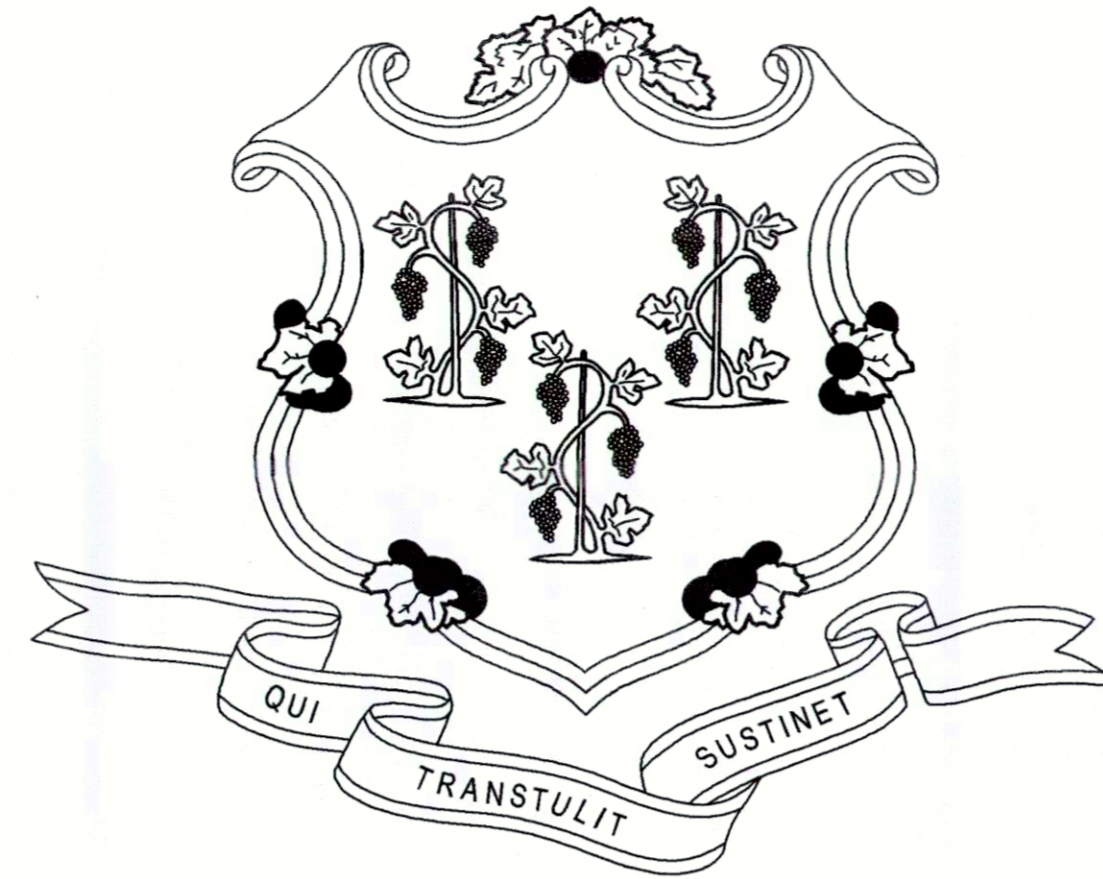


# STATE OF CONNECTICUT



## GOVERNOR NED LAMONT

DEPARTMENT OF ADMINISTRATIVE SERVICES  
JOSH GEBALLE  
COMMISSIONER

DEPARTMENT OF MOTOR VEHICLES  
SIBONGILE MAGUBANE  
COMMISSIONER

NORWALK ROOF AND HVAC  
DEPARTMENT OF MOTOR VEHICLES BRANCH OFFICE FACILITY  
NORWALK, CONNECTICUT

PROJECT NO. BI-MM-53

ARCHITECT  
WISS, JANNEY, ELSTNER ASSOCIATES, INC.  
2 TRAP FALLS ROAD, SUITE 502  
SHELTON, CT 06484  
203-944-9424



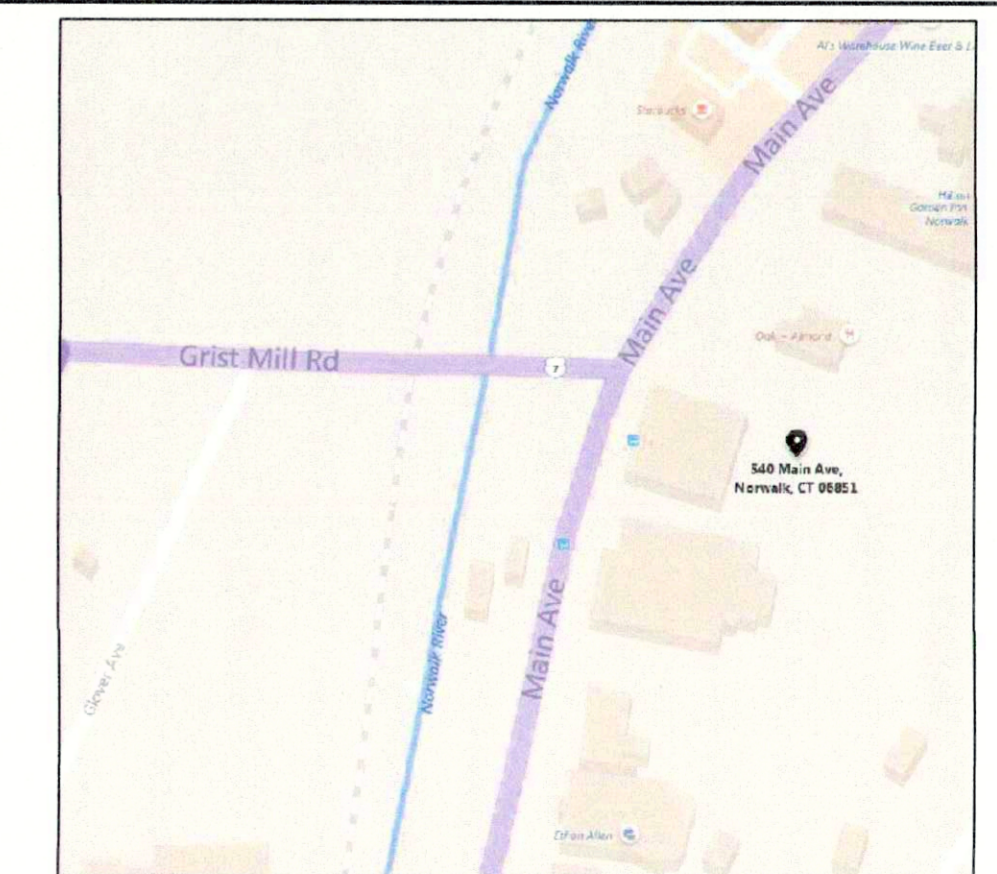
ENGINEER  
KOHLENER RONAN, LLC  
93 LAKE AVENUE  
DANBURY, CT 06810  
203-778-1017



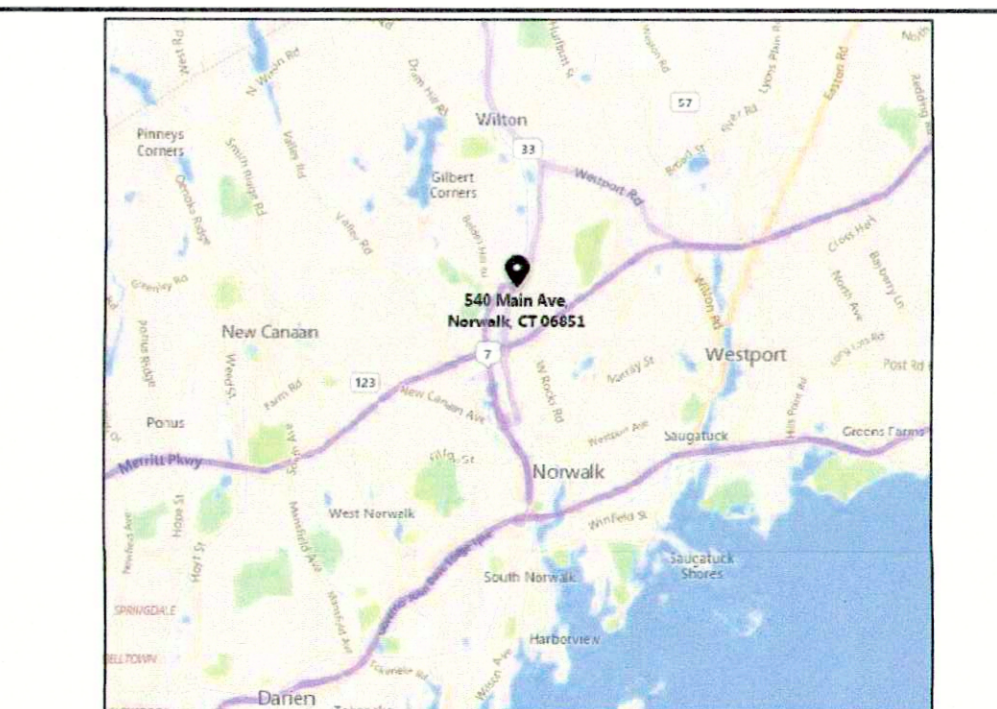
### CONTRACT DRAWINGS

NO.	TITLE
	COVER SHEET
A-001	BUILDING INFORMATION
A-100	SITE PLAN
A-101	FIRST FLOOR PLAN
A-102	REFLECTED CEILING PLAN
A-103	ROOF PLAN
A-200	EXTERIOR ELEVATIONS
A-300	ROOF DETAILS
A-301	ROOF DETAILS
A-302	ROOF DETAILS
M-001	COVER SHEET - MECHANICAL
M-002	GENERAL NOTES - MECHANICAL
MD-100	FIRST FLOOR DEMOLITION PLAN - MECHANICAL
MD-101	ROOF DEMOLITION PLAN - MECHANICAL
M-100	FIRST FLOOR PLAN - MECHANICAL
M-101	ROOF PLAN - MECHANICAL
M-200	SCHEDULES - MECHANICAL
M-300	DETAILS - MECHANICAL
E-001	COVER SHEET - ELECTRICAL
ED-101	ROOF DEMOLITION PLAN - ELECTRICAL
E-100	FIRST FLOOR PLAN - ELECTRICAL
E-101	ROOF PLAN - ELECTRICAL
E-500	SCHEDULES AND DETAILS - ELECTRICAL

D.C.S BUILDING NUMBER 46480



SITE PLAN



LOCATION PLAN

**GENERAL NOTES.**

- ALL WORK SHALL BE IN ACCORDANCE WITH THESE DRAWINGS AND THE PROJECT MANUAL DATED DEC. 3, 2018.
- ALL WORK SHALL COMPLY WITH THE BUILDING CODES, RULES AND REGULATIONS APPLICABLE IN THE STATE OF CONNECTICUT AND ANY OTHER AUTHORITY HAVING JURISDICTION.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AT THE JOB SITE PRIOR TO STARTING THE WORK, AND SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR OTHER CONDITIONS WHICH MAY AFFECT THE SCOPE OF WORK IMMEDIATELY, PRIOR TO BEGINNING REPAIRS IMPACTED BY THE NOTED CONDITIONS.
- THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT AS REQUIRED TO COMPLETE THE WORK.
- THE CONTRACTOR SHALL PROVIDE SIDEWALK PROTECTION IN THE FORM OF BARRICADES, PEDESTRIAN CANOPIES OR SIDEWALK SHEDS AS REQUIRED BY THE OWNER.
- THE CONTRACTOR SHALL SECURE AND PAY FOR ALL NECESSARY PERMITS PRIOR TO STARTING THE WORK, INCLUDING ALL EXPEDITING COSTS.
- THE CONTRACTOR SHALL PROPERLY PROTECT AND MAKE SAFE ADJACENT PROPERTIES AND OWNER'S PROPERTY AS JOB CONDITIONS REQUIRE.
- UNANTICIPATED CONDITIONS OR DISTRESSED BUILDING ELEMENTS ENCOUNTERED DURING THE COURSE OF THE WORK WHICH REQUIRE REPAIRS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER AND THE OWNER. NO ADDITIONAL WORK SHALL BE PERFORMED UNLESS APPROVED IN ADVANCE BY THE ARCHITECT/ENGINEER AND THE OWNER.
- THE DRAWINGS AND SPECIFICATIONS ARE TO BE TAKEN IN THEIR ENTIRETY AND AS A WHOLE.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL SITE SAFETY AND METHODS AND MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL MAKE ANY INSPECTIONS OR ANALYSIS NECESSARY TO VERIFY THAT EXISTING BUILDING ELEMENTS HAVE ADEQUATE LOAD CAPACITY TO SUPPORT ANY REQUIRED FORCES HE/SHE CHOOSES TO IMPOSE ON THEM.
- DO NOT REMOVE ANY LINES OF PUBLIC UTILITY COMPANIES UNLESS NOTED OTHERWISE. WHERE REMOVAL AND/OR RELOCATION OF SUCH LINES IS REQUIRED, MAKE ALL ARRANGEMENTS WITH THE UTILITY COMPANIES INVOLVED.
- THE BUILDING SHALL REMAIN OCCUPIED DURING THE COURSE OF THE WORK AND CONSTRUCTION RELATED ACTIVITIES SHALL BE THOROUGHLY COORDINATED WITH THE OWNER AND SHALL NOT BLOCK EXISTING MEANS OF EGRESS OR PEDESTRIAN WALKWAYS. WORK SHALL BE PHASED SO THAT SAFE ACCESS TO THE BUILDING IS MAINTAINED AT ALL TIMES AND THAT BUILDING OPERATIONS ARE NOT DISTURBED.

**SCOPE OF WORK - SUMMARY**

- REPLACEMENT OF THE APPROXIMATELY 15,000 S.F. EXISTING ROOFING SYSTEM TO THE EXISTING STEEL ROOF DECK
  - DESIGN SHALL COMPLY WITH FACTORY MUTUAL GLOBAL REQUIREMENTS
  - CEILING REPAIRS AND PAINTING AT AREAS DAMAGED BY HVAC WORK
- REPLACEMENT OF BUILDING'S EXISTING FOUR (4) LENNOX HVAC UNITS.
- UPGRADE THE EXISTING INTERIOR BUILDING'S HVAC SYSTEM'S ZONING AND OPERATION

**2016 CONNECTICUT STATE BUILDING CODE**

CHAPTER 34 EXISTING BUILDINGS AND STRUCTURES

**2016 CONNECTICUT STATE BUILDING CODE CONT.**

**CASE 1 - SINGLE OCCUPANCY OR NON-SEPARATED USES (302.3.1)**

Using Table 503, identify the allowable height and area of the single occupancy or the most restrictive of the non-separated mixed occupancies. Construction types providing an allowable tabular area equal to or greater than the adjusted building area and allowable heights (as modified by Section 504) equal to or greater than the actual building height are permitted.

DETERMINE CONSTRUCTION TYPE		ALLOWABLE AREA (506.4)	
Actual building area	15,000 ft <sup>2</sup>	Allowable area per floor (A <sub>f</sub> )	
Adjusted building area	10,067 ft <sup>2</sup> <small>actual building area + conversion factor</small>	1.49 x 23,000 = 34,320 ft <sup>2</sup> <small>conversion factor tabular area (Table 503)</small>	
Actual building height	15 feet 1 stories	Total floor area (all stories)	15,000 ft <sup>2</sup>
Allowable building height	55 feet 3 stories	Allowable floor area (all stories)	
Permitted construction types	2B	34,320 x 1 = 34,320 ft <sup>2</sup> <small>Allowable area per floor (A<sub>f</sub>) Number of stories (maximum 3)</small>	
Type of construction assumed for review (602.1.1)	2B		

**CONSTRUCTION INFORMATION**

<b>6.0 MEANS OF EGRESS:</b>		
6.1 Total Occupant Load (Entire Building)	136	
6.2 Total Occupant Load (Largest Floor)	136	
6.3 Total Capacity Of Exits	900 Existing	
6.4 Total Number of Exits	5 Existing	
<b>7.0 FIRE RESISTANT RATING OF STRUCTURE ELEMENTS (TABLE 602) REFER TO CONSTRUCTION DOCUMENTS FOR THE FOLLOWING:</b>		
<b>7.1 Exterior Walls:</b>		
7.1.1 Load Bearing	NA	HR(S)
7.1.2 Non-load Bearing	0 Hrs. Existing	HR(S)
7.2 Fire Walls & Party Walls	NA	HR(S)
7.3 Fire Separation Assemblies:	NA	
7.3.1 Fire enclosure of exits	NA	HR(S)
7.3.2 Shafts	NA	HR(S)
7.3.3 Mixed Use Separation	NA	HR(S)
7.3.4 Other Separation Assemblies:	NA	HR(S)
7.4 Fire Partitions	NA	HR(S)
7.5 Dwelling Unit Separations	NA	HR(S)
7.6 Smoke Barriers	NA	HR(S)
7.7 Other Non bearing Partitions	NA	HR(S)
<b>7.8 Interior Bearing Walls, Bearing Partitions, Columns, Girders, Trusses and Framing:</b>		
7.8.1 Supporting more than one floor	NA	HS(S)
7.8.2 Supporting one floor only or a roof:	0	HR(S)
7.8.3 Structural Members Supporting Wall	NA	HR(S)
7.9 Floor Construction Including Beams	NA	HR(S)
7.10 Roof Construction	0 Existing	HR(S)
7.10.1 * 15 ft. or less:	0 Existing	HR(S)
7.10.2 * 15 ft. or more:	NA	HR(S)
7.10.3 * 20 ft. or more:	NA	HR(S)
	* Height to lowest member.	
<b>8.0 FIRE PROTECTION SYSTEM:</b>	Existing	
8.1 Fire Suppression System	None	
8.2 Alarms	Yes Existing	
8.3 Automatic Fire Detection System	Yes Existing	
8.4 Smoke Control System	No	
8.5 Supervision	Yes Existing	

**PART 2 - CONNECTICUT STATE FIRE SAFETY CODE**

1.0 CLASSIFICATION OF OCCUPANCY:	B - Business
2.0 CONSTRUCTION CLASSIFICATION:	2B
3.0 MINIMUM CONSTRUCTION TYPE REQUIRED:	2B
4.0 ACTUAL CONSTRUCTION TYPE PROVIDED:	2B
5.0 NOTIFICATION/ALARMS:	Existing
6.0 DETECTION:	Existing
7.0 EXTINGUISHMENT REQUIREMENTS:	Existing

**ROOFING R VALUE: R25 PER 2012 IECC (TABLE 402.2)**

BASE BOARD	0.56
5" POLYISO INSULATION	29.5
TOTAL R-VALUE	30.06

**WIND UPLIFT RATINGS PER FM GLOBAL**

FM GLOBAL (USED FOR ROOF ASSEMBLY AND METAL DECK)

FIELD OF ROOF	60 PSF
PERIMETER OF ROOF	90 PSF
CORNERS OF ROOF	120 PSF

CODE AT TIME OF CONSTRUCTION	BOCA 1987
	1988 - CT SUPPLEMENT
	1989 - CT SUPPLEMENT

2016 CT BUILDING CODE (USED FOR OPEN-WEB STEEL JOISTS)

BASIC WIND SPEED, V=120 MPH

RISK CATEGORY II

EXPOSURE B

ENCLOSED BUILDING

HURRICANE PRONE REGION = YES

WIND-BORNE DEBRIS REGION = NO

ZONE	DESIGN WIND PRESSURE	COMMENT
1	+8.3 PSF -23.7 PSF	FIELD
2	+8.3 PSF -28.1 PSF	EDGE
3	+8.3 PSF -28.1 PSF	CORNER

SNOW LOAD 30 PSF FIELD OF ROOF  
21 PSF + 29 PSF = 50 PSF MAXIMUM AT SNOW DRIFT

ROOF DEAD LOAD = 10 PSF

ROOF LIVE LOAD = 20 PSF

**PART 1 - CT STATE BUILDING CODE**

<b>1.0 EXISTING BUILDING:</b>						
1.1 Continuation of Existing Use	X	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>	N/A
1.2 Change of Use	X	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>	N/A
1.3 Complying with International Existing Building Code	<input type="checkbox"/>	YES	X	NO	<input type="checkbox"/>	N/A
<b>2.0 NEW BUILDINGS OR ADDITIONS:</b>						
2.1 Exceeds Threshold Building Limits	X	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>	N/A
<b>3.0 OCCUPANCY CLASSIFICATION</b>	<b>B - Business</b>					
3.1 Mixed Occupancies						
<b>4.0 HEIGHT AND AREA COMPUTATION + CONSTRUCTION TYPE:</b>						

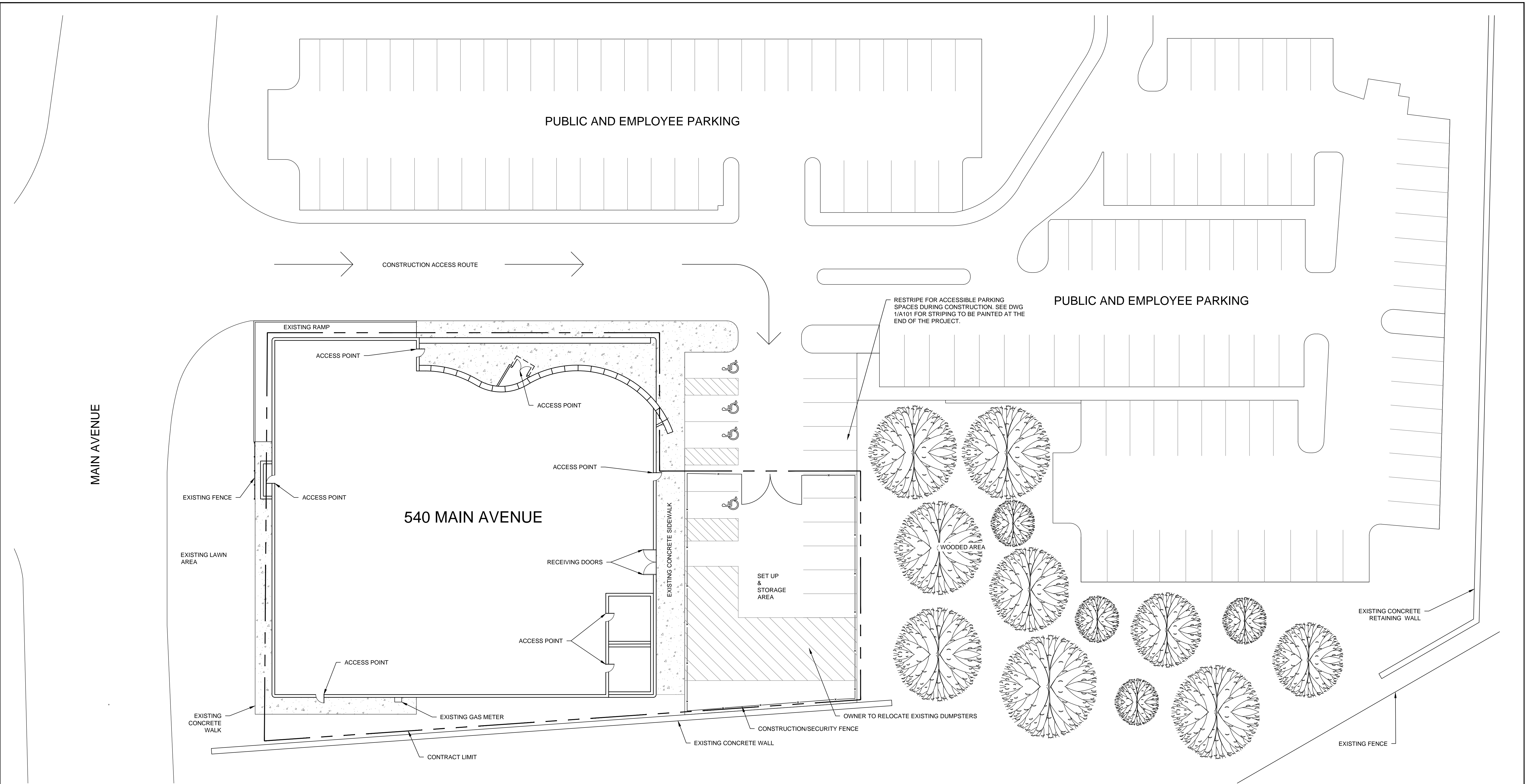
**GENERAL BUILDING LIMITATIONS (Chapters 5 & 6)**

Use **Case 1** to determine the allowable height and area and permitted construction types for the building containing a single occupancy or non-separated mixed occupancies. Use **Case 2** to determine the allowable height and area and permitted types of construction for the building containing separated mixed occupancies.

