUIT IS INDICATED, PROVIDE SURFACE RACEWAY WITH AN EQUAL CROSS SECTION TO THE DIAMETER OF THE CONDUIT INDICATED.
18. DETECTOR SENSITIVITY SHALL BE TESTED USING MANUFACTURER'S CALIBRATED SENSITIVITY INSTRUMENT OR OTHER CALIBRATED TESTING METHOD. (CFC 907.8.3)

NOTE:
WHERE A DETECTOR IS INDICATED TO BE INSTALLED ABOVE THE CEILING AND NO ACCESS TO THE CEILING SPACE EXISTS, THE ELECTRICAL CONTRACTOR SHALL FURNISH ACCESS PANELS. THE DETECTOR SHALL BE EASILY ACCESSIBLE AND THE LOCATION OF THE DETECTOR SHALL BE CLEARLY MARKED.

ADMINISTRATION MODERNIZATION - FIRE ALARM PLAN

SCALE: 1/4"=1'-0"

COMPLETE FIRE ALARM SUBMITTAL
AUTOMATIC ADDRESSABLE FIRE ALARM SYSTEM WITH EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM

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LICENSED ARCHITECT KENNETH J. PODANY No. C28889 REN. 3/19 STATE OF CALIFORNIA

tk1sc COLLABORATIVE
11870 Pierce Street, Suite 160
Riverside, California 92505
951.269.4160 www.tk1sc.com
Project Manager-Erin Hagger
tk1sc Job #: 2016-0734

REGISTERED PROFESSIONAL ENGINEER No. E15610 Exp. 12/31/2019 ELECTRICAL STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

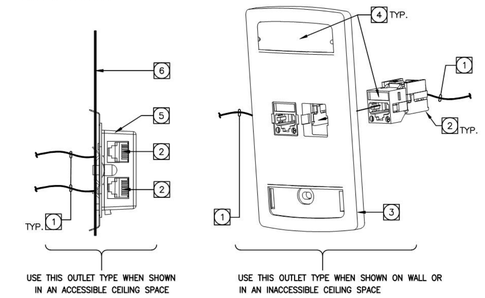
ADMINISTRATION MODERNIZATION FIRE ALARM PLAN

EFA-2.1

WHERE THE FOLLOWING SYMBOLS ARE INDICATED ON THE ELECTRICAL DRAWINGS ARCHITECTURAL DRAWINGS AND/OR STRUCTURED CABLING SYSTEM DRAWINGS:

WAP

THE FOLLOWING SHALL BE PROVIDED, AS DEPICTED IN THE FOLLOWING DIAGRAMMATIC CONNECTIVITY DETAIL.

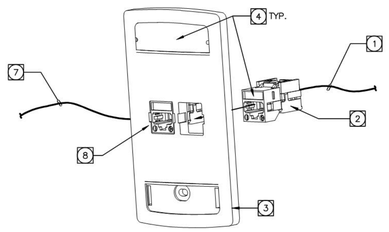


WIRELESS ACCESS POINT LOCATION 4

SCALE: N.T.S.

WHERE THE FOLLOWING SYMBOLS ARE INDICATED ON THE ELECTRICAL DRAWINGS ARCHITECTURAL DRAWINGS AND/OR TECHNOLOGY SYSTEM DRAWINGS:

THE FOLLOWING SHALL BE PROVIDED, AS DEPICTED IN THE FOLLOWING DIAGRAMMATIC CONNECTIVITY DETAIL.



TELEPHONE AND DATA DEVICE 1

SCALE: N.T.S.

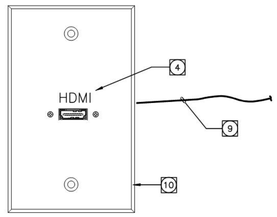
FACEPLATE DETAIL KEY NOTES:

1. PROVIDE (1) CAT-6, 4 PAIR UTP DATA CABLE(S), COLOR OF CABLE(S) SHALL BE BLUE. TERMINATE STATION END(S) IN STATION CONNECTOR(S) PER SPECIFICATIONS. TERMINATE RACK END(S) ON PATCH PANEL(S) AT MDF PER SPECIFICATIONS.
2. PROVIDE CAT-6, 4-PAIR DATA CONNECTOR PER SPECIFICATIONS. COLOR PER DISTRICT STANDARDS.
3. PROVIDE FACEPLATE PER SPECIFICATIONS. FACEPLATE MATERIAL AND FINISH SHALL MATCH ADJACENT/NEARBY POWER FACEPLATES.
4. PROVIDE FACEPLATE LABELING PER SPECIFICATIONS. SEE SPECIFICATIONS FOR ALL OTHER LABELING REQUIREMENTS.
5. PROVIDE DUAL PORT, SURFACE MOUNTED BOX (LEVITON #4SO89-2WP). PROVIDE PLENUM-RATED BOX IN PLENUM-RATED SPACES, MOUNTED TO IN-CEILING BRACKET WITH SPRING WIRE MOUNT (LEVITON #49223-CBC OR EQUAL) WHERE APPLICABLE. SUPPORT SLACK LOOP NEAR WAP SUSPENSION POINT.
6. INSTALL DEDICATED SUSPENDED CEILING WIRE/HANGAR OR SUPPORT ROD/ROD HANGAR DIRECTLY TO STRUCTURAL CEILING ABOVE TO SUPPORT WAP 2-PORT HOUSING.
7. PROVIDE (1) CAT-6, 4 PAIR UTP DATA CABLE(S), COLOR OF CABLE(S) SHALL BE WHITE. TERMINATE STATION END(S) IN STATION CONNECTOR(S) PER SPECIFICATIONS. TERMINATE RACK END(S) ON 66M-50 SPLIT BLOCK AT TELEPHONE PBX SYSTEM HEADEND.
8. PROVIDE CAT-6, 4-PAIR TELEPHONE CONNECTOR. COLOR PER DISTRICT STANDARDS.
9. PROVIDE (1) HDMI CABLE. CONNECT BOTH ENDS INTO HDMI FACEPLATES.
10. PROVIDE 1-GANG FACEPLATE WITH HDMI CONNECTOR. FACEPLATE MATERIAL AND FINISH SHALL MATCH ADJACENT/NEARBY POWER FACEPLATES.

WHERE THE FOLLOWING SYMBOLS ARE INDICATED ON THE ELECTRICAL DRAWINGS ARCHITECTURAL DRAWINGS AND/OR TECHNOLOGY SYSTEM DRAWINGS:

AV

CONNECTIVITY DETAIL. THE FOLLOWING SHALL BE PROVIDED, AS DEPICTED IN THE FOLLOWING DIAGRAMMATIC

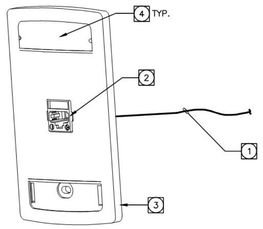


1 PORT HDMI DEVICE 5

SCALE: N.T.S.

WHERE THE FOLLOWING SYMBOLS ARE INDICATED ON THE ELECTRICAL DRAWINGS ARCHITECTURAL DRAWINGS AND/OR TECHNOLOGY SYSTEM DRAWINGS:

CONNECTIVITY DETAIL. THE FOLLOWING SHALL BE PROVIDED, AS DEPICTED IN THE FOLLOWING DIAGRAMMATIC



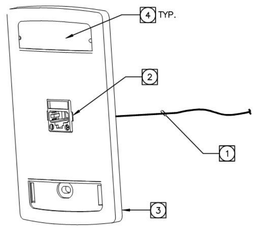
1 PORT DATA DEVICE 2

SCALE: N.T.S.

WHERE THE FOLLOWING SYMBOLS ARE INDICATED ON THE ELECTRICAL DRAWINGS ARCHITECTURAL DRAWINGS AND/OR TECHNOLOGY SYSTEM DRAWINGS:

W

THE FOLLOWING SHALL BE PROVIDED, AS DEPICTED IN THE FOLLOWING DIAGRAMMATIC CONNECTIVITY DETAIL.



