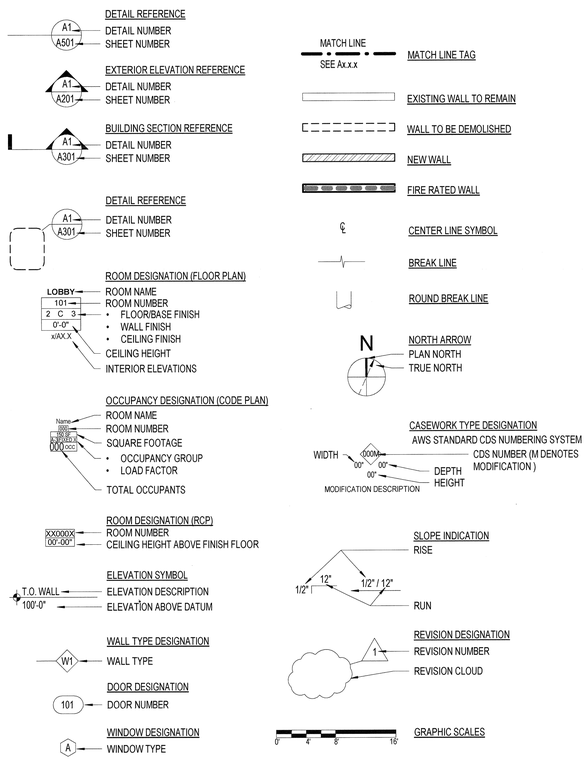
GYM HVAC REPLACEMENT
AMOS ALONZO STAGG HIGH SCHOOL
STOCKTON UNIFIED SCHOOL DISTRICT
1621 BROOKSIDE ROAD, STOCKTON, CA 95207

LIST OF ABBREVIATIONS

A	
A/C	AIR CONDITIONING
AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ALUM	ALUMINUM
ANOD	ANODIZED
ARCH	ARCHITECT
@	AT
B	
BD	BOARD
BLDG	BUILDING
BO	BOTTOM OF
C	
C	CELSIUS
CH	COAT HOOK
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CG	CORNER GUARD
CI	CONTINUOUS INSULATION
CJ	CONTROL JOINT
CL	CENTERLINE
CLG	CEILING
CLO	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
CORR	CORRIDOR
CT	CERAMIC TILE
CTJ	CONSTRUCTION JOINT
CUH	CABINET UNIT HEATER
D	
D	DEEP
DEG	DEGREE
DEMO	DEMOLITION
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DS	DOWNSPOUT
DWGS	DRAWINGS
E	
EA	EACH
EJ	EXPANSION JOINT
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EOS	EDGE OF SLAB
ERD	EXISTING ROOF DRAIN
EQ	EQUAL
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXP	EXPOSED
EXT	EXTERIOR
F	
F	FAHRENHEIT
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FDC	FIRE DEPARTMENT CONNECTION
FD	FLOOR DRAIN
FEC	FIRE EXTINGUISHER CABINET
FE	FIRE EXTINGUISHER
FG	FINISH GRADE
FHC	FIRE HOSE CABINET
FIN	FINISH
FLR	FLOOR
FND	FOUNDATION
FO	FINISHED OPENING
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FRG	FIBER REINFORCED GYPSUM
FSP	FIRE STANDPIPE
FT	FEET
FV	FIELD VERIFY
G	
GA	GAUGE
GALV	GALVANIZED
GFRC	GLASS-FIBER-REINFORCED CONCRETE
GFRG	GLASS-FIBER-REINFORCED GYPSUM
GL	GLASS
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
H	
H	HIGH
HB	HOSE BIBB
HDR	HEADER
HM	HOLLOW METAL
HPT	HIGH POINT
HR	HOUR
HT	HEIGHT
I	
ID	INSIDE DIAMETER; INSIDE DIMENSION
IN	INCH
INFO	INFORMATION
INT	INTERIOR
J	
JAN	JANITOR
K	(NOT USED)
L	
LAB	LABORATORY
LAV	LAVATORY
LBS	POUNDS
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LPT	LOW POINT
M	
MACH RM	MACHINE ROOM
MAX	MAXIMUM
MFR	MANUFACTURER
MECH	MECHANICAL
MEZZ	MEZZANINE
MIN	MINIMUM
MO	MASONRY OPENING
N	
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NOM	NOMINAL
NTS	NOT TO SCALE
O	
OC	ON CENTER
OD	OUTSIDE DIAMETER; OUTSIDE DIMENSION
OFD	OVERFLOW DRAIN
OH DR	OVERHEAD DOOR
OPH	OPPOSITE HAND
OPP	OPPOSITE
ORIG	ORIGINAL
P	
P LAM	PLASTIC LAMINATE
PLAS	PLASTER
PLUMB	PLUMBING
PR	PAIR
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
PVC	POLYVINYL CHLORIDE
Q	
QT	QUARRY TILE
R	
R	RISER OR RADIUS
RAD	RADIUS
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REF	REFRIDGERATOR
REQD	REQUIRED
REV	REVISION
RH	RELATIVE HUMIDITY
RM	ROOM
RO	ROUGH OPENING
RTU	ROOF TOP UNIT
RWL	RAIN WATER LEADER
S	
S	SMOKE DETECTOR
SAM	SELF ADHESIVE MEMBRANE
SCHED	SCHEDULE
SECT	SECTION
SIM	SIMILAR
SPEC	SPECIFICATION
SS	STAINLESS STEEL
STD	STANDARD
STRUCT	STRUCTURAL
T	
T	TREAD
TEL	TELEPHONE
TEMP	TEMPORARY
THK	THICK
TOC	TOP OF CONCRETE
TOM	TOP OF MASONRY
TOP	TOP OF PARAPET
TOS	TOP OF SLAB; TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
TO	TOP OF
U	
UL	UNDERWRITER'S LABORATORIES
UNO	UNLESS NOTED OTHERWISE
V	
VCT	VINYL COMPOSITE TILE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
W	
W/	WITH
W/O	WITHOUT
WD	WOOD
WH	WALL HYDRANT
WP	WORKING POINT
WRB	WEATHER RESISTIVE BARRIER
X,Y,Z	(NOT USED)

THE PRECEDING LIST OF ABBREVIATIONS IS PRESENTED AS A GENERAL GUIDE AND DOES NOT NECESSARILY SHOW ALL ABBREVIATIONS USED. OTHER GENERALLY ACCEPTED ABBREVIATIONS MAY BE FOUND AMONG THE DRAWINGS - SOME ABBREVIATIONS SHOWN ABOVE MAY NOT BE USED WITHIN THIS DRAWING SET.

DRAWING SYMBOL LEGEND



SCOPE OF WORK

WORK INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:
RENOVATION OF GYMNASIUM BUILDING CONSISTING OF HVAC SYSTEM REPLACEMENT AND ASSOCIATED WORK

NOTE: THE ADJACENT SHOWER/LOCKER ROOMS AND CAMPUS WILL BE OCCUPIED THROUGHOUT THE DURATION OF THE CONSTRUCTION SCHEDULE.

PROTECTION OF GYMNASIUM INTERIOR FINISH, HARDWOOD FLOORING AND BLEACHERS IS REQUIRED

SECURITY FENCING AND OVERHEAD PROTECTION IS REQUIRED FOR PUBLIC/STUDENT ACCESS TO/FROM THE SHOWER/LOCKER ROOMS AND TO THE ADJACENT POOL DECK

DSA DEFERRED SUBMITTALS

NONE.

PROJECT TEAM

OWNER

STOCKTON UNIFIED SCHOOL DISTRICT
1621 BROOKSIDE ROAD,
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(209) 933-7045
MICHELLE SPRAGG
FACILITIES PLANNING DEPARTMENT
E-MAIL: mspragg@stocktonusd.net

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KIP GRUBB
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3701 BUSINESS DR., SUITE 100,
SACRAMENTO, CA 95820
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WILLIAM LARSON
E-MAIL: bill@point2se.com

MECHANICAL ENGINEER

CAPITAL ENGINEERING CONSULTANTS, INC.
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MIKE MINGE
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ELECTRICAL ENGINEER

HARRY A. YEE AND ASSOCIATES, INC.
4920 FREEPORT BLVD.
SACRAMENTO, CA 95822
DAVID YU
(916) 454-5319
E-MAIL: david@hyaengineers.com

SHEET INDEX

Grand total: 49

APPLICABLE CODES

2016 BUILDING STANDARDS ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.
2016 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 C.C.R. (2015 INTERNATIONAL BUILDING CODE AND 2016 CALIFORNIA AMENDMENTS)
2016 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R. (2014 NATIONAL ELECTRICAL CODE AND 2016 CALIFORNIA AMENDMENTS)
2016 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 C.C.R. (2015 UNIFORM MECHANICAL CODE AND 2016 CALIFORNIA AMENDMENTS)
2016 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R. (2015 UNIFORM PLUMBING CODE AND 2013 CALIFORNIA AMENDMENTS)
2016 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 C.C.R.
2016 CALIFORNIA FIRE CODE, PART 9, TITLE 24 C.C.R. (2015 INTERNATIONAL FIRE CODE AND 2013 CALIFORNIA AMENDMENTS)
2016 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 C.C.R.
2016 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 C.C.R. TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

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LICENSED ARCHITECT
KIP DAVIS GRUBB
No. C-19022
EXP. 11/30/20
STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APP NO. 02 - 116869
FILE NO. 39-H7
AC TM FLS VB SS SSm
DATE 02 - 13 - 2019
FLS: V.BERG 3/5

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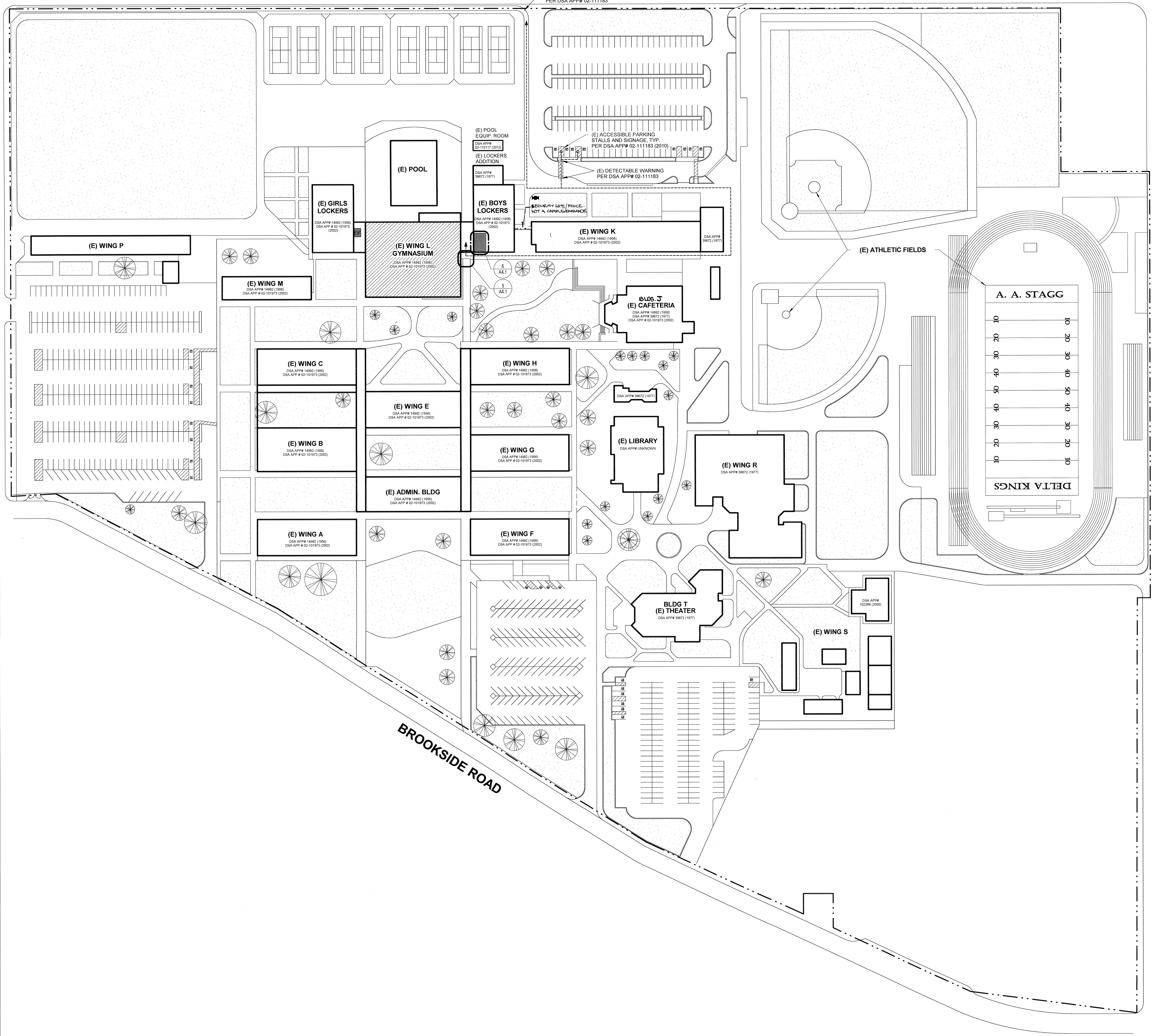
COVER SHEET AND GENERAL INFORMATION

A0.0



1 CAMPUS SITE PLAN
A1.0 1/64" = 1'-0"

CODE ANALYSIS

CONSTRUCTION TYPE:	V-A
OCCUPANCY GROUP:	A-2
AUTOMATIC SPRINKLERS:	NONE
FIRE ALARM:	YES

GYMNASIUM BUILDING AREA:

BASIC ALLOWABLE AREA:	31,500 SF (SEE NOTE BELOW)	
ACTUAL BUILDING AREA:	21,559 SF	
ALLOWABLE HEIGHT:	1 STORY	40'-0"
ACTUAL HEIGHT:	1 STORY	29'-4"

NOTE:
THE GYMNASIUM BUILDING IS 1309 SF OVER THE ALLOWABLE AREA AS DEFINED IN THE 1998 CBC. HOWEVER THE CONCRETE WALL BISECTING THE BUILDING MAY HAVE BEEN DESIGNED AS AN AREA SEPARATION WALL AS DEFINED IN THE 1955 UBC. THIS WILL ALLOW THE BUILDING TO HAVE AN ALLOWABLE AREA OF 31,500 SF.

SITE PLAN LEGEND

(E) ACCESSIBLE PATH OF TRAVEL

(E) DSA APPROVED RESTROOM (RR) AND / OR DRINKING FOUNTAIN (DF) PER DSA APP# 02-101973

AREA OF WORK

DESIGN PROFESSIONAL ACCESS COMPLIANCE STATEMENT

DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE STATES:

THE PATH OF TRAVEL (POT) IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS IS COMPLIANT WITH 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 POT THAT WERE DETERMINED TO BE NONCOMPLIANT HAVE:

1. BEEN IDENTIFIED ON THESE PLANS
2. THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THE PROJECT'S WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATION INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS.

ANY NONCOMPLIANT ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE SO INDICATED IN THESE CONSTRUCTION DOCUMENTS.

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

ACCESSIBLE ROUTE COMPONENTS INCLUDE BUT ARE NOT LIMIT TO:

- AT LEAST 48" IN WIDTH; OR AS APPROVED BY CODE;
- WITHOUT ABRUPT LEVEL CHANGES EXCEEDING 1/2" IF BEVELED AT 1:2 MAXIMUM SLOPE, OR VERTICAL LEVEL CHANGES EXCEEDING 1/4";
- WITH A FIRM, STABLE AND SLIP RESISTANT WALKING SURFACE;
- WITH A RUNNING SLOPE OF 1:20 OR LESS;
- WITH RUNNING SLOPE OF CODE COMPLIANT RAMPS, NOT TO EXCEED 8.33% (1:12), (RAMPS COMPLY WITH 11B-405);
- WITH REQUIRED LANDINGS AND LEVEL AREAS WITH SLOPE 1:48 (1/4"/FT.) OR LESS;
- WITH A CROSS SLOPE OF 1:48 (1/4"/FT.) OR LESS;
- WITH OPENINGS IN DRAINS AND GRATING NOT TO EXCEED ½" IN PREDOMINANT DIRECTION OF TRAVEL;
- IS FREE OF OVERHEAD OBSTRUCTIONS WITHIN 80" ABOVE THE WALKING SURFACE; AND
- IS FREE OF OBJECTS WHICH PROTRUDE MORE THAN 4" BETWEEN THE HEIGHTS OF 27" AND 80" ABOVE THE WALKING SURFACE

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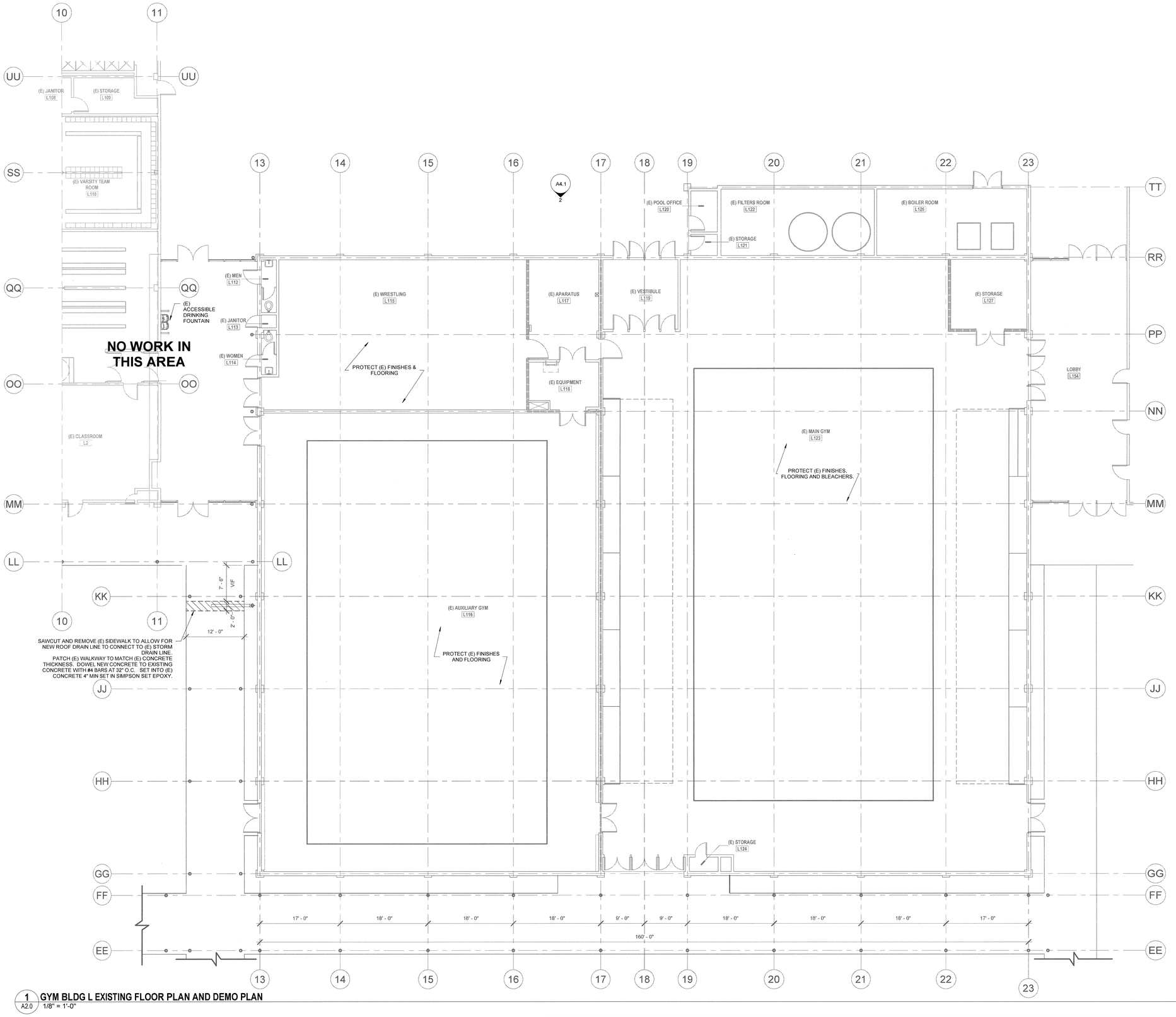
CAMPUS SITE PLAN

A1.0



1 A2.0 **GYM BLDG L EXISTING FLOOR PLAN AND DEMO PLAN**
1/8" = 1'-0"

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RENEWAL 11/30/19
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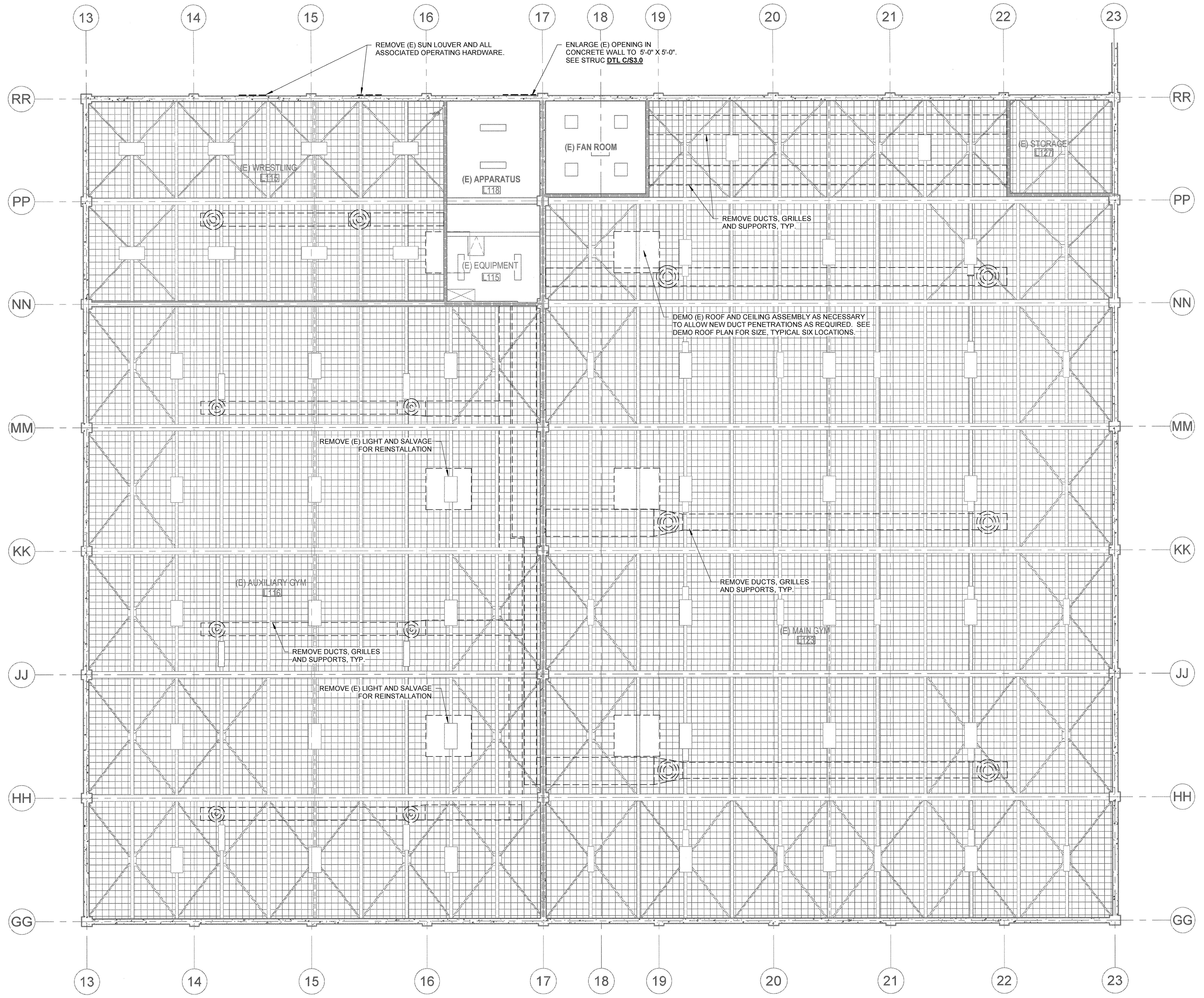
EXISTING FLOOR PLANS AND DEMOLITION PLAN

A2.0



1 A2.2 **EXISTING AND DEMOLITON REFLECTED CEILING PLAN**
1/8" = 1'-0"

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EXISTING AND DEMOLITION REFLECTED CEILING PLAN

A2.2

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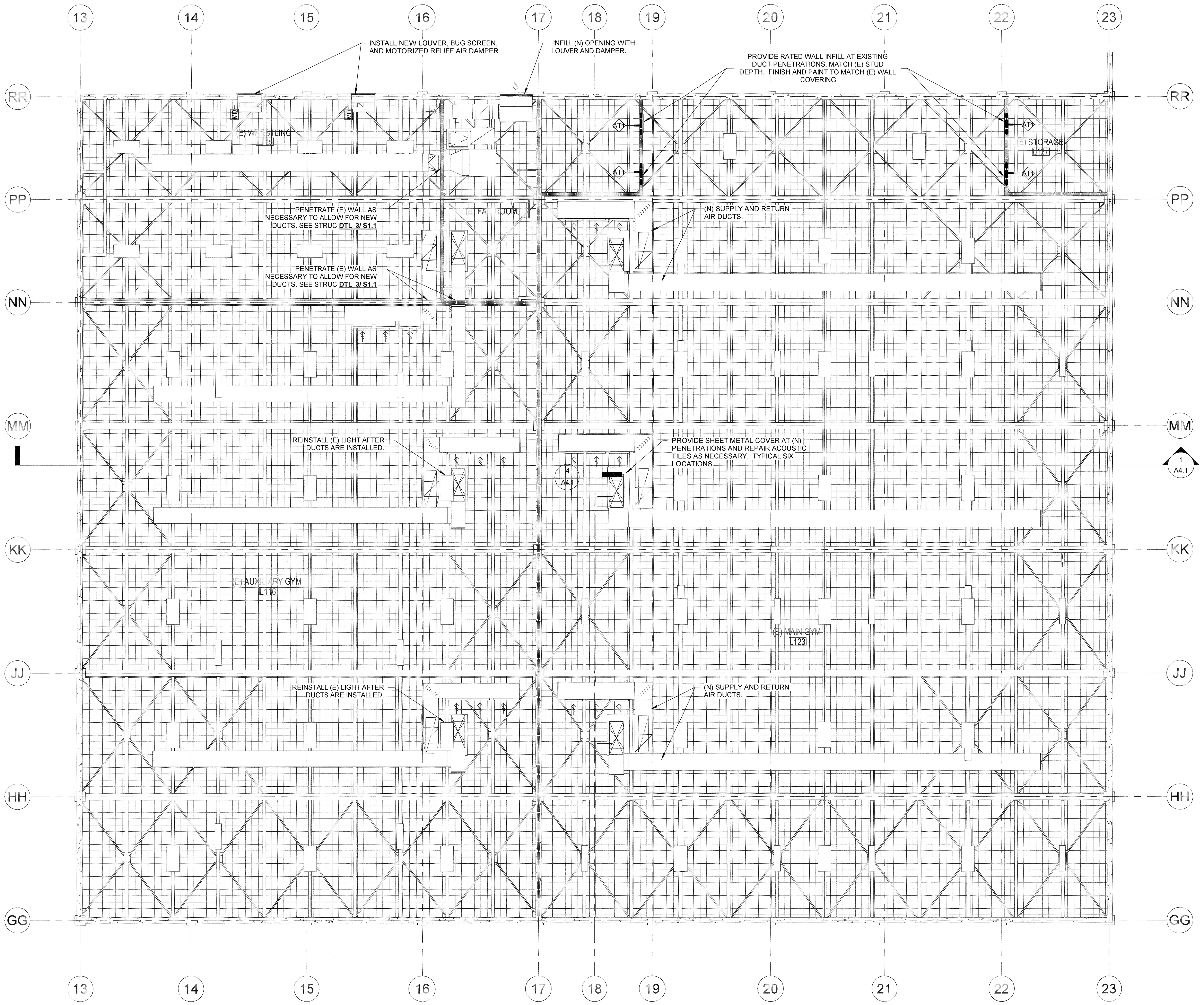

1 **REFLECTED CEILING PLAN**
A2.3 1/8" = 1'-0"

ASSEMBLY WALL TYPES				
MARK	TESTING AGENCY	ITEM NUMBER	DESCRIPTION OF CONSTRUCTION	RATING
AT1	C.B.C. TABLE 721.1(2)	14-1.3	2"x4" WOOD STUDS 24" ON CENTER WITH 5/8" TYPE X GYPSUM WALLBOARD APPLIED VERTICALLY OR HORIZONTALLY NAILED WITH 6d COOLER OR WALLBOARD NAILS AT 7" ON CENTER WITH END JOINTS ON NAILING MEMBERS. STAGGER JOINTS EACH SIDE.	1HR

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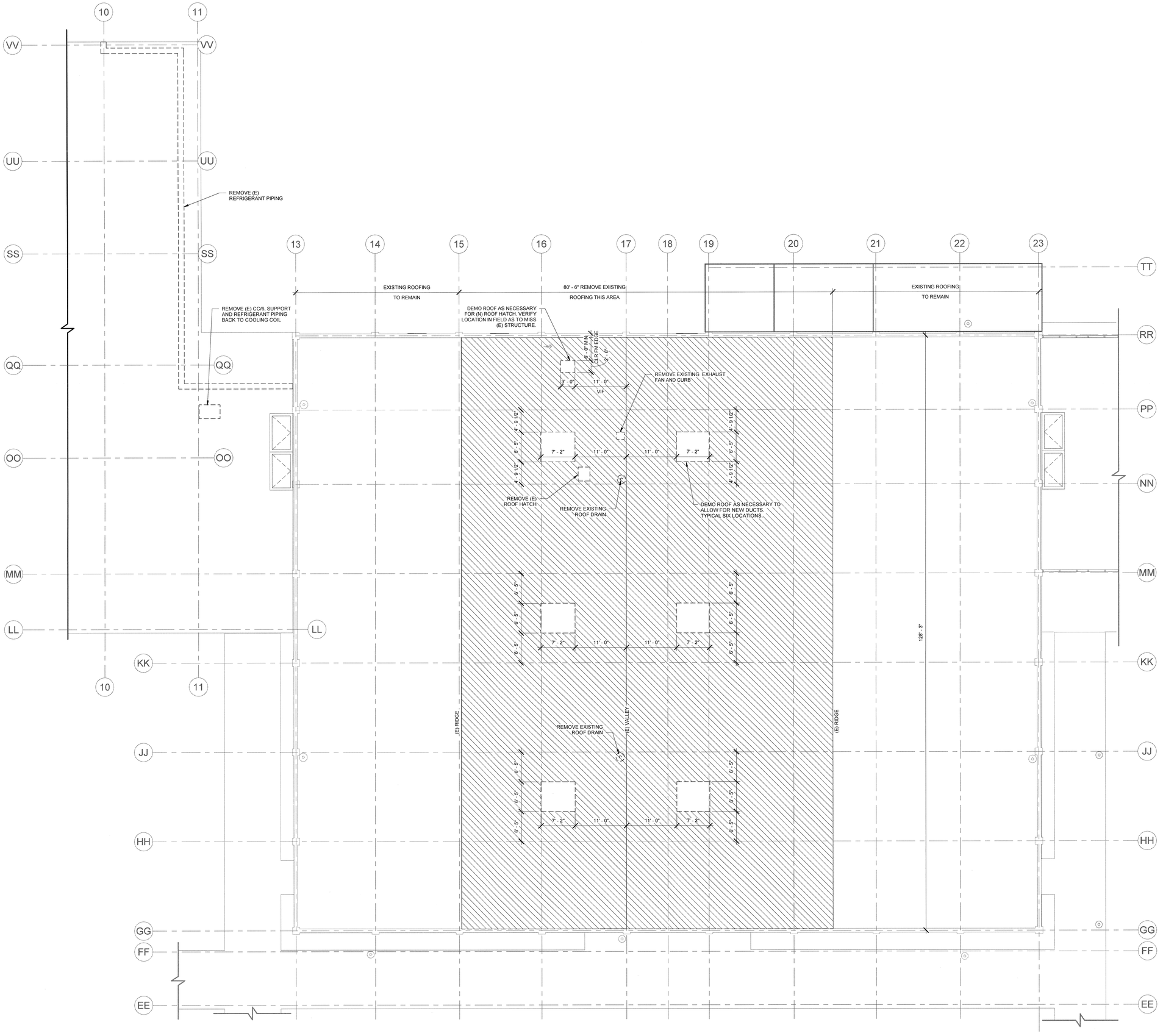
REFLECTED CEILING PLAN

A2.3



1 EXISTING AND DEMOLITION ROOF PLAN
A2.4 1/8" = 1'-0"

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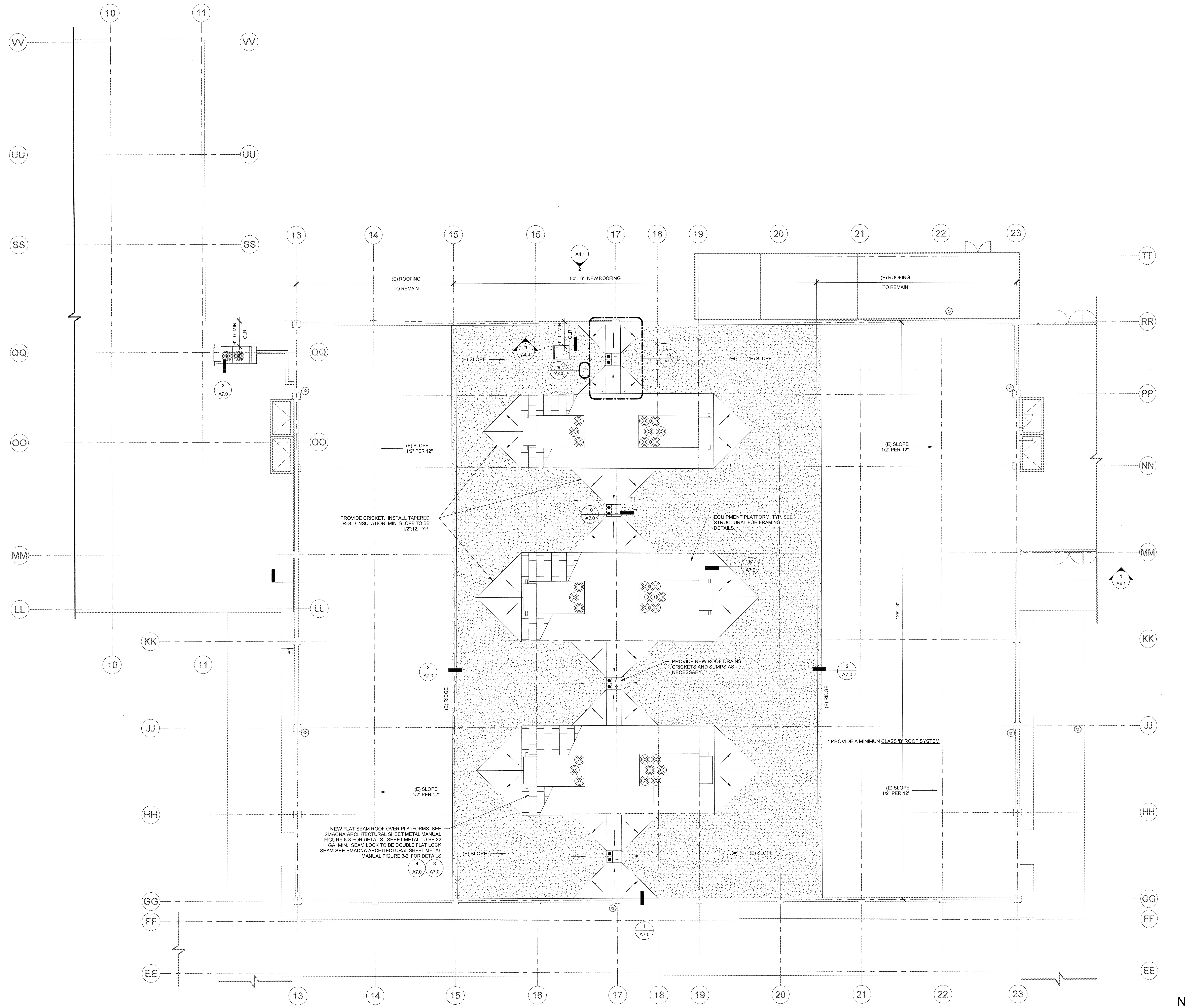
EXISTING AND DEMOLITION ROOF PLAN

A2.4



1 ROOF PLAN
A2.5 1/8" = 1'-0"

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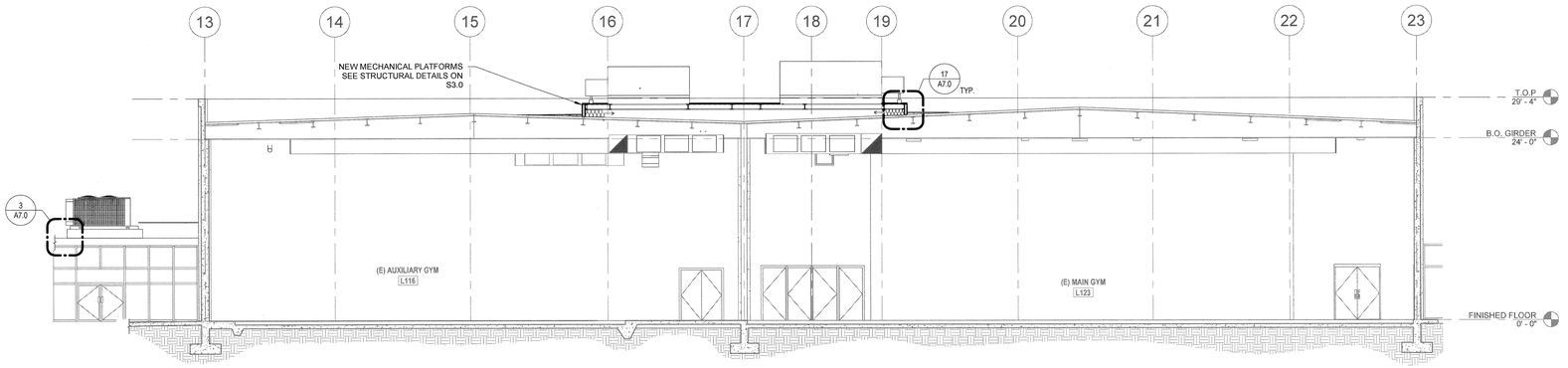
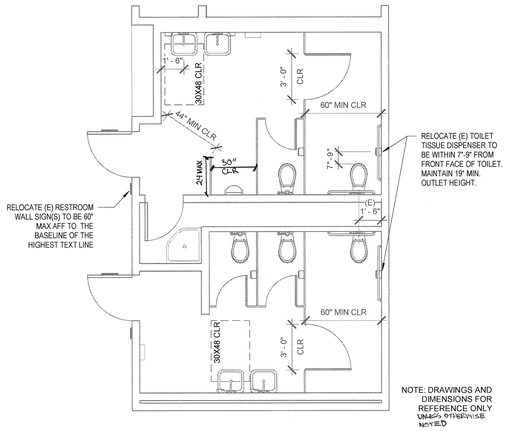
ROOF PLAN

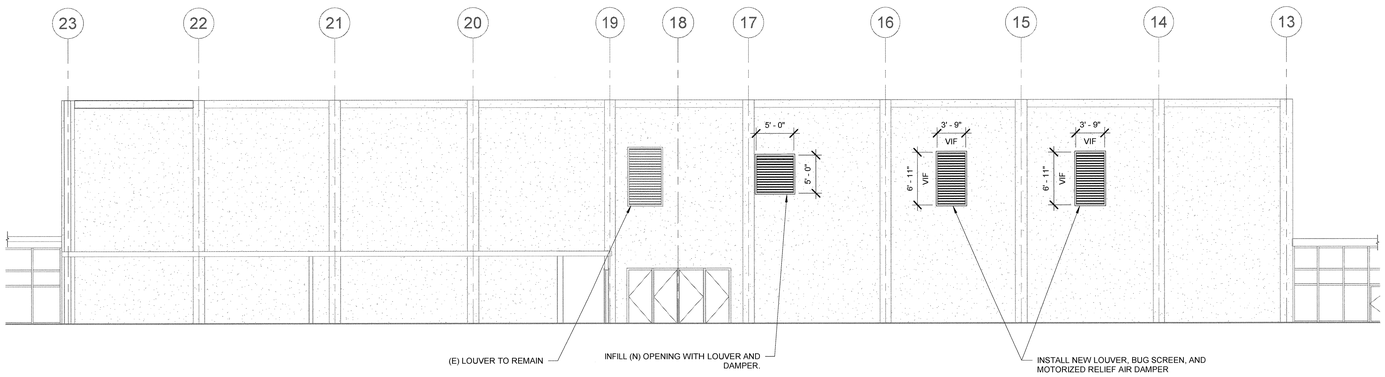
A2.5



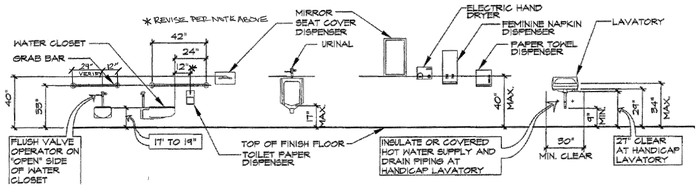
1 A4.1 PARTIAL BUILDING SECTION 1/8" = 1'-0"



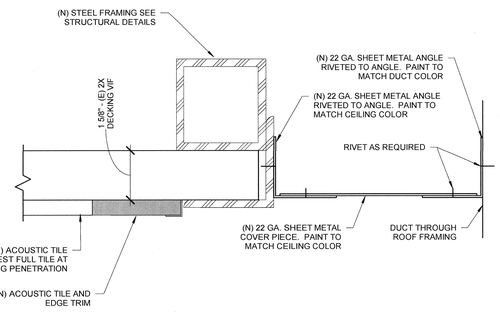
6 A4.1 ENLARGED EXSITING RESTROOMS 1/4" = 1'-0"



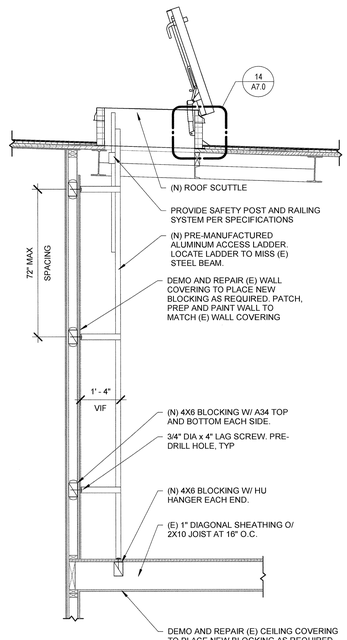
2 A4.1 PARTIAL NORTH ELEVATION 1/8" = 1'-0"



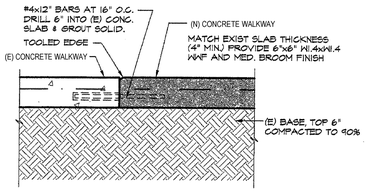
8 A4.1 (E) ACCESSORY MOUNTING HEIGHTS AT (E) RESTROOMS PER DSA APP# 02-101973
1/4" = 1'-0"



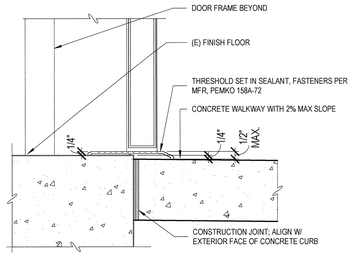
4 A4.1 PENETRATION DETAIL 6" = 1'-0"



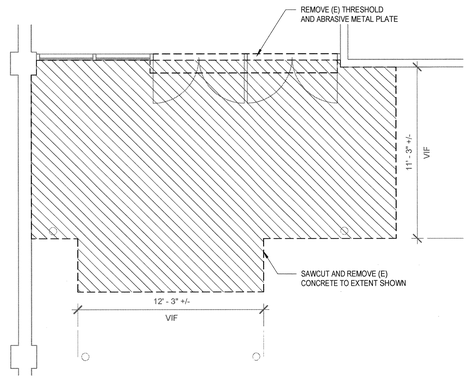
3 A4.1 ROOF ACCESS LADDER SECTION 1/2" = 1'-0"

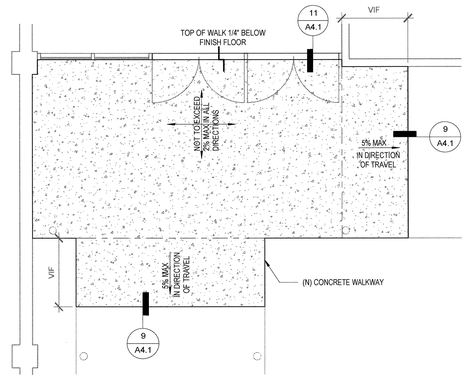


9 A4.1 NEW CONCRETE TO EXISTING CONCRETE WALKWAY 1 1/2" = 1'-0"



11 A4.1 DOOR THRESHOLD 3" = 1'-0"





5 A4.1 ENLARGED PLAN (DEMO AND NEW) 1/4" = 1'-0"

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LICENSED ARCHITECT KIP DAVIS GRUBB RENEW 11/30/19 STATE OF CALIFORNIA

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STOCKTON, CA 95207

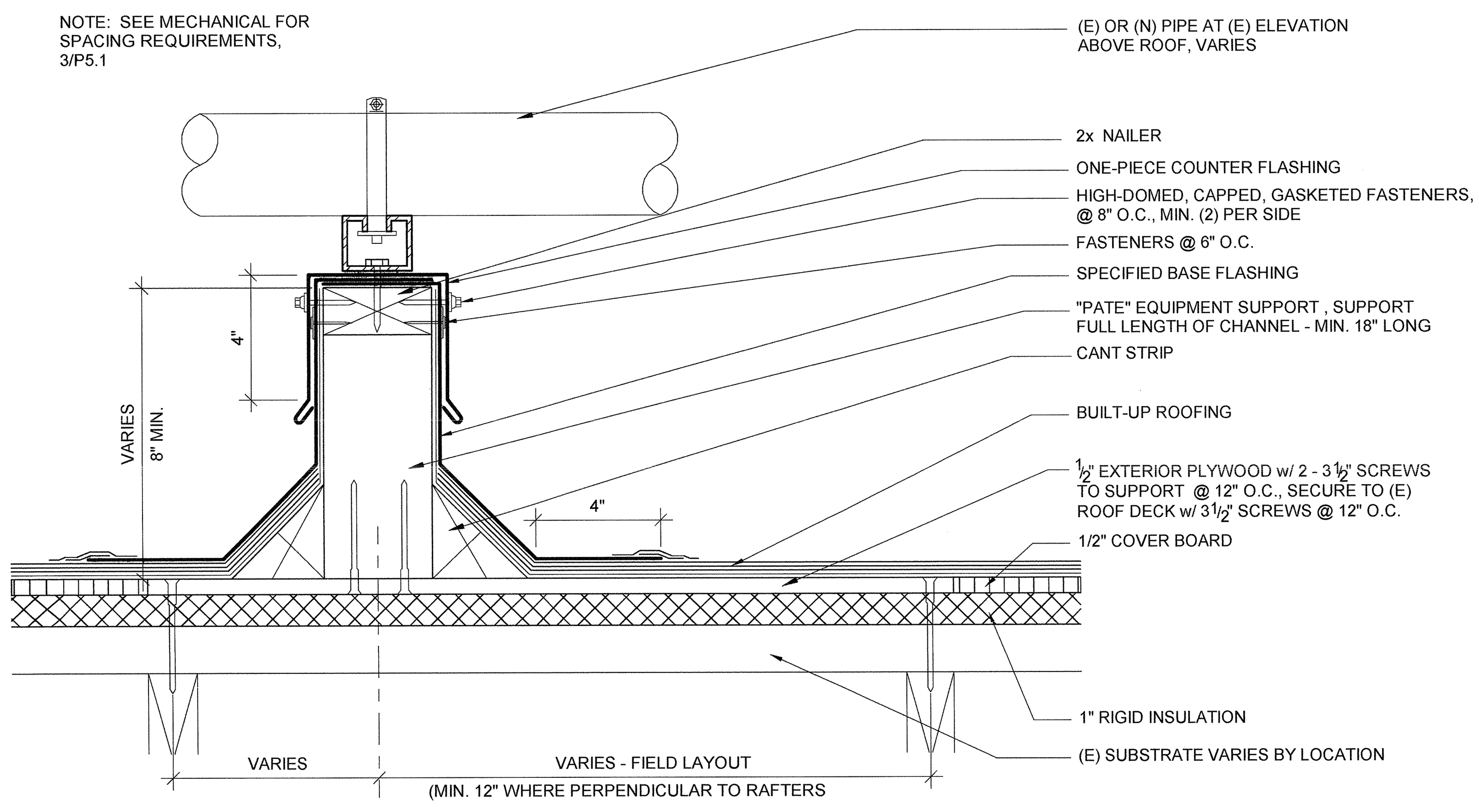
STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

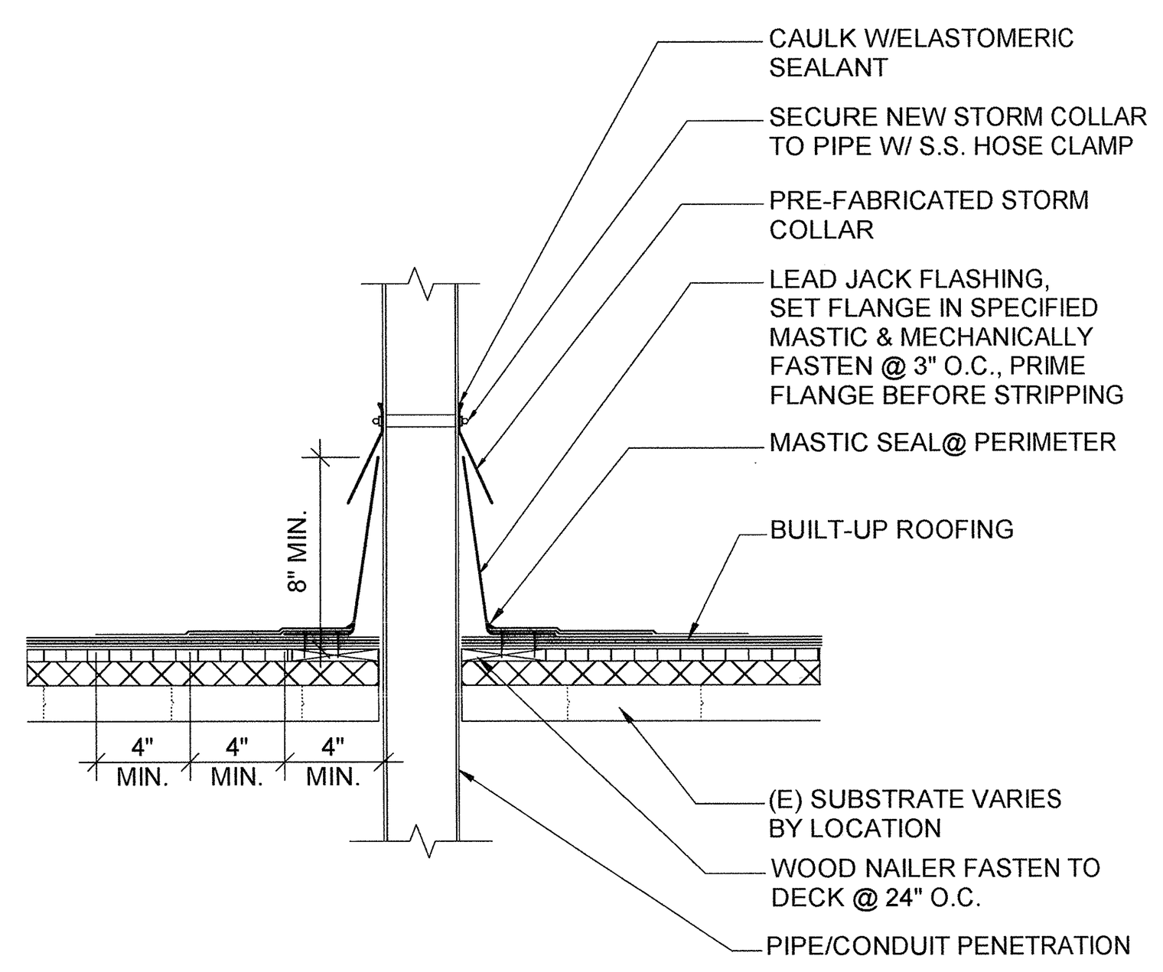
DSA SUBMITTAL: 02/13/2019

BUILDING SECTION AND DETAILS

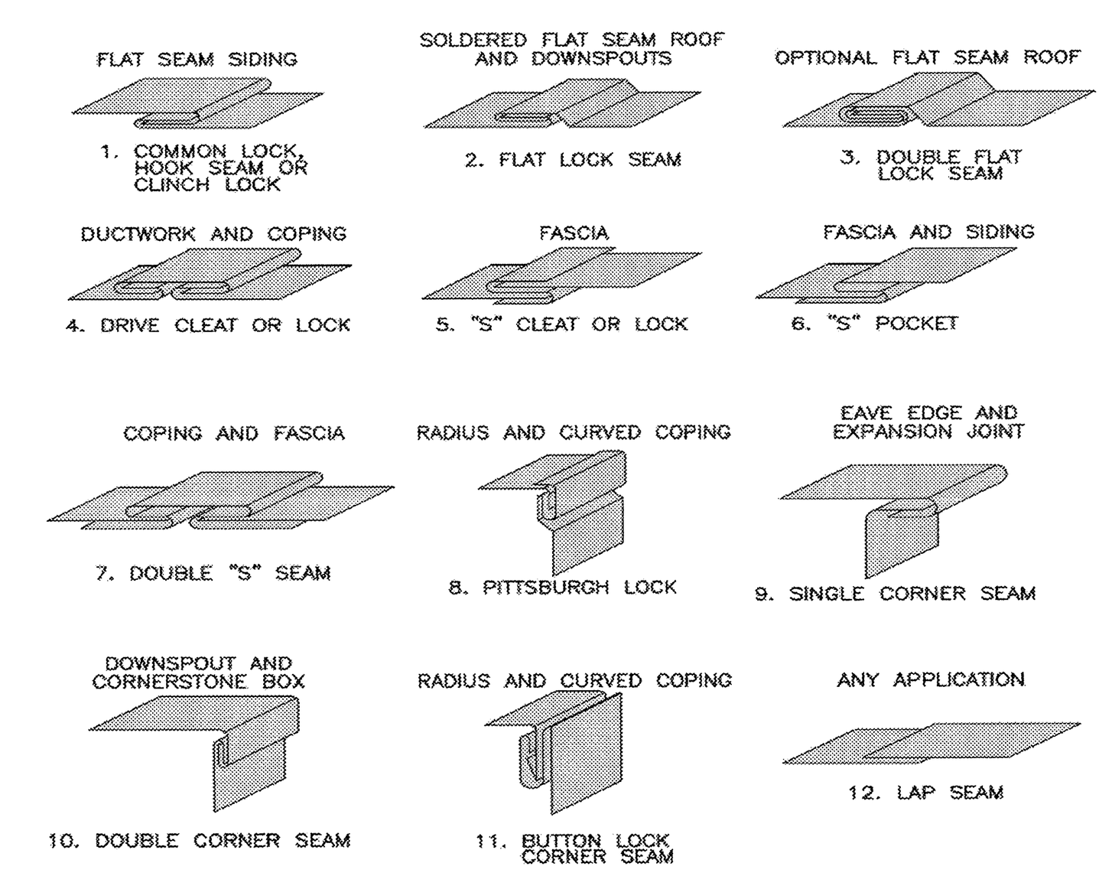
A4.1



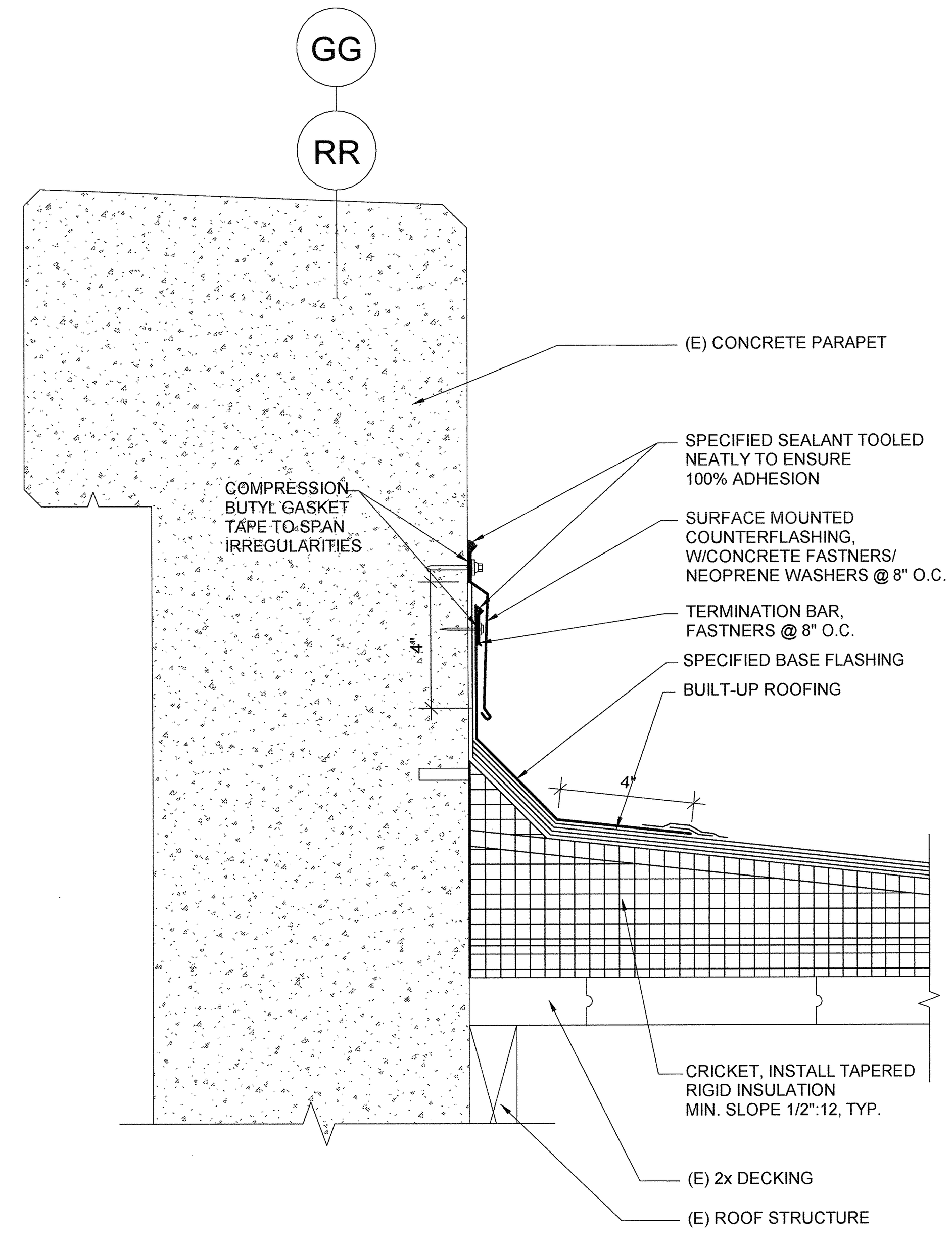
15 **CONDUIT / PIPE SUPPORT**
A7.0 3" = 1'-0" D_Pipe2_support



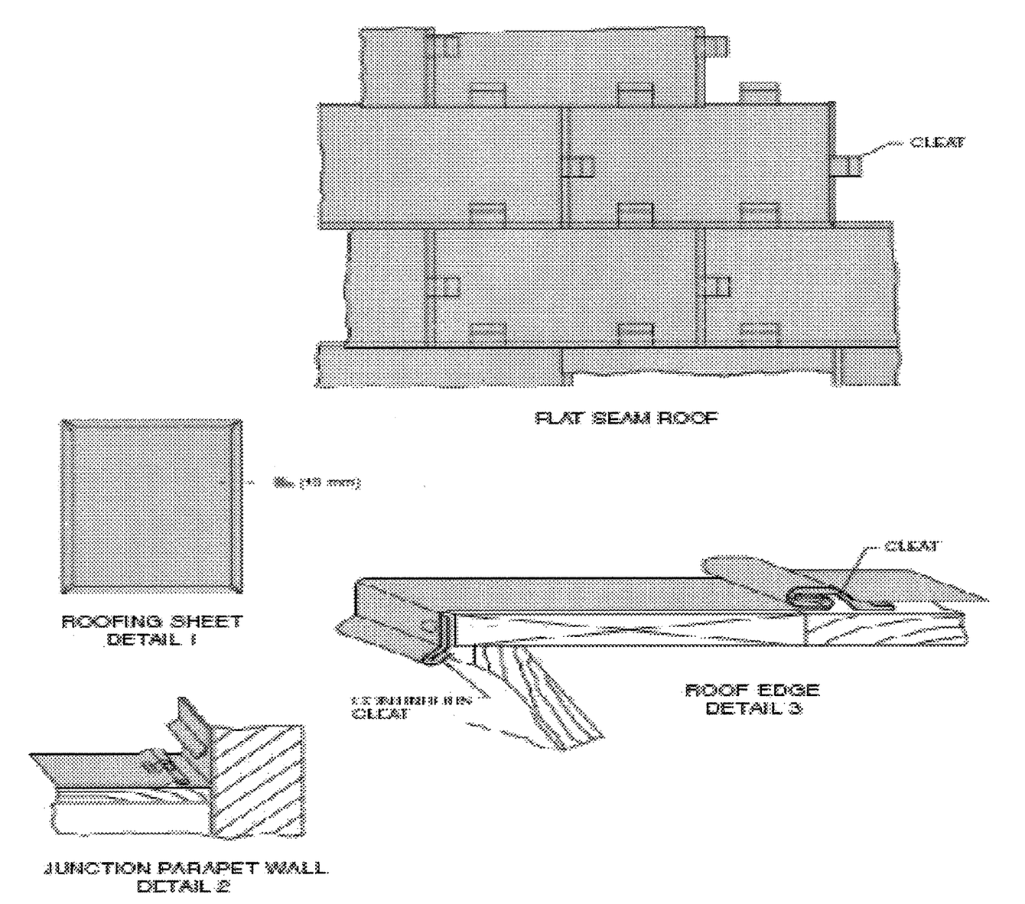
7 **PIPE/CONDUIT ROOF PENETRATION**
A7.0 1 1/2" = 1'-0" D_Pipe7



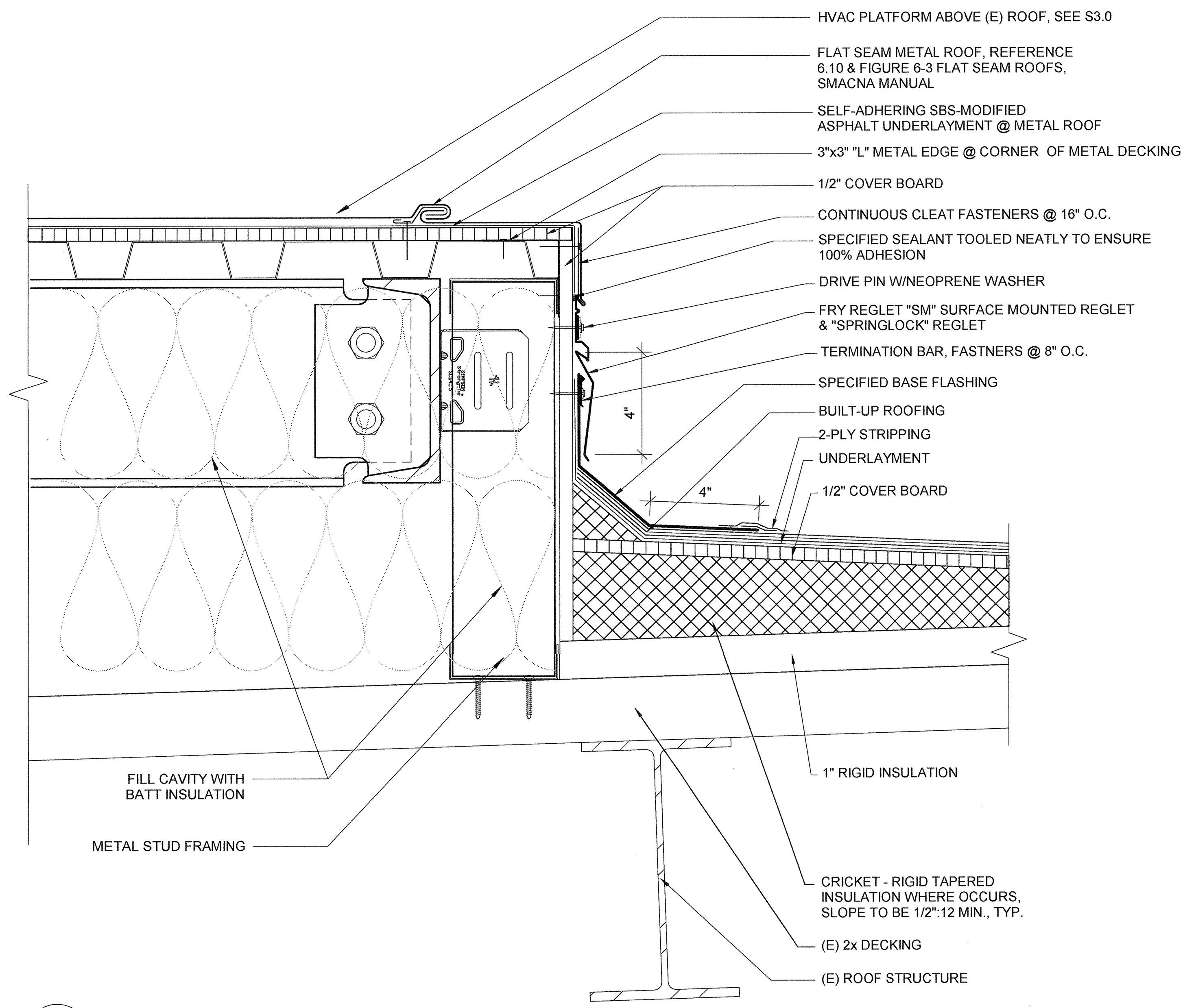
4 **TYPICAL LOCK AND SEAMS SMACNA FIG 3-2**
A7.0 1 1/2" = 1'-0"



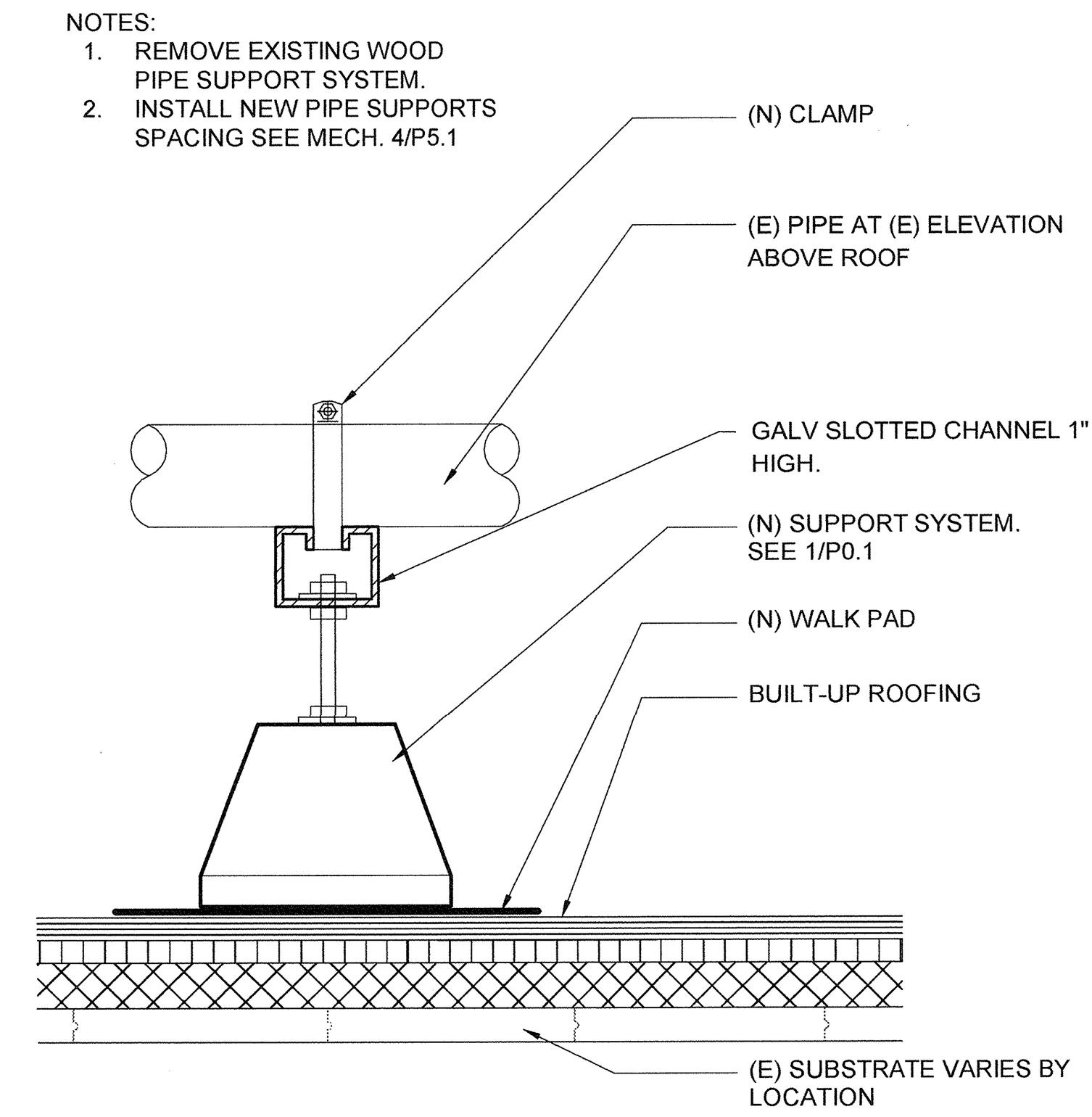
1 **CONCRETE PARAPET**
A7.0 3" = 1'-0" D_Flash CONC WALL