AREA MODIFICATIONS TO TABLE 503						
% of allowable tabular area, A <sub>t</sub> (Table 503)	100%	Frontage (506.2)	126	0	126	134
% Increase for frontage, I <sub>f</sub> (506.2)	+ 49%		North	East	South	West
% Increase for automatic sprinklers, I <sub>s</sub> (506.3)	+ 0 %	Total Frontage (F)	386 ft.		Perimeter (P)	520 ft.
Total percentage factor	= 149 %	Width of open space (W)	= 36 feet minimum			
Conversion factor	1.49	% Frontage increase (I <sub>f</sub> ) (506.2)	= 49			
	Total percentage factor + 100%		I <sub>f</sub> = 100 $\left[ \frac{F}{P} - 0.25 \right] \frac{W}{30}$			

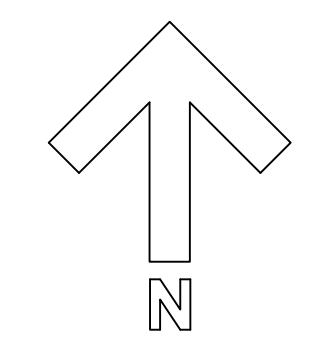
BUILDING INFORMATION			STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES		
REVISIONS			drawing prepared by		
mark	date	description	WISS, JANNEY, ELSTNER ASSOCIATES, INC. 2 TRAP FALLS ROAD, SUITE 502 SHELTON, CT 06484		date 01/22/2019
			project		scale As Noted
			540 MAIN AVENUE NORWALK DMV ROOF AND HVAC NORWALK, CT		drawn by DAF
			CAD no.		approved by PCL
			project no. 2018.0336.0		drawing no. A-001



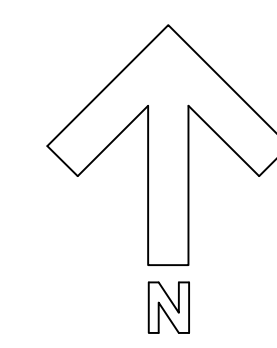
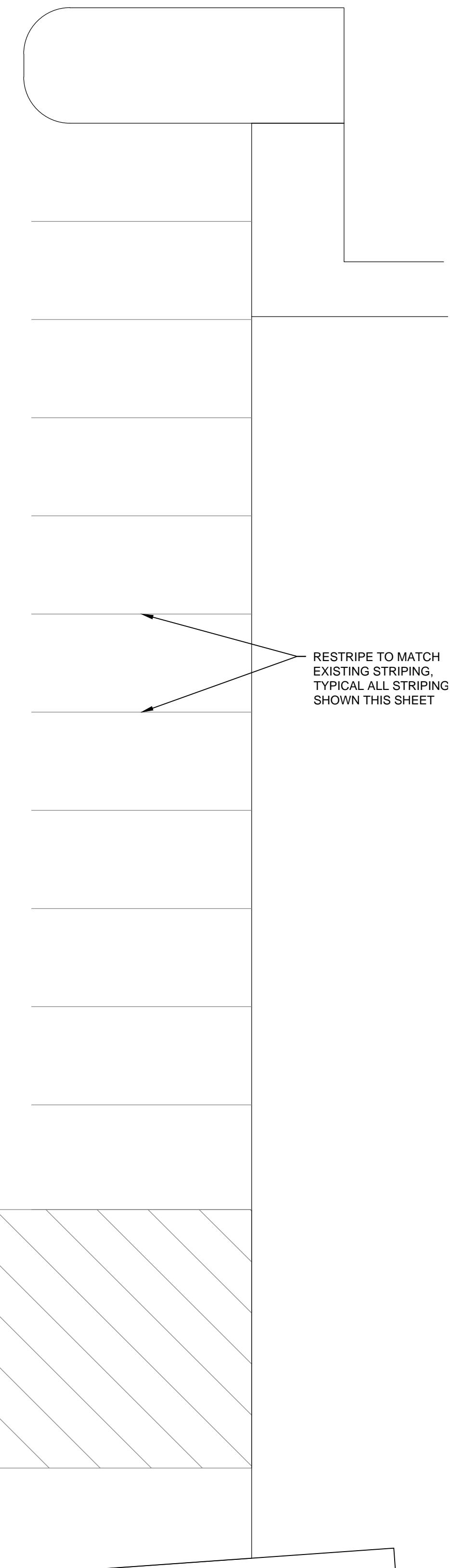
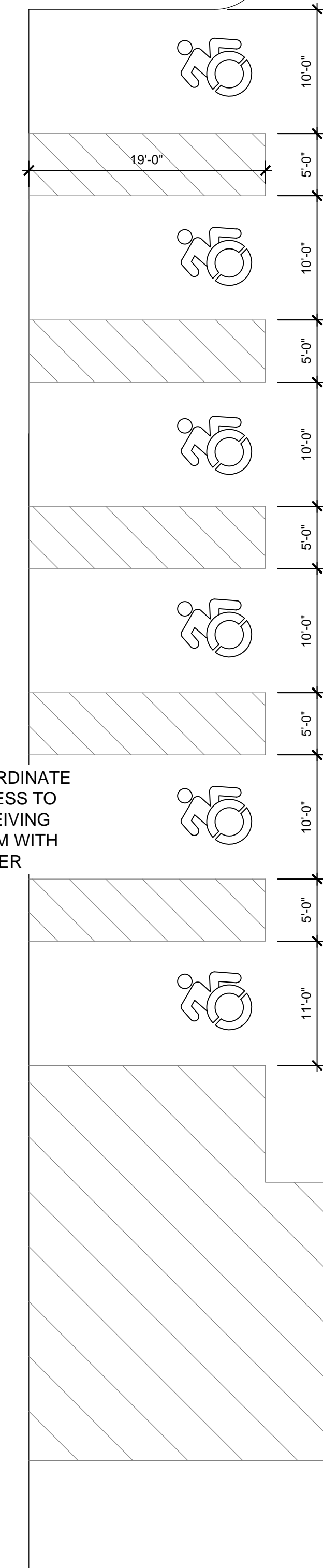
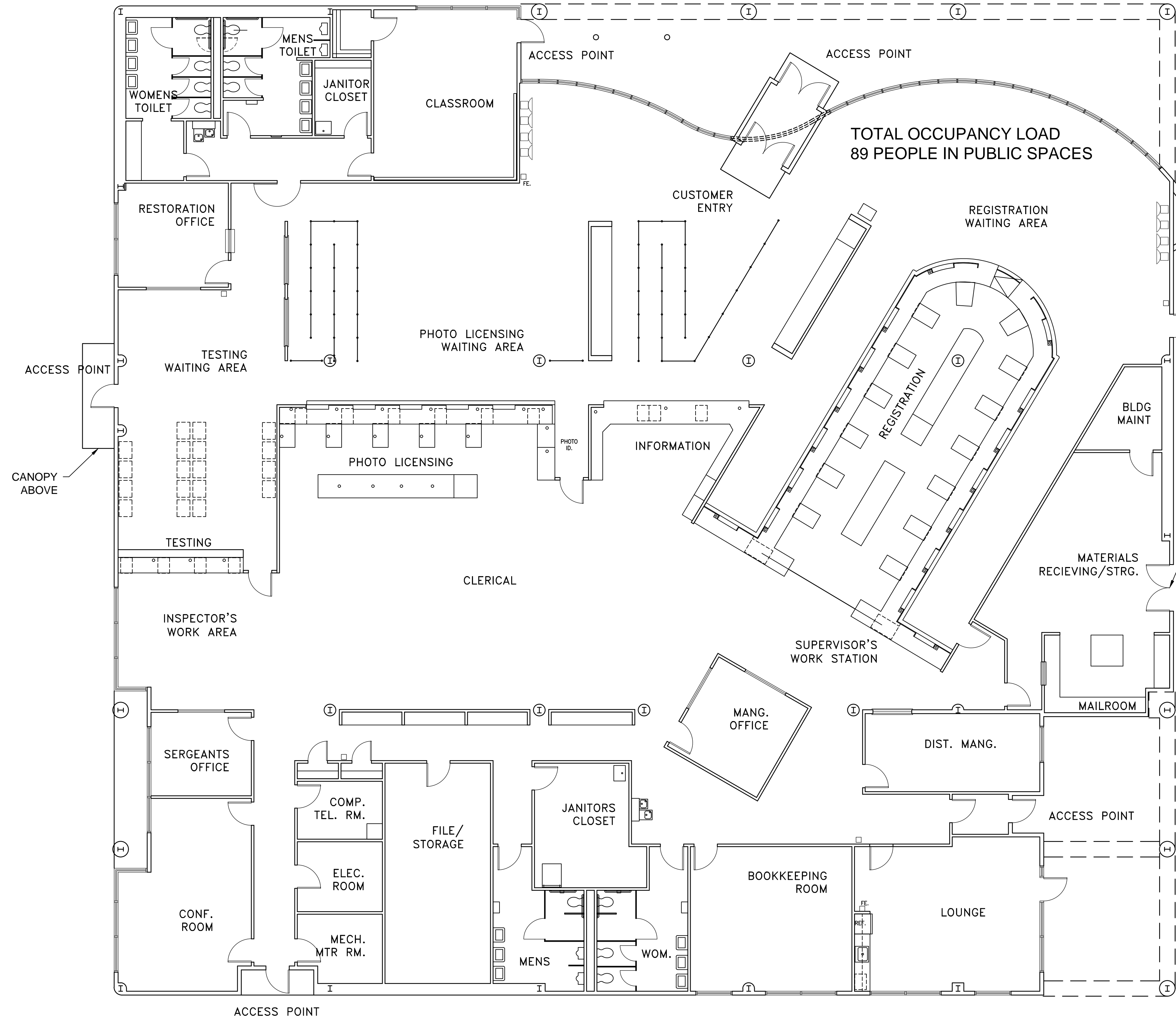


**1 SITE PLAN**  
SCALE: 1/16" = 1'-0"

- NOTES:
1. CONTRACTOR SHALL NOT PARK OUTSIDE OF CONSTRUCTION SECURITY FENCE WITHOUT APPROVAL OF THE OWNER
  2. ALL ACCESS POINTS SHALL BE UNOBSTRUCTED AT ALL TIMES DURING CONSTRUCTION.
  3. SIDEWALK PROTECTION IS REQUIRED AT ALL ACCESS POINTS.



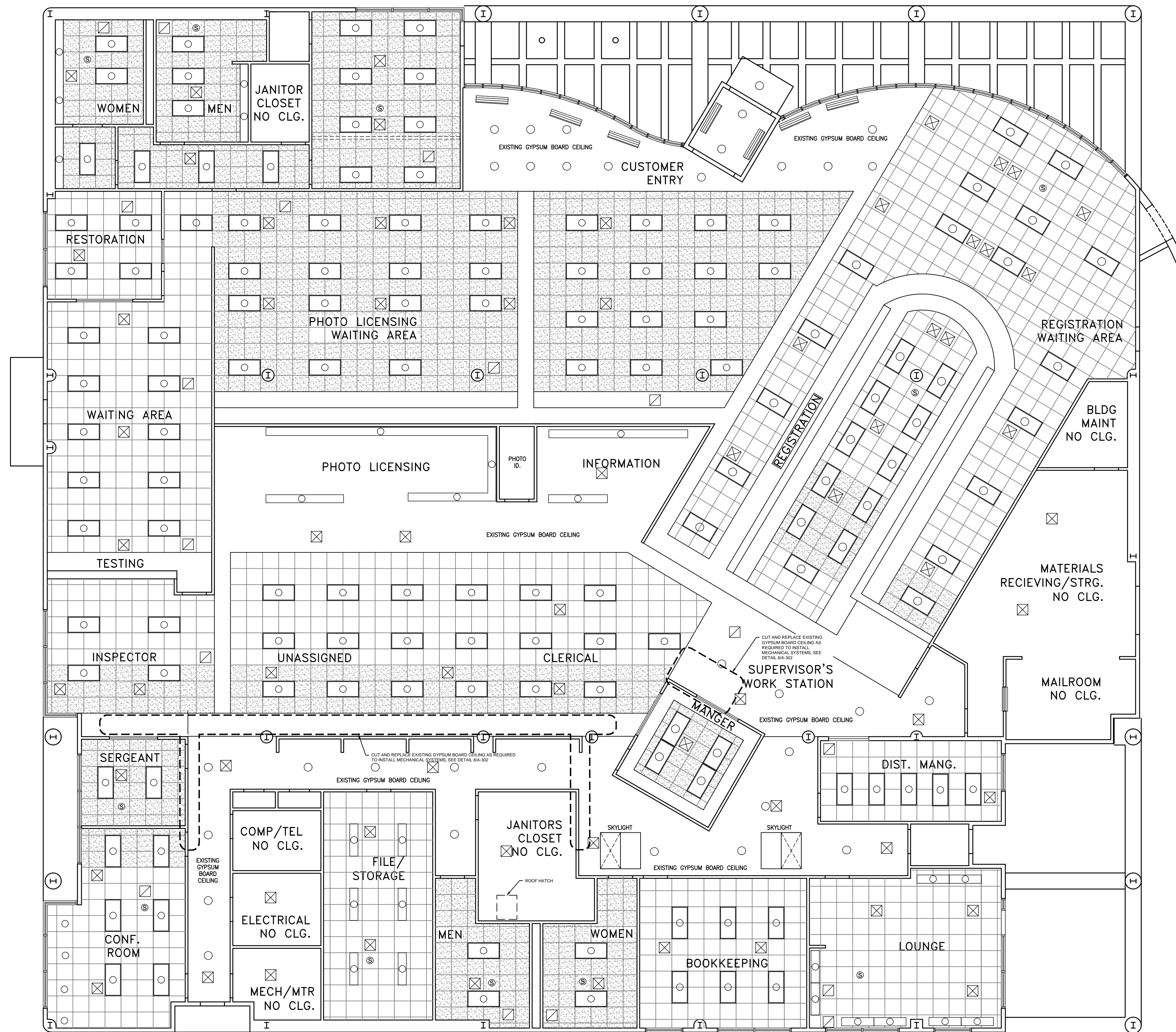
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REVISIONS					
mark	date	description	drawing prepared by WISS, JANNEY, ELSTNER ASSOCIATES, INC. 2 TRAP FALLS ROAD, SUITE 502 SHELTON, CT 06484	date 01/22/2019	scale As Noted
			project 540 MAIN AVENUE NORWALK DMV ROOF AND HVAC NORWALK, CT	drawn by DAF	approved by PCL
			CAD no.	project no. 2018.0336.0	drawing no. <b>A-100</b>



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

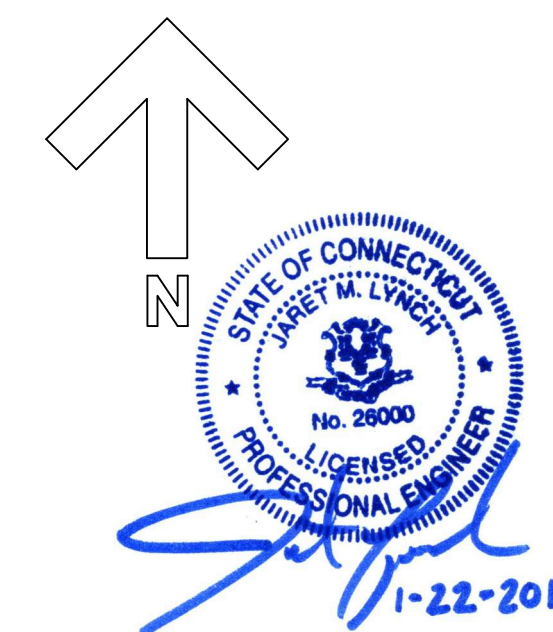


drawing title			STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES	
FIRST FLOOR PLAN			REVISIONS	
mark	date	description	drawing prepared by	date
			WISS, JANNEY, ELSTNER ASSOCIATES, INC. 2 TRAP FALLS ROAD, SUITE 502 SHELTON, CT 06484	01/22/2019
			project 540 MAIN AVENUE NORWALK DMV ROOF AND HVAC NORWALK, CT	scale As Noted
			CAD no.	approved by PCL
			project no. 2018.0336.0	drawing no. A-101

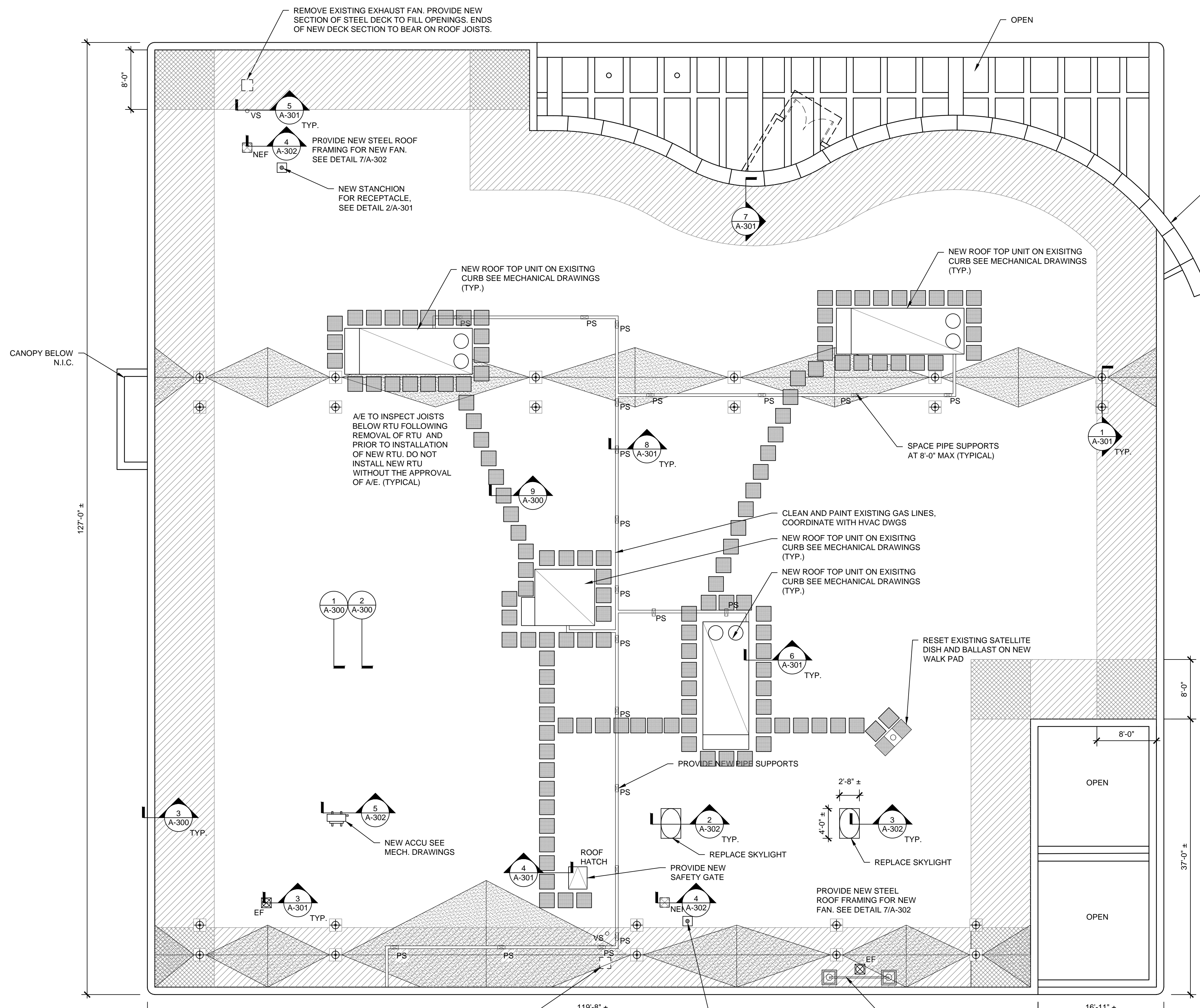


- LEGEND:
- SUPPLY VENT - COORDINATE LOCATIONS WITH DRAWING M-100
  - RETURN VENT - COORDINATE LOCATIONS WITH DRAWING M-100
  - SUPPLY VENT - COORDINATE LOCATIONS WITH DRAWING M-100
  - EXISTING LIGHT FIXTURE - REINSTALL IN NEW TILES AS SHOWN ON PLAN
  - EXISTING LIGHT FIXTURE - REINSTALL IN NEW TILES AS SHOWN ON PLAN
  - EXISTING LIGHT FIXTURE - REINSTALL IN NEW TILES AS SHOWN ON PLAN
  - EXISTING ACOUSTICAL CEILING TILE
  - NEW ACOUSTICAL CEILING TILE IN EXISTING GRID. SECURE GRID AT NEW TILES AS SHOWN DETAIL 1/A302
  - EXISTING GYPSUM BOARD CEILING OR SOFFIT

1 REFLECTED CEILING PLAN  
SCALE: 1/8" = 1'-0"



drawing title <b>REFLECTED CEILING PLAN</b>			<b>STATE OF CONNECTICUT</b> DEPARTMENT OF ADMINISTRATIVE SERVICES		
REVISIONS			drawing prepared by WISS, JANNEY, ELSTNER ASSOCIATES, INC. 2 TRAP FALLS ROAD, SUITE 502 SHELTON, CT 06484		
mark	date	description	date	scale	As Noted
			01/22/2019		
			project 540 MAIN AVENUE NORWALK DMV ROOF AND HVAC NORWALK, CT	drawn by DAF	approved by PCL
			CAD no. 2018.0336.0	project no. 2018.0336.0	drawing no. A-102



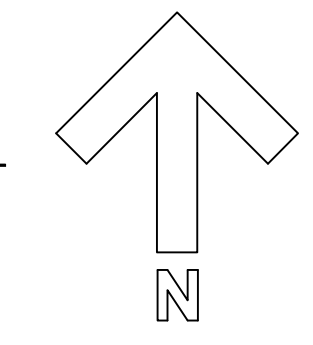
- 3. EXISTING FOOT STEEL
- 4. ADD F. STEEL
- 5. ADD F. 12" O.C. CURBS
- 6. PER S' JOISTS BRIDG INSTAL BOTTC RTUS, REQUI
- 7. ALLOW EXISTI BEFOR NOT IN APPRC

