

FREEDOM HIGH SCHOOL NEW MAINTANENCE FACILITIES

1050 Neroly Rd, Oakley, CA 94561
LIBERTY UNION HIGH SCHOOL DISTRICT

DSA FILE NO: 7-H4

DSA APPLICATION NO: 01-117846

PTN: 61721-0069

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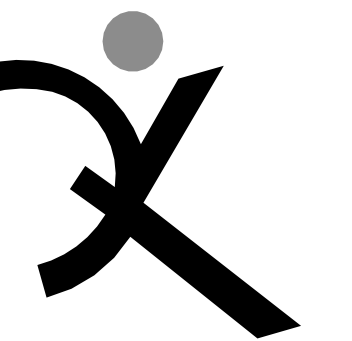
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MAINTANENCE
FACILITIES

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LIBERTY UNION HIGH
SCHOOL DISTRICT

ARCH PROJECT NO: 1739.02
DRAWN BY: SGV
DRAWING SCALE: N.T.S.
PTN: 61721-0069

BID SET

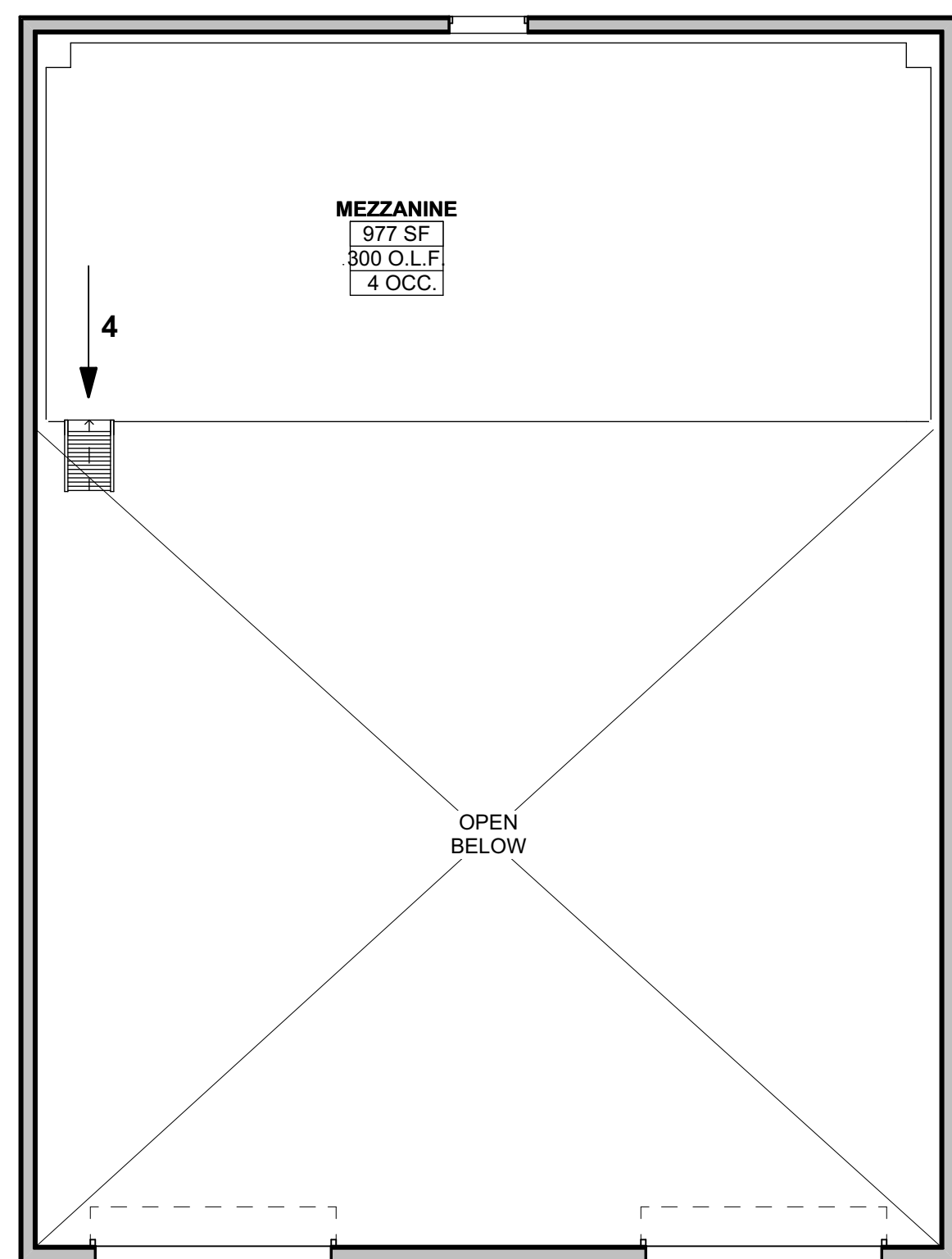
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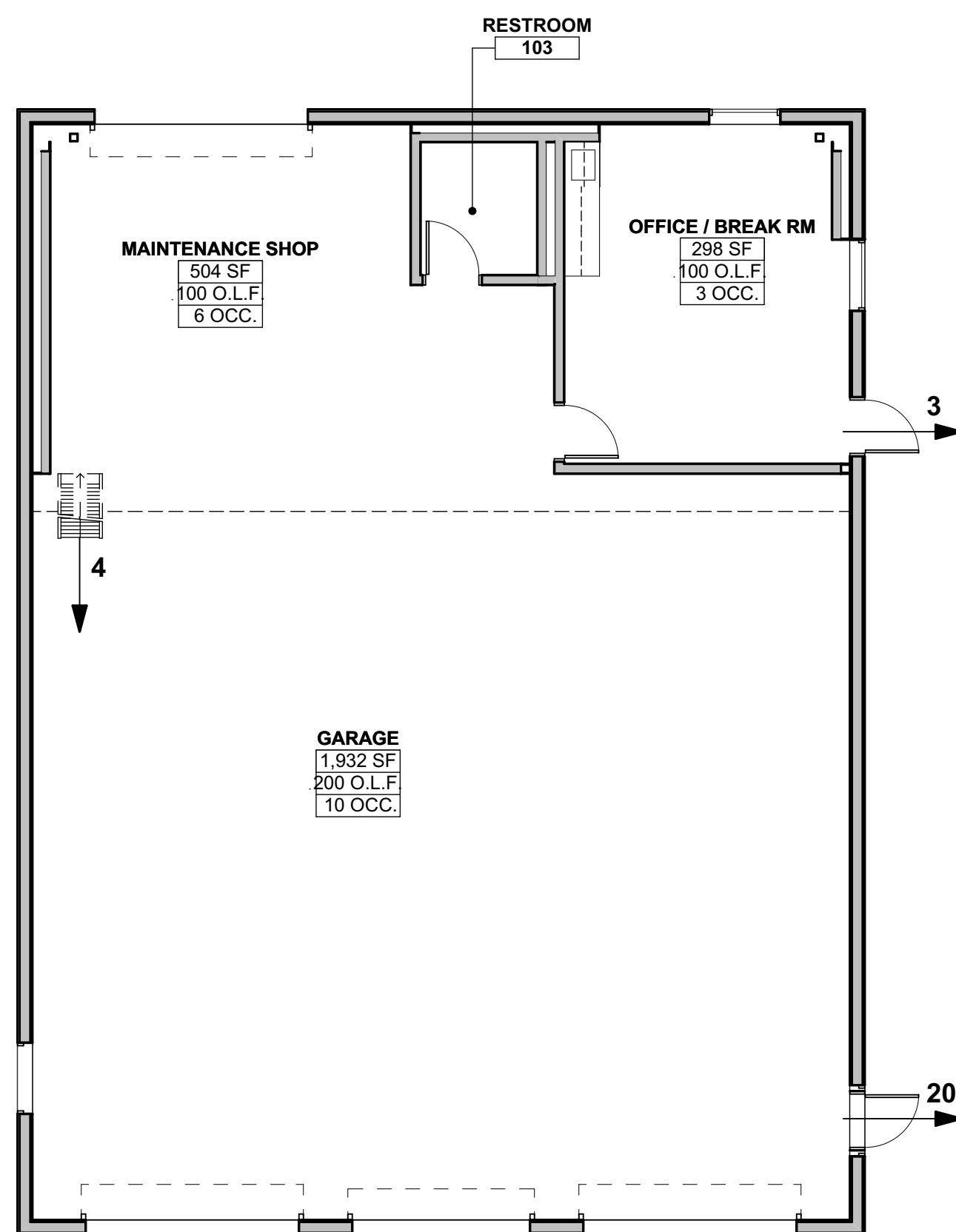
COVER SHEET

SHEET NUMBER

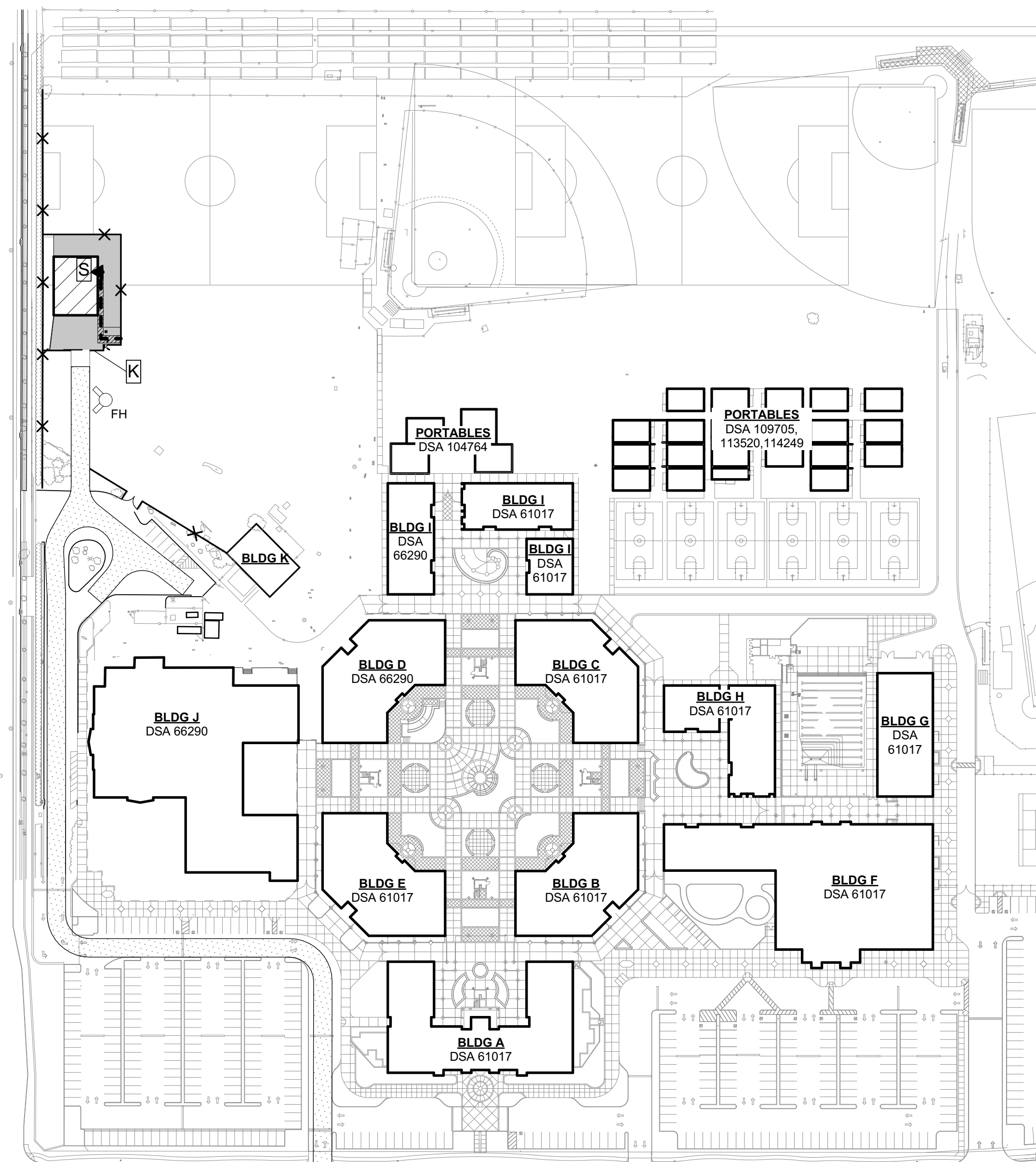
G-0.1



MEZZANINE CODE ANALYSIS 3
 1/8" = 1'-0"



FIRST FLOOR CODE ANALYSIS 2
 1/8" = 1'-0"



CAMPUS PLAN 1
 1" = 100'

BUILDING CODE ANALYSIS						
BUILDING	OCCUPANCY	TYPE OF CONSTRUCTION	BASIC ALLOWABLE AREA (square feet) **	ACTUAL AREA (square feet)	MAX. STORIES & HEIGHT **	ACTUAL STORIES & HEIGHT
SHOP, STORAGE & ENCLOSED PUBLIC PARKING GARAGE	B & S-1	V-B - SPRINKLED	36,000 SF	MAIN AREA 3,020 SF MEZZANINE 970 SF 1ST FLOOR TOTAL 3,990 SF	2 STORIES, 60'-0"	1 STORY, 23'-0"

* NO SEPERATION IS REQUIRED PER TABLE 508.4
 ** PER MORE RESTRICTIVE OCCUPANCY

GENERAL NOTES

- FOR BUILDING CODE ANALYSIS SEE G-0.3.
- ALL NEW WORK SHALL BE ACCESSIBLE. ALL NEW WALKWAYS SHALL CONFORM TO CBC 11338.7 PAVING MATERIALS NOT OTHERWISE NOTED SHALL BE CONCRETE PER DETAIL
 - CONCRETE SHALL SLOPE MIN. 1/8" PER FOOT AWAY FROM BUILDINGS, S.C.D.
 - EXTERIOR DOOR LANDINGS SHALL SLOPE 1/4" PER FOOT MAX. AWAY FROM BUILDING FOR DRAINAGE.
- REFER TO CIVIL ENGINEERING DWGS FOR SIDEWALK GRADES.
- REFER TO CIVIL ENGINEERING DRAWINGS FOR SITE FEATURES NOT OTHERWISE INDICATED.
- PARKING AND PEDESTRIAN SITE SIGNAGE SHALL COMPLY WITH CBC SECTIONS 11B-502.6 & 11B-703.7.2.1
- BUILDING SIGNAGE SHALL COMPLY WITH CBC 11B-703
- PEDESTRIAN GATES SHALL COMPLY WITH CBC 1008.2 & 11B-206.5

DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE STATEMENT:
 THE P.O.T. IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS IS COMPLIANT WITH THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT THE P.O.T. WAS EXAMINED AND ANY ELEMENT, COMPONENTS OR PORTIONS OF THE P.O.T. THAT WERE DETERMINED TO BE NONCOMPLIANT

- HAVE BEEN IDENTIFIED AND
- THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS.

ANY NONCOMPLIANT ELEMENT, COMPONENT, OR PORTION OF THE P.O.T. 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 P.O.T. 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 THE CBC AS A PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT.

THE BARRIER FREE PATH OF TRAVEL INDICATED HAS BEEN PROVIDED IN ACCORDANCE WITH IR 11B-10 AND SHALL COMPLY WITH THE FOLLOWING:

- 1:20 MAXIMUM SLOPE WITHOUT A RAMP
- 1:48 MAXIMUM CROSS SLOPE
- NO ABRUPT VERTICAL CHANGES EXCEEDING 1/4". CHANGES BETWEEN 1/4" TO 1/2" VERTICAL CAN BE AT 1:2 MAX SLOPE. CHANGES LESS THAN 1/4" CAN BE VERTICAL
- 48" MIN. CLEAR IN WIDTH (60" MIN PASSING SPACE)
- NON-SLIP SURFACE - HEAVY BROOM FINISH AT EXTERIOR CONCRETE PAVING WHERE SLOPED >6%, MEDIUM BROOM FINISH AT SLOPES <6%
- MAINTAIN FREE OF OVERHANGING OBSTRUCTIONS TO 80" MIN
- PROTRUDING OBJECTS NOT GREATER THAN 4" SHALL BE MOUNTED BETWEEN 27" AND 80" A.F.F.
- WHERE A DRAIN INLET IS IN THE PATH OF TRAVEL, THE GRATE SHALL BE ORIENTED SO THAT MAX OPENING IS 1/2" & LONG DIM IS PERPENDICULAR TO THE PREDOMINANT DIRECTION OF PEDESTRIAN TRAVEL
- CONTRACTOR TO VERIFY THAT NO BELOW-GRADE PULL BOXES OCCUR WITHIN THE AREA OF TRUNCATED DOMES

LEGEND

- EXISTING BUILDING
- 20' WIDE EMERGENCY VEHICLE ACCESS
- NEW BUILDING
- NON-RATED WALL
- ACCESSIBLE PATH OF TRAVEL PER GENERAL NOTES ABOVE
- ACCESSIBLE ENTRY/ EXTERIOR DOOR AT P.O.T.
- FH FIRE HYDRANT
- K KNOX BOX
- S ACCESSIBLE GENDER-NEUTRAL STAFF RESTROOM

PARKING ANALYSIS

	TOTAL SPACES PROVIDED	ACC SPACES REQUIRED *	ACC SPACES PROVIDED
SOUTH PARKING LOT	1	1 (1 VAN)	1 (1 VAN)

* CBC SECTION 11B-208.2 & TABLE 11B-208.2
 26-50 PARKING SPACES: 2 ACCESSIBLE SPACES REQUIRED PER 11B-208.2.4; 1 VAN ACC SPACE REQUIRED PER 6 ACC SPACES

DSA FORM 810



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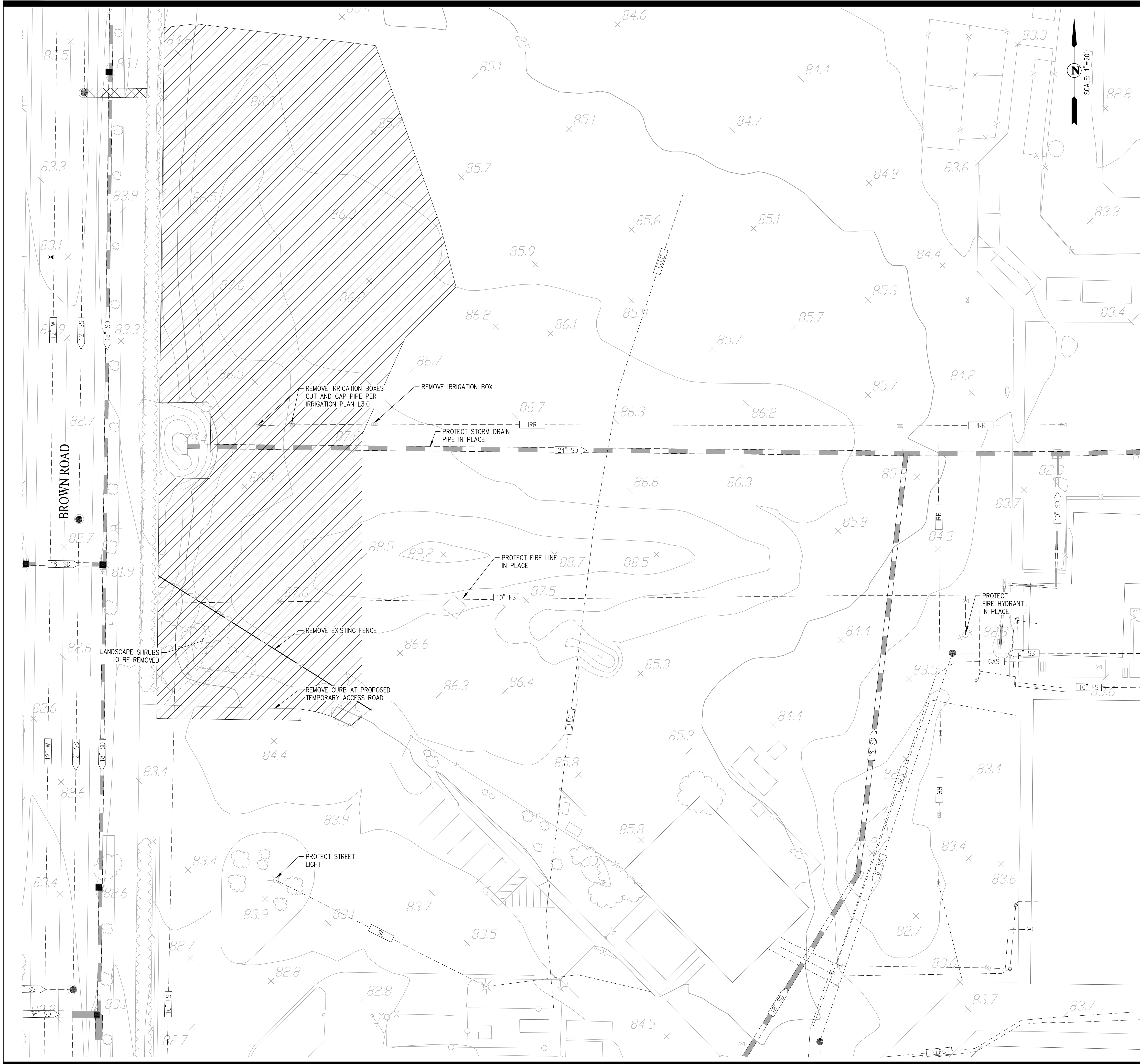
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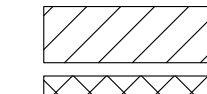
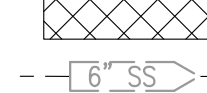


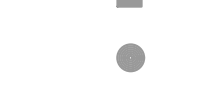
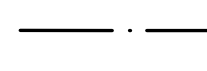


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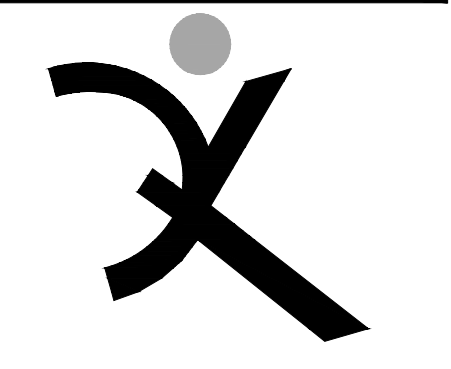
CAMPUS PLAN & BUILDING CODE ANALYSIS

SHEET NUMBER
G-0.3



LEGEND

-  CLEAR AND GRUB
-  UTILITY TRENCHING
-  EXISTING SEWER
-  EXISTING STORM DRAIN
-  EXISTING FIRE SERVICE
-  EXISTING FIELD INLET
-  EXISTING MANHOLE
-  REMOVE FENCE



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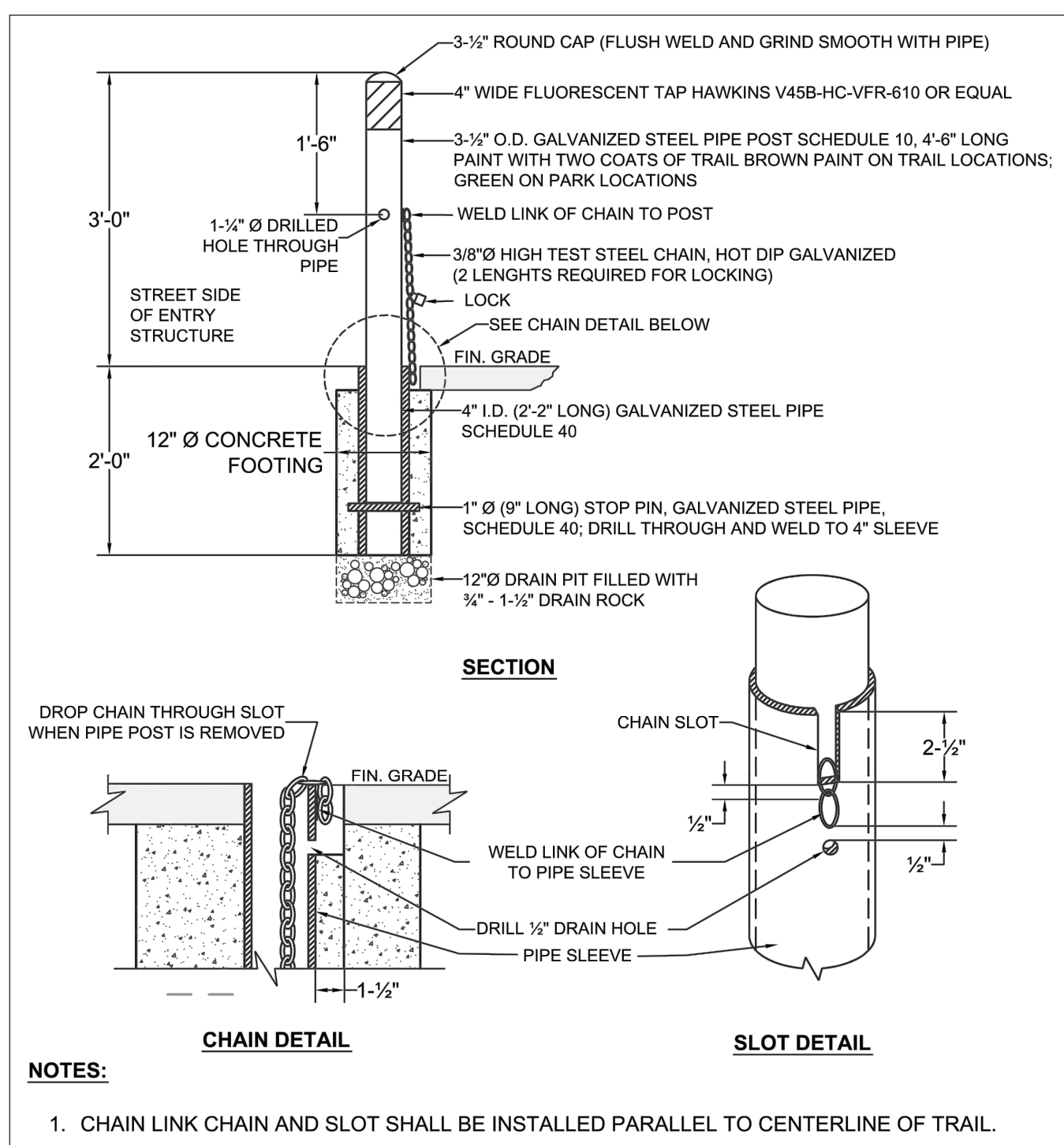
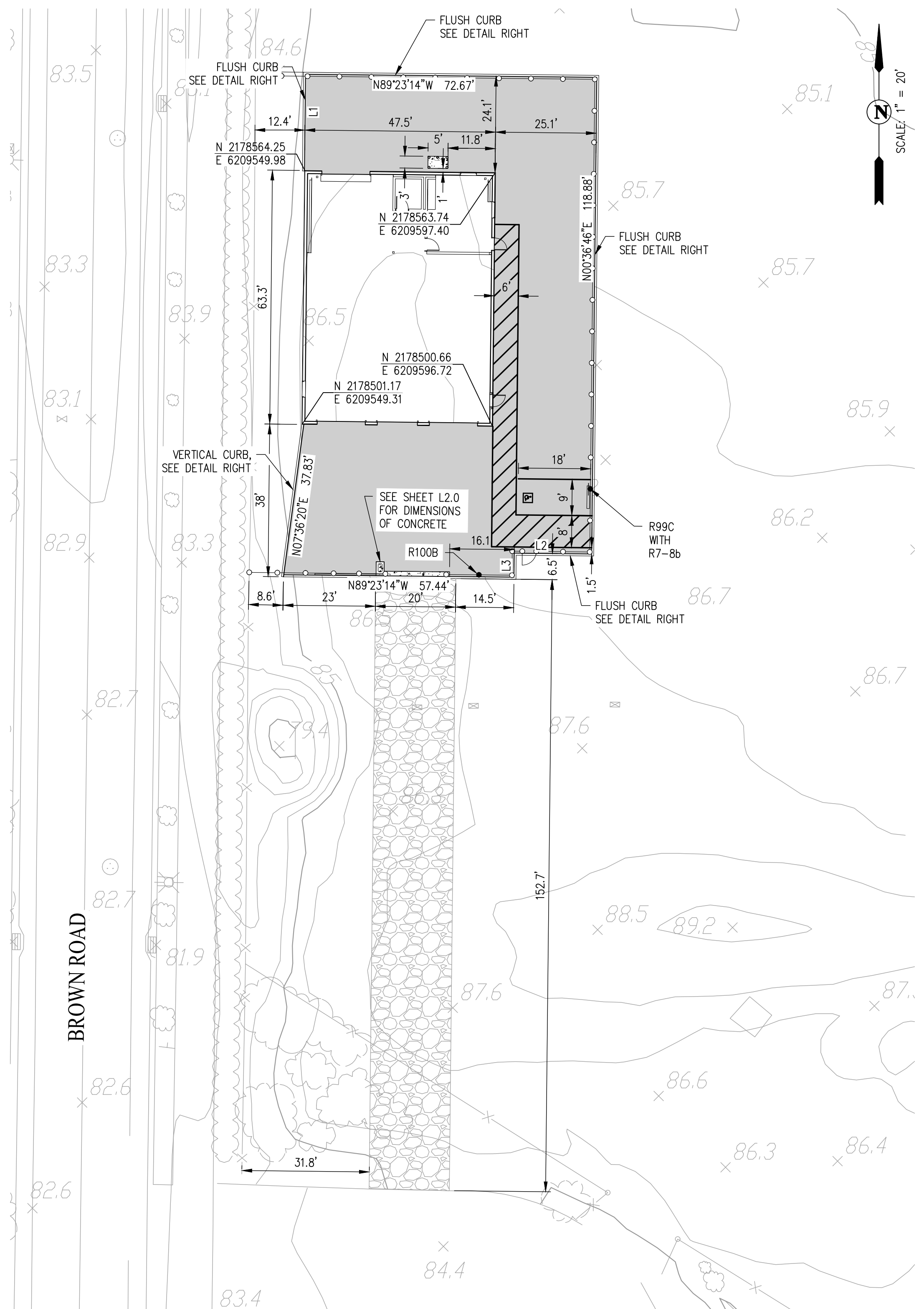
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DEMOLITION PLAN

SHEET NUMBER

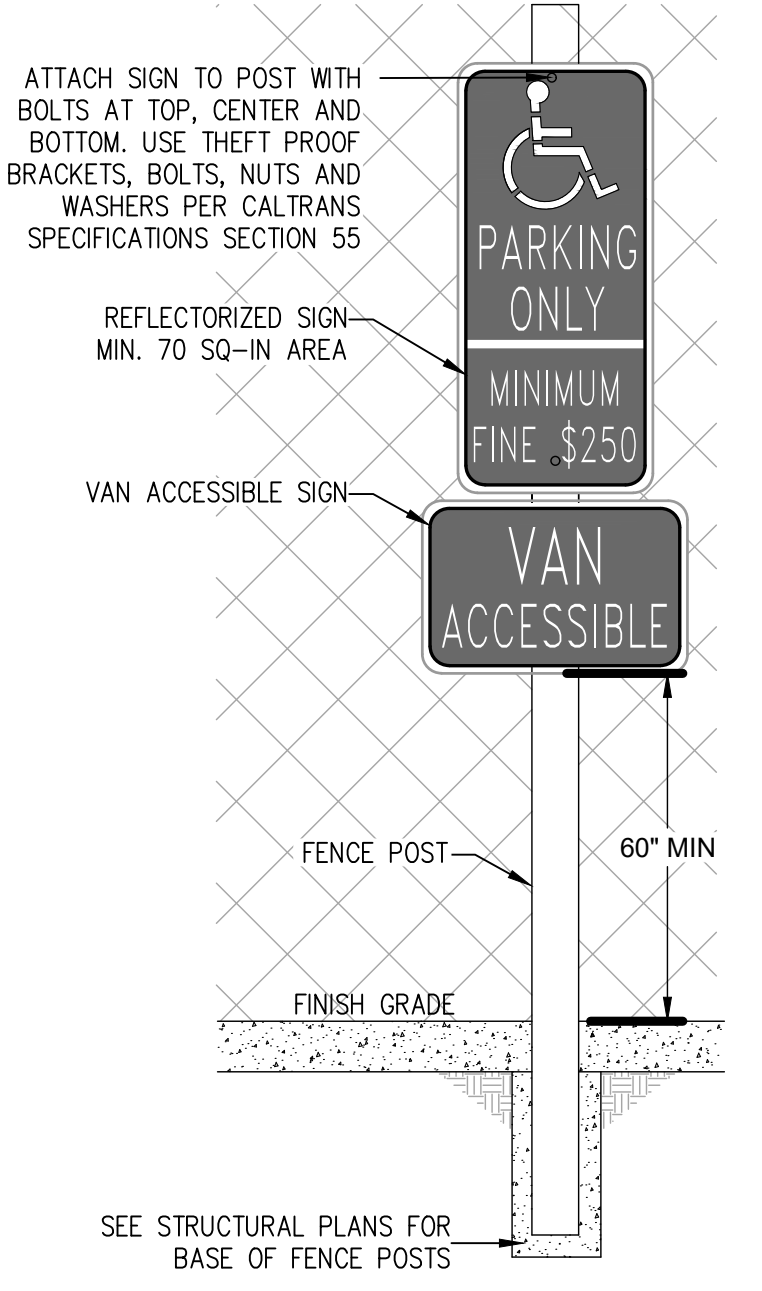
C-1.0



- LEGEND**
- AC PAVING (3.5" AC/12" CLASS II AB)
 - TEMPORARY CLASS II AB ACCESS ROAD
 - WHEEL STOP
 - SIGN
 - REMOVABLE BOLLARD (SEE DETAIL LEFT)

- ABBREVIATIONS**
- ISA INTERNATIONAL SYMBOL OF ACCESSIBILITY
 - R99C (CA) ACCESSIBLE PARKING ONLY SIGN
 - R7-8b (CA) VAN ACCESSIBLE SIGN
 - R100B TOW AWAY SIGN

NOTES:
1. ALL DISTANCES MEASURED ALONG OR TO TC/TFC.

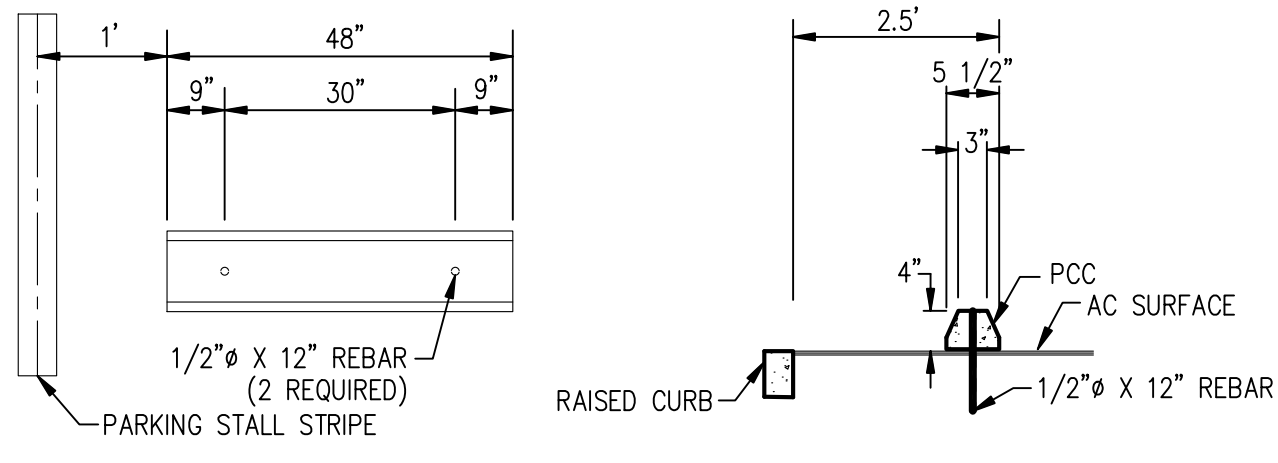


VAN ACCESSIBLE SIGN PLACEMENT
NOT TO SCALE

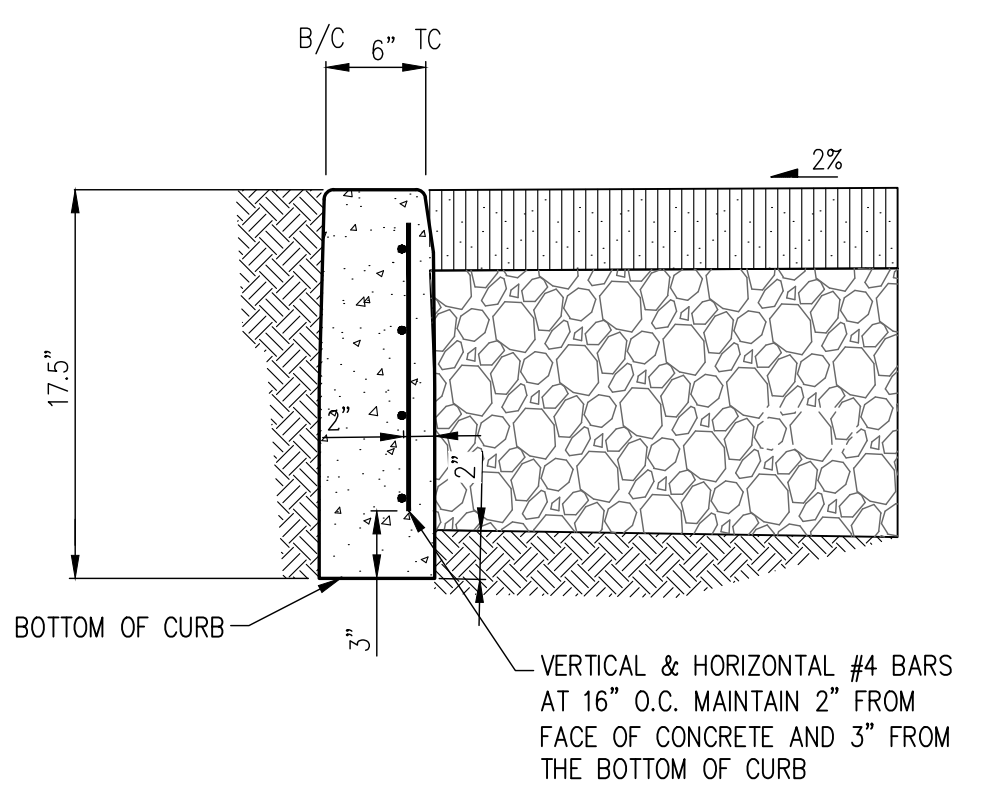
REMOVABLE BOLLARD
NOT TO SCALE



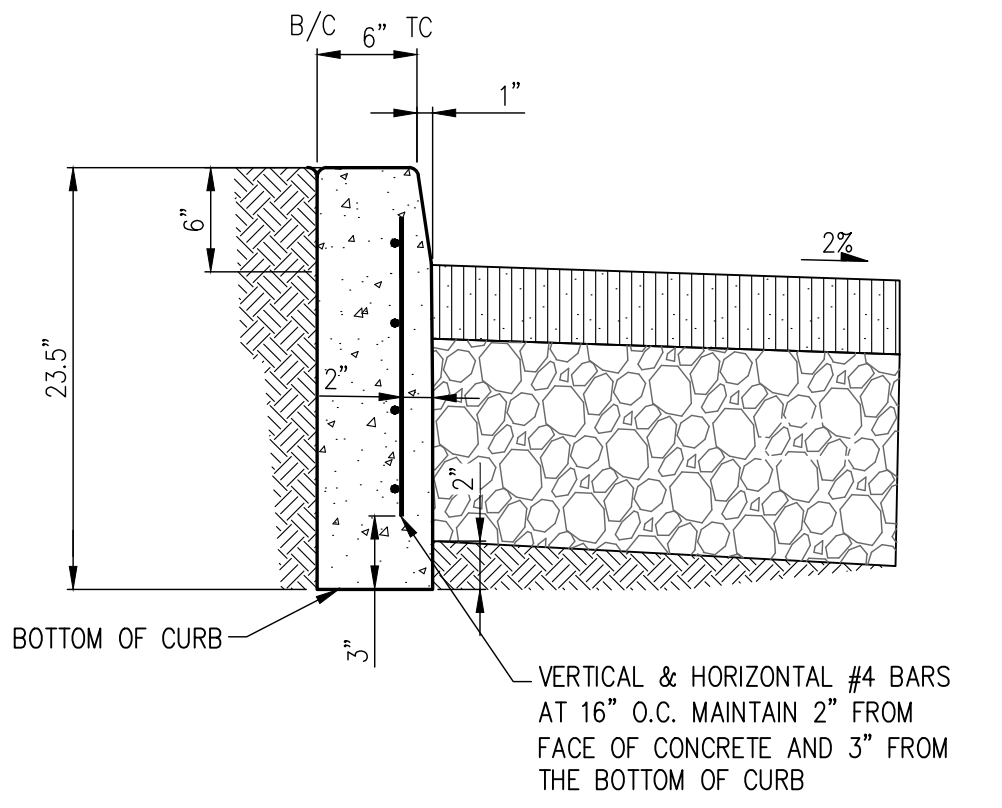
TOW AWAY SIGN (R100B)
NOT TO SCALE



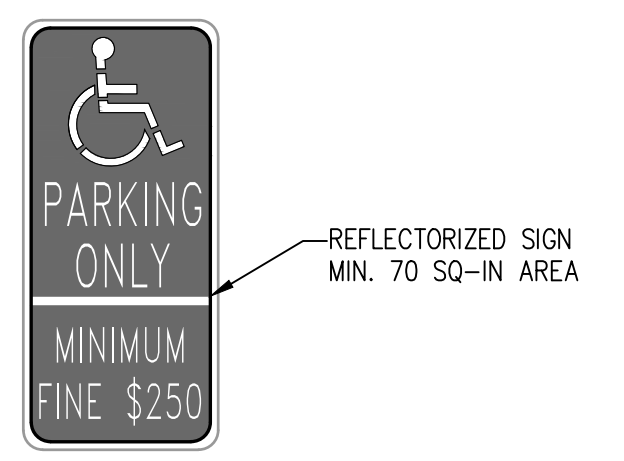
PASSENGER VEHICLE WHEEL STOP (OR APPROVED EQUAL)
(NOT TO SCALE)



FLUSH CURB DETAIL
NOT TO SCALE



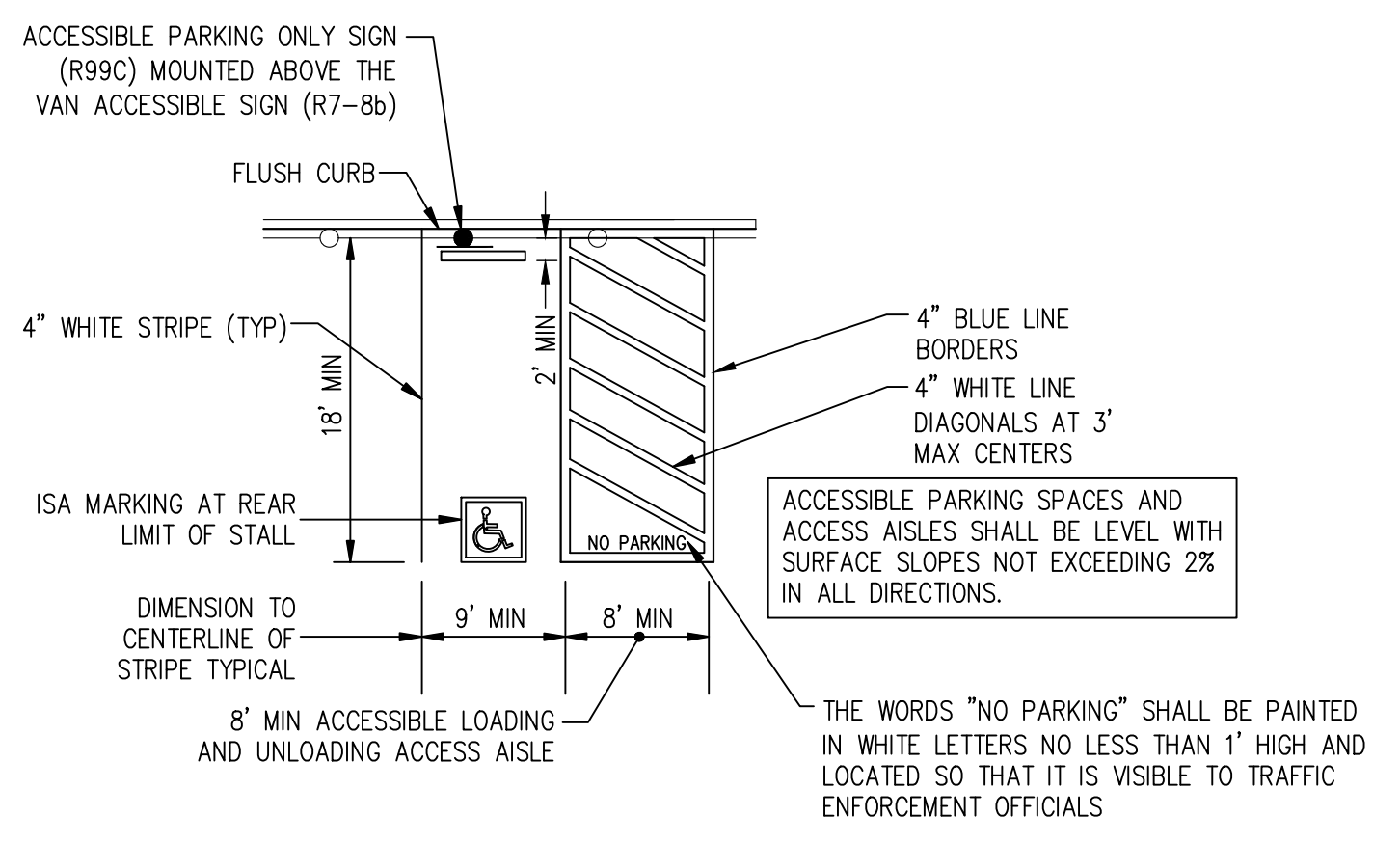
6" VERTICAL CURB DETAIL
NOT TO SCALE



ACCESSIBLE PARKING ONLY SIGN (R99C)
NOT TO SCALE



VAN ACCESSIBLE SIGN (R7-8b)
NOT TO SCALE



ACCESSIBLE PARKING STALL
NOT TO SCALE

LINE TABLE		
NO	BEARING	LENGTH
L1	24.000	N00° 36' 46.03"E
L2	19.333	N89° 23' 13.97"W
L3	6.000	N00° 36' 46.03"E

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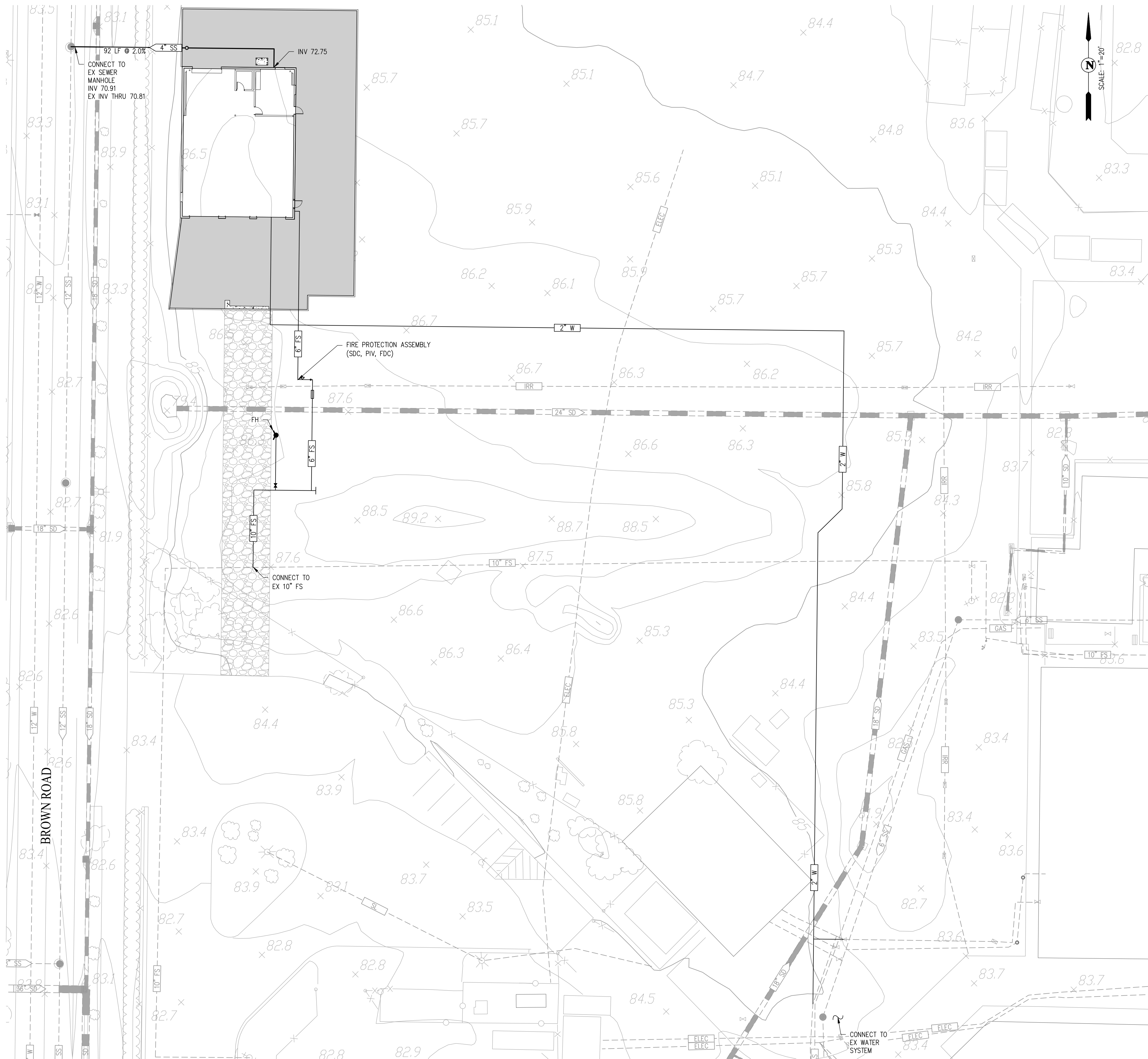
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SHEET TITLE

HORIZONTAL CONTROL PLAN

SHEET NUMBER

C-2.0



LEGEND

- AC PAVING
- TEMPORARY GRAVEL ACCESS ROAD
- PROPOSED SEWER LATERAL
- PROPOSED WATER LATERAL
- PROPOSED FIRE SERVICE
- PROPOSED SANITARY SEWER CLEANOUT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- SINGLE-DETECTOR CHECK VALVE
- PIV
- FDC
- EXISTING SEWER
- EXISTING STORM DRAIN
- EXISTING FIRE SERVICE
- EXISTING FIELD INLET
- EXISTING FIRE SERVICE
- EXISTING MANHOLE

NOTES

1. FOR CATHODIC PROTECTION ALONG THE FIRE SERVICE LINE, SEE DETAILS 1 AND 2 ON SHEET CP1.2.
2. FOR CATHODIC PROTECTION ALONG THE WATER LINE, SEE DETAILS 3 AND 4 ON SHEET CP1.2.

SANITARY SEWER PIPE SCHEDULE

STRUCTURE	DESCRIPTION
4" PIPE	92 LF, PVC SDR 35

SANITARY SEWER STRUCTURE SCHEDULE

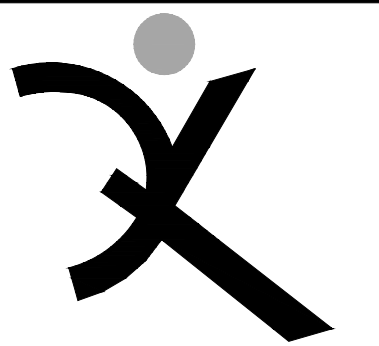
STRUCTURE	DESCRIPTION
SSCO (1 TOTAL)	PER CITY OF BRENTWOOD STANDARD SS-1

WATER PIPE SCHEDULE

STRUCTURE	DESCRIPTION
2" PIPE	570 LF PE
6" PIPE	130 LF PVC
10" PIPE	75 LF PVC

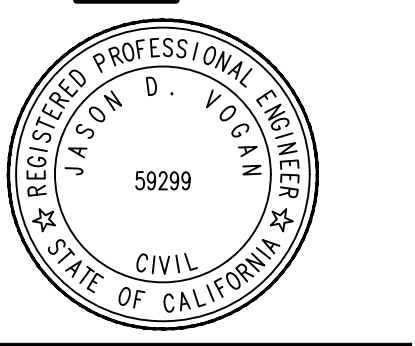
WATER STRUCTURE SCHEDULE

STRUCTURE	DESCRIPTION
SINGLE-DETECTOR CHECK VALVE (1 TOTAL)	NIBCO F-908-W 175 PSI WWP IRON BODY CHECK VALVE
PIV (1 TOTAL)	MUELLER A-20801 PER CITY OF BRENTWOOD STANDARD W-4
FIRE DEPT. CONNECTION (1 TOTAL)	CROKER 6545 4-WAY FDC
FIRE HYDRANT (1 TOTAL)	CITY OF BRENTWOOD STANDARD W-2



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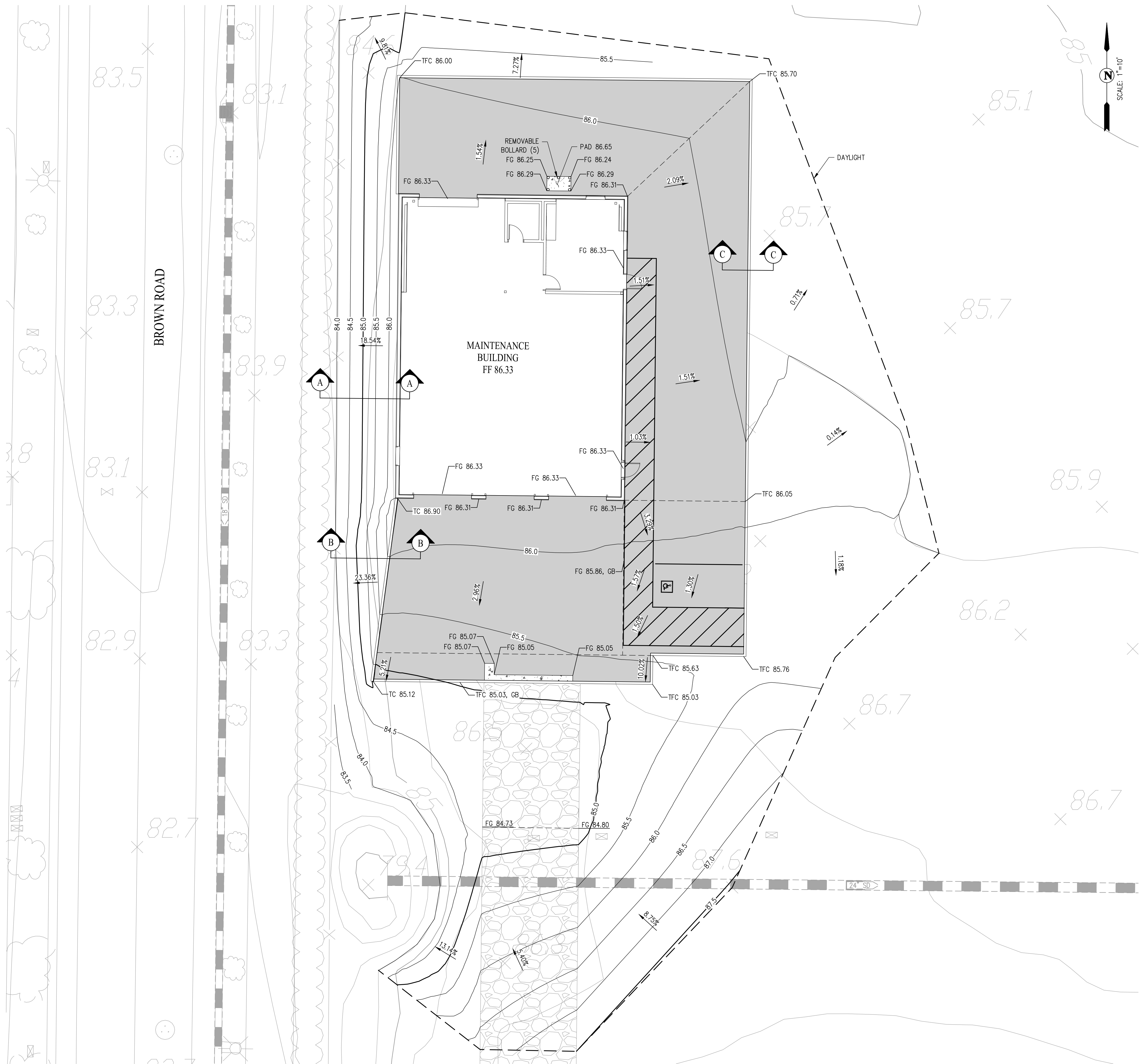
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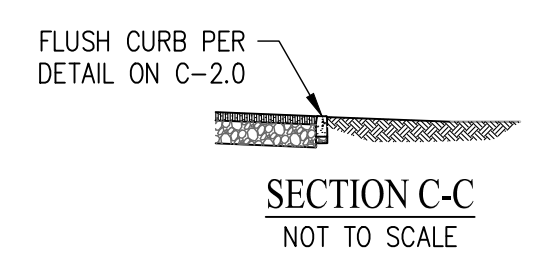
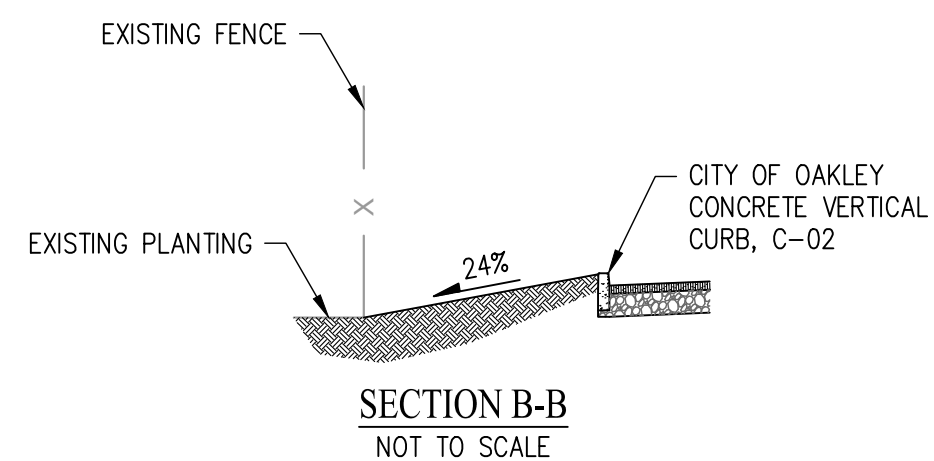
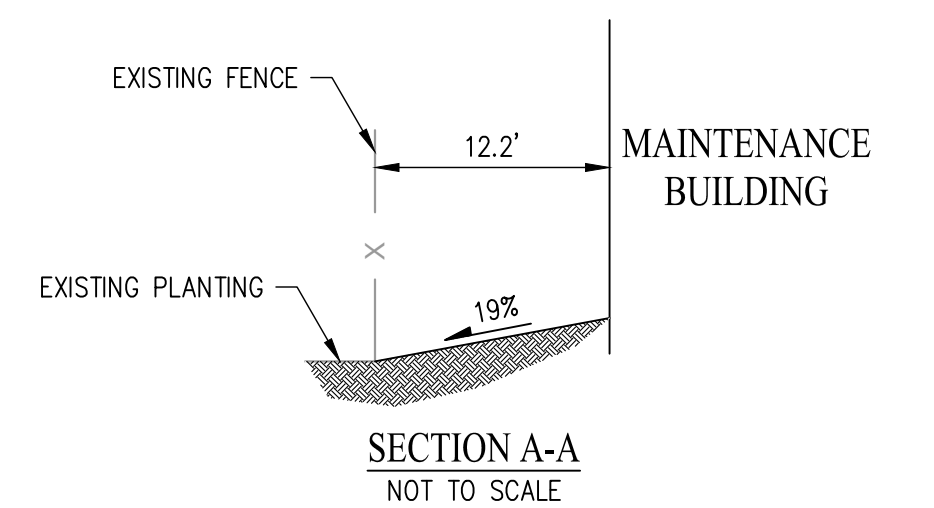
UTILITIES PLAN

SHEET NUMBER

C-3.0



- LEGEND**
- AC PAVING
 - TEMPORARY GRAVEL ACCESS ROAD
 - PROPOSED MAJOR CONTOUR
 - PROPOSED MINOR CONTOUR
 - PROPOSED GRADE BREAK
 - PROPOSED DAYLIGHT
 - EXISTING STORM DRAIN
 - REMOVABLE BOLLARD (SEE SHEET C-2.0)



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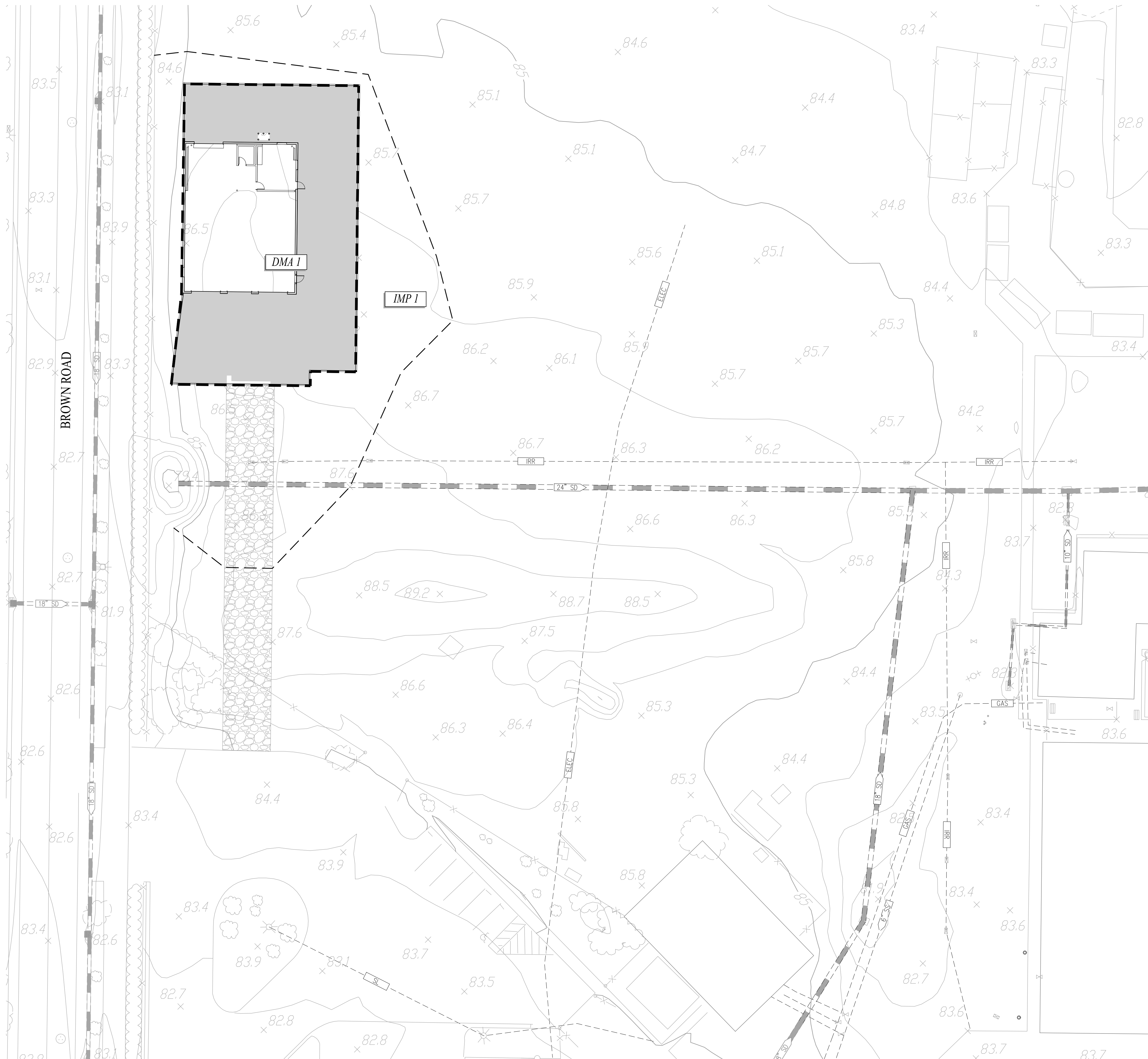
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SHEET TITLE

GRADING PLAN

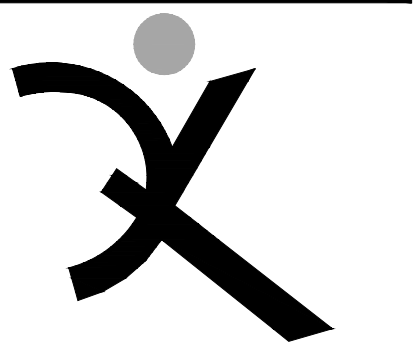
SHEET NUMBER

C-4.0



- LEGEND**
- IMP 1 INTEGRATED MANAGEMENT PRACTICE – BIORETENTION AREA
 - - - DRAINAGE MANAGEMENT AREA BOUNDARY
 - DMA 1 DRAINAGE MANAGEMENT AREA DRAINING TO IMPERVIOUS AREA

NOTE: ALL IMPERVIOUS AREA WILL DRAIN TO IMPERVIOUS AREA.



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 95404
 Pleasanton Office:
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REGISTERED PROFESSIONAL ENGINEER
 JASON D. VOGAN
 59299
 CIVIL
 STATE OF CALIFORNIA

FREEDOM HIGH SCHOOL

NEW MAINTANENCE FACILITIES

1050 Neroly Rd.
 Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

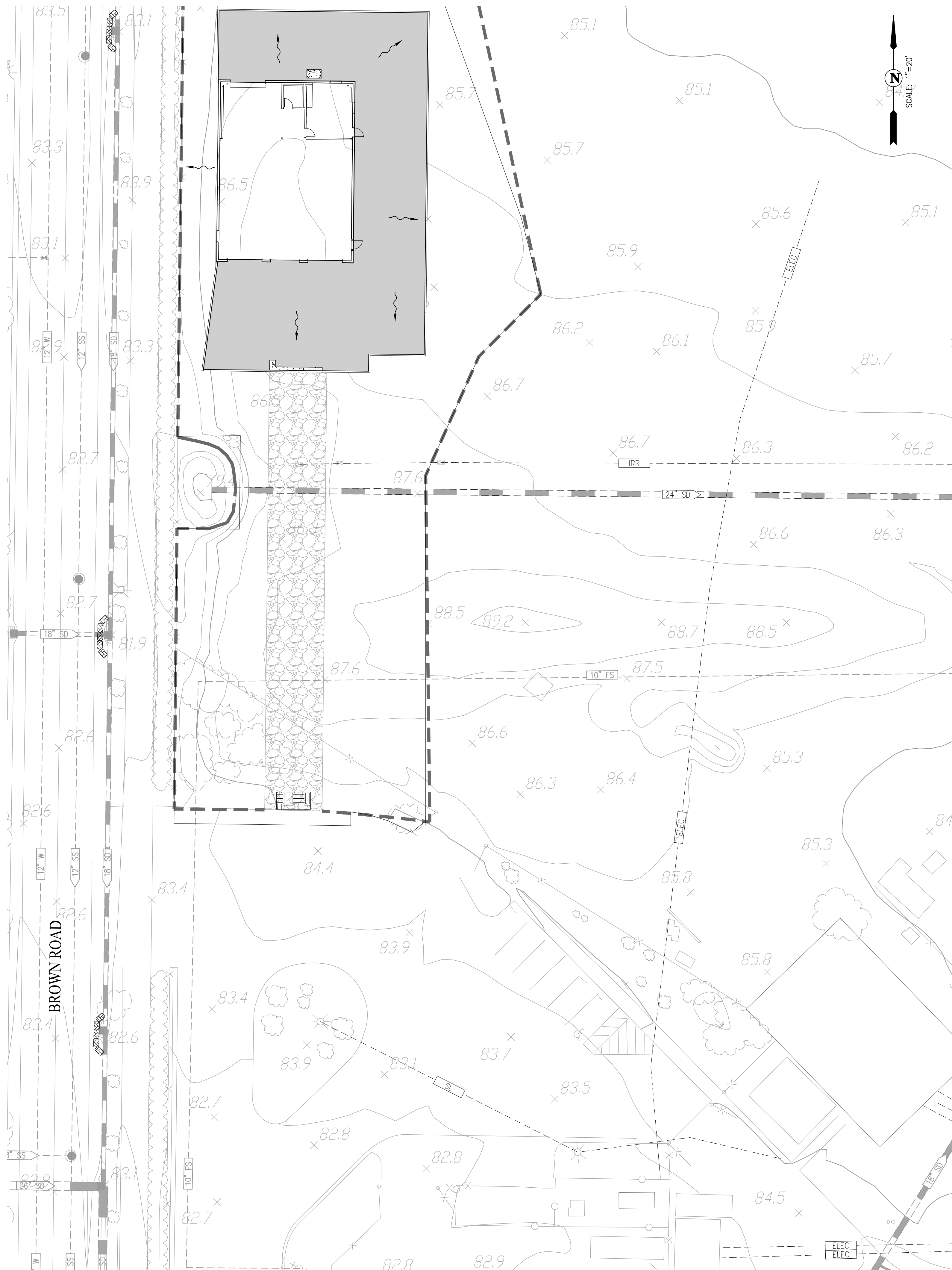
ARCH PROJECT NO: 1739.02
 DRAWN BY: MJV
 DRAWING SCALE: 1" = 20'
 PTN: 61721-0069

BID SET
JANUARY 4, 2019

STORMWATER CONTROL PLAN

SHEET NUMBER
C-5.0

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WDID #: _____

GENERAL NOTES:

1. LEGALLY RESPONSIBLE PARTY/PERSON (LRP) OWNER/SUBDIVIDER: LIBERTY UNION HIGH SCHOOL DISTRICT
850 2ND STREET
BRENTWOOD, CA 94513
2. CIVIL ENGINEER: CARLSON, BARBEE & GIBSON, INC.
2633 CAMINO RAMON, SUITE 350
SAN RAMON, CA 94583
(925) 866-0322
JASON VOGAN, RCE 59299
3. GEOTECHNICAL ENGINEER: BSK ASSOCIATES
399 LINDBERGH AVENUE
LIVERMORE, CA 94551
(925) 315-3151
CARRIE FOULK

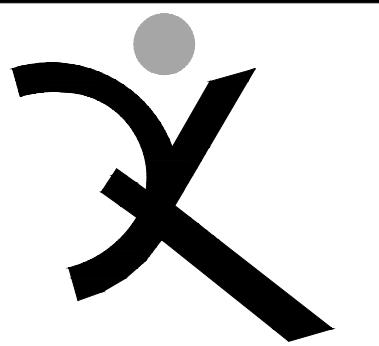
LEGEND

- DIRECTION OF FLOW WITH STORM DRAIN INSTALLED
- CURB INLET PROTECTION - (SE-10)
- FIBER ROLL - (SE-5)
- STABILIZED CONSTRUCTION ENTRANCE/EXIT - (TC-1)
- EXISTING STORM DRAIN

NOTE:
* STORMWATER DISCHARGE SAMPLING LOCATIONS ARE SUBJECT TO CHANGE AND WILL BE REMOVED, RELOCATED OR ADDED AT THE QSP'S DISCRETION.

APPLICABLE (BUT NOT LIMITED TO) CURRENT CASQA STORMWATER BMP CONSTRUCTION HANDBOOK

- EC-1 SCHEDULING
- EC-3 HYDROMULCH
- EC-4 HYDROSEED
- NS-1 WATER CONSERVATION PRACTICES
- NS-2 DEWATERING OPERATIONS
- NS-3 PAVING & GRINDING OPERATIONS
- NS-8 VEHICLE & EQUIPMENT CLEANING
- NS-9 VEHICLE & EQUIPMENT FUELING
- NS-10 VEHICLE & EQUIPMENT MAINTENANCE
- NS-12 CONCRETE CURING
- NS-13 CONCRETE FINISHING
- SE-1 SILT FENCE
- SE-4 CHECK DAMS
- SE-5 FIBER ROLLS
- SE-10 DI PROTECTION TYPE 1
- SE-10 DI PROTECTION TYPE 2
- SE-10 DI PROTECTION TYPE 3
- TC-1 STABILIZED CONSTRUCTION ENTRANCE/EXIT
- TC-2 STABILIZED CONSTRUCTION ROADWAY
- TC-3 ENTRANCE & OUTLET TIRE WASH
- WE-1 WIND EROSION CONTROL
- WM-1 MATERIAL DELIVERY & STORAGE
- WM-2 MATERIAL USE
- WM-3 STOCKPILE MANAGEMENT
- WM-8 CONCRETE WASTE MANAGEMENT
- WM-9 SANITARY/SEPTIC WASTE MANAGEMENT



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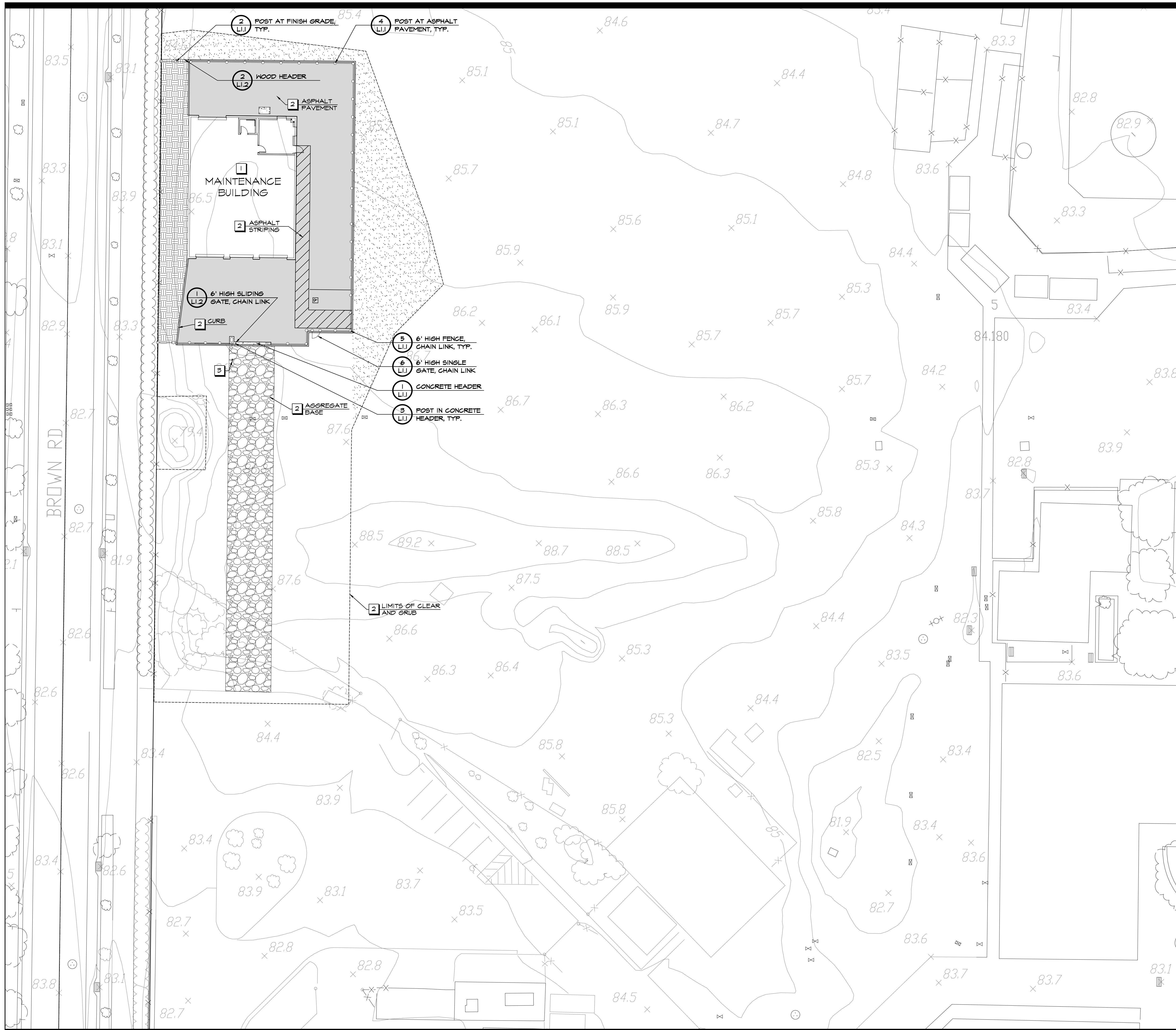
LIBERTY UNION HIGH SCHOOL DISTRICT

ARCH PROJECT NO: 1739.02
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EROSION CONTROL SHEET

SHEET NUMBER
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LEGEND

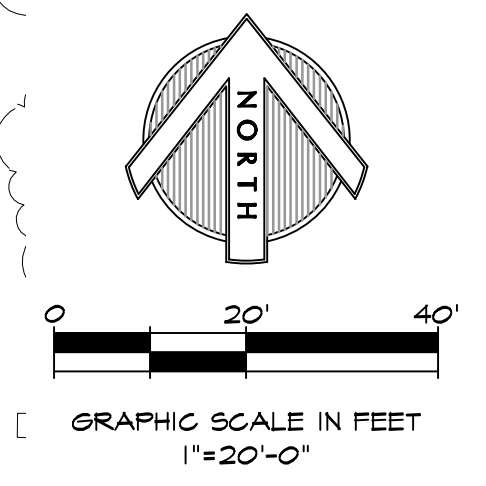
- Asphalt Pavement. See Civil Drawings.
- Concrete Pavement
- Turf. See Planting Plan.
- Mulch. See Planting Plan.
- Wood Header
- Existing Fence
- 6' High Fence, Chain Link
- 6' High Single Gate, Chain Link
- 6' High Sliding Gate, Chain Link

KEY NOTES

- 1** See Architectural Drawings
- 2** See Civil Drawings
- 3** Card Reader and Knox Gate Key Switch

CONCRETE NOTES

1. Subgrade preparation shall be done in accordance with the recommendations in the Geotechnical Report.
2. Tooled control joints shall run continuously and extend through integral curbs and thickened edges. Tooled control joint layout shall be as shown on the Layout Plan, and coincide with the corners of objects, structures and the beginning and ends of curves. Joints should have a minimum depth of 25% of the slab thickness, unless otherwise noted on plans.
3. Expansion joints shall be laid out as shown on the Layout Plan.
4. Contractor shall place 3/8" asphalt impregnated fiber board where new concrete meets building, walls, curbs and planters.
5. The base rock layer, prior to placement of concrete, shall be sprinkled with clean water several times to restore any moisture that may have been lost after completion of compaction.
6. Cure concrete with curing compound or keep continuously moist for a minimum of 7 days.
7. Contractor shall prepare a 4"x4" sample of all materials in the field prior to construction, for review and approval by the District.
8. Concrete pavement with slopes less than 6% shall receive a medium broom finish and slopes greater than 6% shall receive a heavy broom finish. Finish shall be in the direction shown on this sheet.



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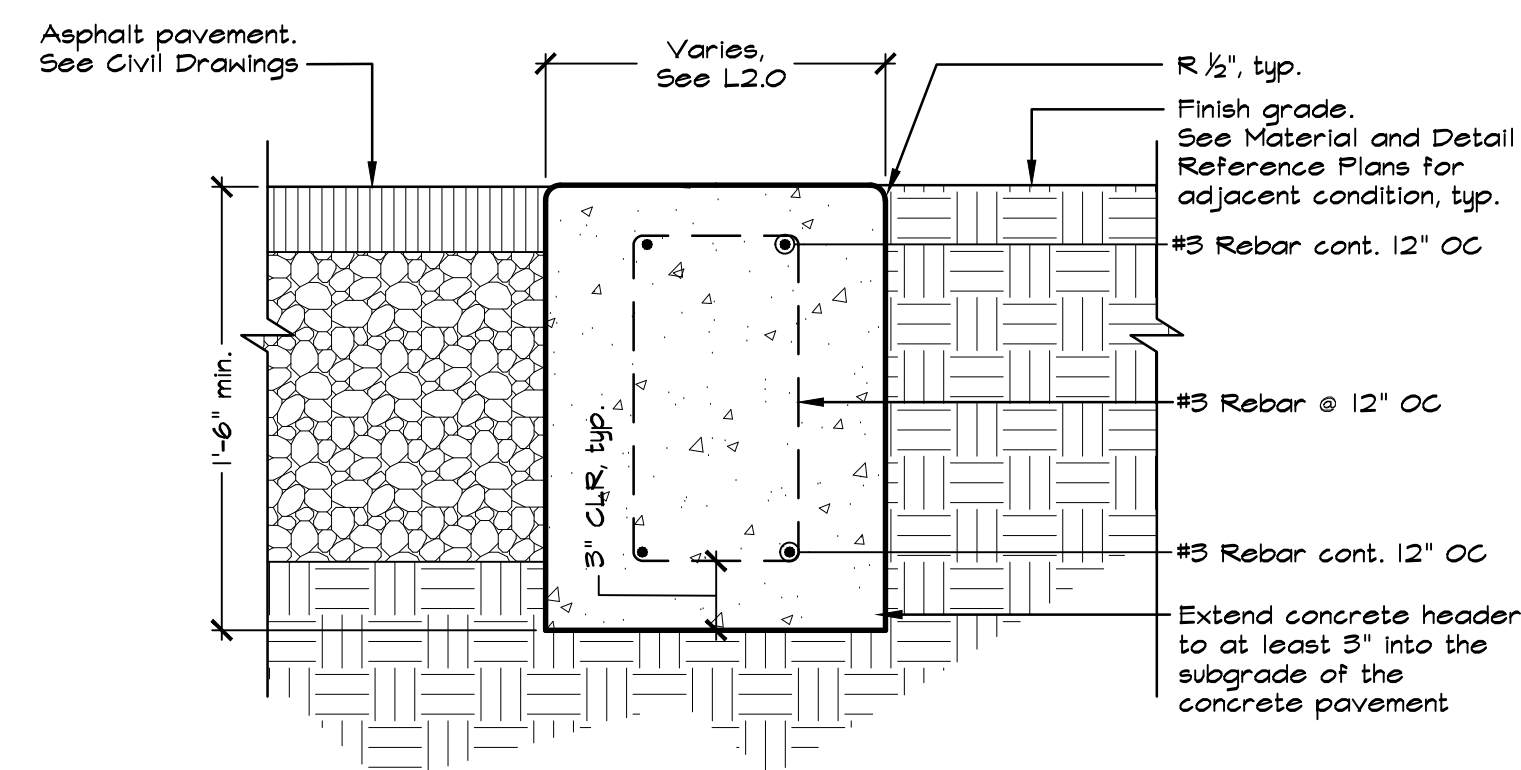
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ARCH PROJECT NO: 1739.02
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MATERIAL AND DETAIL REFERENCE PLAN

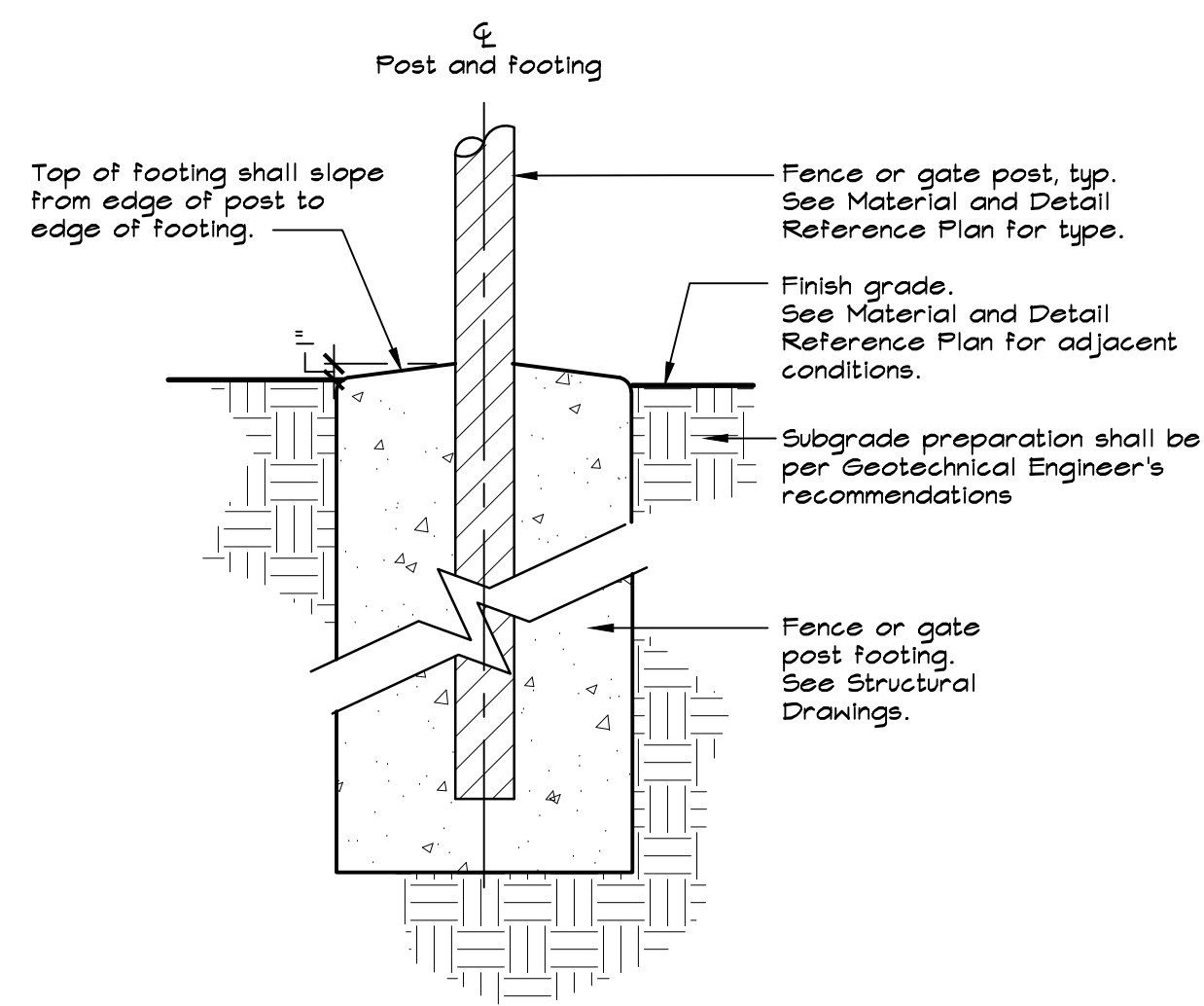
SHEET NUMBER
L1.0



NOTES:

1. See Concrete Notes on the Material and Detail Reference Plan in addition to requirements in the Specifications.
2. Finish shall be applied on all exposed sides, broomed parallel with curb.

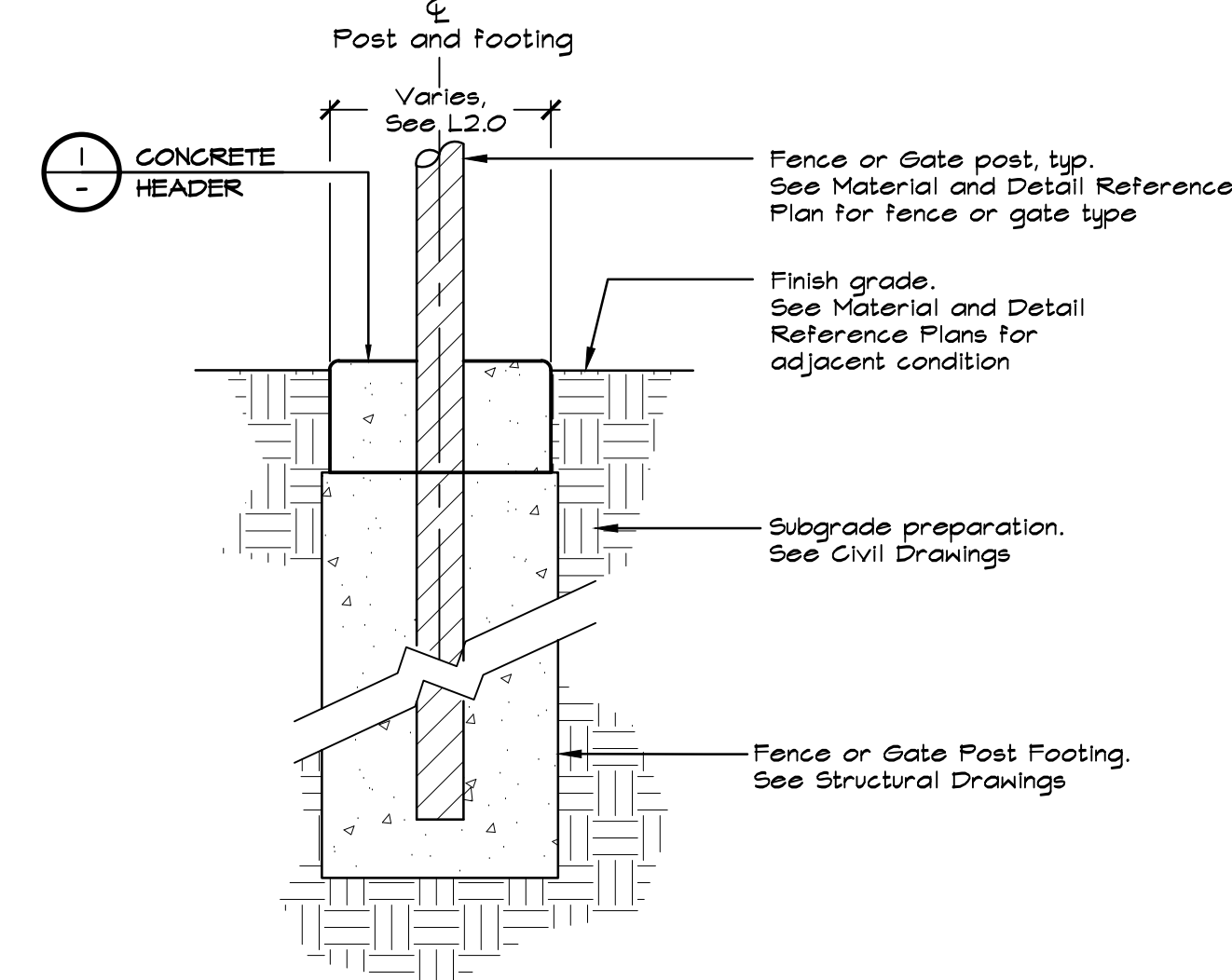
1 CONCRETE HEADER
NOT TO SCALE



NOTES:

1. See Concrete Notes on the Material and Detail Reference Plan in addition to requirements in the Specifications.
2. See Material and Detail Reference Plan and Layout Plan for post locations.
3. See Structural Drawings for post and footing information.

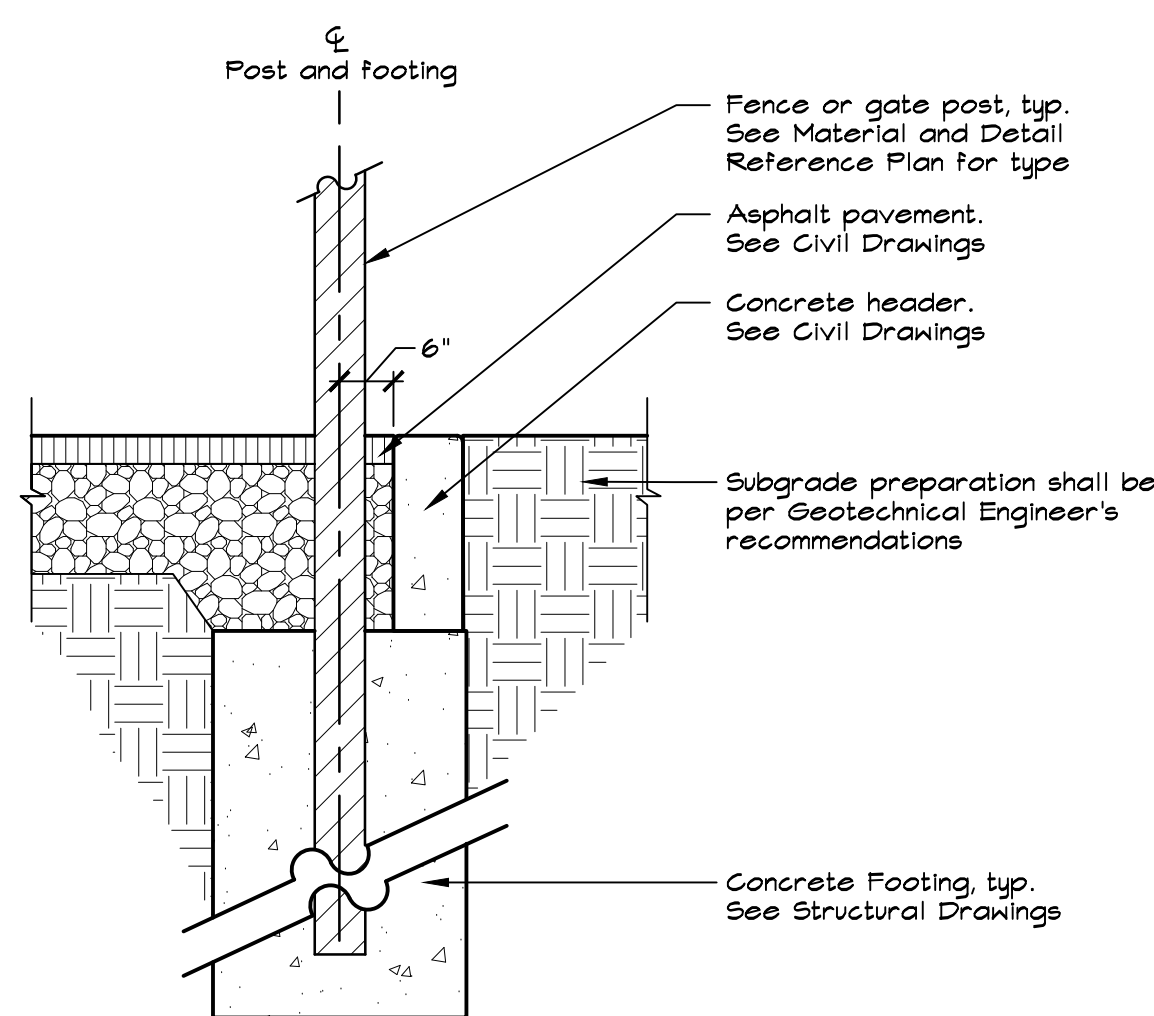
2 POST AT FINISH GRADE
NOT TO SCALE



NOTES:

1. See Concrete Notes on the Material and Detail Reference Plan in addition to requirements in the Specifications.
2. Tooled control joint and expansion joints shall align with center of fence and gate posts.
3. See Material and Detail Reference Plan and Layout Plan for post locations.
4. See Structural Drawings for post and footing information.

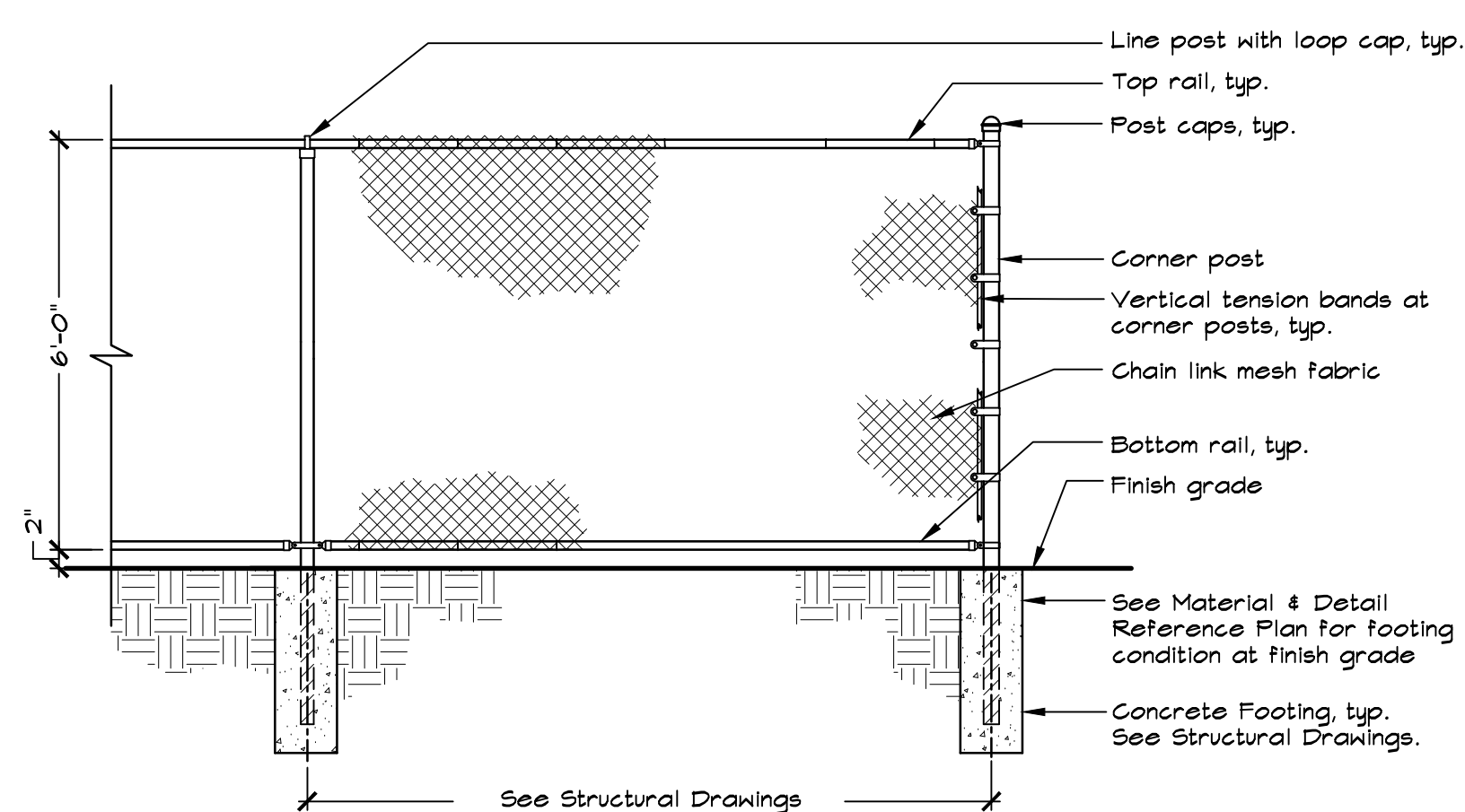
3 POST IN CONCRETE HEADER
NOT TO SCALE



NOTES:

1. See Concrete Notes on the Material and Detail Reference Plan in addition to requirements in the Specifications.
2. See Material and Detail Reference Plan and Layout Plan for post locations.
3. See Structural Drawings for post and footing information.

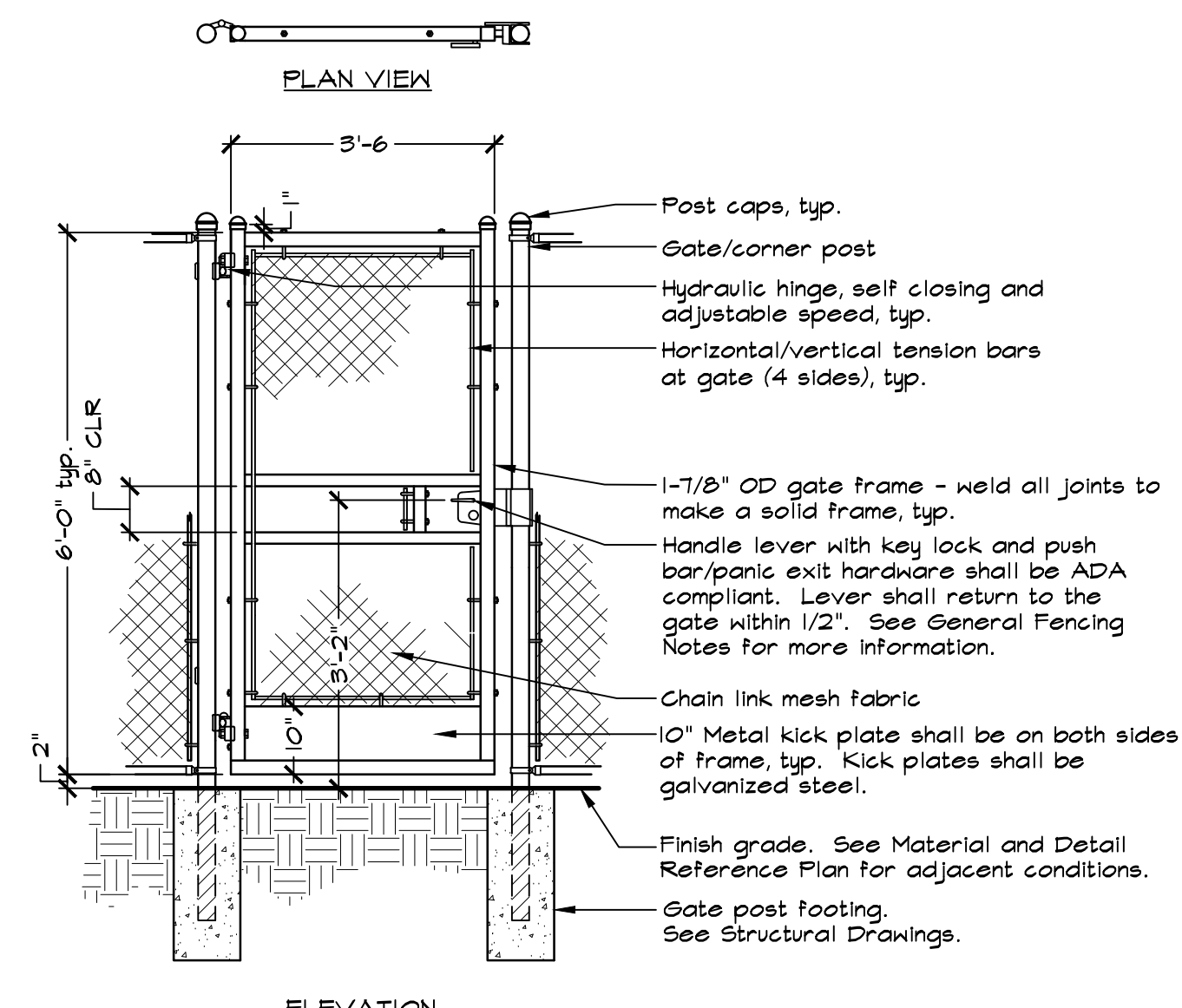
4 POST AT ASPHALT PAVEMENT
NOT TO SCALE



NOTES:

1. See General Fencing and Gate Notes and Schedules on Sheet L1.2.
2. See Material and Detail Reference Plan and Layout Plan for post locations.
3. See Structural Drawings for post and footing information.

5 6' HIGH FENCE, CHAIN LINK
NOT TO SCALE



NOTES:

1. See General Fencing and Gate Notes and Schedules on Sheet L1.2.
2. See Material and Detail Reference Plan and Layout Plan for post locations.
3. See Structural Drawings for post and footing information.
4. Door opening shall provide clear width of 32 inches minimum, CBC 11B-404.2.3

6 6' HIGH SINGLE GATE, CHAIN LINK
NOT TO SCALE

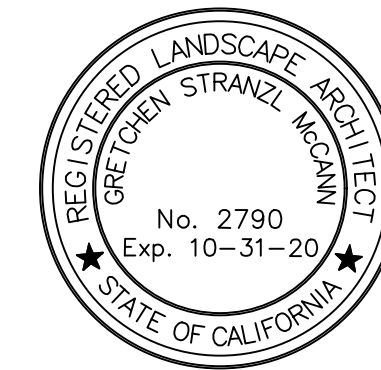


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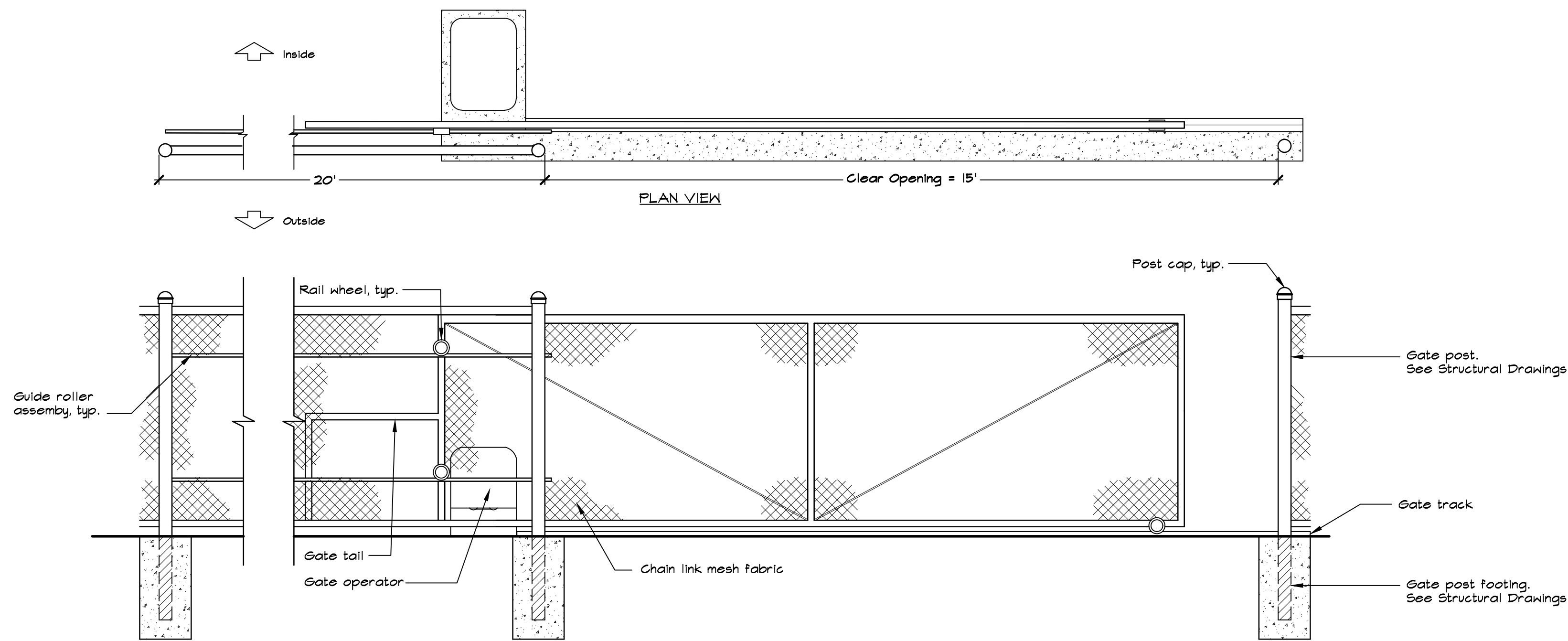
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CONSTRUCTION DETAILS

SHEET NUMBER

L1.1



DIMENSION CHART FOR SLIDING GATES

LABEL	DESCRIPTION	DIMENSION
CHAIN LINK		
A	Clear Opening	15'
B	Tail Length	3'±
C	Overall Gate Length	18'±

Gate Automation Schedule		
Manufacturer	Product	Model No.
DKS Doorking	Gate Operator	Owner furnished, Contractor installed.
DKS Doorking	Entrapment Protection	Owner furnished, Contractor installed.
DKS Doorking	Vehicle Loop Detector	6' Single Channel Loop Model 4410-010
Knox	Fire Gate and Key Switch	Owner furnished, Contractor installed.

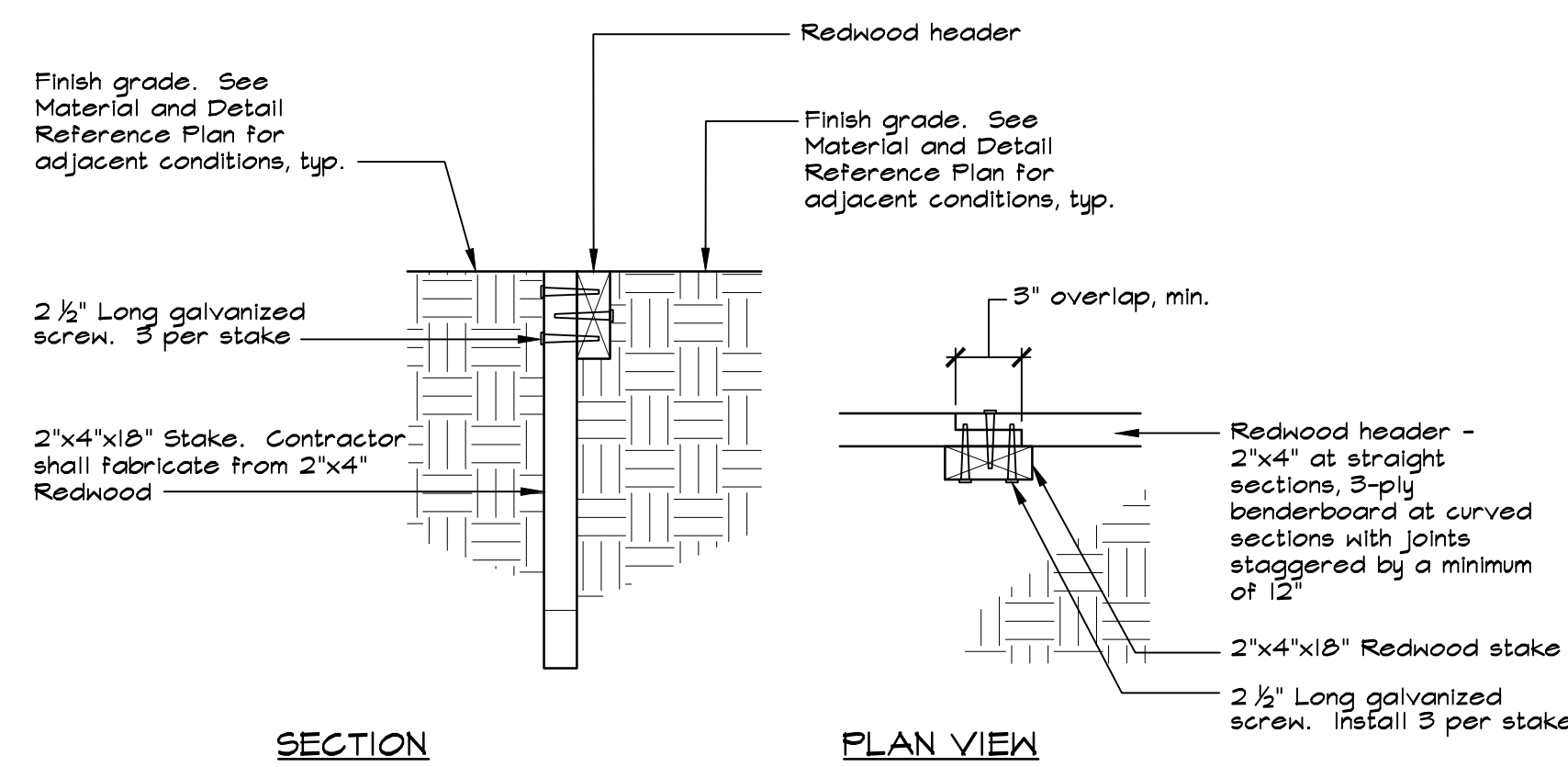
NOTES:

- Gate and operator to be Owner Furnished, Contractor Installed.
- See General Fencing and Gate Notes and Schedules on this Sheet.
- See Material and Detail Reference Plan and Layout Plan for post locations.
- See Structural Drawings for post and footing information.
- Provide and install gate components as listed on the Gate Automation Schedule, or approved equal. Doorking contact is Lamar Jackson, (916) 240-7201; L.Jackson@doorking.com.
- See Electrical Drawings for power and control raceways. Contractor shall provide shop drawings for sliding gate and gate automation.

1 6' HIGH SLIDING GATE, CHAIN LINK
NOT TO SCALE

GENERAL FENCING AND GATE NOTES AND SCHEDULES

- Details are for general reference. Contractor shall provide shop drawings prior to construction for approval by the District. Contractor shall include all hardware types and manufacturers' information within shop drawings.
- ADA compliant gates shall be accessible, have push bar and lockable lever with cylinder dogging, push pad armor, push bar with trim, weep holes and keyed lever all in stainless steel finish. Von Duprin or equal, product number: CD x AX x FA x RBL x NH x 996L-NL x 630. Lock shall have an interchangeable large format lock, cylinder dogging and night latch feature. Schlage Lock product number: 20-057 IC rim cylinder (996L) and 20-061 x XQ11-948 630 (CD). Contact Debbie White at Allegion for ordering information. (925) 463-7702, Debbie.White@allegion.com.
- Chain link fabric shall be galvanized steel, 4 gauge, 2" mesh. See Material and Detail Reference Plan for locations. All posts, hardware, and rails finish shall match fabric.
- All gate hinge hardware shall be commercial/industrial quality.
- All overlapping fence fabric shall be cut and knuckled together.
- See Concrete Notes on Sheet L1.0.
- See Structural Drawings for post and footing information.
- Subgrade preparation shall be per Geotechnical Engineer's recommendations.



NOTE:

- Wood header and stakes shall be Redwood Construction Heart or better, or approved equal.

2 WOOD HEADER
NOT TO SCALE

Fence Schedule	
Description	6' High Fence
Detail Reference	5 L1.1
Line Post	See Structural Drawings
Corner/ End Post	See Structural Drawings
Bottom Rail (STD SCH 40 Pipe)	1 5/8" OD
Top Rail (STD SCH 40 Pipe)	1 5/8" OD
Footing Size	See Structural Drawings

Gate Schedule		
Description	6' High x 3'-6" Wide	6' High x 15' Wide
Detail Reference	6 L1.1	1 -
Gate Post	See Structural Drawings	See Structural Drawings
Gate Frame (STD. SCH 40 Pipe)	1 7/8" OD	Existing Frame
Footing Size	See Structural Drawings	See Structural Drawings



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SHEET TITLE

CONSTRUCTION DETAILS

SHEET NUMBER

L1.2

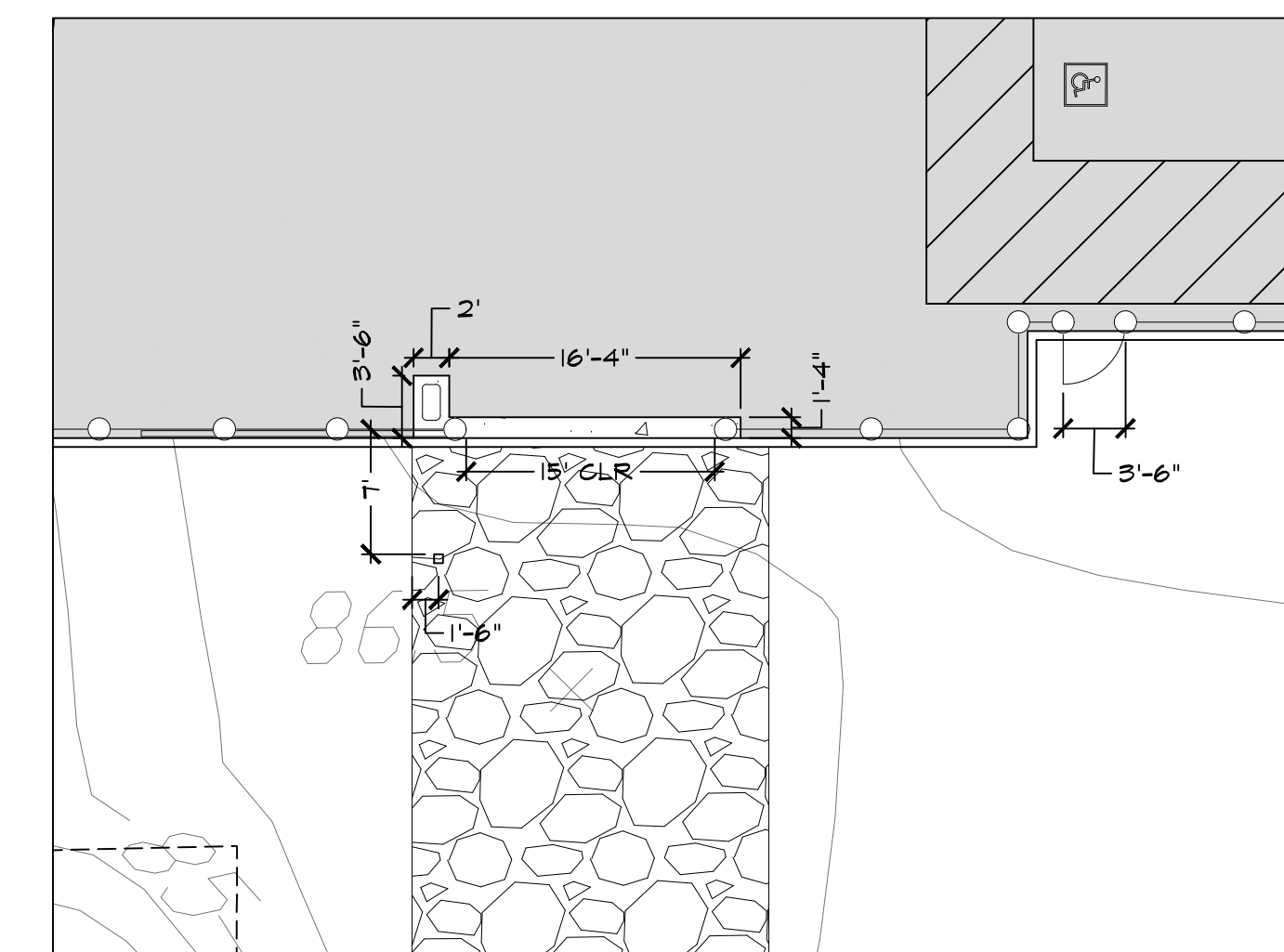


LAYOUT LEGEND

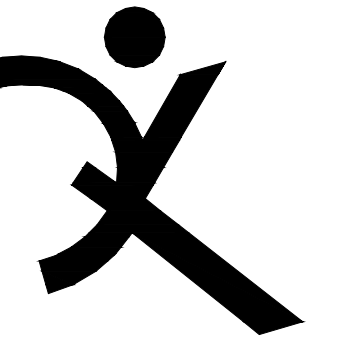
- Radial Dimension
- Arc Dimension
- Linear Dimension
- Align
- Guideline to show alignment
- Equal
- Centerline
- Midpoint of Arc
- Point of Tangency
- Clear Opening
- 90 Degree Angle
- Control Points:

LAYOUT NOTES

1. Contractor shall notify all public or private utility companies two (2) working days prior to commencement of work on this project to verify the locations of existing utility lines. Call Underground Service Alert (U.S.A.) toll free at 1-800-227-2600 or 811, 7:00am to 5:00pm, Monday through Friday.
2. All coordinates and dimensions shown are in a horizontal plane.
3. Written dimensions always take precedence over scaled dimensions. If there is a conflict, notify the Architect and obtain a clarification. No deviation or substitution shall be allowed without obtaining written approval from the Architect.
4. See Civil Drawings for additional layout information.
5. This Plan does not represent a Property Line Survey. Property lines shown hereon may not represent the true position of the line.
6. The Contractor shall coordinate all construction elements including utility locations and required sleeving prior to installation of any underground utilities.
7. The Contractor shall verify critical dimensions, reference and control point locations and construction conditions prior to construction.
8. All dimensions shall be verified in the field, chalked painted, and/or string lined. Any minor adjustments required to achieve overall design layout shall be reviewed and approved by the Architect prior to construction.
9. All materials shall be furnished and installed by the Contractor per Manufacturer's specifications, unless otherwise noted in these Plans or Specifications.
10. Existing features and topographic information have been taken from Survey performed by Carlson, Barbee & Gibson, Inc. on June 14, 2018 provided by Quattrocchi Kwok Architects. GSM landscape architects, inc. assumes no liability, real or alleged, regarding the accuracy of the existing features or topographic information shown.