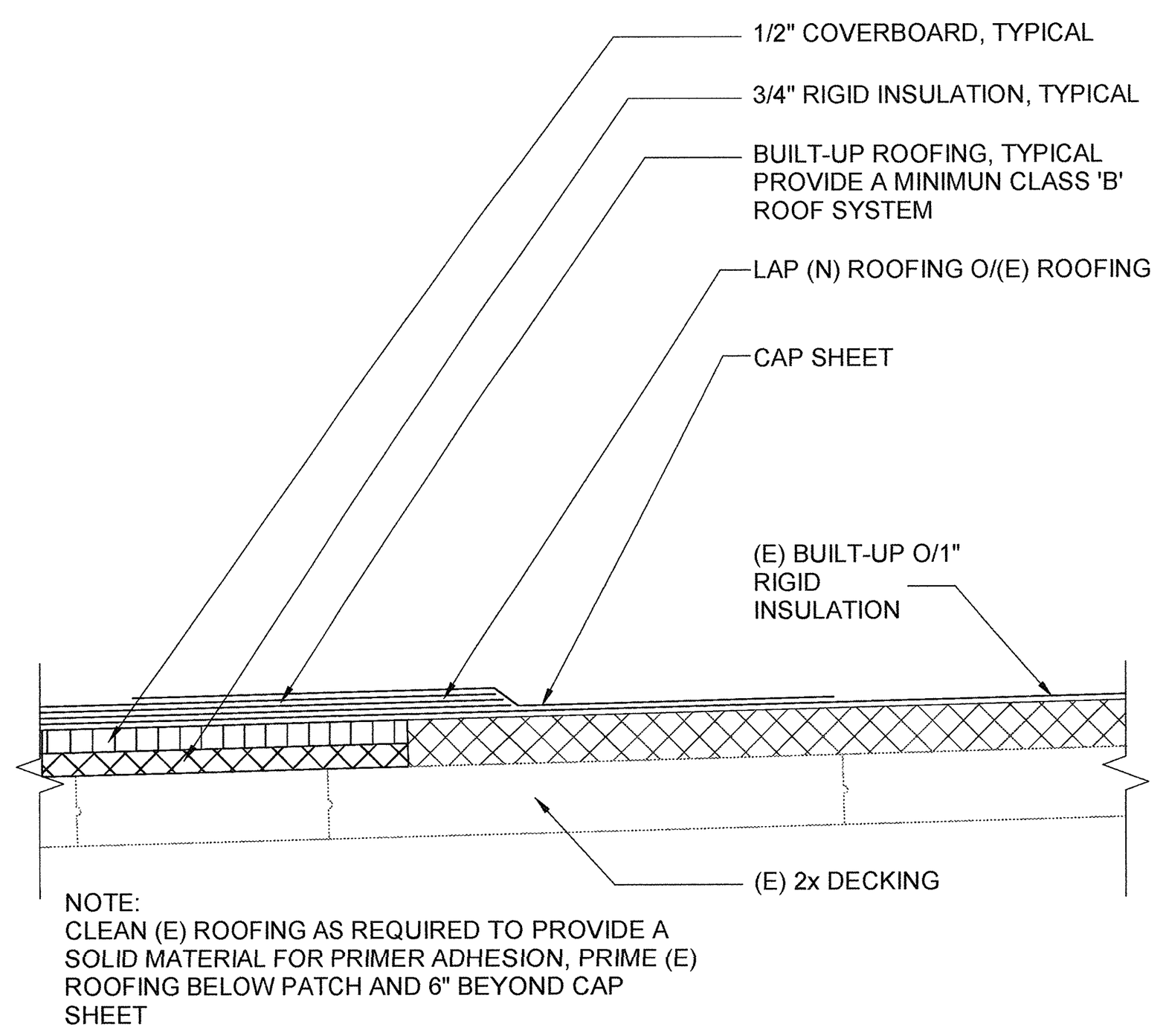
8 **FLAT SEAM ROOFS SMACNA FIG 6-3**
A7.0 1 1/2" = 1'-0"



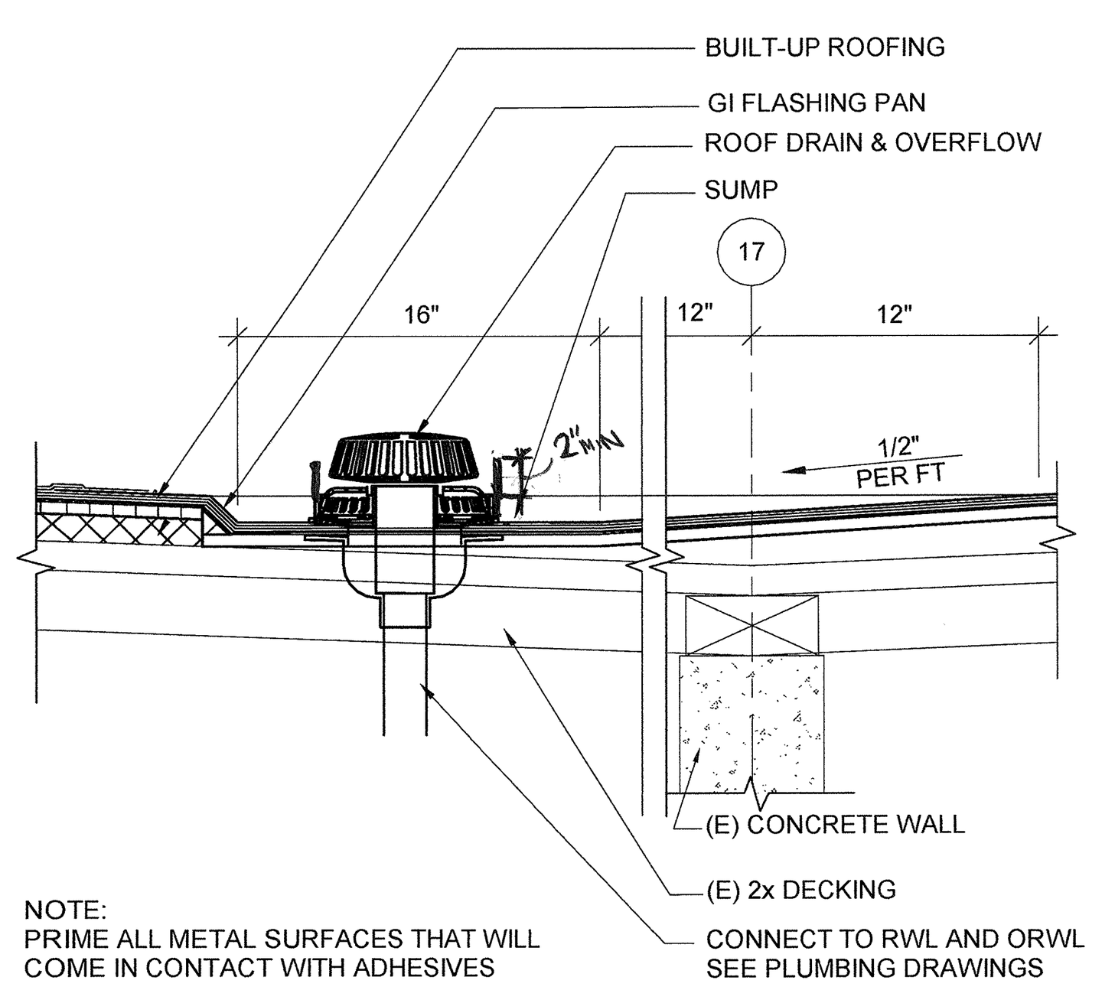
17 **HVAC PLATFORM EDGE**
A7.0 3" = 1'-0" ROOF @ PLATFORM



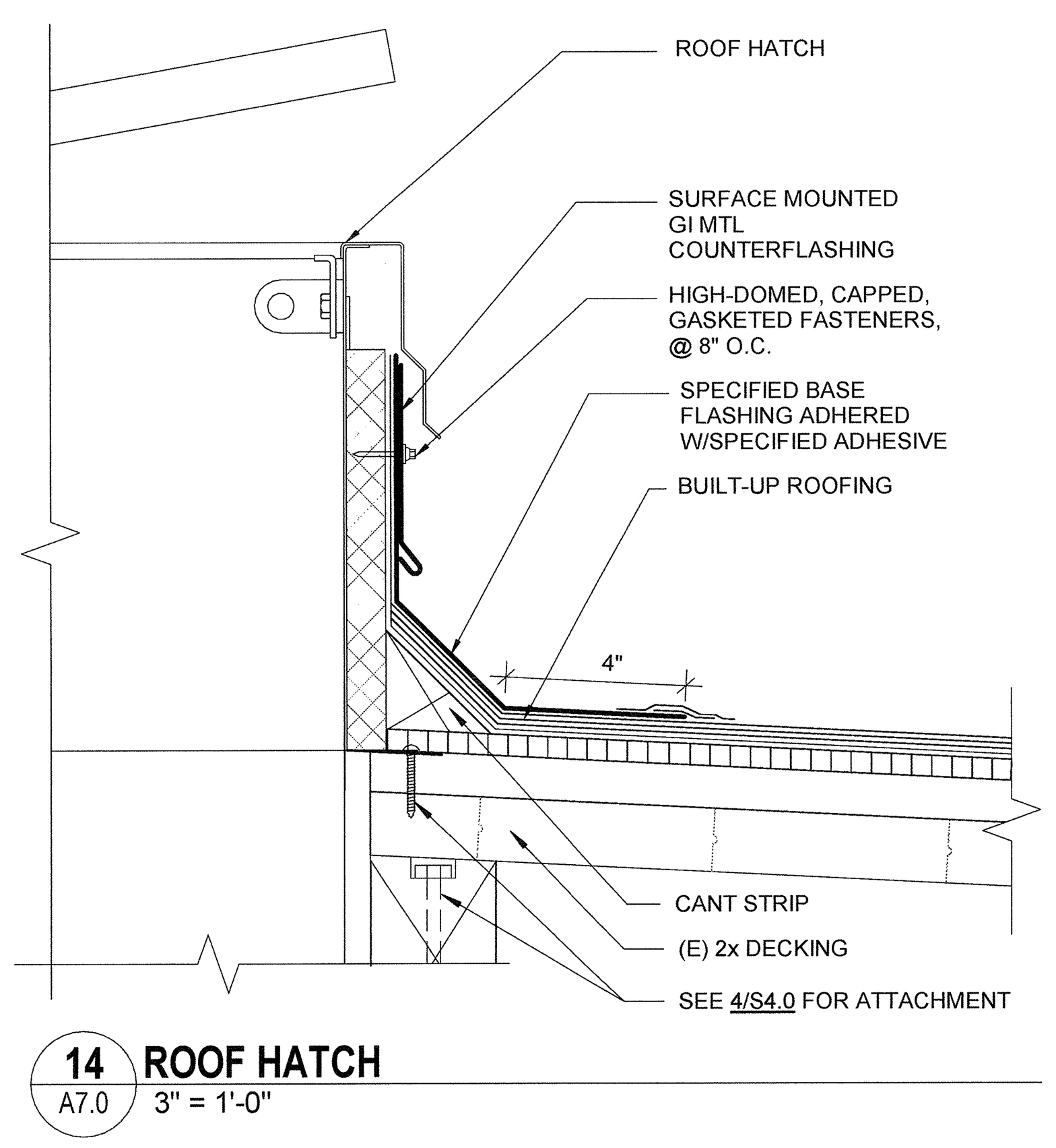
5 **INTERMEDIATE PIPE SUPPORT**
A7.0 3" = 1'-0" D_PIPE_INTRMED



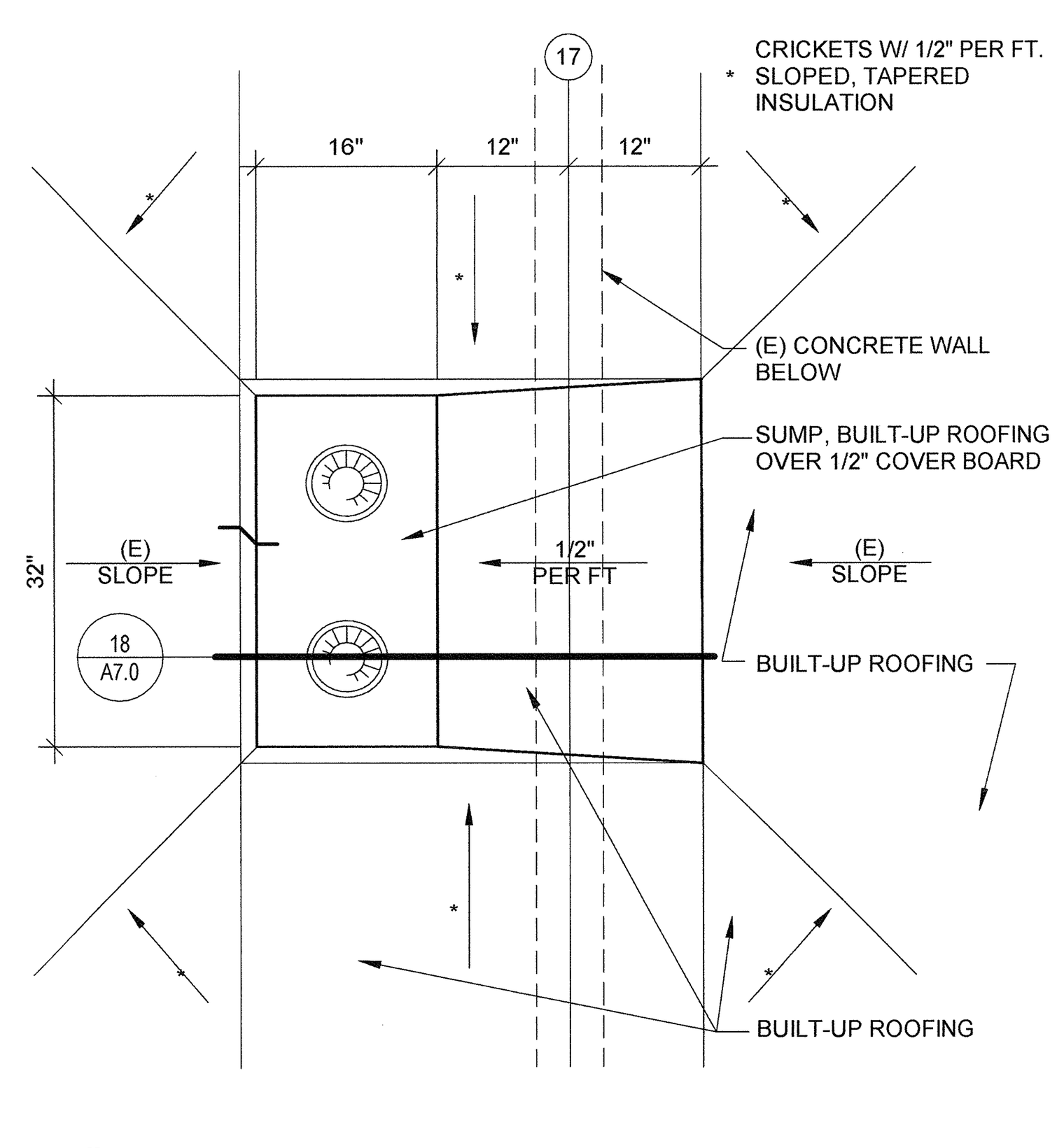
2 **NEW TO EXISTING ROOFING TIE-IN**
A7.0 3" = 1'-0" NEW TO EXST



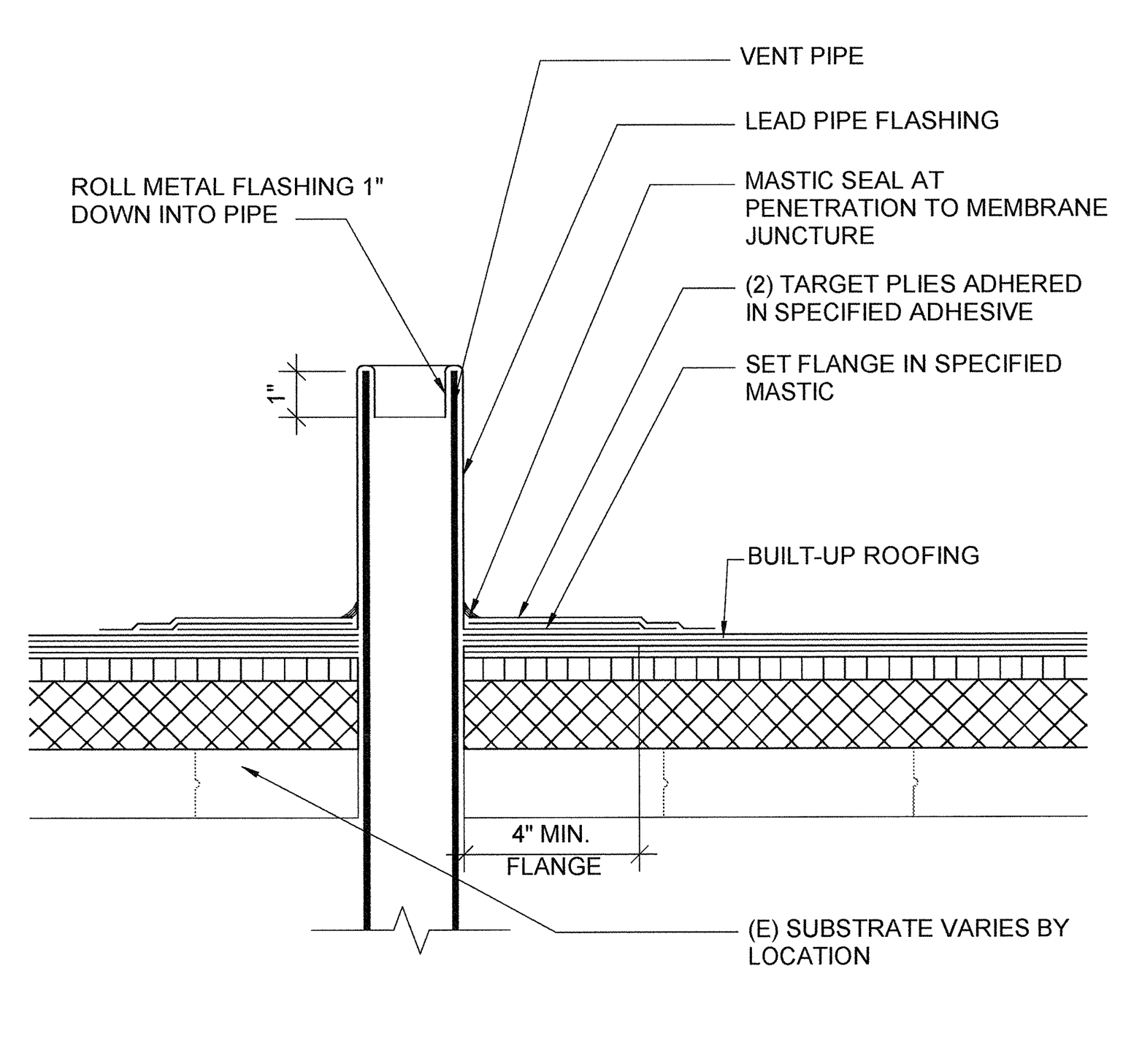
18 **ROOF DRAIN**
A7.0 1 1/2" = 1'-0" roof drain-overflow BUR



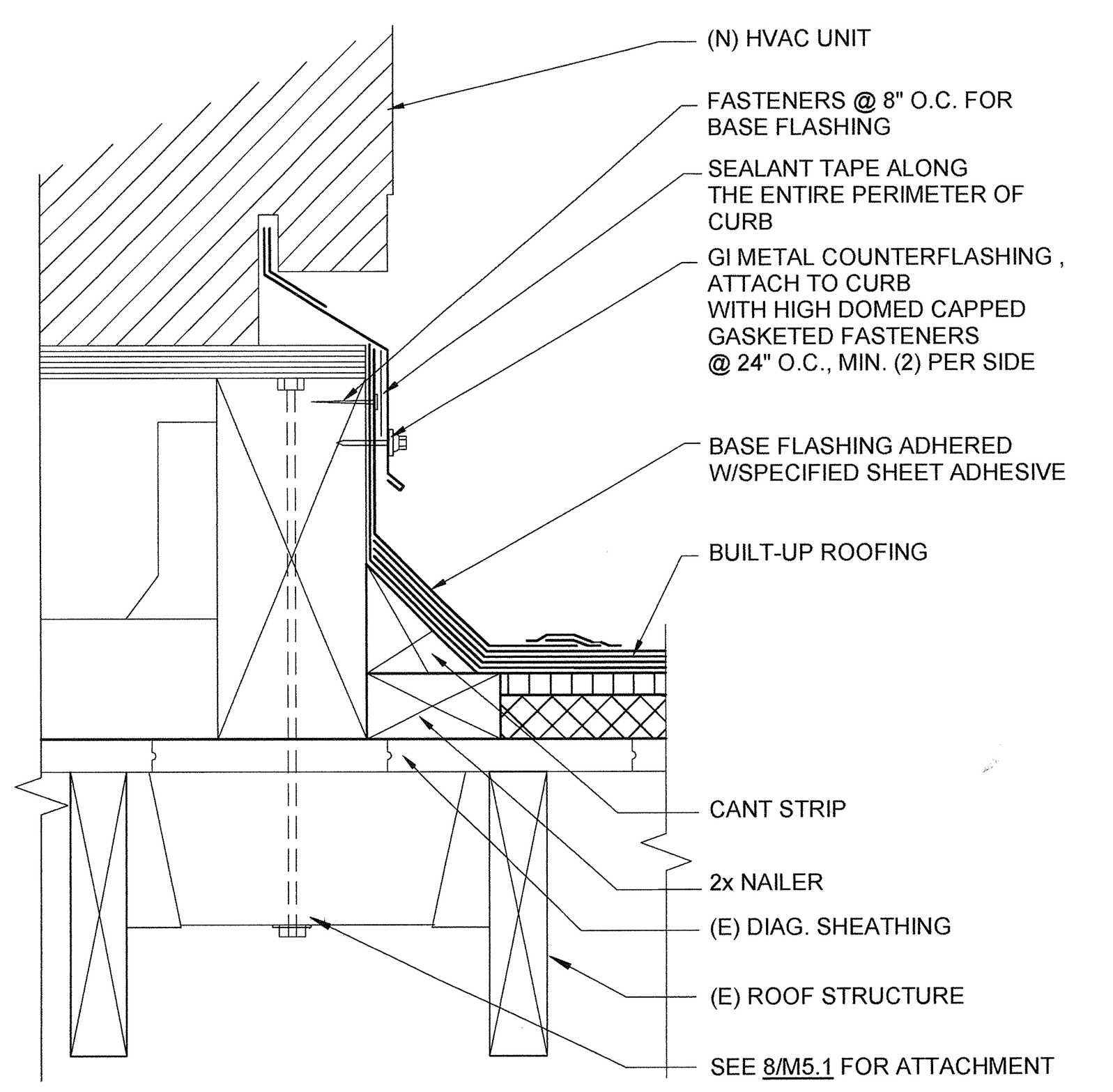
14 **ROOF HATCH**
A7.0 3" = 1'-0"



10 **R.D. AND O.F.D. W/SUMP**
A7.0 3/4" = 1'-0" RD-OFD SUMP



6 **VENT PIPE FLASHING**
A7.0 3" = 1'-0" D_Pipe4



3 **FLASHING @ HVAC UNIT CURB**
A7.0 3" = 1'-0" D_HVAC_CURB

CA+SA studio
3701 Business Drive Suite 200
Sacramento, CA 95820
Phone: (916) 365-9655

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APP NO. 02 - 116869
FILE NO. 39-H7
AC FLS SS
DATE 02 - 13 - 2019

GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
1621 BROOKSIDE RD.,
STOCKTON, CA 95207

STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

ROOF DETAILS

A7.0

HAMMER DRILLED

A S1.0 ADHESIVE ANCHORS

HIT-RE 500-V3 EPOXY ADHESIVE ANCHOR
ICC ESR #3814 ISSUED 2016

REBAR/BOLT SIZE	MINIMUM EMBEDMENT*	MINIMUM CONCRETE THICKNESS	MAX EMBEDMENT	MINIMUM SPACING AND EDGE DISTANCE	PULL TEST VALUE (LBS)
	NORMAL WEIGHT CONCRETE (145 PCF)				
#3 OR 3/8	2 3/8"	3 5/8"	7 1/2"	1 7/8"	2050
#4 OR 1/2	2 3/4"	4"	10"	2 1/2"	2800
#5 OR 5/8	3 1/8"	4 5/8"	12 1/2"	3 1/8"	3200
#6 OR 3/4	3 1/2"	5 1/2"	15"	3 3/4"	3600
#7 OR 7/8	3 1/2"	5 1/2"	17 1/2"	4 3/8"	4000
#8 OR 1	4"	6 1/4"	20"	5"	4400

NOTES:
1. MINIMUM F'C = 2500 PSI.
2. DESIGN BASED ON CRACKED CONCRETE.
3. VALUES FOR REBAR. -ASTM A615-GRADE 60 MIN.
4. VALUES FOR SINGLE ANCHOR ACTION ONLY.
5. ASSUMES ALL HOLES TO BE DRILLED BY A HAMMER DRILL WITH A CARBIDE BIT.
6. *FOR DEEPER EMBEDMENTS THE MINIMUM MEMBER THICKNESS MUST BE INCREASED BY THE SAME AMOUNT.

B S1.0 EXPANSION ANCHORS

HILTI KWIK BOLT-TZ
ICC ESR #1917

SIZE	EMBEDMENT	MINIMUM CONCRETE THICKNESS	MINIMUM EDGE DISTANCE	TORQUE TEST VALUE (FT-LBS)
	NORMAL WEIGHT CONCRETE (145 PCF)			
3/8"	2 5/16"	4"	4 3/8"	*25
1/2"	2 3/8"	4"	5 1/2"	40
5/8"	3 9/16"	5"	6 1/2"	60
3/4"	4 5/16"	6"	10"	110

NOTES:
1. MINIMUM F'C = 2500 PSI
2. DESIGN BASED ON CRACKED CONCRETE
3. VALUES FOR CARBON STEEL BOLT.
4. VALUES FOR SINGLE ANCHOR ACTION ONLY. SPACING BETWEEN ANCHORS IS 12 DIAMETERS OR MORE.
6. TEST TORQUE MUST BE REACHED WITHIN 1/2 TURN OF THE NUT.
* - 1/4 TURN OF NUT FOR 3/8" ANCHOR.

STRUCTURAL ABBREVIATIONS

@	AT
AB	ANCHOR BOLTS
AC	ASPHALTIC CONCRETE
AFF	ABOVE FINISH FLOOR
BN	BOUNDARY NAILING
BEV	BEVELED
BOC	BOTTOM OF CONCRETE
BOF	BOTTOM OF FOOTING
CIP	CAST IN PLACE
CJ	CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTER LINE
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
DF	DOUGLAS FIR
(E)	EXISTING
EF	EACH FACE
EW	EACH WAY
EJ	EXPANSION JOINT
EOS	EDGE OF SLAB
EN	EDGE NAILING
ES	EACH SIDE
FA	FRAMING ANCHOR
FD	FLOOR DRAIN
FF	FINISH FLOOR
FLG	FLANGE
FN	FIELD NAILING
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
GLB	GLUE LAMINATED BEAM
GSM	GALVANIZED SHEET METAL
GT	GIRDER TRUSS
HAS	HEADED ANCHOR STUD
HP	HIGH POINT
HSB	HIGH STRENGTH BOLT
HSS	HOLLOW STRUCTURAL SECTION
HT	HIP TRUSS
ID	INSIDE DIAMETER
JT	JACK TRUSS
LFRS	LATERAL FORCE RESISTING SYTEM
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT
LS	LAG SCREW
LT WT	LIGHT WEIGHT
LVL	LAMINATED VENEER LUMBER
MU	MECHANICAL UNIT
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NSG	NON SHRINK GROUT
OC	ON CENTER
OD	OUTSIDE DIAMETER
OSB	ORIENTED STRAND BOARD
OWSG	OPEN WEB STEEL GIRDER
OWSJ	OPEN WEB STEEL JOIST
OH	OPPOSITE HAND
PCC	PRECAST CONCRETE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PW	PLYWOOD
R	RADIUS
SAD	SEE ARCHITECTURAL DRAWINGS
SDST	SELF DRILLING SELF TAPPING
SIM	SIMILAR
SCJ	SLIP CONTROL JOINT
SLH	SHORT LEG HORIZONTAL
SLV	SHORT LEG VERTICAL
SOG	SLAB ON GRADE
SP	STRUCTURAL PLYWOOD
SS	STAINLESS STEEL
T24	TITLE 24 CALIFORNIA CODE
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING OR TOP OF FRAMING
TOM	TOP OF MASONRY
T.O. SLAB	TOP OF SLAB
TOS	TOP OF STEEL
TOW	TOP OF WALL
UNO	UNLESS NOTED OTHERWISE
WS	WATER STOP
WWF	WELDED WIRE FABRIC
WPJ	WEAKENED PLANE JOINT

EXPANSION ANCHOR & ADHESIVE ANCHOR NOTES

1. WHERE "EPOXY" OR "EXPANSION" ANCHORS ARE INDICATED IN DRAWINGS THESE NOTES & SCHEDULE (A S1.0) (B S1.0) SHALL APPLY.
2. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS GIVEN IN THE ICC REPORT.
3. PERIODIC SPECIAL INSPECTION IS REQUIRED, UNLESS NOTED OTHERWISE IN THESE DRAWINGS. VERIFICATION OF THE FOLLOWING IS REQUIRED DURING SPECIAL INSPECTION:
   A. ANCHOR TYPE AND DIMENSIONS.
   B. CONCRETE TYPE AND COMPRESSIVE STRENGTH.
   C. HOLE DIMENSIONS AND HOLE CLEANING PROCEDURES.
   D. ANCHOR SPACING, EDGE DISTANCES, CONCRETE/MASONRY THICKNESS, AND ANCHOR EMBEDMENT DEPTH.
   E. TIGHTENING TORQUE.
   F. COMPLIANCE WITH MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS.
4. WHEN INSTALLING DRILLED IN ANCHORS IN EXISTING CONCRETE OR MASONRY, USE CARE & CAUTION TO AVOID CUTTING OR DAMAGING EXISTING REINFORCING BARS.
5. ALL POST INSTALLED EXPANSION & ADHESIVE ANCHORS SHALL BE TENSION TESTED TO THE VALUES GIVEN IN THE SCHEDULE.
   EXCEPTIONS:
   a. SILL BOLTING APPLICATIONS: 10% OF THE ANCHORS SHALL BE TESTED.
   b. NON STRUCTURAL APPLICATIONS: 50% OF THE ANCHORS SHALL BE TESTED.
   IF ANY ANCHOR FAILS TESTING, ALL ANCHORS OF THE SAME TYPE NOT PREVIOUSLY TESTED SHALL BE TESTED UNTIL 20 CONSECUTIVE ANCHORS PASS, THEN RESUME THE INITIAL TESTING FREQUENCY, OR AS DIRECTED BY DSA (PER 1910A.5).
6. THE TESTING OF THE ANCHORS SHALL BE DONE BY THE TESTING LABORATORY IN THE PRESENCE OF THE PROJECT INSPECTOR & A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO THE GOVERNING AGENCY AND ARCHITECT/STRUCTURAL ENGINEER.

STRUCTURAL STEEL:

(SUBMIT SHOP DRAWINGS BEFORE FABRICATION)
1. FABRICATION, ERECTION, AND MATERIALS SHALL CONFORM WITH THE AISC SPECIFICATION FOR THE DESIGN FABRICATION & ERECTION OF STRUCTURAL STEEL FOR BUILDINGS AND 2016 CBC.
2. STRUCTURAL STEEL SHAPES SHALL CONFORM TO THE FOLLOWING:
   A. WIDE FLANGE BEAMS & COLUMNS (UNO)....ASTM-A992 (Fy = 50 ksi)
   B. ANGLES (UNO)..... ASTM-A36
   C. M, S, C, MC, HP, MT, WT & ST (UNO) ASTM-A36
   D. RECTANGULAR HSS SHAPES (UNO)....ASTM-A500 GRADE B (Fy=46 ksi)
   E. ROUND HSS SHAPES (UNO)....ASTM-A500 GRADE B (Fy = 42 ksi)
   F. PIPES (UNO).....ASTM-A53, TYPE E OR S, GRADE B (Fy = 35 ksi)
   G. PLATES, BARS & MISC. (UNO)....ASTM-A36
   H. ANCHOR RODS (UNO)....ASTM-F1554 (Fy=36ksi)
3. WELDING DONE BY THE ELECTRIC ARC PROCESS IN ACCORDANCE WITH "AWS". STANDARDS.
   PROVIDE E70XX ELECTRODES FOR ALL WELDS UNO.
   USE ONLY CERTIFIED WELDERS. ALL BUTT WELDS SHALL HAVE COMPLETE PENETRATION. ALL EXPOSED BUTT WELDS SHALL BE GROUND.
4. PLACE 2" NON-SHRINK GROUT UNDER ALL BASE PLATES BEFORE ADDING VERTICAL LOAD UNO.
5. ALL STRUCTURAL STEEL SHALL BE ERECTED PLUMB AND TRUE TO LINE. TEMPORARY BRACING SHALL BE INSTALLED AND SHALL BE LEFT IN PLACE UNTIL OTHER MEANS ARE PROVIDED TO ADEQUATELY BRACE THE STRUCTURE.
6. HOLES FOR UNFINISHED BOLTS SHALL BE OF THE SAME NOMINAL DIAMETER AS THE BOLT PLUS 1/16".
7. USE STANDARD AISC GAGE AND PITCH FOR BOLTS UNLESS NOTED OTHERWISE
8. WRAP STRUCTURAL STEEL EMBEDDED IN CONCRETE WITH 6x6-W1.4xW1.4 WWF. DO NOT PAINT EMBEDDED AREAS.
9. PROVIDE 3" MINIMUM CONCRETE COVERAGE ON ALL STEEL BELOW GRADE.
10. HIGH STRENGTH BOLTS: 3/4" DIAMETER A325-N TYP UNO.
11. PROVIDE 1/2"ø STITCH BOLTS & RING FILLS, SPACED AT NOT MORE THAN 2'-0" ON CENTER FOR ALL DOUBLE ANGLE MEMBERS.
12. COMPOSITE METAL DECKING AND ALL BEAMS AND GIRDERS SHALL REMAIN UNSHORED DURING AND AFTER THE PLACING OF THE CONCRETE FILL UNO.
13. DO NOT PAINT THE TOPS OF THE BEAMS & GIRDERS.
14. PAINT ALL EXPOSED STEEL W/ PRIMER.

DECK NOTES:

(SUBMIT SHOP DRAWINGS PRIOR TO FABRICATION)
1. DECK PANELS ARE TO BE THREE-SPAN CONTINUOUS WHEREVER POSSIBLE. ONE SPAN ONLY WHERE UNAVOIDABLE. DECKING AND ALL ACCESSORIES SHALL BE FORMED FROM STEEL SHEETS HAVING A MINIMUM YIELD STRENGTH OF 33,000 PSI AND CONFORMING TO ASTM A653. THE STEEL SHALL HAVE A MTL PROTECTIVE COATING OF ZINC CONFORMING TO LIGHT COMMERCIAL DECK.
2. SECTIONS, EDGE FORMS AND FLASHINGS ARE EXPECTED TO SPAN WITHOUT SHORING. IF SHORING IS DESIRED TO PREVENT EXCESSIVE DEFLECTIONS, CONTRACTOR SHALL PROVIDE SHORING AT NO EXTRA EXPENSE. CONTRACTOR MAY USE A HEAVIER GAUGE TO AVOID SHORING.
3. SHEAR STUDS IF REQUIRED, ARE INDICATED ON FRAMING PLANS AND FRAMING PLAN NOTES. LAYOUT SHEAR CONNECTORS BEGINNING WITH FIRST AVAILABLE FLUTE AT EACH END OF BEAM AND WORKING TOWARD MIDSPAN (EQUAL NUMBER EACH SIDE OF ℄).
   A) EVERY OTHER LOW FLUTE.
   B) IF CONNECTORS REMAIN, EVERY UNFILLED LOW FLUTE.
   C) IF CONNECTORS REMAIN, EVERY FLUTE (TWO STUD PATTERN) BEGINNING AT EA END & MOVING TOWARD MIDSPAN UNTIL TOTAL # OF STUDS IS SUPPLIED.
   D) PLACE STUDS ONLY AFTER CAREFUL LAYOUT AND APPROVAL BY STRUCTURAL ENGINEER.
4. MINIMUM BEARING OF DECKING ON SUPPORTS SHALL BE 2 INCHES.
5. PROVIDE ONE (1) SHEAR CONNECTOR AT 12" ON CENTER ON ALL BEAMS IF NUMBER OF CONNECTORS ARE NOT INDICATED ON PLANS.
6. MIN CONCRETE COVER FOR SHEAR CONNECTORS TO BE 1" @ TOP & 3" @ SIDE.
7. PROVIDE CLOSURE ANGLES (16 GA MINIMUM) AROUND ALL COLUMNS AS NECESSARY TO SUPPORT METAL DECK AND CONCRETE FILL.
8. SEE SHEET S.X.X FOR METAL DECK DETAILS.
9. SEE METAL DECK SCHEDULE FOR WELDING.
10. AT COMPOSITE FLOOR & ROOF DECKS 3/4"ø SHEAR STUDS MAY SUBSTITUTE FOR 3/4"ø PUDDLE WELDS.

COLD FORMED METAL STUD & JOIST NOTES:

GAUGE	20		18		16		14	
MIN. THICK	0.0330		0.0480		0.0540		0.0680	
DEPTH "D"	Sx	Ix	Sx	Ix	Sx	Ix	Sx	Ix
2 1/2"	0.188	0.235	0.242	0.302	0.296	0.370	0.360	0.450
3 5/8"	0.304	0.551	0.392	0.710	0.481	0.873	0.590	1.069
4"	0.346	0.692	0.446	0.892	0.544	1.098	0.673	1.346
6"	0.548	1.743	0.772	2.316	0.958	2.860	1.175	3.525
8"	0.846	3.552	1.156	4.633	1.434	5.736	1.772	7.089
10"	-	-	1.605	8.025	1.990	9.950	2.465	12.325
12"	-	-	-	-	2.622	15.730	3.253	19.518

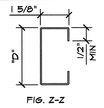


FIG. Z-Z

PER ICC ESR-3064P

1. ALL METAL STUD FRAMING SHALL BE FORMED FROM CORROSION RESISTANT STEEL CONFORMING TO ASTM A-653, W MIN YIELD STRENGTH OF 33 KSI FOR 18 GA & LIGHTER & 50 KSI FOR 16 GA & HEAVIER
2. METAL STUDS SHALL BE OF SIZE AND GAUGE SHOWN ON DRAWINGS W THE MIN EFFECTIVE SECTION PROPERTIES SHOWN IN THE TABLE ABOVE, & CHANNEL TYPE SECTIONS W STIFFENED FLANGES AS SHOWN IN FIG. Z-Z
3. MIN THICKNESS SHOWN IN TABLE FOR THE GAUGE SPECIFIED REPRESENTS 95% OF DESIGN THICKNESS PER 2007 AISI CODE, SECTION A2.4
4. METAL FRAMING SHALL BE PER ICC ESR NO. 3064P. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AGENCY APPROVAL FOR ANY SUBSTITUTIONS
5. WELDING SHALL BE IN ACCORDANCE W/ AWS D1.3 "STRUCTURAL WELDING CODE - SHEET STEEL." WELDERS SHALL BE AWS CERTIFIED. WELDING RODS: E-70 SERIES
6. METAL TRACKS SHALL BE SAME GAUGE AS STUDS WHICH IT SUPPORTS, UNPUNCHED, W MIN FLANGE WIDTH OF 1 1/4", EXCEPT WHERE SLOTTED SLIP TRACKS ARE REQ'D UNLESS NOTED OTHERWISE ON PLANS. SEE TYPICAL DETAILS
7. METAL STUDS SHALL NOT HAVE PUNCH-OUTS CLOSER THAN 1 1/2 TIMES THE DEPTH OF THE STUD FROM THE END OF THE STUD.
8. SIZES INDICATED IN THESE DRAWINGS ASSUME THE COMPRESSION FLANGE IS ADEQUATELY BRACED BY THE WALL FINISH OR OTHER APPROVED METHOD, AT 4'-0" MIN O.C., FOR FULL HEIGHT OF STUD.
9. STUD TO STUD CONNS TO BE MADE W/ (4) #10 SMS @ EA CONTACT TYP UNO.
10. UNLESS INDICATED OTHERWISE BRACING OF METAL STUDS TO BE PER ICC ESR-3064P
11. FRAMING SYSTEMS ARE NOT FULLY DETAILED ON THE DRAWINGS, BUT ARE GIVEN TO PROVIDE DESIGN INTENT. IT IS THE CONTRACTORS RESPONSIBILITY TO FABRICATE & INSTALL THE COLD FORMED METAL FRAMING ASSEMBLIES IN ACCORDANCE WITH THESE DOCUMENTS AND THE APPLICABLE CODE. ALL SUBSTITUTIONS FROM THE APPROVED DOCUMENTS MUST BE APPROVED BY ENGINEER AND DSA PRIOR TO INSTALLATION.
12. STUDS SHALL BE MIN 18GA (43 MILS) THICKNESS @ 16" OC SPACING UNO IN THESE DRAWINGS. 12" STUDS SHALL BE MIN. 16ga (54 MILS) THICKNESS @ 16" OC SPACING U.N.O. IN THESE DRAWINGS.

TYPICAL NOTES

APPLICABLE TO ALL DRAWINGS UNLESS NOTED OR SHOWN OTHERWISE

GENERAL NOTES:

1. CONSTRUCTION SHALL CONFORM TO THE 2016 CALIFORNIA BUILDING CODE, CBC.
2. NOTES AND DETAILS ON TYPICAL SHEETS SHALL APPLY UNLESS OTHERWISE SHOWN OR NOTED ON PLANS.
3. CONTRACTOR SHALL NOT SCALE DRAWINGS FOR SIZES, LENGTHS, CLEARANCES, ETC.
4. DETAILS OF CONSTRUCTION NOT FULLY SHOWN SHALL BE OF THE SAME NATURE AS SHOWN FOR A SIMILAR CONDITION.
5. PRIOR TO FABRICATION, SHOP DRAWINGS, SHALL BE SUBMITTED FOR REVIEW BY THE STRUCTURAL ENGINEER ON ALL STRUCTURAL STEEL, REINFORCING STEEL, STAIRS, GLUE-LAMINATED BEAMS, CONCRETE MIX PROPORTIONS.
   SHOP DRAWINGS: SHOP DRAWING SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS AND THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE ENGINEER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT BY INDICATING WHICH MATERIAL HE INTENDS TO FURNISH AND INSTALL AND BY DETAILING THE FABRICATION AND INSTALLATION METHODS INTENDED FOR USE. DUPLICATION OF DESIGN DRAWINGS FOR THE PURPOSE OF SHOP DRAWINGS IS NOT ACCEPTABLE.
6. SAFETY NOTE:
   A. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH THE PERTINENT SECTIONS OF THE "CONSTRUCTION SAFETY ORDERS" ISSUED BY THE STATE OF CALIFORNIA, LATEST EDITION, AND ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
   B. THE STRUCTURAL ENGINEER DOES NOT ACCEPT ANY RESPONSIBILITY FOR THE CONTRACTOR'S FAILURE TO COMPLY WITH THESE REQUIREMENTS.
   C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE DESIGN AND CONSTRUCTION OF ALL FORMS AND SHORING REQUIRED.
7. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
8. CONTRACTOR SHALL NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DRAWINGS OR DOCUMENTS. CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE BUILDING THAT IS IN CONFLICT UNTIL SAID CONFLICT IS RESOLVED WITH THE AFFECTED PARTIES. IF NOT RESOLVED PRIOR TO BID, THE MOST STRINGENT CONDITION WILL APPLY.
9. REVIEW OF FIRE SPRINKLER SHOP DRAWINGS, CALCULATIONS AND THE FOLLOW-UP CERTIFICATION LETTER REQUIRED BY THE FIRE MARSHALL IS NOT INCLUDED IN THE SERVICES OF THE STRUCTURAL ENGINEER OF RECORD. THE COST OF THIS REVIEW WILL BE CHARGED TO THE SUBCONTRACTOR RESPONSIBLE FOR THE DESIGN. THIS FEE MUST BE RECEIVED BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO THE COMPLETION OF THIS TASK.

DESIGN LOADS:

CODE: 2016 CALIFORNIA BUILDING CODE (CBC)

LIVE LOADS:

ROOF . . . . . 20.0 PSF (REDUCIBLE)

WIND:

ULTIMATE DESIGN WIND SPEED V_{ULT} (3 SEC GUST)= 115 MPH
RISK CATEGORY: ☐I ☐II ■III ☐IV
EXPOSURE C

ENCLOSURE CLASSIFICATION:	INTERNAL PRESSURE COEFFICIENT (GCpi)
☐ ENCLOSED	+0.18, -0.18
☐ PARTIALLY ENCLOSED	+0.55, -0.55
■ OPEN	0.00

SEISMIC:

BASIC SEISMIC RESISTING SYSTEM
TYPE: A2
DESCRIPTION: ORDINARY REINFORCED CONCRETE SHEAR WALLS.

BUILDING LOCATION:
LATITUDE: 37.958248 °N
LONGITUDE: -121.32622 °W

SEISMIC IMPORTANCE FACTOR I_E	SITE CLASS	RISK CATEGORY	SEISMIC DESIGN CATEGORY
☐ 1.00	☐ A	☐ I	☐ A
■ 1.25	☐ B	☐ II	☐ B
☐ 1.50	☐ C	■ III	☐ C
	■ D	☐ IV	■ D
	☐ E		☐ E
	☐ F		☐ F

MAPPED MAXIMUM CONSIDERED SPECTRAL RESPONSE ACCELERATIONS: S_S = 0.914, S_1 = 0.338

DESIGN SPECTRAL RESPONSE ACCELERATIONS PARAMETERS: S_{MS} = 0.691, S_{D1} = 0.388

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REGISTERED ARCHITECT CALIFORNIA No. C19022 RENEWAL 11/30/2019 STATE OF CALIFORNIA

POINT 2
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P2 JOB # 2017-103

REGISTERED PROFESSIONAL ENGINEER WILLIAM P. LARSON 3148 STRUCTURAL CIVIL OF CALIFORNIA

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APP NO. 02 - 116869
FILE NO. 39-H7
AC — FLS — SS
DATE 02 - 13 - 2019

GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL

1621 BROOKSIDE RD.,
STOCKTON, CA 95207

STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

TYPICAL NOTES

S1.0

TYPICAL DETAILS

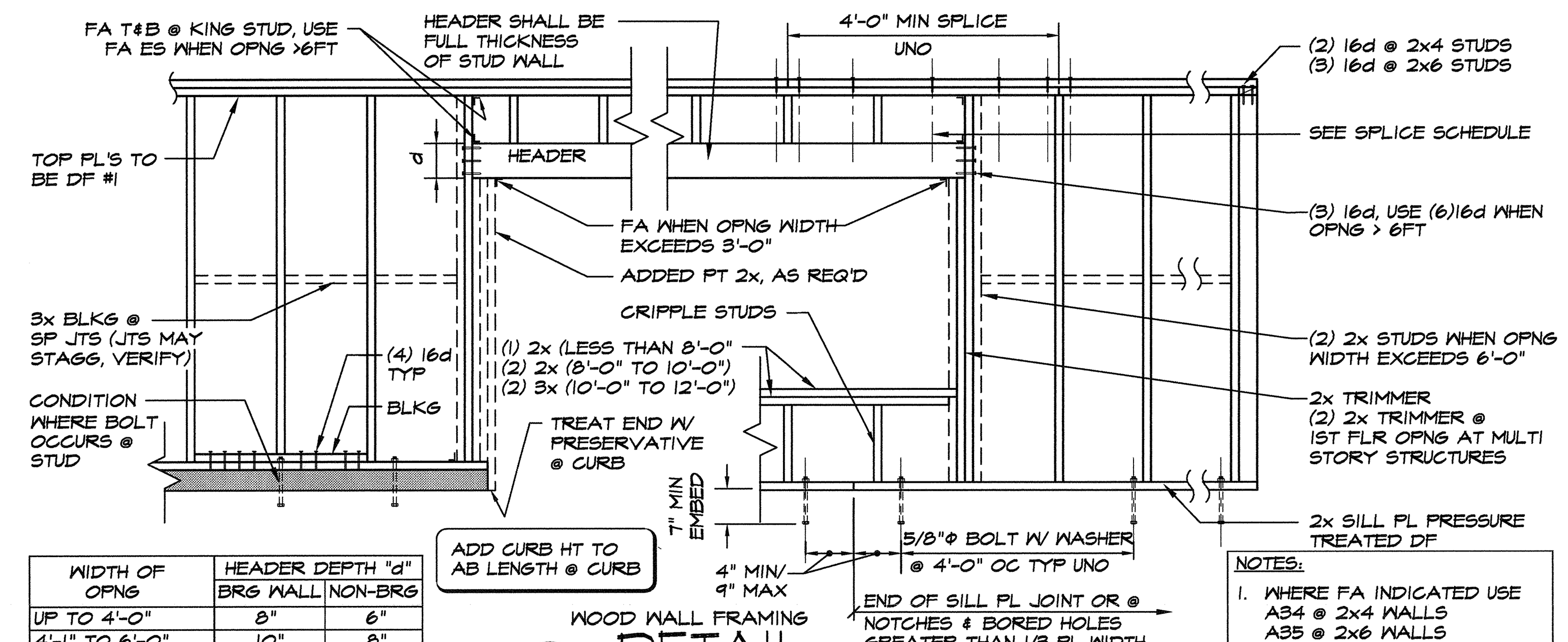
APPLICABLE TO ALL DRAWINGS UNLESS NOTED OR SHOWN OTHERWISE

A/S1.1 METAL DECK AND WELDING SCHEDULE:

DECK DESIGNATION		MINIMUM PROPERTIES (1' WIDE SECTION)				DECK PROFILE AND ATTACHMENT			CONNECTIONS AT PARALLEL MEMBERS & BLOCKING: AT BOUNDARY & FRAME LINES	AT OTHER MEMBERS	COMMENTS
PLAN DESIGNATION	DECK TYPE	+S IN 3	-S IN 3	I IN 4	ALLOW DIAPHRAGM SHEAR (NOTE 3)	CONNECTORS/ WELDS PER SHEET TO SUPPORTS	DECK PROFILE/WELD PATTERN	SIDE LAP ATTACHMENT	WELDS AT ALL PARALLEL MEMBERS & BLOCKING		
(hatched oval)	2"-18 GA ASC DG2WH-36 GALV DECK OR EQUAL (36" WIDE)	0.472	0.488	.570	932 PLF 14' SPAN	4-3/4"ϕ FUSION	36"	DELTA GRIP @ 24" OC	3/4"ϕ FUSION WELDS @ 12" OC	3/4"ϕ FUSION WELDS @ 12" OC	

*NOTE:
1. VALUES ARE BASED ON 8' MAX SPAN
2. VALUES REPORTED ABOVE ARE TAKEN FROM UES #161 12-06-2018
3. DSA ALLOWED 80% OF PUBLISHED CAPACITY.
4. ASC-ASC STEEL DECK UES #161

DECKWELDSCH.dwg

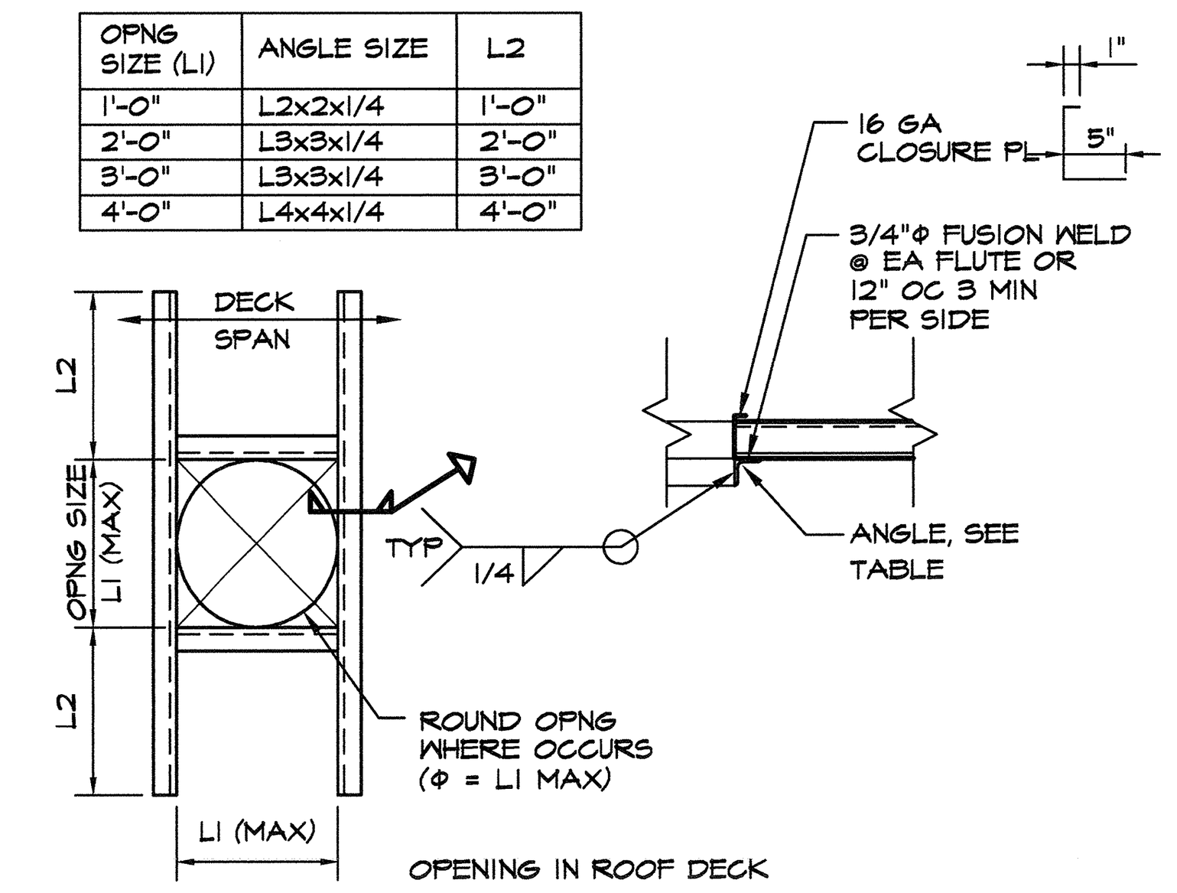


WIDTH OF OPNG	HEADER DEPTH "d"	
	BRG WALL	NON-BRG
UP TO 4'-0"	8"	6"
4'-1" TO 6'-0"	10"	8"
6'-1" TO 8'-0"	12"	10"
8'-1" TO 10'-0"	14"	12"
10'-1" & GREATER	SEE PLAN	SEE PLAN

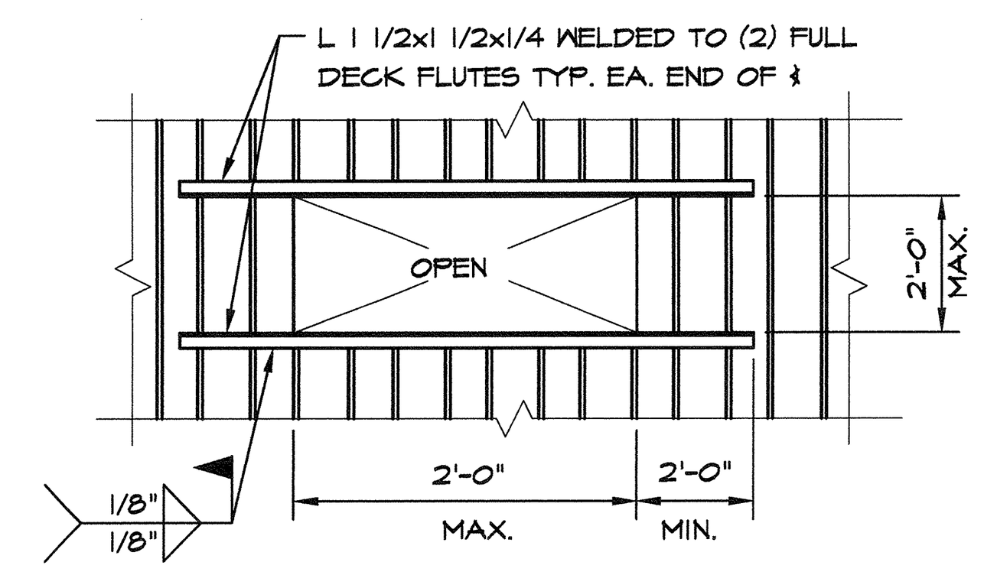
NOTES:
1. WHERE FA INDICATED USE A34 @ 2x4 WALLS A35 @ 2x6 WALLS

WOOD WALL FRAMING
4/S1.1 DETAIL
NO SCALE WOOD17.dwg 1/2"

OPNG SIZE (L1)	ANGLE SIZE	L2
1'-0"	L2x2x1/4	1'-0"
2'-0"	L3x3x1/4	2'-0"
3'-0"	L3x3x1/4	3'-0"
4'-0"	L4x4x1/4	4'-0"

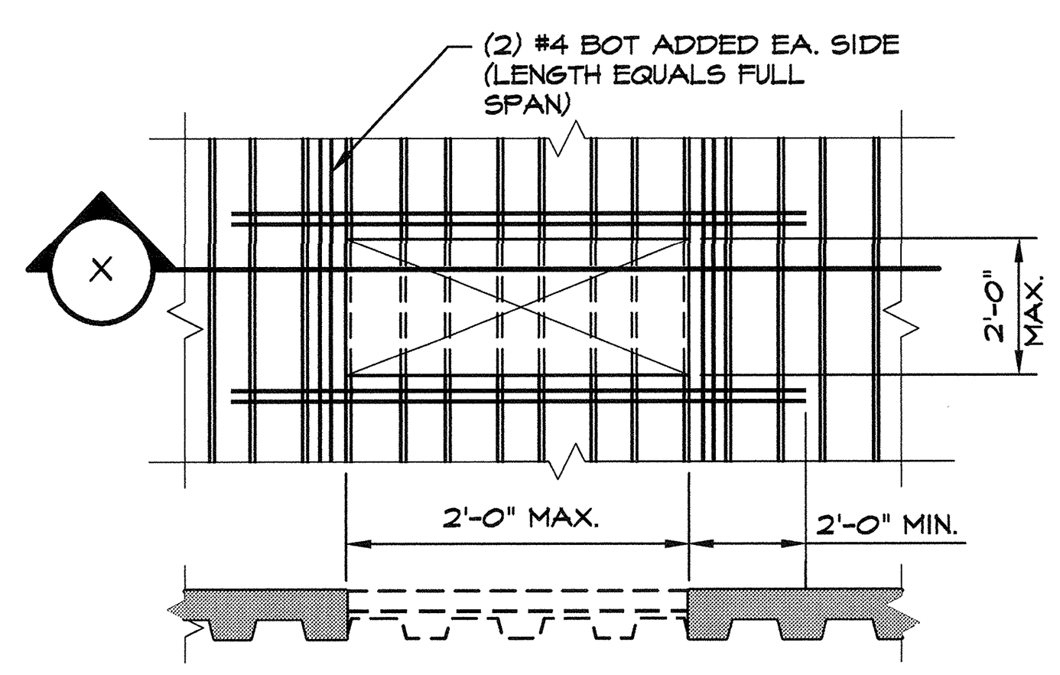


OPENING IN ROOF DECK
1/S1.1 DETAIL
NO SCALE



NOTES:
1. NO REINF. ANGLES REQ'D WHEN OPENINGS ARE LESS THAN 6"
2. INSTALL ANGLES BELOW DECK WHERE REQ'D

DECK OPENING BEFORE POUR

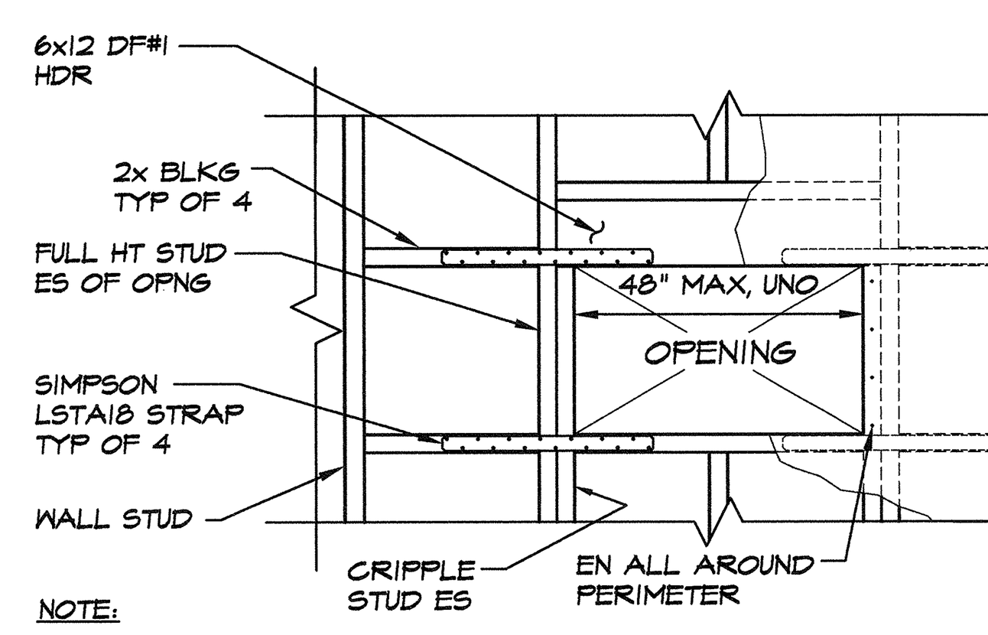


X SECTION
NTS

BLOCK-OUT DECK OPENING

NOTES:
1. NO REINF. REQ'D WHEN OPENING IS LESS THAN 6"
2. BLOCK OUT OPENING W/ STYROFOAM
3. CUT DECK AFTER CONC. HAS REACHED DESIGN STRENGTH

OPENING
2/S1.1 DETAIL
NO SCALE



NOTE:
1. OPGS IN SHEAR WALLS ONLY PERMITTED WHERE SPECIFICALLY CALLED OUT ON STRUCTURAL DWGS.
2. SEE MECHANICAL DWGS FOR SIZE & LOCATION OF OPG
3. PROVIDE PLYWOOD EDGE NAILING @ PERIMETER OF OPG
4. TYPICAL OPG IN SHEAR WALL- NOT REQD AROUND DOOR OR WINDOW OPG UNLESS SPECIFICALLY INDICATED
5. NOT APPLICABLE TO OPNG LESS THAN 10" SQ

TYPICAL WALL OPENING
3/S1.1 DETAIL
NO SCALE WOOD11.dwg 3/4"

SEE 4/S1.1 ALL FRAMING REQUIREMENTS

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LICENSED ARCHITECT No. C19022 11/30/19 STATE OF CALIFORNIA

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REGISTERED PROFESSIONAL ENGINEER WILLIAM P. LARSON 3148 STRUCTURAL STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APP NO. 02 - 116869
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GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
1621 BROOKSIDE RD., STOCKTON, CA 95207

STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

TYPICAL DETAILS

S1.1

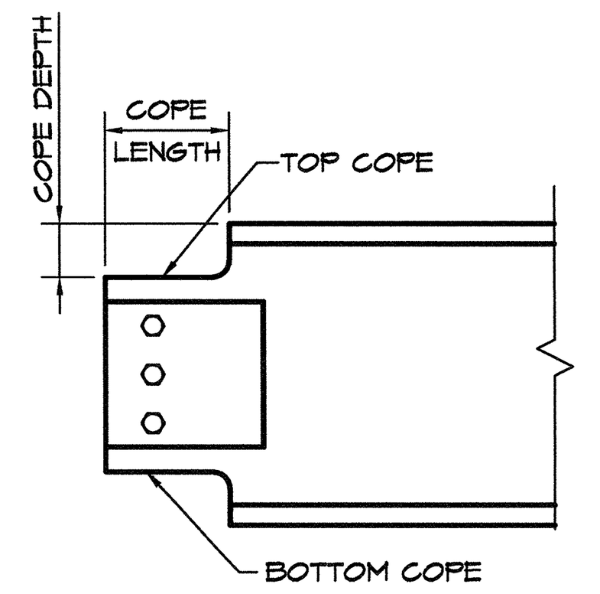
TYPICAL COPED BEAM CONNECTION

	NUMBER OF BOLTS	PL THICK (A36) (INCHES)	WELD SIZE (INCHES)	TOP COPE ONLY: MIN. WEB THICK (INCHES)	TOP COPE ONLY: MAX. COPE LENGTH (INCHES)	TOP & BOTTOM COPE: MIN. WEB THICK (INCHES)	TOP & BOTTOM COPE: MAX. COPE LENGTH (INCHES)
3/4"Φ A325 N BOLTS	2	5/16	1/4	0.19	6	0.19	2 1/2
	3	5/16	1/4	0.20	4 1/2	0.21	2 1/2
	4	5/16	1/4	0.23	7	0.26	4
	5	5/16	1/4	0.24	9	0.27	5
	6	3/8	5/16	0.27	11	0.30	7
	7	3/8	5/16	0.27	14	0.29	10
	8	3/8	5/16	0.26	18	0.28	14
	9	1/2	3/8	0.25	18	0.27	18

NOTES:

THESE NOTES APPLY TO ALL COPED BEAMS, U.N.O.

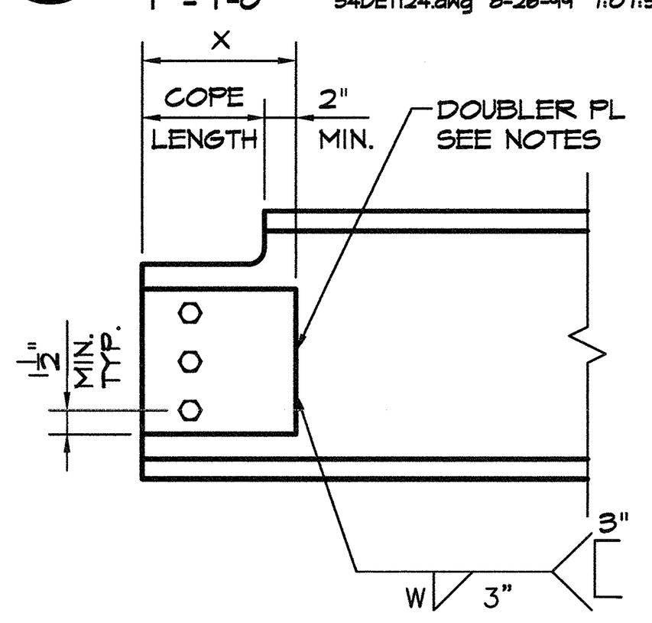
1. COPED BEAMS SHALL BE CHECKED FOR MINIMUM WEB THICKNESS AND MAXIMUM COPE LENGTH PER TABLE. COPE LENGTH IS AS SHOWN IN THE CONNECTION DETAILS.
2. MAXIMUM TOP COPE DEPTH IS 2" FOR BEAM DEPTHS UP TO W18, 3" FOR BEAM W21 AND DEEPER. WHEN ACTUAL COPE DEPTH EXCEEDS MAXIMUM COPE DEPTH, ADD STIFFENER PER TYPICAL COPE WEB STIFFENER DETAIL 13/S1.2
3. WHEN ACTUAL COPE LENGTH IS GREATER THAN SHOWN IN APPLICABLE TABLE, SEE TYPICAL COPE WEB STIFFENER DETAIL.
4. SEE WEB DOUBLER DETAIL 12/S1.2 FOR BEAMS NOT CONFORMING TO MIN. WEB THICKNESS REQ.



TYP. COPED BEAM DETAIL

11/S1.2 GENERAL NOTES FOR COPED BEAMS

1" = 1'-0" S4DET124.dwg 8-26-99 7:07:57 pm EST



NOTES:

1. USE FOLLOWING FORMULA TO DETERMINE DOUBLER PLATE THICKNESS: MINIMUM WEB THICKNESS PER TABLE 11/S1.2 - BEAM WEB THICKNESS + COEFFICIENT

MINIMUM PLATE THICKNESS SHALL BE 1/4": MINIMUM WIDTH X= 5"

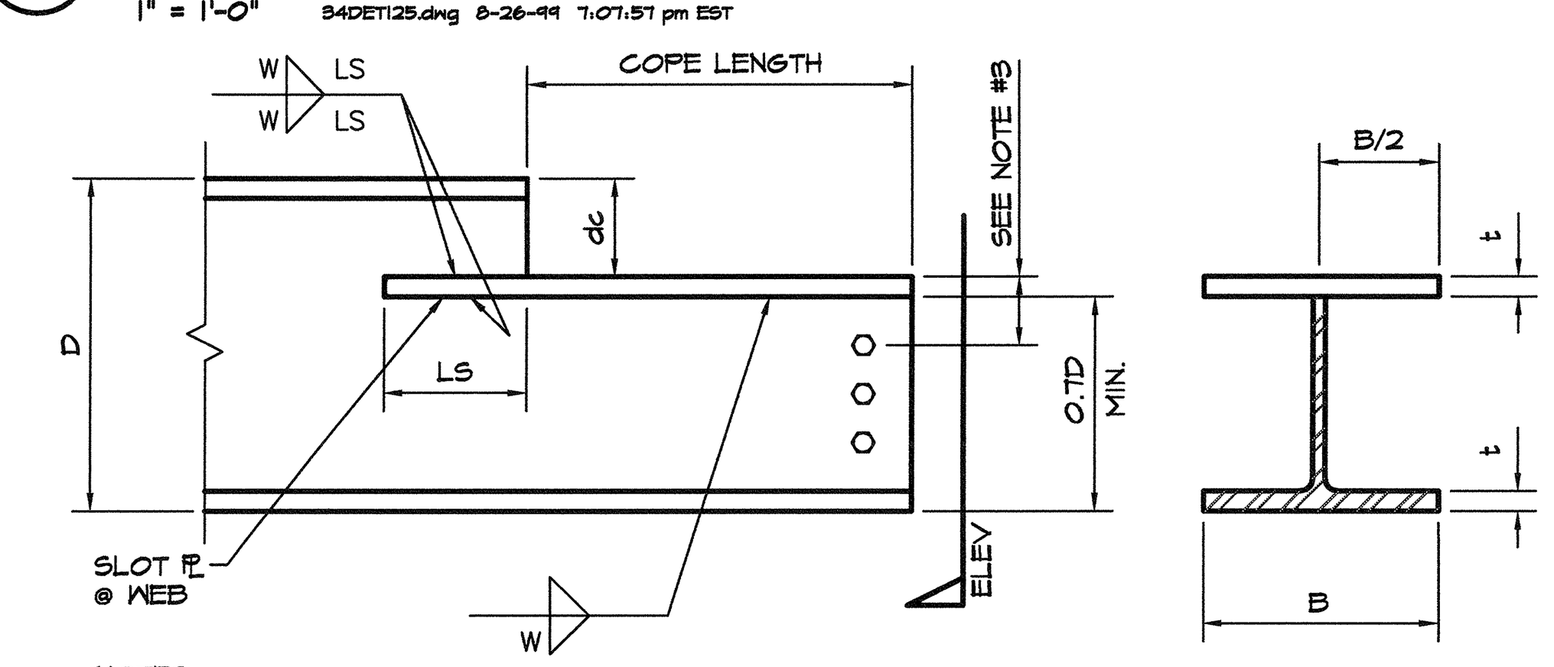
X	COEFFICENT
5	1/8"
7	1/4"
10 1/2	3/8"

2. PLATE SHALL BE SAME GRADE STEEL AS BEAM
3. WELD SIZE 'W' SHALL BE 1/16" LESS THAN PLATE THICKNESS

TYPICAL WEB DOUBLER DETAIL

12/S1.2 DETAIL

1" = 1'-0" S4DET125.dwg 8-26-99 7:07:57 pm EST



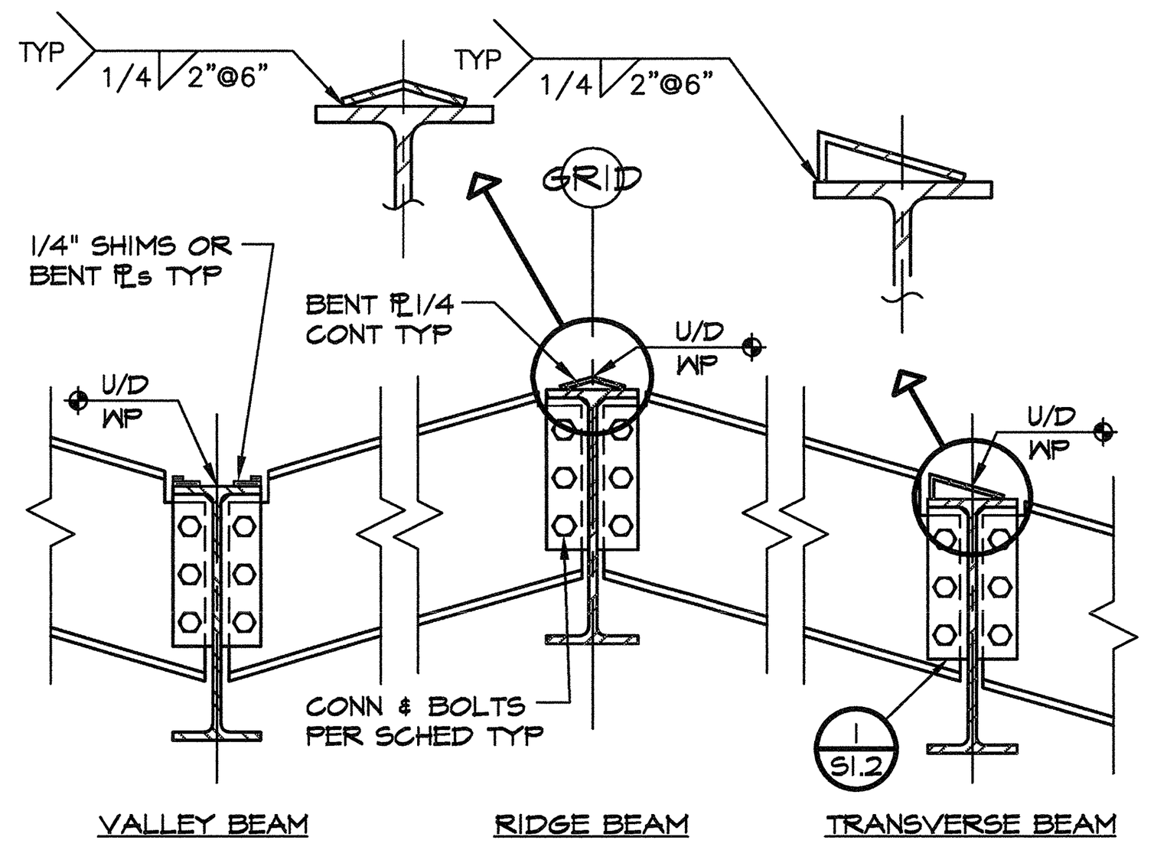
NOTES:

1. 'W' SHALL BE 0.35t OR AISC MINIMUM.
2. 'LS' SHALL BE THE GREATER OF THREE TIMES (B/2) OR TWO TIMES THE COPE DEPTH (dc)
3. ADJUST BOLT LOCATION AS REQUIRED.