**LEGEND:**

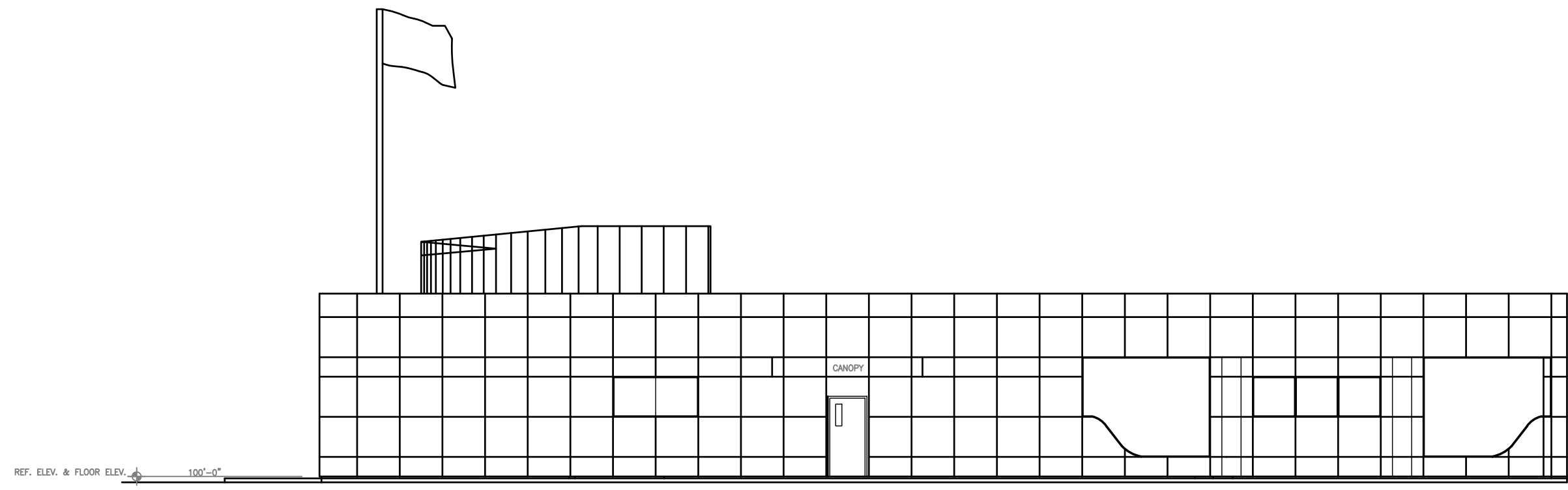
- EXISTING FAN CURB
- EXISTING VENT STACK
- NEW RTU
- EXISTING ROOF DRAIN WITH OVERFLOW DRAIN TO REMAIN, CLAMPING RING AND STRAINER TO BE REPLACED
- EXISTING ROOF HATCH
- NEW SKYLIGHT
- NEW WALK PAD
- NEW PIPE SUPPORT
- NEW EXHAUST FAN
- FM GLOBAL 8'-0" ROOF PERIMETER
- FM GLOBAL 8'-0" X 8'-0" ROOF CORNER - PROVIDE SUPPLEMENTAL INSULATION FASTENERS AT 1 PER SF AT CORNERS.
- CRICKET, SLOPE 1/2" PER 1'

- NOTES:**
1. COORDINATE ALL WORK AT AND AROUND SATELLITE DISH WITH OWNER
  2. PROVIDE WALK PADS BELOW ALL CONDENSATE DRAINS FROM NEW ROOF TOP UNITS.
  3. EXISTING ROOF DECK SLOPES 1/2" PER FOOT TO EXISTING DRAINS.
  4. ADD FASTENERS AT 12" O.C. TO SECURE STEEL ROOF DECK TO STEEL JOISTS.
  5. ADD FASTENERS TO MATCH EXISTING AT 12" O.C. AT ALL EXISTING EQUIPMENT CURBS.
  6. PER STEEL JOIST INSTITUTE (2015) JOISTS ARE TO HAVE BOTTOM CHORD BRIDGING AT MAXIMUM 8'43" SPACING. INSTALL 1 1/4" EQUAL LEG ANGLE BOTTOM CHORD BRIDGING WHERE NEW RTUS ARE INSTALLED IF BRIDGING REQUIREMENTS ARE NOT ALREADY MET.
  7. ALLOW A/E TO INSPECT JOISTS UNDER EXISTING RTUS DURING CONSTRUCTION BEFORE INSTALLATION OF NEW RTUS. DO NOT INSTALL NEW RTUS WITHOUT APPROVAL OF A/E.

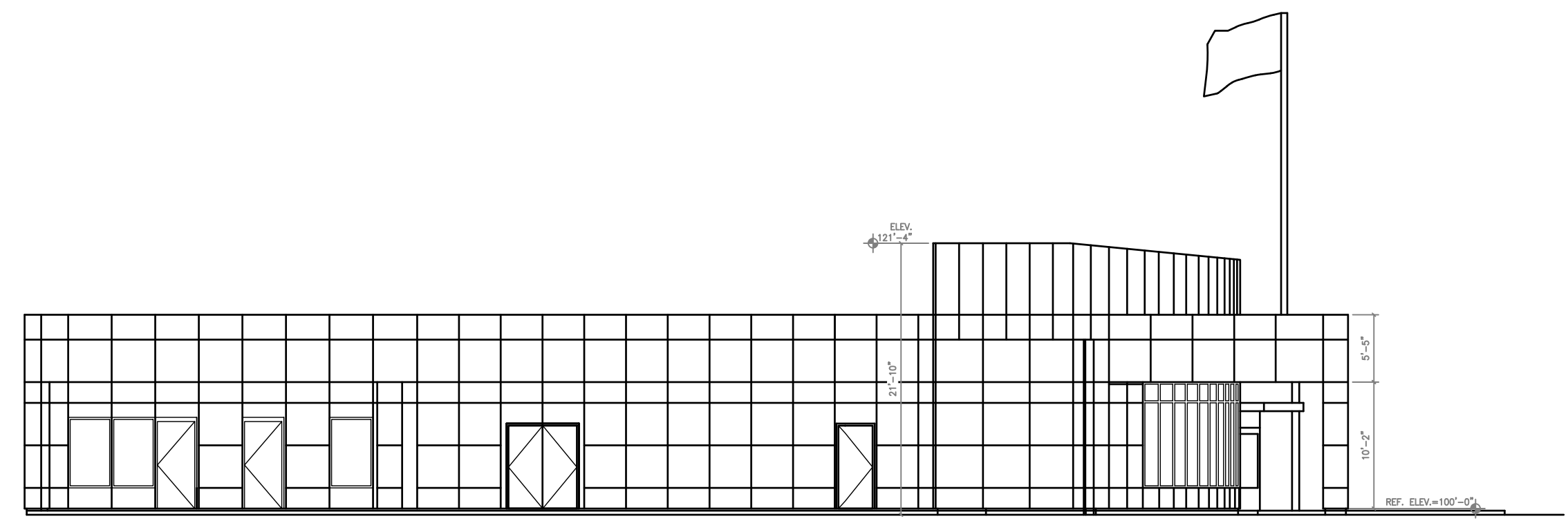
**1 ROOF PLAN**  
SCALE: 1/8" = 1'-0"



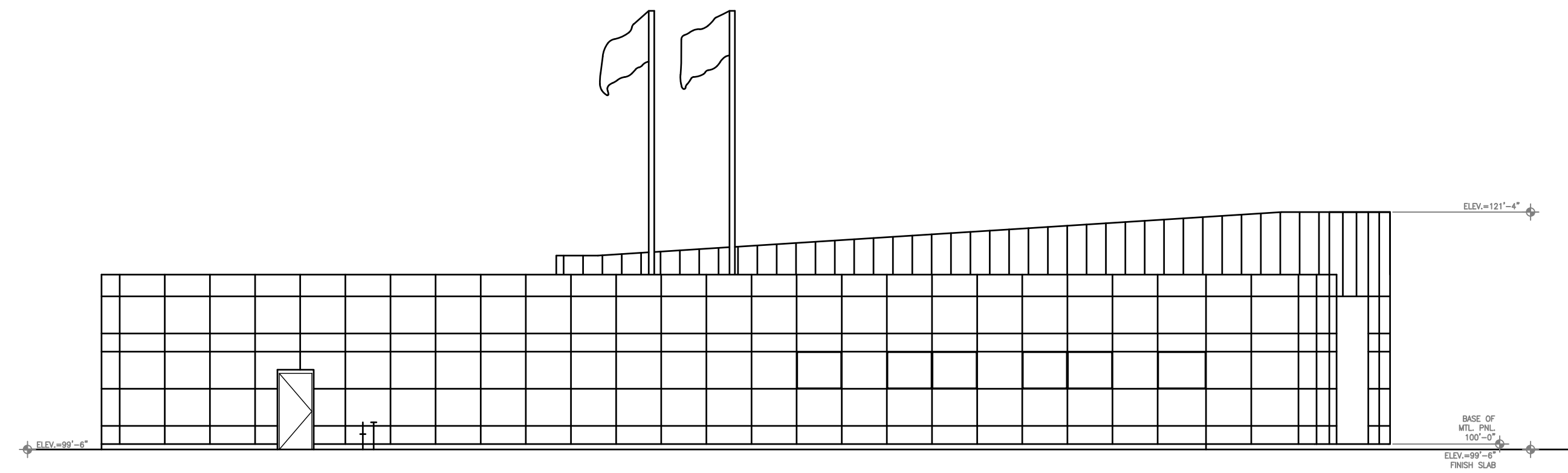
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REVISIONS					
mark	date	description	drawing prepared by WISS, JANNEY, ELSTNER ASSOCIATES, INC. 2 TRAP FALLS ROAD, SUITE 502 SHELTON, CT 06484	date 01/22/2019	scale As Noted
			project 540 MAIN AVENUE NORWALK DMV ROOF AND HVAC NORWALK, CT	drawn by DAF	approved by PCL
			CAD no.	project no. 2018.0336.0	drawing no. <b>A-103</b>



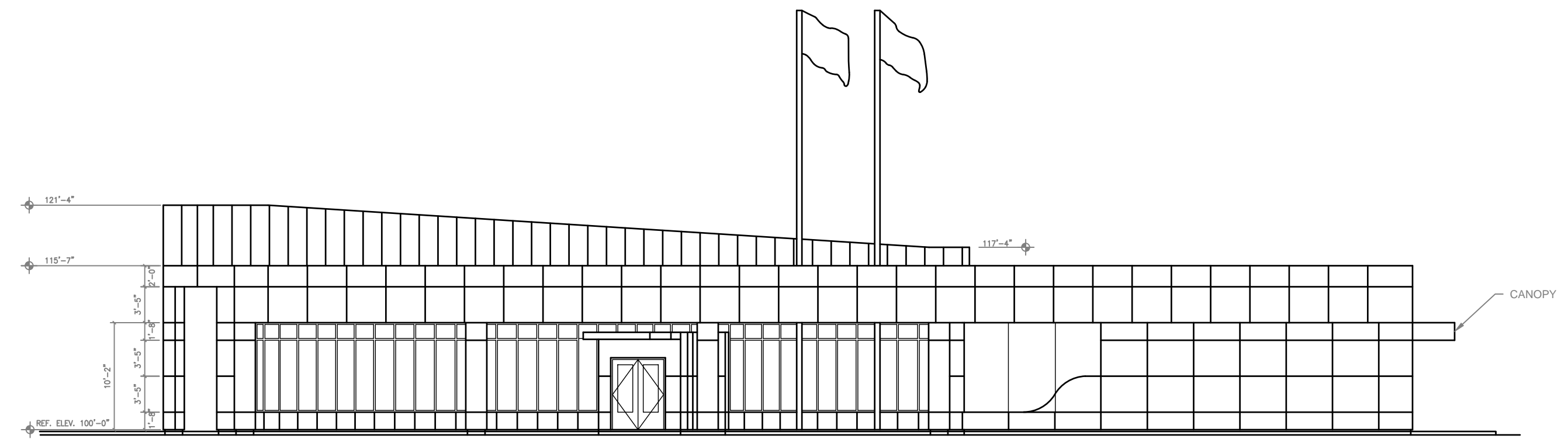
1 SOUTH ELEVATION  
A4 1/8"=1'-0"



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



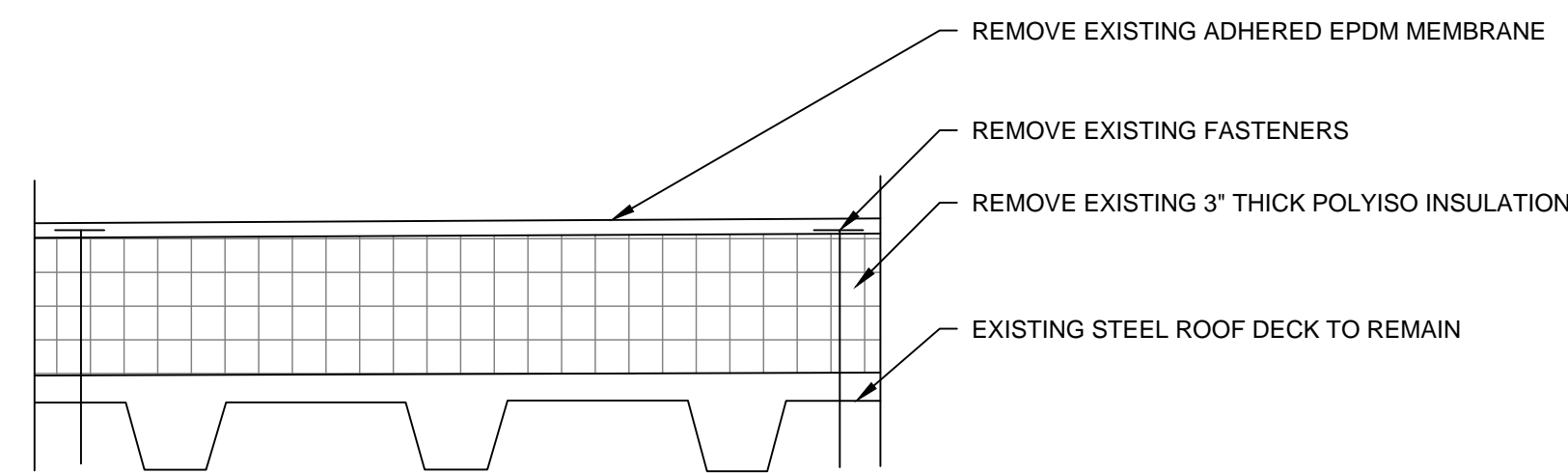
3 EAST ELEVATION  
A4 1/8"=1'-0"



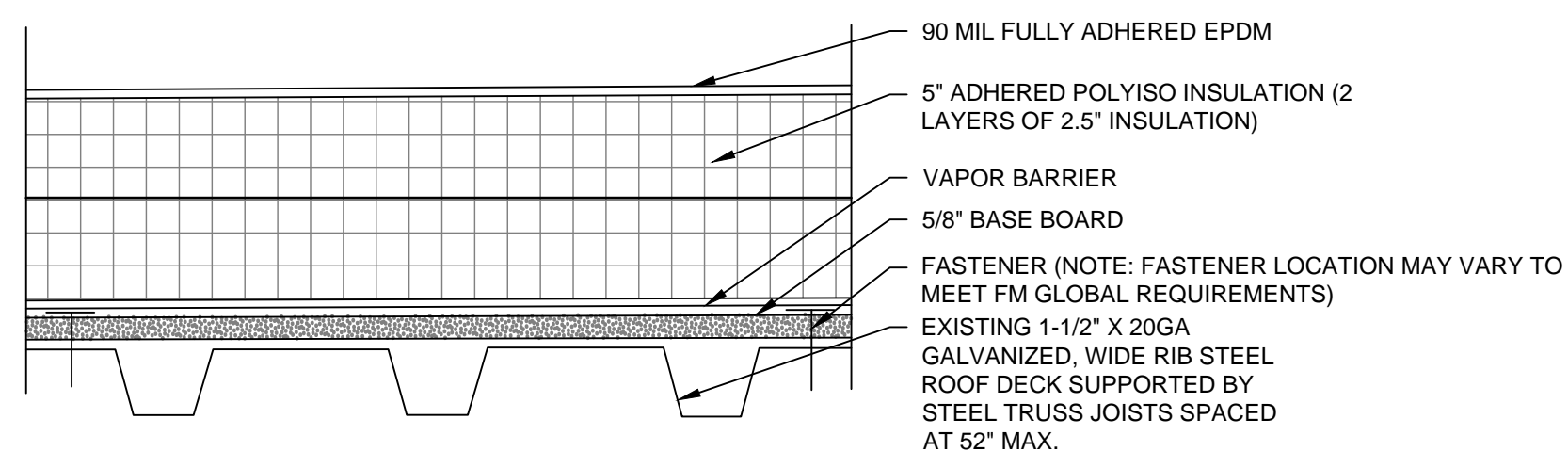
4 WEST ELEVATION  
A4 1/8"=1'-0"



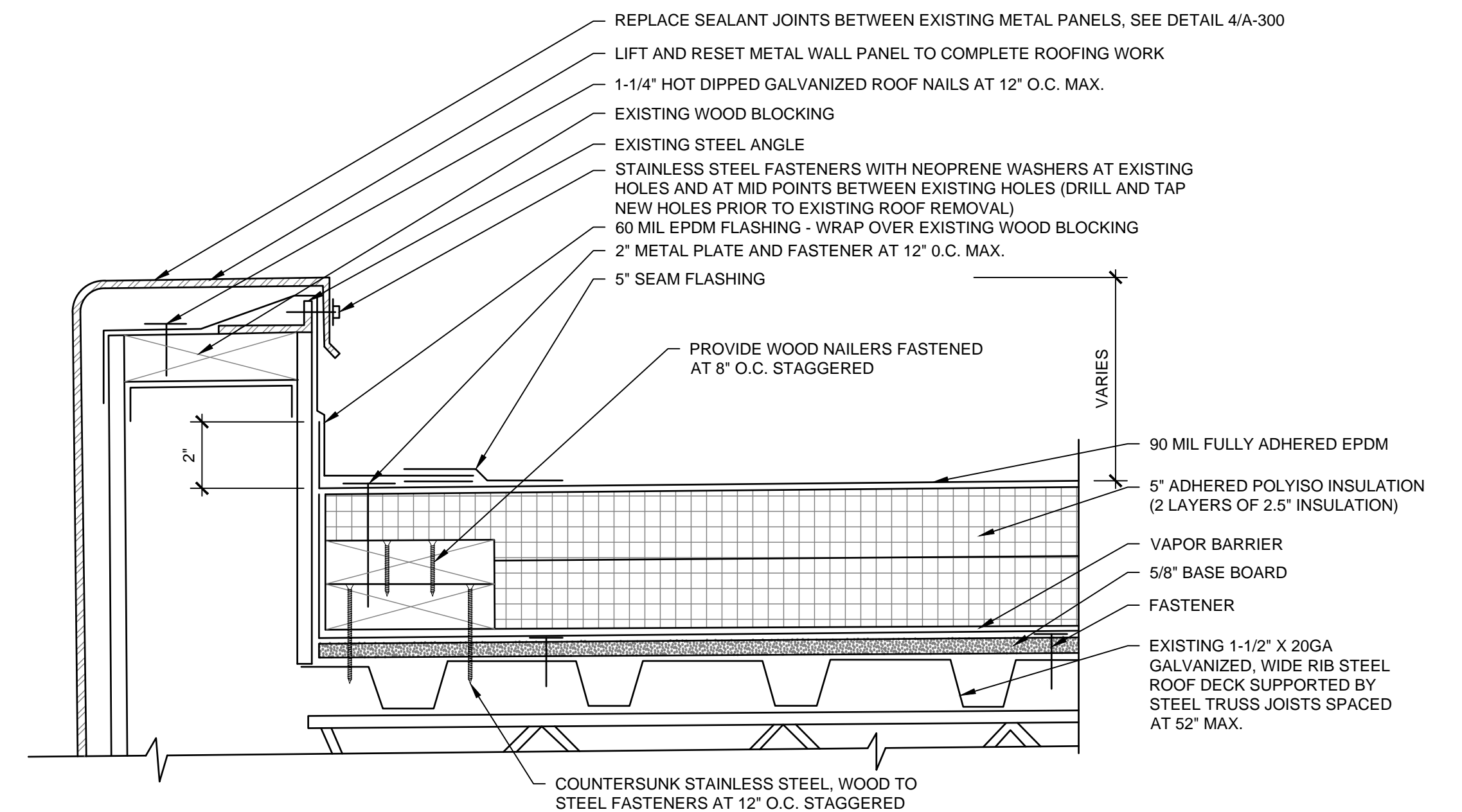
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REVISIONS			drawing prepared by WISS, JANNEY, ELSTNER ASSOCIATES, INC. 2 TRAP FALLS ROAD, SUITE 502 SHELTON, CT 06484		
mark	date	description	date 01/22/2019		scale As Noted
			drawn by DAF		approved by PCL
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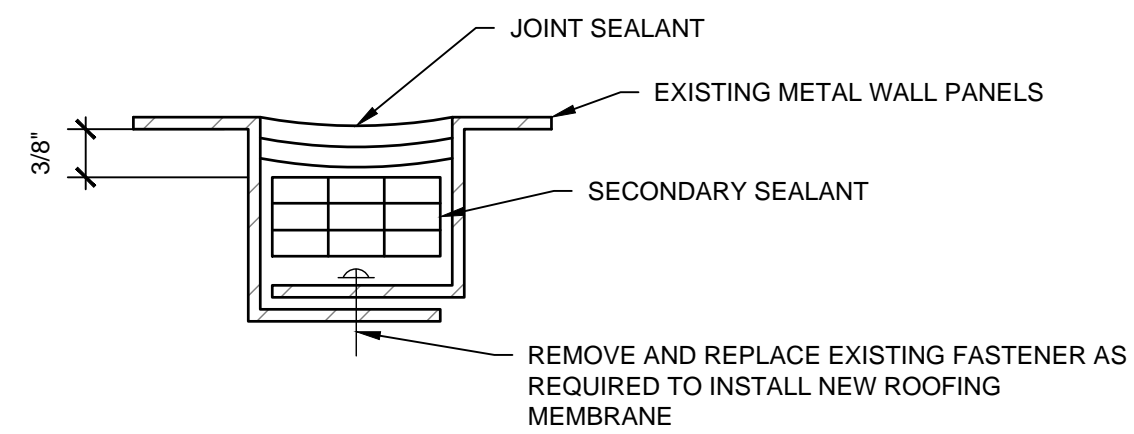
1 EXISTING ROOF ASSEMBLY  
 SCALE: 3" = 1'-0"