① LAYOUT ENLARGEMENT I
SCALE: 1" = 10'



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SHEET TITLE

LAYOUT PLAN

SHEET NUMBER

L2.0

MATCHLINE SEE BELOW RIGHT



IRRIGATION DESIGNER:
JAMES D. EDDY ASSOCIATES, DANVILLE, CALIFORNIA
NOTE: NO LICENSE FOR THE LANDSCAPE IRRIGATION SYSTEM DESIGN PROFESSION IS AVAILABLE IN THE STATE OF CALIFORNIA.
MEMBER: AMERICAN SOCIETY OF IRRIGATION CONSULTANTS



JAMES D. EDDY ASSOCIATES
LANDSCAPE IRRIGATION ENGINEERS
P.O. BOX 2291
DANVILLE, CALIFORNIA 94526
P: (925) 867-3339
EMAIL: JDE@EDDYASSOCIATES.COM
PLANNING-DESIGN-MANAGEMENT
JDE PROJECT NO: 18027



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SHEET NOTES

GENERAL NOTE: THE DRAWINGS ARE DIAGRAMMATIC AND LOCATION OF EXISTING IRRIGATION EQUIPMENT HAS NOT BEEN FIELD MEASURED. LOCATE ACTUAL EXISTING PIPE, VALVE, AND HEAD LOCATIONS IN THE FIELD PRIOR TO CONSTRUCTION. CONFIRM IN THE FIELD THAT AFTER CONSTRUCTION ALL (E) ROTOR HEADS TO REMAIN AS-IS ARE CONNECTED TO AN RCV TO CONTROL THAT HEAD. LAYOUT HEADS TO PROVIDE TRIANGULAR HEAD-TO-HEAD COVERAGE. MAKE CONSTRUCTION CORRECTIONS AS REQUIRED TO OBTAIN FULL TURF IRRIGATION COVERAGE.

- 1 (E) CONTROLLER "A" TO FIELD RCV'S: CONTROLLER SHALL REMAIN IN SERVICE, AS-IS, AT ALL TIMES.
- 2 DELETE (E) ROTOR HEAD AND LATERAL LINE PIPE.
- 3 (E) ROTOR HEAD TO REMAIN IN SERVICE. CONFIRM IN THE FIELD THAT HEAD HAS AN RCV TO OPERATE IT.
- 4 ADJUST (E) ROTOR HEAD TO A PART CIRCLE OPERATION. IF HEAD CANNOT BE ADJUSTED TO A PART CIRCLE OPERATION, REPLACE HEAD WITH THE SPECIFIED (N) HEAD AS NEEDED.
- 5 CAP (N) MAIN LINE PIPE BELOW GRADE AND THRUST BLOCK. STUBBED FOR LATER CONNECTION TO PERFORMING ARTS CENTER MAIN LINE.
- 6 CAP (E) LATERAL LINE PIPE BELOW GRADE. ALL PIPING DOWNSTREAM OF THE CAP SHALL BE DEMOLISHED.
- 7 MAIN LINE LOCATION "A": CONNECT (N) MAIN LINE PIPE TO (E) MAIN LINE PIPE AND REROUTE MAIN LINE AS SHOWN. LOCATE BURIED EXISTING LOW VOLTAGE WIRE BUNDLE ADJACENT TO (E) MAIN LINE AND FROM CONTROLLER "A". INSTALL A PULL BOX, CUT WIRES, SPLICE TO (N) WIRES AND REROUTE (N) LOW VOLTAGE WIRE ALONG (N) MAIN LINE TO LOCATION "A".
- 8 MAIN LINE LOCATION "B": CONNECT (N) MAIN LINE PIPE TO (E) MAIN LINE PIPE AND REROUTE MAIN LINE AS SHOWN. LOCATE BURIED EXISTING LOW VOLTAGE WIRE BUNDLE ADJACENT TO (E) MAIN LINE AND FROM CONTROLLER "A". INSTALL A PULL BOX, CUT WIRES, SPLICE TO (N) WIRES AND REROUTE (N) LOW VOLTAGE WIRE ALONG (N) MAIN LINE TO LOCATION "B".
- 9 DEMOLISH (E) REMOTE CONTROL VALVE: THE (E) LATERAL LINE PIPE TO (E) ROTOR HEADS SHALL BE RECONSTRUCTED TO THE DESIGNATED (N) REMOTE CONTROL VALVE LOCATION (AS SHOWN) WITH (N) PVC LATERAL PIPE.
- 10 (E) REMOTE CONTROL VALVE TO REMAIN IN SERVICE. CONFIRM ACTUAL LOCATION IN THE FIELD.
- 11 (E) 4" WELL WATER IRR MAIN LINE TO REMAIN IN SERVICE. CONFIRM ACTUAL LOCATION IN THE FIELD.
- 12 CAP (E) ABANDONED MAIN LINE PIPE BELOW GRADE.
- 13 RELOCATE VALVE STATION CONTROL WIRES TO HERE.

CONSTRUCTION NOTES:

- 1. (E) IRRIGATION INSIDE THE (N) WORK AREA SHALL BE DEMOLISHED AS REQUIRED TO MAKE WAY FOR THE (N) BUILDING AND HARDSCAPE CONSTRUCTION. THIS INCLUDES (E) RCV'S, LATERAL LINE PIPE WITH RECONNECTION TO (E) ROTOR HEAD ZONES AS SHOWN AND NOTED, AND (E) RCV'S. WHEN IN DOUBT, CONFER WITH ARCHITECT FOR DIRECTION.
- 2. THE (E) IRRIGATION MAIN LINE SERVING FREEDOM HIGH SCHOOL CAMPUS LANDSCAPE AND FIELDS SHALL REMAIN IN SERVICE AND IN GOOD WORKING ORDER AT ALL TIMES. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING RESEARCH AND SERVICES PRIOR TO ACTUAL CONSTRUCTION OF THE NEW WORK:
 - A. DISCUSS THE ACTUAL IRRIGATION MAIN LINE PIPE LOCATIONS WITH THE ARCHITECT. STAKE LOCATIONS AS REQUIRED.
 - B. POT HOLE TO ESTABLISH WHAT BURIED PIPES ARE IRRIGATION MAIN LINES SERVING THE FIELDS AND THE SCHOOL CAMPUS.
- 3. WIRING NOTE FOR (E) RCV SOLENOIDS SHOWN ON THIS SHEET: RCV'S AS SHOWN ON THIS SHEET SHALL BE CONTROLLED FROM AND WIRED TO (E) CONTROLLER "A". SALVAGE AND PROTECT (E) CONVENTIONAL CONTROL WIRING FOUND NEXT TO THE (E) PVC MAIN LINE. REROUTE WITH (N) WIRE AS DIRECTED AND SHOWN ON THE IRRIGATION PLAN.



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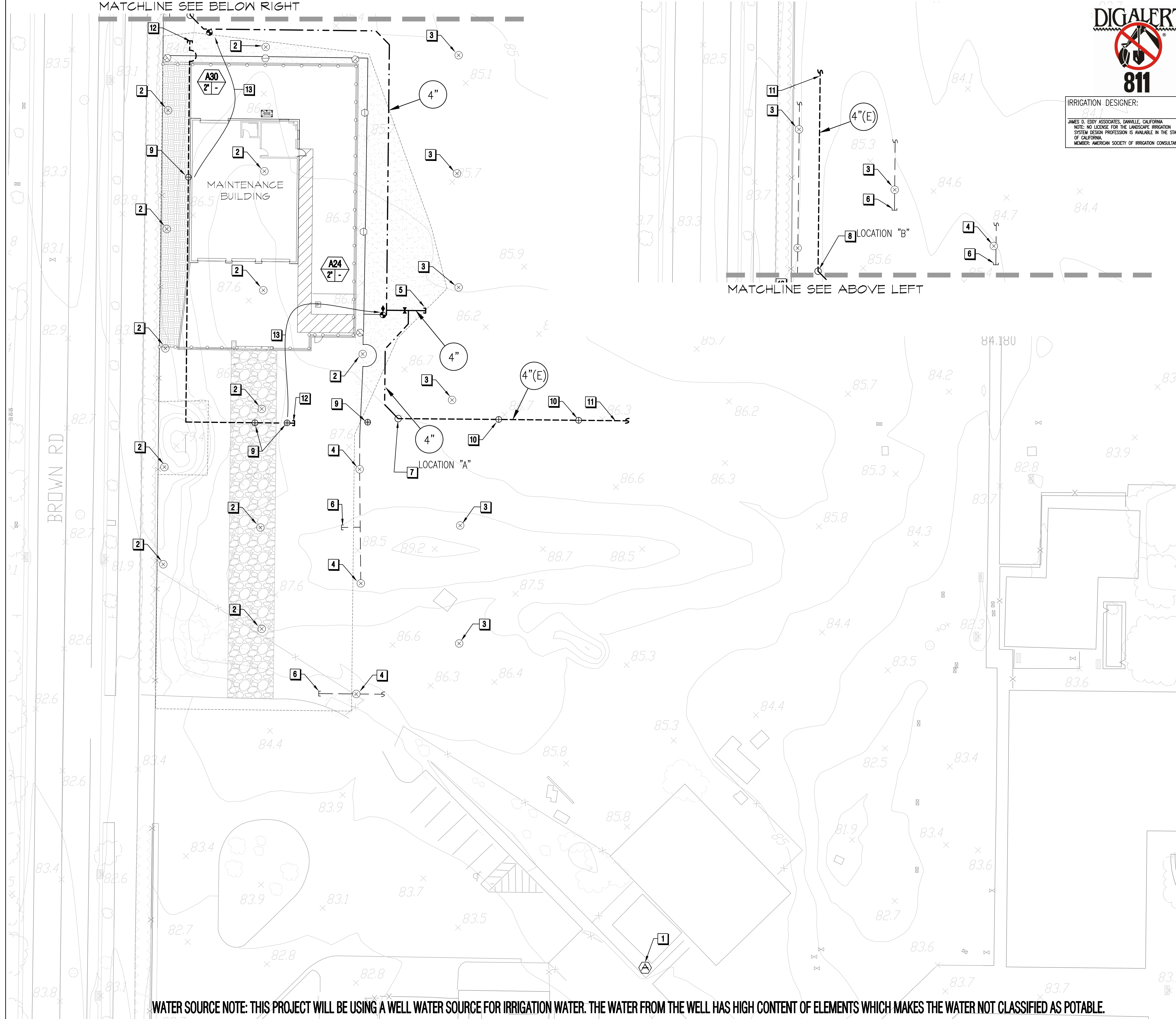
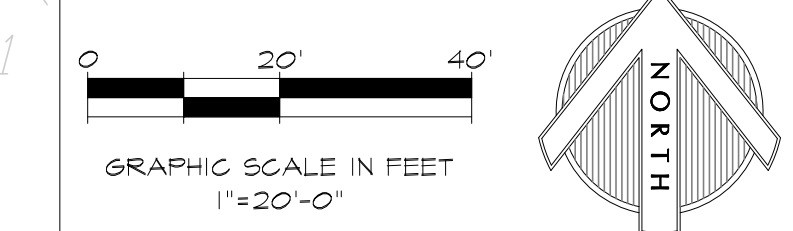
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IRRIGATION PLAN

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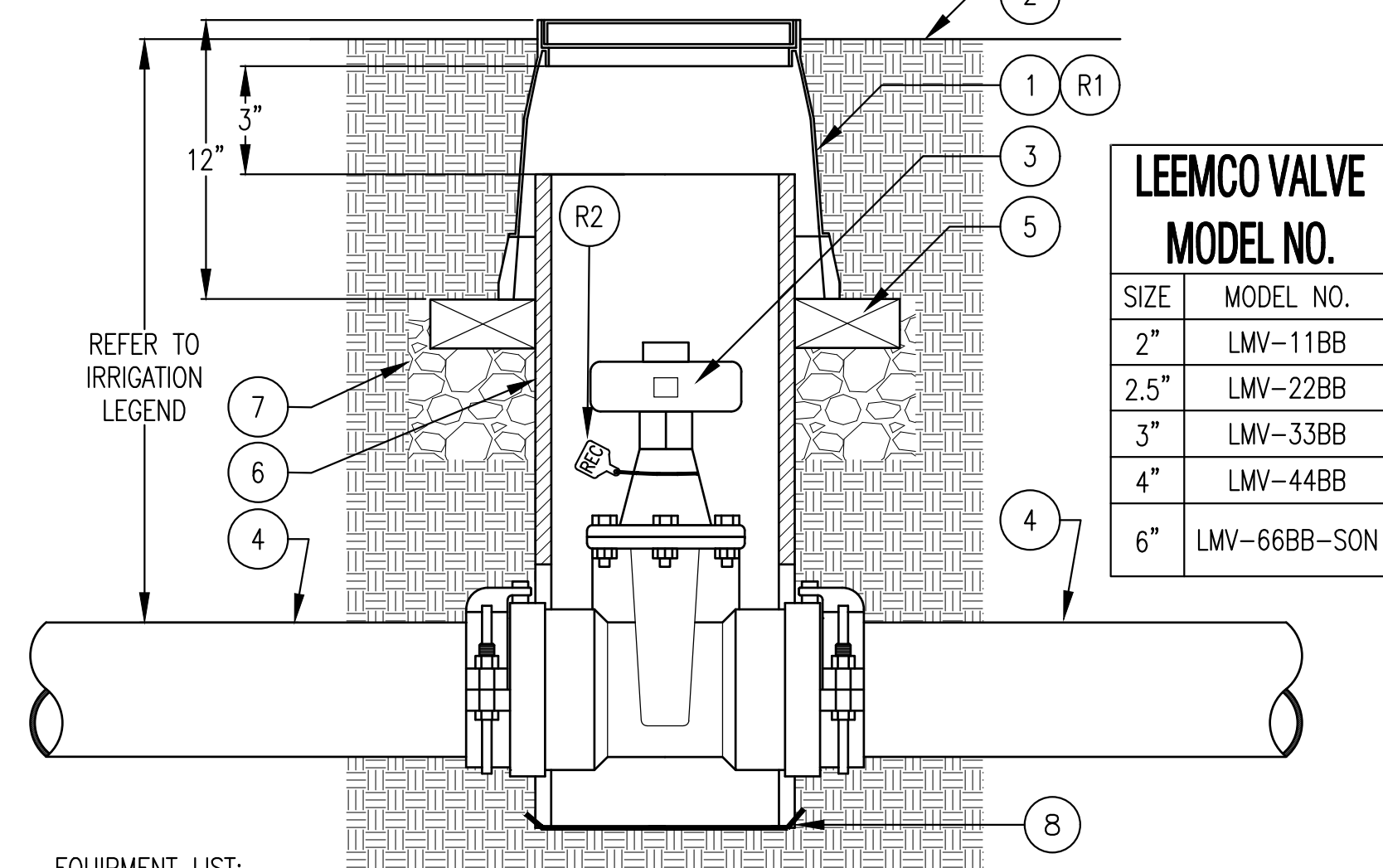
L3.0

WATER SOURCE NOTE: THIS PROJECT WILL BE USING A WELL WATER SOURCE FOR IRRIGATION WATER. THE WATER FROM THE WELL HAS HIGH CONTENT OF ELEMENTS WHICH MAKES THE WATER NOT CLASSIFIED AS POTABLE.



RECYCLED WATER ITEMS:

- R1. VALVE BOX AND LID COLOR: RECYCLED WATER PURPLE
 R2. RECYCLED WATER TAG - ATTACH TO VALVE WITH A PLASTIC ZIP TIE.



EQUIPMENT LIST:

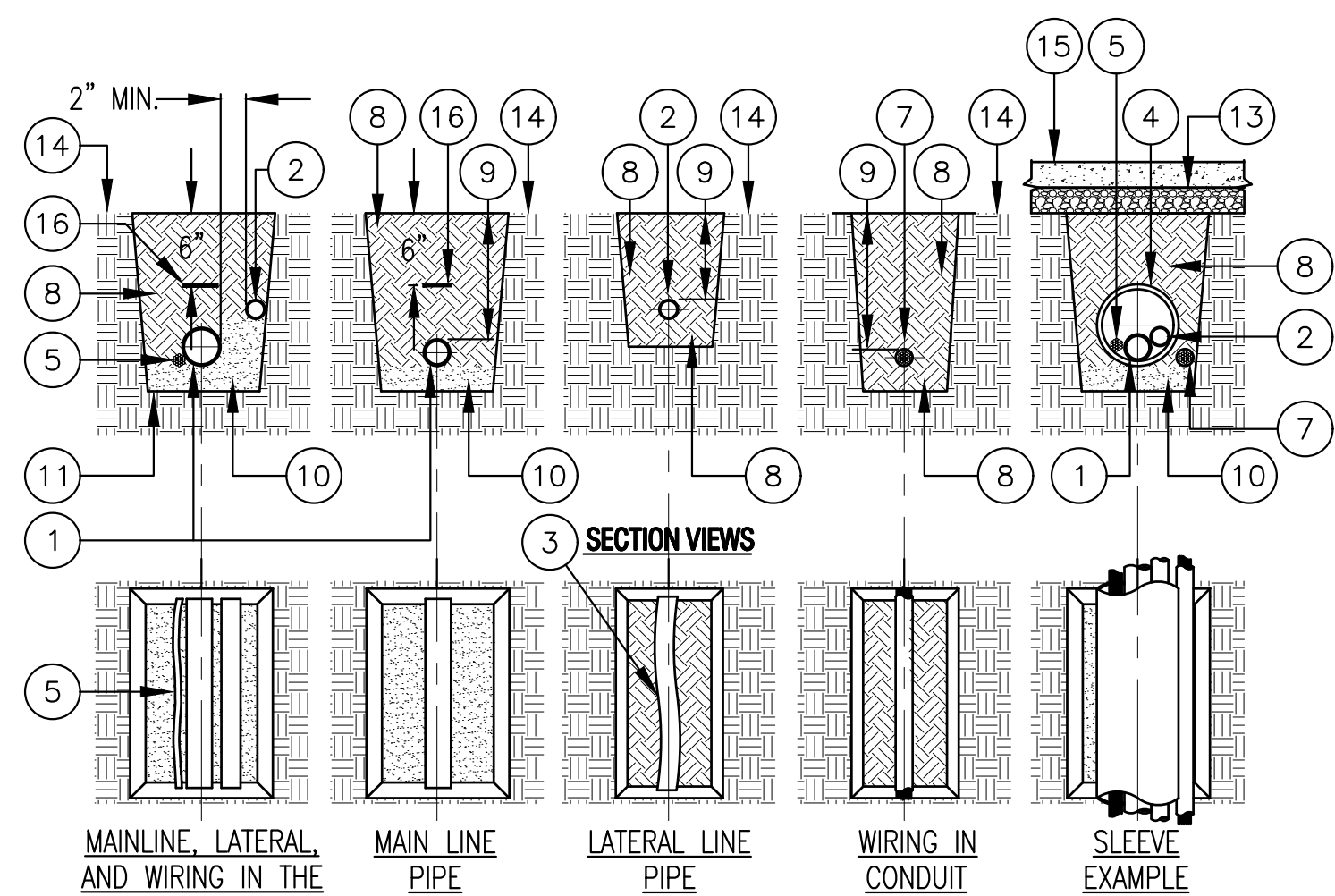
(REFER TO BUBBLED NUMBERS)

- 10" ROUND PLASTIC VALVE BOX WITH PLASTIC BOLT-DOWN LID.
- FINISH GRADE
- LEEMCO GATE VALVE, BELL CONNECTIONS WITH INTEGRAL RESTRAINTS. UNLESS OTHERWISE NOTED, PLACE VALVE IN THE OPEN POSITION. BOLT TORQUE: 3" = 20 FT-LBS; 4", 6" & 8" = 50 FT-LBS.
- MAIN LINE PIPE (ACCORDING TO LEGEND AND SPECIFICATIONS)
- BRICK BASE (2 TOTAL, 180 DEGREES APART)
- 10" SCH. 40 OR CLASS 200 PVC RISER-NOTCH RISER TO FIT OVER PIPE
- CRUSHED GRAVEL BASE, 6" DEEP, ALL AROUND
- METAL WIRE MESH TO PREVENT GOPHER INTRUSION, 1/2" MESH, 19 GA, GALVANIZED

INSTALLATION NOTES:

- INSTALL VALVE BOX FLUSH WITH FINISH GRADE IN TURF AND 1" ABOVE FINISH GRADE IN SHRUB AREAS.
- KEEP BRICKS AWAY FROM PIPE.

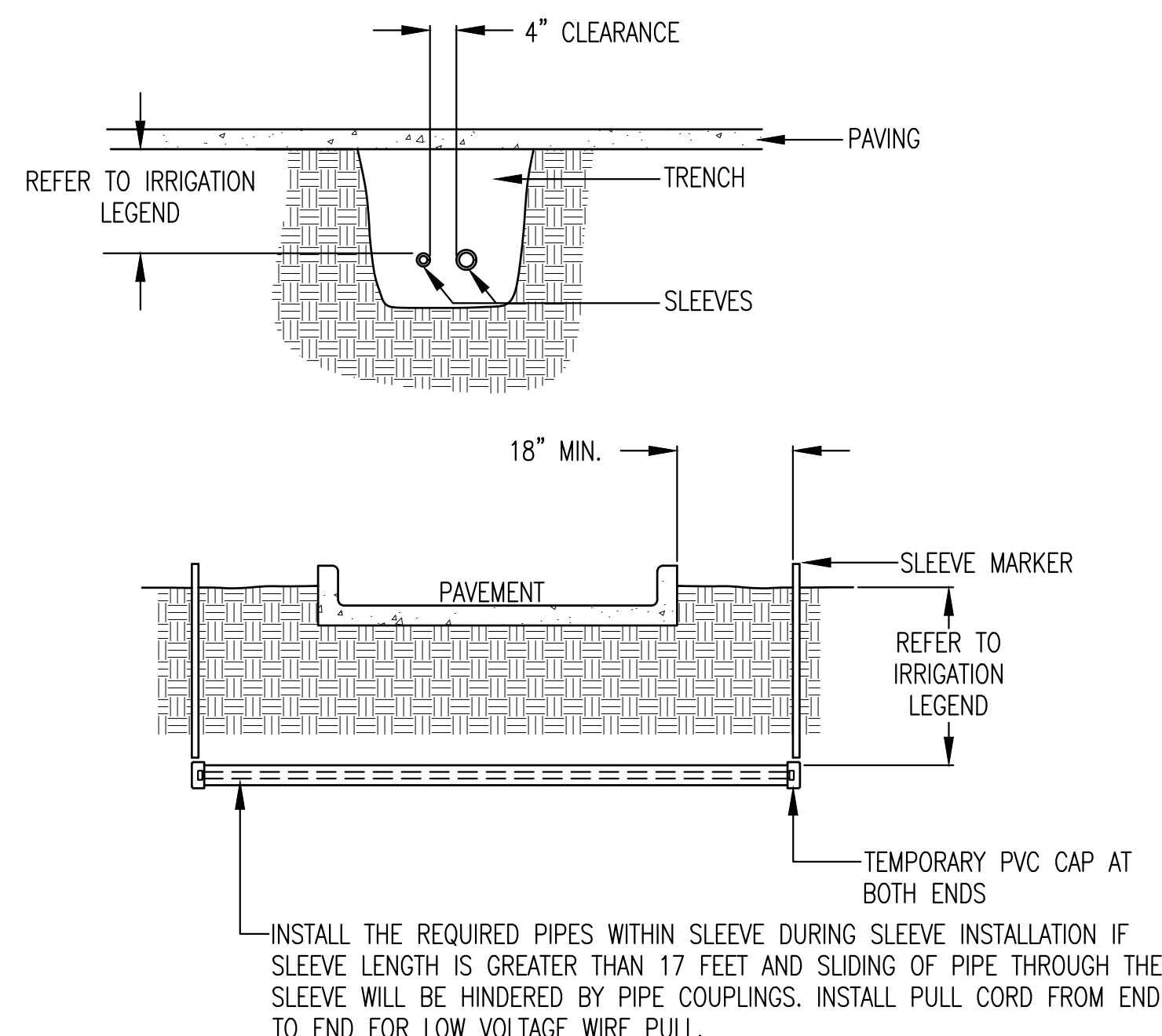
1 GATE VALVE, LEEMCO WITH BELL CONNECTIONS & RESTRAINTS (2", 2.5", 3", 4", & 6")
 NOT TO SCALE



ITEM LIST AND INSTALLATION NOTES:

- MAIN LINE PIPE; PROVIDE A MINIMUM OF 2" BETWEEN ALL PIPES.
- LATERAL LINE PIPE; PROVIDE A MINIMUM OF 2" BETWEEN ALL PIPES. SNAKE SOLVENT WELD PLASTIC PIPING IN TRENCH AS SHOWN.
- SLEEVE BELOW ALL HARDSCAPE ELEMENTS WITH SLEEVING TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE WITHIN.
- WIRE BUNDLE: INSTALL WIRING BENEATH AND BESIDE MAIN LINE. TAPE AND BUNDLE AT 10-FOOT INTERVALS.
- TIE A 24-INCH LOOP IN WIRING AT CHANGES OF DIRECTION OF 30° OR GREATER. UNTIE AFTER ALL CONNECTIONS HAVE BEEN MADE.
- LOW VOLTAGE WIRE CONDUIT (WHERE SPECIFIED).
- CLEAN BACKFILL PER THE SPECIFICATIONS, TYPICAL.
- FOR PIPE, SLEEVE AND WIRE BURIAL DEPTHS, REFER TO IRRIGATION LEGEND AND SPECIFICATIONS.
- PROVIDE A SAND BED FOR PIPE.
- TRENCH BOTTOM OF UNDISTURBED SOIL, TYPICAL.
- WHERE BORING UNDER EXISTING PAVEMENT IS REQUIRED - REFER TO DRAWINGS FOR SPECIFIC INFORMATION.
- PAVEMENT AND SUBGRADE
- FINISH GRADE
- PAVED OR CONCRETE SURFACE
- DETECTABLE WARNING TAPE PER SPECIFICATIONS

4 TRENCH
 NOT TO SCALE

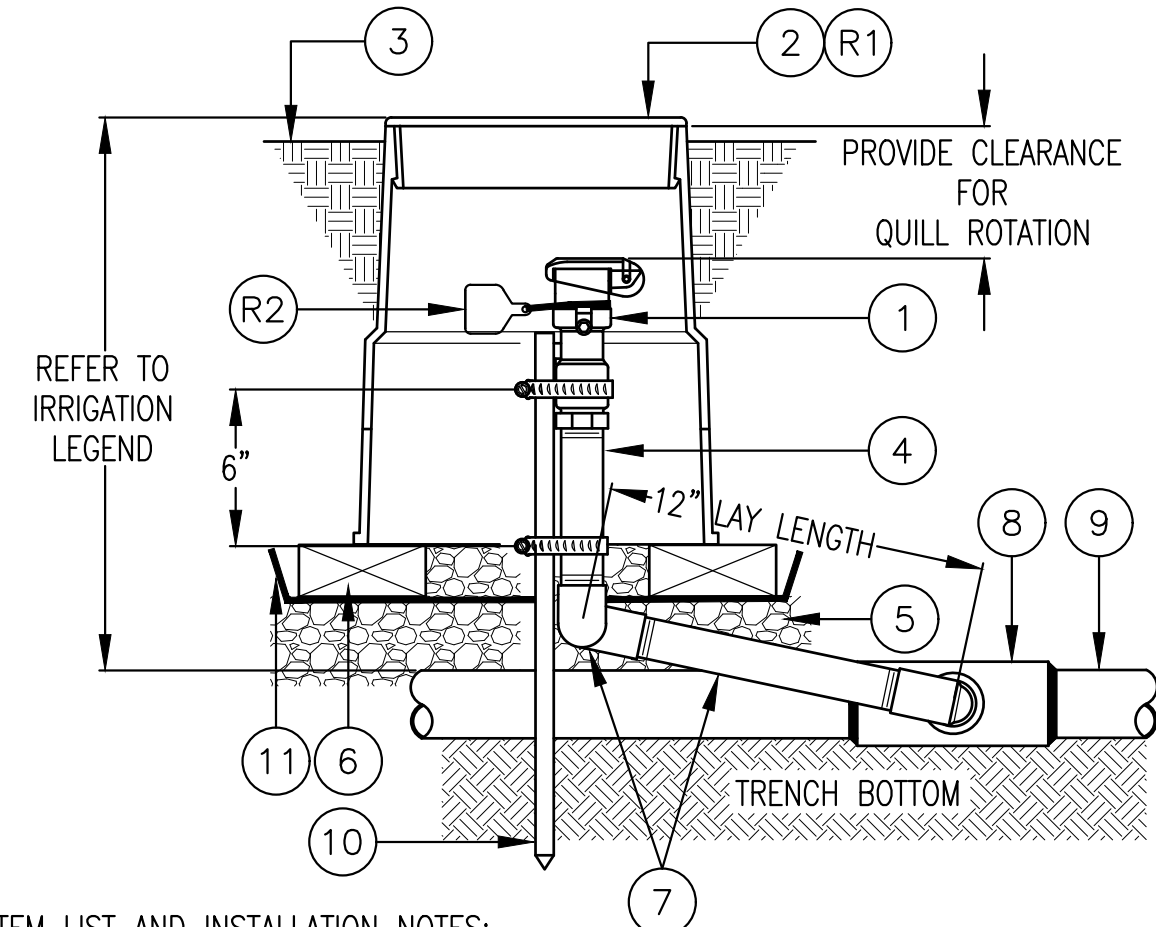


NOTES:

- IRRIGATION SLEEVES TO BE PVC CLASS 200 OR SCH 40 PIPE. USE THE PIPE WITH THE THICKEST WALL DIMENSION.
- JOINTS TO BE SOLVENT WELDED AND WATERTIGHT.
- IF PIPING IS TO BE INSTALLED AFTER SLEEVING IS BACKFILLED, MARK SLEEVE LOCATION WITH A T. CHRISTY ENTERPRISES FIBERGLASS COMPOSITE MARKING POST, LABELED "IRRIGATION", EXPOSED AT GRADE, MODEL #ID-SF66-IRR.
- MECHANICALLY TAMP BACKFILL TO 95% COMPACTION.
- INSTALL SLEEVES LEVEL AND AFTER PIPE INSTALLATION, SEAL ENDS OF PIPE WITH GROUT TO PREVENT ROOT INTRUSION INTO THE SLEEVE.

2 SLEEVE INSTALLATION
 NOT TO SCALE

- RECYCLED WATER ITEMS:**
 R1. VALVE BOX AND LID COLOR: RECYCLED WATER PURPLE
 R2. RECYCLED WATER TAG - ATTACH TO VALVE WITH A PLASTIC ZIP TIE.



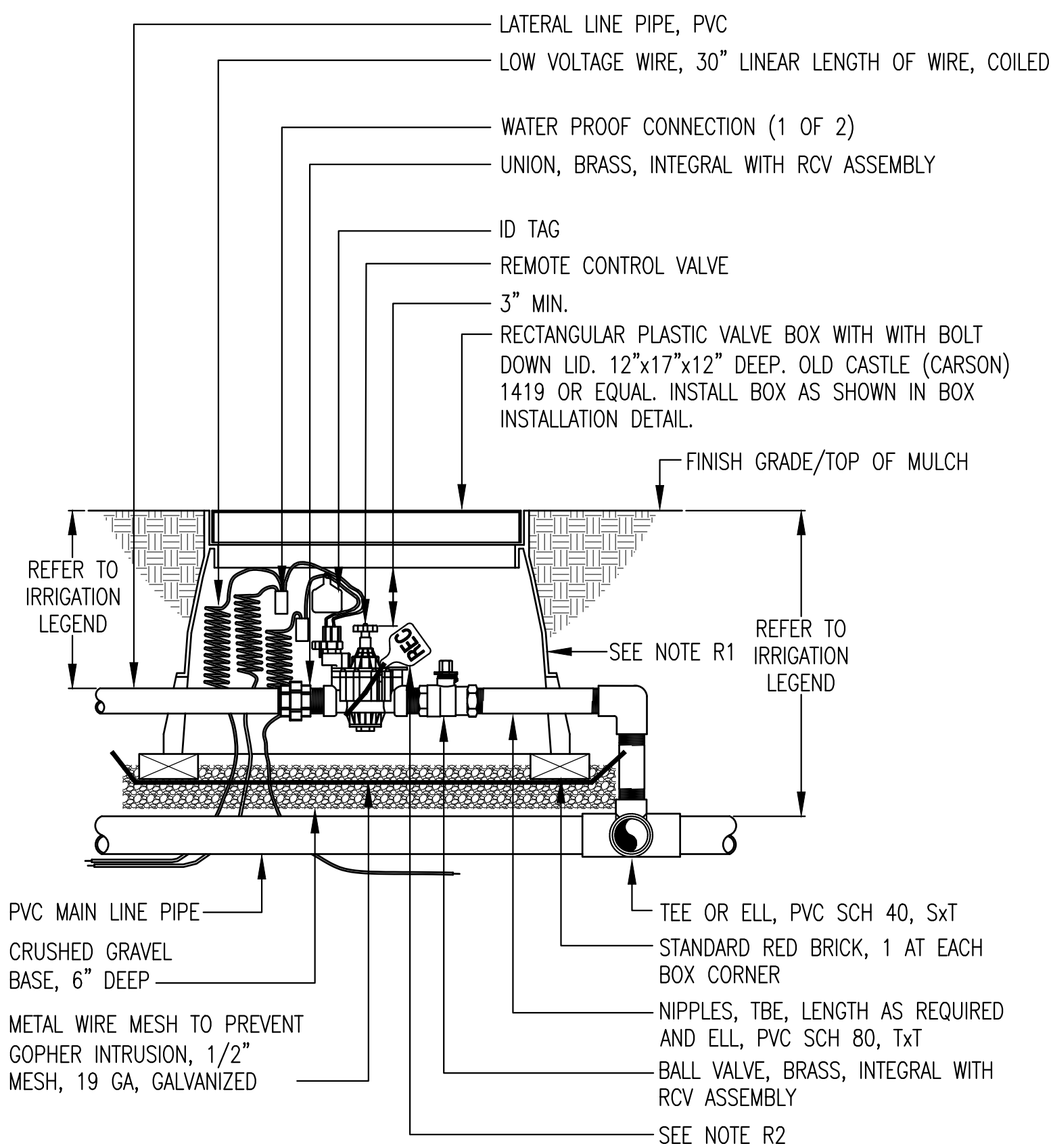
ITEM LIST AND INSTALLATION NOTES:

- QUICK COUPLING VALVE - INSTALL VALVE PERPENDICULAR TO FINISHED GRADE UNLESS FIELD CONDITIONS REQUIRE ADJUSTMENT. INSTALL IN OUT-OF-PLAY OR PEDESTRIAN ACCESS AREAS. UNLESS OTHERWISE NOTED, FITTINGS ARE THE SAME IPT SIZE AS THE VALVE IPT INLET THREAD SIZE.
- PLASTIC VALVE BOX AND LID, 10" ROUND, BOLT-DOWN LID - INSTALL VALVE BOX FLUSH WITH FINISH GRADE IN TURF AND 1" ABOVE FINISH GRADE IN SHRUB AREAS
- FINISH GRADE OR TOP OF MULCH
- PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
- CRUSHED GRAVEL BASE, 6" DEEP
- COMMON BRICK, 2 TOTAL, 180 DEGREES APART
- SWING JOINT ASSEMBLY:
 - FINGER TIGHTEN O-RING JOINTS AND BACK-OFF ONE FULL TURN TO ALLOW FOR SWING ACTION.
 - PROVIDE 12" BETWEEN CENTER LINES OF ELBOWS ON SWING ARM.
 - INSTALL THE SWING JOINT LAY ARM AT AN ANGLE BETWEEN 30° AND 45° OF THE LATERAL IN ORDER TO ABSORB DOWNWARD IMPACT.
 - SWING JOINT MANUFACTURER: RAIN BIRD SWJ SERIES, 1" DURA STANDARD UNI-BODY MODEL 1-A2-2-1-12, OR APPROVED EQUAL.
- TEE, ELBOW OR SADDLE CONNECTION (PER MAIN LINE FITTING SPECIFICATIONS)
- PVC MAIN LINE PIPE, (MATERIAL AND TYPE PER LEGEND AND SPECIFICATIONS)
- #4 x 24" REBAR STAKE W/STAINLESS STEEL GEAR CLAMPS OR EQUIVALENT SUPPORT SYSTEM
- METAL WIRE MESH TO PREVENT GOPHER INTRUSION, 1/2" MESH, 19 GA, GALVANIZED

5 QUICK COUPLING VALVE IN LANDSCAPED AREAS
 NOT TO SCALE

RECYCLED WATER ITEMS:

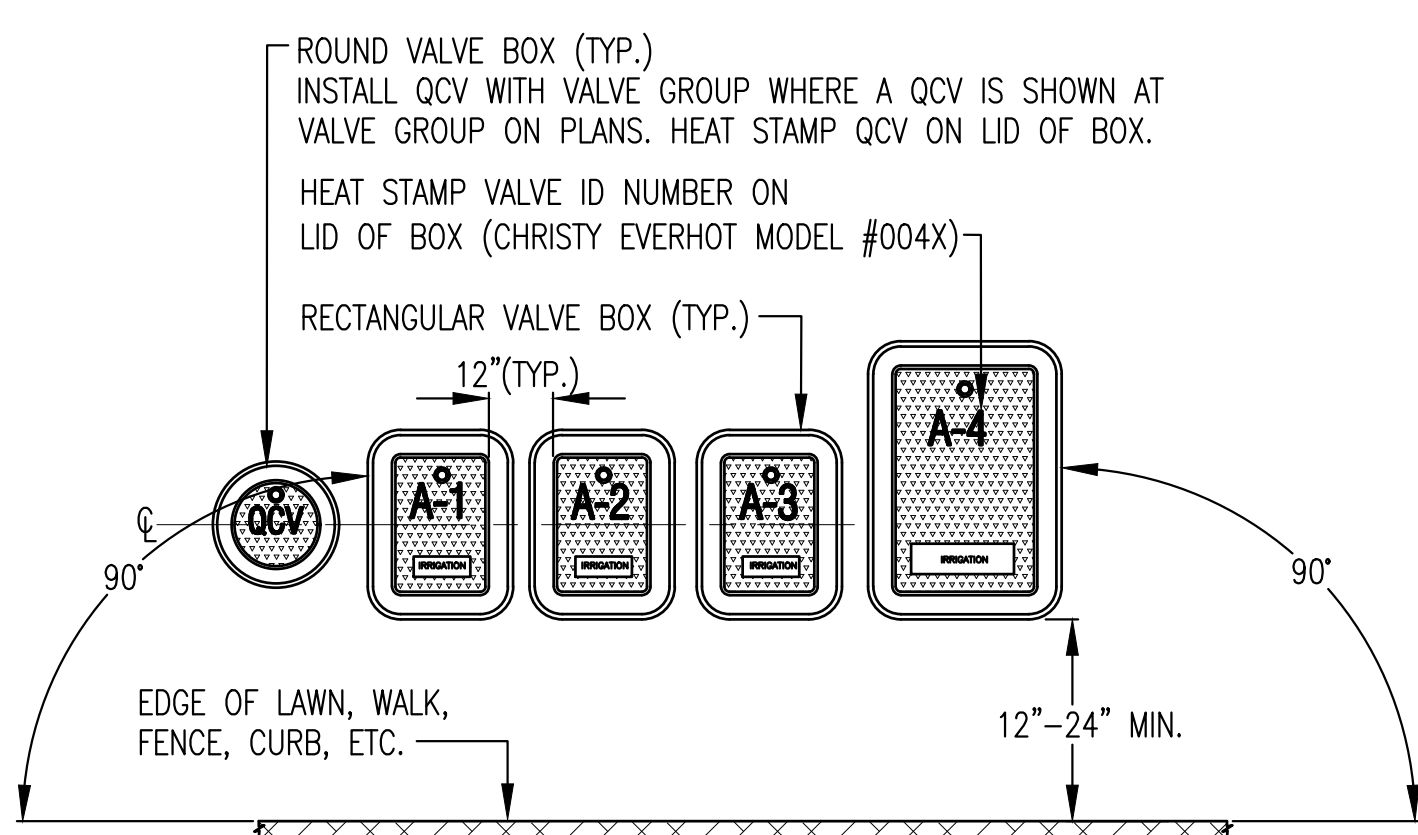
- R1. VALVE BOX AND LID COLOR: RECYCLED WATER PURPLE
 R2. RECYCLED WATER TAG - ATTACH TO VALVE WITH A PLASTIC ZIP TIE.



3 REMOTE CONTROL VALVE (SPRAY AND BUBBLER ZONES)
 NOT TO SCALE

RECYCLED WATER ITEMS:

1. VALVE BOX AND LID COLOR: RECYCLED WATER PURPLE



INSTALLATION NOTES:

- INSTALL VALVE BOXES AS SHOWN IN THE DETAIL ABOVE.
- INSTALL VALVE BOX ASSEMBLIES IN SHRUB OR GROUND COVER ZONES. VALVE ASSEMBLIES INSTALLED IN A TURF ZONE IS PERMITTED ONLY IF A SHRUB OR GROUND COVER AREA DOES NOT EXIST IN THE PROXIMITY OF THE IRRIGATION ZONE.
- PLACE THE CENTER OF THE VALVE BOX OVER THE CENTER OF THE REMOTE CONTROL VALVE. INSTALL VALVE BOX IN A WAY TO ENABLE EASY SERVICING OR REMOVAL OF VALVE.
- INSTALL TOP OF BOX 1" ABOVE FINISHED GRADE IN SHRUB OR GROUND COVER AREAS OR EQUAL TO THE DEPTH OF THE MULCH AND FLUSH WITH GRADE IN TURF ZONES. INSTALL THE TOP OF BOX AT THE SAME ANGLE AS THE FINISHED GRADE.
- PREVENT THE COLLAPSE AND DEFORMATION OF VALVE BOX SIDES. DO NOT HEAVILY COMPACT SOIL AGAINST THE SIDES OF THE VALVE BOX.
- INSTALL EXTENSION RISERS TO VALVE BOX AS REQUIRED TO COMPLETELY ENCLOSE VALVE ASSEMBLY. PROVIDE EXTENSION RISER MANUFACTURED BY THE SAME MANUFACTURER OF THE VALVE BOX.
- PREVENT SOIL INTRUSION INTO THE BOX. USE 20 MIL POLYETHYLENE TAPE AROUND PIPE CUTOUTS AS NEEDED.
- SAWCUTTING OR MODIFYING THE VALVE BOXES BEYOND WHAT THE MANUFACTURER ALLOWS IS NOT PERMITTED. SAWCUT BOXES FOUND DURING REVIEW WILL REQUIRE REPLACEMENT AT NO ADDITIONAL COST TO THE ORIGINAL BID.
- WHEN ASSEMBLY IS COMPLETE INSTALL THE GRAVEL BELOW THE VALVE. FINISHED GRAVEL SHALL BE CLEAN WITHOUT DEBRIS IN THE VALVE BOX.
- WHEN WORK IS COMPLETE AND ACCEPTED BY THE DISTRICT OR TO PREVENT VANDALISM, BOLT DOWN THE LIDS.

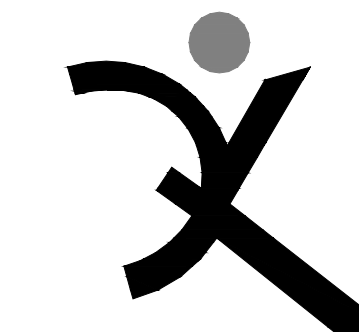
6 BOX INSTALLATION
 NOT TO SCALE



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 JDE PROJECT NO: 18027

IRRIGATION DESIGNER:

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 NOTE: NO LICENSE FOR THE LANDSCAPE IRRIGATION SYSTEM DESIGN PROFESSION IS AVAILABLE IN THE STATE OF CALIFORNIA.
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FREEDOM HIGH SCHOOL

NEW MAINTENANCE FACILITIES

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 OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

ARCH PROJECT NO: 1739.02
 DRAWN BY: JDE
 DRAWING SCALE: AS SHOWN
 PTN: 61721-0069

BID SET
JANUARY 4, 2019
 SHEET TITLE

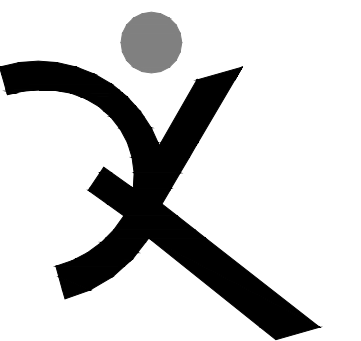
IRRIGATION DETAILS

SHEET NUMBER

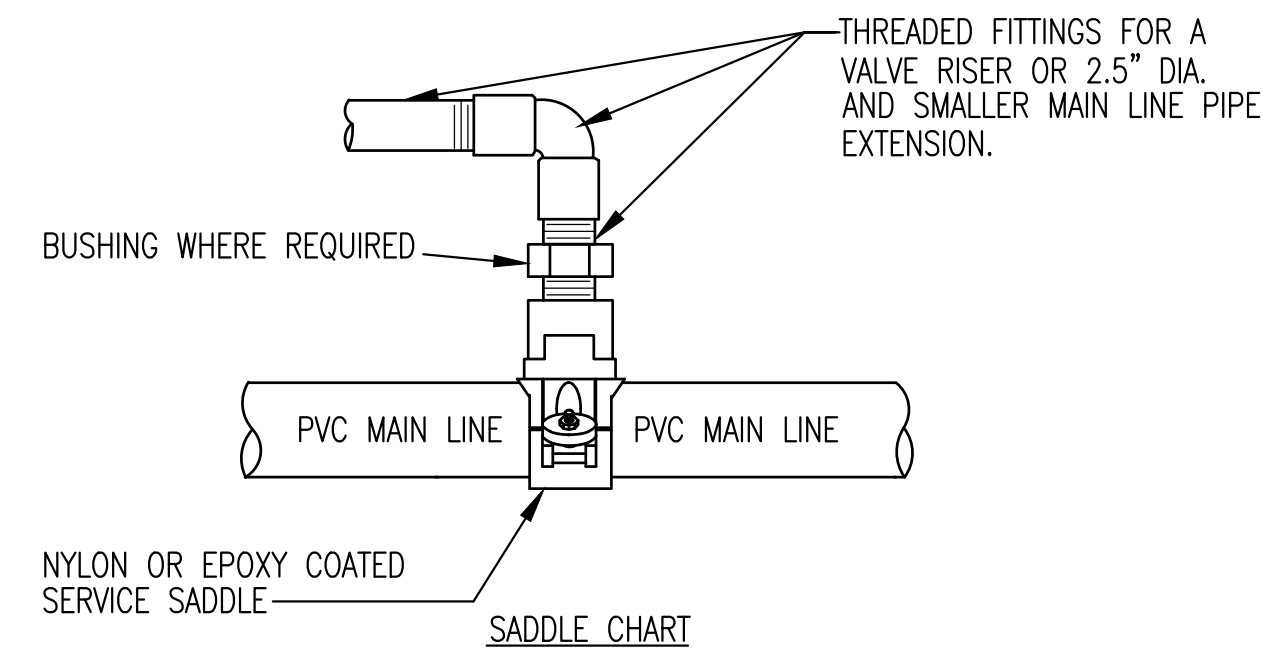
L3.2

IRRIGATION DESIGNER:

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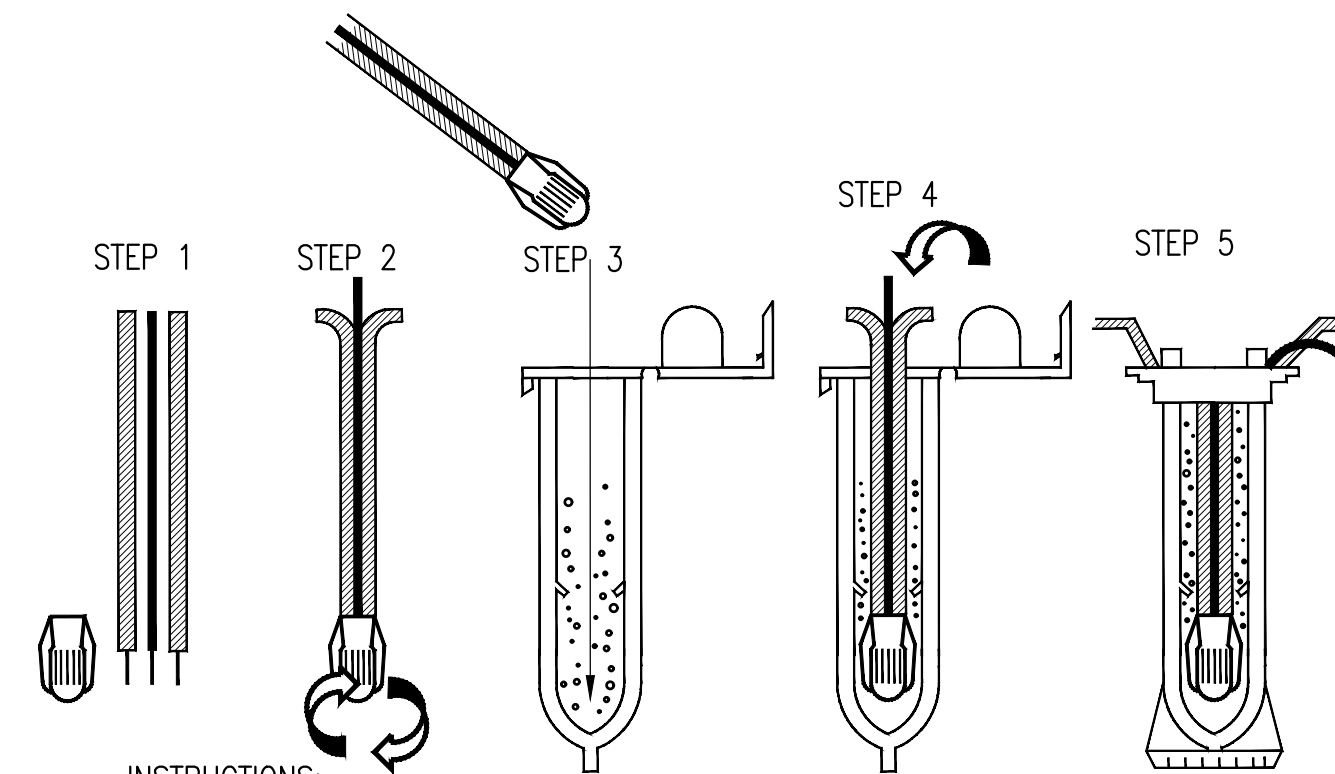


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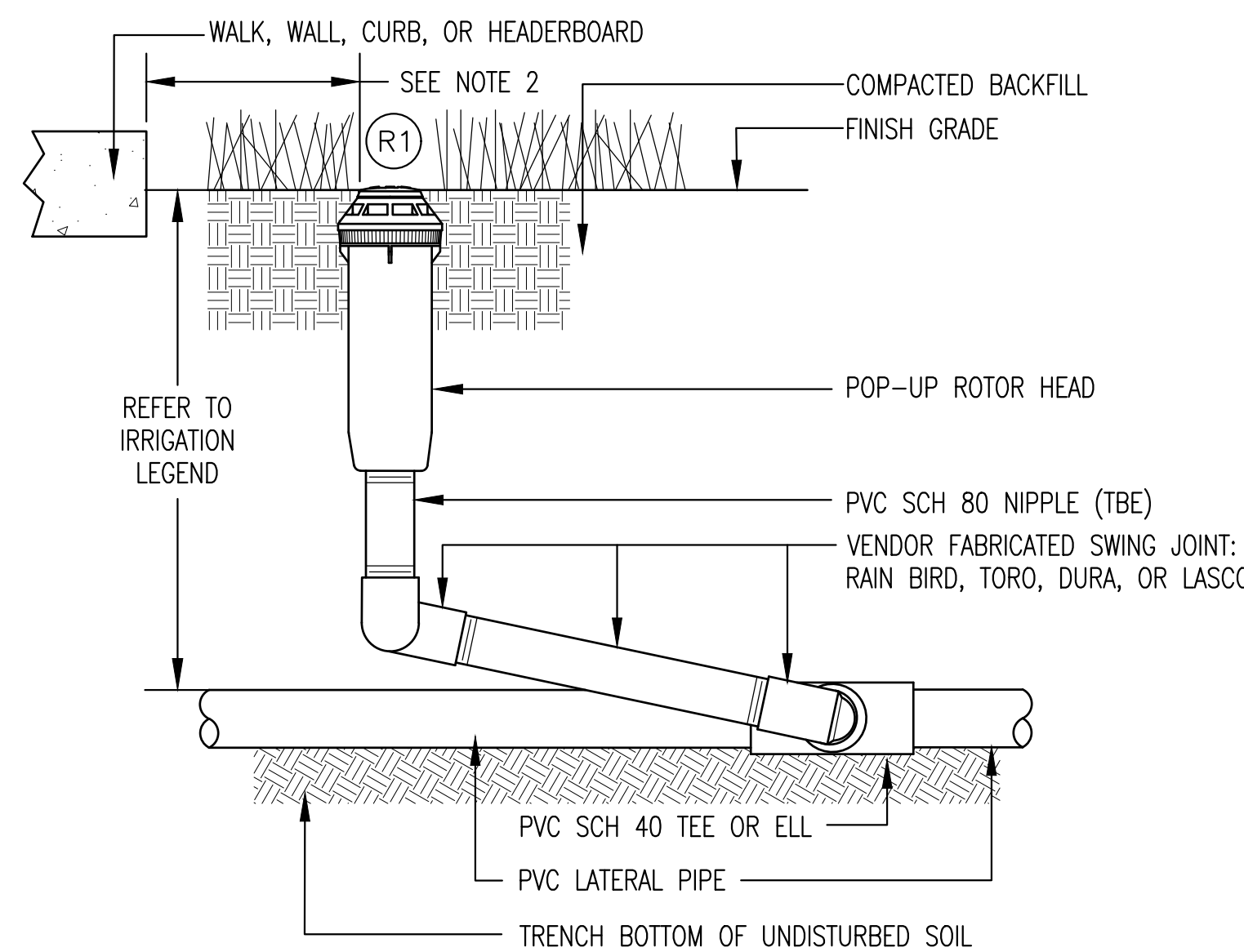
NOMINAL PIPE DIA. (INCHES)	MAIN LINE AVERAGE O.D. (INCHES)	SADDLE MANUFACTURER
4	4.50	LEEMCO LTS SERIES; ROMAC 202N;
6	6.63	SMITH-BLAIR 317; TAP SIZE AS
8	8.63	REQUIRED TO MATCH TAP SIZE OF
VALVE OR PIPE.		
RECOMMENDED NUT TORQUE		
NUT SIZE	PVC PIPE	CI, DI, OR OTHER PIPE
1/2"	20 FT-LBS.	40-50 FT-LBS.
5/8"	30-40 FT-LBS.	60-70 FT-LBS.
3/4"		80-90 FT-LBS.

- NOTES:
- TIGHTEN NUTS EVENLY UNTIL SADDLE BODY CONFORMS SNUGLY TO PIPE. LOOSEN NUTS AND TORQUE AS INDICATED ABOVE OR BY MANUFACTURER.
 - FOR VALVE CONNECTION, USE TAP SIZE EQUAL TO THE VALVE.
 - FOR QUICK COUPLING VALVE CONNECTION, USE 1" FIPT TAP SIZE.
 - FOR AIR/VACUUM RELIEF VALVE CONNECTION, USE 1" FIPT TAP SIZE.
 - FOR 2.5" OR SMALLER MAIN LINE EXTENSION, USE TAP SIZE EQUAL TO MAIN LINE SIZE.
 - PROTECT THREADS FROM DISTORTING, SCREW THE CORPORATION STOP OR OTHER FITTING INTO THE SADDLE BODY PRIOR TO FINAL TIGHTENING.



- INSTRUCTIONS:
- STRIP WIRES APPROXIMATELY 1/2" TO EXPOSE WIRE.
 - TWIST CONNECTOR AROUND WIRES CLOCKWISE UNTIL HAND TIGHT, DO NOT OVERTIGHTEN.
 - INSERT WIRE ASSEMBLY INTO PLASTIC TUBE UNTIL WIRE CONNECTOR SNAPS PAST LIP IN BOTTOM OF TUBE.
 - PLACE WIRES WHICH EXIT TUBE IN WIRE EXIT HOLES AND CLOSE CAP UNTIL IT SNAPS.
 - INSPECT FINAL SPLICE ASSEMBLY TO BE SECURE AND FINISHED.

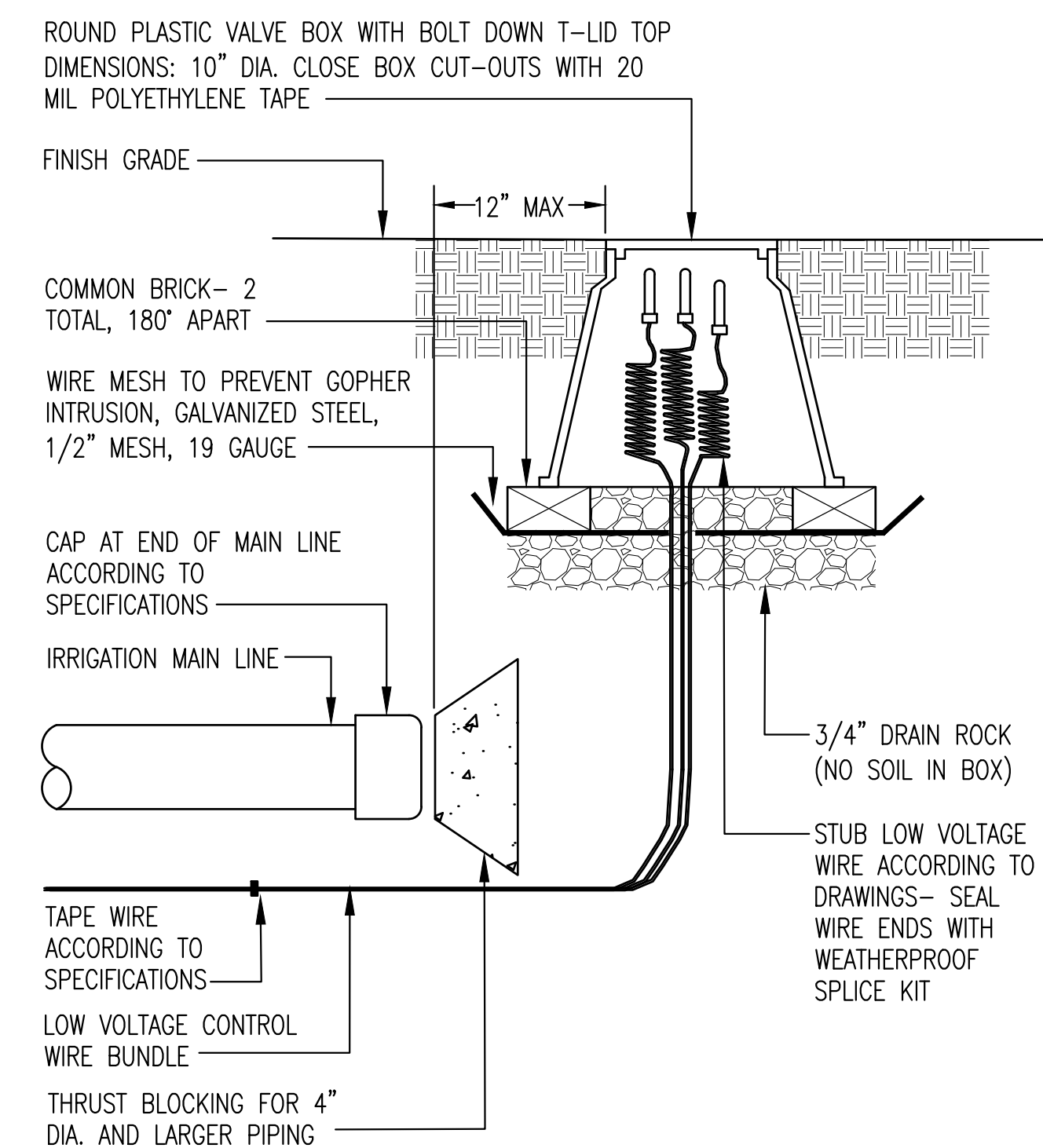
1 WIRE SPLICE
 NOT TO SCALE



- RECYCLED WATER ITEMS:
 R1. TOP OF HEADS MUST CLEARLY INDICATE THE USE OF RECYCLED WATER.
- INSTALLATION NOTES:
- SET TOP OF HEAD 1" ABOVE FINISH GRADE AT TIME OF INSTALLATION. LOWER TO FINAL GRADE WHEN GRADE IS WELL ESTABLISHED.
 - DIMENSION "A": INSTALL HEAD 4" FROM HEADERBOARD OR FENCE AND 24" FROM BUILDINGS AND ALL NON-PERMEABLE PAVED SURFACES.
 - INSTALL HEAD PERPENDICULAR TO FINISHED GRADE.
 - PRIOR TO NOZZLE INSTALLATION, FLUSH HEAD WITH WATER USING MANUFACTURER'S FLUSH NOZZLE TO ELIMINATE DEBRIS FROM WITHIN HEAD AND RISER.
 - INSTALL NOZZLE AND ADJUST ROTOR HEAD'S VARIABLE ARC ADJUSTMENT (PART CIRCLE HEAD) AND NOZZLE STREAM SCREW SO COVERAGE IS WITHIN PLANTED AREA. NO OVERSPRAY ON WINDOWS, BUILDINGS, STREETS OR PAVEMENT.
 - ROTOR HEAD SHALL PROVIDE HEAD-TO-HEAD COVERAGE OR GREATER.

3 TURF ROTARY POP-UP HEAD
 NOT TO SCALE

2 SADDLE CONNECTION - 3" & 4" DIA. MAIN LINE (WHERE REQUIRED)
 NOT TO SCALE



4 MAIN LINE & WIRE STUB-OUT
 NOT TO SCALE

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NO.	DESCRIPTION

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BID SET
 JANUARY 4, 2019
 SHEET TITLE

IRRIGATION DETAILS

SHEET NUMBER

L3.3

LEEMCO FITTING & JOINT RESTRAINT CONSTRUCTION DETAILS (also refer to the Leemco's current guidelines and recommendations)

LEEMCO JOINT RESTRAINTS DISTANCE TABLES:

SIZE REDUCTION, REDUCERS

TABLES BELOW SHOW "L" DISTANCES IN FEET. WHEN AN ADJACENT JOINT TO A REDUCER OR A REDUCING TEE IS WITHIN THIS DISTANCE, OTHER JOINTS ON THE LARGER DIAMETER END MUST BE RESTRAINED.

TABLE VALUES ARE LISTED FOR 125 PSI LINE PRESSURE.

TABLE VALUES ARE BASED ON TYPE 3 TRENCHING AND COMPACTNESS METHOD, 30" COVER AND A SAFETY FACTOR OF 2. DESIGN COVER IS 36".

BENDS, DEAD ENDS

TABLES BELOW SHOW "L" DISTANCES. WHEN AN ADJACENT JOINT TO A BEND IS WITHIN THIS DISTANCE, THE JOINT MUST BE RESTRAINED. FOR BENDS ADJACENT JOINTS ON BOTH SIDES OF THE BEND REQUIRE RESTRAINTS. USE THE 90-DEGREE BEND VALUES FOR THE SIDE (BRANCH) OUTLET OF TEE'S.

TABLE VALUES ARE LISTED FOR 125 PSI LINE PRESSURES.

TABLE VALUES ARE BASED ON TYPE 3 TRENCHING AND COMPACTNESS METHOD, 30" COVER AND A SAFETY FACTOR OF 2. DESIGN COVER IS 36".

SANDY-CLAY SOIL MIXTURE

TABLE A-125 PSI LINE PRESSURE

PIPE SIZE	DEGREE OF BEND				DEAD END
	11"	22"	45"	90"	
3"	2	3	5	11	30
4"	2	4	9	20	45
6"	3	6	13	29	63

SANDY-CLAY SOIL MIXTURE

TABLE A-125 PSI LINE PRESSURE

SIZE REDUCTION	DISTANCE IN FEET	
	3 x 2	3 x 2.5
3 x 2	10	8
3 x 2.5	8	31
4 x 2	20	20
4 x 2.5	14	14

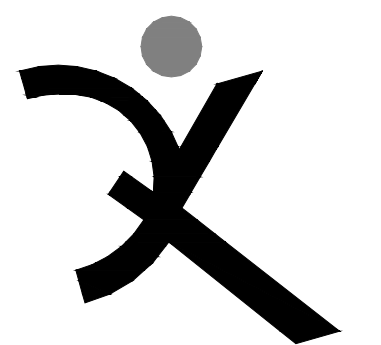
NOTE: ALL DI FITTINGS SHALL BE WRAPPED COMPLETELY WITH T. CHRISTY POLYETHYLENE FITTING WRAP SECURED WITH CHRISTY'S PIPE WRAP TAPE.



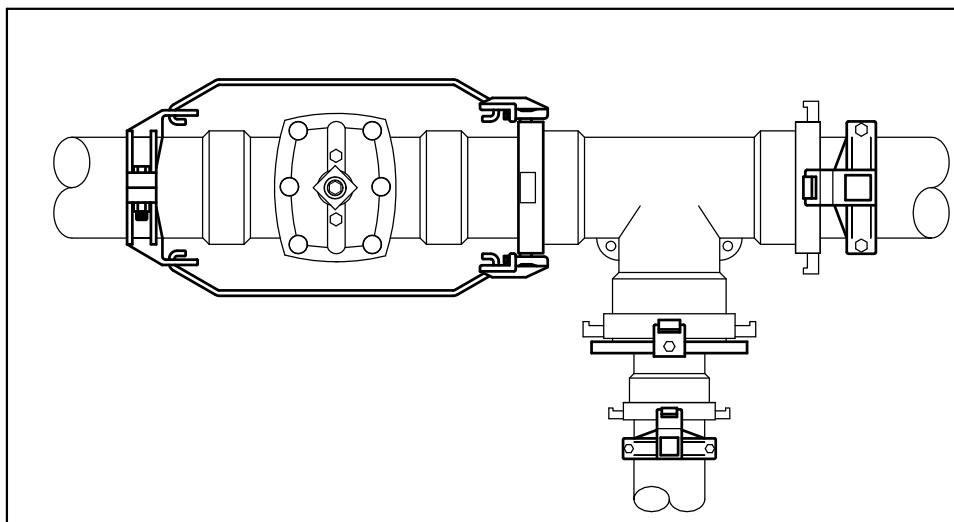
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THE ARRANGEMENT ON THE LEFT IS THE METHOD OF RESTRAINING A GATE VALVE. THE SB-LK7 LINK SHOWN BELOW BOLTS ONTO THE LUG OF THE FITTING.

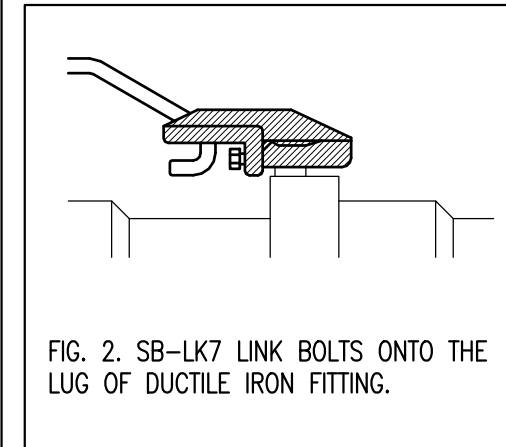


FIG. 2. SB-LK7 LINK BOLTS ONTO THE LUG OF DUCTILE IRON FITTING.

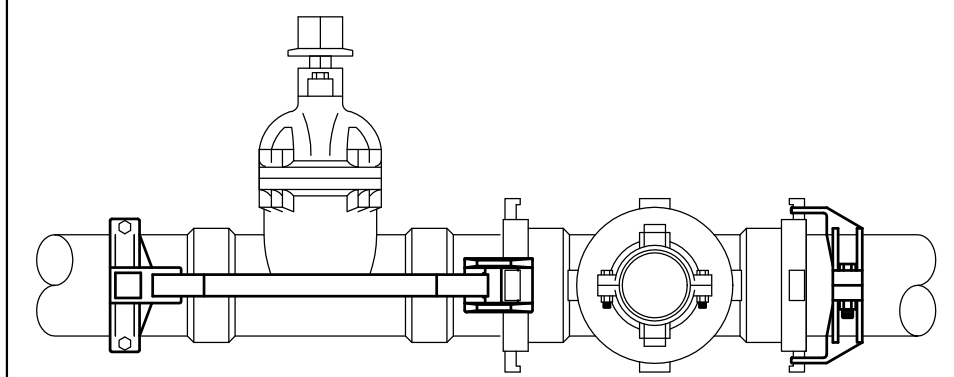


FIG. 1. TOP AND SIDE VIEW OF THE RESTRAINED GATE VALVE. THE SB-LK7 LINKS BOLT ONTO THE LUGS OF THE FITTING. THE RESTRAINT BARS SPAN ACROSS THE VALVE AND ATTACH TO THE JOINT RESTRAINT SECURED TO THE PIPE.

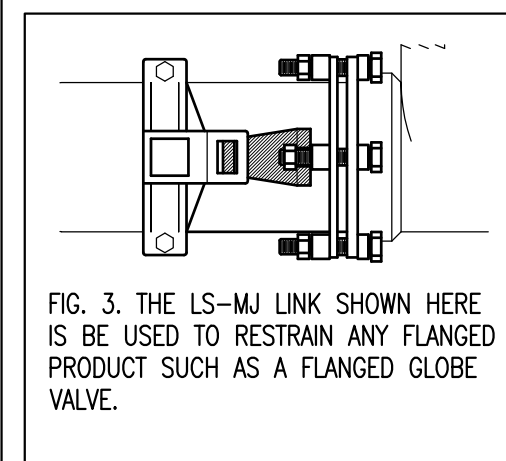


FIG. 3. THE LS-MJ LINK SHOWN HERE IS BE USED TO RESTRAIN ANY FLANGED PRODUCT SUCH AS A FLANGED GLOBE VALVE.

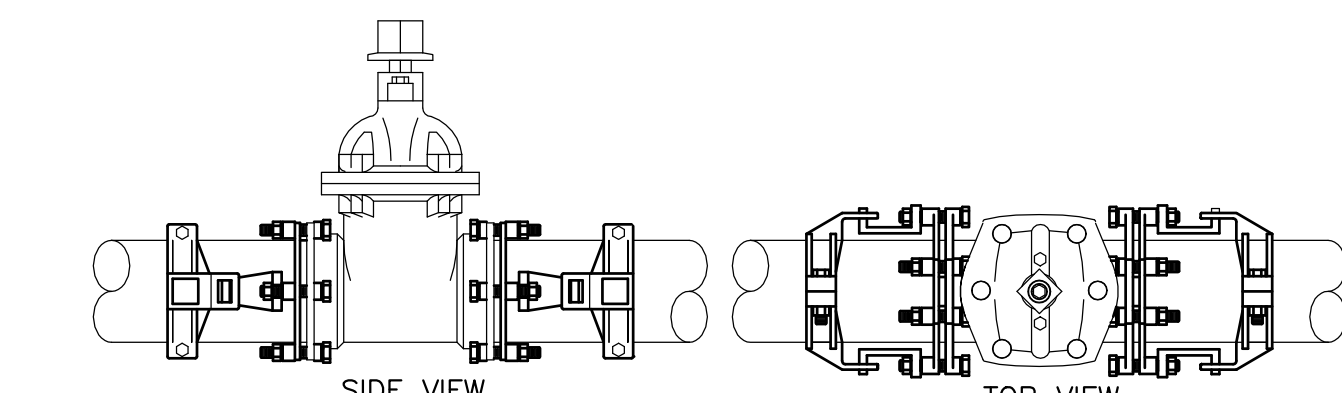


FIG. 4. THE LS-MJ LINKS ATTACH TO THE FLANGE OF AN MJ GATE VALVE OR A FLANGED DEVICE.

- NOTES:**
- ALTHOUGH A GATE VALVE ACTS AS A DEAD-END WHEN SHUT-OFF, THE CONNECTING PIPES ON BOTH SIDES OFFER RESISTANCE, ACT AS THRUST BLOCKS AND ELIMINATE THE NEED FOR RESTRAINING ADJACENT JOINTS.
 - THE ADJACENT JOINT TO A GATE VALVE WILL REQUIRE RESTRAINTS, WHEN IT IS WITHIN THE "L" DISTANCE OF A BEND, A REDUCER OR A DEAD END.
 - GATE VALVES LOCATED NEXT TO A TEE: USE LEEMCO LGK SERIES JOINT RESTRAINTS.

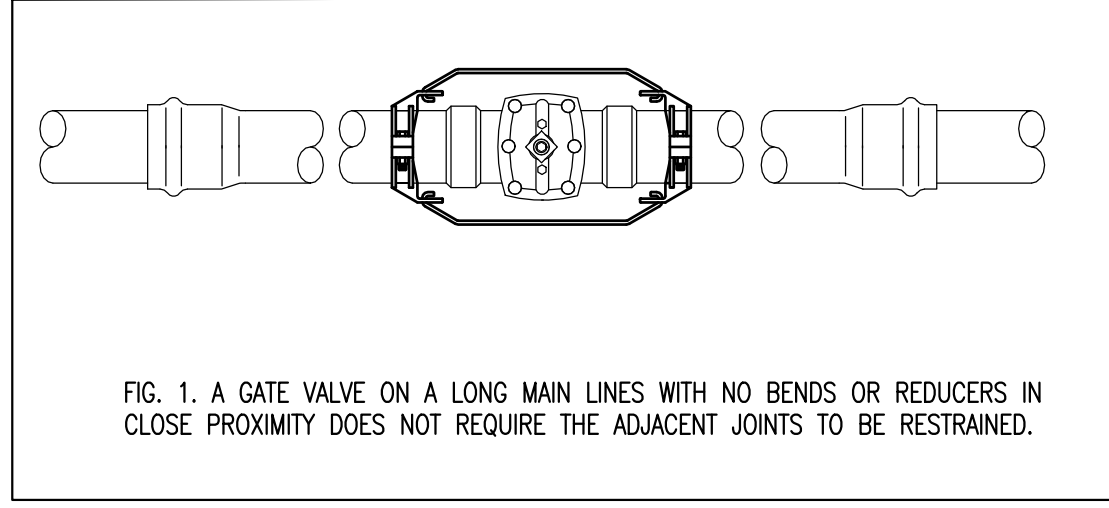


FIG. 1. A GATE VALVE ON A LONG MAIN LINES WITH NO BENDS OR REDUCERS IN CLOSE PROXIMITY DOES NOT REQUIRE THE ADJACENT JOINTS TO BE RESTRAINED.

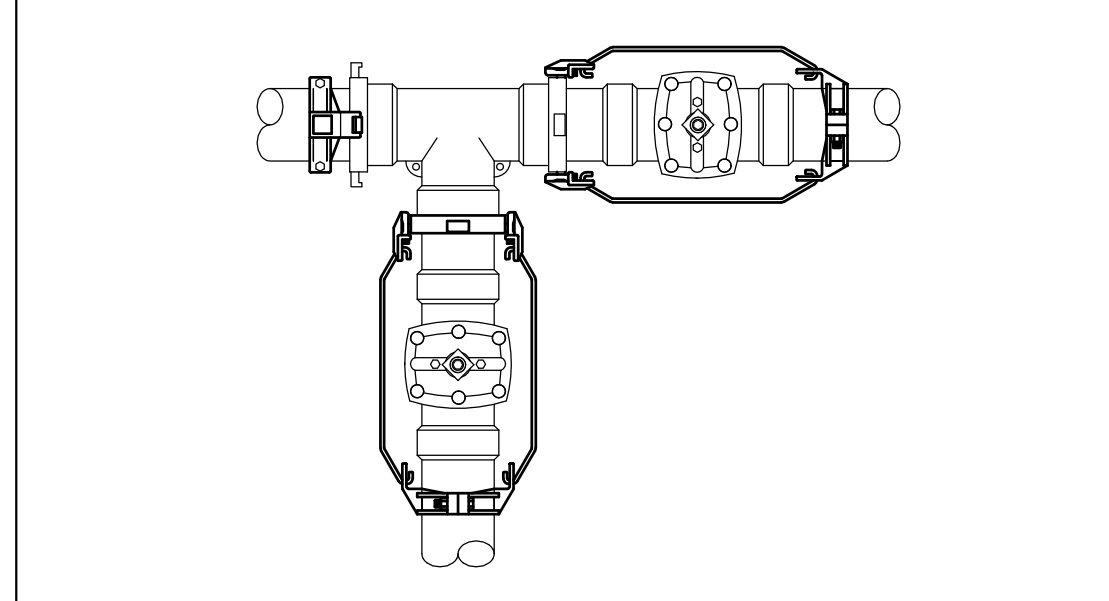


FIG. 2. GATE VALVE INSTALLATION

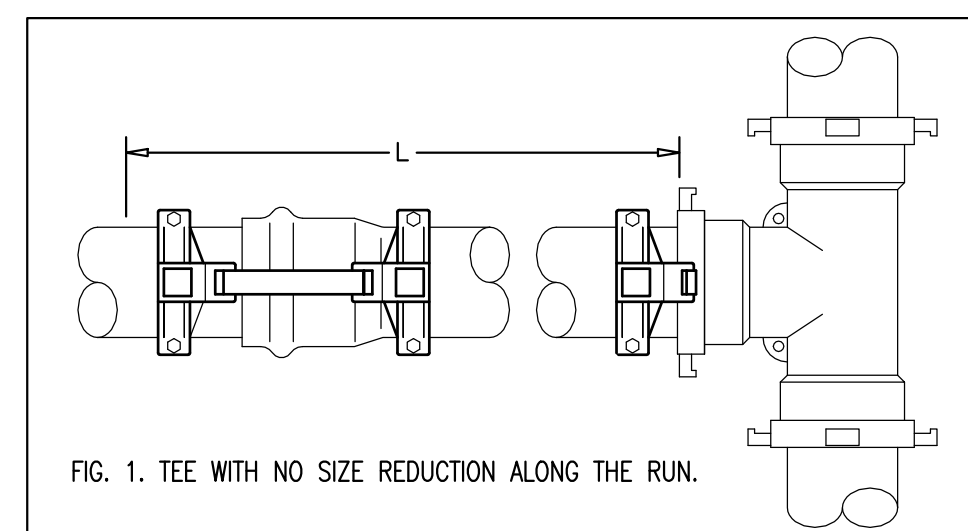


FIG. 1. TEE WITH NO SIZE REDUCTION ALONG THE RUN.

- NOTES:**
- A BRANCH OF A TEE IS TREATED AS A 90-DEGREE BEND. DIRECTION OF FLOW IS NOT RELATIVE TO RESTRAINING A JOINT.
 - A BRANCH OF A TEE IS TREATED AS A 90-DEGREE BEND. DIRECTION OF FLOW IS NOT RELATIVE TO RESTRAINING A JOINT.

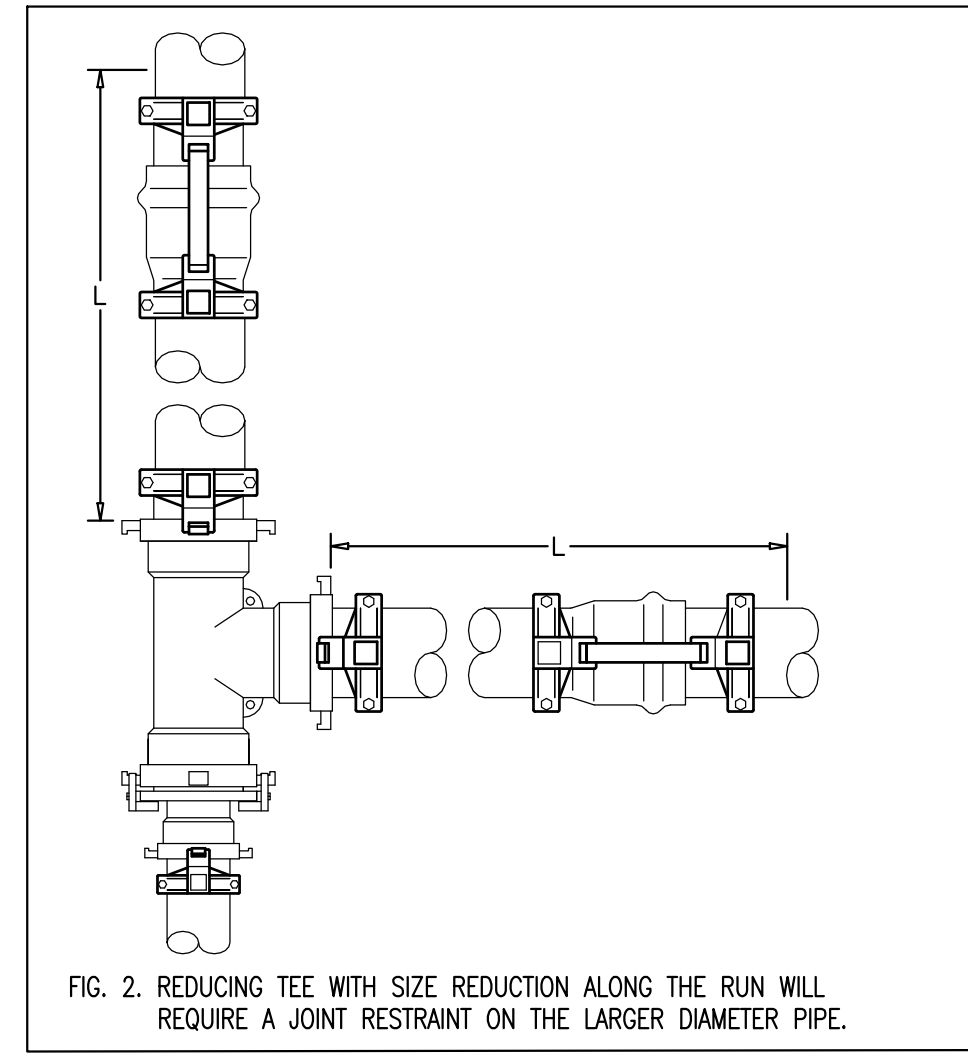


FIG. 2. REDUCING TEE WITH SIZE REDUCTION ALONG THE RUN WILL REQUIRE A JOINT RESTRAINT ON THE LARGER DIAMETER PIPE.

- USE THE DISTANCE TABLES FOR 90-DEGREE BENDS TO DETERMINE HOW MANY OTHER JOINTS ALONG THE BRANCH REQUIRE RESTRAINTS.
- A TEE WITH A SIZE REDUCTION ALONG THE RUN REQUIRES JOINT RESTRAINTS ON THE TEE ITSELF AND ON OTHER JOINTS ALONG THE LARGER DIAMETER RUN AS ILLUSTRATED IN FIG. 2.
- USE DISTANCE TABLES FOR REDUCERS TO DETERMINE HOW MANY OTHER JOINTS ALONG THE RUN REQUIRE RESTRAINTS.

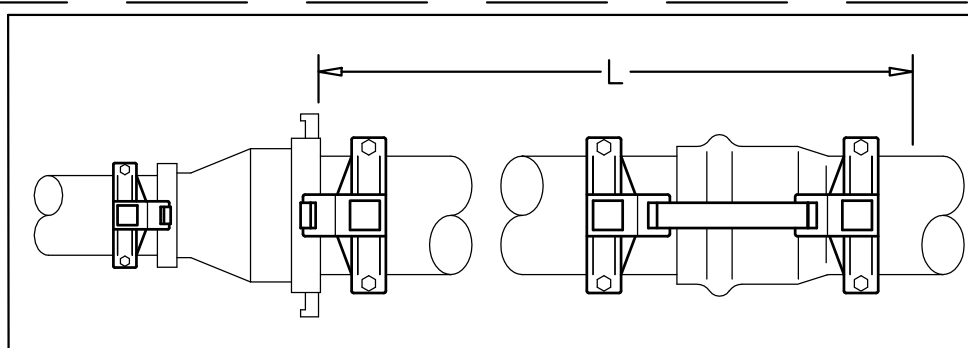


FIG. 1. THE REDUCER IS RESTRAINED ON BOTH ENDS. ADDITIONALLY THE PIPE-TO-PIPE JOINT ON THE LARGER DIAMETER SIDE IS ALSO RESTRAINED (AS SHOWN).

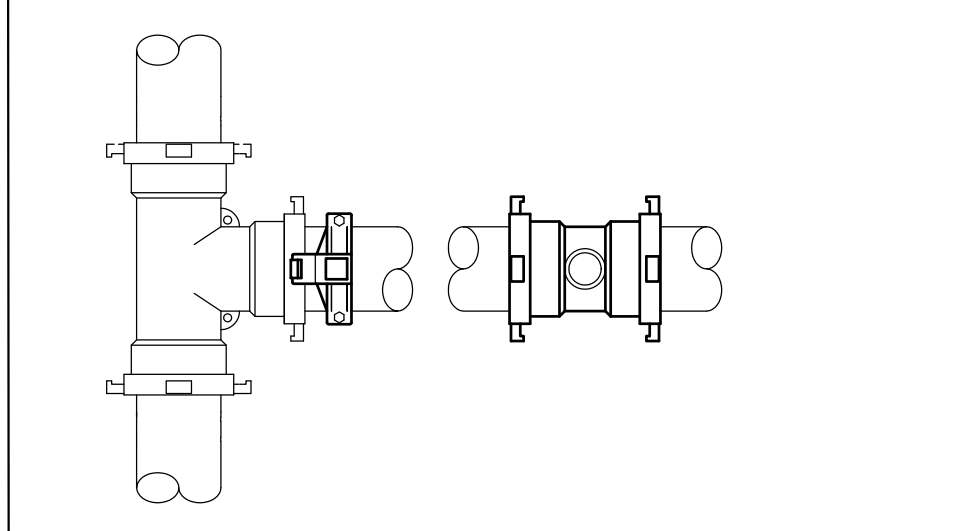


FIG. 2. SERVICE TEES INSTALLED OUTSIDE THE "L" DISTANCE OF A TEE REQUIRES NO JOINT RESTRAINTS.

- NOTES:**
- RESTRAIN IN-LINE REDUCERS AND REDUCING TEE'S (ALONG THE RUN). ADDITIONALLY, THE NEXT JOINTS UPSTREAM (ON THE LARGER DIAMETER SIDE) MAY REQUIRE JOINT RESTRAINTS WHEN THESE JOINTS ARE WITHIN THE "L" DISTANCE OF THE REDUCER. REFER TO AND USE THE DISTANCE TABLE VALUES.
 - SERVICE TEES INSTALLED ON LONG MAIN LINES, AWAY FROM A BEND OR A REDUCER, DO NOT REQUIRE JOINT RESTRAINTS.
 - SERVICE TEES REQUIRE JOINT RESTRAINTS ONLY WHEN INSTALLED WITHIN THE "L" DISTANCE OF A BEND OR A REDUCER.
 - TAPPED (SERVICE) TEE'S DO NOT REQUIRE JOINT RESTRAINTS UNLESS THEY ARE WITHIN THE "L" DISTANCE FROM A RESTRAINED FITTING SUCH AS A BEND OR A REDUCER.

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1 GATE VALVES, MJ & FLANGED CONNECTIONS

NOT TO SCALE

2 PUSH-ON GATE VALVES

NOT TO SCALE

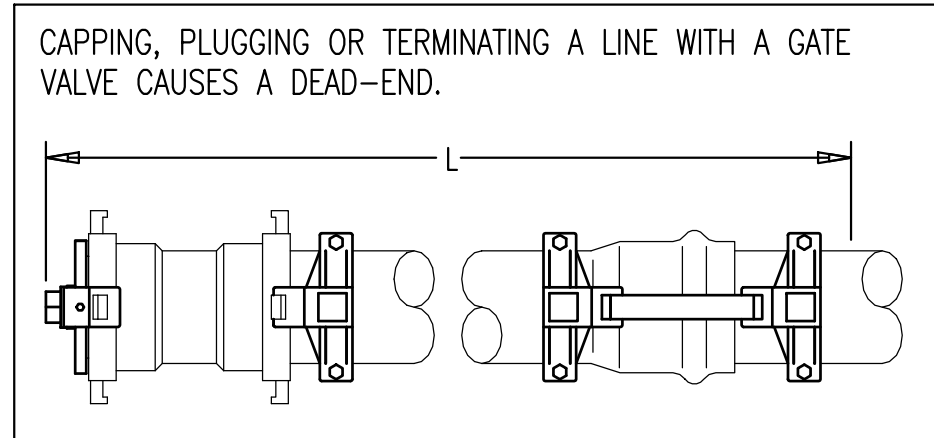
3 TEE RESTRAINTS

NOT TO SCALE

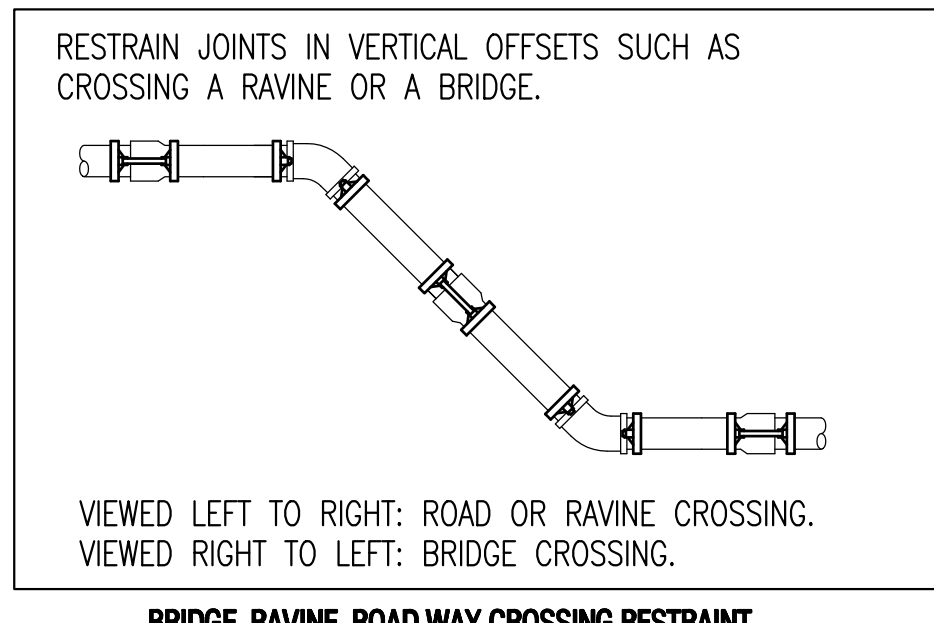
4 REDUCERS & TAPPED TEES

NOT TO SCALE

- NOTES:**
- A DEAD-END WILL REQUIRE SEVERAL UPSTREAM JOINTS TO BE RESTRAINED. REFER TO DISTANCE CHART FOR NUMBER OF UPSTREAM JOINTS TO BE RESTRAINED.
 - WHEN CROSSING A Ravine, ROADWAY, OR A STREAM BED, USE JOINT RESTRAINTS ON ALL JOINTS TO PREVENT BUCKLING.



CAPPING, PLUGGING OR TERMINATING A LINE WITH A GATE VALVE CAUSES A DEAD-END.



VIEWED LEFT TO RIGHT: ROAD OR Ravine CROSSING. VIEWED RIGHT TO LEFT: BRIDGE CROSSING.

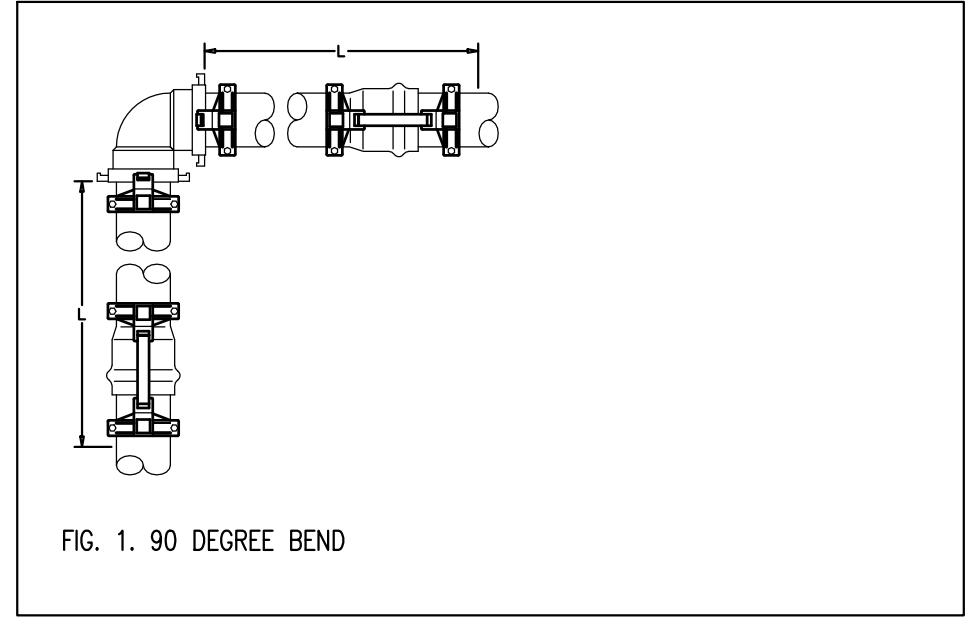


FIG. 1. 90 DEGREE BEND

- NOTES:**
- BESIDES THE FITTING ITSELF, OTHER JOINTS ON BOTH SIDES OF A BEND MAY REQUIRE JOINT RESTRAINTS.
 - THE LARGER THE PIPE LINE SIZE, THE MORE JOINTS (ON BOTH SIDES) THAT HAVE TO BE RESTRAINED.
 - EXAMPLE: FOR A 90-BEND (FIG. 1) USING 125 PSI AND SANDY-CLAY SOIL, THE TABLE SHOWS:
3 INCH (90): "L" = 11 FEET,
6 INCH (90): "L" = 29 FEET,
8 INCH (90): "L" = 38 FEET.
 - WHEN USING 20-FOOT LENGTH PIPE, BECAUSE 20 FEET IS WITHIN THE "L" LENGTHS, ADJACENT JOINTS OF THE 6 INCH AND 8" MUST BE RESTRAINED AS SHOWN IN FIG. 1. THE ADJACENT JOINTS TO THE 3 INCH BEND DO NOT REQUIRE RESTRAINTS BECAUSE THEIR DISTANCE OF 20 FEET IS OUTSIDE THE "L" DIMENSION OF 11 FEET.

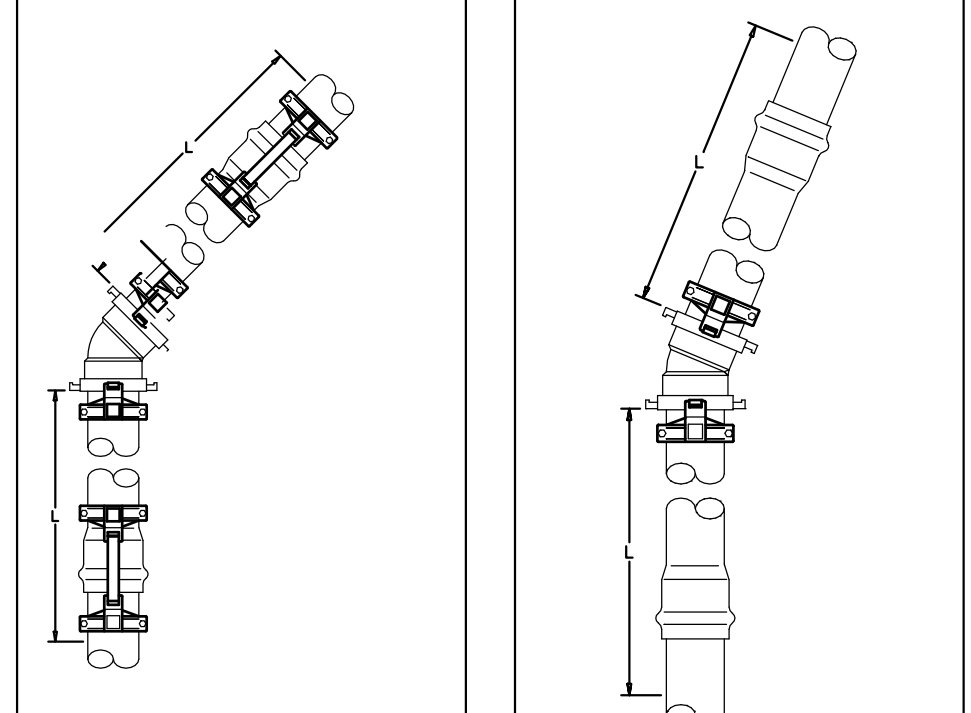


FIG. 2. 45 DEGREE ELBOW - IN SOME CASES THE ADJACENT JOINTS NEED RESTRAINTS.

- AS THE BEND ANGLE GETS SMALLER (FIG. 2 & 3) THE NEED TO RESTRAIN ADJACENT JOINTS DIMINISHES.
- USING THE DISTANCE TABLES, ONLY THE 10 FOOT AND 12 FOOT 45-DEGREE BENDS REQUIRE THE ADJACENT JOINTS TO BE RESTRAINED. OTHER SIZES DO NOT REQUIRE THEM (BASED ON THE SAME PARAMETERS AS THE ABOVE EXAMPLE).

DISTANCE TABLES ARE GIVEN IN FEET FROM A BEND OR A REDUCER BECAUSE AT TIMES PIPE MAY BE SPLICED SHORTER THAN 20 FEET.

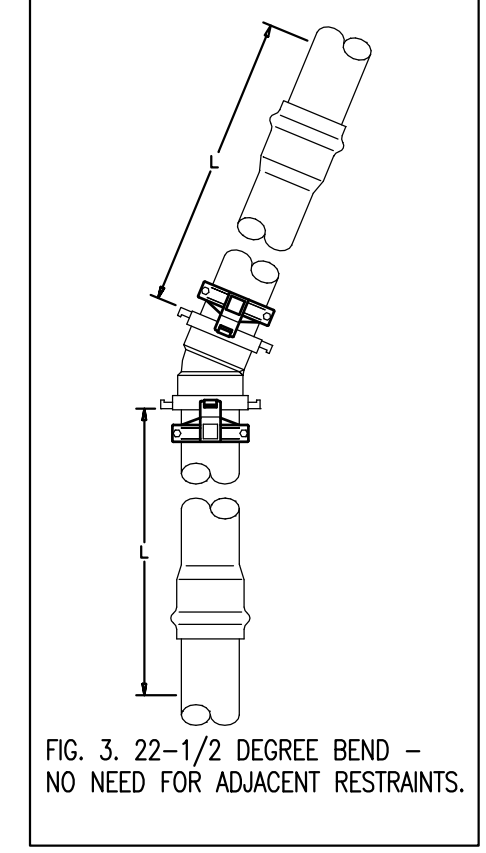
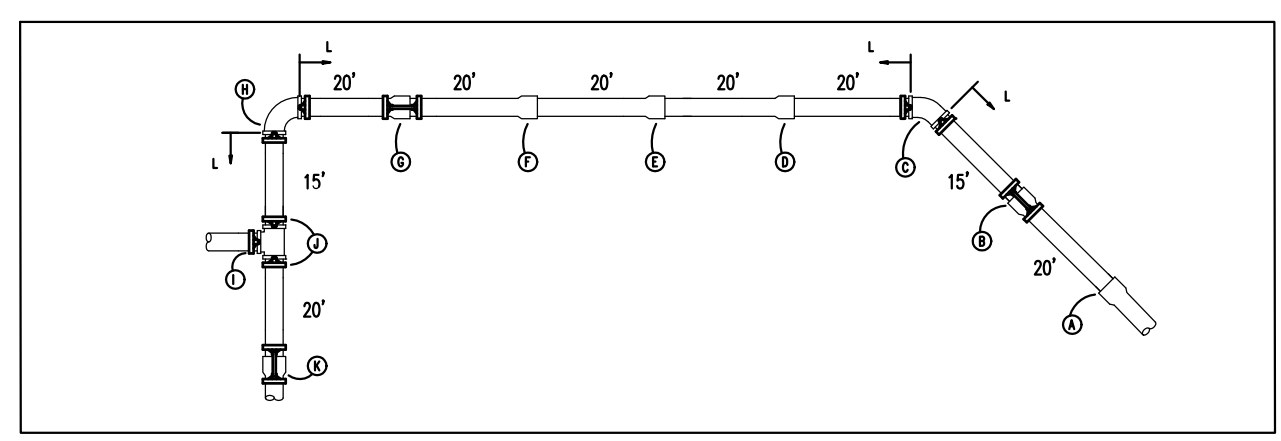


FIG. 3. 22-1/2 DEGREE BEND - NO NEED FOR ADJACENT RESTRAINTS.

USE DISTANCE TABLES TO DETERMINE NUMBER AND DISTANCE OF JOINT RESTRAINTS



EXAMPLE 1: 8" PIPING SYSTEM
CRITERIA: SANDY-CLAY SOIL, 125 PSI

NOTE: ALL BENDS ARE RESTRAINED; JOINT "B" IS RESTRAINED BECAUSE IT'S DISTANCE OF 15 FEET AWAY FROM JOINT "C" (45 BEND) IS LESS THAN THE "L" = 15 FEET (FROM TABLE VALUE). JOINT "D" IS NOT RESTRAINED BECAUSE IT'S DISTANCE OF 20 FEET FROM "C" IS FARTHER THAN TABLE VALUE OF 15 FEET.

JOINTS "J" (15 FEET), "K" (35 FEET), AND "G" (20 FEET) AWAY FROM 90-BEND "H" ARE ALL WITHIN THE 38 FEET ALLOWED DISTANCE "L" TABLE VALUE.

EXAMPLE 2: 12 INCH PIPING SYSTEM: WITH THE "L" TABLE VALUES OF 21 FEET FOR A 45 BEND AND 53 FEET FOR A 90-BEND, RESTRAIN JOINTS AS FOLLOWS:

JOINT A: WON'T REQUIRE A RESTRAINT BECAUSE ITS 35 FEET DISTANCE AWAY IS FURTHER OUT THAN 21-FOOT REQUIREMENT. JOINTS B & D: BOTH WITHIN 21 FEET OF "C" WILL NEED TO BE RESTRAINED.

JOINTS G,J,K ARE ALL WITHIN THE 53 FEET OF THE "H" (90-BEND).

5 LEEMCO-DEADEND OR CROSSINGS

NOT TO SCALE

6 ELBOW RESTRAINTS

NOT TO SCALE

7 WORKING WITH THE DISTANCE TABLES

NOT TO SCALE

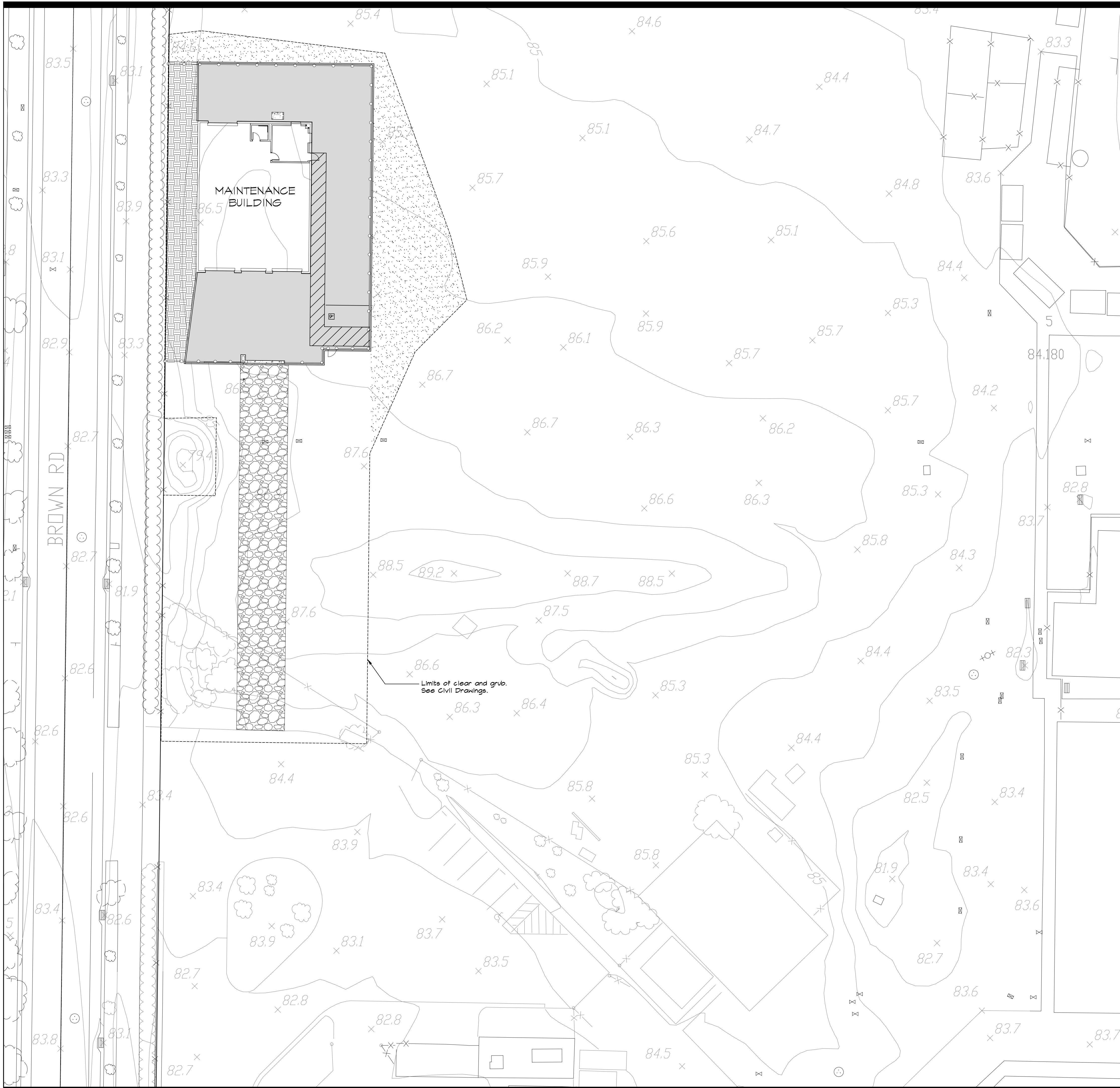
REVISIONS

ARCH PROJECT NO: 1739.02
DRAWN BY: JDE
DRAWING SCALE: AS SHOWN
PTN: 61721-0069

BID SET
JANUARY 4, 2019
SHEET TITLE

IRRIGATION DETAILS

SHEET NUMBER
L3.4



PLANT LEGEND

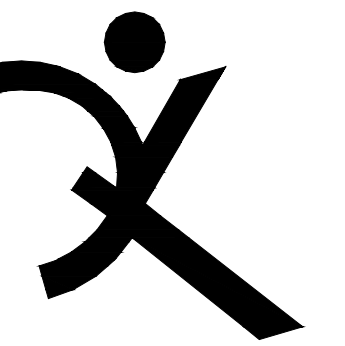
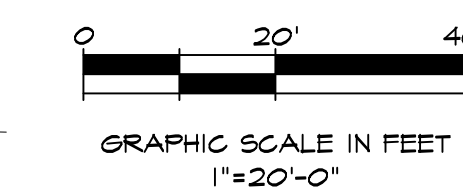
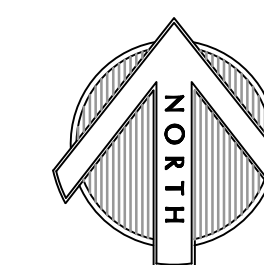
SYMBOL	TYPE	QUANTITY	WATER USE
	TURF		
	Delta 90/10 Tall Fescue, non-netted sod as available through Delta Bluegrass Company. Contact Clayton Playte 800-637-8875, cplayte@deltabluegrass.com	4,215± SF Project Total	SLA
	Landscape Mulch: Weed fabric and 3" thick mulch. See Planting Notes on this sheet for mulch type.		

PLANTING NOTES

- Prior to commencement of planting, the Contractor shall verify locations of all underground utilities.
- Contractor shall adjust all plant material around electrical utilities, valve boxes, etc., as required in the field.
- All landscape grades shall be smooth and feathered in appearance.
- Irrigation system shall be fully operational prior to planting. Contractor shall thoroughly water all plants immediately after planting.
- All trees shall be double staked and installed per planting details. All trees shall be of adequate trunk caliper to stand without support.
- Installing Contractor shall verify existing grade in the field prior to planting. Finished surfaces shall be uniform and smooth. Finished grade of planting and bark mulch areas shall be flush with top of edging, pavement and walks.
- Soil for all exposed soil and planting areas except sod and bioretention areas shall receive weed fabric and a 3" minimum depth of bark mulch. Bark mulch shall be Eco-Mini Natural Mulch, as available through Eco-Mulch, 5010 Pacheco Blvd., Martinez, (925) 228-1875. Bioretention areas shall receive 3" minimum depth of the compost used in the bioretention soil mix.
- All trees planted within 8' of adjacent paving, curbing, hardscape, water meters, joint trenches, etc. shall receive Deep Root Barrier UB 24-2 (24" depth x 10' min. length) as manufactured by Deep Root Partners (800) 458-7668, or approved equal.
- No plant material shall be substituted without prior written consent from the Landscape Architect.
- Contractor shall be responsible for the pre-ordering of all plant material after the Notice to Proceed. Photographs for all plants shall be submitted to the Landscape Architect prior to placing order.
- All plant material shall be certified by the Agricultural Commissioner inspection program for freedom from the glassy winged sharpshooter or other pests identified by the Agricultural Commissioner. The Agricultural Commissioner's office shall be notified of all impending deliveries of live plants with points of origin outside of the County so that inspection can be arranged.

SOILS MANAGEMENT NOTES

- The following organic amendments, soil amendments and fertilizer rates and quantities shall be used for bid basis only. Contractor shall arrange and pay for a soil fertility test by an accredited soils laboratory of existing site soil after rough grading operations are complete, and shall amend the soils, according to said laboratory's recommendations. The soils recommendations shall be considered a part of these contract documents. The soils report must provide the following information:
 - Soil permeability rate in inches per hour.
 - Soil texture test.
 - Cation exchange capacity.
 - Soil fertility, including test for nitrogen, potassium, phosphorous, pH, organic matter and specific conductance (electrical conductivity).
 - Recommendation for amendments to the planting area soil.
- Topsail: All landscape areas shall have a minimum 8" depth of topsoil with greater depths as required for planting work. Contractor shall provide topsoil which is fertile and friable, possessing characteristics of representative productive soils on the site. It shall not contain toxic substances which may be harmful to plant growth. When herbicide contamination is suspected then a radish/rye grass growth trial must be performed. Consult with the District prior to decision to test. It shall be uniformly textured and free of all objectionable foreign materials, oil or chemicals which may be injurious to plant growth. Natural topsoil shall possess a pH factor between 5.5 and 7.5, a sodium absorption ratio (SAR) of less than 8, a boron concentration of the saturation extract of less than 1 ppm, and salinity of the saturation extract at 25 degrees C, of less than 4.0 millimhos per centimeter. If required to import topsoil, Contractor shall obtain topsoil from naturally well-drained sites where topsoil occurs in a depth of not less than four inches (4"); do not obtain from bogs or marshes.
- Organic Amendment: Nitrified fir bark having a minimum organic content of 94% and a nitrogen content of 0.8% minimum to 1.2% maximum on a dry weight basis. Fir bark shall be shredded to pass a one quarter inch (1") mesh screen. Incorporate organic amendment and fertilizer into the soil to a minimum depth of six inches (6") at a minimum rate of six cubic yards (6 cy) per one thousand square feet (1,000 sf) or per specific amendment recommendations from the soils report.
- Fertilizer:
 - Fertilizer shall be a commercial inorganic fertilizer in the granular or pelleted form. Fertilizer shall be delivered to the site in containers labeled in accordance with the applicable State of California regulations, bearing the warranty of the producer or the grade furnished, and shall be uniform in composition, dry and free-flowing.
 - Turf, Shrubs and Vines:
 - 6N-20P-20K, and 16-6-8, pelleted type.
 - Sulphate - sulphur
 - Lime for pH adjustment of moderately acid soil
 - Starting one (1) month after planting, on a monthly basis, 21N-0P-0K Ammonium sulfate, 5 lbs. per 1,000 square feet.
 - Trees:
 - 21 gram 20N-10P-5K slow release fertilizer tablets as manufactured by Agriform. Apply according to manufacturer's instructions.
 - After planting: 21N-0P-0K Ammonium sulfate 5lbs. per 1,000 square feet.



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 1700 Soscol Ave, Suite 23
 Napa, CA 94959
 707-255-4630
 www.gsm-lainc.com



FREEDOM HIGH SCHOOL

NEW MAINTENANCE FACILITIES

1050 NEROLY ROAD
 OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS	

ARCH PROJECT NO: 1739.02
 DRAWN BY: JMH
 DRAWING SCALE: AS SHOWN
 PTN: 61721-0069

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JANUARY 4, 2019

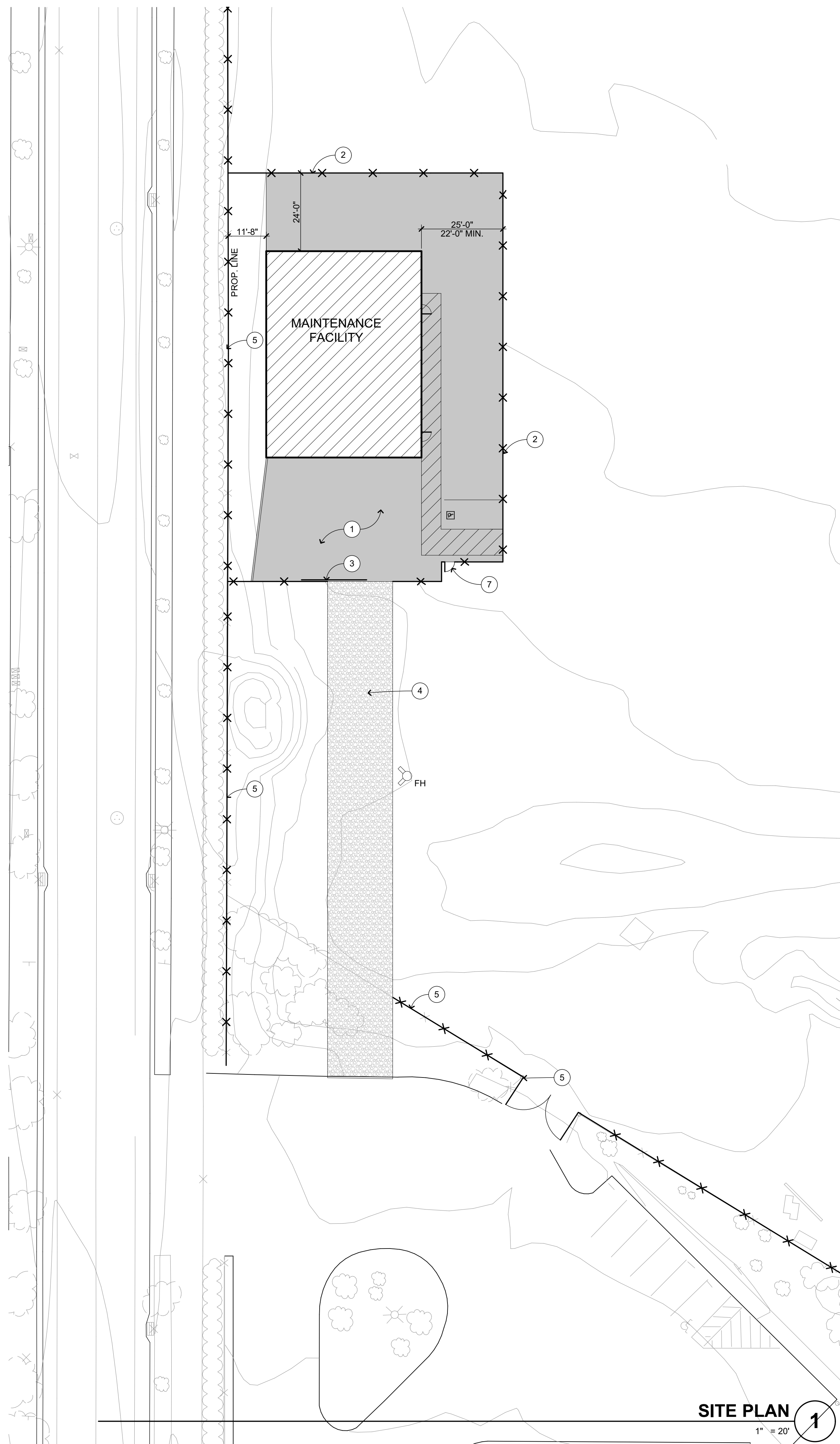
SHEET TITLE

PLANTING PLAN

SHEET NUMBER

L4.0

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SITE PLAN KEYNOTES



NOT ALL KEYNOTES MAY APPLY TO THIS SHEET

- 1 PAVING, S.C.D.
- 2 FENCE, S.L.D.
- 3 20'-0" GATE, S.L.D.
- 4 TEMPORARY GRAVEL ROAD, S.C.D.
- 5 (E) FENCE AND GATE TO REMAIN, PROTECT IN PLACE
- 6 NOT USED.
- 7 3'-0" GATE, S.L.D.