TYPICAL COPED WEB STIFFENER

13/S1.2 DETAIL

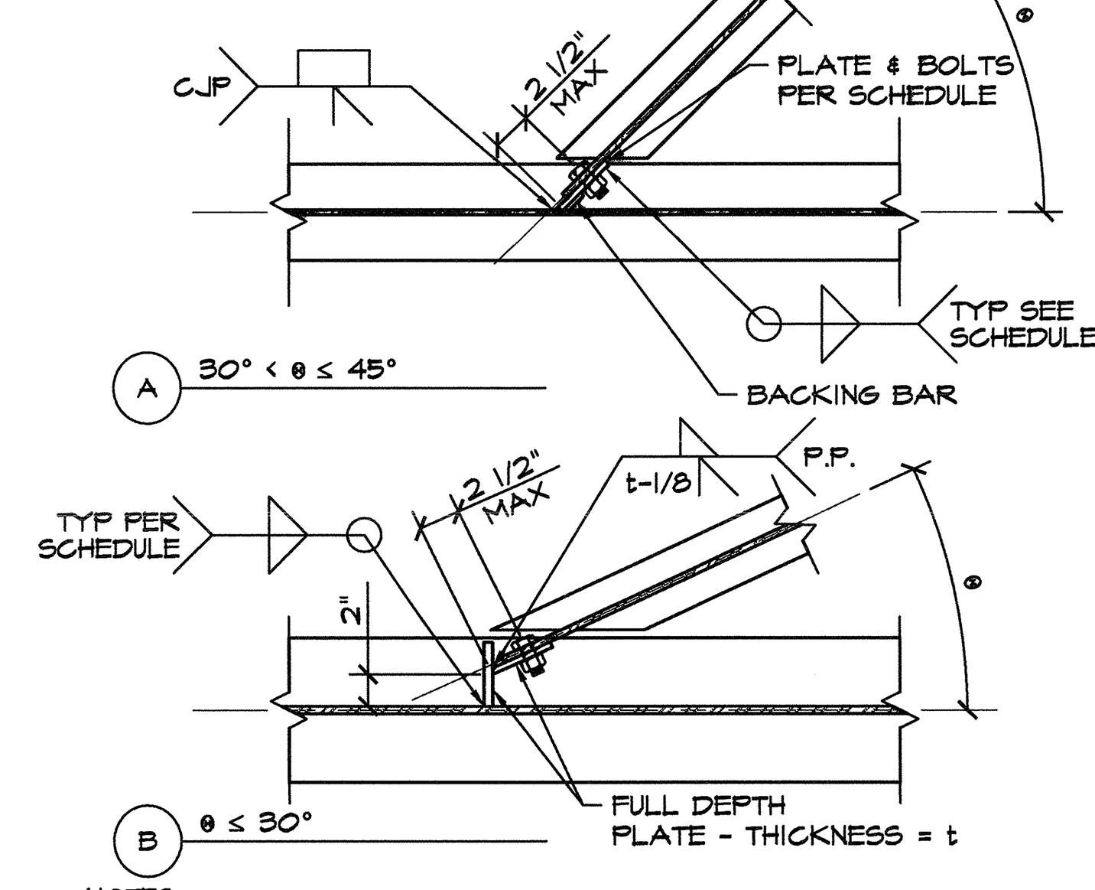
1" = 1'-0" S4DET123.dwg 8-26-99 7:07:57 pm EST



SLOPED BEAM CONNECTION

14/S1.2 DETAIL

NO SCALE STEEL40.dwg



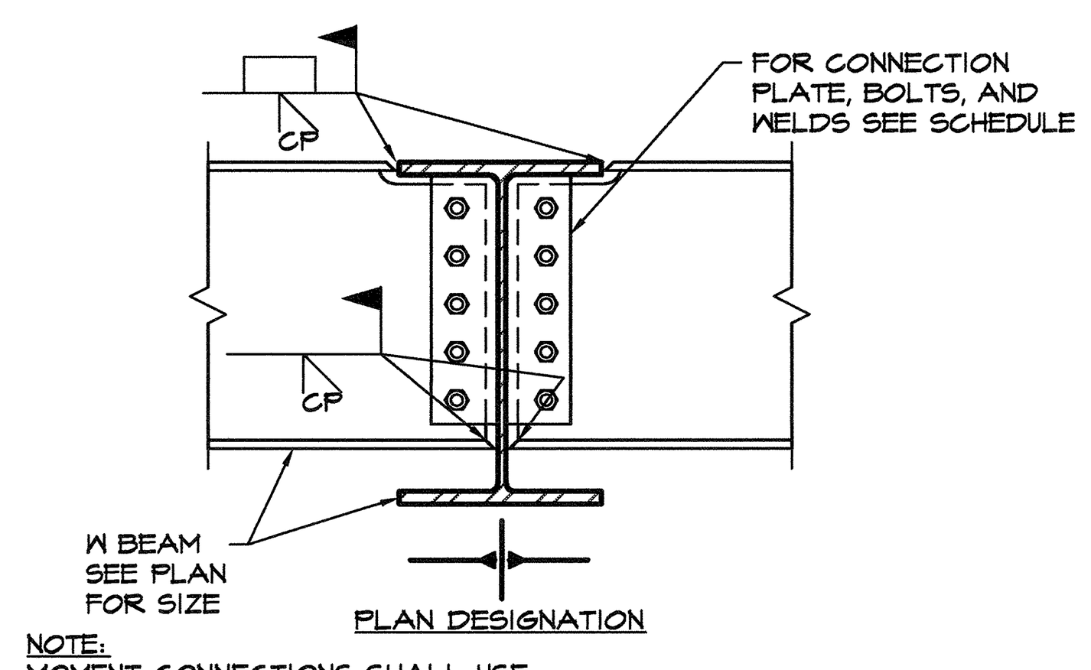
NOTES:

1. FOR CONNECTIONS WHERE ANGLE θ BETWEEN BEAMS > 45° USE DETAIL 1/S1.2
2. t = PLATE THICKNESS PER 1/S1.2 PLUS 1/8"
3. FOR INFO NOT SHOWN SEE 1/S1.2

SKEWED BEAM CONNECTION

8/S1.2 DETAIL

1" = 1'-0" STEEL 46

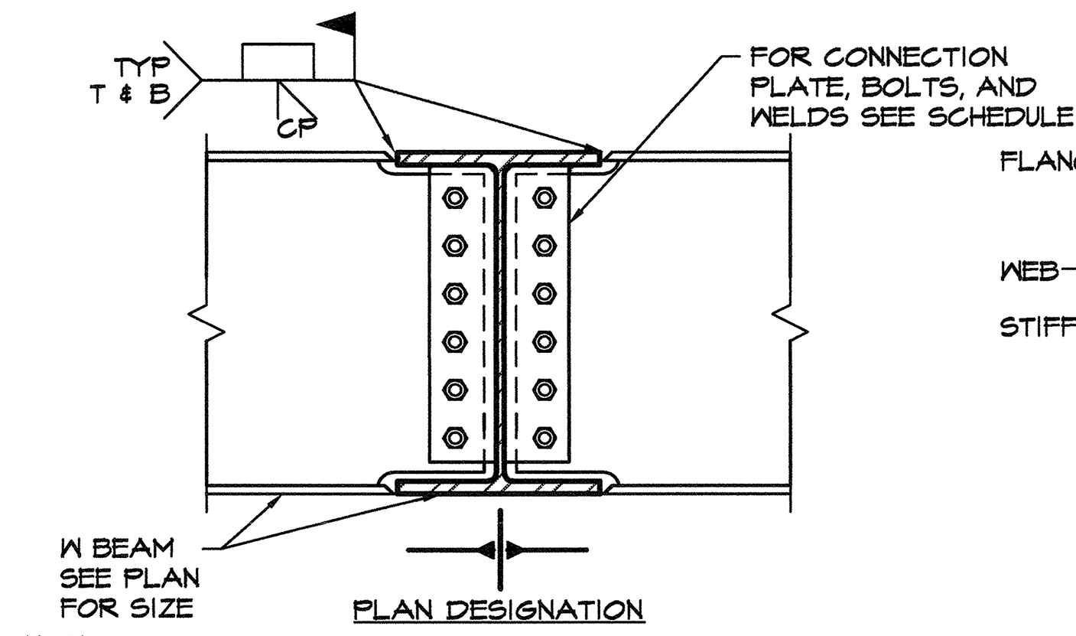


NOTE:
MOMENT CONNECTIONS SHALL USE SLIP CRITICAL BOLTS - SEE SCHEDULE
BUTT WELDS TO FLANGES SHALL BE DONE PRIOR TO TIGHTENING HIGH STRENGTH BOLTS - TYP

MOMENT CONNECTION

9/S1.2 DETAIL

1" = 1'-0" STEEL1

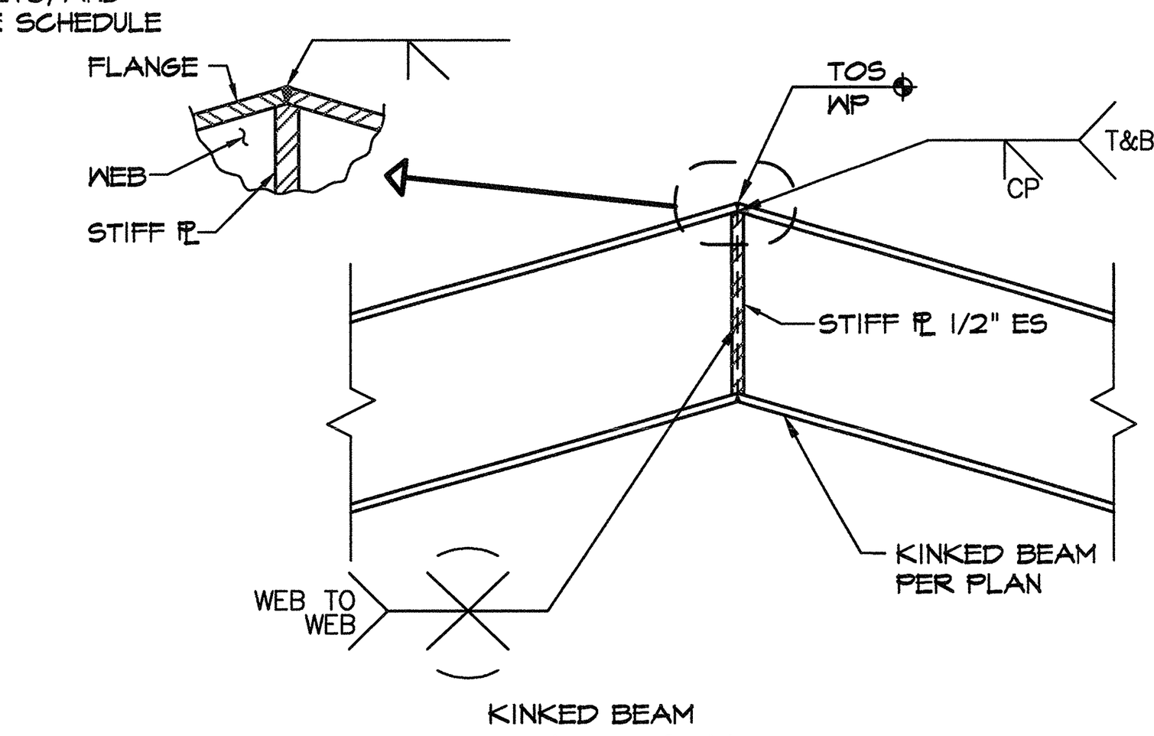


NOTE:
MOMENT CONNECTIONS SHALL USE SLIP CRITICAL BOLTS - SEE SCHEDULE
BUTT WELDS TO FLANGES SHALL BE DONE PRIOR TO TIGHTENING HIGH STRENGTH BOLTS - TYP

MOMENT CONNECTION

10/S1.2 DETAIL

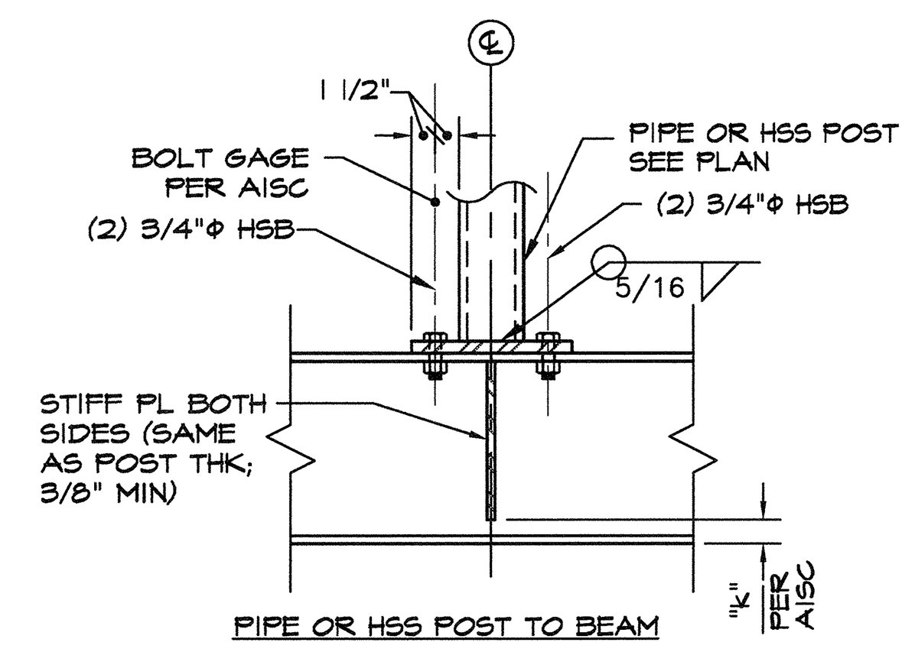
1" = 1'-0" STEEL2



KINKED BEAM

6/S1.2 DETAIL

1" = 1'-0" STEEL51.dwg 8-18-04 2:13:57 pm EST



NOTES:

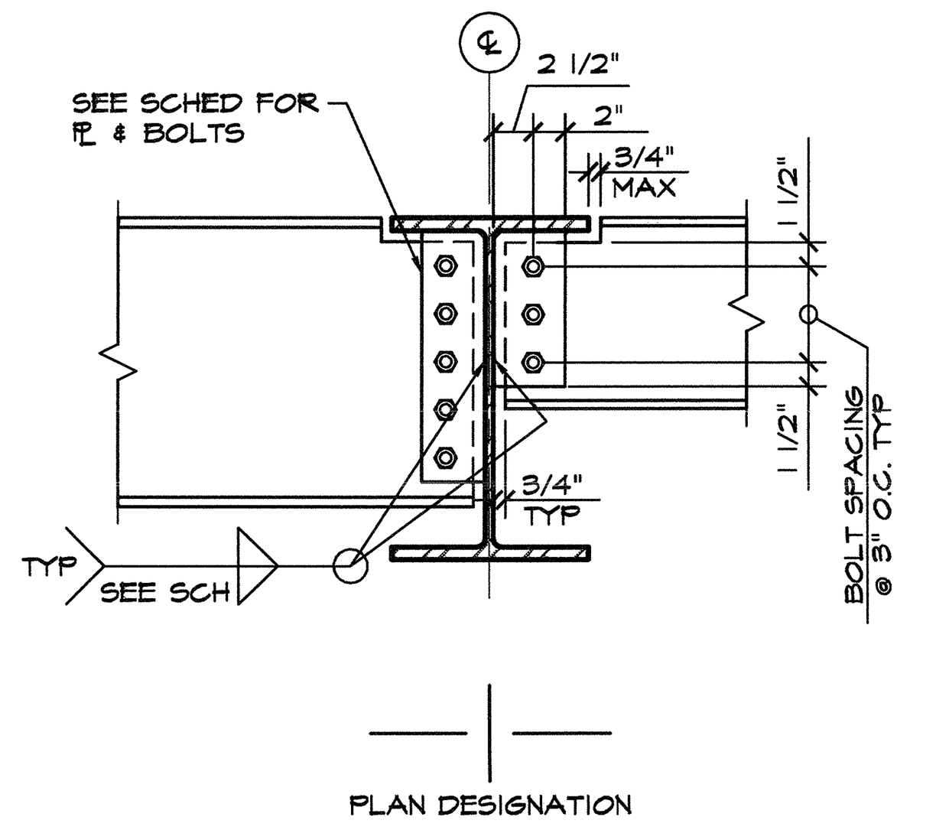
1. BASE PL WIDTH = POST WIDTH + 5/8" MIN
2. BASE PL THICK = 3/4" UNO
3. USE FULL HT STIFF PL IF THERE IS POST BELOW

5/S1.2 DETAIL

NO SCALE

TYPICAL DETAILS

APPLICABLE TO ALL DRAWINGS UNLESS. NOTED OR SHOWN OTHERWISE



NOTE:

1. TIGHTEN BOLTS TO "SNUG TIGHT" POSITION. PER SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS. WHERE SLIP CRITICAL CONNECTIONS ARE INDICATED ON DWG, USE STD HOLES AND TC BOLTS PER ASTM F1852.
2. FOR SKEWED BEAMS SEE 8/S1.2
3. FOR COPED BEAM DETAILS SEE 12/S1.2
4. FOR ONE SIDED BEAM CONN SEE 4/S1.2

* WELD SIZE TO MEET REQ'TS OF TABLE J2.4 (13TH EDITION AISC MANUAL) WHICHEVER IS LARGER

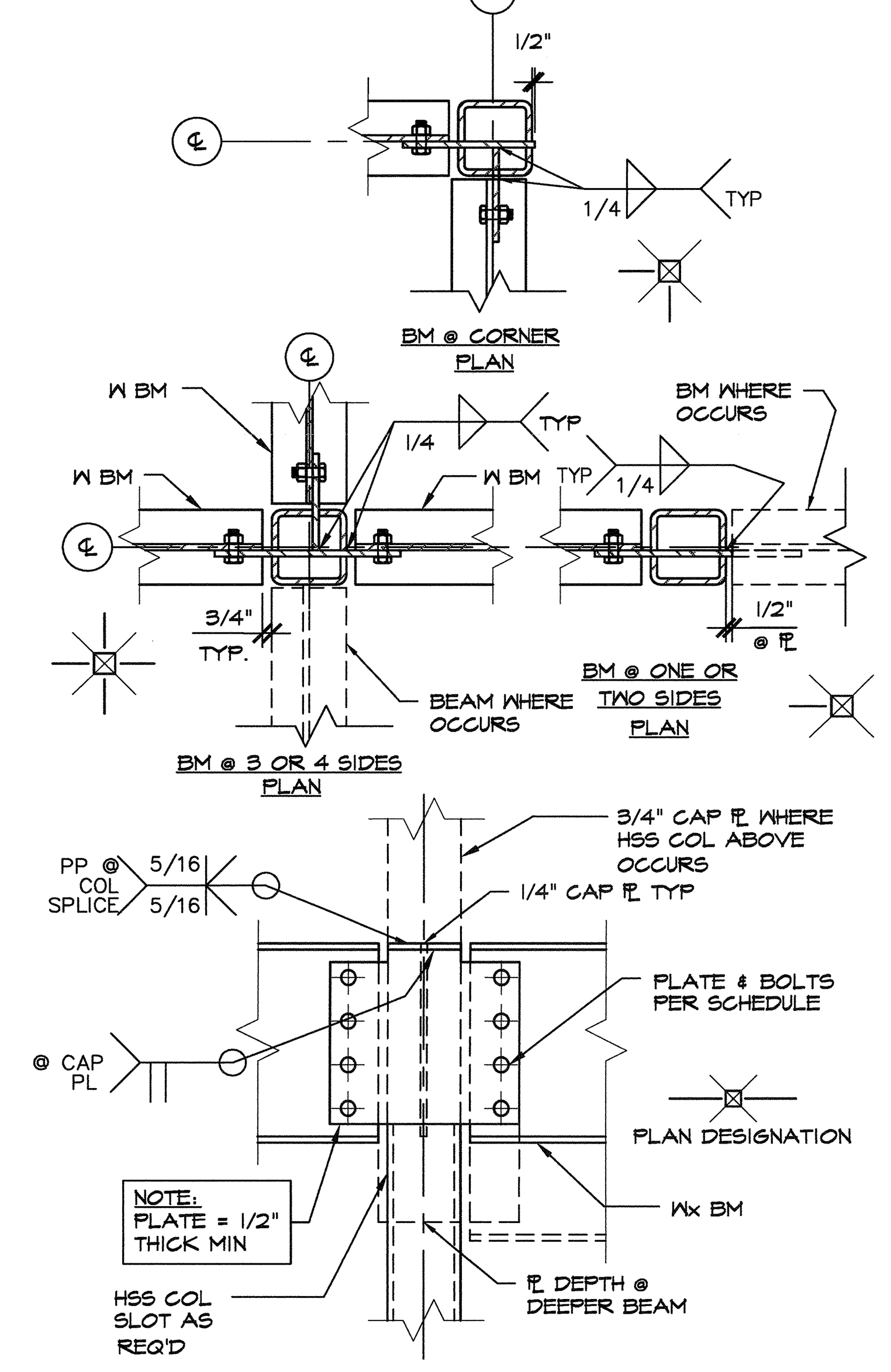
** SEE 2/S1.2

SCHEDULE (A325N BOLTS)

BEAM SIZE	PL. THICK. **	#-SIZE BOLTS	MIN WELD *SIZE
W8	5/16"	(2) 3/4"	1/4"
W10	5/16"	(2) 3/4"	1/4"
W12	5/16"	(3) 3/4"	1/4"
W14	5/16"	(3) 3/4"	1/4"
W16	5/16"	(4) 1"Φ	3/8"
W18	5/16"	(5) 1"Φ	3/8"
W21	3/8"	(6) 1"Φ	3/8"
W24	3/8"	(7) 1"Φ	1/2"
W27	3/8"	(8) 1"Φ	1/2"
W30	3/8"	(9) 1"Φ	1/2"
W33	1/2"	(10) 1"Φ	1/2"
W36	5/8"	(10) 1"Φ	1/2"

1/S1.2 TYPICAL BEAM CONNECTION DETAIL

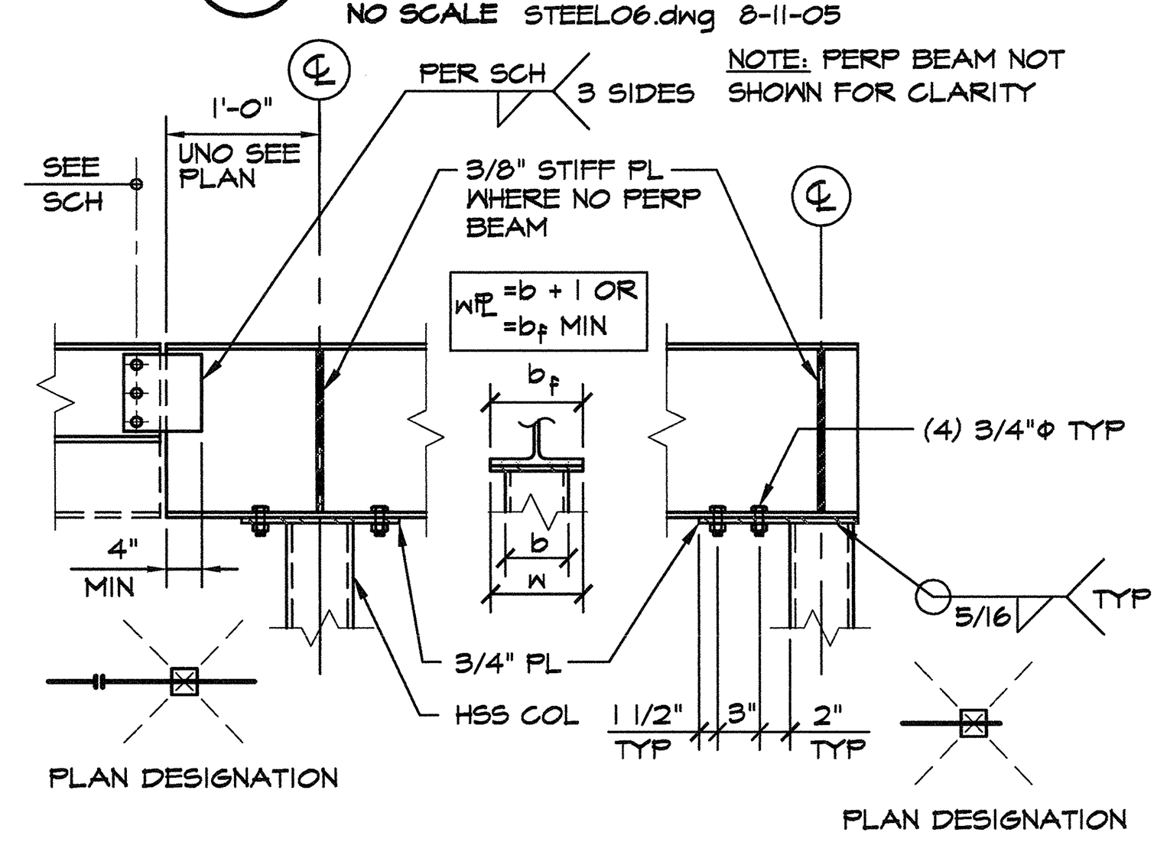
1" = 1'-0" STEEL14



TYP. W.F. BEAM TO HSS COL.

2/S1.2 SECTION

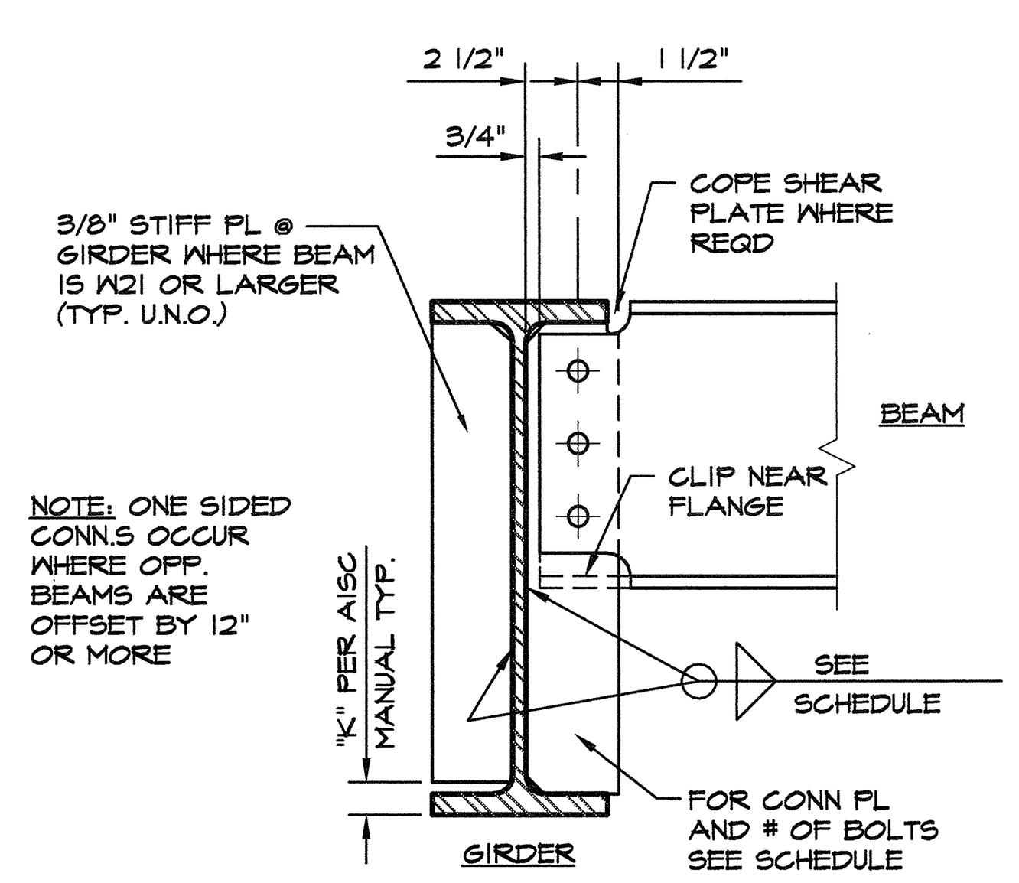
NO SCALE STEEL06.dwg 8-11-05



TYP. W.F. BEAM TO HSS COL.

3/S1.2 SECTION

NO SCALE STEEL20.dwg



ONE-SIDED BEAM CONN.

4/S1.2 SECTION

NO SCALE STEEL3.dwg

7/S1.5 NOT USED

= 1'-0"

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GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
1621 BROOKSIDE RD., STOCKTON, CA 95207

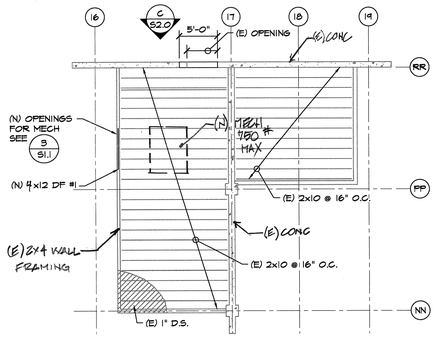
STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

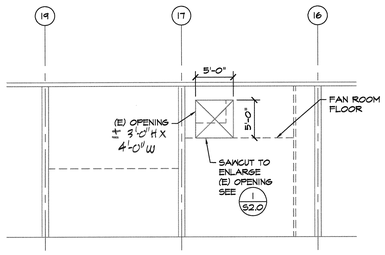
TYPICAL DETAILS

S1.2



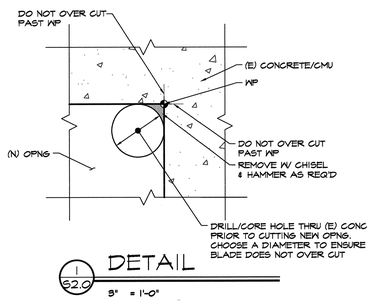
B/S2.0 FAN ROOM FLOOR

1/8" = 1'-0"



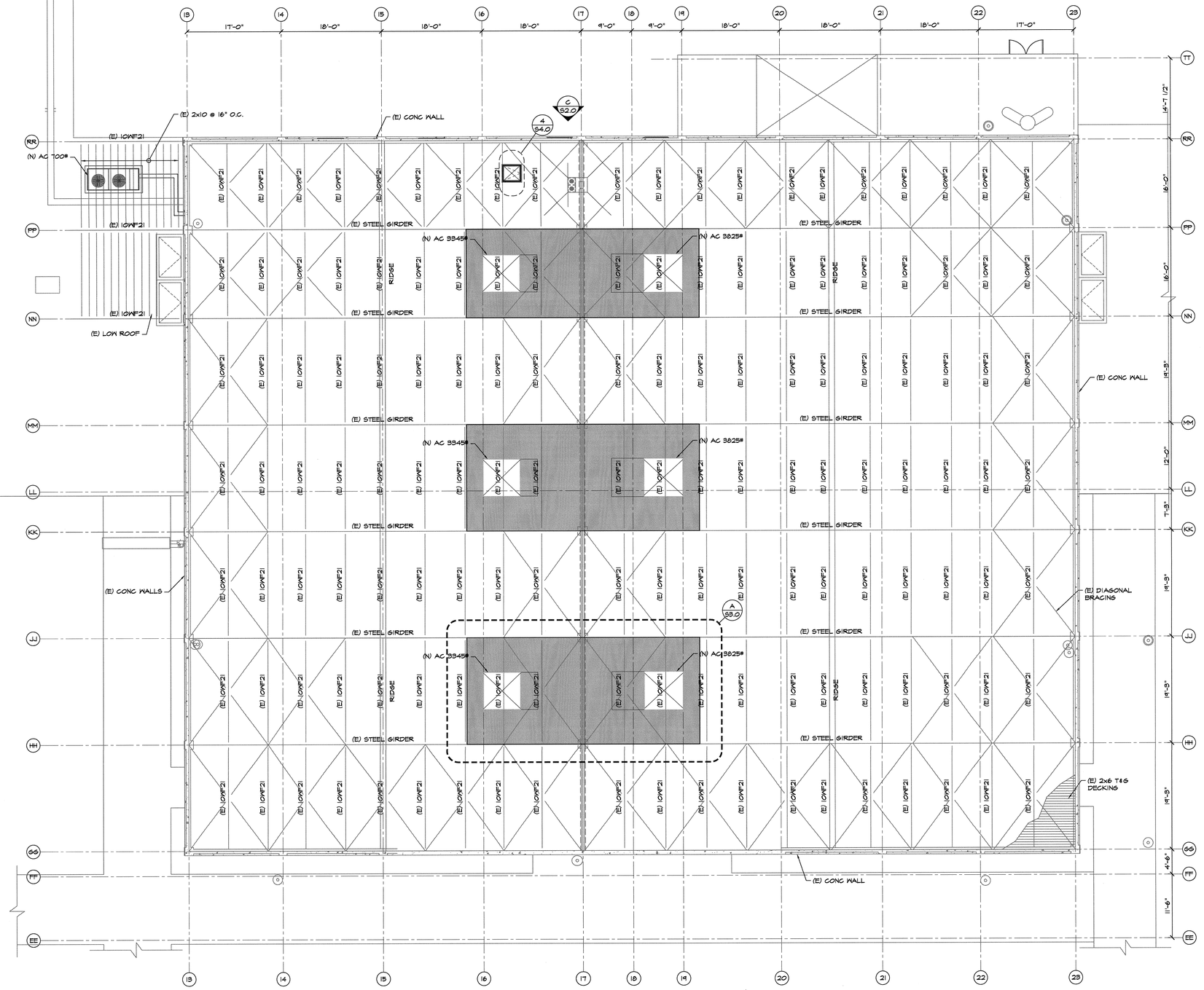
C/S2.0 ELEVATION

1/8" = 1'-0" 108ELEV002



1/S2.0 DETAIL

3" = 1'-0"



A/S2.0 ROOF FRAMING PLAN

1/8" = 1'-0"

NOTES:
1. DENOTES (N) STRUCTURAL STEEL & METAL DECK HVAC PLATFORM SEE SHEET S3.0
2. VERIFY ALL (E) DIMENSIONS
3. SEE S2.1 FOR OPENINGS IN ROOF DECK

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GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL

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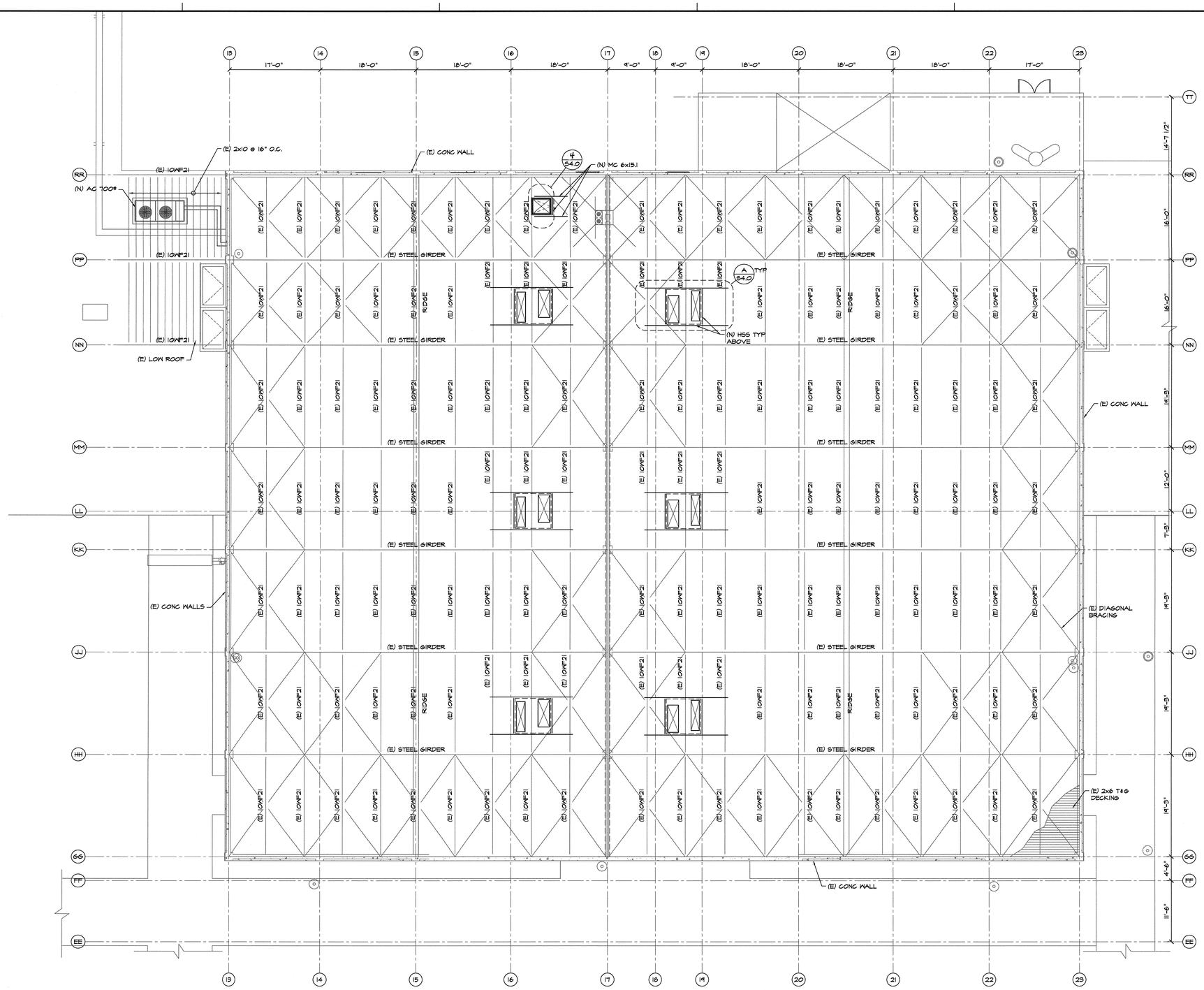
STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

ROOF FRAMING PLAN

S2.0



A S2.1 ROOF OPENINGS PLAN

1/8" = 1'-0"

NOTES:

1. DENOTES (N) STRUCTURAL STEEL & METAL DECK HVAC PLATFORM SEE SHEET S5.0
2. VERIFY ALL (E) DIMENSIONS
3. ALL (E) FRAMING TO REMAIN.
4. SEE S2.0 FOR PLATFORM FRAMING.

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LICENSED ARCHITECT
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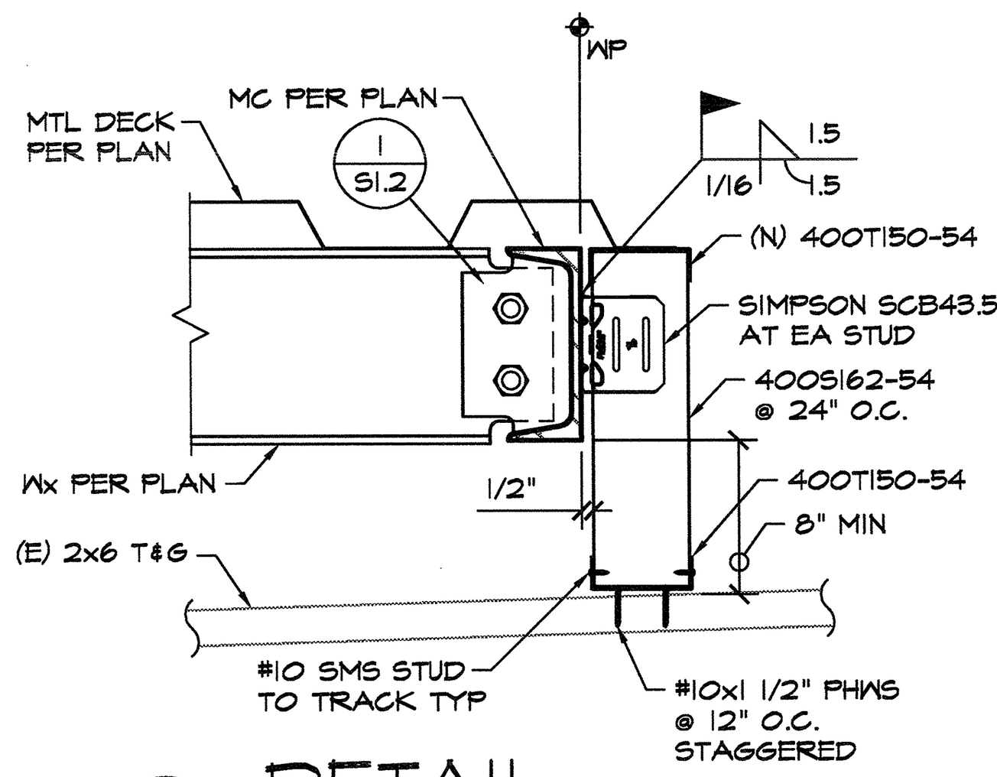
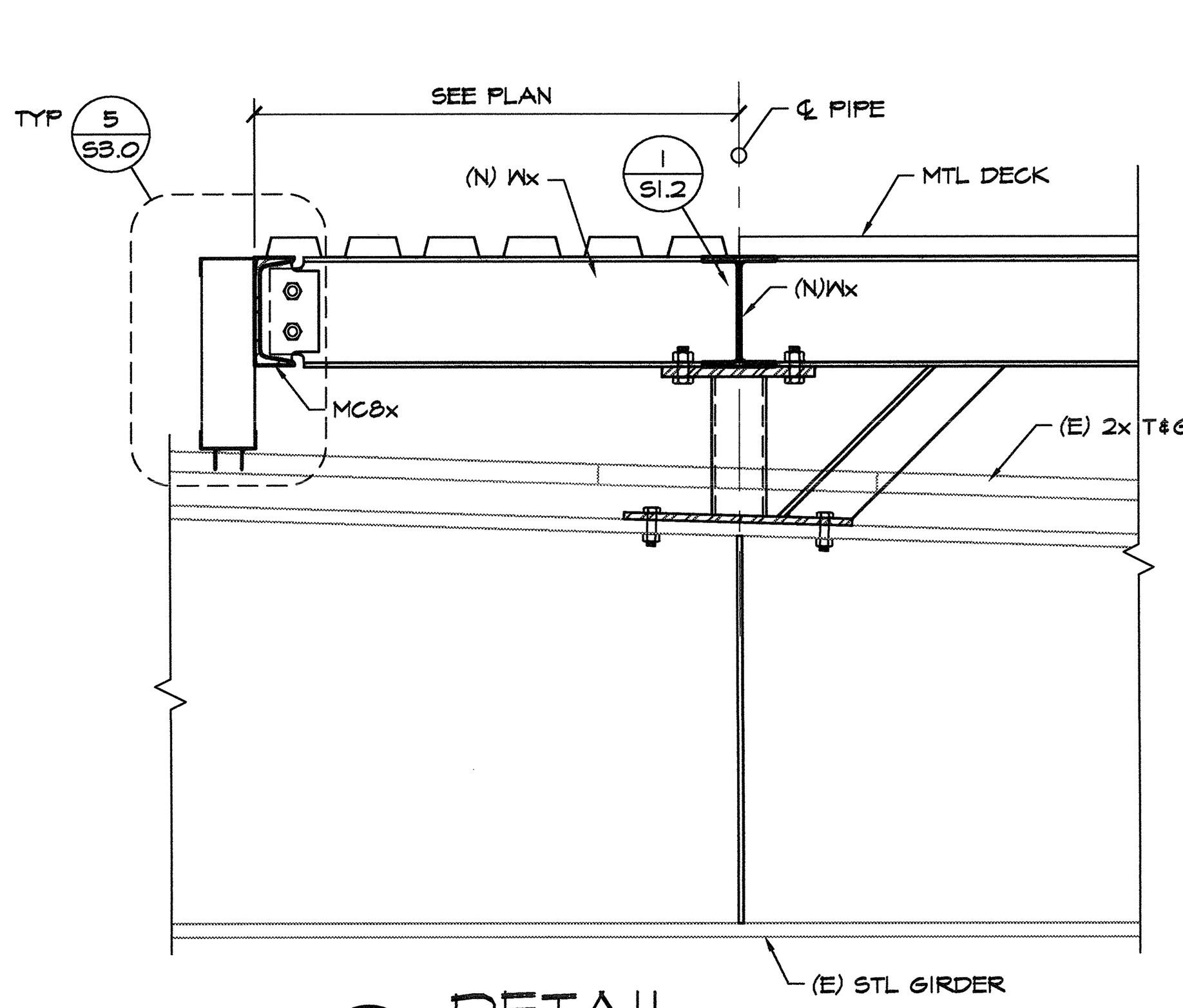
ROOF OPENINGS PLAN

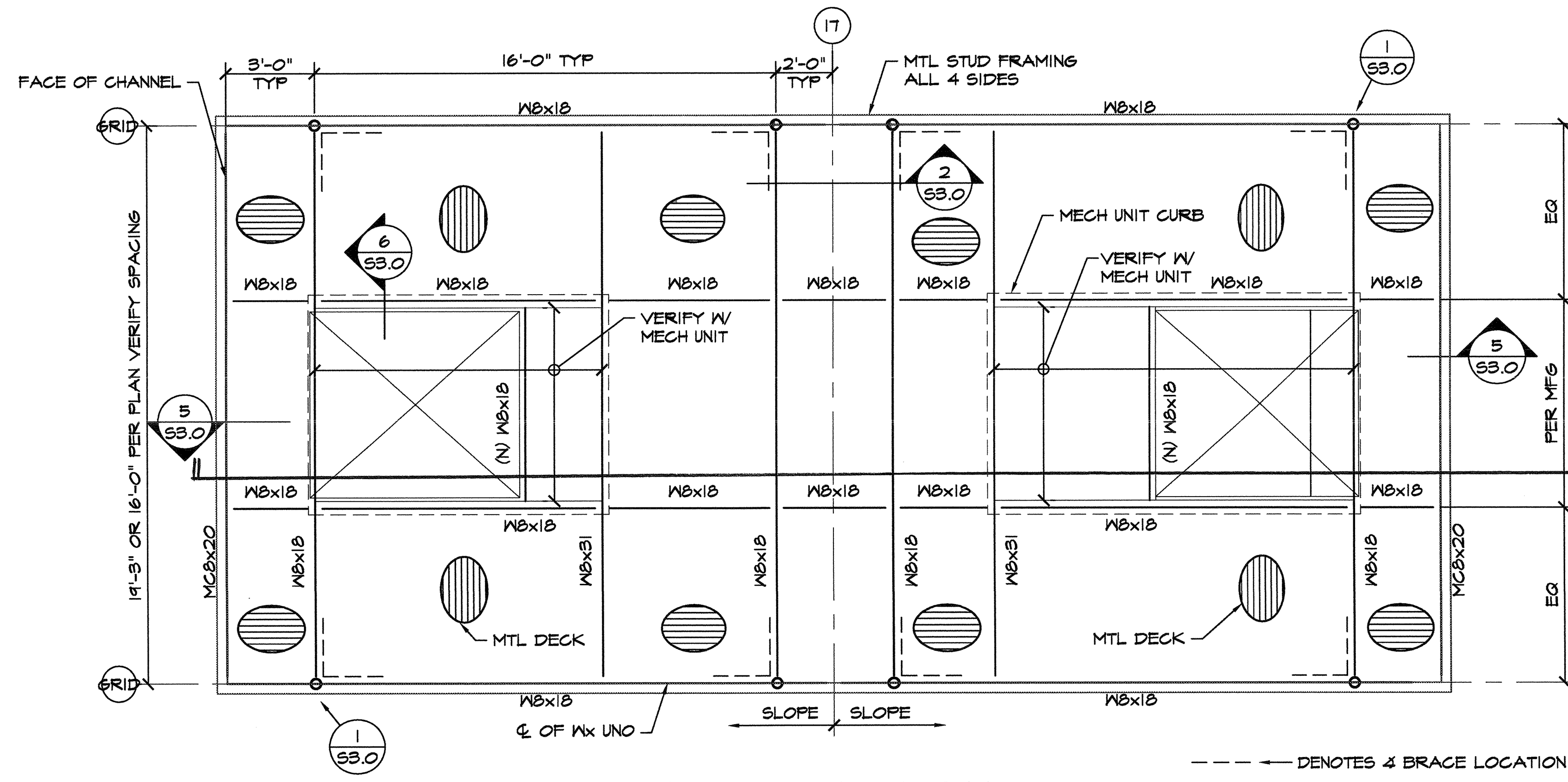
S2.1



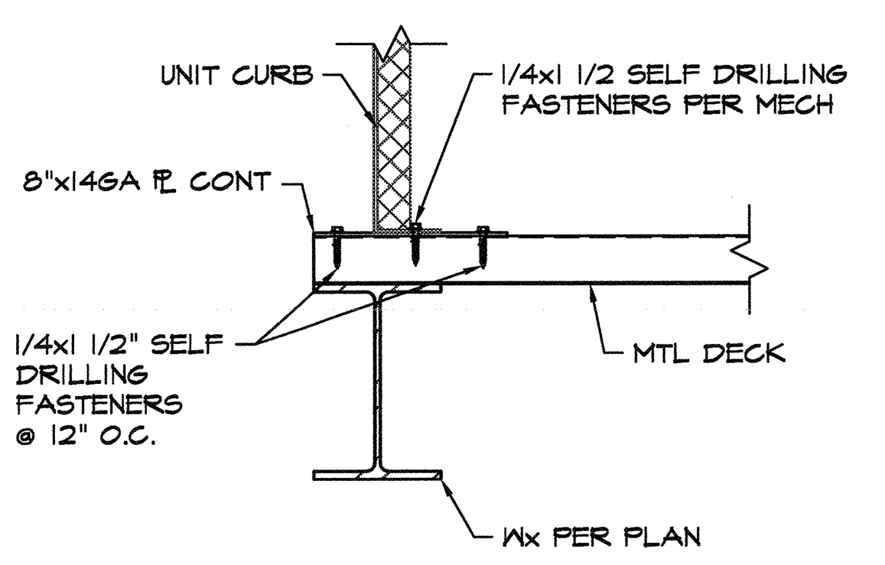
5 S3.0 DETAIL
1 1/2" = 1'-0"



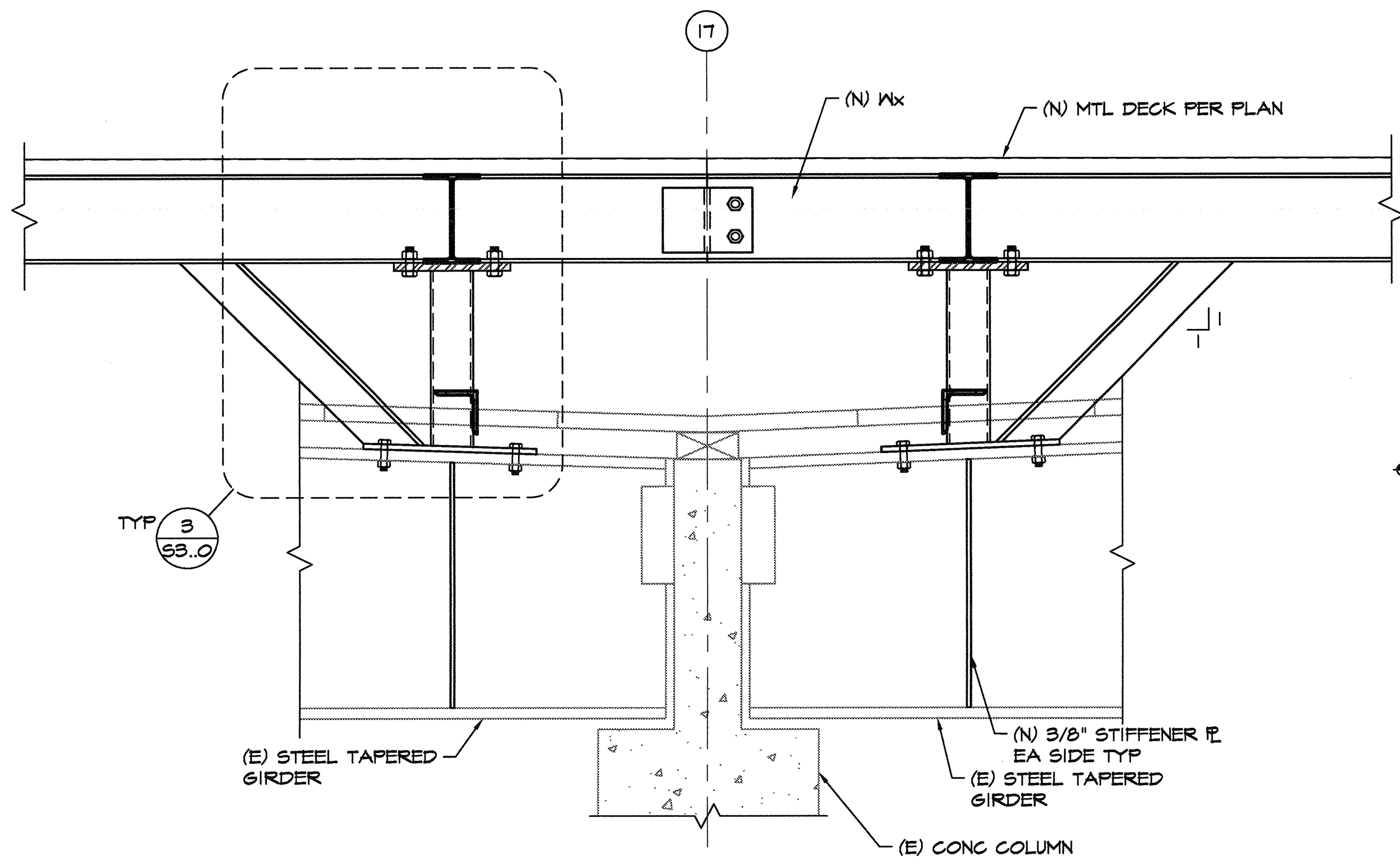
1 S3.0 DETAIL
1" = 1'-0"



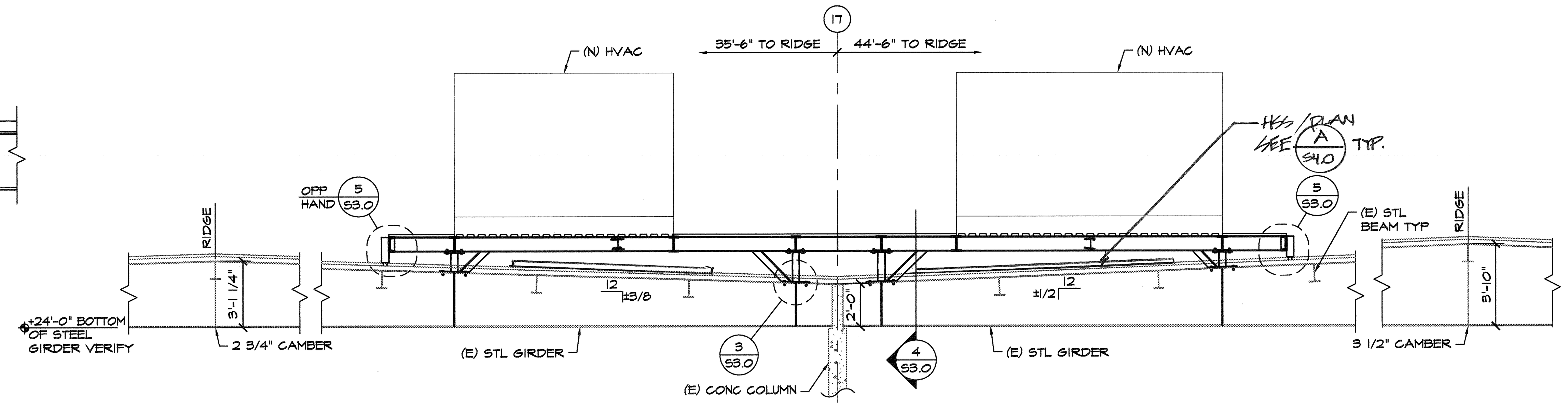
A S3.0 PLATFORM PLAN
1/4" = 1'-0"



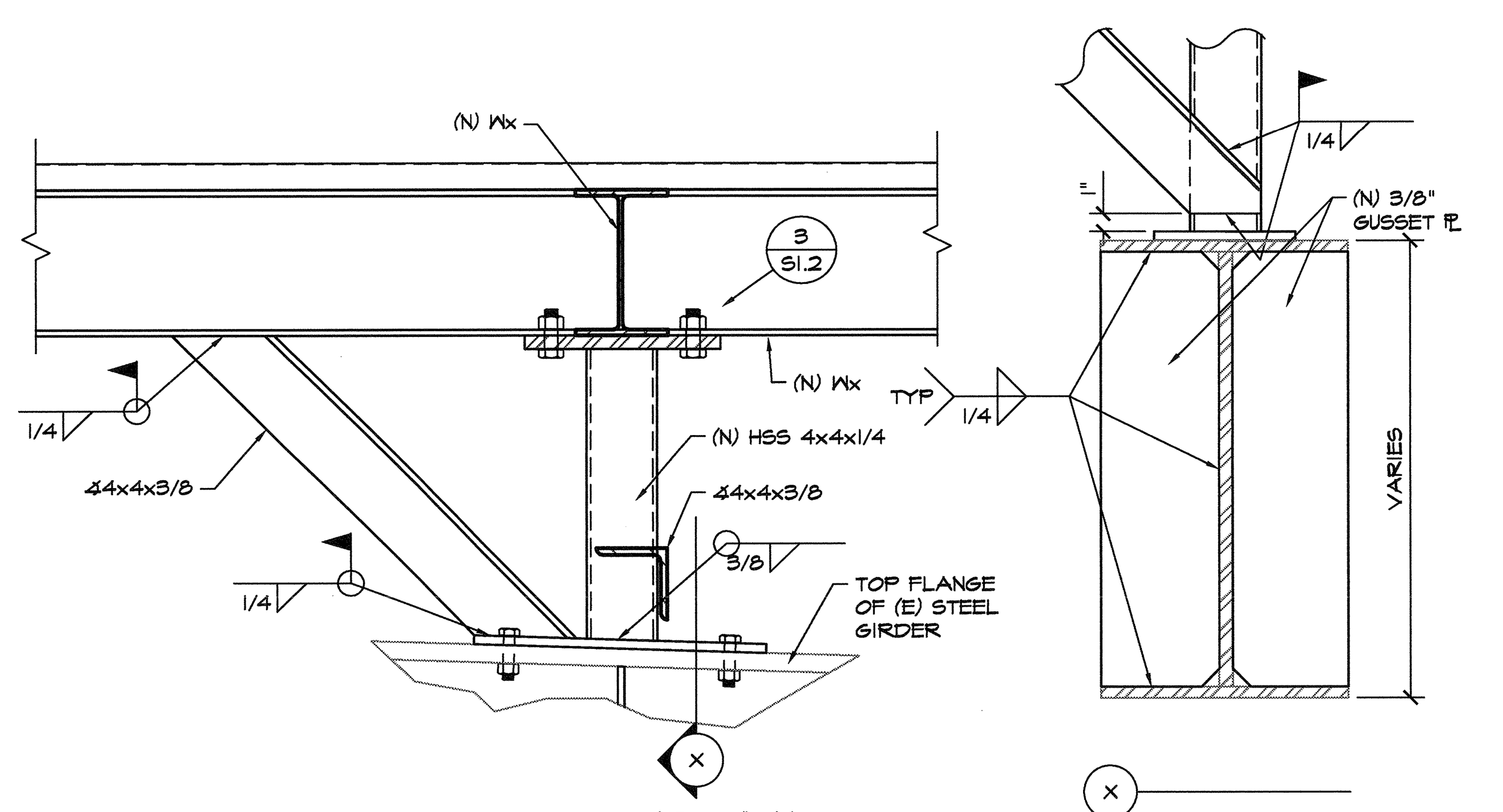
6 S3.0 DETAIL
1 1/2" = 1'-0"



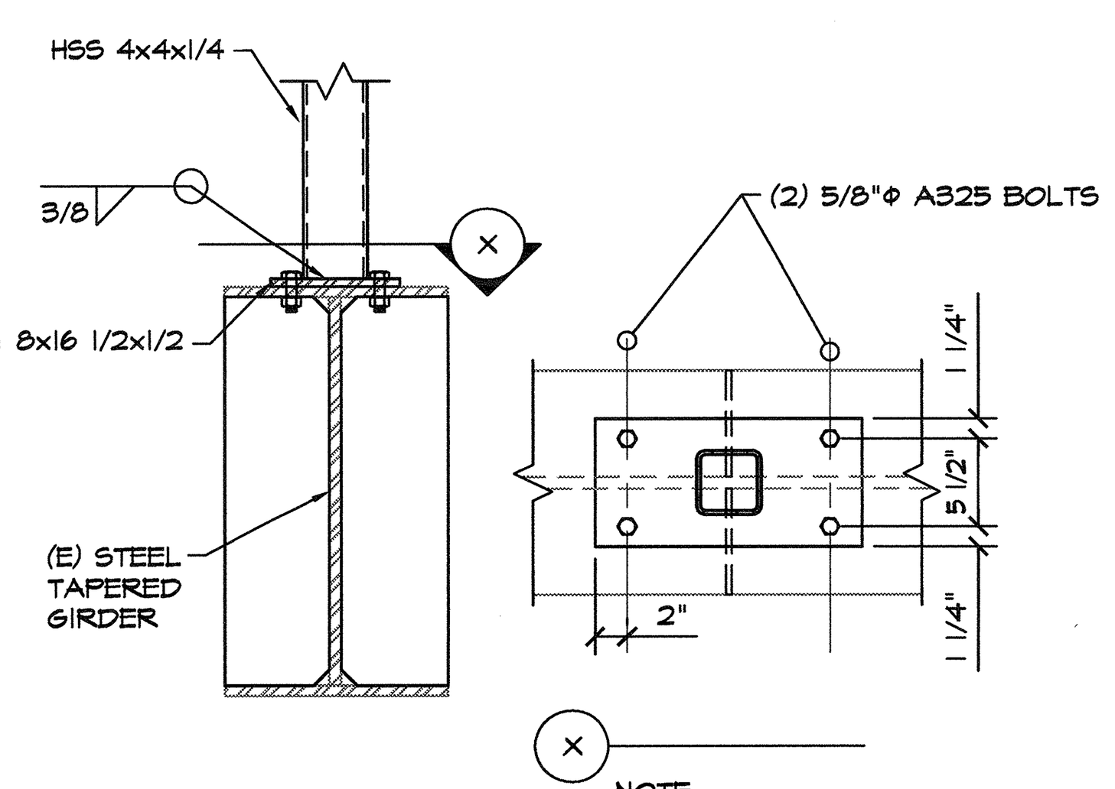
2 S3.0 DETAIL
1" = 1'-0"



B S3.0 ELEVATION
1/4" = 1'-0"



3 S3.0 DETAIL
1 1/2" = 1'-0"



NOTE: 4BRACES NOT SHOWN

4 S3.0 DETAIL
1" = 1'-0"

CA+SA studio
3701 Business Drive Suite 200
Sacramento, CA 95820
Phone: (916) 365-9655

LICENSED ARCHITECT No. C19022 REN. 11/30/19 STATE OF CALIFORNIA

POINT 2 STRUCTURAL ENGINEERS, INC.
3701 BUSINESS DR SUITE 100
SACRAMENTO, CA 95820
(916)-452-8200
(916)-452-8212 (FAX)
P2 JOB # 2017-103

REGISTERED PROFESSIONAL ENGINEER WILLIAM P. LARSON 3148 STRUCTURAL STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APP NO. 02 - 116869
FILE NO. 39-H7
AC ___ FLS ___ SS ___
DATE 02 - 13 - 2019

GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL

1621 BROOKSIDE RD.,
STOCKTON, CA 95207

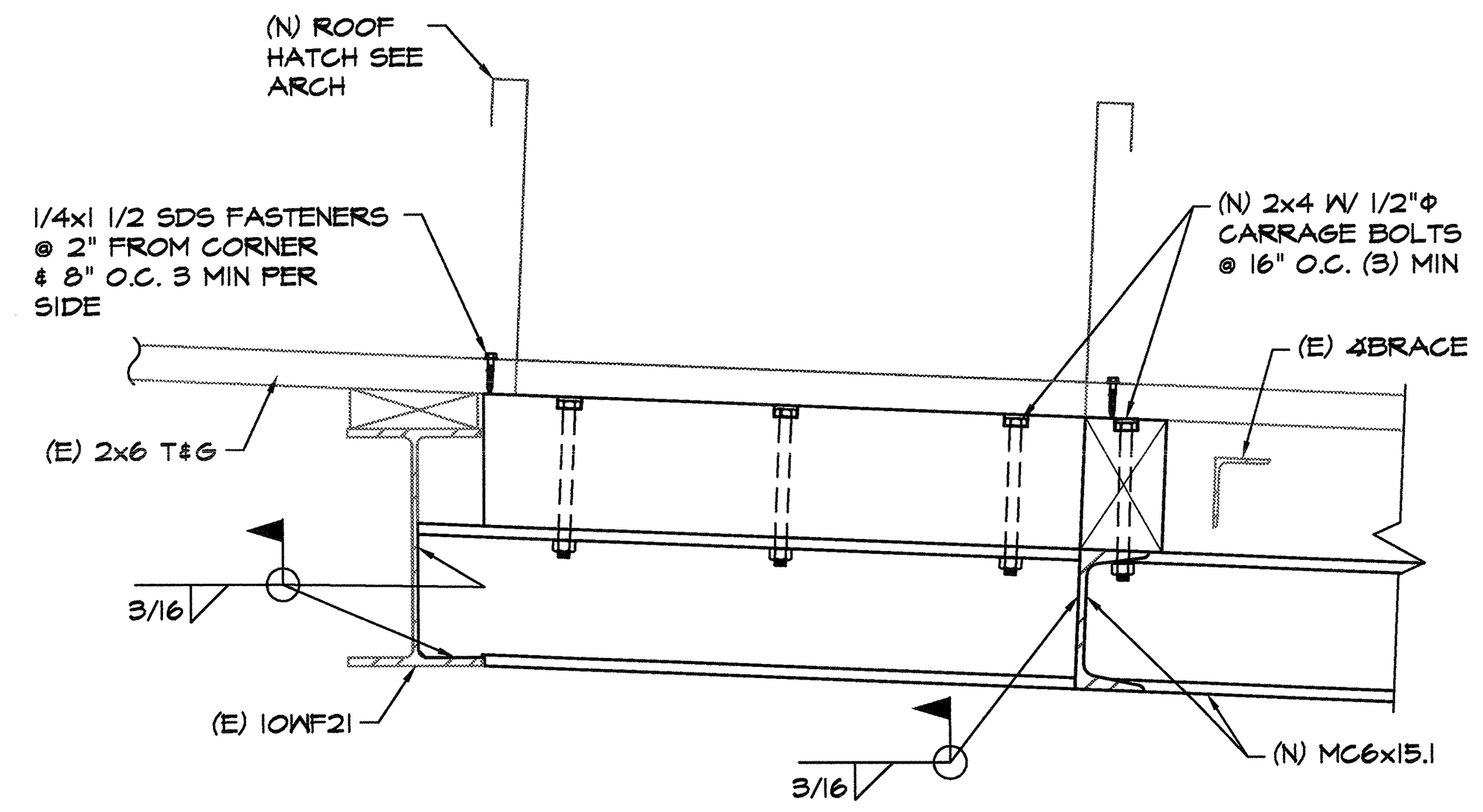
STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

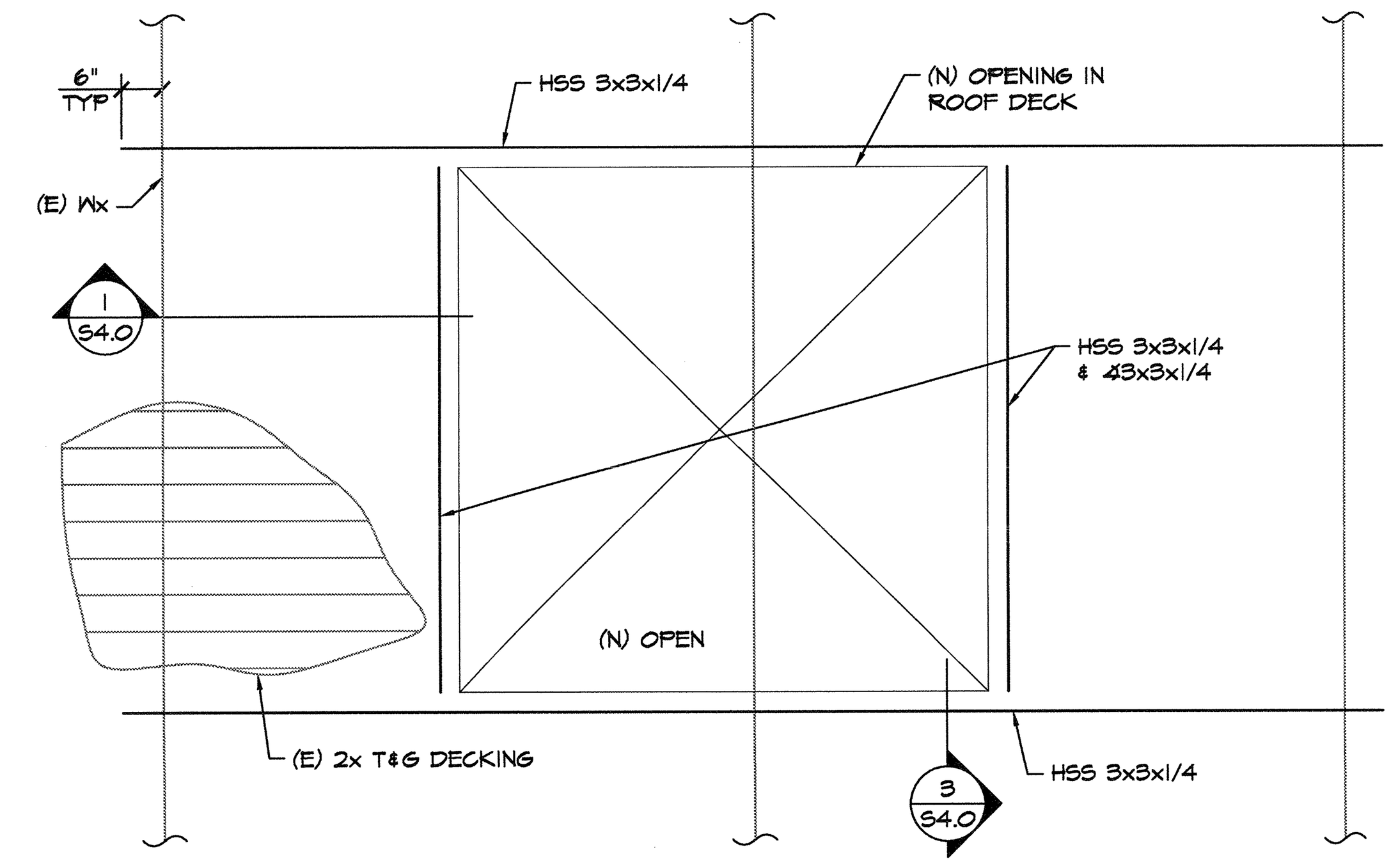
DSA SUBMITTAL: 02/13/2019

PLANS ELEVATIONS & DETAILS

S3.0

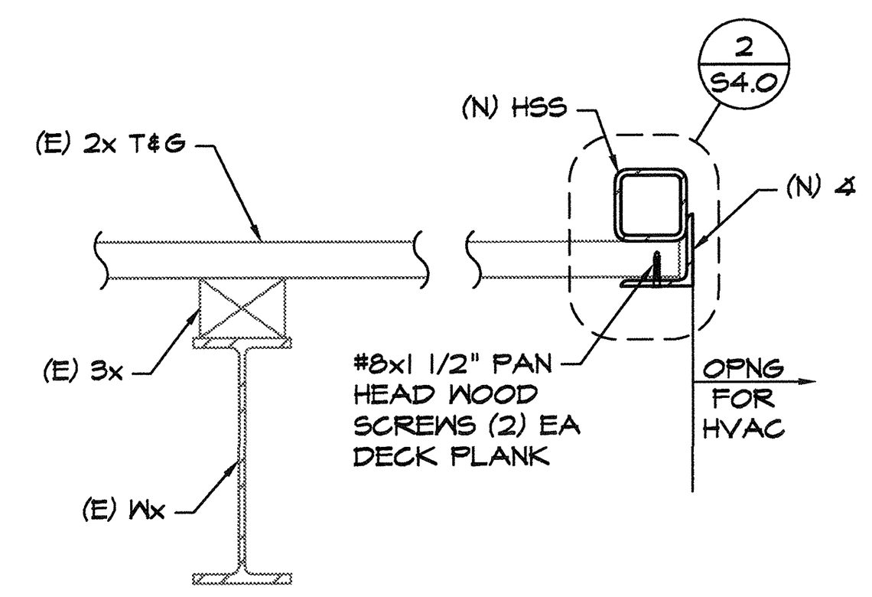


4 S4.0 DETAIL
1 1/2"= 1'-0"

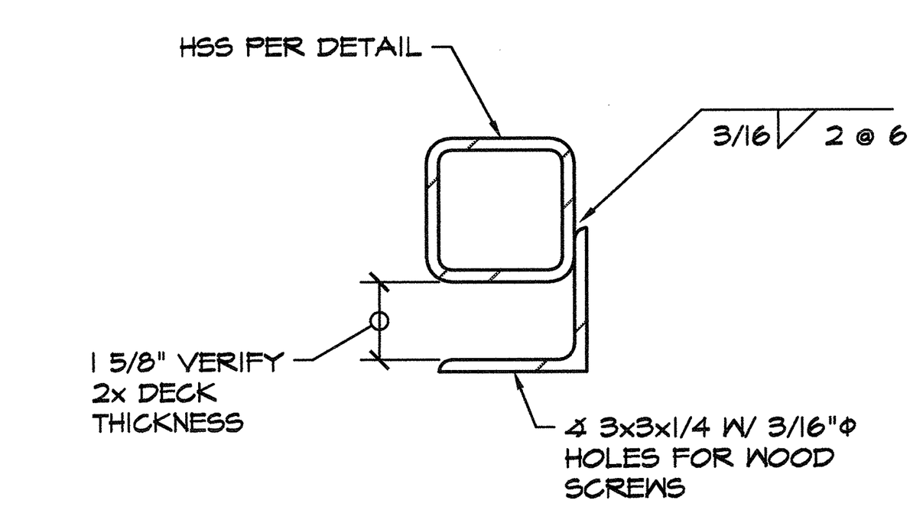


A S4.0 PARTIAL PLAN
1/2" = 1'-0"

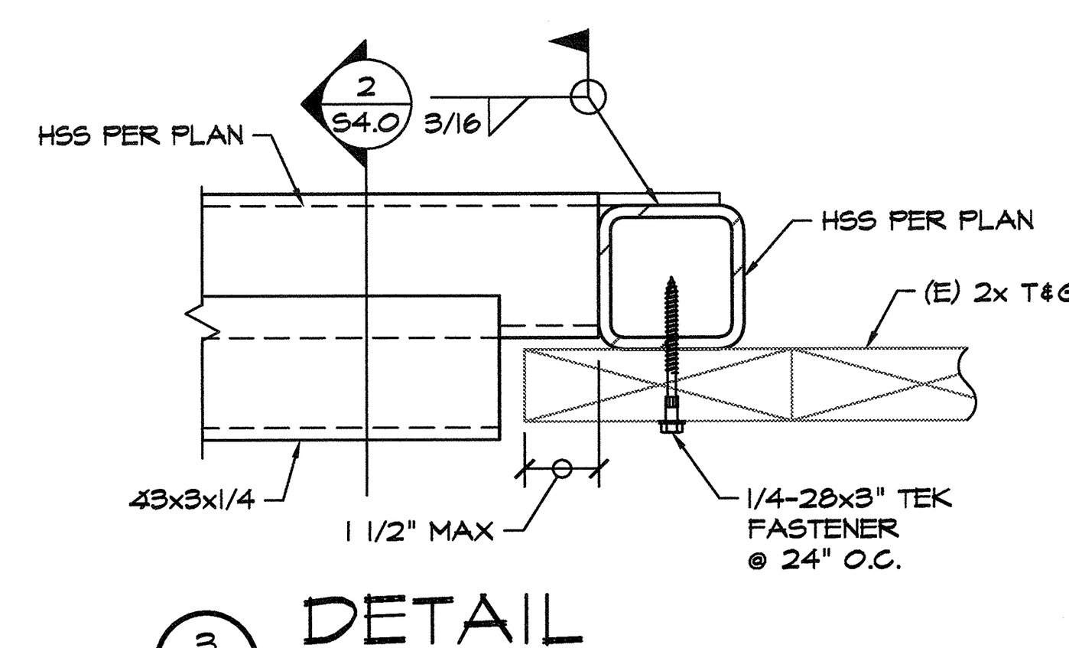
B S4.0 NOT USED
= 1'-0"



1 S4.0 DETAIL
1 1/2"= 1'-0"



2 S4.0 DETAIL
3" = 1'-0"



3 S4.0 DETAIL
3" = 1'-0"

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Sacramento, CA 95820
Phone: (916) 365-9655

POINT 2
STRUCTURAL ENGINEERS, INC.
3701 BUSINESS DR SUITE 100
SACRAMENTO, CA. 95820
(916)-452-8200
(916)-452-8252 (FAX)
P2 JOB # 2017-103

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APP NO. 02 - 116869
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AC TM FLS — SS
DATE 02 - 13 - 2019

GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
1621 BROOKSIDE RD.,
STOCKTON, CA 95207

STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

DETAILS

S4.0

MEP 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 CHAPTER 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 OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT 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 DISTRIBUTION 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 DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, DUCTWORK & 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 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-APPROVED (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.