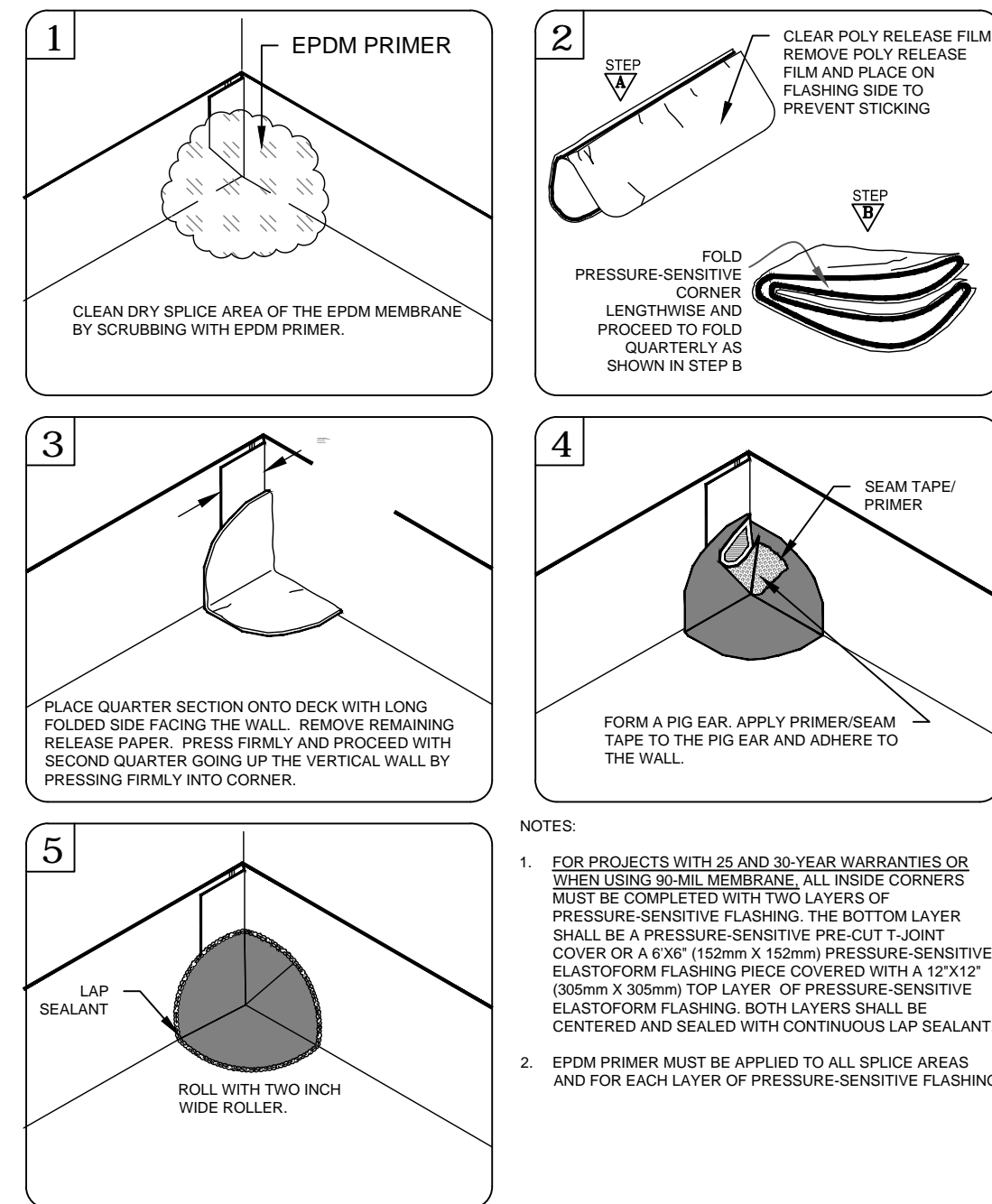
2 NEW ROOF ASSEMBLY  
 SCALE: 3" = 1'-0"



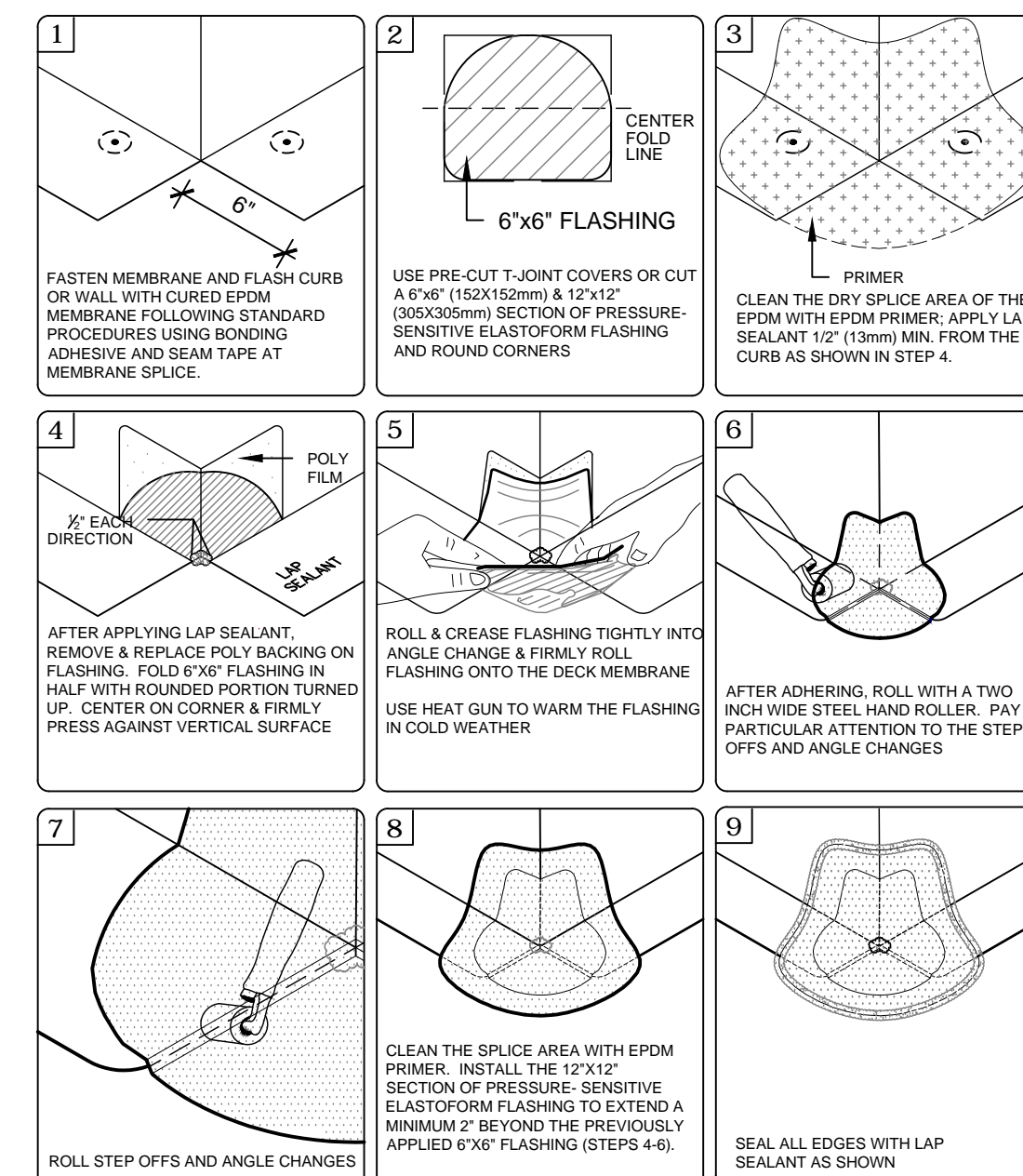
3 BASE FLASHING AT PARAPET  
 SCALE: 3" = 1'-0"



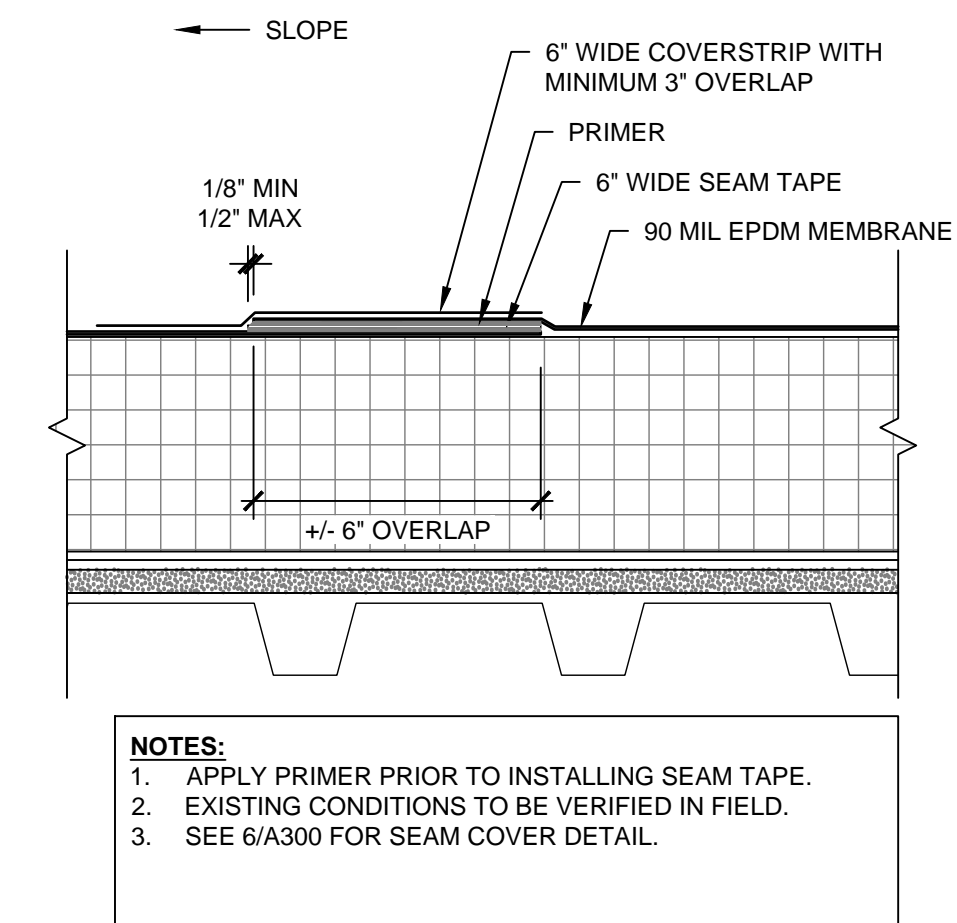
4 SEALANT AT PARAPET  
 SCALE: 1" = 1'-0"



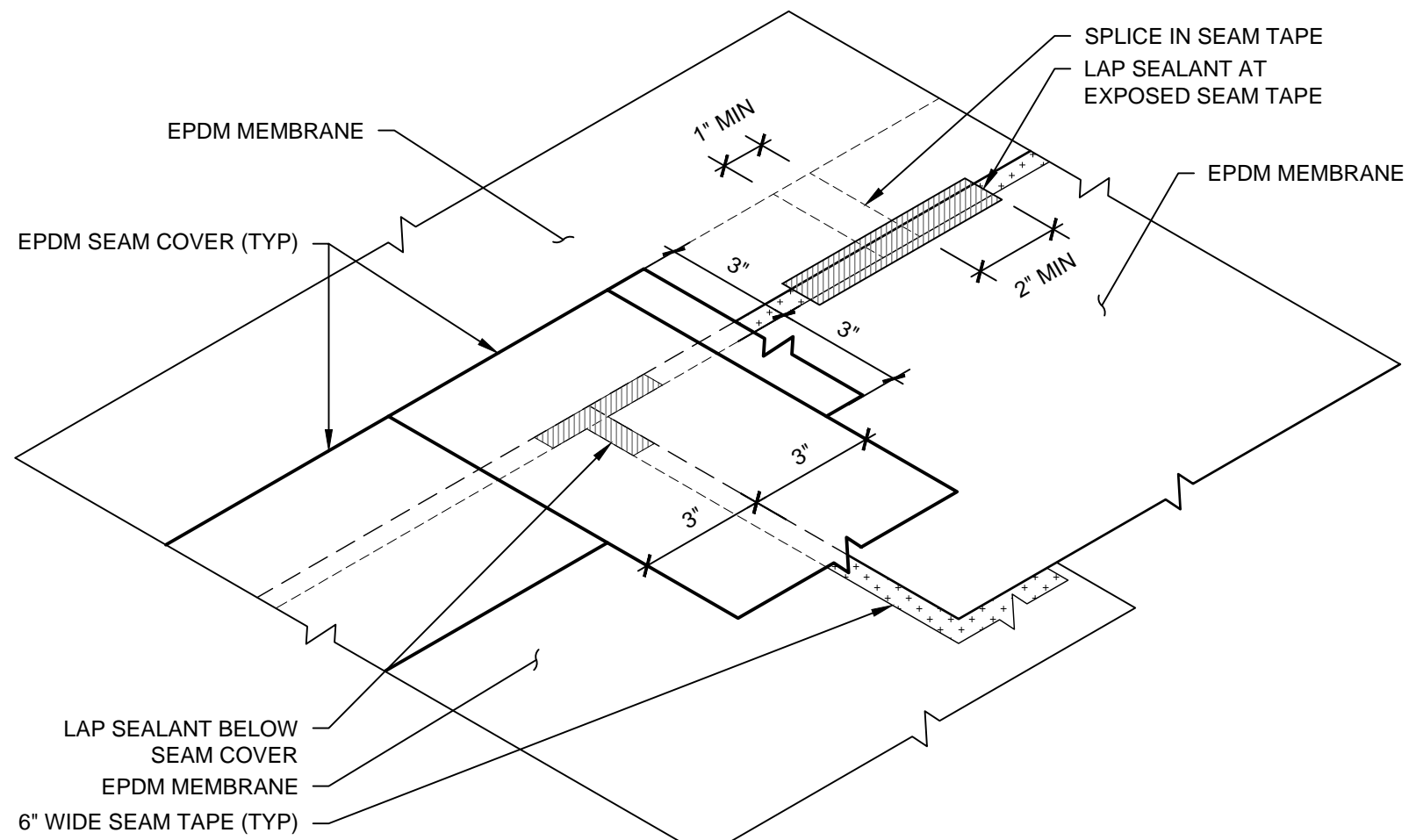
5 TYPICAL INSIDE CORNER  
 SCALE: 3" = 1'-0"



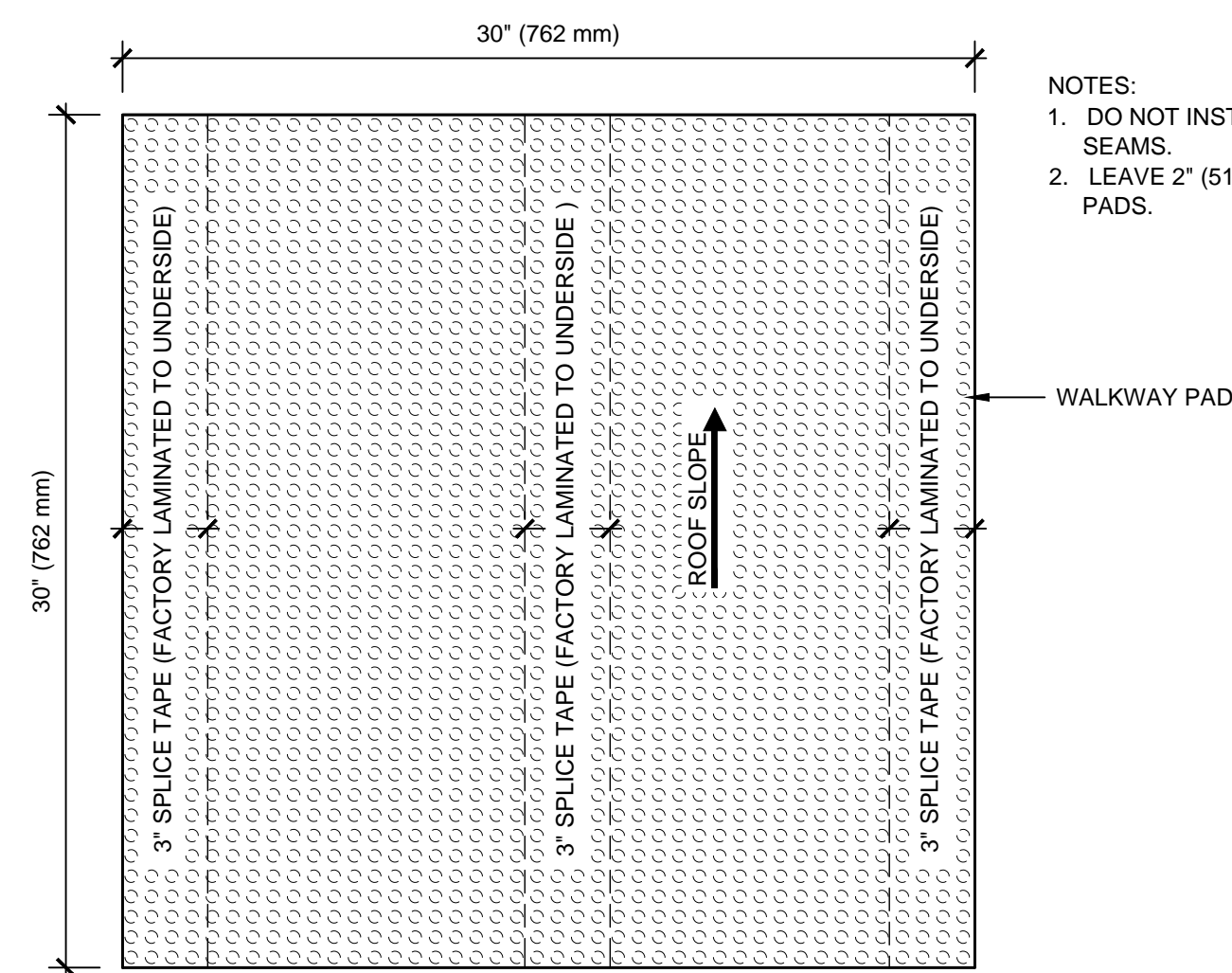
6 TYPICAL OUTSIDE CORNER  
 SCALE: 3" = 1'-0"



7 TYPICAL SEAM LAP  
 SCALE: 3" = 1'-0"

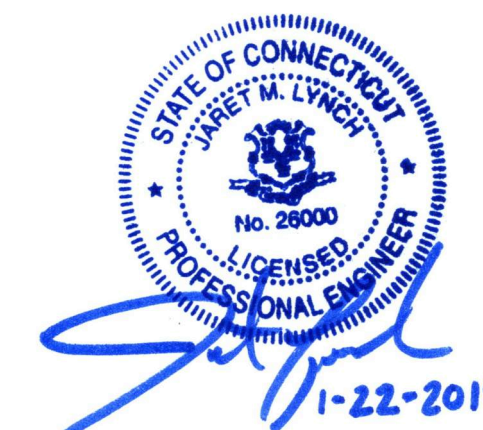


8 TYPICAL SEAM COVER AT 'T' CONNECTION  
 SCALE: 3" = 1'-0"



9 WALKPAD  
 SCALE: 6" = 1'-0"

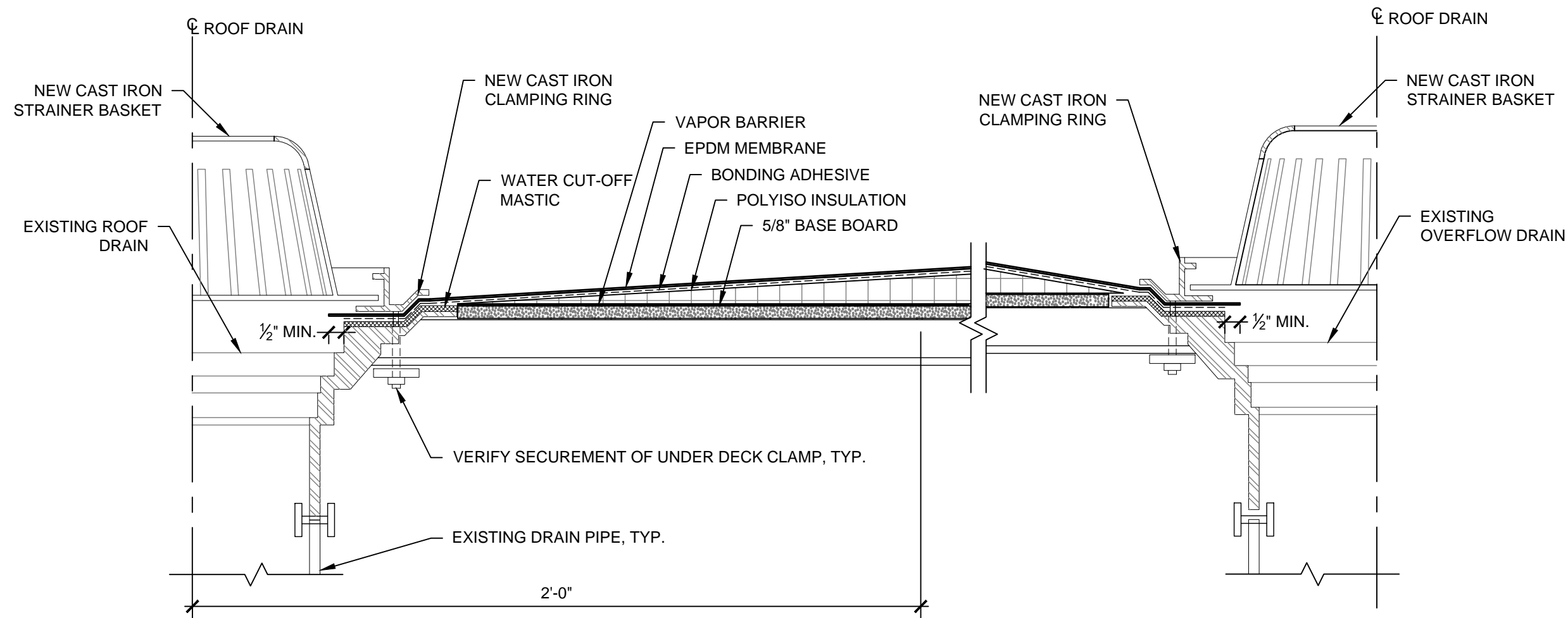
NOTES:  
 1. DO NOT INSTALL OVER FIELD OR FLASHING SEAMS.  
 2. LEAVE 2" (51 mm) BETWEEN WALKWAY PADS.



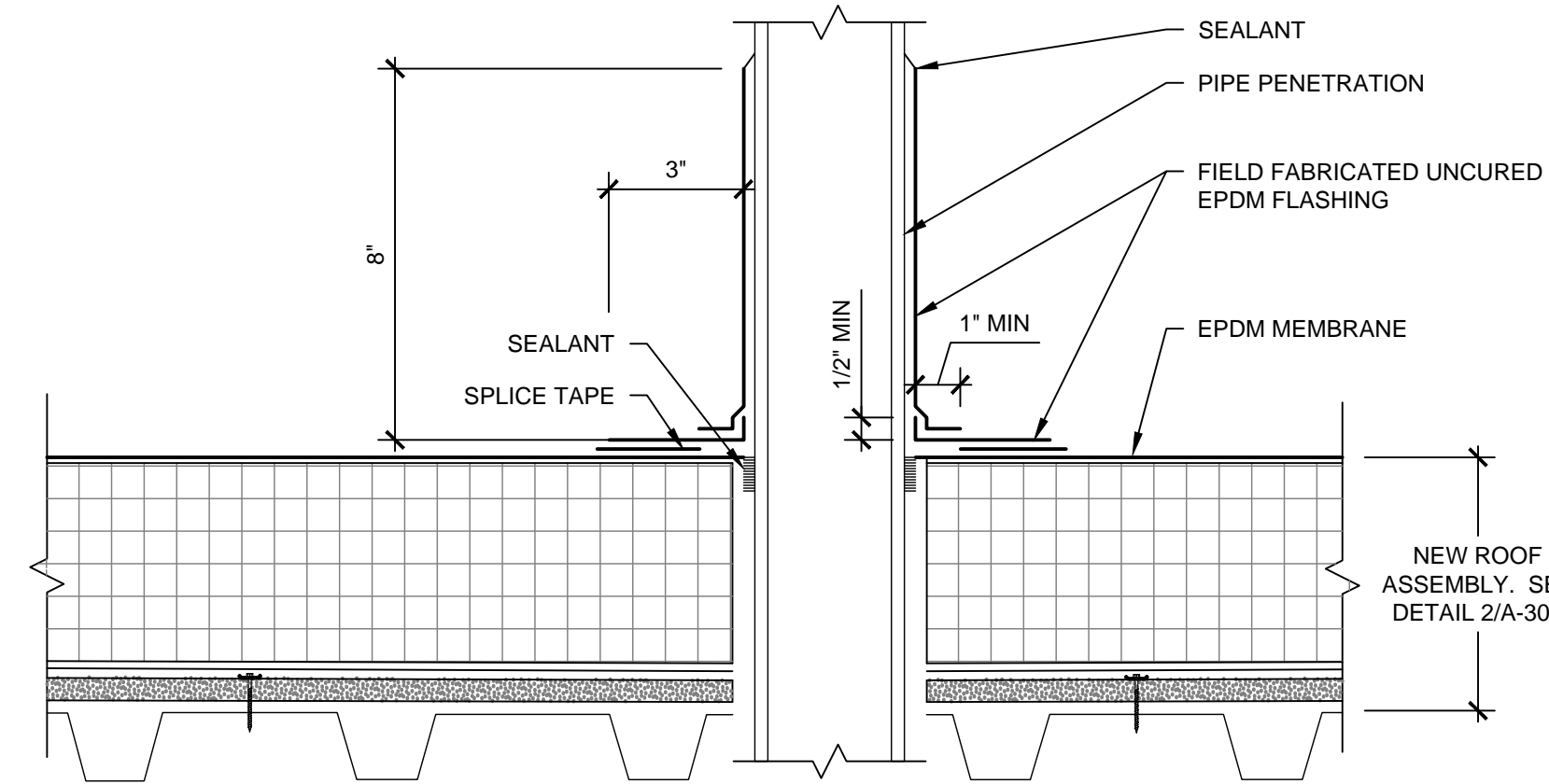
ROOF DETAILS			STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES	
REVISIONS			drawing prepared by	
mark	date	description	WISS, JANNEY, ELSTNER ASSOCIATES, INC. 2 TRAP FALLS ROAD, SUITE 502 SHELTON, CT 06484	date 01/22/2019 scale As Noted
			project 540 MAIN AVENUE NORWALK DMV ROOF AND HVAC NORWALK, CT	
			drawing no. A-300	
			CAD no.	project no. 2018.0336.0



NOTES:  
1. HOLE IN MEMBRANE SHOULD EXTEND A MINIMUM OF 1/2" BEYOND CLAMPING RING AND SHOULD NOT BE SMALLER THAN THE DIAMETER OF THE LEADER PIPE.