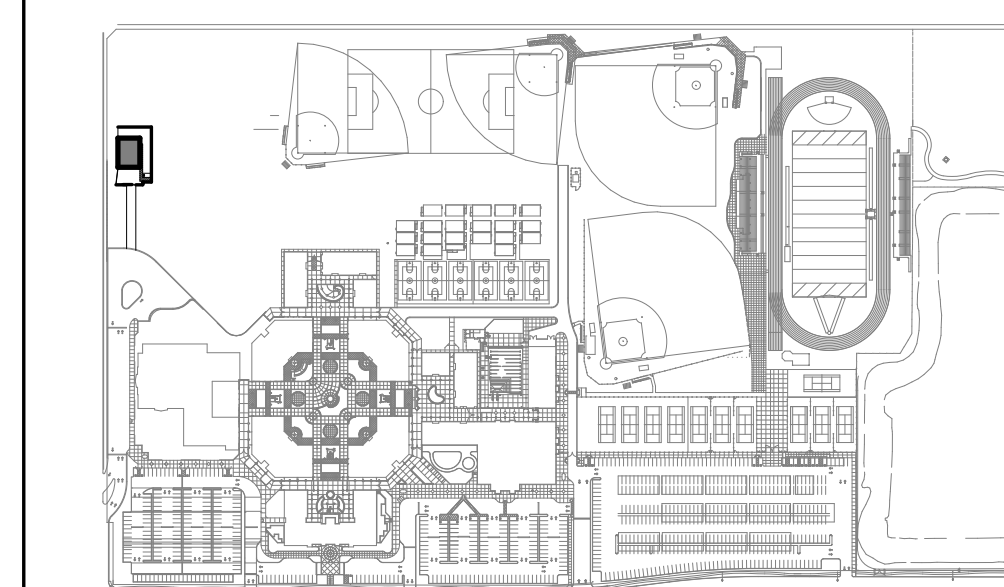
SITE PLAN GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A SITE INSPECTION TO FULLY CONFIRM EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
2. REFER TO CIVIL DRAWINGS FOR EXISTING UNDERGROUND UTILITY MAINS AND SERVICE LINES.
3. IF UTILITIES TO REMAIN IN PLACE ARE DAMAGED, CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY AND MAKE REPAIRS TO SAID LINES AS QUICKLY AS POSSIBLE, AT NO EXPENSE TO THE OWNER.
4. DEMOLITION OF UTILITIES TO BE STAGED AS REQUIRED SO THAT EXISTING SERVICE TO REMAINING BUILDINGS ARE NOT INTERRUPTED.
5. WITHIN THE LIMIT OF DEMOLITION, REMOVE ALL PAVING AND AGGREGATE BASE, STRUCTURES, TREES AND PLANTS, TOPSOILS, ORGANIC MATERIAL AND MISCELLANEOUS ITEMS UNLESS OTHERWISE NOTED ON PLANS. EXCAVATE TO PAD ELEVATION OR SUBGRADE DEPTH FOR PROPOSED CONSTRUCTION AS INDICATED ON PROJECT DOCUMENTS. REFER TO GEOTECH REPORT FOR ADDITIONAL INFORMATION.
6. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED TO PREVENT DEBRIS AND UNSUITABLE MATERIALS FROM ENTERING STORM DRAINS, SANITARY SEWERS AND STREETS. SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
7. DUST CONTROL SHALL BE IMPLEMENTED DURING DEMOLITION.
8. EXTERIOR CONCRETE FLATWORK SHALL HAVE A MAXIMUM SLOPE OF 1:20, U.N.O. EXTERIOR DOOR LANDINGS SHALL SLOPE 1/4" PER FOOT FOR 60° PERPENDICULAR TO DOOR FACE, MAXIMUM FOR DRAINAGE. CONCRETE SHALL SLOPE MINIMUM 1/8" PER FOOT AWAY FROM BUILDINGS. S.C.D.
9. REFER TO CIVIL ENGINEERING DRAWINGS AND SITE PLAN FOR SITE FEATURES NOT OTHERWISE INDICATED.
10. REPAIR AND REPLACE ALL EXISTING SURFACES AND FINISHES TO EXISTING UNDISTURBED WORK.
11. NOTES AND SYMBOLS ARE TO APPLY AT ALL AREAS OF SIMILAR GRAPHIC REPRESENTATION, SUCH INDICATIONS MAY BE LIMITED TO PROMOTE CLARITY OR AVOID REDUNDANCY, NO LIMITATIONS OF APPLICATION SHALL BE CONSTRUED WITHOUT SPECIFIC NOTATION.
12. TO ACCOMPLISH THE FULL SCOPE OF WORK, ADDITIONAL WORK MAY BE REQUIRED BEYOND THE INDICATED SITE WORK. REFER TO ALL CONSTRUCTION DOCUMENTS. ALL SUCH WORK SHALL BE PATCHED AND REPAIRED TO ORIGINAL CONDITION.

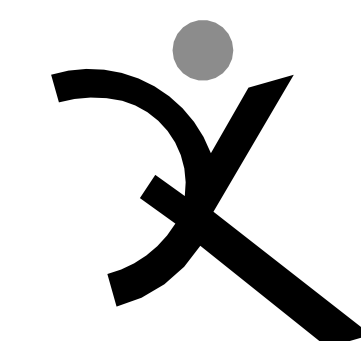
SITE PLAN LEGEND

-  NEW BUILDING
-  PROPERTY LINE

KEYPLAN



SITE PLAN
1
1" = 20'



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FREEDOM HIGH SCHOOL

NEW MAINTENANCE FACILITIES

1050 Neroly Rd
Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

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DRAWING SCALE: 1"=xx'
PTN: 61721-0069

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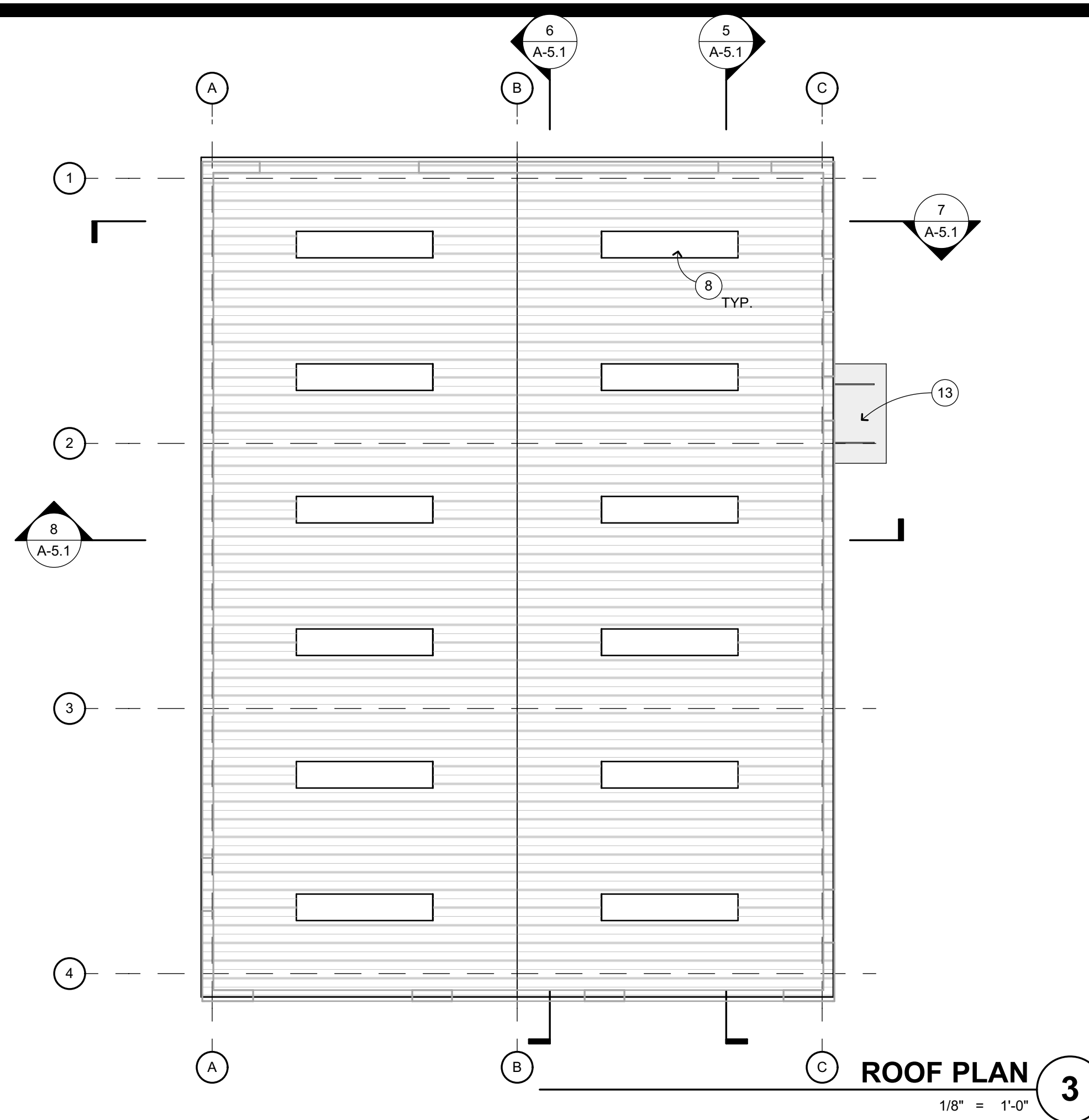
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SITE PLAN

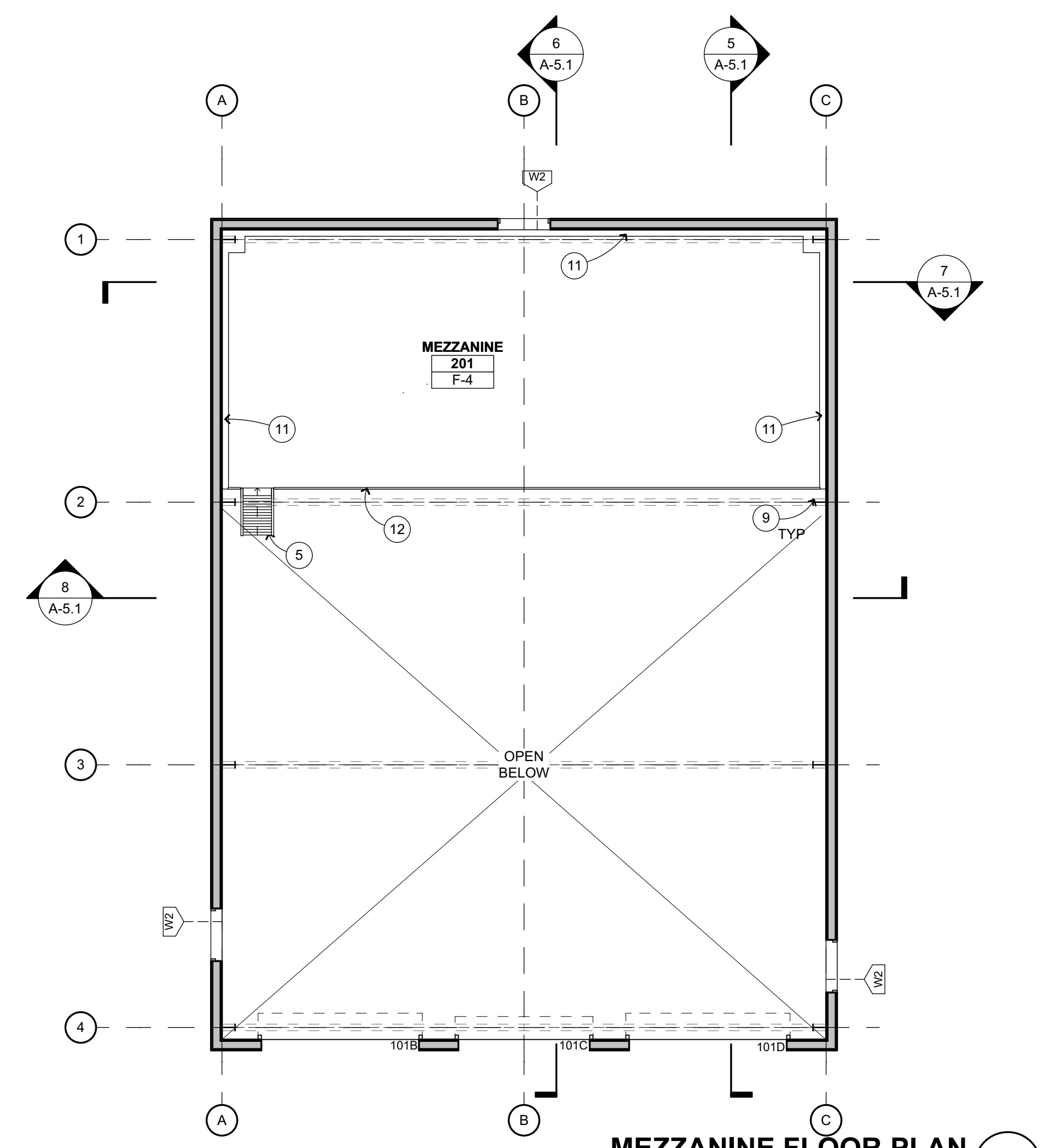
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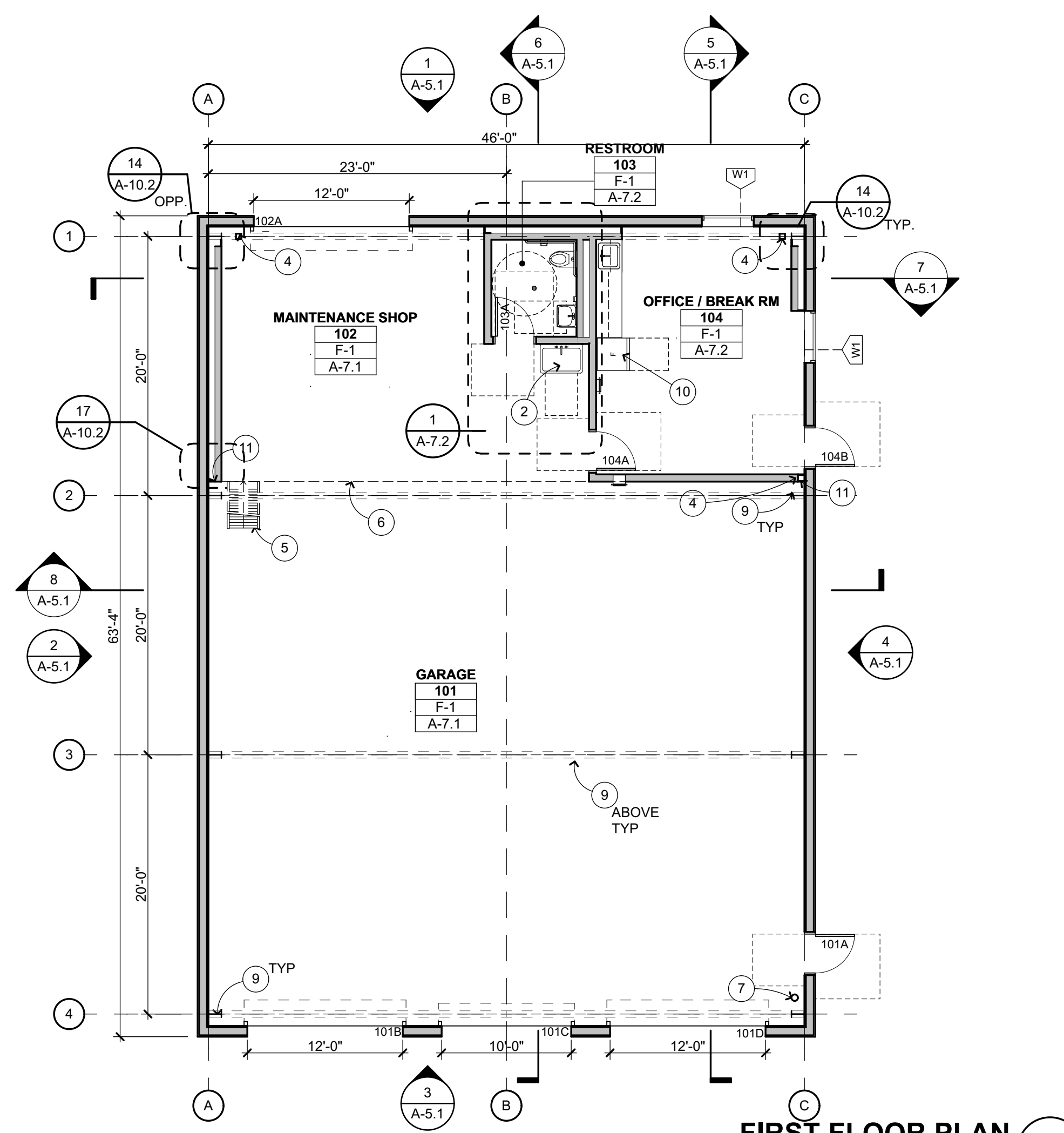
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ROOF PLAN 3
1/8" = 1'-0"



MEZZANINE FLOOR PLAN 2
1/8" = 1'-0"



FIRST FLOOR PLAN 1
1/8" = 1'-0"

FLOOR & ROOF PLAN KEYNOTES

NOT ALL KEYNOTES MAY APPLY TO THIS SHEET

- 1 MECHANICAL ITEM, S.M.D.
- 2 PLUMBING ITEM / FIXTURE, S.P.D.
- 3 ELECTRICAL ITEM, S.E.D.
- 4 STRUCTURAL ITEM, S.S.D.
- 5 SHIP LADDER, SEE
- 6 MEZZANINE ABOVE
- 7 FIRE SPRINKLER RISER, S.F.P.D.
- 8 UNIT SKY LIGHT BY BLDG MFR
- 9 STRUCTURAL ITEM BY BLDG MFR
- 10 REFRIGERATOR, OPOI
- 11 SEISMIC GAP COVER (17) SIM. U.O.N.
- 12 FALL PROTECTION
- 13 AWNING BY BLDG MFR

FLOOR PLAN GENERAL NOTES

1. EXTERIOR CONCRETE FLATWORK SHALL HAVE A MAXIMUM SLOPE OF 1:20, U.O.N.; EXTERIOR DOOR LANDINGS SHALL SLOPE 1/4" PER FOOT FOR 60° PERPENDICULAR TO DOOR FACE, MAXIMUM FOR DRAINAGE. CONCRETE SHALL SLOPE MINIMUM 1/8" PER FOOT AWAY FROM BUILDINGS, S.C.D.
2. FINISHED FLOOR ELEVATIONS SHOWN INDICATE FLOOR SLABS FOR THIS BUILDING. FOR ELEVATIONS RELATIVE TO THE REST OF THE SITE, REFER TO CIVIL ENGINEERING DRAWINGS.
3. REFER TO CIVIL ENGINEERING DRAWINGS AND SITE PLAN FOR SITE FEATURES NOT OTHERWISE INDICATED.
4. REFER TO ARCHITECTURAL GRAPHICS DRAWINGS FOR SIGNAGE NOT SHOWN.
5. REFER TO REFLECTED CEILING PLAN FOR CLERESTORY WINDOWS.
6. ALL INTERIOR WALL FRAMING AND GYP.BD. EXTEND TO UNDERSIDE OF ROOF / FLOOR SHEATHING ABOVE, U.O.N.

WALL TYPE LEGEND

- ALL METAL FRAMING IS 6" STUDS, U.O.N. S.S.D. FOR WOOD FRAMING SIZES
- WOOD FRAMING - NON RATED
 - 6" WOOD STUD SIZE, 6" U.O.N.

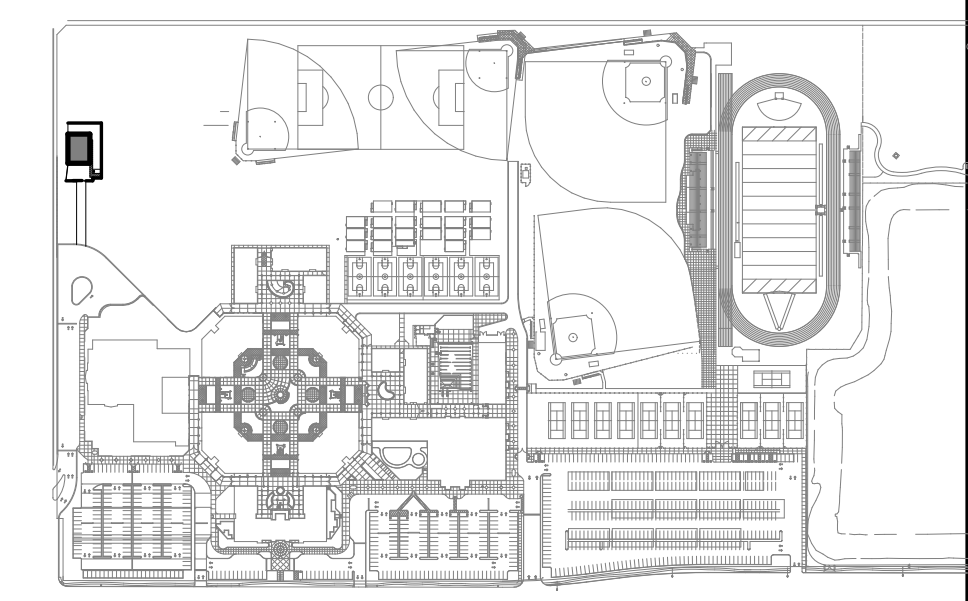
FLOOR FINISH CODES

- F-1 SEALED CONCRETE
- F-2 RESILIENT FLOORING TILE
- F-3 FLUID-APPLIED FLOORING
- F-4 PLYWOOD SHEATHING

ROOF PLAN LEGEND

- +0'-0" DIMENSION INDICATING TOP OF ROOF LEVEL. SEE DETAILS FOR TOP OF ROOF LOCATION WITHIN ASSEMBLY
- METAL ROOF

KEYPLAN



FREEDOM HIGH SCHOOL

NEW MAINTENANCE FACILITIES

1050 Neroly Rd
Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

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FLOOR & ROOF PLANS

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 SHEET TITLE

REFLECTED CEILING PLANS

SHEET NUMBER
A-3.1

REFLECTED CEILING PLAN KEYNOTES

NOT ALL KEYNOTES MAY APPLY TO THIS SHEET

- ① STRUCTURAL ITEM, S.S.D.
- ② ELECTRICAL ITEM, S.E.D.
- ③ MECHANICAL ITEM, S.M.D.
- ④ STRUCTURE BY BLDG MFR
- ⑤ SEISMIC GAP COVER
- ⑥ ACCESS PANEL, SEE 14 A-10.1
- ⑦ UNIT SKY LIGHT BY BLDG. MFR.
- ⑧ MEZZANINE ABOVE
- ⑨ SHIP LADDER

REFLECTED CEILING PLAN GENERAL NOTES

1. NOTES & SYMBOLS ARE TO APPLY TO ALL AREAS OF SIMILAR GRAPHIC REPRESENTATION. SUCH INDICATIONS MAY BE LIMITED TO PROMOTE CLARITY OR AVOID REDUNDANCY. NO LIMITATION OF APPLICATION SHALL BE CONSTRUED WITHOUT SPECIFIC NOTATION.
2. PENDANT LIGHT FIXTURE LOCATION DIMENSIONS ARE NOMINAL. VERIFY IN FIELD TO MAINTAIN 45° SWING CLEARANCES TO FIXED ELEMENTS.
3. S.E.D. FOR HORNS, SPEAKERS, PULL STATIONS, LIGHT FIXTURES AND OTHER FEATURES NOT OTHERWISE SHOWN.
4. S.E.D. FOR EXIT SIGNS & EMERGENCY LIGHTING CONDITIONS.
5. S.M.D. FOR PIPING, REGISTERS & VENTS NOT OTHERWISE SHOWN. MECHANICAL DUCT LOCATION DIMENSIONS ARE NOMINAL. VERIFY IN FIELD TO MAINTAIN CLEARANCES TO FIXED ELEMENTS.
6. CBC TABLE 601- ROOFS AND THEIR MEMBERS OTHER THAN THE STRUCTURAL FRAME MAY BE OF UNPROTECTED NON-COMBUSTIBLE MATERIALS WHEN EVERY PART OF ROOF FRAMING INCLUDING THE STRUCTURAL FRAME IS 20 FEET OR MORE ABOVE THE FLOOR IMMEDIATELY BELOW

REFLECTED CEILING PLAN LEGEND

10'-0" CL-XX REFERS TO CEILING FINISH CODE SEE BELOW. X'-X" REFERS TO FINISHED CEILING HEIGHT AFF. WHERE CEILING HEIGHT IS INDICATED AS "OPEN" OR " * " ROOM IS OPEN TO STRUCTURE ABOVE. FOR CEILING CONFIGURATION & HEIGHT WHERE CEILING HEIGHT IS INDICATED AS CURVED, SLOPING, OR VARIES, REFER TO SECTION DRAWINGS.

ROOM NAME ROOM # X'-X"

GYPSUM BOARD, SEE FINISH CODE

2x4 SUSPENDED CEILING SYSTEM W/ ACOUSTIC TILE, SEE FINISH CODES

DOORS SHOWN DASHED INDICATE DOOR BELOW. FOR DEMO, (E), AND (N) DOOR/FRAME INFORMATION SEE FLOOR PLANS & DOOR SCHEDULE

ELECTRICAL ITEMS, S.E.D.

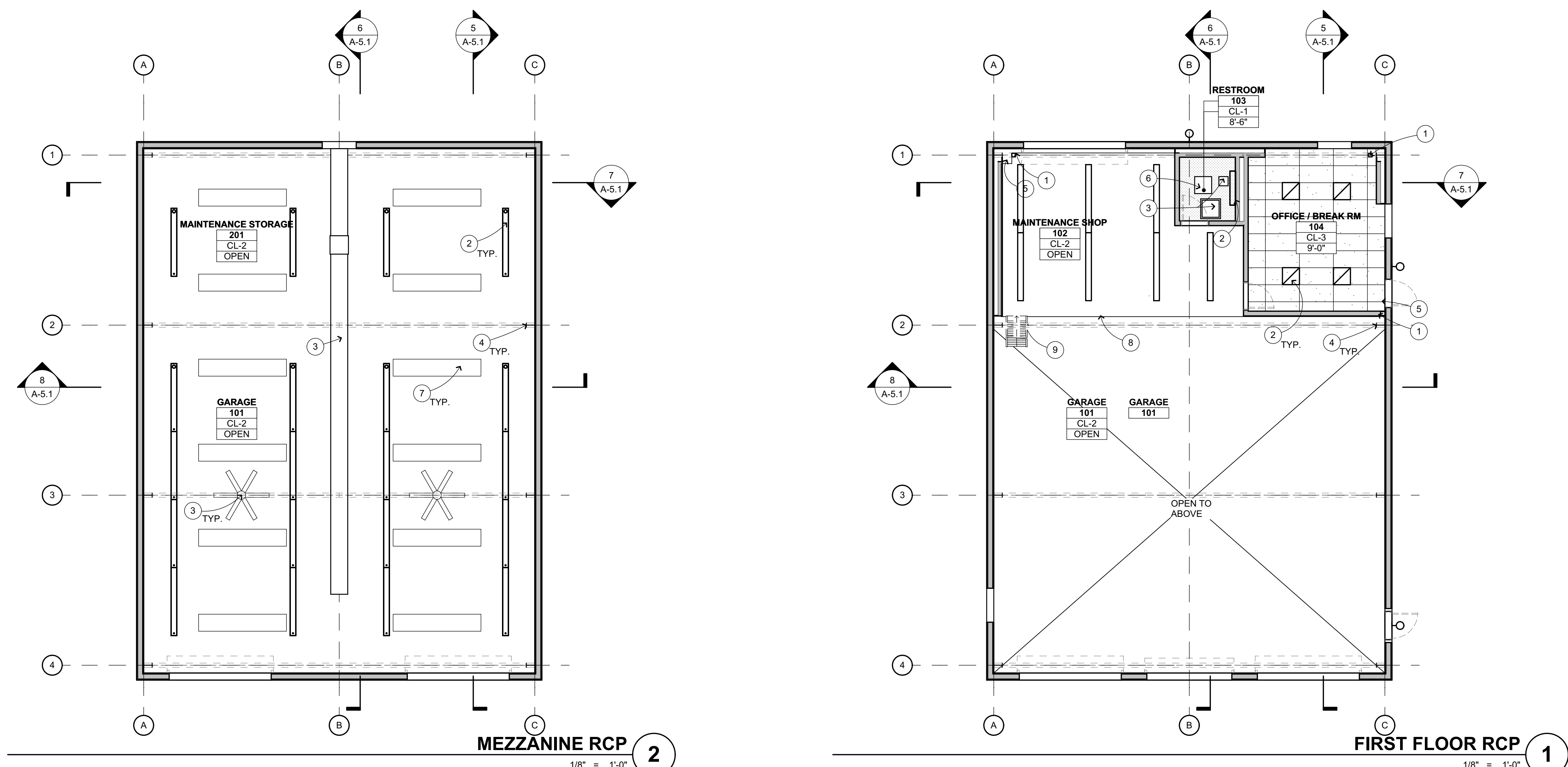
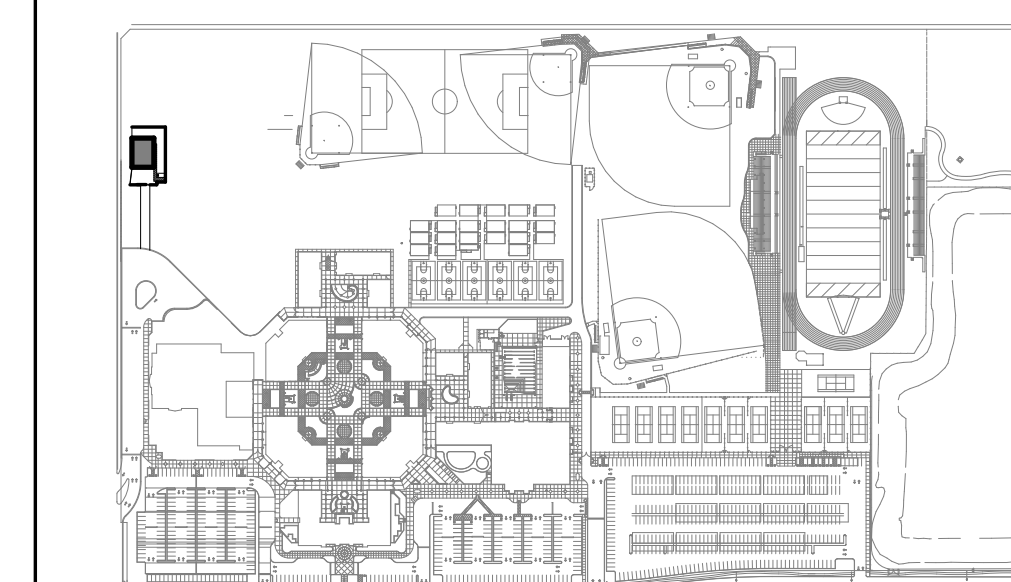
MECHANICAL ITEMS, S.M.D.

FIRE SPRINKLERS, S.F.P.D.

CEILING FINISH CODES FOR PAINT FINISHES SEE SEC. 09 9113 (EXTERIOR) & 09 9123 (INTERIOR).

- CL-1 WOOD FRAMED MOISTURE RESISTANT GYP BD, S.S.D. FOR CEILING JOIST SCHEDULE
- CL-2 EXPOSED ROOF STRUCTURE
- CL-3 ACOUSTICAL CEILING TILE, SEE 7 A-10.1

KEYPLAN

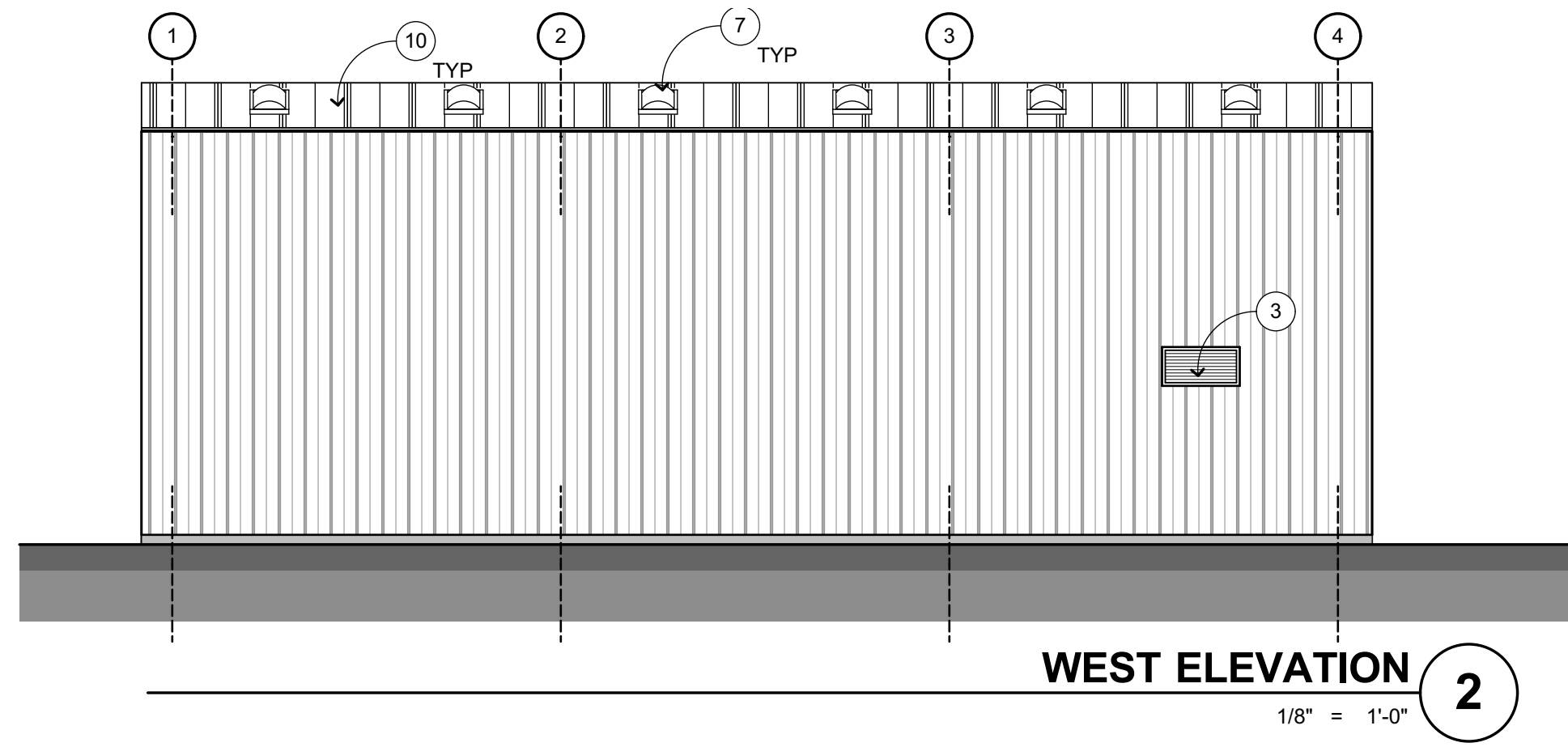


MEZZANINE RCP ②
 1/8" = 1'-0"

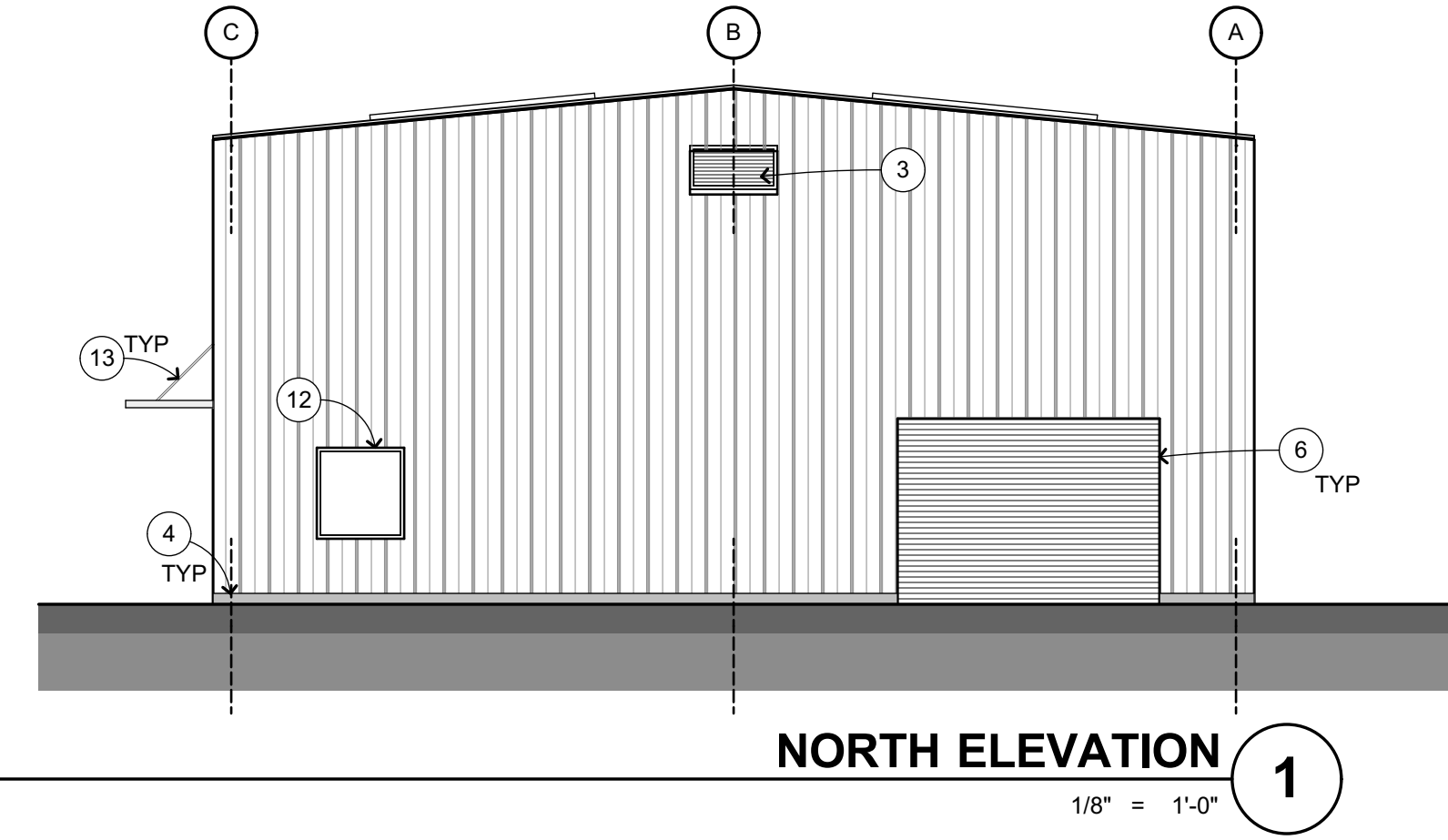
FIRST FLOOR RCP ①
 1/8" = 1'-0"

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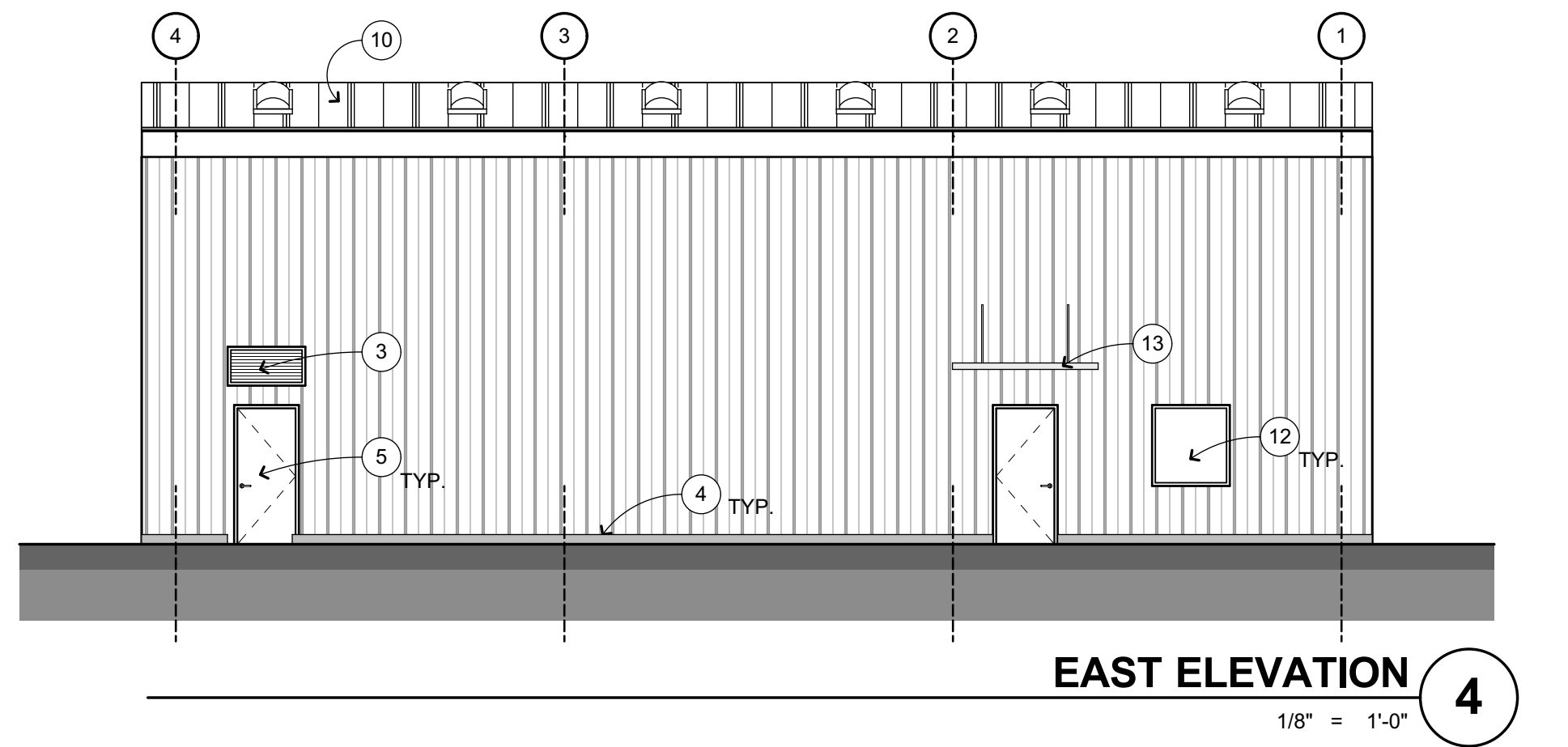
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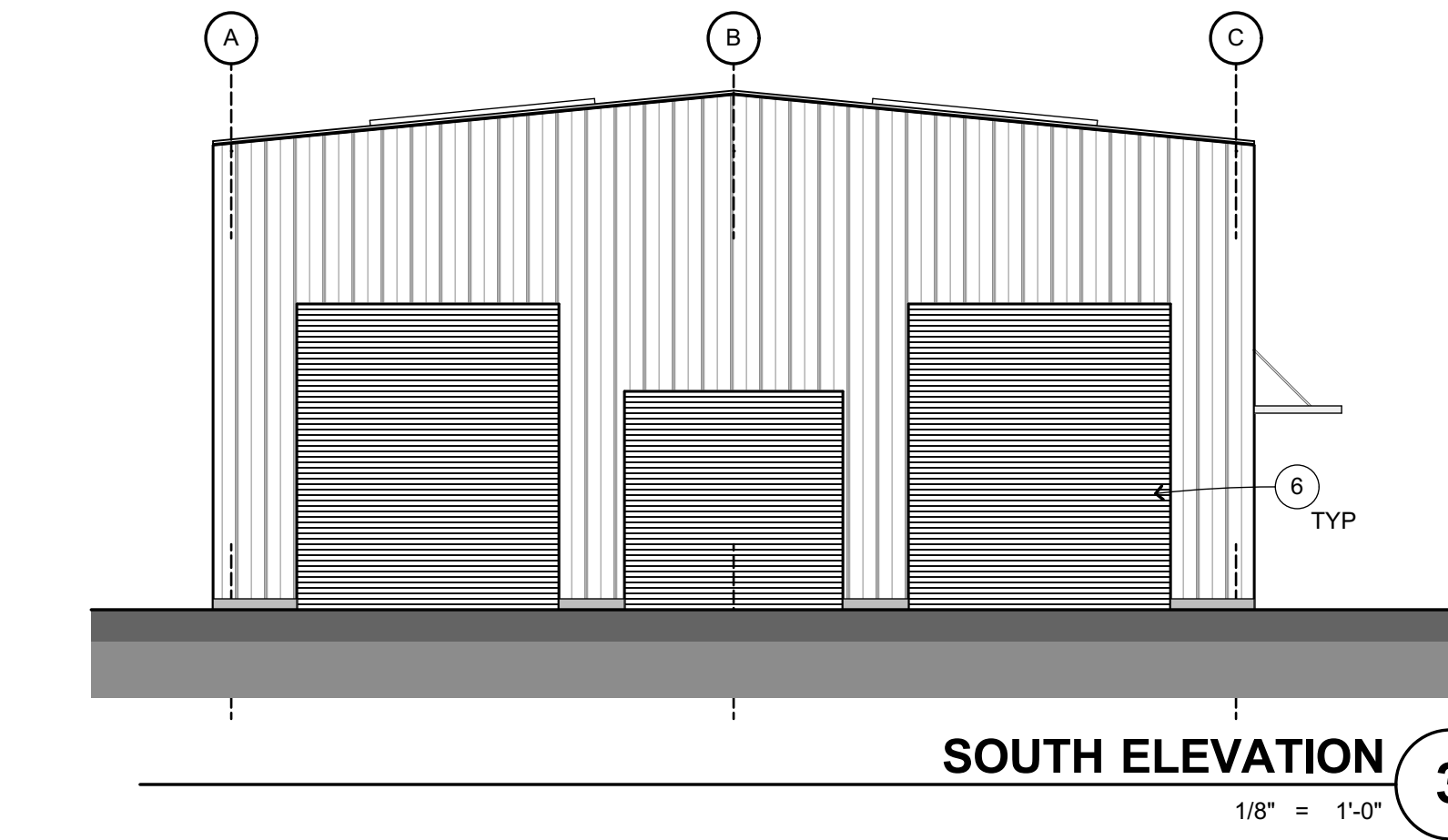
WEST ELEVATION
1/8" = 1'-0" **2**



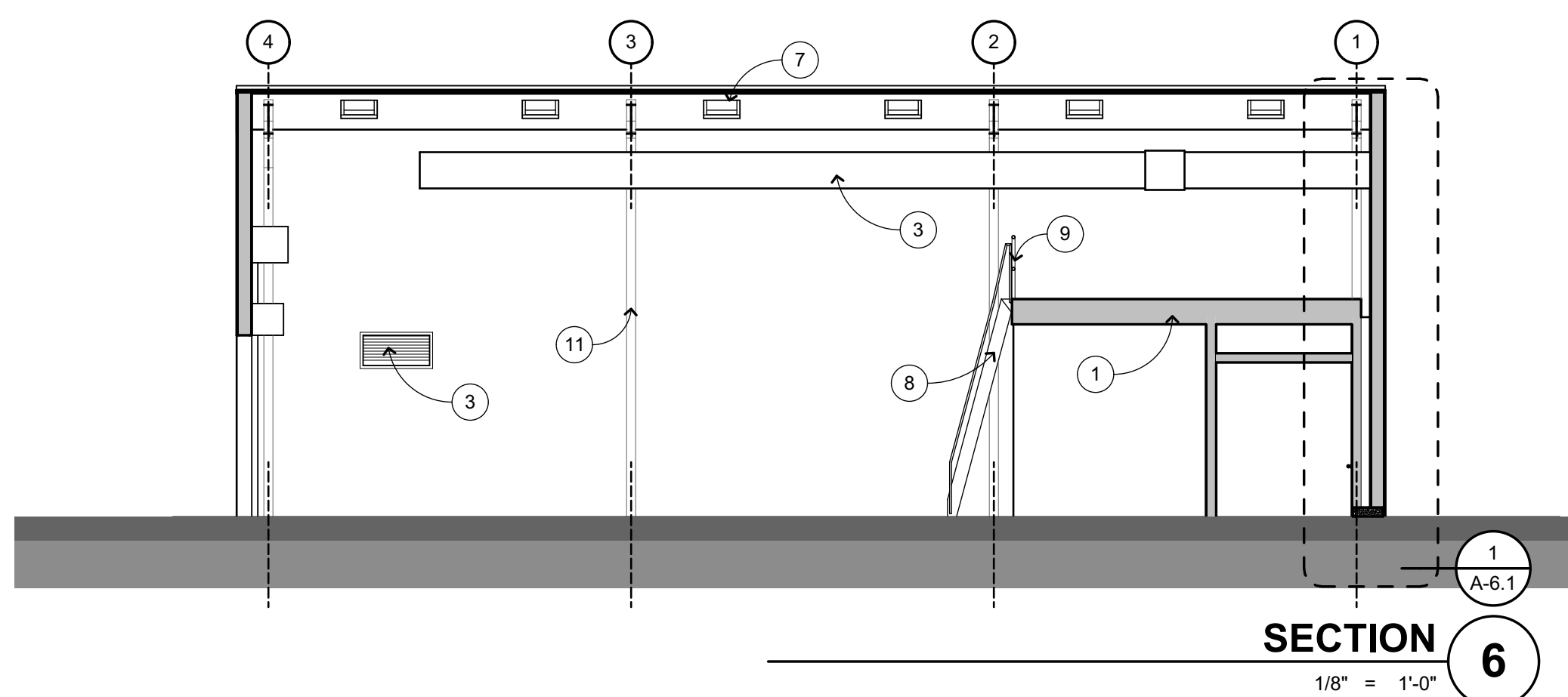
NORTH ELEVATION
1/8" = 1'-0" **1**



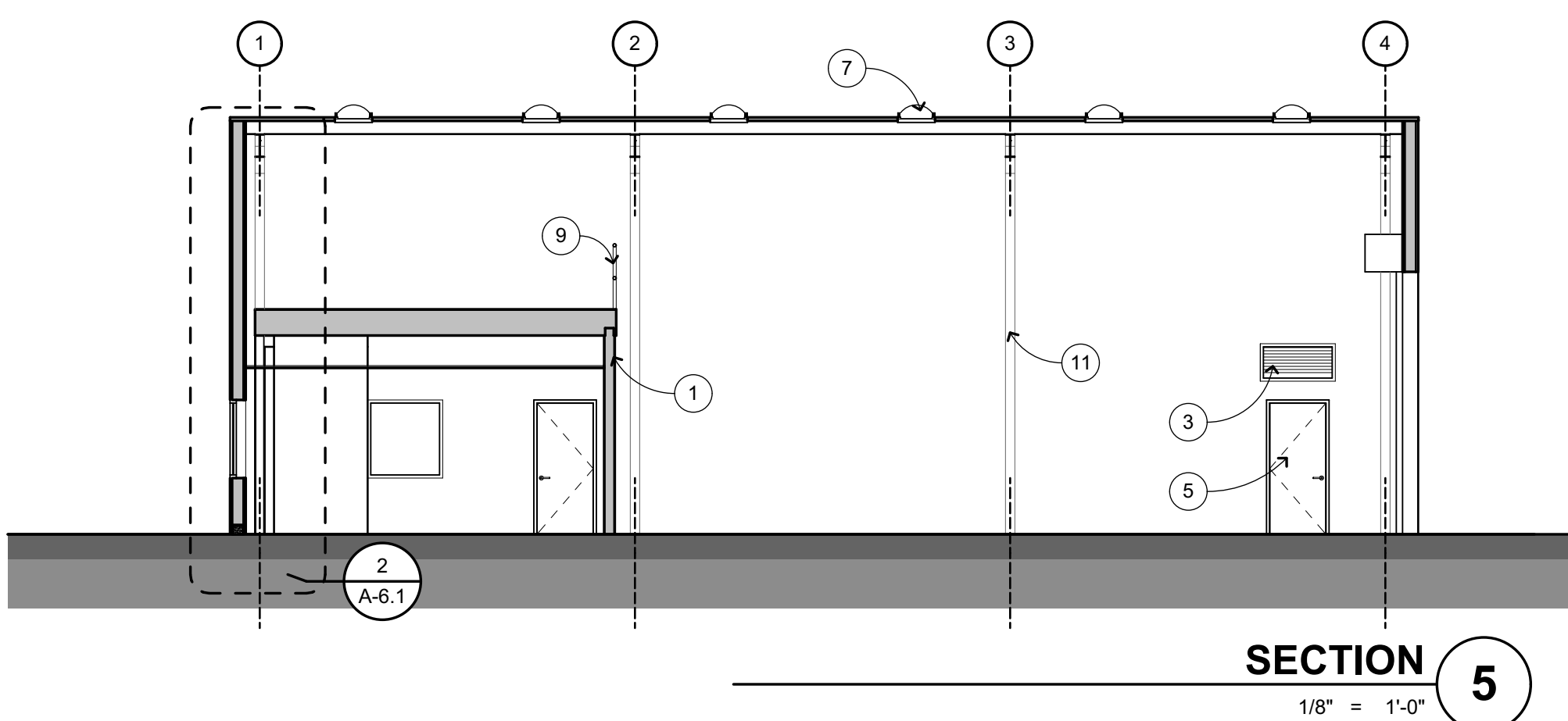
EAST ELEVATION
1/8" = 1'-0" **4**



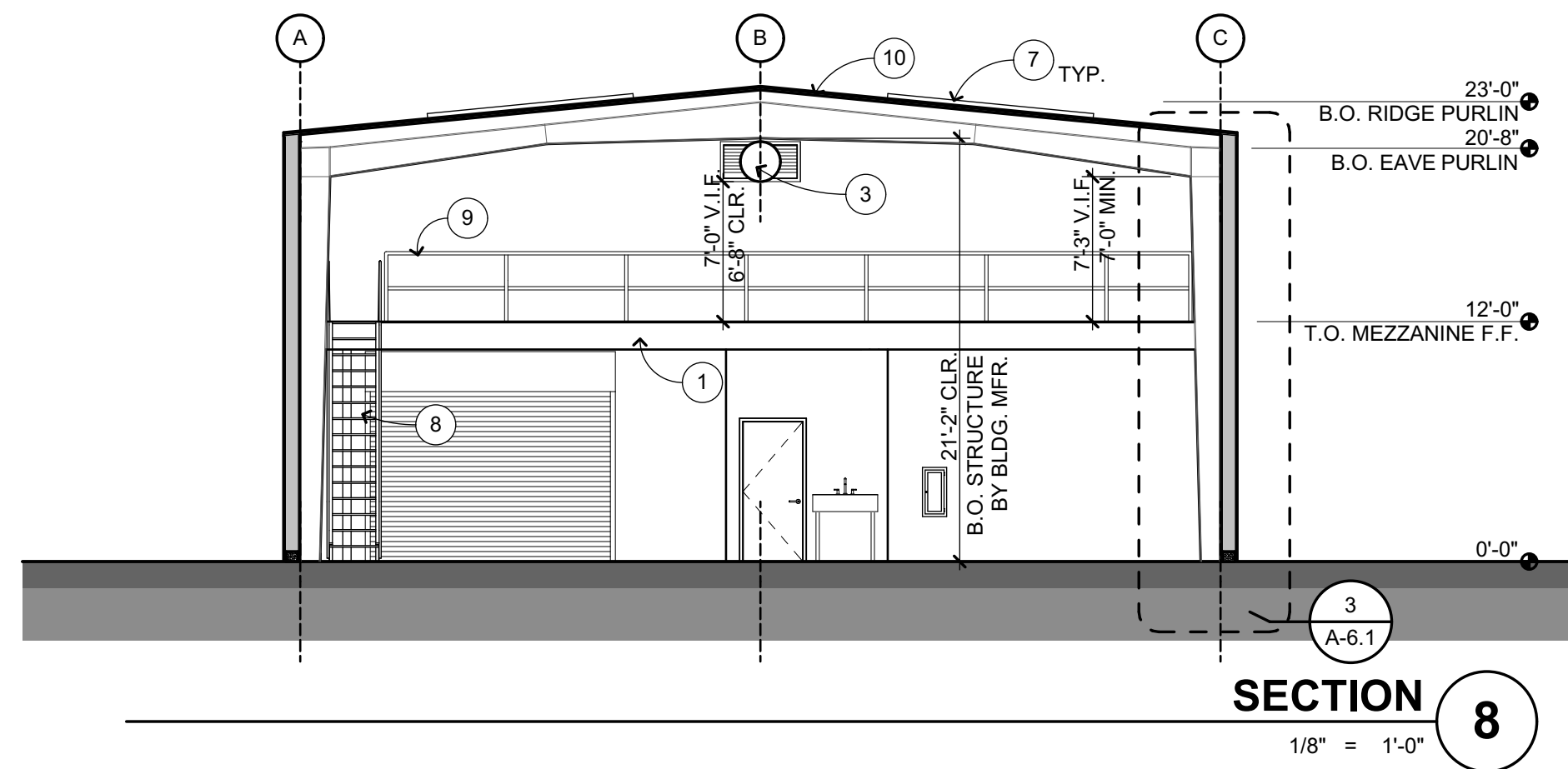
SOUTH ELEVATION
1/8" = 1'-0" **3**



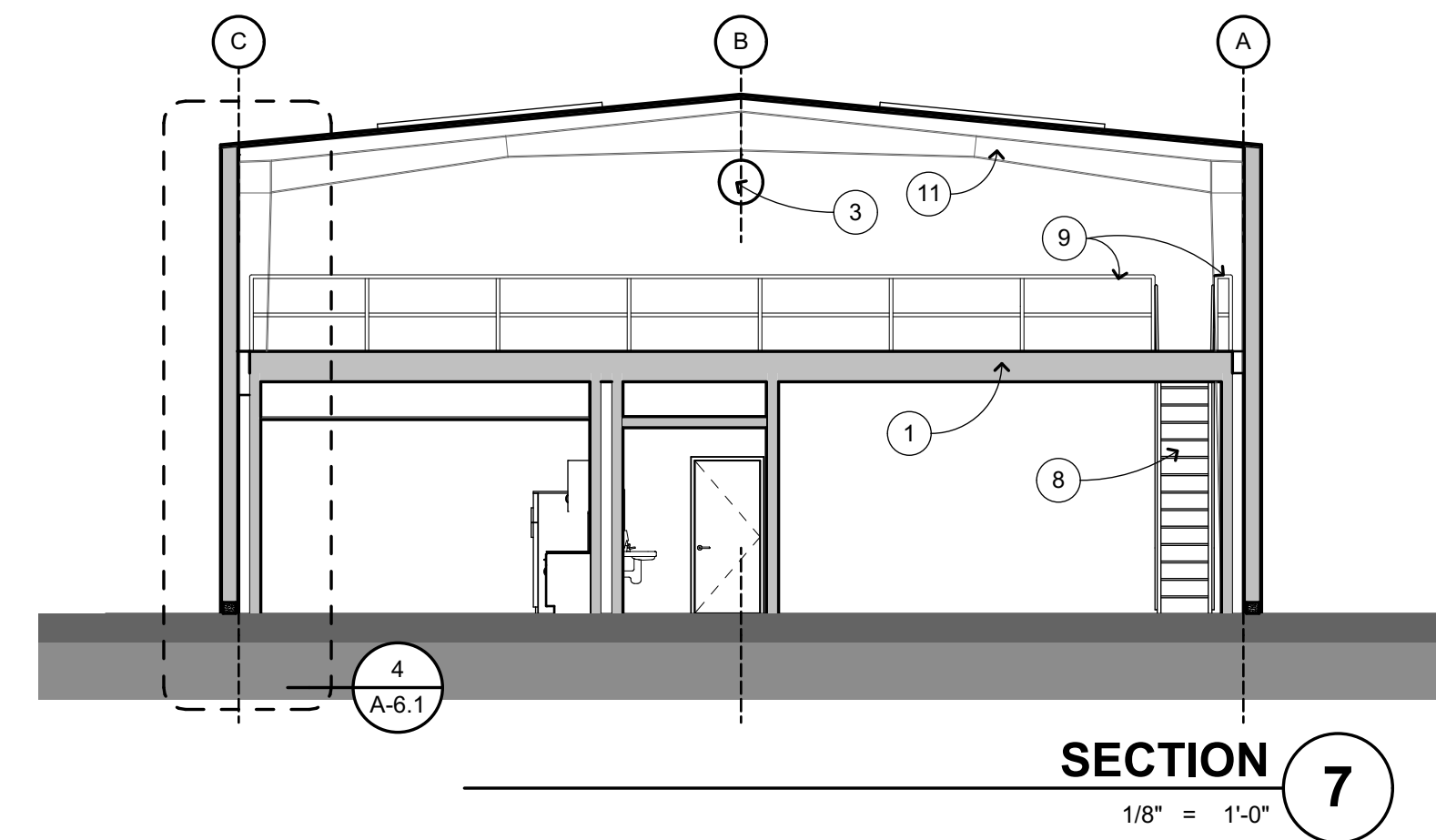
SECTION 6
1/8" = 1'-0"



SECTION 5
1/8" = 1'-0"



SECTION 8
1/8" = 1'-0"



SECTION 7
1/8" = 1'-0"

EXT. ELEVATION & SECTION KEYNOTES

NOT ALL KEYNOTES MAY APPLY TO THIS SHEET

- 1 STRUCTURAL ITEM, S.S.D.
- 2 ELECTRICAL ITEM, S.E.D.
- 3 MECHANICAL ITEM, S.M.D.
- 4 6" CONCRETE CURB, S.S.D.
- 5 HM DOOR AND FRAME, SEE DOOR SCHEDULE
- 6 OVERHEAD ROLL-UP DOOR, SEE DOOR SCHEDULE
- 7 UNIT SKY LIGHT BY BLDG. MFR.
- 8 SHIP LADDER, SEE A-10.2
- 9 FALL PROTECTION RAIL, SEE A-10.2
- 10 STANDING SEAM MTL ROOF BY BLDG MFR
- 11 STRUCTURE BY BLDG MFR
- 12 WINDOW, SEE WINDOW SCHEDULE
- 13 AWNING BY BLDG MFR

EXT. ELEV. & SECTION GENERAL NOTES

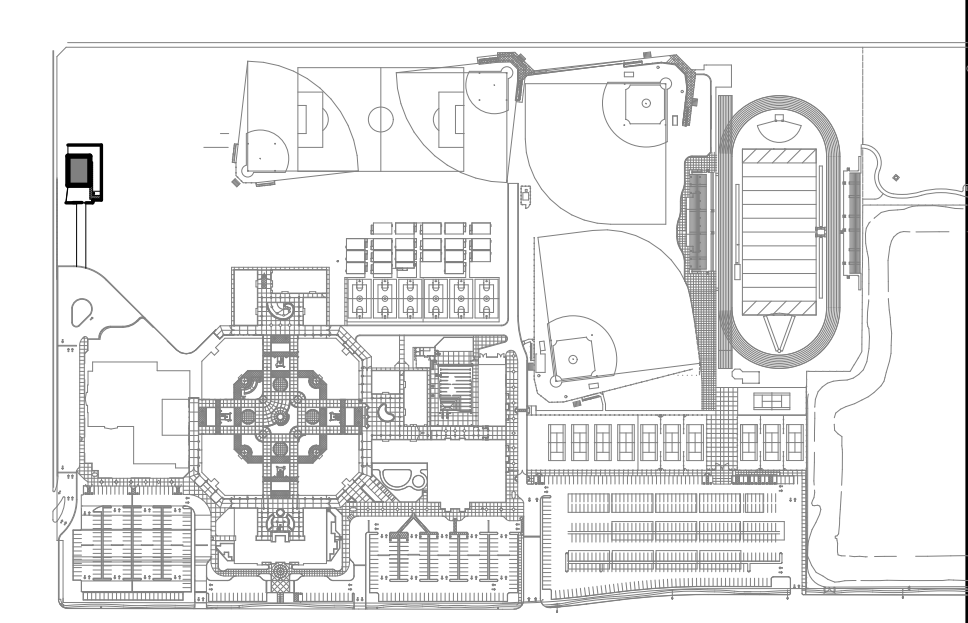
1. NOTES AND SYMBOLS ARE TO APPLY TO ALL AREAS OF SIMILAR GRAPHIC REPRESENTATION. SUCH INDICATIONS MAY BE LIMITED TO PROMOTE CLARITY OR AVOID REDUNDANCY. NO LIMITATION OF APPLICATION SHALL BE CONSTRUED WITHOUT SPECIFIC NOTATION.
2. ALL PENETRATIONS THROUGH EXTERIOR ROOF AND WALLS, AND FLOORS SHALL BE FLASHED AND SEALED WEATHER TIGHT. ALL PENETRATIONS THROUGH THE BUILDING INSULATION ENVELOPE SHALL BE PACKED WITH INSULATION.
3. PROVIDE OPENING FLASHINGS AT ALL WINDOWS, DOORS, LOUVERS AND SIMILAR WALL OPENINGS PER DETAIL A-9.1
4. PROVIDE FIRESTOPPING AT CONCEALED SPACES, INCLUDING BETWEEN STAIR STRINGERS & BETWEEN STUDS WITH STAIR RUN, FURRED SPACES, CEILING/FLOOR LEVELS AND 10'-0" INTERVALS ALONG LENGTHS OF WALL, SOFFITS, DROP CEILINGS, AND COVE CEILINGS PER CBC 718.
5. REFER TO INTERIOR ELEVATIONS FOR WALL FINISHES AND INFORMATION NOT SHOWN, TYPICAL.
6. REFER TO FLOOR PLAN FOR FLOOR FINISHES, TYPICAL.
7. REFER TO REFLECTED CEILING PLAN FOR CEILING FINISHES, TYPICAL.
8. REFER TO MECHANICAL DRAWINGS FOR REGISTERS AND VENTS NOT OTHERWISE SHOWN.
9. REFER TO ELECTRICAL DRAWINGS FOR HORNS, SPEAKERS, PULL STATIONS AND OTHER FEATURES NOT OTHERWISE SHOWN.

1739.02

EXTERIOR ELEVATION LEGEND

- PREFORMED METAL ROOF BY MTL BLDG MFR
- METAL PANEL, BY MTL BLDG MFR

KEYPLAN



FREEDOM HIGH SCHOOL

NEW MAINTENANCE FACILITIES

1050 Neroly Rd
Oakley, CA 94561

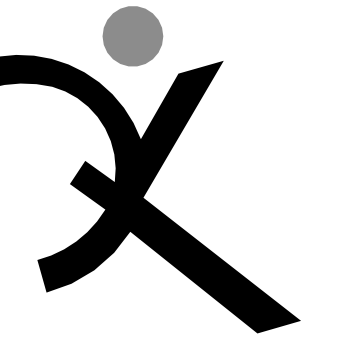
LIBERTY UNION HIGH SCHOOL DISTRICT

ARCH PROJECT NO: 1739.02
DRAWN BY: fill out manually ea sheet!
DRAWING SCALE: 1/8" = 1'-0"
PTN: 61721-0069

BID SET
JANUARY 4, 2019
SHEET TITLE

EXTERIOR ELEVATIONS & SECTIONS

SHEET NUMBER
A-5.1



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NEW MAINTENANCE FACILITIES

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LIBERTY UNION HIGH SCHOOL DISTRICT

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PTN: 61721-0069

BID SET

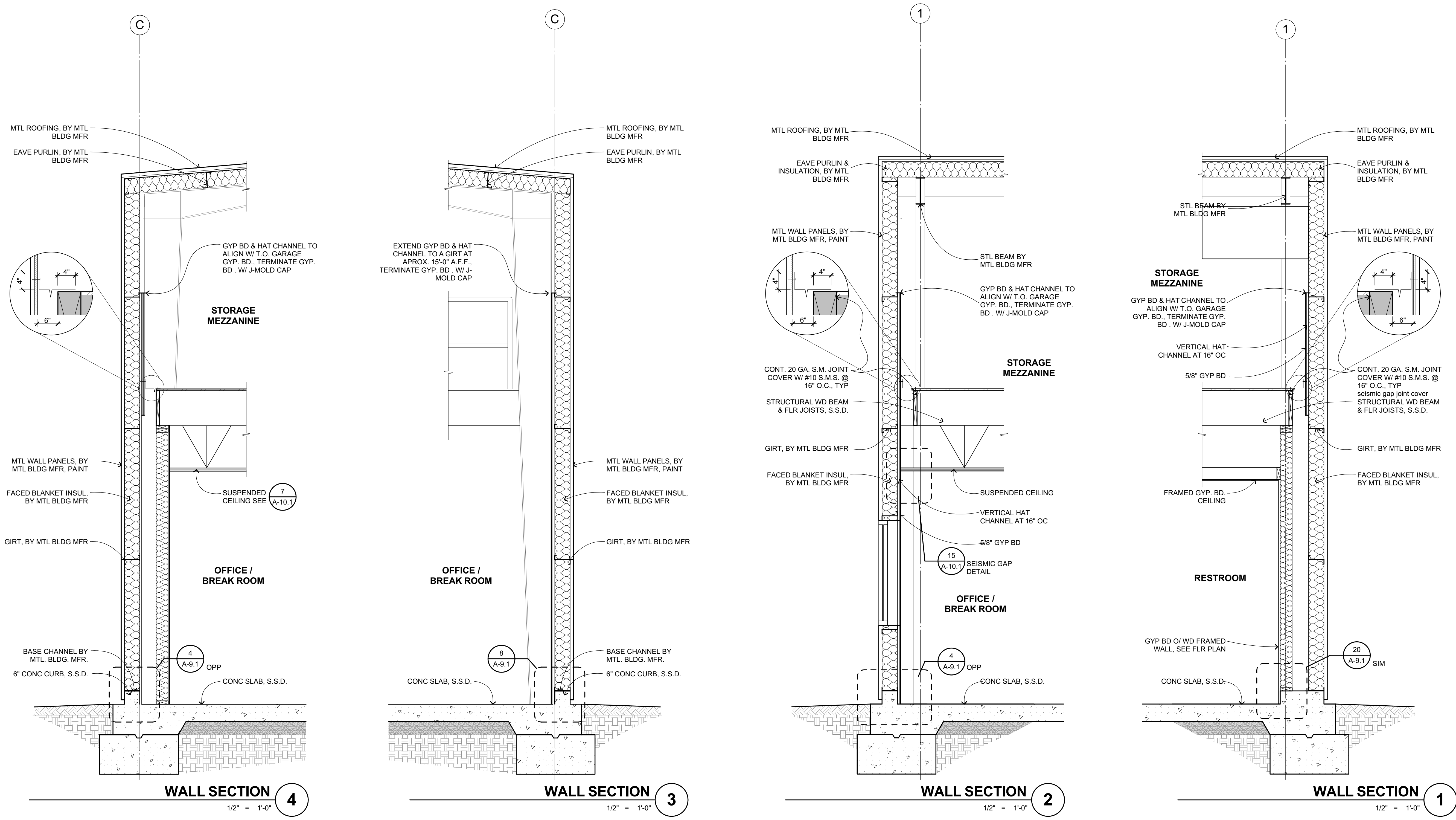
JANUARY 4, 2019

SHEET TITLE

WALL SECTIONS

SHEET NUMBER

A-6.1



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INTERIOR ELEVATION KEYNOTES

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 - 2 ELECTRICAL ITEM, S.E.D.
 - 3 MECHANICAL ITEM, S.M.D.
 - 4 STRUCTURAL ITEM BY BLDG MFR
 - 5 HM DOOR AND FRAME, SEE DOOR SCHEDULE
 - 6 OVERHEAD ROLL-UP DOOR, SEE DOOR SCHEDULE
 - 7 WINDOW, SEE WINDOW SCHEDULE
 - 8 SHIP LADDER, SEE $\frac{9}{A-10.2}$
 - 9 FALL PROTECTION RAIL, SEE $\frac{1}{A-10.2}$
 - 10 CASEWORK & COUNTERTOP, SEE $\frac{19}{A-10.2}$
 - 11 REFRIGERATOR, OPOI
 - 12 SEISMIC GAP COVER
 - 13 FIRE EXTINGUISHER & CABINET

TOILET ROOM ACCESSORY SCHEDULE

- A TOILET PAPER DISPENSER, SURFACE MOUNTED, O.P.O.I.
- B PAPER TOWEL DISPENSER, RECESSED
- C SOAP DISPENSER, SURFACE MOUNTED, O.P.O.I.
- D MIRROR (TYP), FOR ATTACHMENT SEE $\frac{10}{A-10.2}$
- E TOILET SEAT COVER DISPENSER, SURFACE MOUNTED, O.P.O.I.
- F 36" GRAB BAR, FOR ATTACHMENT SEE $\frac{3}{A-10.2}$
- G 42" GRAB BAR, FOR ATTACHMENT SEE $\frac{3}{A-10.2}$

INTERIOR ELEVATION GENERAL NOTES

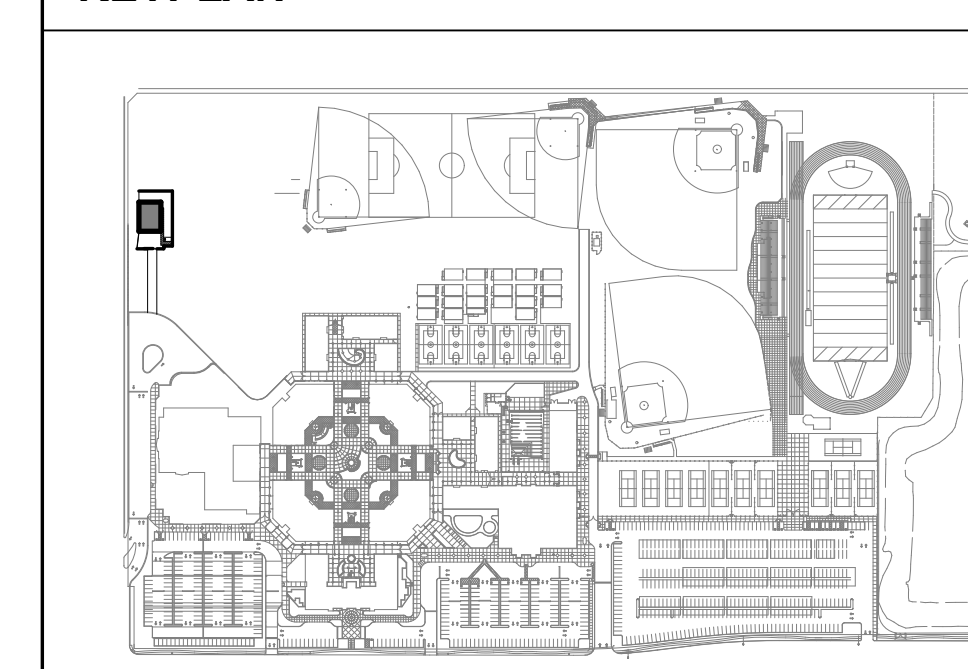
1. NOTES AND SYMBOLS ARE TO APPLY AT ALL AREAS OF SIMILAR GRAPHIC REPRESENTATION. SUCH INDICATIONS MAY BE LIMITED TO PROMOTE CLARITY OR AVOID REDUNDANCY. NO LIMITATION OF APPLICATION SHALL BE CONSTRUED WITHOUT SPECIFIC NOTATION.
2. REFER TO MECHANICAL DRAWINGS FOR REGISTERS AND VENTS NOT OTHERWISE SHOWN.
3. REFER TO ELECTRICAL DRAWINGS FOR HORNS, SPEAKERS, PULL STATIONS AND OTHER FEATURES NOT OTHERWISE SHOWN.
4. TYPICAL MOUNTING HEIGHTS OF ACCESSIBLE ELEMENTS AT ACCESSIBLE FIXTURES SEE $\frac{4}{A-10.2}$
5. FLUSH VALVE HANDLES SHALL BE LOCATED AT THE WIDE SIDE OF ACCESSIBLE STALL.
6. FLOORING & BASE SHALL EXTEND UNDER ACCESSIBLE SINK/LAVATORY BASE CABINETS TO THE WALL. HOT WATER AND DRAINPIPES ACCESSIBLE UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.
7. PROVIDE SOLID BLOCKING FOR CABINET, ACCESSORY, OR EQUIPMENT MOUNTING $\frac{2}{A-10.2}$

WALL AND BASE FINISH CODES

FOR PAINT FINISHES SEE SEC. 09 9113 (EXTERIOR) & 09 9123 (INTERIOR). ALL GYP BD TO BE TYPE 'X'.

- W-1 GYP BD
- W-2 FRP PANEL O/ MOISTURE RESISTANT GYP BD
- W-3 MANUFACTURED METAL BLDG EXPOSED STRUCTURE & INSULATION
- W-4 TACKABLE WALL PANELS $\frac{7}{A-10.2}$
- B-1 4" RESILIENT BASE, SEE $\frac{4}{A-9.1}$ AT MTL BLDG WALL $\frac{12}{A-9.1}$ AT WD WALL
- B-2 FLUID APPLIED FLOORING COVED BASE, SEE $\frac{20}{A-9.1}$
- B-3 SEALED CONC. CURB, SEE $\frac{8}{A-9.1}$ AT MTL BLDG WALL $\frac{16}{A-9.1}$ AT WD WALL

KEYPLAN



FREEDOM HIGH SCHOOL

NEW MAINTENANCE FACILITIES

1050 Neroly Rd
Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

ARCH PROJECT NO: 1739.02
DRAWN BY: fill out manually ea sheet
DRAWING SCALE: 1/4" = 1'-0"
PTN: 61721-0069

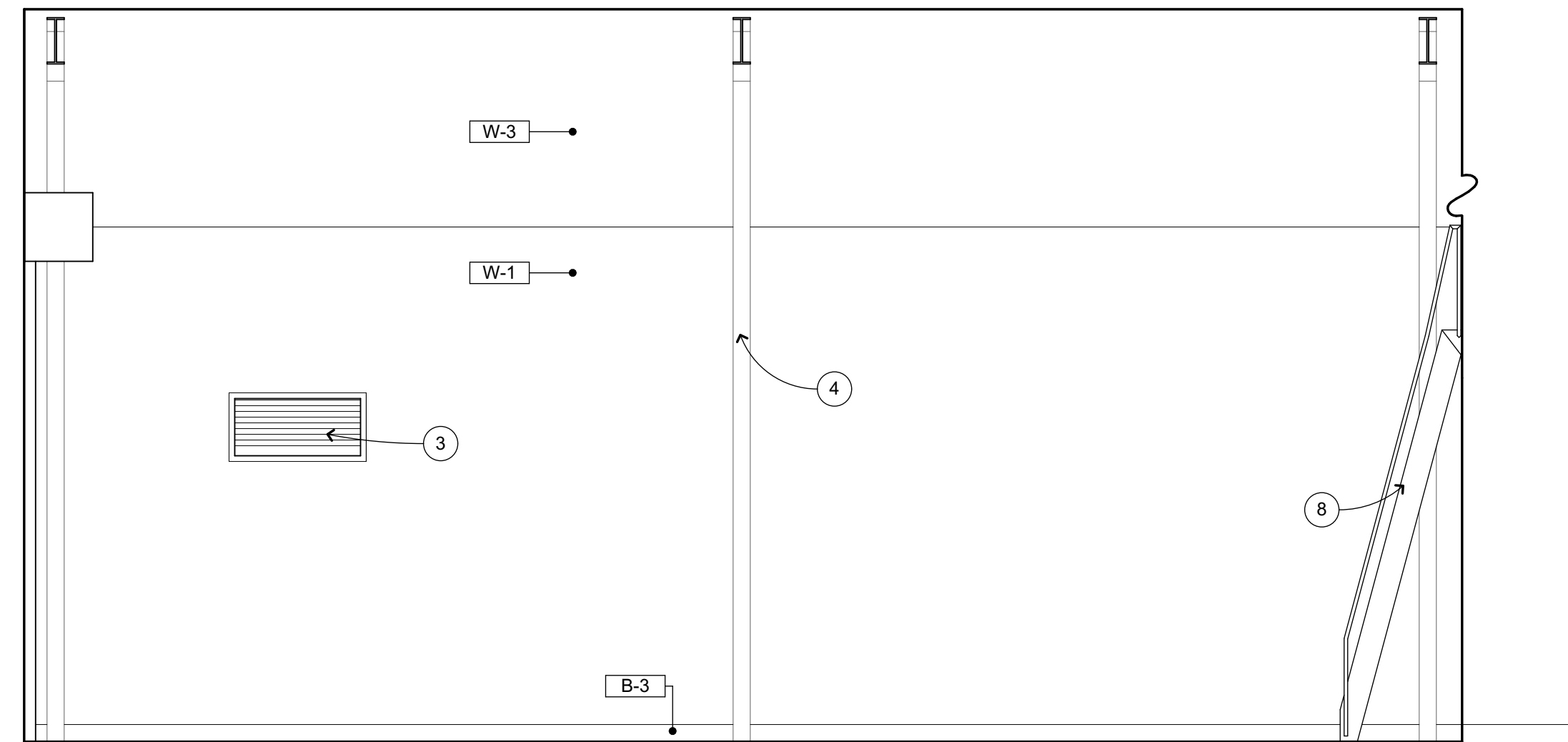
BID SET

JANUARY 4, 2019
SHEET TITLE

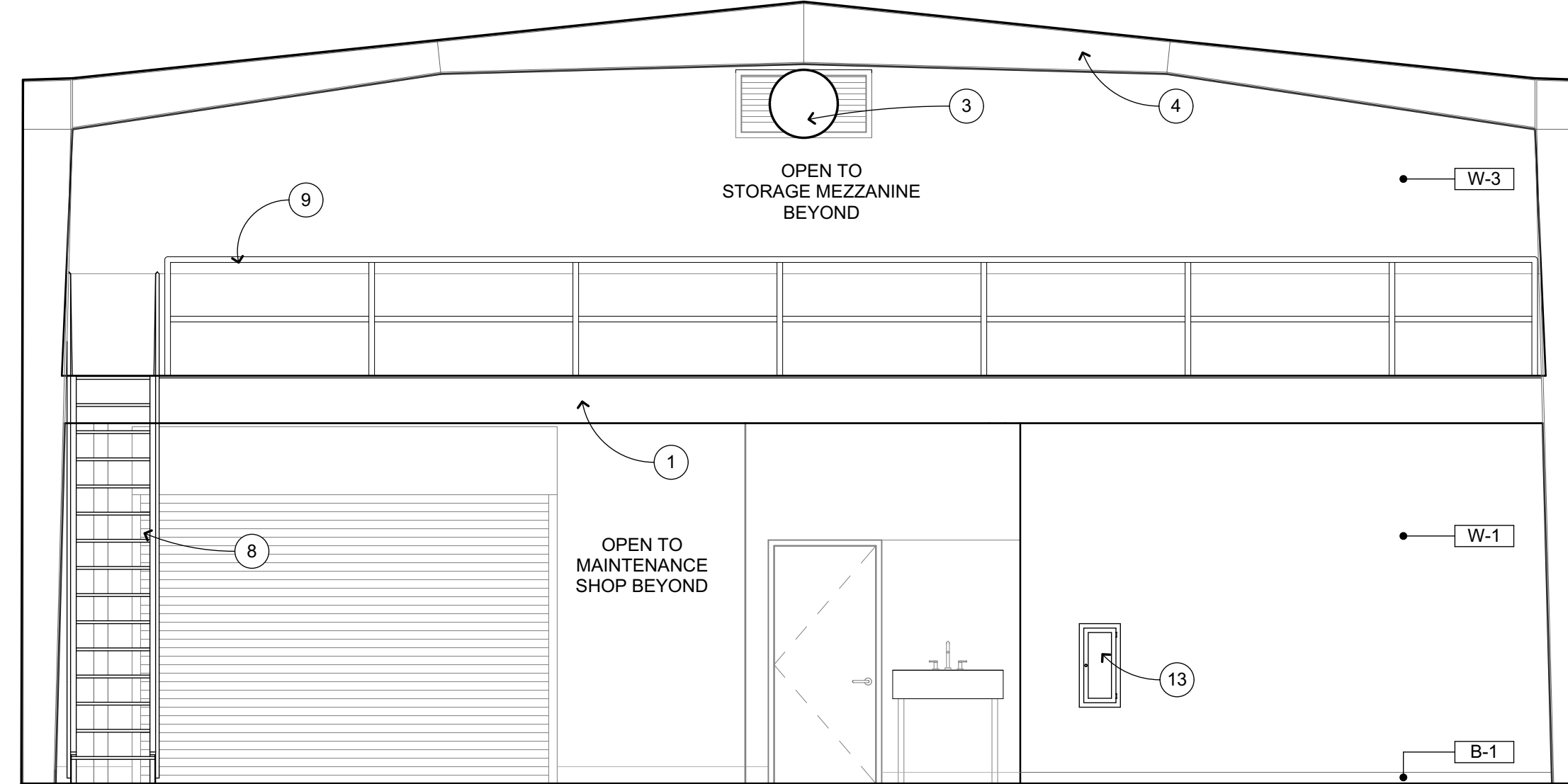
INTERIOR ELEVATIONS

SHEET NUMBER

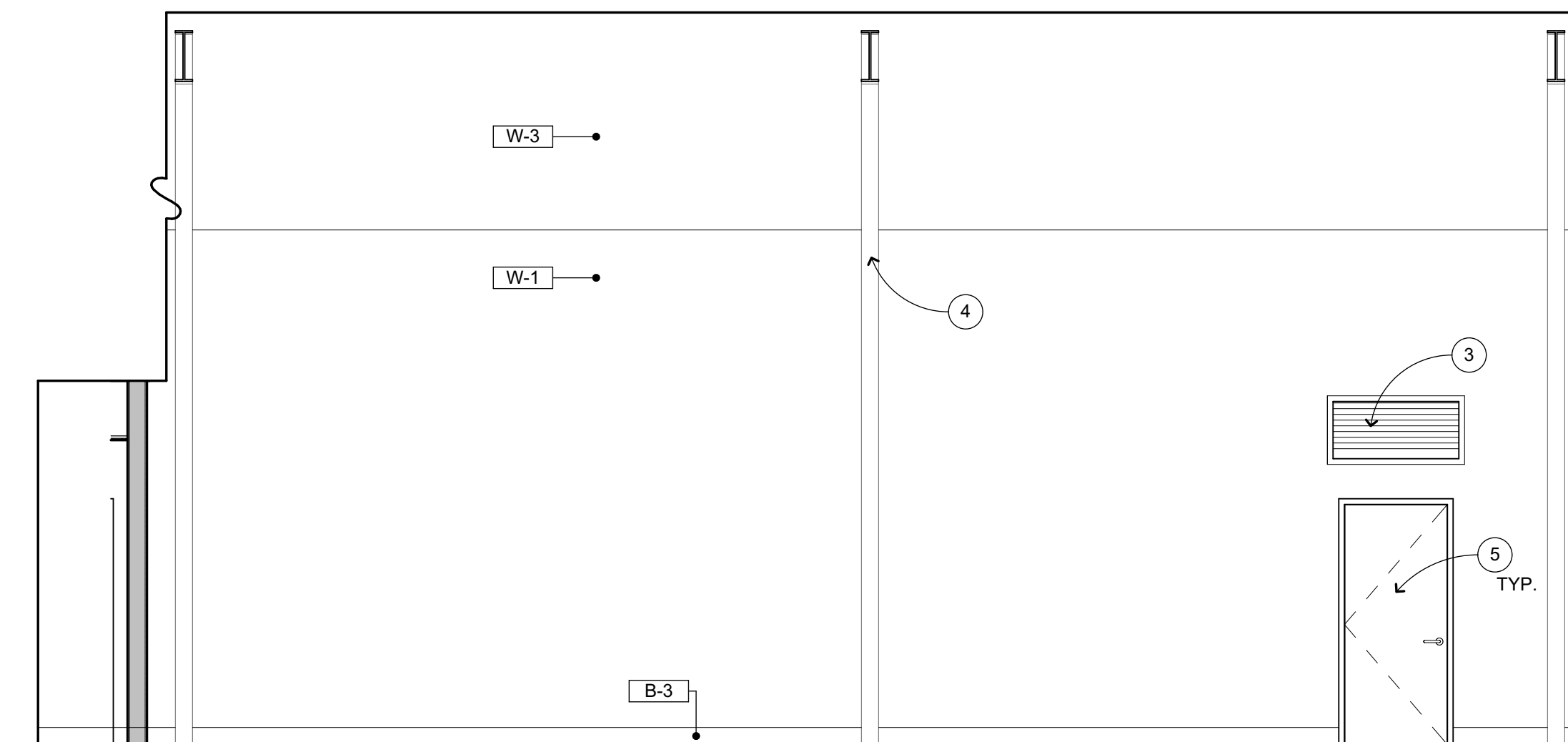
A-7.1



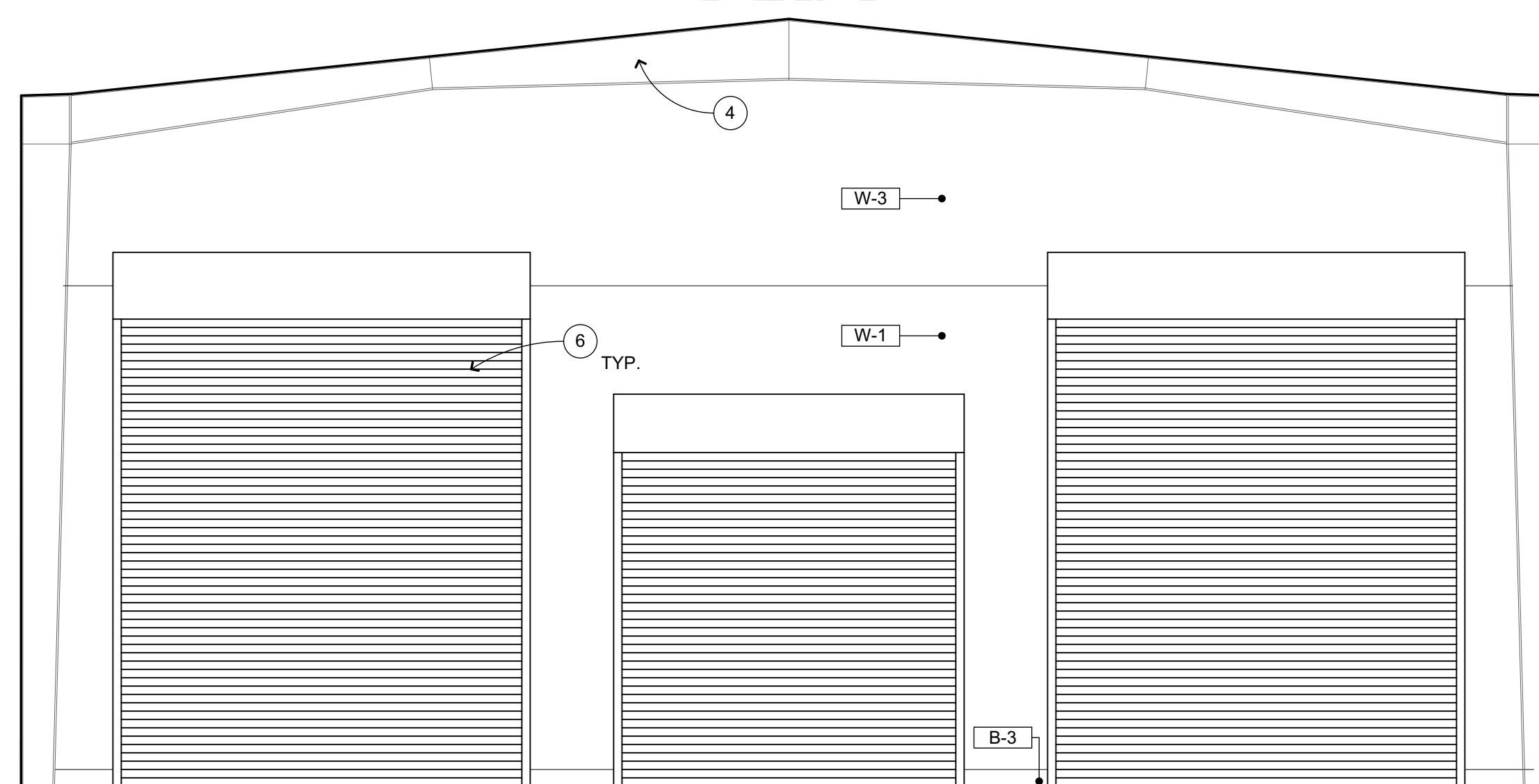
WEST



NORTH

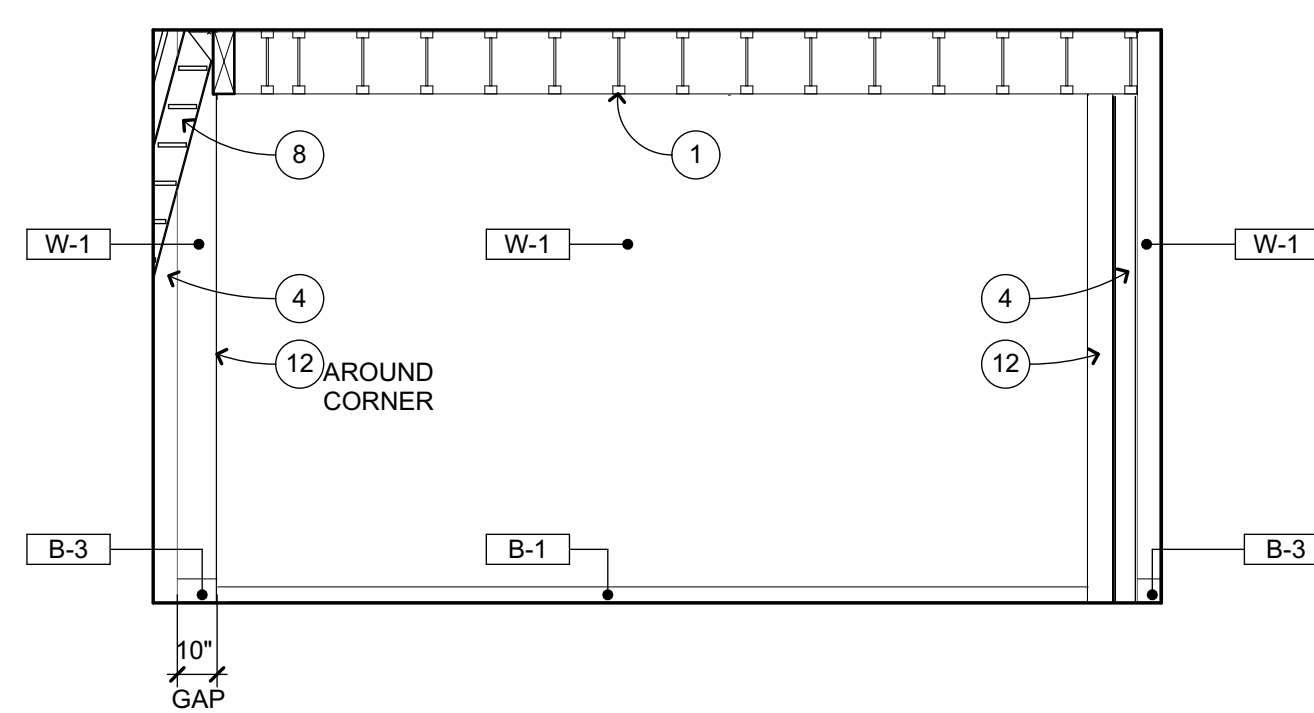


EAST

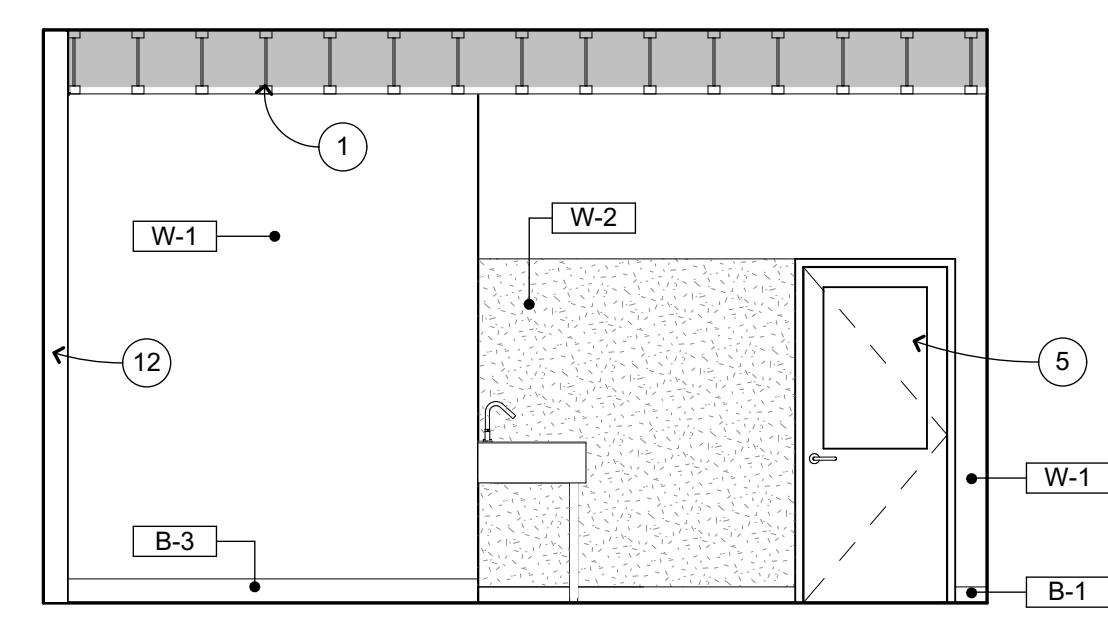


SOUTH

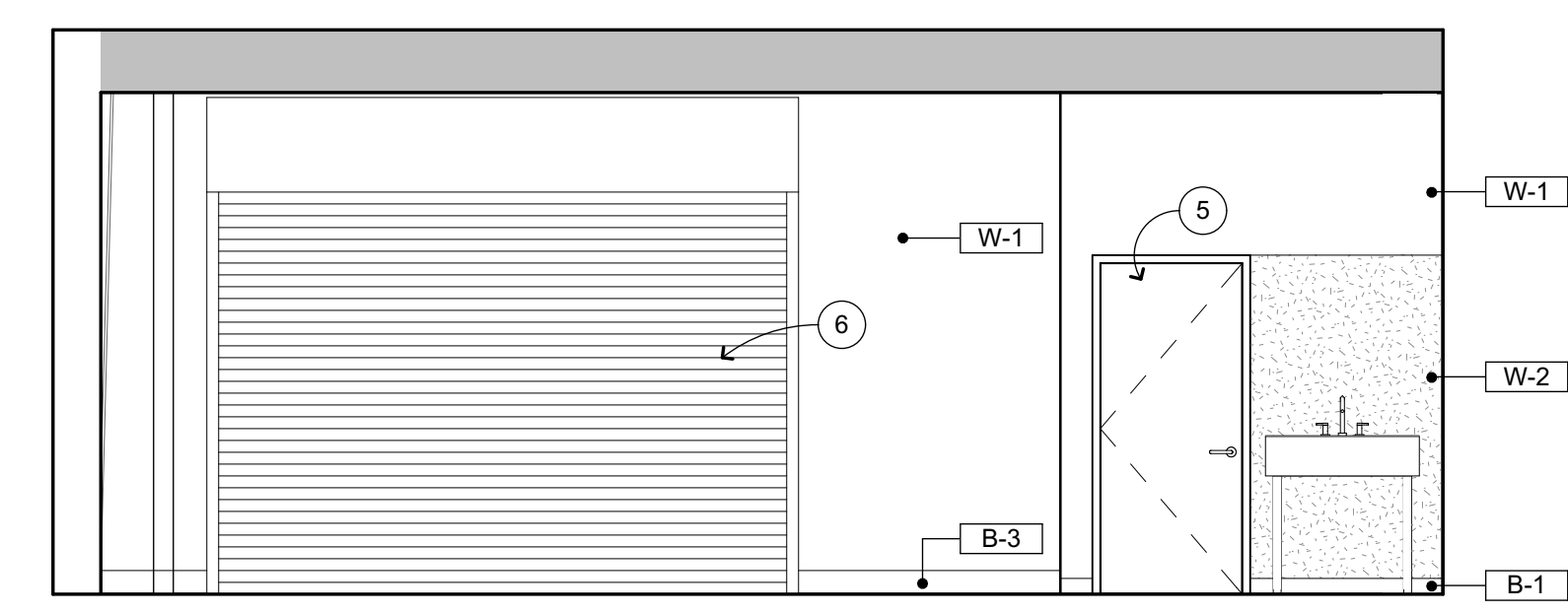
GARAGE 101
1/4" = 1'-0" A-2.1



WEST



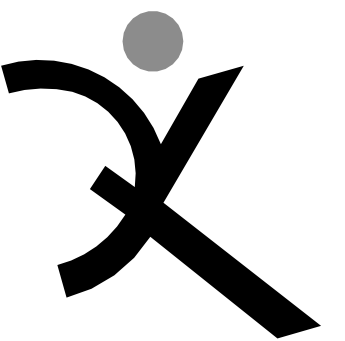
EAST



SOUTH

MAINTENANCE SHOP 102
1/4" = 1'-0" A-2.1

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- 2 ELECTRICAL ITEM, S.E.D.
- 3 MECHANICAL ITEM, S.M.D.
- 4 STRUCTURAL ITEM BY BLDG MFR
- 5 HM DOOR AND FRAME, SEE DOOR SCHEDULE
- 6 OVERHEAD ROLL-UP DOOR, SEE DOOR SCHEDULE
- 7 WINDOW, SEE WINDOW SCHEDULE
- 8 SHIP LADDER, SEE 9 A-10.2
- 9 FALL PROTECTION RAIL, SEE 1 A-10.2
- 10 CASEWORK & COUNTERTOP, SEE 19 A-10.2
- 11 REFRIGERATOR, OPOI
- 12 SEISMIC GAP COVER
- 13 FIRE EXTINGUISHER & CABINET

TOILET ROOM ACCESSORY SCHEDULE

- A TOILET PAPER DISPENSER, SURFACE MOUNTED, O.P.O.I.
- B PAPER TOWEL DISPENSER, RECESSED
- C SOAP DISPENSER, SURFACE MOUNTED, O.P.O.I.
- D MIRROR (TYP), FOR ATTACHMENT SEE 10 A-10.2
- E TOILET SEAT COVER DISPENSER, SURFACE MOUNTED, O.P.O.I.
- F 36" GRAB BAR, FOR ATTACHMENT SEE 3 A-10.2
- G 42" GRAB BAR, FOR ATTACHMENT SEE 3 A-10.2

INTERIOR ELEVATION GENERAL NOTES

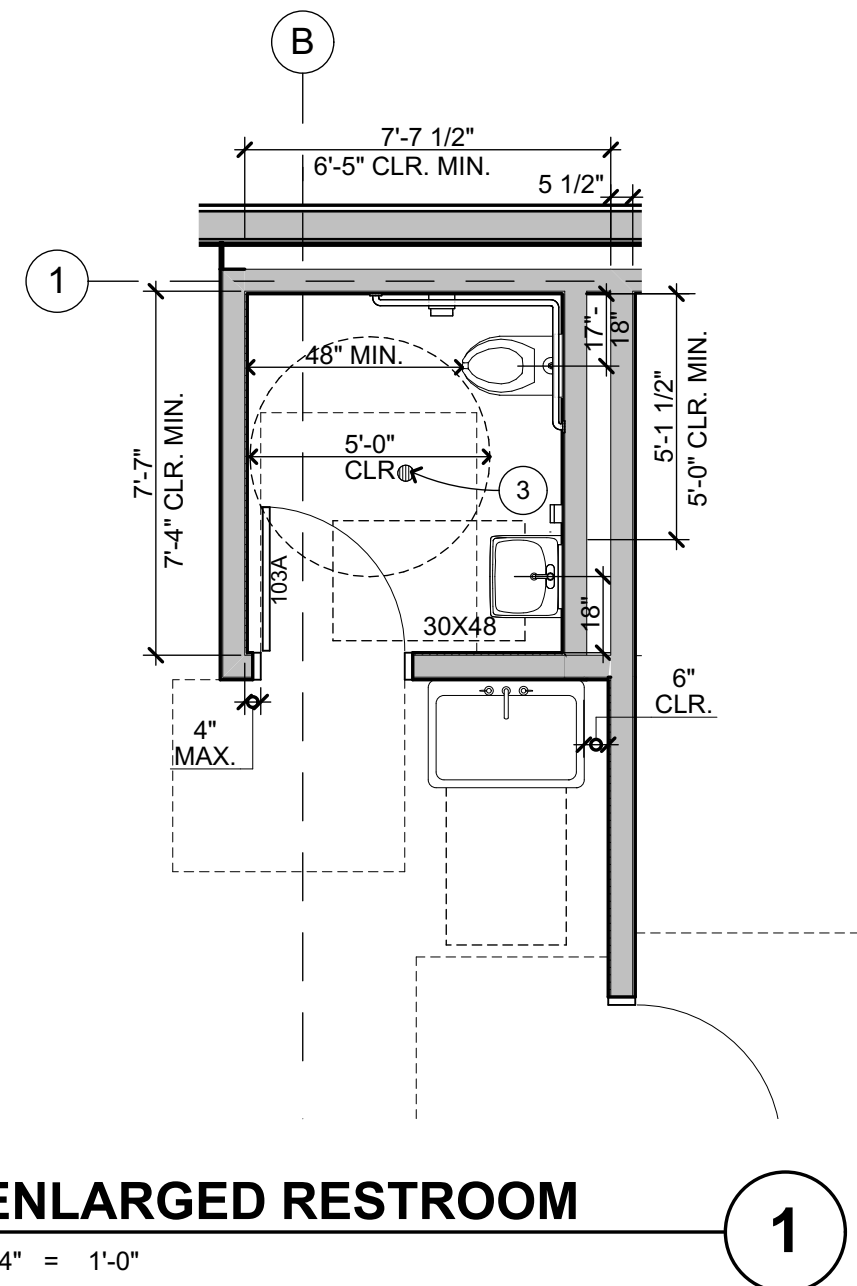
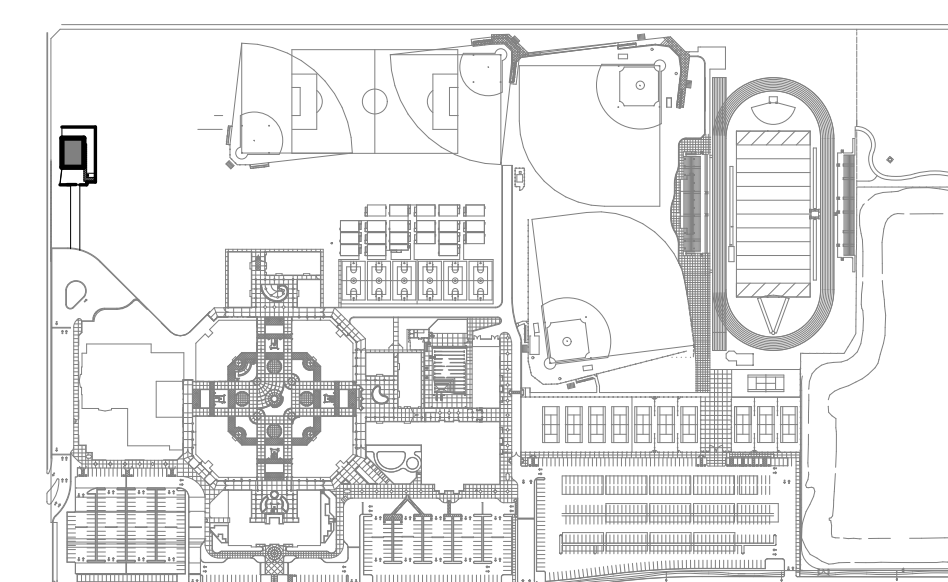
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- TYPICAL MOUNTING HEIGHTS OF ACCESSIBLE ELEMENTS AT ACCESSIBLE FIXTURES SEE 4 A-10.2
- FLUSH VALVE HANDLES SHALL BE LOCATED AT THE WIDE SIDE OF ACCESSIBLE STALL.
- FLOORING & BASE SHALL EXTEND UNDER ACCESSIBLE SINK/LAVATORY BASE CABINETS TO THE WALL. HOT WATER AND DRAIN PIPES ACCESSIBLE UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.
- PROVIDE SOLID BLOCKING FOR CABINET, ACCESSORY, OR EQUIPMENT MOUNTING 2 A-10.2

WALL AND BASE FINISH CODES

FOR PAINT FINISHES SEE SEC. 09 9113 (EXTERIOR) & 09 9123 (INTERIOR), ALL GYP BD TO BE TYPE 'X'.

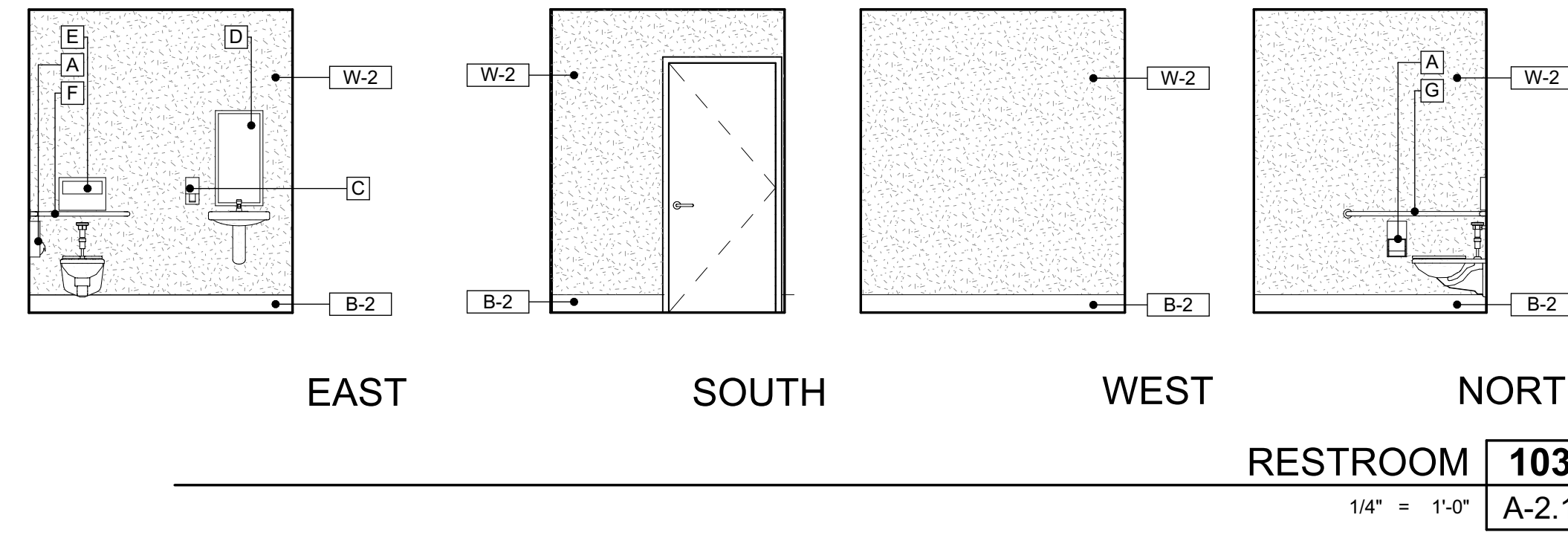
- W-1 GYP BD
- W-2 FRP PANEL O/ MOISTURE RESISTANT GYP BD
- W-3 MANUFACTURED METAL BLDG EXPOSED STRUCTURE & INSULATION
- W-4 TACKABLE WALL PANELS 7 A-10.2
- B-1 4" RESILIENT BASE, SEE 4 A-9.1 AT MTL BLDG WALL, 12 A-9.1 AT WD WALL
- B-2 FLUID APPLIED FLOORING COVED BASE, SEE 20 A-9.1
- B-3 SEALED CONC. CURB, SEE 8 A-9.1 AT MTL BLDG WALL, 16 A-9.1 AT WD WALL

KEYPLAN

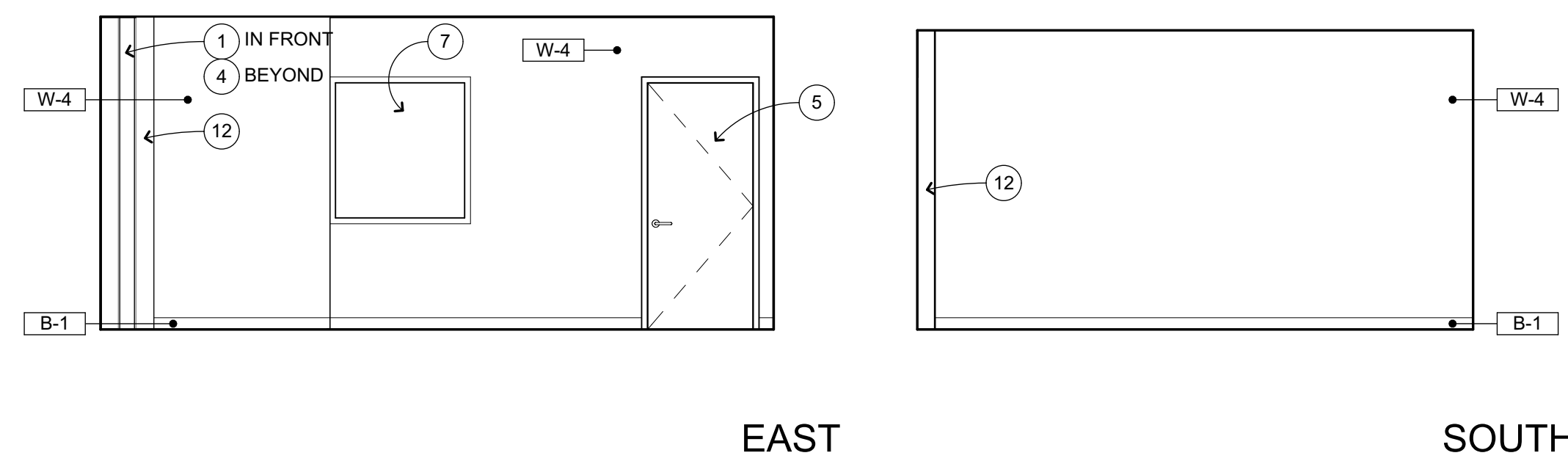


ENLARGED RESTROOM

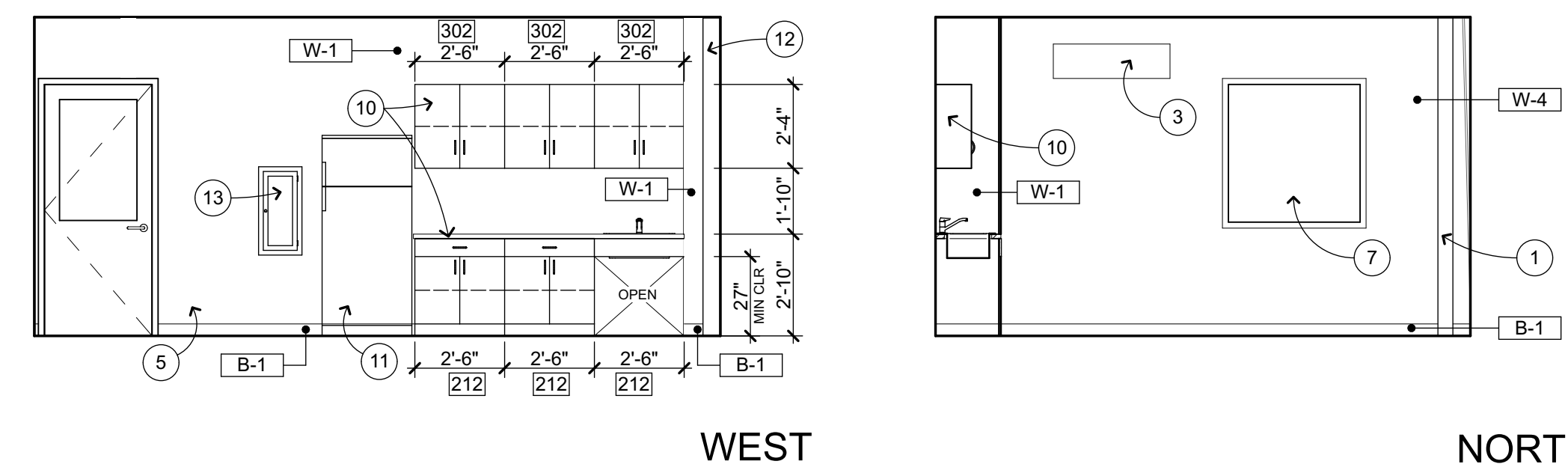
1/4" = 1'-0"



RESTROOM 103
1/4" = 1'-0"
A-2.1



OFFICE BREAK RM 104
1/4" = 1'-0"
A-2.1



OFFICE BREAK RM 104
1/4" = 1'-0"
A-2.1

FREEDOM HIGH SCHOOL

NEW MAINTENANCE FACILITIES

1050 Neroly Rd
Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

ARCH PROJECT NO: 1739.02

DRAWN BY:

DRAWING SCALE:

PTN: 61721-0069

BID SET

JANUARY 4, 2019

SHEET TITLE

INTERIOR ELEVATIONS

SHEET NUMBER

A-7.2

MINIMUM CBC REQUIREMENTS.

TYPICAL PLAQUE NOTES U.O.N.

PLAQUES WITH TACTILE LETTERING AND SYMBOLS (RAISED 1/32") INCLUDES CALIFORNIA CONTRACTED GRADE 2 BRAILLE RAISED 1/40" PER CBC REQUIREMENTS. SAN SERIF FONT SELECTION SHALL HAVE THE WIDTH OF THE UPPERCASE LETTER "O" IS 60% MIN AND 110% MAX OF THE HEIGHT OF THE UPPERCASE LETTER "I". A STROKE WIDTH TO HEIGHT OF THE UPPERCASE LETTER "I" SHALL BE 15% MAX OF HT OF CHARACTER.

CUSTOM COLORS, LAYOUT & LETTER STYLES TO BE SELECTED & APPROVED BY ARCHITECT. SIGNAGE SYMBOLS, BACKGROUND, MOUNTING SURFACE TO CONTRAST, 70% MINIMUM CONTRAST.

WHERE SIGN PLAQUES ARE PLACED ON GLASS, ANY BACKING PLAQUE OR SIGN IS TO BE THE SAME SIZE.

TEXT

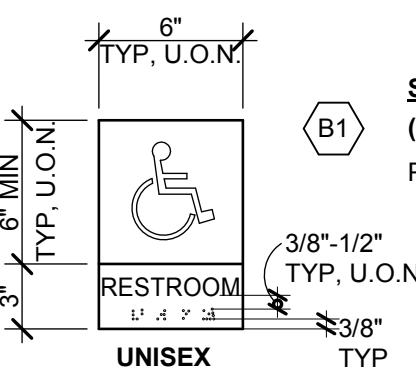
TEXT HT A.F.F.	TEXT SIZE*
48"-70"	5/8" MIN. TEXT (48 PT)
> 70"	2" MAX.

* FOR WALL MOUNTED SIGNS WHICH MAY BE VIEWED W/O OBSTRUCTION.



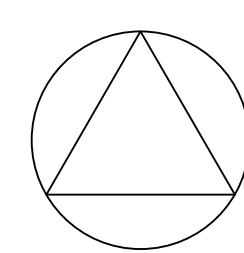
ACCESSIBLE ENTRANCE SIGN

VINYL 4"x4" BACKING WITH VINYL SYMBOL. 3M REFLECTIVE BLUE BACKGROUND WITH 3M REFLECTIVE WHITE SYMBOL. PROVIDE AT MAIN ENTRANCE.