MECHANICAL GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES, SPECIFICATIONS, LOCAL ORDINANCES AND INDUSTRY STANDARDS.
2. VERIFY EXACT LOCATION OF ALL (E) EQUIPMENT, DUCTWORK, DIFFUSERS, REGISTERS AND GRILLES. NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES BETWEEN (E) SYSTEMS AND DRAWINGS.
3. COORDINATE EXACT LOCATION OF EQUIPMENT AND ALL PENETRATIONS THROUGH ROOF, FLOORS AND WALLS WITH ARCHITECTURAL STRUCTURAL SYSTEMS PRIOR TO COMMENCING WORK.
4. COORDINATE EXACT SIZE AND ROUTING OF DUCTWORK WITH ARCHITECTURAL PLANS, STRUCTURE AND EQUIPMENT PRIOR TO COMMENCING WORK.
5. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING DIFFUSERS, REGISTERS AND GRILLES.
6. FURNISH AND INSTALL MANUAL AIR DAMPERS AT ALL DUCT BRANCH TAKEOFFS TO A SINGLE SUPPLY DUFFUSER.
7. FLEXIBLE DUCTWORK CONNECTIONS TO CEILING DIFFUSERS ARE LIMITED TO 5' MAXIMUM LENGTH.
8. ALL DUCTWORK, CEILING DIFFUSERS/REGISTERS/GRILLES, EQUIPMENT, PIPING ETC., ARE NEW U.O.N. (SHOWN HEAVY). (E) DUCTWORK, PIPING ETC. IS SHOWN LIGHT. SEE LEGEND.
9. (E) DUCTWORK AND ITEMS TO BE REMOVED ARE SHOWN CROSSED ("X") OUT, SEE LEGEND, COORDINATE CLOSELY WITH (N) DUCTWORK AND P.O.C.'S SHOWN. ALL OTHER (E) DUCTWORK, ETC. TO REMAIN.
10. WHERE INLET DUCT DIAMETER AND DIFFUSER NECK SIZE ARE THE SAME (I.E. 9"□ & 9x9) CONTRACTOR SHALL OVERSIZE THE SHEET METAL PLENUM TO ACCOMODATE THE ROUND DUCT CONNECTION.
11. THERMOSTATS AND ROOM TEMPERATURE SENSORS SHALL BE INSTALLED AT 46" ABOVE FINISHED FLOOR (TO TOP OF DEVICE). DO NOT INSTALL THERMOSTATS AND ROOM TEMPERATURE SENSORS ABOVE CASEWORK, SHELVING OR OTHER OBSTRUCTIONS OVER 24" IN DEPTH AND 34" IN HEIGHT.

MECHANICAL LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	ABV	ABOVE
	ABC	ABOVE CEILING
	AF	ABOVE FLOOR
	AFF	ABOVE FINISHED FLOOR
	AFG	ABOVE FINISHED GRADE
	AD , AP	ACCESS DOOR , ACCESS PANEL
	AC	AIR CONDITIONING
	APD	AIR PRESSURE DROP, INCHES WATER COLUMN
	AB	ANCHOR BOLT
	ANV	ANGLE VALVE
	BV	BALL VALVE
	BF	BELOW FLOOR
	BHP	BRAKE HORSE POWER
	BTU(H)	BRITISH THERMAL UNITS (PER HOUR)
	CC	CENTER TO CENTER
	CLG	CEILING
	CKV	CHECK VALVE
	CLR	CLEAR
	CONC	CONCRETE
		CONCENTRIC REDUCER
CD	CD	CONDENSATE DRAIN
	COND	CONDENSER
	CONN	CONNECT OR CONNECTION
	CONT	CONTINUATION
	CONTR	CONTRACTOR
%%154	CFM	CUBIC FEET OF AIR FLOW PER MINUTE
	DPR	DAMPER
°F		DEGREES FAHRENHEIT
–	DIA	DIAMETER , PHASE
	DL	DOOR LOUVER
	DN	DOWN
	DR	DRAIN
	DB	DRY BULB (DEGREES FAHRENHEIT)
DS	DS	DYNAMIC SENSOR
		ECCENTRIC REDUCER
	EP	ELECTRICAL PANEL
	EL	ELEVATION
	ENT	ENTERING
	EDB	ENTERING DRY BULB
	EW	ENTERING WATER
	EWT	ENTERING WATER TEMPERATURE
	EWB	ENTERING WET BULB
	EVAP	EVAPORATOR
	EC	EVAPORATIVE COOLER
	EA	EXHAUST AIR
	EAD	EXHAUST AIR DAMPER
	EF	EXHAUST FAN
	(E), EXIST	EXISTING
	(E)	EXISTING TO BE REMOVED
	ESP	EXTERNAL STATIC PRESSURE
	FPM	FEET PER MINUTE
	FIN	FINISH
F	FD	FIRE DAMPER
FS	FS	FIRE/SMOKE DAMPER
	FC	FLEXIBLE CONNECTION
	FLR	FLOOR
		FLOW IN DIRECTION OF ARROW
	FLV	FLOW LIMITING VALVE
	FA	FROM ABOVE
	FB	FROM BELOW
	FLA	FULL LOAD AMPS
	GCK	GAGE COCK
	GPH	GALLONS PER HOUR
	GPM	GALLONS PER MINUTE
	GV	GATE VALVE
	GLV	GLOBE VALVE
	GALV	GALVANIZED
	GI	GALVANIZED IRON
	GA	GAUGE
	HTG	HEATING

MECHANICAL LEGEND cont'd

SYMBOL	ABBREVIATION	DESCRIPTION
	IE	INVERT ELEVATION
	KW	KILOWATTS
	KWH	KILOWATT HOUR
	LDB	LEAVING DRY BULB IN DEGREES FAHRENHEIT
	LWB	LEAVING WET BULB IN DEGREES FAHRENHEIT
	LRA	LOCKED ROTOR AMPERES
	LVR	LOUVER
	MAD, MD	MANUAL AIR DAMPER
	MAV	MANUAL AIR VENT
	MFR	MANUFACTURER
	MAX	MAXIMUM
	MIN	MINIMUM
	MCC	MOTOR CONTROL CENTER
	(N)	NEW
	OC	ON CENTER
	OA	OUTSIDE AIR
	OAD	OUTSIDE AIR DAMPER
		PIPE ANCHOR
		PIPE DROP
		PIPE GUIDE
		PIPE RISE
		PITCH DOWN IN DIRECTION OF FLOW
	POC	POINT OF CONNECTION
	LBS	POUNDS
	PSI (G) (A)	POUNDS PER SQUARE INCH (GAUGE) (ABSOLUTE)
	PRV	PRESSURE REDUCING VALVE
	PCR	PUMPED CONDENSATE RETURN
RG	RG	REFRIGERANT GAS PIPING
RS	RS	REFRIGERANT SUCTION PIPING
RL	RL	REFRIGERANT LIQUID PIPING
	RV or P&TRV	RELIEF VALVE OR PRESSURE & TEMPERATURE RELIEF VALVE
	RA	RETURN AIR
	RAD	RETURN AIR DAMPER
	RPM	REVOLUTIONS PER MINUTE
	RLA	RUNNING LOAD AMPERES
	SM	SHEET METAL
SD	SD	SMOKE DAMPER
SD	SKD	SMOKE DETECTOR
	SD	SPLITTER DAMPER
—	SQFT, FT``2~~	SQUARE FEET
	SQIN, IN``2	SQUARE INCHES
	SP	STATIC PRESSURE
	SPD	STATIC PRESSURE DROP
	SA	SUPPLY AIR
	SF	SUPPLY FAN
	TCP	TEMPERATURE CONTROL PANEL
	TCV	TEMPERATURE CONTROL VALVE
T X	T	THERMOSTAT, "X" INDICATES DEVICE CONTROLLED. TOP OF STAT MOUNTED AT 48" ABOVE FINISHED FLOOR
	MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
	TA	TO ABOVE
	TB	TO BELOW
	TP	TOTAL PRESSURE
	TSP	TOTAL STATIC PRESSURE
	TYP	TYPICAL
	UG	UNDERGROUND
	UCD	UNDER CUT DOOR
	UON	UNLESS OTHERWISE NOTED
		VALVE IN VALVE BOX
	WPD	WATER PRESSURE DROP
	W	WATTS
	WT	WEIGHT
	WB	WET BULB
	WMS	WIRE MESH SCREEN

CA+SA studio

3701 Business Drive Suite 200
Sacramento, CA 95820
Phone: (916) 365-9655

LICENSED ARCHITECT
KIP DAVIS GRUBB
No. C19022
EXP. 11/30/19
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
THOMAS A. DUVAL
M 22836
EXPIRES 9/30/20
MECHANICAL
STATE OF CALIFORNIA

DATE SIGNED: 2-11-2019

CAPITAL ENGINEERING CONSULTANTS, INC.
RANCHO CORDOVA, CALIFORNIA
MCM/RL — PM - DESIGN TEAM
180204.00 — PROJECT NO.

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APP NO. 02 - 116869
FILE NO. 39-H7
AC TM FLS SS
DATE 02 - 13 - 2019

GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
1621 BROOKSIDE RD.,
STOCKTON, CA 95207

STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

MECHANICAL SCHEDULE, LEGEND AND NOTES

M0.1

AIR CONDITIONING UNIT SCHEDULE

UNIT	SPACE SERVED	"CARRIER" MODEL NO.	CFM	UPPER MIN. O.A. (CFM)	LOWER MIN. O.A. (CFM)	ESP (IN. W.G.)	SENS. COOLING CAP. (MBH)	TOTAL COOLING CAP. (MBH)	EVAP. EDB (°F)	EVAP. EWB (°F)	GAS HEATING INPUT (MBH)	GAS HEATING OUTPUT (MBH)	ELECTRICAL DATA VOLT/PH	SUPPLY FAN BHP	SUPPLY FAN FLA	COMPRESSOR QTY	COMPRESSOR RLA	COMPRESSOR LRA	COND. FAN FLA	COMB. FAN FLA	PWR. EXH UNIT	PWR. EXH CFM	MCA	SEER (EER)	AFUE (%)	OPER. WT. (LBS.)	MOUNTING DETAIL	CONTROL DIAGRAM	NOTES
AC 1	LARGE GYM	48HCDD28A26A	8450	1875	570	0.8	235.70	276.25	82.4	65.7	220.0 / 176.0	178.0 / 142.0	460/3 PH	4.38	8.6	2	18.6 17.9	125 125	-	0.3 EA	PE 1	8000	55.5	(11.2)	81	3825	4,5,6 M5.2	1 M6.1	1 2 3 4 5 6 7 9 11 13
AC 2	LARGE GYM	48HCDD28A26A	8450	1875	570	0.8	235.70	276.25	82.4	65.7	220.0 / 176.0	178.0 / 142.0	460/3 PH	4.38	8.6	2	18.6 17.9	125 125	-	0.3 EA	PE 2	8000	55.5	(11.2)	81	3825	4,5,6 M5.2	1 M6.1	1 2 3 4 5 6 7 9 11 13
AC 3	LARGE GYM	48HCDD28A26A	8450	1875	570	0.8	235.70	276.25	82.4	65.7	220.0 / 176.0	178.0 / 142.0	460/3 PH	4.38	8.6	2	18.6 17.9	125 125	-	0.3 EA	PE 3	8000	55.5	(11.2)	81	3825	4,5,6 M5.2	1 M6.1	1 2 3 4 5 6 7 9 11 13
AC 4	SMALL GYM	48HCDD17A26A	6000	1120	335	0.8	150.37	169.59	81.4	65.4	220.0 / 176.00	178.0 / 142.0	460/3 PH	2.72	4.9	2	12.8	100	-	0.3 EA	PE 4	6000	38.6	(12.0)	81	3345	4,5,6 M5.2	1 M6.1	1 2 3 4 5 8 10 11 12 13
AC 5	SMALL GYM	48HCDD17A26A	6000	1120	335	0.8	150.37	169.59	81.4	65.4	220.0 / 176.00	178.0 / 142.0	460/3 PH	2.72	4.9	2	12.8	100	-	0.3 EA	PE 5	6000	38.6	(12.0)	81	3345	4,5,6 M5.2	1 M6.1	1 2 3 4 5 8 10 11 12 13
AC 6	SMALL GYM	48HCDD17A26A	6000	1120	335	0.8	150.37	169.59	81.4	65.4	220.0 / 176.00	178.0 / 142.0	460/3 PH	2.72	4.9	2	12.8	100	-	0.3 EA	PE 6	6000	38.6	(12.0)	81	3345	4,5,6 M5.2	1 M6.1	1 2 3 4 5 8 10 11 12 13

NOTES:

1. UNITS SELECTED AT 105 F DB / 70 F WB SUMMER AMBIENT, 30 F DB WINTER AMBIENT AIR TEMPERATURES. COOLING CAPACITIES SCHEDULED ARE GROSS SENSIBLE & GROSS TOTAL CAPACITIES. OPERATING WEIGHT SCHEDULED INCLUDES AC UNIT, 100% MODULATING POWER EXHAUST ECONOMIZER MODULE, AND ROOF CURB.
2. PROVIDE UNIT WITH 2" MERV 13 DISPOSABLE PLEATED MEDIA FILTER(S).
3. PROVIDE UNIT WITH FACTORY INSTALLED VFD ON SUPPLY FAN AND MINIMUM 2-STAGES OF MECHANICAL COOLING CAPACITY, PER 2016 TITLE-24 FOR DX UNITARY EQUIPMENT WITH AHRI COOLING CAPACITY GREATER THAN 65,000 BTUH. SEE CONTROLS FOR SEQUENCE OF OPERATION.
4. PROVIDE EMS SYSTEM INTERLOCK WITH ROOM LIGHTING CONTROL OCCUPANCY SENSOR(S) FOR OCCUPANCY BASED VENTILATION CONTROL, PER 2016 TITLE-24 FOR CLASSROOMS, CONFERENCE, CONVENTION & MEETING ROOMS GREATER THAN 750 SQFT, AND MULTI-PURPOSE ROOMS LESS THAN 1,000 SQFT. SEE CONTROLS FOR SEQUENCE OF OPERATION.
5. PROVIDE EMS SYSTEM INTERLOCK WITH ROOM LIGHTING CONTROL.
6. INSTALL SMOKE DETECTOR IN SUPPLY AIR DUCT TO SHUT DOWN UNIT UPON SENSING SMOKE. PROVIDED, POWERED & INTERLOCKED WITH FIRE ALARM SYSTEM BY DIV. 26, INSTALLED & CONNECTED TO AC UNIT BY DIV. 25.
7. AC-1,2,3, LARGE GYM - "MICROMETL" VIBRATION CURB MODEL CRBV-MRT09FA-14 SERIES 24" TALL CURB. WEIGHT OF 870 LBS. INCLUDED IN UNIT OPERATING WEIGHT.
8. AC-4, 5, 6, SMALL GYM - "MICROMETL" VIBRATION CURB MODEL CRBV-MRT06FA-14 SERIES 24" TALL CURB. WEIGHT OF 795 LBS. INCLUDED IN UNIT OPERATING WEIGHT.
9. (PE 1,2,3) PROVIDE "MICROMETL" AC-UNIT MOUNTED MEDIUM STATIC PRESSURE ECONOMIZER WITH POWER EXHAUST MODEL PCC-MRT69CA-D4M4. 460V/ 3 PHASE, MODULATING 4.0 HP, 8.6 FLA, 10.8 MCA, 20.0 MOCP AT 0.5 STATIC. APPROXIMATE WEIGHT OF 325 LBS. INCLUDED IN OPERATING UNIT WEIGHT.
10. (PE 4,5,6) PROVIDE "MICROMETL" AC-UNIT MOUNTED MEDIUM STATIC PRESSURE ECONOMIZER WITH POWER EXHAUST MODEL PCC-MRT69CA-D4M2. 460V/ 3 PHASE, MODULATING 2.0 HP, 4.0 FLA, 5.0 MCA, 10.0 MOCP AT 0.5 STATIC. APPROXIMATE WEIGHT OF 325 LBS. INCLUDED IN OPERATING UNIT WEIGHT.
11. PROVIDE UNIT WITH "MICROMETL" 100% MODULATING POWER EXHAUST ECONOMIZER WITH VFD, STATIC PRESSURE TRANSMITTER, "BELIMO" LF SERIES ACTUATORS AND LOW VOLTAGE INTERFACE STRIP FOR DDC TIE-IN. NOTE THAT SEPARATE POWER CONNECTIONS ARE REQUIRED TO THE AC UNIT AND TO THE MODULATING POWER EXHAUST ECONOMIZER. ELECTRICAL LOADS OF EACH DEVICE ARE SCHEDULE, ELECTRICAL ENGINEER SHALL PROVIDE SEPARATE POWER CONNECTIONS, APPROPRIATE CIRCUIT BREAKER(S), FEEDER(S), AND DISCONNECT(S) AS REQUIRED BY CODE.
12. AUTOMATIC SHUTDOWN OF HVAC SYSTEM IS NOT REQUIRED PER 2016 CMC, SECTION 608.1, EXCEPTION 2: ALL ROOMS HAVE DIRECT EXIT TO OUTSIDE WITH TRAVEL DISTANCE LESS THAN 100 FEET.
13. REFRIGERANT TYPE IS R410A.

FURNACE SCHEDULE (WITH DX COIL)

UNIT	LOCATION	MODEL NO. (INDOOR UNIT)	CFM	UPPER MIN. O.A. (CFM)	LOWER MIN. O.A. (CFM)	ESP (IN. WG)	COIL MFR MODEL NO.	GAS HEATING INPUT (MBH)	GAS HEATING OUTPUT (MBH)	AFUE (%)	ELECTRICAL DATA VOLT/PH	FAN HP	FLA	MCA	MOCP	OPER. WT. (LBS.)	MOUNTING DETAIL	CONTROL DIAGRAM	NOTES
F 1	GYM MEZZANINE	REZNOR CAUA 350	5575	845	35	1.00	-- --	350.0	280.0	80.0	460/3	5.0	7.35	9.0	15	765	5, 6 M5.1	2 M6.1	1 2 3 4 5 6 7 8 9 10

NOTES:

1. ESP DOES NOT INCLUDE COIL APD.
2. OPER. WT. INCLUDES COIL..
3. SEE CONDENSING UNIT SCHEDULE FOR COOLING CAPACITY.

NOTES:

1. UNIT SELECTED AT 105 DB / 70 WB SUMMER AMBIENT, AND 30 DB WINTER AMBIENT AIR TEMPERATURES.
2. SEE CONDENSING UNIT SCHEDULE FOR COOLING CAPACITIES.
3. OPERATING WEIGHT INCLUDES DX COOLING COIL. ESP SCHEDULED DOES NOT INCLUDE DX COIL APD.
4. PROVIDE WITH MANUFACTURER'S CONCENTRIC COMBUSTION AIR/VENT KIT. SEE DETAIL x/M5.1.
5. PROVIDE WITH MANUFACTURER'S STAINLESS STEEL HEAT EXCHANGER AND BURNERS, 2-STAGE GAS VALVE, DX COOLING COIL WITH 1/3, 2/3 SPLIT CAPACITY CIRCUITS, AND BELT DRIVE SUPPLY FAN MOTOR WITH VFD. PROVIDE FIELD FAB'D MIXING BOX WITH ECONOMIZER DAMPERS/ACTUATORS, AND FILTER RACK WITH 2" THICK MERV 8 DISPOSABLE PLEATED MEDIA FILTERS.
6. PROVIDE HVAC CONTROLS SYSTEM WITH DEDICATED OCCUPANCY SENSOR(S) FOR OCCUPANCY BASED VENTILATION CONTROL, PER 2016 TITLE-24 FOR CLASSROOMS, CONFERENCE, CONVENTION & MEETING ROOMS GREATER THAN 750 SQFT, AND MULTI-PURPOSE ROOMS LESS THAN 1,000 SQFT. SEE CONTROLS FOR SEQUENCE OF OPERATION.
7. AUTOMATIC SHUTDOWN OF HVAC SYSTEM IS REQUIRED PER 2016 CMC, SECTION 608.1
8. INSTALL SMOKE DETECTOR IN SUPPLY AIR DUCT TO SHUT DOWN UNIT UPON SENSING SMOKE. PROVIDED, POWERED & INTERLOCKED WITH FIRE ALARM SYSTEM BY DIV. 26, INSTALLED & CONNECTED TO FURNACE (F/1) UNIT BY DIV. 25.
9. PROVIDE "LITTLE GIANT" MODEL VCMA-20ULS CONDENSATE PUMP, 208V/1Ø /60HZ, 1/30 HP, 0.6 AMPS, 1/2 GAL. TANK, DISCHARGE CHECK VALVE WITH OPTIONAL SAFETY SWITCH. INTERLOCK SAFETY SWITCH WITH FURNACE TO SHUT-DOWN UNIT UPON CONDENSATE PUMP FAILURE. REFER TO PLUMBING DRAWINGS FOR CONDENSATE ROUTING AND DISCHARGE LOCATIONS.
10. PROVIDE WITH MANUFACTURER'S CONDENSING GAS FURNACE IN-LINE CONDENSATE NEUTRALIZER ACCESSORY. REFER TO PLUMBING DRAWINGS FOR CONDENSATE ROUTING AND DISCHARGE LOCATIONS.

CONDENSING UNIT SCHEDULE (AIR-COOLED)

UNIT	LOCATION	MODEL NO.	SENSIBLE COOLING CAP. (MBH)	TOTAL COOLING CAP. (MBH)	EVAP. EDB (°F)	EVAP. EWB (°F)	VOLT-PH	COND. FAN FLA	COMPRESSOR LRA	COMPRESSOR RLA	MCA	MOCP	OPER. WT. (LBS.)	SEER (EER)	MOUNTING DETAIL	CONTROL DIAGRAM	NOTES
ACCU 1	GYM ROOF	REZNOR MASA 150	135.2	135.2	-	-	460/3	2@ 2.0 EA	62.0	10.0	37.3	50	700	(12.7)	8 M5.1	3 M6.1	1 2 3 4

NOTES:

1. SENSIBLE AND TOTAL CAPACITY ARE AT 105°F AMBIENT OUTDOOR CONDITIONS.

(1) PROVIDE UNIT WITH MINIMUM 2-STAGES OF MECHANICAL COOLING CAPACITY.
(2) PROVIDE WITH EXPANDED METAL CONDENSER COIL GUARDS.
(3) PROVIDE WITH (2) REFRIGERANT LINES SETS AS REQUIRED BETWEEN THE ACCU/1 AND THE FURNACE UNIT.
(4) REFRIGERANT TYPE IS R410A.

DIFFUSER, REGISTER & GRILLE SCHEDULE

SYMBOL	DESCRIPTION	KRUEGER	METALAIRE	NAILOR	TITUS	TUTTLE & BAILEY
CD	MODULAR CORE SURFACE MOUNT CEILING DIFFUSER BEVEL FRAME Ž" DROP	1240 FRAME 21 - 1""	9000-2	7500-S	MCD BORDER TYPE 6	SQD-SB
CD-2	MODULAR CORE SURFACE MOUNT CEILING DIFFUSER FLAT FRAME	1240 FRAME 22	9000-1	7500-B	MCD BORDER TYPE 1	SQD-SF
CDL	MODULAR CORE LAY-IN CEILING DIFFUSER FOR T-BAR CEILING 24x24 PANEL	1240 FRAME 23	9000-6P	7500-L	MCD BORDER TYPE 3	SQD-LT
CR	CEILING RETURN WITH " EGG CRATE CORE SURFACE MOUNT	EGC-5	CC5D	61 EC-S	MODEL 50 F BORDER TYPE 1	CRE500-SF
CRL	CEILING RETURN WITH " EGG CRATE CORE IN 24x24 PANEL FOR T-BAR CEILING	EGC-5TB	CC5D-TBD	61 EC-L	MODEL 50 F BORDER TYPE 3	CRE500-LT
S *	DOUBLE DEFLECTION SUPPLY GRILLE WITH VERTICAL FRONT BARS, Ž" SPACING	880 V	V 4004 S	61 DV	300 RS	T54
R & E *	RETURN OR EXHAUST GRILLE WITH 35° OR 45° HORIZONTAL BARS.	S 80 H	SRH	7145 H	350 RL	T70D
SG	SOFFIT GRILLE - HEAVY DUTY SINGLE DEFLECTION GRILLE WITH 10 GAUGE, "' WOVEN STEEL MESH SECURED BEHIND FACE BARS. PROVIDE PLASTER FRAME IN PLASTER SOFFIT	S 480 H WITH "' MESH AND PF WHERE REQUIRED	HDRH WITH "' MESH AND PF WHERE REQUIRED	6145 HD WITH %%146" MESH & PLASTER FRAME WHERE REQUIRED	33 RL HD WITH "' MESH AND PF WHERE REQUIRED	T75D WITH "' MESH AND PF WHERE REQUIRED
RH & EH	HEAVY DUTY RETURN OR EXHAUST GRILLE WITH 35° OR 45° HORIZONTAL BARS	S 480 H	HDRH	6145 HD	33 RL	T115H-40
LD	ALUMINUM LINEAR SLOT DIFFUSER WITH 4-%%142" SLOTS & FIELD FABRICATED PLENUM	-	-	-	ML-38	6000
LD-2	ALUMINUM LINEAR SLOT DIFFUSER WITH 8-%%142" SLOTS & FIELD FABRICATED PLENUM	-	-	-	ML-38	6000

NOTES:

1. ALL SYMBOLS NOTED MAY NOT BE USED. REFER TO PLANS FOR SIZE AND QUANTITY.
2. ALL SUPPLY AIR DIFFUSERS ARE 4 WAY BLOW UNLESS SHOWN OTHERWISE.
3. FURNISH ALL PRODUCTS OF A SINGLE MANUFACTURER.
4. COORDINATE DIFFUSER TYPE WITH REFLECTED CEILING PLAN.
5. OPPOSED BLADE DAMPERS ARE NOT REQUIRED AT DIFFUSERS, REGISTERS OR GRILLES.
6. PROVIDE MANUAL AIR DAMPERS AT EACH BRANCH DUCT TO A SINGLE DIFFUSER, REGISTER OR GRILLE.

* ALUMINUM REGISTERS FOR SHOWERS AND DAMP AREAS

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LICENSED ARCHITECT KIP DAVIS GRUBB No. C19022 EXP. 11/30/19 STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER THOMAS A. DUVAL M 22836 EXPIRES 9/30/20 MECHANICAL STATE OF CALIFORNIA
DATE SIGNED: 2-11-2019

CAPITAL ENGINEERING CONSULTANTS, INC.
RANCHO CORDOVA, CALIFORNIA
MCM/RL — PM - DESIGN TEAM
180204.00 — PROJECT NO.

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APP NO. 02 - 116869
FILE NO. 39-H7
AC TM FLS SS
DATE 02 - 13 - 2019

GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
1621 BROOKSIDE RD.,
STOCKTON, CA 95207

STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

MECHANICAL EQUIPMENT SCHEDULES

M0.2

1 M1.0 MECHANICAL SITE PLAN
SCALE: 1/64" = 1'-0"

DEMOLITION GENERAL NOTES

1. CONTRACTOR TO REMOVE THE CONTROLLERS AND THERMOSTATS FROM ALL EQUIPMENT AND ROOMS AND TURN OVER TO OWNER'S REPRESENTATIVE.

DEMOLITION SHEET NOTES:

1 -

NEW GENERAL NOTES

1. CONTRACTOR TO INSTALL THE NEW CONTROLLERS IN THE UNITS AND THE THERMOSTATS AND CO2 SENSORS AT +48" ABOVE FINISHED FLOOR (TOP OF BOX).

NEW SHEET NOTES:

1 -

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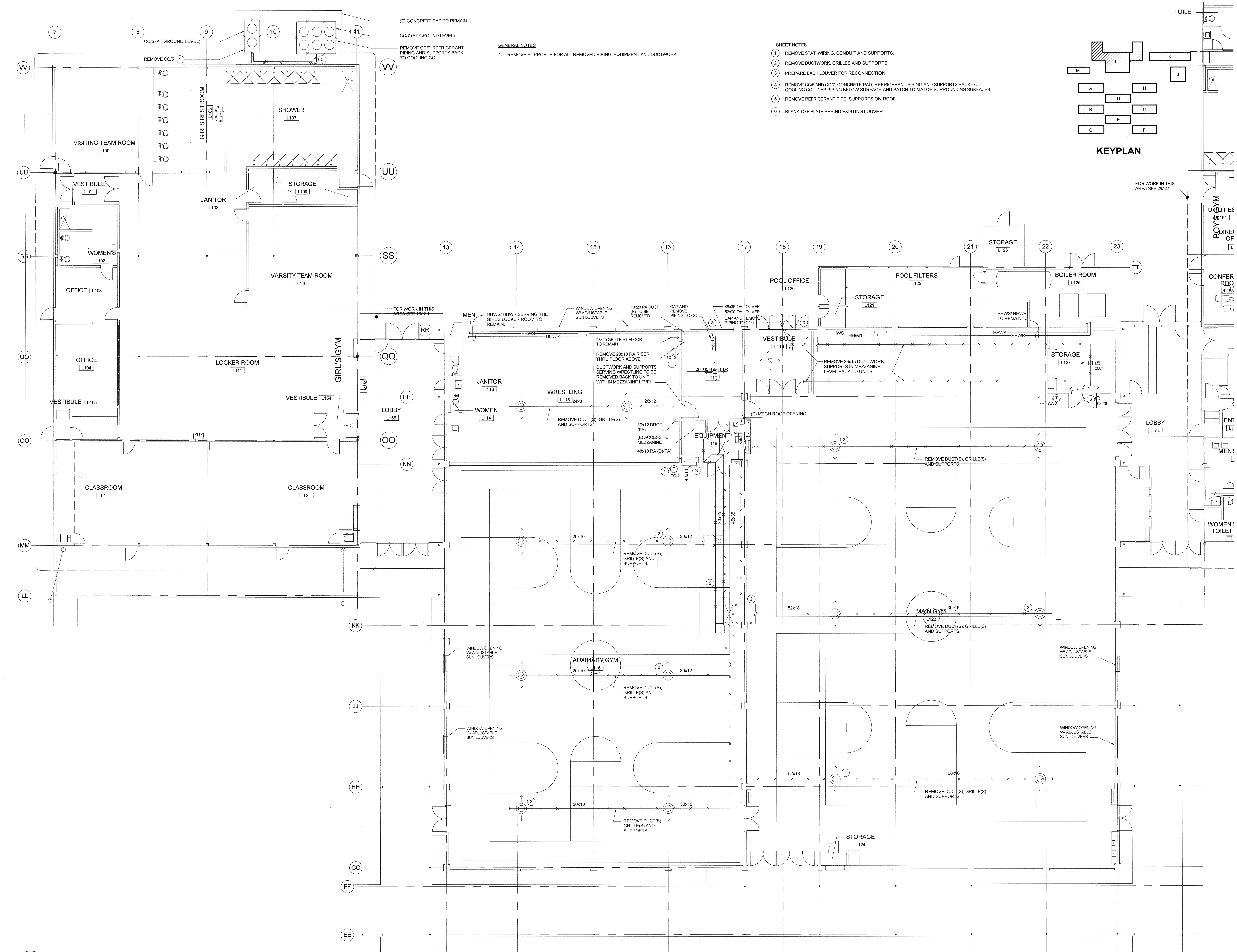
MECHANICAL SITE PLAN

M1.0



GENERAL NOTES:

1. REMOVE SUPPORTS FOR ALL REMOVED PIPING, EQUIPMENT AND DUCTWORK.

SHEET NOTES:

1. REMOVE STAT, WIRING, CONDUIT AND SUPPORTS.
2. REMOVE DUCTWORK, GRILLES AND SUPPORTS.
3. PREPARE EACH LOUVER FOR RECONNECTION.
4. REMOVE CC/5 AND CC/7, CONCRETE PAD, REFRIGERANT PIPING AND SUPPORTS BACK TO COOLING COIL. CAP PIPING BELOW SURFACE AND PATCH TO MATCH SURROUNDING SURFACES.
5. REMOVE REFRIGERANT PIPE, SUPPORTS ON ROOF.
6. BLANK-OFF PLATE BEHIND EXISTING LOUVER

KEYPLAN

1 / M2.0 MECHANICAL DEMOLITION FLOOR PLAN

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

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REGISTERED PROFESSIONAL ENGINEER THOMAS A. DUVAL M 22836 EXPIRES 9/30/20 MECHANICAL STATE OF CALIFORNIA

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MECHANICAL DEMOLITION FLOOR PLAN

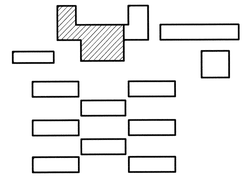
M2.0

GENERAL NOTES

1. REMOVE AND CAP HEATING HOT WATER PIPING SERVING HOT WATER COILS AS SHOWN ON M2.0.
2. REMOVE SUPPORTS FOR ALL REMOVED PIPING, EQUIPMENT AND DUCTWORK.

SHEET NOTES:

1. REMOVE DAMPER BLANK-OFF OPENING
2. REMOVE DUCTWORK, GRILLES AND SUPPORTS.
3. BLANK-OFF PLATE BEHIND EXISTING LOUVER
4. REMOVE ALL SUPPLY FAN(S), SF/1 AND SF/2 AND ALL MOUNTING/ SUPPORTS. REMOVE ASSOCIATED DUCTWORK, COILS SUPPORTS AND FILTER WALL WITHIN MEZZANINE SPACE.



CC/5 (AT GROUND LEVEL)

CC/7 (AT GROUND LEVEL)

REMOVE CC/7, CONCRETE PAD, REFRIGERANT PIPING AND SUPPORTS BACK TO COOLING COIL.

REMOVE CC/5, CONCRETE PAD, REFRIGERANT PIPING AND SUPPORTS BACK TO COOLING COIL.

REMOVE REFRIGERANT PIPE, SUPPORTS ON ROOF.

GIRL'S LOCKER ROOM ROOF

REMOVE REFRIGERANT PIPE

REF PIPE 43x36 OA LOUVER/ DAMPER

FAN ROOM

SF/1

DEMO FILTER WALL 42x90 OA LOUVER/ DAMPER (1)

REMOVE SM WALL/ FILTER WALL WITHIN MEZZANINE LEVEL.

REMOVE 10x28 RA DUCT (R) FROM LOW GRILLE W/ FIRE DAMPER AT FLR.

HEATING COIL

COOLING COIL

REMOVE CC/6, SUPPORT AND REFRIGERANT PIPING BACK TO COOLING COIL.

CU/6 (ON ROOF)

24x12

SUPPLY AIR TO WRESTLING RM

10x12 DROP

MECHANICAL ROOM

23x35

48x18 RA (D)

96x36 HEATING COIL

96x36 COOLING COIL

(E) FAN ROOM

FAN ROOM

REMOVE 36x15 RA

96x48

FIRE DAMPER

RA DAMPER REMOVE MAD

REMOVE 36x15 RA

FIRE DAMPER

RA PLENUM

REMOVE SM WALL AND DOOR WITHIN MEZZANINE LEVEL.

60x36 HEATING COIL

COOLING COIL

60x36

23x25

48x36

1 M2.1 MECHANICAL DEMOLITION ROOF/ MEZZANININE PLAN

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

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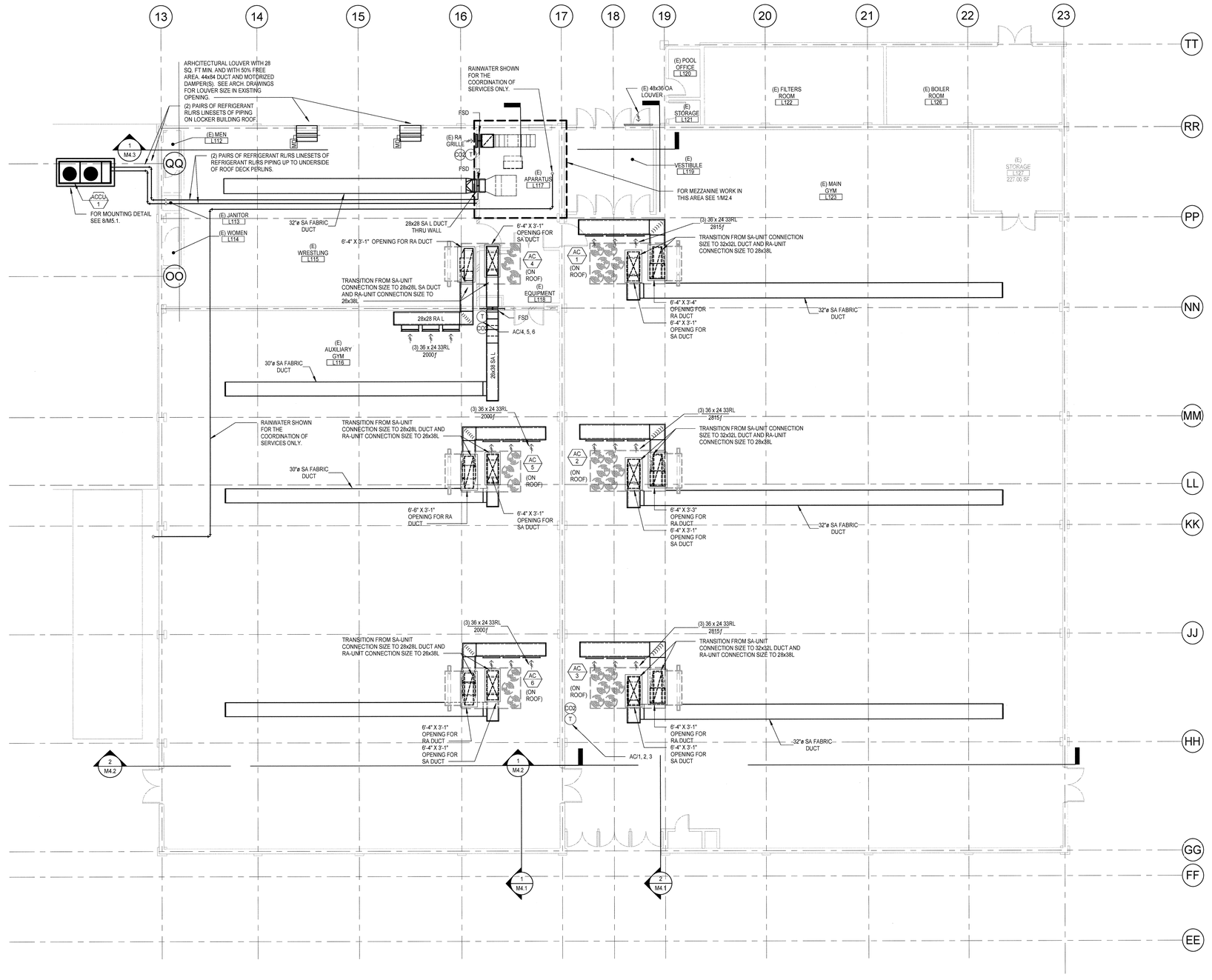
MECHANICAL DEMO. ROOF/ MEZZANINE PLAN

M2.1



1 M2.2 FLOOR PLAN

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

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GYM HVAC REPLACEMENT

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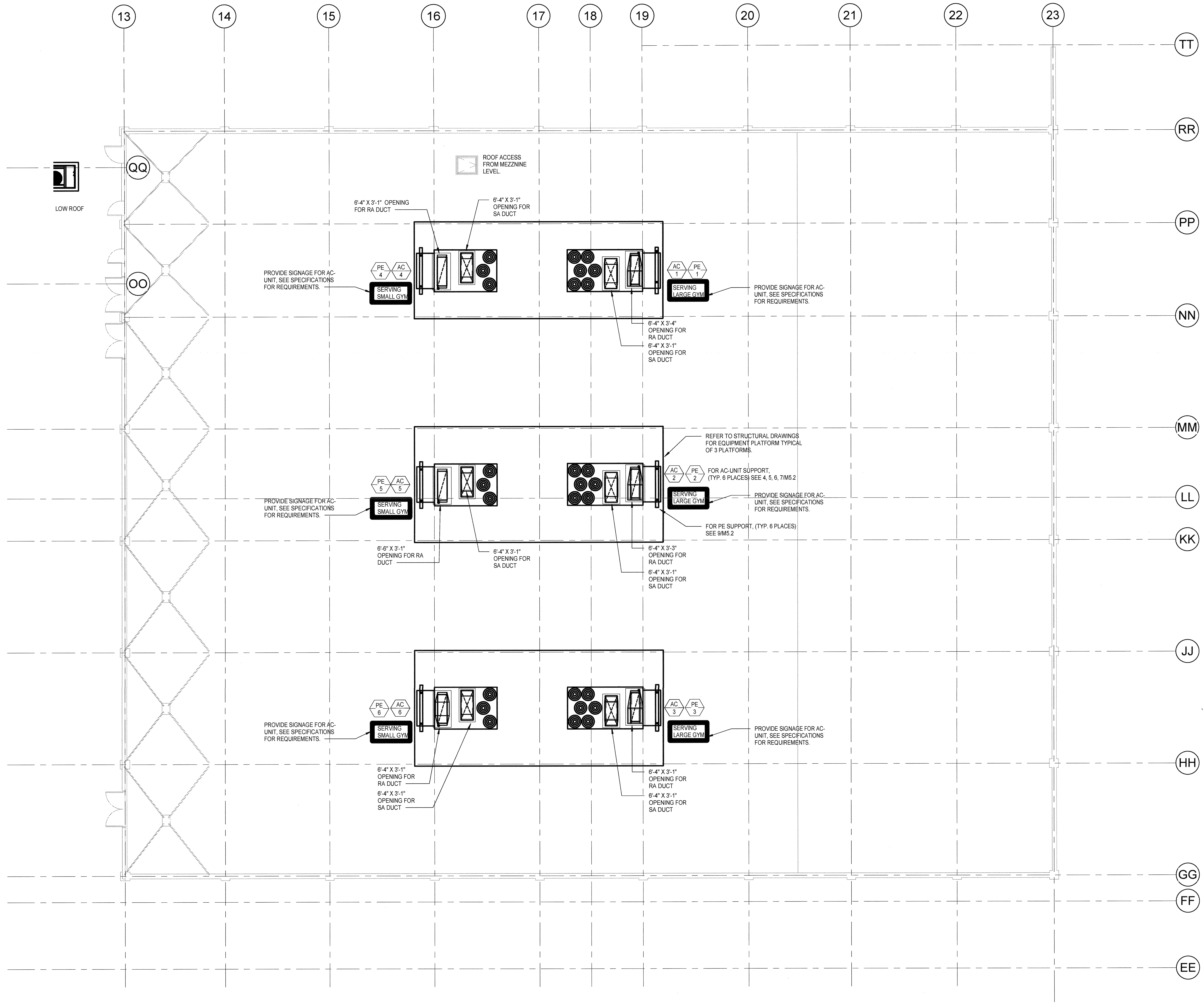
MECHANICAL FLOOR PLAN

M2.2



1 / M2.3 ROOF PLAN

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

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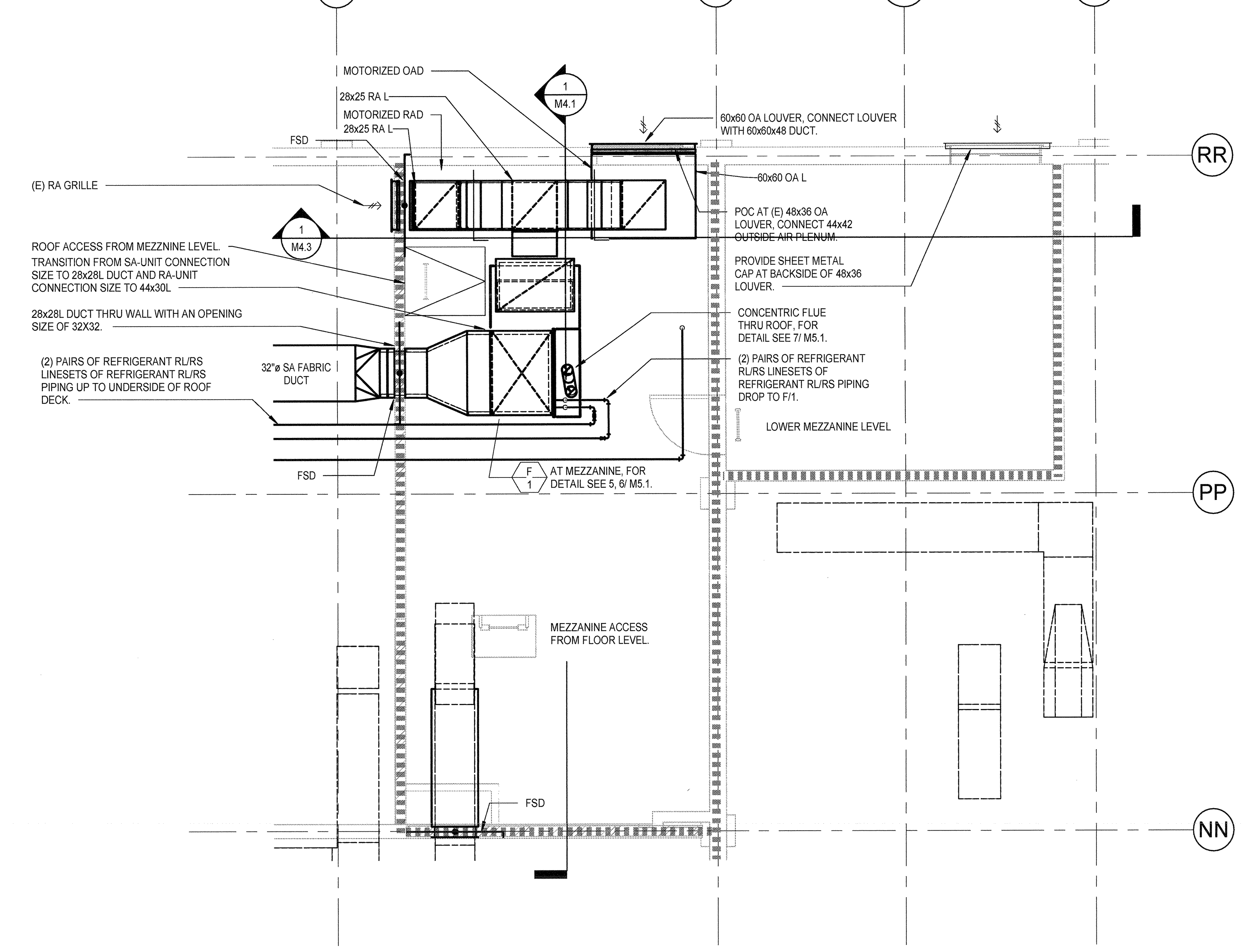
MECHANICAL ROOF PLAN

M2.3



1
M2.4
FLOOR PLAN
SCALE: 1/4" = 1'-0"

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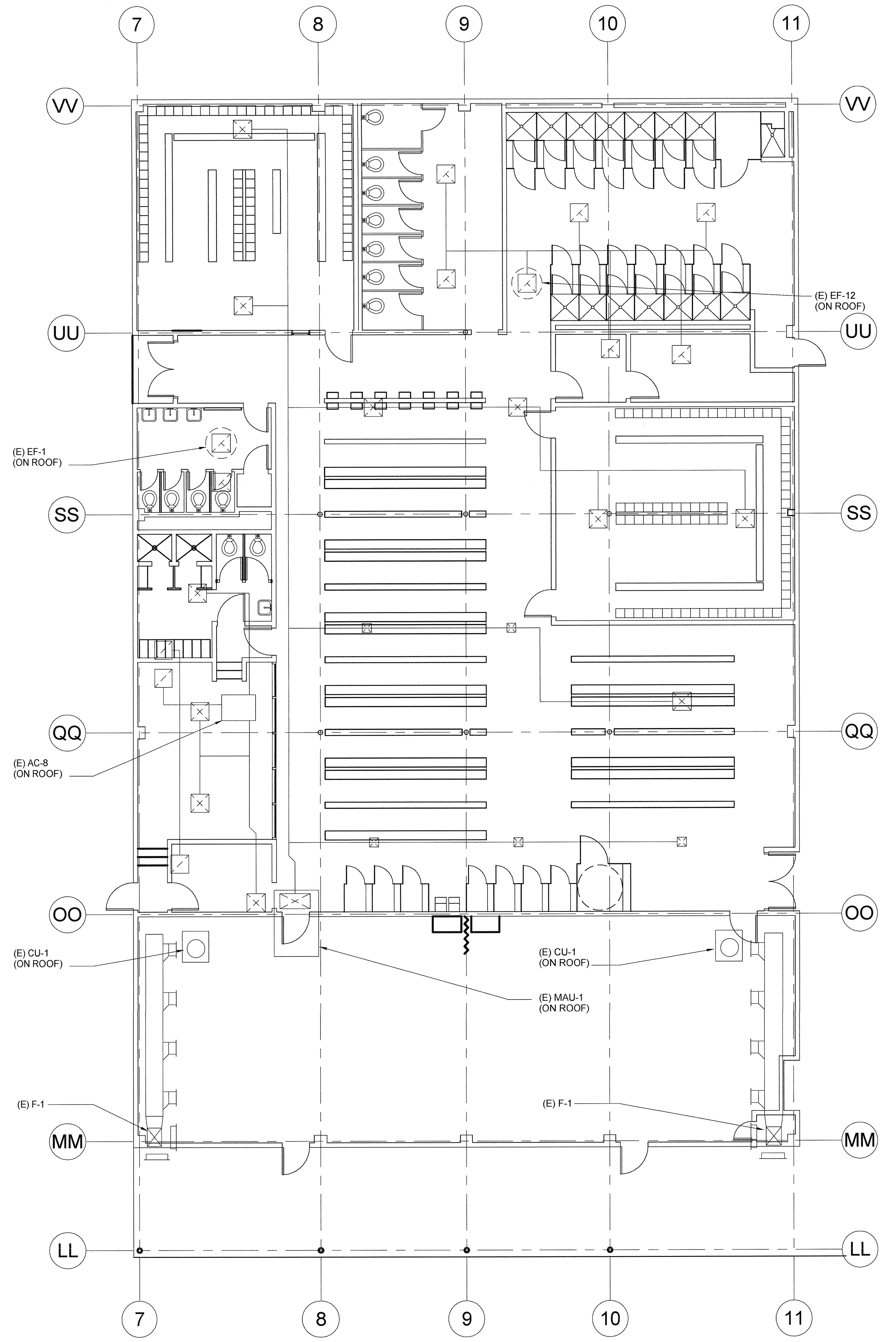
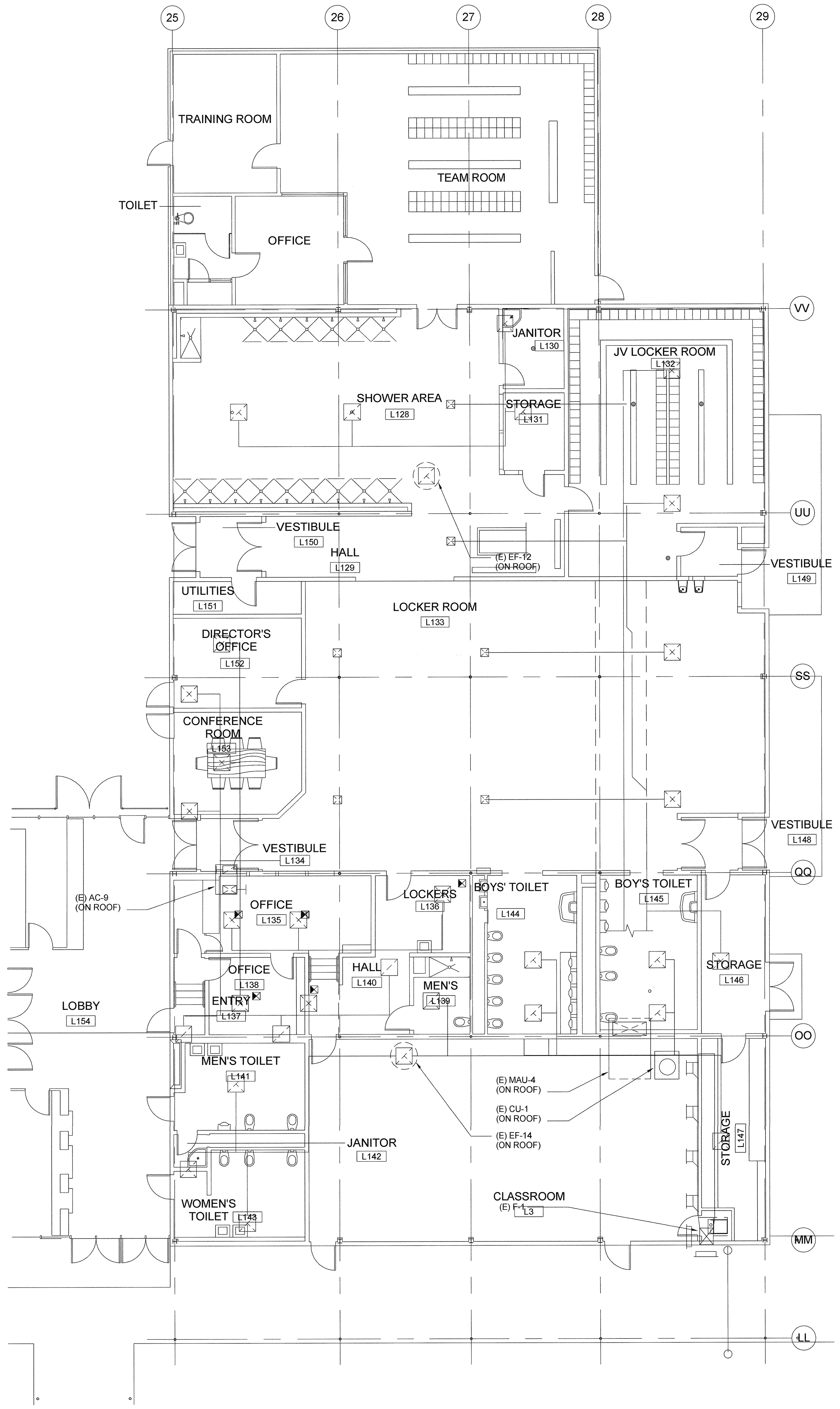
MECHANICAL MEZZANINE LEVEL PLAN

M2.4



GIRL'S LOCKER ROOM



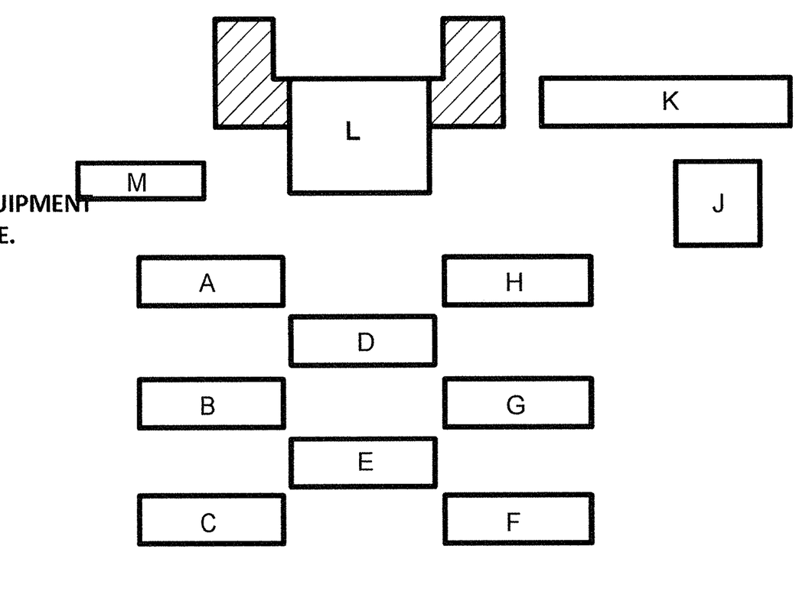
BOY'S LOCKER ROOM

DEMOLITION GENERAL NOTES

1. CONTRACTOR TO REMOVE THE CONTROLLERS FROM ALL EQUIPMENT AND ROOMS AND TURN OVER TO OWNER'S REPRESENTATIVE.

NEW GENERAL NOTES

1. CONTRACTOR TO INSTALL THE NEW CONTROLLERS IN THE UNITS.



KEYPLAN

1 / M2.5 MECHANICAL LOCKER ROOM FLOOR PLAN

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

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REGISTERED PROFESSIONAL ENGINEER THOMAS A. DUVAL M 22836 EXPIRES 9/30/20 MECHANICAL STATE OF CALIFORNIA

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GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
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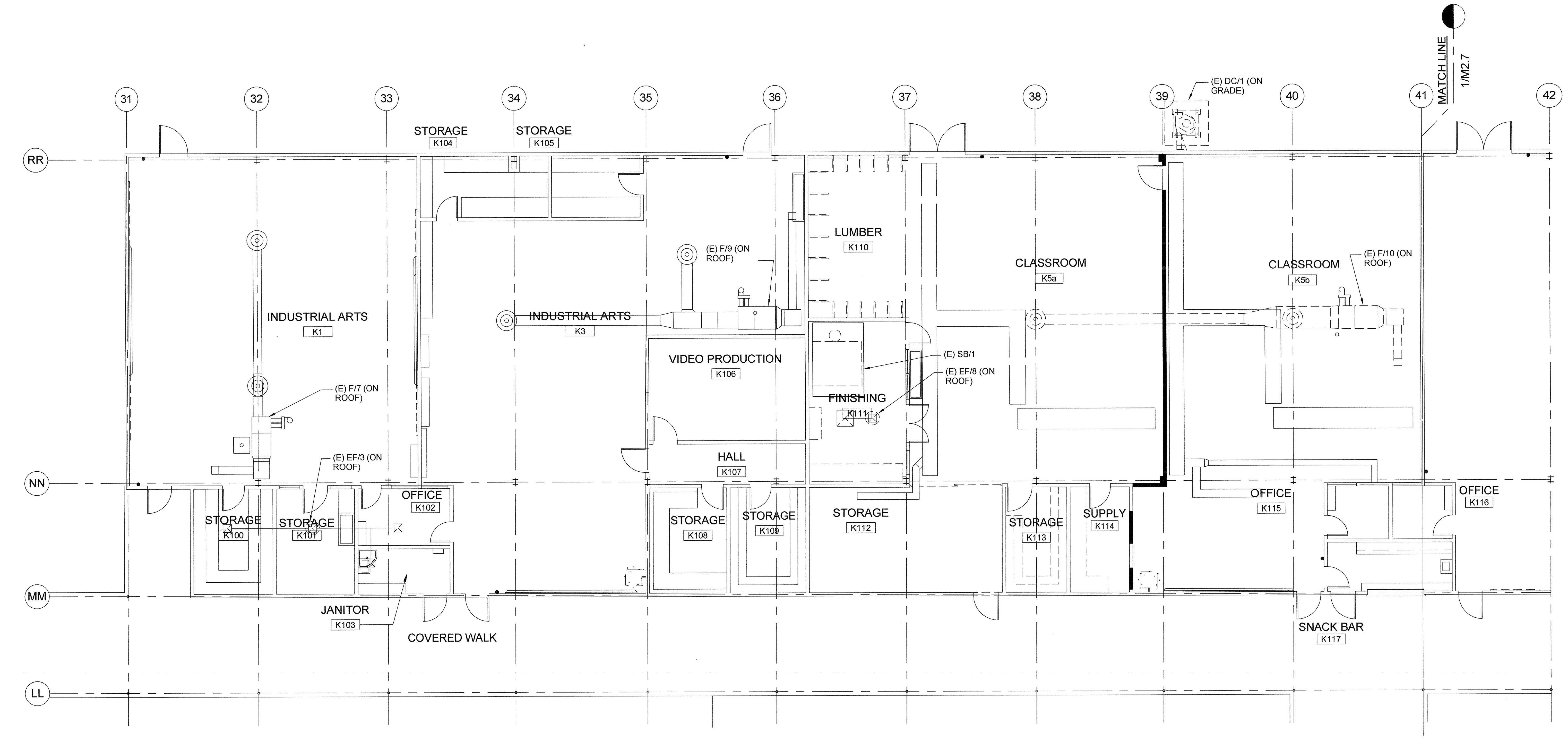
MECHANICAL LOCKER ROOMS FLOOR PLANS