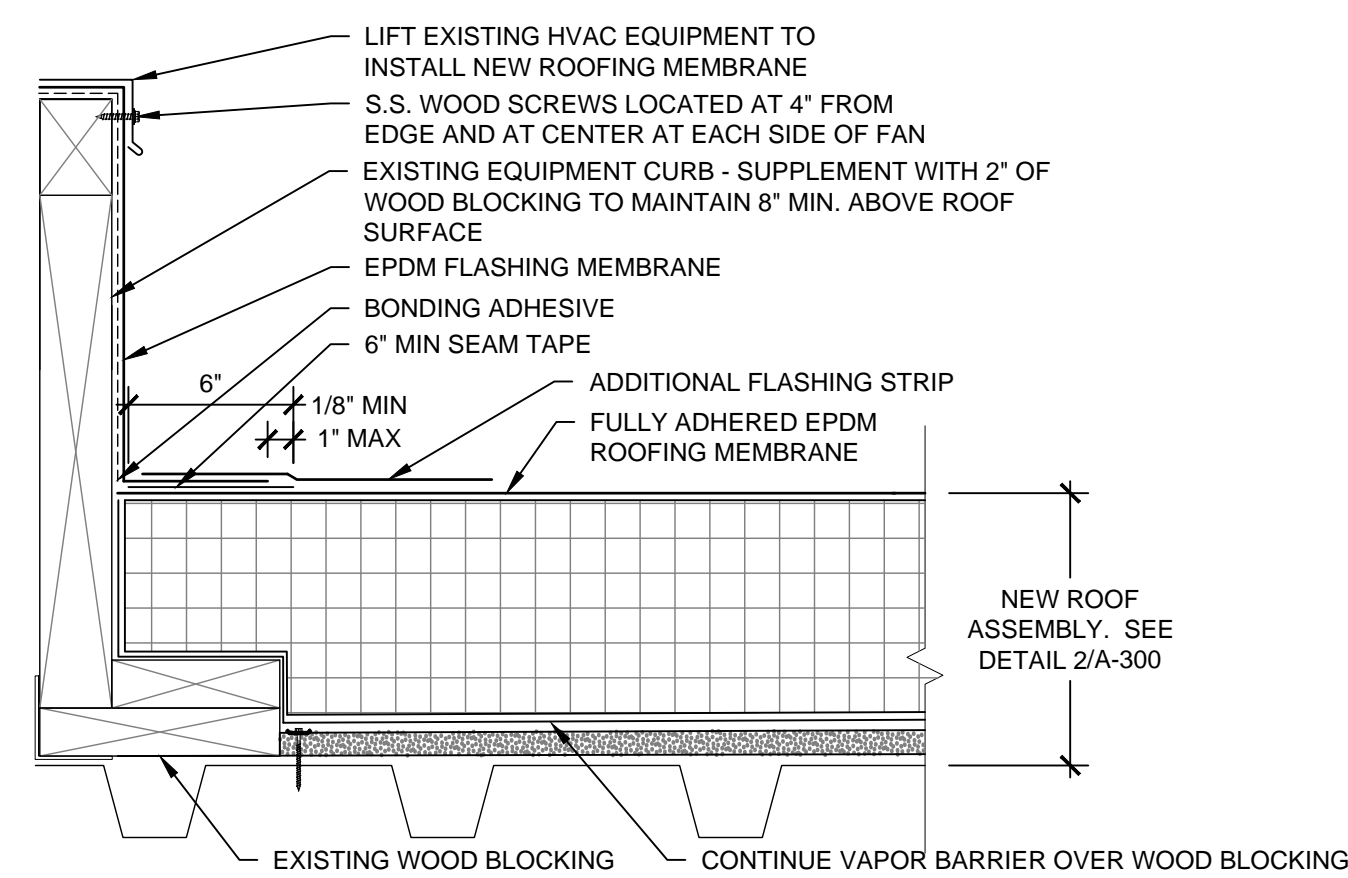


1 ROOF DRAIN  
SCALE: 3" = 1'-0"

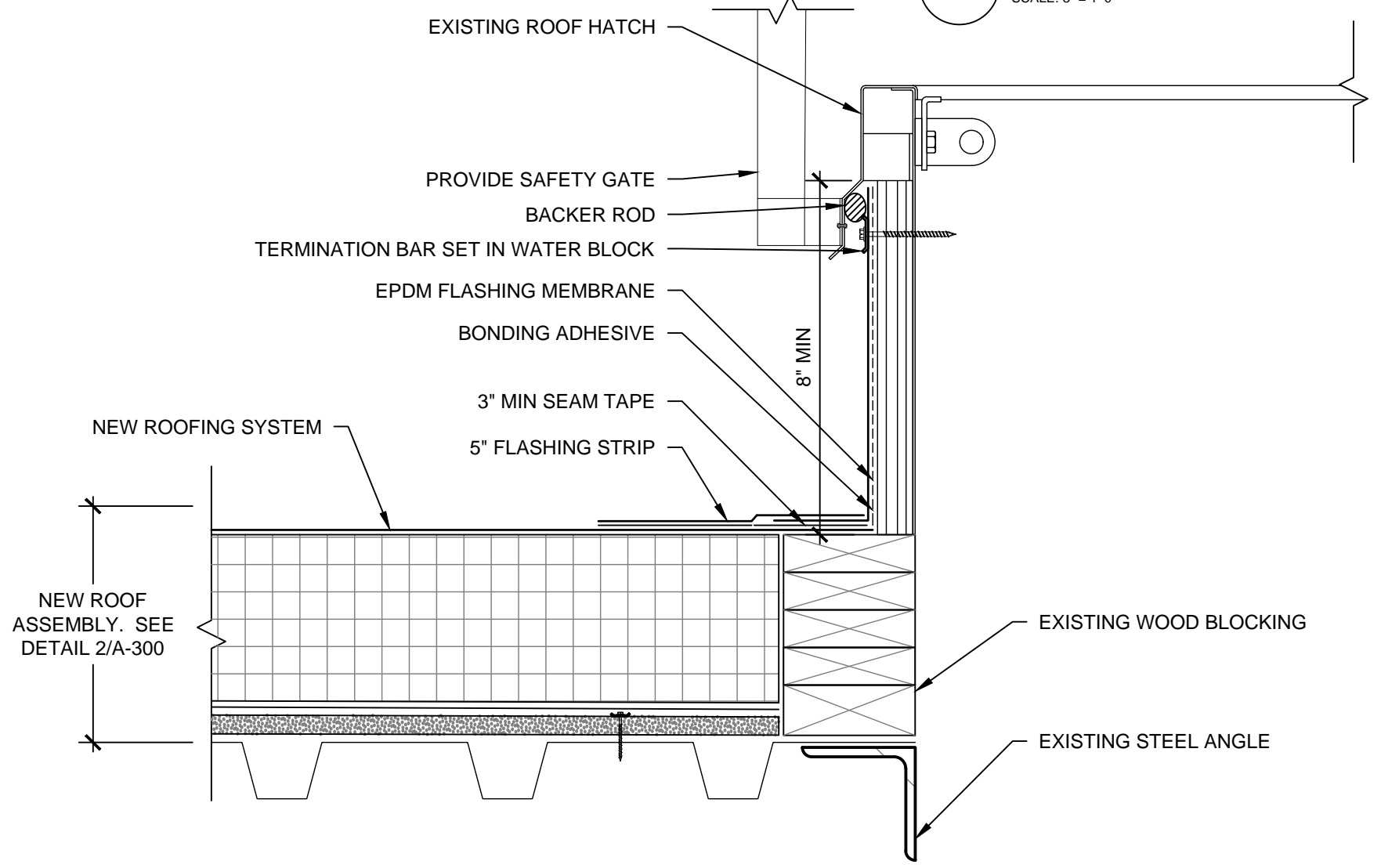


NOTES:  
1. TEMPERATURE OF PIPE MUST NOT EXCEED 180°F.  
2. FIELD FABRICATED EPDM FLASHING MUST HAVE A MINIMUM 3" MEMBRANE SPLICE.  
3. ADDITIONAL FASTENING IS REQUIRED AT ALL PENETRATIONS.  
4. APPLY PRIMER PRIOR TO INSTALLING SEAM TAPE.  
5. LAP SEALANT IS REQUIRED ON CUT EDGES OF REINFORCED MEMBRANE.  
6. EXISTING CONDITIONS TO BE VERIFIED IN FIELD.

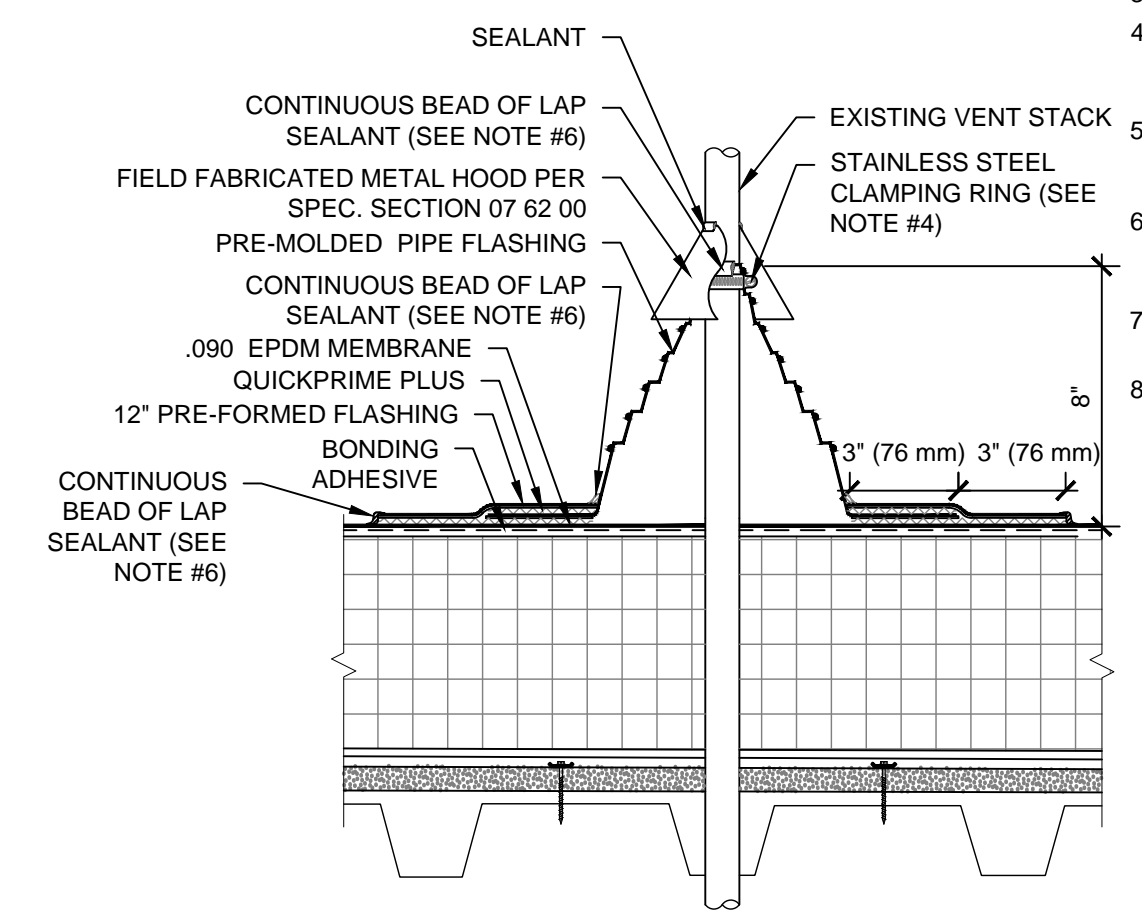
2 PIPE - CONDUIT FLASHING  
SCALE: 3" = 1'-0"



3 EXISTING EXHAUST FAN CURB FLASHING  
SCALE: 3" = 1'-0"

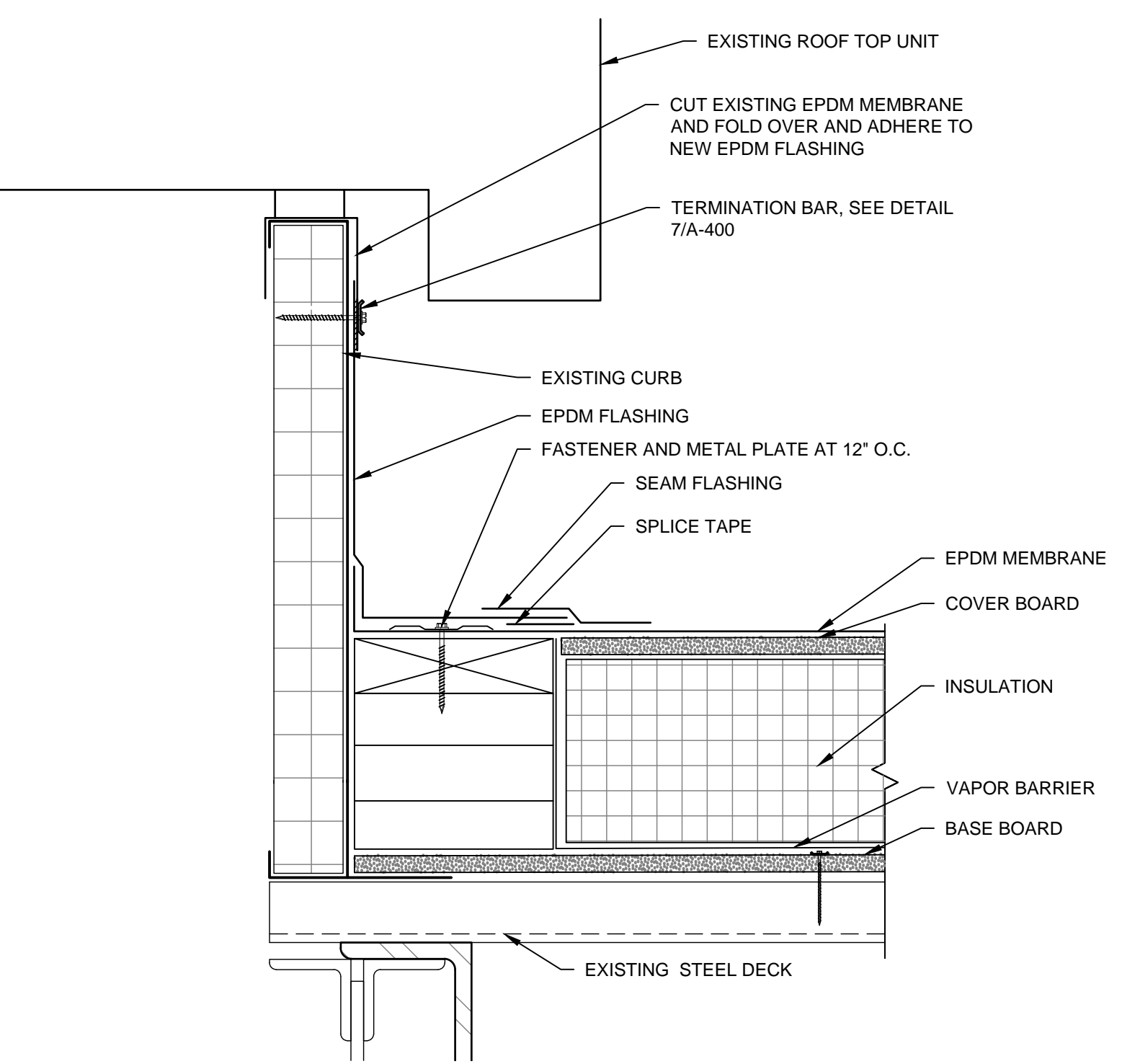


4 FLASHING AT ROOF HATCH  
SCALE: 3" = 1'-0"

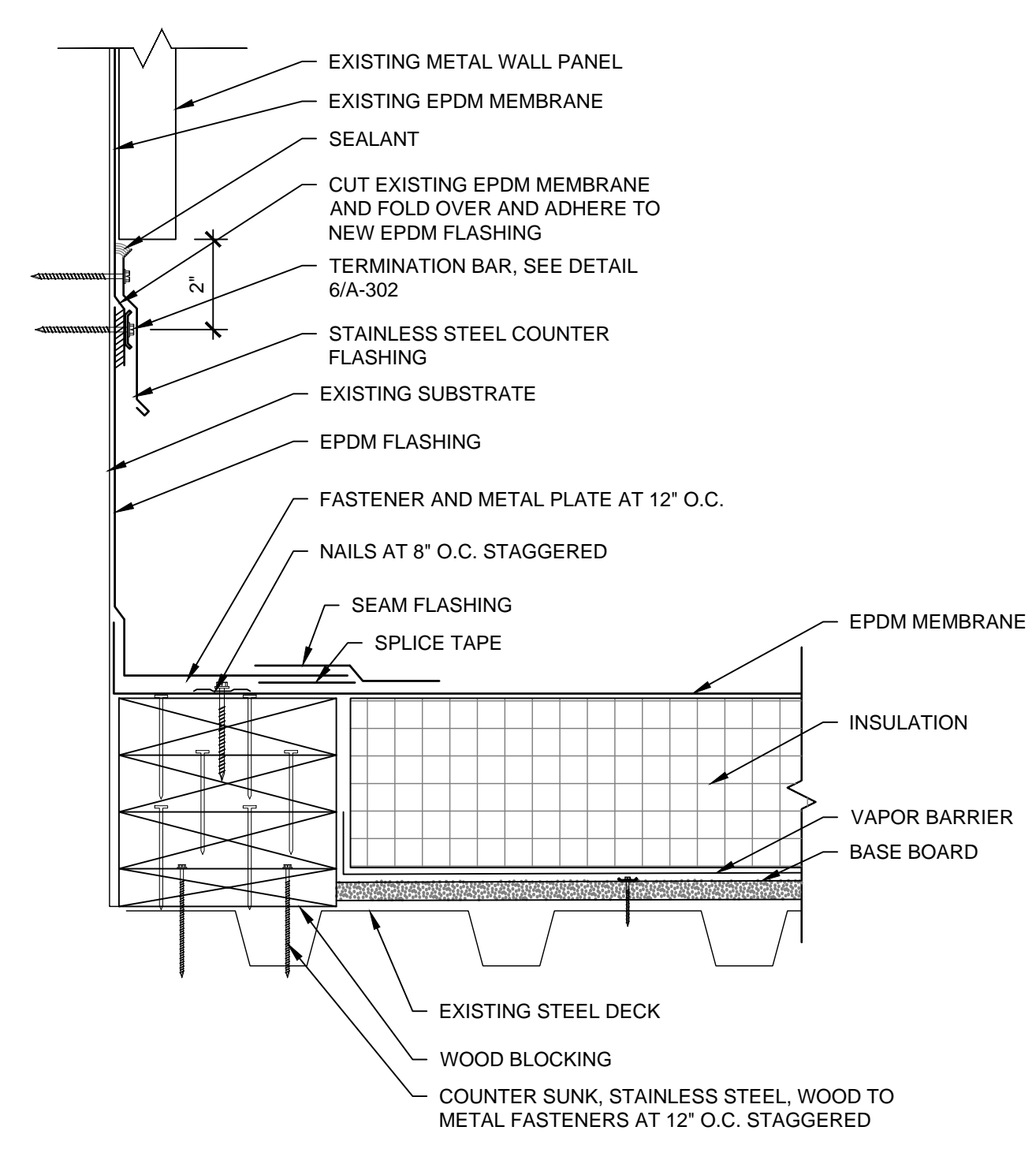


5 VENT STACK  
SCALE: 3" = 1'-0"

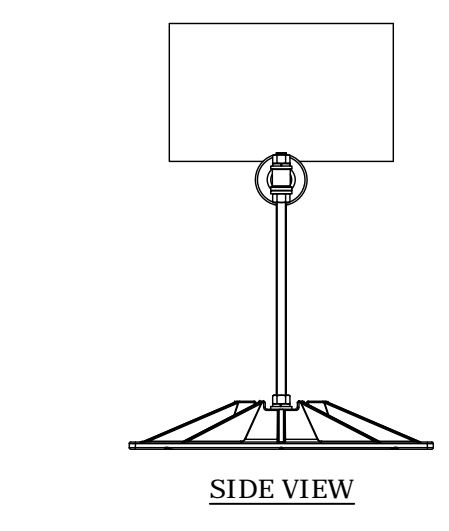
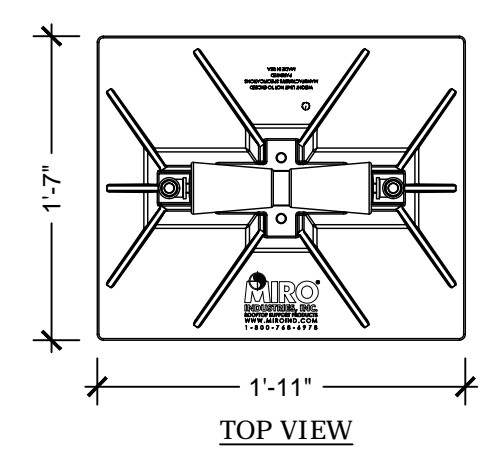
NOTES:  
1. REMOVE ALL EXISTING FLASHING, LEADS, ETC. PIPE SURFACE MUST BE FREE OF ALL RUST, GREASE, INSULATION, ETC.  
2. PIPE MUST BE ANCHORED TO ENSURE STABILITY.  
3. PRE-MOLDED PIPE FLASHING MAY BE CUT TO HEIGHT, BUT NO LOWER THAN REINFORCING RING (NO WRINKLES OR FOLDS UNDER CLAMPING RING).  
4. 1/2" PRE-FORMED FLASHING EXTENDING 1/4" (6 mm) FROM PIPE FLASHING WALL TO 3" (76 mm) BEYOND PIPE FLASHING.  
5. APPLY LAP SEALANT BETWEEN PENETRATION AND PRE-MOLDED PIPE FLASHING PRIOR TO INSTALLATION OF CLAMPING RING.  
6. PRE-MOLDED PIPE FLASHING FITS 1" (25 mm) - 6" (152 mm) PENETRATION SIZES.  
7. DO NOT USE WHEN SERVICE LINE TEMP. EXCEEDS 180°F.