STRIKE SIDE TOILET ROOM SIGNAGE

(PLAQUE NOTES TYP FOR EACH SIGN) PROVIDE AT ACCESSIBLE TOILET ROOMS.



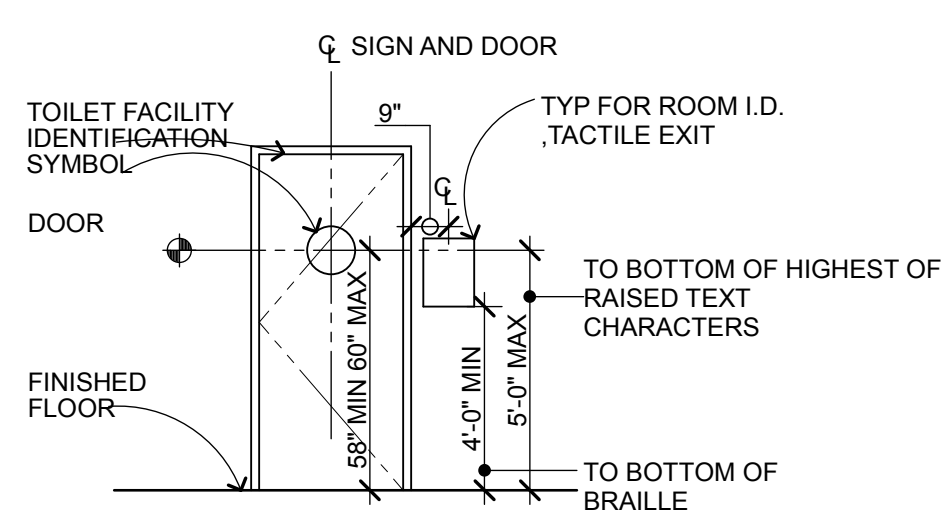
UNISEX TOILET FACILITY IDENTIFICATION SYMBOL
CIRCLE, 12 INCHES IN DIAMETER WITH AN EQUILATERAL TRIANGLE 1/4" THICK SUPERIMPOSED ON THE CIRCLE & WITHIN THE 12 INCH DIAMETER VERTEX POINTING UPWARD. COLOR & CONTRAST SHALL BE DISTINCTLY DIFFERENT THAN THAT OF THE DOOR. 70 LETTER STYLE MINIMUM CONTRAST. DOUBLE STICK FOAM TAPE ADHESIVE.

PROVIDE AT ACCESSIBLE TOILET ROOM DOOR CENTERED AT 60" HIGH. SEE ACCOMPANYING DIAGRAM.

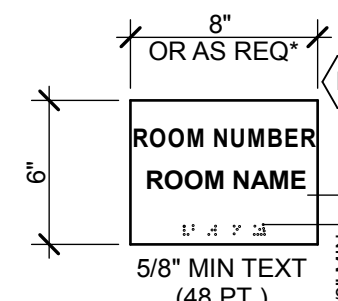
ACCESSIBLE SIGNAGE

1/4" = 1'-0"

MOUNTING OF SIGNS

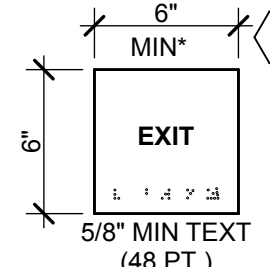


PERMANENT ROOM SIGNAGE TO BE PLACED AT STRIKE SIDE. WHERE INSUFFICIENT ROOM, PLACE ON ADJACENT WALL, PREFERABLY TO THE RIGHT OF THE DOOR.



PERMANENT ROOM I.D. SIGNAGE

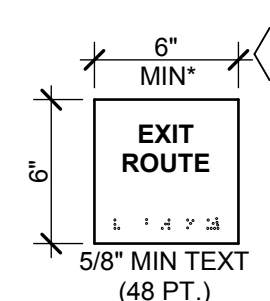
INSTALL NEXT TO ENTRANCE DOORS, PER CBC REQUIREMENTS.



TACTILE EXIT SIGN AT ALL EXIT DOORS

RAISED LETTERS "EXIT", BRAILLE "EXIT", CONTRACTED GRADE 2 BRAILLE

LOCATED AT ALL EXIT DOORS IN ADDITION TO OVERHEAD, ILLUMINATED EXIT SIGNS. INSTALL ON THE WALL ADJACENT TO THE LATCH ON THE OUTSIDE OF THE DOOR WHERE THERE IS NO WALL SPACE ON THE WALL LATCH SIDE INCLUDING AT DOUBLE LEAF DOORS. SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL, PREFERABLY ON THE RIGHT SIDE.



TACTILE EXIT ROUTE SIGN

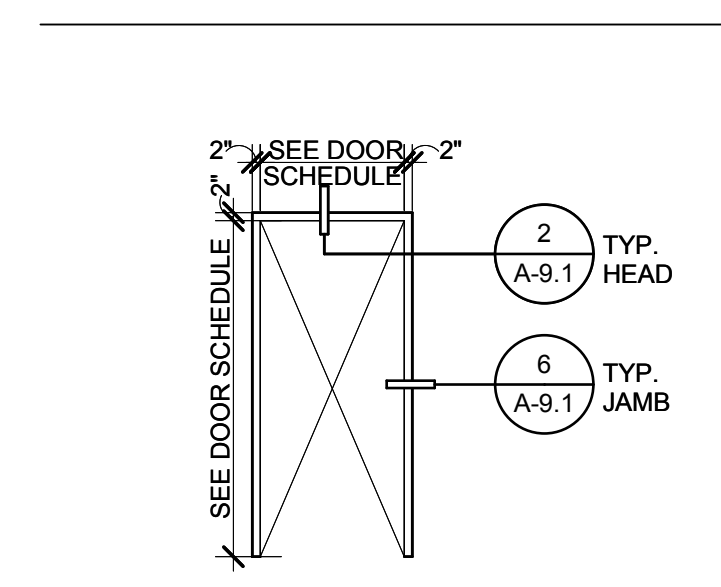
POST AS INDICATED AT DOORS TO EXIT ROUTE THAT DO NOT LEAD DIRECTLY TO THE EXTERIOR

*MIN DIMENSIONS SHOWN, WHERE BACK TO BACK SIGNS ARE APPLIED OVER GLASS, WIDTHS TO MATCH.

18

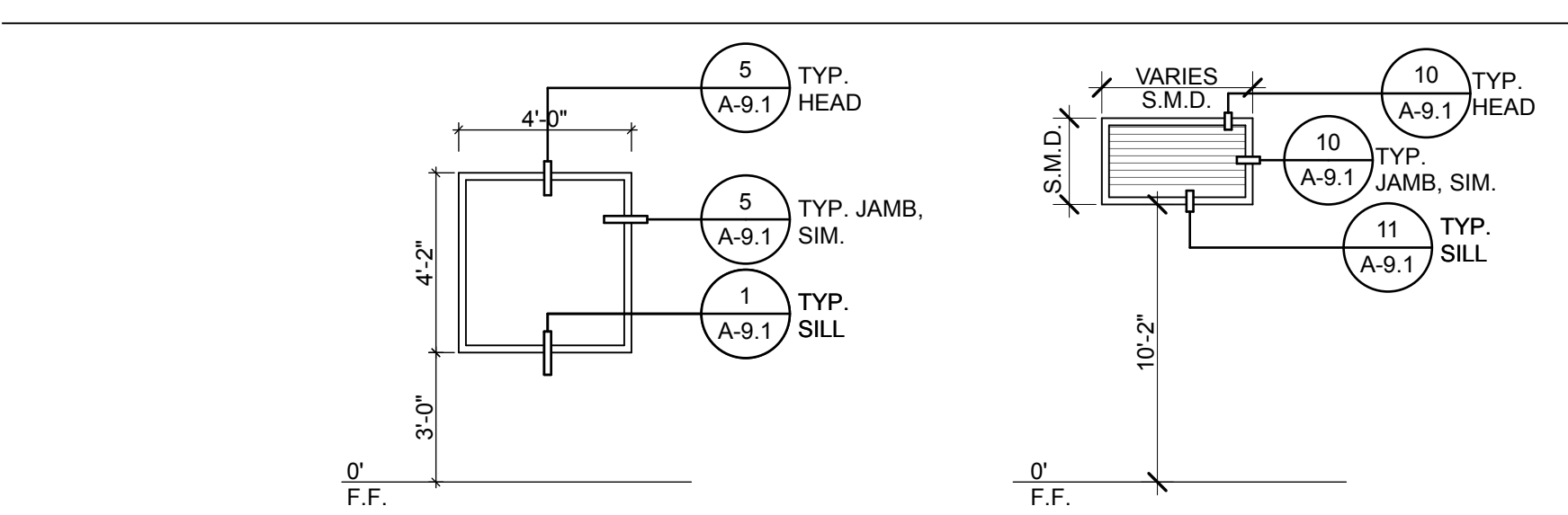
DOOR SCHEDULE												
ID	TYPE	DOOR			FRAME			THRESHOLD	LABEL	HDWR	P. H.	REMARKS
		SIZE	MAT	FIN	TYPE	MAT	FIN					
101A	A	3'-0" x 7'-0"	H.M.	PAINT	1	H.M.	PAINT	15/A-9.1	-	4		
101B	E	12'-0" x 14'-0"		MFR.								
101C	E	10'-0" x 10'-0"		MFR.								
101D	E	12'-0" x 14'-0"		MFR.								
102A	E	12'-0" x 8'-6"		MFR.								
103A	A	3'-0" x 7'-0"	H.M.	PAINT	1	H.M.	PAINT	24A/A-9.1	-	3		
104A	D	3'-0" x 7'-0"	H.M.	PAINT	1	H.M.	PAINT	24B/A-9.1	-	2		
104B	A	3'-0" x 7'-0"	H.M.	PAINT	1	H.M.	PAINT	15/A-9.1	-	1		

DOOR FRAME TYPES



1	HOLLOW METAL FRAME
TYPE	HOLLOW METAL FRAME
GLAZING	-
OPERATION	-
RATING	-
NOTES	-

WINDOW & LOUVERS TYPES



1	ALUMINUM SYSTEM
2	LOUVER
TYPE	ALUMINUM SYSTEM
GLAZING	DOUBLE GLAZING
OPERATION	FIXED
RATING	N/A
NOTES	N/A

DOOR GENERAL NOTES

- ALL EXIT DOORS IN SCHOOL BUILDINGS, INCLUDING BUT NOT LIMITED TO DOORS OF TOILET ROOMS AND STORAGE ROOMS SHALL CONFORM TO CBC 1010. EXIT DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, OR SPECIAL KNOWLEDGE OR EFFORT.
- EXIT DEVICES (PANIC HARDWARE) SHALL BE INSTALLED IN CONFORMANCE WITH CBC 1010.1.10. THE ACTIVATING MEMBER SHALL BE CENTERED AT A HEIGHT OF NOT LESS THAN 34 INCHES OR MORE THAN 44 INCHES ABOVE THE FLOOR.
- PANIC HARDWARE IS REQUIRED FROM ROOMS AND CORRIDORS OF E OCCUPANCY WHERE OCCUPANT LOAD EXCEEDS 50 PER CBC 1010.1.10
- DOORS WITH CLOSERS SHALL BE ADJUSTED TO PROVIDE MINIMUM DOOR CLOSER PERIOD OF FIVE SECONDS FROM A POSITION OF 90 DEGREES TO WITHIN 12 DEGREES OF THE DOOR LATCH, MEASURED FROM THE LEADING EDGE OF THE DOOR.
- MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 POUNDS APPLIED IN THE DIRECTION OF TRAVEL. REQUIRED FIRE DOORS SHALL HAVE A MAXIMUM OPERATING EFFORT NOT TO EXCEED 15 POUNDS.
- SEE ARCHITECTURAL SIGNAGE DRAWINGS FOR SIGNS ON DOORS AND SIGNS RELATED TO ENTRANCE AND EXIT. REFER TO SITE PLAN FOR SITE SIGNAGE.

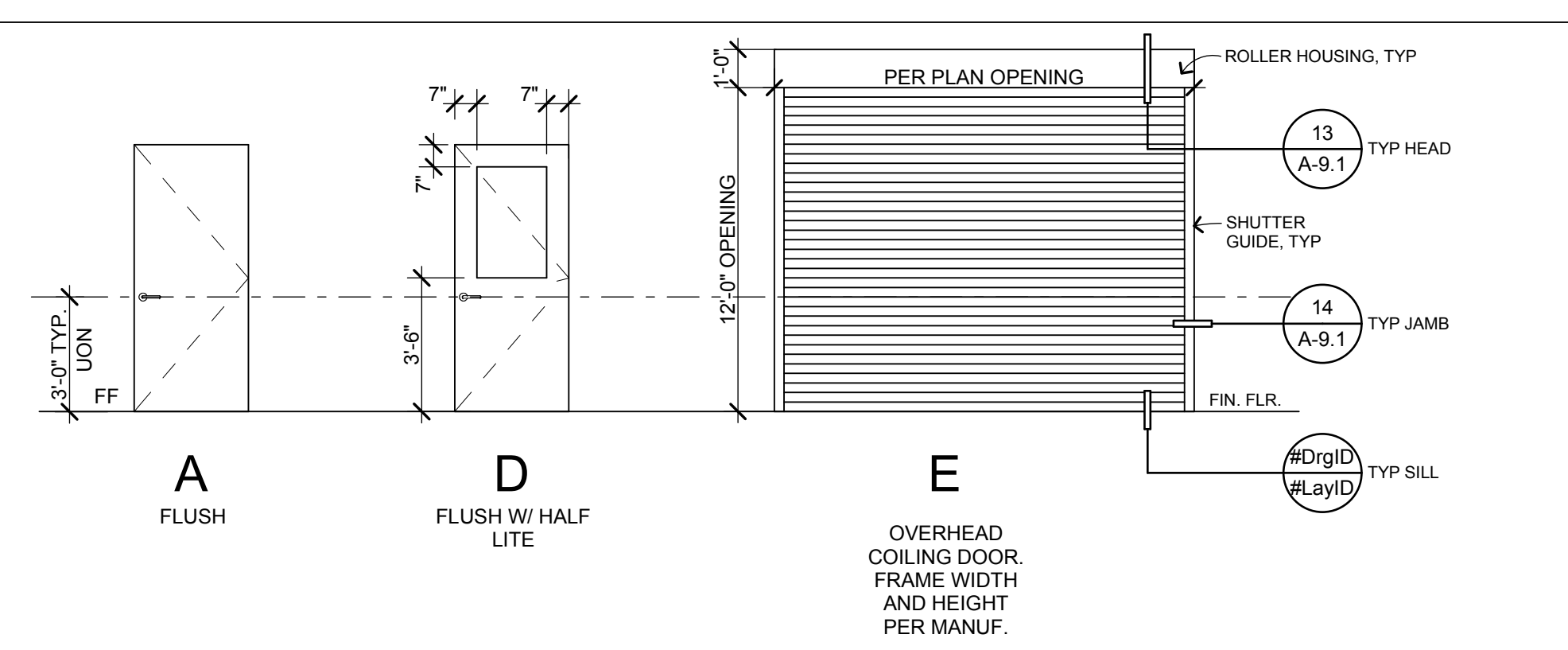
Z101005

SIGNAGE GENERAL NOTES

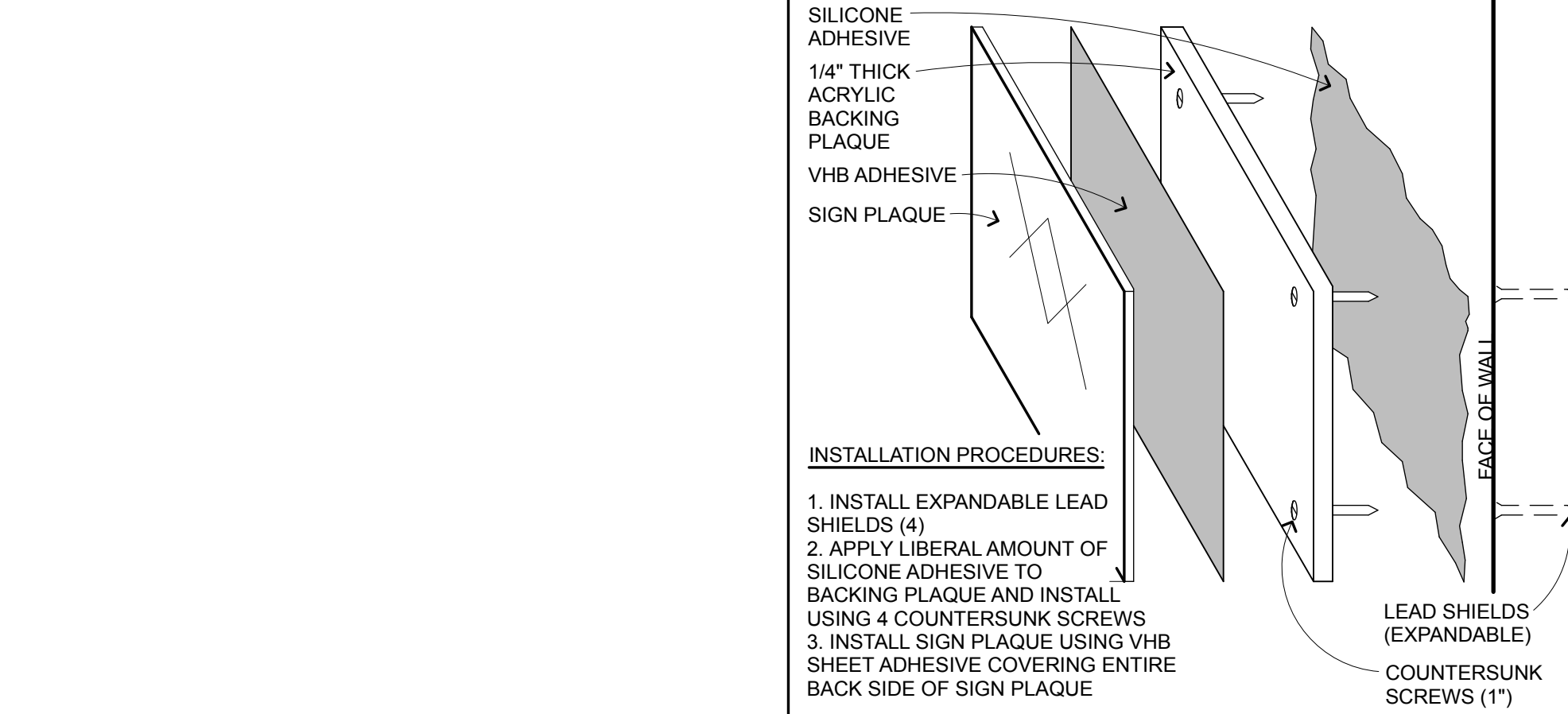
- ALL SIGNAGE AT MAIN ENTRANCES, TOILETS, PERMANENT ROOMS, ASSISTIVE LISTENING SYSTEMS SHALL COMPLY WITH TITLE 24 CBC AND CBC 11B-703
- RAISED CHARACTERS SHALL CONFORM TO CBC 11B-703.2 BRAILLE SHALL CONFORM TO 11B-703.3 PICTORIAL SIGNAGE SHALL CONFORM TO 11B-703.6
- MOUNTING LOCATION AND HEIGHT: (WHERE PERMANENT IDENTIFICATION IS PROVIDED OR WHERE SIGNAGE IS REQUIRED FOR ROOMS AND SPACES): CBC 11B-703.4
- INTERNATIONAL SYMBOL OF ACCESSIBILITY DESIGN AND COLOR SHALL CONFORM TO CBC 11B-703.7.1 & 11B-703.7.2.1.
- DOORS TO TOILET ROOMS: PROVIDE SIGNAGE CONFORMING TO CBC 11B-703.7.2.6
- CONTRAST AND FINISH OF SYMBOLS SHALL CONFORM TO CBC 11B-703.7.1.

Z101006

DOOR PANEL TYPES



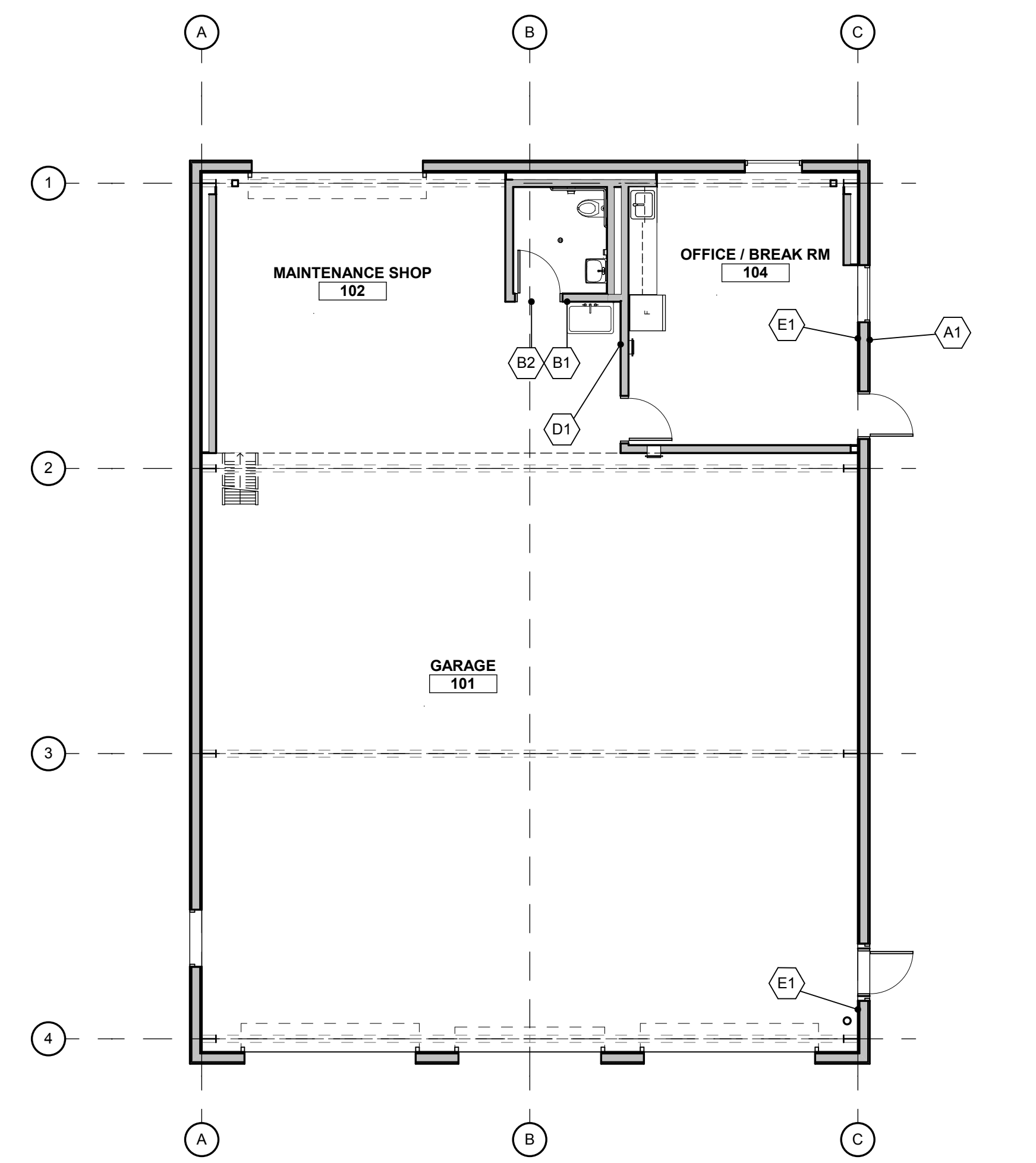
ACC. DOOR LANDINGS



SIGN INSTALLATION

6" = 1'-0" C103301

16

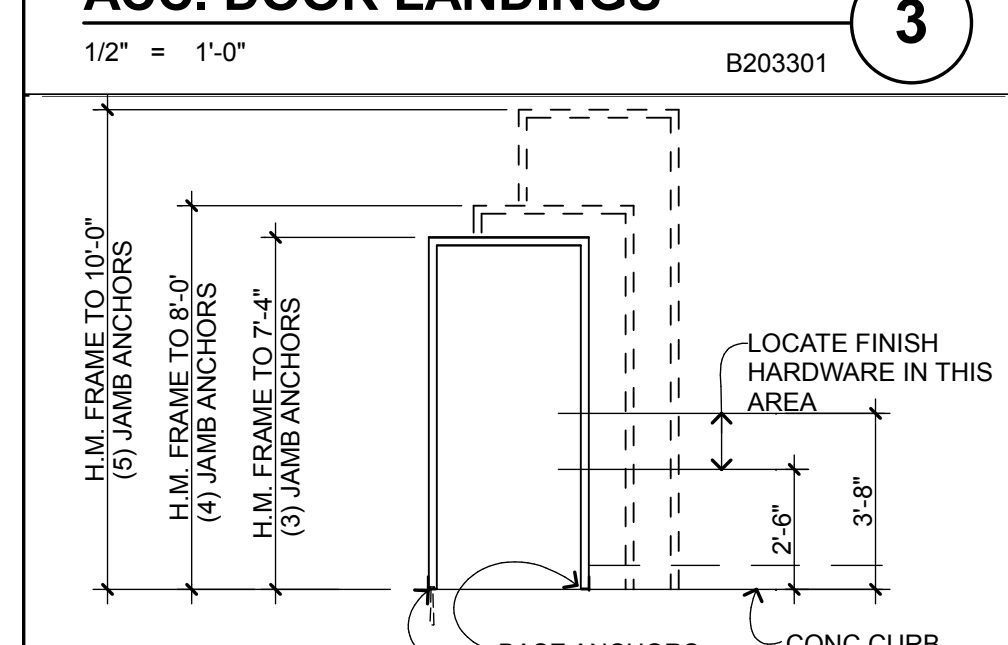


1st FLOOR SIGNAGE PLAN

1/8" = 1'-0"

8

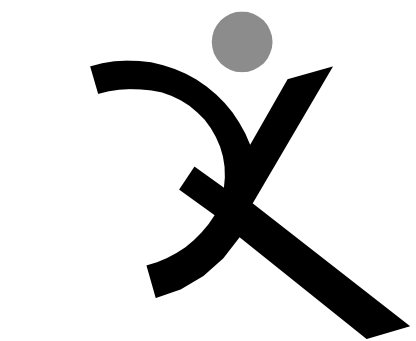
HM FRAME ANCHORAGE



- NOTES:
- PROVIDE DOOR FRAME ANCHORAGE AS FOLLOWS: PROVIDE A MINIMUM OF 3-FRAME ANCHORS AT EA JAMB OF DOOR FRAMES. AT WALLS PROVIDE SNAP-IN FRAME ANCHORS AT 24" O.C. (2 MIN) WITH 3/8" DIA I.C.C. APPROVED EXPANSION BOLTS FROM ANCHOR TO CONCRETE (TYP) JAMB ANCHORS TO BE SPACED EQUALLY.
 - ATTACH ANCHORS TO WOOD FRAMING WITH #8 F.H.W.S., 1 1/2" MINIMUM PENETRATION.
 - BASE ANCHORS ARE ADDITIONAL TO THE NUMBER OF JAMB ANCHORS INDICATED ON THIS DIAGRAM.

1/4" = 1'-0" B203306

4



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SIGNED: JANUARY 4, 2019

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Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
FILE NO: 7-H4
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AC _____ FLS _____ SS _____
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ARCH PROJECT NO: 1739.02
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DRAWING SCALE: AS NOTED
PTN: 61721-0069

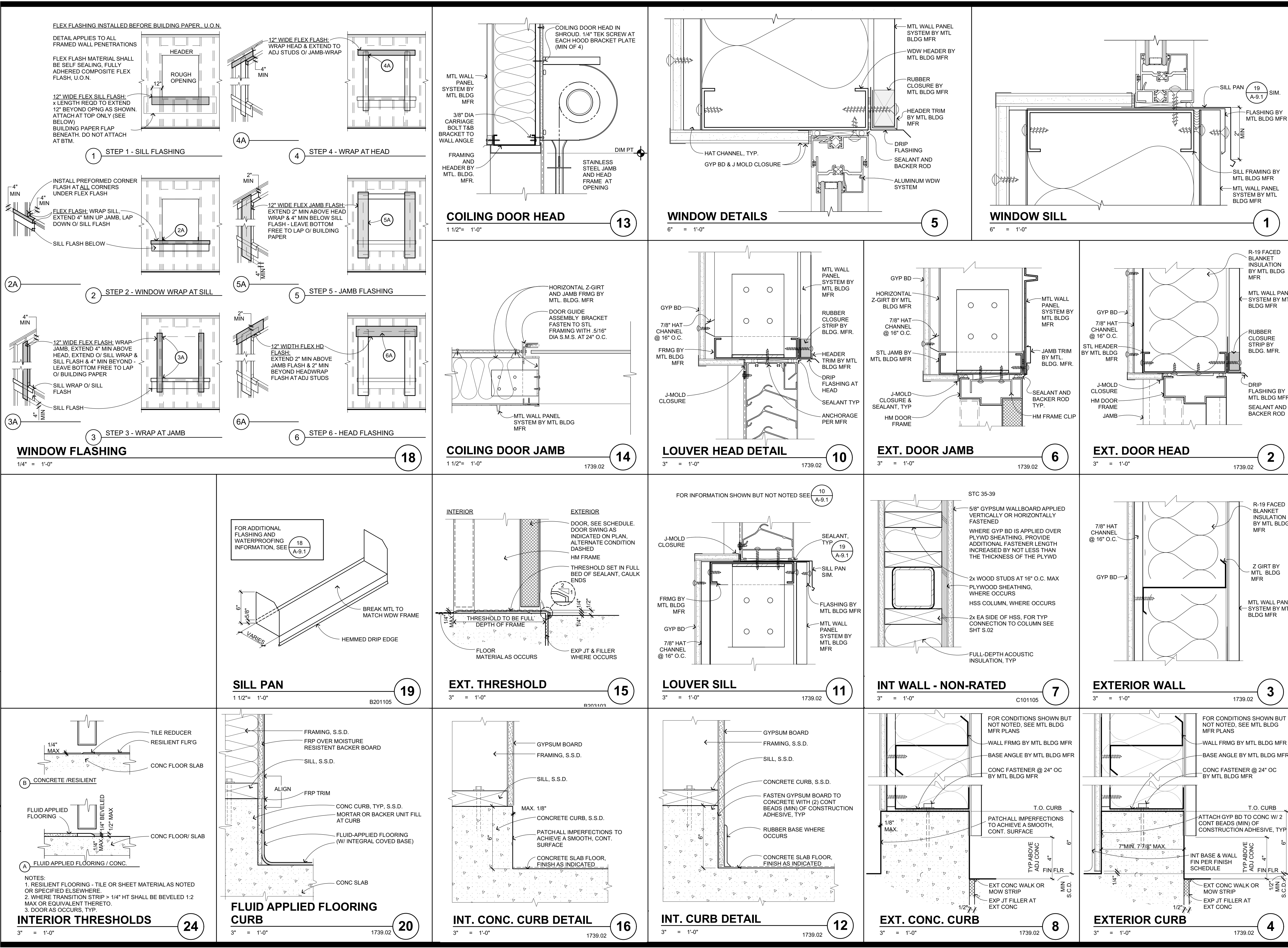
BID SET
JANUARY 4, 2019

SHEET TITLE

DOOR, WINDOW, & SIGNAGE SCHEDULE

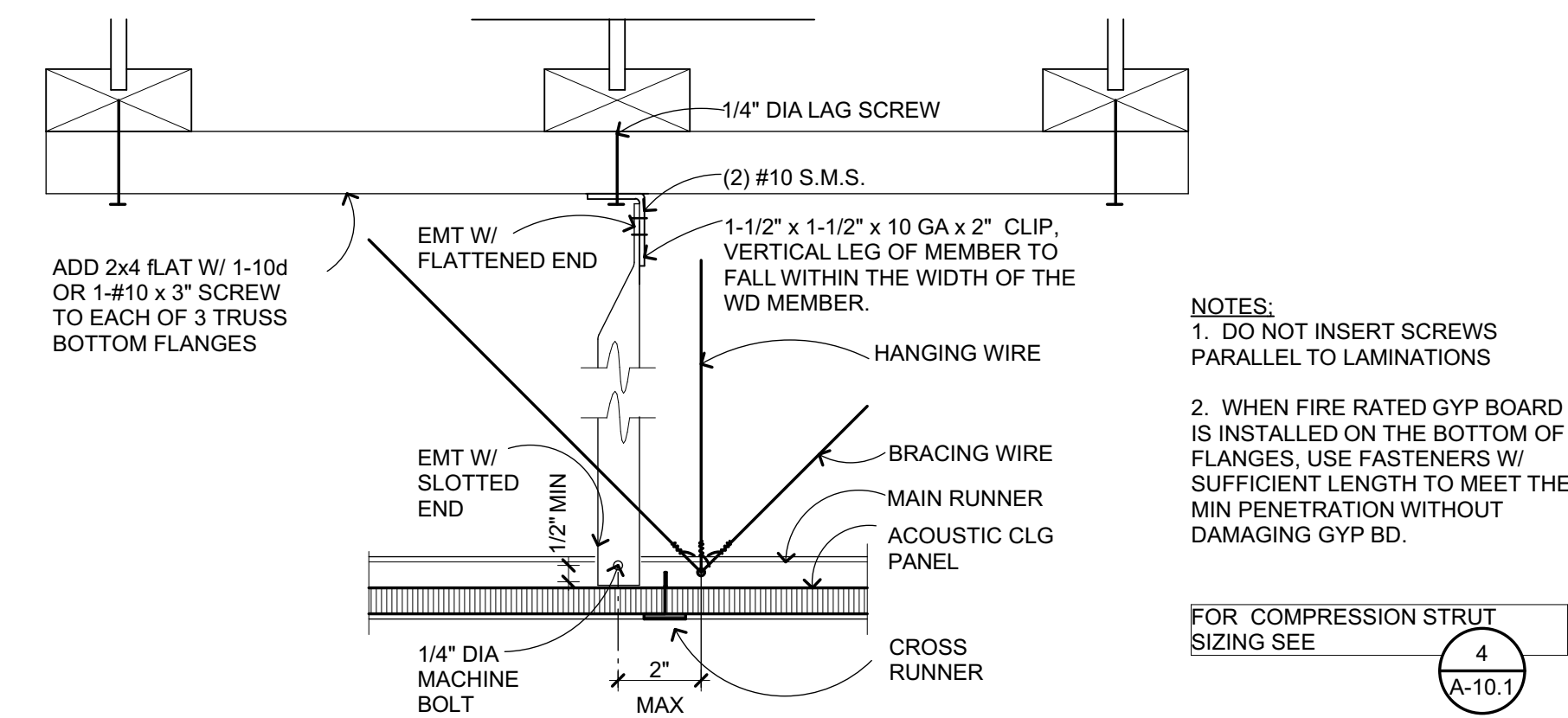
SHEET NUMBER

A-8.1

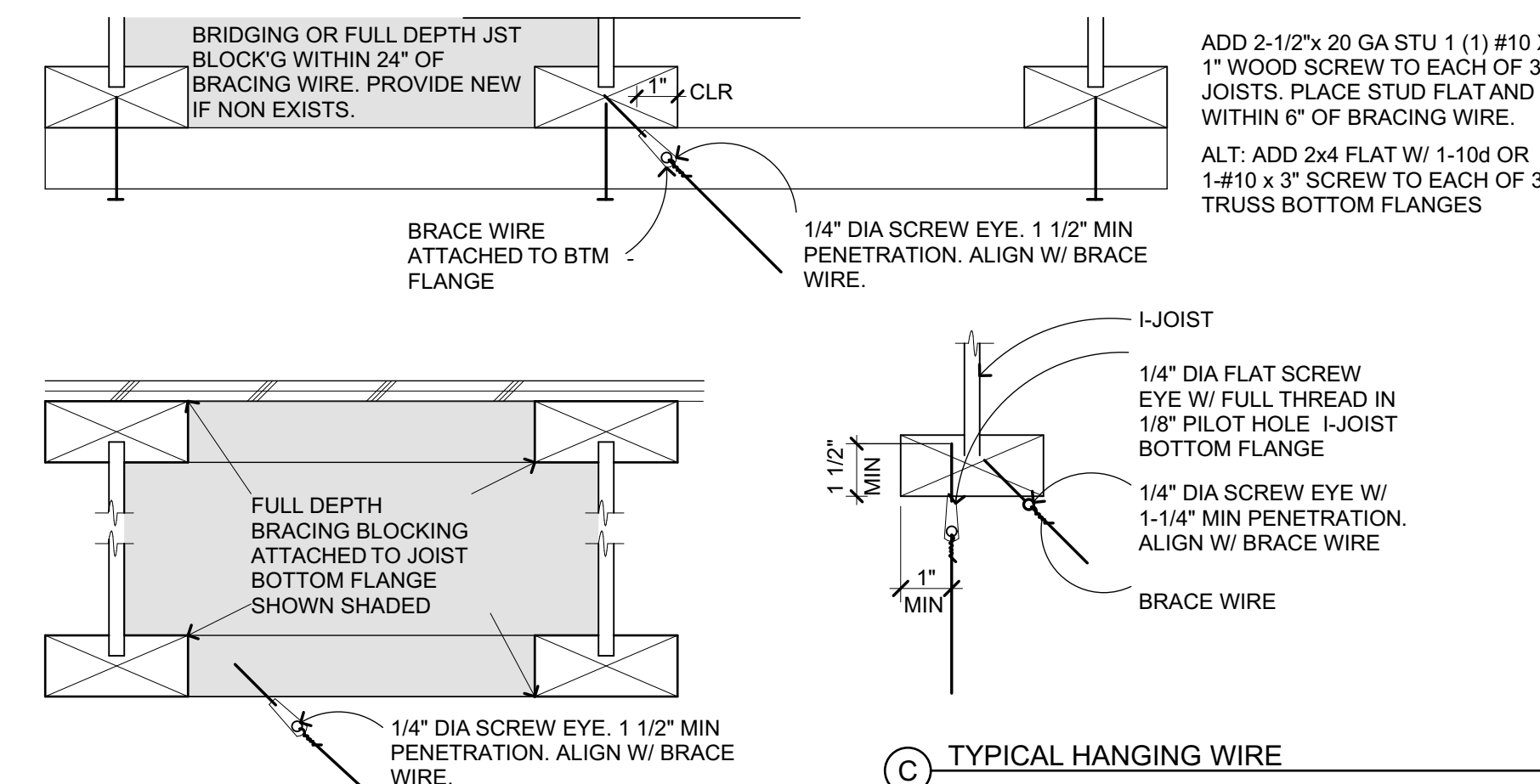


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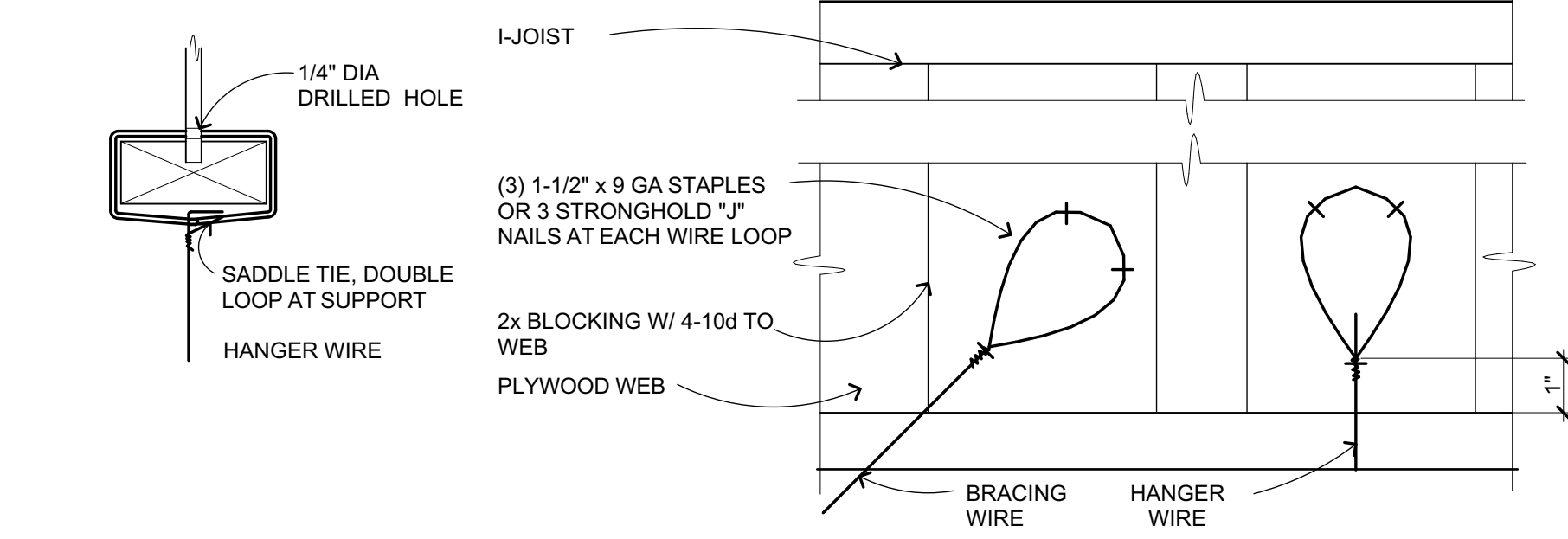
A EMT COMPRESSION STRUT



C TYPICAL HANGING WIRE

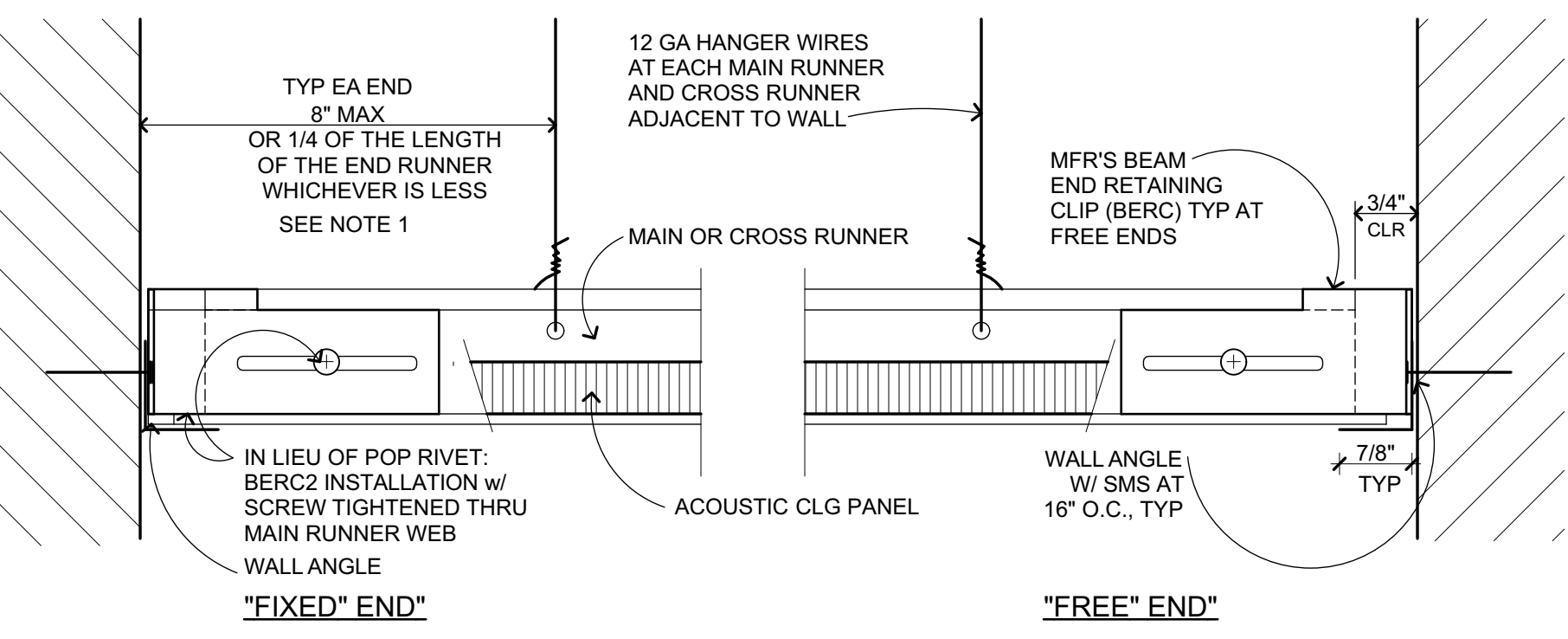
HANGER OR BRACING WIRE ANCHORS TO THE STRUCTURE SHOULD BE INSTALLED IN SUCH A MANNER THAT THE DIRECTION OF THE ANCHOR ALIGNS AS CLOSELY AS POSSIBLE W/ THE DIRECTION OF THE WIRE. HANGER AND BRACING WIRES SHALL NOT ATTACH TO OR GEND AROUND OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO PIPING, DUCTWORK, CONDUIT AND EQUIPMENT.

B TYPICAL BRACING WIRE



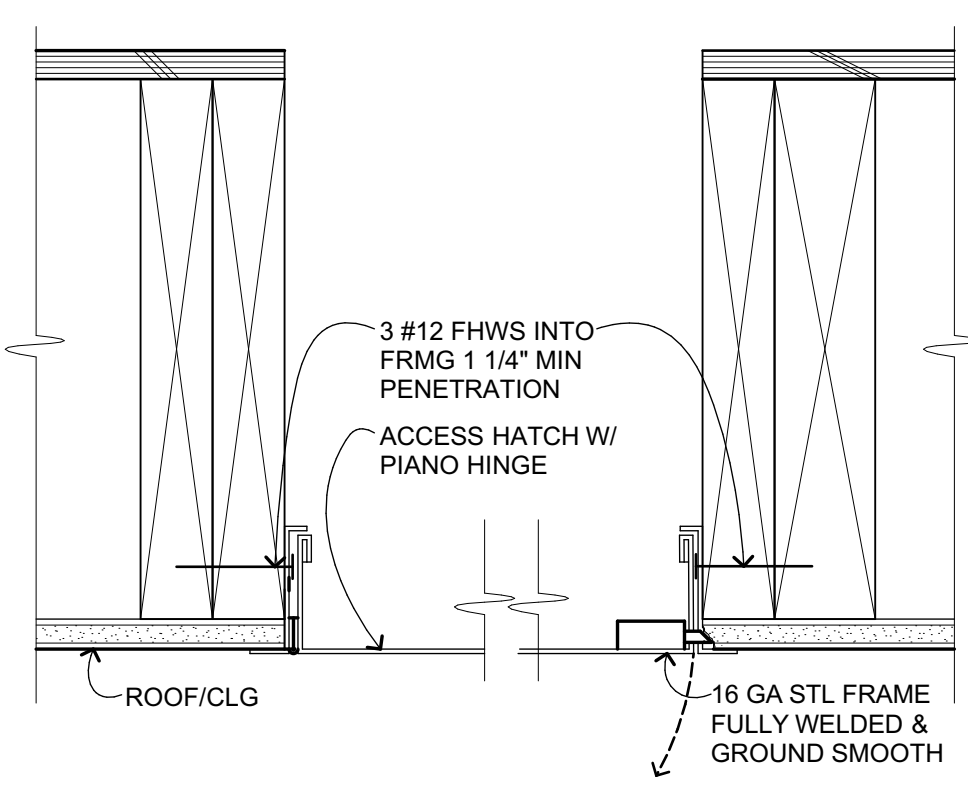
C ALTERNATE WIRE ATTACHMENTS

SUSPENDED CLG DETAILS

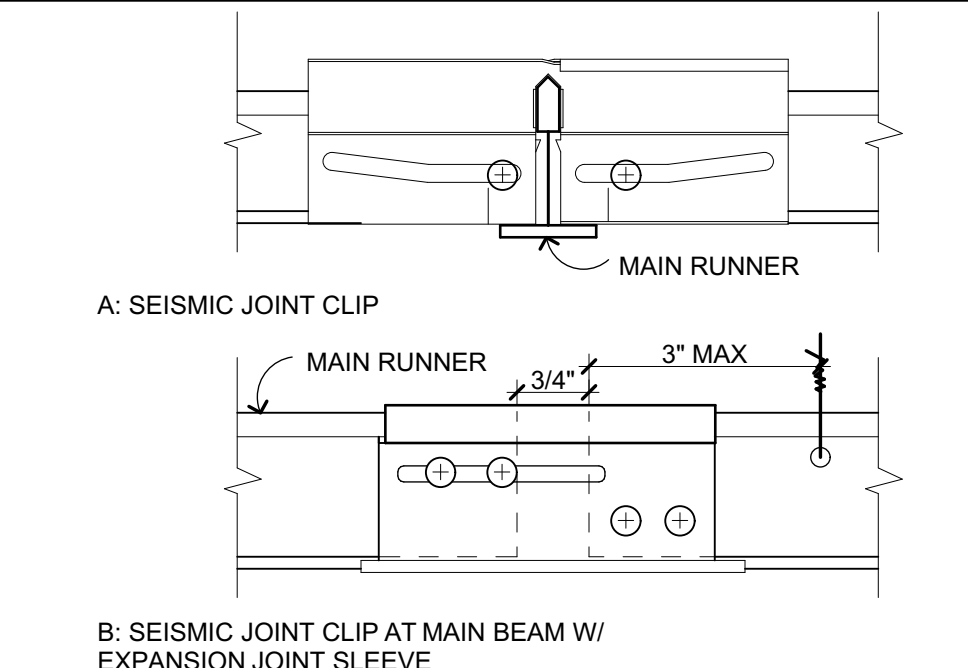


BASIS OF DESIGN: ARMSTRONG PRELUDE XL SEISMIC Rx. ICC ESR 1308. REFER TO SPECIFICATIONS FOR ALTERNATE MANUFACTURERS.
NOTE 1: PERIMETER WIRES ARE NOT REQUIRED WHEN LENGTH OF TEE IS 8\"/>

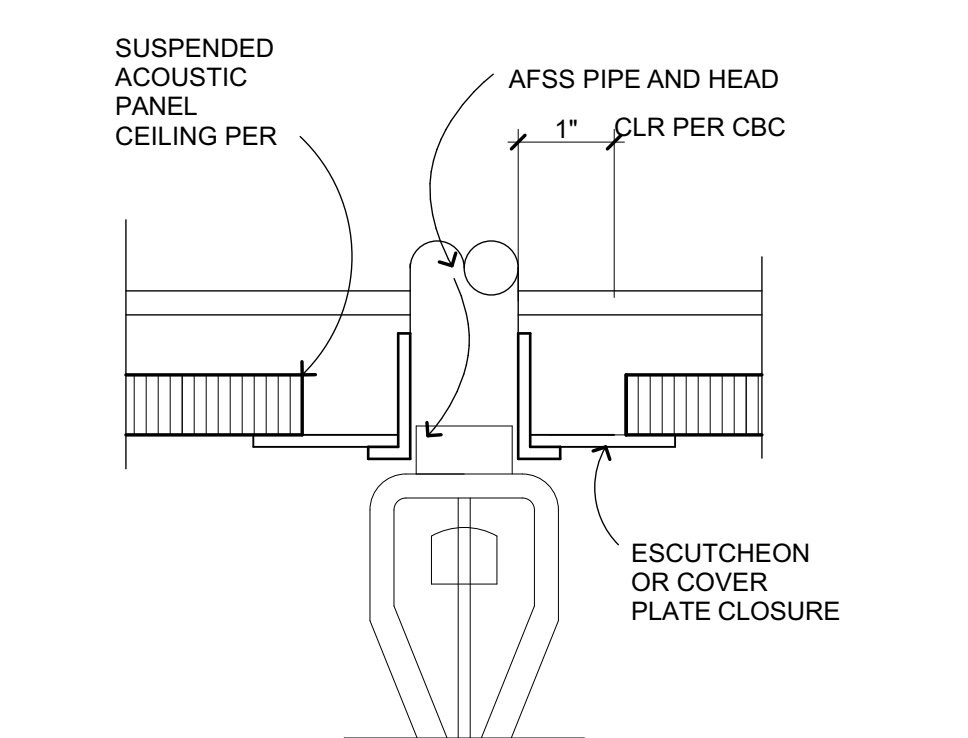
SUSP CLG PERIMETER CLIP



CLG ACCESS PANEL



SUSP. CLG SEISMIC GAP



FIRE SPRINKLER HD PLATE

- GENERAL REQUIREMENTS:** CBC Section 1616 & IR 25-2.13 govern the design and installation of suspended ceiling systems. The details are for ceilings whose total weight does not exceed 4 PSF. SEE DETAILS FOR SPECIFIC REQUIREMENTS
- Refer to reflected ceiling plans for locations of expansion joints and seismic separation joints as occur.
- Lateral force bracing may be omitted for suspended acoustical ceiling systems with a ceiling area of 144 square feet or less, and fire rated suspended acoustical ceiling systems with a ceiling area of 96 square feet or less, when perimeter support in accordance with governing regulations are provided and perimeter walls are designed to carry the ceiling lateral forces.
- For attachment of all light fixtures, flush, recessed or otherwise ceiling mounted, refer to electrical drawings for details.
- For attachment of ceiling mounted air terminals, grilles, mechanical terminals, and flexible sprinkler hose fittings or other services be supported directly on runner, refer to mechanical drawings for details.
- Ceiling panels shall not support any light fixture, air terminals or devices.
- For power actuated fasteners and anchors, refer to structural drawings - General Notes & Details Sheet S-0.1.

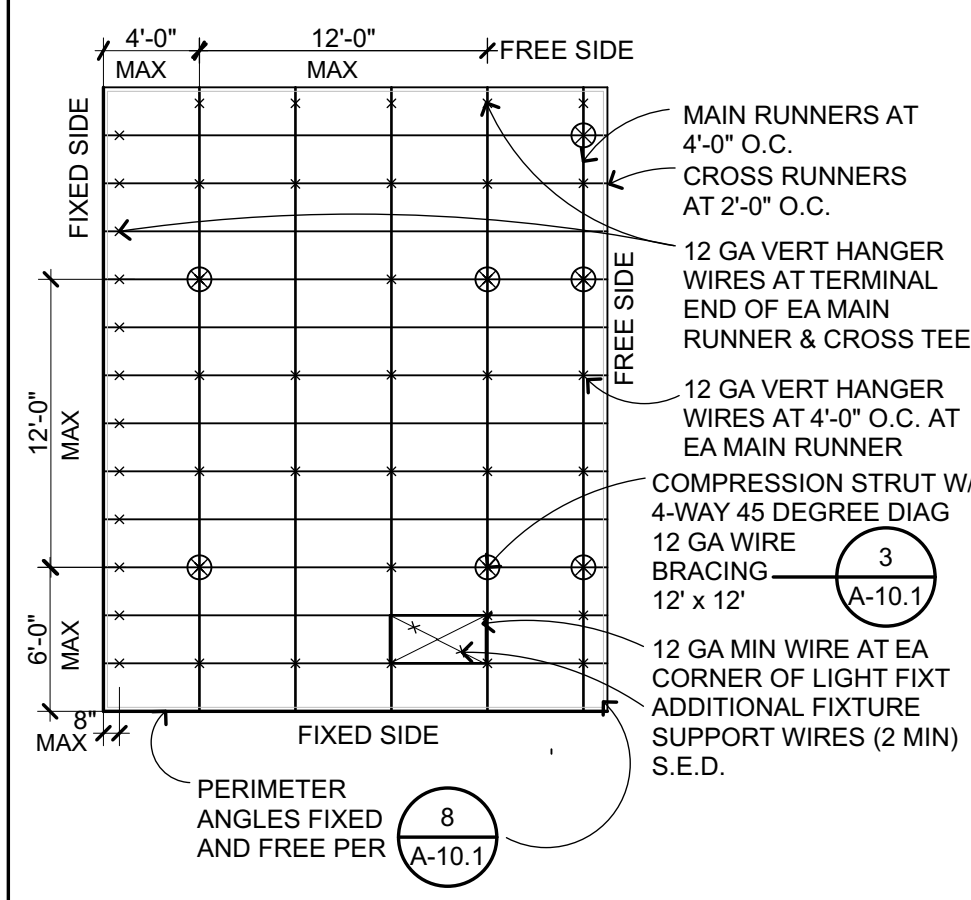
TYPICAL WIRE FASTENING:

HANGER WIRES: 12 GA WIRE WITH MINIMUM OF 3 TIGHT TURNS IN 3 INCHES, BOTH END, TYPICAL.

BRACING WIRES: 12 GA WIRE WITH MINIMUM OF 4 TIGHT TURNS IN 1-1/2\"/>

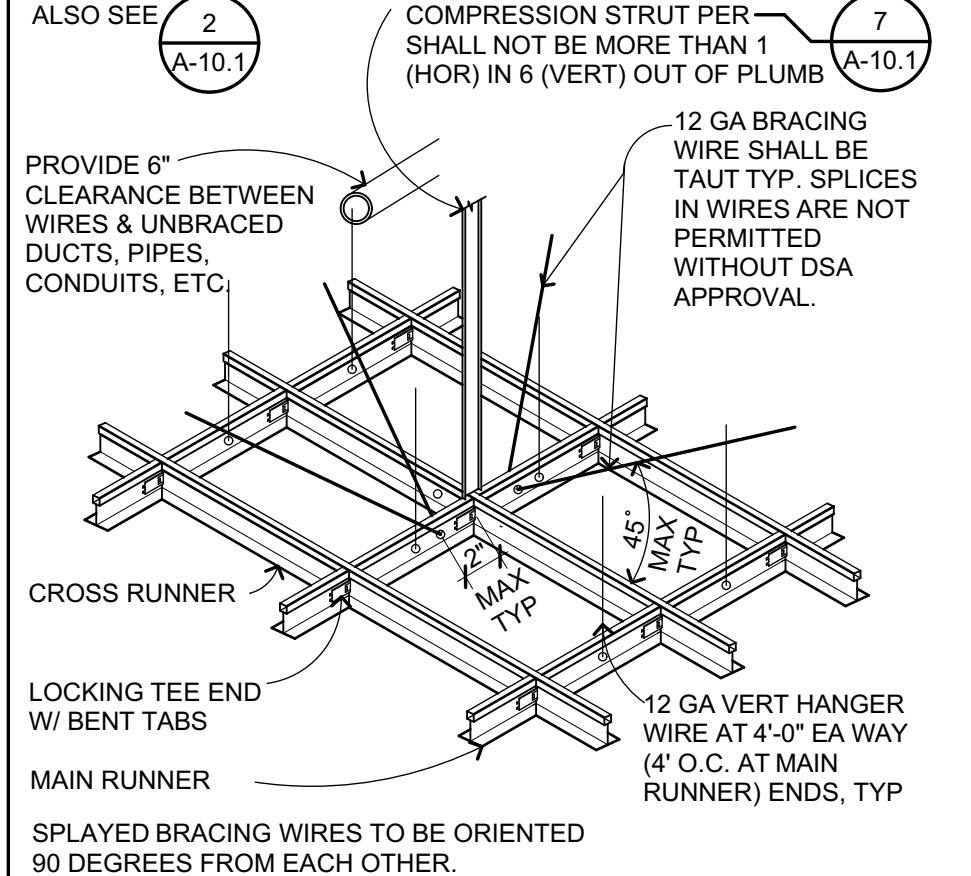
SUSP. CEILING. NOTES

1/8" = 1'-0" 1739.02



SUSP. CLG. SUPPORT PLAN

1/8" = 1'-0" 1739.02



CROSS-TEE INTERSECTION

1 1/2" = 1'-0" 1739.02

EMT COMPRESSION STRUT

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

CHANNEL COMPRESSION STRUT

CHANNEL COMPRESSION STRUT	MAXIMUM LENGTH
250S125-33	5'-0"
250S137-33	6'-10"
362S137-33	8'-0"
250I37-43	8'-10"
400S137-43	10'-10"

COMPRESSION STRUT TABLE

1" = 1'-0" 303214



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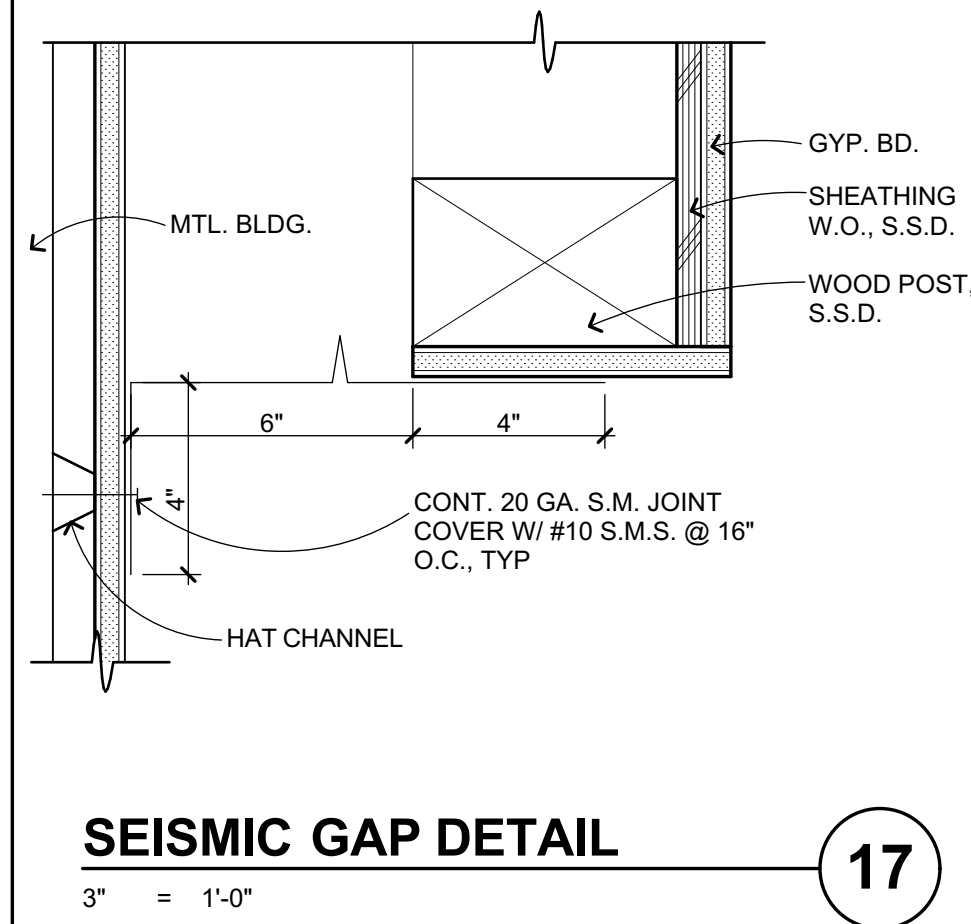
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DRAWING SCALE: AS NOTED
PTN: 61721-0069

BID SET
JANUARY 4, 2019
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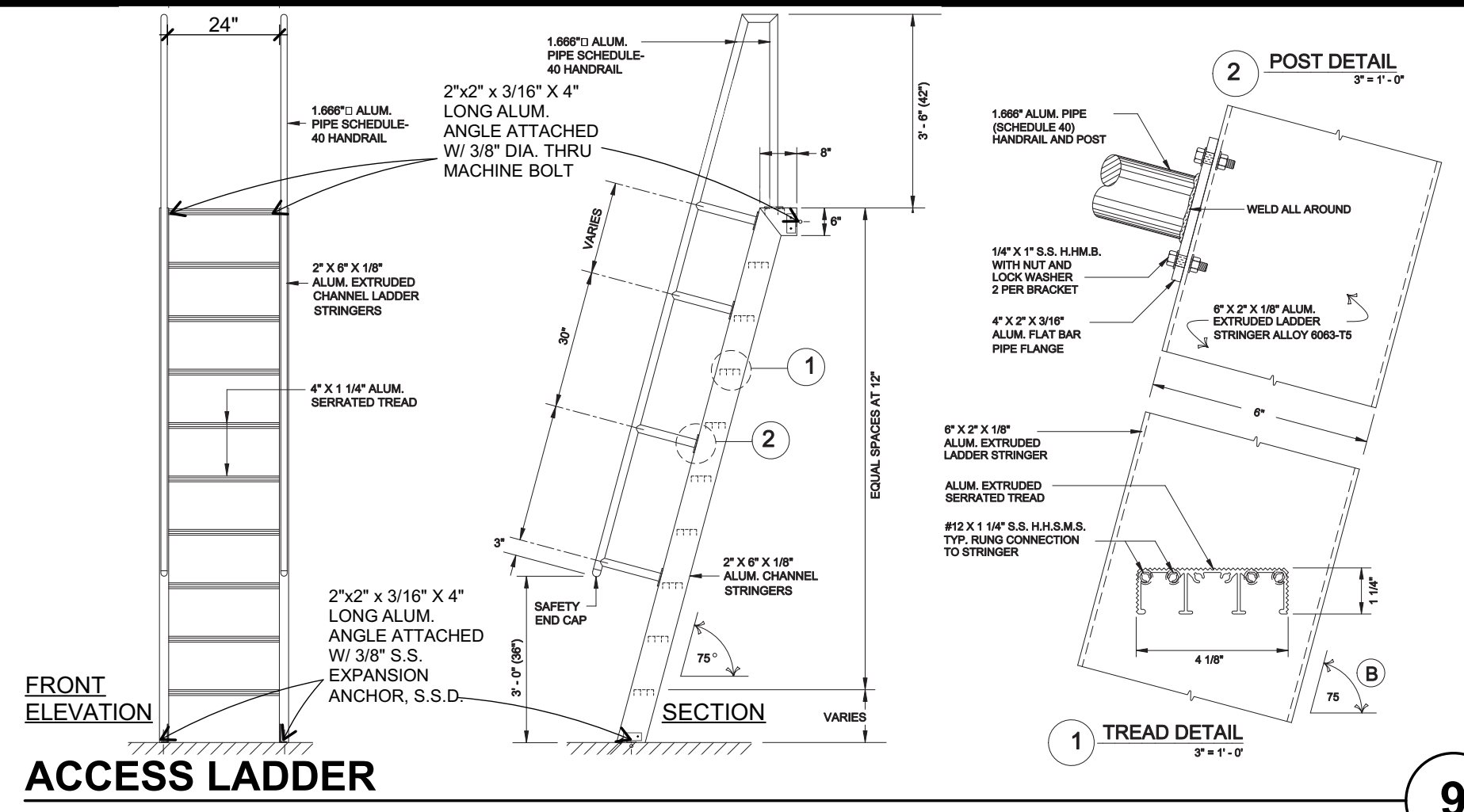
CEILING DETAILS

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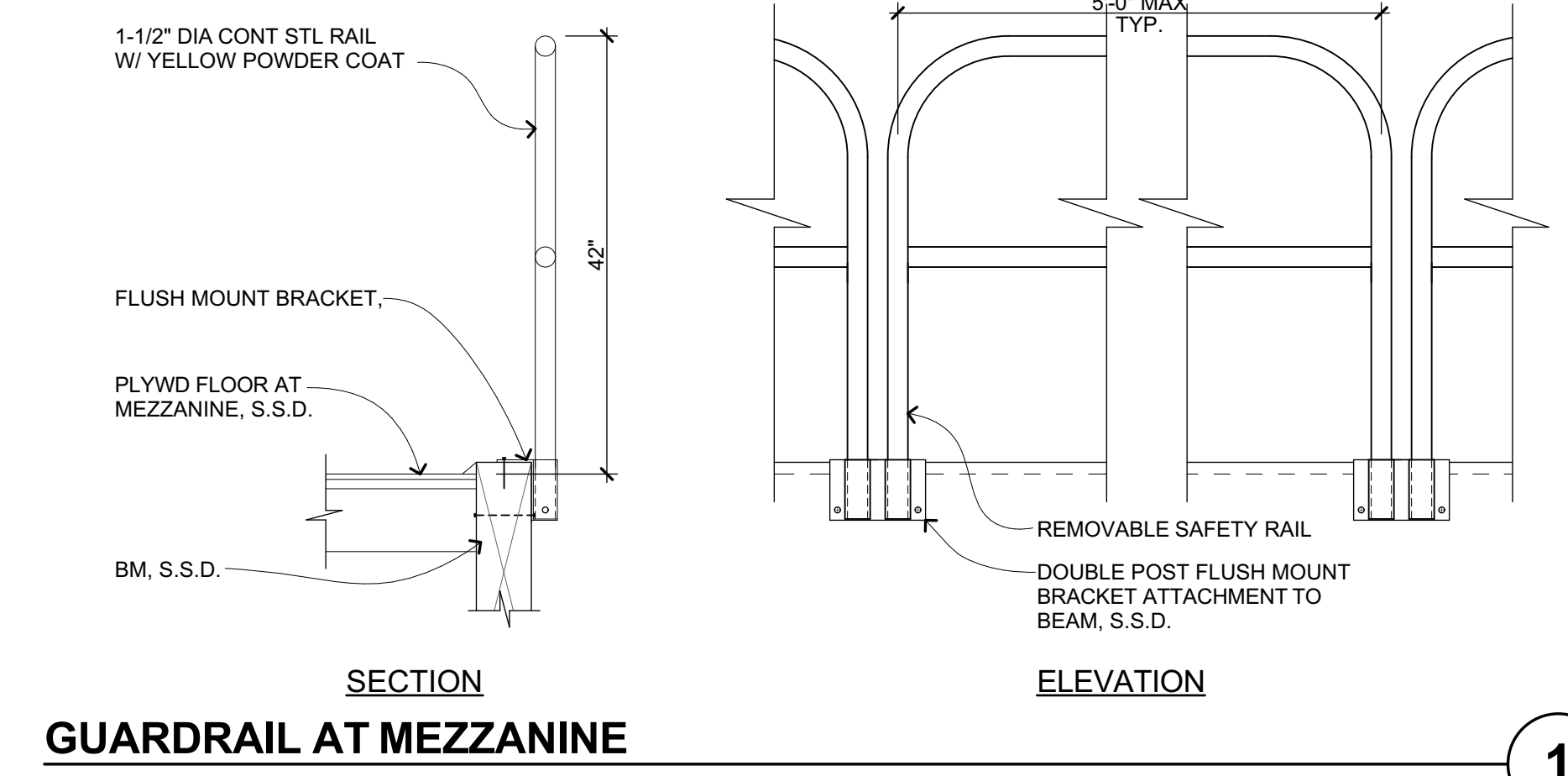
A-10.1



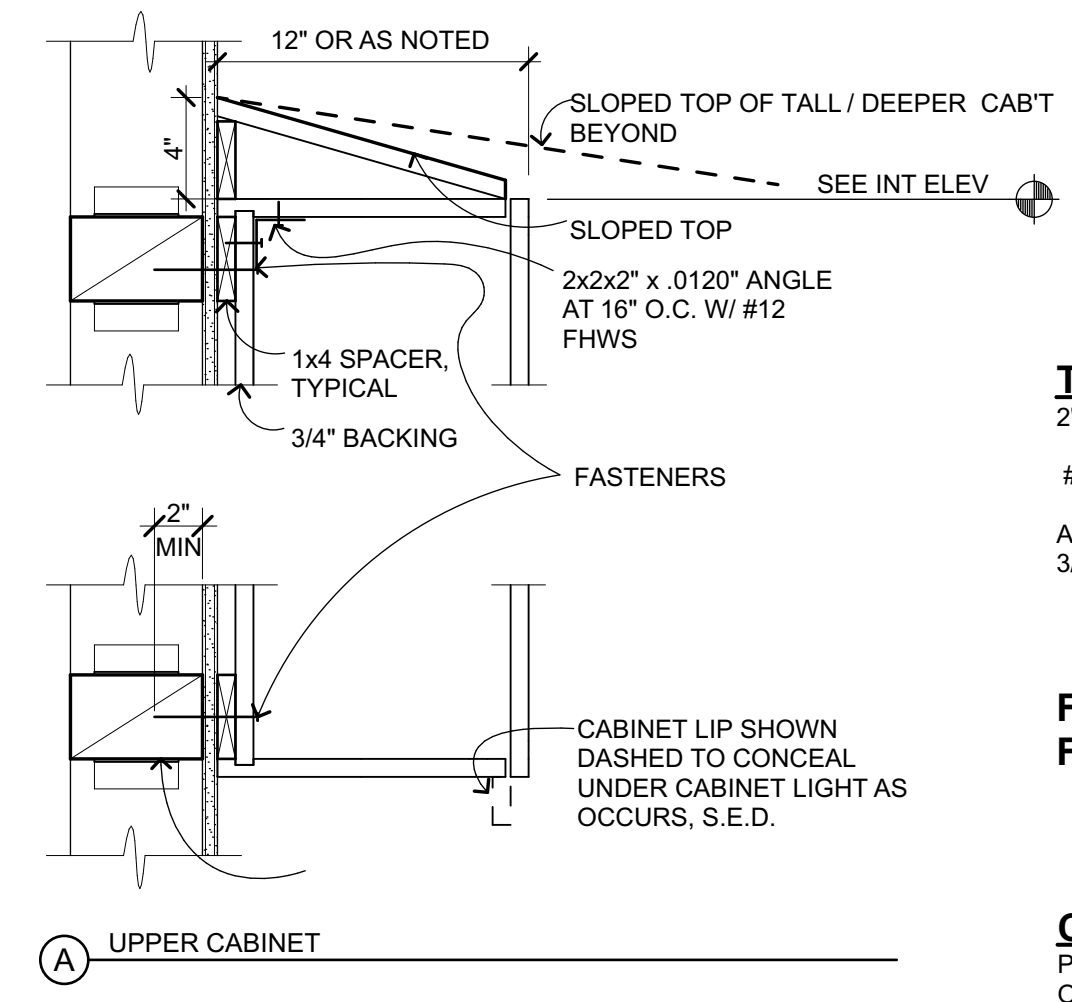
SEISMIC GAP DETAIL
3\"/>



ACCESS LADDER
3/4\"/>



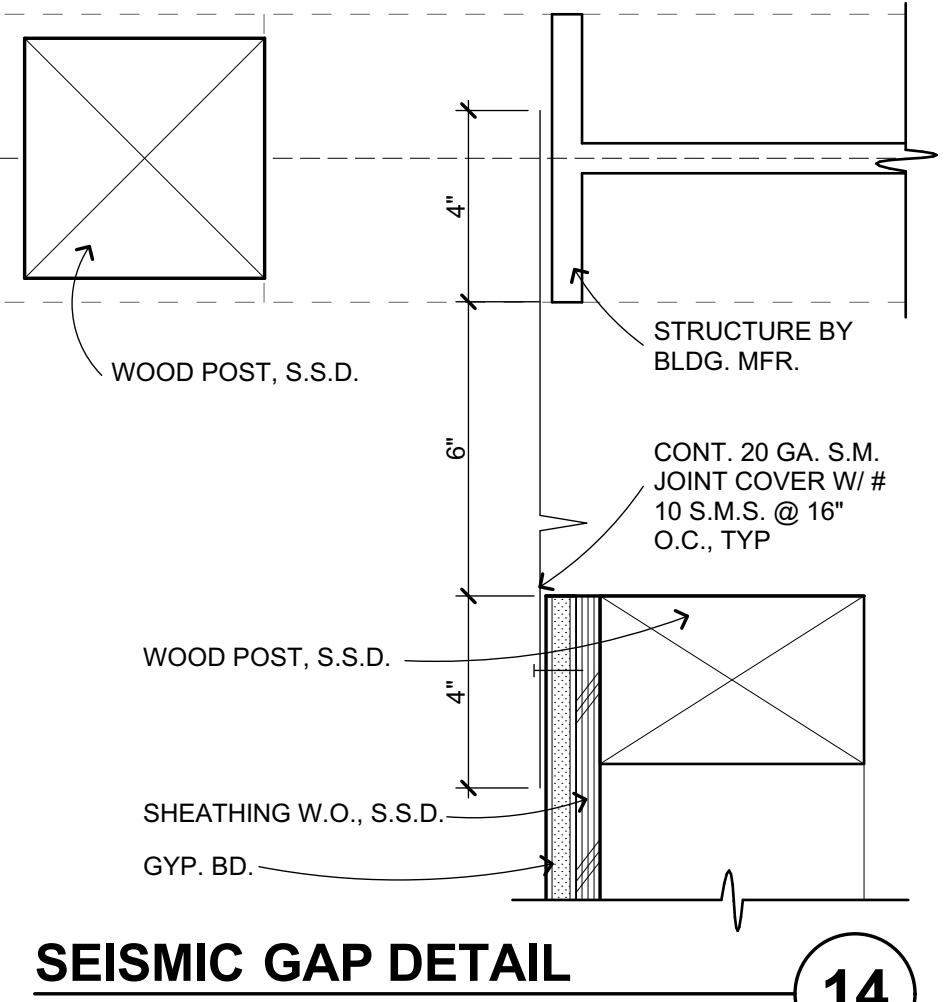
GUARDRAIL AT MEZZANINE
3/4\"/>



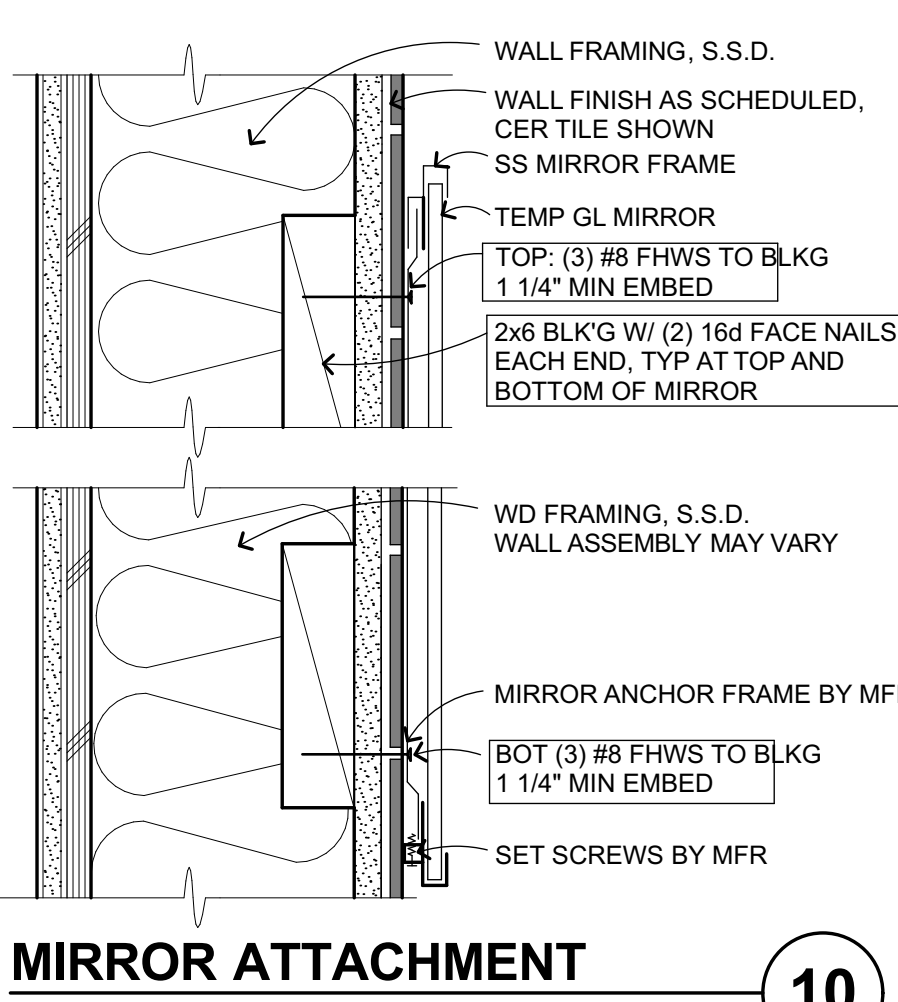
TYPICAL FASTENER:
2\"/>

FOR BLOCKING AT WOOD FRAMING SEE

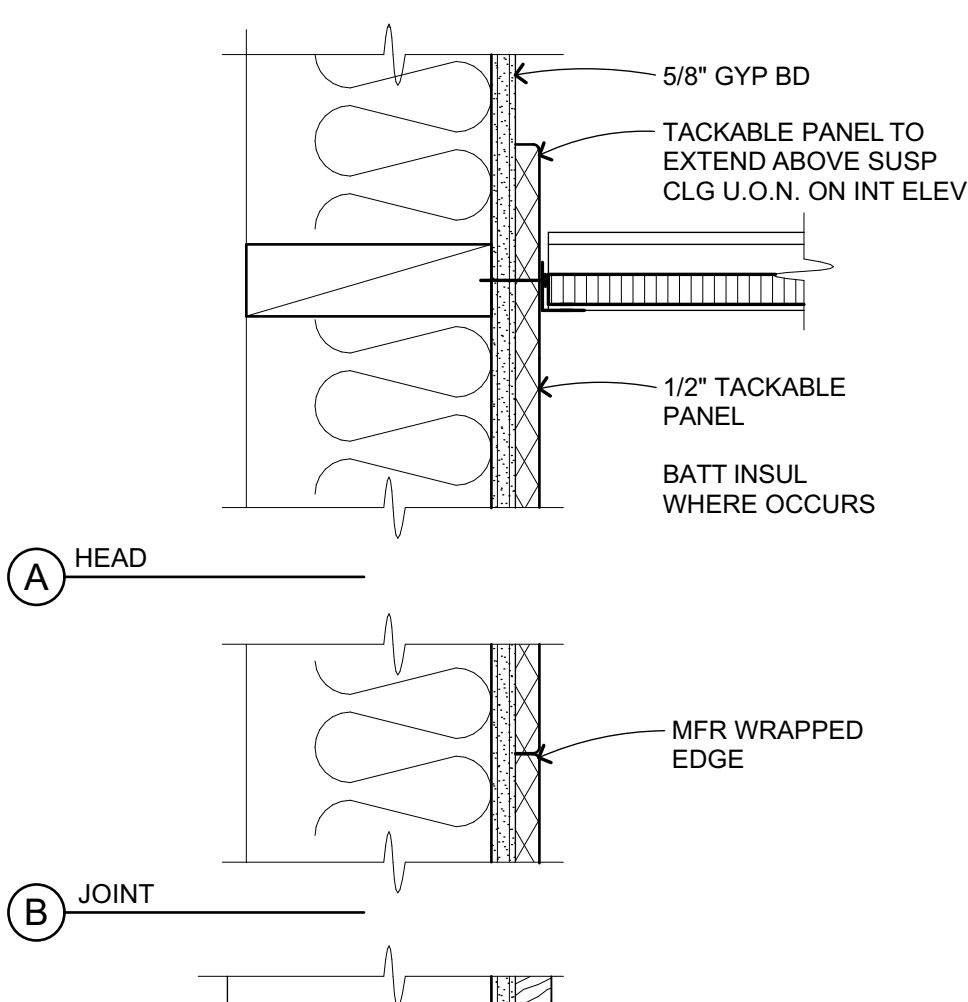
CABINET NOTES:
PLASTIC LAMINATE CABINET U.O.N. ON INT ELEVATIONS OR OTHERWISE SCHEDULED. DADO AND GLUE CABINET CARCASS. 3/4\"/>



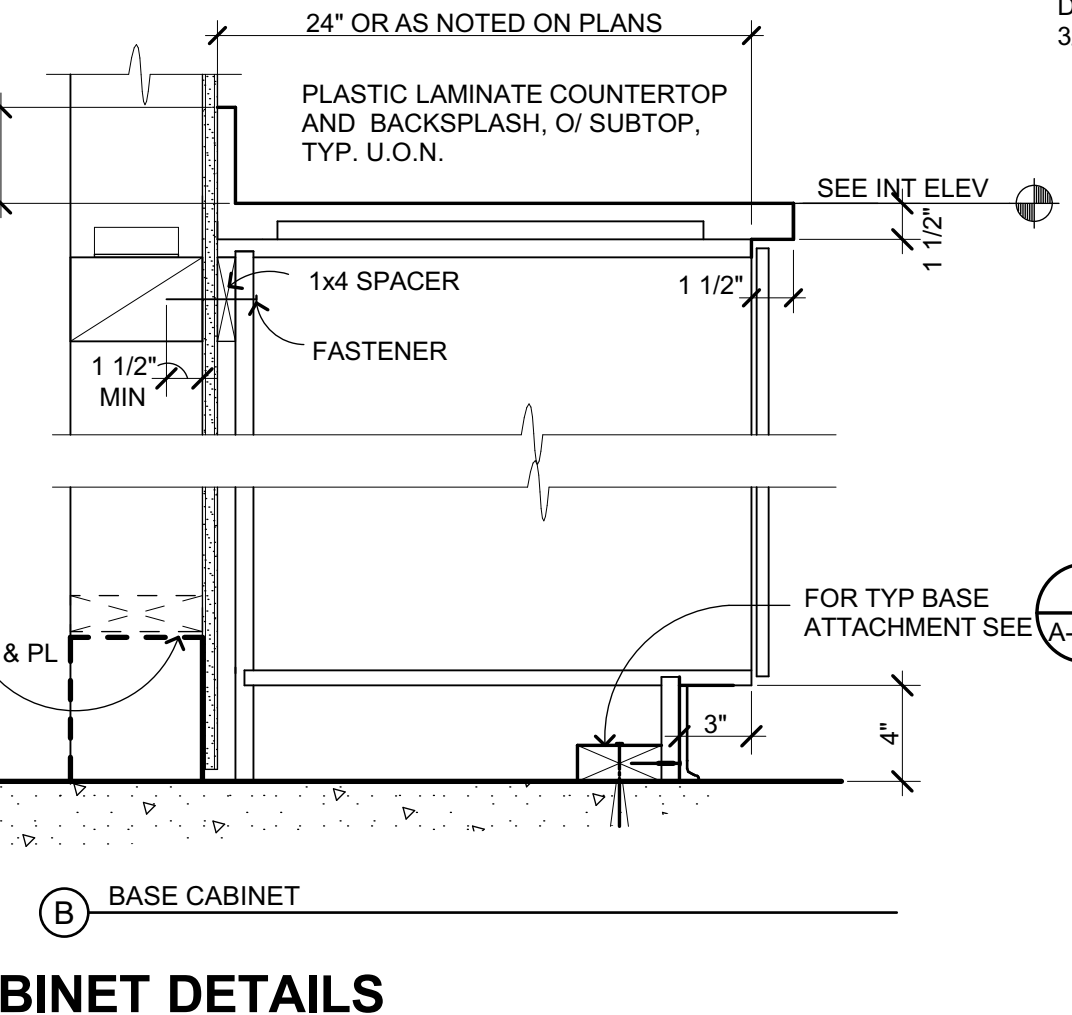
SEISMIC GAP DETAIL
3\"/>



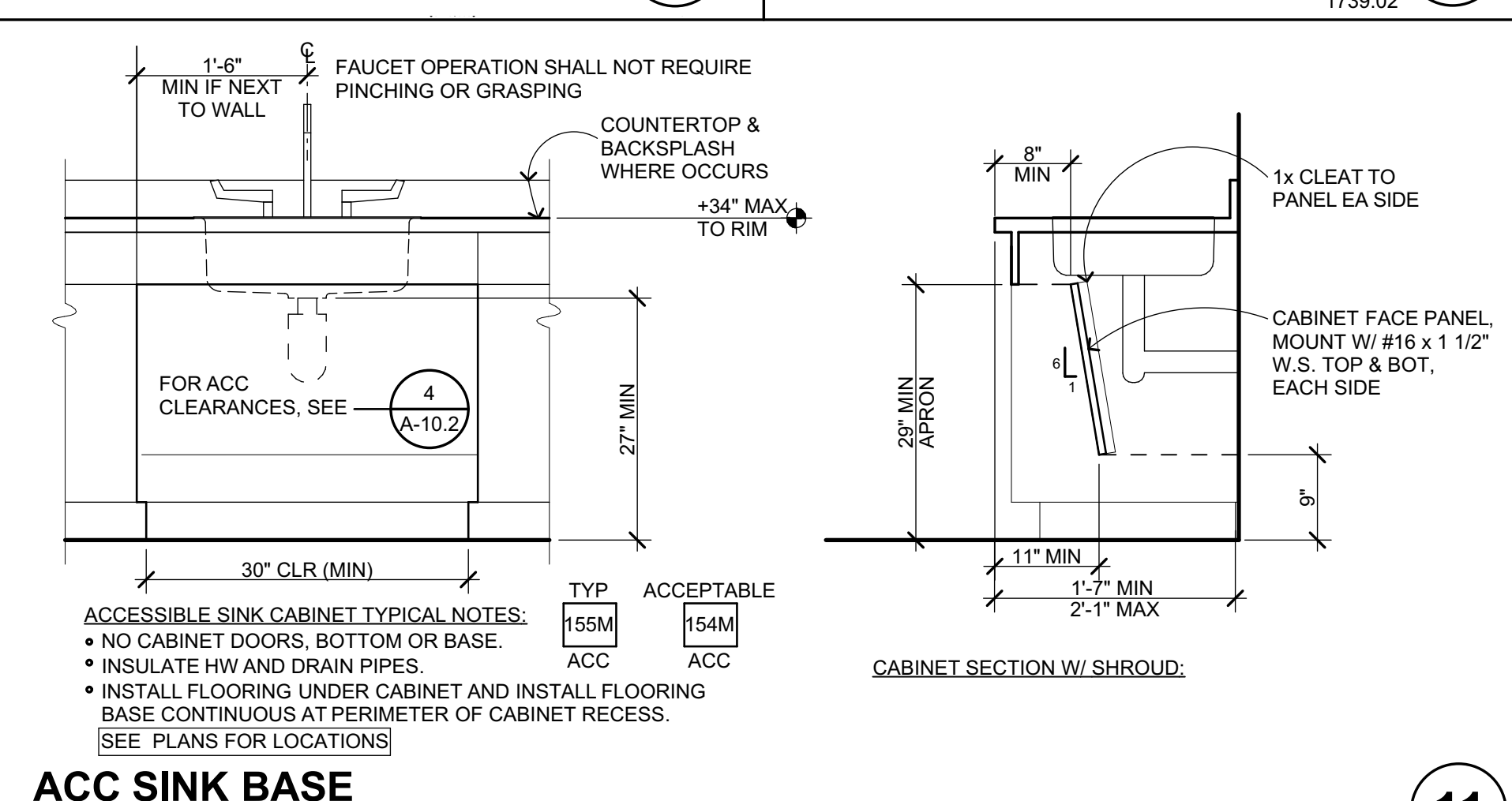
MIRROR ATTACHMENT
3\"/>



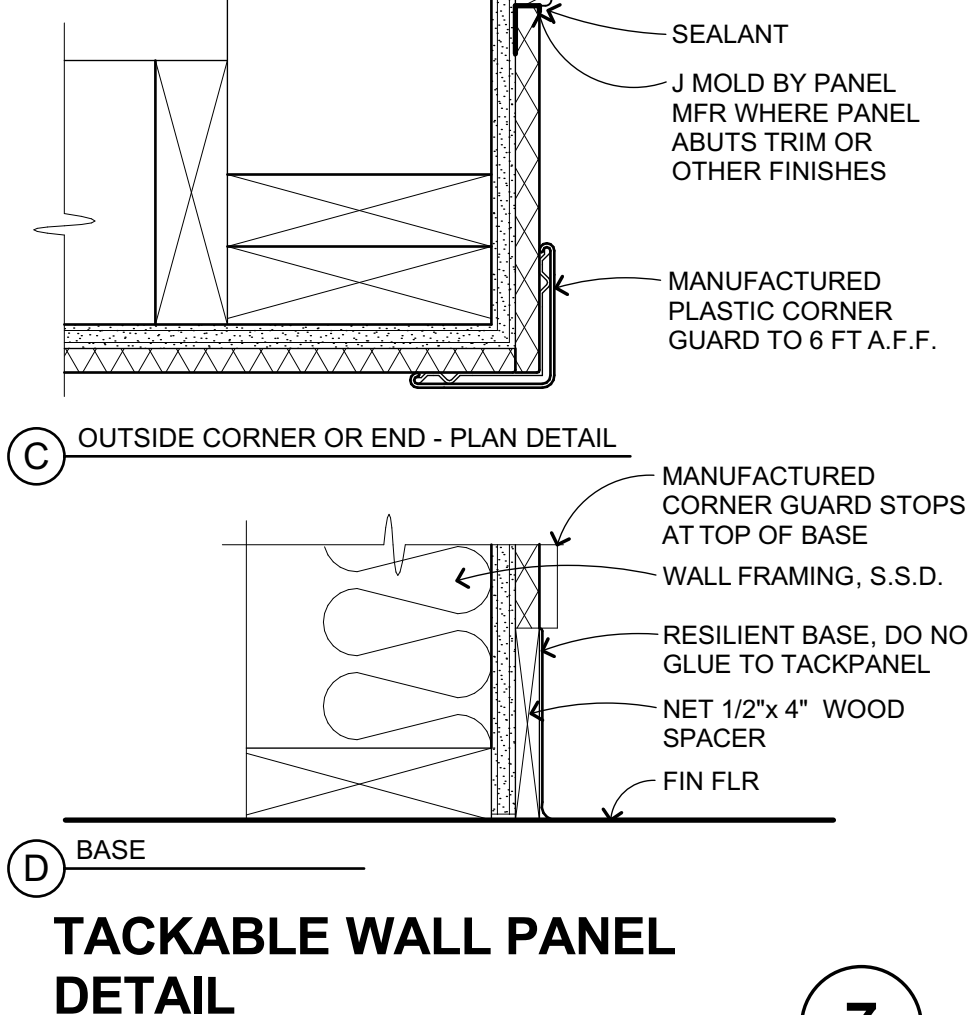
BLOCKING DETAIL
3\"/>



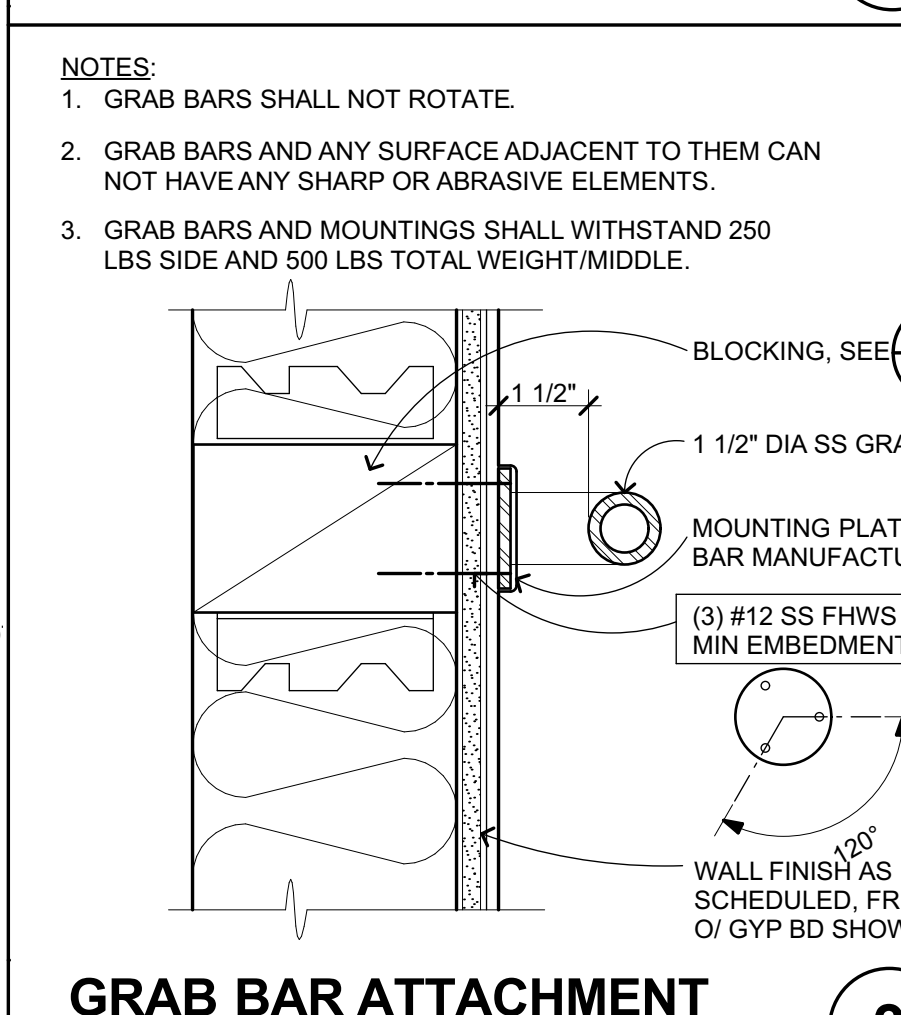
CABINET DETAILS
1 1/2\"/>



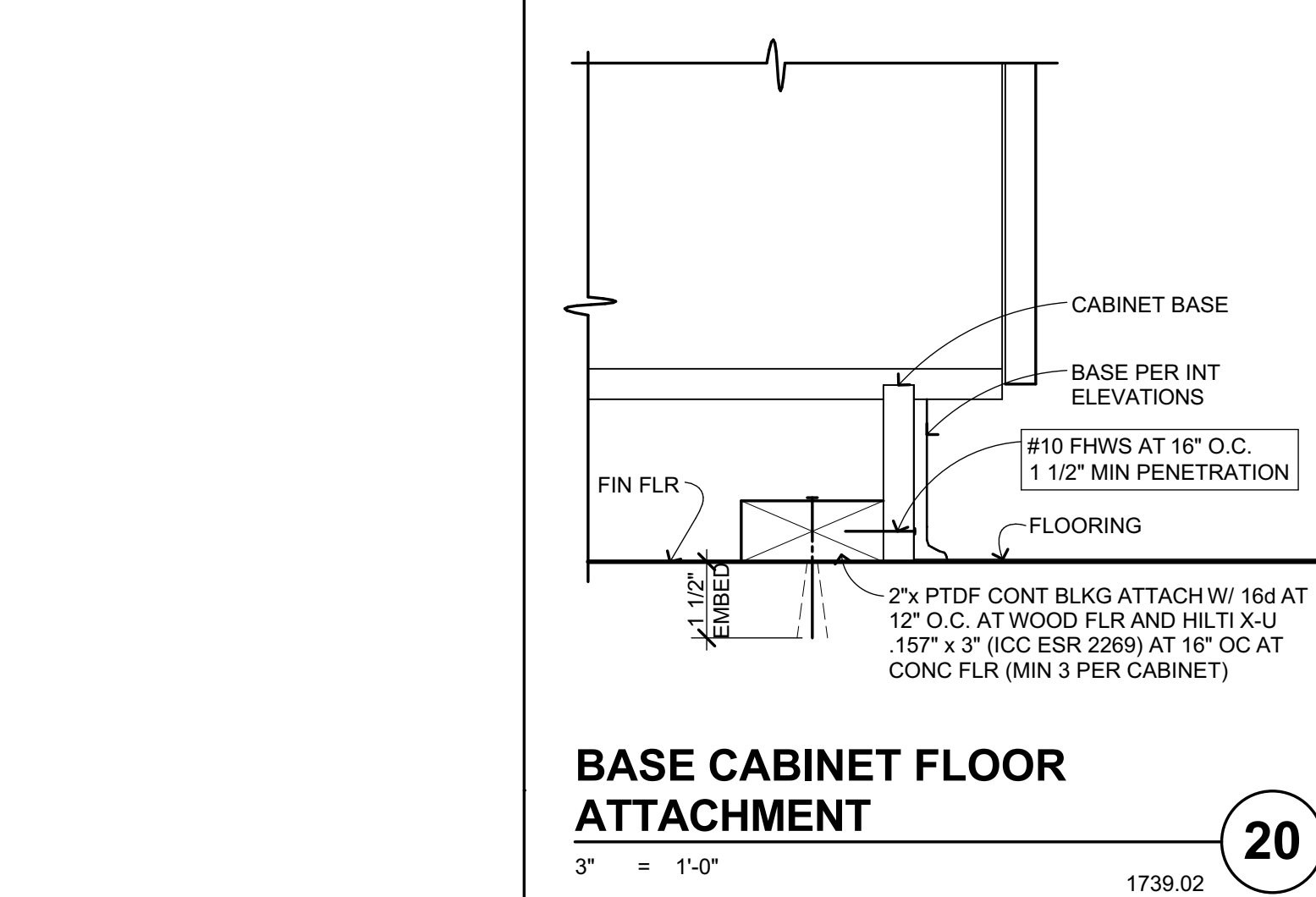
ACC SINK BASE
3/4\"/>



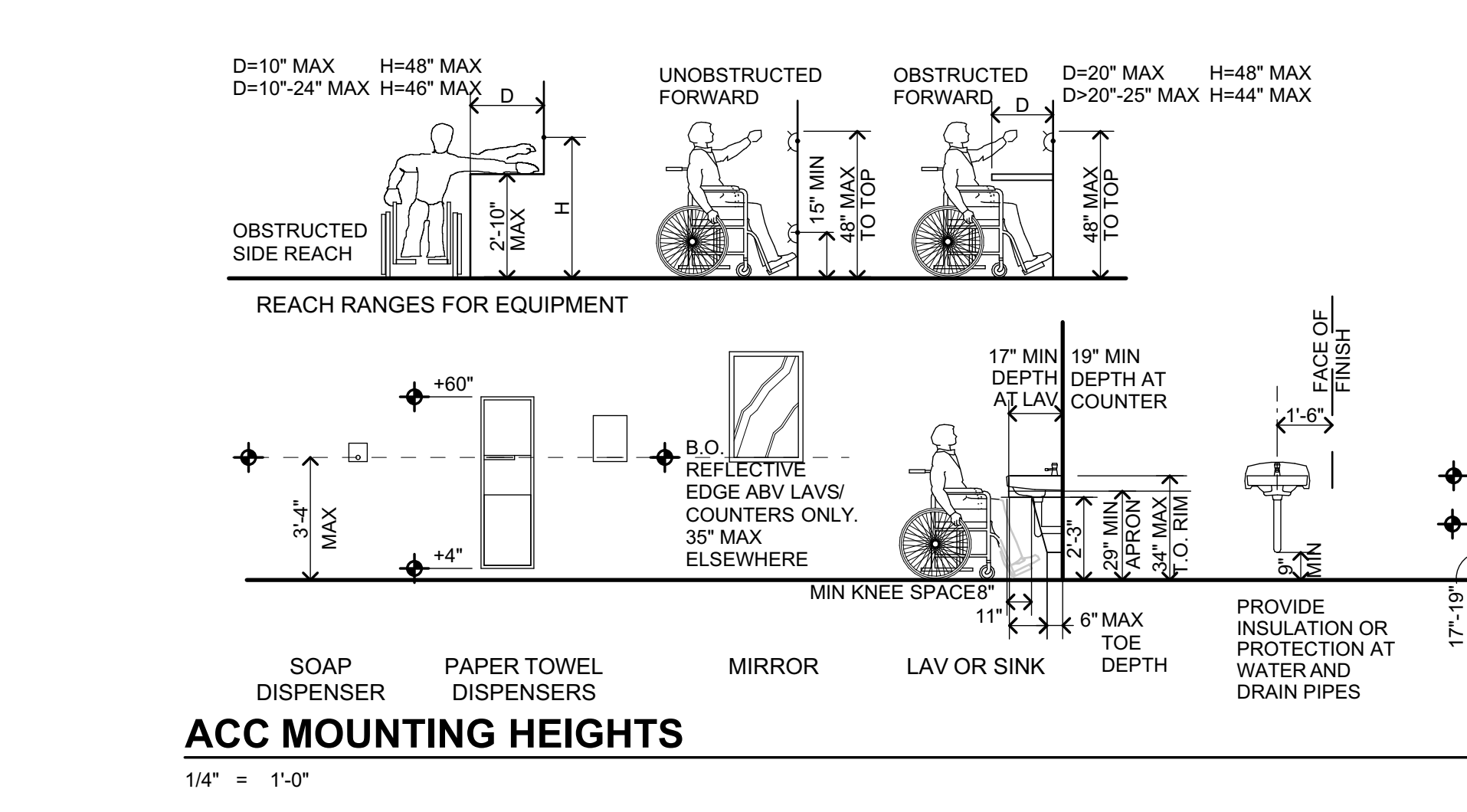
TACKABLE WALL PANEL DETAIL
3\"/>



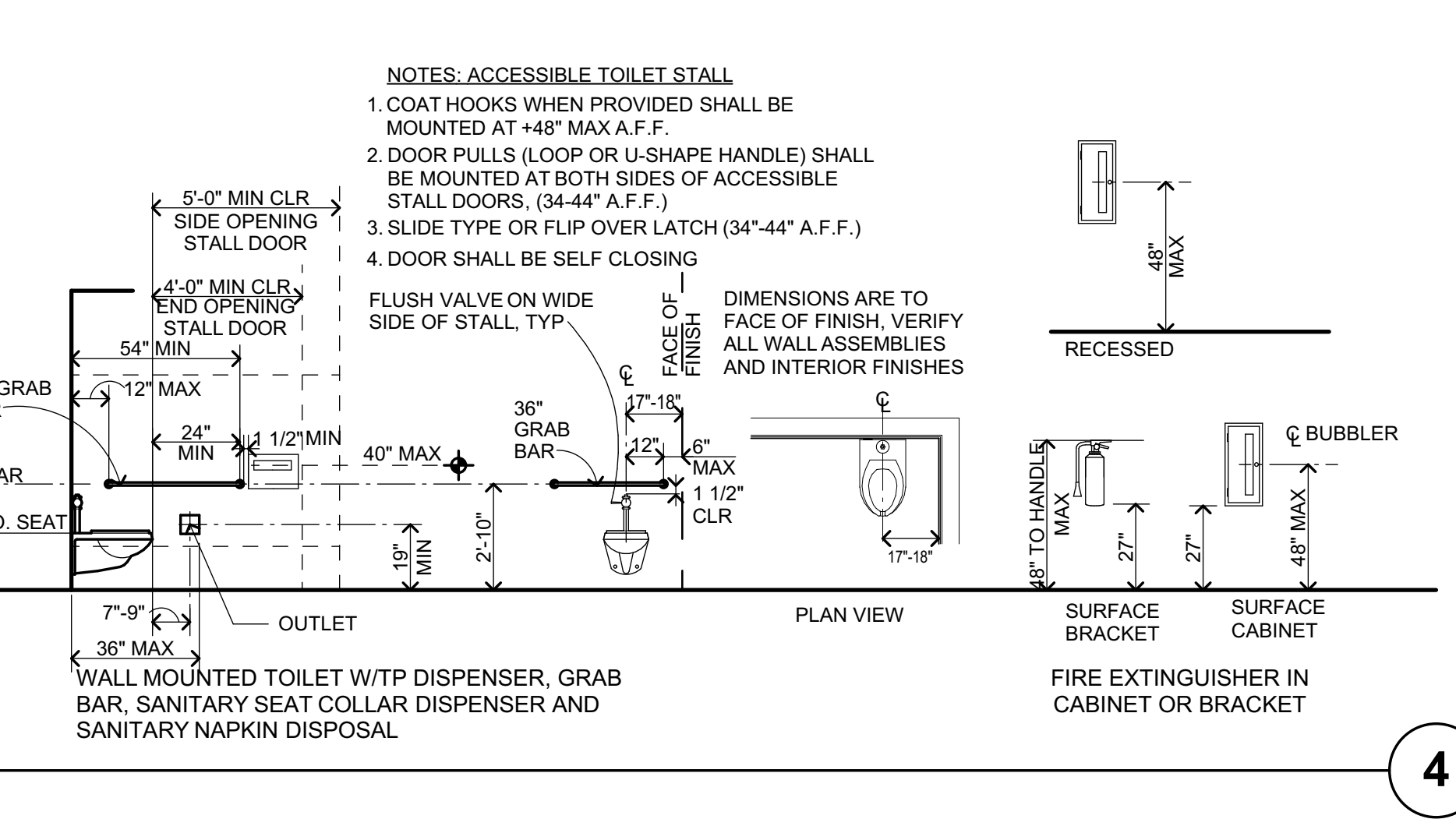
GRAB BAR ATTACHMENT
3\"/>



BASE CABINET FLOOR ATTACHMENT
3\"/>

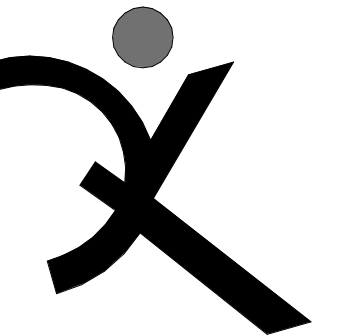


ACC MOUNTING HEIGHTS
1/4\"/>



ACCESSIBLE TOILET STALL
3\"/>

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TOP PLATE SPLICE SCHEDULE		
MARK	LAP SPLICE (CASE 1)	STRAP SPLICE (CASE 2)
A	(12) 16d PER 4'-0" MIN LAP	MSTC28
B	(22) 16d PER 4'-0" MIN LAP	MSTC40
C	(26) 16d PER 6'-0" MIN LAP	MSTC52

SHEAR WALL SCHEDULE					
SW	APA RATED SHEATHING	NAILING (PEN)	ANCHORAGE		REMARKS
			1/2" BOLT FDN	3x BULL	
A	1/2" (32/16) EXP 1	10d @ 6"oc	32"oc	48"oc	3x MIN AT ALL ADJOINING PANEL EDGES
B	1/2" (32/16) EXP 1	10d @ 4"oc	24"oc	32"oc	
C	1/2" (32/16) EXP 1	10d @ 3"oc	16"oc	24"oc	

TIE STRAP SCHEDULE						
MARK	STRAP	MIN. NAILING ES OF *	MAX. NAIL SPACING (SEE NOTES #1 & #2)			MIN. END LENGTH (EL)
			CASE 1		CASE 2	
			EL	RL	EL	
A	CS16	(10) 10d	10d @ 4"oc STGR	FILL ALL NAIL HOLES	10d @ 4"oc STGR	12"
B	CS14	(13) 10d	10d @ 4"oc STGR	FILL ALL NAIL HOLES	10d @ 4"oc STGR	16"
C	CMSTC16	(25) 10d	10d @ 3"oc STGR	FILL ALL NAIL HOLES	10d @ 3"oc STGR	24"
D	CMST14	(33) 10d	10d @ 3 1/2"oc STGR	FILL ALL NAIL HOLES	10d @ 3 1/2"oc STGR	32"
E	CMST12	(43) 10d	10d @ 3 1/2"oc STGR	FILL ALL NAIL HOLES	10d @ 3 1/2"oc STGR	48"

CONTINUOUS FOOTING SCHEDULE					
MARK	'b'	'd'	REINF 'a'	NOTES	
CF18	18"	18"	(2) #5 T&B	PROVIDE #3 TIES @ 24"oc	
CF36	36"	18"	(5) #5 T&B	PROVIDE #3 TIES @ 24"oc	

PAD FOOTING SCHEDULE		
MARK	SIZE	REINFORCING
F2.0	2'-0" SQ x 18" DEEP	(3) #5
F3.0	3'-0" SQ x 18" DEEP	(4) #5
F5.0	5'-0" SQ x 18" DEEP	(6) #5 T&B

1. CASE 1 APPLIES UNLESS END LENGTH (EL) IS NOTED ON PLANS. WHERE END LENGTH (EL) IS NOTED, SEE CASE 2.

PLAN NOTES:

- REFER TO SHEETS S-0.1, S-1.1, AND S-1.2, FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAILS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
- DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
- SEE D/S-0.1 AND DETAILS FOR CURB LOCATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
- PLUMBING AND ELECTRICAL CONDUIT AND GROUND STRAP SHALL NOT BE LAID WITHIN FOUNDATIONS. NO UTILITY PIPES OR CONDUITS SHALL BE LOCATED THRU COLUMN FOOTINGS OR FRAME FOOTINGS. NO VERTICAL OR HORIZONTAL PIPES OR CONDUITS SHALL BE LOCATED THROUGH STEEL FRAMES, STEEL COLUMNS, OR STEEL BASE PLATES. PROVIDE FURRING AND/OR THICKENED CONCRETE WHERE REQUIRED TO CLEAR UTILITY SYSTEMS. MECHANICAL, ELECTRICAL AND PLUMBING PENETRATIONS THROUGH WALLS, ROOFS OR FLOORS SHALL BE PER REFERENCES BELOW UNLESS SHOWN AND DETAILED OTHERWISE ON THE STRUCTURAL PLANS. NOTIFY ARCHITECT/ENGINEER PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE DETAILS.
 - PIPES THROUGH FOOTINGS SHALL BE PER 2/S-1.1 AND 3/S-1.1.
 - PIPES PARALLEL TO FOOTINGS SHALL BE PER 4/S-1.1.
 - PIPES AT SLAB ON GRADE SHALL BE PER 7/S-1.1.
 - PENETRATIONS THROUGH SHEAR WALLS SHALL BE PER 7/S-1.2.
 - PENETRATIONS THROUGH FLOORS/ROOFS SHALL BE PER 6/S-1.2.
- SEISMIC GAPS WHERE NOTED ARE DIMENSIONED CLEAR BETWEEN WALL FINISHES. THIS GAP TO BE MAINTAINED ENTIRELY CLEAR TO ALLOW FOR DIFFERENTIAL BUILDING MOVEMENT. NO PIPES, CONDUITS, ETCETERA SHALL BE LOCATED WITHIN THE GAP. PROVIDE FLEXIBLE COUPLINGS AT ALL UTILITIES CROSSING SEISMIC GAPS.