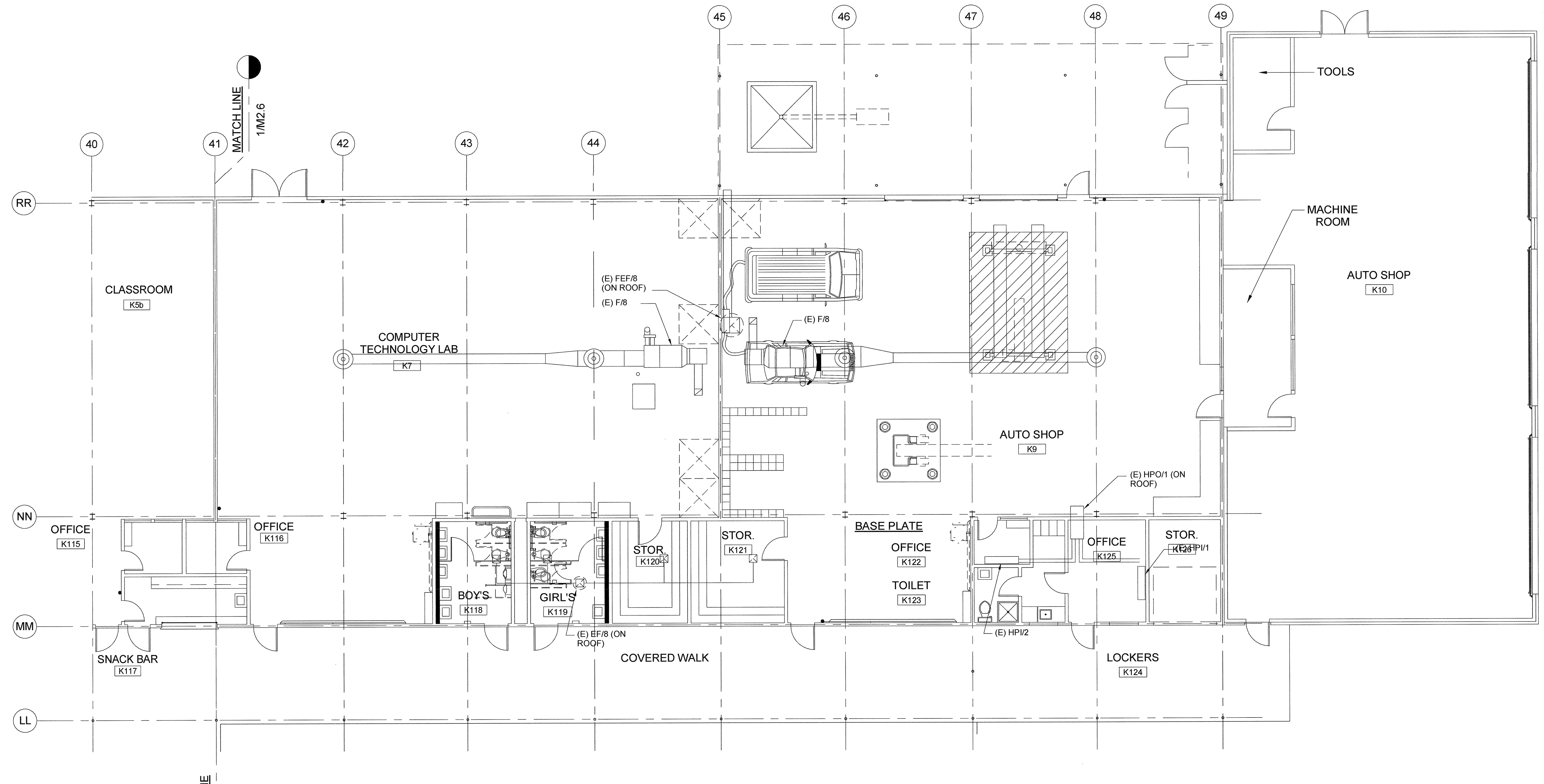
M2.5



MECHANICAL PARTIAL BLDG K FLOOR PLAN 1 M2.6

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

MATCH LINE 1/M2.7



MATCH LINE 1/M2.6

MECHANICAL PARTIAL BLDG K FLOOR PLAN 2 M2.6

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

DEMOLITION GENERAL NOTES

1. CONTRACTOR TO REMOVE THE CONTROLLERS FROM ALL EQUIPMENT AND ROOMS AND TURN OVER TO OWNER'S REPRESENTATIVE.

NEW GENERAL NOTES

1. CONTRACTOR TO INSTALL THE NEW CONTROLLERS IN THE UNITS.

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GYM HVAC REPLACEMENT

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STOCKTON UNIFIED SCHOOL DISTRICT

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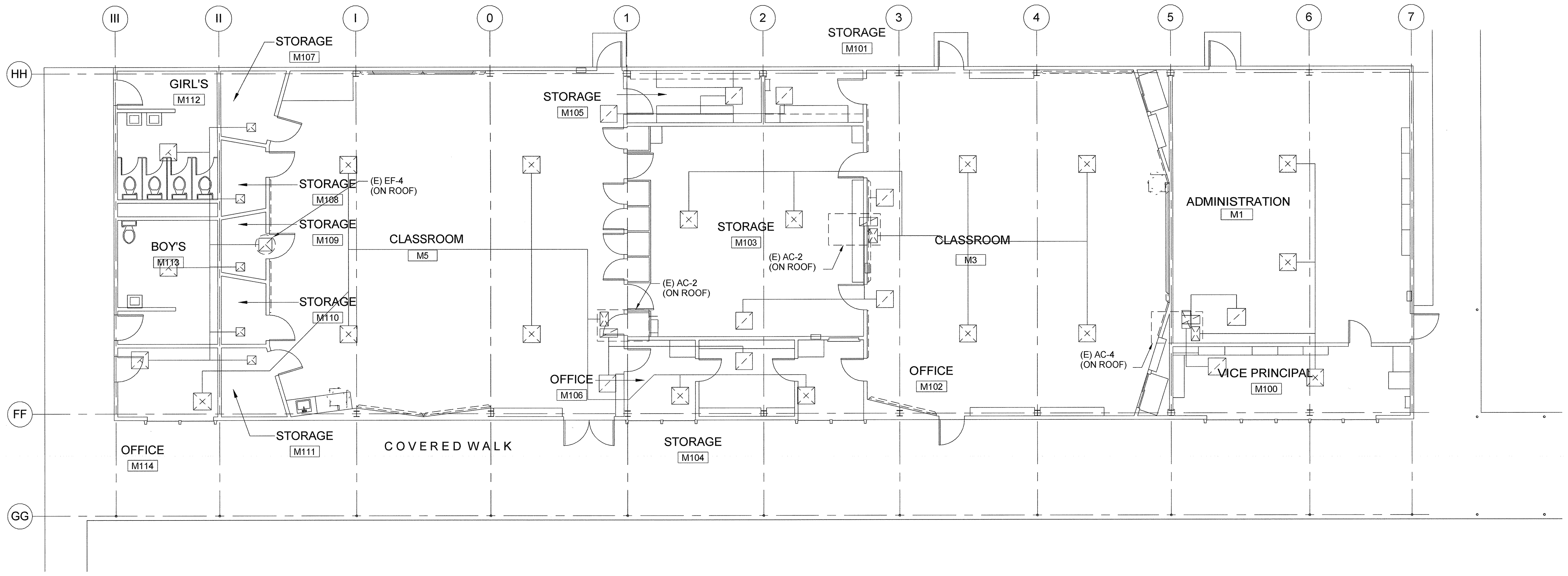
MECHANICAL BUILDING K FLOOR PLAN

M2.6



1 / M2.7 MECHANICAL BLDG M FLOOR PLAN

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

DEMOLITION GENERAL NOTES

1. CONTRACTOR TO REMOVE THE CONTROLLERS FROM ALL EQUIPMENT AND ROOMS AND TURN OVER TO OWNER'S REPRESENTATIVE.

NEW GENERAL NOTES

1. CONTRACTOR TO INSTALL THE NEW CONTROLLERS IN THE UNITS.

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GYM HVAC REPLACEMENT

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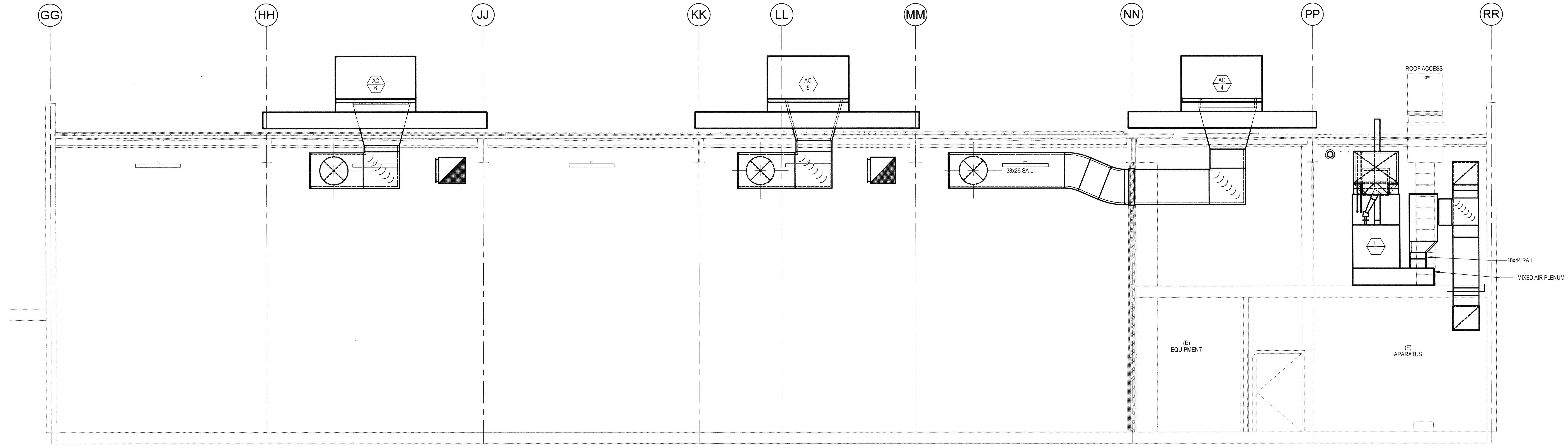
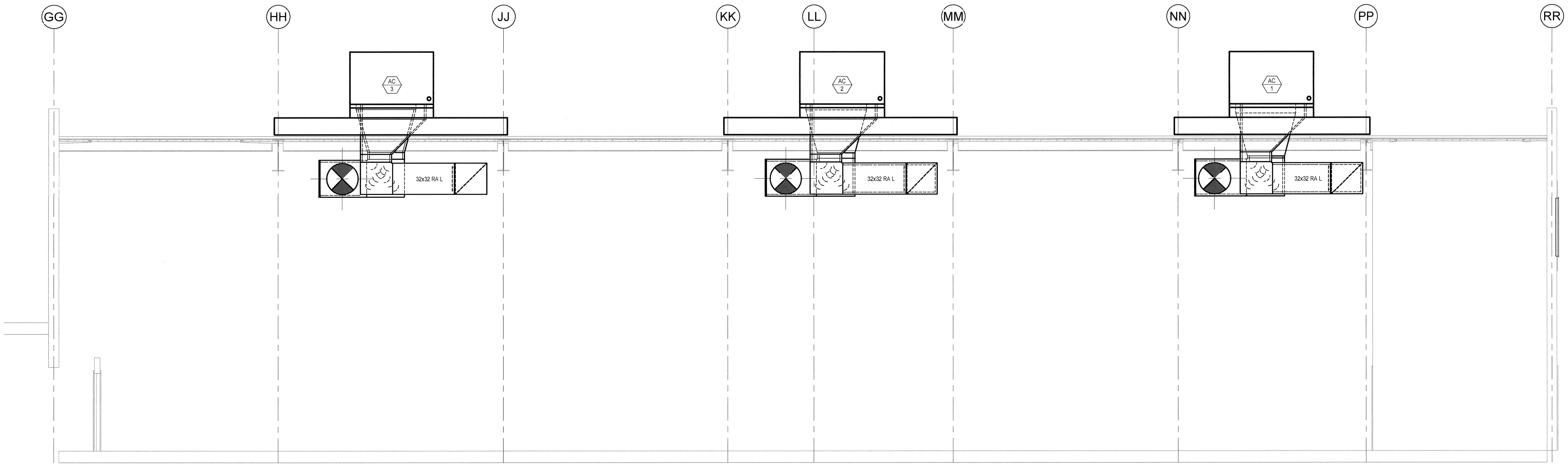
MECHANICAL BLDG M FLOOR PLAN

M2.7



1 / M4.1 **Section AT COLUMN 16.5**
SCALE: 1/4" = 1'-0"



2 / M4.1 **Section AT COLUMN 19**
SCALE: 1/4" = 1'-0"

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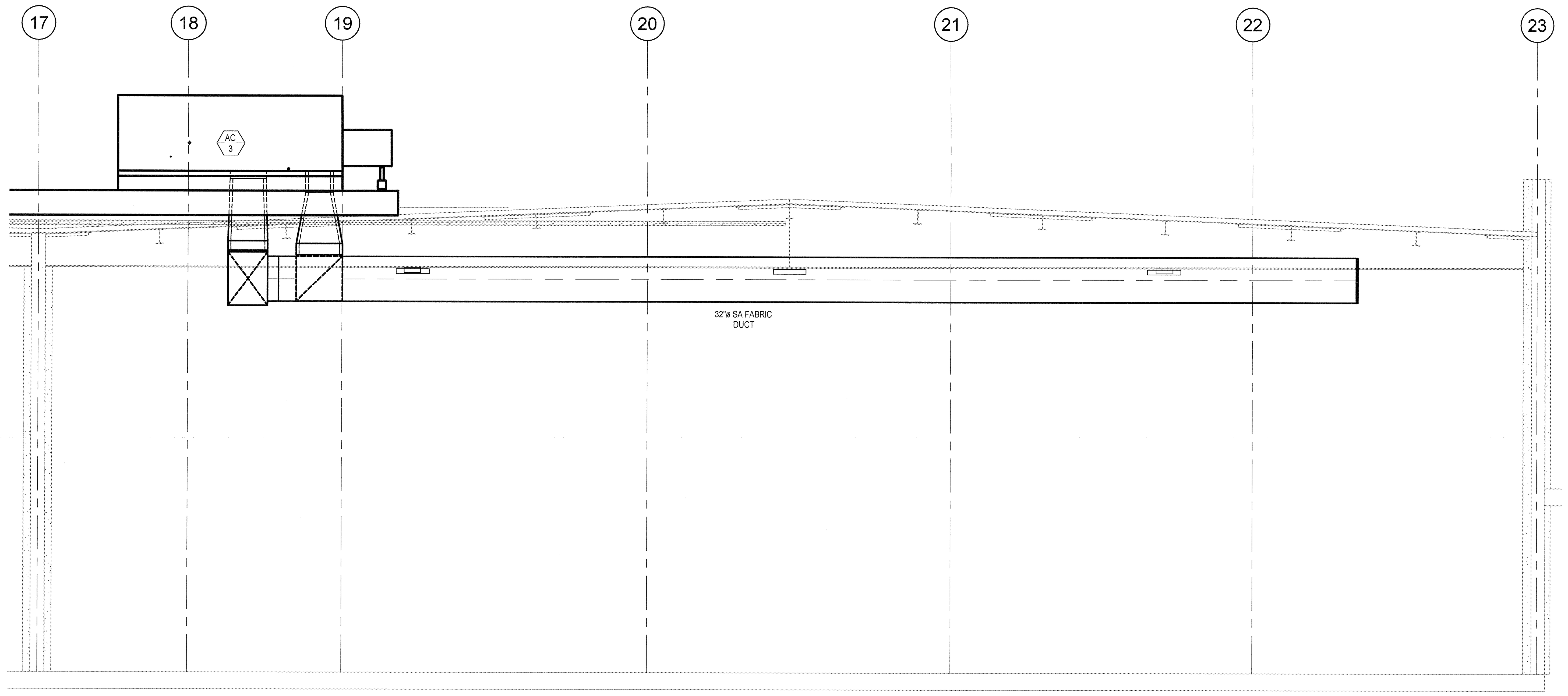
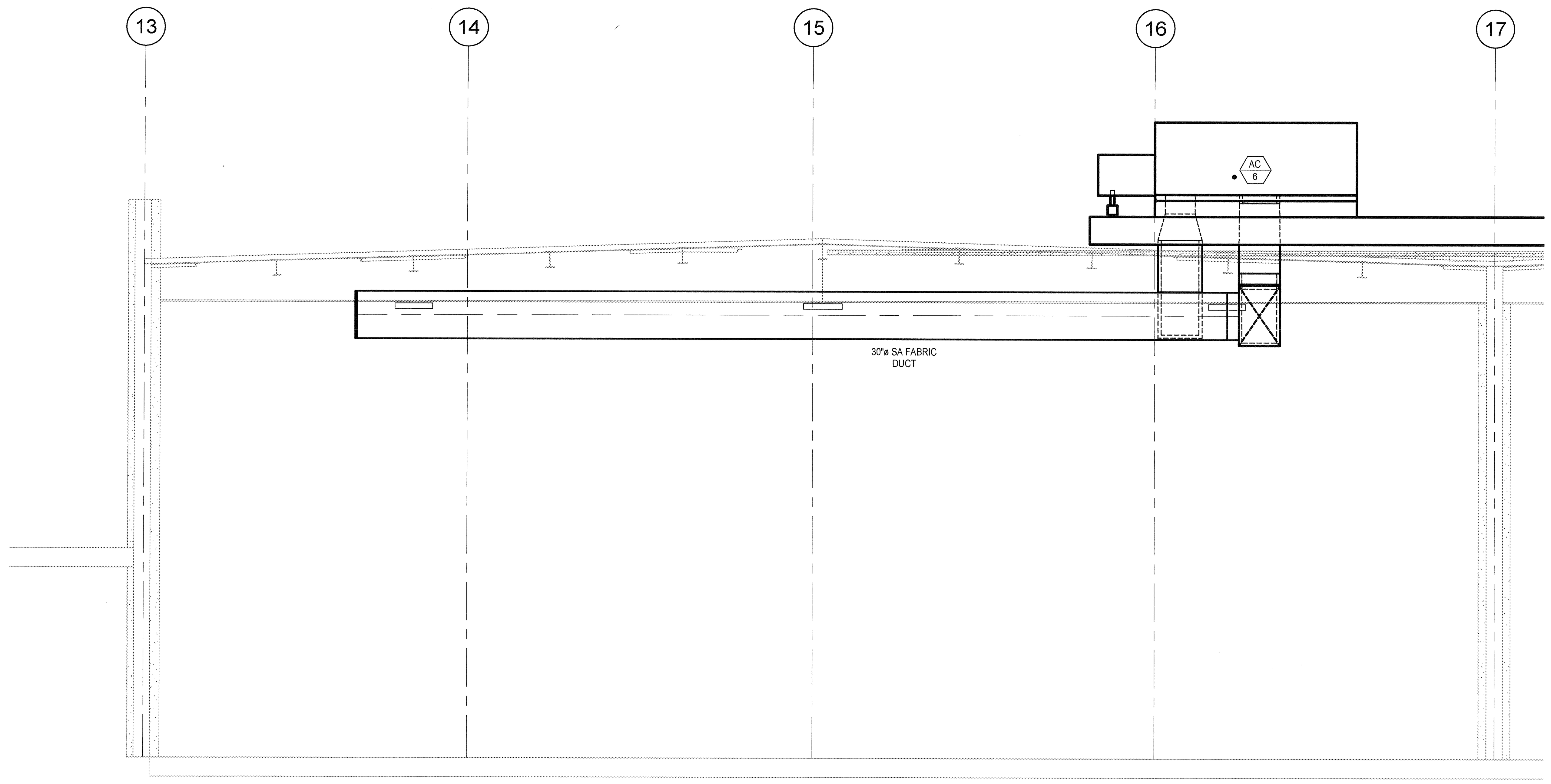
MECHANICAL SECTIONS

M4.1



1
M4.2
Section AT COLUMN HH
SCALE: 1/4" = 1'-0"



2
M4.2
Section AT COLUMN HH1
SCALE: 1/4" = 1'-0"

CA+SA
studio

3701 Business Drive Suite 200
Sacramento, CA 95820
Phone: (916) 365-9655

DATE SIGNED: 2-11-2019

CAPITAL
ENGINEERING CONSULTANTS, INC.
RANCHO CORDOVA, CALIFORNIA
MCM/RL 190204.00
PM - DESIGN TEAM PROJECT NO.

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APP NO. 02 - 116869
FILE NO. 39-H7
AC FLS SS
DATE 02 - 13 - 2019

GYM HVAC
REPLACEMENT

AMOS ALONZO
STAGG
HIGH SCHOOL
1621 BROOKSIDE RD.,
STOCKTON, CA 95207

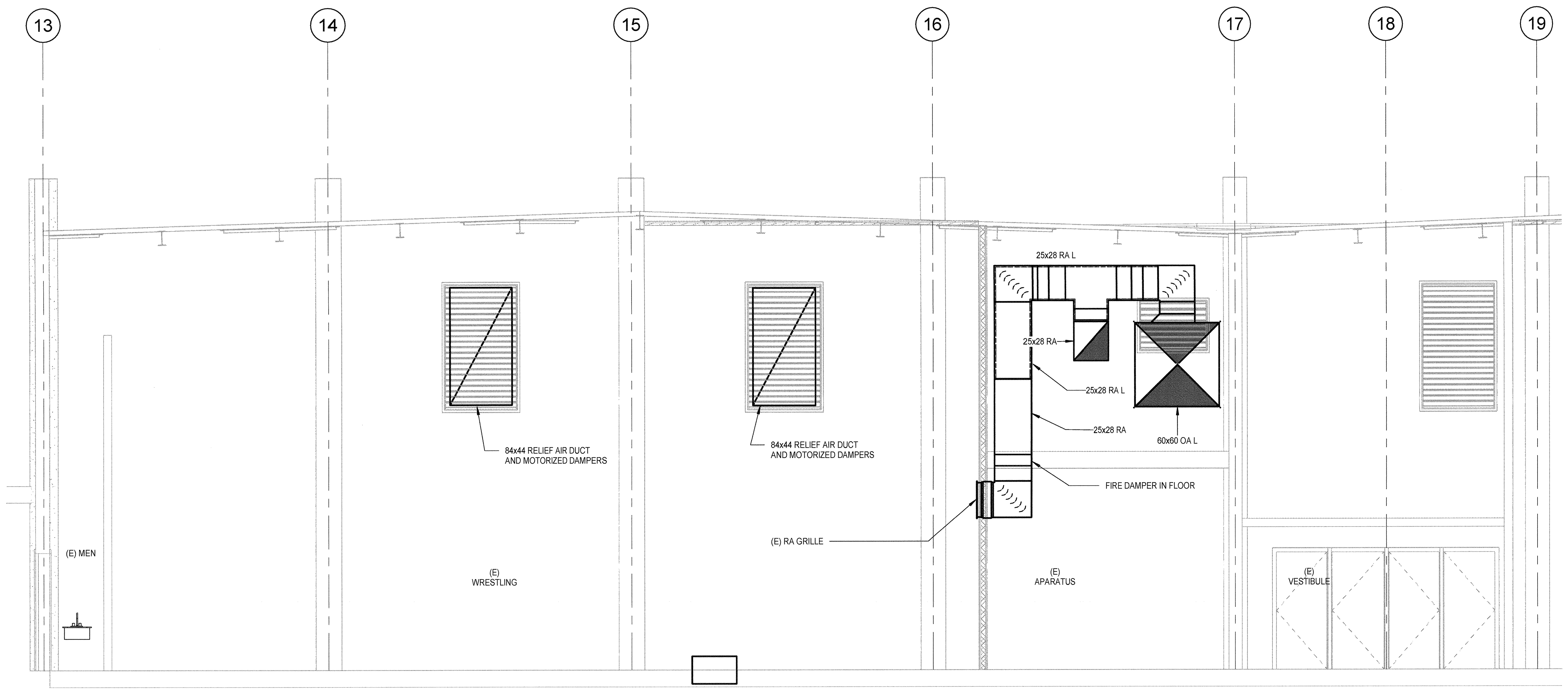
STOCKTON UNIFIED
SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

MECHANICAL
SECTIONS

M4.2



1 / M4.3 **Section AT COLUMN RR**
SCALE: 1/4" = 1'-0"

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GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
1621 BROOKSIDE RD.,
STOCKTON, CA 95207

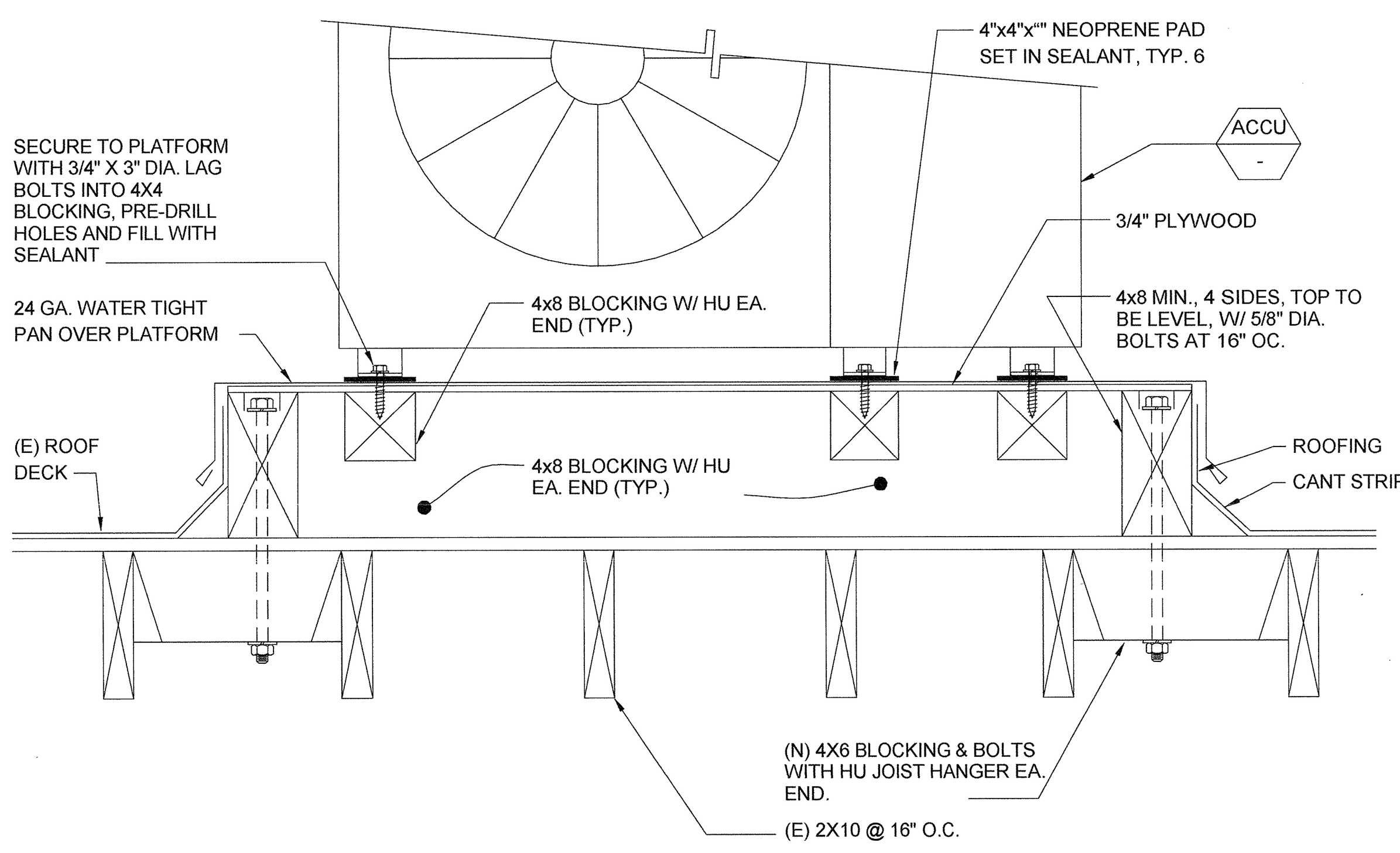
STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

MECHANICAL SECTIONS

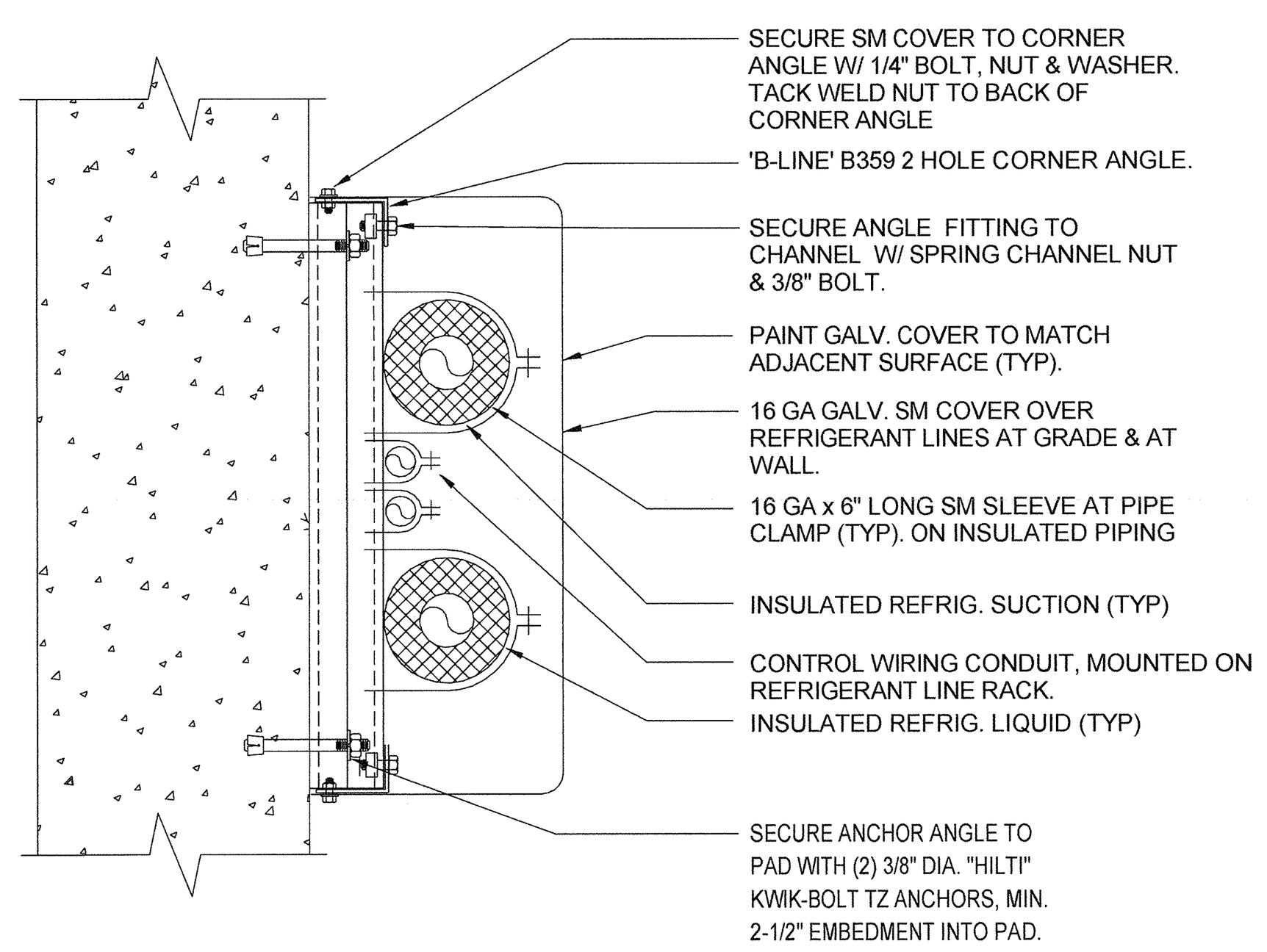
M4.3



SPLIT SYSTEM OUTDOOR MOUNTING

8 / M5.1

SCALE : NONE

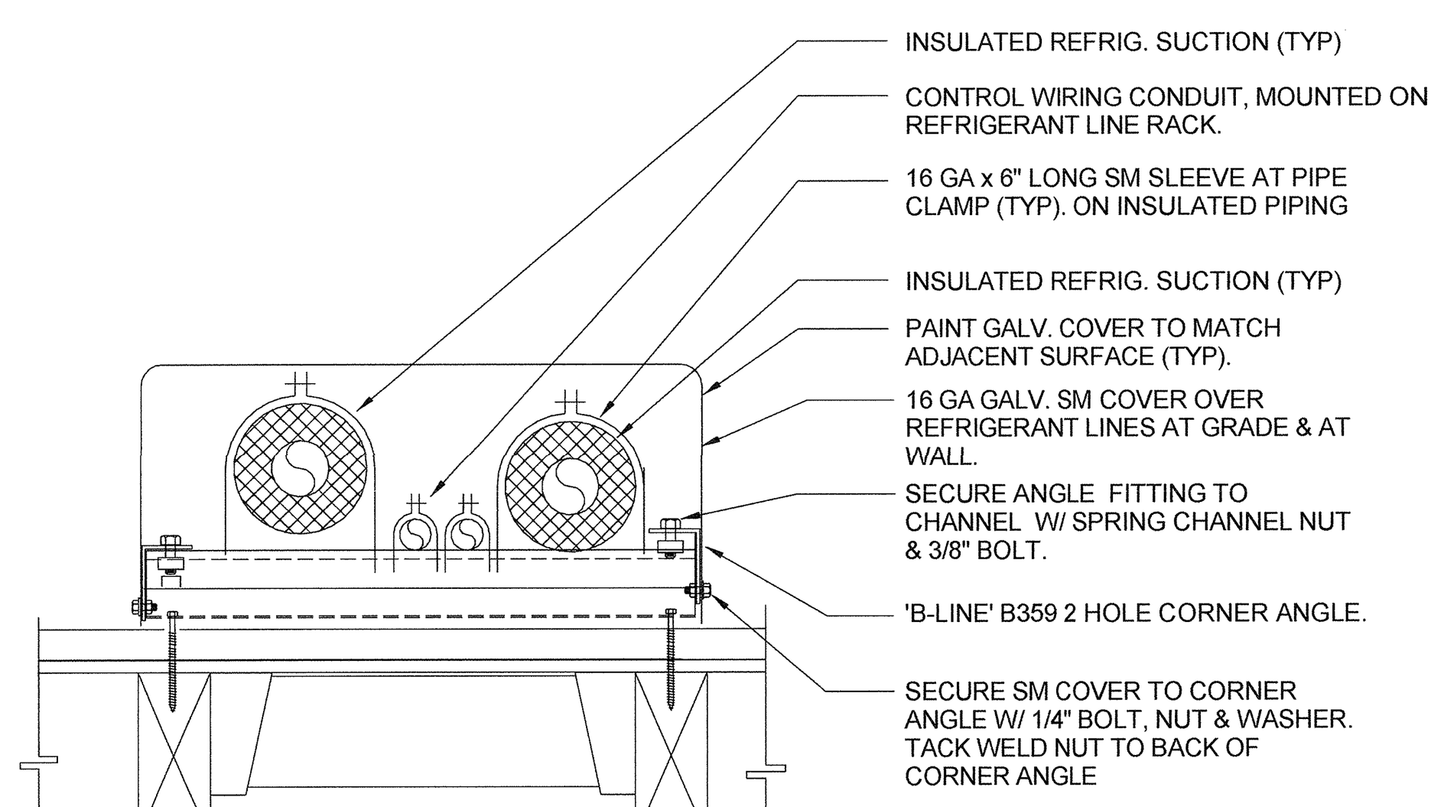


NOTES:
1. ALL CHANNELS AND FITTINGS SHALL BE ELECTRO-GALVANIZED.
2. SPACE PIPE SUPPORTS ON WALL AT 4' O.C. MIN. 2 SUPPORTS.
3. SEE PLANS FOR NUMBER OF PIPES ON EACH SUPPORT.
4. ALL EXPOSED METAL PARTS INCLUDING SHEET METAL COVER SHALL BE PRIMED AND PAINTED TO MATCH ARCHITECTURAL SURROUNDING SURFACE.
5. CAP ALL ENDS WATER TIGHT (HEMMED AND SEALED).

REFRIG PIPE ON CONC. WALL

9 / M5.1

SCALE : NONE



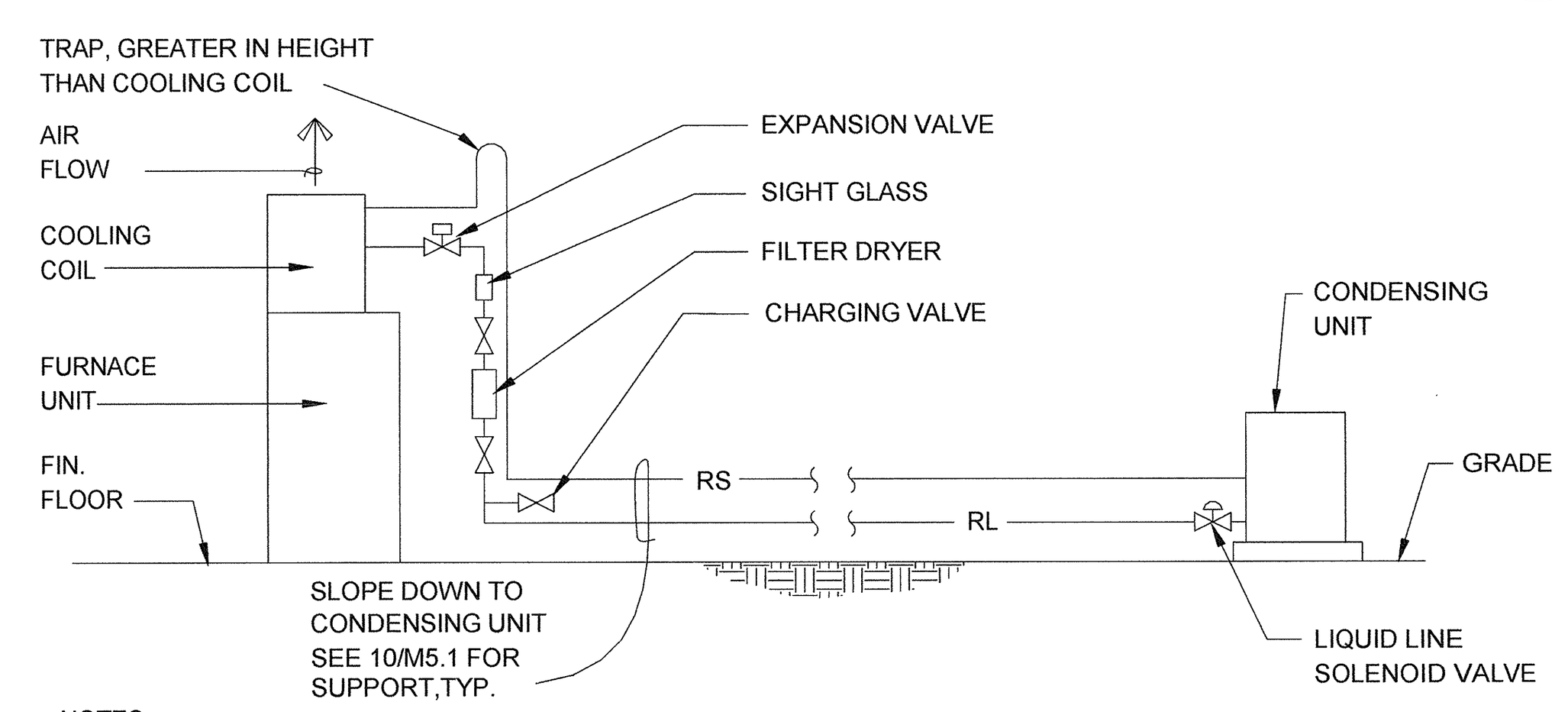
NOTES:
1. FOR WATERPROOFING SEE ARCHITECTURAL DRAWINGS.

REFRIGERANT PIPING RACKED ON WALL

PIPE AT OVERHANG MOUNTING DETAIL

10 / M5.1

SCALE : NONE

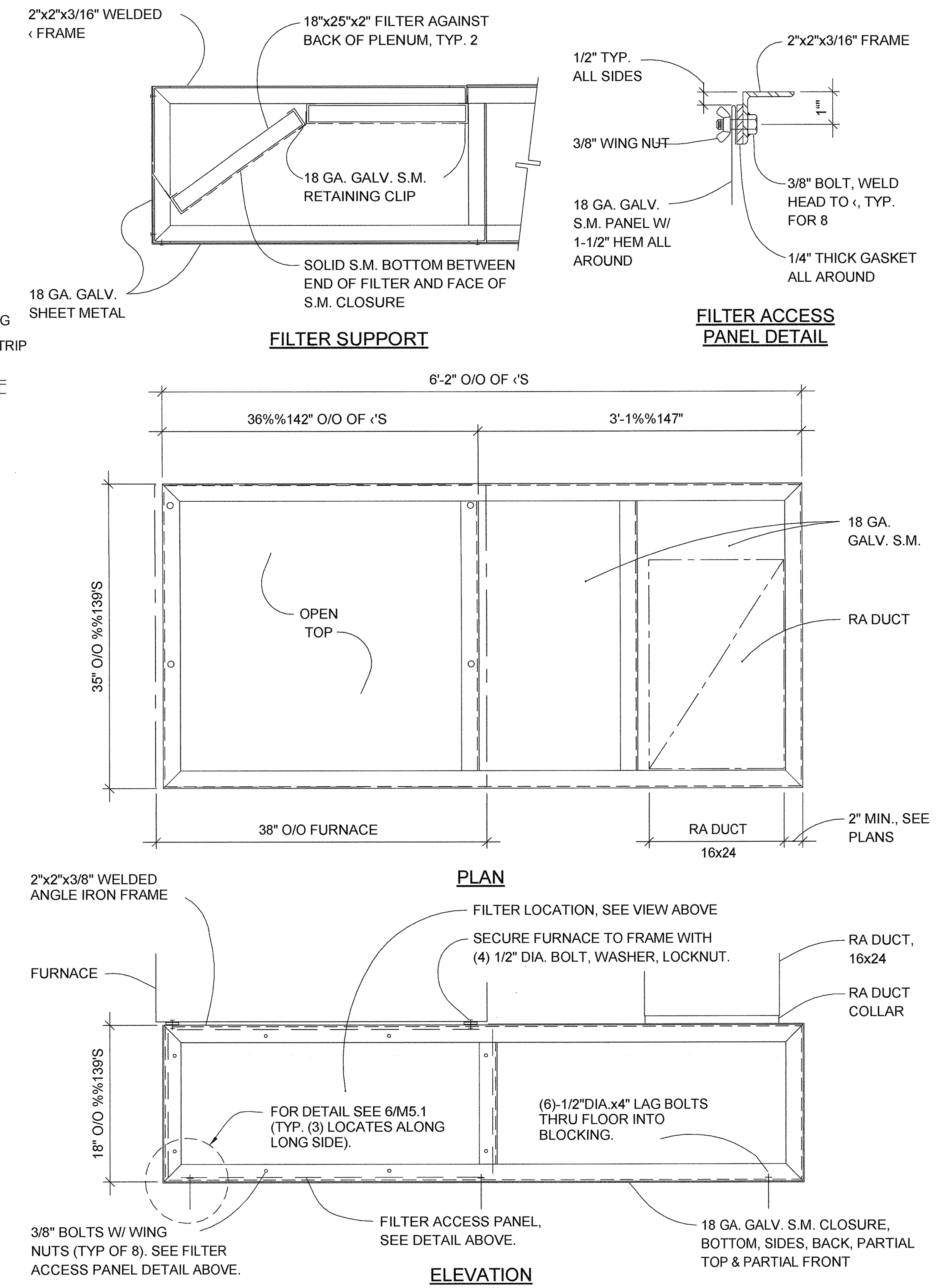


NOTES:
1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S LONG LINE REFRIGERANT INSTALLATION GUIDE LINES.
2. FURNISH EACH UNIT WITH:
   - THERMOSTATIC EXPANSION VALVE,
   - LIQUID LINE SOLENOID VALVE,
   - LIQUID LINE FILTER,
   - START RELAY AND CAPACITOR,
   - OUTDOOR UNIT TIME DELAY RELAY,
   - CRANKCASE HEATER,
   - SUCTION LINE ACCUMULATOR AT COMPRESSOR.
3. PIPING TO CONDENSING UNIT ON ROOF SIMILAR.

REFRIGERANT LINE PIPING DIAGRAM

11 / M5.1

SCALE : NONE

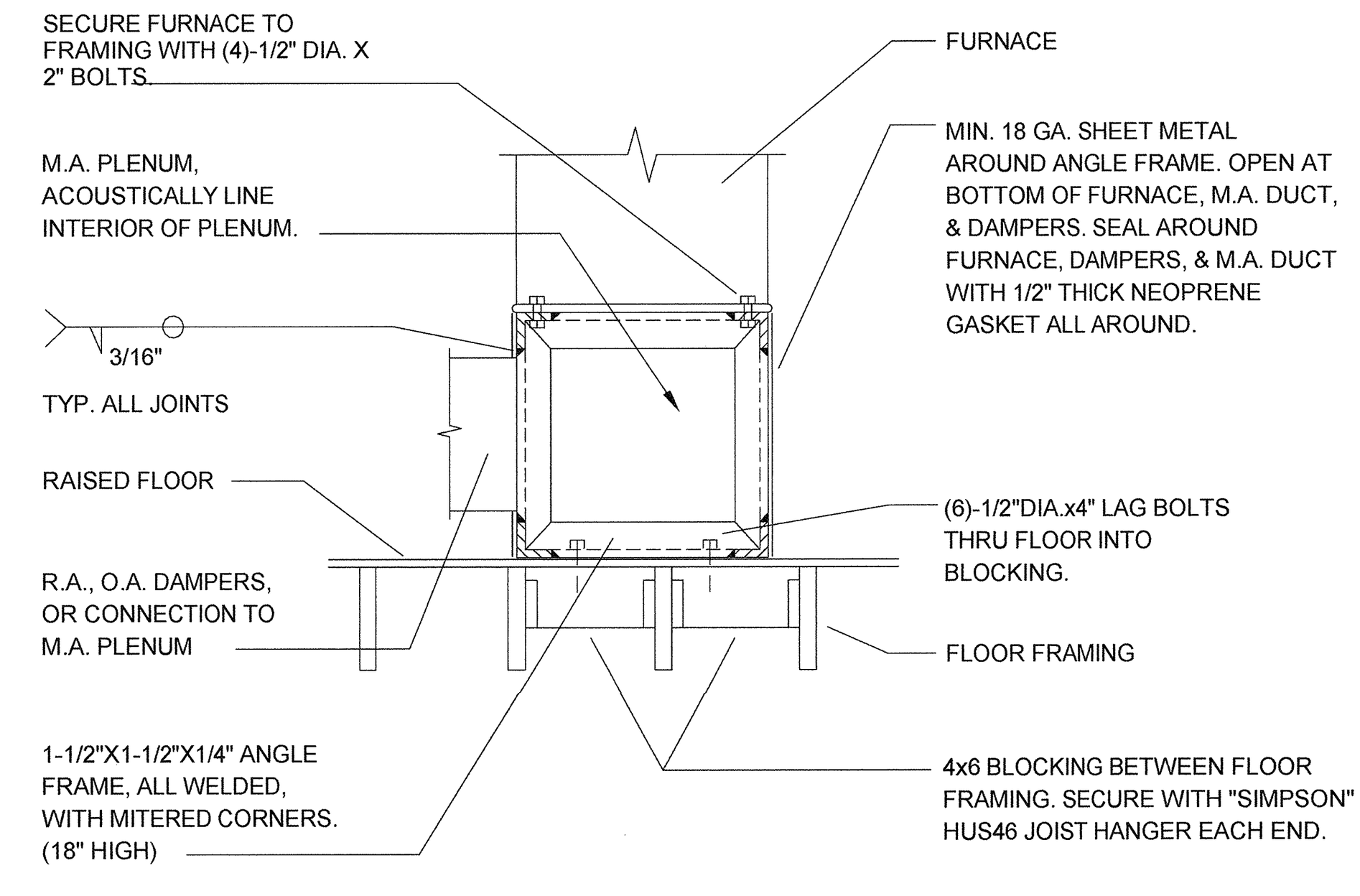


SEE 1/M2.4 FOR FURNACE LOCATION

FURNACE MOUNTING

5 / M5.1

SCALE : NONE

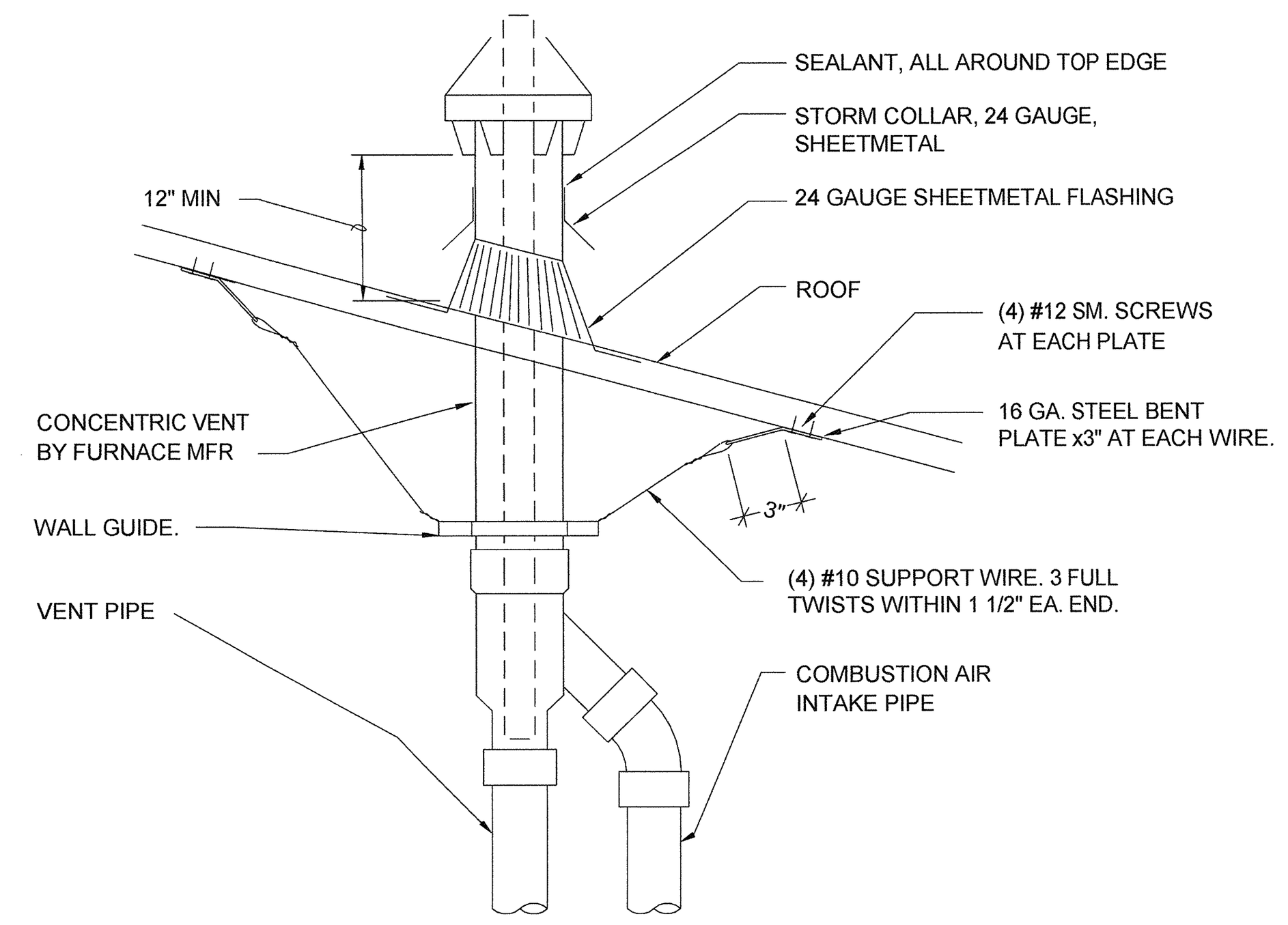


SEE 1/M2.4 FOR FURNACE LOCATION

FURNACE MTG. AT RAISED FLOOR

6 / M5.1

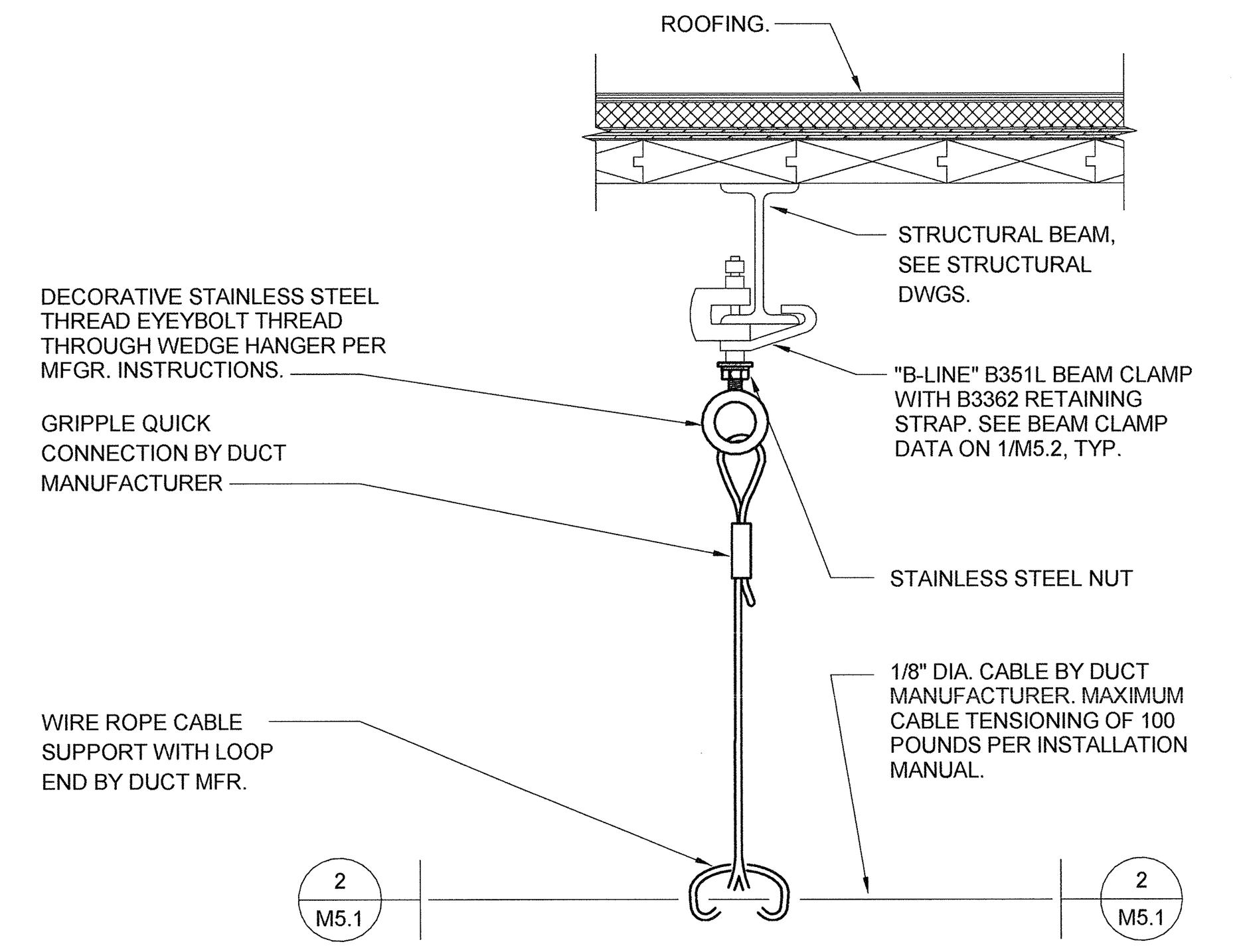
SCALE : NONE



VENT & COMBUSTION AIR PIPING

7 / M5.1

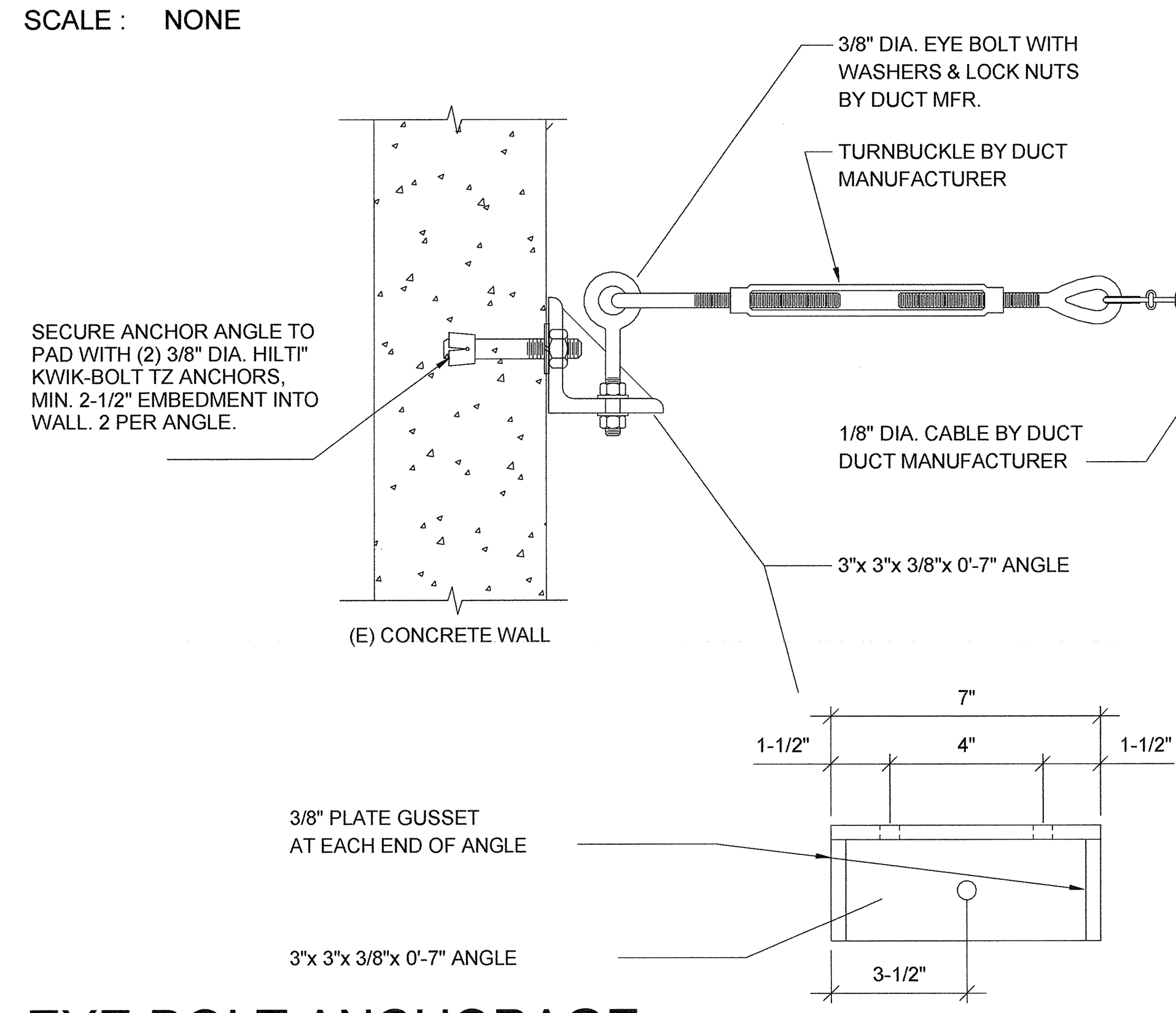
SCALE : NONE



CABLE SUPPORT ANCHOR

1 / M5.1

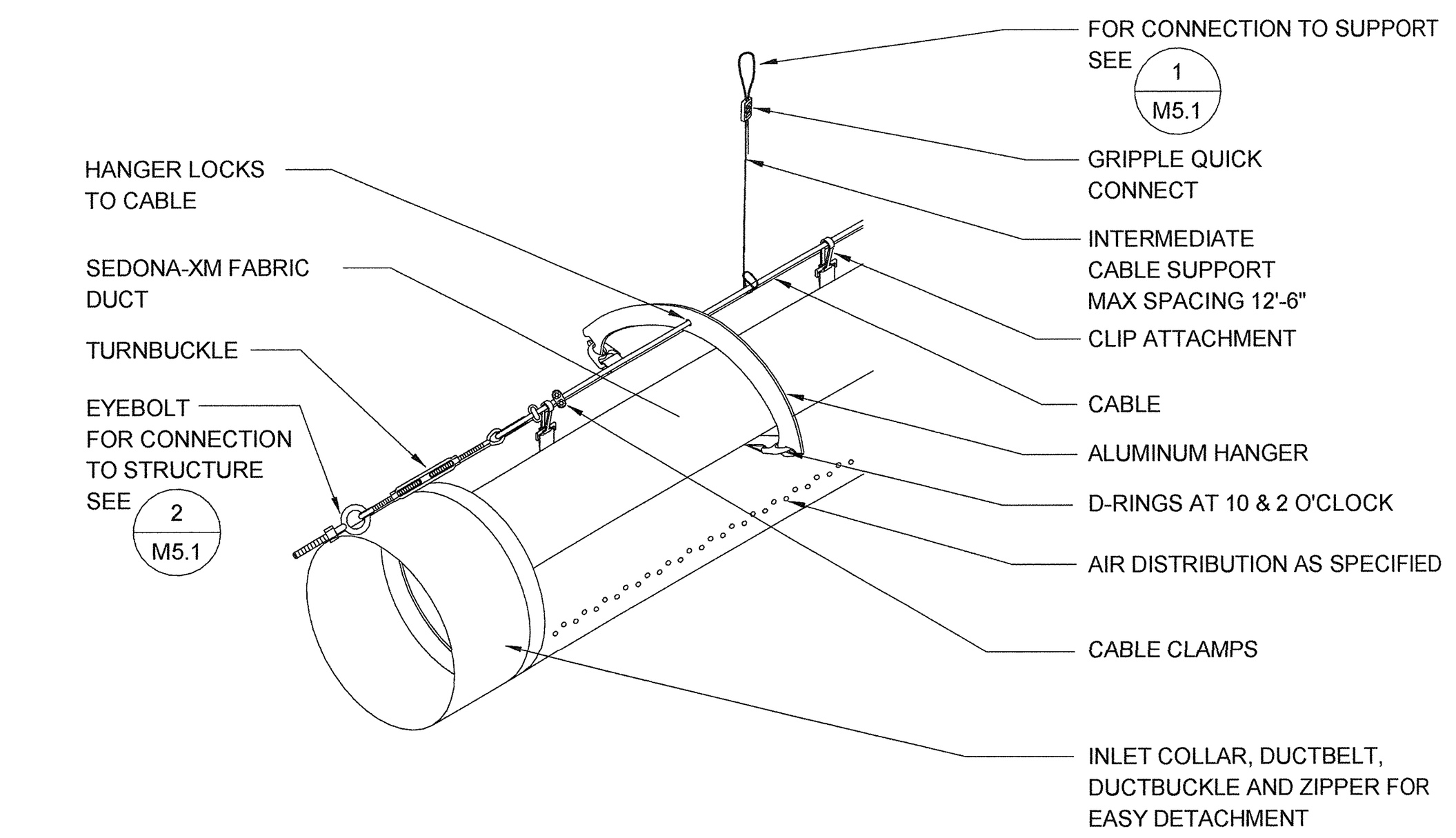
SCALE : NONE



EYE BOLT ANCHORAGE

2 / M5.1

SCALE : NONE



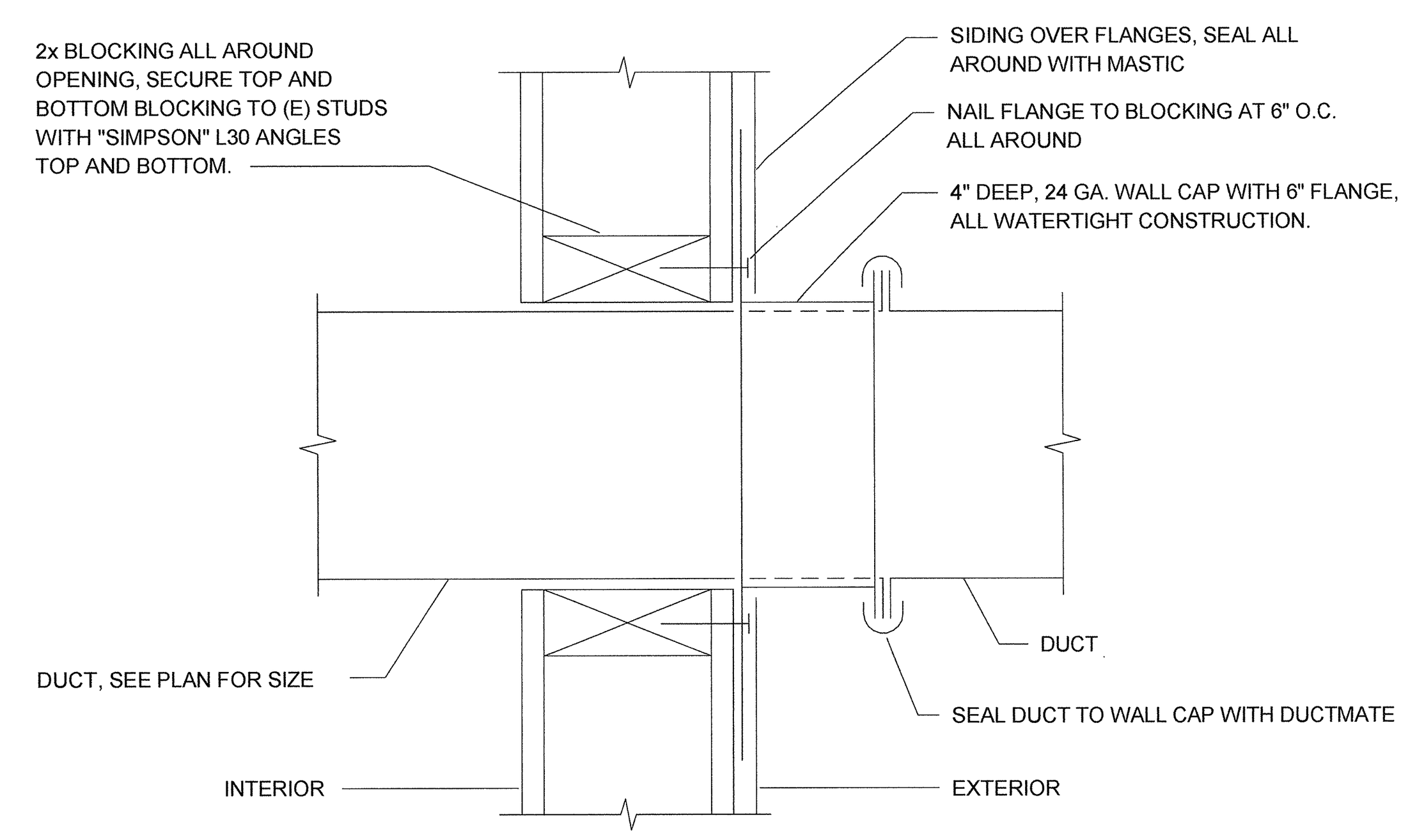
NOTES:
1. 3x1 SUSPENSION, CABLE AT 12 O'CLOCK HANGER SUPPORTS DUCTSOX AT 10 & 2 O'CLOCK
2. DUCT SOX WEIGHS LESS THAN 1 LB./FT.

NOTE: CONTRACTOR TO COORDINATE WITH ARCHITECT AND OWNER ON THE CUSTOM COLORS AND LOGO'S PROVIDED ON THE FABRIC DUCTWORK.

FABRIC DUCT SUPPORT

3 / M5.1

SCALE : NONE



DUCT PENETRATION THROUGH WALL

4 / M5.1

SCALE : NONE

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GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
1621 BROOKSIDE RD., STOCKTON, CA 95207

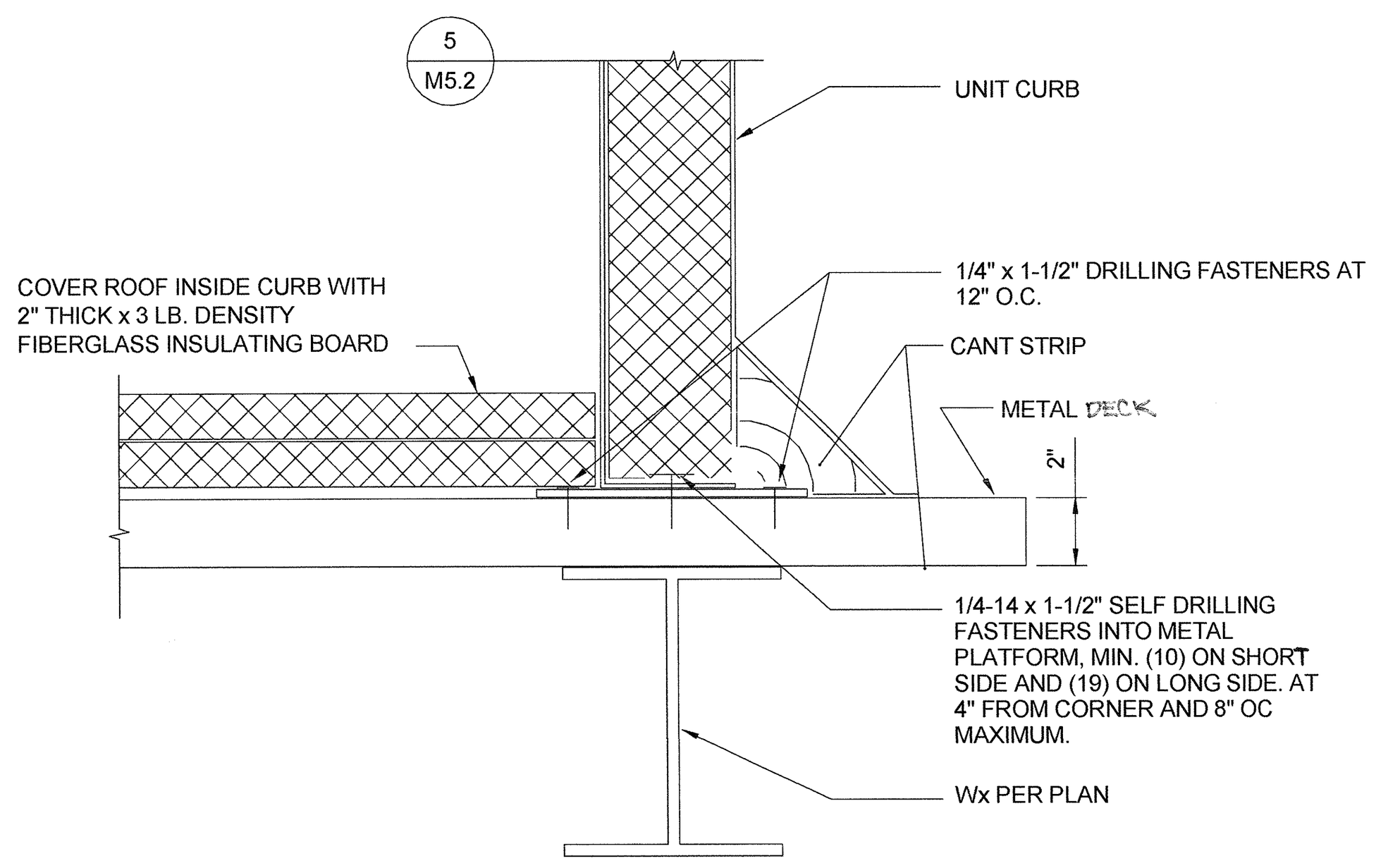
STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

MECHANICAL DETAILS

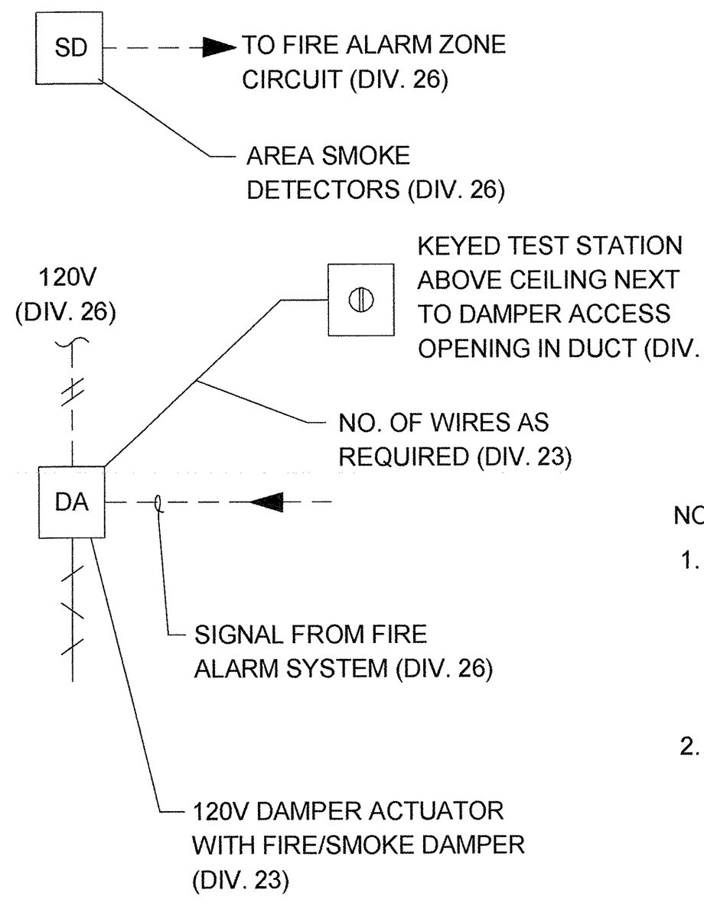
M5.1



NOTE: 1. FOR WATER PROOFING OF THE CURB AND THE FINISHED PLATFORM SEE ARCHITECTURAL DRAWINGS.
2. FOR METAL PLATFORM DETAILS SEE STRUCTURAL DRAWINGS.