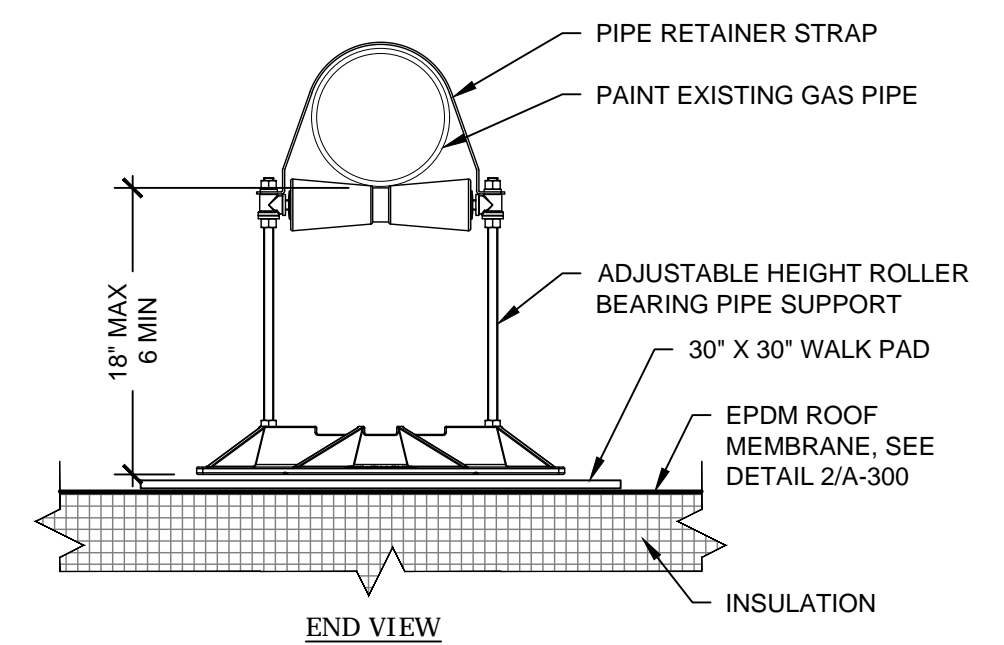
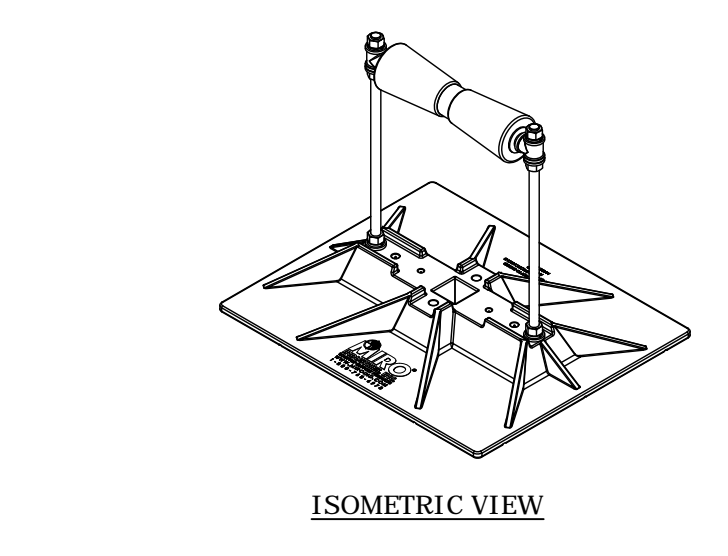
6 ROOF TOP UNIT  
SCALE: 3" = 1'-0"



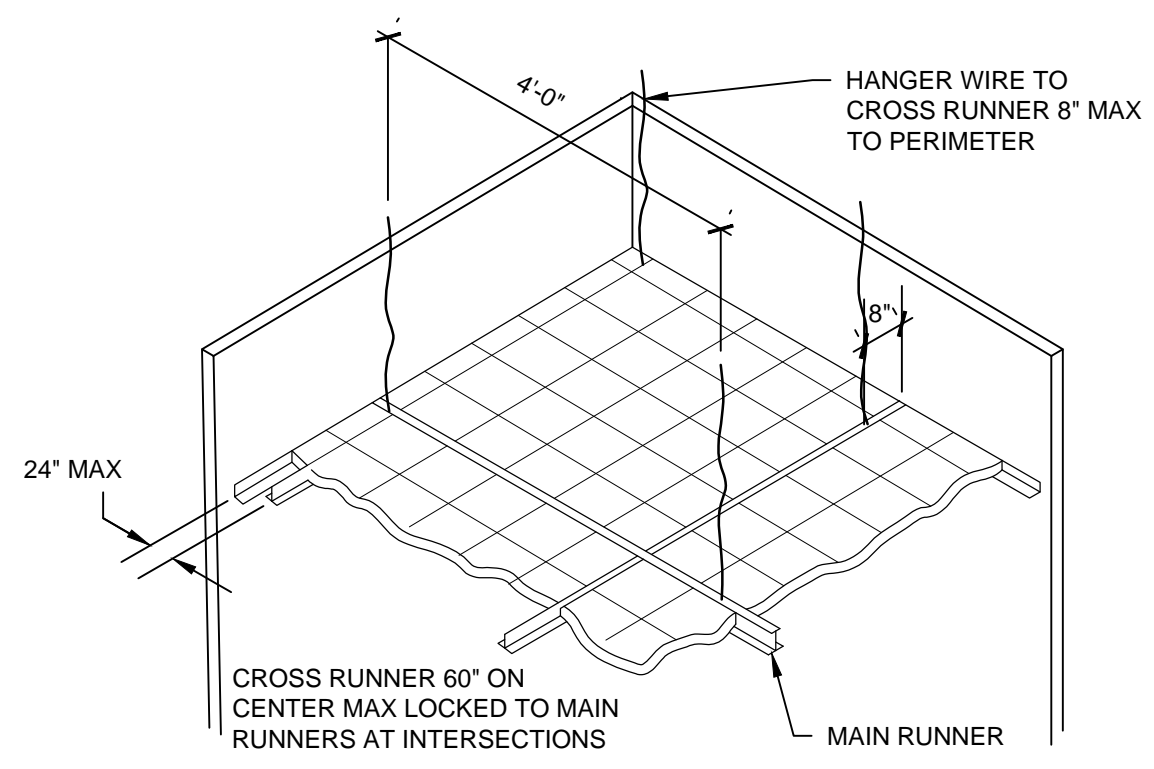
7 BASE FLASHING AT WALL PANELS  
SCALE: 3" = 1'-0"



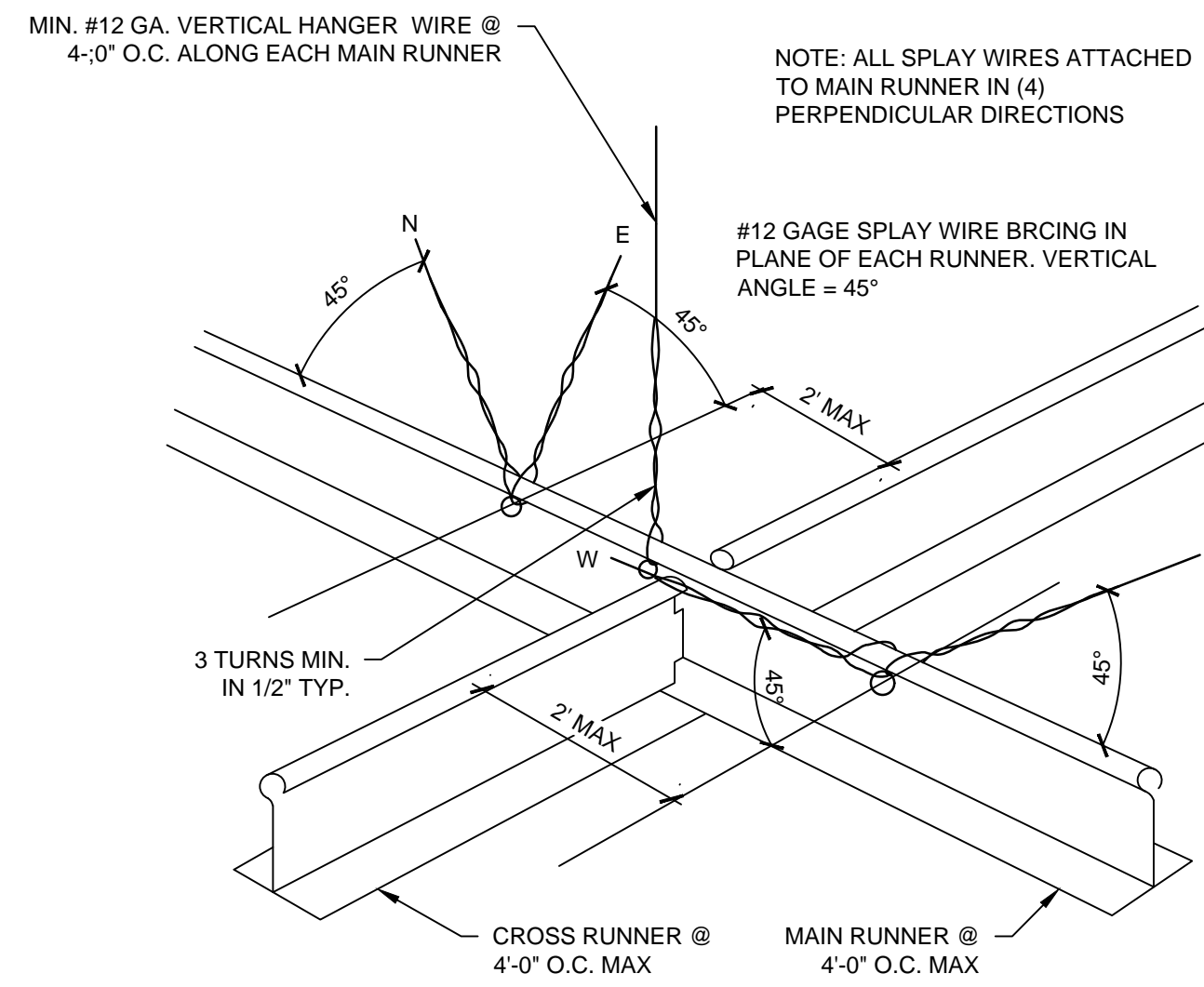
8 PIPE SUPPORT  
SCALE: 1" = 1'-0"



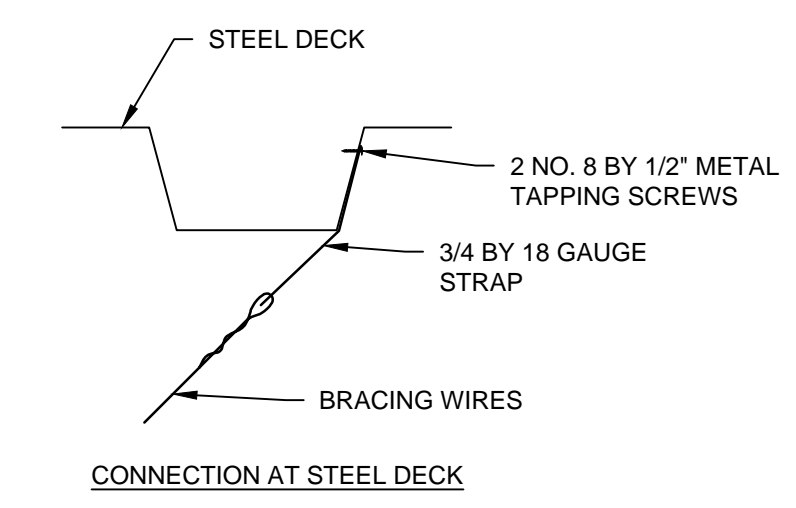
REVISIONS			STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES	
mark	date	description	drawing prepared by	date
			WISS, JANNEY, ELSTNER ASSOCIATES, INC. 2 TRAP FALLS ROAD, SUITE 502 SHELTON, CT 06484	01/22/2019
			540 MAIN AVENUE NORWALK DMV ROOF AND HVAC NORWALK, CT	As Noted
				approved by PCL
				drawing no. A-301
			CAD no.	project no. 2018.0336.0



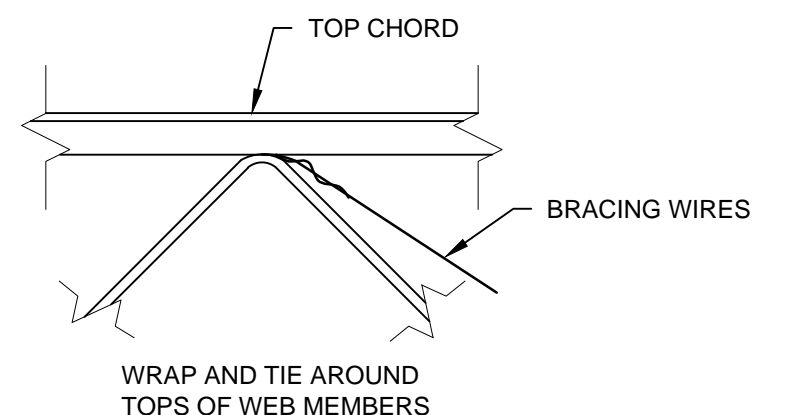
SUSPENSION SYSTEM WITH LOCKING CROSS RUNNERS