PLAN LEGEND

SYMBOL	REFERENCE DETAIL	DESCRIPTION
⊘		INDICATES GRIDLINE
▭		INDICATES FOUNDATION.
CF24		INDICATES CONTINUOUS FOOTING SIZE AND REINFORCING PER SCHEDULE.
F2.0		INDICATES PAD FOOTING SIZE AND REINFORCING PER SCHEDULE.
—	1/S-1.2	INDICATES STRUCTURAL WALL.
▨	8/S-1.2	INDICATES SHEAR WALL TYPE AND MINIMUM WALL LENGTH. SYMBOL LOCATION INDICATES SHEATHED FACE OF WALL UNLESS NOTED OTHERWISE.
⊠	E/S-0.1	INDICATES WOOD POST.
⊠*	9/S-1.2	INDICATES POST WITH HOLDOWN. POSTS WITH HOLDOWN ARE FULL HEIGHT FROM SILL TO TOP PLATE.
⊠		INDICATES STEEL COLUMN.
—	12/S-1.2	INDICATES PANEL EDGE NAILING ALONG FULL LENGTH OF MEMBER.
—	E/S-0.1	INDICATES HANGER.
—	13/S-1.2	INDICATES TOP PLATE SPLICE. SPLICE TYPE SHALL OCCUR ALONG THE ENTIRE LENGTH OF THE WALL. UNO, PROVIDE SPLICE TYPE 'A' IF NOT NOTED ON PLANS.
—	15/S-1.2	INDICATES TIE STRAP. SEE SCHEDULE FOR STRAP, NAILING AND LENGTH.
⊠	1/S-4.1	INDICATES THRUST ANGLE CONFIGURATION AT MBM COLUMN FOOTING

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 santa rosa ca 95404 707.526.0992
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NEW MAINTENANCE FACILITIES

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LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

NO.	DESCRIPTION

ZFA NO: 18253
 ENGR / PM: KPB / AIZ
 DRAWING SCALE: As indicated
 PTN: 61721-0069

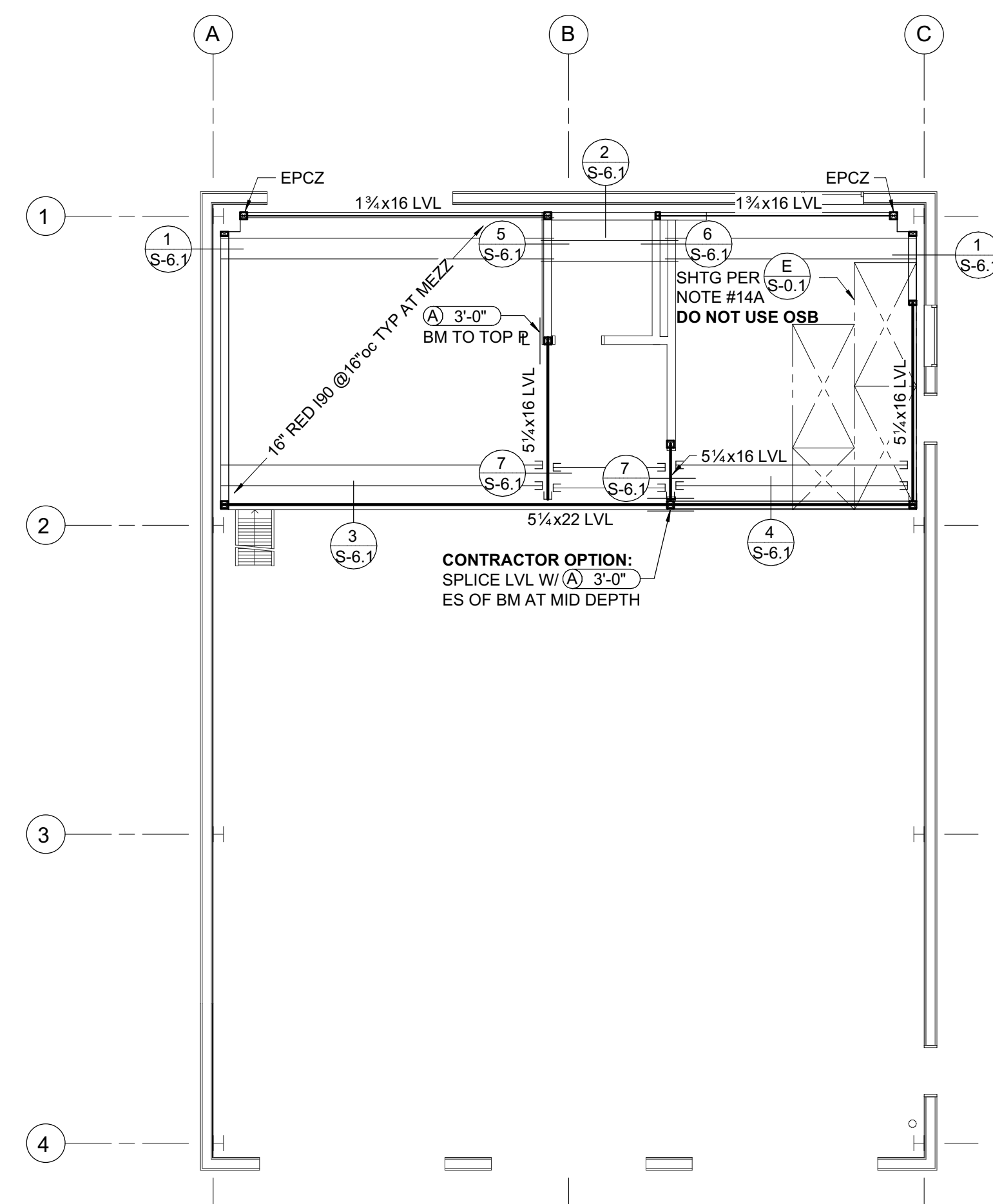
BID SET
 JANUARY 4, 2019

SHEET TITLE

FOUNDATION AND MEZZANINE PLANS

SHEET NUMBER

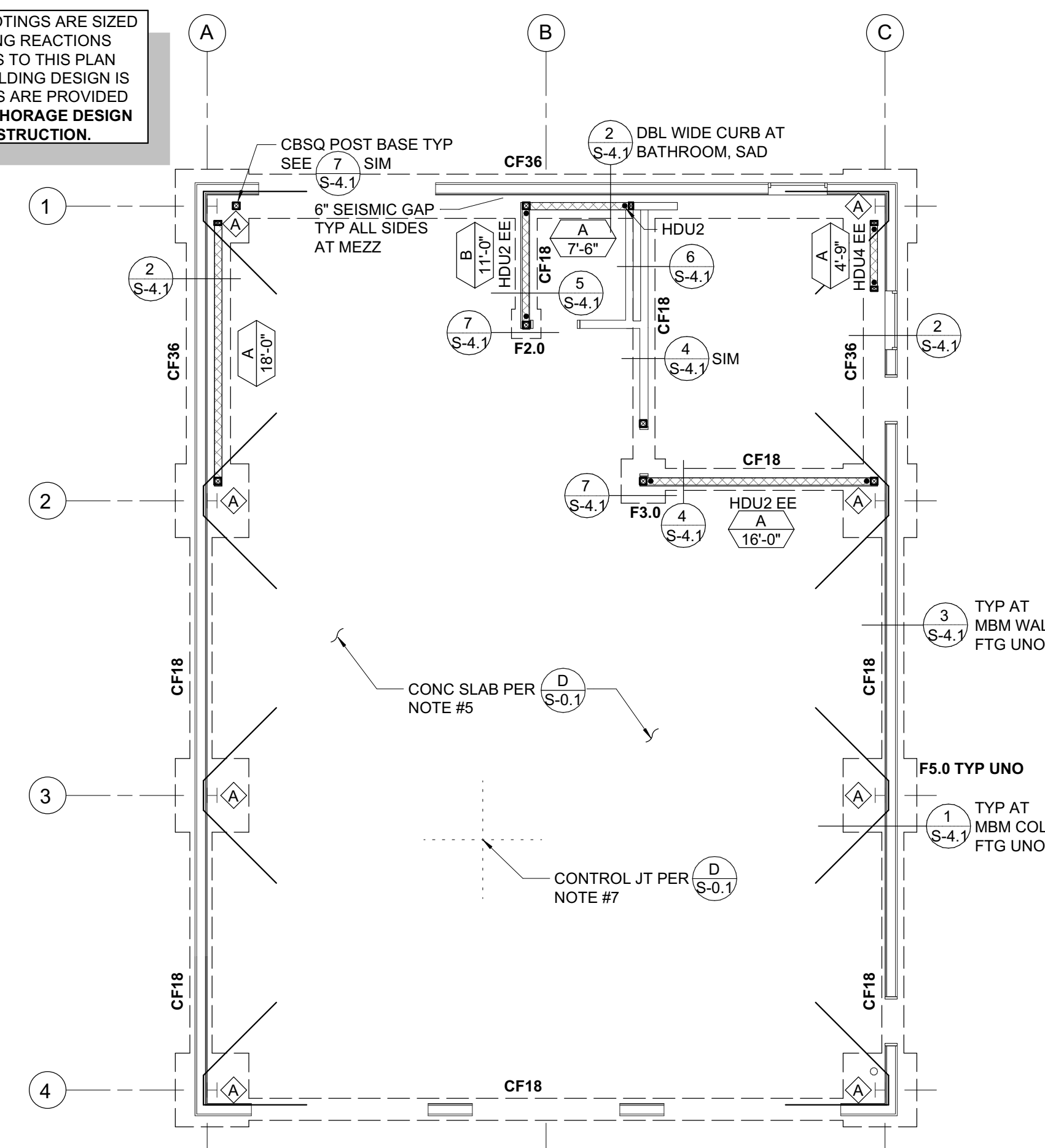
S-2.1



MEZZANINE FRAMING

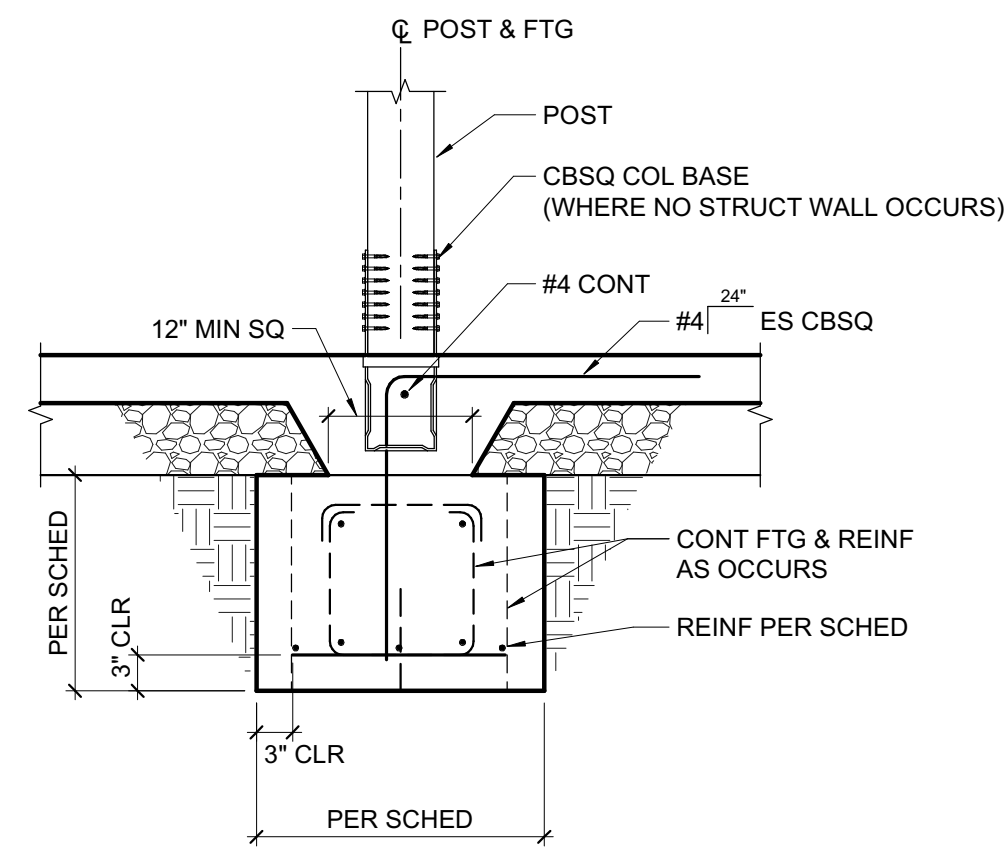
1/8" = 1'-0"

FOUNDATION ANCHORAGE AND FOOTINGS ARE SIZED FROM APPROXIMATE METAL BUILDING REACTIONS DETERMINED BY ZFA. ADJUSTMENTS TO THIS PLAN MAY BE MADE ONCE THE METAL BUILDING DESIGN IS FINALIZED AND FINAL DESIGN LOADS ARE PROVIDED TO ZFA. THE FOUNDATION AND ANCHORAGE DESIGN SHOWN IS NOT INTENDED FOR CONSTRUCTION.

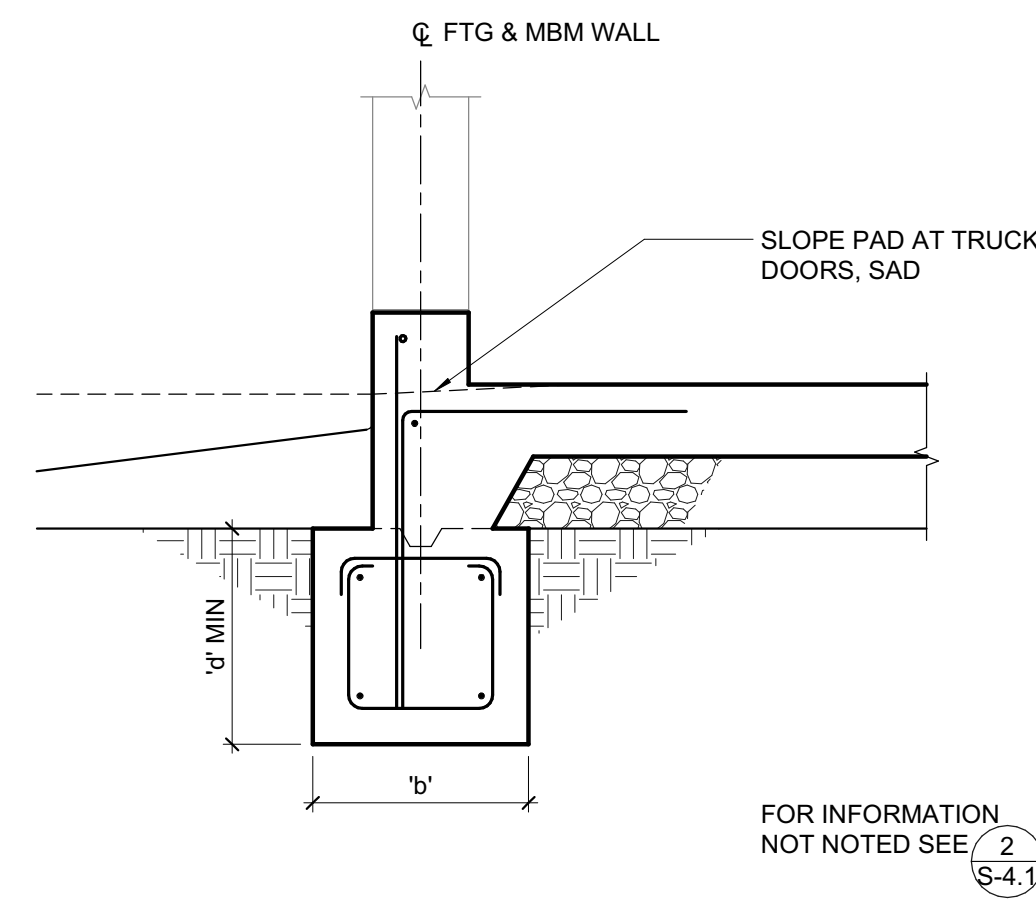


FOUNDATION

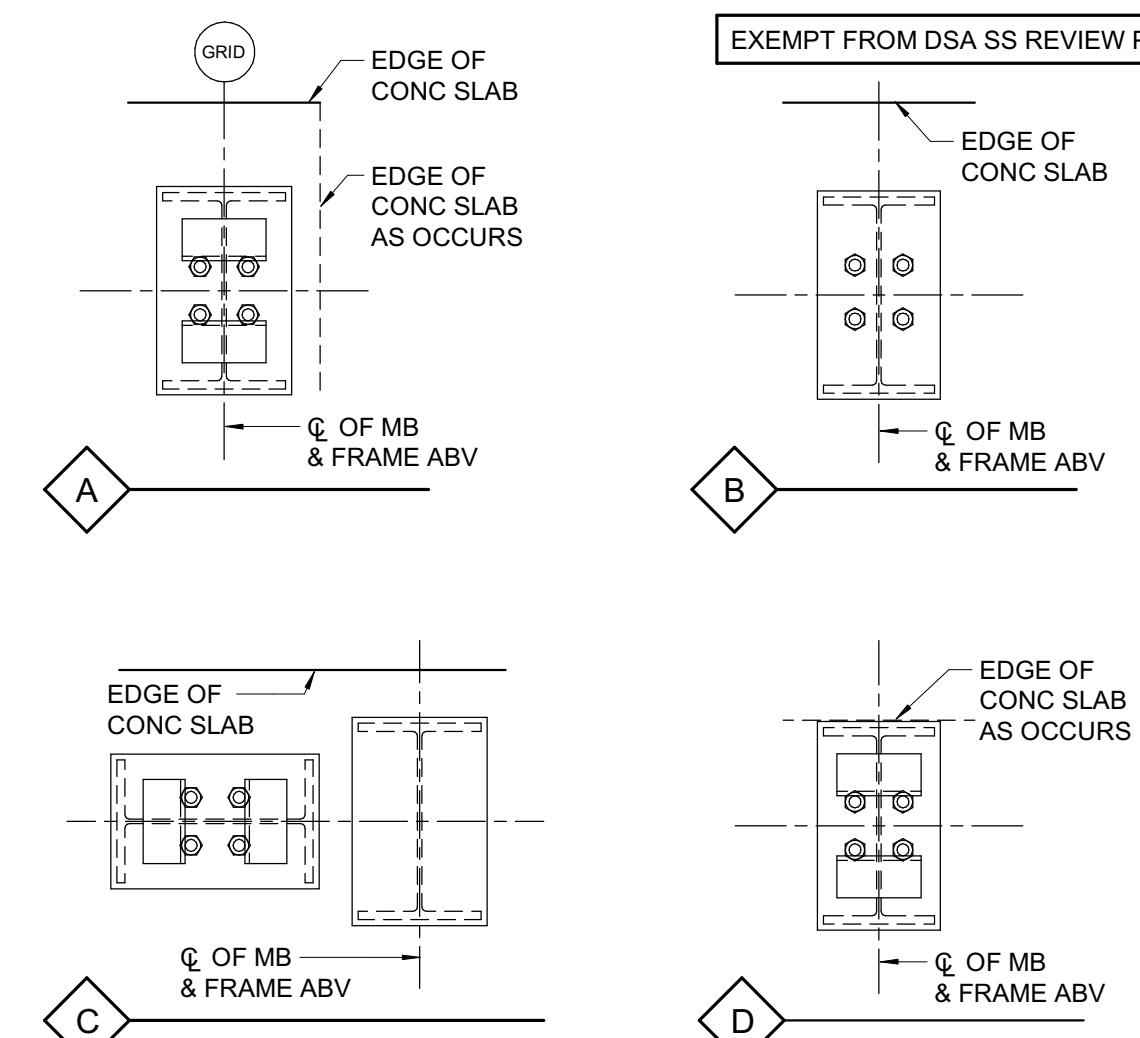
1/8" = 1'-0"



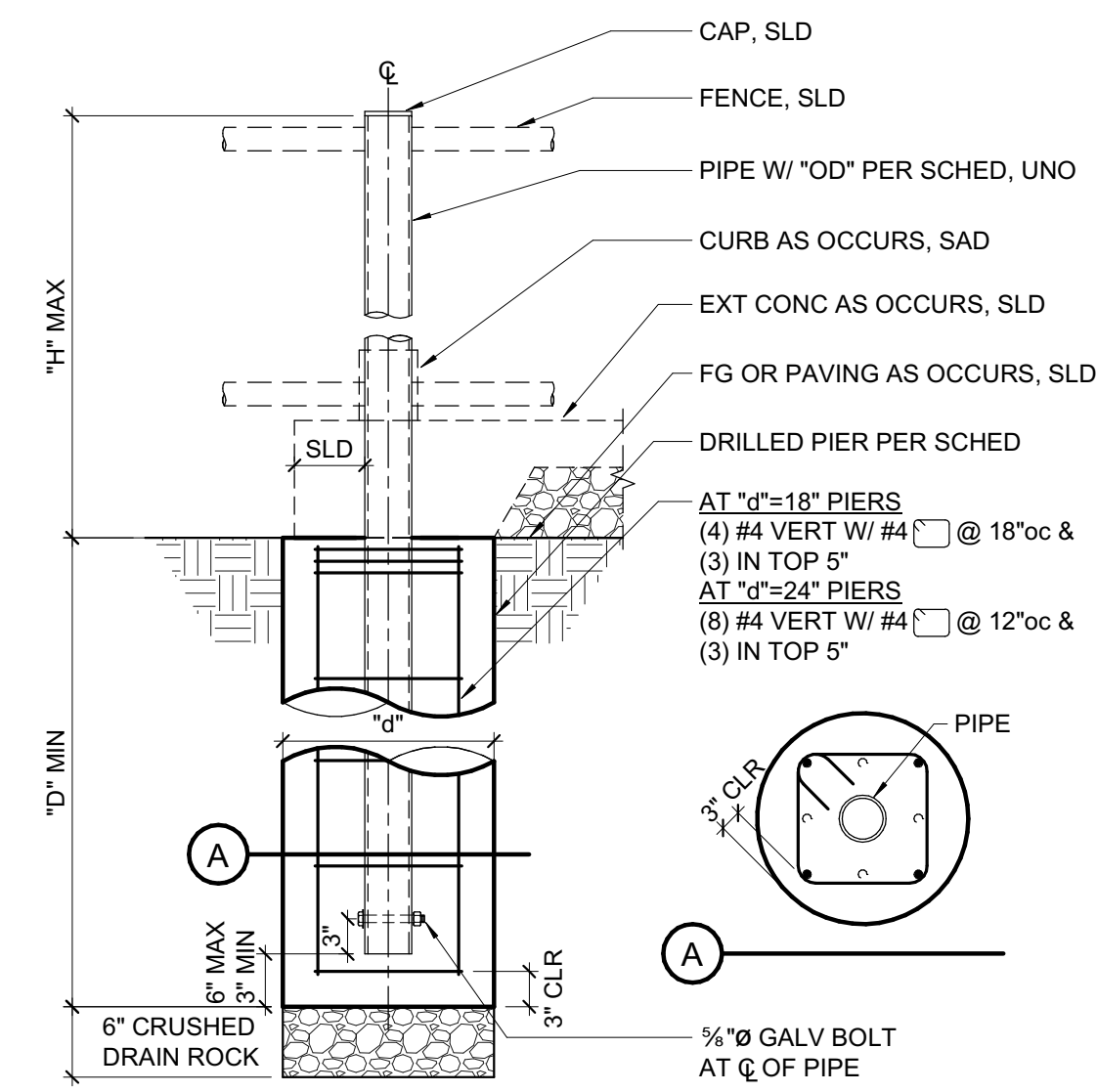
7 PAD FOOTING AT POST
3/4" = 1'-0"



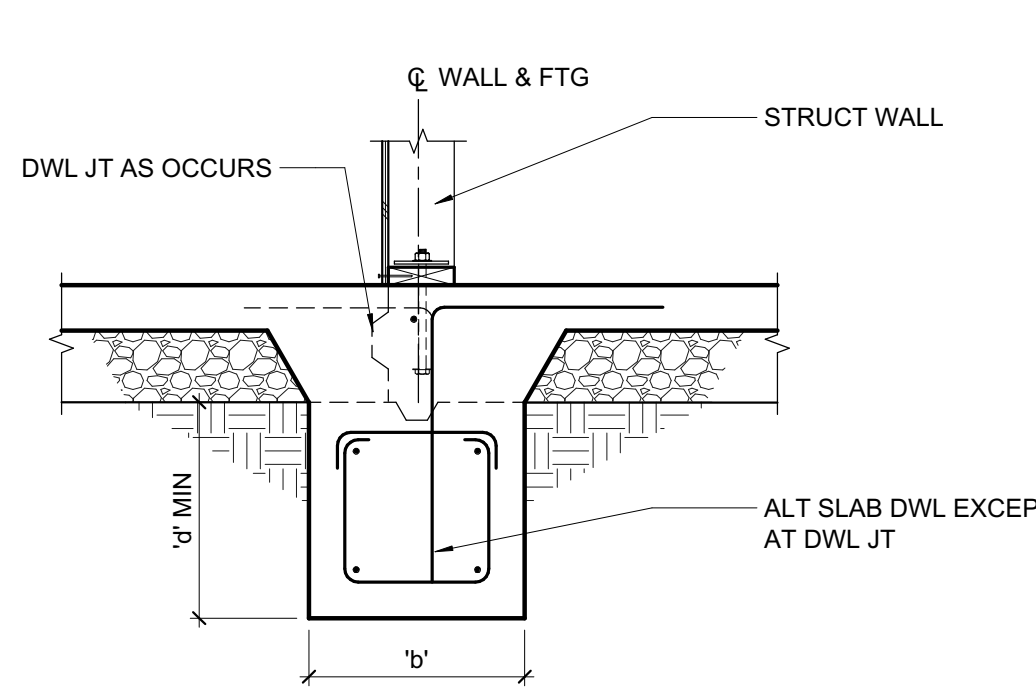
3 TYPICAL PERIMETER FOOTING
3/4" = 1'-0"



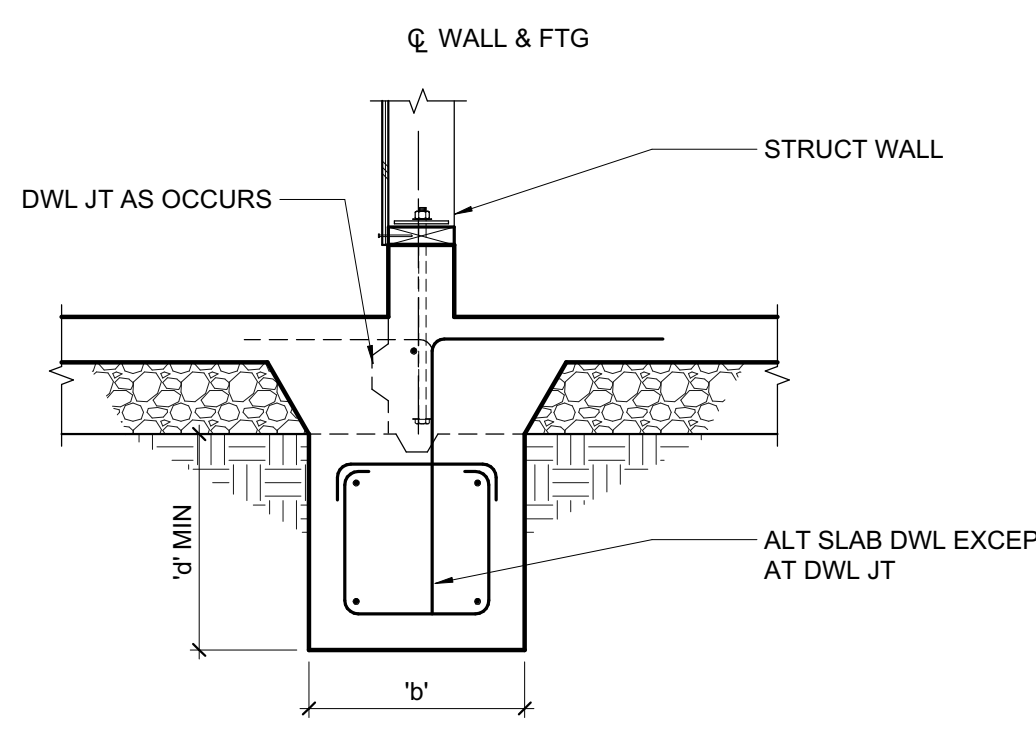
THRUST ANGLE CONFIGURATIONS
(SEE PLAN)



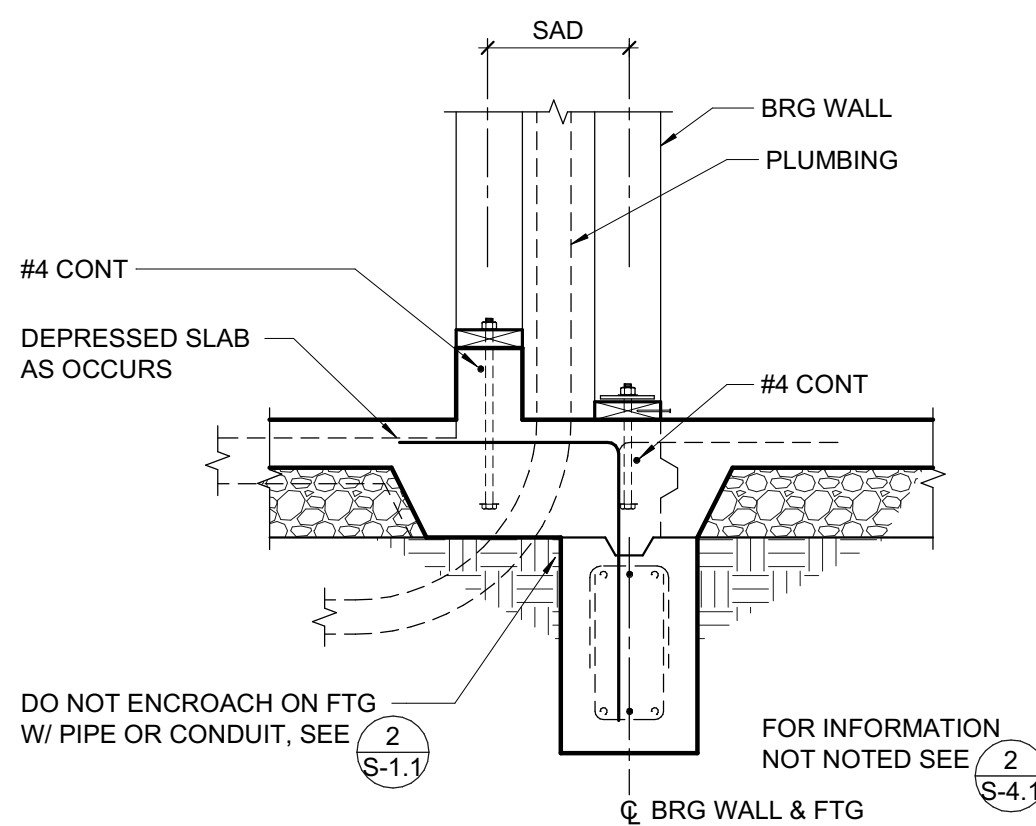
8 DRILLED PIERS FOR FENCING
3/4" = 1'-0"



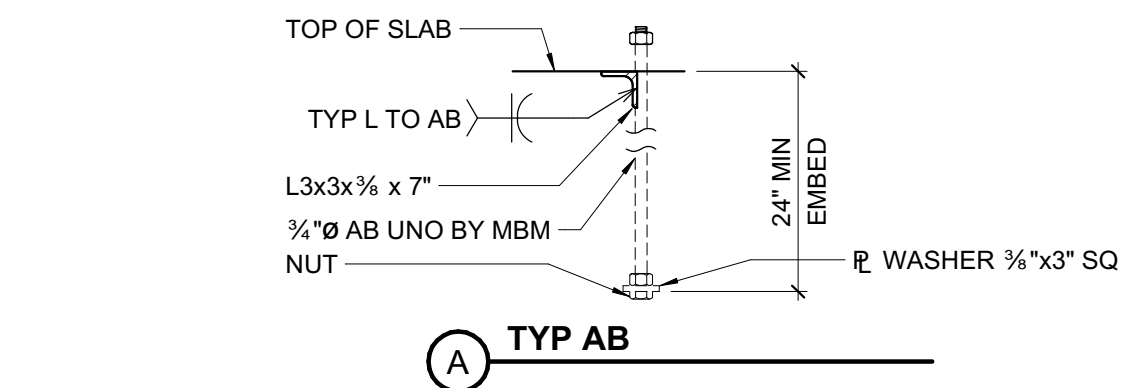
4 INTERIOR FOOTING AT SHEAR WALL WITHOUT CURB
3/4" = 1'-0"



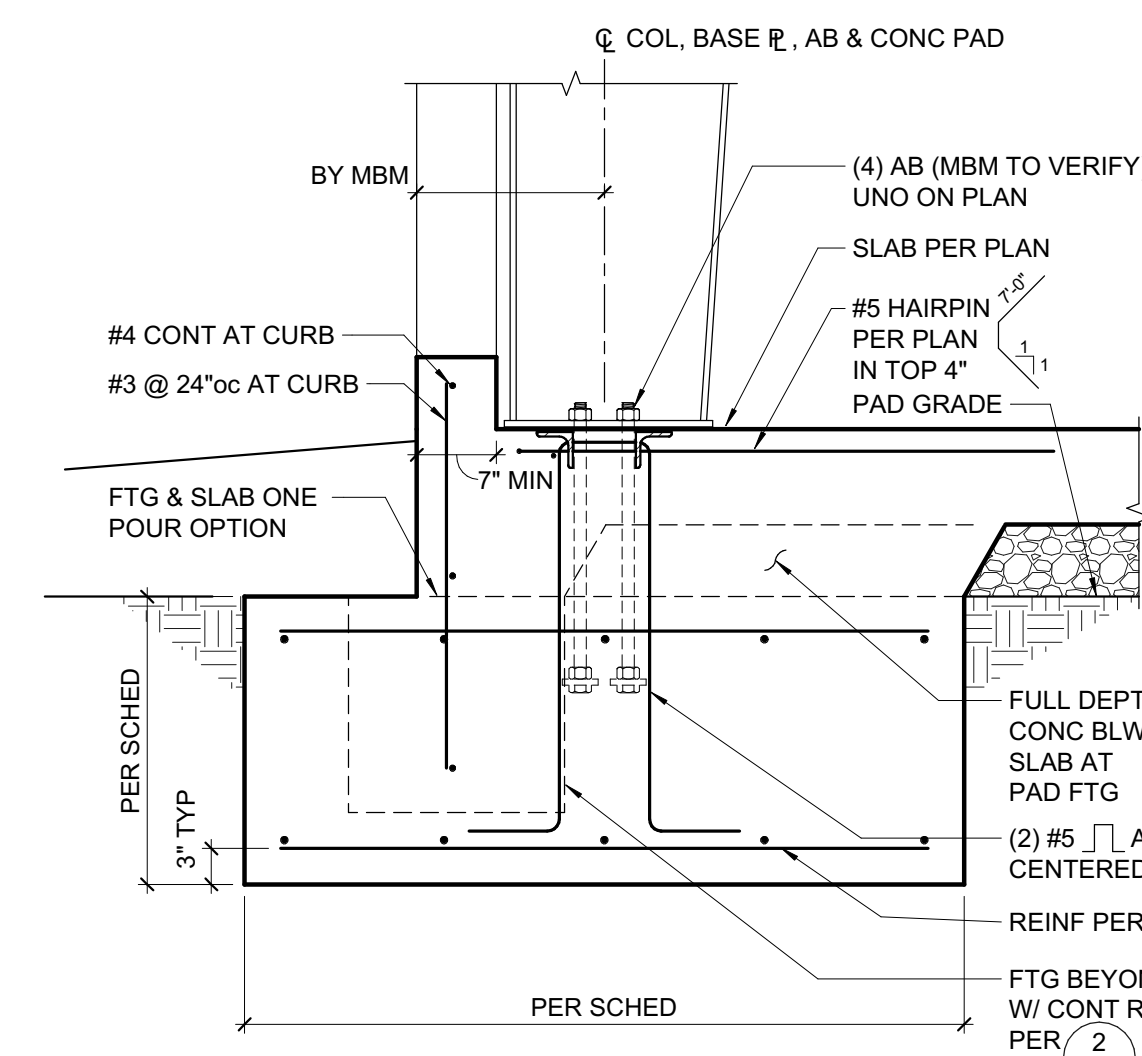
5 INTERIOR FOOTING AT SHEAR WALL WITH CURB
3/4" = 1'-0"



6 FOOTING AT PLUMBING WALL
3/4" = 1'-0"

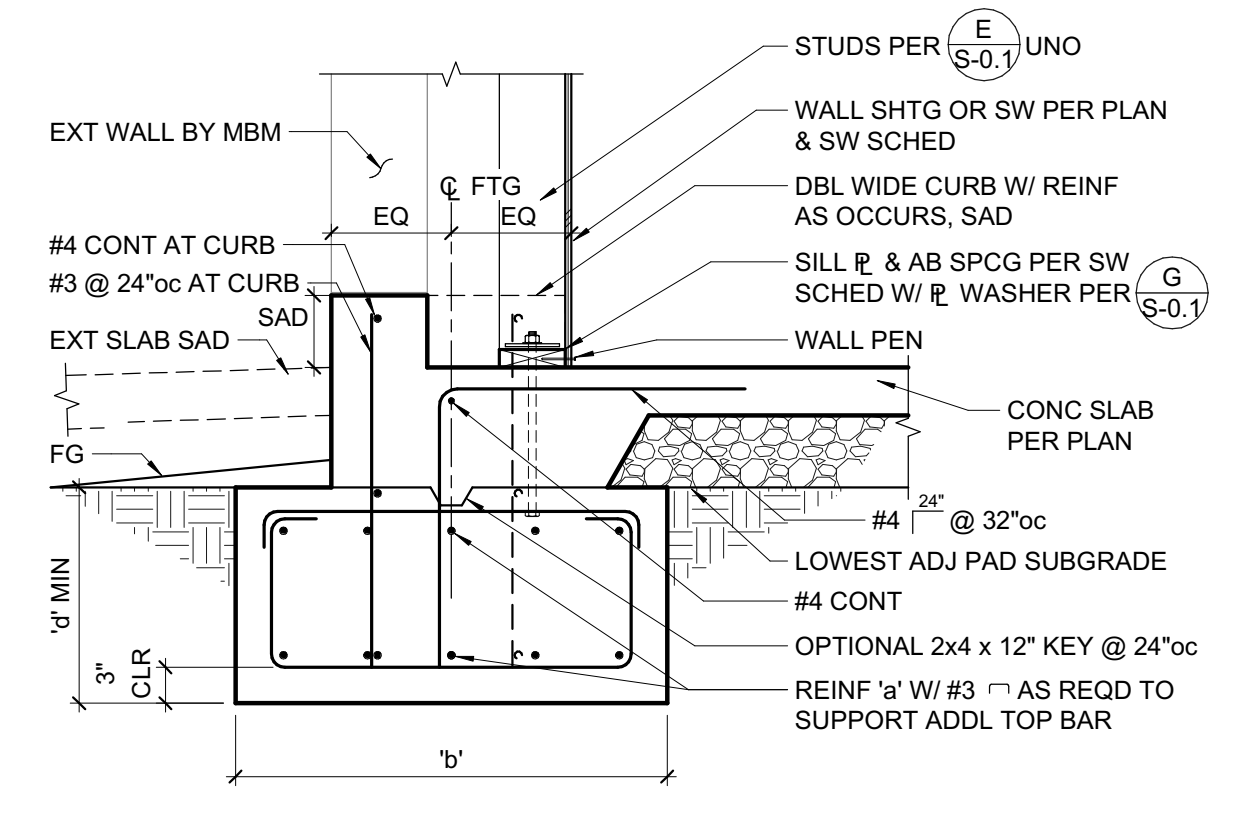


TYP AB



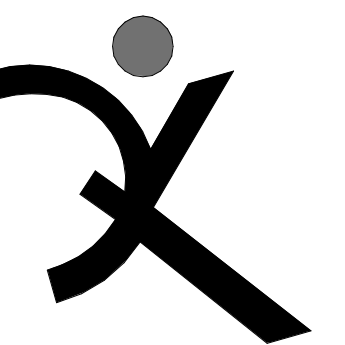
MARK	SIZE	REINFORCING
F2.0	2'-0" SQ x 18" DEEP	(3) #5
F3.0	3'-0" SQ x 18" DEEP	(4) #5
F5.0	5'-0" SQ x 18" DEEP	(6) #5 T&B

1 METAL BUILDING EXTERIOR PAD FOOTING
3/4" = 1'-0"



MARK	b'	d'	REINF 'a'	NOTES
CF18	18"	18"	(2) #5 T&B	PROVIDE #3 TIES @ 24"oc
CF36	36"	18"	(5) #5 T&B	PROVIDE #3 TIES @ 24"oc

2 EXTERIOR FOOTING AT MEZZANINE
3/4" = 1'-0"



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FREEDOM HIGH SCHOOL

NEW MAINTENANCE FACILITIES

1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS	

ZFA NO: 18253
ENGR / PM: KPB / AIZ
DRAWING SCALE: 3/4" = 1'-0"
PTN: 61721-0069

BID SET
JANUARY 4, 2019
SHEET TITLE

FOUNDATION DETAILS

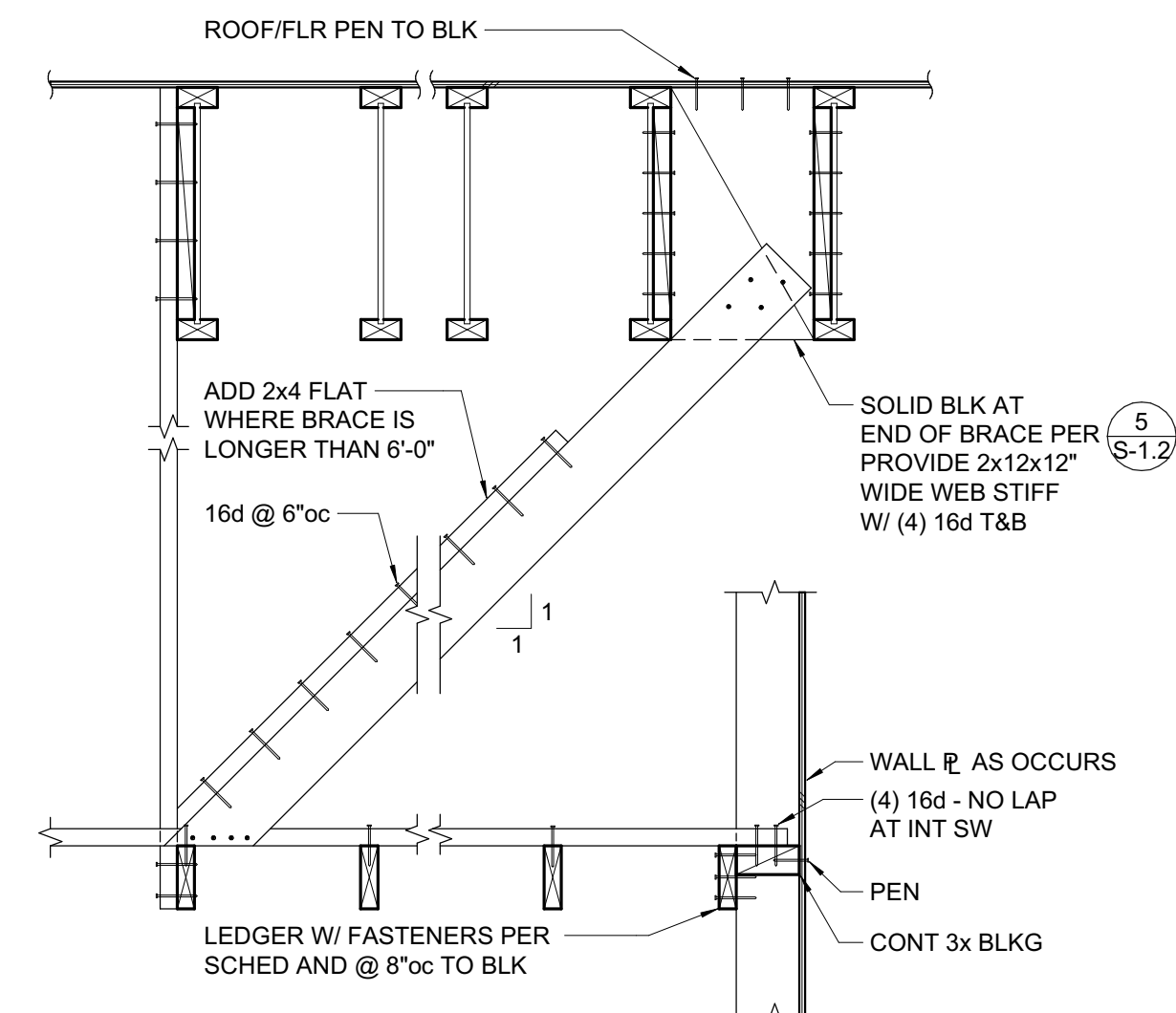
SHEET NUMBER

S-4.1

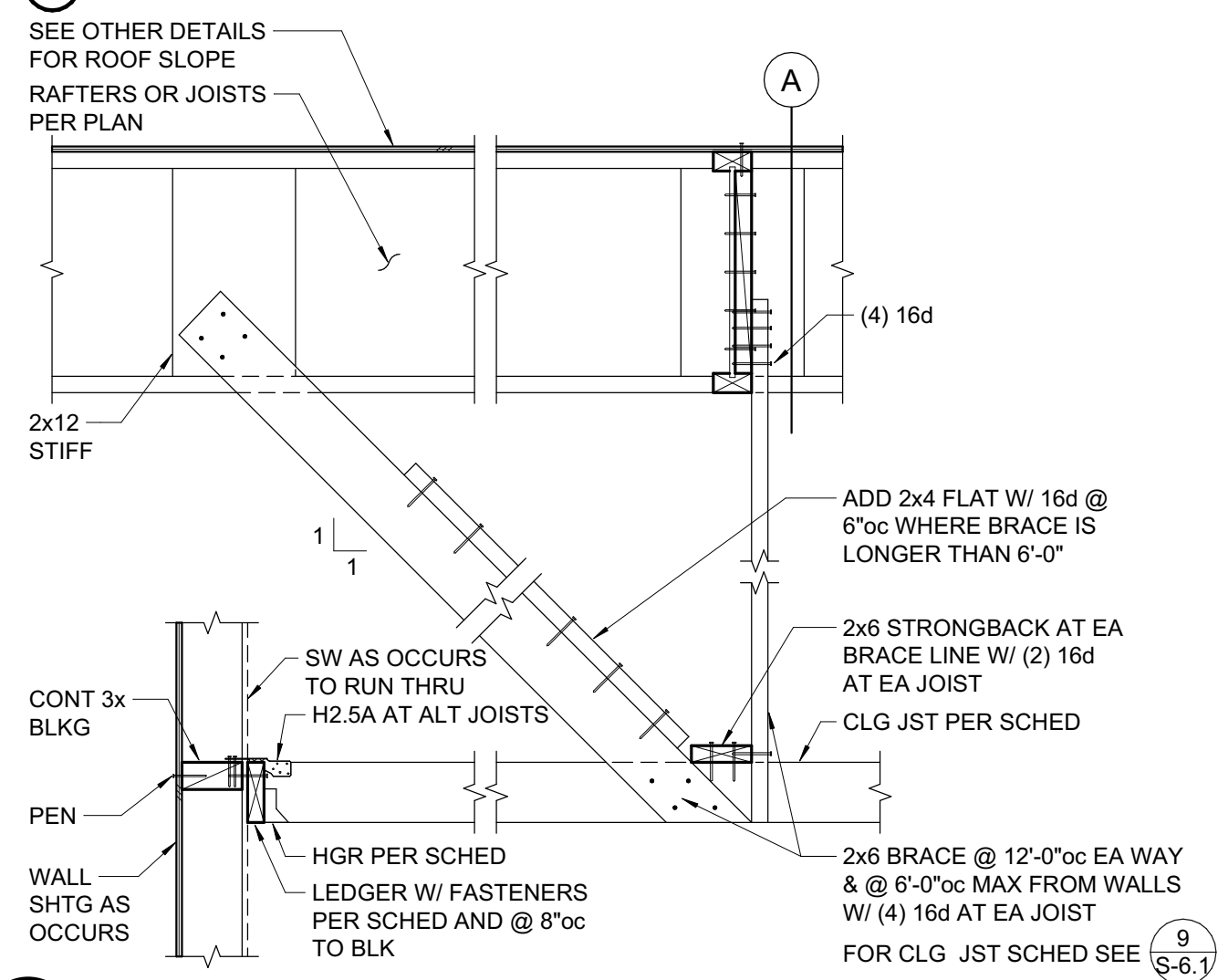
CEILING JOIST SCHEDULE			
MAX SPAN	JOIST SIZE	HANGER IF REQUIRED	LEDGER IF REQUIRED
9'-0"	2x4 @ 16"oc	LU24	2x4 W/ (2) 16d @ 16"oc
12'-6"	2x6 @ 16"oc	LU26	2x6 W/ (3) 16d @ 16"oc
14'-0"	2x8 @ 16"oc	LU28	2x8 W/ (4) 16d @ 16"oc
19'-0"	2x10 @ 16"oc	LU210	2x10 W/ (5) 16d @ 16"oc

- NOTES:**
- CEILING JOIST SCHEDULE IS BASED ON LL = 10 psf.
 - WHERE LEDGERS ARE NAILED THROUGH WALL SHTG, USE 20d NAILS IN LIEU OF 16d NAILS.
 - PROVIDE MIDSPAN BLOCKING AT 2x10 JOISTS.

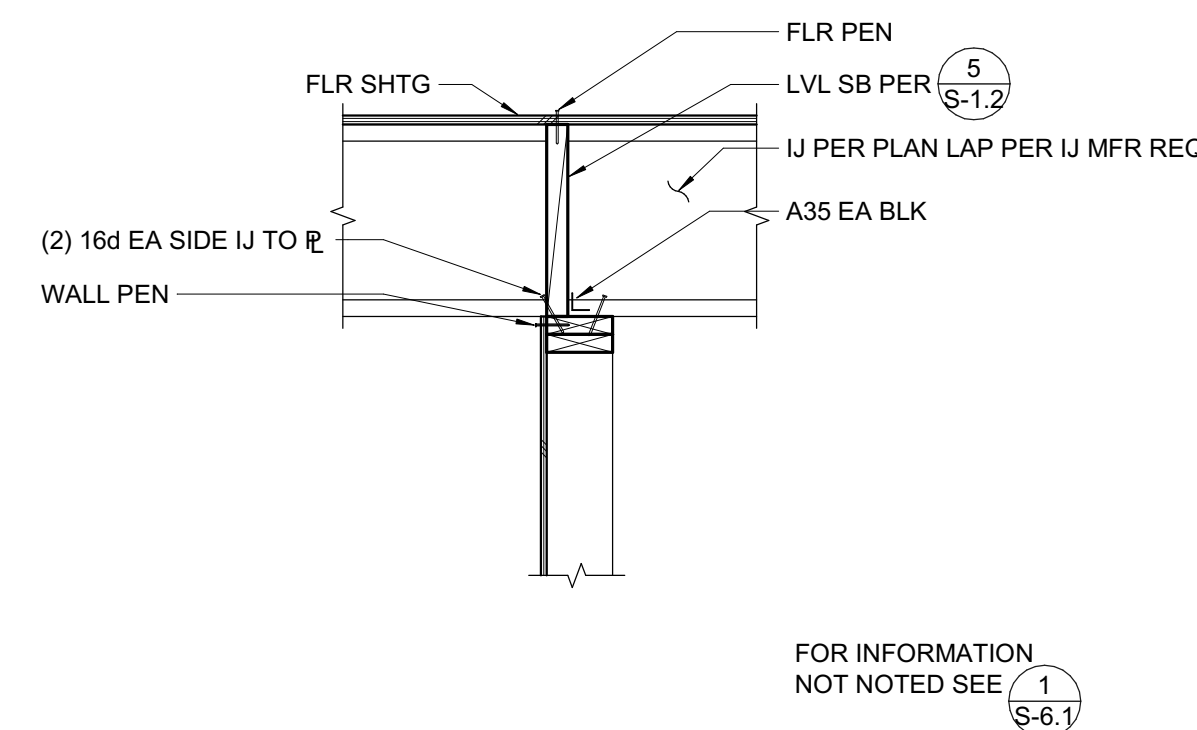
9 CEILING JOIST SCHEDULE
NOT TO SCALE



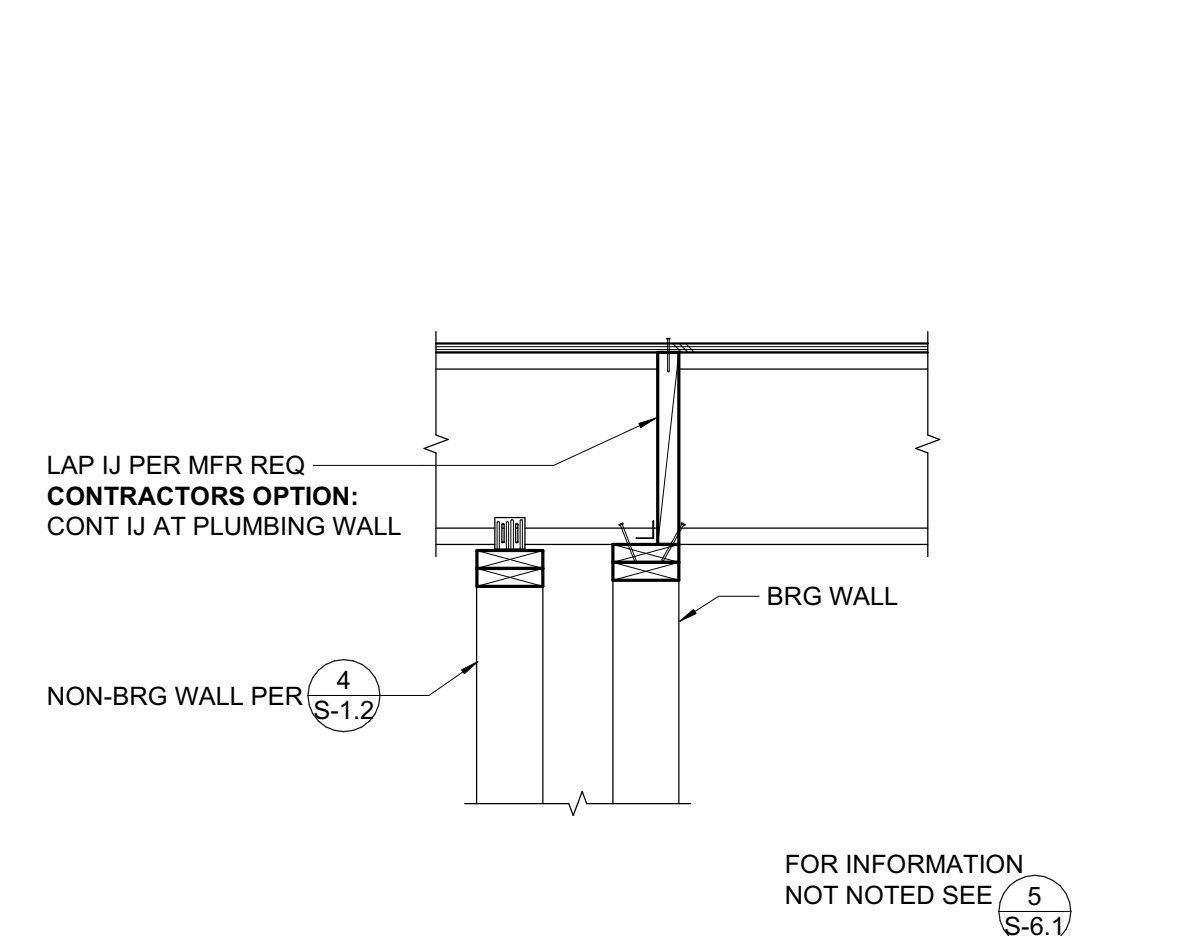
A AT END WALL OR FULL HEIGHT PARTITION



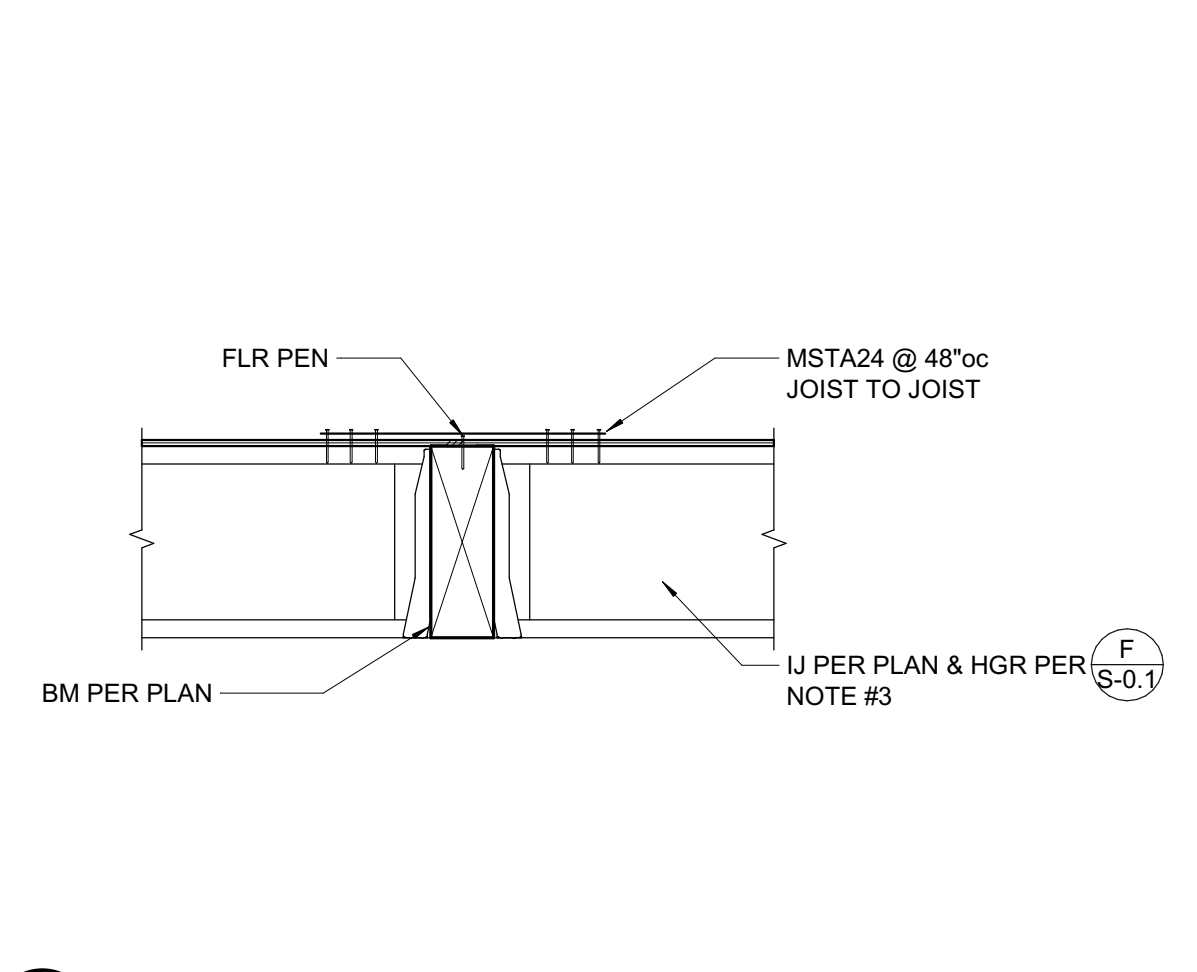
10 CEILING JOISTS (SPAN TO WALLS) AT EXTERIOR WALLS
3/4" = 1'-0"



5 PERPENDICULAR FRAMING AT INTERIOR WALL
3/4" = 1'-0"

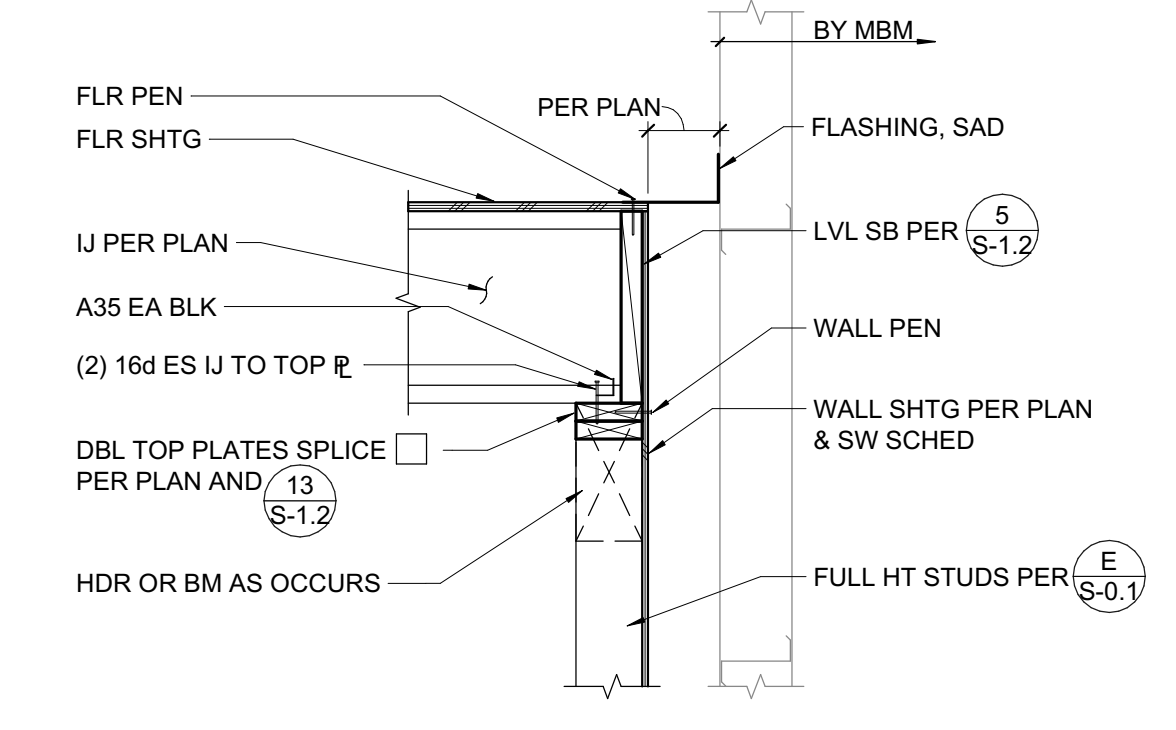


6 PERPENDICULAR FRAMING AT INTERIOR PLUMBING WALL
3/4" = 1'-0"

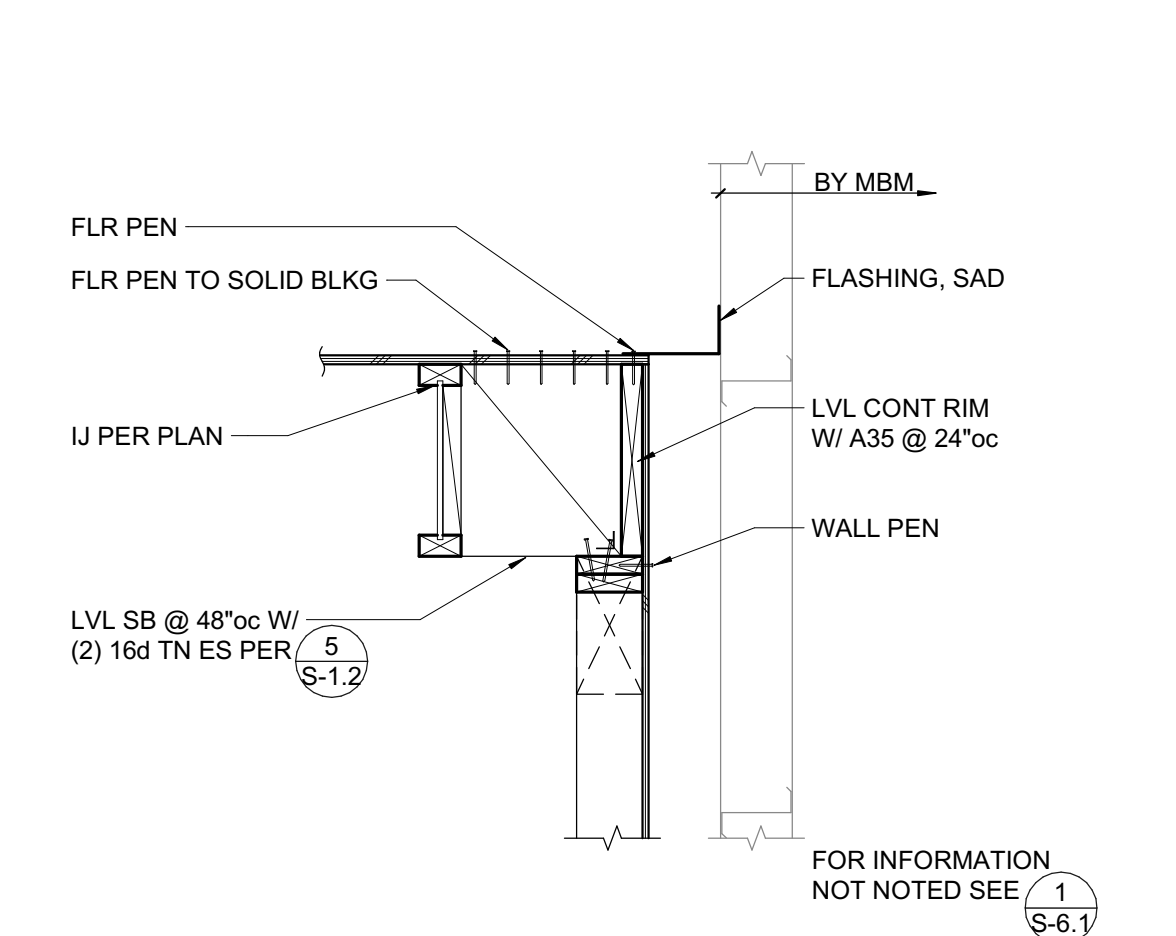


7 PERPENDICULAR FRAMING AT BEAM
3/4" = 1'-0"

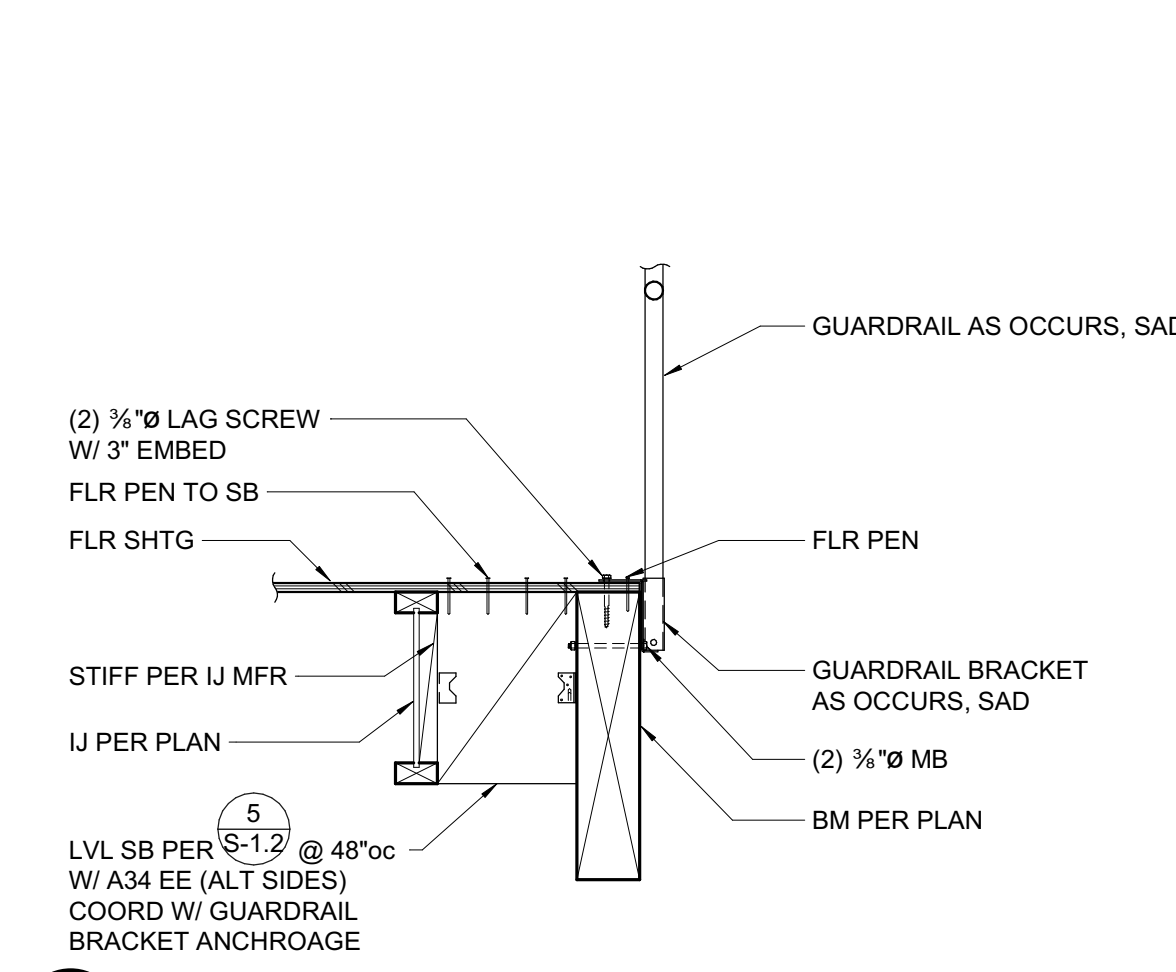
EXEMPT FROM DSA SS REVIEW PER IR A-22



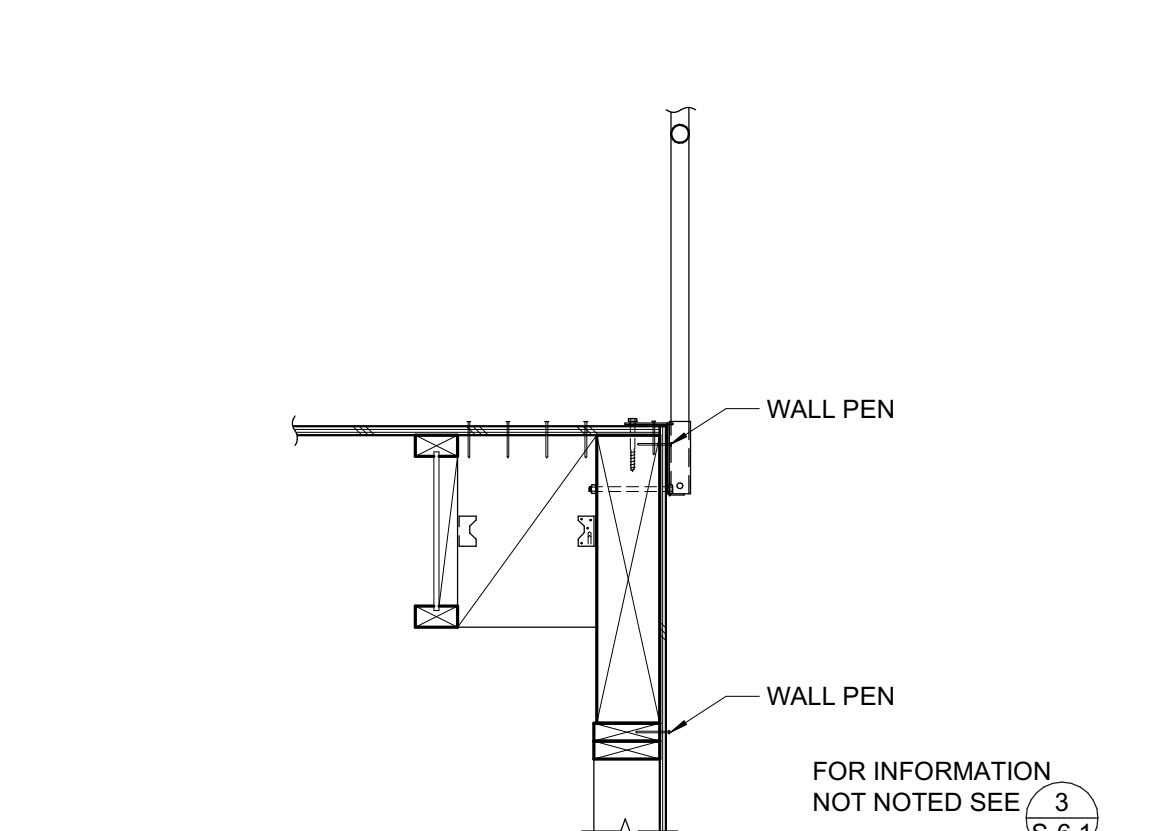
1 PERPENDICULAR FRAMING AT WALL OR BEAM
3/4" = 1'-0"



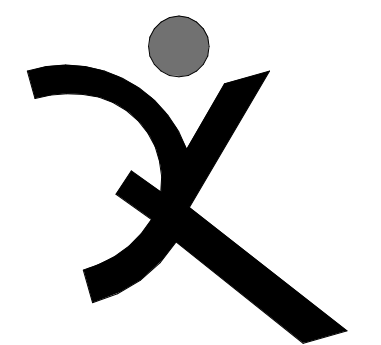
2 PARALLEL FRAMING AT WALL
3/4" = 1'-0"



3 PARALLEL FRAMING AT BEAM (GUARDRAIL)
3/4" = 1'-0"

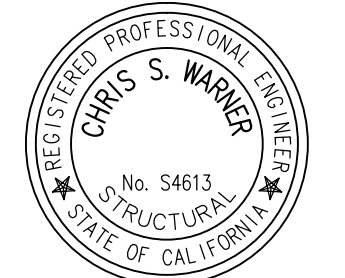


4 PARALLEL FRAMING AT INTERIOR WALL
3/4" = 1'-0"



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LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS	

ZFA NO: 18253
ENGR / PM: KPB / AIZ
DRAWING SCALE: As indicated
PTN: 61721-0069

BID SET
JANUARY 4, 2019

SHEET TITLE

FRAMING DETAILS

SHEET NUMBER

S-6.1

SPLIT SYSTEM OUTDOOR UNIT											
MARK	MFR.	MODEL NO.	UNIT CAPACITIES (MBH)		EER	ELECTRICAL DATA			WEIGHT	SERVICE	REMARKS
			HEATING	COOLING		V-Ø-HZ	MCA	MOCP			
HP 1	DAIKIN	RX24NMVJU	24.0	21.2	12.5	208-1-60	18.3	20	108	OFFICE/BREAK	
REMARKS: 1. PROVIDE WITH ALL NECESSARY REFRIGERATION PIPING & APPURTENANCES; R410A REFRIGERANT											

SPLIT SYSTEM INDOOR UNIT							
MARK	MFR.	MODEL	AIRFLOW	FILTER	WEIGHT	SERVICE	REMARKS
FC 1	DAIKIN	FTX24NMVJU	745 CFM	WASHABLE	27 lb	OFFICE /BREAK	
REMARKS: 1. INDOOR UNIT IS POWERED FROM OUTDOOR UNIT 2. PROVIDE WITH WIRED T-STAT.							

EXHAUST FAN SCHEDULE											
MARK	MFR.	MODEL NO.	AIRFLOW	FAN RPM	INLET SONES	ELECTRICAL DATA			WEIGHT	SERVICE	REMARKS
						MOTOR HP	WATTS	V-Ø-HZ			
EF-1	PANASONIC	FV-05-11VK1	110 CFM		0.3				11.00 lb	RESTROOM	1
EF-2	GREENHECK	SQ-160-VG	3000 CFM	1206		1	0.63	6 W	115-1-60	149.00 lb	GENERAL EXHAUST 2
REMARKS: 1. PROVIDE WITH MANUFACTURES MOTION SENSOR AND 10 MIN DELAY CONTROL MODULE 2. PROVIDE WITH WALL MOUNTED SPEED CONTROLLER AND ON/OFF SWITCH											

CEILING FAN SCHEDULE										
MARK	MFR.	MODEL NO.	FAN RPM	ELECTRICAL DATA			WEIGHT	REMARKS		
				MOTOR HP	WATTS	V-Ø-HZ				
CF-1	BIG ASS FAN	BASIC 6	191	1	0.75 W	115-1-60	15	124.00 lb	1, 2	
CF-2	BIG ASS FAN	BASIC 6	191	1	0.75 W	115-1-60	15	124.00 lb	1, 2	
REMARKS: 1. PROVIDE WITH VFD AND WALL CONTROL PANEL 2. PROVIDE WITH FIRE PANEL CONTROL INTEGRATION 3. PROVIDE AND MOUNT ALL FANS WITH FACTORY Z-PURLIN MOUNTING KIT WITH SEISMIC GUY WIRES PER MANUFACTURES INSTRUCTIONS										

ELECTRIC RADIANT HEATING PANEL						
MARK	MFR.	MODEL NUMBER	V-Ø-HZ	WATTS	WEIGHT	REMARKS
ERP-1	QMARK	CP371	120-1-60	375	15.00 lb	1, 2
REMARKS: 1. PROVIDE WITH LINE VOLTAGE THERMOSTAT 2. PROVIDE WITH SURFACE MOUNTING KIT BY MANUFACTURE						

LIST OF APPLICABLE CODES AND STANDARDS:

TITLE 24, PART 2: 2016 CALIFORNIA BUILDING CODE (VOLUMES 1 & 2)
 TITLE 24, PART 3: 2016 CALIFORNIA ELECTRICAL CODE
 TITLE 24, PART 4: 2016 CALIFORNIA MECHANICAL CODE
 TITLE 24, PART 5: 2016 CALIFORNIA PLUMBING CODE
 TITLE 24, PART 6: 2016 CALIFORNIA ENERGY CODE
 TITLE 24, PART 9: 2016 CALIFORNIA FIRE CODE
 TITLE 24, PART 12: 2016 CALIFORNIA REFERENCED STANDARDS CODE

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.

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

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

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

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

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

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

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEMS ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON PRE APPROVED 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 SYSTEM. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

- MECHANICAL/PLUMBING/DUCTS
- M PP D -OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.
 M PP D -OPTION 2: SHALL COMPLY WITH THE OSHPD PRE-APPROVAL (OPM #) # 0043-13
 M PP D -OPTION 3: SHALL COMPLY WITH THE SMACNA SEISMIC RESTRAINT

MANUAL, OSHPD EDITION (2009), INCLUDING ANY ADDENDA, FASTENERS AND OTHER ATTACHMENTS NOT SPECIFICALLY IN THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION, ARE DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. THE DETAILS SHALL ACCOUNT APPLICABLE SEISMIC HAZARD LEVEL ____ AND CONNECTIONS LEVEL ____ FOR THE PROJECT AND CONDITIONS.

MECHANICAL LEGEND

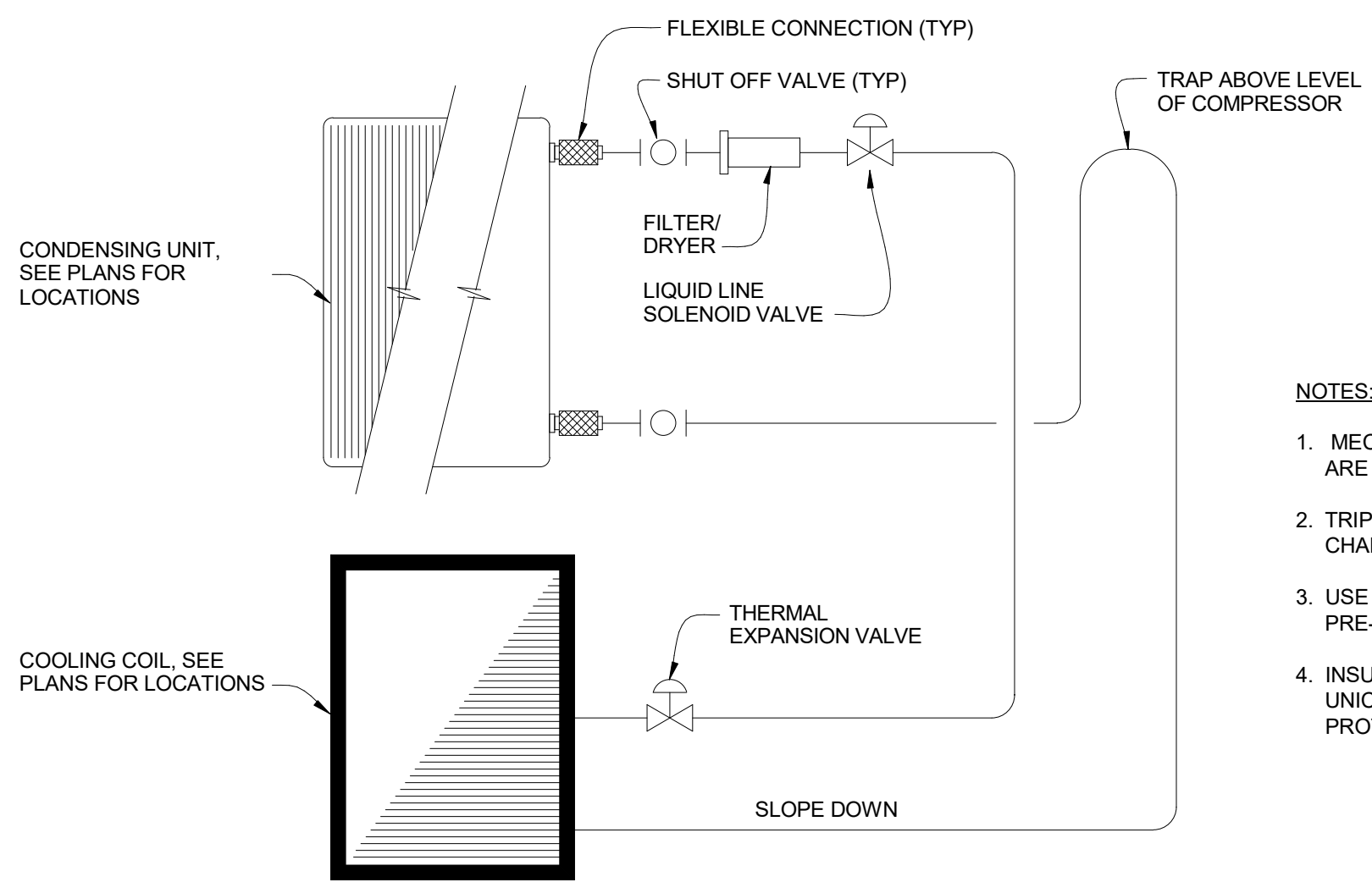
SYMBOL	ABBREVIATION	DESCRIPTION
		EQUIPMENT TYPE _____ EQUIPMENT NUMBER _____
		DETAIL / DRAWING NUMBER _____ SHEET NUMBER _____
	SA OR OA	SECTION THRU SUPPLY AIR OR OUTSIDE AIR DUCT
	RA OR EA	SECTION THRU RETURN AIR OR EXHAUST AIR DUCT
		ROUND DUCT DOWN
	DN OR UP	SLOPE DUCT DOWN OR UP IN DIRECTION OF FLOW
	AL	ACOUSTICAL LINING
	FC	FLEXIBLE DUCT CONNECTION
	VD	VOLUME DAMPER
	FD	FIRE DAMPER
	TV	TURNING VANES
		FLEXIBLE DUCT
		45° ROUND DUCT TAKE-OFF
		45° RECTANGULAR DUCT TAKE-OFF
		90° TURN - ROUND DUCT
		90° RADIUS TURN - ROUND OR RECTANGULAR DUCT
		SQUARE TO ROUND DUCT TRANSITION
		DUCT TRANSITION
		RECTANGULAR DUCT 90° SPLIT
		THERMOSTAT @ 46" AFF MAX TO CENTER LINE
	AP	ACCESS PANEL
	POC	POINT OF CONNECTION
	POD	POINT OF DEMOLITION
	BHP	BRAKE HORSEPOWER
	HP	HORSEPOWER
	SAD	SEE ARCHITECTURAL DRAWINGS
	SSD	SEE STRUCTURAL DRAWINGS
	SCD	SEE CIVIL DRAWINGS
	AFC	ABOVE FINISH CEILING

AIR TERMINAL SCHEDULE MANUFACTURER: TITUS (EXCEPT AS NOTED)

SDG		SPIRAL DUCT RETURN/EXHAUST GRILLE	PRICE SDGER
NOTES: 1. ADAPTER NEEDED FOR TRANSITION FROM SQUARE NECK TO ROUND DUCT. 2. SIZE (NECK/FACE) TYPE FACE SIZE FOR T-BAR CEILING ONLY CFM (NO. OF THROW)			

BLDG 'MECHANICAL' SHEET LIST

M1.1	MECHANICAL SCHEDULES & LEGENDS
M2.1	MECHANICAL PLANS
M4.1	MECHANICAL DETAILS
M4.2	MECHANICAL DETAILS



- NOTES:**
- MECHANICAL JOINT REFRIGERANT CONNECTIONS ARE PROHIBITED. ALL JOINTS SHALL BE BRAZED.
 - TRIPLE EVACUATE AND WEIGH IN REFRIGERANT CHARGE.
 - USE ONLY RIGID ACR COPPER PIPING. DO NOT USE PRE-CHARGED TUBING KITS.
 - INSULATE SUCTION LINE WITH 1/2" THICK "ARMAFLEX" UNICELLULAR PIPE INSULATION WITH ULTRAVIOLET PROTECTION.

A REFRIGERANT PIPING DIAGRAM
SCALE: NONE

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 3274 Vito Lane, Novato, CA 94949 ph: 707.233.9177 fax: 707.233.6473
 REGISTERED PROFESSIONAL ENGINEER
 CHRISTOPHER J. COSTA
 No. 31520
 Exp. 12-31-20
 MECHANICAL
 STATE OF CALIFORNIA

FREEDOM HIGH SCHOOL

NEW MAINTENANCE FACILITIES

1050 NEROLY ROAD
 OAKLEY, CA 94561
 LIBERTY UNION HIGH SCHOOL DISTRICT

ARCH PROJECT NO:	1739.02
DRAWN BY:	Author
DRAWING SCALE:	12" = 1'-0"
PTN:	61721-0069

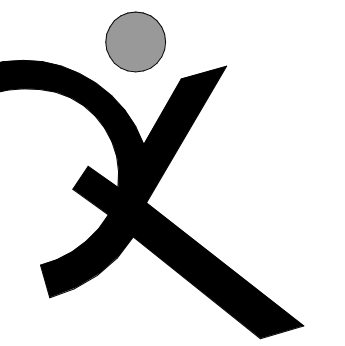
DSA SUBMITTAL
 NOVEMBER 2, 2018
 SHEET TITLE

MECHANICAL SCHEDULES & LEGENDS

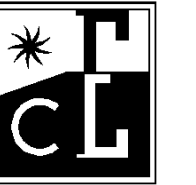
SHEET NUMBER
M1.1

GENERAL NOTES

- FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M1.1
- MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL WORK WITH OTHER TRADES.
- PATCH ALL WALLS, CEILINGS, ROOF AND OTHER SURFACES TO MATCH EXISTING CONDITIONS.



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COSTA ENGINEERS INC.
3274 Villa Lane, Novato, CA 94949
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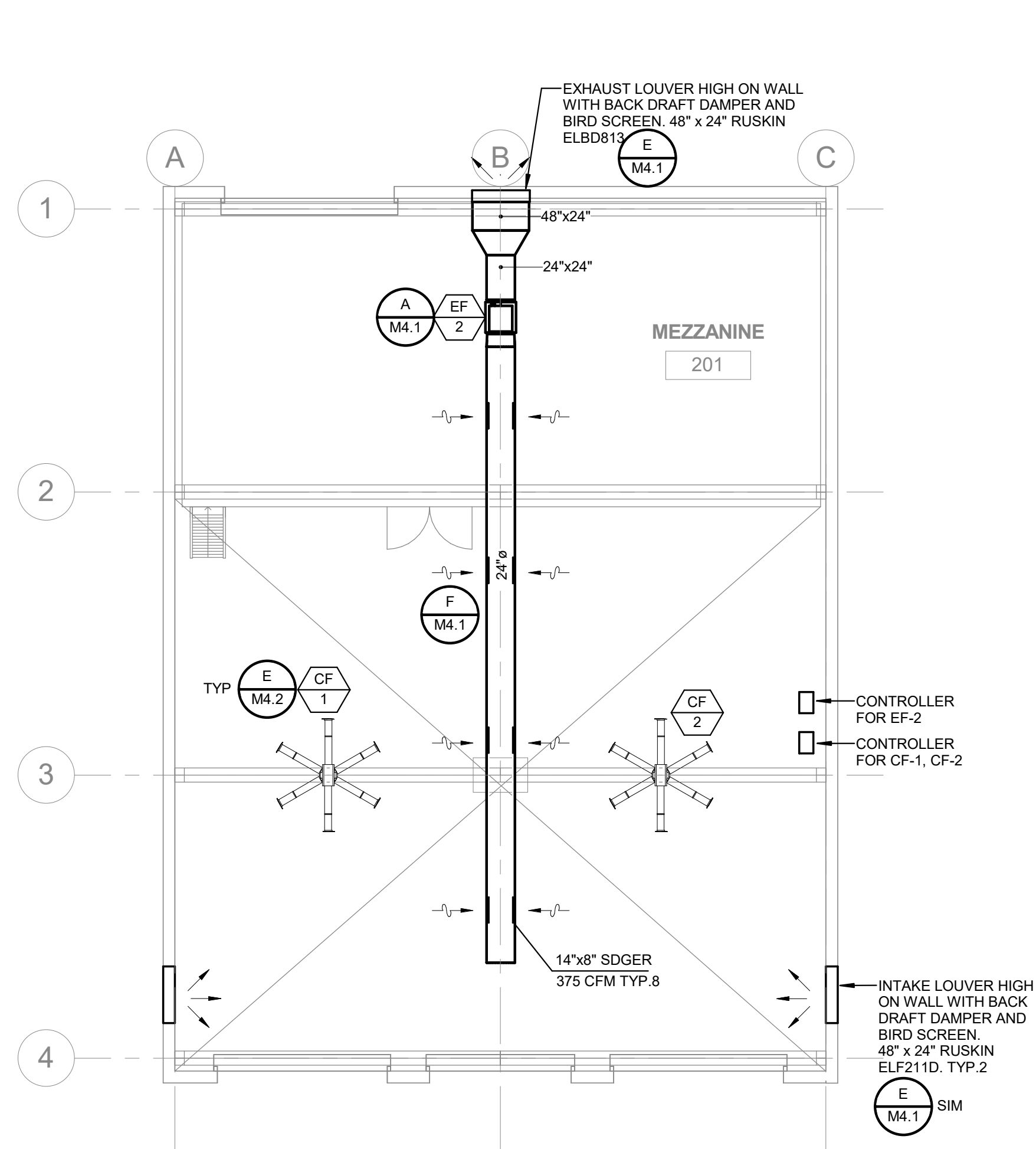


FREEDOM
HIGH SCHOOL

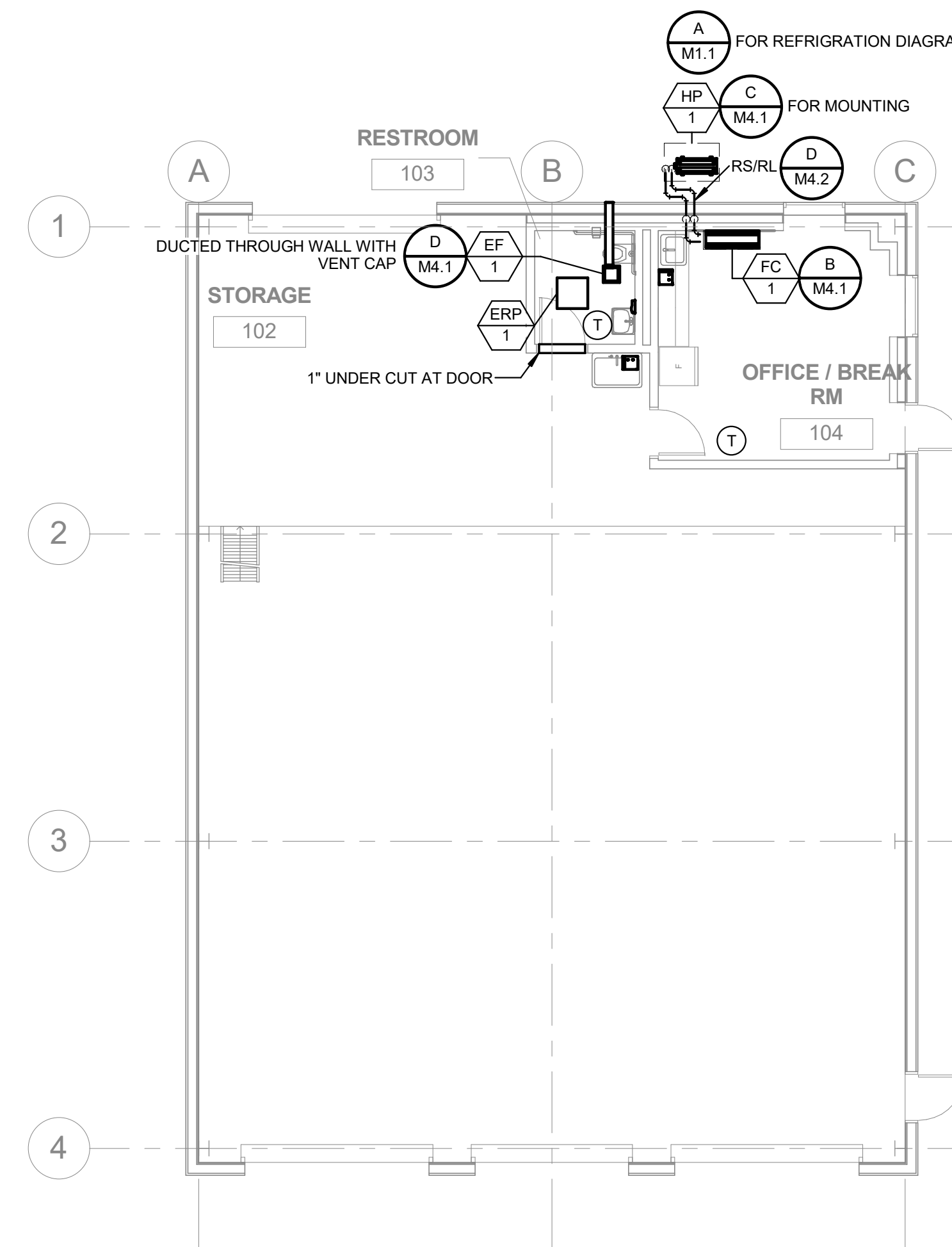
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1050 NEROLY ROAD
OAKLEY, CA 94561

LIBERTY UNION
HIGH SCHOOL
DISTRICT



2 MECHANICAL MEZZANINE LEVEL
1/8" = 1'-0"



1 MECHANICAL FIRST FLOOR LEVEL
1/8" = 1'-0"

WALL LEGENDS

ARCH PROJECT NO: 1739.02
DRAWN BY: Author
DRAWING SCALE: 1/8" = 1'-0"
PTN: 61721-0069

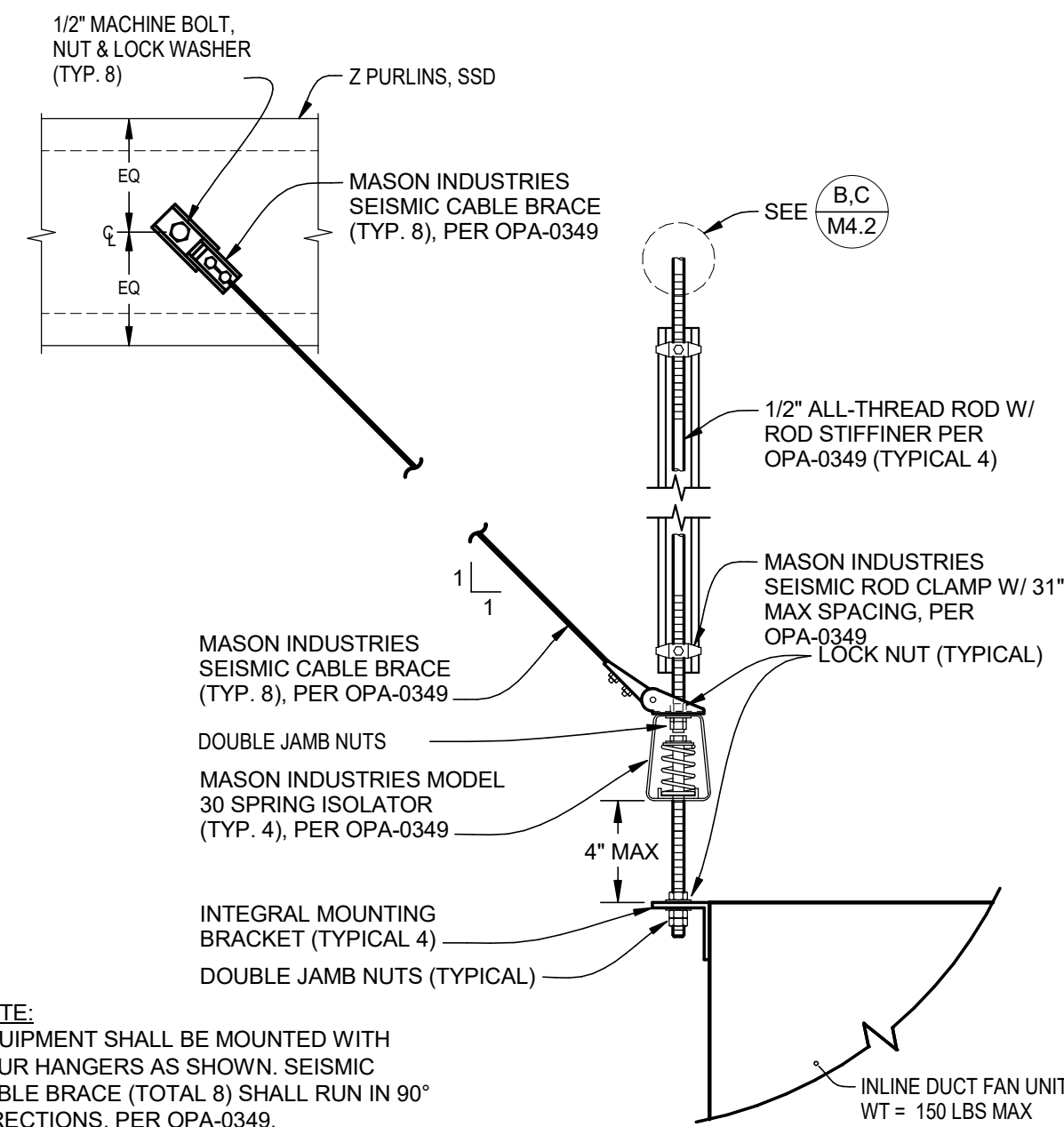
DSA SUBMITTAL
NOVEMBER 2, 2018

SHEET TITLE

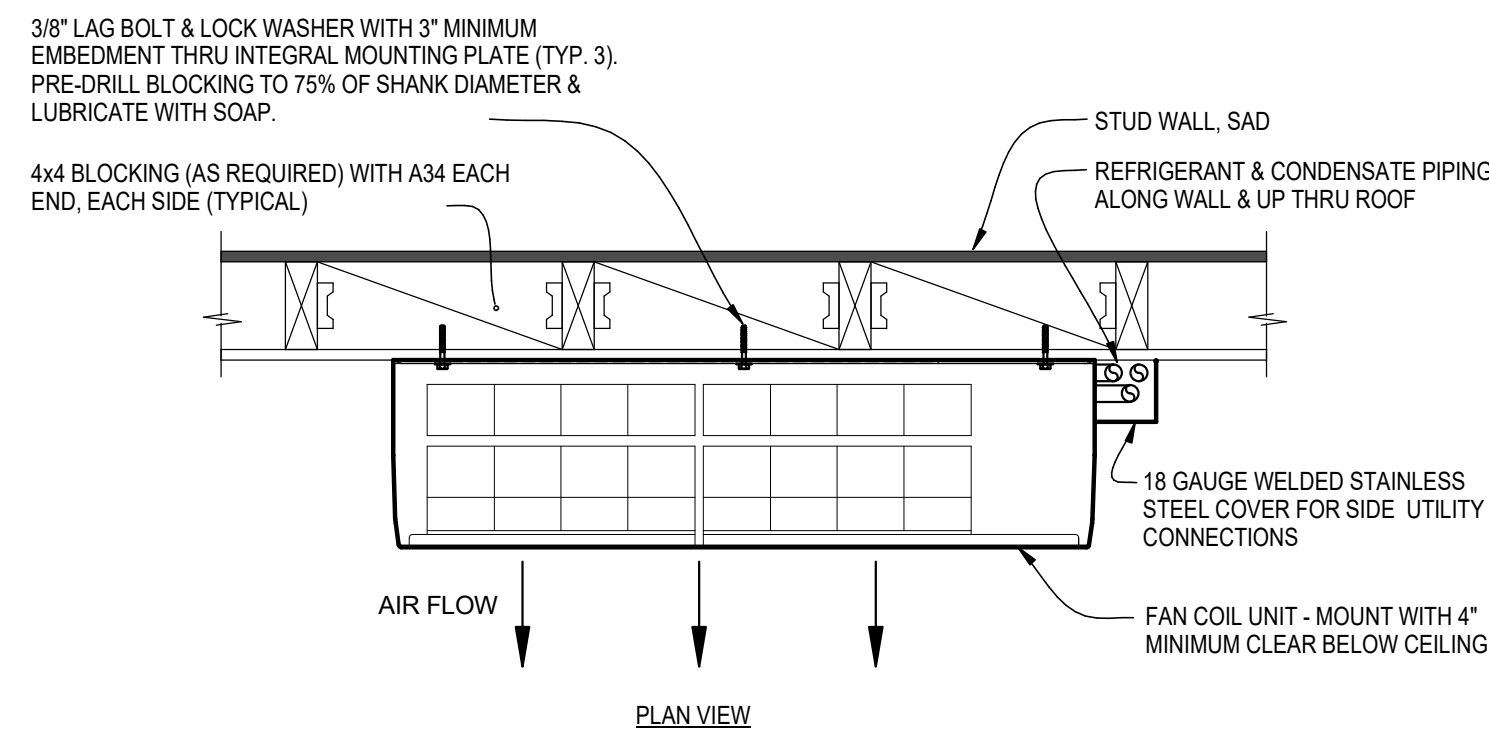
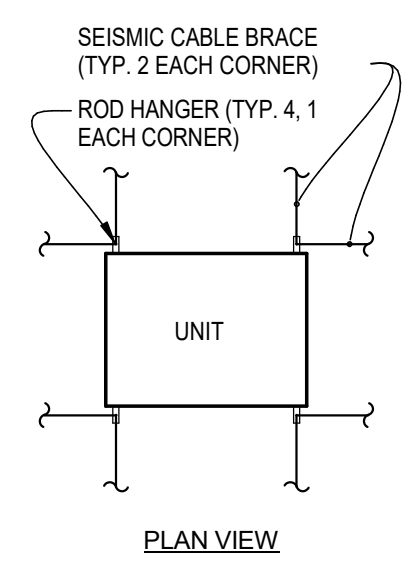
MECHANICAL
PLANS

SHEET NUMBER

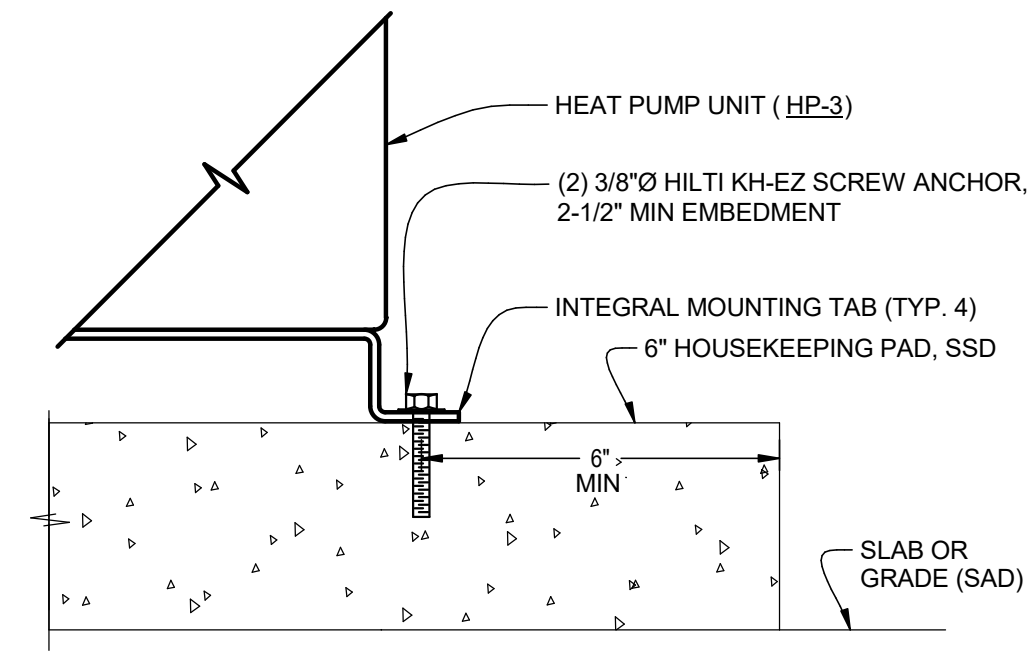
M2.1



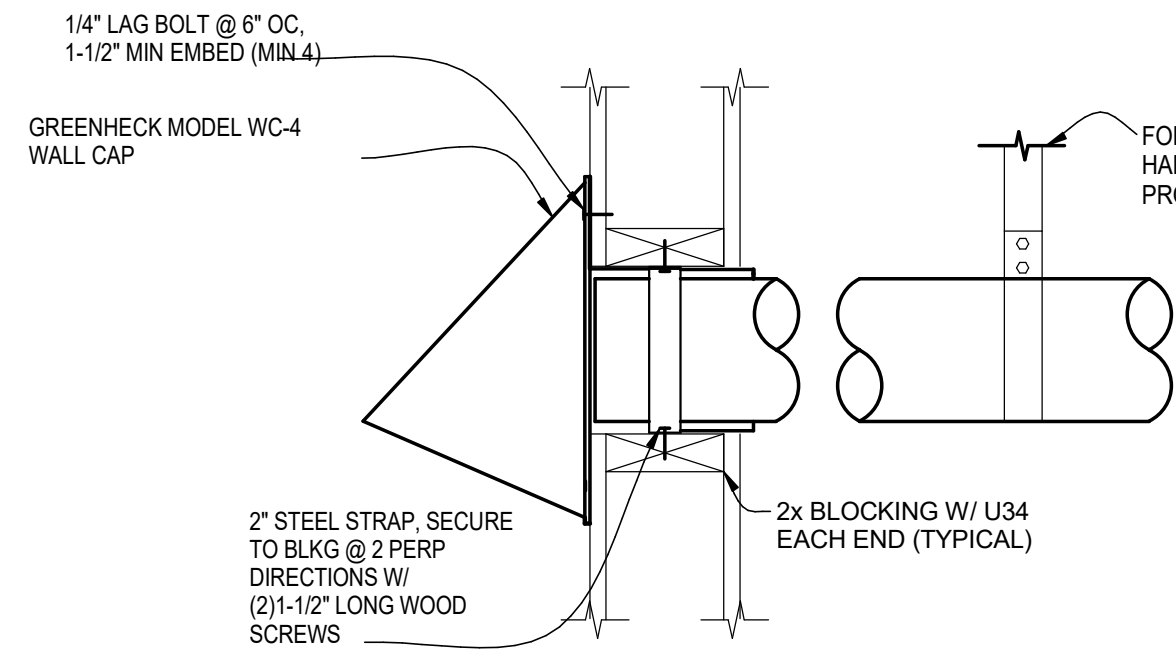
A **INLINE DUCT FAN MOUNTING DETAIL**
SCALE: NONE



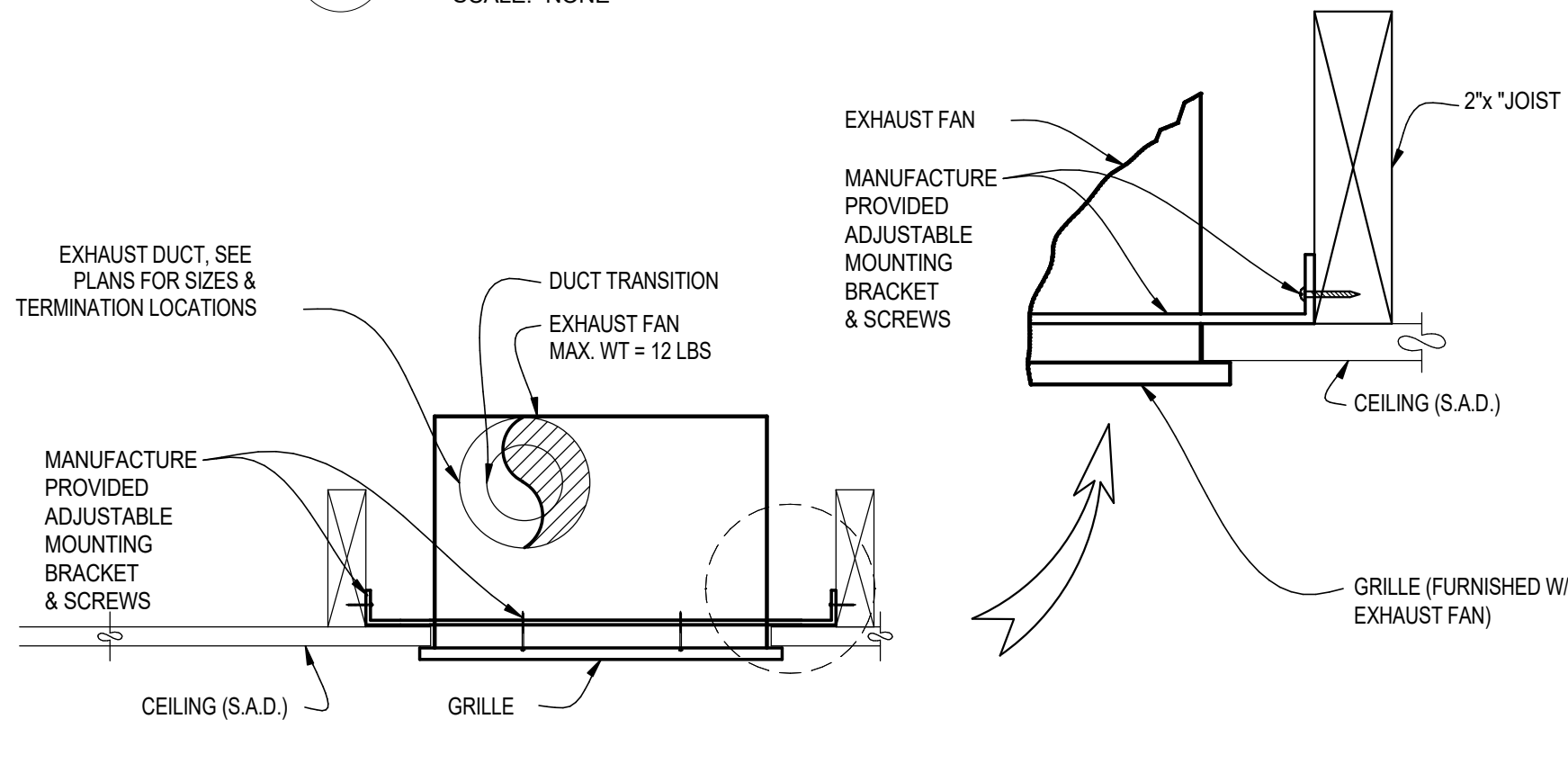
B **WALL-MOUNTED FAN COIL MOUNTING DETAIL**
SCALE: NONE



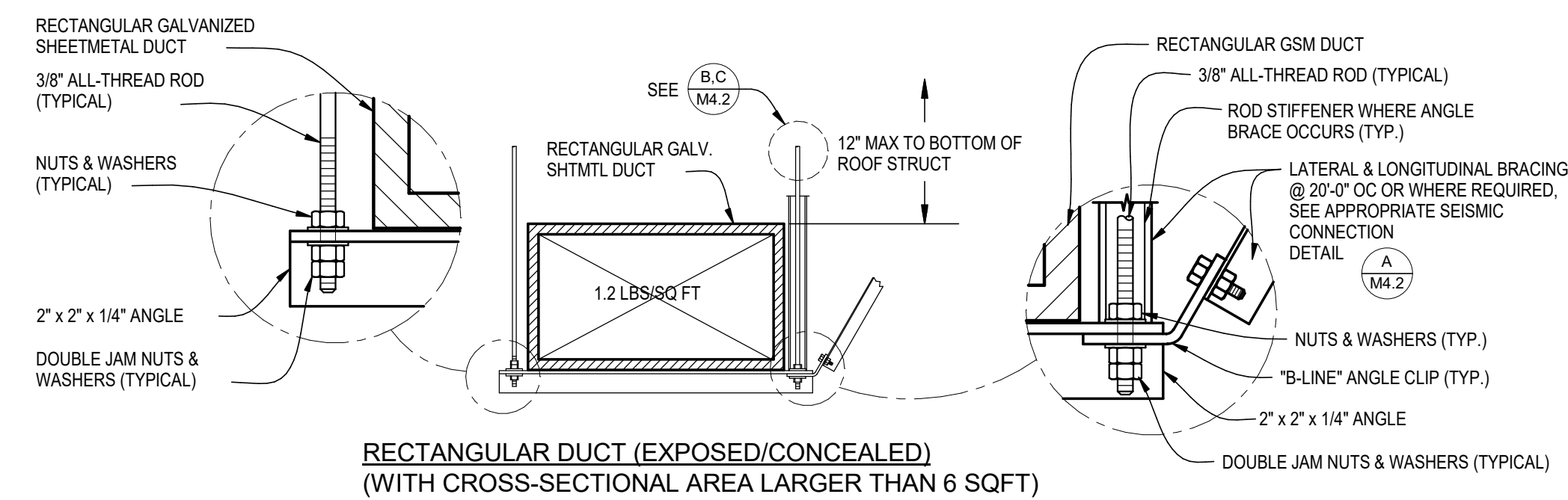
C **HEAT PUMP MOUNTING DETAILS**
SCALE: NONE



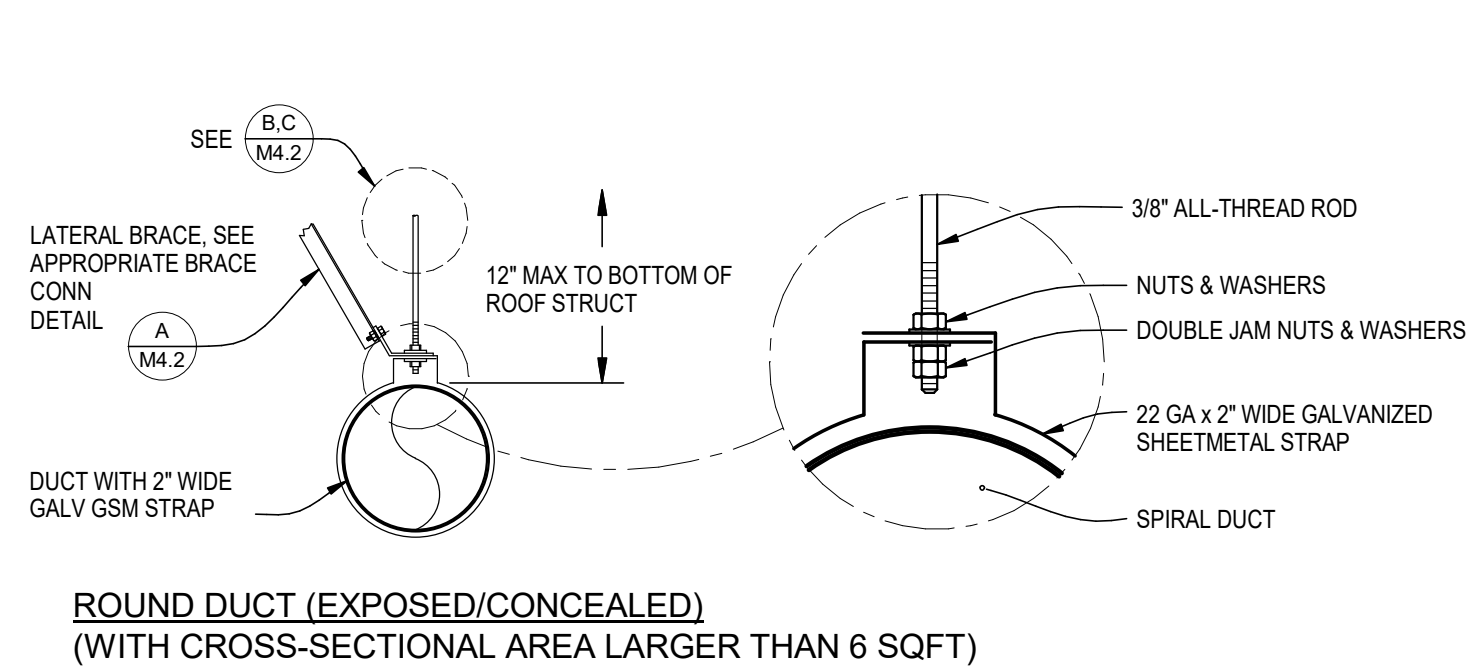
D **CEILING EXHAUST FAN MOUNTING DETAIL**
SCALE: NONE



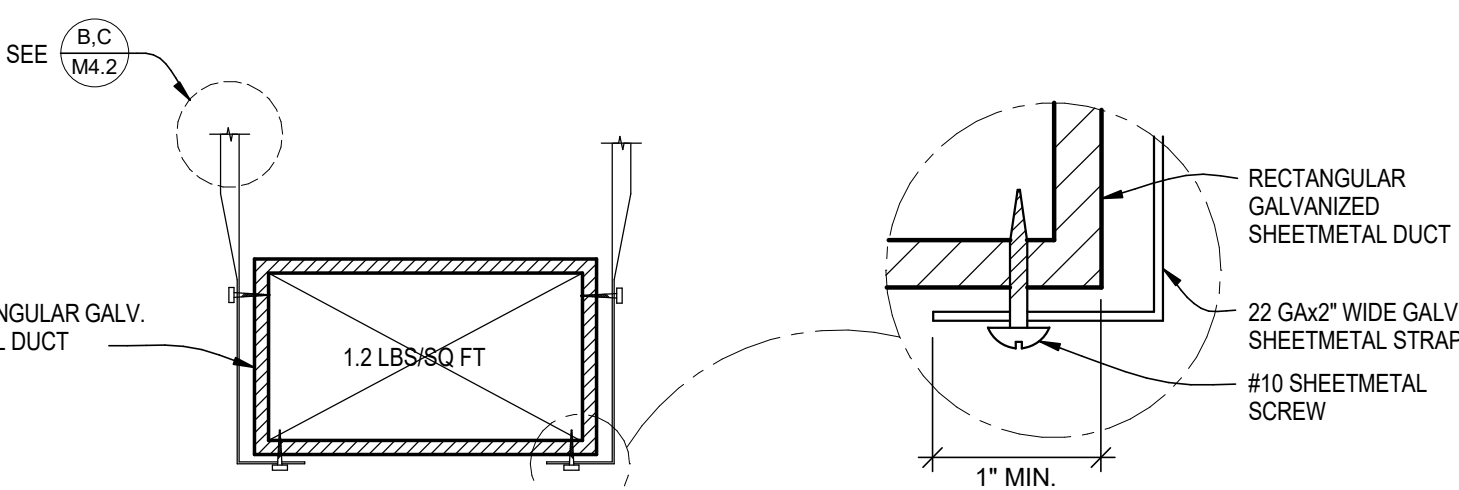
E **BACKDRAFT DAMPER LOUVER**
SCALE: NTS



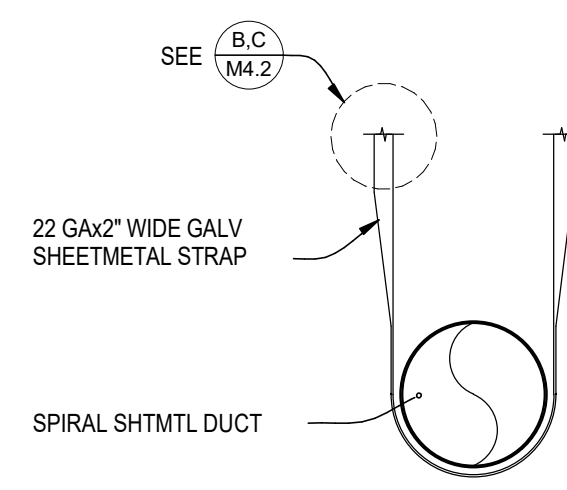
RECTANGULAR DUCT (EXPOSED/CONCEALED)
(WITH CROSS-SECTIONAL AREA LARGER THAN 6 SQFT)



ROUND DUCT (EXPOSED/CONCEALED)
(WITH CROSS-SECTIONAL AREA LARGER THAN 6 SQFT)



RECTANGULAR DUCT (EXPOSED/CONCEALED)
(WITH CROSS-SECTIONAL AREA SMALLER THAN 6 SQFT)



ROUND DUCT (EXPOSED/CONCEALED)
(WITH CROSS-SECTIONAL AREA SMALLER THAN 6 SQFT)

F **TYPICAL DUCT HANGER DETAILS**
SCALE: NONE

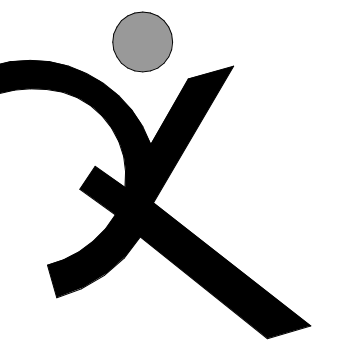
TRAPEZE LOAD & SUPPORT CONDITIONS:
HEAVY: 645 LBS PER TRAPEZE, OR MORE: 1/2" ALL-THREAD TO ROOF STRUCTURE
NOT HEAVY: LESS THAN 645 LBS PER TRAPEZE: 3/8" ALL-THREAD TO ROOF STRUCTURE

TABLE-1	
ANGLE (INCHES)	MAX LENGTH (INCHES)
1-1/2 x 1-1/2 x 1/8	3'-0"
2 x 2 x 3/16	6'-0"
3 x 3 x 1/4	8'-0"

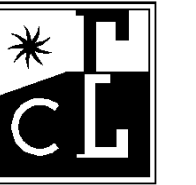
MINIMUM ROD SIZES (INCHES)	PIPE DIAMETER (INCHES)
3/8"	2" & SMALLER PIPE
1/2"	2-1/2" & 3" PIPE
5/8"	4" PIPE

DUCT SUPPORT NOTES:

- A. ALL STRAPS, RODS, TRAPEZE ANGLES AND TRAPEZE CHANNELS SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH THE LATEST SMACNA REQUIREMENTS.
- B. ALL BOLTS, NUTS, SCREWS AND OTHER FASTENING DEVICES SHALL BE LOAD-RATED AND SHALL MEET ALL CODE REQUIREMENTS AND SAFETY FACTORS WHICH APPLY.
- C. WIRE, USED IN LIEU OF STRAPS AND RODS, IS NOT ALLOWED.
- D. WHERE APPLICABLE, INSTALL INSULATION AFTER INSTALLING DUCT HANGERS.
- E. SUPPORTS SHALL BE PLACED AT 8'-0" ON CENTER (MAX) AND AT ALL CHANGES IN DIRECTION.
- F. LATERAL BRACING REQUIRED ON DUCTS WITH CROSS-SECTIONAL AREA LARGER THAN 6 SQ FT.
- G. SEISMIC BRACING IS NOT REQUIRED AT HVAC DUCTS THAT ARE 6 FT SQ OR LESS IN CROSS-SECTIONAL AREA, OR WEIGH 10 LB/FT OR LESS.
- H. SUPPORTS SHALL BE PLACED AT 8'-0" ON CENTER (MAX) AND AT ALL CHANGES IN DIRECTION.
- I. SEISMIC BRACING IS NOT REQUIRED AT HVAC DUCTS SUPPORTED BY HANGERS THAT ARE 12" OR LESS IN LENGTH FROM THE DUCT SUPPORT POINT TO THE SUPPORTING STRUCTURE. HVAC DUCTS SUPPORTED WITH ROD HANGERS WITH DIAMETER GREATER THAN 3/8 INCH SHALL BE EQUIPPED WITH SWIVELS TO PREVENT INELASTIC BENDING IN THE ROD.
- J. HVAC DUCTS ARE FREE TO SWING AT 45° IN ANY HORIZONTAL DIRECTION WITHOUT COLLIDING WITH THE STRUCTURE, ARCHITECTURAL ITEMS OR OTHER MECHANICAL, PLUMBING OR ELECTRICAL ITEMS.