CURB TO PLATFORM MOUNTING DETAIL 7 / M5.2

SCALE : NONE

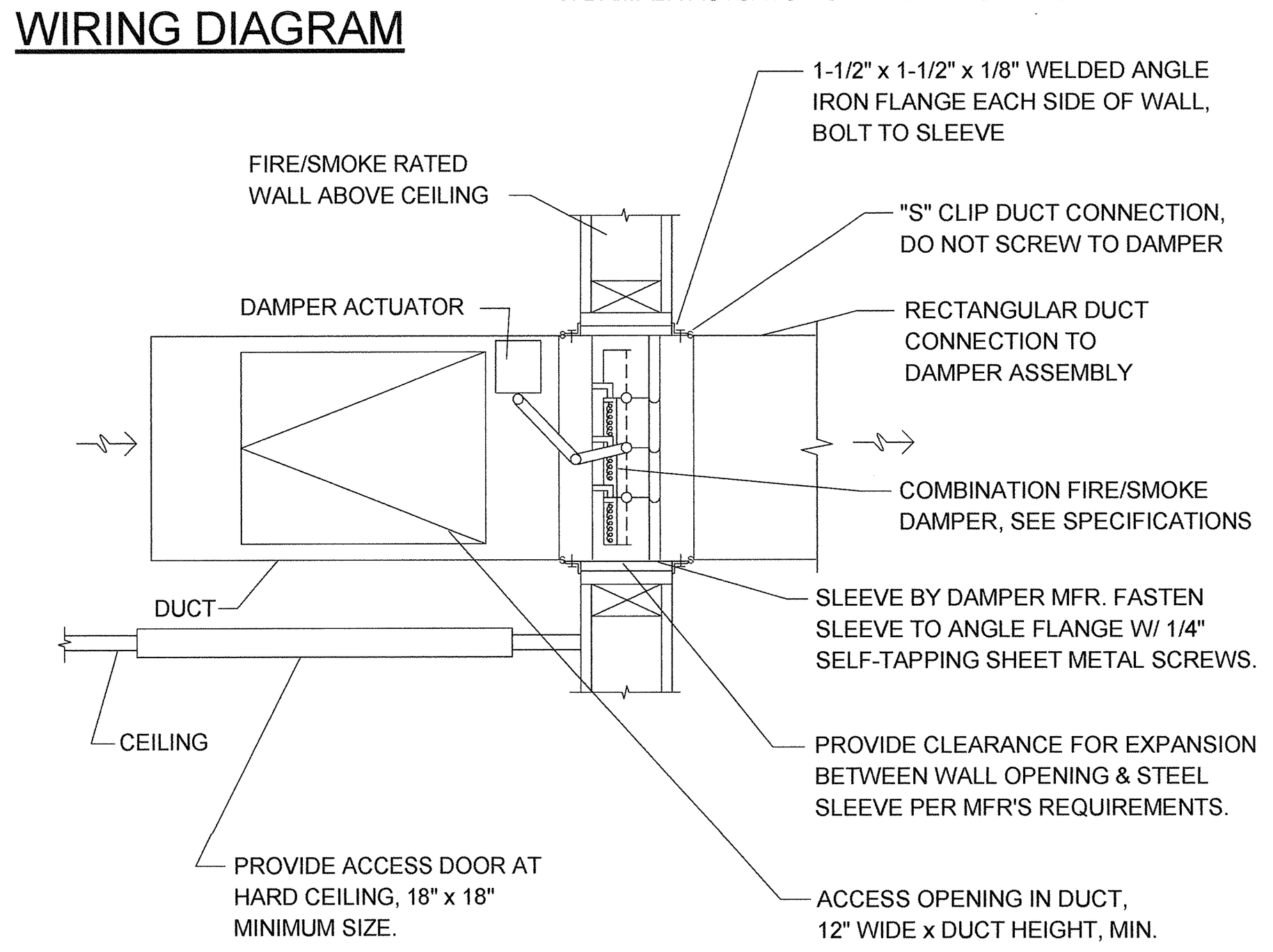


RUSKIN: MODEL DIBD20
CSFM LISTING NO. 3235-0245:0126

FIRE DAMPERS SHALL BE LISTED AND CALIFORNIA STATE FIRE MARSHAL APPROVED AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. MANUFACTURER'S INSTRUCTIONS SHALL BE MADE AVAILABLE TO THE INSPECTING AUTHORITY. DETAILS SHOWN ARE FOR REFERENCE ONLY.

NOTES :
1. INSTALLATION SHALL BE PER THE DAMPER MANUFACTURER'S U.L. LISTING FOR DAMPER IN THE PLANE OF THE WALL AND ACTUATOR OUTSIDE OF THE DUCT. MANUFACTURER SHALL PROVIDE ALL COMPONENTS NECESSARY TO INSTALL THE DAMPERS PER THIS REQUIREMENT.
2. WIRE TO CLOSE DAMPER UPON SENSING OF SMOKE BY THE TOTAL COVERAGE SMOKE DETECTION SYSTEM VIA A SIGNAL FROM THE FIRE ALARM SYSTEM. FOR WIRING DIAGRAM, SEE LEFT. DAMPER CLOSURE SHALL SHUT DOWN IT'S ASSOCIATED SUPPLY FAN. PROVIDE ALL WIRING, CONDUITS, RELAYS, ETC. REQUIRED TO RENDER SYSTEM COMPLETE.
3. DAMPER ACTUATOR SHALL BE A POWER OPEN-FAIL CLOSE TYPE.

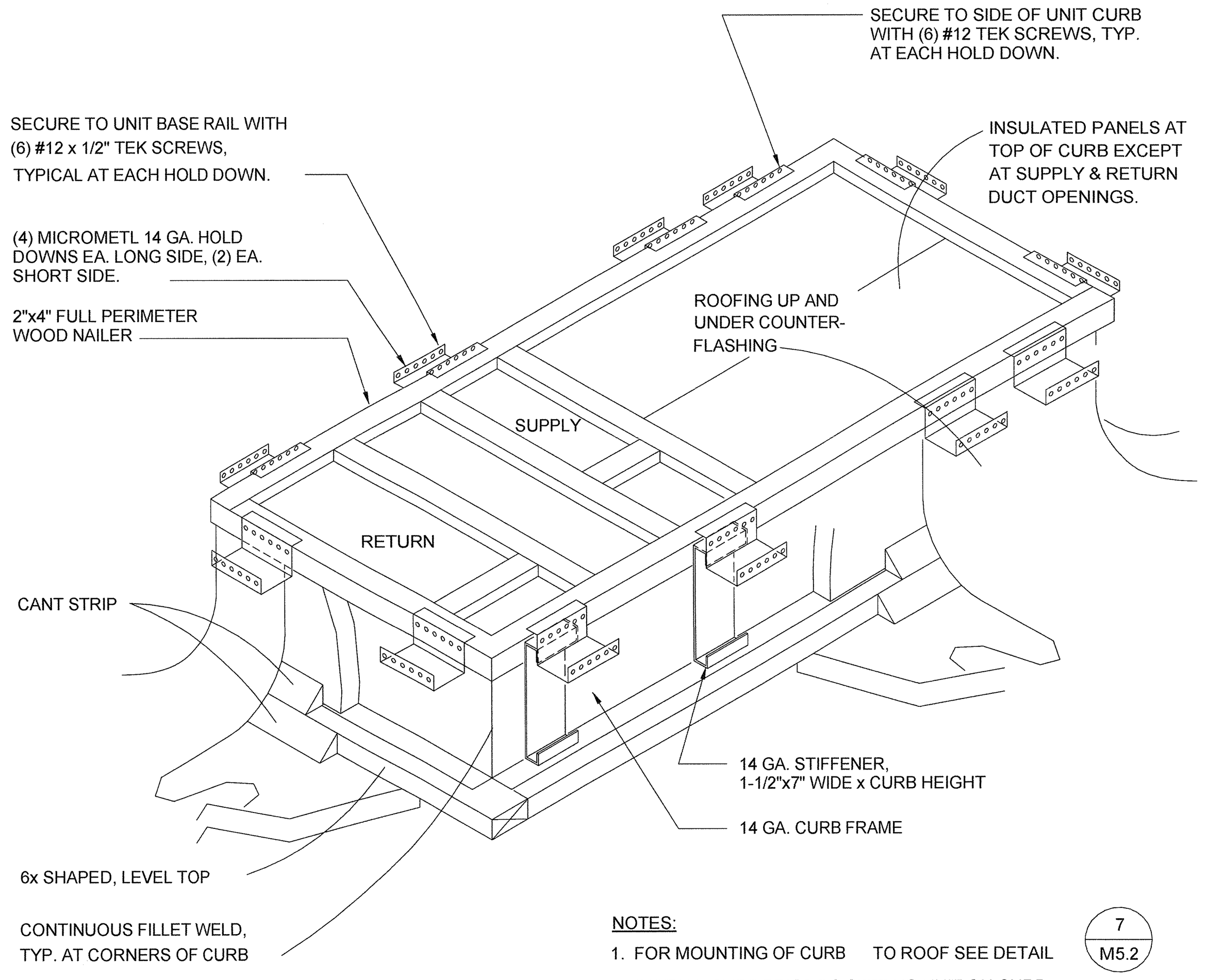
WIRING DIAGRAM



MOUNTING DETAIL

COMBINATION FIRE/SMOKE DAMPER THRU WALL MOUNTING 8 / M5.2

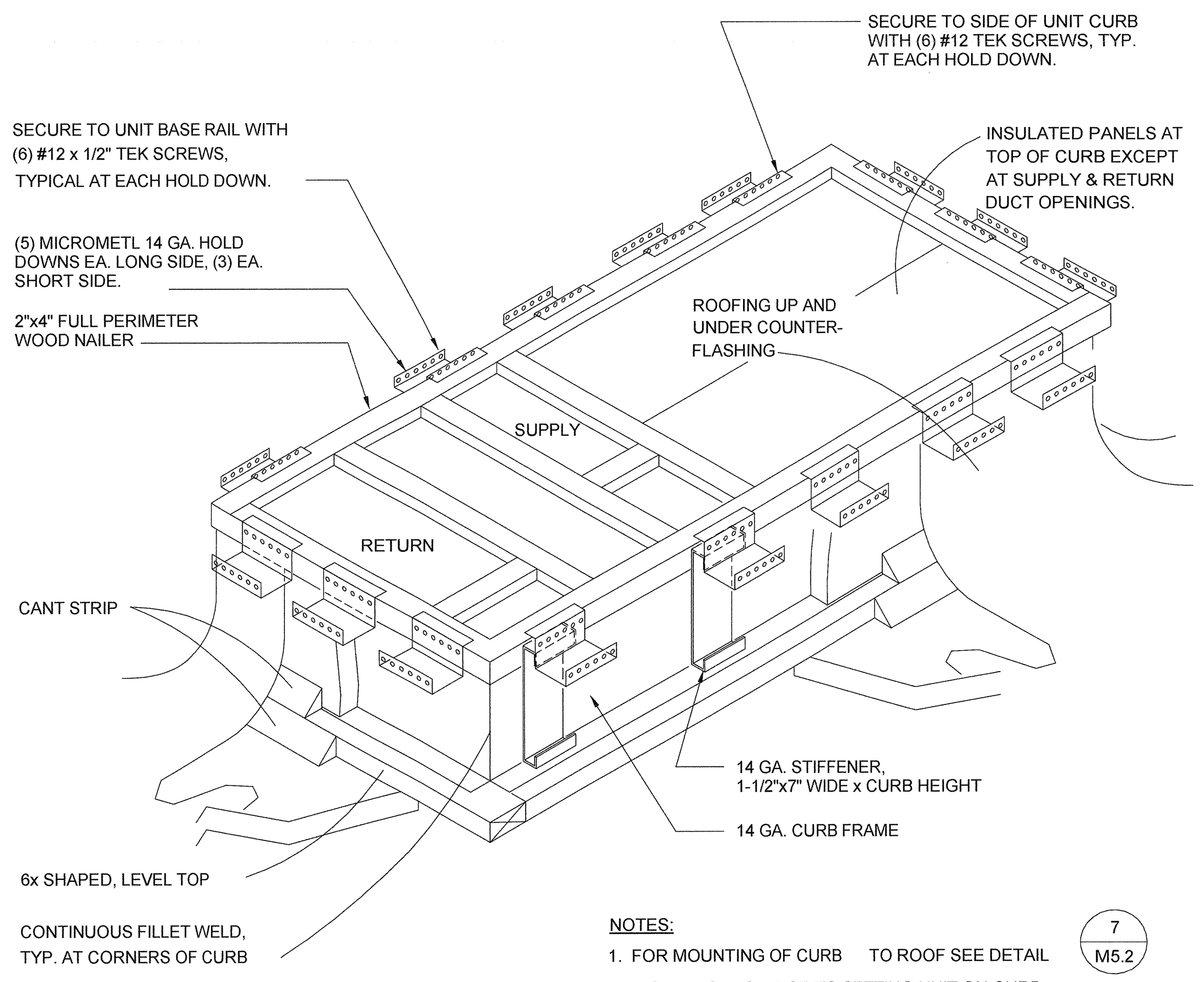
SCALE : NONE



NOTES:
1. FOR MOUNTING OF CURB TO ROOF SEE DETAIL 7 / M5.2
2. INSTALL CLIPS PRIOR TO SETTING UNIT ON CURB.

48HCDD17 HOLD DOWN 4 / M5.2

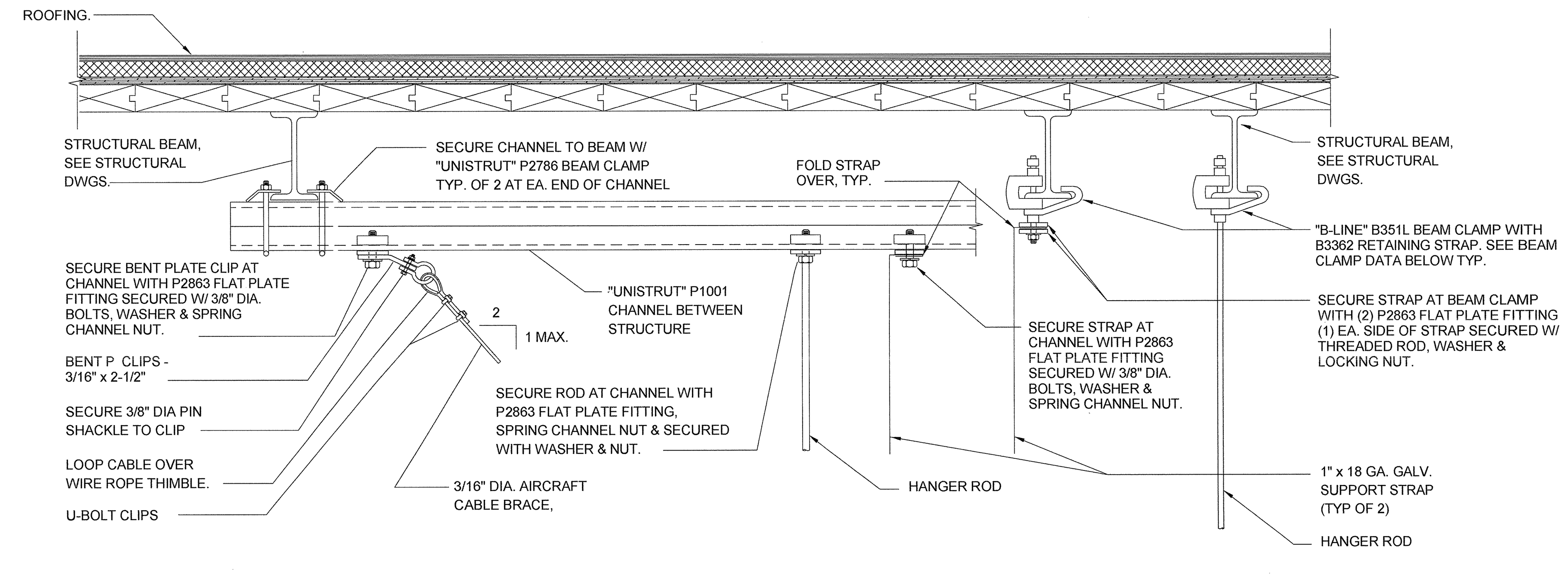
SCALE : NONE



NOTES:
1. FOR MOUNTING OF CURB TO ROOF SEE DETAIL 7 / M5.2
2. INSTALL CLIPS PRIOR TO SETTING UNIT ON CURB.

48HCDD28 HOLD DOWN 5 / M5.2

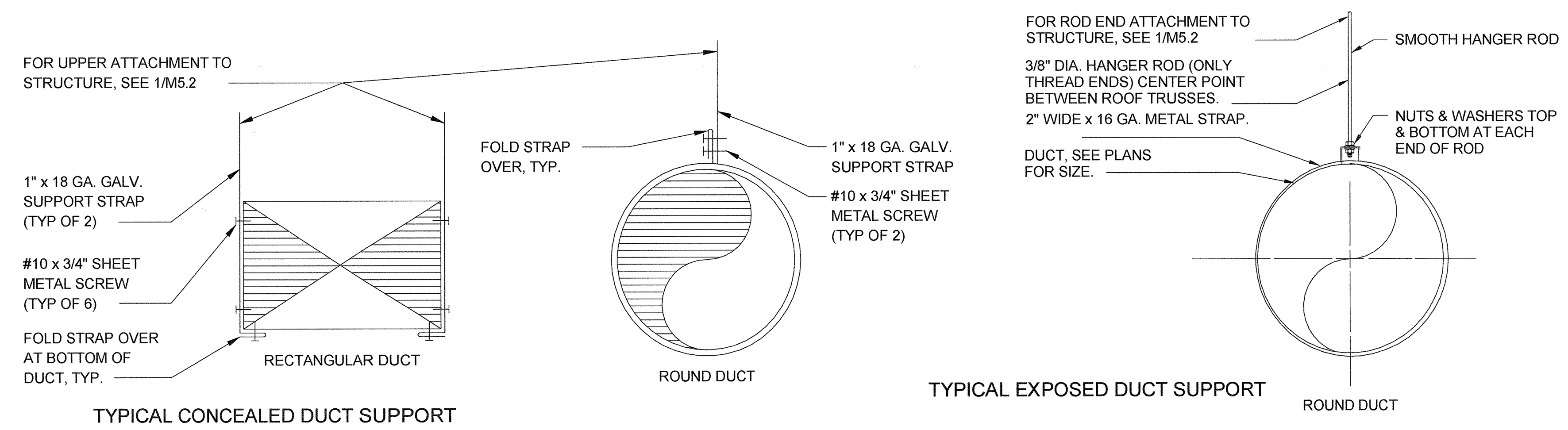
SCALE : NONE



BEAM CLAMP DATA						
Part No.	Rod Size 'A'	'D' In.	Design Load Lbs.	Part No.	For Use With	'W' in.
B351L-3/8	3/8"-16	3/4"	230	B3362-L	B351L-3/8" & 1/2"	1.250"
B351L-1/2	1/2"-13	3/4"	380	B3363-L	B351L-5/8" & 3/4" - B3036L-5/8" & 1/2"	1.250"
B351L-5/8	5/8"-11	3/4"	550			
B351L-3/4	3/4"-10	3/4"	630	B3364-L	B3036L-5/8" & 3/4"	1.250"
B351L-7/8	7/8"-9	1"	1200	B3365-L	B351L-7/8"	1.500"

UPPER ATTACHMENT TO STRUCTURE 1 / M5.2

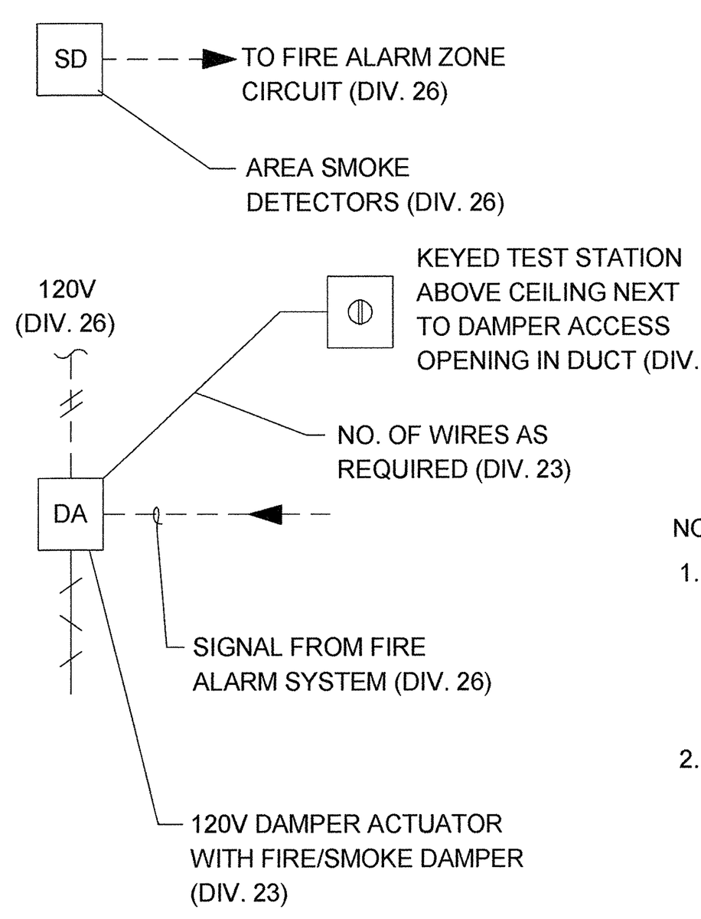
SCALE : NONE



NOTE: 1. SUPPORT STRAP SPACING SHALL BE MAX. 8'-0" O.C. APPLIES TO RECTANGULAR DUCTWORK LESS THAN 6 SQFT CROSS SECTIONAL AREA, AND ROUND DUCTWORK UP TO 26" DIA. NO SEISMIC BRACING REQUIRED.
2. PAINT ALL COMPONENTS AS DIRECTED BY ARCHITECT.

TYPICAL DUCT SUPPORT 2 / M5.2

SCALE : NONE



RUSKIN: MODEL FSD60GA
CSFM LISTING NO. 3235-0245:0126

FIRE DAMPERS SHALL BE LISTED AND CALIFORNIA STATE FIRE MARSHAL APPROVED AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. MANUFACTURER'S INSTRUCTIONS SHALL BE MADE AVAILABLE TO THE INSPECTING AUTHORITY. DETAILS SHOWN ARE FOR REFERENCE ONLY.

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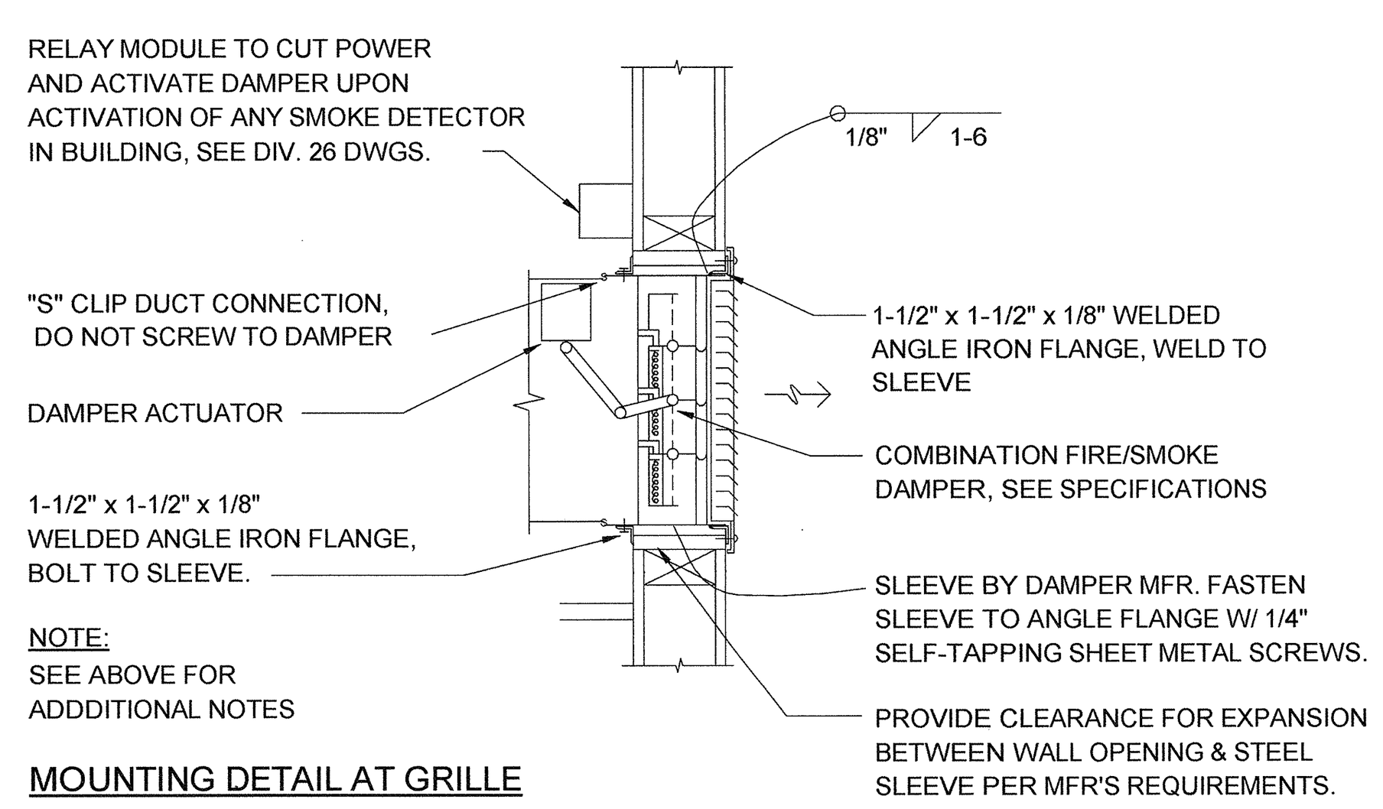
2. WIRE TO CLOSE DAMPER UPON SENSING OF SMOKE BY THE TOTAL COVERAGE SMOKE DETECTION SYSTEM VIA A SIGNAL FROM THE FIRE ALARM SYSTEM. FOR WIRING DIAGRAM, SEE LEFT. DAMPER CLOSURE SHALL SHUT DOWN IT'S ASSOCIATED SUPPLY FAN. PROVIDE ALL WIRING, CONDUITS, RELAYS, ETC. REQUIRED TO RENDER SYSTEM COMPLETE.
3. DAMPER ACTUATOR SHALL BE A POWER OPEN-FAIL CLOSE TYPE.

WIRING DIAGRAM

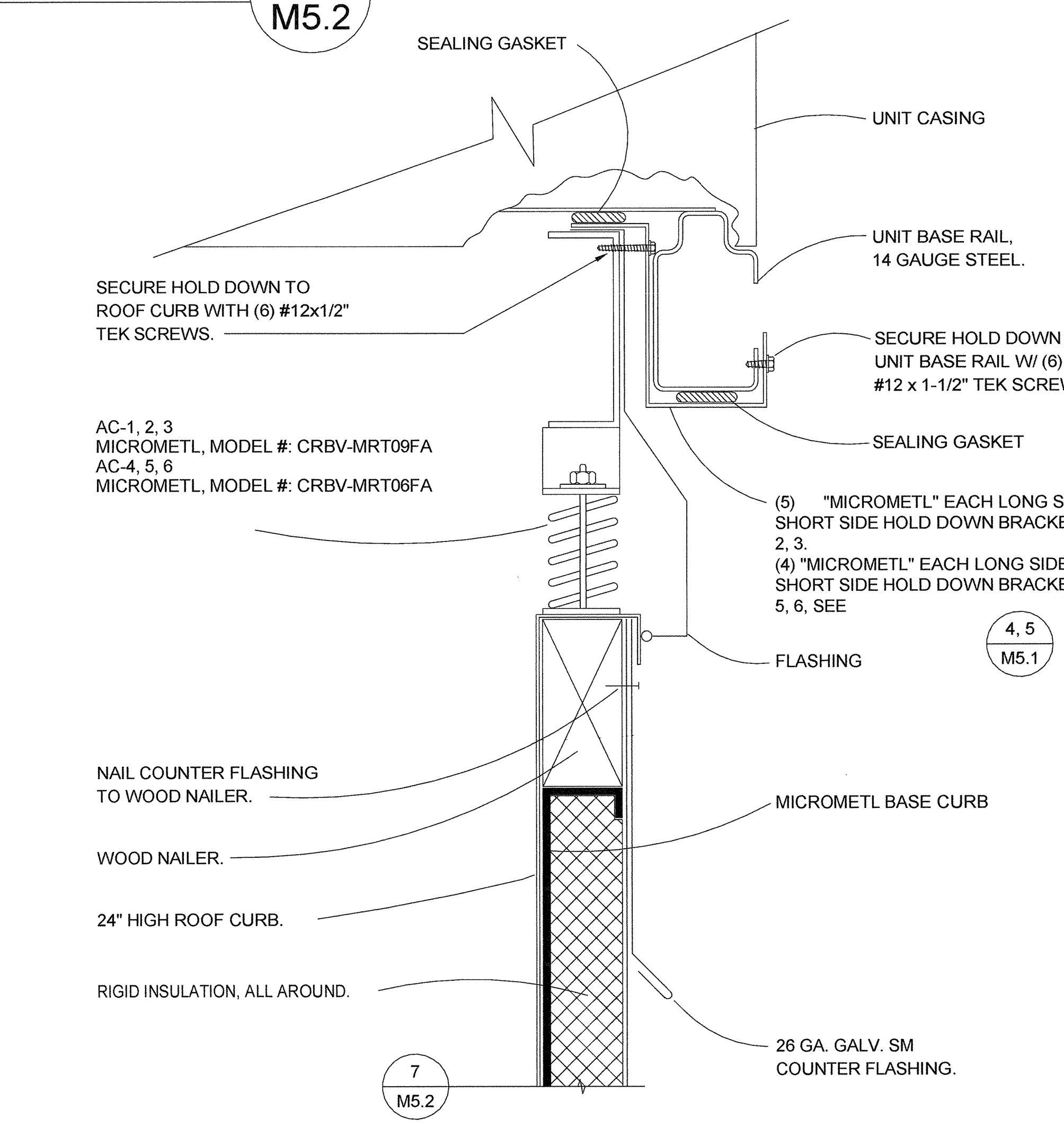


NOTE:
SEE ABOVE FOR ADDDITIONAL NOTES

MOUNTING DETAIL AT GRILLE

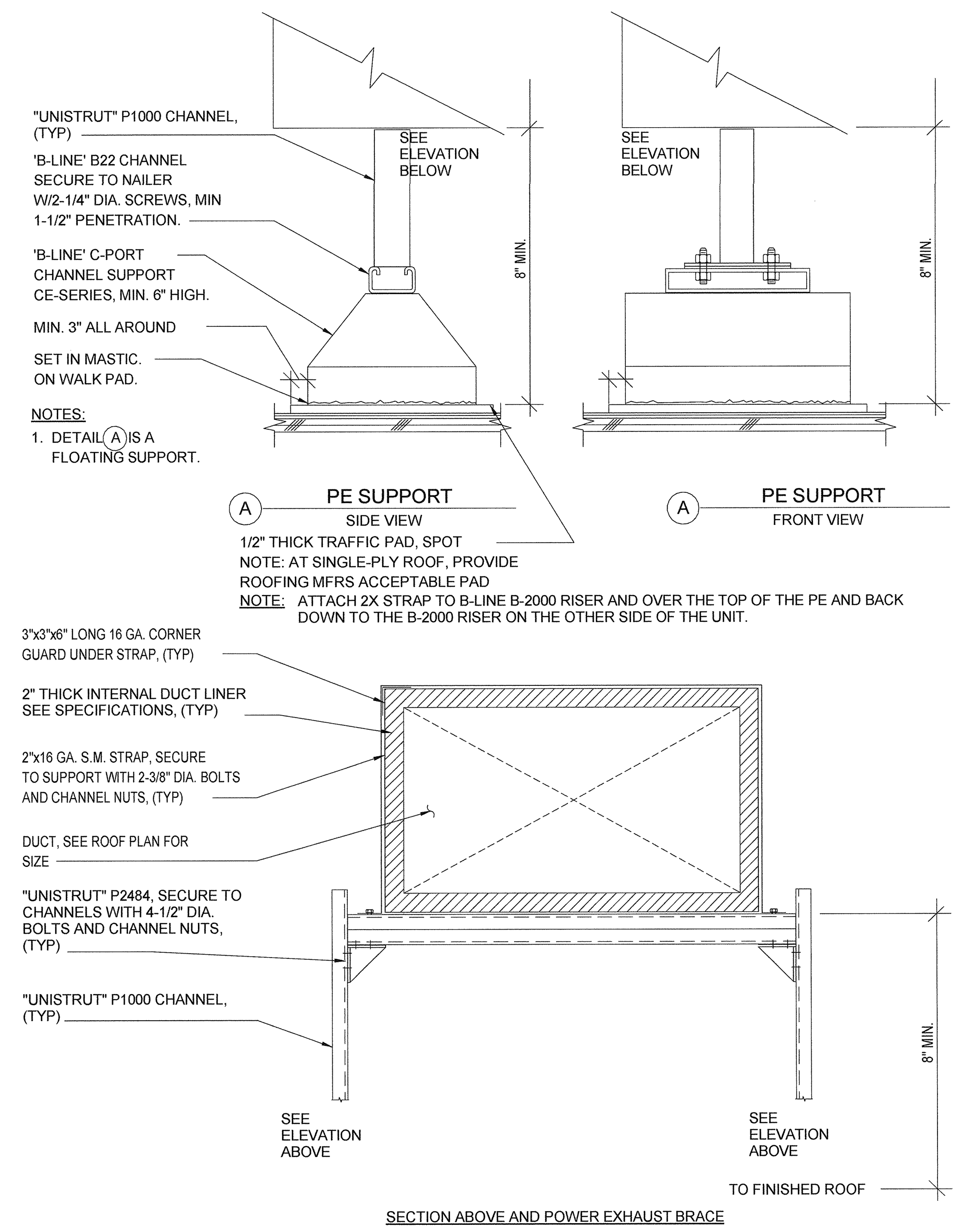
COMBINATION FIRE/SMOKE DAMPER AT GRILLE MOUNTING 9 / M5.2

SCALE : NONE



CURB TO AC UNIT MOUNTING 6 / M5.2

SCALE : NONE



NOTES:
1. DETAIL (A) IS A FLOATING SUPPORT.

1/2" THICK TRAFFIC PAD, SPOT
NOTE: AT SINGLE-PLY ROOF, PROVIDE ROOFING MFRS ACCEPTABLE PAD
NOTE: ATTACH 2X STRAP TO B-LINE B-2000 RISER AND OVER THE TOP OF THE PE AND BACK DOWN TO THE B-2000 RISER ON THE OTHER SIDE OF THE UNIT.

SECTION ABOVE AND POWER EXHAUST BRACE

PE ON ROOF MOUNTING DETAIL 3 / M5.2

SCALE : NONE

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Phone: (916) 365-9655

LICENSED ARCHITECT DAVIS CRUSE C-25522 REN. 11/30/19 STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER THOMAS A. DUNN M 22836 EXPIRES 9/30/00 MECHANICAL STATE OF CALIFORNIA

DATE SIGNED: 2-11-2019

CAPITAL ENGINEERING CONSULTANTS, INC.
RANCHO CORDOVA, CALIFORNIA
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GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
1621 BROOKSIDE RD., STOCKTON, CA 95207

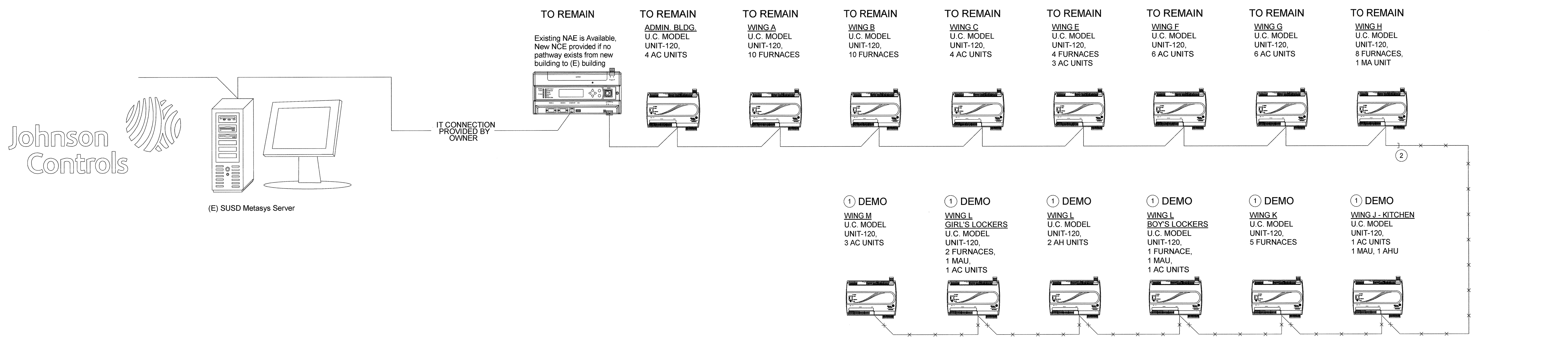
STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

MECHANICAL DETAILS

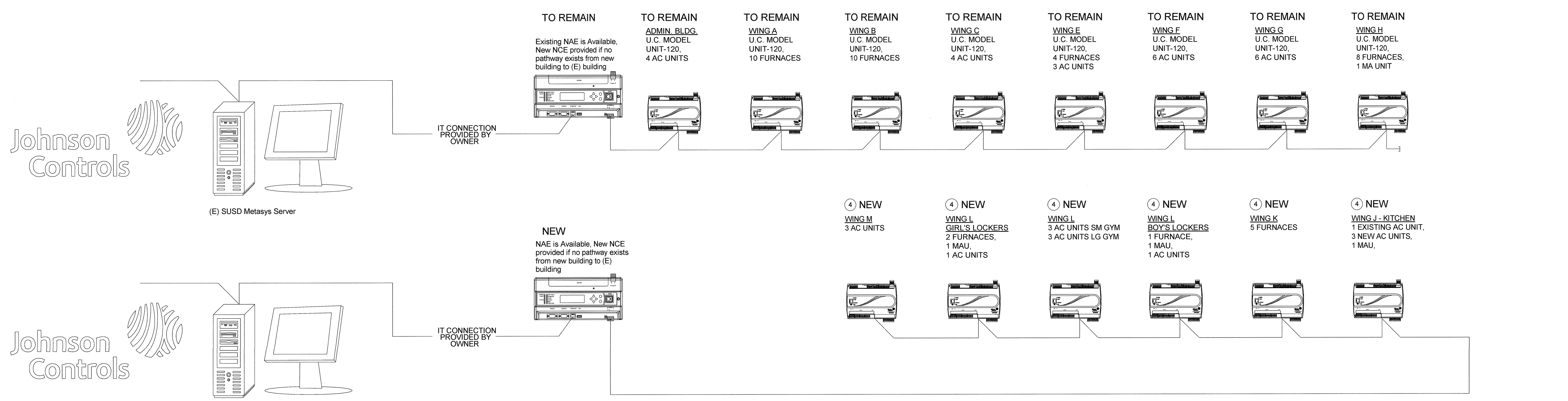
M5.2



NETWORK RISER DIAGRAM - DEMOLITION

SCALE : NONE

1
M6.0.1



NETWORK RISER DIAGRAM - NEW

SCALE : NONE

2
M6.0.1

KEYNOTES:

1. CONTRACTOR TO REMOVE THE CONTROLLERS PRIOR TO DEMOLITION OF THE UNIT(S) WITHIN WING L LARGE AND SMALL GYMNASIUMS AND TURN OVER TO THE OWNER.

   CONTRACTOR TO REMOVE THE CONTROLLERS WITHIN WING J. THE EXISTING AC-UNIT SERVING STAGE TO REMAIN. REMOVE THE AC-UNITS CONTROLLER AND TURN OVER TO THE OWNER. REMOVE THE REMAINDER OF THE CONTROLLERS WITHIN WING J AND TURN OVER TO THE OWNER.

   CONTRACTOR TO REMOVE THE CONTROLLER WITHIN WING K, WING L BOY'S AND GIRL'S LOCKERS AND WING L CLASSROOMS, AND WING M AND TURN OVER TO THE OWNER.

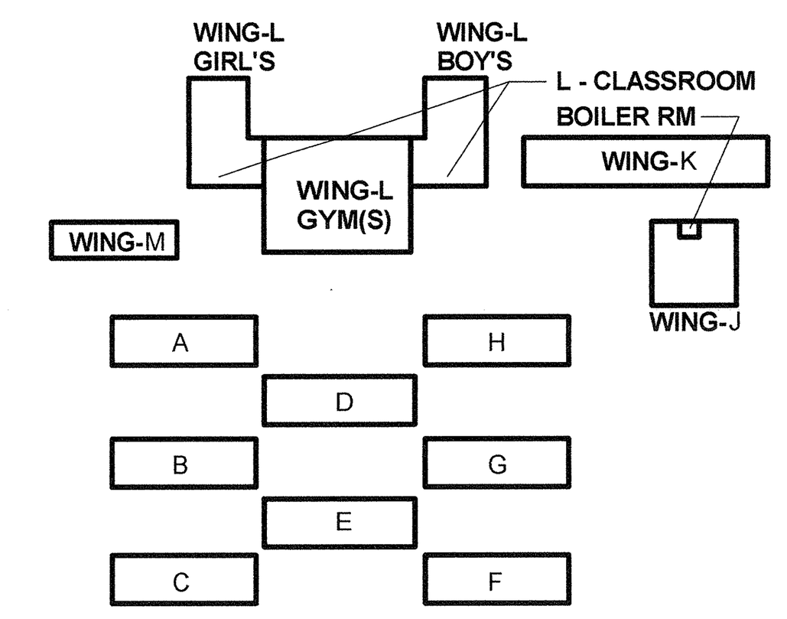
   CONTRACTOR TO REMOVE STAT'S WITHIN WING J, WING K, WING L BOY'S AND GIRL'S LOCKERS AND WING L CLASSROOMS, AND WING M AND TURN OVER TO THE OWNER.

2. DISCONNECT CONDUIT/ WIRING FROM EQUIPMENT SERVING WING J, WING K, WING L, AND WING M.

3. CONTRACTOR TO LOCATE NEW CONTROLLER WITHIN WING J (KITCHEN) BOILER ROOM.

4. CONTRACTOR TO PROVIDE NEW CONTROLLERS WITHIN THE UNITS LOCATED WITH WING J, WING K, WING L LARGE AND SMALL GYMNASIUMS, WING L BOY'S AND GIRL'S LOCKERS AND WING L CLASSROOMS, AND WING M.

   PROVIDE STAT'S AND CO2 SENSORS IN ALL SPACES WITH NEW CONTROLLERS BEING PROVIDED WITHIN WING J, WING K, WING L LARGE AND SMALL GYMNASIUMS, WING L BOY'S AND GIRL'S LOCKERS AND WING L CLASSROOMS, AND WING M.



KEYPLAN

GENERAL NOTES

1. NETWORK DIAGRAM IS REPRESENTATIVE OF NETWORK LAYOUT. CONTROLS CONTRACTOR TO PROVIDED CONTROLLERS AND NETWORK AS NEED TO INSTALL A COMPLETE SYSTEM
2. BASIS OF DESIGN - JCI METASYS CALL ZAC DILLOW FOR PRICING 925.719.7785 OR EMAIL AT ZACHARY.J.DILLOW@JCI.COM
3. CONTROLS CONTRACTOR RESPONSIBLE FOR INTEGRATING NEW CONTROLLERS INTO EXISTING SCUSD METASYS SERVER.
4. CONTROLS CONTRACTOR TO GENERATE GRAPHICS TO REPRESENT BUILDING
5. CONTROLS CONTRACTOR TO REUSE CONTROLS MATERIAL SALVAGED IN DEMOLITION.
6. CONTRACTOR TO MAINTAIN TRUCK INTEGRITY AS PART OF DEMOLITION.
7. PROVIDE NEW SENSORS AND ACTUATORS.

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Phone: (916) 365-9655

LICENSED ARCHITECT KIP DAVIS GRUBB No. C19022 EXP. 11/30/19 STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER THOMAS A. DUVAL M 22836 EXPIRES 9/30/20 MECHANICAL STATE OF CALIFORNIA

DATE SIGNED: 2-11-2019

CAPITAL ENGINEERING CONSULTANTS, INC.
RANCHO CORDOVA, CALIFORNIA

MCM/RL	180204.00
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AC TM FLS VO SS SS

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GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL

1621 BROOKSIDE RD.,
STOCKTON, CA 95207

STOCKTON UNIFIED SCHOOL DISTRICT

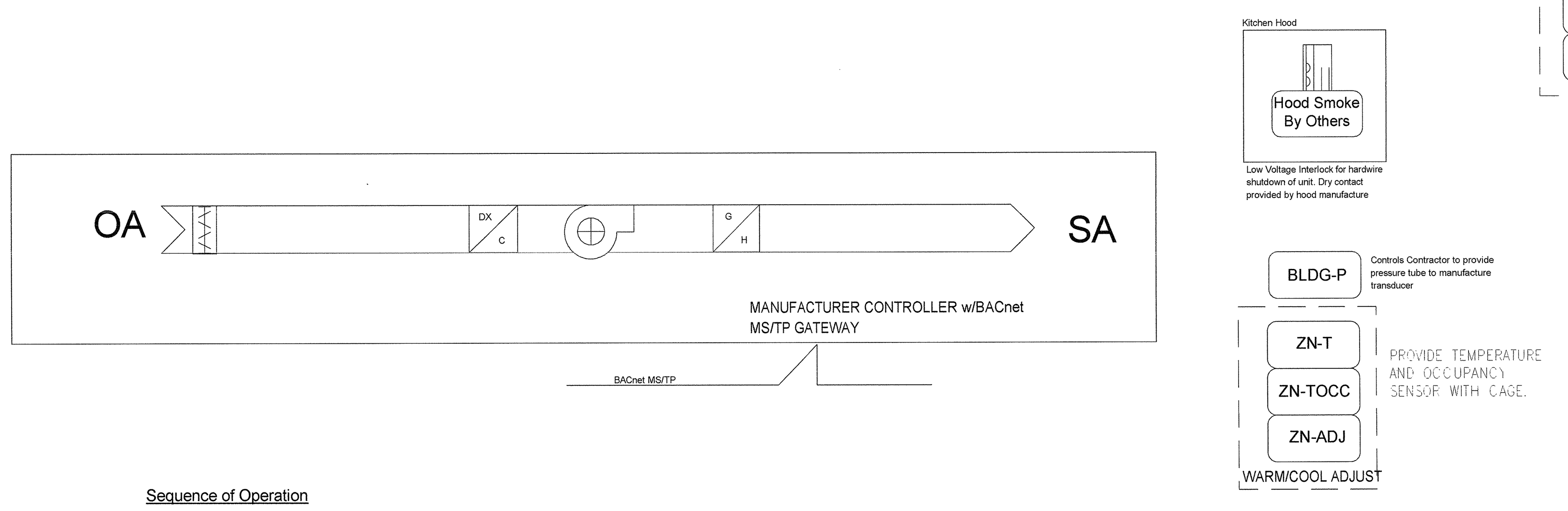
SUSD

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

MECHANICAL CONTROLS

M6.1



Sequence of Operation

The BMS will interface to the manufacture control system via a manufacture provided BACnet MS/TP gateway. The BMS will provide supervisory control of the MAU - scheduling the unit and commanding heating/cooling to maintain a zone temperature set point. The BMS will additionally monitor various "read only" points provided by the gateway for troubleshooting purposes.

SUPPLY FAN CONTROL:

The supply fan will be started based on occupancy schedule. The supply fan will modulate run to maintain a building static pressure set point initially set at (-0.02 in.wc) - and user adjustable via the user view. As kitchen exhaust fans come online/offline the SF will automatically adjust its speed to maintain building pressure.

TEMPERATURE CONTROL:

The unit will control to maintain the locally adjustable zone temperature setpoint (ZN-ADJ) as sensed by the zone temperature (ZN-T) sensor (60°F cooling. & 78°F heating).

OCCUPIED MODE:

The occupancy mode will be controlled via a network input (OCC-SCHEDULE). The occupancy mode can also be overridden by a network input (OCC-OVERRIDE). A temporary occupancy button (ZN-TOCC) on the zone sensor will place the unit in occupied mode for an adjustable time.

UNOCCUPIED MODE:

The unit will cycle to maintain unoccupied zone setpoints (CLGUNOCC-SP & HTGUNOCC-SP) during unoccupied periods.

COOLING COIL:

The cooling coil will be staged in sequence to maintain the temperature setpoint.

HEATING COIL:

The heating coil will be staged in sequence to maintain the temperature setpoint.

REHEAT COIL:

The unit will modulate the re-heat coil via it own SOO to maintain a discharge air temperature set point.

SMOKE DETECTOR SHUTDOWN:

The unit will have a hardwire shutdown to a smoke detector provided and installed by the kitchen hood manufacturer.

EXHAUST FAN INTERLOCK:

The make up air unit is interlocked to its respective exhaust fan. Whenever the MAU fan is commanded on, the exhaust fan will similarly be commanded on. MAU-1 is interlocked to KEF-3

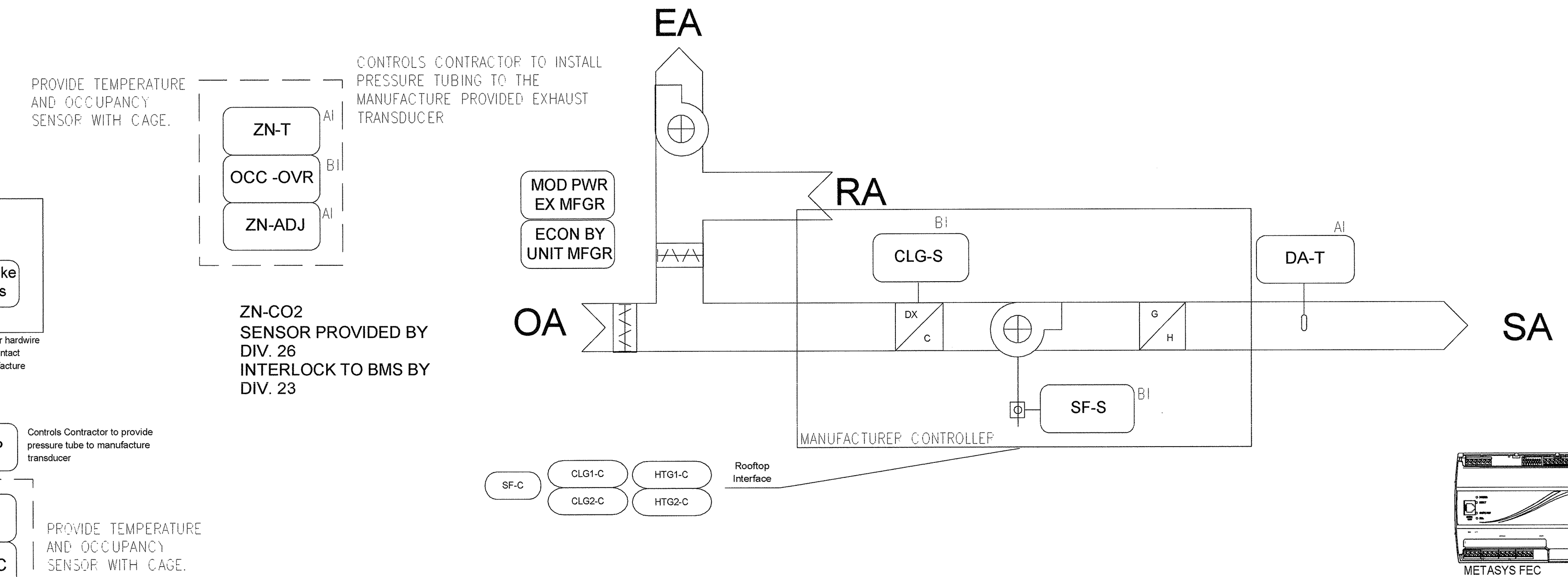
ADDITIONAL POINTS MONITORED BY THE BMS:

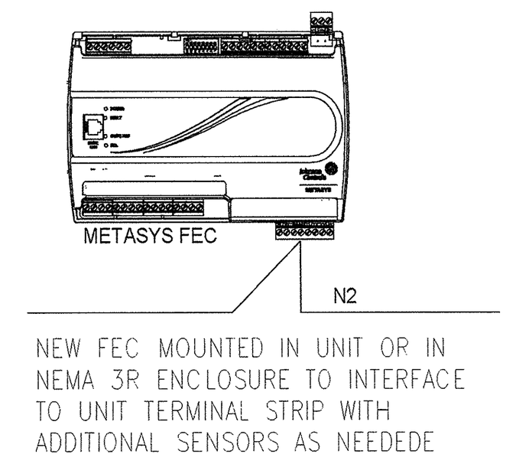
- Various via BACnet MS/TP Gateway

MAKE-UP AIR UNIT CONTROL DIAGRAM

SCALE : NONE

4
M6.2





SUPPLY FAN CONTROL:
The supply fan (SF-C) will be started based on occupancy schedule. When the supply fan status (SF-S) indicates the fan started, the control sequence will be enabled. Upon a loss of airflow (SF-S), the supply fan will attempt to automatically restart until positive status is received.

ECONOMIZER CONTROL:
When the outdoor air (OA-T) is cooler than the economizer setpoint (ECONSWO-SP), the economizer will act as the initial stage of cooling, working in sequence with the cooling coil. This will be accomplished via the manufacture provided T24 compliant economizer controller.

TEMPERATURE CONTROL:
The unit will control to maintain the locally adjustable zone temperature setpoint (ZN-SP) (WC-ADJ) as sensed by the zone temperature (ZN-T) sensor.

OCCUPIED MODE:
The occupancy mode will be controlled via a network input (OCC-SCHEDULE). The occupancy mode can also be overridden by a network input (OCC-OVERRIDE). A temporary occupancy button (ZN-TOCC) on the zone sensor will place the unit in occupied mode for an adjustable time.

SHUT OFF COOLING WHEN SPACE IS UNOCCUPIED FOR 10 MINUTES.

UNOCCUPIED MODE:
The unit will cycle to maintain unoccupied zone setpoints (CLGUNOCC-SP & HTGUNOCC-SP) during unoccupied periods.

COOLING COIL:
The cooling coil (CLGx-C) will be staged in sequence to maintain the temperature setpoint initially set at 73 and variable at the zone from 73-77.

GAS HEATING COIL:
The reheat coil (HTGx-C) will be staged in sequence to maintain the temperature setpoint initially set at 69 and variable at the zone from 65-69.

ZONE PRESSURE CONTROL:
The AC units are equipped with a modulating power exhaust economizer. The modulating power exhaust economizer with factory provided controller and pressure transducer will modulate the exhaust fan to maintain the zone pressure setpoint. The controls contractor is to run the pressure tubing to ensure factory provided modulating power exhaust controller is reading accurate values.

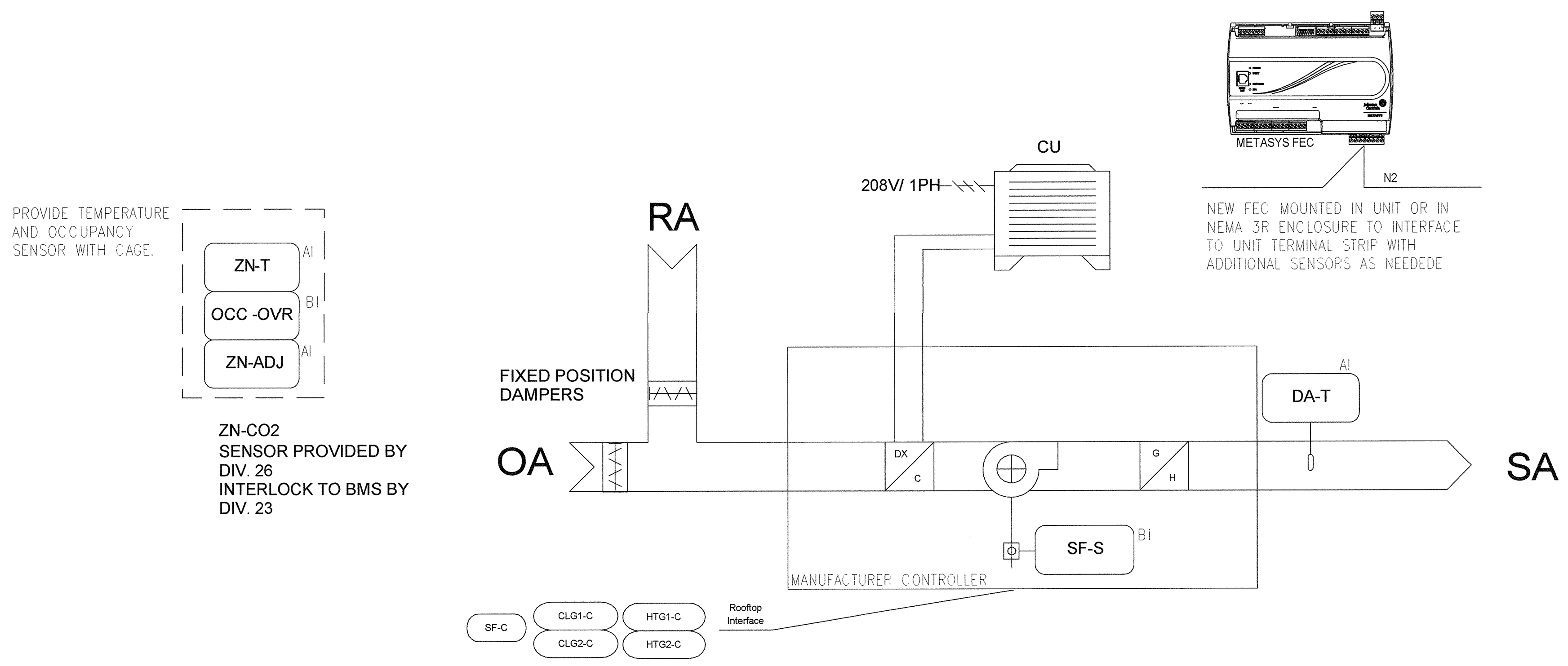
ALARMS
The BMS system shall generate an alarm if:
-The zone temperature is 6 degrees away from set point.
-The fan command does not match its status
-The cooling command does not match its status

ADDITIONAL POINTS MONITORED BY THE FMS:
Supply Fan Status (SF-S)
Discharge Air Temperature (DA-T)
Compressor Status (COMP-S)

AC UNIT CONTROL DIAGRAM WITH POWER EXHAUST ECONOMIZER

SCALE : NONE

1
M6.2



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The occupancy mode will be controlled via a network input (OCC-SCHEDULE). The occupancy mode can also be overridden by a network input (OCC-OVERRIDE). A temporary occupancy button (ZN-TOCC) on the zone sensor will place the unit in occupied mode for an adjustable time.
SHUT OFF COOLING WHEN SPACE IS UNOCCUPIED FOR 10 MINUTES.

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The reheat coil (HTGx-C) will be staged in sequence to maintain the temperature setpoint initially set at 69 and variable at the zone from 65-69.

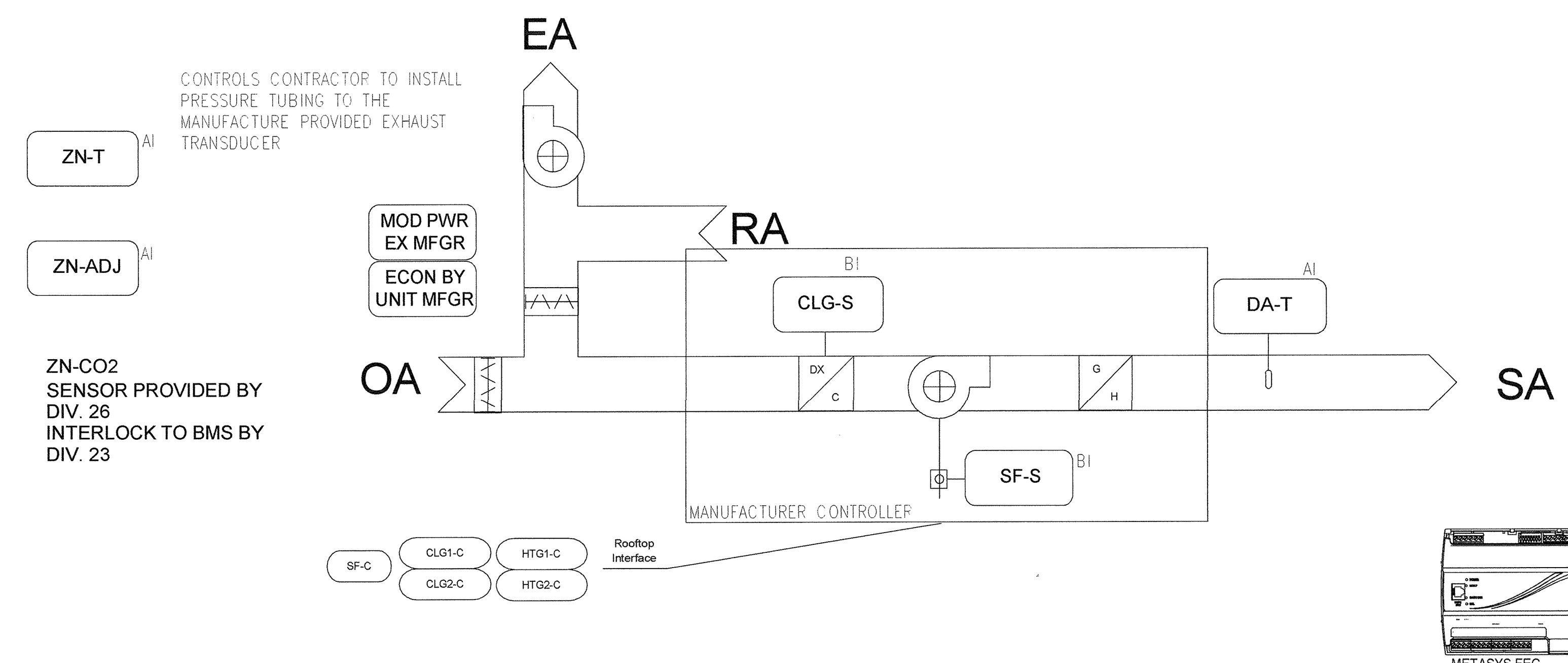
ALARMS
The BMS system shall generate an alarm if:
-The zone temperature is 6 degrees away from set point.
-The fan command does not match its status
-The cooling command does not match its status

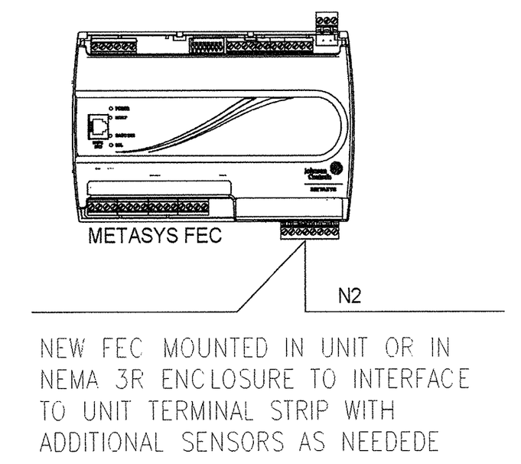
ADDITIONAL POINTS MONITORED BY THE FMS:
Supply Fan Status (SF-S)
Discharge Air Temperature (DA-T)
Compressor Status (COMP-S)

SPLIT FURNACE/ CU UNIT CONTROL DIAGRAM

SCALE : NONE (WITH ECONOMIZER)

3
M6.2





SUPPLY FAN CONTROL:
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TEMPERATURE CONTROL:
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OCCUPIED MODE:
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SHUT OFF COOLING WHEN SPACE IS UNOCCUPIED FOR 10 MINUTES.

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The AC units are equipped with a modulating power exhaust economizer. The modulating power exhaust economizer with factory provided controller and pressure transducer will modulate the exhaust fan to maintain the zone pressure setpoint. The controls contractor is to run the pressure tubing to ensure factory provided modulating power exhaust controller is reading accurate values.

ALARMS
The BMS system shall generate an alarm if:
-The zone temperature is 6 degrees away from set point.
-The fan command does not match its status
-The cooling command does not match its status

ADDITIONAL POINTS MONITORED BY THE FMS:
Supply Fan Status (SF-S)
Discharge Air Temperature (DA-T)
Compressor Status (COMP-S)

AC UNIT CONTROL DIAGRAM

SCALE : NONE

2
M6.2

CA+SA studio

3701 Business Drive Suite 200
Sacramento, CA 95820
Phone: (916) 365-9655

LICENSED ARCHITECT KIP DAVIS GRUBB No. C19022 EXP. 11/30/19 STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER THOMAS A. DUVAL M 22836 EXPIRES 9/30/20 MECHANICAL STATE OF CALIFORNIA

DATE SIGNED: 2-11-2019

CAPITAL ENGINEERING CONSULTANTS, INC.
RANCHO CORDOVA, CALIFORNIA

MCM/RL	180204.00
PM - DESIGN TEAM	PROJECT NO.

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APP NO. 02 - 116869
FILE NO. 39-H7
AC TM FLS VB SS SJ
DATE 02 - 13 - 2019

GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
1621 BROOKSIDE RD., STOCKTON, CA 95207

STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

MECHANICAL CONTROLS

M6.2

STATE OF CALIFORNIA

REQUIRED ACCEPTANCE TESTS

CEC-NRCC-MCH-04-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-04-E
Required Acceptance Tests	(Page 1 of 3)
Project Name: Amas Alonzo Stagg HS Gym	Date Prepared: 6/26/2018

A. MECHANICAL COMPLIANCE FORMS & WORKSHEETS
(indicate if worksheet is included)

For detailed instructions on the use of this and all Energy Standards compliance documents, refer to the 2016 Nonresidential Manual
Note: The Enforcement Agency may require all compliance documents to be incorporated onto the building plans. The NRCC-MCH-04-E and NRCC-MECH-05-E are alternative compliance documents to NRCC-MCH-01-E, NRCC-MCH-02-E and NRCC-MCH-03-E for projects using only single zone packaged HVAC systems.

YES	NO	Form	Title
✓		NRCC-MCH-04-E (1 of 2)	Certificate of Compliance. Required on plans when used.
✓		NRCC-MCH-04-E (2 of 2)	Mechanical Acceptance Tests. Required on plans when used.
✓		NRCC-MCH-05-E (1 of 2)	HVAC Prescriptive Requirements. It is required on plans when used.
✓		NRCC-MCH-05-E (2 of 2)	Mechanical SWH Equipment Summary is required for all submittals with service water heating, pools or spas. It is required on plans where applicable.

STATE OF CALIFORNIA

REQUIRED ACCEPTANCE TESTS

CEC-NRCC-MCH-04-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-04-E
Required Acceptance Tests	(Page 2 of 3)
Project Name: Amas Alonzo Stagg HS Gym	Date Prepared: 6/26/2018

Designer:
This compliance document is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for mechanical systems. The designer is required to check the applicable boxes by all acceptance tests that apply and list all equipment that require an acceptance test. If all equipment of a certain type requires a test, list the equipment description and the number of systems. The NA number designates the Section in the Appendix of the Nonresidential Reference Appendices Manual that describes the test. Since this compliance document will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately.

Enforcement Agency:
Systems Acceptance. Before occupancy permit is granted for a newly constructed building or space, or a new space-conditioning system serving a building or space is operated for normal use, all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance.

Systems Acceptance. Before occupancy permit is granted. All newly installed HVAC equipment must be tested using the Acceptance Requirements.
The NRCC-MCH-04-E compliance document is not considered a completed document and is not to be accepted by the building department unless the correct boxes are checked. The equipment requiring testing, person performing the test (Example: HVAC installer, TAB contractor, controls contractor, PE in charge of project) and what Acceptance test must be conducted. The following checked-off forms are required for ALL newly installed and replaced equipment. In addition a Certificate of Acceptance documents shall be submitted to the building department that certifies plans, specifications, installation certificates, and operating and maintenance information meet the requirements of Section 10-103(b) and Title 24 Part 6. The building inspector must receive the properly filled out and signed compliance documents before the building can receive final occupancy.