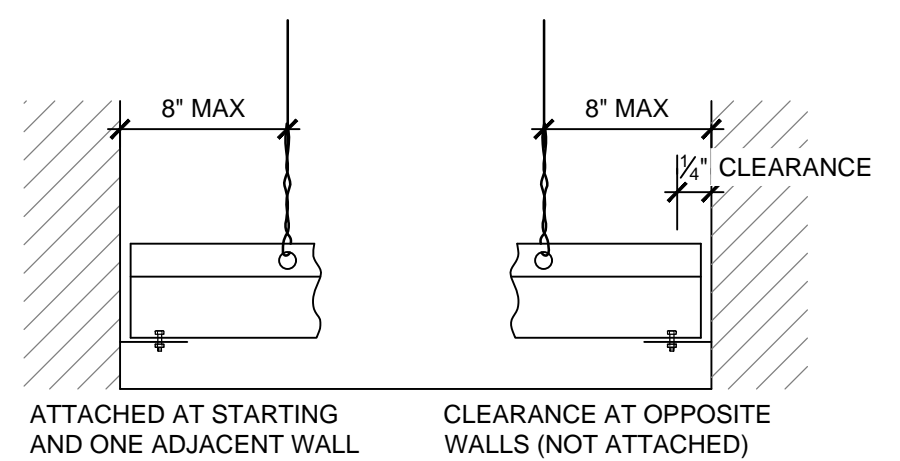
TYPICAL CEILING BRACING



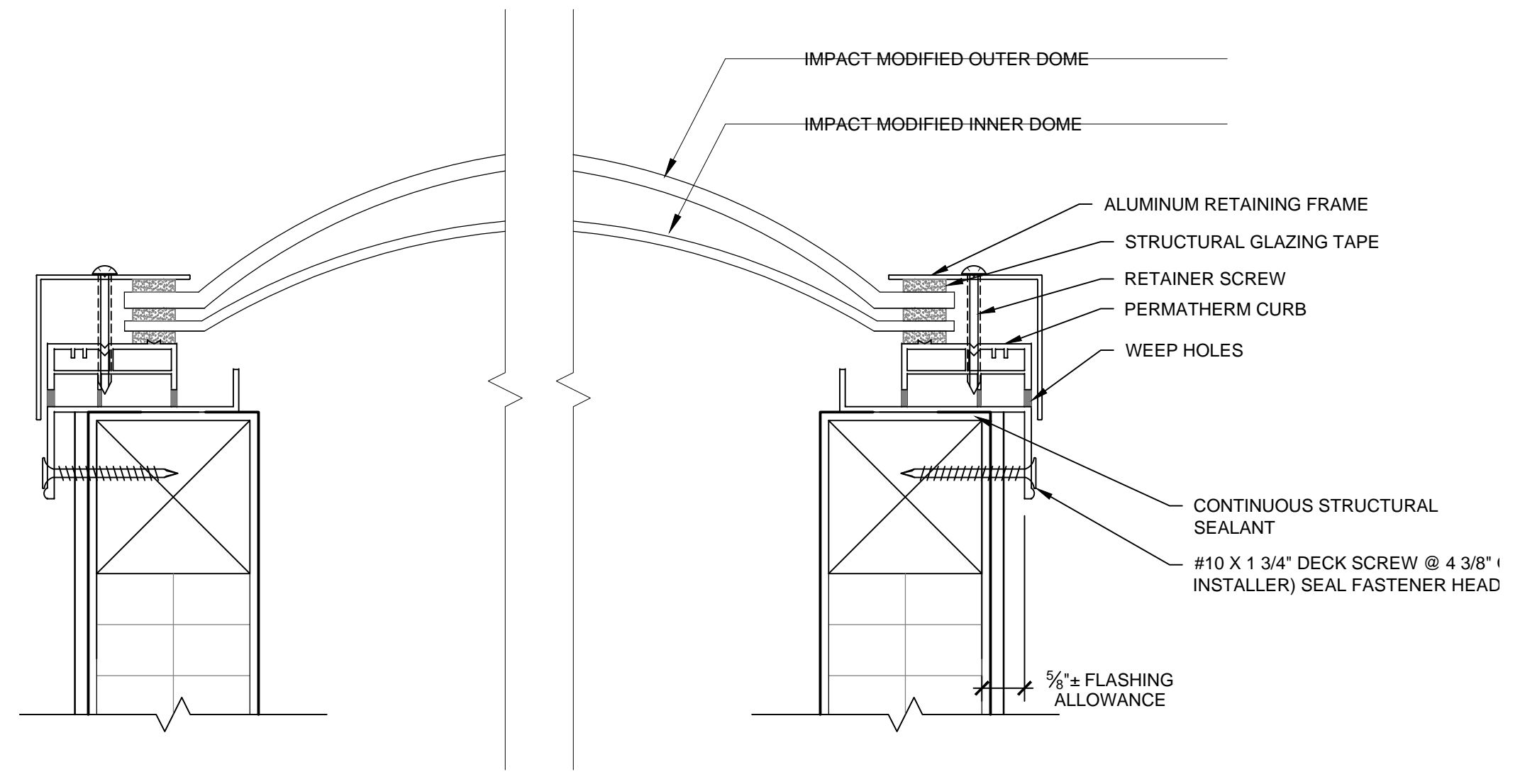
CONNECTION AT STEEL DECK



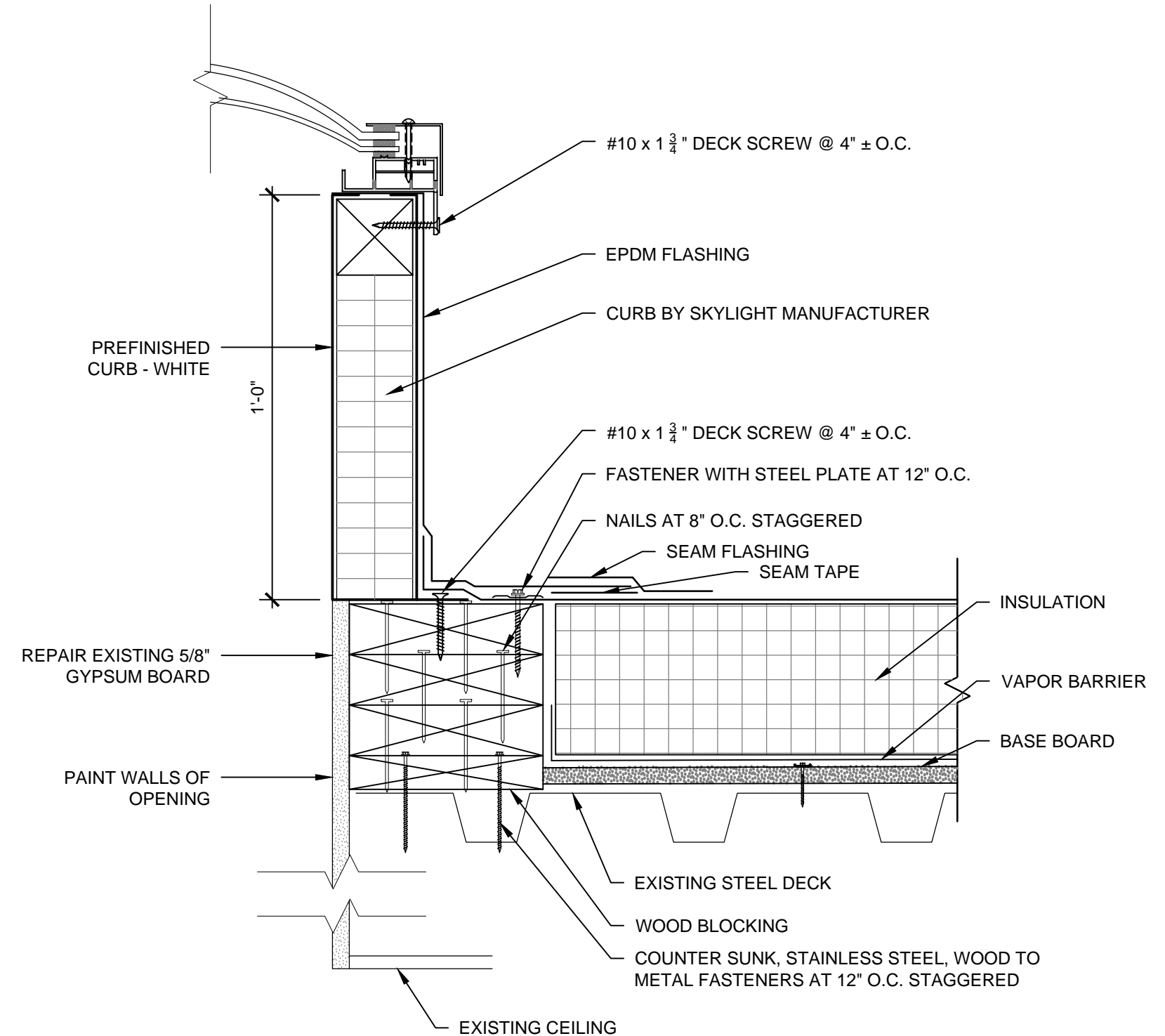
CONNECTION AT OPEN WEB STEEL JOISTS



RUNNERS AT WALLS

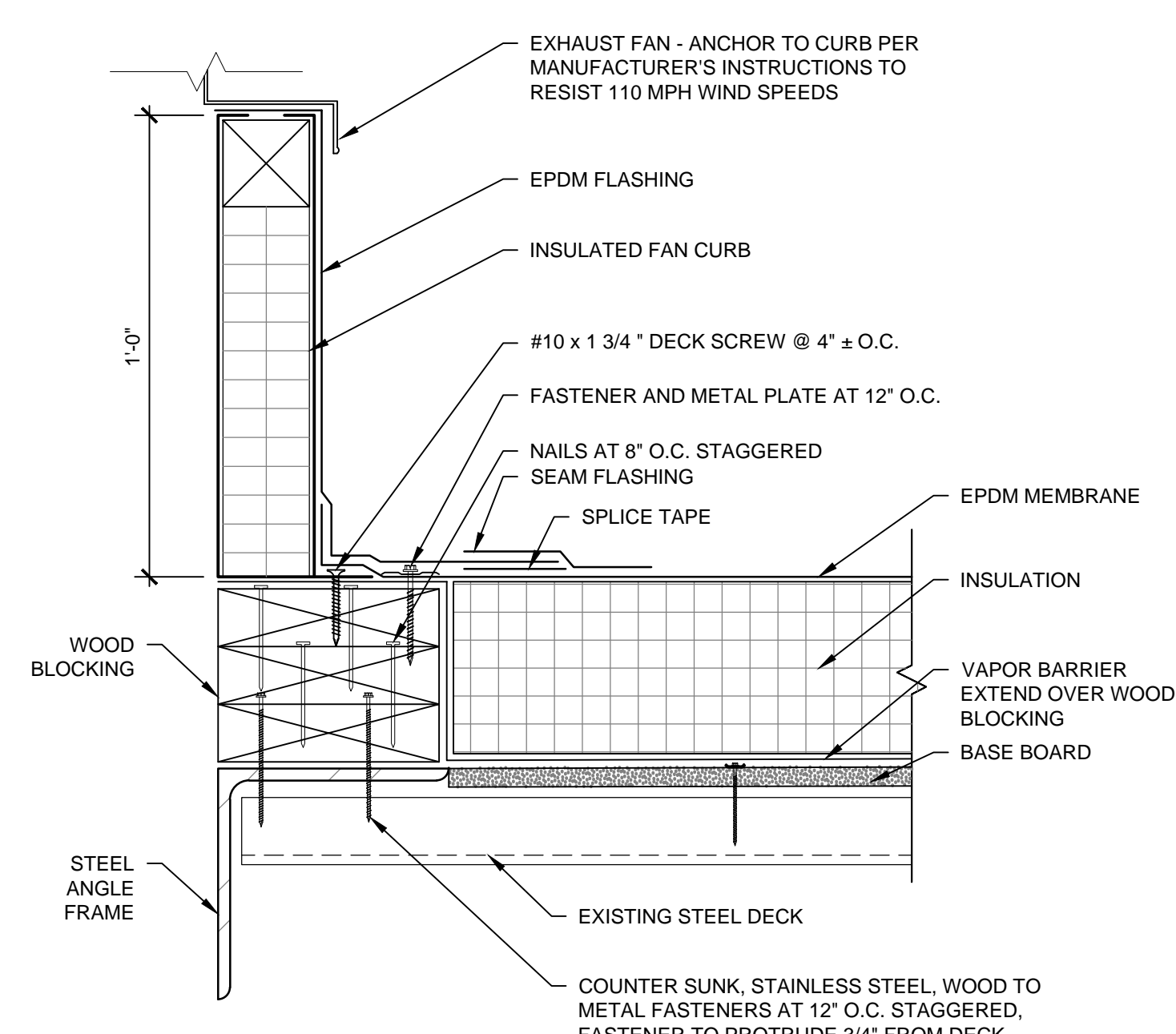


2 SKYLIGHT SECTION  
SCALE: 6" = 1'-0"

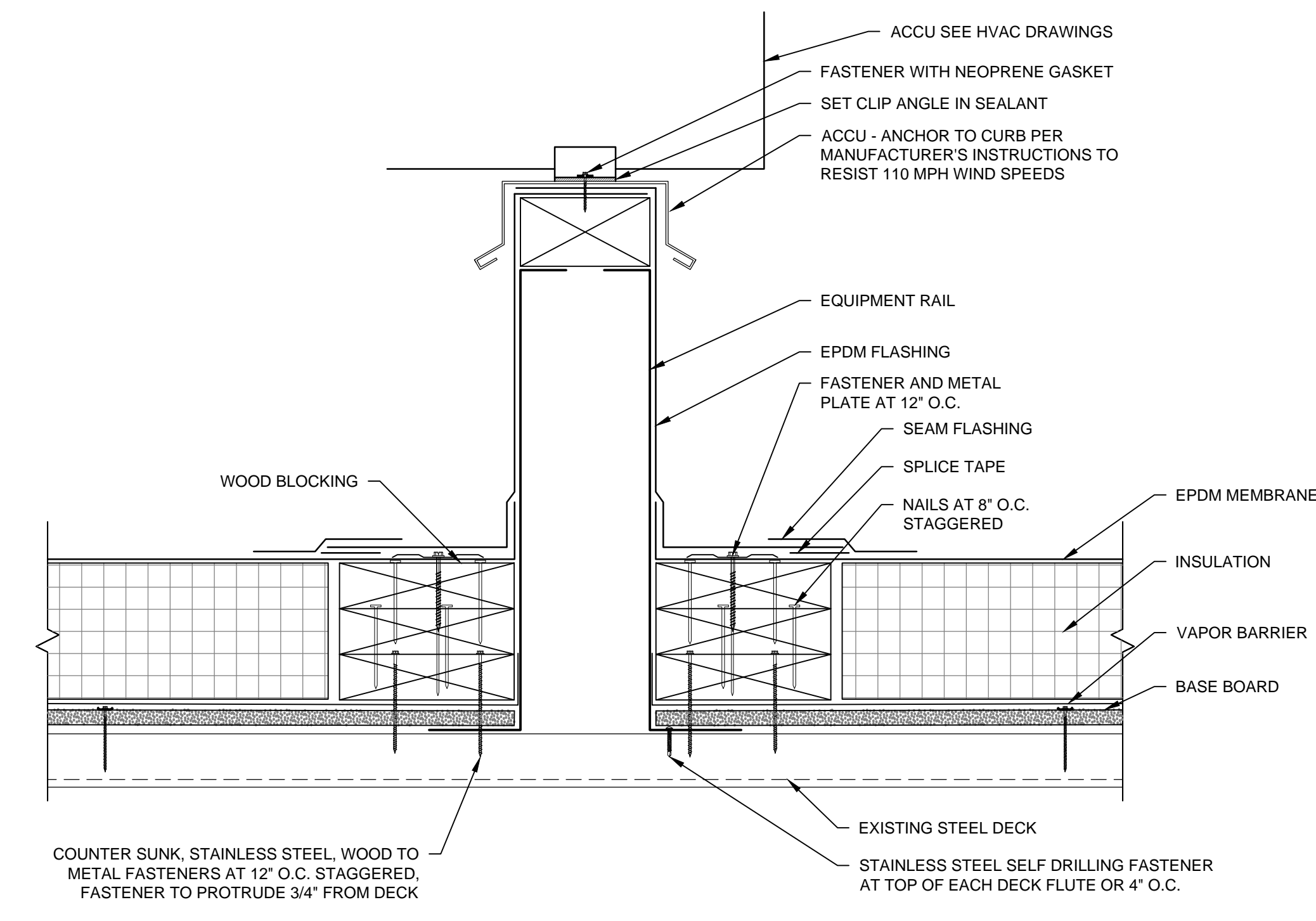


3 SKYLIGHT CURB FLASHING  
SCALE: 3" = 1'-0"

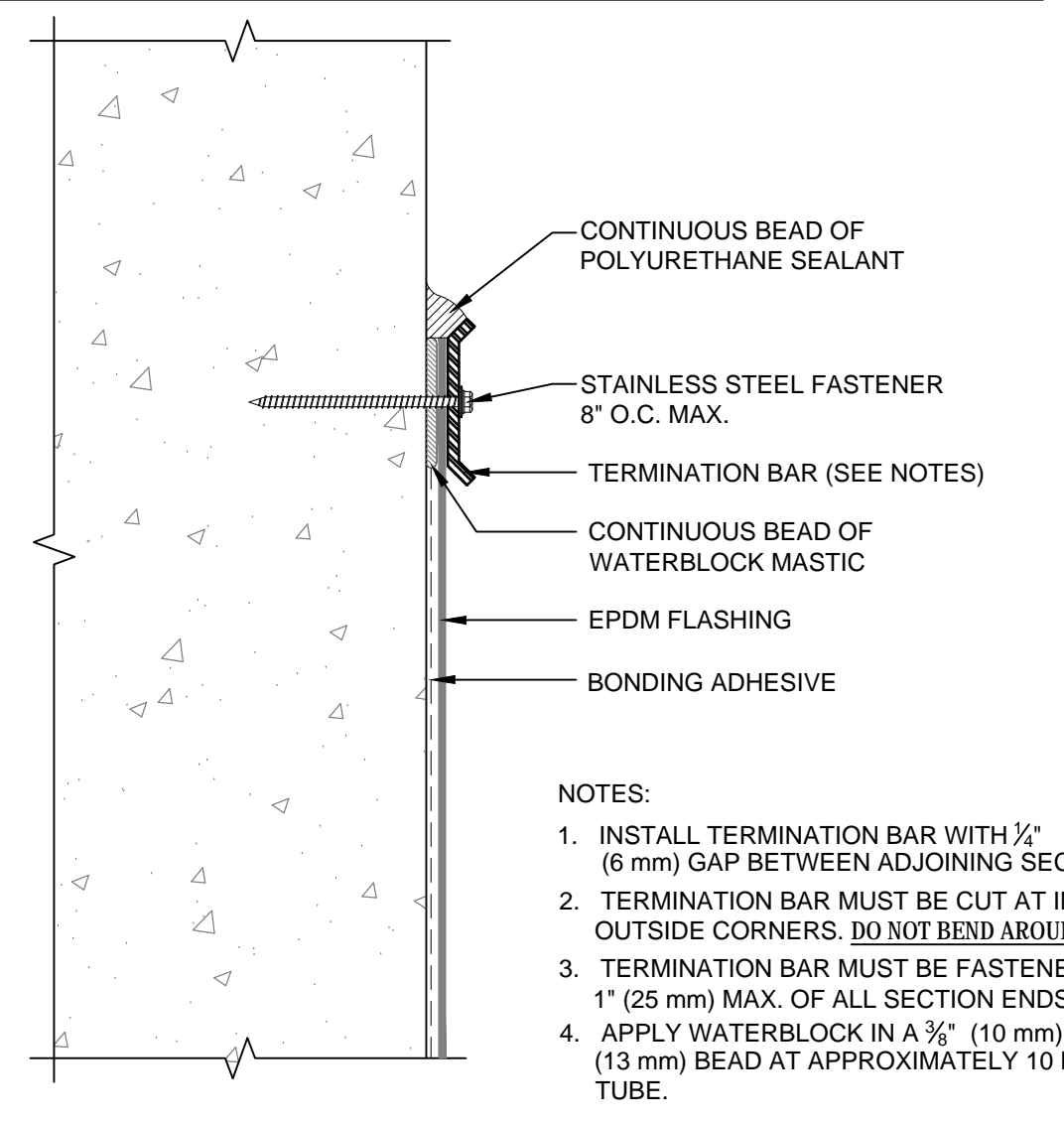
1 CEILING DETAILS  
SCALE: 1/2" = 1'-0"



4 NEW EXHAUST FAN CURB  
SCALE: 3" = 1'-0"

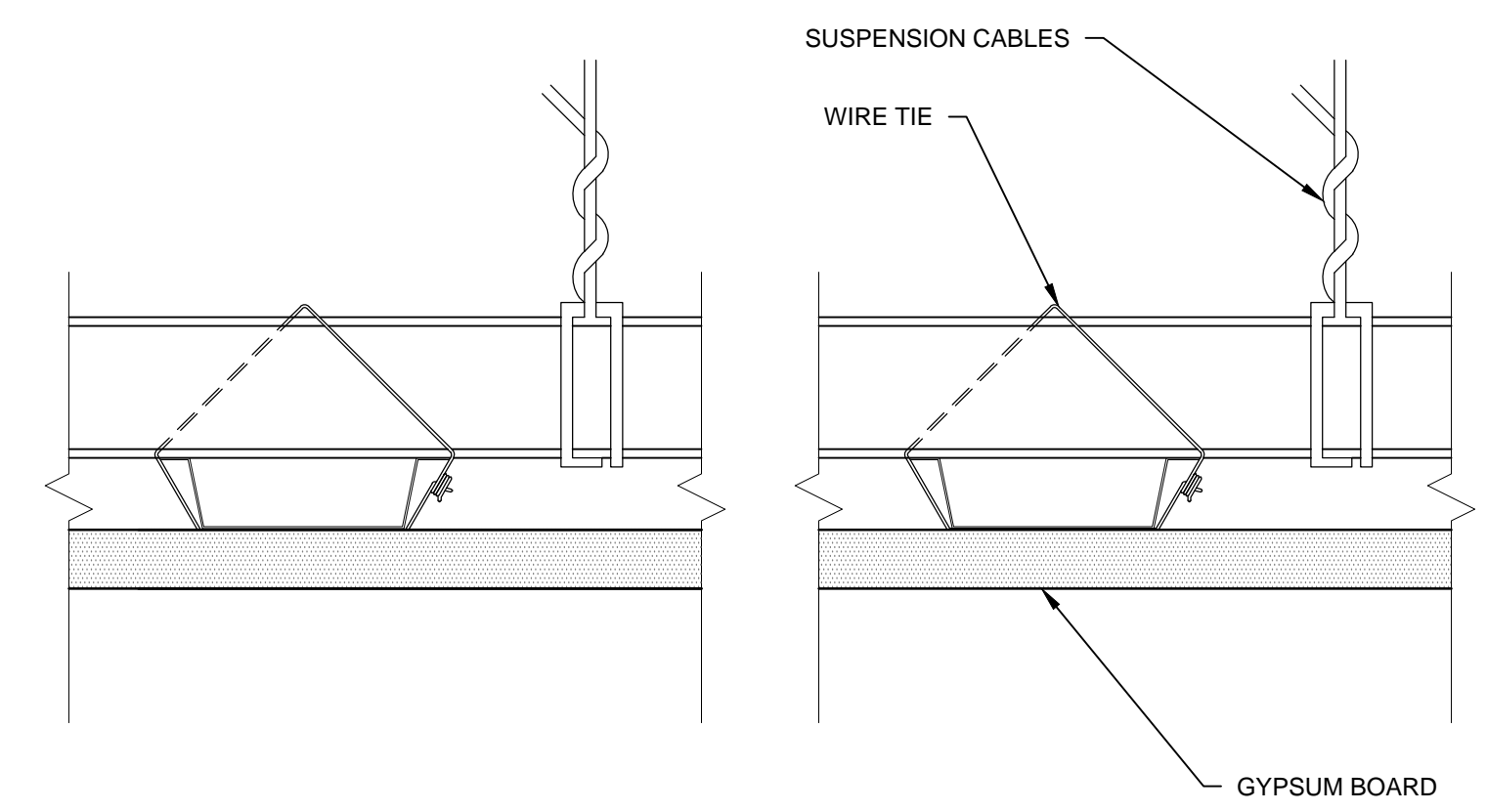


5 EQUIPMENT RAIL  
SCALE: 3" = 1'-0"

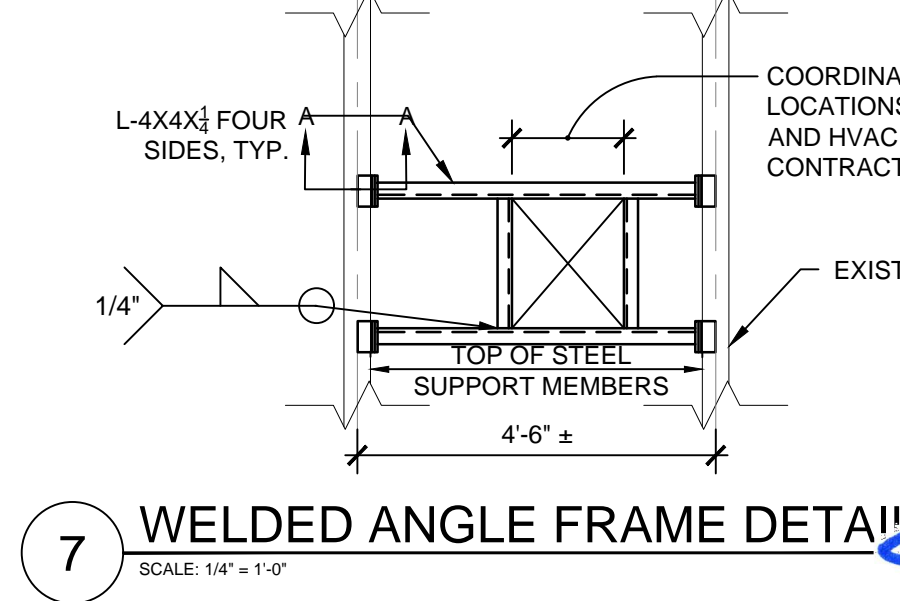
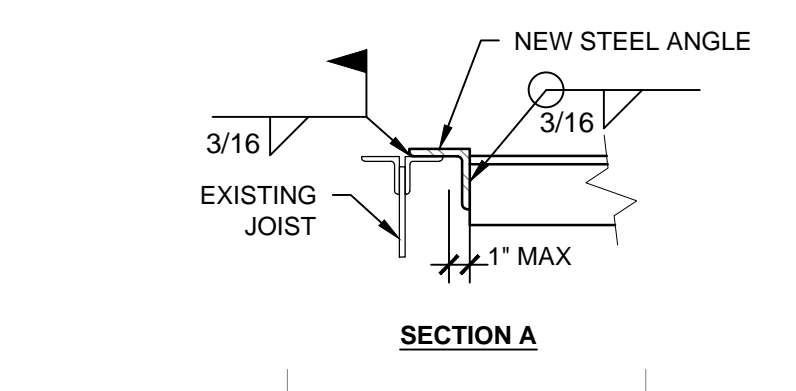


6 TERMINATION BAR  
SCALE: 6" = 1'-0"

- NOTES:
1. INSTALL TERMINATION BAR WITH 1/8" (6 mm) GAP BETWEEN ADJOINING SECTIONS.
  2. TERMINATION BAR MUST BE CUT AT INSIDE AND OUTSIDE CORNERS. DO NOT BEND AROUND CORNERS.
  3. TERMINATION BAR MUST BE FASTENED WITHIN 1" (25 mm) MAX. OF ALL SECTION ENDS.
  4. APPLY WATERBLOCK IN A 3/8" (10 mm) TO 1/2" (13 mm) BEAD AT APPROXIMATELY 10 LF PER TUBE.



8 GYPSUM BOARD CEILING  
SCALE: 3" = 1'-0"



7 WELDED ANGLE FRAME DETAIL  
SCALE: 1/4" = 1'-0"

ROOF DETAILS			STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES	
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mark	date	description	WISS, JANNEY, ELSTNER ASSOCIATES, INC. 2 TRAP FALLS ROAD, SUITE 502 SHELTON, CT 06484	
			date 01/22/2019	
			scale As Noted	
			project	
			540 MAIN AVENUE NORWALK DMV ROOF AND HVAC NORWALK, CT	
			date 1-22-2019	
			drawing no. A-302	
			project no. 2018.0336.0	



## GENERAL MECHANICAL NOTES

### GENERAL

1. WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT, AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.
2. IT IS THE INTENTION OF THE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR FINISHED WORK, TESTED AND READY FOR OPERATION.
3. ITEMS AND SERVICES NOT SHOWN ON DRAWINGS OR SPECIFICATIONS BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.
4. WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS. PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH, DELIVER AND INSTALL ALL WORK AS SPECIFIED AND AS REQUIRED BY JOB CONDITIONS. WHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.
5. DRAWINGS ARE DIAGRAMMATIC AND INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUB-CONTRACTOR DOCUMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND ALL SUB-CONTRACTORS TO INCLUDE THE PROVISIONS AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS. GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED. THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES AND EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION. DO NOT SCALE DRAWINGS. CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS.
6. PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT GENERAL CONDITIONS AND WITH THE PROVISIONS OF ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES AND LAWS.
7. WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIAL, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, FEES, LICENSES, AND ADMINISTRATIVE TASKS REQUIRED TO COMPLETE AND MAKE OPERABLE WORK SHOWN ON THE DRAWINGS, SPECIFIED HEREIN AND AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
8. STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE.
9. THIS CONTRACTOR SHALL PROVIDE AND INSTALL ALL POWER AND CONTROL WIRING REQUIRED FOR EQUIPMENT OPERATION NOT SPECIFICALLY PROVIDED BY OTHERS BUT REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THIS CONTRACTOR SHALL PROVIDE MOTOR STARTERS. COORDINATE REQUIREMENTS WITH DIVISION 26.
10. COORDINATE ALL HVAC WORK AND EQUIPMENT WITH STRUCTURAL STEEL, FIRE PROTECTION PIPING, PLUMBING PIPING, LIGHT FIXTURES, ELECTRICAL EQUIPMENT AND OWNER'S EQUIPMENT.
11. ALL EXISTING CONDITIONS AS INDICATED ARE APPROXIMATIONS OF EXACT CONDITIONS TO BE VERIFIED IN THE FIELD. CONTRACTOR SHALL VISIT THE SITE TO VERIFY THE CONSTRUCTION CONDITIONS BEFORE SUBMITTING BID.
12. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL CEILING GRILLES, REGISTERS AND DIFFUSERS.
13. PROVIDE VOLUME DAMPERS IN EACH BRANCH DUCTWORK SERVING REGISTERS, GRILLES AND DIFFUSERS WHETHER INDICATED OR NOT.
14. PROVIDE CABLE OPERATED DAMPERS IN BRANCH DUCTWORK SERVING REGISTERS, GRILLES, AND DIFFUSERS IN INACCESSIBLE CEILING LOCATIONS WHETHER INDICATED OR NOT.
15. LOCATE ALL BALANCING DAMPERS AT MAIN DUCTWORK ABOVE ACCESSIBLE CEILINGS, OR PROVIDE ACCESS DOORS.
16. PROVIDE TRAPPED CONDENSATION DRAIN PIPING FROM COOLING COIL DRAIN PAN TO AN APPROVED POINT OF DISCHARGE AS INDICATED.
17. RIN REFRIGERATION PIPING FROM AIR COOLED CONDENSING UNITS TO RESPECTIVE OX COOLING COILS. ROUTE AND SIZE PIPING PER EQUIPMENT MANUFACTURERS RECOMMENDATIONS.
18. PROVIDE PITCH CORRECTION CURBS FOR ALL MECHANICAL EQUIPMENT AS REQUIRED. ROOF MOUNTED EQUIPMENT TO BE INSTALLED PLUMB AND LEVEL ACCORDING TO EQUIPMENT MANUFACTURERS INSTALLATION INSTRUCTIONS.
19. REFER TO SPECIFICATION SECTION 230000 AND DIVISION 7 FOR ADDITIONAL PENETRATION SEALING REQUIREMENTS. PENETRATIONS TO COMPLY WITH ASTM E84 & E814 AND APPROVED UL 1479 AND SPECIFIC UL ASSEMBLIES AS REQUIRED TO SUIT PENETRATION CONDITIONS.
20. LOCATE ALL ROOF MOUNTED EQUIPMENT REQUIRING SERVICE A MINIMUM OF 10'-0" FROM EDGE OF ROOF. CONTRACTOR MUST COMPLY W/ THIS SET BACK.
21. COORDINATE ALL ROOF AND FLOOR PENETRATIONS W/ STRUCTURAL DWGS AND PROVIDE STRUCTURAL CONTRACTOR W/ FLOOR, WALL & ROOF OPENING SIZES.
22. THIS CONTRACTOR IS RESPONSIBLE FOR ALL CONTROL WIRING 120 VOLT AND LESS. EXTEND POWER FOR VAV BOXES FROM JUNCTION BOXES PROVIDED BY DIVISION 26. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS. CONTRACTOR TO EXTEND 120V POWER TO EACH VAV BOX TRANSFORMER. SHARED TRANSFORMERS ARE NOT ALLOWED. RUN POWER PER DIVISION 26 REQUIREMENTS.