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FREEDOM HIGH SCHOOL

NEW MAINTENANCE FACILITIES

1050 NEROLY ROAD
OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

ARCH PROJECT NO: 1739.02

DRAWN BY: Author

DRAWING SCALE:

PTN: 61721-0069

DSA SUBMITTAL

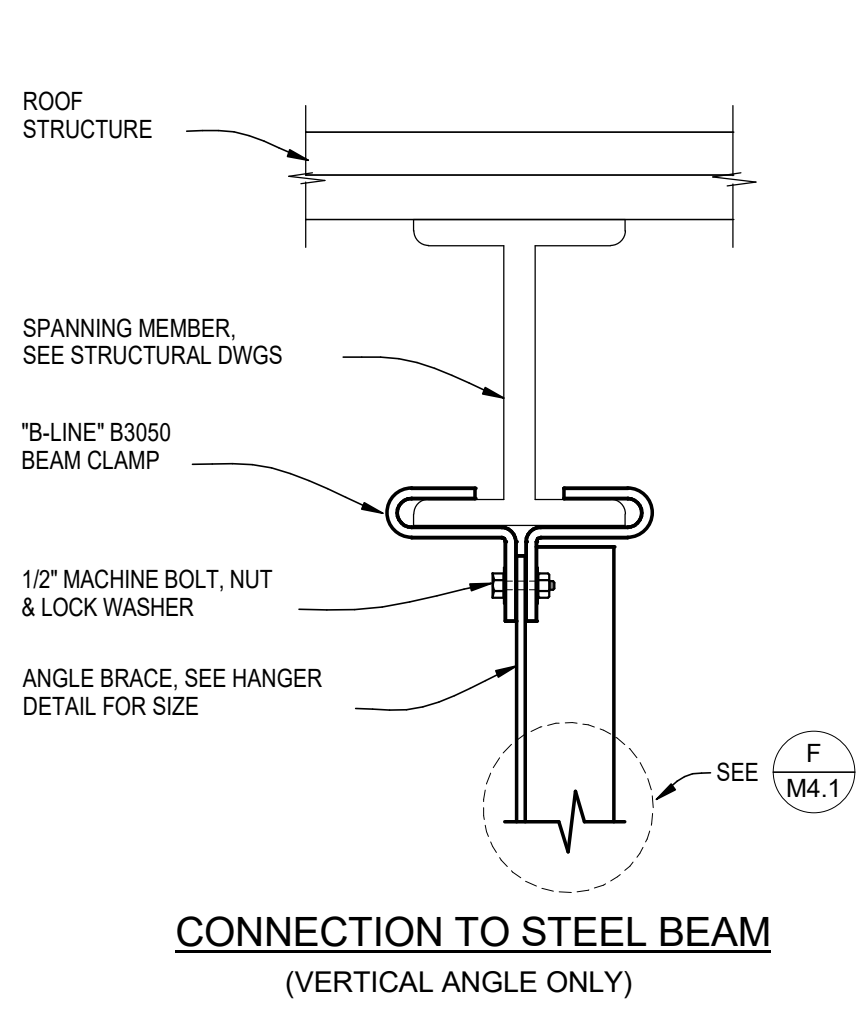
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SHEET TITLE

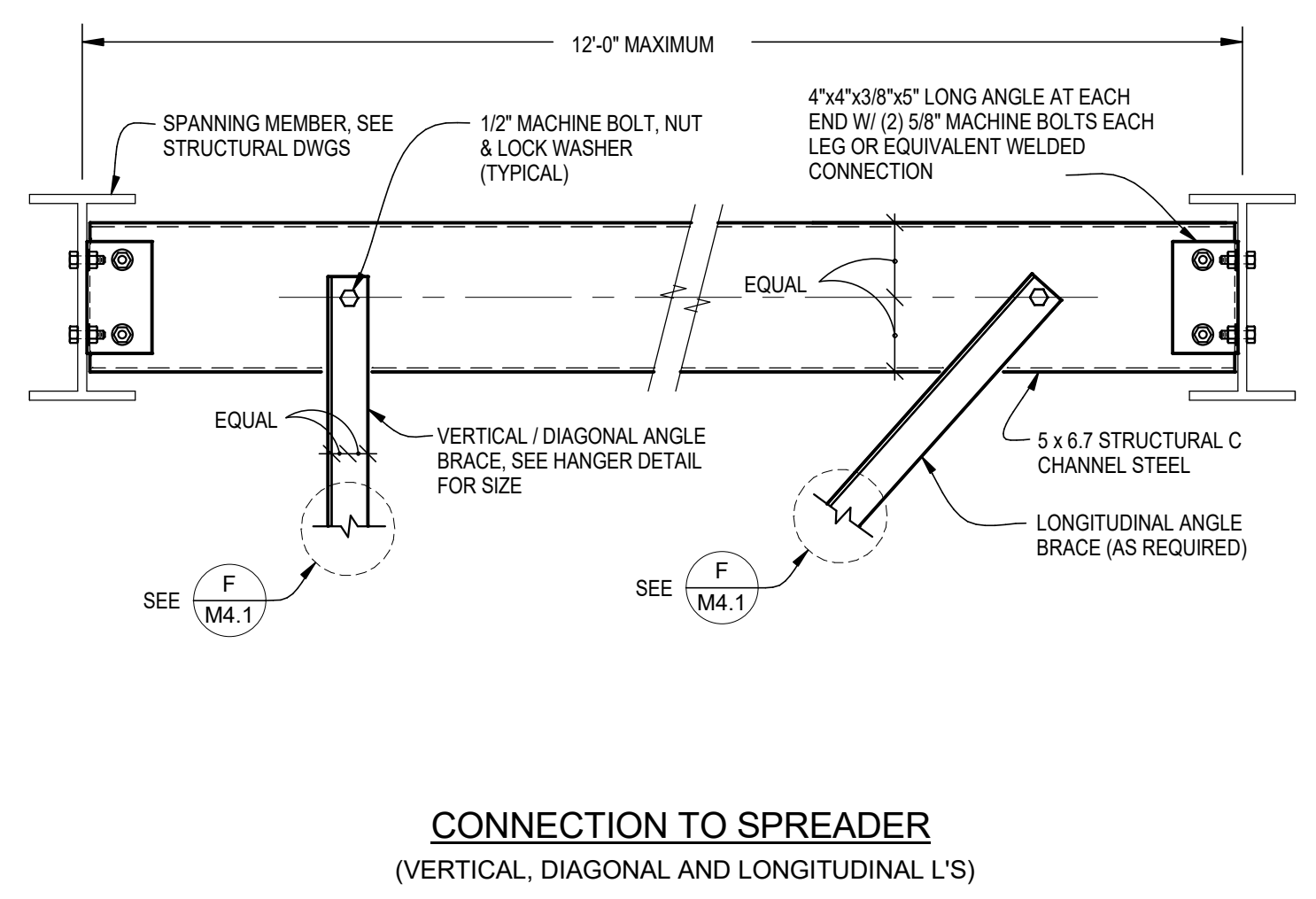
MECHANICAL DETAILS

SHEET NUMBER

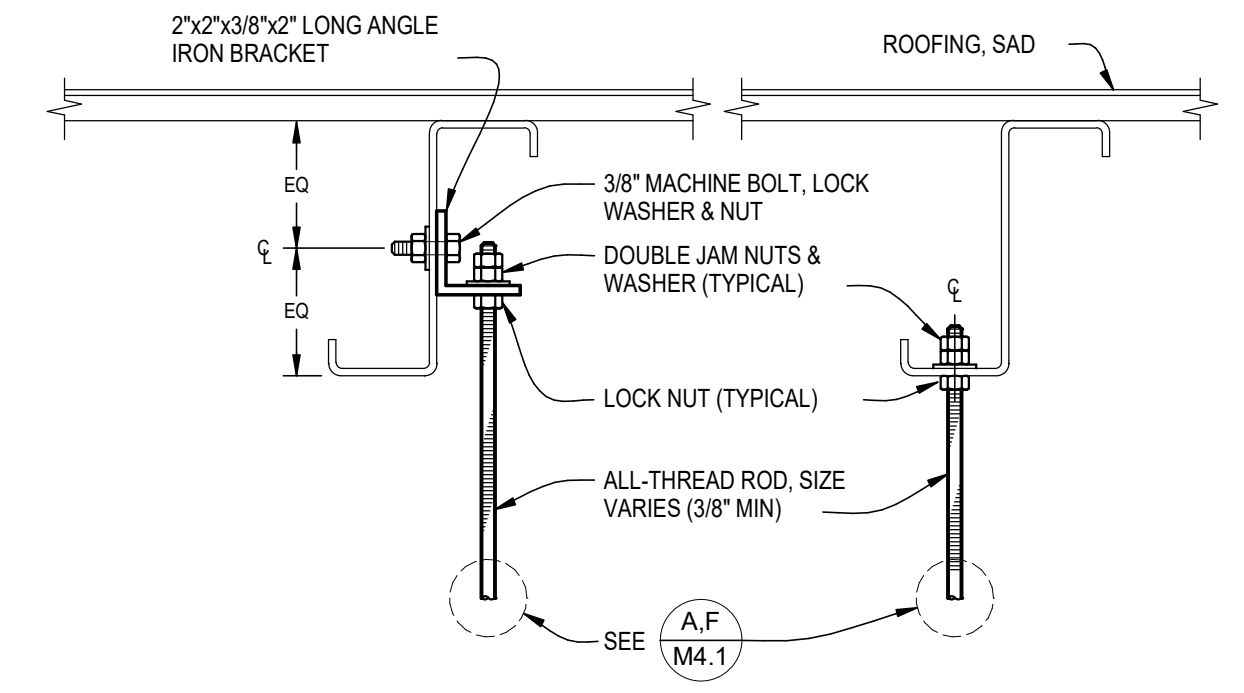
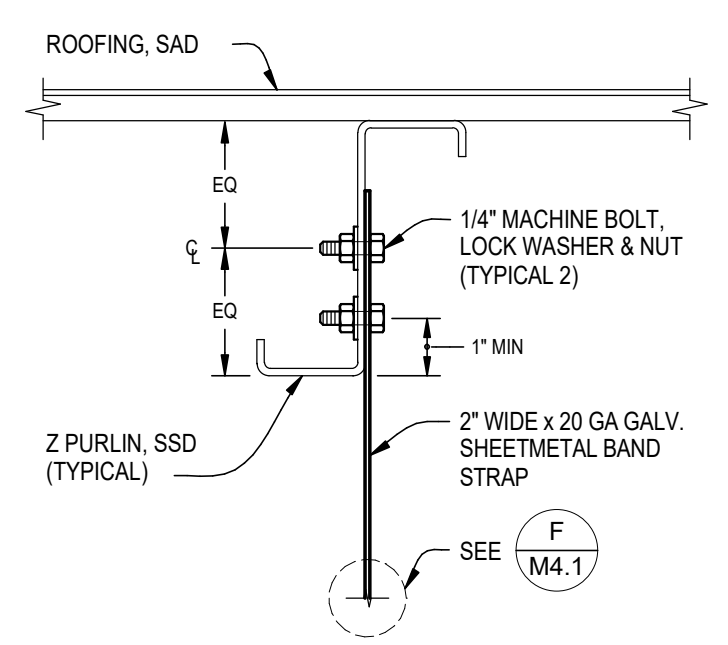
M4.1



CONNECTION TO STEEL BEAM
(VERTICAL ANGLE ONLY)

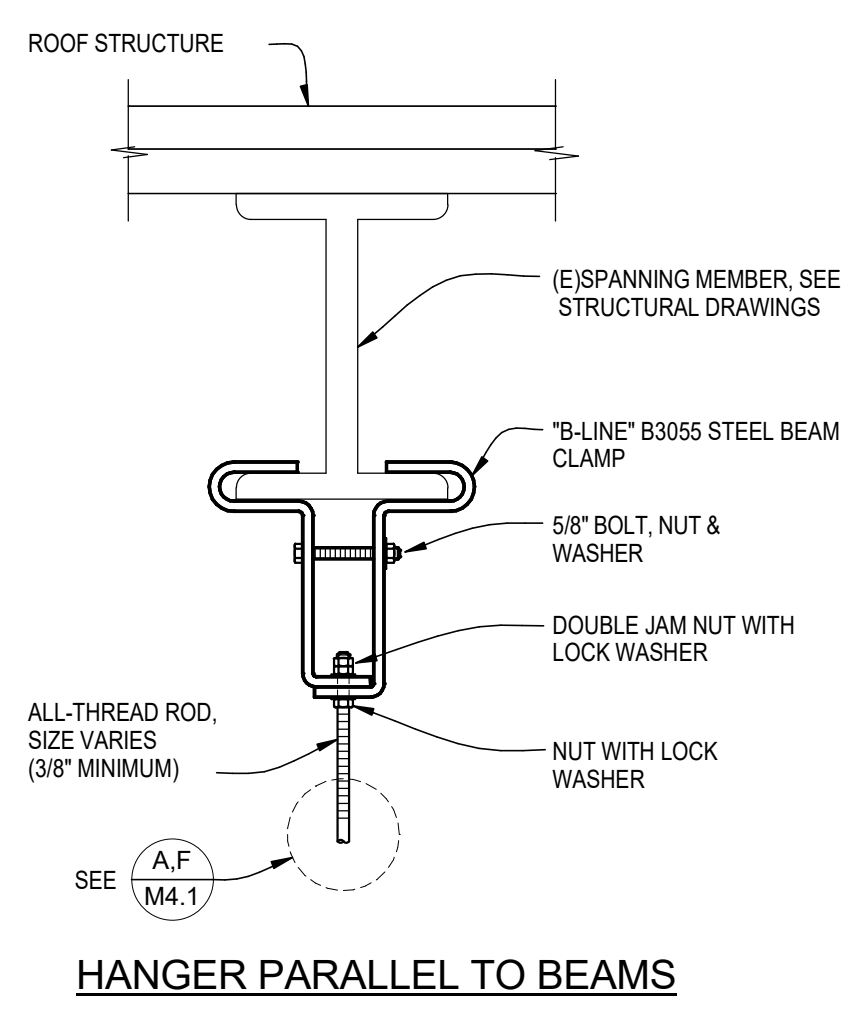


CONNECTION TO SPREADER
(VERTICAL, DIAGONAL AND LONGITUDINAL L'S)

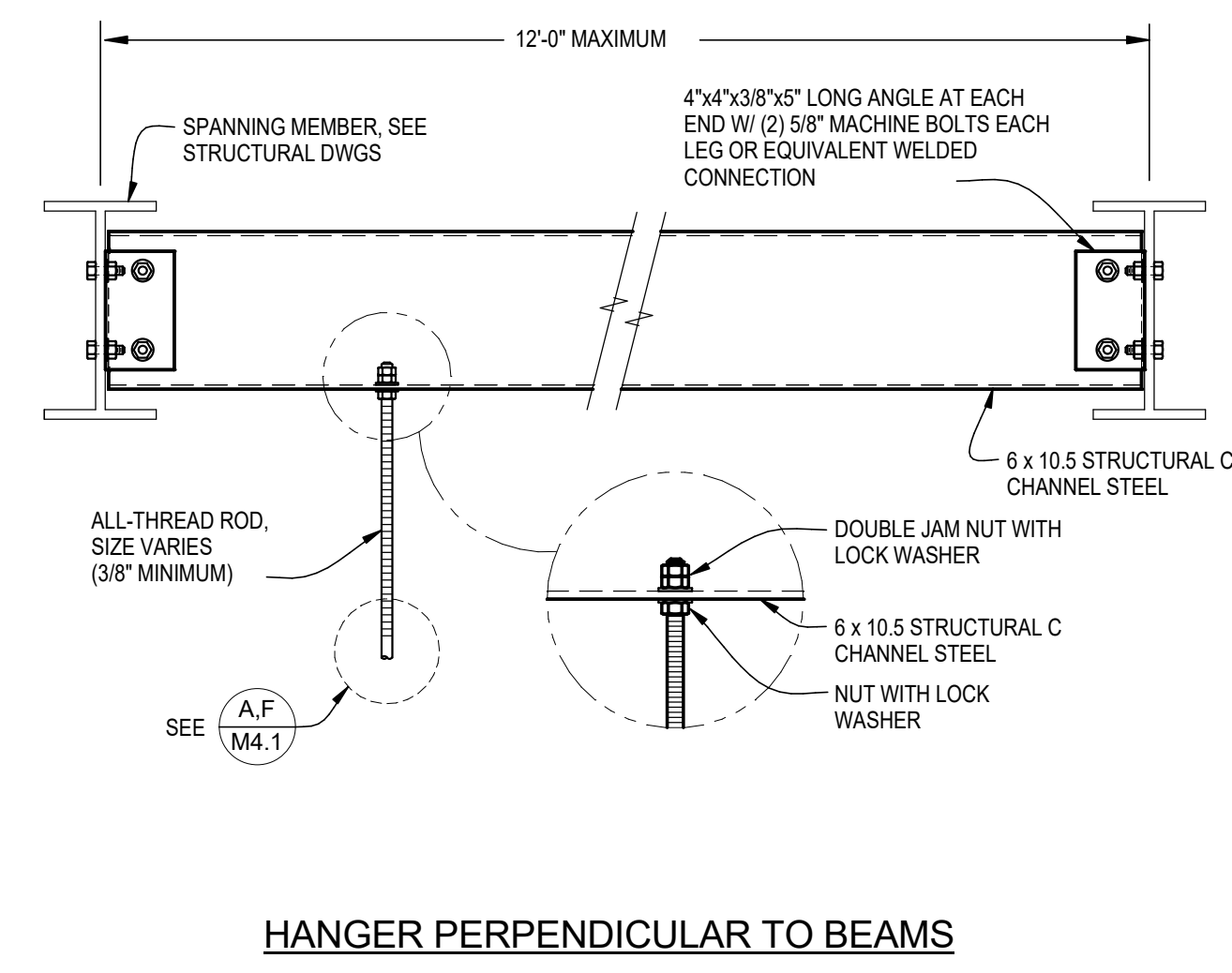


B TYPICAL HANGER CONNECTIONS @ Z PURLIN
SCALE: NONE

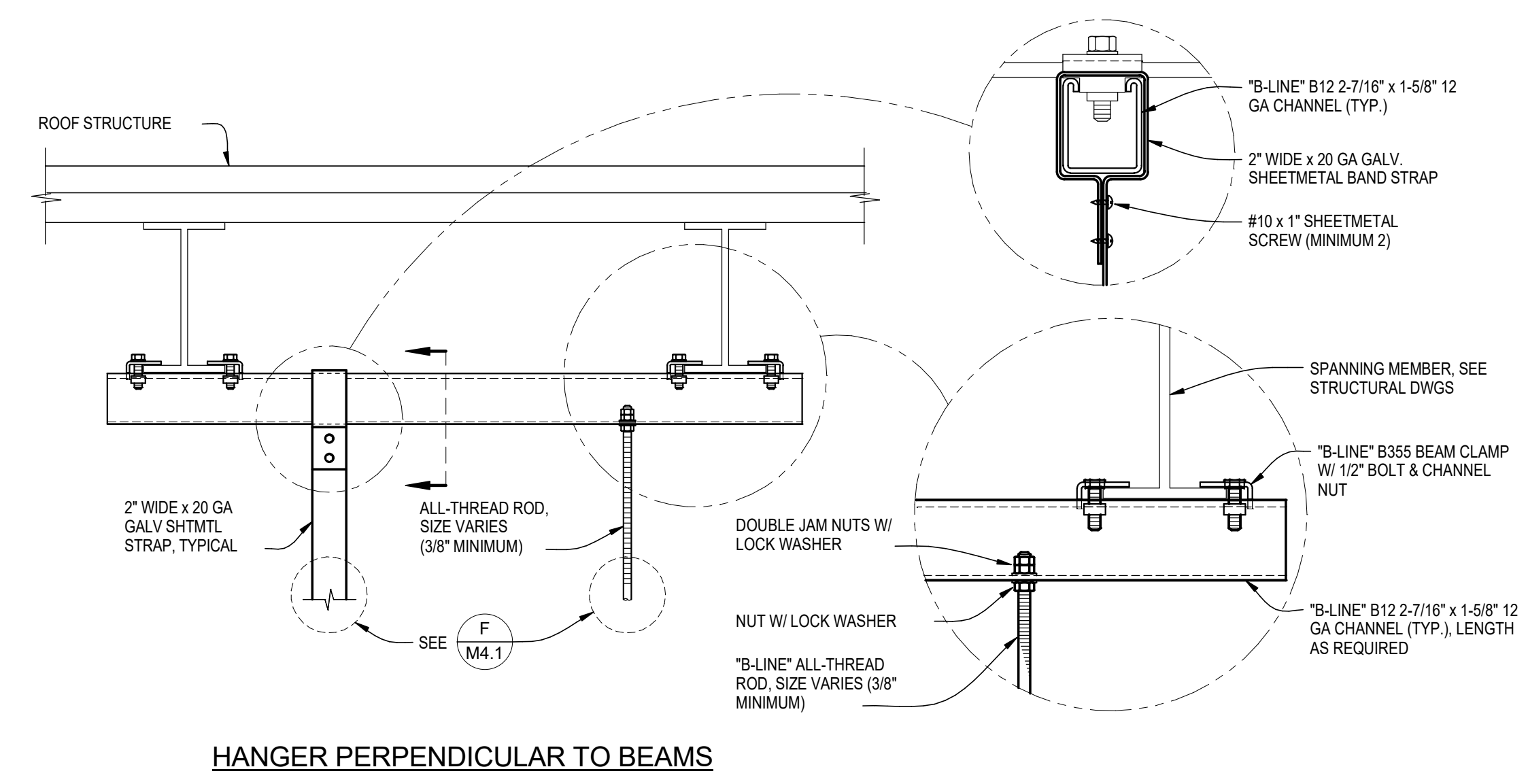
A TYPICAL SEISMIC BRACE CONNECTION DETAILS @ BEAMS
SCALE: NONE



HANGER PARALLEL TO BEAMS

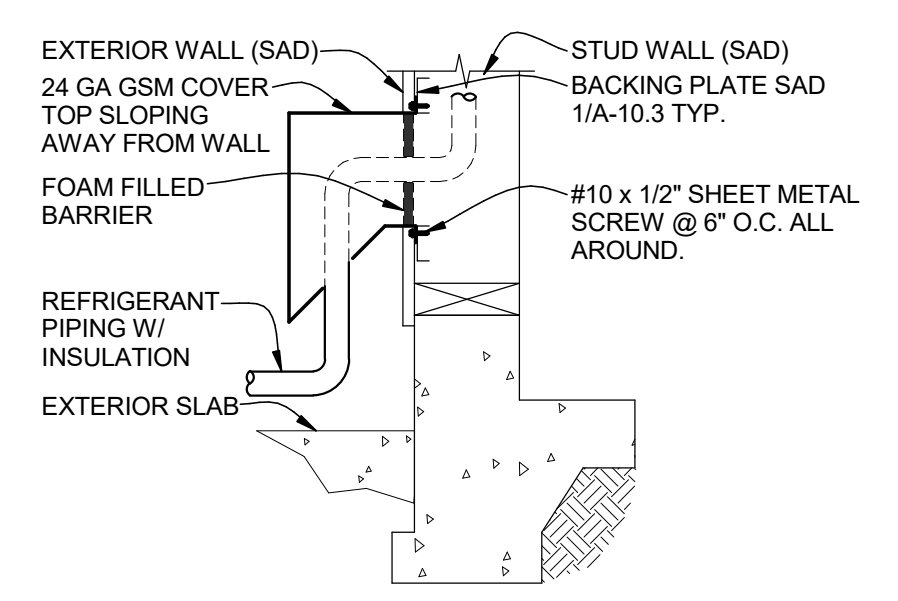


HANGER PERPENDICULAR TO BEAMS

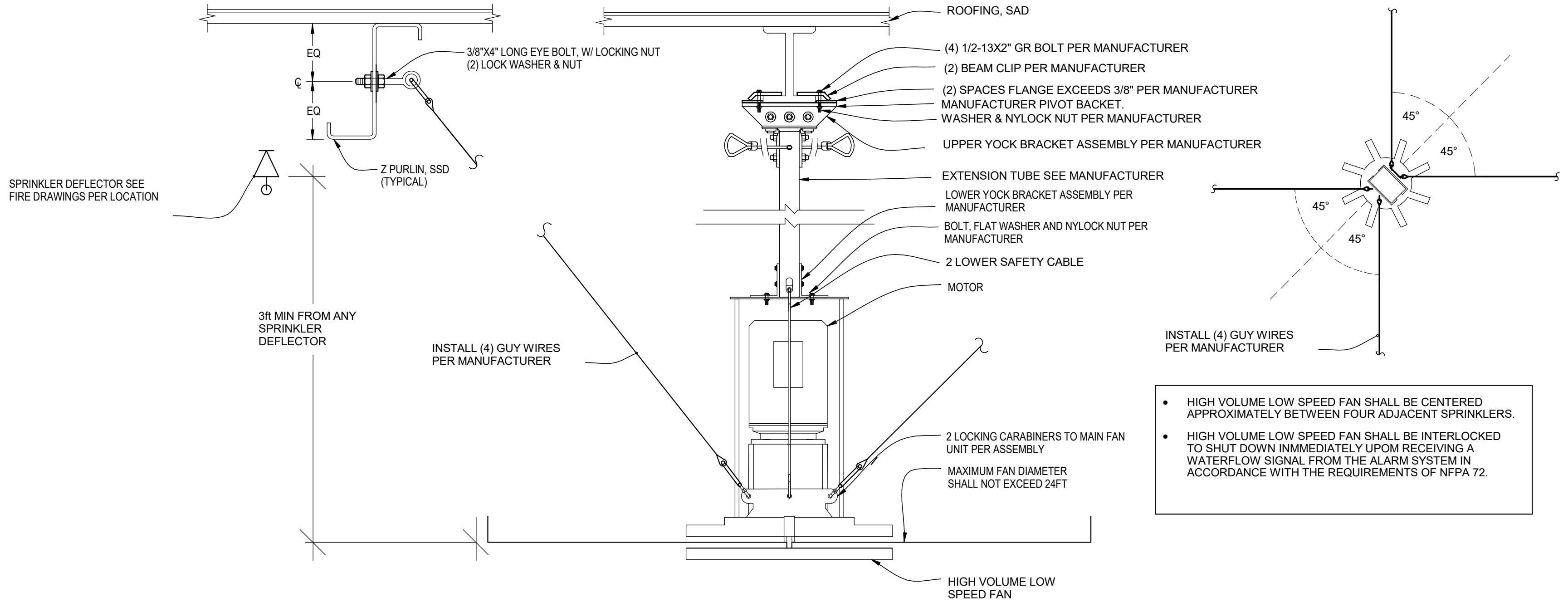


HANGER PERPENDICULAR TO BEAMS

C TYPICAL HANGER CONNECTIONS @ BEAMS
SCALE: NONE



D REFRIGERANT PIPING PENETRATION DETAIL
SCALE: NONE



E HIGH VOLUME LOW SPEED FAN MOUNTING @ I BEAM
SCALE: NONE

- HIGH VOLUME LOW SPEED FAN SHALL BE CENTERED APPROXIMATELY BETWEEN FOUR ADJACENT SPRINKLERS.
- HIGH VOLUME LOW SPEED FAN SHALL BE INTERLOCKED TO SHUT DOWN IMMEDIATELY UPON RECEIVING A WATERFLOW SIGNAL FROM THE ALARM SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 72.

PLUMBING FIXTURE SCHEDULE					
MARK	W	V	CW	HW	REMARKS
P-1	4"	2"	1 1/4"		WALL MOUNTED WATER CLOSET MANUAL LEVER HANDLE, ADA COMPLIANT
P-2	2"	1 1/2"	3/4"	3/4"	WALL MOUNTED, VITREOUS CHINA; METER PUSH BUTTON, 105°F MAX. TEMP., ADA COMPLIANT
PS-A	2"	1 1/2"	3/4"	3/4"	COUNTER MTD. SELF RIMMING; STAINLESS STEEL; GOOSENECK FAUCET, ADA COMPLIANT
P-5B	2"	2"	3/4"		FREE STAND SINK W/ FAUCET
FD	3"	1 1/2"			FLOOR DRAIN; PROVIDE WITH TRAP PRIMER & ACCESS PANEL
HB-2			3/4"		EXTERIOR HOSE BIBB; BRONZE, NARROW WALL WITH VACUUM BREAKER
CW FIXTURES AND VALVES SHALL BE AB1953 COMPLIANT.					

ELECTRIC WATER HEATER SCHEDULE										
MARK	MANUF.	MODEL	TYPE	STORAGE CAPACITY	RECOVER Y @ 60F° RISE	ELECTRICAL			OPER. WEIGHT	LOCATION
						V-Ø-HZ	No. Elements	WATTS		
EWH 1	CHRONOMITE	CM-12L/208	INSTANTANEOUS	0 gal		208-1-60	1	2,500 W	5.00 lb	
EWH 2	CHRONOMITE	CMT-2.5	TANK	2.5 gal		110/120-1-60	1	1,440 W	38.75 lb	
EWH 2	CHRONOMITE	CMT-2.5	TANK	2.5 gal		110/120-1-60	1	1,440 W	38.75 lb	

LIST OF APPLICABLE CODES AND STANDARDS:

TITLE 24, PART 2: 2016 CALIFORNIA BUILDING CODE (VOLUMES 1 & 2)
 TITLE 24, PART 3: 2016 CALIFORNIA ELECTRICAL CODE
 TITLE 24, PART 4: 2016 CALIFORNIA MECHANICAL CODE
 TITLE 24, PART 5: 2016 CALIFORNIA PLUMBING CODE
 TITLE 24, PART 6: 2016 CALIFORNIA ENERGY CODE
 TITLE 24, PART 9: 2016 CALIFORNIA FIRE CODE
 TITLE 24, PART 12: 2016 CALIFORNIA REFERENCED STANDARDS CODE

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.

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

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

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

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

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

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

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEMS ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON PRE APPROVED 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 SYSTEM. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL/PLUMBING/DUCTS

- | | | | | | |
|---|--|---------------------------------------|--|-------------------------------------|--|
| M | <input type="checkbox"/> PP | <input type="checkbox"/> D | <input type="checkbox"/> -OPTION 1: | <input type="checkbox"/> | DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. |
| M | <input checked="" type="checkbox"/> PP | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> -OPTION 2: | <input checked="" type="checkbox"/> | SHALL COMPLY WITH THE OSHPD PRE-APPROVAL (OPM #) # 0043-13 |
| M | <input type="checkbox"/> PP | <input type="checkbox"/> D | <input type="checkbox"/> -OPTION 3: | <input type="checkbox"/> | SHALL COMPLY WITH THE SMACNA SEISMIC RESTRAINT |

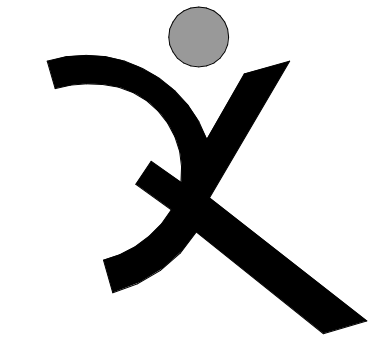
MANUAL, OSHPD EDITION (2009), INCLUDING ANY ADDENDA, FASTENERS AND OTHER ATTACHMENTS NOT SPECIFICALLY IN THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION, ARE DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. THE DETAILS SHALL ACCOUNT APPLICABLE SEISMIC HAZARD LEVEL ____ AND CONNECTIONS LEVEL ____ FOR THE PROJECT AND CONDITIONS.

PLUMBING LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
		EQUIPMENT TYPE
		EQUIPMENT NUMBER
		DETAIL / DRAWING NUMBER
		SHEET NUMBER
		FIXTURE TYPE/NUMBER
	(N)	NEW PLUMBING AND PIPING SHOWN HEAVY
	(E)	EXISTING PLUMBING AND PIPING SHOWN LIGHT
	SS	SANITARY WASTE ABOVE GROUND
	SS	SANITARY WASTE BELOW GROUND
	V	VENT PIPE
	CW	DOMESTIC COLD WATER PIPE
	HW	DOMESTIC HOT WATER PIPE
	HW/R	HOT WATER RETURN PIPE
	110"	TEMPERED HOT WATER PIPE
	CA	COMPRESSED AIR
	CD	CONDENSATE DRAIN
	FW	FILTERED WATER
	G	NATURAL GAS PIPE
	ID	INDIRECT WASTE
	LPG	LIQUID PROPANE GAS
	N2	NITROGEN
	N2O	NITROUS OXIDE
	OA	OIL FREE AREA
	O2	OXYGEN
	PW	PROCESS WASTE PIPE
	RVD	RELIEF VALVE DISCHARGE
	RWL	RAIN WATER LEADER
	SD	STORM DRAIN PIPE
	VAC	VACUUM LINE
	GV	GATE VALVE
		GLOBE VALVE
	BV	BALL VALVE
	BFV	BUTTERFLY VALVE
	CV	CHECK VALVE
		BALANCING VALVE
		GAS COCK OR STOP
	PRV	PRESSURE REDUCING VALVE
	TV	TEMPERING VALVE
		STRAINER
		UNION
		PRESSURE GAUGE AND COCK
	P	PUMP
		THERMOMETER
	CO	CLEANOUT
	WCO	WALL CLEANOUT
	FCO	FLOOR CLEANOUT
	COTG	CLEANOUT TO GRADE
		PRESSURE GAUGE WELL ONLY (PETE'S PLUG)
	HB	HOSE BIBB
		PIPE UP
		PIPE DOWN
		BRANCH TOP CONNECTION
		BRANCH BOTTOM CONNECTION
		BRANCH SIDE CONNECTION
		CAP ON END OF PIPE
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		VALVE IN RISER
		POINT OF CONNECTION
		POINT OF DEMOLITION
		CENTER LINE
	AF	ABOVE FINISHED FLOOR
	AFG	ABOVE FINISHED GRADE
	AP	ACCESS PANEL
	BFF	BELOW FINISHED FLOOR
	CI	CAST IRON
	COTG	CLEANOUT TO GRADE
	DMV	DRAIN, WASTE, AND VENT
	DN	DOWN
	DW	DISHWASHER
	DWG	DRAWING
	(E)	EXISTING
	FCO	FLOOR CLEANOUT
	IE	INVERT ELEVATION
	IW	INDIRECT WASTE
	(N)	NEW
	NIC	NOT IN CONTRACT
	NTS	NOT TO SCALE
	SA	SHOCK ABSORBER
	SAD	SEE ARCHITECTURAL DRAWINGS
	SCD	SEE CIVIL DRAWINGS
	SED	SEE ELECTRICAL DRAWINGS
	SMD	SEE MECHANICAL DRAWINGS
	SSD	SEE STRUCTURAL DRAWINGS
	TYP	TYPICAL
	UMC	UNIFORM MECHANICAL CODE
	UPC	UNIFORM PLUMBING CODE
	UNO	UNLESS NOTED OTHERWISE
	V	VENT
	VTR	VENT THROUGH ROOF
	WCO	WALL CLEANOUT

BLDG 'PLUMBING' SHEET LIST

P1.1	PLUMBING SCHEDULES & LEGENDS
P2.1	PLUMBING FLOOR PLANS
P2.2	PLUMBING ENLARGEMENT
P4.1	PLUMBING DETAILS



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FREEDOM HIGH SCHOOL

NEW MAINTENANCE FACILITIES

1050 NEROLY ROAD
 OAKLEY, CA 94561

LIBERTY UNION
 HIGH SCHOOL
 DISTRICT

ARCH PROJECT NO: 1739.02
 DRAWN BY: Author
 DRAWING SCALE: 1/2" = 1'-0"
 PTN: 61721-0069

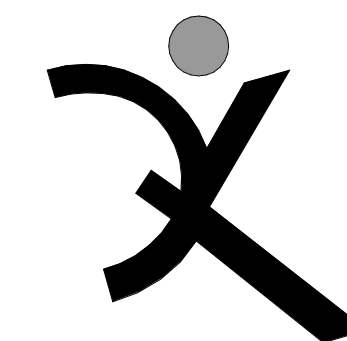
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 NOVEMBER 2, 2018

SHEET TITLE

PLUMBING SCHEDULES & LEGENDS

SHEET NUMBER

P1.1



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FREEDOM HIGH SCHOOL

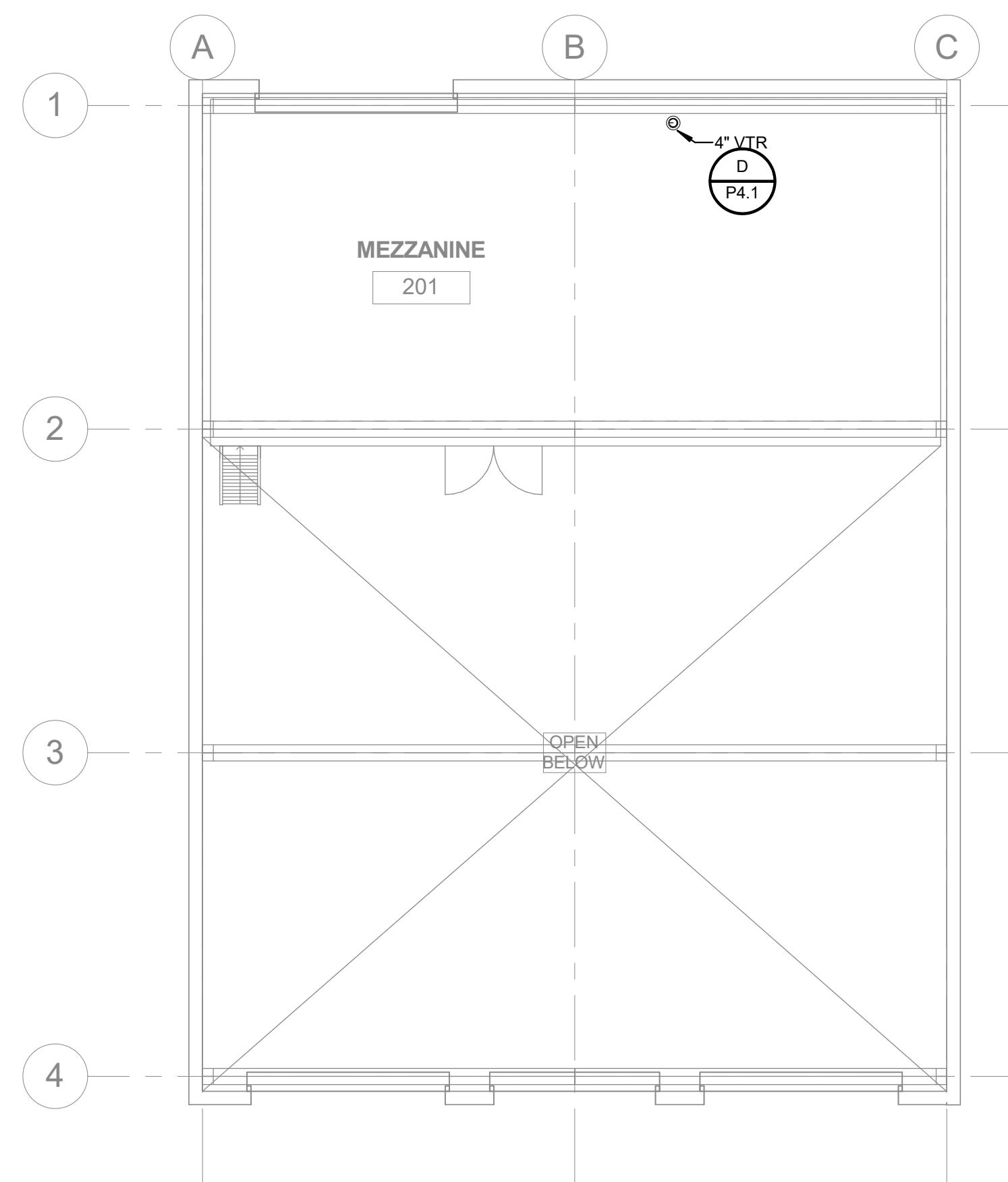
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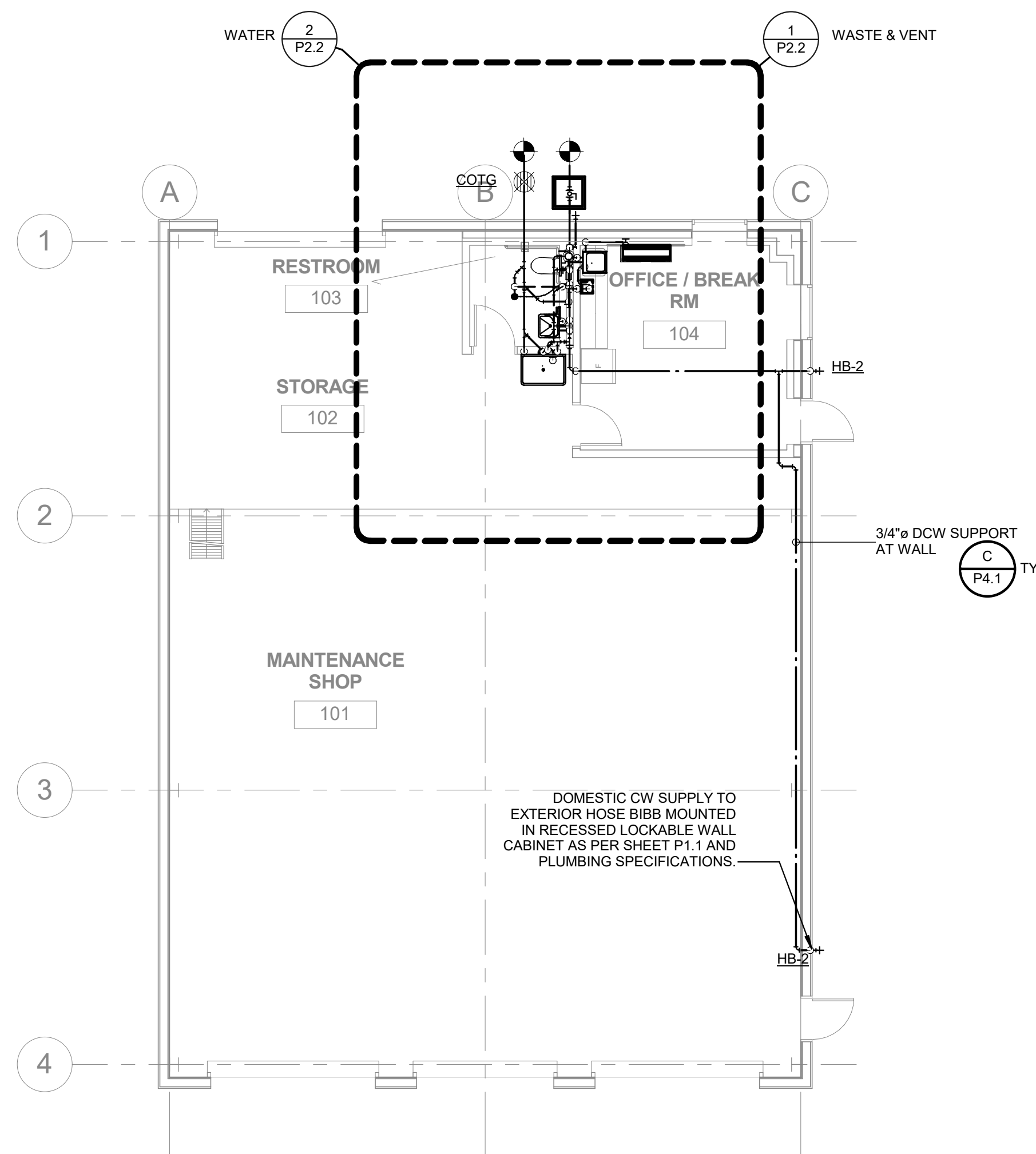
LIBERTY UNION
 HIGH SCHOOL
 DISTRICT

GENERAL NOTES

- FOR PLUMBING GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET P1.1
- PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE PLUMBING WORK WITH OTHER TRADES.
- SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF PLUMBING FIXTURES.
- PROVIDE WALL CLEANOUTS FOR SINKS AND URINALS AS REQUIRED.
- FOR ACCESSIBLE WATER CLOSETS, LOCATE VALVE HANDLE ON THE ACCESSIBLE SIDE PER ACCESSIBLE REQUIREMENTS.
- ALL UNDERGROUND AND BELOW SLAB PIPINGS SHALL BE INSTALLED NO LESS THAN MINIMUM BURY PER CODE. ALL PIPING THROUGH SLAB, BURIED OR UNDERNEATH FOUNDATION SSD



2 PLUMBING MEZZANINE LEVEL
 1/8" = 1'-0"



1 PLUMBING FIRST FLOOR LEVEL
 1/8" = 1'-0"

WALL LEGENDS

ARCH PROJECT NO: 1739.02
 DRAWN BY: Author
 DRAWING SCALE: 1/8" = 1'-0"
 PTN: 61721-0069

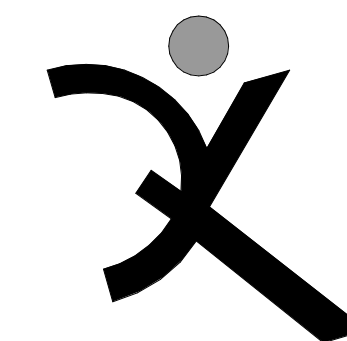
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SHEET TITLE

PLUMBING FLOOR PLANS

SHEET NUMBER

P2.1



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FREEDOM HIGH SCHOOL

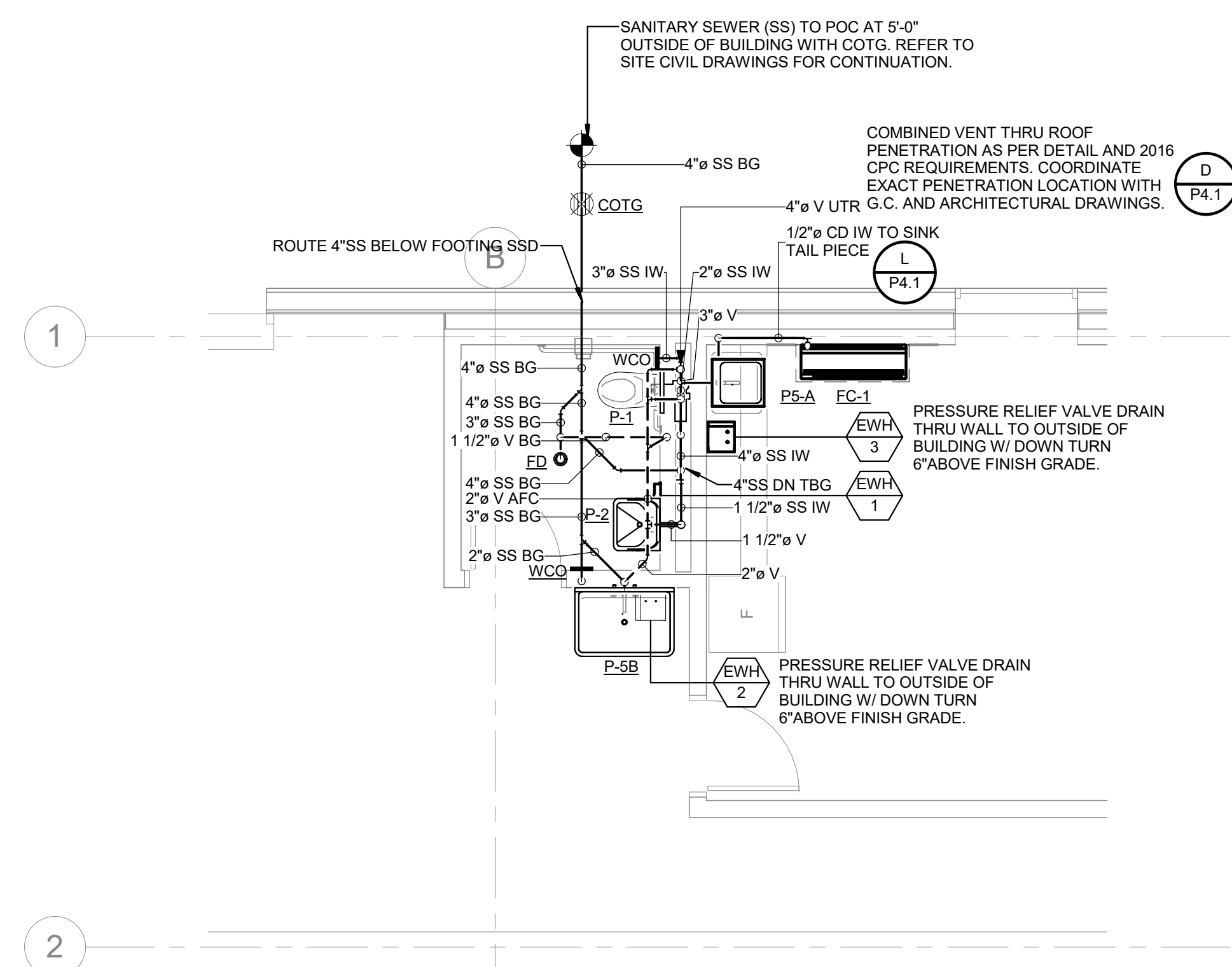
NEW MAINTENANCE FACILITIES

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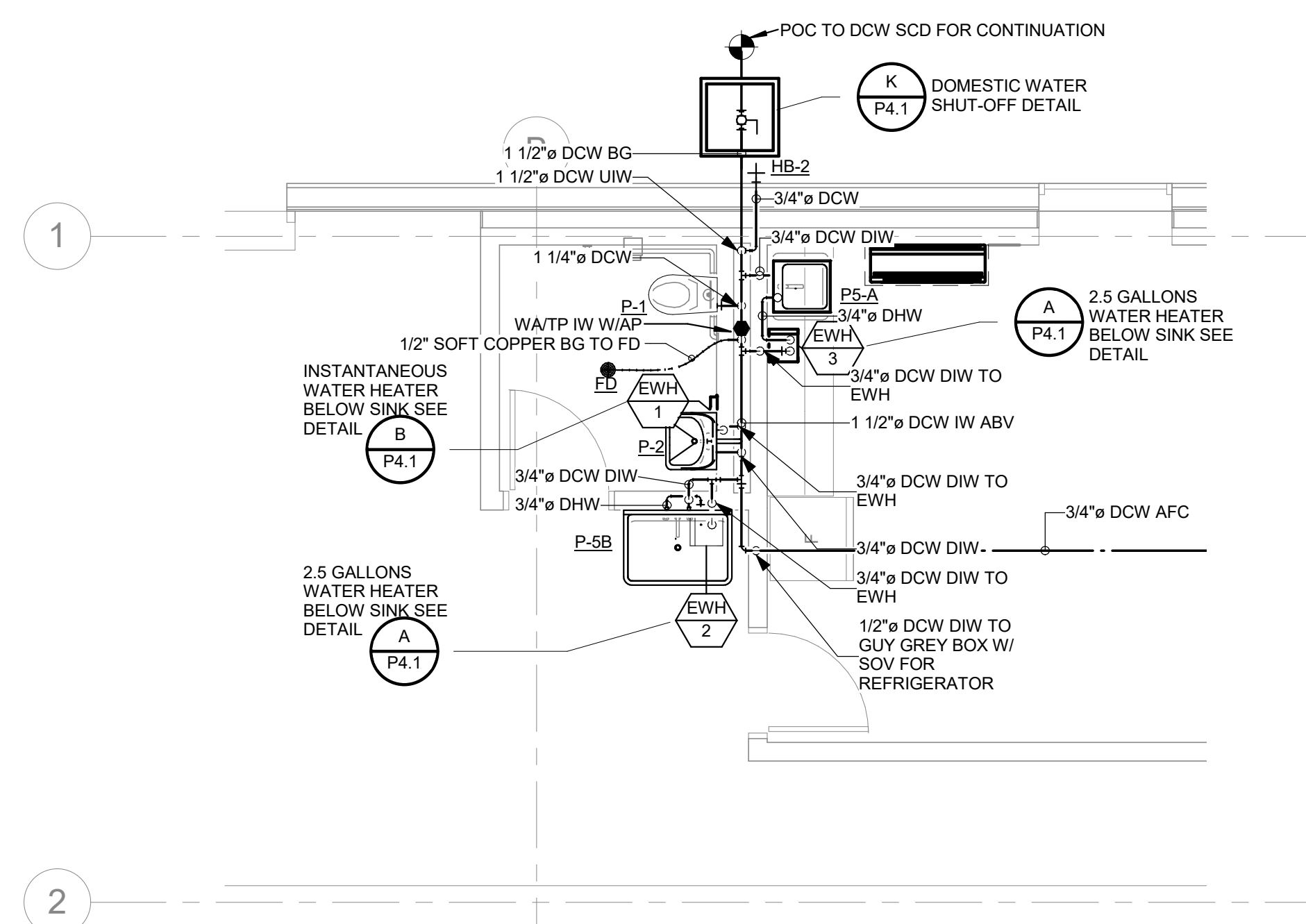
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1 PLUMBING FIRST FLOOR WASTE AND VENT
 1/4" = 1'-0"



2 PLUMBING FIRST FLOOR WATER
 1/4" = 1'-0"

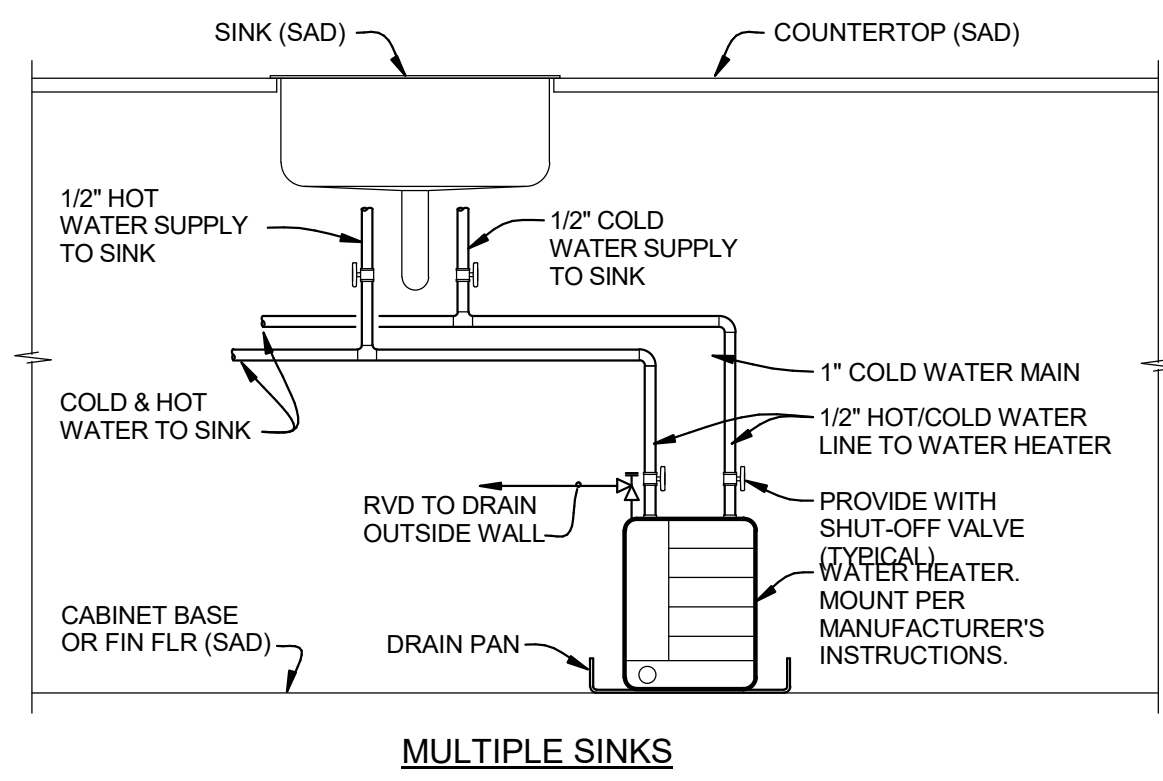
WALL LEGENDS

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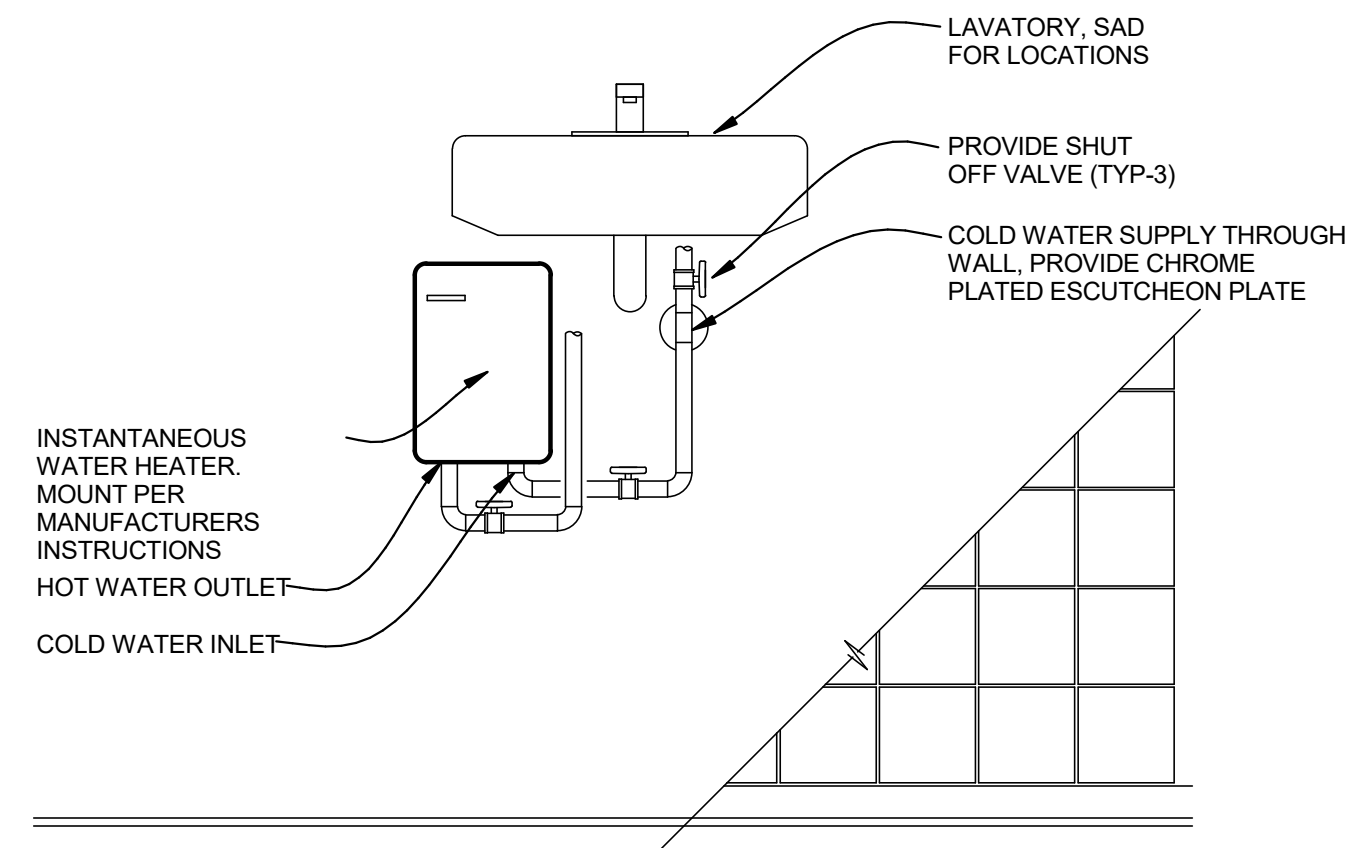
PLUMBING ENLARGEMENT

SHEET NUMBER

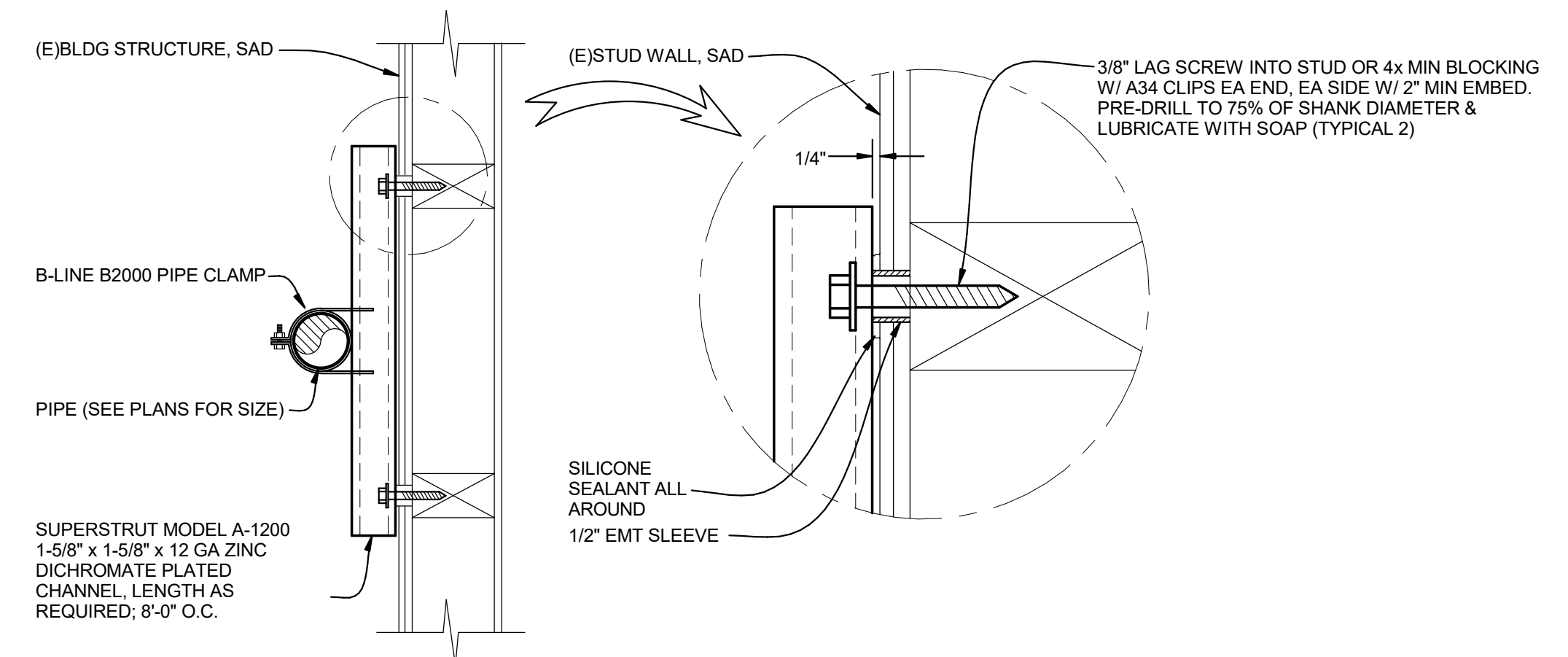
P2.2



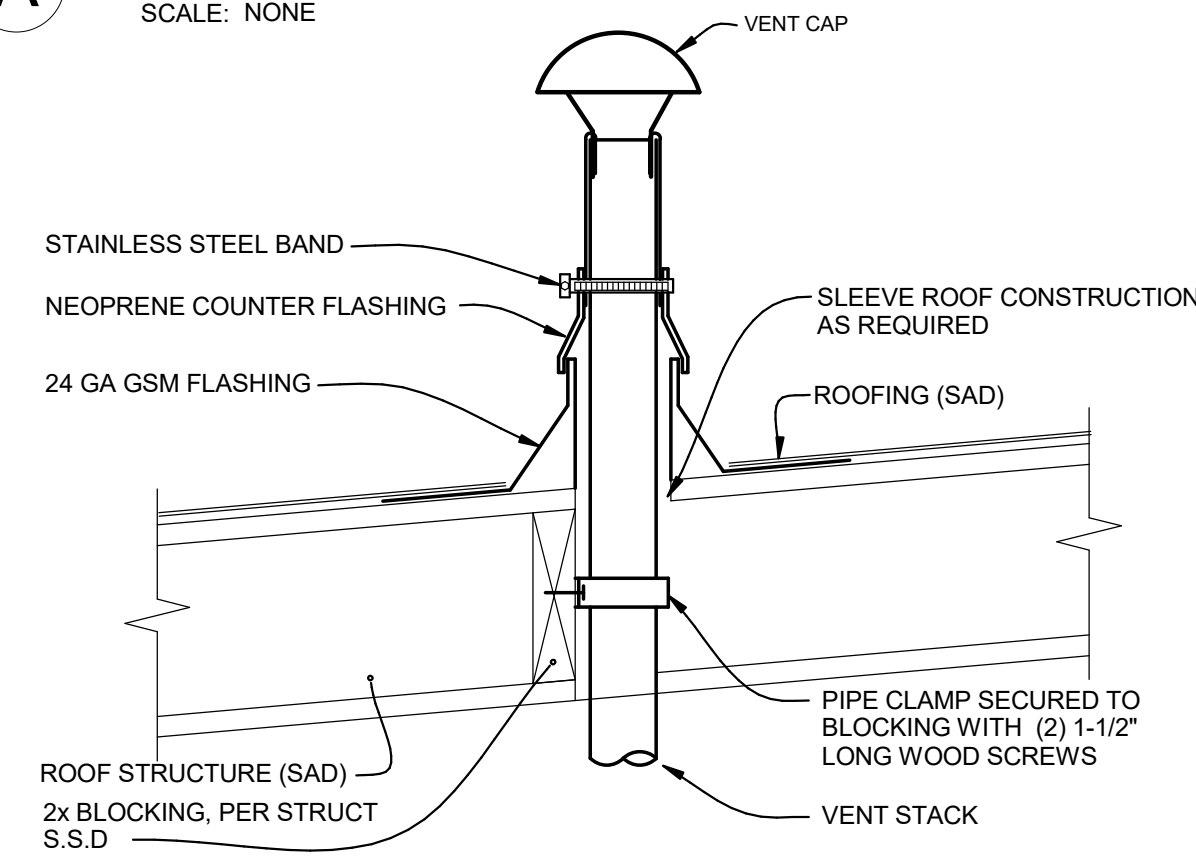
A TANKLESS WATER HEATER DETAIL
SCALE: NONE



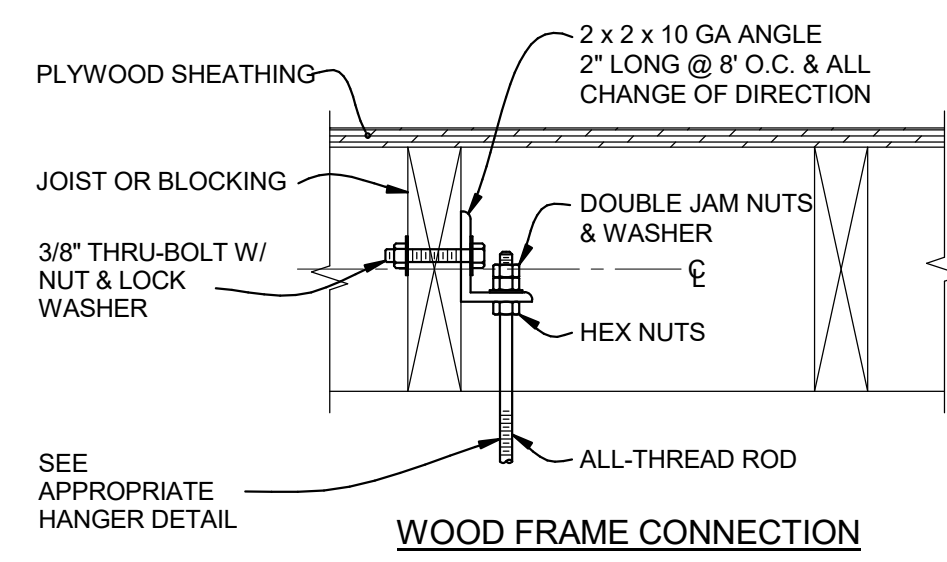
B POINT OF USE WATER HEATER DETAIL
SCALE: NONE



C CHANNEL SUPPORT DETAIL
SCALE: NONE



D VENT THRU ROOF DETAIL
SCALE: NONE

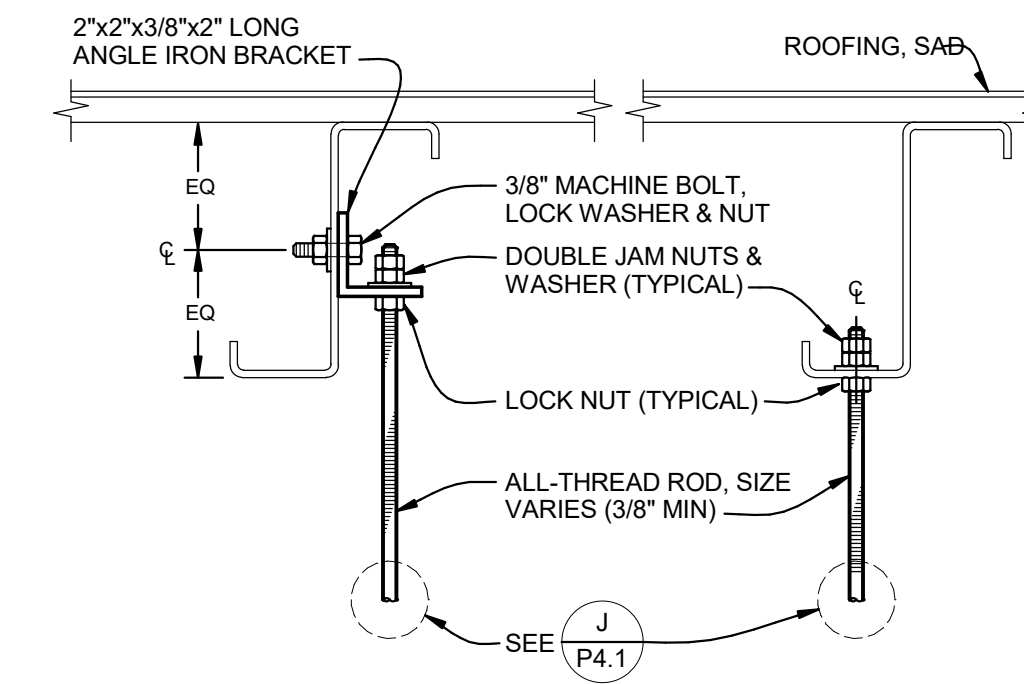


E HANGER WOOD CONNECTION DETAIL
SCALE: NONE

TRAPEZE LOAD & SUPPORT CONDITIONS:
HEAVY: 645 LBS PER TRAPEZE, OR MORE: 1/2\"/>

TABLE-1	
ANGLE (INCHES)	MAX LENGTH (INCHES)
1-1/2 x 1-1/2 x 1/8	3'-0"
2 x 2 x 3/16	6'-0"
3 x 3 x 1/4	8'-0"

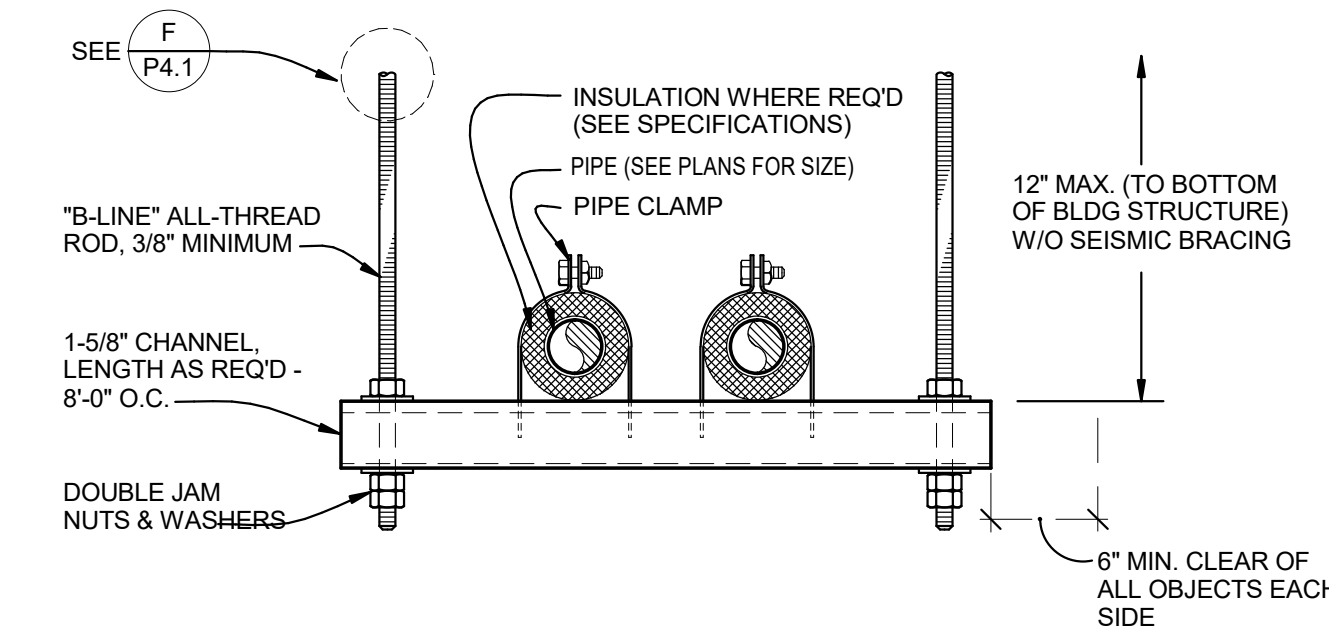
MINIMUM ROD SIZES (INCHES)	PIPE DIAMETER (INCHES)
3/8"	2" & SMALLER PIPE
1/2"	2-1/2" & 3" PIPE
5/8"	4" PIPE



F TYPICAL HANGER CONNECTIONS @ Z PURLIN
SCALE: NONE

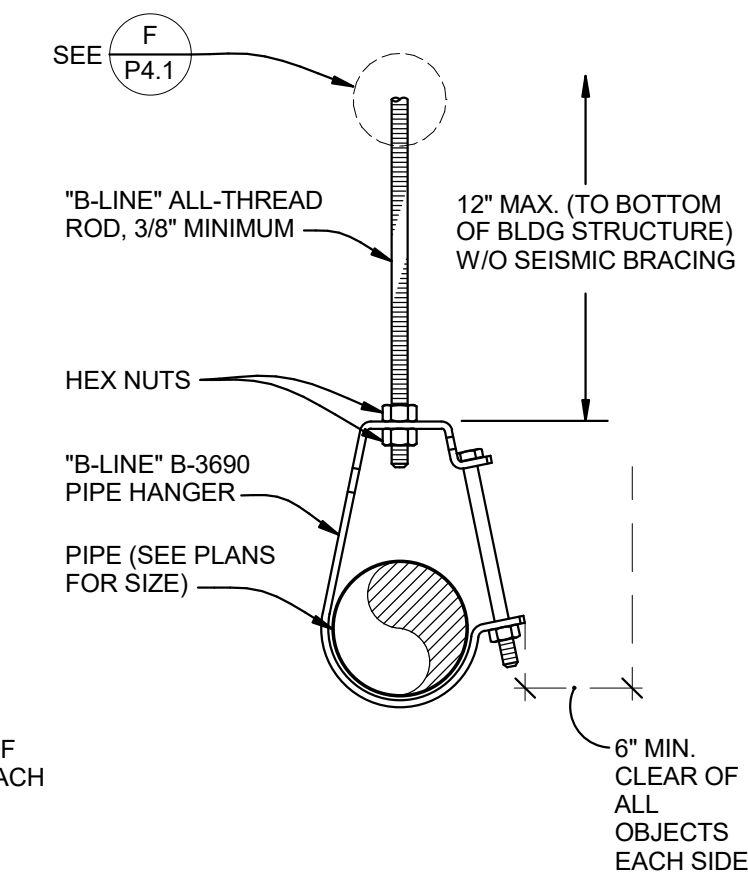
- NOTES:
1. RUN PIPING TRAPEZE AS CLOSE AS POSSIBLE TO STRUCTURE.
 2. SUPPORT PIPING AT A MAXIMUM OF 8'-0" INTERVALS.
 3. SEE PLANS FOR PIPE SIZES.
 4. CHANNEL DEFLECTION SHALL NOT EXCEED 1/360 OF THE SPAN BETWEEN RODS. DOUBLE-UP CHANNELS AS REQUIRED.
 5. NO BRACING IS REQUIRED ON PIPES LESS THAN 2-1/2" IN DIAMETER, AND WHEN SUPPORTED LESS THAN 12" FROM BOTTOM OF BLDG STRUCTURE.

TRAPEZE LOAD & SUPPORT CONDITIONS:
HEAVY: 645 LBS PER TRAPEZE, OR MORE: 1/2\"/>

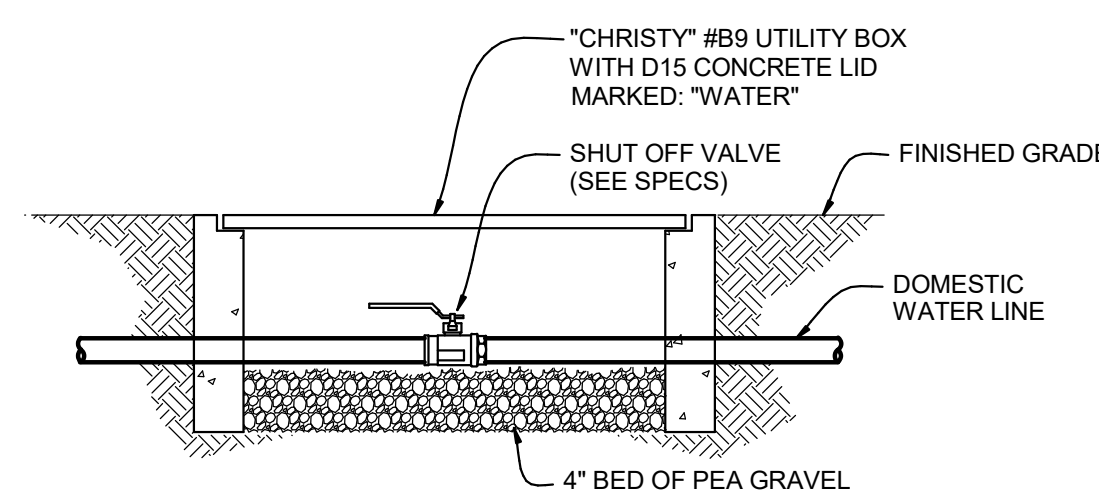


J TYPICAL PIPE HANGER DETAILS
SCALE: NONE

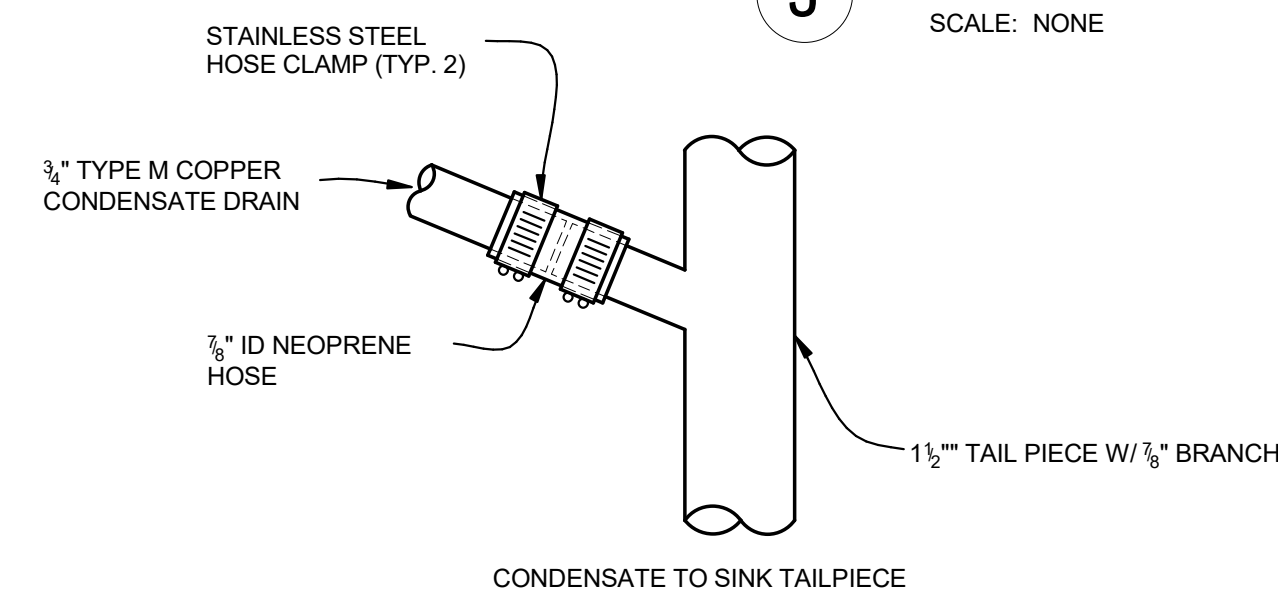
MINIMUM ROD SIZES (INCHES)	PIPE DIAMETER (INCHES)
3/8"	2" & SMALLER PIPE
1/2"	2-1/2" & LARGER PIPE



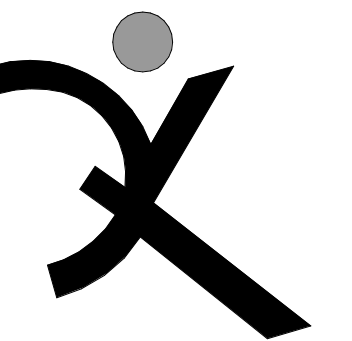
H NOT USED
SCALE: NONE



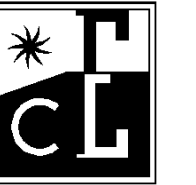
K DOMESTIC WATER SHUT-OFF DETAIL
SCALE: NONE



L CONDENSATE TERMINATION DETAIL
SCALE: NONE



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FREEDOM HIGH SCHOOL

NEW MAINTENANCE FACILITIES

1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

ARCH PROJECT NO: 1739.02
DRAWN BY: Author
DRAWING SCALE:

PTN: 61721-0069
DSA SUBMITTAL
NOVEMBER 2, 2018

SHEET TITLE

PLUMBING DETAILS

SHEET NUMBER

P4.1

ABBREVIATIONS table with columns for symbol and description. Includes entries for A.F.F., A.F.G., C, CATV, C.O., CU, E.C., E, EM, EMS, EQPT, (ER), (EX), EXT, FMC, GFI, IDF, L, LV, MCB, MDF, MFR, MLO, MTD, (N), N.E.C., NEU, N.I.E.C., O.A.H., O.F.C.I., P, PA, PNL, S.A.D., STC, TC, TELE, U.O.N., WP, WPU.

ELECTRICAL EQUIPMENT ANCHORAGE

ELECTRICAL ANCHORAGE NOTES: ALL ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHEN NO DETAIL IS INDICATED, THE FOLLOWING REQUIREMENTS DESCRIBED IN THE 2016 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7-10, CHAPTER 13, 26, AND 30.

ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE: 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 13.5.5, 13.5.6, 13.5.7, 13.5.8, AND 2016 CBC, SECTIONS 1616A.1.24, 1616A.1.25, AND 1616A.1.26.

LIGHT FIXTURES: ALL LIGHT FIXTURES SHALL BE POSITIVELY ATTACHED TO THE CEILING SUSPENSION SYSTEMS BY MECHANICAL MEANS TO RESIST A HORIZONTAL FORCE EQUAL TO THE WEIGHT OF THE FIXTURE.

SYMBOLS LIST

SYMBOLS LIST table with columns for symbol and description. Includes symbols for MAIN SWITCHBOARD, FLUSH MOUNTED PANELBOARD, SURFACE MOUNTED PANELBOARD, FUSED EQUIPMENT DISCONNECT SWITCH, MOTOR DISCONNECT SWITCH, COMBINATION MOTOR STARTER & DISCONNECT, MAGNETIC MOTOR STARTER, MANUAL MOTOR STARTER WITH OVERLOAD PROTECTION, MOTOR WITH FLEXIBLE CONDUIT CONNECTION AND DISCONNECT, TRANSFORMER, CONCRETE PULLBOX, CUPPER GROUND ROD, FLUSH CEILING MOUNTED JUNCTION BOX, JUNCTION BOX FLUSH FLOOR MOUNTED, 20A 3PG 125V DUPLEX RECEPTACLE, 20A 3PG 125V DUPLEX RECEPTACLE, WEATHERPROOF, 20A 3PG 125V DUPLEX RECEPTACLE, GROUND FAULT CIRCUIT INTERRUPTER TYPE, 20A 3PG 125V DUPLEX RECEPTACLE, ISOLATED GROUND TYPE, 20A 3PG 125V DUPLEX RECEPTACLE, TAMPER RESISTANT, 20A 3PG 125V DUPLEX RECEPTACLE, MOUNTED ABOVE COUNTER, 20A 3PG 125V DOUBLE DUPLEX RECEPTACLE, 20A 3PG 125V DOUBLE DUPLEX RECEPTACLE, MOUNTED ABOVE COUNTER, 20A 3PG 125V SINGLE DUPLEX RECEPTACLE, 20A 3PG 125V SINGLE DUPLEX RECEPTACLE, MOUNTED ABOVE COUNTER, SPECIAL RECEPTACLE AS INDICATED ON PLANS, CONTROLLED AND IDENTIFIED (SPLIT-WIRED) DUPLEX RECEPTACLE, TERMINAL MOUNTING BACKBOARD, TELEPHONE OUTLET, COMBINED TELEPHONE/DATA OUTLET, COMBINED VOICE/DATA OUTLET, INTERCOM HANDSET, WALL MOUNTED SIGNAL SYSTEM CLOCK, FLUSH WALL MOUNTED INDOOR PUBLIC ADDRESS SPEAKER, FLUSH WALL MOUNTED OUTDOOR WEATHERPROOF PUBLIC ADDRESS SPEAKER, FLUSH CEILING MOUNTED INDOOR PUBLIC ADDRESS SPEAKER, FLUSH WALL MOUNTED INDOOR PUBLIC ADDRESS SPEAKER & SIGNAL SYSTEM CLOCK, WEATHERPROOF ENCLOSURE, CONDUIT AND WIRE CONCEALED IN CEILING OR WALL, CONDUIT AND WIRE CONCEALED IN OR UNDER SLAB OR UNDERGROUND, CONDUIT AND WIRE RUN EXPOSED, CROSSMARKS INDICATE QUANTITY OF #12 CONDUCTORS PLUS PARTY SIZED GROUND CONDUCTOR, GROUND WIRE, WIRE SIZE 10 AWG FOR ALL CONDUCTORS, FLEXIBLE METALLIC CONDUIT, HOMERUN TO PANELBOARD OR TERMINAL BOARD, COMPLETE CONNECTION OF EQUIPMENT, CONDUIT STUBBED OUT, CAPPED AND MARKED, CONDUIT TURNED UP, CONDUIT TURNED DOWN, TELEPHONE SYSTEM CONDUIT AND PULLWIRE, COMPUTER/DATA SYSTEM CONDUIT AND PULLWIRE, TELEPHONE/DATA SYSTEM CONDUIT AND PULLWIRE, #4/0 COPPER GROUNDING ELECTRODE CONDUCTOR, MECHANICAL EQUIPMENT DESIGNATION, NUMBERED SHEET NOTE, UTILITY METER, CURRENT TRANSFORMERS, CIRCUIT BREAKER, FEEDER SIZE.

SYMBOLS LIST

SYMBOLS LIST table with columns for symbol and description. Includes symbols for INDICATES LUMINAIRE TYPE, SUSPENDED LINEAR LUMINAIRE, SURFACE CEILING, WALL OR COVE MOUNTED LUMINAIRE, WALL MOUNTED LUMINAIRE, POLE ARM-MOUNTED AREA LUMINAIRE, WALL MOUNTED EMERGENCY BATTERY EGRESS LUMINAIRE, LINE VOLTAGE SINGLE POLE TOGGLE SWITCH, LINE VOLTAGE TWO POLE TOGGLE SWITCH, LINE VOLTAGE THREE-WAY TOGGLE SWITCH, LINE VOLTAGE KEY OPERATED TOGGLE SWITCH, LINE VOLTAGE MOTOR RATED TOGGLE SWITCH, LINE VOLTAGE TOGGLE SWITCH WITH PILOT LIGHT, LOW VOLTAGE MOMENTARY CONTACT SWITCH, LOW VOLTAGE KEYPAD MOMENTARY CONTACT SWITCH, WALL MOUNTED SWITCH TYPE INFRARED OCCUPANCY SENSOR, WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, WALL MOUNTED DIGITAL SWITCH, WALL MOUNTED SINGLE OR MULTI-ZONE DIGITAL DIMMER SWITCH, CEILING MOUNTED DUAL TECHNOLOGY DIGITAL OCCUPANCY SENSOR, CEILING MOUNTED DUAL TECHNOLOGY DIGITAL OCCUPANCY SENSOR, CEILING MOUNTED LINE VOLTAGE DUAL TECHNOLOGY OCCUPANCY SENSOR, SINGLE OR MULTI-ZONE SWITCHING OR DIMMING OPEN LOOP DIGITAL DAYLIGHTING SENSOR, SINGLE ZONE SWITCHING OR DIMMING CLOSED LOOP DIGITAL DAYLIGHTING SENSOR, DAYLIGHT CONTROL PHOTOCELL, INDICATES DAYLIGHT ZONE CONTROLLED VIA PHOTOCELL, ROOM CONTROLLER, ADJACENT NUMERAL REFERS TO THE NUMBER OF ZONES TO BE CONTROLLED, PLUG LOAD ROOM CONTROLLER, EMERGENCY LIGHTING CONTROL MODULE, OCCUPANCY SENSOR POWER PACK MOUNTED IN CONCEALED ACCESSIBLE LOCATION.

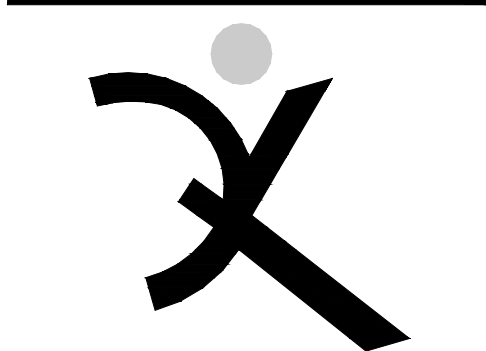
CALIFORNIA GREEN BUILDING STANDARDS COMPLIANCE ALL EXTERIOR LUMINAIRES SPECIFIED IN THESE CONTRACT DOCUMENTS COMPLY WITH THE REQUIREMENTS OF THE CALIFORNIA ENERGY CODE AND THE CALIFORNIA GREEN BUILDING STANDARDS CODE, SECTION AS.106.8 LIGHT POLLUTION REDUCTION.

GENERAL NOTES

- 1. PRIOR TO BID THE CONTRACTOR SHALL VISIT THE SITE TO ADEQUATELY DETERMINE ALL PRE-EXISTING CONDITIONS. BY THE ACT OF SUBMITTING A BID, THE CONTRACTOR WILL BE DEEMED TO HAVE COMPLIED WITH THE FOREGOING, TO HAVE ACCEPTED SUCH CONDITIONS, AND TO HAVE MADE ALLOWANCES THEREFOR IN PREPARING THE BID.
2. PROVIDE PARTY SIZED GREEN GROUND WIRE IN ALL POWER CONDUITS, BRANCH CIRCUITS (LIGHTING & POWER) AND HOMERUNS. PROVIDE ADDITIONAL ISOLATED GROUND, GREEN WITH YELLOW STRIPE, TO ALL ISOLATED GROUND RECEPTACLES.
3. PROVIDE PULLROPE IN ALL EMPTY CONDUITS THROUGHOUT THE PROJECT.
4. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION & CONNECTION REQUIREMENTS OF ALL LUMINAIRE(S) AND ALL OUTLET, SWITCH, AND ELECTRICAL RELATED DEVICE MOUNTING HEIGHTS AND LOCATIONS. COORDINATE LOCATIONS OF ALL LUMINAIRE(S) AND JUNCTION BOXES WITH MECHANICAL DIVISION PRIOR TO ROUGH-IN. COORDINATE LOCATIONS OF ELECTRICAL DEVICES WITH FURNITURE PLANS PRIOR TO ROUGH-IN.
5. REFER TO MECHANICAL PLANS FOR EXACT LOCATION(S) OF ALL MECHANICAL EQUIPMENT, AND CONFIRM EXACT CONNECTION REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH MECHANICAL DIVISION, PRIOR TO ROUGH-IN. VERIFY EXACT REQUIREMENTS FOR VOLTAGE, PHASE, HORSE POWER, OR KVA RATINGS, OF ALL MECHANICAL DIVISION EQUIPMENT REQUIRING ELECTRICAL CONNECTION.
6. VERIFY EXACT CONNECTION REQUIREMENTS, OUTLET TYPE(S), MOUNTING HEIGHT(S) AND LOCATION(S) OF ALL OWNER-SUPPLIED EQUIPMENT, AND ALL EQUIPMENT PROVIDED UNDER OTHER SECTIONS OF THE SPECIFICATIONS, PRIOR TO ROUGH-IN. REFER TO ARCHITECTURAL DRAWINGS FOR EQUIPMENT LOCATIONS.
7. COORDINATE TRENCHING WITH OWNER AND OTHER TRADES BEFORE BEGINNING WORK.
8. ALL CONDUIT PENETRATIONS THROUGH FIRE-RATED WALLS AND FLOORS SHALL BE SEALED AND EQUIPPED WITH U.L. LISTED FIRE PENETRATION ASSEMBLIES TO MAINTAIN FIRE SEPARATION RATING.
9. DO NOT INSTALL ANY OUTLETS BACK TO BACK IN STUD WALLS OR DE-MOUNTABLE PARTITIONS.
10. THE CONTRACTOR SHALL VERIFY ALL CEILING TYPES BEFORE ORDERING OF LUMINAIRE(S). ALSO VERIFY THAT ALL FEATURES CALLED FOR IN LUMINAIRE DESCRIPTIONS ON THE LUMINAIRE SCHEDULE ARE INCLUDED WITH CATALOG NUMBERS LISTED ON THE LUMINAIRE SCHEDULE WHEN LUMINAIRE ORDERS ARE PLACED, AND ARE INCLUDED AS PART OF THE LIGHTING SUBMITTALS FOR THIS PROJECT. IF A DISCREPANCY EXISTS, CONTACT THE ARCHITECT AND ELECTRICAL ENGINEER FOR CLARIFICATION PRIOR TO BID.
11. CIRCUITRY AND CONDUIT ROUTING SHOWN ON THE PLANS IS DIAGRAMMATIC ONLY. THIS CONTRACTOR IS RESPONSIBLE FOR BECOMING COMPLETELY FAMILIAR WITH THE ARCHITECTURAL AND STRUCTURAL CONDITIONS AND LIMITATIONS IN THE BUILDING AND TO PROVIDE ALL LABOR, TOOLS AND MATERIALS REQUIRED TO PRODUCE A COMPLETELY CONCEALED INSTALLATION WHEREVER INDICATED ON THE PLANS.
12. MAINTAIN "AS-BUILT" RECORDS AT ALL TIMES, SHOWING EXACT LOCATION OF ALL UNDERGROUND AND/OR CONCEALED CONDUITS AND SERVICES INSTALLED UNDER THIS CONTRACT, INCLUDING CIRCUIT IDENTIFICATION WHERE APPLICABLE. PROVIDE OWNER WITH "AS-BUILT" DOCUMENTS AS INDICATED IN THE SPECIFICATIONS, AND/OR CALLED FOR IN THE SPECIFICATIONS.
13. DRAWINGS INDICATE THE LOCATION(S) OF DEVICES, LUMINAIRE(S) AND EQUIPMENT, AND THE CIRCUIT NUMBER AND PANEL DESIGNATED TO SUPPLY THEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETELY CONNECTING ALL ELECTRICAL DEVICES TO CIRCUITS INDICATED ON THE DRAWINGS.
14. UNLESS OTHERWISE NOTED, ALL WORK SHOWN ON DRAWINGS IS NEW AND TO BE PROVIDED AND INSTALLED COMPLETE UNDER THIS CONTRACT.
15. ALL EQUIPMENT GROUNDING SHALL CONFORM TO ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE, LATEST EDITION.
16. ALL EXTERIOR CONDUIT ABOVE GRADE, INCLUDING ALL ROOF MOUNTED CONDUIT, SHALL BE GALVANIZED RIGID STEEL. COAT ALL EXPOSED THREADS WITH GALVANIZING PAINT. PAINT ALL SURFACE MOUNTED RACEWAYS AND PULLBOXES TO MATCH SURROUNDING CONDITIONS, AS DIRECTED BY THE ARCHITECT.
17. ALL ELECTRICAL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LATEST EDITION OF THE N.E.C., AS WELL AS STATE, AND LOCAL CODES AND REQUIREMENTS.
18. ALL CONDUIT SHALL BE CONCEALED, UNLESS OTHERWISE NOTED.
19. EQUIPMENT OVERLOADS AND FUSES SHALL BE PROVIDED AND INSTALLED AS PER NAME PLATE ON THE EQUIPMENT ACTUALLY PROVIDED.
20. THE CONTRACTOR SHALL PAY FOR ALL REQUIRED PERMITS AND INSPECTION FEES.
21. THE CONTRACTOR SHALL VERIFY ALL CRITICAL DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN.
22. ALL MECHANICAL DIVISION EQUIPMENT LOW VOLTAGE CONTROL WIRING AND RACEWAY SHALL BE PROVIDED AND INSTALLED AS SPECIFIED IN MECHANICAL DIVISION U.O.N.
23. COORDINATE INSTALLATION OF ALL RECESSED LUMINAIRE(S) WITH MECHANICAL DIVISION PRIOR TO INSTALLATION OF HVAC DUCTS AND SPRINKLER HEADS. ENSURE AFTER INSTALLATION OF LUMINAIRE(S) THAT THERE IS NO CONTACT BETWEEN DUCTS AND LUMINAIRE(S) TO AVOID VIBRATION IN LUMINAIRE(S).
24. USE FLEXIBLE CONDUIT FOR ALL MOTOR, TRANSFORMER, RECESSED LUMINAIRE CONNECTIONS, AND CONNECTIONS THROUGH TWO SEPARATE STRUCTURES AND FOR ALL FINAL CONNECTIONS TO "CRITICAL EQUIPMENT" AS DEFINED IN SPECIFICATIONS. MINIMUM 1/2" DIAMETER, LIQUID TIGHT TYPE USED OUTDOORS AND IN ALL WET LOCATIONS; PROVIDE WITH CODE-SIZE (MINIMUM #12) BARE GROUND WIRE IN ALL FLEXIBLE CONDUITS.
25. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR ALL BRANCH CIRCUITS FEEDING OUTLETS AS NOTED ON THE DRAWINGS.
26. FOR FLUSH MOUNTED PANELBOARDS THE CONTRACTOR SHALL STUB A MINIMUM OF FOUR (4) 3/4" CONDUITS FROM THE PANEL UP INTO THE ACCESSIBLE CEILING ABOVE FOR FUTURE CIRCUITS.
27. ALL CONDUIT CONNECTORS TO OUTLET OR JUNCTION BOXES SHALL HAVE INSULATED THROATS (MANUFACTURED AS AN INTEGRAL PART OF THE CONNECTOR). AFTER-MARKET INSERTABLE THROATS ARE NOT ACCEPTABLE.
28. ALL CIRCUITS IN ALL JUNCTION BOXES AND DEVICES SHALL BE CLEARLY IDENTIFIED BY MEANS OF "EZ" NUMBERS/TAGS OR EQUIVALENT, TO IDENTIFY THE CIRCUIT NUMBER OR RELAY SUPPLYING THE CONDUCTOR. ALL JUNCTION BOXES SHALL BE LABELED PER SPECIFICATIONS.
29. ALL SURFACE MOUNTED POWER AND SIGNAL BOXES IN FINISHED AREAS SHALL BE "WIREMOLD" TYPE, WITH MATCHING RACEWAYS. SURFACE MOUNTED STEEL JUNCTION BOXES AND/OR EMT ARE NOT ACCEPTABLE.
30. ALL LOCATIONS OF BARE METAL SURFACE MOUNTED CONDUIT, BOXES, PANEL COVERS, AND RELATED FITTINGS OR ACCESSORIES INSTALLED IN FINISHED AREAS (BOTH INTERIOR AND EXTERIOR) SHALL BE FINISH PAINTED TO MATCH THE SURFACE TO WHICH THEY ARE MOUNTED TO (AFTER INSTALLATION). PAINTING SHALL INCLUDE DIFFERENT COLORS AS REQUIRED TO MATCH EXISTING STRIPING OR OTHER BUILDING FEATURES TO WHICH THE EQUIPMENT IS ATTACHED AND VISIBLE. VERIFY EXACT JUNCTION BOX LOCATIONS AND ROUTING OF EXPOSED RACEWAYS WITH THE ARCHITECT PRIOR TO ROUGH-IN.
31. PROVIDE A BLANK COVER PLATE (COLOR TO MATCH ADJACENT DEVICES OR AS SPECIFICALLY CALLED FOR IN SPECIFICATIONS) FOR ALL JUNCTION BOXES (NEW AND EXISTING) ON THE PROJECT WHEN NO DEVICE IS INSTALLED.
32. FOR OUTDOOR 15 AND 20-AMPERE, 125 AND 250-VOLT RECEPTACLES: RECEPTACLES LOCATED IN "WET" LOCATIONS SHALL HAVE "IN-USE" TYPE WEATHERPROOF COVER PLATES PROVIDED AND INSTALLED; RECEPTACLES LOCATED IN "DAMP" LOCATIONS SHALL HAVE "IN-USE" TYPE WEATHERPROOF COVER PLATES IN LOCATIONS DEEMED TO BE "IN-USE" WITH CORD AND PLUG ATTACHED.
33. TWO OR THREE DIFFERENT PHASES SUPPLIED BY A 3-PHASE PANEL MAY SHARE A SINGLE NEUTRAL ONLY IF CIRCUIT BREAKERS ARE ADJACENT IN THE PANEL PROVIDE COMMON HANDLE-TIE ON BREAKERS FOR MULTI-WIRE BRANCH CIRCUITS, WITH COMMON NEUTRAL, PER NEC REQUIREMENTS.

LIST OF DRAWINGS

Table with columns for drawing number and description. Includes entries for E-0.1 SYMBOLS LIST, GENERAL NOTES & LIST OF DRAWINGS; E-1.1 SITE PLAN - ELECTRICAL; E-2.1 FIRST & MEZZANINE LIGHTING PLANS AND LUMINAIRE SCHEDULE; E-3.1 FIRST & MEZZANINE FLOOR PLANS - POWER & SIGNAL; E-5.1 DIAGRAMS & SCHEDULES; E-7.1 DETAILS; FE-0.1 FIRE ALARM EQUIPMENT LIST, GENERAL NOTES & DETAILS; FE-1.1 SITE PLAN - FIRE ALARM; FE-3.1 FIRST & MEZZANINE FLOOR PLANS - FIRE ALARM; FE-5.1 DIAGRAMS & CALCULATIONS - FIRE ALARM.



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LIBERTY UNION HIGH SCHOOL DISTRICT

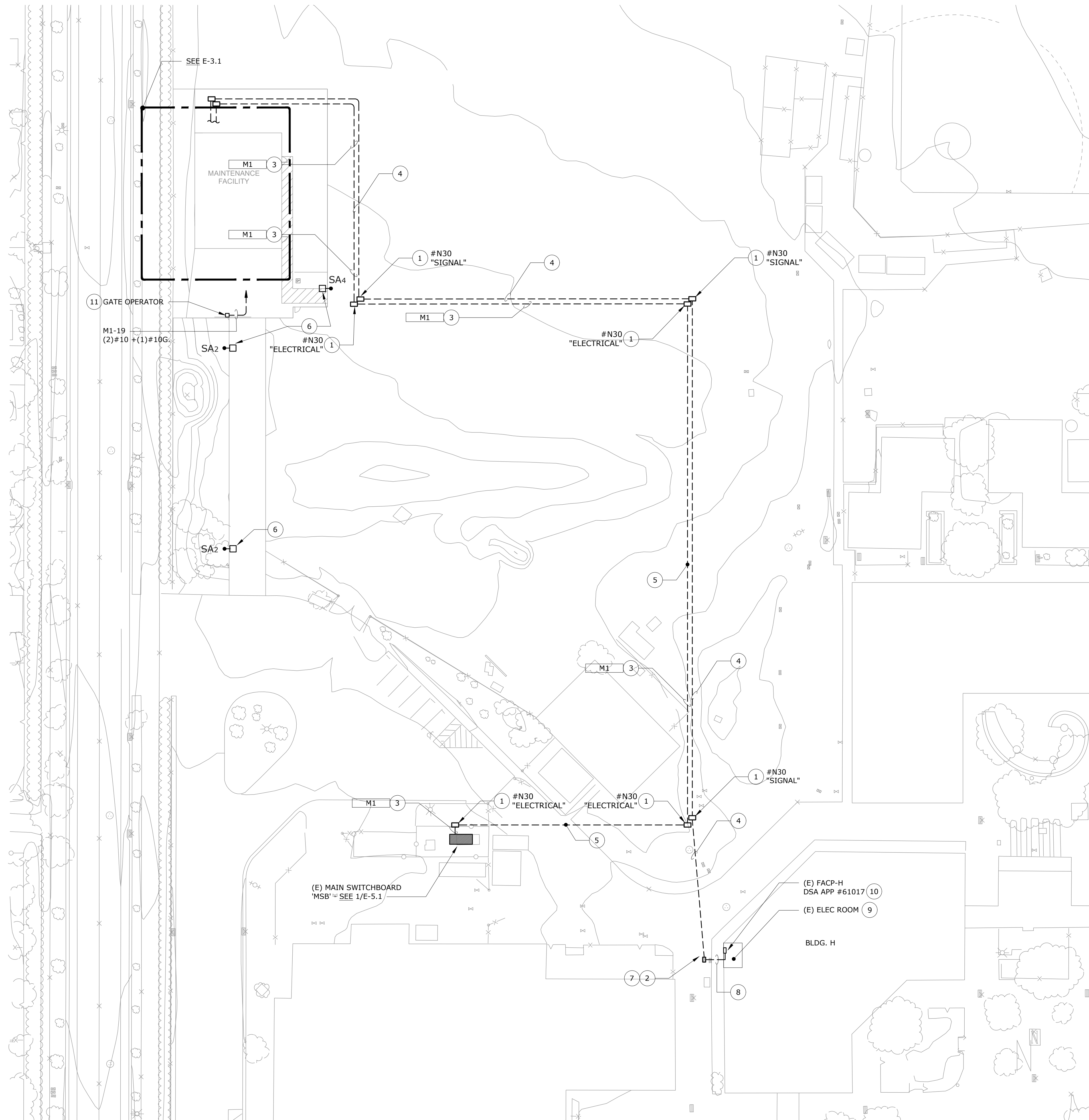
REVISIONS

Table with columns for revision number, description, and date. Includes entries for ARCH PROJECT NO: 1739.02, DRAWN BY: TV, DRAWING SCALE: AS NOTED, PTN: 61721-0069, BID SET, JANUARY 4, 2019, SHEET TITLE.

SYMBOLS LIST, GENERAL NOTES & LIST OF DRAWINGS

SHEET NUMBER

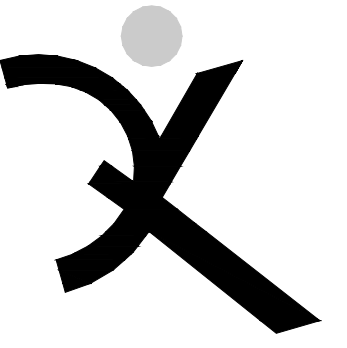
E-0.1



NUMBERED SHEET NOTES

- 1 PROVIDE FLUSH, IN GRADE PULLBOX CHRISTY (OR EQUAL), SIZED AS NOTED ON PLANS. PULLBOX COVER SHALL BE LABELED AS IDENTIFIED ON PLANS. WHERE LOCATED IN TRAFFIC AREAS, BOXES SHALL BE 'TRAFFIC RATED' REINFORCED CONCRETE WITH STEEL FRAME AND STEEL COVER. WHERE LOCATED ELSEWHERE, BOXES SHALL BE REINFORCED CONCRETE AND COMPOSITE COVER. ALL PULLBOX LOCATION SHALL BE COORDINATED WITH THE ARCHITECT.
- 2 INTERCEPT EXISTING SIGNAL CONDUIT AT EXISTING PULLBOX LOCATION. THE PULLBOX SHALL BE REPLACED WITH A NEW #N30 (PER SIMILAR REQUIREMENTS OF NUMBERED NOTE 1). THE NEW SIGNAL SYSTEM SHALL BE EXTENDED TO EXISTING CAMPUS SYSTEMS VIA THIS LOCATION - SEE E-1.0.
- 3 PROVIDE AND INSTALL UNDERGROUND FEEDERS TO BRANCH PANEL AS NOTED WITH ADJACENT TAG DESCRIPTION. SEE 1/E-5.1 FOR FEEDER SIZING.
- 4 PROVIDE AND INSTALL UNDERGROUND SIGNAL SYSTEMS TO SYSTEMS AS FOLLOWS:
 - (1) 3" C. - FIBER OPTIC
 - (1) 2" C. - FIRE ALARM
 - (2) 2" C. - SPARES
- 5 ALL CONDUITS ALONG THIS LINE SHALL BE ROUTED IN COMMON SITE "UTILITY CORRIDOR". MAINTAIN A 3' LATERAL SEPARATION FROM ALL OTHER SITE UTILITIES. DO NOT RUN OVER, OR UNDER ANY OTHER SITE UTILITIES. COORDINATE ALL TRENCHING ROUTES AND SEPARATIONS WITH CIVIL, LANDSCAPE AND ARCHITECT PRIOR TO COMMENCING WORK.
- 6 SEE DETAIL 6/E-7.1.
- 7 EXISTING SIGNAL SYSTEM RACEWAY TO BE INTERCEPTED AT THIS LOCATION, AT EXISTING SIGNAL PULLBOX.
- 8 UTILIZE SPARE RACEWAY INTO BUILDING H ELECTRICAL ROOM FOR FIBER AND FIRE ALARM HOMERUNS.
- 9 INTERCEPT EXISTING FIBER STRANDS AT EXISTING IDF AND EXTEND NEW FIBER TO MAINTENANCE BUILDING.
- 10 CONNECT COMPLETE TO EXISTING FIRE ALARM 2-WIRE IDNET COMMUNICATIONS CABLING AT EXISTING FIRE ALARM EQUIPMENT. SEE FE SERIES.
- 11 PROVIDE POWER AND LOW VOLTAGE RACEWAY CONNECTIONS TO GATE CONTROLLER AS SHOWN. 120V POWER IN 1" SCHEDULE 40 PVC. BACK TO MAINTENANCE FACILITY PANEL 'M1' AND 1" SCHEDULE 40 PVC WITH CAT 6A. ROUTE BACK TO MAINTENANCE BUILDING IDF.

PRIOR TO COMMENCING WORK, CONTRACTOR SHALL HIRE THE SERVICES OF AN INDEPENDENT SURVEY COMPANY, WHICH SHALL MARK THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES WITHIN THE AREA OF WORK. THIS CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT IN PLACE ALL EXISTING UNDERGROUND UTILITIES AND ROUTE NEW TRENCHES AND CONDUIT SUCH TO AVOID CONFLICT WITH EXISTING. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES OCCURRING TO EXISTING UNDERGROUND INFRASTRUCTURE. IN THE EVENT DAMAGES OCCUR, CONTRACTOR SHALL INCUR ALL COSTS AND REPAIR ALL CONDITIONS TO THE SATISFACTION OF THE DISTRICT.