Test Description		MCH-02-A	MCH-03-A	MCH-04-A	MCH-05-A	MCH-06-A	MCH-07-A	MCH-11-A	MCH-12-A	MCH-14-A	MCH-18-A	Test Performed By:
Equipment Requiring Testing or Verification	# of Units	Outdoor Air	Single Zone Unitary	Air Distribution Ducts	Economizer Controls	Demand Control Ventilation (DCV)	Supply Fan VAV	Automatic Demand Shed Control	FDD for Packaged DX Units	Distributed Energy Storage DX AC Systems	Energy Management Control System	
Carrier 48 H	3	✓	✓		✓	✓			✓			Installing Contractor
Carrier 48H(	3	✓	✓		✓	✓			✓			Installing Contractor
Reznor CAL	1	✓	✓		✓	✓						

STATE OF CALIFORNIA

REQUIRED ACCEPTANCE TESTS

CEC-NRCC-MCH-04-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-04-E
Required Acceptance Tests	(Page 3 of 3)
Project Name: Amas Alonzo Stagg HS Gym	Date Prepared: 6/26/2018

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Aaron Wintersmith	Documentation Author Signature:
Company: Capital Engineering Consultants Inc.	Signature Date: 6/26/2018
Address: 11020 Sun Center Dr	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Rancho Cordova, CA 95670	Phone: 916-851-3500

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: Thomas A Duval	Responsible Designer Signature:
Company : Capital Engineering	Date Signed: 02/08/2019
Address: 11020 Sun Center DR #100	License: M22836
City/State/Zip: Rancho Cordova, CA 95670	Phone: 916-851-3500

STATE OF CALIFORNIA

REQUIREMENTS FOR PACKAGED SINGLE ZONE UNITS

CEC-NRCC-MCH-05-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-05-E
Requirements for Packaged Single-Zone Units	(Page 1 of 2)
Project Name: Amas Alonzo Stagg HS Gym	Date Prepared: 6/26/2018

Equipment Tag(s)[1]		Large Gym		Small Gym		WRESTLING	
MANDATORY MEASURES	*T-24 Sections*	*Requirement[3]*	*As Scheduled[3]*	*Requirement[3]*	*As Scheduled[3]*	*Requirement[3]*	*As Scheduled[3]*
Heating Equipment Efficiency[4]	110.1 or 110.2(a)	78% AFUE	81% AFUE	78% AFUE	80% AFUE	78% TE	80% TE
Cooling Equipment Efficiency[4]	110.1 or 110.2(a)	9.8 EER	11.2 EER	10.8 EER	12.0 EER	10.8 EER	12.7 EER
Thermostats[5]	110.2(b), 110.2(c)	Setback	Setback	Setback	Setback	Setback	Setback
Furnace Standby Loss Control[6]	110.2(d)	n/a		n/a		Req	IID
Low Leakage AHU	110.2(f)	NR	none	NR	none	NR	none
Ventilation[7]	120.1(b)	5,616	5,616	3,349	3,349	1,115	1,115
Demand Control Ventilation[8]	120.1(c)4	Req	Yes	Req	Yes	Req	Yes
Occupant Sensor Ventilation Control[8]	120.1(c)5, 120.2(e)3						
Shutoff and Reset Controls[9]	120.2(e)	Req	Programmable	Req	Programmable	Req	Programmable S
Outdoor Air and Exhaust Damper Control	120.2(f)	Req	Auto	Req	Auto	Req	Auto
Automatic Demand Shed Controls	120.2(h)	NR	none	NR	none	NR	none
Economizer FDD	120.2(i)	Req	Yes	Req	Yes	Req	Yes
Duct Insulation	120.4	R-8	R-8.0	R-8	R-8.0	R-8	R-8.0
PRESCRIPTIVE MEASURES							
Equipment is sized in conformance with 140.4 (a & b)	140.4(a & b)	780,341 Btu/h 889,198 Btu/h	534,000 Btu/hr 764,290 Btu/hr	452,235 Btu/h 549,841 Btu/h	534,000 Btu/hr 470,843 Btu/hr	217,074 Btu/h 231,576 Btu/h	280,000 Btu/hr 140,720 Btu/hr
Economizer	140.4(e)	Req	Diff. Temp (Inte	Req	Diff. Temp (Inte	Req	Fixed Temp (Inte
Electric Resistance Heating[10]	140.4(g)	No	No	No	No	No	No
Duct Leakage Sealing and Testing.[11]	140.4(l)	NR	No	NR	No	NR	No

Notes:

1. *Provide equipment tags (e.g. AC1 or AC1 to 10). Multiple units of the same make and model with the same application and accessories can be grouped together.*
2. *Enter the following information as appropriate: Unit Manufacturer; Unit Model Number (including all accessories); Description of the unit (e.g. gas-pack or heat pump; rated heating capacity (enter "N/A" if no heating); and, rated cooling capacity (enter "N/A" if no cooling). For unit capacities include the units (e.g. kBtuh or tons).*
3. *For each requirement, enter the minimum requirement from the Standard In the left column (under "Standard Requirement"). In the right column (under "As Scheduled") enter the value for the units as specified.*
4. *Where there is more than one requirement (e.g. full and part load efficiency) enter both with the appropriate labels (e.g. COP and IEER).*
5. *In the left column identify the thermostatic requirements from the standard (e.g. programmable setback thermostat or heat pump with electric heat), . In the right column indicate the capabilities of the thermostat as scheduled.*
6. *If the unit has a furnace which is rated at ≥225,000 Btuh of capacity, indicate the rated standby loss and ignition source (e.g. IID). If there is no furnace or the unit is rated for <225,000 Btuh indicate "N/A".*
7. *In the left column, enter both the required ventilation value from Table 120.1A and for the number of occupants times 15 cfm/person. In the right column enter the actual minimum ventilation as scheduled. If the space is naturally ventilated enter "N/A" in the left column and "the space is naturally ventilated" in the right column.*
8. *If the space is required to have either DCV or Occupant Sensor Ventilation Control indicate "required" in the left column (otherwise indicate "N/A" in the left column). If either DCV or Occupant Sensor Ventilation Control is provided indicate "provided" in the right column (otherwise indicate "N/A" in the right column)*
9. *In the left column indicate the required time controls from the standard. In the right column identify the device that provides this functionality (e.g. EMCS or programmable timeclock).*
10. *Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies.*
11. *If duct leakage sealing and testing is required, a **MCH-04-A** compliance document must be submitted.*

STATE OF CALIFORNIA

REQUIREMENTS FOR PACKAGED SINGLE ZONE UNITS

CEC-NRCC-MCH-05-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-05-E
Requirements for Packaged Single-Zone Units	(Page 2 of 2)
Project Name: Amas Alonzo Stagg HS Gym	Date Prepared: 6/26/2018

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Aaron Wintersmith	Documentation Author Signature:
Company: Capital Engineering Consultants Inc.	Signature Date: 6/26/2018
Address: 11020 Sun Center Dr	CEA/HERS Certification Identification (if applicable):
City/State/Zip: Rancho Cordova, CA 95670	Phone: 916-851-3500

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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.
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Responsible Designer Name: Thomas A Duval	Responsible Designer Signature:
Company : Capital Engineering	Date Signed:
Address: 11020 Sun Center DR #100	License: M22836
City/State/Zip: Rancho Cordova, CA 95670	Phone: 916-851-3500

CA+SA studio
3701 Business Drive Suite 200
Sacramento, CA 95820
Phone: (916) 365-9655

LICENSED ARCHITECT KIP DAVIS GRUBB No. C19022 EXP. 11/30/19 STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER THOMAS A. DUVAL M 22836 EXPIRES 9/30/20 MECHANICAL STATE OF CALIFORNIA

DATE SIGNED: 2-11-2019

CAPITAL ENGINEERING CONSULTANTS, INC.
RANCHO CORDOVA, CALIFORNIA

MCM/RL	180204.00
PM - DESIGN TEAM	PROJECT NO.

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APP NO. 02 - 116869
FILE NO. 39-H7
AC TM FLS SS
DATE 02 - 13 - 2019

GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
1621 BROOKSIDE RD.,
STOCKTON, CA 95207

STOCKTON UNIFIED SCHOOL DISTRICT

SUSD

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

ENERGY CODE COMPLIANCE FORMS - MECHANICAL

M7.1

MEP 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 CHAPTER 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 OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT 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 DISTRIBUTION 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 DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, DUCTWORK & 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 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-APPROVED (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.

GAS PRESSURE REGULATOR SCHEDULE

UNIT	LOCATION	"MFR" MODEL NO.	MIN. CAPACITY (MBH)	INLET PRESSURE RANGE MAX/MIN	OUTLET PRESSURE	NOTES
GPR 1	ROOF	AMERICAN METER COMPANY SERIES 1813B	1600	5 PSIG	7" WC	PROVIDE WITH HI AND LOW PRESSURE TEST PORTS

PLUMBING LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	ABC	ABOVE CEILING
	AFF	ABOVE FINISHED FLOOR
	AFG	ABOVE FINISHED GRADE
	AF , BF	ABOVE FLOOR , BELOW FLOOR
	AD , AP	ACCESS DOOR , ACCESS PANEL
	ANV	ANGLE VALVE
	AQ	AQUASTAT
	AD	AREA DRAIN
	BV	BALL VALVE
		BRANCH - TOP CONNECTION
		BRANCH - BOTTOM CONNECTION
or		BRANCH - SIDE CONNECTION
	CBV	CALIBRATED BALANCE VALVE
	COP	CAP ON END OF PIPE
	CB , RD	CATCH BASIN , ROOF DRAIN
		CENTER LINE
	CKV	CHECK VALVE
	CP	CIRCULATING PUMP
	CW	COLD WATER
	CWR	COLD WATER DROP
	CWD	COLD WATER RISE
H	CWH, HWH, VH	COLD WATER HEADER, HOT WATER HEADER, VENT HEADER
%%153	CR	CONCENTRIC REDUCER
CD	CD	CONDENSATE DRAIN LINE
	CMP	CORRUGATED METAL PIPE
CO CO	CO	CLEANOUT
DEG. F		DEGREES FAHRENHEIT
DIA. , SQ.FT.		DIAMETER , SQUARE (FEET)
	ER	ECCENTRIC REDUCER
	(E)	EXISTING TO BE REMOVED
	EJ	EXPANSION JOINT
FF=		FINISHED FLOOR ELEVATION
	FHC	FIRE HOSE RACK AND CABINET
F	F	FIRE PROTECTION WATER SUPPLY
FU		FIXTURE UNIT
	FC	FLEXIBLE CONNECTOR
Ø	CO	CLEANOUT
	FD	FLOOR DRAIN
	FS	FLOOR SINK
		FLOW IN DIRECTION OF ARROW
	FLV	FLOW LIMITING VALVE
FS	FS	FLOW SWITCH
FV , FT		FLUSH VALVE , FLUSH TANK
(FA) , (TA)		FROM ABOVE , TO ABOVE
(FB) , (TB)		FROM BELOW , TO BELOW
	GCK	GAGE COCK
	GSCK , PC	GAS COCK , PLUG COCK
GA	GA	GASOLINE
GV		GASOLINE VENT
	GSOV	GAS SHUT-OFF VALVE
G	G	GAS - LOW PRESSURE
MG	MG	GAS - MEDIUM PRESSURE
HG	HG	GAS - HIGH PRESSURE
	GPR	GAS PRESSURE REGULATOR VALVE
R	GPR	GAS PRESSURE REGULATOR
	GM	GAS METER
		GAS SEISMIC VALVE
	GV	GATE VALVE
	GV	GREASE VENT
	GPM	GALLONS PER MINUTE
	GLV	GLOBE VALVE
Ø	CO	CLEANOUT
GW	GW	GREASE WASTE PIPING
	HD	HOPPER DRAIN , HUB DRAIN
	HB	HOSE BIBB
	(D)	DROP
	(R)	RISE/RISER
	BG	BELOW GROUND
	RWL	RAINWATER LEADER
	ORWL	OVERFLOW RAINWATER LEADER
	RD	ROOF DRAIN
	OD	OVERFLOW DRAIN

PLUMBING LEGEND cont'd

SYMBOL	ABBREVIATION	DESCRIPTION
	HW	HOT WATER PIPING
	HWR	HOT WATER PIPING RISE
	HWD	HOT WATER PIPING DROP
	HW	HOT WATER PIPING WITH HEAT TRACE TAPE
	HWRET	HOT WATER RETURN
	HWRET(R)	HOT WATER RETURN RISE
	HWRET(D)	HOT WATER RETURN DROP
( )	( ) HW	HOT WATER (TEMP. ˚F)
( )	( ) HWR	HOT WATER RETURN (TEMP. ˚F)
I S	I S	IRRIGATION SUPPLY
D	D	INDIRECT DRAIN , CONDENSATE DRAIN
LPG	LPG	LIQUIFIED PETROLEUM GAS
LO	LO	LUBRICATING OIL
LOV	LOV	LUBRICATING OIL VENT
	(N) , (E)	NEW , EXISTING
	(NTS)	NOT TO SCALE
	OH	OVERHEAD
OF	OF	OVERFLOW RAINWATER LEADER
	OFD	OVERFLOW DRAIN
	AN	PIPE ANCHOR
		PIPE GUIDE
		PIPE IN SLEEVE
		PITCH DOWN IN DIRECTION OF FLOW
	PT	PLUGGED TEE
	POC	POINT OF CONNECTION
	PG	PRESSURE GAUGE
P & TRV	P & TRV	PRESSURE & TEMPERATURE RELIEF VALVE PIPING
	PRV	PRESSURE REDUCING VALVE
PD	PD	PUMP DISCHARGE LINE
RWL	RWL	RAINWATER LEADER
	WH	RECESSED BOX HOSE BIBB OR WALL HYDRANT
	RV or P&TRV	RELIEF VALVE OR PRESSURE & TEMPERATURE RELIEF VALVE
	RET	RETURN
	RE , IE	RIM ELEVATION , INVERT ELEVATION
	(R) , (D)	RISE , DROP
		RISER DOWN (ELBOW)
		RISER UP (ELBOW)
	R , D	RISE OR DROP
	RD	ROOF DRAIN
	S, W	SOIL, WASTE OR SANITARY SEWER ABOVE FLOOR
	S, W	SOIL, WASTE OR SANITARY SEWER BELOW FLOOR
		SOLENOID VALVE WITH MOTOR ACTUATOR
SD	SD	STORM DRAIN
	STR	STRAINER
T	T	TEMPERED WATER SUPPLY
	TH	THERMOMETER
		THREE WAY CONTROL VALVE
	TP	TRAP PRIMER
TP		TRAP PRIMER PIPING
		TWO WAY CONTROL VALVE
	TYP	TYPICAL
	UN	UNION OR FLANGE
UD	UD	UNDER DRAIN
	AV	VALVE WITH MOTOR ACTUATOR
		VALVE IN RISER (TYPE AS INDICATED OR NOTED)
	VB	VALVE IN VALVE BOX (VALVE TYPE SYMBOL AS REQUIRED FOR VALVE TYPE USED)
	V	VENT PIPING
V , VR , VTR		VENT , VENT RISER , VENT THRU ROOF
VCP		VITRIFIED CLAY PIPE
	WCO	WALL CLEANOUT
	WHA	WATER HAMMER ARRESTER
WM	WM	WATER METER

PLUMBING FIXTURE SPECIFICATION & CONNECTION SCHEDULE

ADA	SYMBOL	FIXTURE	FIXTURE MANUFACTURER AND MODEL No.	FAUCET OR VALVE MANUFACTURER AND MODEL No.	TRIM MANUFACTURER AND MODEL No.	REMARKS	VENT	DRAIN/WASTE		COLD WATER		HOT WATER	
								BRANCH	OUTLET	BRANCH	OUTLET	BRANCH	OUTLET
							-	3" 4"	3" 4"	-	-	-	-
	RD	ROOF DRAIN	ROOF DRAIN 4"DIA. PIPE SIZE MAX. - JAY R. SMITH MODEL 1330-RDP, ZURN MODEL Z107 OR EQUAL. 5"DIA. AND 6" DIA. - JAY R. SMITH MODEL 1310-RDP, ZURN MODEL Z107 OR EQUAL.	SECURE DECK PLATE TO ROOF. PROVIDE 6" HIGH CAST IRON VANDAL PROOF DOME TYPE STRAINER INLET AND CLAMPING COLLAR. PROVIDE WITH EXTENSION AS REQUIRED TO SUIT JOB CONDITIONS.			-	3" 4"	3" 4"	-	-	-	-
	OD	OVERFLOW DRAIN	OVER FLOW DRAIN 4"DIA. PIPE SIZE MAX. - JAY R. SMITH MODEL 1330-RDP, ZURN MODEL Z100 OR EQUAL. 5"DIA. AND 6" DIA. - JAY R. SMITH MODEL 1310-RDP, ZURN MODEL Z100 OR EQUAL.	SECURE DECK PLATE TO ROOF. PROVIDE 6" HIGH CAST IRON VANDAL PROOF DOME TYPE STRAINER INLET AND CLAMPING COLLAR. PROVIDE WITH 2" WATER DAM. PROVIDE WITH EXTENSION AS REQUIRED TO SUIT JOB CONDITIONS.			-	3" 4"	3" 4"	-	-	-	-
	DSN	DOWNSPOUT NOZZLE	DOWNSPOUT NOZZLE CONNECTION AT WALL FOR DRAIN LEADERS WHICH TERMINATE ABOVE GRADE, ZURN Z199				-	6" 8"	6" 8"	-	-	-	-

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Sacramento, CA 95820
Phone: (916) 365-9655

LICENSED ARCHITECT KIP DAVIS GRUBB No. C19022 EXP. 11/30/19 STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER THOMAS A. DUVAL M 22836 EXPIRES 9/30/20 MECHANICAL STATE OF CALIFORNIA

DATE SIGNED: 2-11-2019

CAPITAL ENGINEERING CONSULTANTS, INC.
RANCHO CORDOVA, CALIFORNIA
MCM/RL — PM - DESIGN TEAM
180204.00 — PROJECT NO.

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APP NO. 02 - 116869
FILE NO. 39-H7
AC TM FLS ___ SS ___
DATE 02 - 13 - 2019

GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
1621 BROOKSIDE RD., STOCKTON, CA 95207

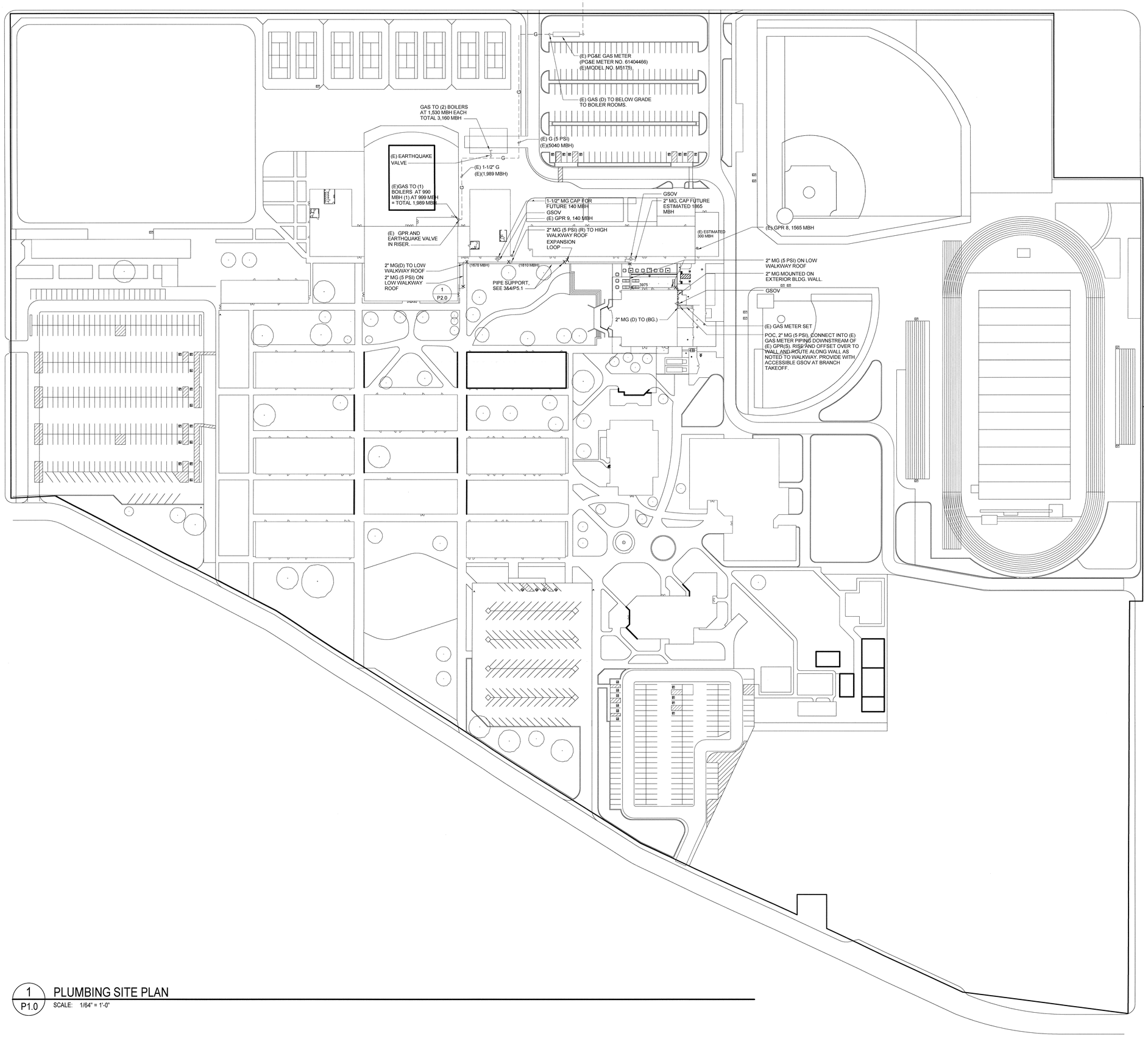
STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

PLUMBING LEGEND, SCHEDULE AND NOTES

P0.1



1 P1.0 PLUMBING SITE PLAN
SCALE: 1/64" = 1'-0"

GENERAL NOTES

1. --

SHEET NOTES:

(1) --

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LICENSED ARCHITECT
KYLE DAVIS GRIMM
REG. 11/30/19
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
THOMAS A. JAMIAL
M 22836
EXPIRES 9/30/20
MECHANICAL
STATE OF CALIFORNIA

DATE SIGNED: 2-11-2019

CAPITAL
ENGINEERING CONSULTANTS, INC.
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STOCKTON UNIFIED
SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

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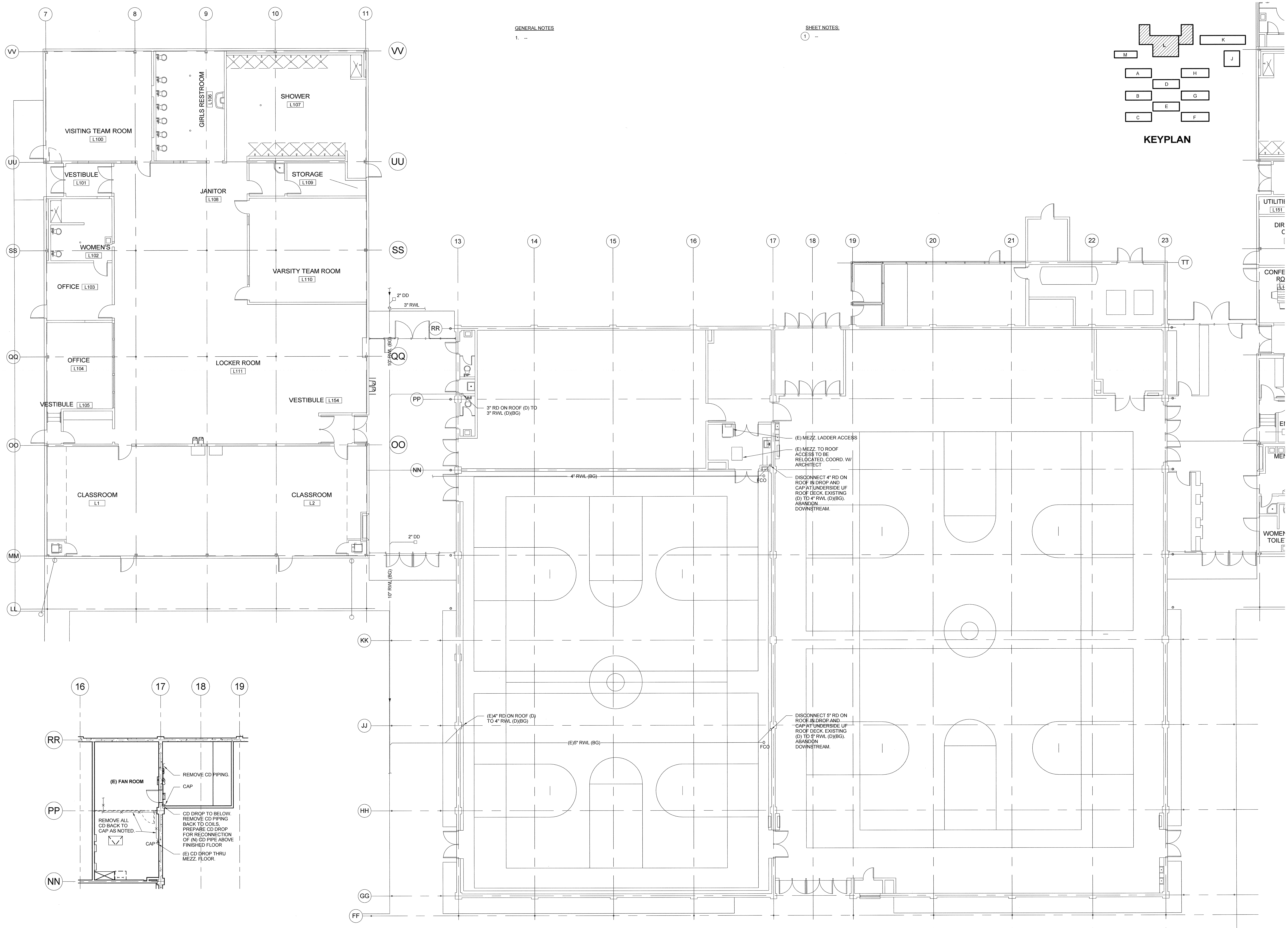
PLUMBING SITE PLAN

P1.0



PLUMBING PARTIAL DEMO. MEZZANINE PLAN

2 / P2.0

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

PLUMBING DEMOLITION FLOOR PLAN

1 / P2.0

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

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GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
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STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

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PLUMBING DEMOLITIION FLOOR PLAN

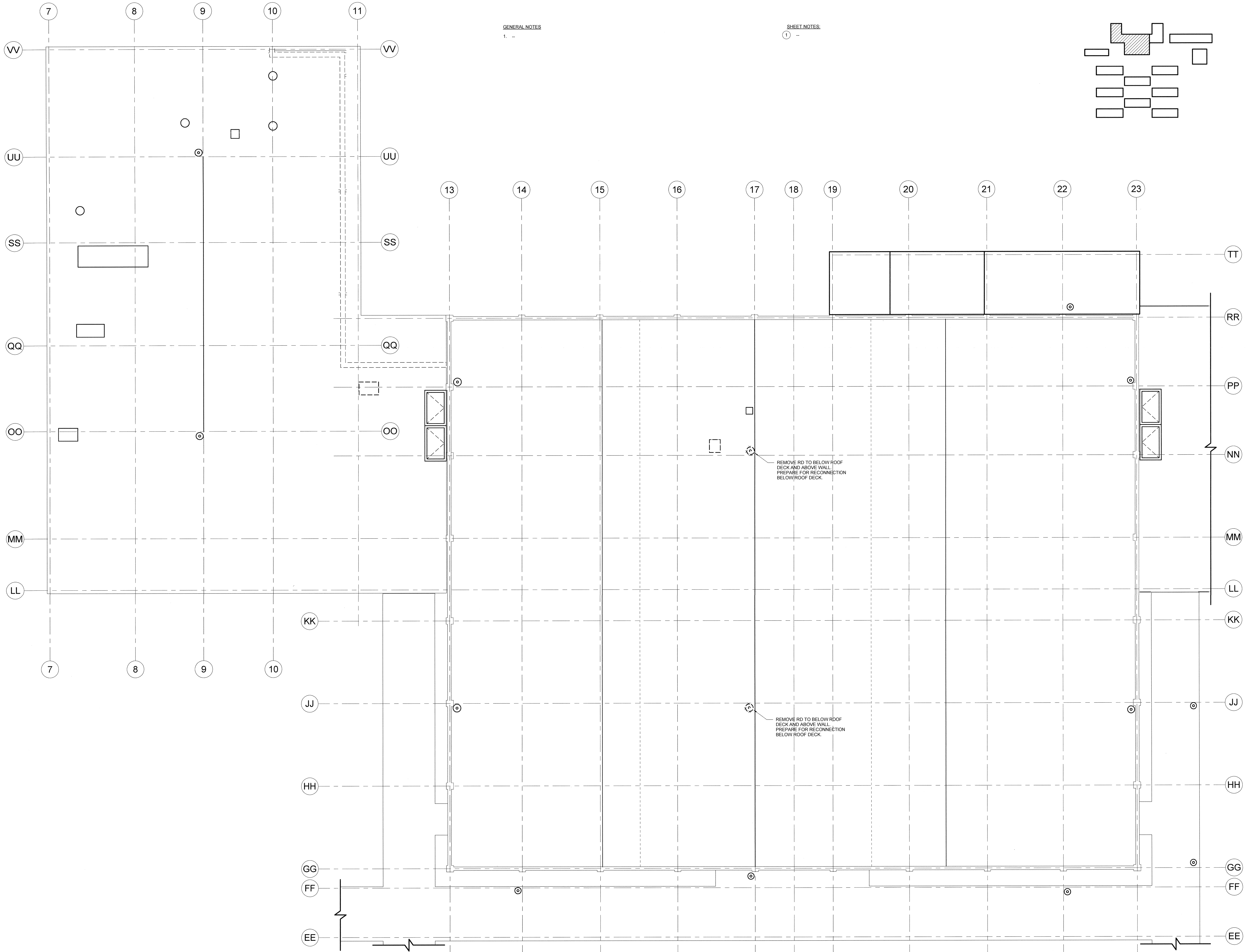
P2.0

GENERAL NOTES

1. --

SHEET NOTES:

(1) --



1 / P2.1 PLUMBING DEMOLITION ROOF PLAN

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

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GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL

1621 BROOKSIDE RD.,
STOCKTON, CA 95207

STOCKTON UNIFIED SCHOOL DISTRICT

SUSD

PROJECT NUMBER: 2017-015.00

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PLUMBING DEMOLITION ROOF PLAN

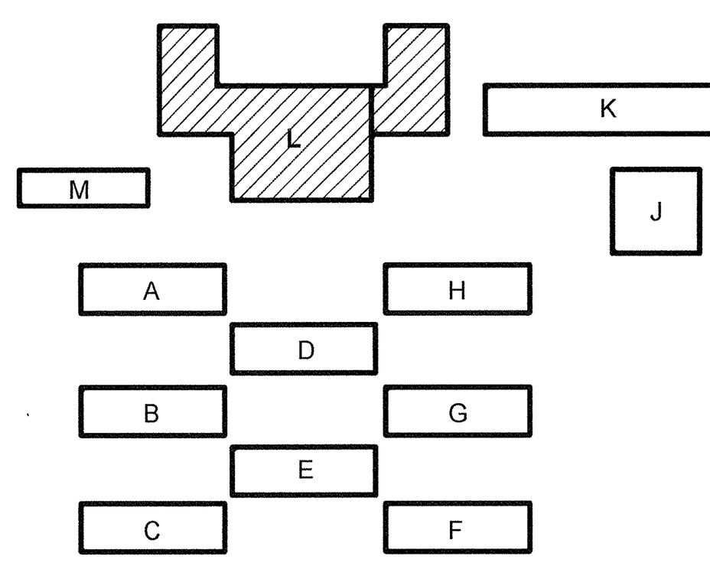
P2.1

GENERAL NOTES

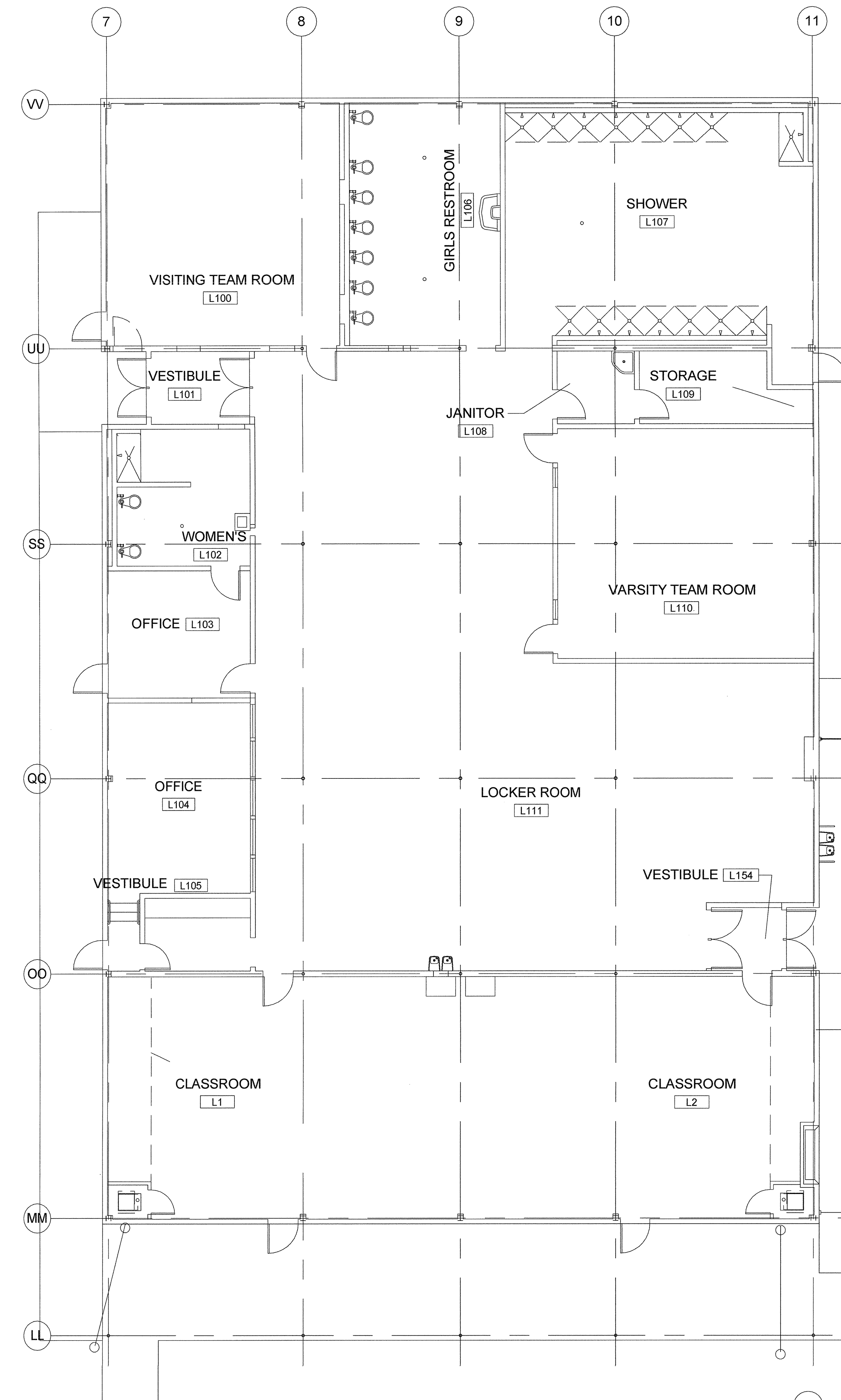
1. INSULATE ALL RWL AND ORWL PIPING.

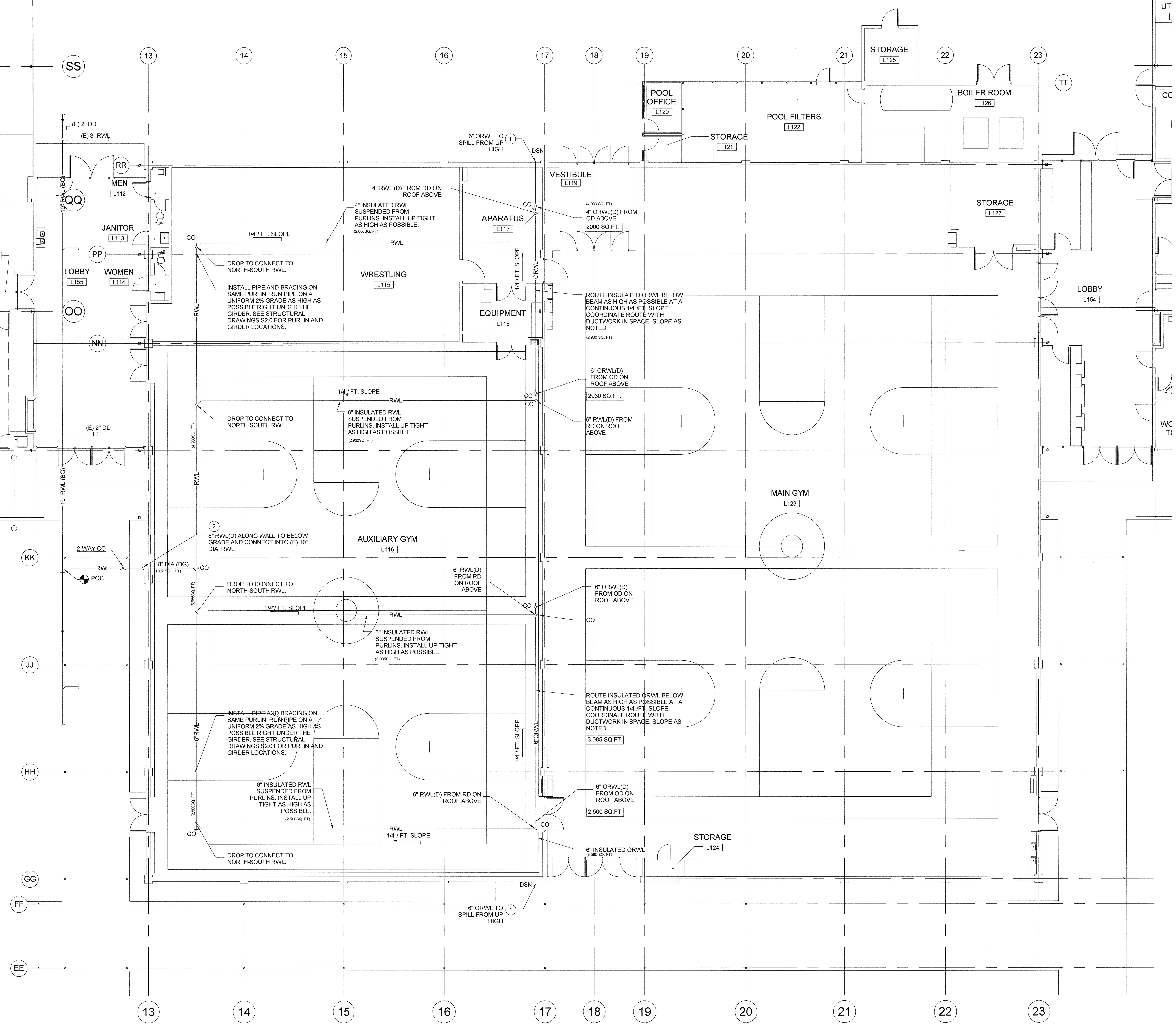
SHEET NOTES:

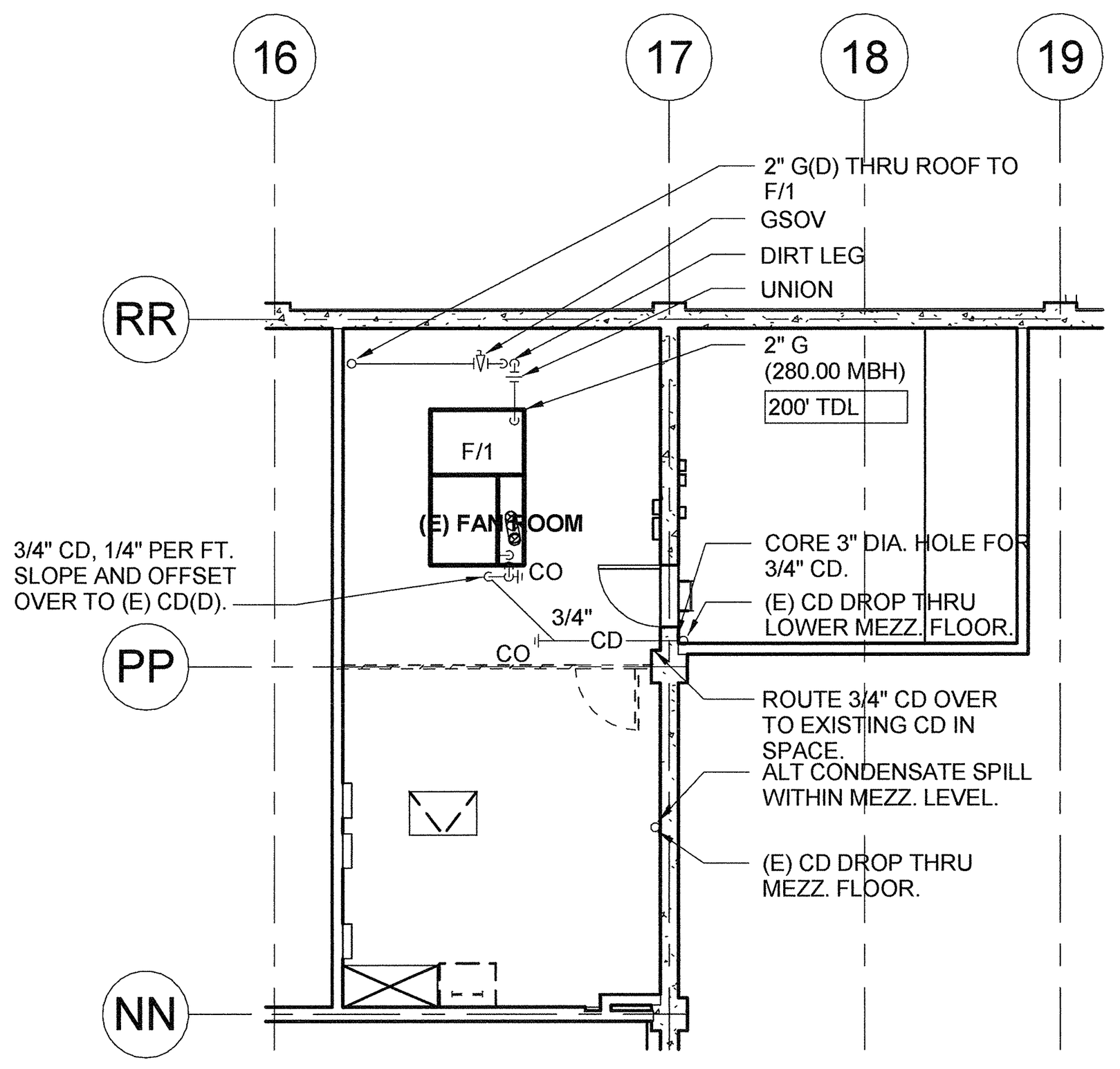
1. CORE THRU EXTERIOR WALL 1" LARGER THAN OUTSIDE DIAMETER PIPE SIZE. XRAY PRIOR TO CORING THROUGH WALL. 6" ORWL, DAYLIGHT HIGH ON WALL AND TERMINATE WITH LAMBS TONGUE.
2. CORE THRU EXTERIOR WALL 1" LARGER THAN OUTSIDE DIAMETER PIPE SIZE. XRAY PRIOR TO CORING THROUGH WALL. 8" RWL DROP TO BELOW GRADE.



KEYPLAN







PLUMBING PARTIAL MEZZANINE PLAN — 2 / P2.2

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

PLUMBING FLOOR PLAN — 1 / P2.2

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

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GYM HVAC REPLACEMENT

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STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

PLUMBING FLOOR PLAN

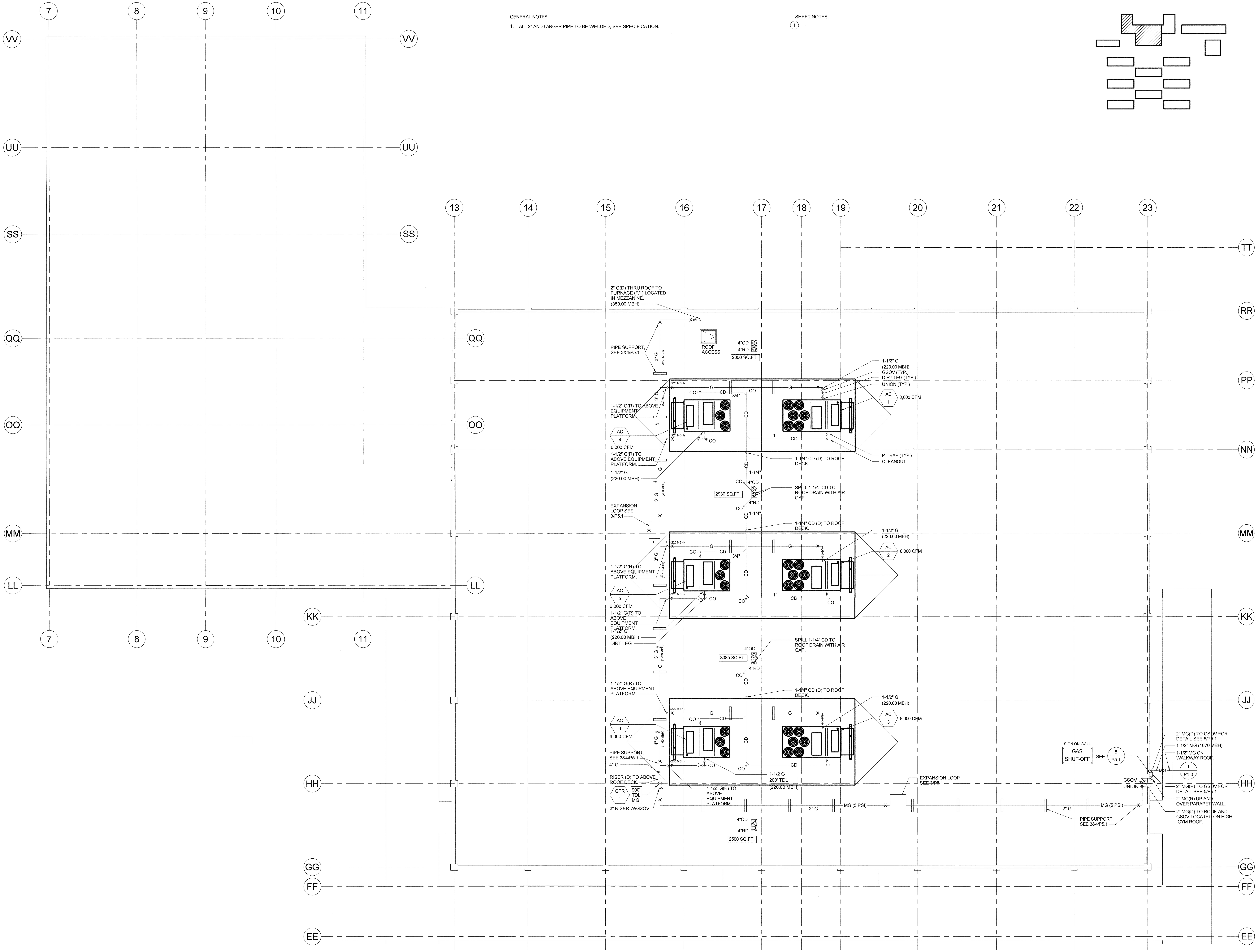
P2.2

GENERAL NOTES:

1. ALL 2" AND LARGER PIPE TO BE WELDED, SEE SPECIFICATION.

SHEET NOTES:

1 -



1 P2.3 PLUMBING ROOF PLAN

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

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FILE NO. 39-H7
AC TM FLS VS SS
DATE 02 - 13 - 2019

GYM HVAC REPLACEMENT

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PLUMBING ROOF PLAN

P2.3

ProSet FIRESTOP WALL PENETRATOR GUIDE
Penetrators through Masonry & Gypsum Walls

PROSET PROTECTION

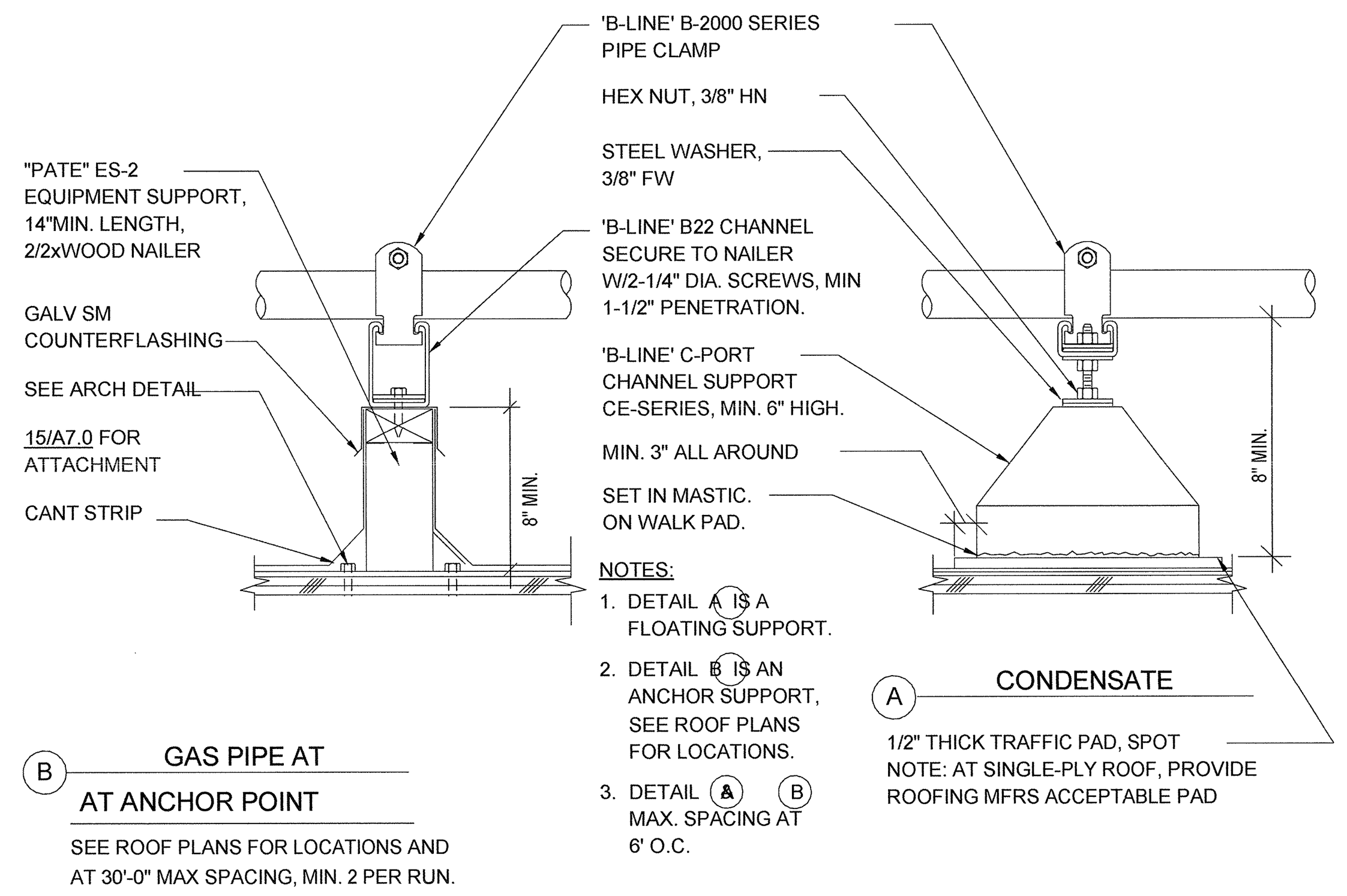
Recommended drawing numbers are shown below
Other options may be available

Pressure Pipe and PVC/ABS Pipe - All sleeves are 8" long— Consult factory for other options

Size	Type of Wall	Copper	Steel	CPVC	PVC Pressure	PVC/ABS DWV	Other
1/2"	CONCRETE	A-1010-a	A-1010-a	A-1011-a	A-1011-a	A-1011-a	Multiple Pipes
	BLOCK	A-1010-g	A-1010-g	A-1011-g	A-1011-g	A-1011-g	A-1003-ax
	GYPSUM	A-1012-f or 13-f	A-1012-f or 13-f	A-1012-f or 13-f	A-1012-f or 13-f	A-1012-f or 13-f	Chilled Water
3/4"	CONCRETE	A-1010-a	A-1010-a	A-1011-a	A-1011-a	A-1011-a	A-1000-a
	BLOCK	A-1010-g	A-1010-g	A-1011-g	A-1011-g	A-1011-g	Glass Pipe
	GYPSUM	A-1012-f or 13-f	A-1012-f or 13-f	A-1012-f or 13-f	A-1012-f or 13-f	A-1012-f or 13-f	A-1015-a
1"	CONCRETE	A-1010-a	A-1010-a	A-1011-a	A-1011-a	A-1011-a	Waterproof
	BLOCK	A-1010-g	A-1010-g	A-1011-g	A-1011-g	A-1011-g	Thru-pipe
	GYPSUM	A-1012-f or 13-f	A-1012-f or 13-f	A-1012-f or 13-f	A-1012-f or 13-f	A-1012-f or 13-f	A-1017-g
1 1/4"	CONCRETE	A-1010-a	A-1010-a	A-1011-a	A-1011-a	A-1011-a	Optional Wall
	BLOCK	A-1010-g	A-1010-g	A-1011-g	A-1011-g	A-1011-g	Sleeve Fasteners
	GYPSUM	A-1012-f or 13-f	A-1012-f or 13-f	A-1012-f or 13-f	A-1012-f or 13-f	A-1012-f or 13-f	For Gypsum Walls
1 1/2"	CONCRETE	A-1010-a	A-1010-a	A-1011-a	A-1011-a	A-1011-a	A-1012-f and
	BLOCK	A-1010-g	A-1010-g	A-1011-g	A-1011-g	A-1011-g	A-1013-f or
	GYPSUM	A-1012-f or 13-f	A-1012-f or 13-f	A-1012-f or 13-f	A-1012-f or 13-f	A-1012-f or 13-f	A-1014-f and
2"	CONCRETE	A-1014-a	A-1014-a	A-1015-a	A-1015-a	C-9049-a	A-1015-f
	BLOCK	A-1015-g	A-1015-g	A-1015-g	A-1015-g	C-9049-g	polypropylene
	GYPSUM	A-1014-f	A-1014-f	A-1015-f	A-1015-f	C-9049-f	Acid waste pipe
2 1/2"	CONCRETE	A-1014-a	A-1014-a	A-1015-a	A-1015-a	C-9049-a	C-9049-f
	BLOCK	A-1015-g	A-1015-g	A-1015-g	A-1015-g	C-9049-g	C-9049-g
	GYPSUM	A-1014-f	A-1014-f	A-1015-f	A-1015-f	C-9049-f	Polyethylene
3"	CONCRETE	A-1014-a	A-1014-a	A-1015-a	A-1015-a	C-9049-a	A-1011-a
	BLOCK	A-1015-g	A-1015-g	A-1015-g	A-1015-g	C-9049-g	A-1011-g
	GYPSUM	A-1014-f	A-1014-f	A-1015-f	A-1015-f	C-9049-f	A-1012-f or
4"	CONCRETE	A-1014-a	A-1014-a	A-1015-a	A-1015-a	C-9049-a	A-1013-f
	BLOCK	A-1015-g	A-1015-g	A-1015-g	A-1015-g	C-9049-g	Insulated pipe
	GYPSUM	A-1014-f	A-1014-f	A-1015-f	A-1015-f	C-9049-f	A-1004-a
5"	CONCRETE	A-1014-a	A-1014-a	A-1015-a	A-1015-a	N.A	A-1010-ai
	BLOCK	A-1015-g	A-1015-g	A-1015-g	A-1015-g	N.A	Refrigeration
	GYPSUM	A-1014-f	A-1014-f	A-1015-f	A-1015-f	N.A	A-1003-a
6"	CONCRETE	A-1014-a	A-1014-a	A-1015-a	A-1015-a	N.A	
	BLOCK	A-1015-g	A-1015-g	A-1015-g	A-1015-g	N.A	
	GYPSUM	A-1014-f	A-1014-f	A-1015-f	A-1015-f	N.A	

Plumbing Fixture Wall Openings: 1-1/2" Lavatory and Sink Sub Outs: Use ProSet P-90 PVC Pipe See drawing No. C-8112-f
Wall Outlet 3" or 4" Water Closets See ProSet Drawing No. C-4492-a and C-4492-dhc
ProSet Systems, Inc., 1355 Capital Circle Lawrenceville, GA 30043-5866 1-800-262-5355 FAX (770) 339-1784

PIPE PENETRATION THROUGH RATED WALL SCHEDULE
7 / P5.1
SCALE : NONE

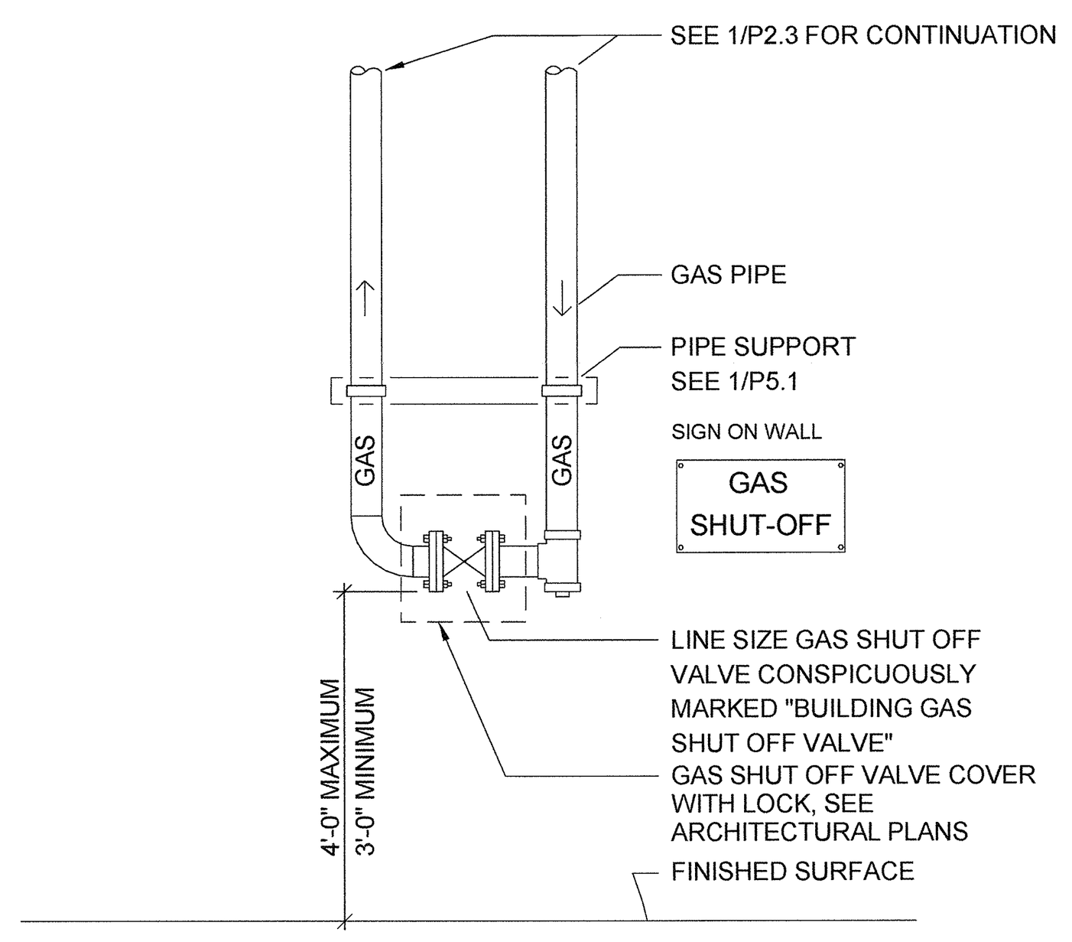


NOTES:
1. DETAIL (A) IS A FLOATING SUPPORT.
2. DETAIL (B) IS AN ANCHOR SUPPORT, SEE ROOF PLANS FOR LOCATIONS.
3. DETAIL (A) (B) MAX. SPACING AT 6' O.C.

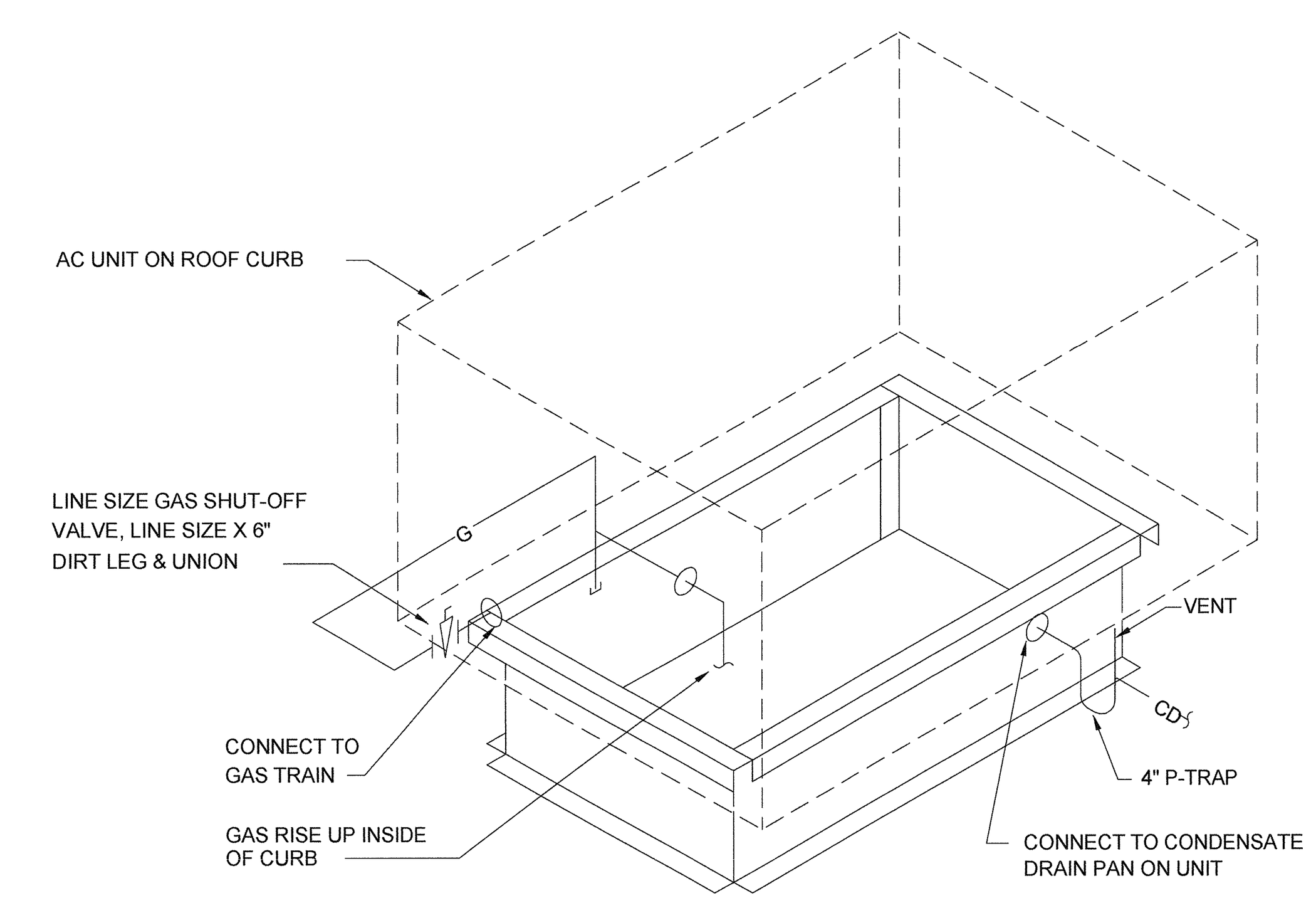
(B) GAS PIPE AT AT ANCHOR POINT
SEE ROOF PLANS FOR LOCATIONS AND AT 30'-0" MAX SPACING, MIN. 2 PER RUN.

(A) CONDENSATE
1/2" THICK TRAFFIC PAD, SPOT NOTE: AT SINGLE-PLY ROOF, PROVIDE ROOFING MFRS ACCEPTABLE PAD

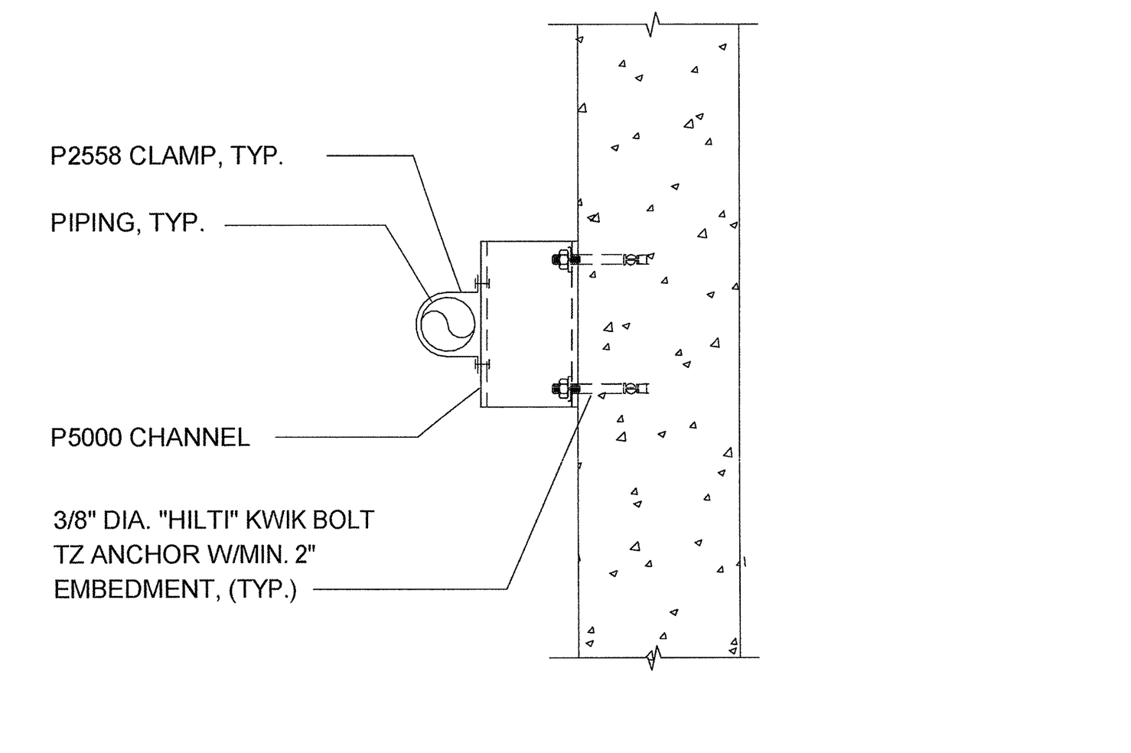
PIPE ON ROOF MOUNTING DETAIL
4 / P5.1
SCALE : NONE SUPPORT PER CPC 1210.2.4.1 & 1210.2.4.2 AND NFPA 54:7.2.6.2, 7.2.6.3, 7.2.6.4



GAS VALVE ON WALL
5 / P5.1
SCALE : NONE

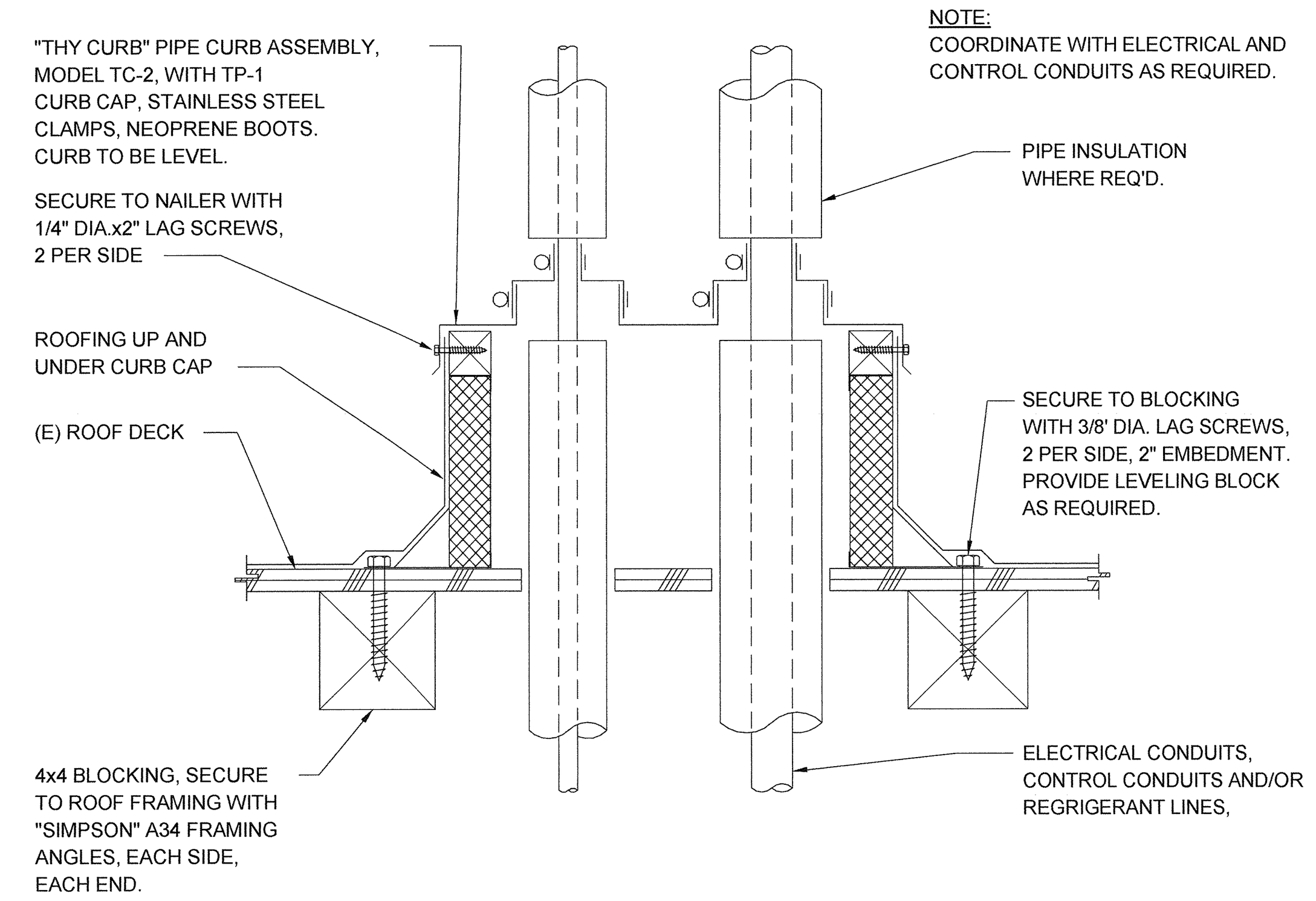


AC UNIT PIPING
6 / P5.1
SCALE : NONE



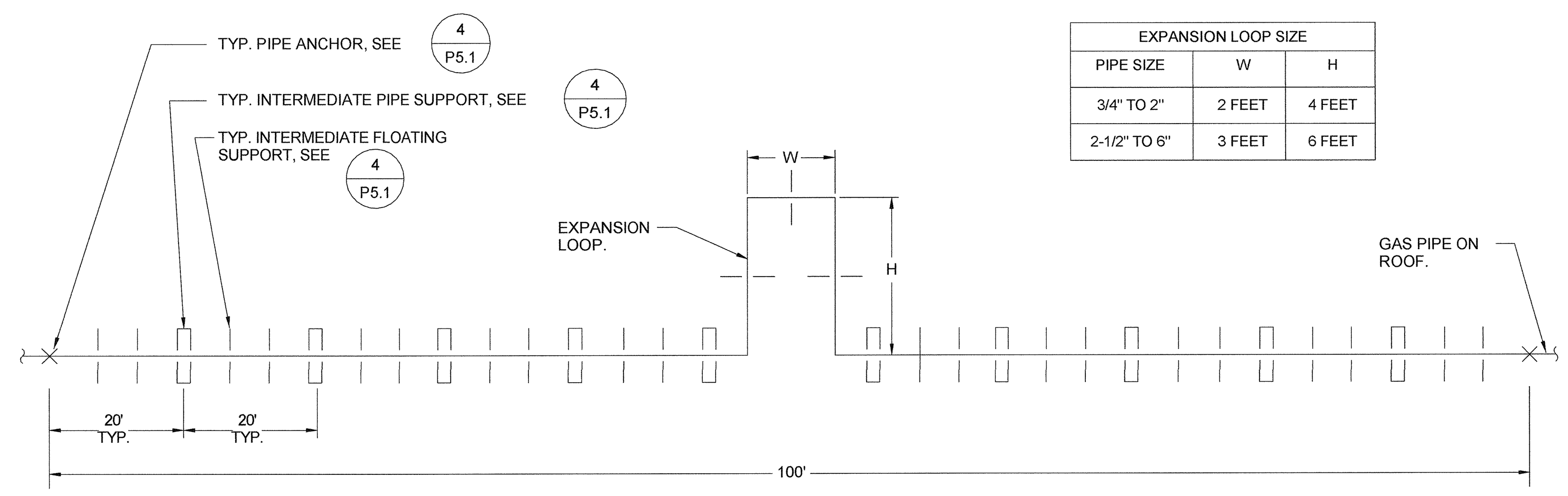
NOTES:
1. ALL CHANNELS AND FITTINGS SHALL BE ELECTRO-GALVANIZED.
2. SPACE PIPE SUPPORTS ON GRADE AT 4' O.C. MIN. 2 SUPPORTS.
3. SEE PLANS FOR NUMBER OF PIPES ON EACH SUPPORT.