1-PORT VOICE DEVICE 3

SCALE: N.T.S.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 02-117236 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 03/25/2019

pjhm architects
www.pjhm.com

LICENSED ARCHITECT
KEITH T. POPE
No. C28889
EXP. 3/19
STATE OF CALIFORNIA

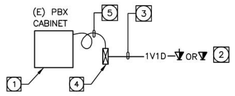
tk1sc COLLABORATIVE
15170 Pierce Street, Suite 160
Riverside, California 92504
951.299.4160 www.tk1sc.com
Project Manager-Erin Hopper
tk1sc Job #: 2016-0734

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
Ex.12/31/2019
ELECTRICAL
STATE OF CALIFORNIA

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION
JEFFERSON SCHOOL DISTRICT

LOW VOLTAGE
FACEPLATE DETAILS

T-0.1



TELEPHONE PBX SYSTEM BLOCK DIAGRAM KEY NOTES:

1. EXISTING CORTELCO MILLENNIUM PBX TELEPHONE SYSTEM.
2. COMBINATION PHONE/DATA DEVICE. TERMINATE CAT-6 "VOICE" CABLE AT WALL MOUNT 66M-BLOCK LOCATED AT TELEPHONE PBX SYSTEM HEAD END. REFER TO LAN SYSTEM DIAGRAM FOR TERMINATION OF DATA CABLE. REFER TO FACEPLATE DETAILS FOR MORE INFORMATION.
3. CATEGORY-6 UTP 4-PAIR CABLE(S). CABLE QUANTITIES PER FACEPLATE DETAILS AND CABLE SCHEDULE SHOWN ON LAN SYSTEM BLOCK DIAGRAM.
4. WALL MOUNT 66M-50 SPLIT BLOCK(S) WITH 89B STAND-OFF BRACKET(S). QUANTITY AS REQUIRED TO TERMINATE ALL TELEPHONE CABLES ON THIS PROJECT. INSTALL ON EXISTING TELECOM BACKBOARD AT PBX SYSTEM CROSS-CONNECT FIELD.
5. PROVIDE CROSS-CONNECTION JUMPERS AS MAY BE REQUIRED BY OWNER. COORDINATE CONNECTIONS WITH OWNER IN FIELD.

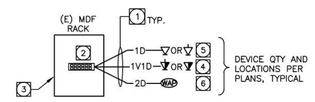
TELEPHONE PBX SYSTEM NOTES:

1. CONTRACTOR'S WORK INCLUDES MODIFYING EXISTING TELEPHONE PBX SYSTEM AND PROVIDING ADDITIONAL COMPONENTS, OUTLETS, TERMINATION BLOCKS, MATERIAL, WIRING, CONDUIT/SLEEVE FIRE STOPPING, LABOR, EQUIPMENT, SUPPLIES, LABELS, TESTING, ACCESSORIES, AND TRAINING REQUIRED FOR A FULLY OPERATIONAL SYSTEM.
2. SEE LAN SYSTEM BLOCK DIAGRAM FOR ADDITIONAL HORIZONTAL CABLING AND DEVICE REQUIREMENTS.
3. DRAWINGS AND LAYOUTS ARE PRIMARILY DIAGRAMMATIC IN NATURE. CONTRACTOR IS RESPONSIBLE FOR FINAL FOOTAGES AND EXACT LOCATIONS.
4. CONTRACTOR SHALL VERIFY QUANTITIES AND LOCATIONS WITH PLAN DRAWINGS AND SPECIFICATIONS, AND WITH DISTRICT PRIOR TO ROUGH-IN.
5. ALL CABLING SHALL BE RATED FOR THE ENVIRONMENT FOR WHICH IT IS INSTALLED, PER CALIFORNIA ELECTRICAL CODE AND TIA-568-C.
6. WHEN EXISTING DEVICE IS CALLED OUT ON PLAN DRAWINGS AS "ER" (TO BE RELOCATED), CONTRACTOR SHALL COMPLETELY REMOVE DEVICE, BACK BOX AND WIRING, AND REINSTALL/RECONNECT SAME AT "R" (RELOCATED) LOCATION ON PLAN DRAWINGS. PROVIDE NEW WIRING AS MAY BE REQUIRED. CONTRACTOR SHALL INCLUDE ALL REQUIRED SURFACE MOUNT BACK BOX AND RACEWAY, ETC.
7. CONTRACTOR SHALL CROSS CONNECT ALL CABLE PAIRS AT PBX LOCATION AS REQUIRED BY OWNER. SEE OWNER FOR CROSS CONNECT REQUIREMENTS.
8. LABEL ALL CABLES, CROSS CONNECT BLOCKS, ETC. WITH MACHINE GENERATED LABELS PER SPECIFICATIONS. HAND WRITTEN LABELS ARE PROHIBITED. PROVIDE SAMPLE OF ALL LABELS FOR OWNER'S REVIEW PRIOR TO INSTALLATION.
9. PLASTIC TIE-WRAPS (ZIP TIES) ARE PROHIBITED. CONTRACTOR SHALL USE VELCRO-TYPE HOOK AND LOOP FASTENERS TO SECURE ALL CABLE BUNDLES ON BACKBOARDS, LADDER TRAY, ETC.
10. ANY PENETRATIONS THROUGH FIRE-RATED WALLS SHALL BE SEALED BY THE CONTRACTOR AS REQUIRED BY THE CALIFORNIA ELECTRICAL CODE AND AS DIRECTED BY, AND TO THE SATISFACTION OF, THE OWNER'S PROJECT MANAGER.
11. REFERENCE CABLING SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