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LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS	

ARCH PROJECT NO: 1739.02
 DRAWN BY: TV
 DRAWING SCALE: AS NOTED
 PTN: 61721-0069

BID SET

JANUARY 4, 2019

SHEET TITLE

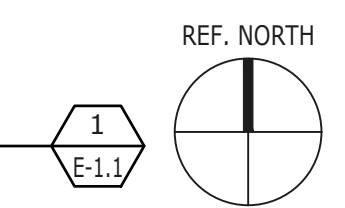
SITE PLAN - ELECTRICAL

SHEET NUMBER

E-1.1

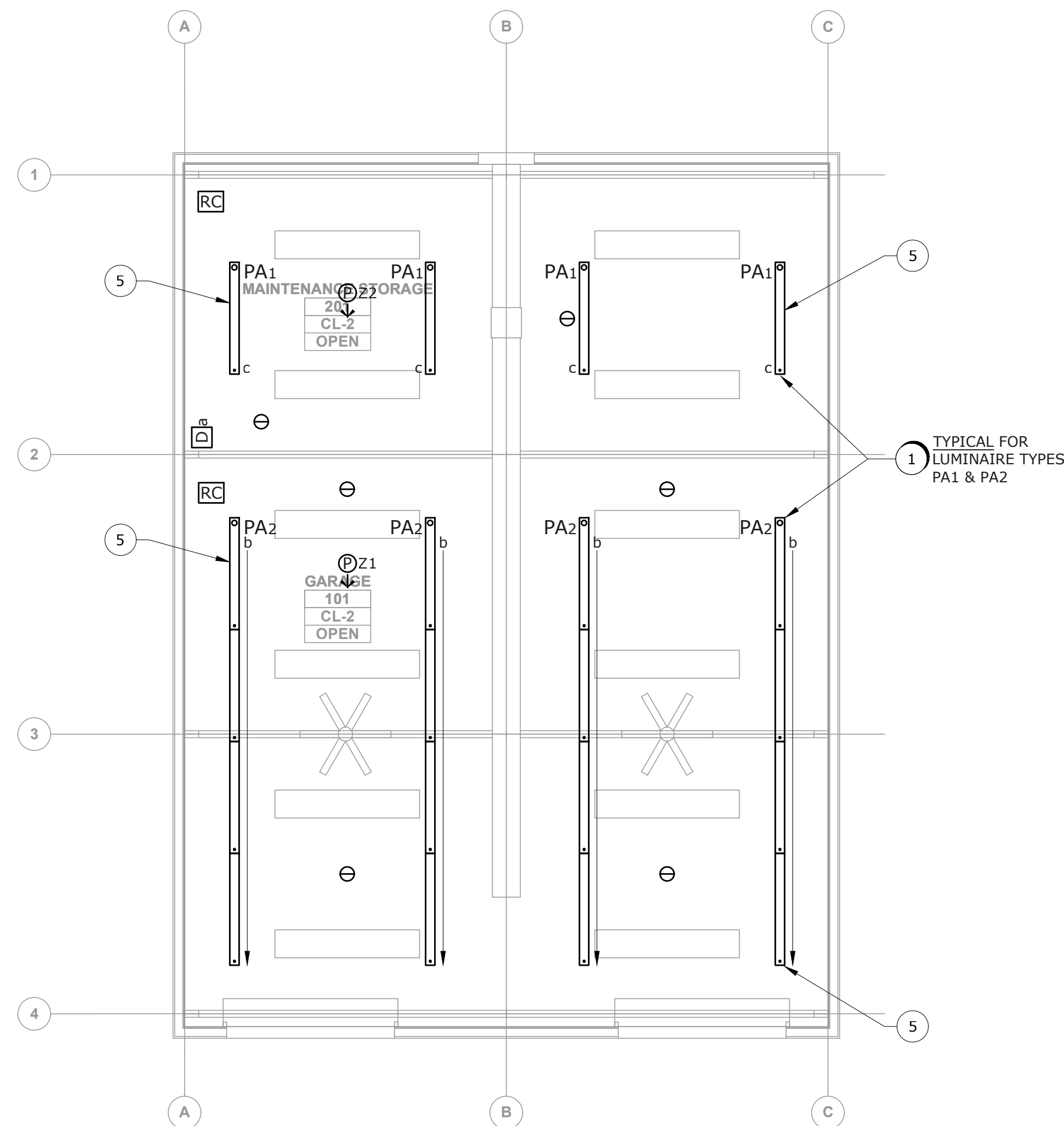
SITE PLAN - ELECTRICAL

SCALE: 1" = 30'-0"

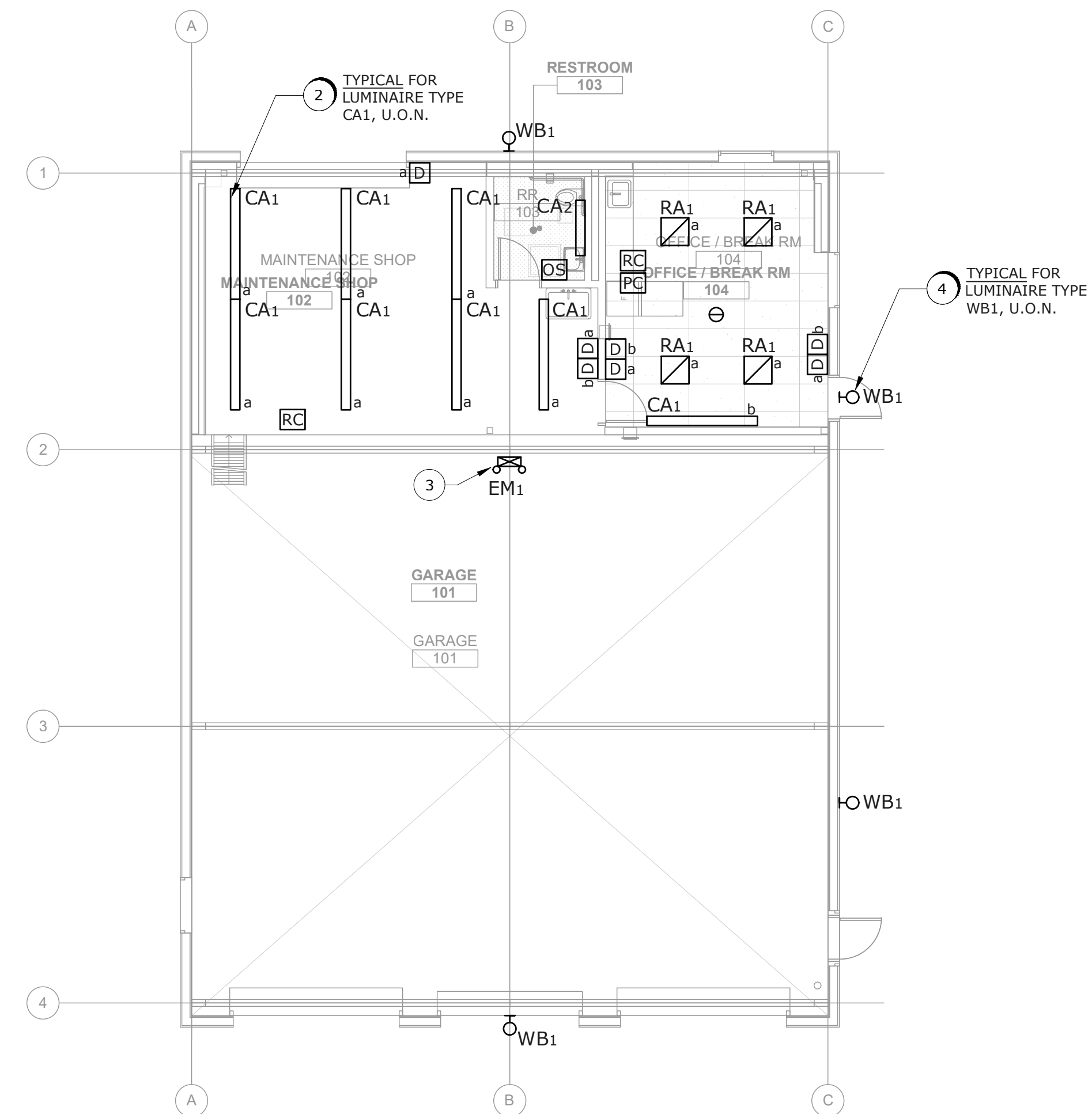


LUMINAIRE SCHEDULE						
TYPE	MOUNTING	DESCRIPTION	MANUFACTURER CATALOG #	LIGHT SOURCE	POWER SUPPLY	VO
CA1	CEILING SURFACE	LENSED STRIPLIGHT, 96" L X 3" W X 4" H, STEEL HOUSING PAINTED POST-FABRICATION, SEMI-FROSTED SQUARE LENS FOR NARROW LIGHT DISTRIBUTION, CONSTANT CURRENT REDUCTION LED DRIVER, WHITE FINISH.	METALUX PDR85351-8SNLED-LD5-60SL-SLN -UNV-L835-CD1-U CONSTANT CURRENT	LED 3500K 80+ CRI 6063 LM	CCR 0-10V DIMMING TO 10%	120V
CA2	CEILING SURFACE	SIMILAR TO TYPE CA1, EXCEPT 48" LENGTH, FULL FROST LENS FOR WIDE LIGHT DISTRIBUTION.	METALUX 4SNLED-LD5-30SL-LW-UNV-L835-CD-1	LED 3500K 80+ CRI 3186 LM	CCR 0-10V DIMMING TO 10%	120V
EM1	WALL SURFACE	EMERGENCY-ONLY (AC FAIL) LIGHT, NICKEL METAL HYDRIDE BATTERY, POLYCARBONATE HOUSING.	BEGHELLI TA-LED-SE-UNV-AT	LED	NON-DIM	120V
PA1	PENDANT	CABLE-SUSPENDED LENSED STRIPLIGHT, 96" L X 3" W X 4" H, STEEL HOUSING PAINTED POST-FABRICATION, SEMI-FROSTED SQUARE LENS FOR NARROW LIGHT DISTRIBUTION, CONSTANT CURRENT REDUCTION LED DRIVER, WHITE FINISH. PROVIDE ACCESSORIES REQUIRED FOR SUSPENSION FROM PURLINS. WEIGHT = 15 LB.	METALUX PDR85351-8SNLED-LD5-60SL-SLN -UNV-L835-CD1-U CONSTANT CURRENT SCA-48-B-(CABLE)	LED 3500K 80+ CRI 6080 LM	CCR 0-10V DIMMING TO 10%	120V
PA2	PENDANT	SIMILAR TO TYPE PA1 EXCEPT MOUNTED END-TO-END FOR 32 FT ROW LENGTH AND HIGHER LUMENS. PROVIDE ACCESSORIES REQUIRED FOR ALIGNMENT AND SUSPENSION FROM CEILING PURLINS AND BEAMS. WEIGHT = 15 LB PER 8 FT.	METALUX PDR85351-8SNLED-LD5-108SL-SL N-UNV-L835-CD1-U CONSTANT CURRENT SCA-48-B-(CABLE)	LED 3500K 80+ CRI 10794 LM/8'	CCR 0-10V DIMMING TO 10%	120V
RA1	RECESSED CEILING	2' x 2' x 1-3/4" HIGH EDGE-LIT FLAT PANEL. LIGHT GUIDE ACRYLIC OPTICAL SHIELDING WITH SMOOTH PATTERN WHITE FROST LENS. RETENTION CLIPS.	METALUX 22FP4235C-FPEQ	LED 3500K 80+ CRI 4641 LUMENS	0-10V DIMMING (10-100%)	120V
SB2	SITE POLE	POLE LUMINAIRE, 15" x 27.5" DIE-CAST ALUMINUM, 32 LEDS, IES TYPE 3 LIGHT DISTRIBUTION, INTERNAL HOUSE-SIDE SHIELD. STEEL POLE 20' H X 4" DIAMETER, FULL BASE COVER. STANDARD FINISH AS SELECTED BY ARCHITECT.	PHILIPS LIGHTING ECF-S-32L-530-WW-G2-3-HIS-120V-FINISH AND SRS-20-4.0-D1-FINISH	3000K 70CRI LED 5348 LM	NON-DIMMING 530mA	120V
SB4	SITE POLE	SIMILAR TO TYPE SB2 EXCEPT IES TYPE 4 LIGHT DISTRIBUTION, NO INTERNAL HOUSE-SIDE SHIELD.	PHILIPS LIGHTING ECF-S-32L-530-WW-G2-4-120V-FINISH AND SRS-16-4.0-D2-FINISH	3000K 70CRI LED 5348 LM	NON-DIMMING 530mA	120V
WB1	WALL	SCONCE AREA-LIGHT, DIE-CAST ALUMINUM, 15.6"W X 6.2"H X 15.7" PROJECTION, IES TYPE 3 LIGHT DISTRIBUTION, BI-LEVEL MOTION SENSOR, STANDARD FINISH AS SELECTED BY ARCHITECT.	PHILIPS GARDCO PWS-140L-1150-WW-G2-3-UNV-FINISH	LED 3000K 70+ CRI 6064 LM	NON-DIMMING, INTEGRAL BI-LEVEL MOTION SENSOR	120V

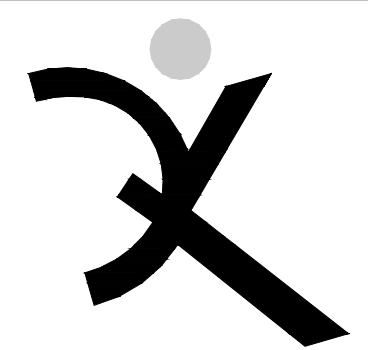
- ### NUMBERED SHEET NOTES
- 1 SUSPEND FROM PURLINS AND BEAMS, 24" FROM BOTTOM OF PURLIN TO BOTTOM OF LUMINAIRE. COORDINATE CONNECTIONS TO PURLINS AND BEAMS WITH METAL BUILDING MANUFACTURER TO PROVIDE ADEQUATE SUPPORT FOR LUMINAIRES. LUMINAIRES SHALL BE FREE TO SWING 45 DEGREES FROM VERTICAL IN ANY DIRECTION WITHOUT CONTACTING AN OBSTRUCTION. RESTRAIN LUMINAIRES WITH SEISMIC BRACING CABLES WHERE NECESSARY.
 - 2 SURFACE MOUNT ON JOISTS. PROVIDE BLOCKING WHERE NECESSARY.
 - 3 SURFACE MOUNT TO FRONT OF MEZZANINE FLOOR, APPROXIMATELY 11'-2" A.F.F.
 - 4 WALL MOUNTED 16 FT A.F.G., PROVIDE STRUCTURE/BLOCKING IN METAL WALL TO SUPPORT LUMINAIRE.
 - 5 MAINTAIN A MINIMUM DISTANCE OF 20" FROM WALL TO CENTERLINE OF THIS LUMINAIRE ROW.



MEZZANINE FLOOR PLAN - LIGHTING
SCALE: 1/8" = 1'-0"



FIRST FLOOR PLAN - LIGHTING
SCALE: 1/8" = 1'-0"



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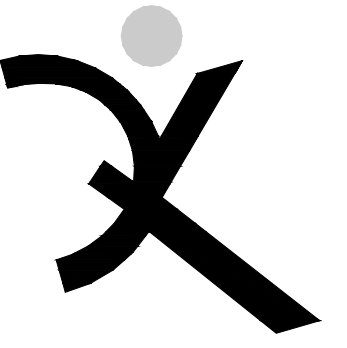
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ARCH PROJECT NO: 1739.02
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SHEET TITLE
FIRST & MEZZANINE LIGHTING PLANS & LUMINAIRE SCHEDULE

SHEET NUMBER
E-2.1



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 SHEET TITLE

FIRST & MEZZANINE FLOOR PLANS - POWER & SIGNAL

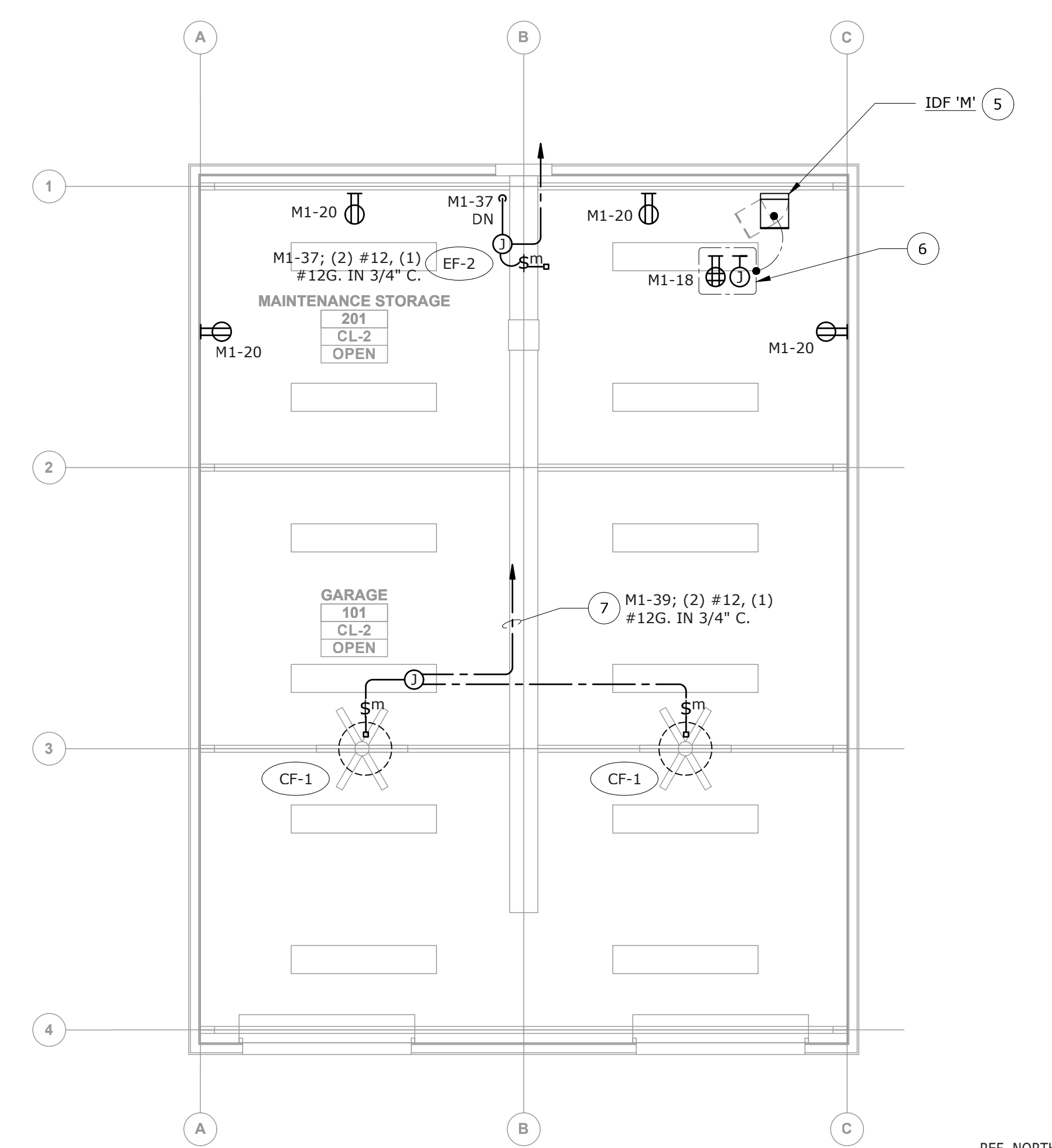
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NUMBERED SHEET NOTES

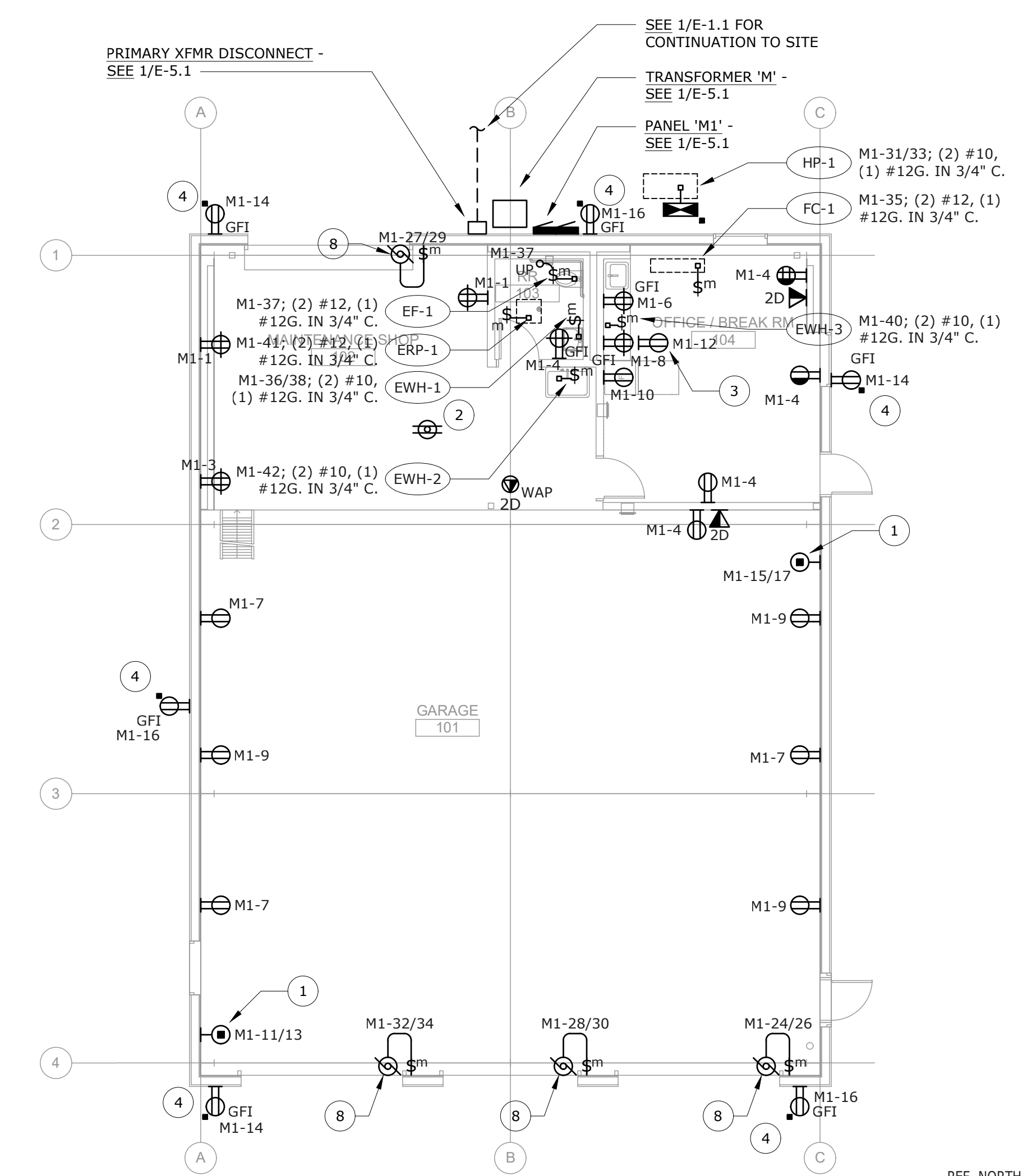
- 1 COORDINATE EXACT RECEPTACLE TYPE WITH DISTRICT PRIOR TO ROUGH-IN. PROVIDE AND INSTALL (2) #8 + (1) #10G. IN 3/4" C. HOMERUN.
- 2 CORD REEL RECEPTACLE. COORDINATE EXACT LOCATION PRIOR TO ROUGH-IN. SEE DETAIL 7/E-7.1.
- 3 LOCATE RECEPTACLE ABOVE SHELF HEIGHT, FOR MICROWAVE. COORDINATE EXACT LOCATION PRIOR TO ROUGH-IN.
- 4 RECEPTACLE SHALL BE LOCATED WITHIN LOCKABLE, WEATHERPROOF, METALLIC IN-USE COVER.
- 5 PROVIDE AND INSTALL 24"H X 30"D DATA CABINET. CHATSWORTH OR EQUAL, WITH 12 RACK UNIT MIN.
- 6 PROVIDE DEDICATED QUAD RECEPTACLE AND J-BOX WITH #2AWG G. TO NEAREST BUILDING ELECTRODE. LOCATE EQUIPMENT WITHIN IDF CABINET (OR RACK).
- 7 ROUTE CEILING FAN BRANCH CIRCUIT VIA FIRE ALARM RELAY MODULE, TO FACILITATE FAN SHUT DOWN UPON ACTIVATION OF SPRINKLER SYSTEM.
- 8 ELECTRIC ROLL UP DOOR (208, 1PH, 30A). PROVIDE AND INSTALL PUSH BUTTON CONTROLS WITH 'UP', 'DOWN' AND 'STOP' FUNCTIONS. WIRING/CONDUIT: (2) #8 + (1) #10G. IN 3/4" C.

GENERAL SHEET NOTES

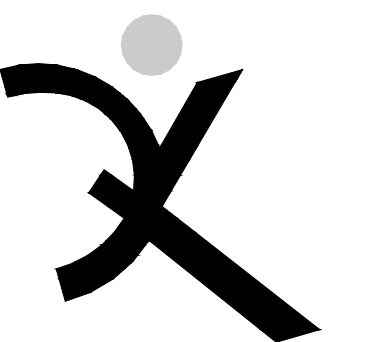
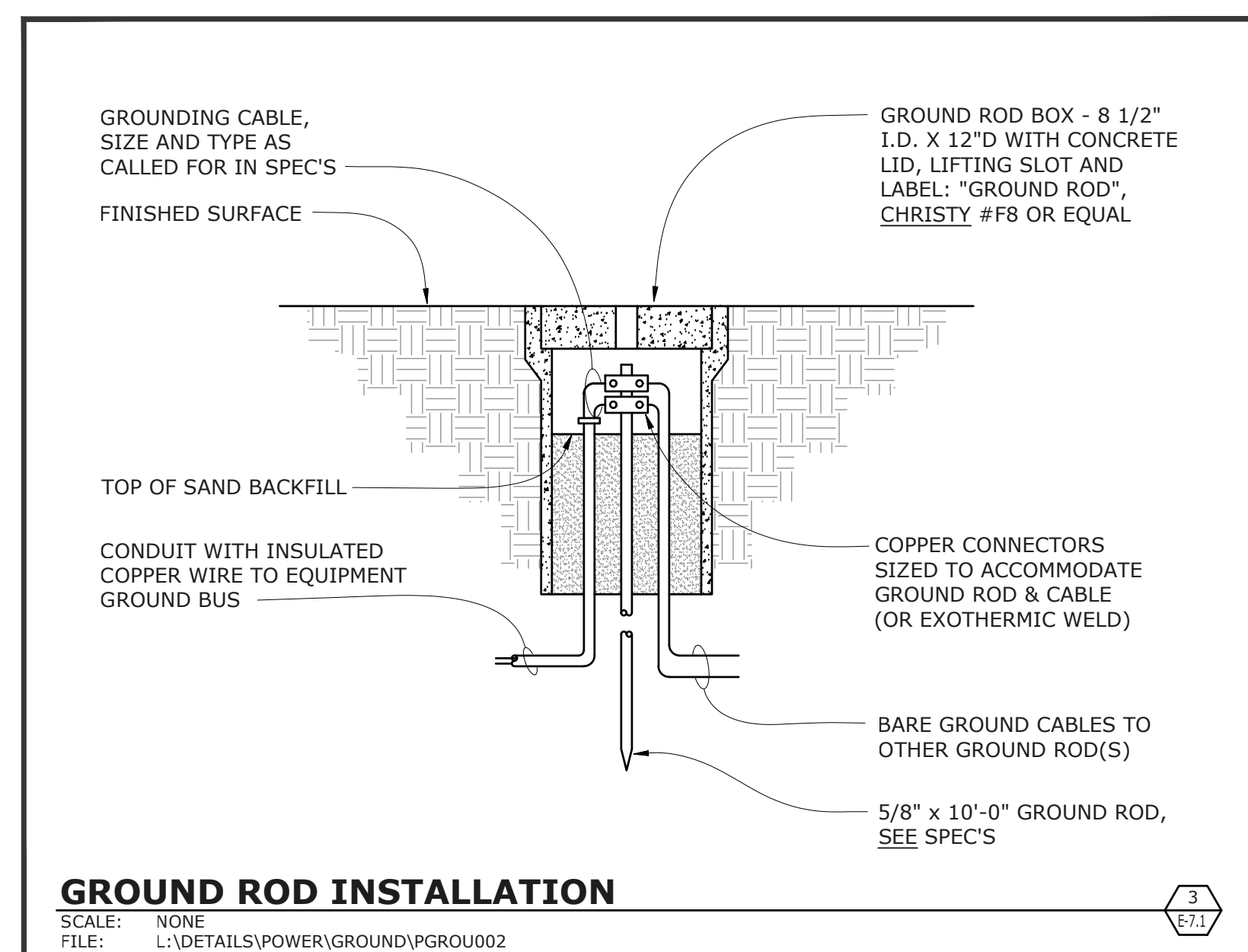
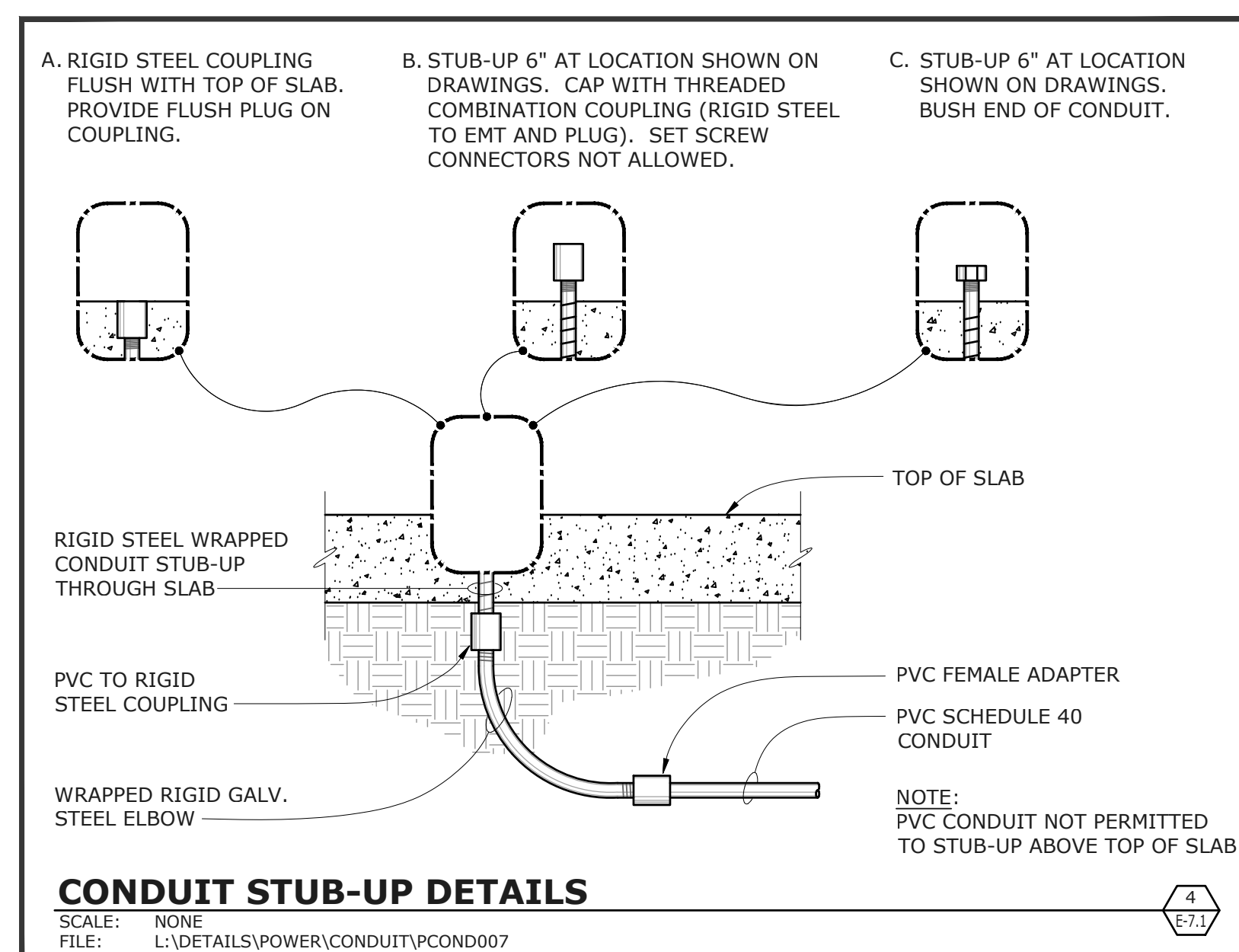
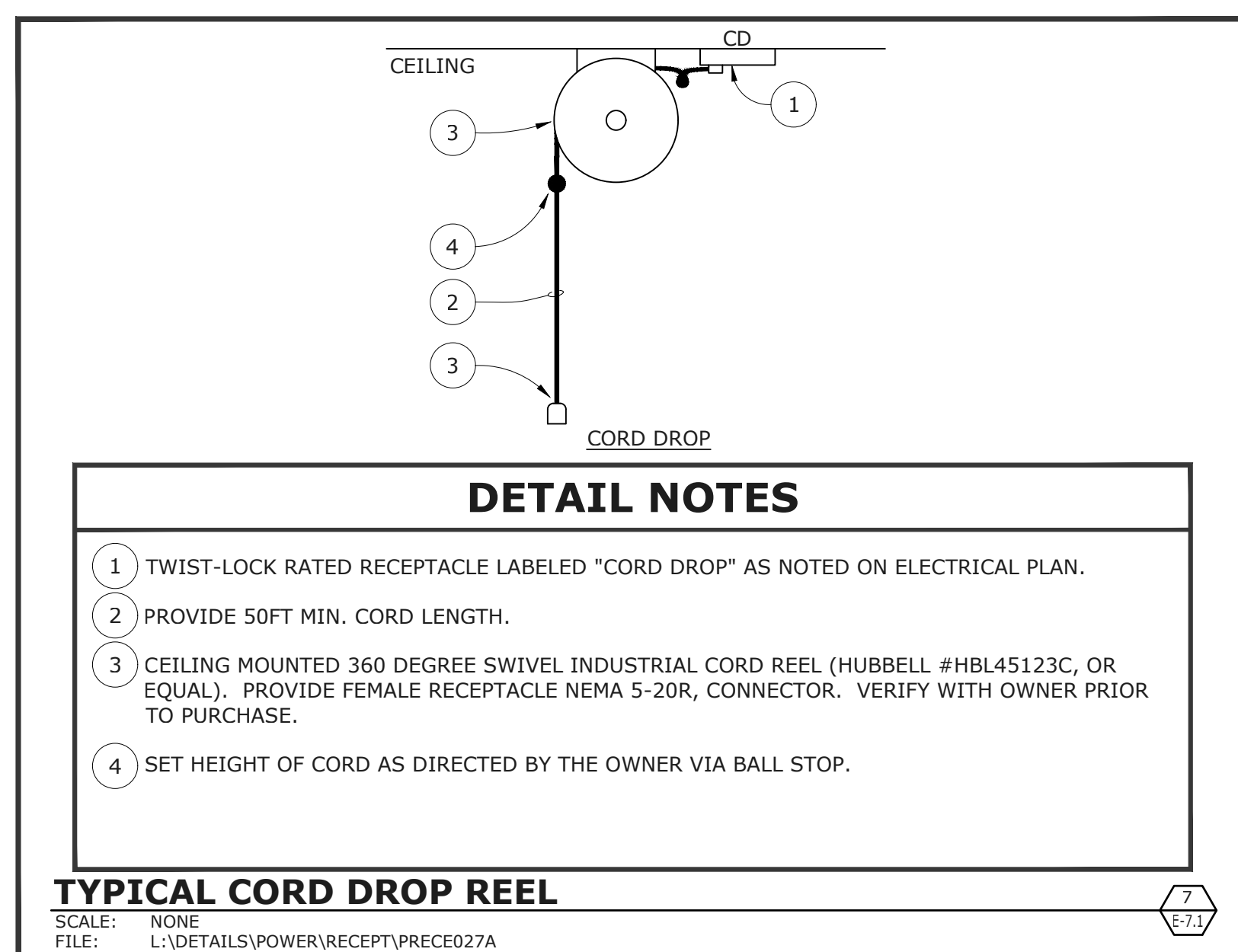
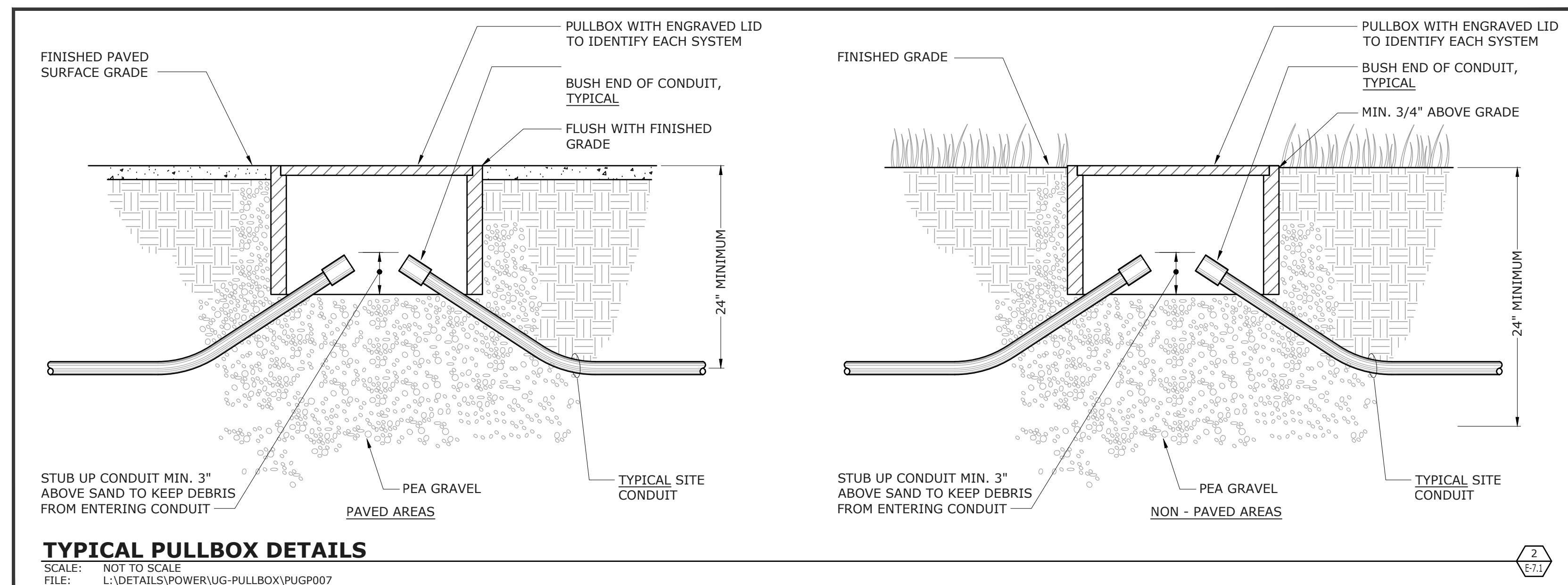
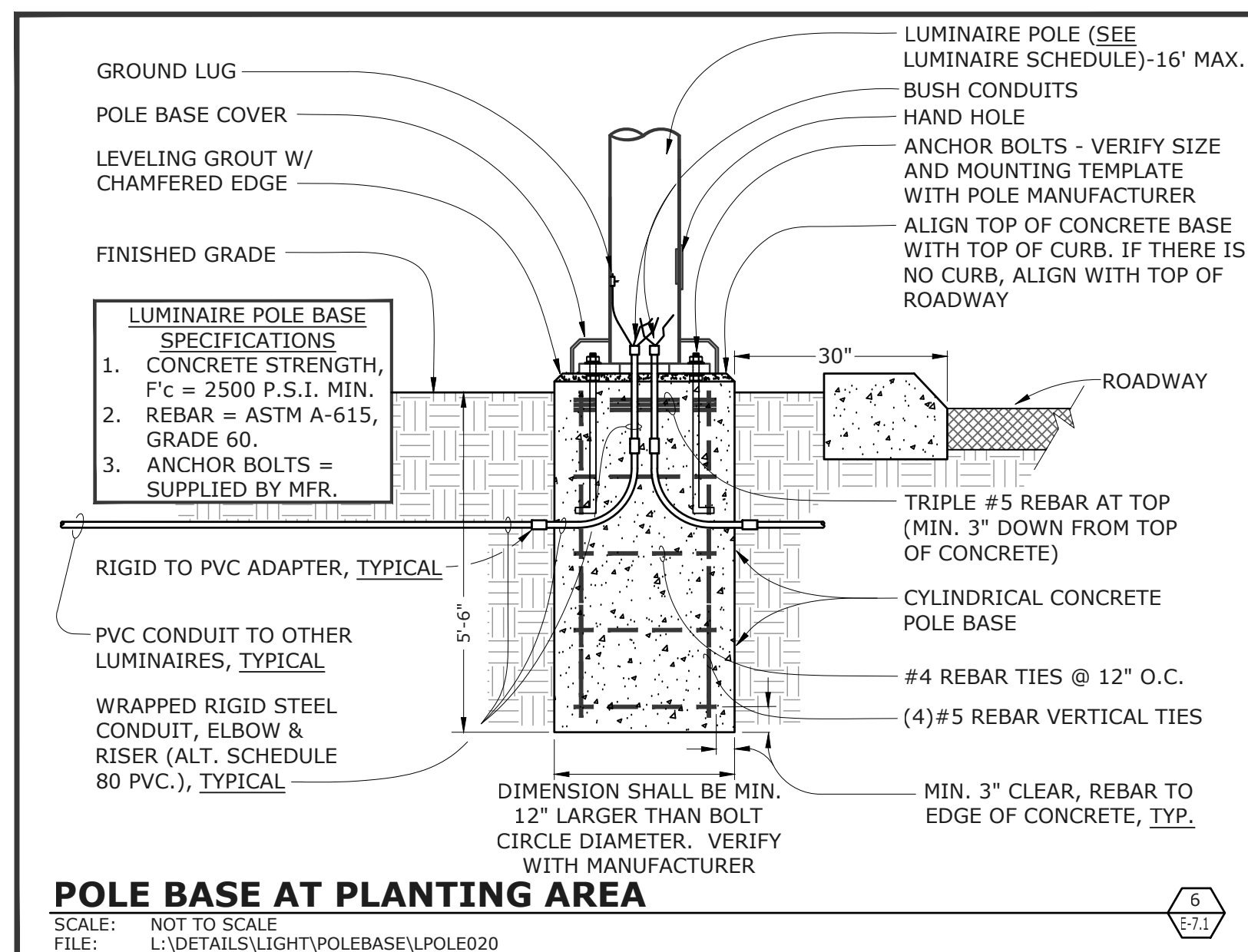
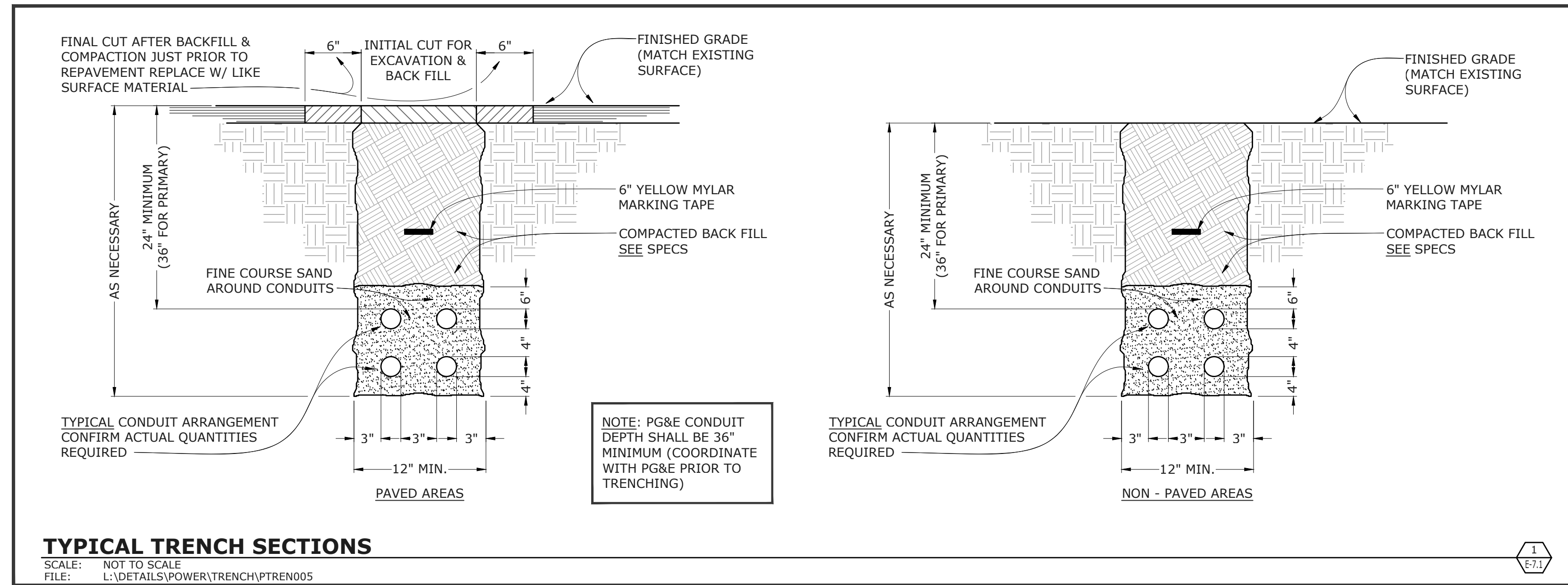
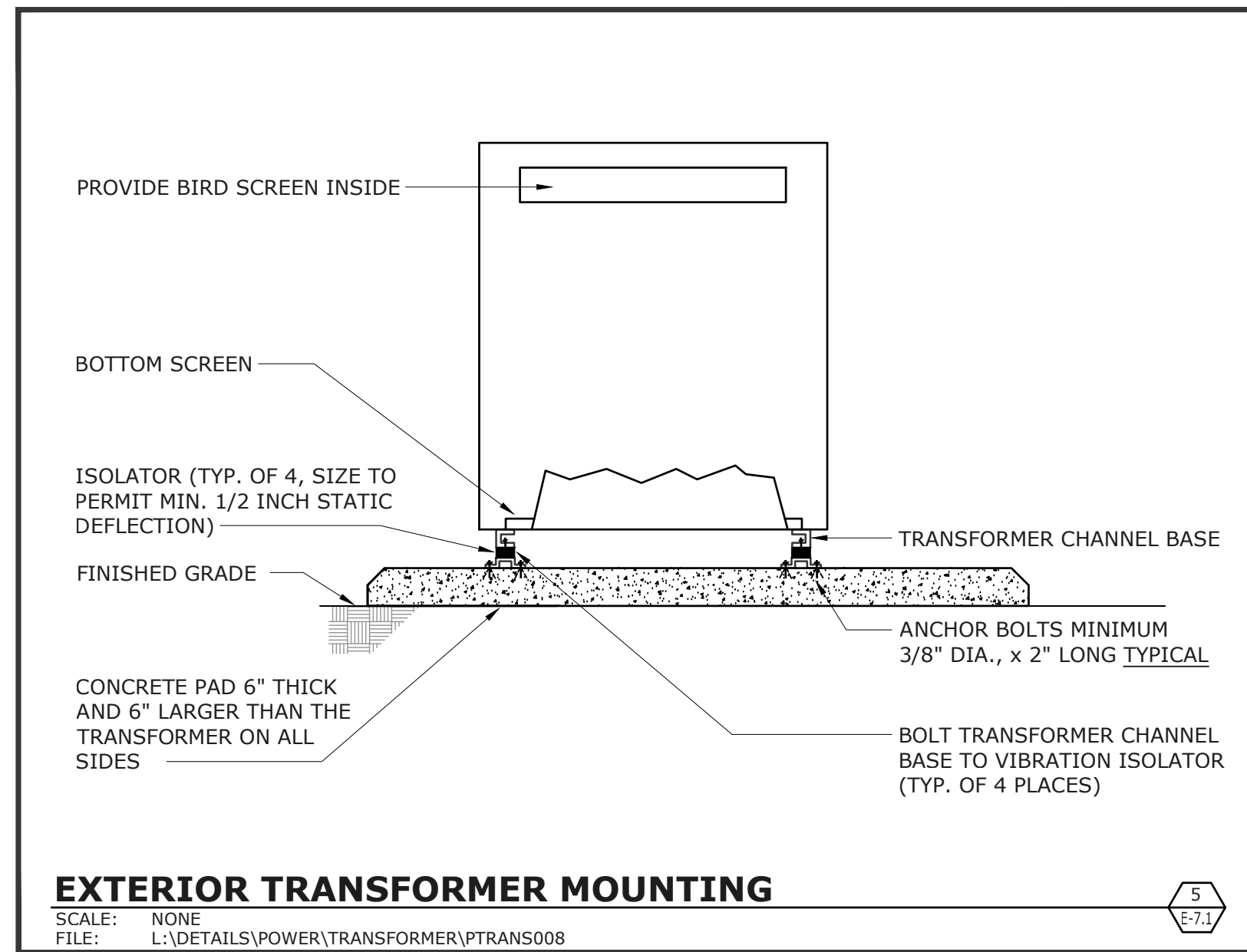
1. REFER TO THE MECHANICAL PLANS FOR THE EXACT LOCATION, CONNECTION REQUIREMENTS, AND SYSTEMS INTERLOCK/INTERFACE OF ALL EQUIPMENT. VERIFY REQUIREMENTS PRIOR TO ROUGH-IN.
2. WHERE DISCREPANCIES OCCUR BETWEEN THE ELECTRICAL SET, AND THE MECHANICAL PLANS / MECHANICAL EQUIPMENT SUBMITTALS, IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO NOTIFY THE ARCHITECT PRIOR TO ROUGH-IN.
3. ALL PROTECTIVE ELECTRICAL EQUIPMENT PROVIDED AT THE MECHANICAL EQUIPMENT, SHALL MATCH THE MANUFACTURER NAMEPLATES OF THE MECHANICAL UNIT PROVIDED ON SITE. VERIFY ALL REQUIREMENTS PRIOR TO ROUGH-IN.



MEZZANINE FLOOR PLAN - POWER & SIGNAL
 SCALE: 1/8" = 1'-0"
 REF. NORTH



FIRST FLOOR PLAN - POWER & SIGNAL
 SCALE: 1/8" = 1'-0"
 REF. NORTH



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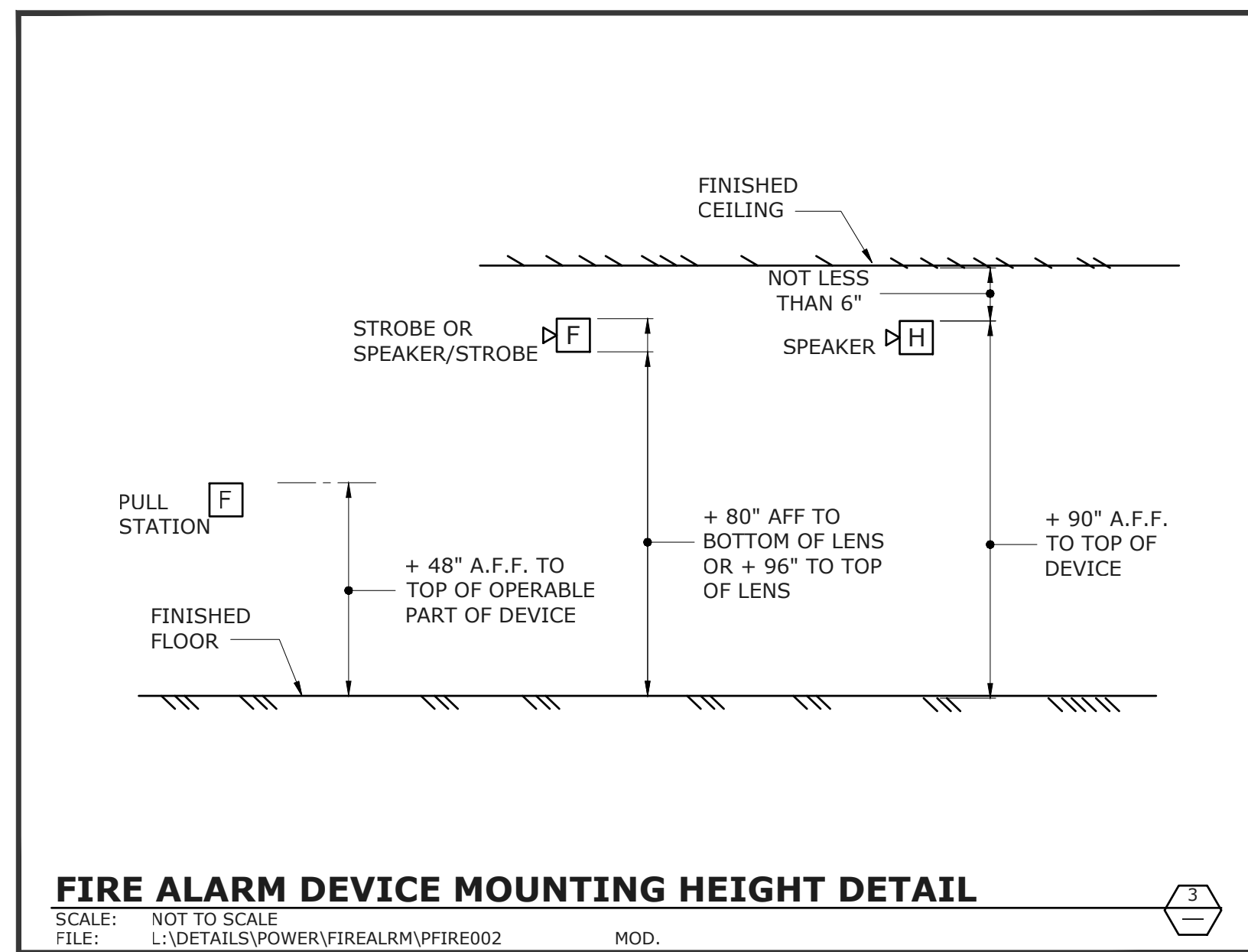
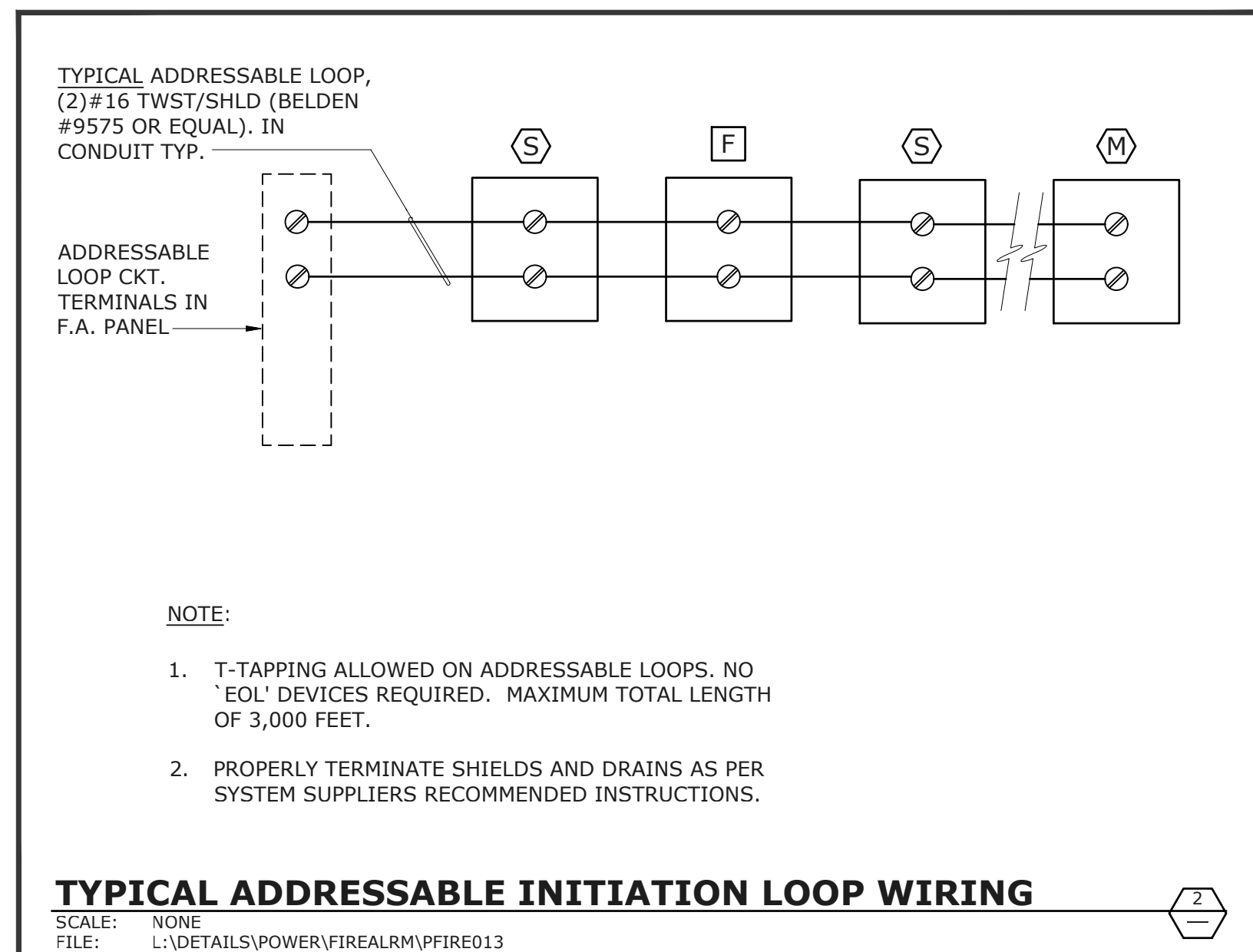
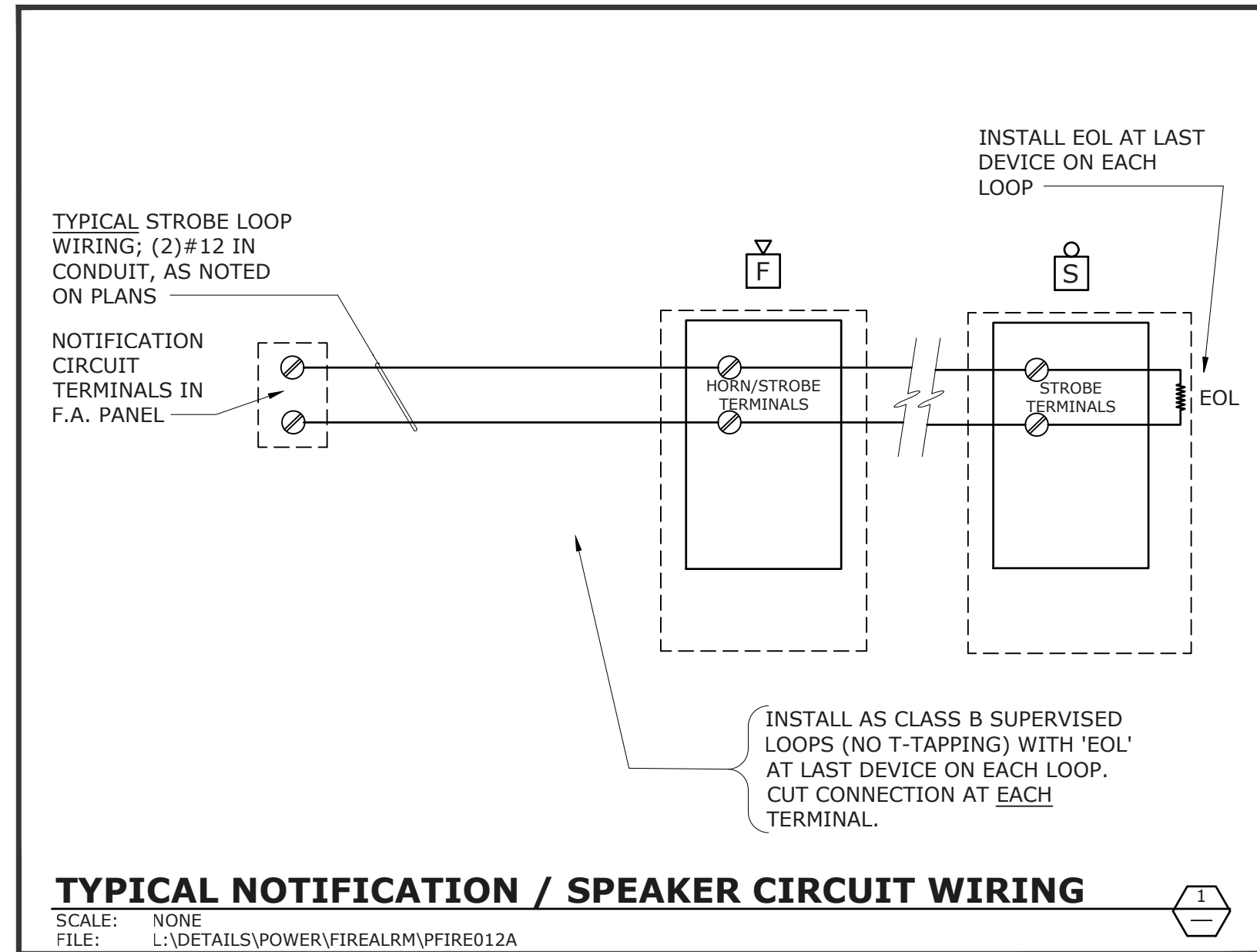
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JANUARY 4, 2019

SHEET TITLE

DETAILS

SHEET NUMBER

E-7.1



GENERAL FIRE ALARM NOTES CONTD.

- PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE ALARM DEVICE. DO NOT SPLICE WIRE. THERE MUST BE AT LEAST 6" OF WIRE LEAD FROM THE BOX TO THE DEVICE. ALL BOXES TO BE SIZED PER CEC FOR PROPER VOLUME WITH INSTALLED WIRING AND DEVICES.
- SUPERVISING STATION: AUTOMATIC FIRE ALARM SYSTEMS SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72, AS AMENDED BY CFC CHAPTER 80. THE SUPERVISION STATION SHALL BE LISTED AS EITHER UJFX OR UJUS BY UNDERWRITERS LABORATORY OR SHALL MEET THE REQUIREMENTS OF FACTORY MUTUAL RESEARCH APPROVAL STANDARD 301.1.
- A DOCUMENTATION CABINET SHALL BE INSTALLED ADJACENT TO THE FACP IN THE FRONT OFFICE (NFPA 72, 7.7.2.1).
- ALL RECORD DOCUMENTATION SHALL BE STORED IN THE DOCUMENTATION CABINET (NFPA 72, 7.7.2.2); PROVIDE NAMEPLATE "FIRE ALARM SYSTEM RECORD DOCUMENTS" (NFPA 72, 7.7.2.4).

FIRE ALARM WIRING LEGEND

TAG	DESCRIPTION	CABLING
A	INITIATION CIRCUIT	(2) #16 TWISTED/UNSHIELDED
B	NOTIFICATION CIRCUIT	(2) #12 THWN
C	IDNET COMMUNICATIONS CABLING	(2) #16 TWISTED/SHIELDED
D	CONTROL (NON RESETABLE POWER)	(2) #14 THHN/THWN

NOTES:
CONTRACTOR SHALL VERIFY EXACT CABLE/WIRE TYPES WITH SYSTEM MANUFACTURER PRIOR TO ROUGH-IN.
INSTALL CABLES IN WIREMOLD RACEWAY IN FINISH AREAS LIKE OFFICES, ADMIN & CLASSROOMS.

FIRE ALARM SYSTEM DESCRIPTION

- THE FIRE ALARM SYSTEM SHALL BE AN AUTOMATIC ADDRESSABLE SYSTEM WITH VOICE EVACUATION, CLASS B WIRING FOR NACS AND SLC'S TO MATCH EXISTING.
- CIRCUIT PATHWAY SURVIVABILITY SHALL BE LEVEL 1.
- PROVIDE AND INSTALL NEW EQUIPMENT, DEVICES AND REQUIRED MODULES FULLY COMPATIBLE WITH (E) FACP AND PROVIDE CONNECTIONS COMPLETE FOR A FULLY FUNCTIONING NETWORKED FIRE ALARM SYSTEM.
- THE NEW FIRE ALARM SYSTEM INCLUDES CARBON MONOXIDE DETECTORS WHERE REQUIRED.
- THE NAME OF THE SPECIFIC PERSON RESPONSIBLE FOR THE SYSTEM DESIGN IS CHRIS LIPPINCOTT (O'MAHONY & MYER).
- SYSTEM INSTALLATION SHALL BE BY A LICENSED ELECTRICAL OR FIRE ALARM CONTRACTOR WITH A CALIFORNIA C-10 LICENSE, FACTORY-AUTHORIZED, REGULARLY ENGAGED IN THE INSTALLATION AND COMMISSIONING OF FIRE ALARM SYSTEMS TO NFPA 72 STANDARDS. INSTALLING CONTRACTOR'S NAME AND CONTACT INFORMATION SHALL BE LISTED IN THE NFPA CLOSE OUT DOCUMENTATION AT COMPLETION OF PROJECT.

FIRE ALARM SCOPE OF WORK

- TERMINATE EACH NOTIFICATION LOOP TO THE FAEP, VOICE EVAC SYSTEM AS SHOWN ON PLANS AND RISER DIAGRAMS. PROVIDE NECESSARY MODULES IN THE (E) FACP TO ACCOMMODATE THE NEW DEVICES & VOICE EVAC SYSTEM.
- TERMINATE EACH INITIATION LOOP AT THE MAIN FIRE ALARM CONTROL PANEL AS SHOWN.
- PROVIDE A COMPLETE NETWORK FIRE ALARM SYSTEM, INCLUDING REMOTE POWER SUPPLY TERMINAL CABINETS, EXPANDER PANELS, OUTLETS, DEVICES AND WIRING FOR THE FACILITY AS SHOWN.

SEQUENCE OF OPERATION

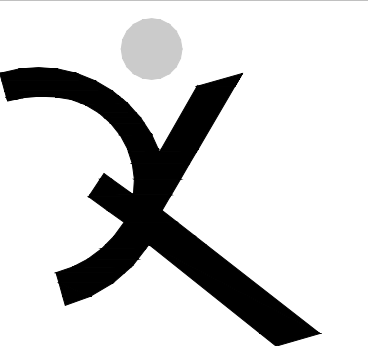
- MANUAL PULL STATION - WHEN A PULL STATION IS PULLED, IT SHALL ANNUNCIATE AN ALARM AT THE FACP. ALARM SHALL ACTIVATE ALL AUDIO AND VISUAL DEVICES THROUGHOUT THE CAMPUS.
- SMOKE AND HEAT DETECTORS - WHEN A SMOKE OR HEAT DETECTOR IS ACTIVATED, IT SHALL ANNUNCIATE AN ALARM AT THE FACP. ALARM SHALL ACTIVATE ALL AUDIO AND VISUAL DEVICES THROUGHOUT THE CAMPUS.
- CARBON MONOXIDE DETECTORS - WHEN TRIGGERED, CARBON MONOXIDE DETECTORS SHALL BE PROGRAMMED TO PROVIDE LOCAL NOTIFICATION THROUGH DEVICE BASE AS WELL AS ADMINISTRATION AREA NOTIFICATION THROUGH DEDICATED HORN/STROBE EMITTING A TEMPORAL 4 TONE. A CARBON MONOXIDE ALARM SHALL NOT ACTIVATE CAMPUS FIRE ALARM SYSTEM AND SHALL NOT DIAL OUT TO OFF-SITE MONITORING.
- ANY BUILDING POWER FAILURE- IF THE BUILDING LOSES POWER, THE FAILURE SHALL SHOW UP AS A TROUBLE SIGNAL ON THE FACP. THE SYSTEM SHALL STAY ACTIVE ON BATTERY BACK-UP POWER IN ACCORDANCE WITH THE STATE FIRE CODE.
- SYSTEM SHALL INDICATE TROUBLE ALARMS FOR ALL SYSTEM FAULTS (i.e. GROUND FAULTS, SHORTS, OPEN CIRCUITS, BATTERY DISCONNECT, ETC.).
- FIRE/SMOKE DAMPERS - WHEN A FIRE/SMOKE DAMPER SMOKE DETECTOR IS ACTIVATED, IT SHALL ANNUNCIATE AN ALARM AT THE MAIN FACP. ALARM SHALL ACTIVATE ALL AUDIO AND VISUAL DEVICES THROUGHOUT THE CAMPUS AND SHALL SHUT DOWN THE ASSOCIATED HVAC UNIT.
- FIRE SPRINKLER SYSTEM - WHEN A FLOW SWITCH IS ACTIVATED, IT SHALL ANNUNCIATE AN ALARM AT THE MAIN FACP. ALARM SHALL ACTIVATE ALL AUDIO AND VISUAL DEVICES THROUGHOUT THE CAMPUS. WHEN TAMPER SWITCH IS ACTIVATED, IT SHALL ANNUNCIATE A SUPERVISORY ALARM AT THE MAIN FACP.
- UPON ALARM CONDITION, AUTO DIALER TO NOTIFY THE SUPERVISING STATION, AND AUTHORIZED SCHOOL PERSONNEL TO NOTIFY THE FIRE DEPARTMENT AND INITIATE EVACUATION OF STUDENTS AND FACULTY AS PER THE SCHOOL'S EVACUATION PLAN.
- UPON TROUBLE CONDITION, AUTO DIALER TO NOTIFY THE SUPERVISING STATION, AND AUTHORIZED SCHOOL PERSONNEL TO NOTIFY AUTHORIZED TECHNICIAN TO CORRECT THE TROUBLE CONDITION.

FIRE ALARM EQUIPMENT LIST

SYMBOL	DESCRIPTION	MANUFACTURER & MODEL NUMBER	CSFM LISTING NUMBER	STANDBY CURRENT	ALARM CURRENT
[FACP]	EXISTING FIRE ALARM ALARM CONTROL PANEL	SIMPLEX 4100ES	7165-0026-0251	373mA	470mA
[FAEP]	FIRE ALARM NAC EXTENDER	SIMPLEX 4009	7300-0026-0214	87mA	185mA
[M]	ADDRESSABLE MONITOR MODULE	SIMPLEX 4090-9001	7300-0026-0223	-	5.10mA
[R]	ADDRESSABLE RELAY MODULE	SIMPLEX 4090-9002	7300-0026-0223	-	5.10mA
[S]	ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR	SIMPLEX 4098-9714	7272-0026-0218	0.40mA	1mA
[D]	ADDRESSABLE DETECTOR BASE	SIMPLEX 4098-9792	7300-0026-0217	-	-
[H]	ADDRESSABLE HEAT DETECTOR	SIMPLEX 4098-9733	7270-0026-0216	0.40mA	1mA
[D]	ADDRESSABLE DETECTOR BASE	SIMPLEX 4098-9792	7300-0026-0217	-	-
[F]	ADDRESSABLE MANUAL PULLSTATION	SIMPLEX 4099-9006	7150-0026-0224	0.038mA	5.10mA
[S]	VISUAL STROBE (WALL MOUNT)	SIMPLEX 4906-9101 (WALL)	7125-0026-0316	-	-
[S]	WALL MOUNT, SELECTABLE CANDELA			15cd	0mA
[S]	UL 1971 PUBLIC MODE NOTIFICATION			30cd	0mA
[S]				75cd	0mA
[S]				110cd	0mA
[S]				252mA	
[S]	COMBINATION VISUAL STROBE AND AUDIBLE HORN,	SIMPLEX 4906-9127 (WALL)	7125-0026-0317	-	-
[S]	WALL MOUNT, SELECTABLE CANDELA			15cd	0mA
[S]	UL 1971 PUBLIC MODE NOTIFICATION			30cd	0mA
[S]				75cd	0mA
[S]				110cd	0mA
[S]				285mA	
[S]	VISUAL STROBE (CEILING MOUNT)	SIMPLEX 4906-9102 (CLG)	7125-0026-0316	-	-
[S]	CEILING MOUNT, SELECTABLE CANDELA			15cd	0mA
[S]	UL 1971 PUBLIC MODE NOTIFICATION			30cd	0mA
[S]				75cd	0mA
[S]				110cd	0mA
[S]				316mA	
[S]	COMBINATION VISUAL STROBE AND AUDIBLE HORN,	SIMPLEX 4906-9128 (CLG)	7125-0026-0317	-	-
[S]	CEILING MOUNT MOUNT, SELECTABLE CANDELA			15cd	0mA
[S]	UL 1971 PUBLIC MODE NOTIFICATION			30cd	0mA
[S]				75cd	0mA
[S]				110cd	0mA
[S]				320mA	
[S]	EXTERIOR AUDIBLE HORN WITH	SIMPLEX 4901-0820	7320-0785-0105	0mA	23mA
[S]	WEATHER-PROOF BACKBOX	#49WPBB			
[S]	DOCUMENTATION CABINET	SPACE AGE ELECT. S5U00685			

GENERAL FIRE ALARM NOTES

- FINAL FIRE ALARM TEST SHALL BE MADE WITH THE DSA INSPECTOR OF RECORD (IOR). LOCAL FIRE AUTHORITY SHALL BE NOTIFIED OF DATE AND TIME OF FINAL ALARM TESTING AND SHALL ASSIST/WITNESS SUCH TESTING WHEN ABLE. DSA/ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF (48) HOURS PRIOR TO THE FINAL INSPECTION AND/OR TESTING.
- FIRE ALARM CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2. MONITORING SHALL BE TESTED AND VERIFIED AS SENDING THE CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT AND/OR PROVISIONS
- UNDERGROUND AND EXTERIOR CONDUITS SHALL HAVE WATERTIGHT FITTINGS.
- FIRE ALARM DEVICE MOUNTING HEIGHTS:
 - PULL STATION: 48" TO TOP OF OPERATOR ABOVE FINISHED FLOOR.
 - HORN INTERIOR: 90" MIN. TO TOP OF DEVICE ABOVE FINISHED FLOOR, OR 100" MAX TO TOP OF DEVICE, BUT NOT LESS THAN 6" FROM CEILING.
 - WALL MOUNTED STROBE OR HORN/STROBE: BETWEEN 80" TO BOTTOM OF DEVICE LENS TO +96" TO TOP OF DEVICE LENS ABOVE FINISH FLOOR, BUT NOT LESS THAN 6" FROM CEILING.
 - CONTROL PANELS / ANNUNCIATORS: 48" TO BOTTOM OF EQUIPMENT.
- AUDIBLE FIRE ALARM SYSTEM LEVEL SHALL BE AT LEAST 15dBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL IN ALL OCCUPIABLE AREAS, OR 5 dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER, MEASURED AT 5 FEET ABOVE THE FLOOR. AUDIBLE SIGNALS SHALL NOT BE LESS THAN 75dBA AT 10 FEET, OR MORE THAN 110dBA AT THE MINIMUM HEARING DISTANCE.
- AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL THREE DISTINCTIVE FIRE ALARM SOUND PER NFPA 72.
- APPLICABLE CODES:
 - a. CBC 2016; CEC 2016; CMC 2016; CFC 2016.
 - b. STATE FIRE MARSHAL TITLE 19, PUBLIC SAFETY.
 - c. NFPA 72, 2016 EDITION W/CA AMENDMENTS, FIRE ALARM CODE.
 - d. NFPA 720, STANDARD FOR THE INSTALLATION OF CARBON MONOXIDE (CO) DETECTION AND WARNING EQUIPMENT, 2015.
- STROBES SHALL FLASH AT A RATE NOT EXCEEDING TWO FLASHES PER SECOND, AND NOT LESS THAN ONE FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELA. VISUAL DEVICES WITHIN 55 FEET OF EACH OTHER SHALL BE SYNCHRONIZED.
- FIRE ALARM CONTRACTOR SHALL PROVIDE A "RECORD OF COMPLETION" TO THE INSPECTOR OF RECORD IOR/DSA AFTER COMPLETION OF OPERATIONAL ACCEPTANCE TESTS, PER NFPA 72.
- POWER SERVICE TO THE FACP, REMOTE POWER SUPPLIES, AND CENTRAL STATION AUTO DIALER SHALL BE ON A DEDICATED BRANCH CIRCUIT WITH A RED MARKING AND IDENTIFIED AS "FIRE ALARM CIRCUIT CONTROL".
- INSTALL ALL WIRING IN CONDUIT, MIN. 3/4" CONDUIT. ALL FIRE ALARM SYSTEM WIRING SHALL BE FLP (FIRE POWER LIMITED) OR FPLP (FIRE POWER LIMITED PLENUM RATED) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE THHN OR THWN.
- CONDUIT AND WIRING SHALL BE PER MANUFACTURERS REQUIREMENTS.
- ALL FIRE ALARM COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICES/EQPT. SHALL EXCEED 20LBS. WITHOUT SPECIAL MOUNTING DETAILS.
- INSTALLATION OF SYSTEM SHALL NOT BE STARTED UNTIL COMPLETE SET OF CONSTRUCTION DOCUMENTS (WITH DEVICE TYPES AND LISTINGS) HAVE BEEN REVIEWED AND APPROVED BY DSA.
- A STAMPED SET OF APPROVED PLANS SHALL BE ON THE JOB SITE AT ALL TIMES AND SHALL BE USED FOR INSTALLATION.
- ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND ARCHITECT/ENGINEER OF RECORD.
- THE CONTRACTOR SHALL INSTALL AND ADJUST ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
- SMOKE DETECTORS SHALL NOT BE ANY CLOSER THAN 1 FOOT FROM FIRE SPRINKLER HEADS OR 3 FEET FROM ANY SUPPLY DIFFUSER. IN AREAS OF CONSTRUCTION OR POSSIBLE DAMAGE /CONTAMINATION, INSTALLED DEVICES SHALL BE COVERED UNTIL AREA IS READY TO BE TURNED OVER TO THE OWNER.



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FREEDOM HIGH SCHOOL

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1050 NEROLY ROAD
OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS	DATE	DESCRIPTION

ARCH PROJECT NO: 1739.02
DRAWN BY: TV
DRAWING SCALE: AS NOTED
PTN: 61721-0069

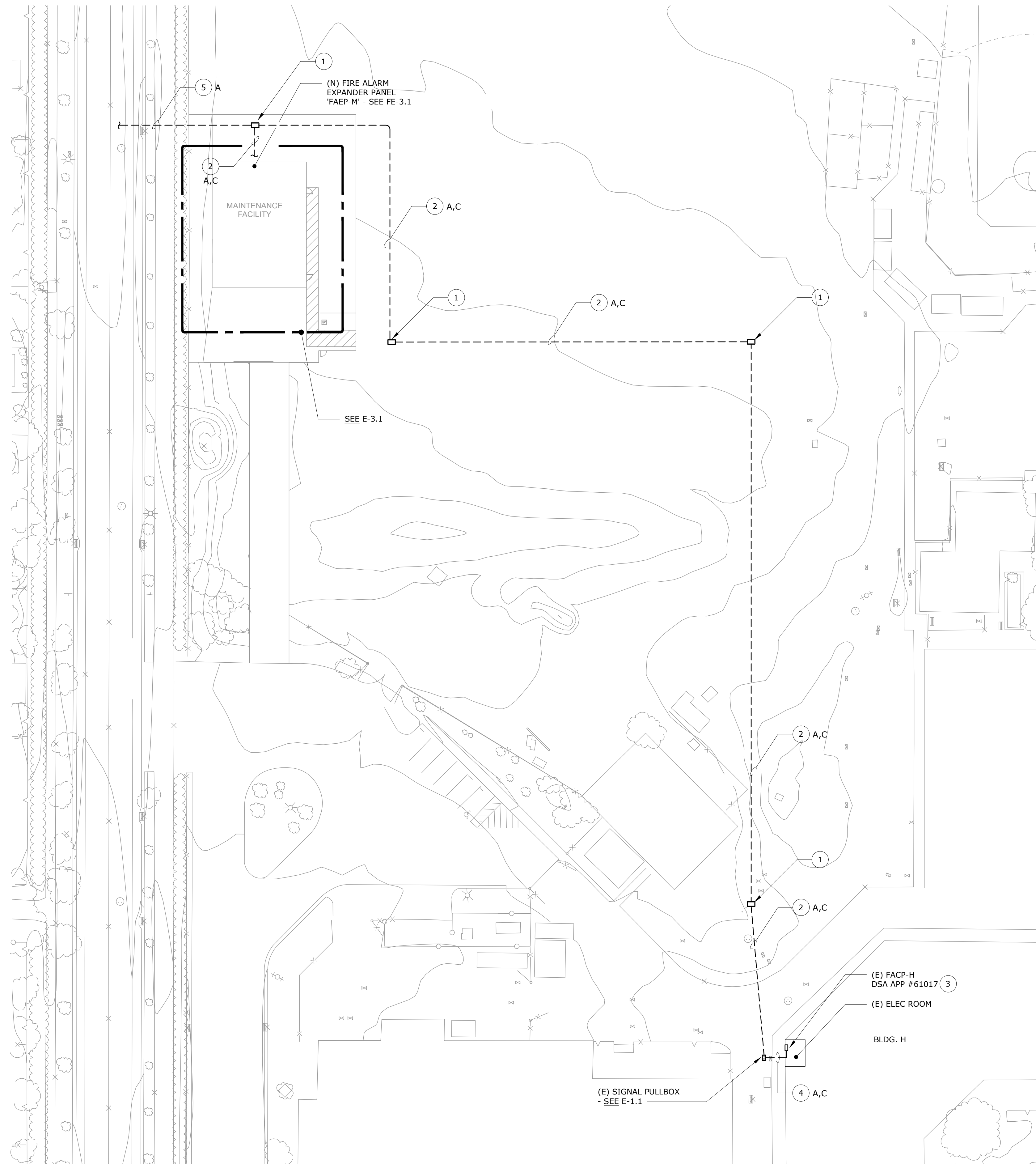
BID SET
JANUARY 4, 2019

SHEET TITLE

FIRE ALARM EQUIPMENT LIST GENERAL NOTES DETAILS

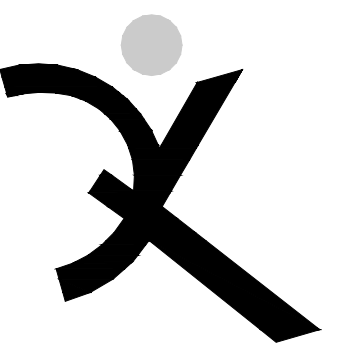
SHEET NUMBER

FE-0.1



NUMBERED SHEET NOTES

- 1 SIGNAL PULLBOX - SEE SITE PLAN E-1.1 FOR REQUIREMENTS AND ROUTING.
- 2 FIRE ALARM CONDUIT - SEE SITE PLAN E-1.1 FOR REQUIREMENTS AND ROUTING. PROVIDE AND INSTALL FIRE ALARM WIRING INDICATED ADJACENT NOTE TAG.
- 3 CONNECT COMPLETE TO EXISTING FIRE ALARM 2-WIRE IDNET COMMUNICATIONS CABLING AT EXISTING FIRE ALARM EQUIPMENT. SEE FE-0.1 RISER DIAGRAM.
- 4 RE-USE EXISTING RACEWAY FROM EXISTING SIGNAL PULLBOX.
- 5 PROVIDE AND INSTALL (1) 1" C. WITH FIRE ALARM WIRING INDICATED, CONNECT COMPLETE TO POST INDICATING VALVE LOCATION. SEE 1/FE-3.1 FOR MODULE LOCATION.



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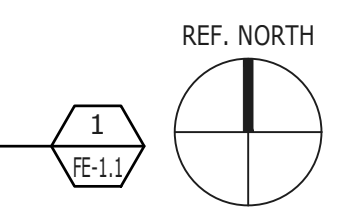
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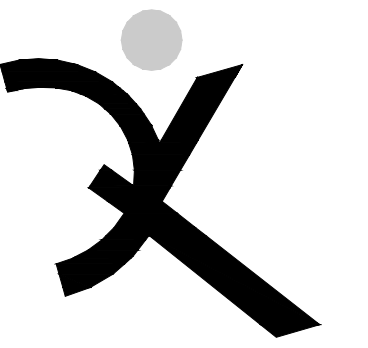
SITE PLAN - FIRE ALARM

SHEET NUMBER
FE-1.1

SITE PLAN - FIRE ALARM

SCALE: 1" = 30'-0"





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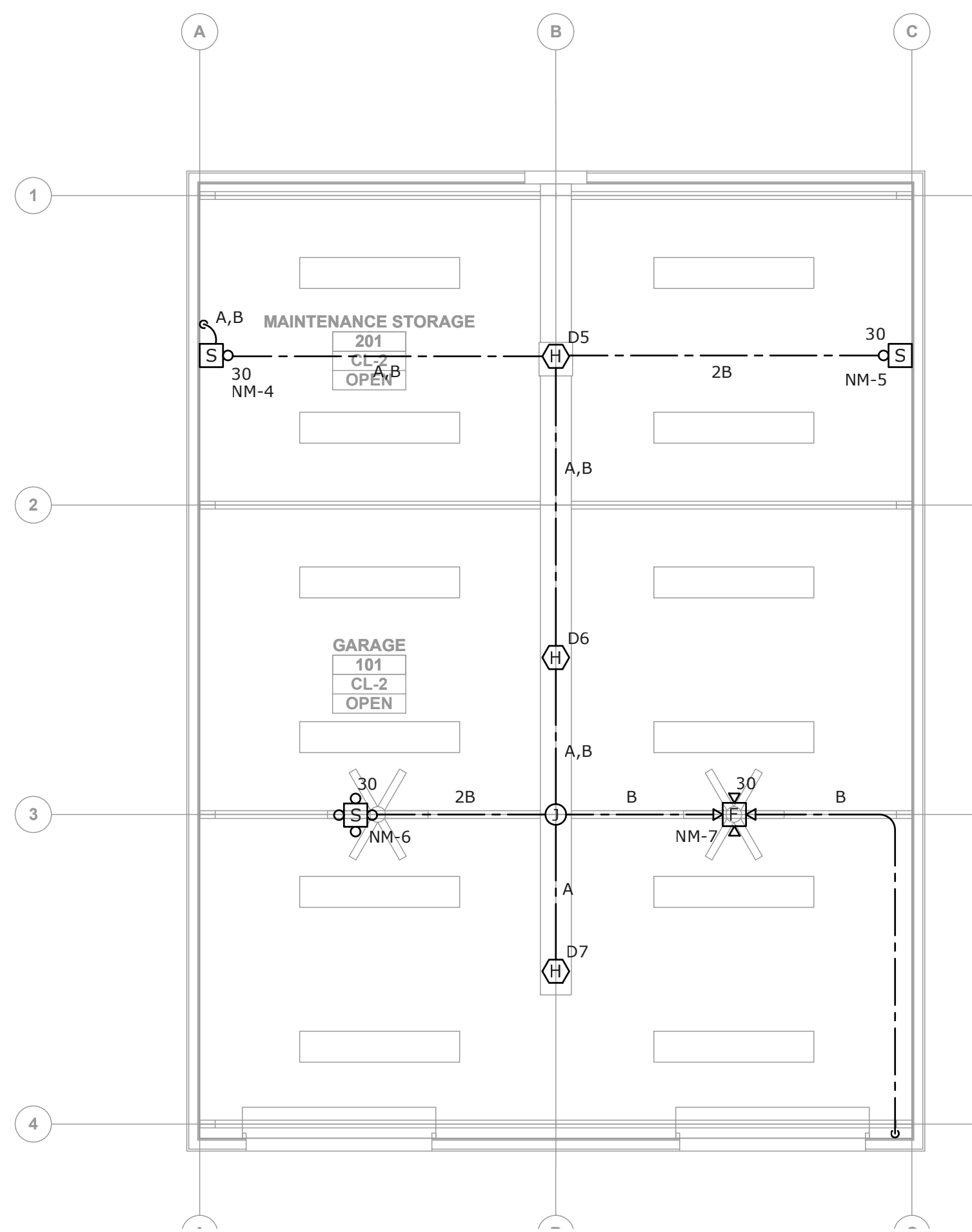
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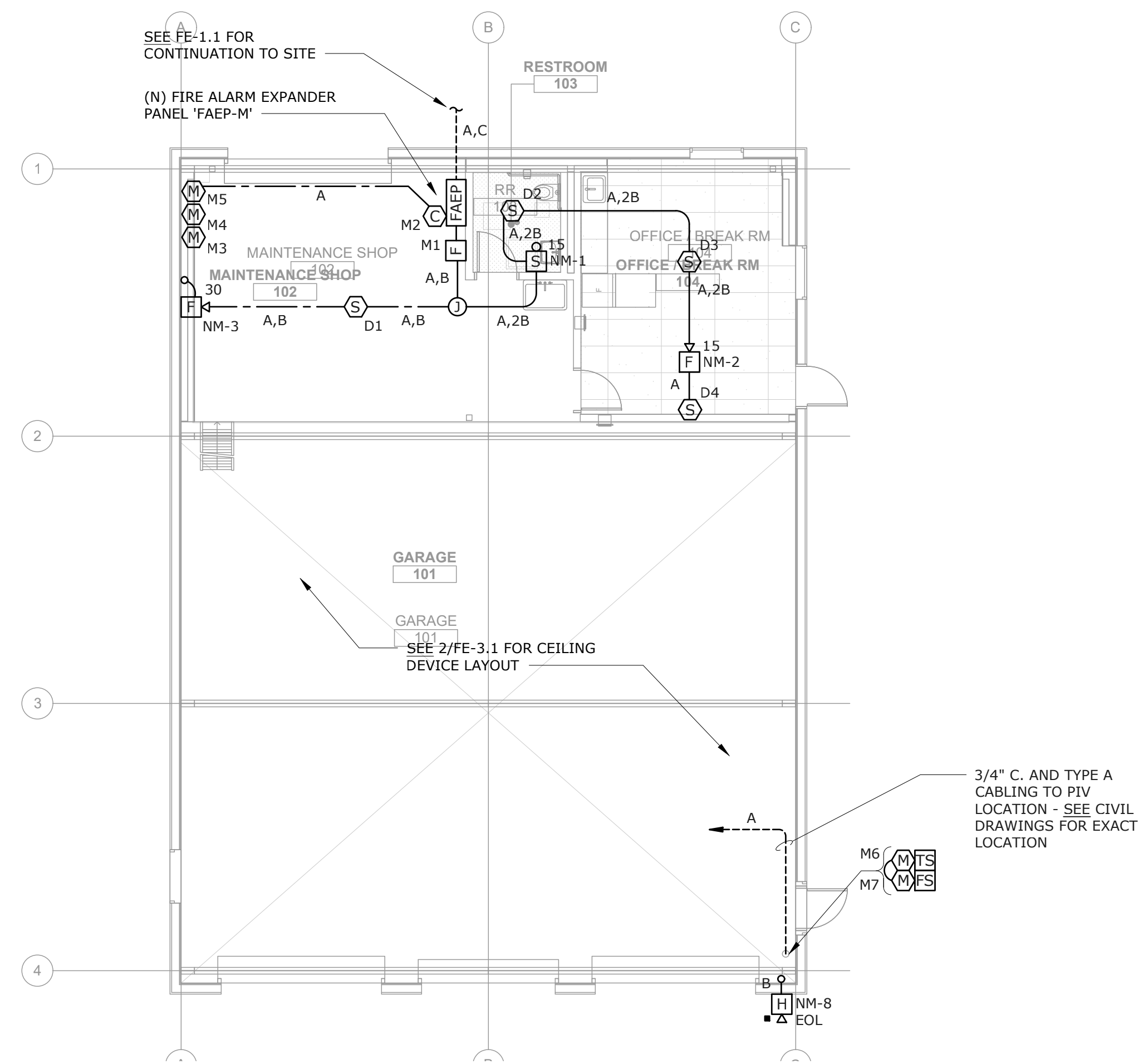
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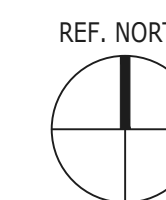
MEZZANINE FLOOR PLAN - FIRE ALARM
 SCALE: 1/8" = 1'-0"

2
 FE-31



FIRST FLOOR PLAN - FIRE ALARM
 SCALE: 1/8" = 1'-0"

1
 FE-31



REVISIONS

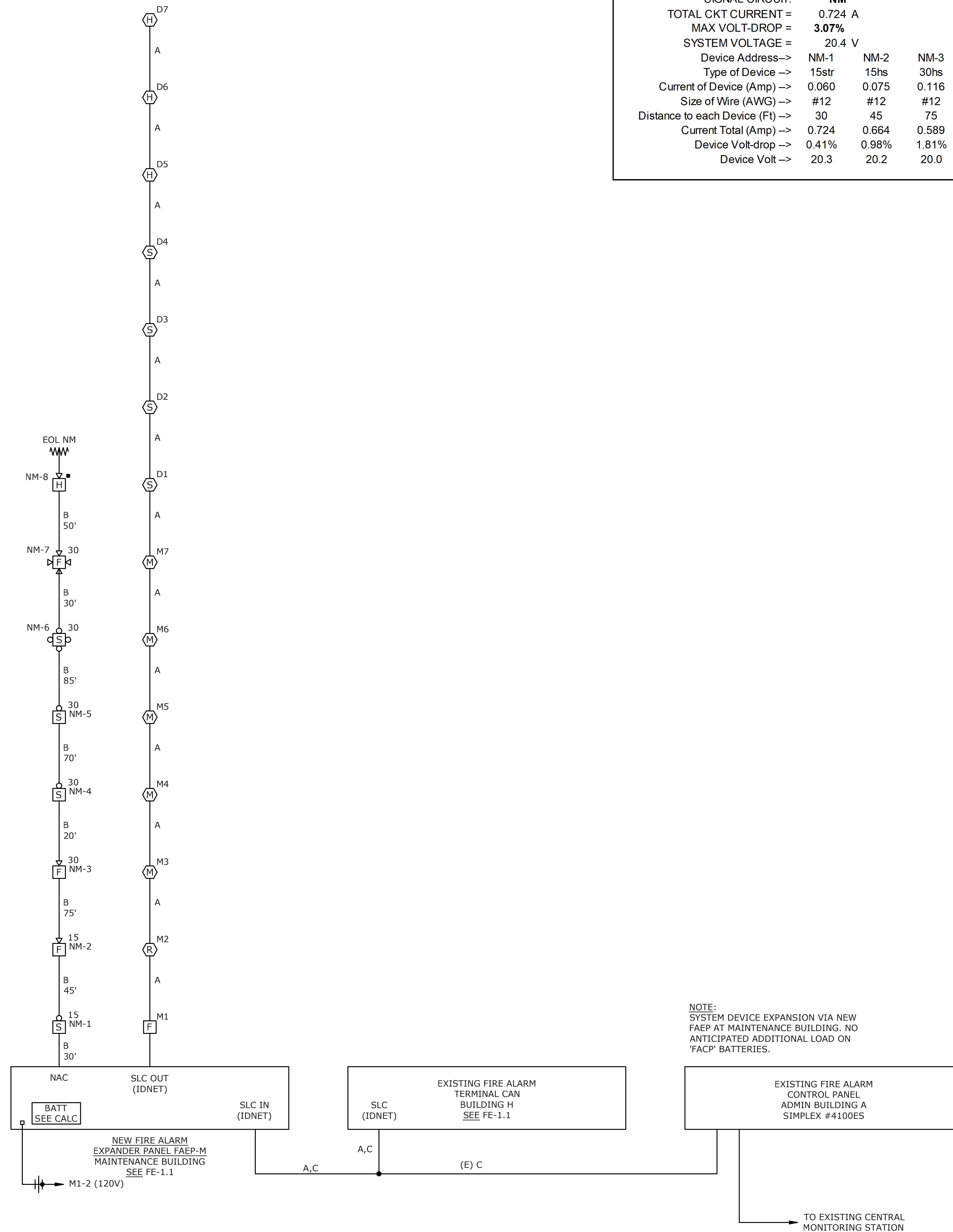
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 SHEET TITLE

FIRST & MEZZANINE FLOOR PLANS - FIRE ALARM

SHEET NUMBER
FE-3.1



RISER DIAGRAM - FIRE ALARM
SCALE: NO SCALE

VOLTAGE DROP CALCULATIONS

NEW FIRE ALARM EXPANDER PANEL 'FAEP-M'										
SIGNAL CIRCUIT:	NM									
TOTAL CKT CURRENT =	0.724 A									
MAX VOLT-DROP =	3.07%									
SYSTEM VOLTAGE =	20.4 V									
Device Address->	NM-1	NM-2	NM-3	NM-4	NM-5	NM-6	NM-7	NM-8		
Type of Device ->	15str	15hs	30hs	30str	30str	30cstr	30chs	WPH	eol	
Current of Device (Amp) ->	0.060	0.075	0.116	0.094	0.094	0.125	0.132	0.023	0.005	
Size of Wire (AWG) ->	#12	#12	#12	#12	#12	#12	#12	#12	#12	
Distance to each Device (Ft) ->	30	45	75	20	70	85	30	50	5	
Current Total (Amp) ->	0.724	0.664	0.589	0.473	0.379	0.285	0.160	0.028	0.005	
Device Volt-drop ->	0.41%	0.98%	1.81%	1.99%	2.49%	2.95%	3.04%	3.07%	3.07%	
Device Volt ->	20.3	20.2	20.0	20.0	19.9	19.8	19.8	19.8	19.8	

BATTERY CALCULATIONS: FIRE ALARM EXPANDER 'FAEP-M'

STANDBY MODE			
	EA (A)	QTY	CURRENT
CTRL UNIT	0.087	1	0.087
DEVICES	0.000	7	0.000
MODULES	0.000	7	0.000

TOTAL STANDBY CURRENT = 0.087 A
REQUIRED (24 HOURS) = 2.088 AH

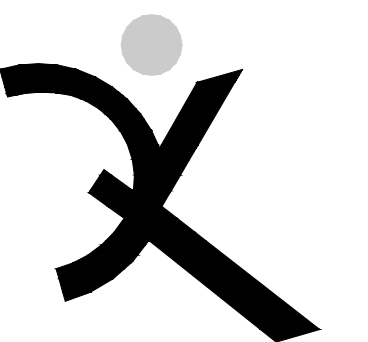
ALARM MODE			
	EA (A)	QTY	CURRENT
CTRL UNIT	0.185	1	0.185
DEVICES	0.000	7	0.001
MODULES	0.005	7	0.036
NOTIFICATION CKT NM	0.724	1	0.724

TOTAL ALARM CURRENT = 0.945 A
REQUIRED (15 MIN) = 0.236 AH

TOTAL POWER REQUIRED WITH 120%
BATTERY DERATING FACTOR = 2.789 AH

PROVIDE TWO 12V, 6.0AH BATTERIES

NOTE:
SYSTEM DEVICE EXPANSION VIA NEW
FAEP AT MAINTENANCE BUILDING. NO
ANTICIPATED ADDITIONAL LOAD ON
'FACP' BATTERIES.



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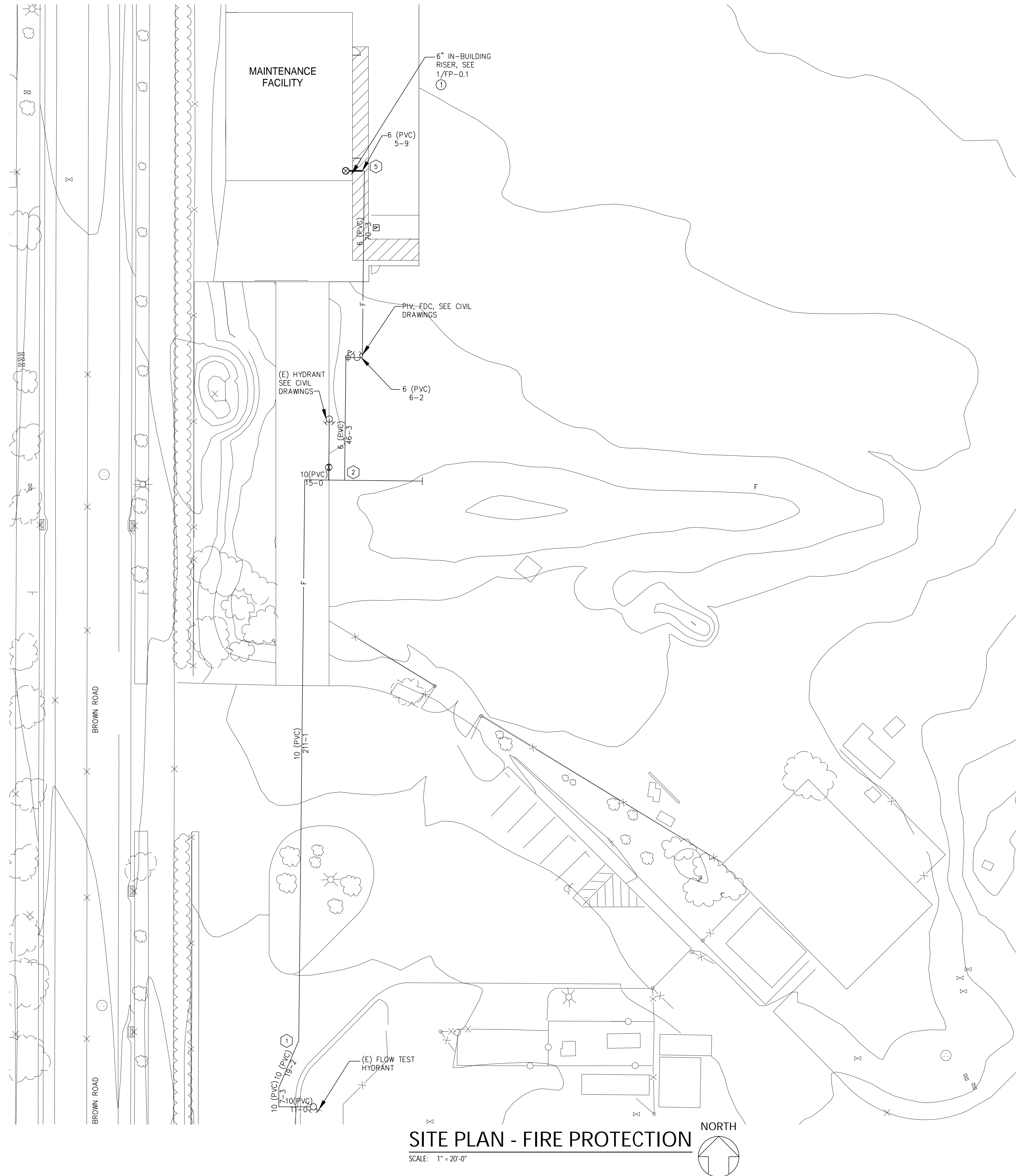
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**DIAGRAMS & CALCULATIONS
FIRE ALARM**

SHEET NUMBER

FE-5.1

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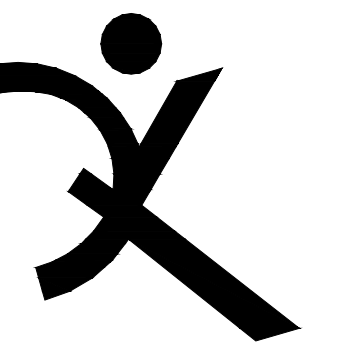
SITE PLAN - FIRE PROTECTION
 SCALE: 1" = 20'-0"

NOTES

1. FIRE SERVICE PIPING IS SHOWN ON DRAWING FP1.1 TO SHOW NODE LOCATIONS REQUIRED FOR OVERHEAD FIRE SPRINKLER HYDRAULIC CALCULATIONS. DESIGN AND SPECIFICATION NEW UNDERGROUND FIRE SERVICE PIPING IS BY THE PROJECT CIVIL ENGINEER, SEE CIVIL DRAWINGS AND SPECIFICATIONS.

KEY NOTES

① FIRE RISER WITH CONTROL VALVE AND FLOW SWITCH THAT REQUIRES MONITORING BY THE FIRE ALARM SYSTEM



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ARCH PROJECT NO: 1739.02
 DRAWN BY: CADD
 DRAWING SCALE: 1/8"=1'-0"
 PTN: 61721-0069

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SHEET TITLE

**SITE PLAN-
 FIRE
 PROTECTION**

SHEET NUMBER

FP-1.1

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22 Lower Reggsdale Dr., Suite A
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 AE Project #: 2018254

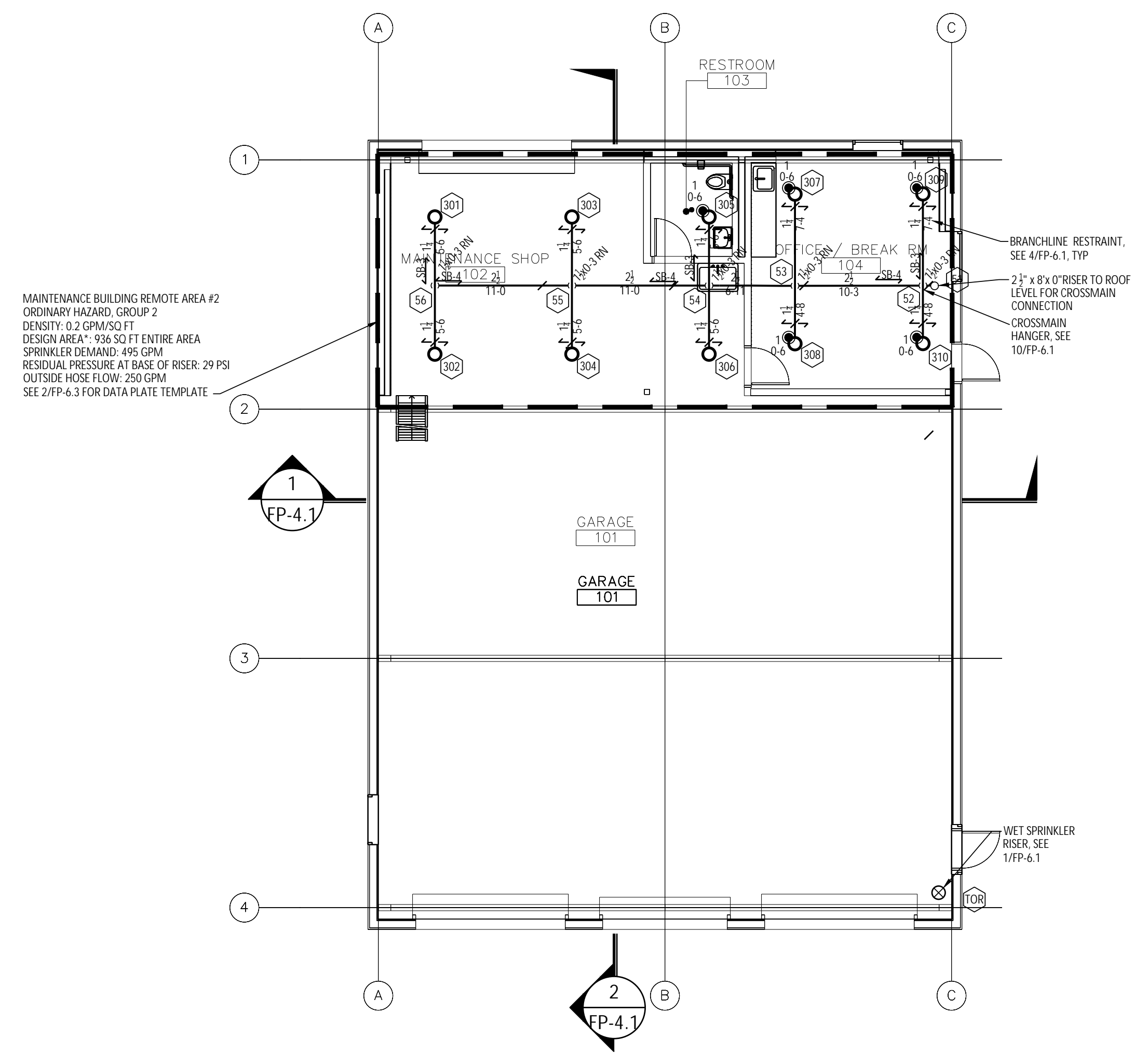
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SPRINKLERS									
SYMBOL	DESCRIPTION	MANF.	MODEL	SIN	TYPE	K FACTOR	TEMP. RATING	QTY	REMARKS
●	RECESSED PENDENT	TYCO	TY-FRB	3231	SSP	5.6	200° F	5	① ②
○	UPRIGHT	TYCO	TY-FRB	3131	SSU	5.6	200° F	10	
TOTAL SPRINKLERS (THIS SHEET)								15	
TOTAL SPRINKLERS (JOB)								45	

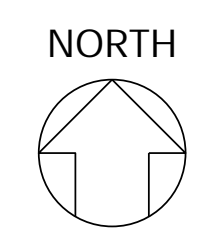
- ① FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT
- ② FOR LAY IN PANEL SUSPENDED CEILINGS PROVIDE 1" ANNULAR CLEARANCE AROUND RECESSED ESCUTCHEON. CONCEAL OVERSIZE HOLE WITH VIKING 12620 EXPANSION PLATE. FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT

NOTES:

1. ALL DIMENSIONS ARE CENTERLINE TO CENTERLINE UNLESS OTHERWISE NOTED.
2. ALL PIPE 1-1/2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL WITH CAST IRON THREADED FITTINGS IN ACCORDANCE WITH ANSI B16.4.
3. ALL PIPE 2" AND GREATER SHALL BE SCHEDULE 10 BLACK WITH GROOVED COUPLINGS AND WELDED OUTLETS.
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6. BRANCH LINES SHALL BE RESTRAINED AT END OF BRANCH LINE, AND AT INTERVALS NOT EXCEEDING 30 FT. SEE 4/FP6.1
7. PROVIDE 1" ANNULAR CLEARANCE AT ALL SPRINKLER PENETRATIONS OF LAY IN PANEL SUSPENDED CEILINGS.



LOW PIPING PLANS-FIRE PROTECTION
 SCALE: 1/8" = 1'-0"



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LOW PIPING PIPING PLANS-FIRE PROTECTION

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 AE Project #: 2018254

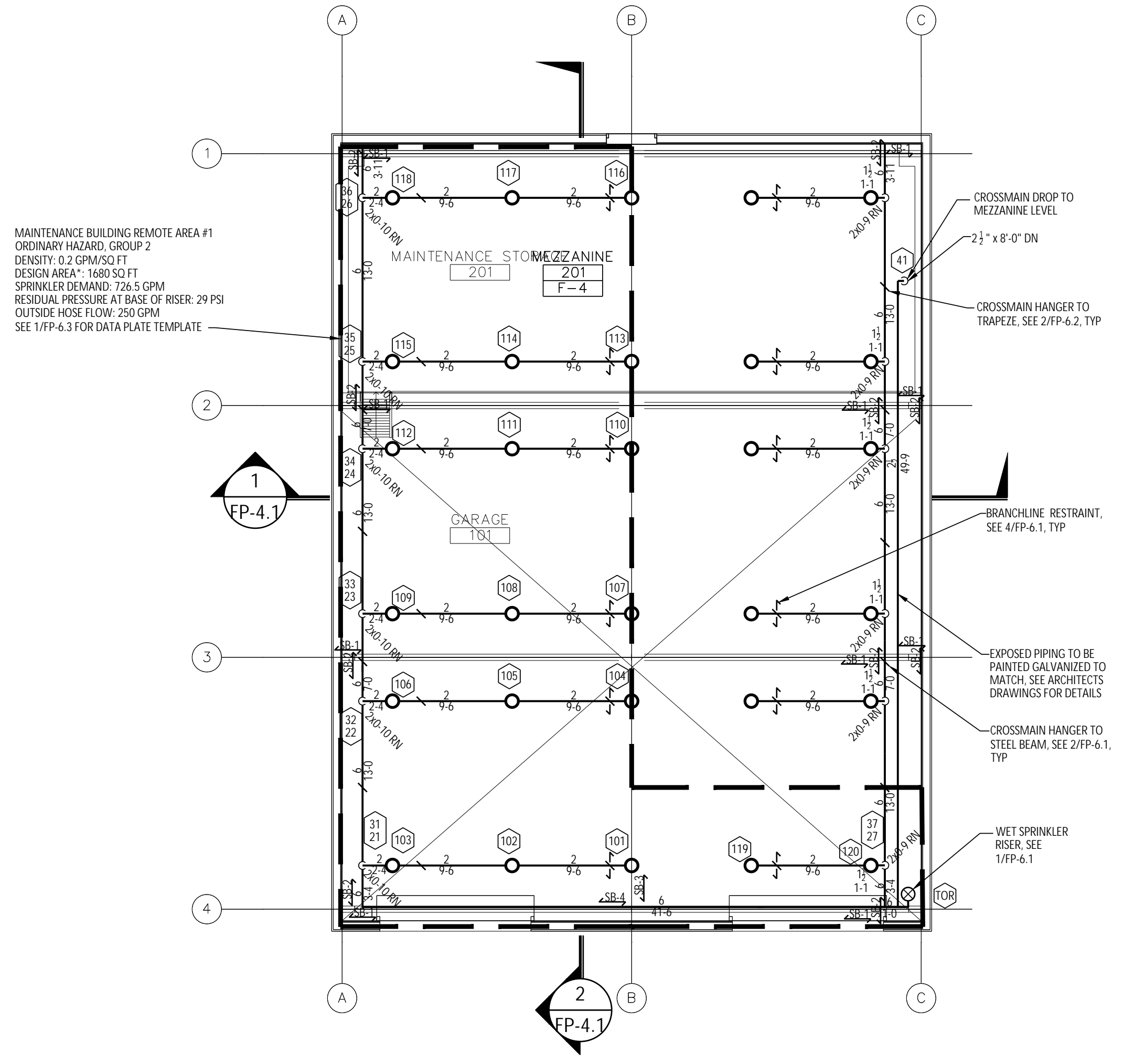
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 Title: ...

SPRINKLERS									
SYMBOL	DESCRIPTION	MANF.	MODEL	SIN	TYPE	K FACTOR	TEMP RATING	QTY	REMARKS
●	RECESSED PENDENT	TYCO	TY-FRB	3231	SSP	5.6	200° F	0	① ②
○	UPRIGHT	TYCO	TY-FRB	3131	SSU	5.6	200° F	30	
TOTAL SPRINKLERS (THIS SHEET)								30	
TOTAL SPRINKLERS (JOB)								45	

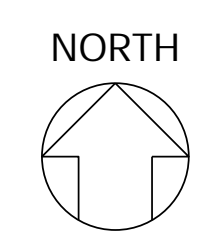
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NOTES:

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7. PROVIDE 1" ANNULAR CLEARANCE AT ALL SPRINKLER PENETRATIONS OF LAY IN PANEL SUSPENDED CEILINGS.