PIPING MOUNTED ON WALL
1 / P5.1
SCALE : NONE



PIPE THRU ROOF DETAIL
2 / P5.1
SCALE : NONE

EXPANSION LOOP SIZE		
PIPE SIZE	W	H
3/4" TO 2"	2 FEET	4 FEET
2-1/2" TO 6"	3 FEET	6 FEET



NOTES:
1. INTERMEDIATE PIPE SUPPORTS SHALL BE SPACED AT 20' ON CENTER.
2. INTERMEDIATE FLOATING SUPPORTS SHALL BE SPACED BETWEEN INTERMEDIATE PIPE SUPPORTS WITH SPACING AS REQUIRED TO MEET THE MINIMUM PIPE SPACING REQUIREMENTS OF SPECIFICATION SECTION 22 30 00.
3. INTERMEDIATE SUPPORTS AND INTERMEDIATE FLOATING SUPPORTS SHALL HAVE PIPE CLAMPS INSTALLED LOOSE AROUND PIPE TO ALLOW LONGITUDINAL MOVEMENT OF THE PIPE. PIPE ANCHORS SHALL HAVE PIPE CLAMPS INSTALLED TIGHT AROUND PIPE TO PROVIDE SECURE ANCHORAGE.
4. "METRAFLEX", METRALOOP MAY ALSO BE USED IN LIEU OF THE PIPED EXPANSION LOOP.

GAS PIPE ON ROOF SUPPORT/ANCHORAGE DETAIL
3 / P5.1
SCALE : NONE

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DATE SIGNED: 2-11-2019

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RANCHO CORDOVA, CALIFORNIA
MCM/RL 180204.00
PM - DESIGN TEAM PROJECT NO.

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APP NO. 02 - 116869
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AC TM FLS SS
DATE 02 - 13 - 2019

GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
1621 BROOKSIDE RD., STOCKTON, CA 95207

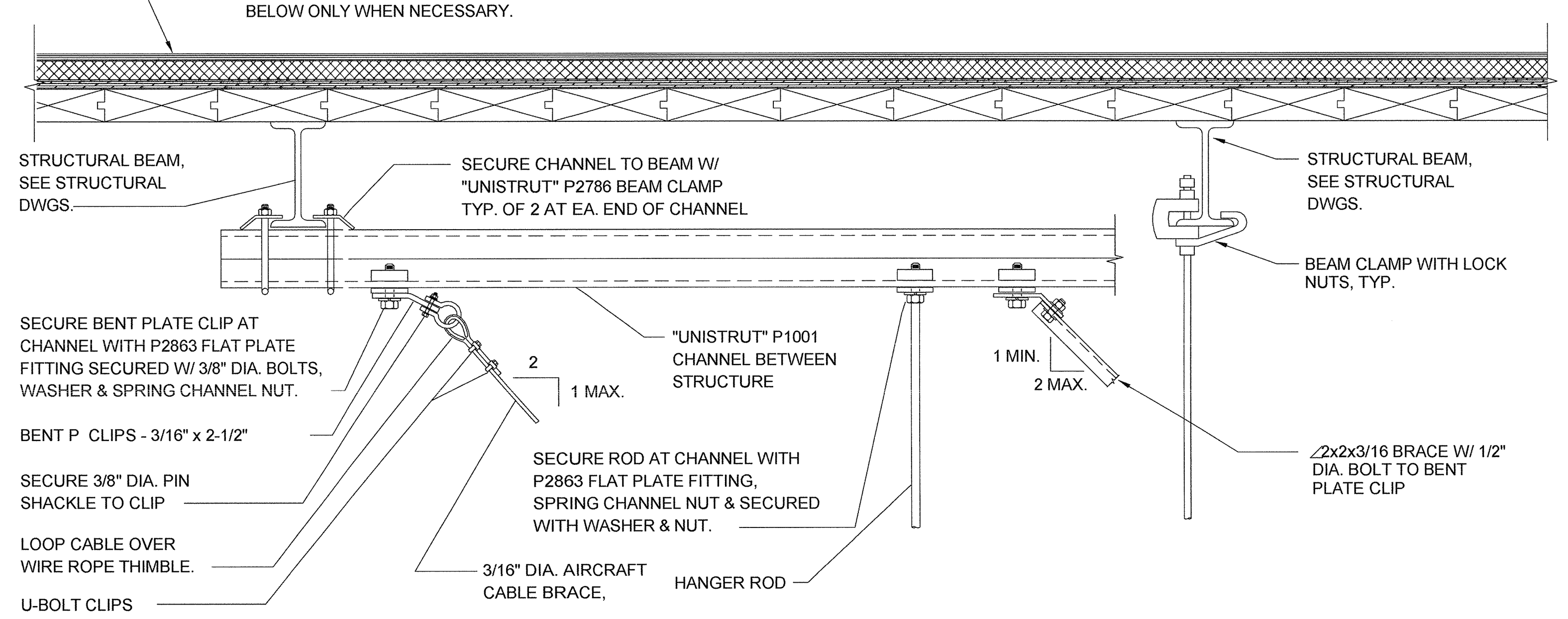
STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

PLUMBING DETAILS

P5.1



UPPER ATTACHMENT TO STRUCTURE

3 / P5.2

SCALE : NONE

Hanger Rod Size

Part No.	Nominal Pipe Size		Rod Size 'A'	Design Load	
	In.	(mm)		Lbs.	(KN)
B3100-1/2	1/2"	(15)	3/8"-16	610	(2.71)
B3100-3/4	3/4"	(20)	3/8"-16	610	(2.71)
B3100-1	1"	(25)	3/8"-16	610	(2.71)
B3100-1 1/4	1 1/4"	(32)	3/8"-16	610	(2.71)
B3100-1 1/2	1 1/2"	(40)	3/8"-16	610	(2.71)
B3100-2	2"	(50)	3/8"-16	610	(2.71)
B3100-2 1/2	2 1/2"	(65)	1/2"-13	1130	(5.02)
B3100-3	3"	(80)	1/2"-13	1130	(5.02)
B3100-3 1/2	3 1/2"	(90)	1/2"-13	1130	(5.02)
B3100-4	4"	(100)	5/8"-11	1430	(6.36)
B3100-5	5"	(125)	5/8"-11	1430	(6.36)
B3100-6	6"	(150)	3/4"-10	1940	(8.63)
B3100-8	8"	(200)	7/8"-9	2000	(8.89)
B3100-10	10"	(250)	7/8"-9	3600	(16.01)
B3100-12	12"	(300)	7/8"-9	3800	(16.01)

Brace Size

Channel Type	Maximum Structure Connection Type	Maximum Brace Length		Channel Height		Channel Width		Material Thickness	
		ft.	(m)	in.	(mm)	in.	(mm)	gauge	(mm)
B54	IV	4'-10"	(1.47)	13/16"	(20.6)	1 5/8	(41.3)	14 Ga.	(1.9)
B52	IV	4'-8"	(1.42)	13/16"	(20.6)	1 5/8	(41.3)	12 Ga.	(2.6)
B42	V	5'-10"	(1.78)	1"	(25.4)	1 5/8	(41.3)	12 Ga.	(2.6)
B32	V	8'-0"	(2.44)	1 3/8"	(34.9)	1 5/8	(41.3)	12 Ga.	(2.6)
B24	IV	9'-7"	(2.92)	1 5/8"	(41.3)	1 5/8	(41.3)	12 Ga.	(2.6)
B22	V	9'-5"	(2.74)	1 5/8"	(41.3)	1 5/8	(41.3)	12 Ga.	(2.6)
B22A	V	10'-10"	(3.30)	3 1/4"	(82.5)	1 5/8	(41.3)	12 Ga.	(2.6)
B11	IV	11'-7"	(3.53)	3 1/4"	(82.5)	1 5/8	(41.3)	12 Ga.	(2.6)

The Structure Connection Type is the brace anchorage requirement. See brace connection to structure details.

Do not exceed the maximum brace length or maximum structure connection type for the channels listed.

Maximum Hanger Spacing for Steel Pipe

Nominal Pipe Size		Field Hanger Spacing See Note 1		Maximum Transverse Support Spacing		Transverse Structure Connection Type	Maximum Longitudinal Support Spacing		Longitudinal Structure Connection Type	Hanger & Rod Loads See Note 3		Rod Size	Field Hanger Spacing	
In.	(mm)	ft.	(m)	ft.	(m)	See Note 2	ft.	(m)	See Note 2	lbs.	(kN)		lbs./ft.	(kg/m)
1/2	(15)	7	(2.13)	28	(8.53)	I	56	(17.07)	I	32	(0.14)	3/8"-16	0.98	(1.46)
3/4	(20)	7	(2.13)	28	(8.53)	I	56	(17.07)	I	44	(0.19)	3/8"-16	1.36	(2.02)
1	(25)	7	(2.13)	35	(10.67)	I	70	(21.33)	I	79	(0.35	3/8"-16	2.06	(3.06)
1 1/4	(32)	7	(2.13)	35	(10.67)	I	70	(21.33)	I	112	(0.50)	3/8"-16	2.92	(4.34)
1 1/2	(40)	9	(2.74)	36	(10.97)	I	72	(21.94)	II	149	(0.66)	3/8"-16	3.60	(5.36)
2	(50)	10	(3.05)	40	(12.19)	I	80	(24.38)	II	235	(1.04)	3/8"-16	5.10	(7.59)
2 1/2	(65)	10	(3.05)	40	(12.19)	II	80	(24.38)	III	362	(1.61)	1/2"-13	7.87	(11.71)
3	(80)	10	(3.05)	40	(12.19)	II	80	(24.38)	IV	495	(2.20)	1/2"-13	10.75	(16.00)
3 1/2	(90)	10	(3.05)	40	(12.19)	III	80	(24.38)	V	616	(2.74)	1/2"-13	13.39	(19.92)
4	(100)	10	(3.05)	40	(12.19)	III	60	(18.29)	IV	603	(2.68)	5/8"-11	16.31	(24.27)
5	(125)	10	(3.05)	40	(12.19)	IV	60	(18.29)	V	865	(3.85)	5/8"-11	23.39	(34.81)
6	(150)	10	(3.05)	40	(12.19)	V	40	(12.19)	V	882	(3.92)	3/4"-10	31.49	(46.86)
8	(200)	10	(3.05)	30	(9.14)	V	30	(9.14)	V	1180	(5.25)	3/4"-10	50.23	(74.75)
10	(250)	10	(3.05)	20	(6.09)	V	20	(6.09)	V	1417	(6.29)	7/8"-9	74.60	(111.01)
12	(300)	10	(3.05)	10	(3.05)	V	10	(3.05)	V	1480	(6.57)	7/8"-9	102.10	(151.94)

Notes:

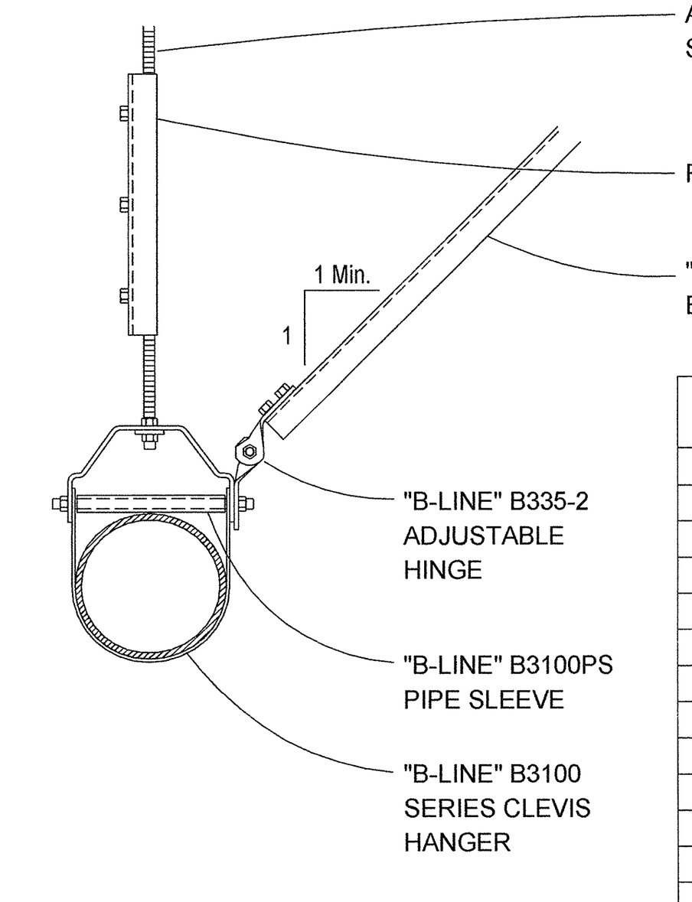
1. Spacing capacities are based on water filled standard weight pipe. Closer hanger spacing may be required when additional valves and fittings increase the load.
2. The "Structure Connection Type" is the brace anchorage requirement. See brace attachment details for connection sizes.
3. The hanger rod load indicates the maximum tension in the rod (and hanger) due to gravity and the additional seismic forces. Refer to "Rod Stiffener Detail" to determine if a rod stiffener is required. Rod stiffeners, if required, are only required at braced locations. Unbraced hangers never require rod stiffeners.
4. Braces must be attached within 4 inches of hanger.
5. This table is for a seismic force level of 0.45 G's.

TABLES FROM "B-LINE" SEISMIC RESTRAINTS SYSTEM, OSHPD PRE-APPROVAL No. OPA-0114.

SEISMIC BRACING TABLES

4 / P5.2

SCALE : NONE



Pipe Size		Clevis Hanger Part No.	Adjustable Hinge Part No.	Pipe Sleeve Part No.*
In.	(mm)			
1/2	(15)	B3100-1/2	N/A	N/A
3/4	(20)	B3100-3/4	N/A	N/A
1	(25)	B3100-1	B335-2-3/8	B3100PS-1
1 1/4	(32)	B3100-1 1/4	B335-2-3/8	B3100PS-1 1/4
1 1/2	(40)	B3100-1 1/2	B335-2-3/8	B3100PS-1 1/2
2	(50)	B3100-2	B335-2-3/8	B3100PS-2
2 1/2	(65)	B3100-2 1/2	B335-2-3/8	B3100PS-2 1/2
3	(80)	B3100-3	B335-2-3/8	B3100PS-3
3 1/2	(90)	B3100-3 1/2	B335-2-3/8	B3100PS-3 1/2
4	(100)	B3100-4	B335-2-3/8	B3100PS-4
5	(125)	B3100-5	B335-2-1/2	B3100PS-5
6	(150)	B3100-6	B335-2-1/2	B3100PS-6
8	(200)	B3100-8	B335-2-5/8	B3100PS-8
10	(250)	B3100-10	B335-2-3/4	B3100PS-10
12	(300)	B3100-12	B335-2-3/4	B3100PS-12

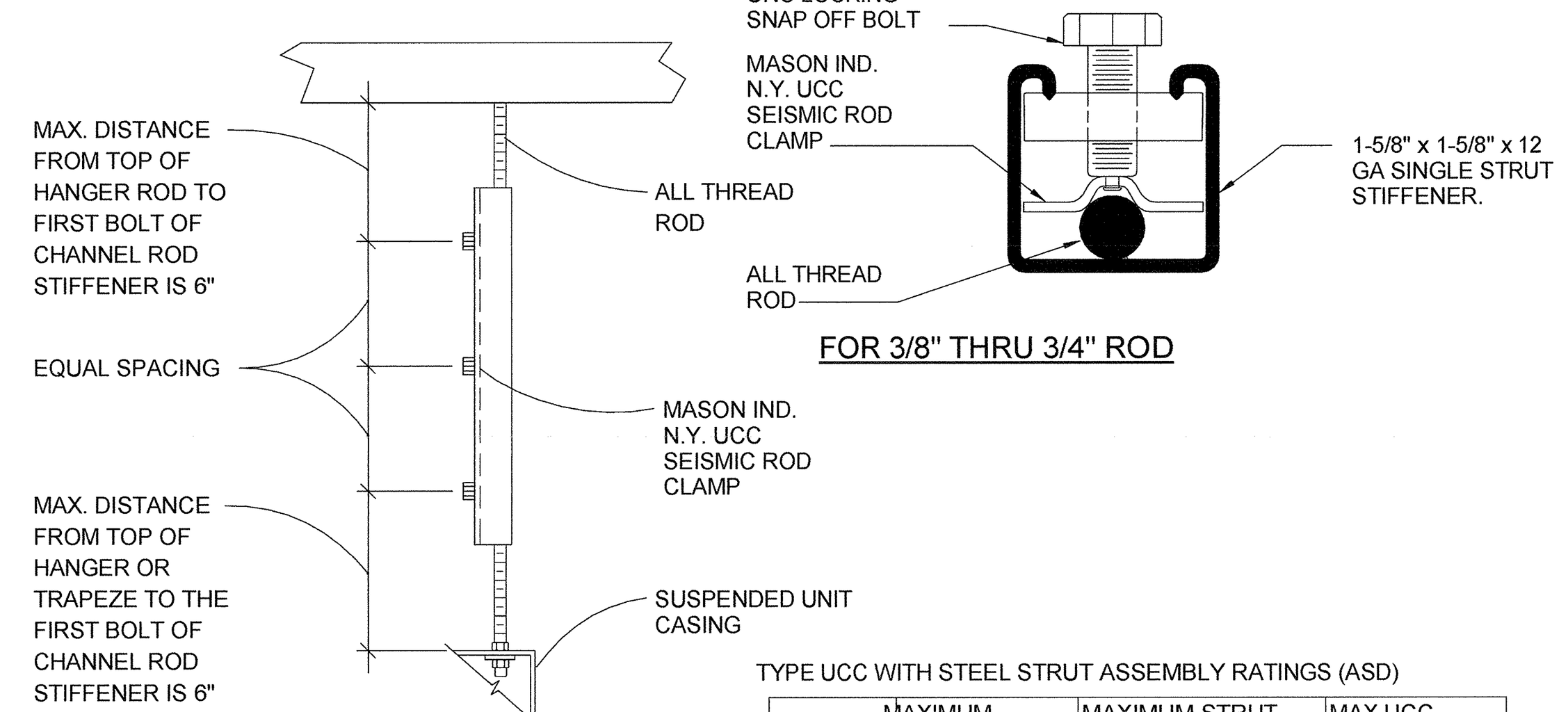
* Not included when ordering standard B3100 Series Clevis Hanger.
Note: Pipe sleeve required over cross bolt of Clevis Hanger when using the brace connection shown in the above figure.

DETAIL FROM "B-LINE" SEISMIC RESTRAINTS SYSTEM, OSHPD PRE-APPROVAL No. OPA-0114.

CLEVIS HANGER & TRANSVERSE BRACING

1 / P5.2

SCALE : NONE



TYPE UCC WITH STEEL STRUT ASSEMBLY RATINGS (ASD)

ATR Size	MAXIMUM COMPRESSIVE FORCE (LBS)	MAXIMUM STRUT STIFFENER LENGTH (INCHES)	MAX UCC SPACING (INCHES)
3/8"	440	156	28
1/2"	735	156	38
5/8"	1155	156	48
3/4"	1700	156	57

DETAIL FROM "MASON" SEISMIC ROD CLAMPS FOR STRUT CHANNELS SYSTEM, OPA-0043-13

ROD STIFFENER DETAIL

2 / P5.2

SCALE : NONE

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LICENSED ARCHITECT KIP DAVIS GRUBB No. C19022 EXP. 11/30/19 STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER THOMAS A. DUVAL M 22836 EXPIRES 9/30/20 MECHANICAL STATE OF CALIFORNIA

DATE SIGNED: 2-11-2019

CAPITAL ENGINEERING CONSULTANTS, INC.
RANCHO CORDOVA, CALIFORNIA
MCM/RL — PM - DESIGN TEAM
180204.00 — PROJECT NO.

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APP NO. 02 - 116869
FILE NO. 39-H7
AC TM FLS VB SS
DATE 02 - 13 - 2019

GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
1621 BROOKSIDE RD.,
STOCKTON, CA 95207

STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

PLUMBING DETAILS

GENERAL NOTES:

1. MOUNTING HEIGHT IS TO THE CENTER OF EQUIPMENT, U.O.N. MOUNTING HEIGHTS OF SUSPENDED LIGHT FIXTURES ARE TO THE BOTTOM OF THE FIXTURE. U.O.N.
2. RECEPTACLES AND DEVICES INSTALLED ABOVE COUNTER SHALL HAVE THE BOTTOM OF COVER PLATE AT APPROX 2-INCHES ABOVE COUNTER OR BACKSPLASH.
3. CAP ALL EMPTY CONDUITS FOR FUTURE USE WATERTIGHT WITH MANUFACTURER'S END CAP, WITH PULL STRING ATTACHED.
4. SEAL ALL EXTERIOR WALL PENETRATIONS WATERTIGHT WITH SILICONE GROUT.
5. SEAL ALL WALL AND CEILING PENETRATIONS WITH GROUT. WHERE CONDUITS PENETRATE FIRE RATED BARRIERS, SEAL PENETRATIONS WITH FIRE RATED COMPOUND TO MATCH OR EXCEED BARRIER RATING.
6. PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE SEALED AS REQUIRED BY CBC.
7. ALL CONDUITS AND BOXES ON THE EXTERIOR SHALL BE PAINTED TO MATCH THE ADJACENT FINISH.
8. WHERE FIRE RATED CONSTRUCTION IS REQUIRED (REFER TO ARCHITECTURAL DRAWINGS), DO NOT LOCATE ELECTRICAL OUTLET BOXES BACK-TO-BACK. PROVIDE MINIMUM 24" HORIZONTAL SEPARATION BETWEEN OUTLET BOXES PER CBC.
9. FIRE STOPPING SHALL BE PROVIDED WHERE PENETRATING ITEMS PASS ENTIRELY THROUGH BOTH PENETRATIVE MEMBRANES OF BEARING WALLS REQUIRED TO HAVE A FIRE-RESISTIVE RATING AND WALLS REQUIRING PROTECTED OPENINGS. FIRE STOPPING SHALL ALSO BE PROVIDED AT PENETRATIONS OF FIRE RESISTIVE FLOORS AND FLOORS WHICH ARE PART OF A CEILING-FLOOR ASSEMBLY. FIRE-STOPPING SHALL HAVE AN "F" AND/OR "T" RATING AS DETERMINED BY TESTS CONDUCTED IN ACCORDANCE WITH CBC STD. 43-6.
10. JUNCTION BOXES, CABINETS, EQUIPMENT ENCLOSURES, SWITCHES, PANELS, ETC. INSTALLED OUTDOORS, OR IN WET OR DAMP LOCATIONS, SHALL BE RATED NEMA-3R FOR OUTDOOR ENVIRONMENTS. PROVIDE MINIMUM 1/4" AIR GAP BETWEEN ENCLOSURE AND WALL SURFACE. PROVIDE GALVANIZED METAL CHANNELS FOR MOUNTING ENCLOSURE ONTO WALL AS REQUIRED.
11. ALL BOXES FOR LIGHT SWITCHES SHALL HAVE CIRCUIT ID HANDWRITTEN (WITH PERMANENT FELT PEN) ON THE BACK INSIDE OF THE BOX.
12. ALL RECEPTACLES SHALL HAVE CIRCUIT ID ON THE COVERPLATE. USE TYPEWRITTEN "CLEAR TAPE". CLEAN SURFACE BEFORE ADHESIVE TAPE IS APPLIED. SAMPLE, "HA-11".
13. ALL WIRING SHALL BE IN CONDUIT, ALL CIRCUITS SHALL BE CONCEALED EXCEPT THAT ON EXISTING SURFACE AND IN DRY LOCATIONS WHERE NECESSARY AND ACCEPTABLE TO THE ARCHITECT, SURFACE METAL RACEWAY (SMR) CAN BE USED, WIREMOLD OR EQUAL. 1/2" CONDUIT WITH LESS THAN 3#12 WIRES SHALL CORRESPOND TO A V200 RACEWAY, OTHERWISE USE V500; 3/4" CONDUIT SHALL CORRESPOND TO A V700; 1" CONDUIT SHALL CORRESPOND TO A V2000; 1-1/4" CONDUIT SHALL CORRESPOND TO A V4400SC. SMR SHALL BE IVORY COLOR AND SHALL BE SECURED TO SURFACES WITH 2 HOLE STRAPS. PROVIDE ALL FITTINGS, ADAPTERS, COUPLINGS, BOXES, ETC. AS REQUIRED FOR A COMPLETE SYSTEM. PROVIDE MATCHING SURFACE OUTLET BOX. PAINT TO MATCH ADJACENT FINISH.
14. DEVICE AND EQUIPMENT HEIGHTS SHALL BE COORDINATED WITH ARCHITECTURAL PLANS AND ELEVATIONS. CONFLICTS SHALL BE ADDRESSED TO THE ARCHITECT PRIOR TO ROUGH-IN.
15. COORDINATE EXACT LOCATION OF EXTERIOR WALL LIGHT FIXTURES, SPEAKERS, ETC. WITH ARCHITECTURAL ELEVATIONS.
16. ELECTRICAL CIRCUITS TO AC UNITS SHALL COME UP INSIDE OF AC CURBS, UNLESS THE AC UNIT DOES NOT ALLOW THIS.
17. IN CERTAIN ROOMS, CIRCUITING AND DEVICES/EQUIPMENT IN ONE ROOM ARE INDICATED TO BE SIMILAR TO ANOTHER ROOMS. PROVIDE ALL SUCH CONDUIT, WIRING DEVICES, AND EQUIPMENT TO BE THE SAME AS THE OTHER ROOM INDICATED. MAKE NECESSARY MINOR ADJUSTMENTS FOR SIMILAR ROOMS THAT ARE OPPOSITE HAND, FLIP-FLOPPED, MIRRORED, OR MINOR WALL DIFFERENCES. THE FOLLOWING ITEMS ARE NOT INCLUDED IN THIS SIMILAR LAYOUT AND ARE SPECIFIC TO EACH ROOM, UNLESS SPECIFICALLY NOTED OTHERWISE.
    A. AIR CONDITIONING AND MECHANICAL EQUIPMENT CONNECTIONS.
    B. EQUIPMENT THAT IS N.I.E.S. BUT REQUIRE ELECTRICAL CONNECTIONS.
    C. LAYOUT OF THE CABLE SUPPORT SYSTEM (CABLE HOOKS OR CABLE TRAY.).
18. NOT USED
19. FOR CONDUITS ROUTED BELOW FOOTING AT ELECTRICAL ROOMS, COORDINATE WITH STRUCTURAL DRAWINGS.

ELECTRICAL SYMBOLS LIST

- L.E.D. LIGHTING FIXTURE - WALL MOUNTED.
- FLEXIBLE CONDUIT.
- CONDUIT CONCEALED IN CEILING OR WALL.
- HOMERUN TO RESPECTIVE PANEL OR TERMINAL.
- INDICATES #12 (GREEN) GROUND WIRE; OTHER SIZES AS INDICATED.
- EXISTING CONDUIT RUN TO REMAIN "AS-IS".
- EXISTING CONDUIT RUN TO BE REMOVED OR ABANDONED.
- NOTE: BRANCH CIRCUIT WITHOUT FURTHER DESIGNATION IS A 2#12 WIRE CIRCUIT. FOR MORE THAN 2#12 WIRES AS FOLLOWS: —#— 3#12, —#— 4#12, ETC. FOR OTHER SIZES AS FOLLOWS: —#— 3#10, —#— 4#6, ETC. (10 / 6)
- S^T THERMAL OVERLOAD SWITCH.
- FUSED DISCONNECT SWITCH, SIZE AND TYPE AS REQUIRED. PROVIDE FUSES AS RECOMMENDED BY EQUIPMENT MANUFACTURER.
- (1) NUMBER CONSTRUCTION NOTES SPECIFIC TO THE SHEET.
- PANELBOARD - SEE PANEL SCHEDULE ON SHEET E1.1.
- $\$_R$ ROOF MOUNTED RECEPTACLE, WEATHERPROOF 15 AMP, DUPLEX G.F.I. RECEPTACLE.
- EQUIPMENT IDENTIFICATION TAG. (N.I.E.S.) CONNECT AS REQUIRED, INCLUDING INSTALLATION AND CONNECTION OF REMOTE STARTERS.
  - AC = AIR CONDITIONING UNIT
  - ACCU = AIR COOLED CONDENSING UNIT
  - CP = CONDENSATE PUMP
  - F = FURNACE
  - PE = .
- CONTROL DEVICE N.I.E.S. CONNECT AS REQUIRED.
- K KEYED ALARM TEST SWITCH.
- D DUCT SMOKE DETECTOR.
- CM CONTROL MODULE.
- FSD FIRE/SMOKE DAMPER, N.I.E.S.
- EXISTING LIGHT FIXTURE TO BE REMOVED.
- EXISTING DISCONNECT SWITCH TO BE REMOVED.
- EXISTING EQUIPMENT TO BE DISCONNECTED. REMOVE OUTLET BOX, CONDUIT AND WIRES.
  - CC = CONDENSING UNIT
  - SF = SUPPLY FAN
- (E) EXISTING LIGHTING FIXTURE.
- (E) EXISTING PANELBOARD.
- (E) T EXISTING TRANSFORMER.
- (E) FACP EXISTING FIRE ALARM CONTROL PANEL.
- FACP ABBREVIATION FOR FIRE ALARM CONTROL PANEL.
- (E) ABBREVIATION FOR EXISTING.
- R ABBREVIATION FOR ROOF.
- WP ABBREVIATION FOR WEATHERPROOF.

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DIVISION OF THE STATE ARCHITECT

APP NO. 02 - 116869
FILE NO. 39-H7

AC TM FLS V2 SS 65

DATE 02 - 13 - 2019

GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL

1621 BROOKSIDE RD.,
STOCKTON, CA 95207

STOCKTON UNIFIED SCHOOL DISTRICT

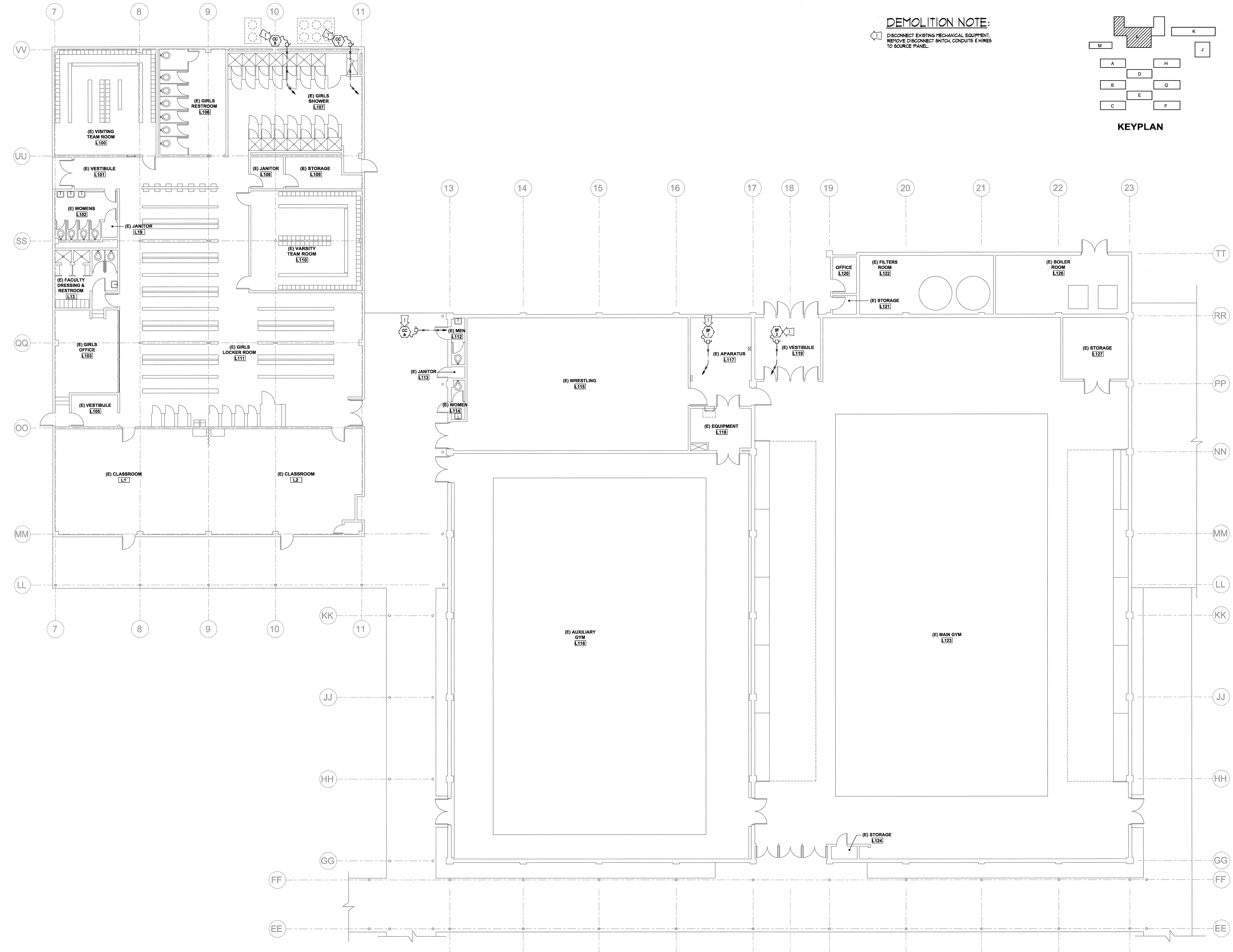
PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

ELECTRICAL SYMBOLS LIST, AND NOTES

E0.1

Plot Date: 02-11-19



DEMOLITION NOTE:

1. DISCONNECT EXISTING MECHANICAL EQUIPMENT, REMOVE DISCONNECT SWITCH, CONDUITS & WIRES TO SOURCE PANEL.

A / E1.1 DEMOLITION FLOOR PLAN
SCALE: 1/8" = 1'-0"

Plot Date: 02-11-19

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GYM HVAC REPLACEMENT

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1621 BROOKSIDE RD.,
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STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

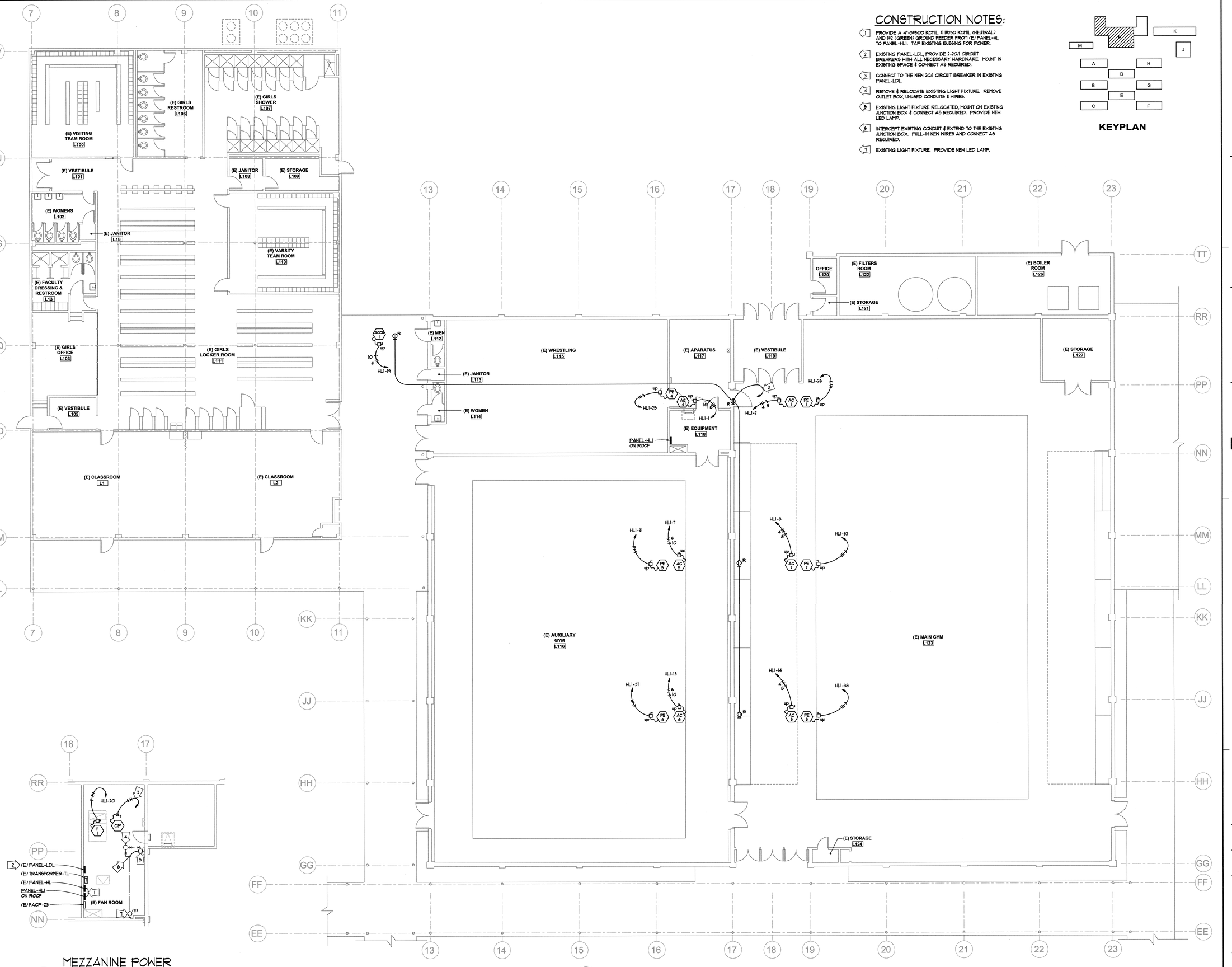
DEMOLITION FLOOR PLAN

E1.1

CONSTRUCTION NOTES:

1. PROVIDE A 4"-3#500 KCMIL & 1#250 KCMIL (NEUTRAL) AND 1#2 (GREEN) GROUND FEEDER FROM (E) PANEL-HL TO PANEL-HLI. TAP EXISTING BUSSING FOR POWER.
2. EXISTING PANEL-LDL, PROVIDE 2-20/1 CIRCUIT BREAKERS WITH ALL NECESSARY HARDWARE. MOUNT IN EXISTING SPACE & CONNECT AS REQUIRED.
3. CONNECT TO THE NEW 20/1 CIRCUIT BREAKER IN EXISTING PANEL-LDL.
4. REMOVE & RELOCATE EXISTING LIGHT FIXTURE. REMOVE OUTLET BOX, UNUSED CONDUITS & WIRES.
5. EXISTING LIGHT FIXTURE RELOCATED. MOUNT ON EXISTING JUNCTION BOX & CONNECT AS REQUIRED. PROVIDE NEW LED LAMP.
6. INTERCEPT EXISTING CONDUIT & EXTEND TO THE EXISTING JUNCTION BOX. PULL-IN NEW WIRES AND CONNECT AS REQUIRED.
7. EXISTING LIGHT FIXTURE. PROVIDE NEW LED LAMP.

KEYPLAN



MEZZANINE POWER FLOOR PLAN

B / E2.1

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

ELECTRICAL FLOOR PLAN

A / E2.1

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

Plot Date: 02-11-19

CA+SA studio

3701 Business Drive Suite 200
Sacramento, CA 95820
Phone: (916) 365-9655

REGISTERED ARCHITECT KYLE DAVIS GRUBB No. C-31822 Exp. 11/30/19 STATE OF CALIFORNIA

HARRY A. YEE & ASSOCIATES, INC.
ELECTRICAL ENGINEERS
4920 FREEPORT BLVD., SUITE D
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TEL: 916.454.5319
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HYA Job #1815

REGISTERED PROFESSIONAL ENGINEER DAVID A. YU No. E14892 Exp. 6/30/19 ELECTRICAL STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

APP NO. 02 - 116869
FILE NO. 39-H7

AC TM FLS VB SS SY

DATE 02 - 13 - 2019

GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL

1621 BROOKSIDE RD.,
STOCKTON, CA 95207

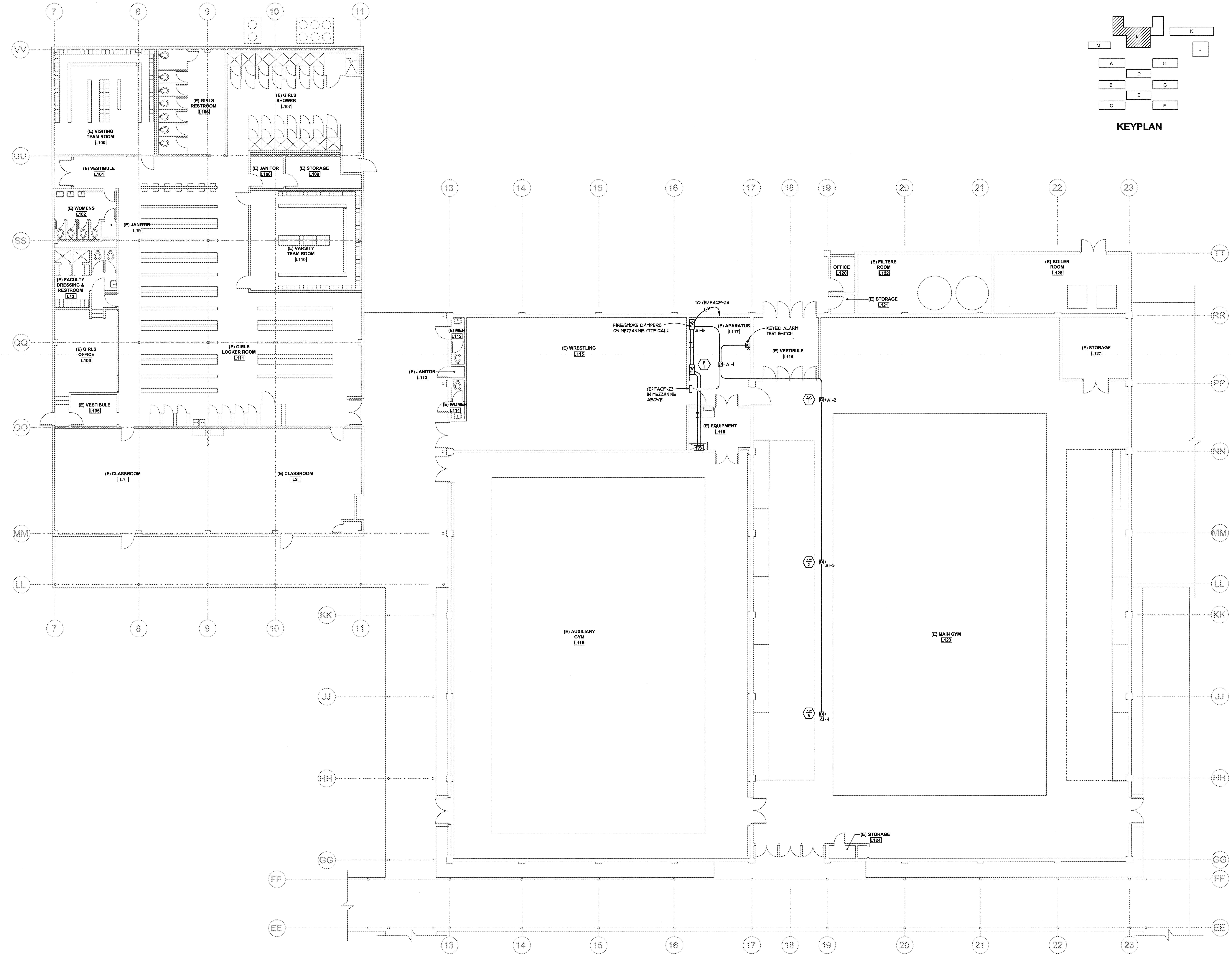
STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

ELECTRICAL FLOOR PLAN

E2.1



A
E3.1
FIRE ALARM FLOOR PLAN
SCALE: 1/8" = 1'-0"

Plot Date: 02-11-19

CA+SA studio

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DSA SUBMITTAL: 02/13/2019

FIRE ALARM FLOOR PLAN

E3.1

FIRE ALARM EQUIPMENT SCHEDULE

SYMBOL	EQUIPMENT / DEVICE	MANUFACTURER AND MODEL NUMBER	CSFM LISTING NO.	STANDBY AMPS	ALARM AMPS
(E) FACP-Z3	(E) FIRE ALARM CONTROL PANEL - (E) FACP-Z3	EDWARDS #EST-3	7165-1651:0186	(E)	(E)
D+	ADDRESSABLE DUCT SMOKE DETECTOR	EDWARDS #SIGA-SD W/ SD-TRK	3242-1651:0223	.000045 / .030	.000045 / 4.03
CR	FIRE ALARM CONTROL RELAY MODULE	EDWARDS #SIGA-CR	7300-1651:0121	.0001	.0001

FIRE ALARM WIRE SCHEDULE

DESIG.	DESCRIPTION	USE	SYSTEM	O.D. (inches)	AREA (sq. inches)
FI	1 PR/#16, FPL, NON PLENUM, UNSHIELDED, SOL, BLACK/RED	BLDG., INITIATING	FIRE ALARM	-	-

BATTERY CALCULATION WORKSHEET

EQUIPMENT / DEVICE	QUANTITY	DEVICE STANDBY CURRENT (AMPS)	TOTAL STANDBY CURRENT (AMPS)	DEVICE ALARM CURRENT (AMPS)	TOTAL ALARM CURRENT (AMP)
(E) FIRE ALARM CONTROL PANEL - (E) FACP-Z3	1	(E)	(E)	(E)	(E)
ADDRESSABLE DUCT SMOKE DETECTOR	4	.000045	.00018	.000045	.00018
KEYED ALARM TEST	1	.030	.030	4.03	4.03
CONTROL MODULE	1	.0001	.0001	.0001	.0001
		TOTALS:	.0303 AMPS		4.03 AMPS

NOTES:

BATTERY CALCULATIONS FOR 24 HOURS (STANDBY) PLUS 15 MINUTES (ALARM).

(TOTAL STANDBY CURRENT) (24 HRS) + (TOTAL ALARM CURRENT) $(\frac{15}{60}$-h) x (25%) = MIN. BATTERY AMP HRS. REQ'D.

(.0303) (24 HRS) + (4.03) $(\frac{15}{60}$-h) x (25%) = 2.72 AMP HOUR (MINIMUM BATTERY)

(E) BATTERY PROVIDED = 7.0 Ahr.

ADDED LOAD = 2.72

(N) BATTERY PROVIDED = 12.0 Ahr.

	FIRE ALARM CONTROL PNL			REMOTE ANNUNCIATOR			SUPERVISORY STATION			NOTIFICATION		FIRE SAFETY FUNCTION	
	ACTUATE V/B/A COMMON ALARM SIGNAL	ACTUATE V/B/A COMMON SUPERVISORY ALARM SIGNAL	ACTUATE V/B/A COMMON TROUBLE SIGNAL	ACTUATE V/B/A COMMON ALARM SIGNAL	ACTUATE V/B/A COMMON SUPERVISORY ALARM SIGNAL	ACTUATE V/B/A COMMON TROUBLE SIGNAL	TRANSMIT GENERAL ALARM SIGNAL	TRANSMIT SUPERVISORY ALARM SIGNAL	TRANSMIT TROUBLE SIGNAL	ACTUATE ALARM V/B/A NOTIFICATION APPLIANCES	ACTUATE ALARM AUDIBLE NOTIFICATION APPLIANCES	SHUTDOWN ASSOCIATED FANS	
MANUAL PULL STATION	●			●			●			●	●		
SMOKE DETECTOR	●			●			●			●	●	●	
HEAT DETECTOR	●			●			●			●	●	●	
DUCT SMOKE DETECTOR ASSOCIATED WITH FAN	●			●				●		●	●	●	
AC POWER LOSS			●			●			●				
SINGLE OPEN			●			●			●				
SINGLE GROUND			●			●			●				
WIRE-TO-WIRE SHORT (SLC)			●			●			●				
WIRE-TO-WIRE SHORT (NAC)			●			●			●				

FIRE ALARM SEQUENCE OF OPERATION MATRIX

NOTES:

1. WALL MOUNTED DEVICES SHALL BE 'RED'.
2. CEILING MOUNTED DEVICES SHALL BE 'WHITE'.

GENERAL FIRE ALARM SYSTEM NOTES:

1. THE FIRE ALARM SYSTEM SHALL COMPLY WITH A TOTAL COVERAGE FULLY AUTOMATIC SYSTEM. DETECTORS SHALL BE INSTALLED IN ALL AREAS WHERE REQUIRED BY THE APPROPRIATE NFPA STANDARD OR THE AUTHORITY HAVING JURISDICTION. EACH INSTALLED DETECTOR SHALL BE ACCESSIBLE FOR PERIODIC MAINTENANCE AND TESTING. PROVIDE ACCESS DOORS AS REQUIRED. TOTAL COVERAGE SHALL INCLUDE ALL ROOMS, STORAGE AREAS, ATTICS, SPACES ABOVE SUSPENDED CEILINGS AND OTHER SUBDIVISIONS AND ACCESSIBLE SPACES. INACCESSIBLE AREAS SHALL NOT BE REQUIRED TO BE PROTECTED BY DETECTORS UNLESS THEY CONTAIN COMBUSTIBLE MATERIAL, IN WHICH CASE THEY SHALL BE MADE ACCESSIBLE AND BE PROTECTED BY DETECTOR(S).
2. THE FIRE ALARM SYSTEM IS AN ADDRESSABLE SYSTEM.
3. THE AUTOMATIC FIRE ALARM SYSTEM SHALL COMPLY WITH SENATE BILL NO. 575 (SB575) & CBC 907.2.3 FOR NEW CONSTRUCTION PROJECTS.
4. THE FIRE ALARM SYSTEM IS A COMPLETE PLAN SUBMITTAL.
5. THE FIRE ALARM SYSTEM SHALL CONFORM TO THE CALIFORNIA BUILDING CODE (CBC) SECTION 907; THE CALIFORNIA ELECTRICAL CODE (CEC) ARTICLE 760 AND THE CALIFORNIA FIRE CODE (CFC) SECTION 907.

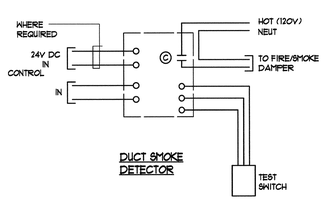
   UPON COMPLETION OF THE INSTALLATION OF THE FIRE ALARM SYSTEM, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE DIVISION OF THE STATE ARCHITECT (DSA) INSPECTOR OF RECORD.
6. PROVIDE COMPLETE SYSTEM WIRING. ALL WIRING SHALL BE IN MINIMUM 3/4" CONDUIT. NO OTHER SYSTEMS WIRING SHALL BE ROUTED IN THE FIRE ALARM CIRCUITS. HARDWIRED INITIATING CIRCUITS SHALL BE MINIMUM #14 THHN/THWN. SYSTEMS WIRING SHALL BE PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND THEIR REQUIREMENTS. ALL CONDUIT SHALL BE INSTALLED WITH COMPRESSION FITTINGS FOR COUPLERS AND BOX CONNECTORS.
7. WIRING AND MATERIALS PER CEC 760.
8. THE LOCATION OF AUTOMATIC DETECTORS, MANUAL STATIONS AND OTHER FIRE ALARM EQUIPMENT AND DEVICES, AS SHOWN ON PLAN, ARE FOR REFERENCE ONLY AND DO NOT CONSTITUTE SHOP DRAWINGS WHICH ARE REQUIRED FOR REVIEW AND APPROVAL.
9. BEFORE REQUESTING FINAL APPROVAL OF THE INSTALLATION THE INSTALLING CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT TO THE PROJECT INSPECTOR TO THE EFFECT THAT THE SYSTEM HAS BEEN INSTALLED AND TESTED IN ACCORDANCE WITH THE (2016) NFPA 72 SECTION 14.4.
10. A FIRE ALARM ACCEPTANCE TEST OF ALL DEVICES AND APPLIANCES, INCLUDING THE BACKUP BATTERY(IES), SHALL BE PERFORMED. ALL MANUFACTURER OPERATING RANGES SHALL BE MET, TESTING OF THE SUPERVISING STATION SIGNALS, AS WELL AS RELAY TO THE APPROPRIATE RESPONDING AGENCY, SHALL BE INCLUDED IN THE ACCEPTANT TESTING. THE PROJECT INSPECTOR SHALL WITNESS THE ACCEPTANCE INSPECTION AND SHALL SIGN AS THE AUTHORITY HAVING JURISDICTION REPRESENTATIVE ON THE "SYSTEM RECORD OF COMPLETION" (NFPS 72, SECTION 7.5.6.). AND THE "SYSTEM RECORD OF INSPECTION AND TESTING" (NFPA 72, SECTION 7.6.6.) SEE NFPA 72, FIGURE 7.8.2(a) & (g). ALL SUPPLEMENTARY RECORDS SHALL BE ATTACHED AS APPLICABLE. THE PROJECT INSPECTOR SHALL VERIFY THAT THE FIRE ALARM SYSTEM IS IN SERVICE PRIOR TO COMPLETION OF THE "SYSTEM RECORD OF COMPLETION" FORM. ALL ORIGINAL DOCUMENTATION SHALL BE RETAINED IN THE REQUIRED DOCUMENTATION CABINET.
11. AUTOMATIC FIRE ALARM SYSTEMS SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72 AND CBC 907.6.5.3. THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUFX OR UUIS BY UL OR SHALL MEET THE REQUIREMENTS OF FM STANDARD 8013.

FIRE ALARM SYSTEM PROJECT NOTES:

1. APPLICABLE STANDARD NFPA 72, AS ADOPTED AND AMENDED IN CBC CHAPTER 35.
2. INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION, INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM, HAS BEEN APPROVED BY DSA.
3. UPON COMPLETION OF SYSTEM INSTALLATION, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF A DSA INSPECTOR.
4. A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.
5. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENSION OF DSA AND THE ARCHITECT/ENGINEER OF THE PROJECT.
6. DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND/OR TESTING.
7. ALL PENETRATIONS THROUGH RATED ASSEMBLIES REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER APPROVED LAB TESTING CRITERIA. APPROVED TYPES OF MATERIALS SHALL BE IDENTIFIED WITHIN THE PROJECT SPECIFICATIONS WITHIN THE FIRE ALARM SECTION.
8. ~~WALL MOUNTED VISIBLE NOTIFICATION DEVICES SHALL HAVE THEIR BOTTOMS MOUNTED AT 80" MINIMUM AND 96" MAXIMUM FROM FINISHED FLOOR.~~
9. ~~WALL MOUNTED AUDIBLE NOTIFICATION DEVICES SHALL HAVE THEIR TOPS MOUNTED AT 90" MINIMUM AND 120" MAXIMUM FROM FINISHED FLOOR AND NO CLOSER THEN 6" TO A HORIZONTAL STRUCTURE.~~
10. ~~AUDIBLE DEVICES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15 DECIBELS (dBA) ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR FIVE dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER, IN EVERY OCCUPIABLE SPACE WITHIN THE BUILDING.~~
11. ~~AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN.~~
12. ~~THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.~~
13. ~~VISIBLE DEVICES SHOULD NOT EXCEED TWO FLASHES PER SECOND AND SHOULD NOT BE CLOSER THAN ONE FLASH EVERY SECOND. THE DEVICE SHALL HAVE A FILTERED LIGHT SOURCE NOT LESS THAN 15 CANDELLA. VISIBLE DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.~~
14. UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATER TIGHT FITTINGS AND WIRE TO BE APPROVED FOR WET LOCATIONS.
15. ALL FIRE ALARM WIRING SHALL BE FPLOR FPLP (FIRE POWER LIMITED OR FIRE POWER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE TYPE THHN OR THWN.
16. PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. ALL BOXES TO BE SIZED PER CEC.
17. ~~SMOKE DETECTORS SHALL NOT BE ANY CLOSER THAN 1' FROM FIRE SPRINKLERS OR 3' FROM ANY SUPPLY DIFFUSER. IN AREA OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION OF NEWLY INSTALLED FIRE ALARM, DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.~~
18. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.
19. ~~FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED 20 LBS WITHOUT SPECIAL MOUNTING DETAILS.~~
20. ~~A DEDICATED 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. THE CIRCUIT BREAKER SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL." CIRCUIT ID TO BE LABELED AT FIRE PANEL EXTERIOR.~~
21. THE INSTALLING CONTRACTOR SHALL PROVIDE A COMPLETED "SYSTEM RECORD OF COMPLETION" PER NFPA 72, FIGURE 7.8.2.
22. ~~FIRE ALARM CONTROL PANELS AND REMOTE ANNUNCIATORS SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48" ABOVE THE FINISHED FLOOR.~~
23. ~~MICROPHONES ASSOCIATED WITH EMERGENCY VOICE ALARM COMMUNICATION SYSTEMS (EVACS) SHALL BE ACCESSIBLE FOR USE, INSTALLED IN COMPLIANCE WITH CBC SECTIONS 11B-305 AND 11B-308.~~
24. THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 907.6.2.
25. ~~SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.~~
26. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS.

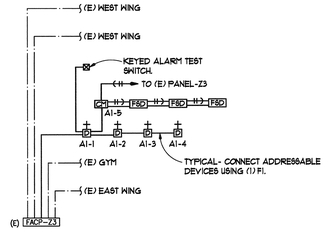
FIRE ALARM SYSTEM DESCRIPTION

THE SYSTEM IS POWER LIMITED, AUTOMATIC, MANUAL, LOCAL, AUXILIARY, REMOTE STATION (PROTECTED PREMISES), PROPRIETARY (PROTECTED PREMISES), WATERFLOW, AND SPRINKLER SUPERVISORY SERVICE. SUITABLE FOR RELEASING DEVICE SERVICE. REFER TO LISTEE'S DATA SHEET FOR DETAILED PRODUCT DESCRIPTION AND OPERATIONAL CONSIDERATIONS.



B / E5.1 TYPICAL- FIRE ALARM DEVICES WIRING DIAGRAM

NO SCALE



A / E5.1 FIRE ALARM RISER DIAGRAM

NO SCALE

CA+SA studio

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REGISTERED ARCHITECT DAVIS GUBB No. C-18022 REN. 11/30/20 STATE OF CALIFORNIA

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HYA Job #1815

REGISTERED PROFESSIONAL ENGINEER DAVID K. YI No. E18672 Exp. 6/30/19 ELECTRICAL STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APP NO. 02 - 116869
FILE NO. 39-H7
AC TM FLS VS SS SJ
DATE 02 - 13 - 2019

GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL

1621 BROOKSIDE RD.,
STOCKTON, CA 95207

STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

FIRE ALARM SCHEDULES, DIAGRAMS, NOTES & CALCULATION

E5.1

Plot Date: 02-11-19

PANEL-HL1

GND | NEUT

MINIMUM AIC: .
TYPE: NF-42-4L-400
MOUNTING: ☐ FLUSH ☒ SURFACE ☐ FREESTANDING
MISC: .

VOLTAGE: ☐ 120/208 ☒ 480/277 ☐ 120/240
PHASE: ☐ 1-PHASE ☒ 3-PHASE
BUSS AMPS: 400 ☒ CU ☐ AL
MAIN AMPS: 400 ☐ MLO ☒ BKR
FED FROM: PANEL-HL

KVA	USE	BKR	No.	Phase	No.	BKR	USE	KVA
26	AC-4	50/3	1	A	2	70/3	AC-1	38
			3	B	4			
			5	C	6			
26	AC-5		7	A	8		AC-2	38
			9	B	10			
			11	C	12			
26	AC-6		13	A	14		AC-3	38
			15	B	16			
			17	C	18			
10	ACCU-1		19	A	20	15/3	F-1	6.7
			21	B	22			
			23	C	24			
7.1	PE-4	20/3	25	A	26	20/3	PE-1	7.1
			27	B	28			
			29	C	30			
7.1	PE-5		31	A	32		PE-2	7.1
			33	B	34			
			35	C	36			
7.1	PE-6		37	A	38		PE-3	7.1
			39	B	40			
			41	C	42			

LOAD KVA: .

AIR CONDITIONING UNIT SCHEDULE

DESIG.	UNIT TYPE	VOLT/ϕ	SUPPLY FAN		COMPRESSOR			COND. FAN		COMB. FAN (FLA)	ECONOMIZER			MCA	MOCP
			BHP	FLA	QTY	RLA	LRA	QTY	FLA		DESIG.	HP	FLA		
AC 1	AIR CONDITIONING UNIT	480/3	4.38	8.6	2	18.6 / 17.9	125 / 125	-	-	0.3 EA.	PE-1	4.0	8.6	57.4	70
AC 2			4.38	8.6	2			-	-	0.3 EA.	PE-2	4.0	8.6		
AC 3			4.38	8.6	2			-	-	0.3 EA.	PE-3	4.0	8.6		
AC 4			2.72	4.9	2	12.8	100	-	-	0.3 EA.	PE-4	4.0	8.6	38.6	50
AC 5			2.72	4.9	2			-	-	0.3 EA.	PE-5	4.0	8.6		
AC 6			2.72	4.9	2			-	-	0.3 EA.	PE-6	4.0	8.6		

FURNACE SCHEDULE

DESIG.	UNIT TYPE	VOLT/ϕ	FAN HP	FLA	MCA	MOCP
F 1	FURNACE UNIT	480/3	5	7.4	9.0	15

CONDENSING UNIT SCHEDULE

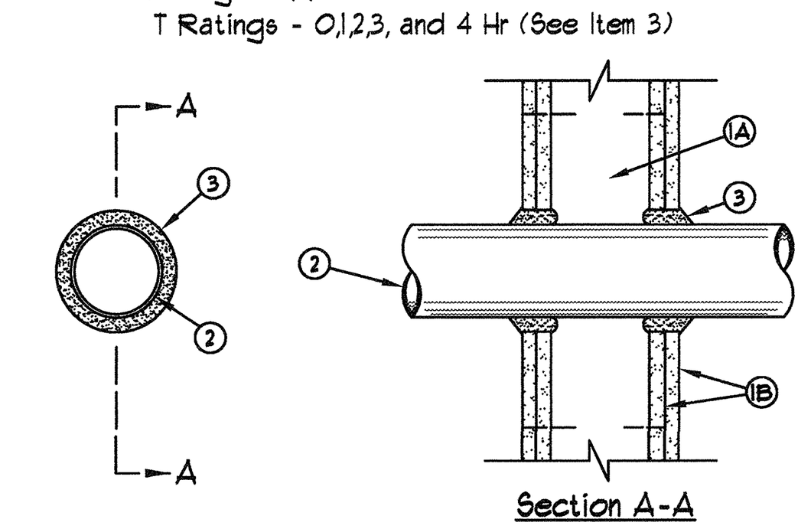
DESIG.	UNIT TYPE	VOLT/ϕ	COMPRESSOR			COND. FAN		MCA	MOCP
			QTY	RLA	LRA	QTY	FLA		
ACCU 1	CONDENSING UNIT	480/3	1	10	62	2	2.0	37.3	50

MISC. SCHEDULE

DESIG.	UNIT TYPE	VOLT/ϕ	HP	KW
CP	CONDENSATE PUMP	120/1	1/30	-

System No. W-L-1001

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)



Section A-A

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 h 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 sheet orientation shall be as specified in the individual U300 or U400 Series design in the UL fire resistance directory. Max diam of opening is 26 in. (660 mm).
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 periphery 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. Conduit - Nom 6 in. (152 mm) diam (or smaller) steel conduit or nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing
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:

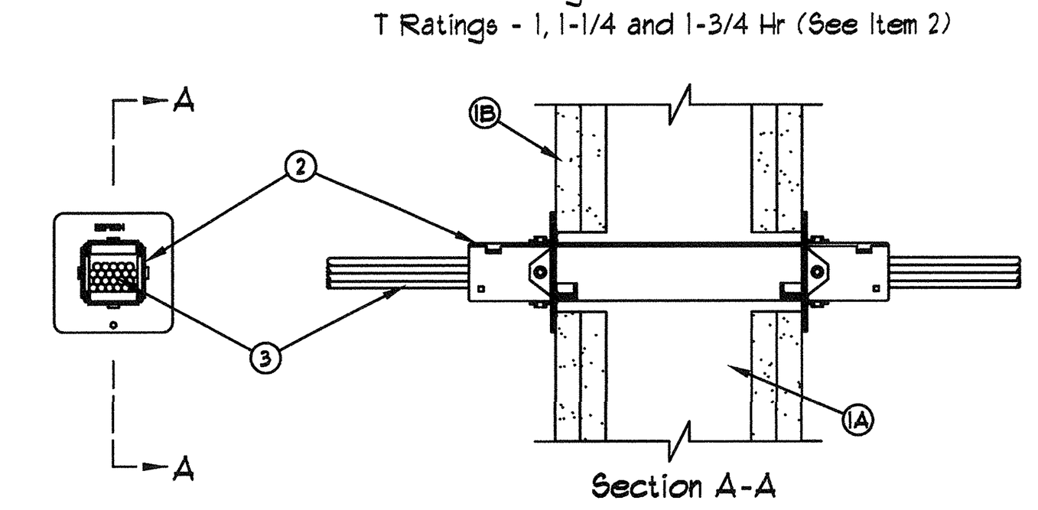
Max Pipe or conduit Diam in (mm)	F Rating hr	F Rating hr
1 (25)	1 or 2	0+, 1 or 2
1 (25)	3 or 4	3 or 4
4 (102)	1 or 2	0
6 (152)	3 or 4	0

3M Company - CP 25WB + or FB-3000 WT.
* Bearing the UL Classification Mark.

UL No. W-L-1001
FIRE RATED WALL
THROUGH PENETRATION DETAIL
B / E7.1
NO SCALE

System No. W-L-3255

F Ratings - 1 and 2 Hr (See Item 1)
T Ratings - 1, 1-1/4 and 1-3/4 Hr (See Item 2)



Section A-A

1. Wall Assembly - The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
   A. Studs - Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
   B. Gypsum Board* - Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Opening in gypsum board to be max 2 in. (51 mm) diam or 1/4 in. (6 mm) larger then width and height dimensions of firestop device(s).
   The hourly F Rating of the firestop system is dependent upon the hourly rating of the wall in which it is installed.
2. Firestop Device* - One firestop device module consisting of a 1.4 by 1.4 by 10-1/2 in. (36 by 36 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in accordance with the accompanying installation instructions. The space between the firestop device module and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/8 in. (3.2 mm). Firestop device module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steelwall plates installed on both sides of wall and secured to each device by means of steel set screws provided with device. The firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly.
   SPECIFIED TECHNOLOGIES INC - EZ PATH Mini
3. Cables - Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
   A. Max four pair No. 22 AWG (or smaller) copper conductor data cable with polyvinyl chloride (PVC) or plenum rated jacketing and insulation.
   C. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   D. Fiber optic cable with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 1/4 in. (6 mm).
   When the hourly rating of the wall assembly is 1 hr, the T Rating is 1 hr. When the hourly fire rating of the wall assembly is 2 hr, the T Rating is 1-1/4 hr when cables are installed and 1-3/4 hr when no cables are installed.

*Bearing the UL Classification Mark

Specified Technologies Inc.

UL W-L-3255

UL No. W-L-3255
SLEEVE THROUGH 1 OR 2 HOUR
FIRE RATED WALL PENETRATION DETAIL
A / E7.1
NO SCALE

CA+SA studio
3701 Business Drive Suite 200
Sacramento, CA 95820
Phone: (916) 365-9655

LICENSED ARCHITECT
No. C19022
EXP. 11/30/19
STATE OF CALIFORNIA

HARRY A. YEE & ASSOCIATES, INC.
ELECTRICAL ENGINEERS
4920 FREEPORT BLVD., SUITE D
SACRAMENTO, CALIFORNIA 95822
TEL: 916.454.5319
FAX: 916.454.4117
HYA Job #1815

REGISTERED PROFESSIONAL ENGINEER
DAVID K. YU
No. E14987
Exp. 6/30/19
ELECTRICAL
STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APP NO. 02 - 116869
FILE NO. 39-H7
AC TM FLS VB SS SS
DATE 02 - 13 - 2019

GYM HVAC REPLACEMENT

AMOS ALONZO STAGG HIGH SCHOOL
1621 BROOKSIDE RD.,
STOCKTON, CA 95207

STOCKTON UNIFIED SCHOOL DISTRICT

PROJECT NUMBER: 2017-015.00

DSA SUBMITTAL: 02/13/2019

ELECTRICAL SCHEDULES

E7.1

Plot Date: 02-11-19