TELEPHONE PBX SYSTEM BLOCK DIAGRAM

SCALE: N.T.S.

3



LAN NETWORK SYSTEM BLOCK DIAGRAM KEY NOTES:

1. CATEGORY-6 UTP 4-PAIR CABLE(S). CABLE QUANTITIES AT EACH DEVICE PER PLAN DRAWINGS, REFER TO FACEPLATE DETAILS AND CABLE SCHEDULE.
2. RACK MOUNT CATEGORY-6 PATCH PANEL. PROVIDE QUANTITY AS REQUIRED TO TERMINATE ALL CATEGORY-6 CABLES ON THIS PROJECT.
3. EXISTING MDF CABINET.
4. COMBINATION PHONE/DATA DEVICE. TERMINATE CAT-6 "DATA" CABLE ON MDF CAT-6 PATCH PANEL. TERMINATE CAT-6 "VOICE" CABLE AT WALL MOUNT 66M-BLOCK LOCATED AT TELEPHONE PBX SYSTEM HEAD END. REFER TO TELEPHONE PBX SYSTEM DIAGRAM AND FACEPLATE DETAILS FOR MORE INFORMATION.
5. DATA DEVICE. QUANTITY AND LOCATIONS PER PLAN DRAWINGS. REFER TO FACEPLATE DETAIL FOR MORE INFORMATION.
6. WIRELESS ACCESS POINT DEVICE. QUANTITY AND LOCATIONS PER PLAN DRAWINGS. WAP ELECTRONICS IS OWNER FURNISHED OWNER INSTALLED. REFER TO FACEPLATE DETAIL FOR MORE INFORMATION.

CABLE SCHEDULE

DESIGNATOR	QUANTITY	TYPE
1D	1	CATEGORY-6 UTP 4-PAIR DATA
2D	2	CATEGORY-6 UTP 4-PAIR DATA
1V1D	2	(1)CATEGORY-6 UTP 4-PAIR DATA, AND (1)CATEGORY-6 UTP 4-PAIR VOICE

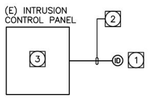
LAN SYSTEM NOTES:

1. CONTRACTOR'S WORK INCLUDES PATCH PANELS, WIRING, OUTLETS, FACEPLATES, CABLE SUPPORTS, PATCH CORDS, CONDUIT/SLEEVE FIRE STOPPING, RACEWAY, LABOR, EQUIPMENT, SUPPLIES, LABELS, TESTING, ACCESSORIES, AND ALL OTHER COMPONENTS REQUIRED FOR A FULLY OPERATIONAL SYSTEM.
2. SEE TELEPHONE PBX SYSTEM BLOCK DIAGRAM FOR ADDITIONAL HORIZONTAL CABLING AND DEVICE REQUIREMENTS.
3. DRAWINGS AND LAYOUTS ARE PRIMARILY DIAGRAMMATIC IN NATURE. CONTRACTOR IS RESPONSIBLE FOR FINAL FOOTAGES AND EXACT LOCATIONS.
4. CONTRACTOR SHALL VERIFY QUANTITIES AND LOCATIONS WITH PLAN DRAWINGS AND SPECIFICATIONS, AND WITH DISTRICT PRIOR TO ROUGH-IN.
5. ALL CABLING SHALL BE RATED FOR THE ENVIRONMENT FOR WHICH IT IS INSTALLED, PER CALIFORNIA ELECTRICAL CODE AND TIA-568-C.
6. WHEN EXISTING DEVICE IS CALLED OUT ON PLAN DRAWINGS AS "ER" (TO BE RELOCATED), CONTRACTOR SHALL COMPLETELY REMOVE DEVICE, BACK BOX AND WIRING, AND REINSTALL/RECONNECT SAME AT "R" (RELOCATED) LOCATION ON PLAN DRAWINGS. PROVIDE NEW WIRING AS MAY BE REQUIRED. CONTRACTOR SHALL INCLUDE ALL REQUIRED SURFACE MOUNT BACK BOX AND RACEWAY, ETC.
7. TERMINATE ALL "DATA" CATEGORY-6 CABLES ON CATEGORY-6 PATCH PANELS(S) IN MDF CABINET. TERMINATE ALL "VOICE" CAT-6 CABLES ON 66M CROSS CONNECTION BLOCKS BY TELEPHONE PBX SYSTEM. REFER TO TELEPHONE PBX SYSTEM BLOCK DIAGRAM.
8. TEST ALL CABLES AND PATCH CORDS ACCORDING TO DISTRICT SPECIFICATIONS.
9. PROVIDE MANUFACTURER'S WARRANTY ON COMPLETE CABLING SYSTEM PER DISTRICT SPECIFICATIONS.
10. UNLESS OTHERWISE NOTED IN THE SPECIFICATIONS, PROVIDE (1) 3-FOOT CAT-6 PATCH CORD AT THE MDF PATCH PANEL FOR EACH CAT-6 CABLE TERMINATED, AND (1) 10-FOOT CAT-6 PATCH CORD FOR EACH CAT-6 CABLE TERMINATED AT THE WORK STATION OUTLET. EACH NEW WAP LOCATION REQUIRES (1) 2-FOOT PATCH CORD AT THE DEVICE LOCATION.
11. LABEL ALL CABLES, CROSS CONNECT BLOCKS, ETC. WITH MACHINE GENERATED LABELS PER SPECIFICATIONS. HAND WRITTEN LABELS ARE PROHIBITED. PROVIDE SAMPLE OF ALL LABELS FOR OWNER'S REVIEW PRIOR TO INSTALLATION.
12. PLASTIC TIE-WRAPS (ZIP TIES) ARE PROHIBITED. CONTRACTOR SHALL USE VELCRO-TYPE HOOK AND LOOP FASTENERS TO SECURE ALL CABLE BUNDLES ON BACKBOARDS, LADDER TRAY, ETC.
13. ANY PENETRATIONS THROUGH FIRE-RATED WALLS SHALL BE SEALED BY THE CONTRACTOR AS REQUIRED BY THE CALIFORNIA ELECTRICAL CODE AND AS DIRECTED BY, AND TO THE SATISFACTION OF, THE OWNER'S PROJECT MANAGER.
14. REFERENCE CABLING SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

LOCAL AREA NETWORK (LAN) SYSTEM DIAGRAM

SCALE: N.T.S.

1



INTRUSION ALARM SYSTEM DIAGRAM KEY NOTES:

1. WALL MOUNT MOTION SENSOR, MATCH EXISTING DEVICES ON CAMPUS. QUANTITY AND LOCATIONS PER PLAN DRAWINGS.
2. DEVICE CABLING PER MANUFACTURER'S RECOMMENDATIONS AND DISTRICT SPECIFICATIONS.
3. EXISTING HONEYWELL SECURITY ALARM SYSTEM CONTROL PANEL, PROVIDE ADDITIONAL ZONE EXPANDERS, POPITS ETC. AS REQUIRED TO ACCOMMODATE ALL ADDITIONAL DEVICES ON THIS PROJECT.