HIGH PIPING PLANS-FIRE PROTECTION
 SCALE: 1/8" = 1'-0"



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SHEET TITLE

HIGH PIPING PLANS-FIRE PROTECTION

SHEET NUMBER

FP-2.2

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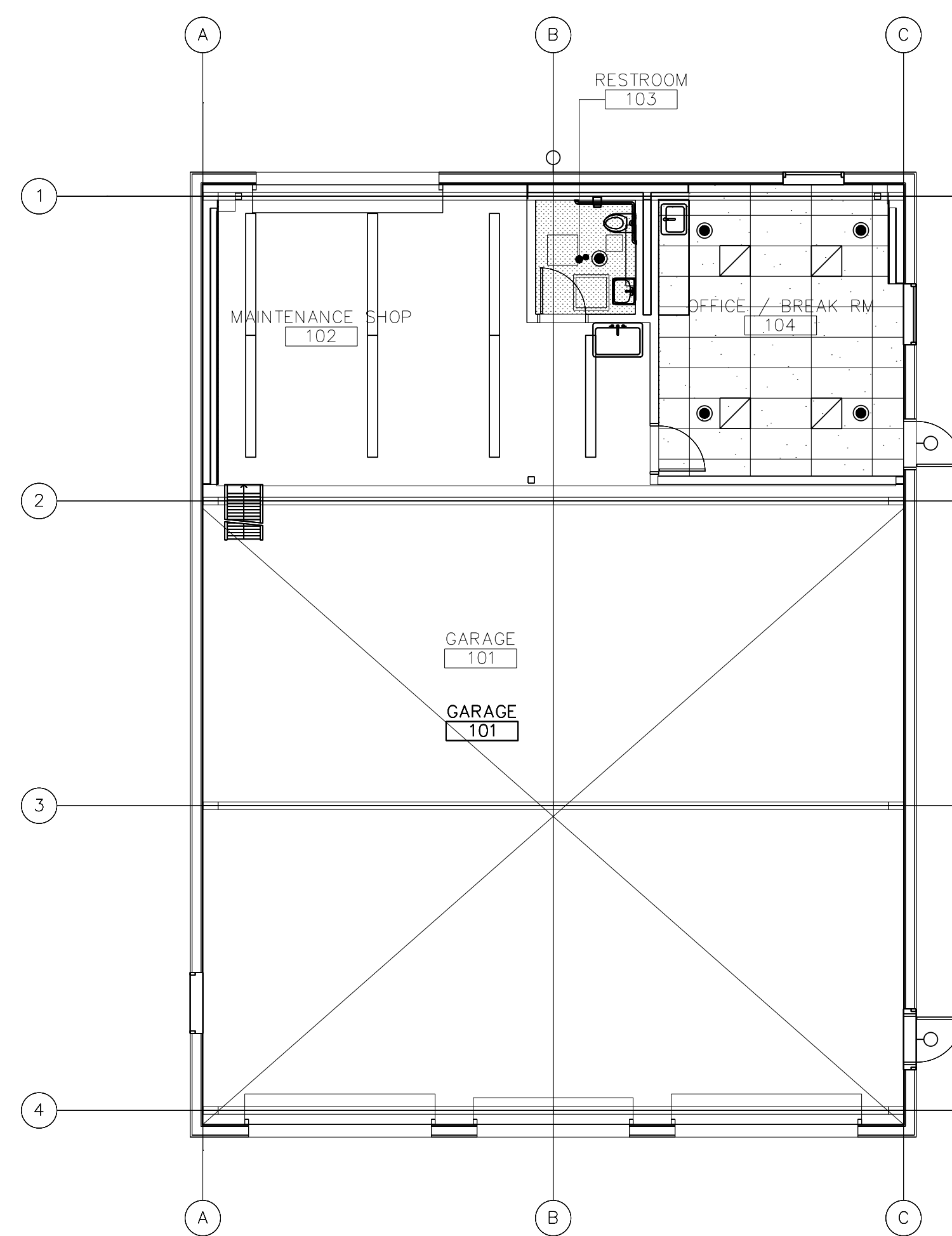
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SPRINKLERS									
SYMBOL	DESCRIPTION	MANF.	MODEL	SIN	TYPE	K FACTOR	TEMP RATING	QTY	REMARKS
●	RECESSED PENDENT	TYCO	TY-FRB	3231	SSP	5.6	200° F	4	① ②
○	UPRIGHT IN CONCEALED SPACE	TYCO	TY-FRB	3131	SSU	5.6	200° F	0	
TOTAL SPRINKLERS (THIS SHEET)								4	
TOTAL SPRINKLERS (JOB)								45	

- ① FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT
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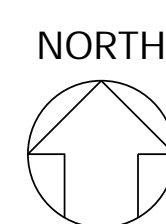
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LOW CEILING PLAN-FIRE PROTECTION

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



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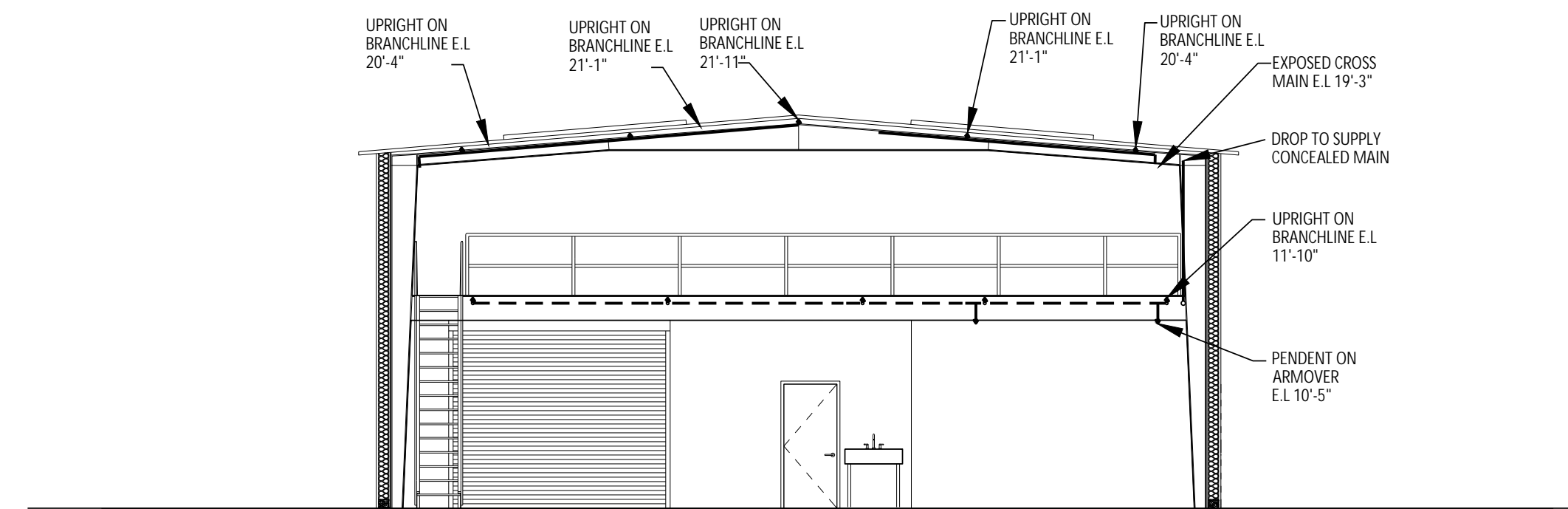
CEILING PLAN-FIRE PROTECTION

SHEET NUMBER

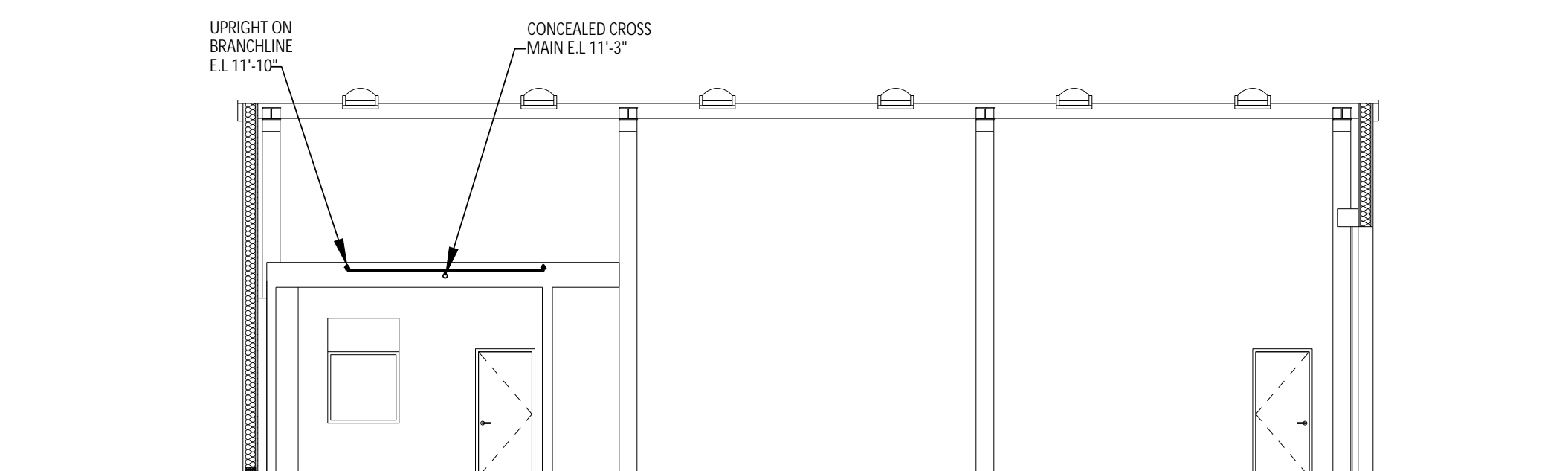
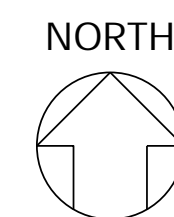
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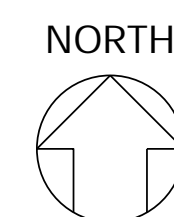
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1 SECTION A-A
 FP-4.1 SCALE: 1/8" = 1'-0"



2 SECTION B-B
 FP-4.1 SCALE: 1/8" = 1'-0"



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SHEET TITLE

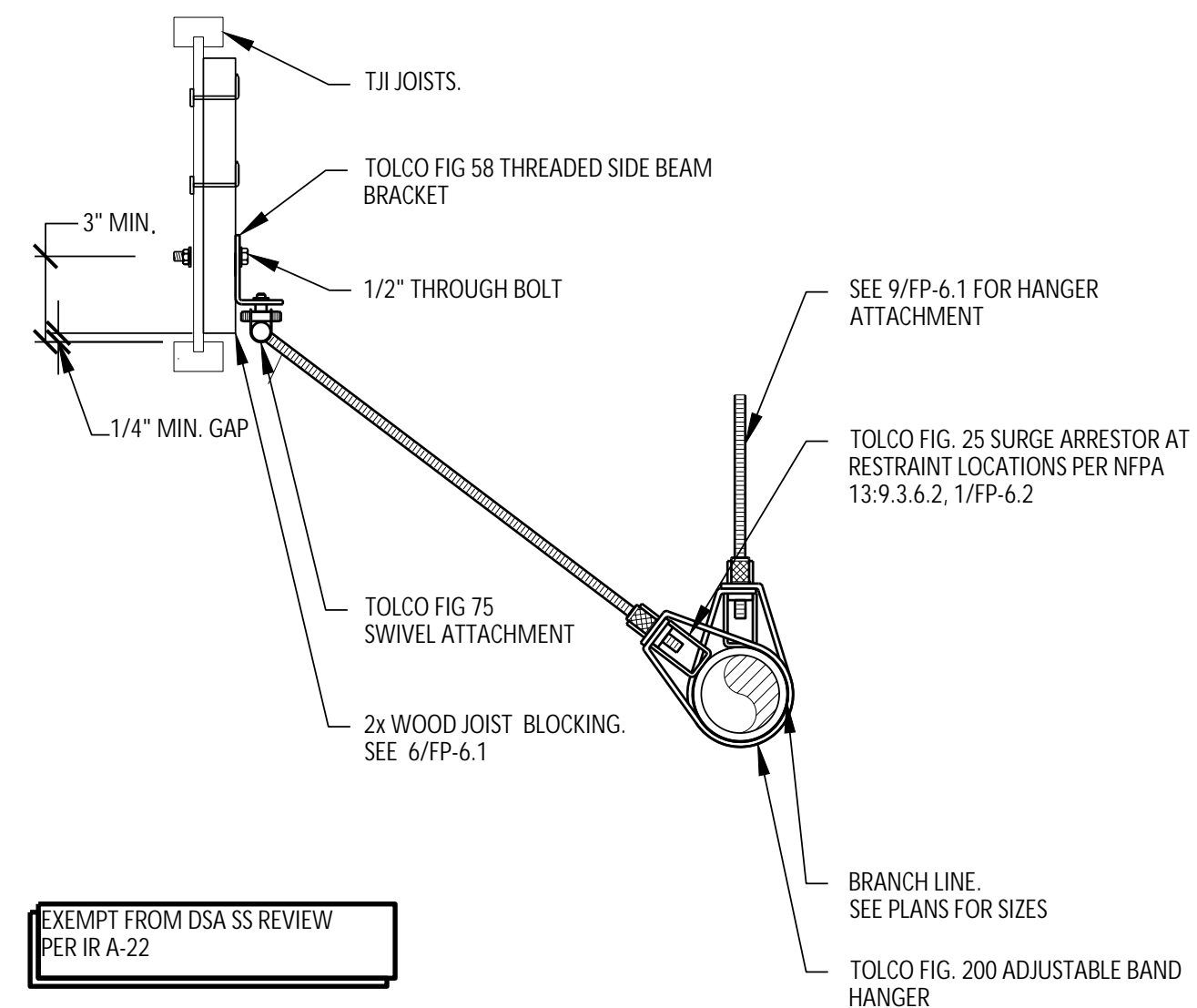
SECTIONS - FIRE PROTECTION

SHEET NUMBER

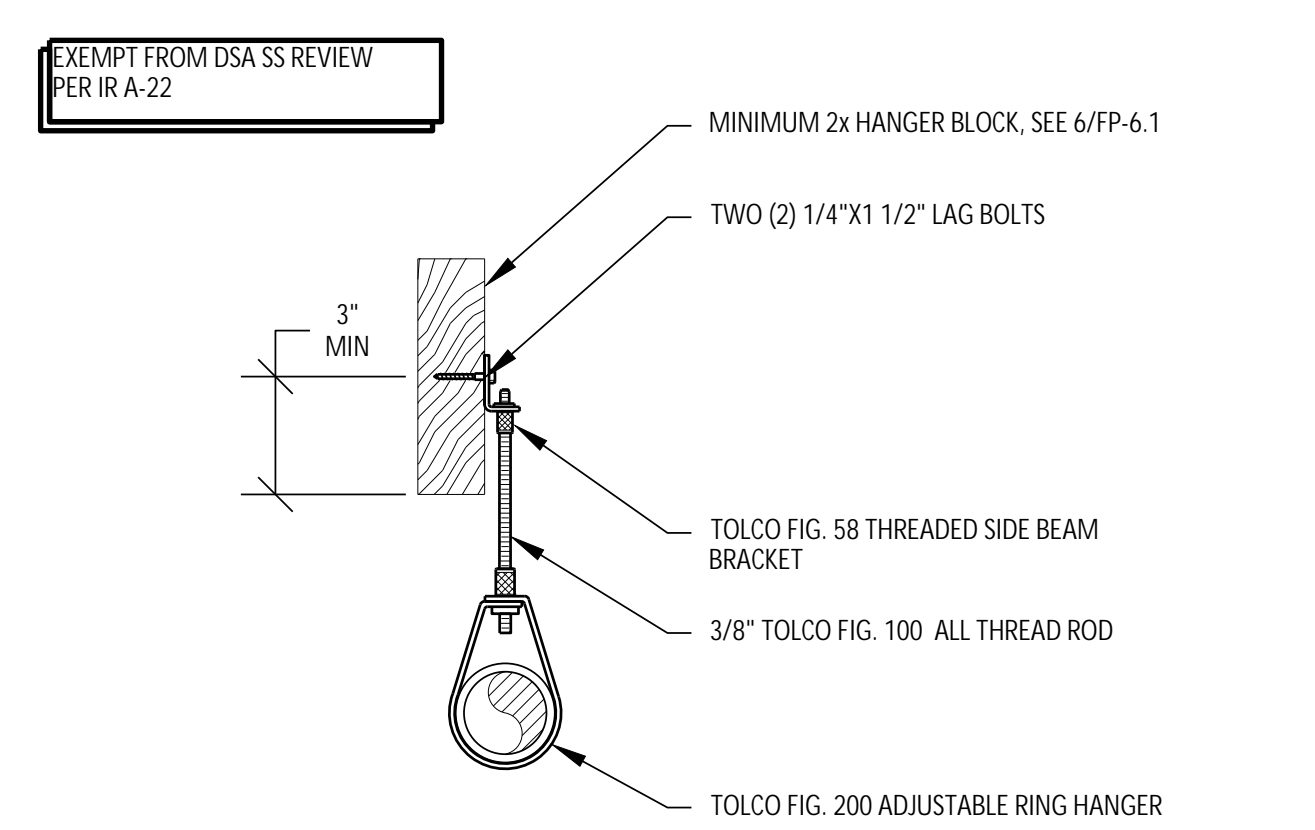
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 AE Project #: 2018254

Drawing: H:\PROJECTS\2019\13\130000\FP-6.1.dwg
 DATE: 05/14/2019 9:24:14 AM
 Author: M. K. HARRIS
 Check: M. K. HARRIS

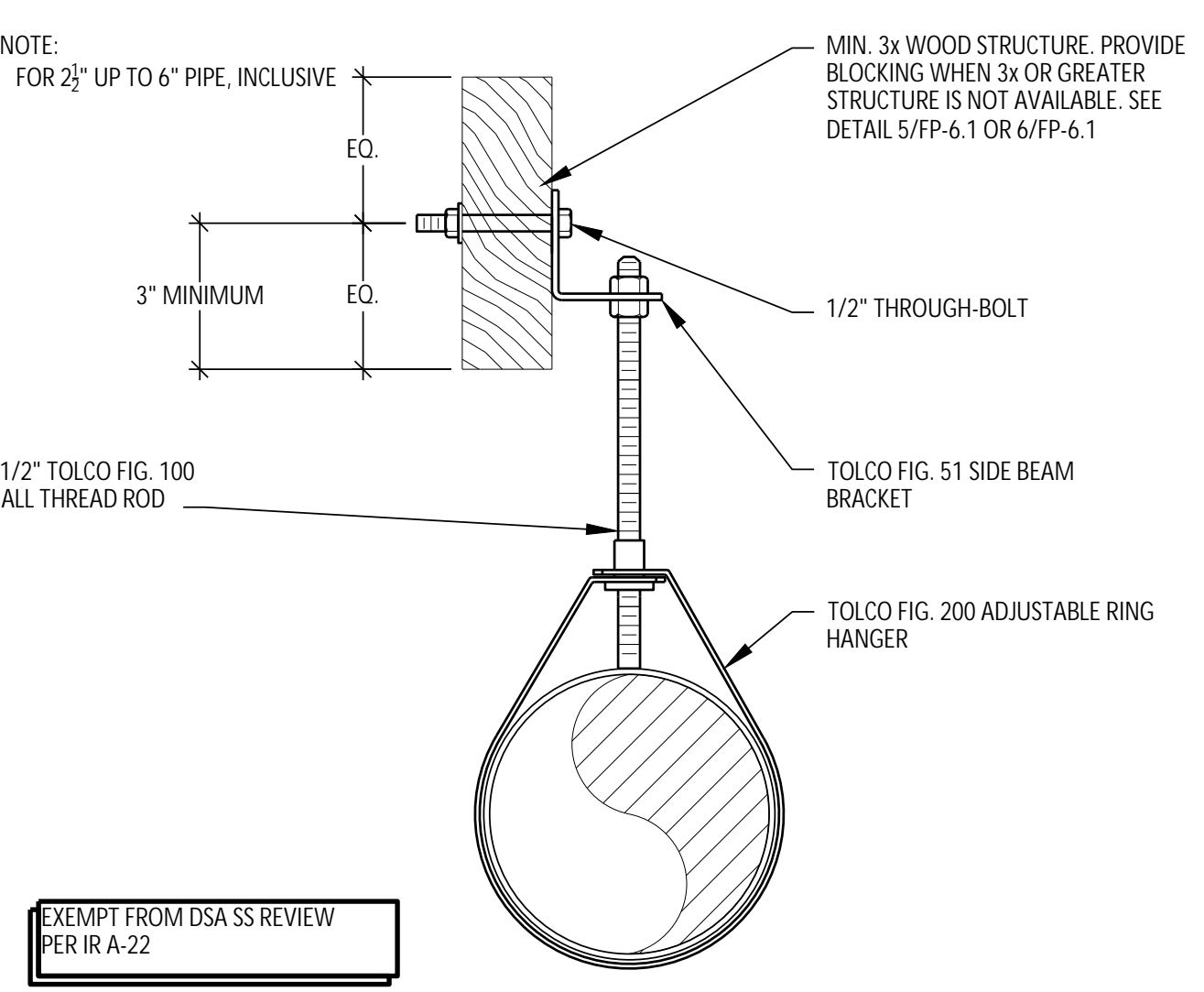


8 TYPICAL BRANCH LINE RESTRAINT
 FP-6.1 NO SCALE

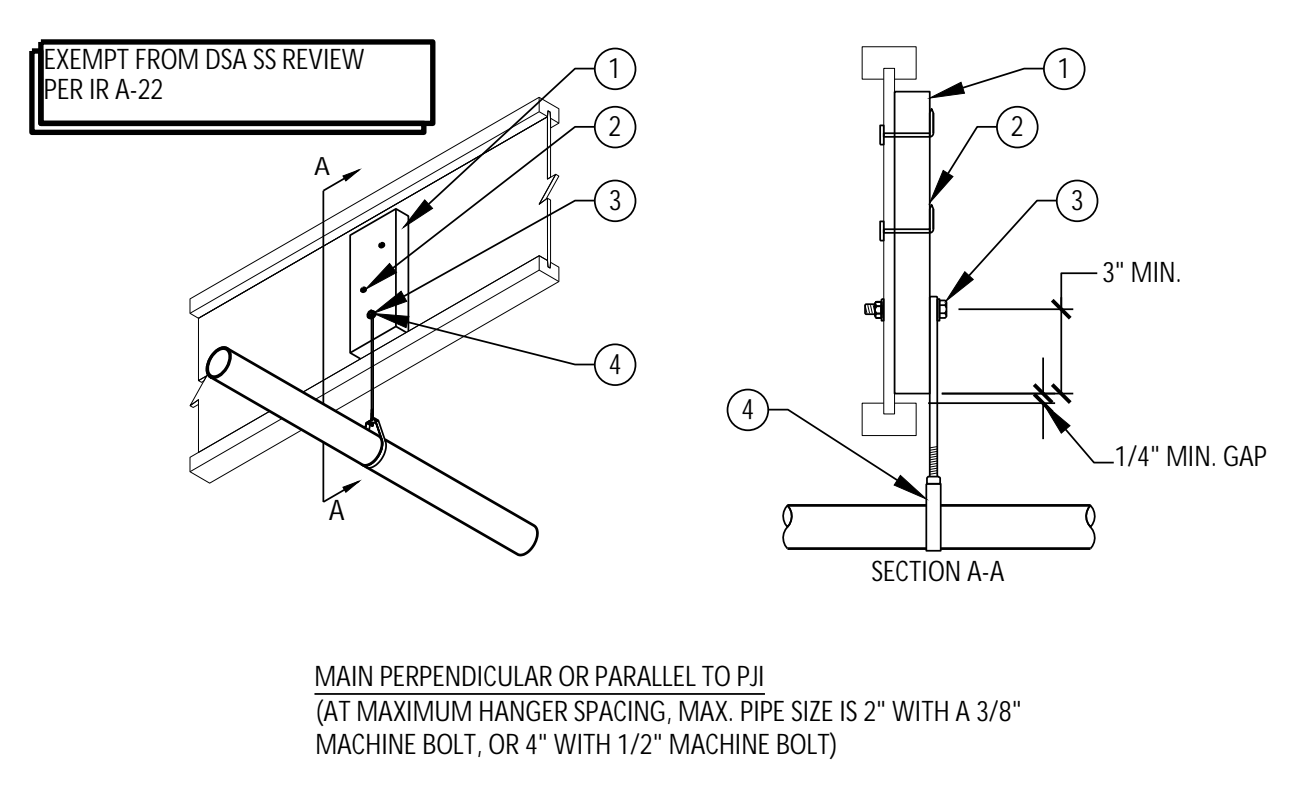


NOTES:
 1. FOR PIPE SIZES UP TO 2"

9 RING HANGER
 FP-6.1 NO SCALE

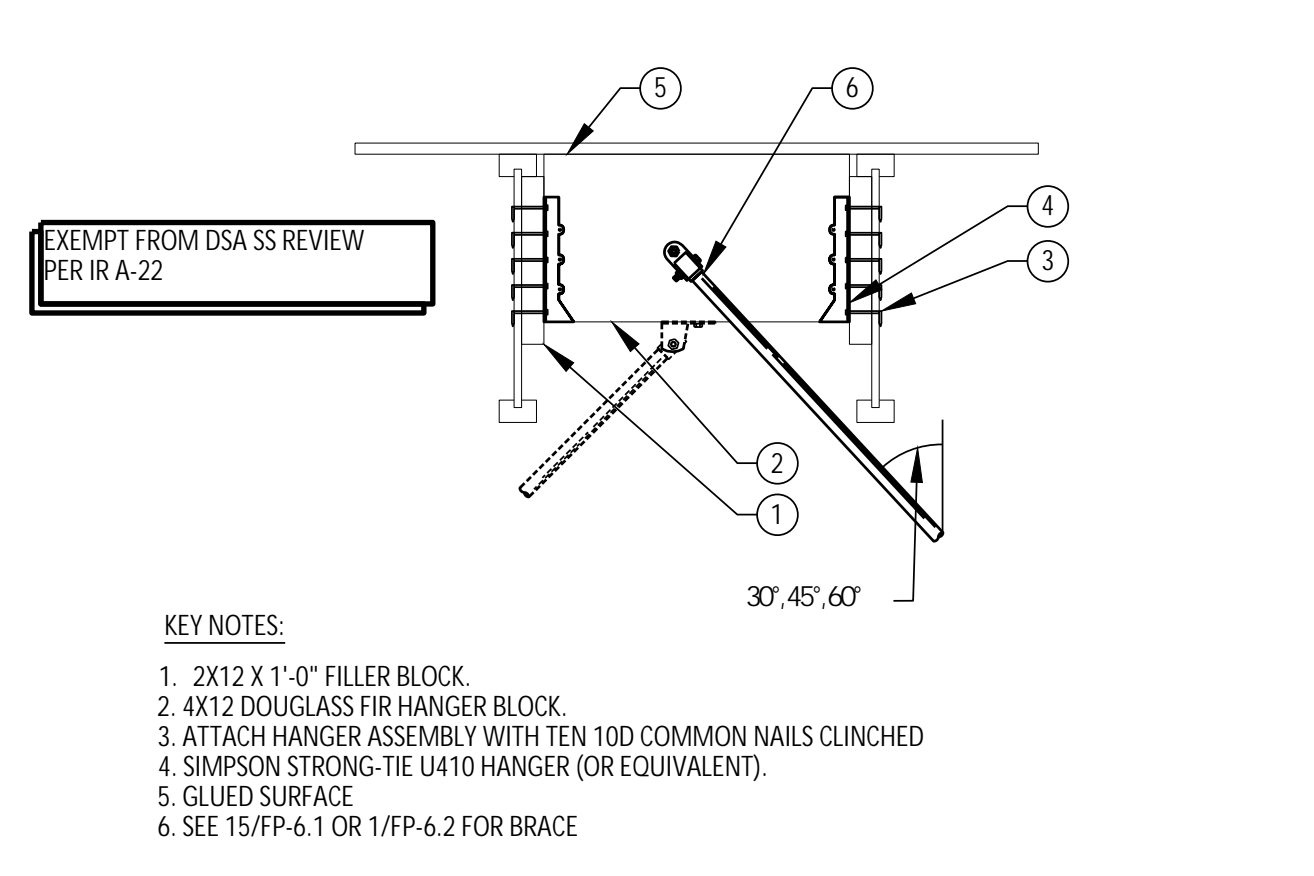


10 RING HANGER
 FP-6.1 NO SCALE



KEY NOTES:
 1. 2x6 DOUGLAS FIR NO. 2 WOOD HANGER BLOCK AS REQUIRED, GRAIN ORIENTED VERTICALLY WITH MINIMUM 1/4" GAP BETWEEN BLOCK AND FLANGE
 2. TWO 10D COMMON NAILS (0.148"x3") CLINCHED
 3. ONE 3/8" OR 1/2" DIAMETER MACHINE BOLT WITH WASHERS, TURNED TIGHT
 4. SEE 10/FP-6.1 FOR THROUGH BOLT, SIDE BEAM CLIP AND RING HANGER

6 STRUCTURE ATTACHMENT
 FP-6.1 NO SCALE



KEY NOTES:
 1. 2X12 X 1'-0" FILLER BLOCK
 2. 4X12 DOUGLAS FIR HANGER BLOCK
 3. ATTACH HANGER ASSEMBLY WITH TEN 10D COMMON NAILS CLINCHED
 4. SIMPSON STRONG-TIE U410 HANGER (OR EQUIVALENT)
 5. GLUED SURFACE
 6. SEE 15/FP-6.1 OR 1/FP-6.2 FOR BRACE

ALLOWABLE HORIZONTAL SEISMIC LOADS (LBS)

SPECIES	ANGLE TO VERTICAL (°)		
	30°	45°	60°
DF	465	720	980

LOADS ARE BASED ON THE CONTROLLING CONNECTION TO THE JOIST.
 THE CAPACITY OF THE BRACE FASTENER TO THE WOOD BLOCK MAY LIMIT THE CAPACITY OF THE DETAIL (SEE NFPA 13).
 LOADS INCLUDE A 1.60 DURATION OF LOAD FACTOR ADJUSTMENT

GENERAL NOTES:
 BEFORE INSTALLING, TOP EDGE OF 4X BLOCKING WITH A SUBFLOOR ADHESIVE THAT MEETS THE REQUIREMENTS OF ASTM D 3498. FOLLOW MANUFACTURER'S RECOMMENDATIONS.
 GLUED SURFACES MUST BE CLEAN AND DUST FREE.

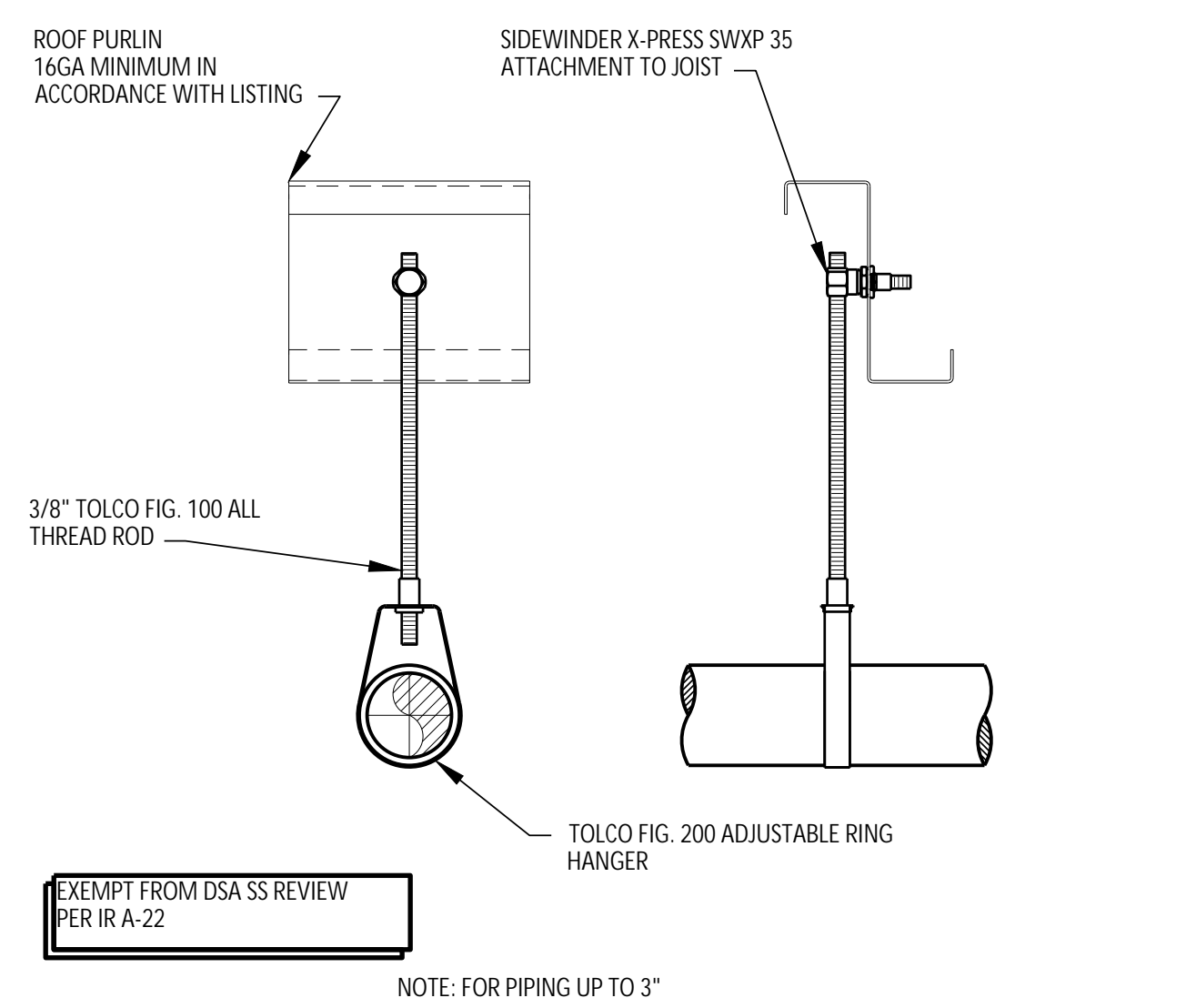
ATTACHED 4X HANGER BLOCK BY NAILING THROUGH EACH HANGER, FILLER BLOCK, AND TJI JOIST WEB WITH TEN 10 COMMON NAILS AND CLINCHED.

FOR LOADS PERPENDICULAR TO JOISTS, THE BRACE MUST BE LOCATED A DISTANCE OF AT LEAST 7X THE HOLE DIAMETER USED FOR BRACE ATTACHMENT, MEASURED FROM THE END OF THE BLOCK.

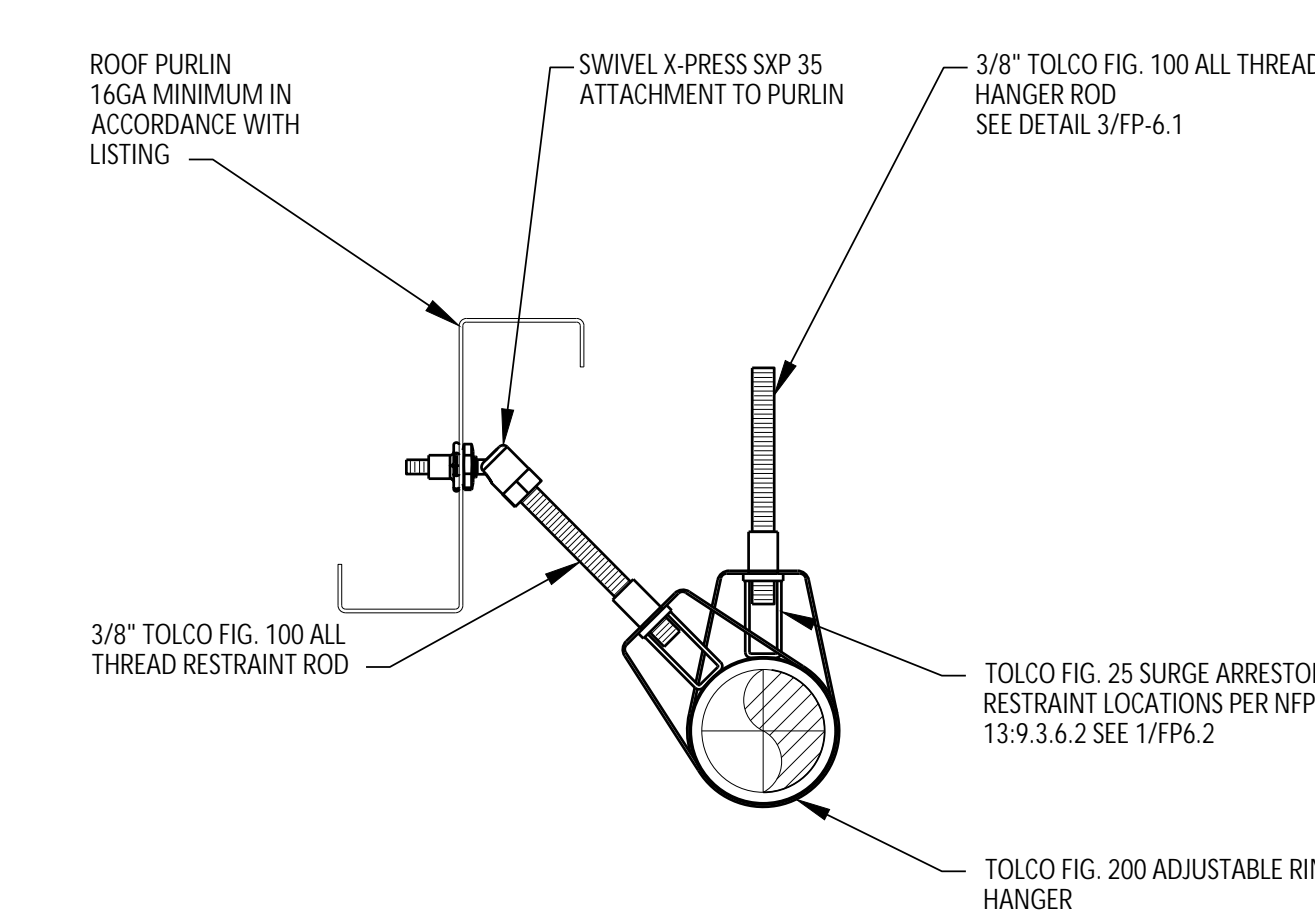
MAINTAIN A 4-HOLE-DIAMETER DISTANCE FROM ALL OTHER EDGES. FOR LOADS PARALLEL TO JOIST, THE BRACE MUST BE ATTACHED TO THE UPPER HALF OF THE 4X BLOCKING.

THE SAME END AND EDGE DISTANCE AS THOSE NOTED ABOVE FOR LOADS PERPENDICULAR TO JOIST MUST BE MAINTAINED.

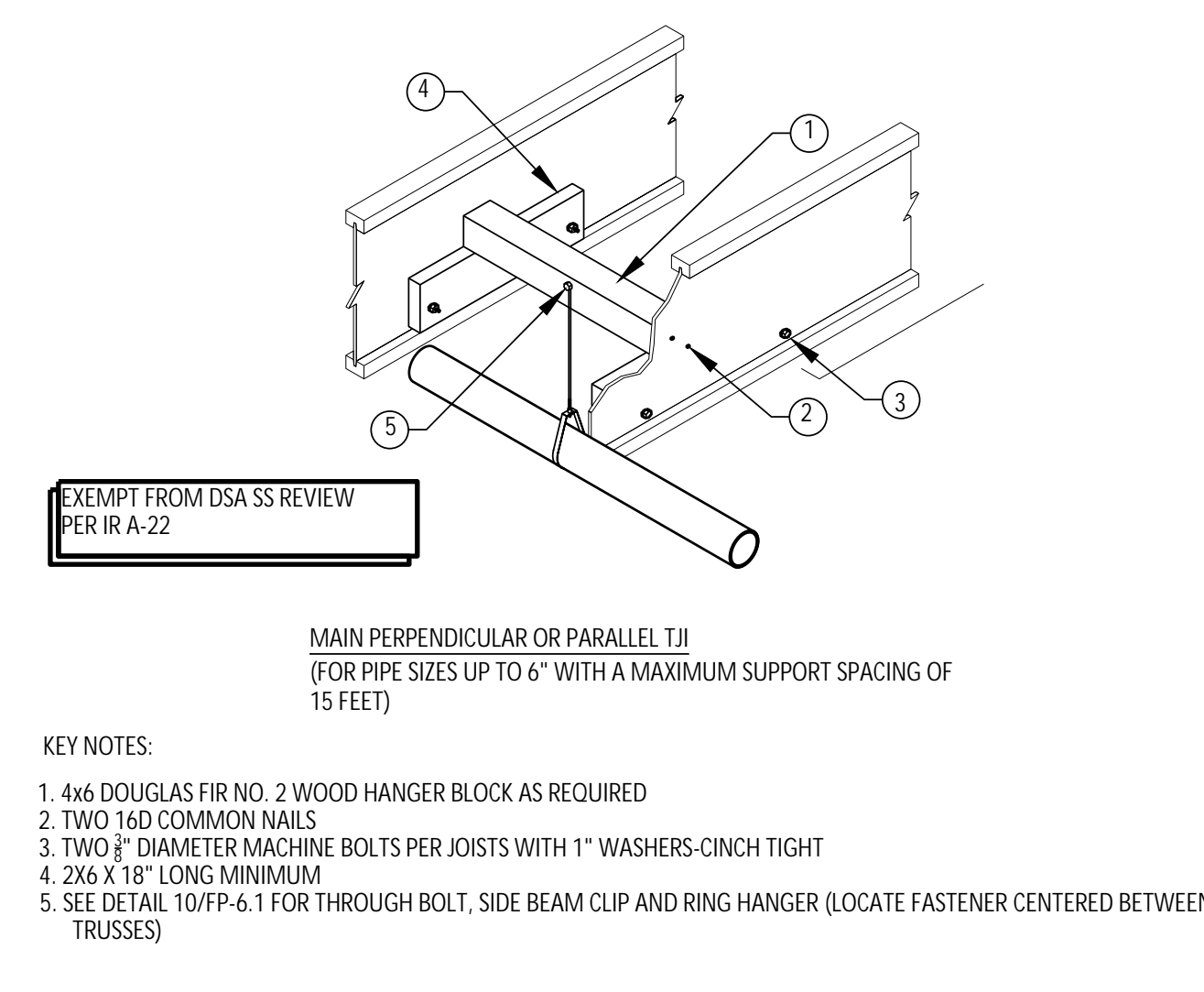
7 BRACE WITH NAILED BLOCKING
 FP-6.1 NO SCALE



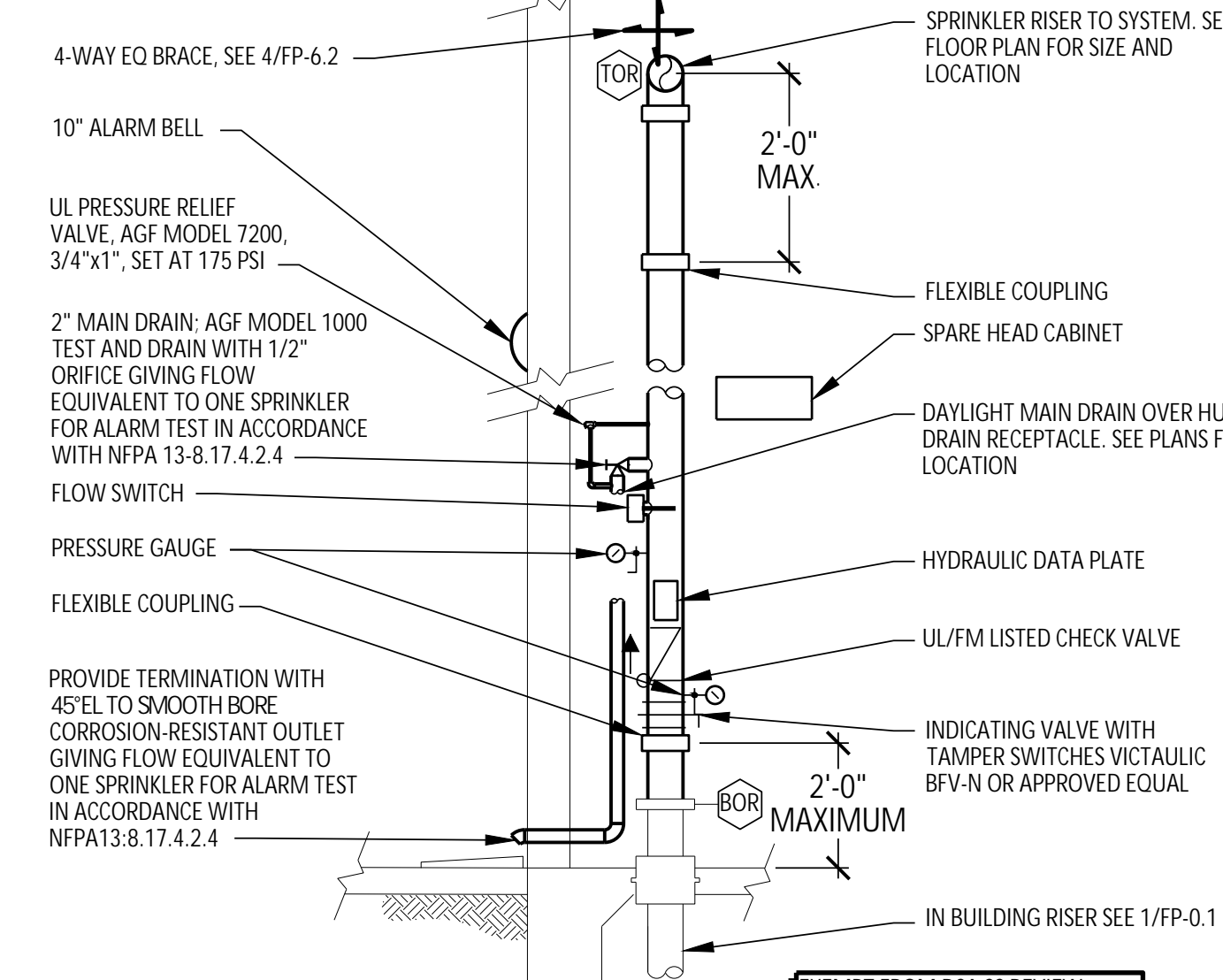
3 RING HANGER
 FP-6.1 NO SCALE



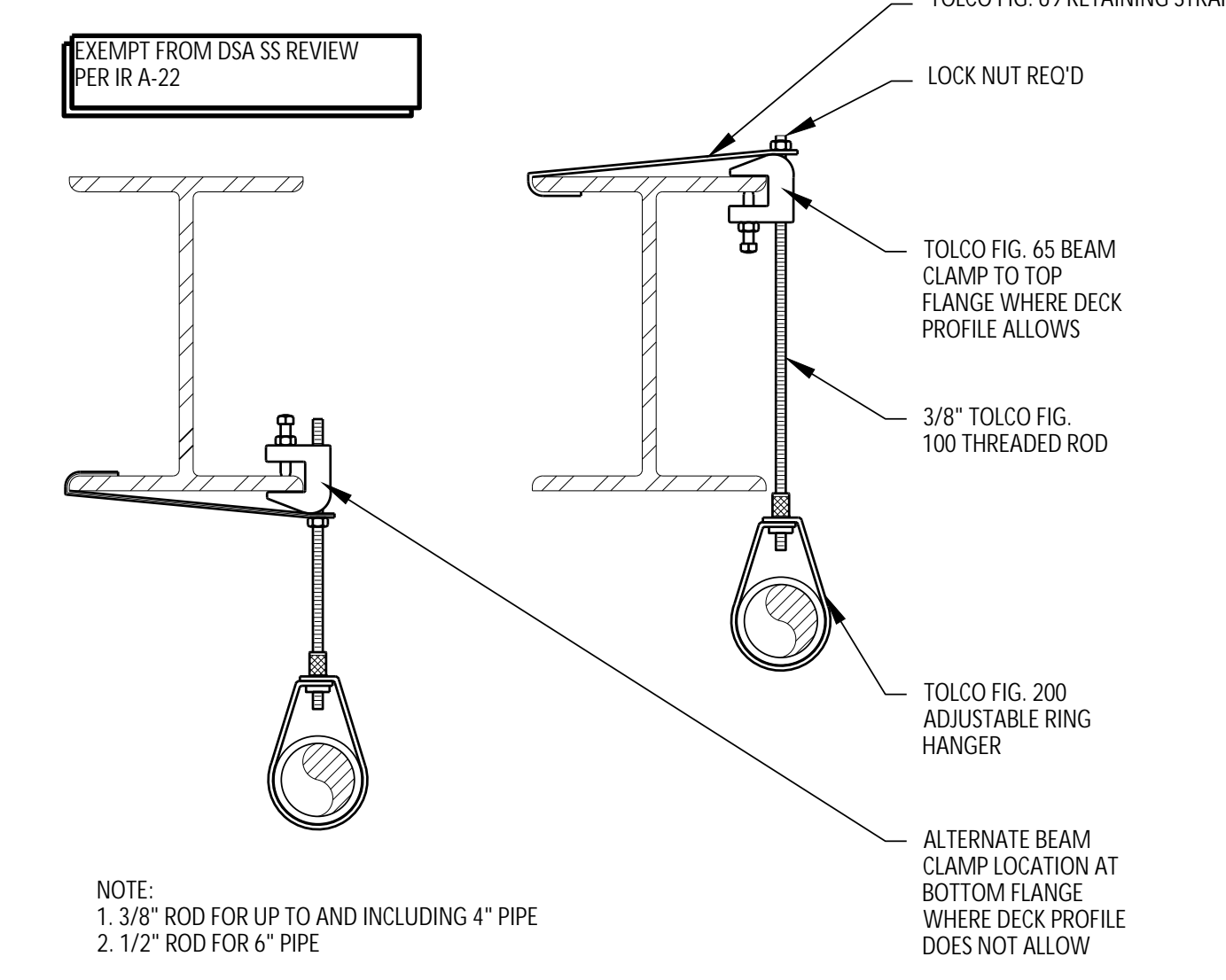
4 BRANCH LINE RESTRAINT
 FP-6.1 NO SCALE



5 STRUCTURE ATTACHMENT
 FP-6.1 NO SCALE



1 WET RISER
 FP-6.1 NO SCALE



2 RING HANGER
 FP-6.1 NO SCALE

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ARCH PROJECT NO: 1739.02
 DRAWN BY: CADD
 DRAWING SCALE: NONE
 PTN: 61721-0069

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SHEET TITLE

DETAILS-FIRE PROTECTION

SHEET NUMBER

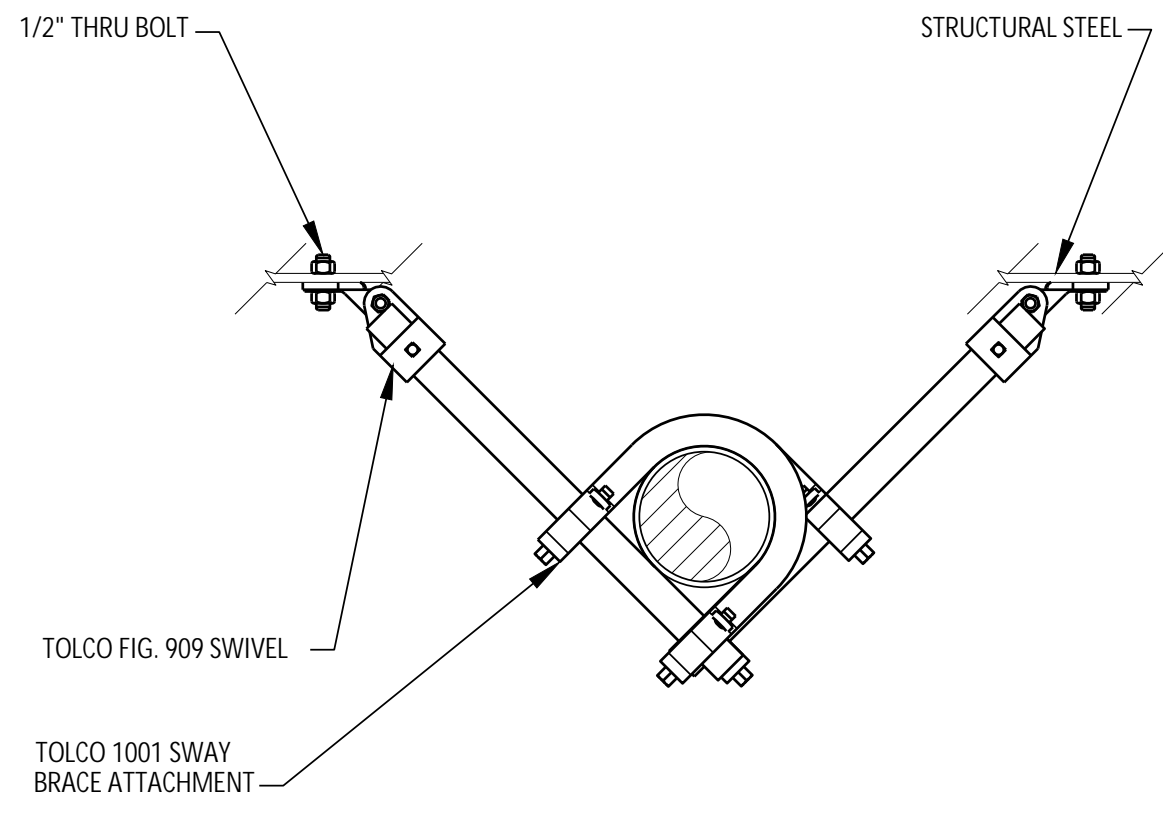
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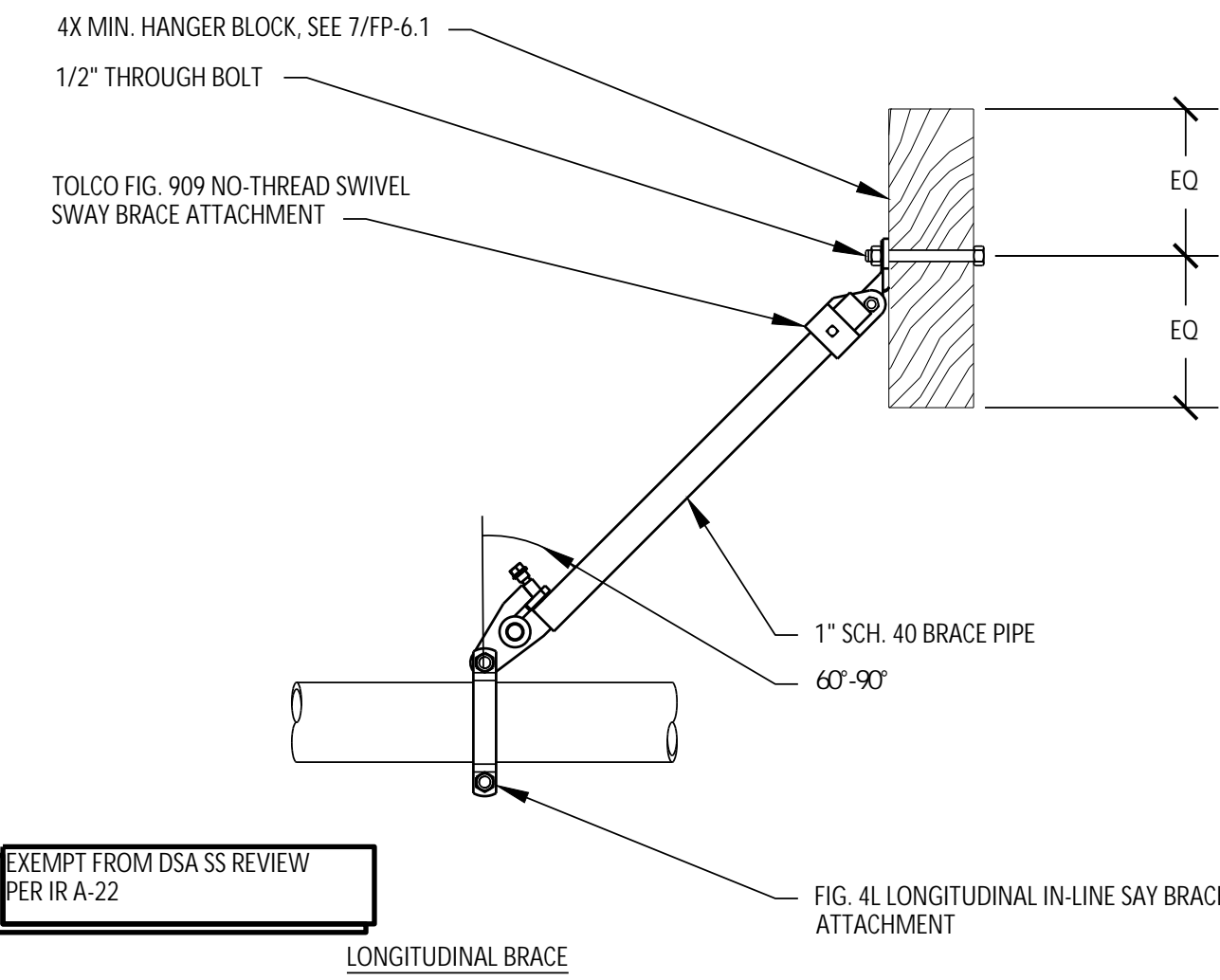
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 AE Project #: 2018254

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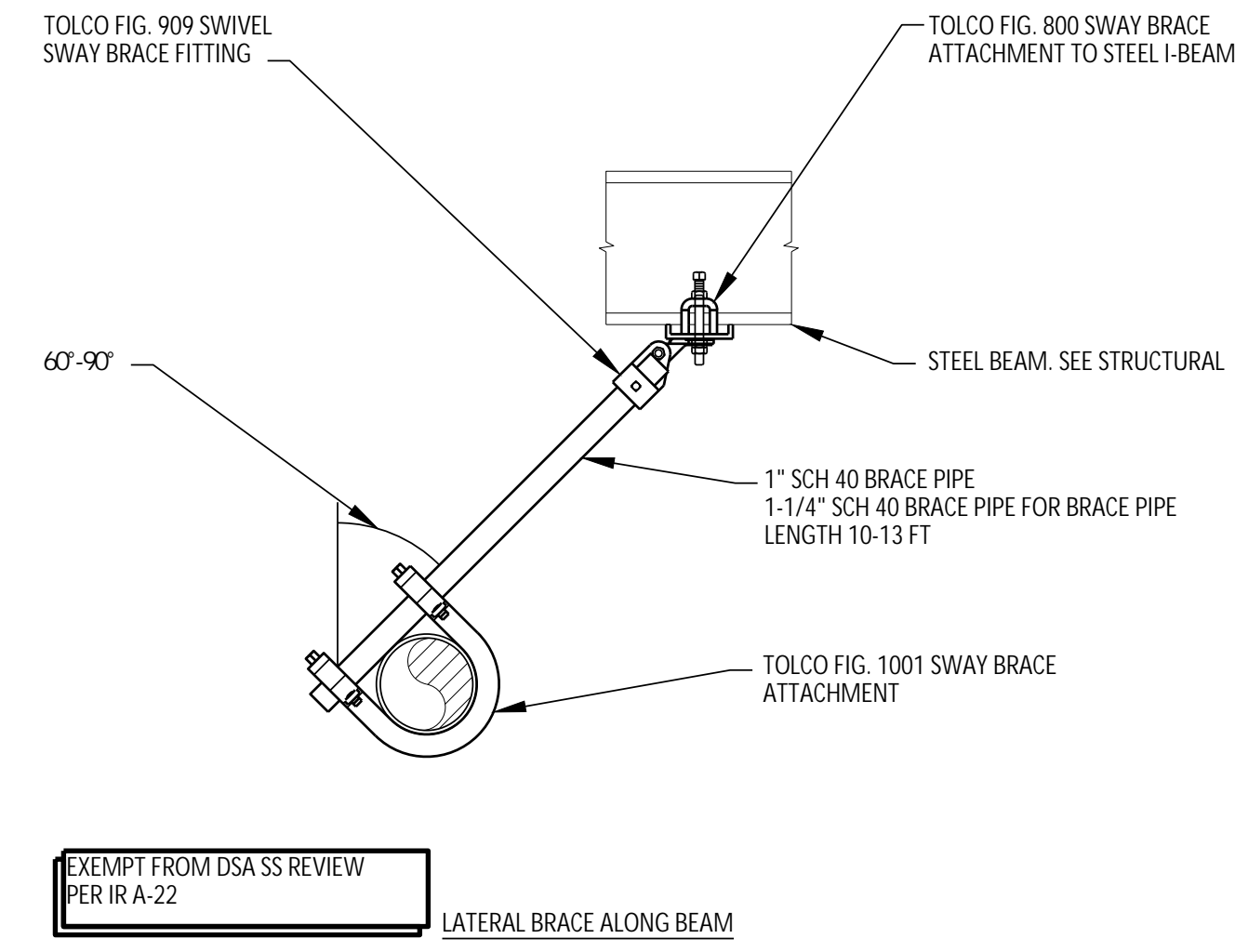
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9 RISER BRACE
FP-6.2 NO SCALE



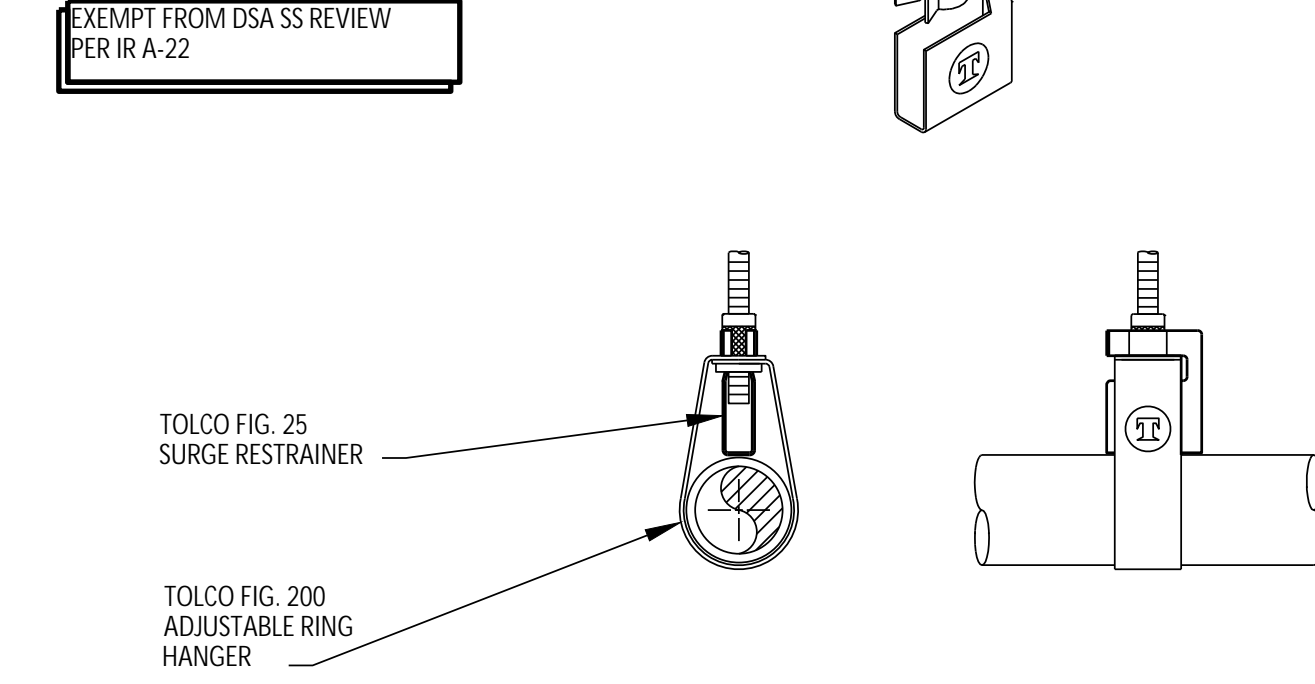
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6 SEISMIC BRACE SB-4
FP-6.2 NO SCALE



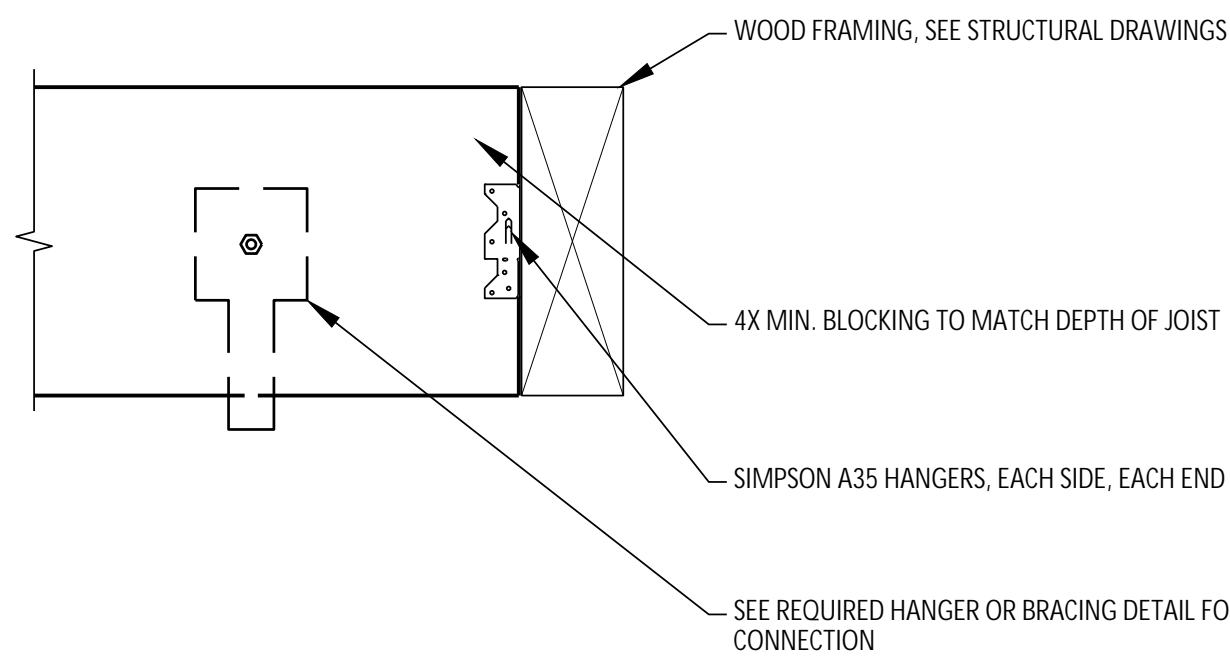
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3 SEISMIC BRACE SB-1
FP-6.2 NO SCALE



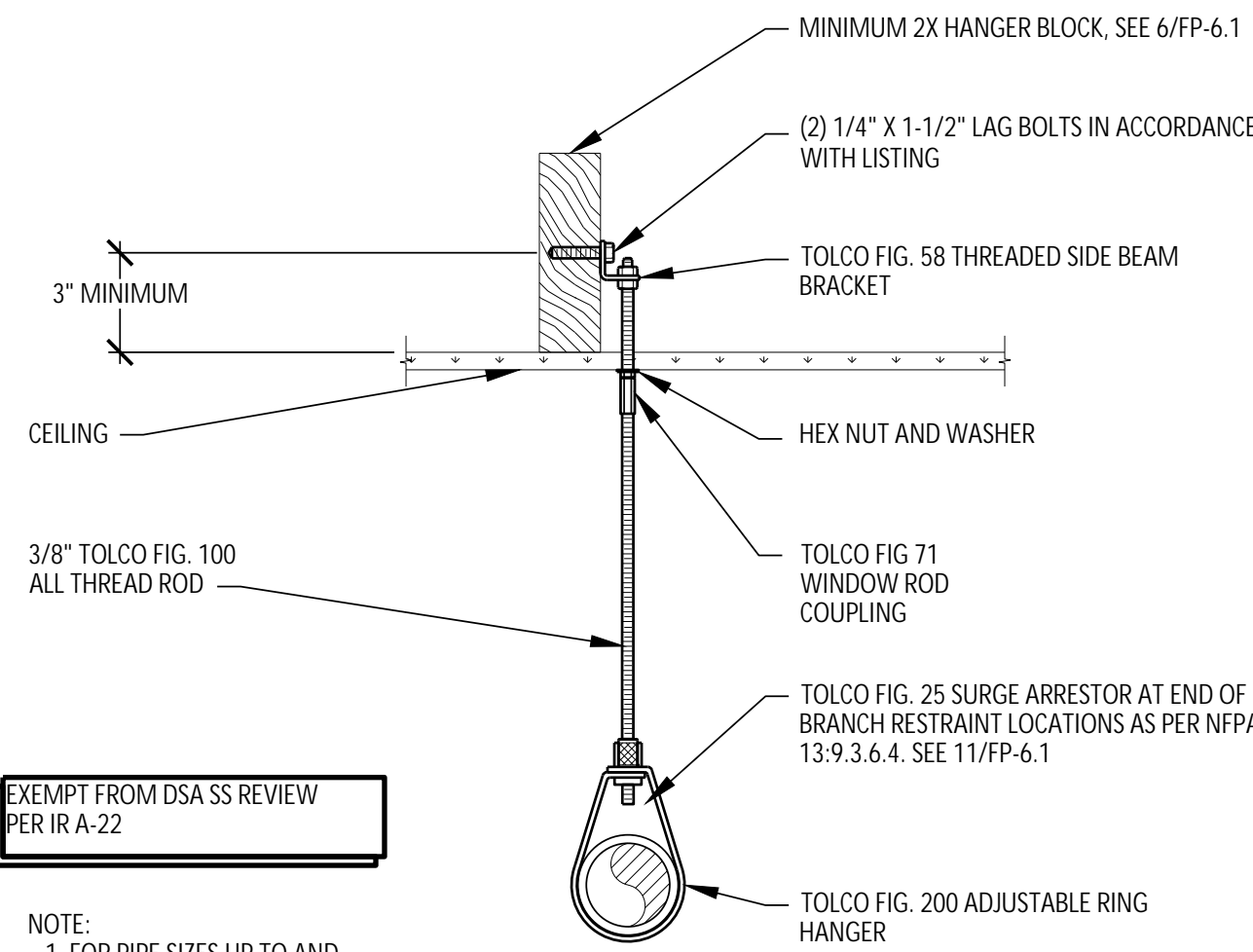
NOTES:
 1. USE TYPE 1 - FOR 1" AND 1-1/4" PIPE AND HANGERS
 2. USE TYPE 2 - FOR 1-1/2" AND 2" PIPE AND HANGERS
 3. NOT REQUIRED IF ALL THREAD ROD IS INSTALLED TIGHT TO TOP OF PIPE

1 SURGE RESTRAINT
FP-6.2 NO SCALE



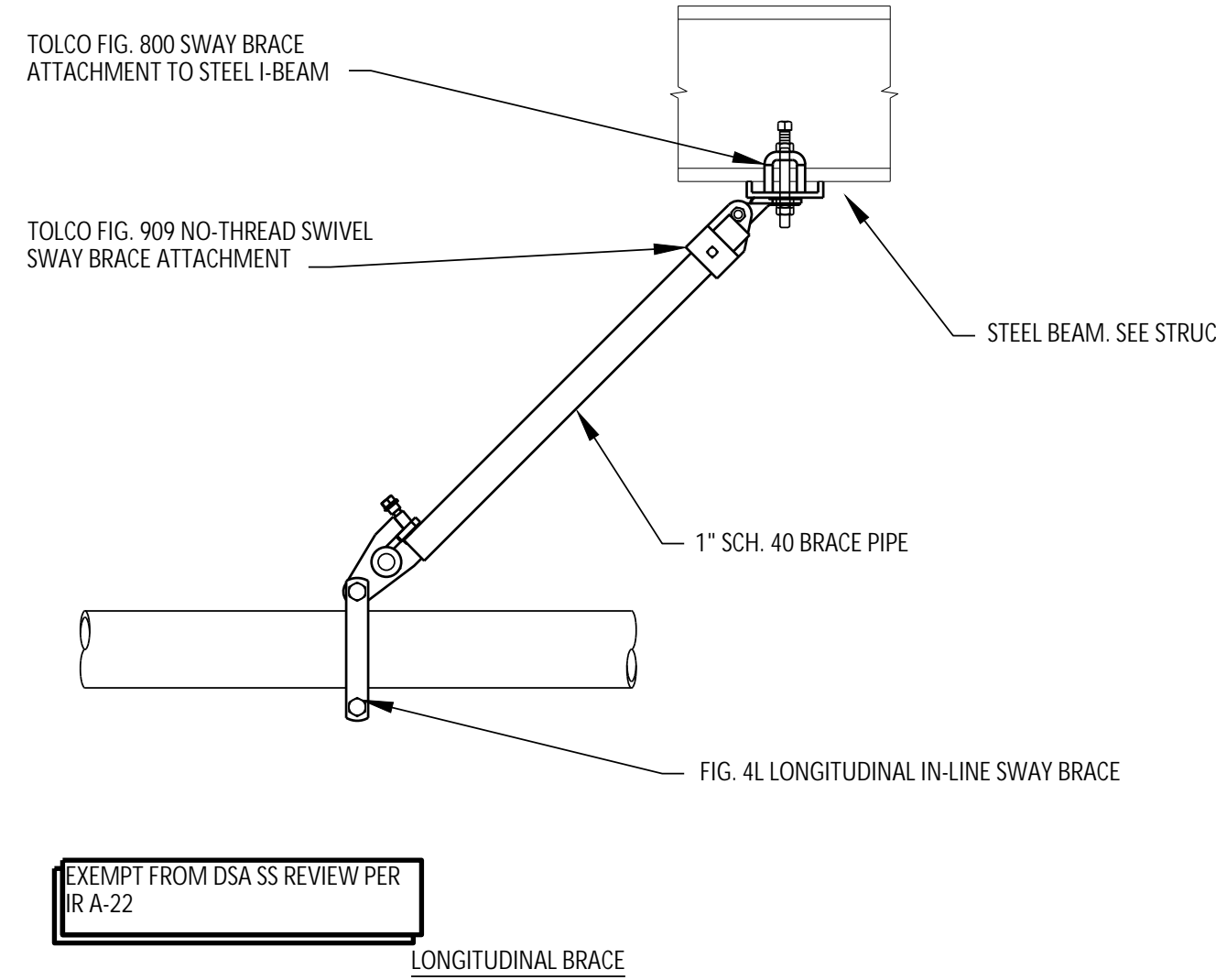
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10 WOOD FRAMING BLOCKING
FP-6.2 NO SCALE



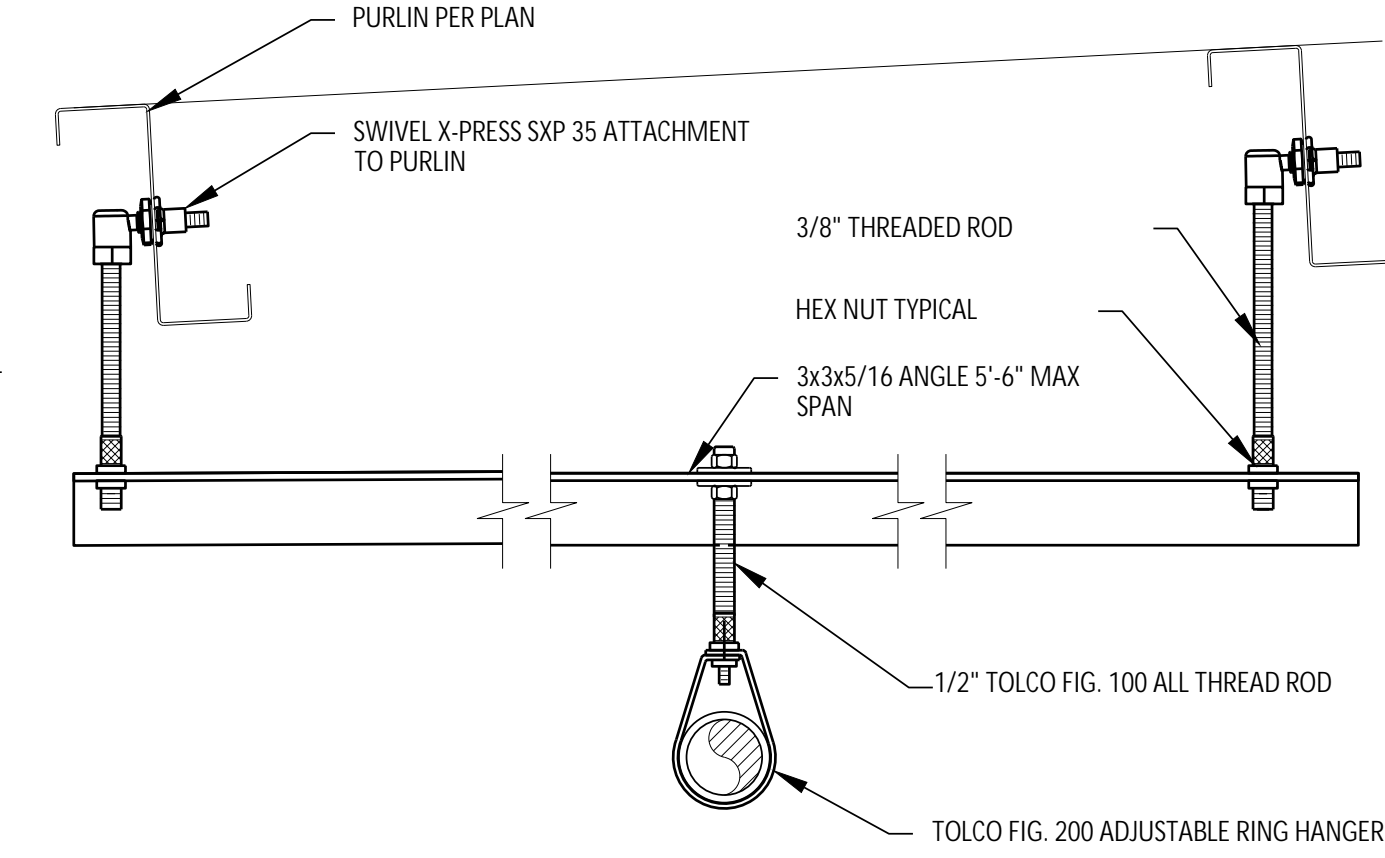
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7 RING HANGER
FP-6.2 NO SCALE



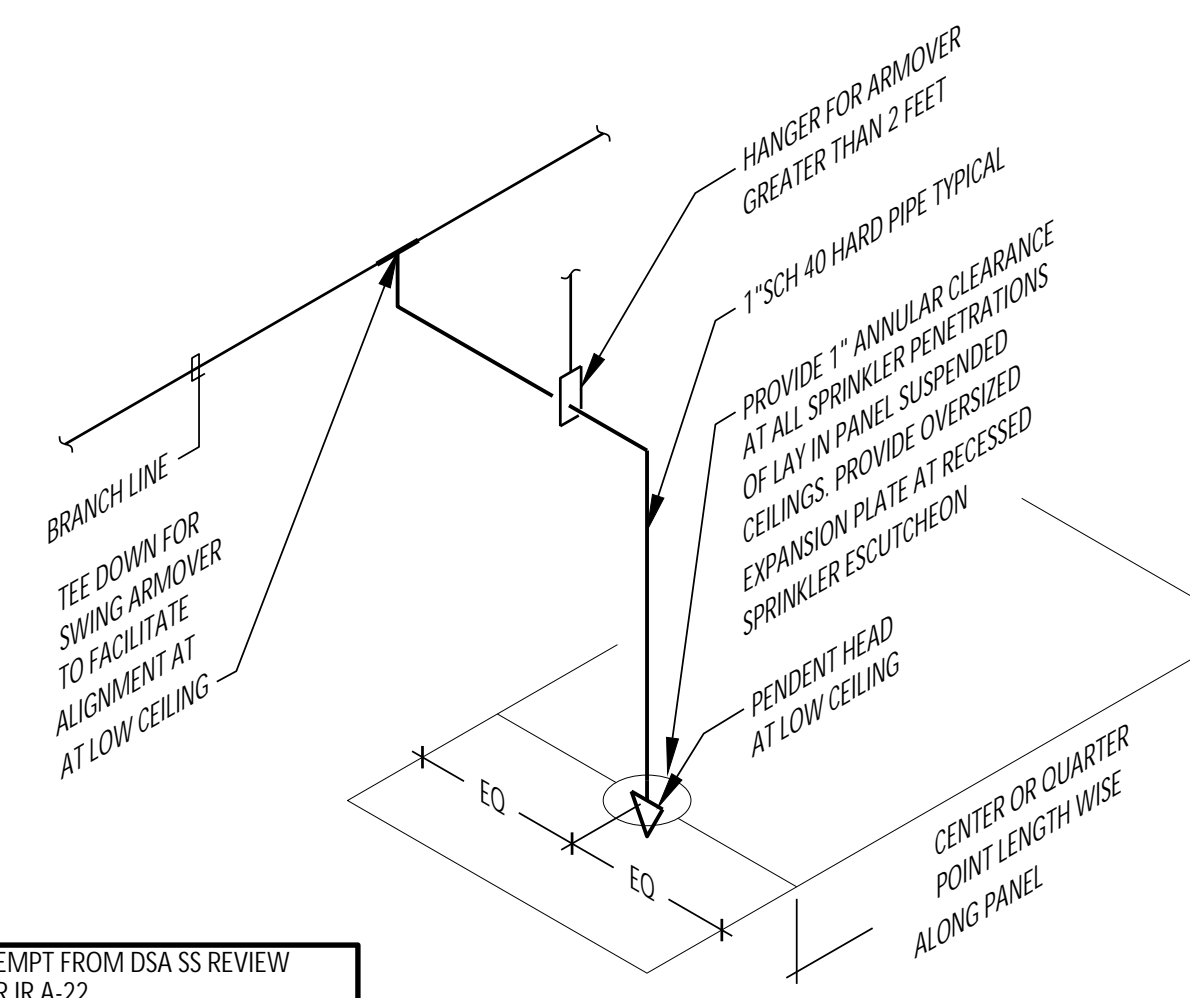
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4 SEISMIC BRACE SB-2
FP-6.2 NO SCALE



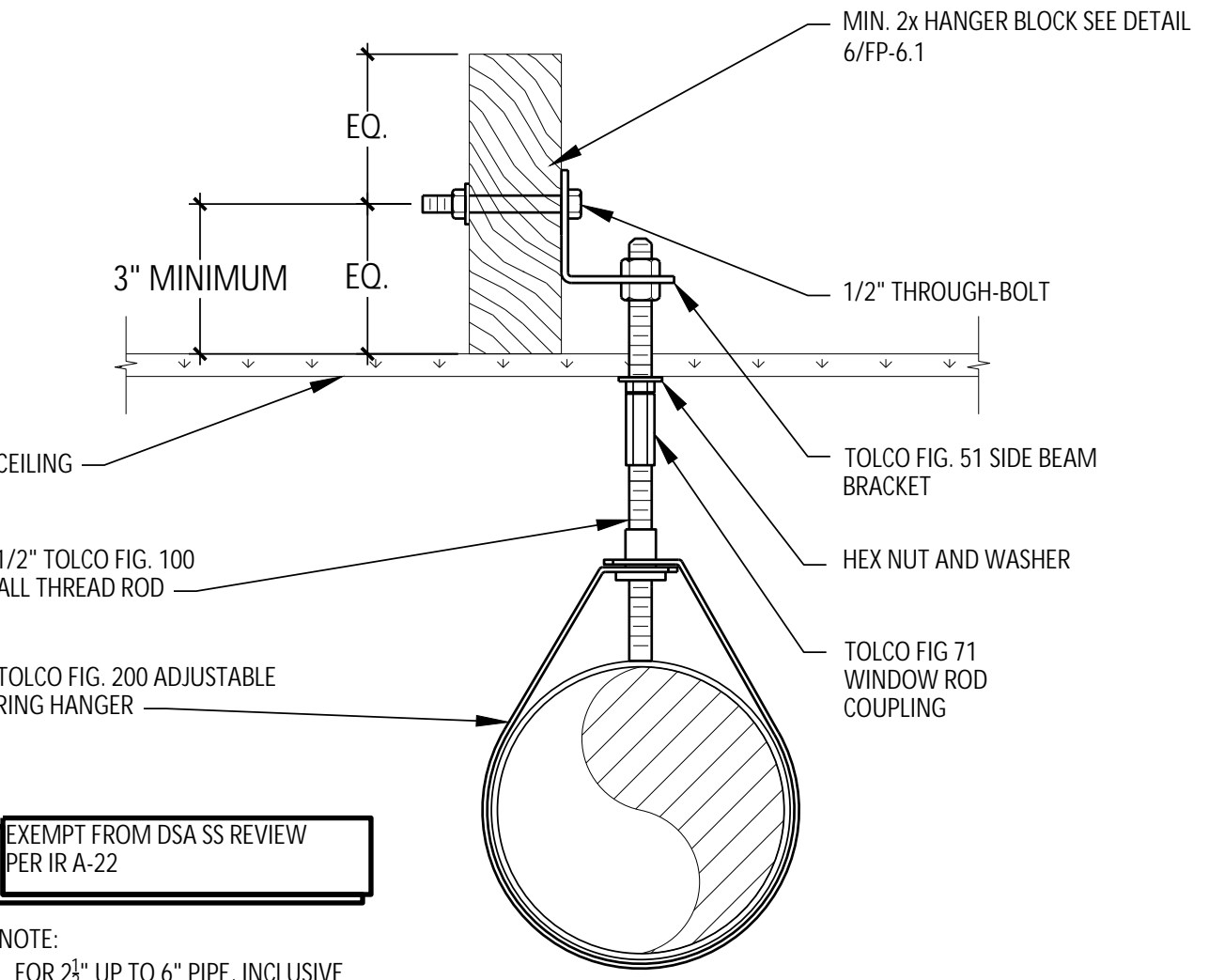
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2 RING HANGER TRAPEZE
FP-6.2 NO SCALE



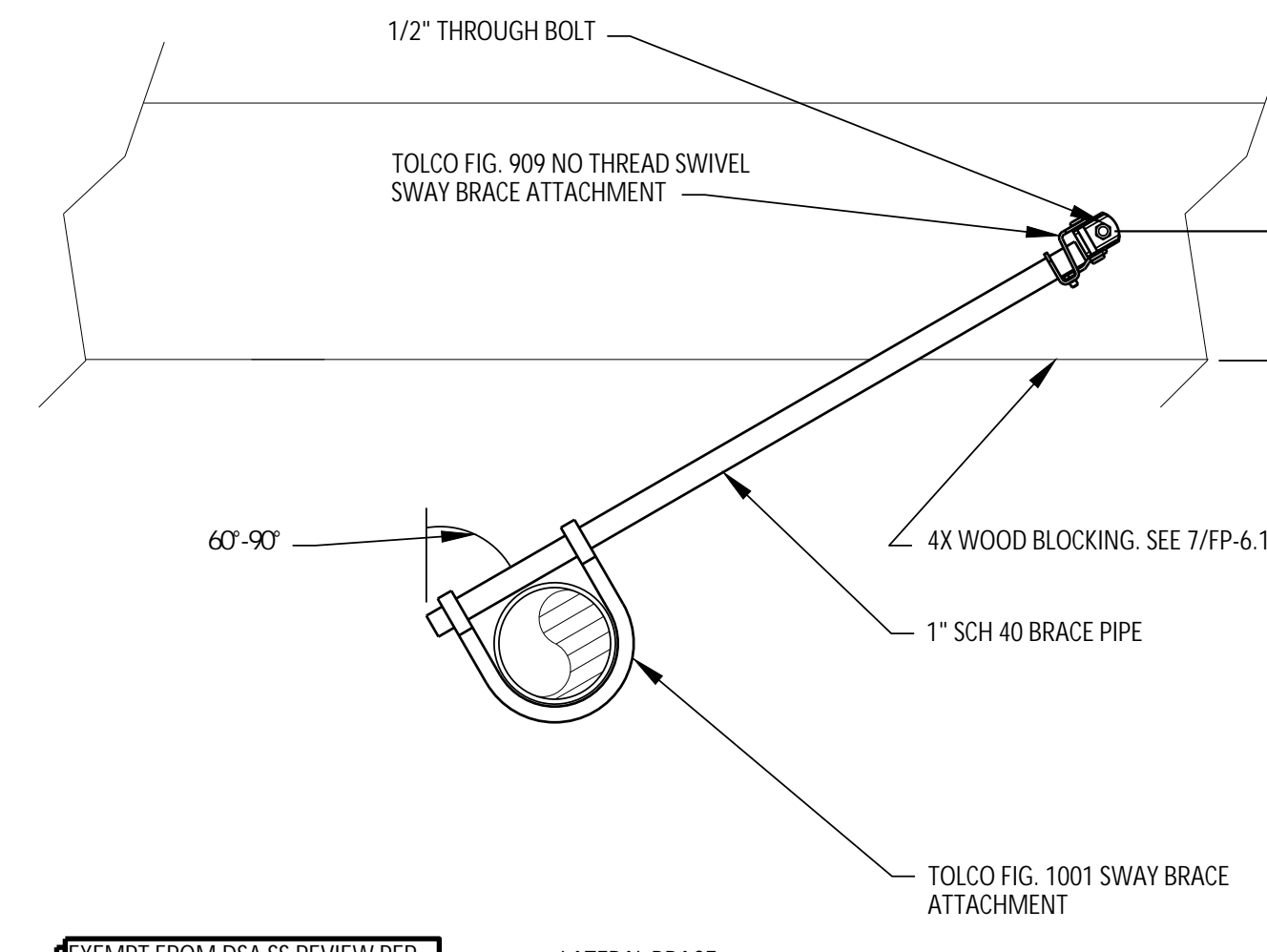
EXEMPT FROM DSA SS REVIEW PER IR A-22

11 TYPICAL DROP TO CEILING
FP-6.2 NO SCALE



EXEMPT FROM DSA SS REVIEW PER IR A-22

8 RING HANGER
FP-6.2 NO SCALE



EXEMPT FROM DSA SS REVIEW PER IR A-22

5 SEISMIC BRACE SB-3
FP-6.1 NO SCALE

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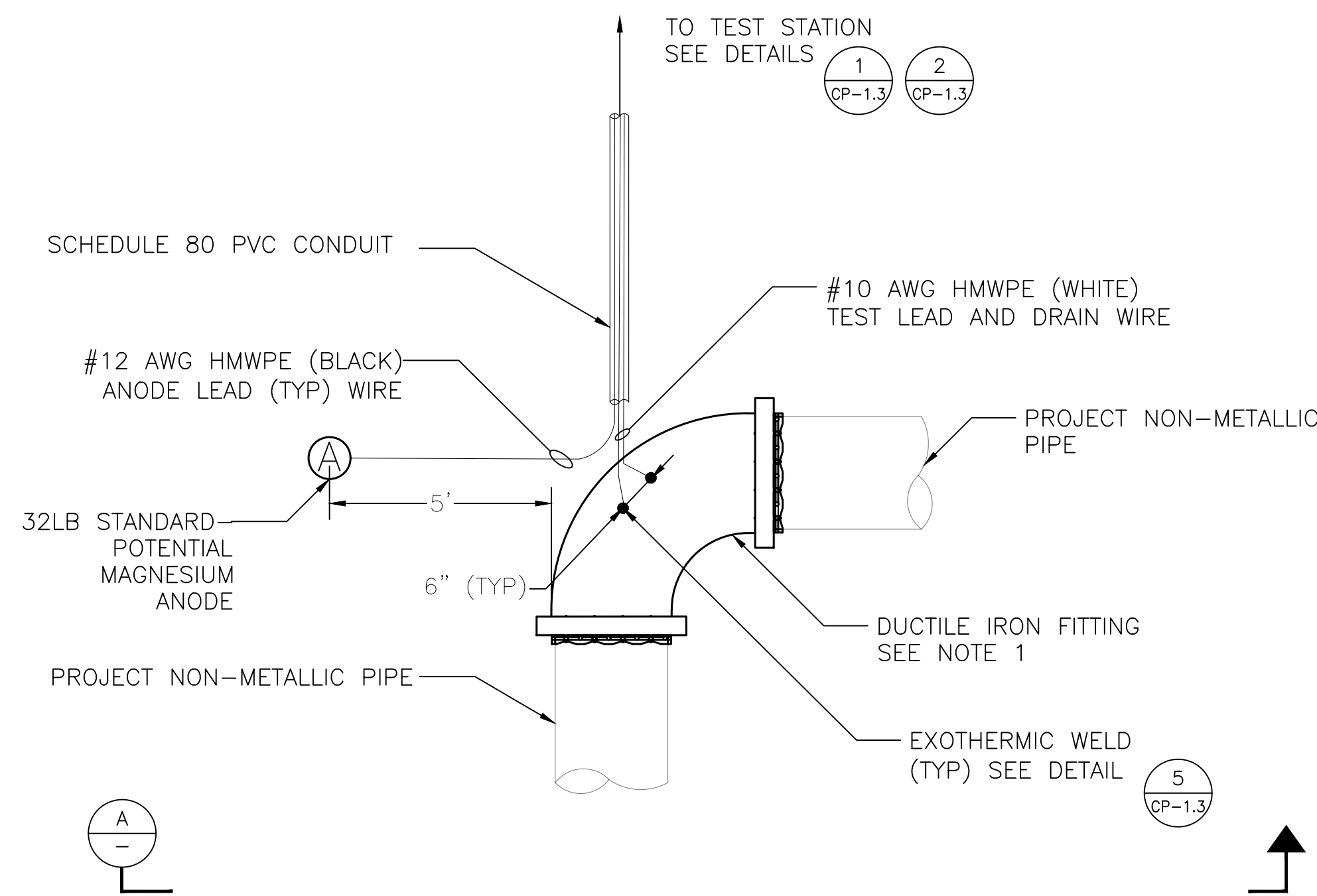
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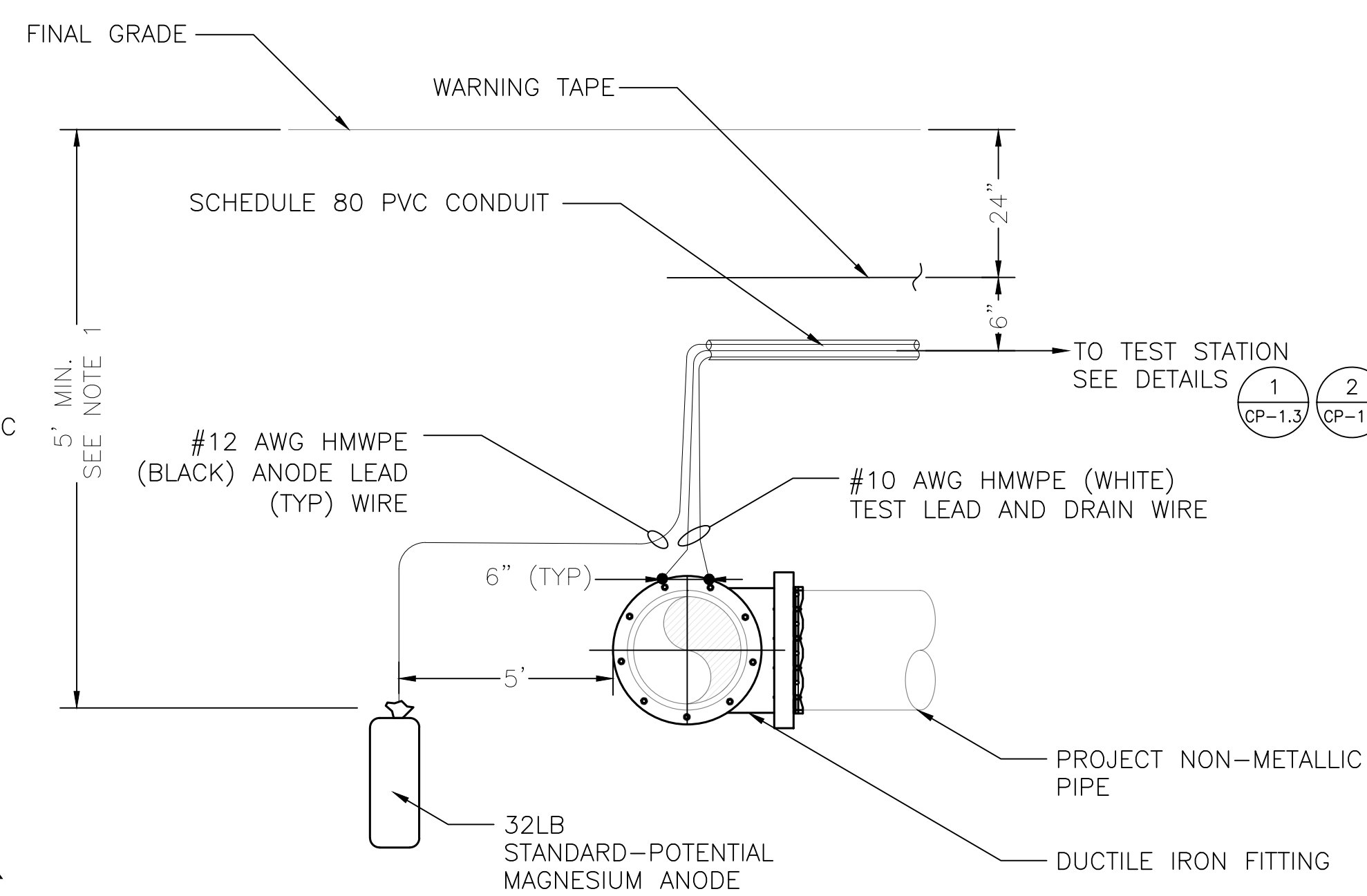
FP-6.2



NOTE:

1. DUCTILE IRON FITTING MAY BE DIFFERENT GEOMETRY, SUCH AS TEE OR INLINE.
2. WRAP FITTING IN PETROLATUM WAX TAPE AND OVERLAP PIPE BY 2 TIMES THE PIPE DIAMETER.

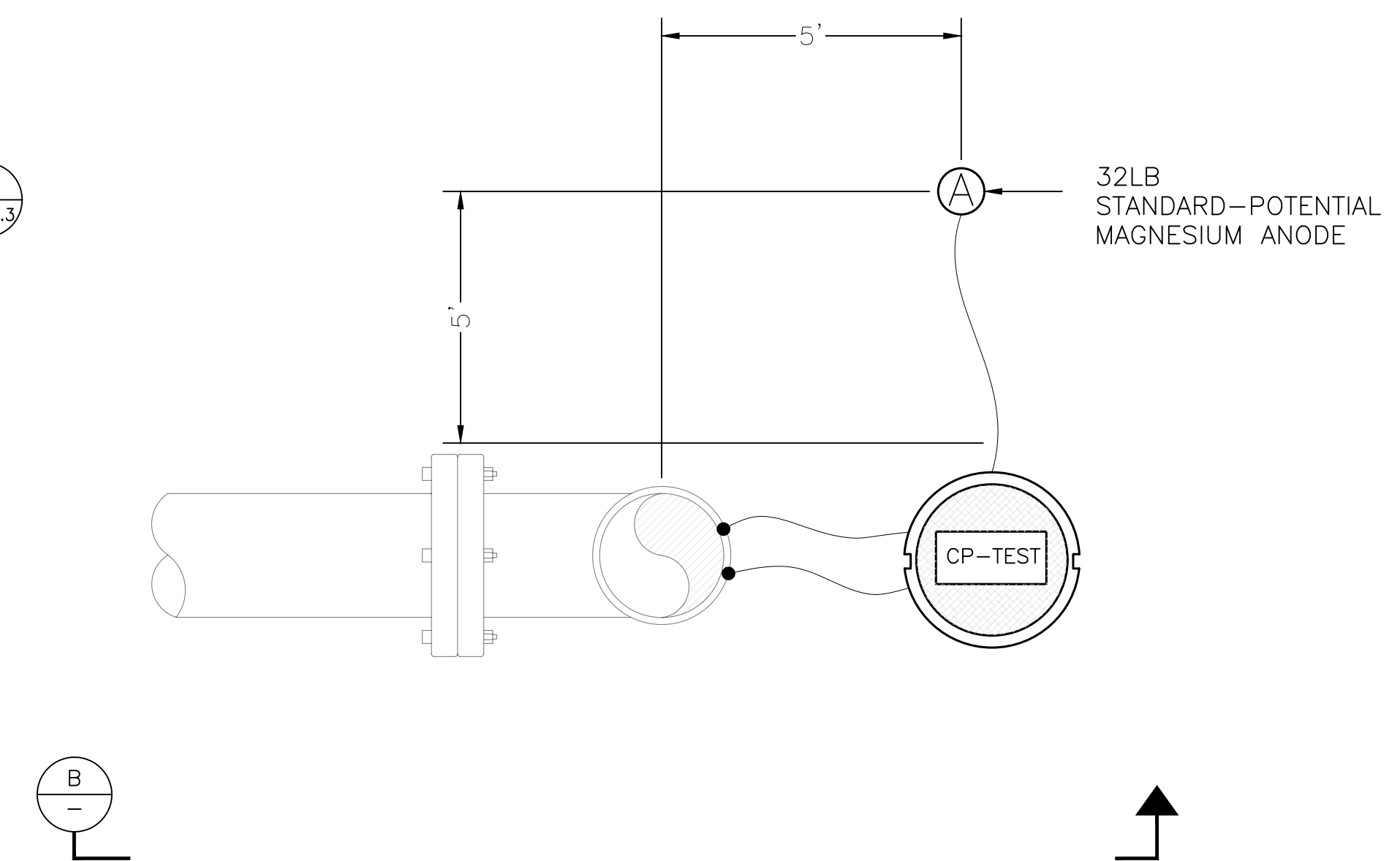
ANODE TEST STATION (ATS) FOR METALLIC FITTING OR VALVE ON NON-METALLIC PIPE PLAN VIEW NTS 1



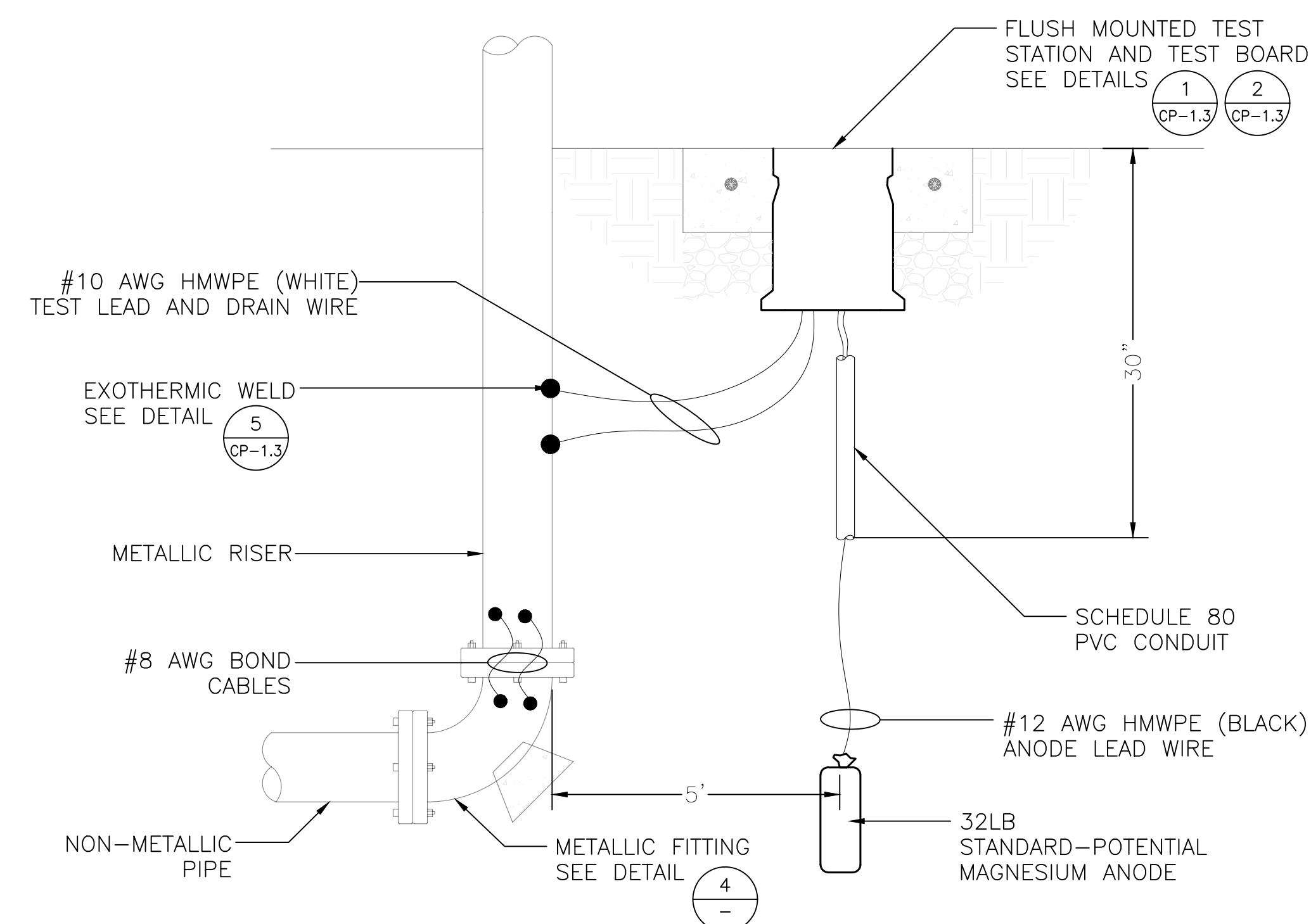
NOTE:

1. TOP OF ANODE SHALL BE AT OR BELOW PIPE INVERT.

ANODE TEST STATION (ATS) FOR METALLIC FITTING OR VALVE ON NON-METALLIC PIPE SECTION VIEW NTS A



ANODE TEST STATION (ATS) FOR RISER PLAN VIEW NTS 2

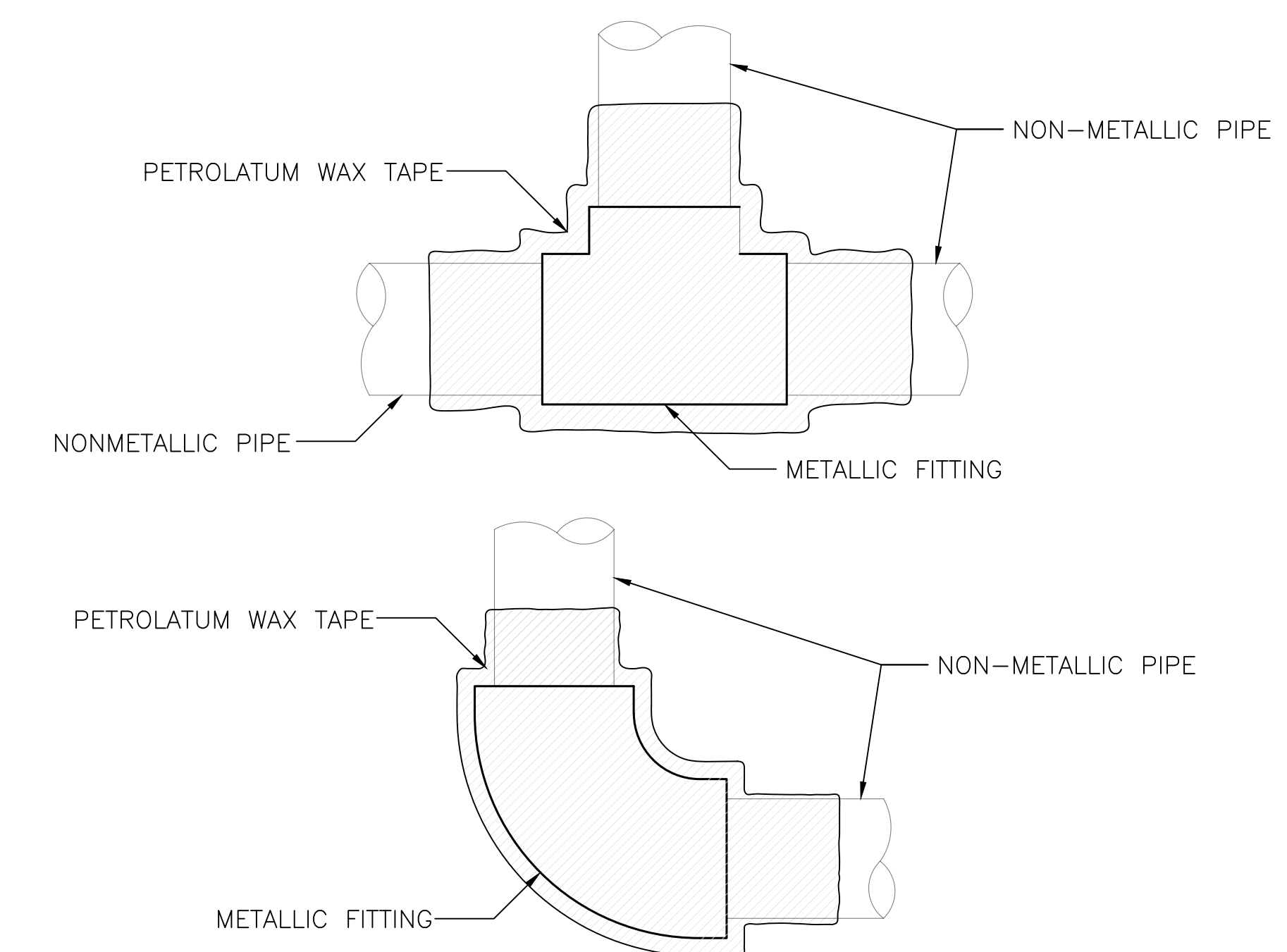


NOTE:

1. IF RISER IS DUCTILE IRON, BOND PIPE AND FITTINGS. RISER MAY HAVE 90 DEGREE ELBOW OR TEE. DUCTILE IRON PIPE AND FITTINGS SHALL HAVE POLYETHYLENE ENCASMENT.
2. IF RISER IS STAINLESS STEEL, WRAP IN PETROLATUM WAX TAPE.

ANODE TEST STATION (ATS) FOR RISER SECTION VIEW NTS B

DETAIL NOT USED



NOTES:

1. PETROLATUM WAX TAPE SHALL OVERLAP PIPE BY 2 TIMES THE PIPE DIAMETER.
2. ENCASE FITTING AND PETROLATUM WAX TAPE IN CONCRETE WITH 2-INCH COVER AT MINIMUM.

CORROSION CONTROL FOR 2-INCH DIAMETER METALLIC FITTING NTS 4



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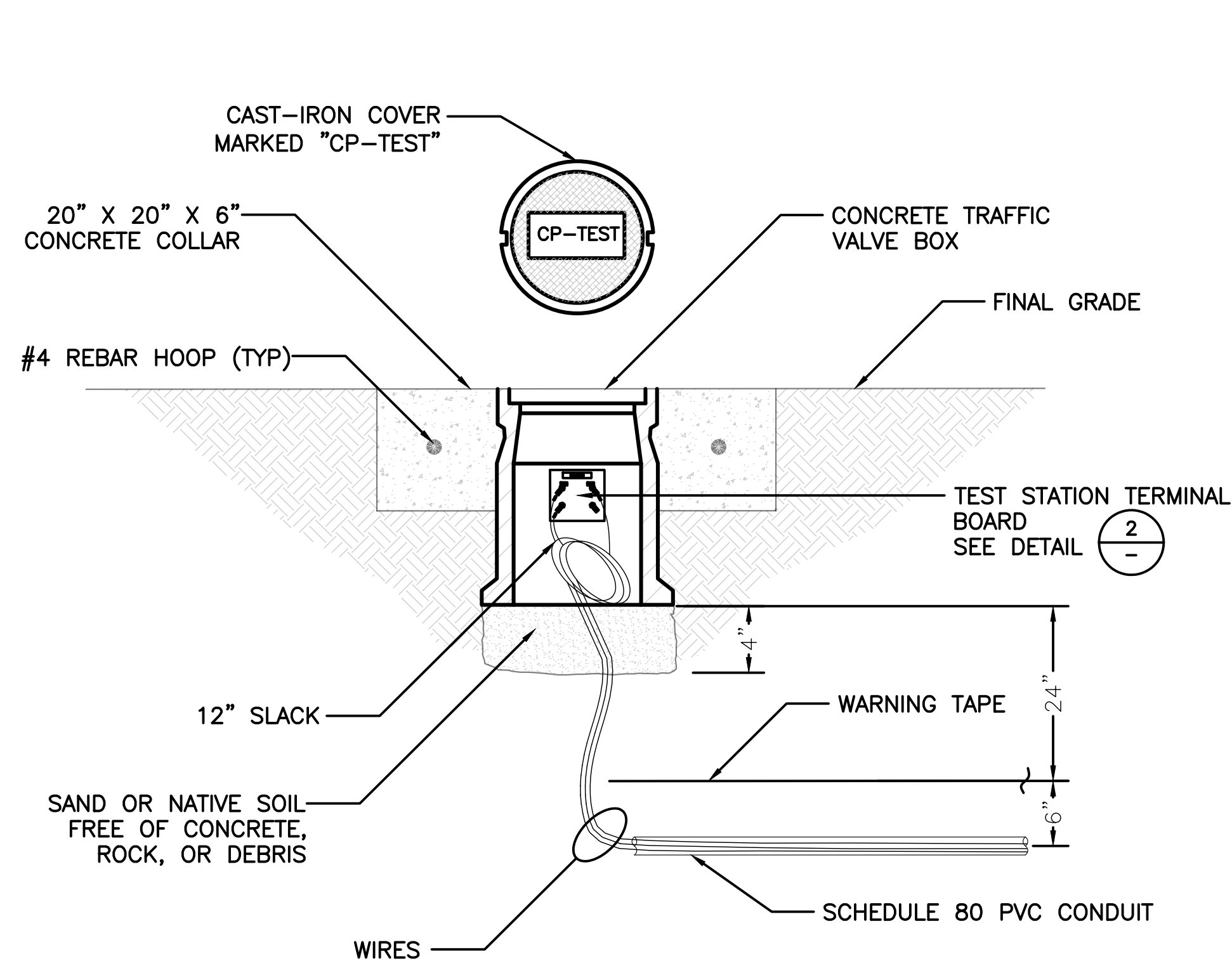
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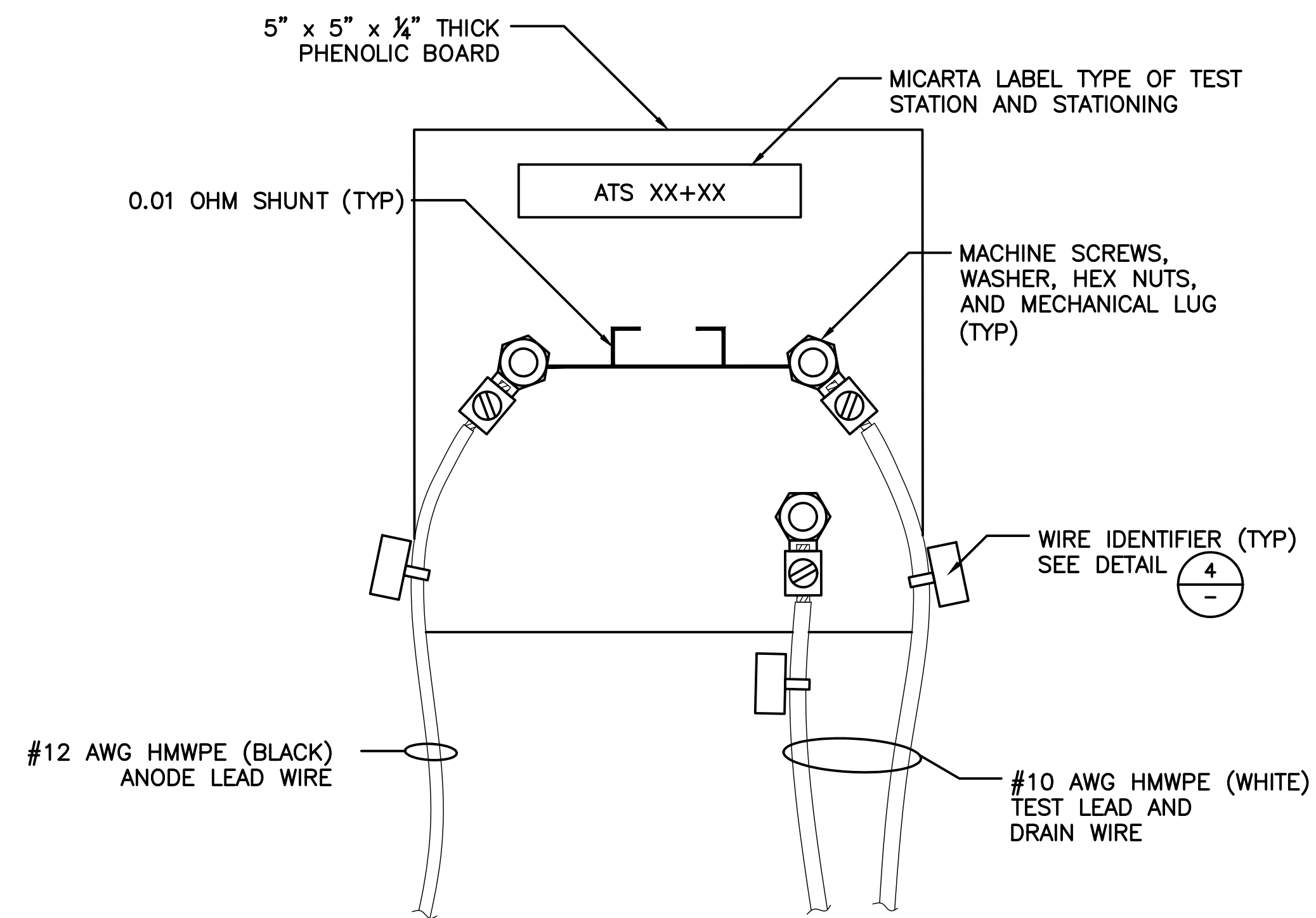
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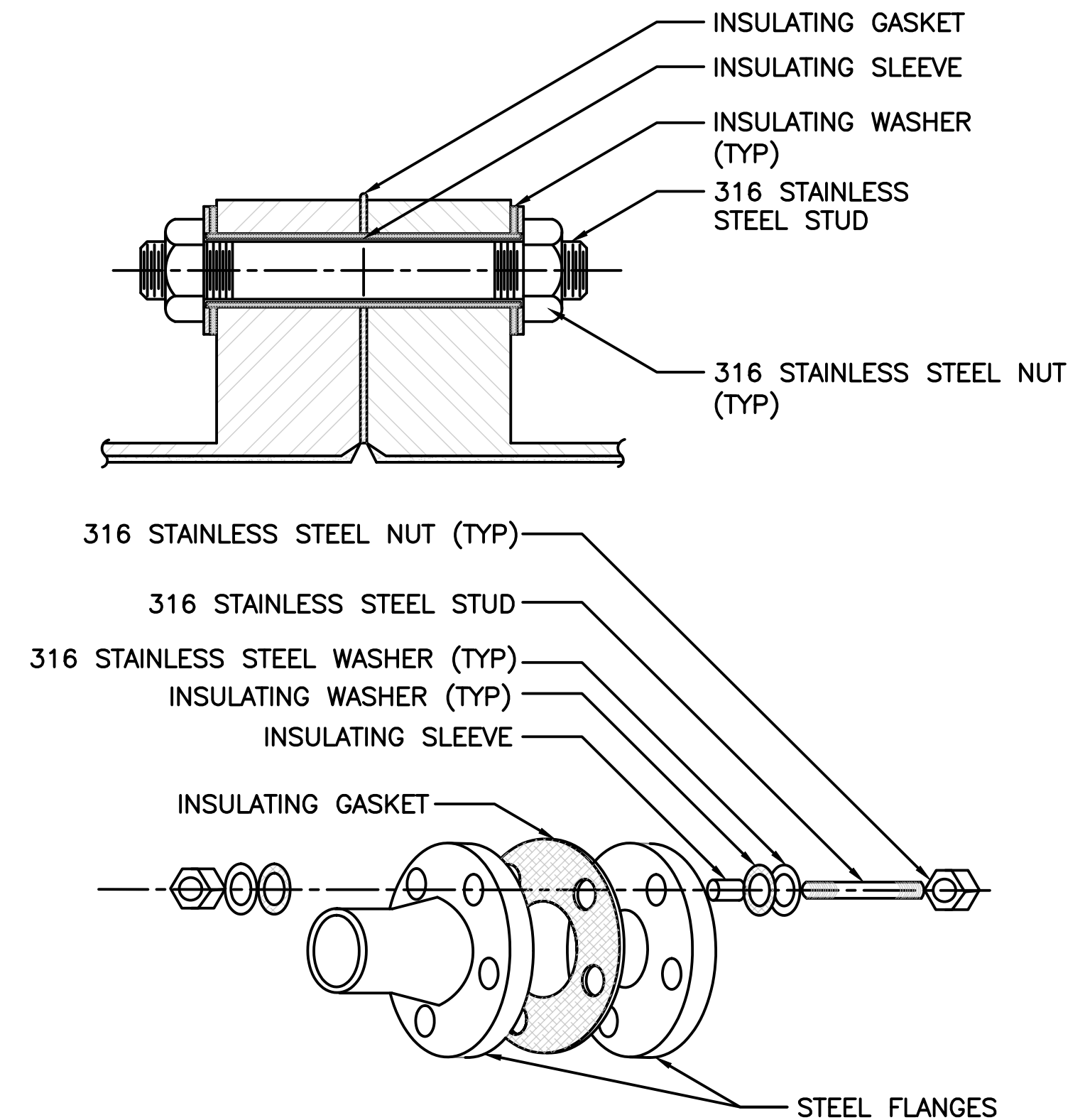
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FLUSH MOUNTED TEST STATION DETAIL (1) NTS

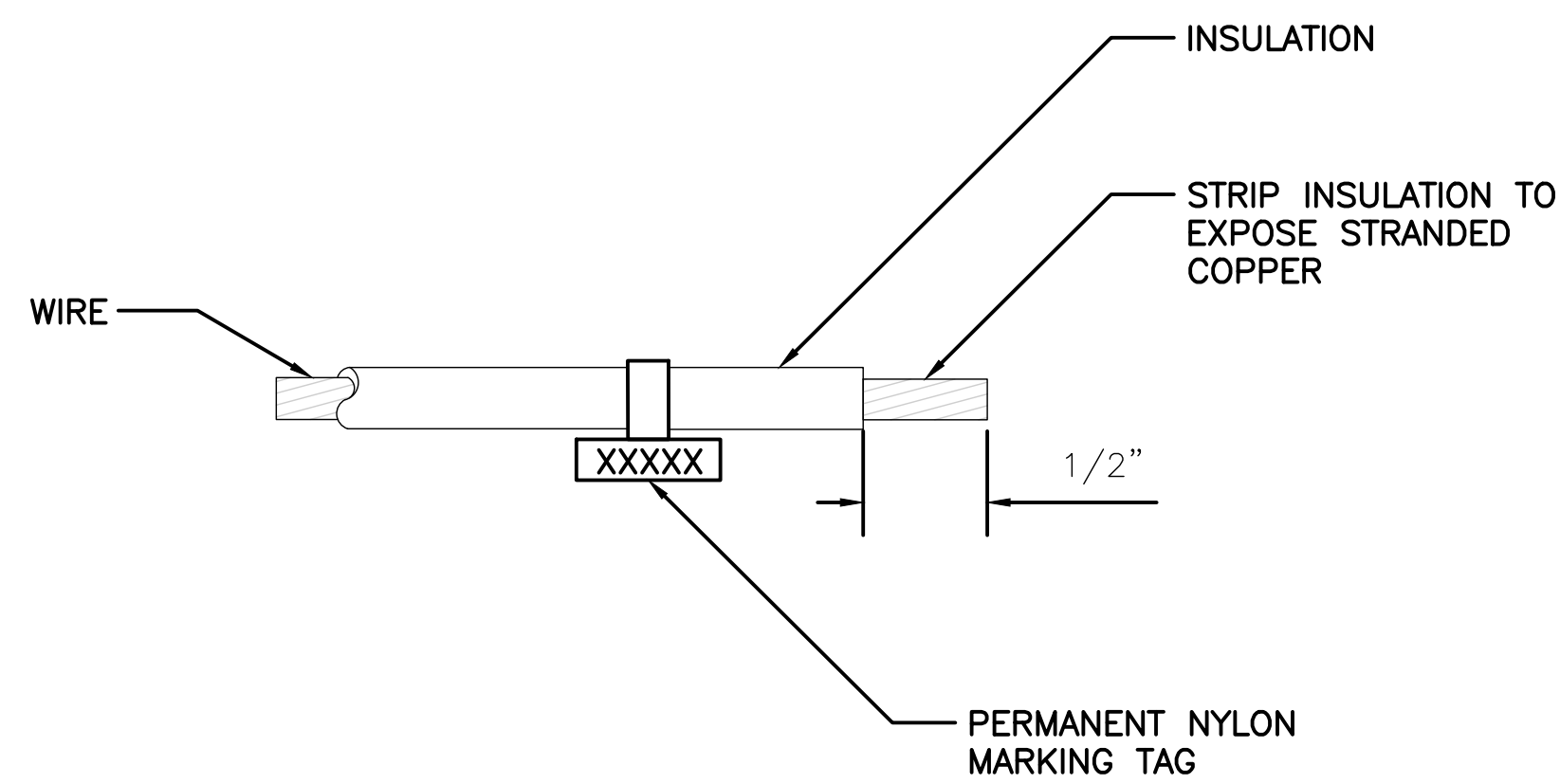


FLUSH-MOUNTED ANODE TEST STATION (ATS) TERMINAL BOARD DETAIL (2) NTS

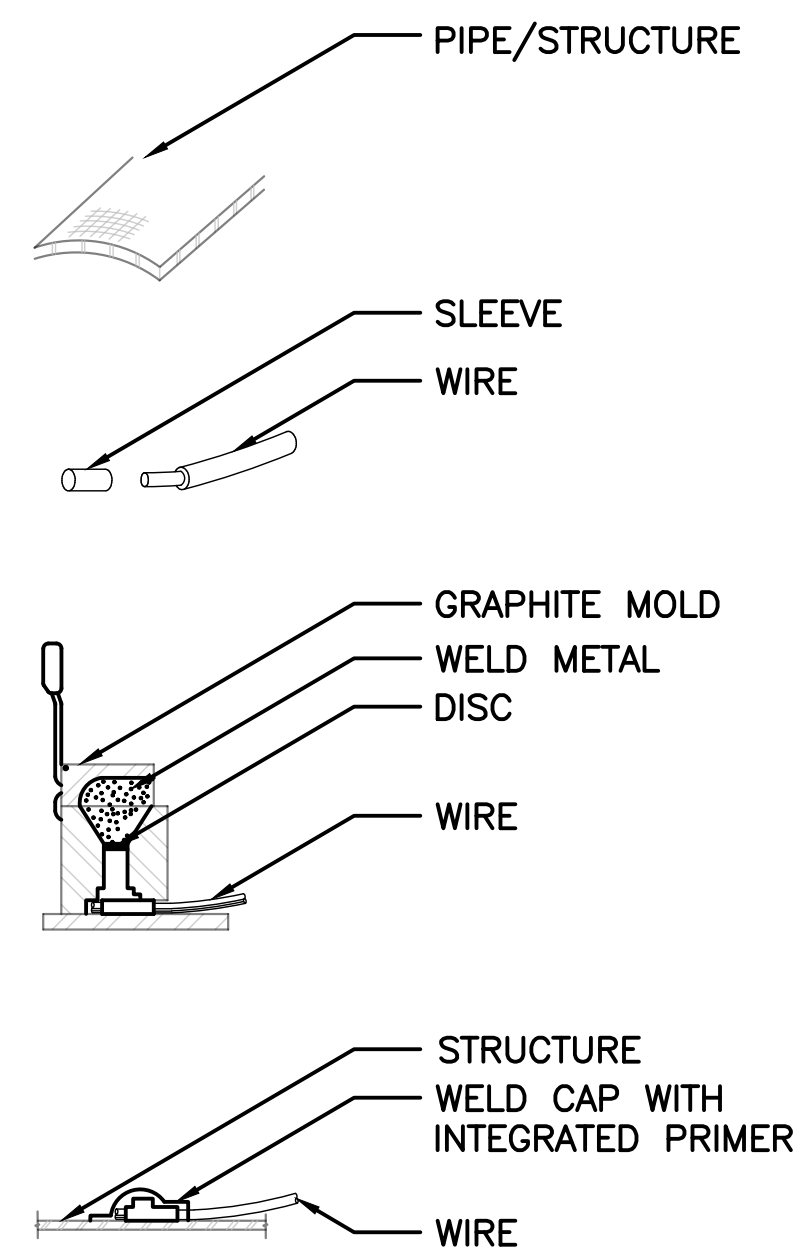


NOTE:
PETROLATUM WAX TAPE NOT SHOWN

DIELECTRIC INSULATING FLANGE KIT DETAIL WITH SECTION VIEW (3) NTS



WIRE IDENTIFIER DETAIL (4) NTS



EXOTHERMIC WELD DETAIL FOR DUCTILE IRON AND STEEL PIPE (5) NTS

1. GRIND PIPE/STRUCTURE TO BARE METAL AND CLEAN SURFACE. GROUND AREA SHALL BE LARGE ENOUGH FOR EXOTHERMIC WELD AND SMALL ENOUGH TO BE COMPLETELY COVERED BY WELD CAP.
2. STRIP INSULATION FROM WIRE AND ATTACH SLEEVE.
3. HOLD MOLD FIRMLY WITH OPENING AWAY FROM OPERATOR. IGNITE WITH FLINT GUN. REMOVE SLAG FROM CONNECTION WITH CHIPPING HAMMER. TEST WELD WITH 22 OZ HAMMER.
4. COVER CONNECTION WITH WELD CAP WITH INTEGRATED PRIMER. REPAIR ALL DAMAGE TO COATING AND LINING IN ACCORDANCE WITH COATING AND LINING MFG RECOMMENDATIONS.



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CP DETAILS

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