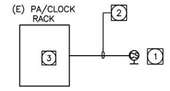
INTRUSION ALARM SYSTEM GENERAL NOTES:

1. CONTRACTOR'S WORK INCLUDES MODIFYING EXISTING DSC CONTROL PANEL AND PROVIDING ADDITIONAL COMPONENTS, SOFTWARE, PROGRAMMING/CONFIGURATIONS, TERMINAL CABINETS, SPEAKERS, CLOCKS, BACK BOXES, MATERIAL, WIRING, CONDUIT/SLEEVE FIRE STOPPING, LABOR, EQUIPMENT, SUPPLIES, LABELS, TESTING, ACCESSORIES, AND TRAINING REQUIRED FOR A FULLY OPERATIONAL SYSTEM.
2. DRAWINGS AND LAYOUTS ARE PRIMARILY DIAGRAMMATIC IN NATURE. CONTRACTOR IS RESPONSIBLE FOR FINAL FOOTAGES AND EXACT LOCATIONS.
3. CONTRACTOR SHALL VERIFY QUANTITIES AND LOCATIONS WITH PLAN DRAWINGS AND SPECIFICATIONS, AND WITH DISTRICT PRIOR TO ROUGH-IN.
4. ALL CABLING SHALL BE PER MANUFACTURER'S REQUIREMENTS.
5. ALL CABLING SHALL BE RATED FOR THE ENVIRONMENT FOR WHICH IT IS INSTALLED, PER CALIFORNIA ELECTRICAL CODE AND TIA-568-C.
6. WHEN EXISTING DEVICE IS CALLED OUT ON PLAN DRAWINGS AS "ER" (TO BE RELOCATED), CONTRACTOR SHALL COMPLETELY REMOVE DEVICE, BACK BOX AND WIRING, AND REINSTALL/RECONNECT SAME AT "R" (RELOCATED) LOCATION ON PLAN DRAWINGS. PROVIDE NEW WIRING AS MAY BE REQUIRED. CONTRACTOR SHALL INCLUDE ALL REQUIRED SURFACE MOUNT RACEWAY, ETC TO CONCEAL DEVICE CABLING.
7. PROVIDE ZONE EXPANDERS AS REQUIRED FOR MOST EFFICIENT AND ECONOMICAL DISTRIBUTION AND EXPANSION (ONE POINT / ZONE PER MOTION DETECTOR AND DOOR CONTACT).
8. ALL DEVICES ARE TO BE WIRED INDEPENDENTLY, NO LOOPS FOR DATA, DEVICE OR POWER.
9. THIS PROJECT WILL BE PERFORMED IN A PHASED CONSTRUCTION FORMAT, INCLUDING DEMOLITION PORTIONS. EACH PHASE OF CONSTRUCTION WILL BE COMPLETELY INSTALLED, LABELED AND TESTED, TO THE GREATEST EXTENT PHYSICALLY POSSIBLE, BEFORE MOVING TO THE NEXT PHASE.
10. LABEL ALL CABLES WITH SCHOOL'S ROOM NUMBER / LOCATION ON PLASTIC COATED CABLE MARKERS WRAPPED AROUND CABLE AT EACH END AND IN EACH TERMINAL CABINET AND JUNCTION BOX.
11. REFERENCE DISTRICT SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

INTRUSION ALARM SYSTEM BLOCK DIAGRAM

SCALE: N.T.S.

4



PUBLIC ADDRESS / CLOCK SYSTEM DIAGRAM KEY NOTES:

1. ROUND ANALOG SYNCHRONIZED CLOCK AND PUBLIC ADDRESS SPEAKER WITH SEMI-FLUSH BACK BOX AND GRILL/BAFFLE, AND 3/4"C. TO NEAREST ACCESSIBLE CEILING. MATCH EXISTING MANUFACTURER MODEL ON SITE. QUANTITY AND LOCATIONS PER PLAN DRAWINGS. PROVIDE SURFACE MOUNT RACEWAY FROM DEVICE TO NEAREST ACCESSIBLE CEILING SPACE WHEN DEVICE IS INSTALLED ON EXISTING WALLS.
2. CABLE PER MANUFACTURE'S RECOMMENDATIONS. CABLE SHALL BE RATED FOR THE ENVIRONMENT IN WHICH IT IS INSTALLED, PER C.E.C CODE. INSTALL CABLE IN SURFACE MOUNT RACEWAY, OR IN CONDUIT IN OPEN-CEILING AND INACCESSIBLE CEILING SPACES, AND CONCEALED IN NEW WALLS. CABLE MAY BE SUPPORTED BY J-HOOKS WHEN INSTALLED ABOVE ACCESSIBLE CEILING SPACES.
3. EXISTING RAULAND TELECENTER PUBLIC ADDRESS SYSTEM HEAD END EQUIPMENT CABINET AND AMPLIFIER. EXPAND SYSTEM AS REQUIRED TO ACCOMMODATE THE ADDITIONAL SPEAKERS AND CLOCKS ON THIS PROJECT.

PUBLIC ADDRESS / CLOCK SYSTEMS GENERAL NOTES:

1. CONTRACTOR'S WORK INCLUDES MODIFYING EXISTING HEADEND SYSTEM AND PROVIDING ADDITIONAL COMPONENTS, SOFTWARE, PROGRAMMING/CONFIGURATIONS, CABINETS, TERMINAL CABINETS, SPEAKERS, MATERIAL, WIRING, CONDUIT/SLEEVE FIRE STOPPING, LABOR, EQUIPMENT, SUPPLIES, LABELS, TESTING, ACCESSORIES, AND TRAINING REQUIRED FOR A FULLY OPERATIONAL SYSTEM.
2. DRAWINGS AND LAYOUTS ARE PRIMARILY DIAGRAMMATIC IN NATURE. CONTRACTOR IS RESPONSIBLE FOR FINAL FOOTAGES AND EXACT LOCATIONS.
3. CONTRACTOR SHALL VERIFY QUANTITIES AND LOCATIONS WITH PLAN DRAWINGS AND SPECIFICATIONS, AND WITH DISTRICT PRIOR TO ROUGH-IN.
4. ALL CABLING SHALL BE PER MANUFACTURER'S REQUIREMENTS.
5. ALL CABLING SHALL BE RATED FOR THE ENVIRONMENT FOR WHICH IT IS INSTALLED, PER CALIFORNIA ELECTRICAL CODE AND TIA-568-C.
6. WHEN EXISTING DEVICE IS CALLED OUT ON PLAN DRAWINGS AS "ER" (TO BE RELOCATED), CONTRACTOR SHALL COMPLETELY REMOVE DEVICE, BACK BOX AND WIRING, AND REINSTALL/RECONNECT SAME AT "R" (RELOCATED) LOCATION ON PLAN DRAWINGS. PROVIDE NEW WIRING AS MAY BE REQUIRED. CONTRACTOR SHALL INCLUDE ALL REQUIRED SURFACE MOUNT RACEWAY, ETC TO CONCEAL DEVICE CABLING.
7. PROVIDE ALL REQUIRED CONDUIT, BOXES, BUSHINGS, FITTINGS, SUPPORTS, MOUNTS, FASTENERS, WEATHERPROOFING, FIREPROOFING, ETC. AS REQUIRED.
8. TERMINATE ALL CABLING AS SPECIFIED BY MANUFACTURER, IN THEIR RESPECTIVE LOCATIONS.
9. LABEL ALL CABLES WITH SCHOOL'S DESIGNATED ROOM NUMBER / LOCATION ON PLASTIC COATED CABLE MARKERS WRAPPED AROUND CABLE AT EACH END AND IN EACH TERMINAL CABINET, VAULT, MANHOLE AND PULL BOX. CONTRACTOR TO VERIFY LABELING SCHEME WITH DISTRICT PRIOR TO INSTALLATION.
10. CONTRACTOR SHALL FULLY ADJUST ALL SPEAKER SOUND LEVELS TO THE SATISFACTION OF THE DISTRICT.
11. REFERENCE DISTRICT SPECIFICATIONS AND STANDARDS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

PUBLIC ADDRESS / CLOCK SYSTEM BLOCK DIAGRAM

SCALE: N.T.S.

2

pjhm architects
www.pjhm.com

tkisc
COLLABORATIVE
11570 Pierce Street, Suite 100
Riverside, California 92505
951.289.4160 www.tkisc.com
Project Manager-Erin Hagar
tk1sc Job #: 2016-0734

TOM HAWKINS ELEMENTARY SCHOOL
ADMINISTRATION MODERNIZATION

JEFFERSON SCHOOL DISTRICT

LOW VOLTAGE SYSTEMS
BLOCK DIAGRAMS

T-0.2