23. CONTRACTOR SHALL EXTEND ALL POWER FOR DAMPER ACTUATORS, VALVE ACTUATORS AND OTHER CONTROL DEVICES FROM LOCAL ELECTRICAL PANEL. DIVISION 26 TO SUPPLY POWER TO TCPS. REFER TO ELECTRICAL DRAWINGS FOR PANEL LOCATIONS.
24. THE DRAWINGS AND SPECIFICATIONS ARE DIVIDED INTO SECTIONS TO MEET THE NEEDS OF THE ARCHITECT, THE ENGINEERS, AND THE DESIGN CONSULTANTS. THEY ARE NOT PREPARED AS INSTRUCTIONS TO THE CONTRACTOR FOR HOW TO BUY OUT OR SUBCONTRACT THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR ALL THE WORK DESCRIBED IN THE CONTRACT DOCUMENTS, REGARDLESS OF WHERE IT IS SHOWN. FOR EXAMPLE, ELECTRICAL WORK IS SHOWN ON FP-SERIES DRAWINGS AS WELL AS ON M-SERIES DRAWINGS AND S-SERIES DRAWINGS. MISCELLANEOUS METALS AND STRUCTURAL ELEMENTS ARE SHOWN ON A-SERIES DRAWINGS AS WELL AS ON S-SERIES DRAWINGS. STRUCTURAL SUPPORTS ARE REQUIRED BY THE FP DRAWINGS. TO AVOID OMITTING ANY COMPONENT OF THE PROJECT, REFER TO ALL THE CONTRACT DOCUMENTS IN THEIR ENTIRETY.
25. WHEREVER EXISTING SYSTEMS ARE ALTERED OR EXTENDED THE INTEGRITY OF THE SYSTEM IS TO BE MAINTAINED AND FUNCTION FULLY AS BEFORE. COORDINATE SCHEDULE FOR HOOK-UPS TO EXISTING SYSTEMS AND EQUIPMENT REMOVAL OR RELOCATION WITH THE OWNER AND PERFORM THIS WORK AT SUCH TIMES TO ENSURE THAT PERIODS OF SHUTDOWN WILL BE ACCEPTABLE TO THE OWNER.
26. VERIFY EXACT LOCATION OF CONNECTION POINTS (NEW TO EXISTING) IN FIELD PRIOR TO CONSTRUCTION.
27. RELOCATE EXISTING DUCTWORK AND/OR PIPE WORK IN EXISTING CEILING SPACES TO ACCOMMODATE ALL RENOVATIONS AND ADDITIONS.
28. TAKE DOWN AND REINSTALL EXISTING CEILING IN ALL AREAS WHERE MECHANICAL WORK IS INDICATED AND EXISTING CEILING REMAINS. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN DRAWINGS FOR LOCATIONS WHERE EXISTING CEILING REMAINS. REPLACE CEILING TILES DAMAGED DURING WORK.
29. PATCH ALL WALLS, FLOORS, CEILINGS, AND ROOFS TO MATCH EXISTING IN ALL CASES WHERE EXISTING WALLS, FLOORS, CEILINGS, AND ROOFS REMAIN AND HVAC DEMOLITION IS INDICATED.

### ALTERATION WORK AND DEMOLITION

1. ALL EQUIPMENT, DUCTWORK, PIPING, CONTROL DEVICES, ETC. TO BE REMOVED, SHALL BE DISPOSED OF, TURNED OVER TO THE OWNER, OR SALVAGED AS DIRECTED BY THE OWNER. EQUIPMENT, DUCTWORK, PIPING, CONTROL DEVICES, ETC. SHALL NOT BE REMOVED FROM THE PREMISES WITHOUT THE OWNER'S APPROVAL.
2. UPON COMPLETION OF REMOVALS AND MODIFICATIONS, ALL DUCTWORK AND PIPING TO REMAIN SHALL BE PROPERLY VALVED, CAPPED AND/OR BY PASSED SUCH THAT UPON COMPLETION OF WORK ALL SYSTEMS TO REMAIN, REMAIN OPERATIONAL.
3. NO DEAD ENDS SHALL BE LEFT ON ANY DUCTWORK OR PIPING SYSTEM UPON COMPLETION OF WORK.
4. EXISTING DUCTWORK AND PIPING SYSTEMS NOT TO BE REUSED, AND NOT SPECIFICALLY NOTED FOR REMOVAL SHALL BE COMPLETELY REMOVED.
5. ALL SYSTEMS SHALL BE LEFT IN WORKING ORDER TO THE SATISFACTION OF THE OWNER UPON COMPLETION OF ALL NEW WORK.
6. ALL EXISTING UNNECESSARY DUCTWORK AND PIPING NOT RELATED TO NEW WORK SHALL BE COMPLETELY REMOVED.
7. RE-ROUTE ALL EXISTING DUCTWORK, PIPING AND SYSTEMS WHERE NECESSARY TO AVOID NEW EQUIPMENT, STRUCTURAL, OR MASONRY WORK AS REQUIRED BY THE PROPOSED ALTERATIONS.

### SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO BE REVIEWED BY THE ENGINEER PRIOR TO CONSTRUCTION. SHOP DRAWINGS SHALL BE SUBMITTED FOR DUCTWORK LAYOUT, PIPING LAYOUT, SHEET METAL SHOP STANDARDS AND ALL EQUIPMENT FURNISHED.
2. ELECTRONIC DRAWING FILES SHALL BE GENERATED BY THE CONTRACTOR. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC VERSION (AUTOCAD VERSION AS REQUIRED BY THE OWNER) OR AUTOCAD VERSION 2010 IF NOT SPECIFIED.
3. PRIOR TO THE SUBMISSION AND REVIEW OF SHEET METAL SHOP DRAWINGS, THE CONTRACTOR SHALL SUBMIT FOR REVIEW SHEET METAL SHOP STANDARDS. ANY SHEET METAL SHOP DRAWINGS SUBMITTED PRIOR TO THE SUBMISSION OF THE SHOP STANDARDS SHALL BE RETURNED "NOT REVIEWED".

### COORDINATION DRAWINGS

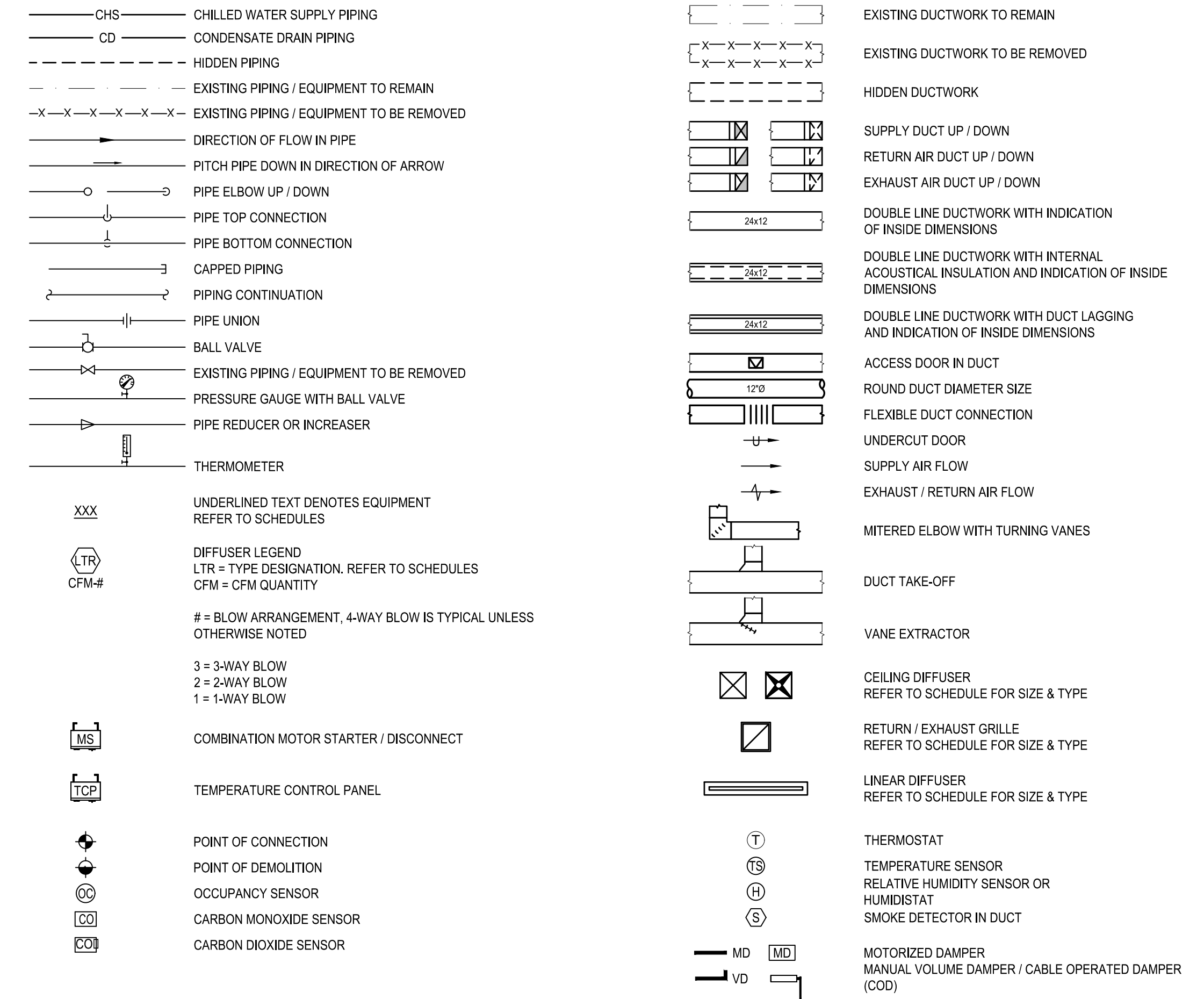
1. ELECTRONIC DRAWING FILES SHALL BE GENERATED BY THE CONTRACTOR. IF REQUESTED, ELECTRONIC FILES OF THE MECHANICAL FLOOR PLANS, SECTIONS AND ELEVATIONS ONLY WILL BE MADE AVAILABLE. ELECTRONIC FILES WILL BE RELEASED ONLY UPON RECEIPT OF THE SIGNED AGREEMENT FOR TRANSFER OF ELECTRONIC FILE DATA, AGREEMENT FOR TRANSFER OF BUILDING INFORMATION MODEL AND ALL FEES INDICATED THEREIN.
2. DEVELOP AND SUBMIT COORDINATION DRAWINGS AS OUTLINED.
  - A. SHEET METAL, PLUMBING AND FIRE PROTECTION SHOP DRAWINGS THAT HAVE BEEN COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW. DRAWINGS MUST BE RETURNED FROM ENGINEER EITHER "REVIEWED" OR "FURNISH AS CORRECTED" PRIOR TO BEING USED AS BASIS FOR COORDINATION DRAWINGS.

- B. AFTER SHEET METAL AND PIPING DRAWINGS HAVE BEEN REVISED PER ENGINEERS COMMENTS, REPRODUCIBLE COPIES SHALL BE SENT TO THE TRADES IN THE FOLLOWING SEQUENCE FOR THE INCLUSION OF THEIR WORK:
  - MECHANICAL SHEET METAL
  - PLUMBING PIPING
  - MECHANICAL PIPING
  - ELECTRICAL WORK
3. AFTER ALL TRADES HAVE INCLUDED THEIR WORK ON THE COORDINATION DRAWING AND NOTED CONFLICTS, ALL TRADES SHALL MEET TO RESOLVE CONFLICTS AND AGREE TO ACCEPTABLE SOLUTIONS. EACH TRADE SHALL SIGN COORDINATION DRAWINGS. ITEMS NOT SHOWN ON COORDINATION DRAWING IS RESPONSIBILITY OF OMITTING CONTRACTOR AND CONTRACTOR IS SUBJECT TO ADDITIONAL COSTS INCURRED BY OTHER TRADES.
4. THE ARCHITECT AND ENGINEER ARE NOT PART OF THE COORDINATION DRAWING PROCESS. THE ENGINEER WILL PROVIDE ASSISTANCE FOR NOTED CONFLICTS ONLY. COORDINATION DRAWINGS ARE NOT TO BE CONSIDERED PIPING OR DUCT SHOP DRAWINGS. THE CONTRACTOR IS REQUIRED TO SUBMIT INDIVIDUAL PIPING AND DUCTWORK SHOP DRAWINGS FOR REVIEW BY THE ENGINEER. PIPING AND DUCTWORK SHOP DRAWINGS SHALL FOLLOW THE DESIGN INTENT OF THE CONTRACT DOCUMENTS.
5. SUBMIT FINAL SIGNED COORDINATION DRAWING TO ENGINEER FOR REVIEW. ENGINEER WILL REVIEW COORDINATION DRAWINGS FOR GENERAL ARRANGEMENT AND FOR NOTED CONFLICTS ONLY. SPECIFIC INSTALLATION REQUIREMENTS WILL BE REVIEWED ONLY IN INDIVIDUAL TRADE SHOP DRAWINGS.
6. ANY WORK FABRICATED OR INSTALLED PRIOR TO SIGN OFF BY ALL TRADES WHICH IS DEEMED TO BE IN CONFLICT WITH COORDINATION DRAWINGS SHALL BE REMOVED AND RE-INSTALLED IN CONFORMANCE WITH COORDINATION DRAWINGS.
7. EACH CONTRACTOR (MENTIONED ABOVE) IS RESPONSIBLE FOR THE COORDINATION OF HIS SUB-CONTRACTORS.
8. THE OVERALL COORDINATION OF THE COORDINATION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE ENGINEER IS NOT RESPONSIBLE FOR THE COORDINATION PROCESS. DRAWINGS SUBMITTED WILL BE REVIEWED FOR CLEARLY IDENTIFIED CONFLICTS ONLY. SOLUTIONS TO CONFLICTS WILL NOT BEAR ADDITIONAL COST.

### AS BUILT DRAWINGS

1. PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC VERSION (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) OR AUTOCAD VERSION 2010 IF NOT SPECIFIED. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.
2. PROVIDE "AS-BUILT DRAWINGS" INDICATING IN A NEAT AND ACCURATE MANNER A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:
  - INCLUDE ALL CHANGES AND AN ACCURATE RECORD IN AUTOCAD DRAWING OR APPROPRIATE SHOP DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND WORK INSTALLED.
  - MAINS AND BRANCHES OF PIPING SYSTEMS, WITH VALVES AND CONTROL DEVICES LOCATED AND NUMBERED, CONCEALED UNIONS LOCATED, AND WITH ITEMS REQUIRING MAINTENANCE LOCATED (I.E., TRAPS, STRAINERS, EXPANSION COMPENSATORS, TANKS, ETC.). VALVE LOCATION DIAGRAMS, COMPLETE WITH VALVE TAG CHART.
  - EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.
  - APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
  - CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
3. SUBMIT FOR REVIEW BOUND SETS OF THE REQUIRED DRAWINGS, MANUALS AND OPERATING INSTRUCTIONS.
4. SUBMIT A COMPLETE MAINTENANCE MANUAL OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.

## GENERAL MECHANICAL SYMBOLS



\* ALL SYMBOLS MAY NOT BE USED IN THESE DOCUMENTS.

## MECHANICAL DRAWING LIST

DRAWING NUMBER	DRAWING DESCRIPTION
M-001	COVER SHEET - MECHANICAL
M-002	GENERAL NOTES - MECHANICAL
MD-100	FIRST FLOOR DEMOLITION PLAN - MECHANICAL
MD-101	ROOF DEMOLITION PLAN - MECHANICAL
M-100	FIRST FLOOR PLAN - MECHANICAL
M-101	ROOF PLAN - MECHANICAL
M-200	SCHEDULES - MECHANICAL
M-300	DETAILS - MECHANICAL

drawing title			STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES	
COVER SHEET - MECHANICAL			REVISIONS	
mark	date	description	drawing prepared by	date
X.X.X	8.17.19	DESIGN DEVELOPMENT	KOHLER RONAN 93 LAKE AVENUE DANBURY, CT 06810	01/22/2019
X.X.X	12.03.19	CONSTRUCTION DOCUMENTS		NONE
project			drawn by	FMD
540 MAIN AVENUE NORWALK DMV ROOF HVAC NORWALK, CT			approved by	KR
drawing no.				M-001
CAD no. 18086-M-100-Cover Sheet.dwg			project no. BI-MM-53	



**MECHANICAL CONTROLS SYMBOL LIST**

	ALARM
	CARBON DIOXIDE SENSOR
	END SWITCH
	HUMIDITY SENSOR
	DAMP/VALVE MOTOR
	MOTOR STARTER
	PRESSURE SENSOR
	REFRIGERANT SENSOR
	SMOKE DETECTOR, FURNISHED AND WIRED BY DIVISION 23 CONTRACTOR AND MOUNTED BY DIVISION 23 CONTRACTOR
	STATIC PRESSURE SENSOR
	TEMPERATURE CONTROL PANEL
	TERMINAL CONTROL UNIT
	*ROOM TEMPERATURE THERMOSTAT
	ROOM TEMPERATURE SENSOR
	TEMPERATURE SENSOR
	AUTOMATIC TIME CLOCK
	**VARIABLE FREQUENCY CONTROLLER
	VARIABLE SPEED FAN SWITCH
	VELOCITY PRESSURE SENSOR
	COIL
	OPPOSED BLADE DAMPER
	PUMP / FAN
	DISCONNECT SWITCH

ALL SYMBOLS MAY NOT BE USED IN THESE DOCUMENTS.  
 \* REFER TO THERMOSTAT DIAGRAM FOR REQUIRED CONTROL POINTS FOR ALL T SYMBOLS INDICATED.  
 \*\* REFER TO VARIABLE FREQUENCY CONTROLLER CONTROL DIAGRAM FOR REQUIRED CONTROL POINTS FOR ALL VFD & VSF SYMBOLS INDICATED.

**GENERAL MECHANICAL ABBREVIATIONS**

ABV	ABOVE	EAT	ENTERING AIR TEMPERATURE	HX-#	HEAT EXCHANGER CONVERTOR	PSI	POUND PER SQUARE INCH
AC	AIR COMPRESSOR	EER	ENERGY EFFICIENCY RATIO	IBT	INVERTED BUCKET TRAP	RA	RETURN AIR
ACC-#	AIR COOLED CONDENSER	EG	EXHAUST GRILLE	ID	INSIDE DIMENSION	RAD	RETURN AIR DAMPER
ACU-#	AIR CONDITIONING UNIT	EHC-#	ELECTRIC HEATING COIL	IN	INCHES	RAF-#	RETURN AIR FAN
ACCU-#	AIR COOLED CONDENSING UNIT	ENT	ENTERING	IP	INTAKE PENTHOUSE	RAT	RETURN AIR TEMPERATURE REGISTER
AD	ACCESS DOOR	HEPA	HIGH EFFICIENCY PARTICULATE FILTER	IV	INLET GUIDE VANES	REG	REGISTER
AF	AIRFOIL	EXRA	EXHAUST REGISTER	KW	KILOWATT	RH	RELATIVE HUMIDITY
AFC	ADJUSTABLE FREQUENCY CONTROLLER	ES	END SUCTION	KWH	KILOWATT HOUR	RHC	REHEAT COIL
AFF	ABOVE FINISHED FLOOR	ESP	EXTERNAL STATIC PRESSURE	IL	INLINE	RLA	RATED LOAD AMPERES
AFMS	AIR FLOW MEASURING STATION	ET-#	EXPANSION TANK	LAT	LEAVING AIR TEMPERATURE	RM	ROOM
AHU-#	AIR HANDLING UNIT	ETR	EXISTING TO REMAIN	LD	LINEAR DIFFUSER	RP	RELIEF PENTHOUSE
AL	ACOUSTIC LINING	EUI-#	ELECTRIC UNIT HEATER	LIN	LINEAR	RLM	RELIEF PENTHOUSE PER MINUTE
ALD	AUTOMATIC LOUVER DAMPER	EWT	ENTERING WATER TEMPERATURE	LRA	LOCKED ROTOR AMPERES	RTU-#	ROOFTOP AIR CONDITIONING UNIT
ALP	ACOUSTICALLY LINED PLENUM	EXP-#	EXPANSION LOOP	LPR	LOW PRESSURE RETURN	RV	RADIATION VALVE
APD	AIR PRESSURE DROP	EX	EXISTING	LPS	LOW PRESSURE SUPPLY	SA	SUPPLY AIR
AUTO	AUTOMATIC	EXH	EXHAUST	LVG	LEAVING	SAF-#	SUPPLY AIR FAN
B	BOILER	EXT	EXTERNAL	LWT	LEAVING WATER TEMPERATURE	SAT	SUPPLY AIR TEMPERATURE
BC	BACKWARD CURVED	F	DEGREES FAHRENHEIT	MAN	MANUAL	SB	SECURITY BARS
BD	BYPASS DAMPER	F&B	FACE & BYPASS DAMPER	MAT	MIXED AIR TEMPERATURE	VSC	VERTICAL SPLIT CASE
BMCS	BUILDING MANAGEMENT & CONTROL SYSTEM	FA	FACE AREA	MAX	MAXIMUM	HSC	HORIZONTAL SPLIT CASE
BTU	BRITISH THERMAL UNIT	FC	FORWARD CURVE	MBH	1000 BTU'S	SD	SMOKE DAMPER
BV	BYPASS VALVE	F.C.	FLEX CONNECTION	MCA	MINIMUM CIRCUIT AMPACITY	SG	SUPPLY GRILLE
CH#	CHILLER	FC-#	FAN COIL	MD	MOTORIZED DAMPER	SP	STATIC PRESSURE
CHR	CHILLED WATER RETURN	FOU-#	FAN COIL UNIT	MER	MECHANICAL EQUIPMENT ROOM	SQ FT	SQUARE FOOT (AREA)
CHS	CHILLED WATER SUPPLY	FD	FIRE DAMPER WITH ACCESS DOOR	MEZZ	MEZZANINE	ST	SINGLE POLE SWITCH
CAP	CAPACITY	FF	FINAL FILTER	MFS	MAXIMUM FUSE SIZE	TSTAT	THERMOSTAT
CB-#	CONTROL BOX	FIN FL	FINISH FLOOR	MIN	MINIMUM	TB	TERMINAL BOX
CC-#	COOLING COIL	FL	FLOOR	MTR	MOTOR	TOP	TEMPERATURE CONTROL PANEL
CD	CEILING DIFFUSER	FLA	FULL LOAD AMPERES	MJA	MAKE-UP AIR	TD	TEMPERATURE DIFFERENCE
CFM	CUBIC FEET PER MINUTE	FLEX	FLEXIBLE	MV	MOTORIZED VALVE	TEMP	TEMPERATURE
CG	CEILING GRILLE	FO	FLAT OVAL	NC	NOISE CRITERIA	TG	AIR TRANSFER GRILLE
CLG	CEILING	PPF	FINS PER FOOT	NFA	NET FREE AREA	TOT	TOTAL
C-#	CONVECTOR	FT	FEET	NIC	NOT IN THIS CONTRACT	TN-HR	TON HOUR REFRIGERATION
C.O.D.	CABLE OPERATED DAMPER	F.T.	FLOAT & THERMOSTATIC TRAP	NO	NORMALLY OPEN	TR	TOP REGISTER
CP	CONDENSATE RECEIVER/PUMPING SYSTEM	FT-#	FIN TUBE RADIATION	NTS	NOT TO SCALE	TRD	TRANSFER DUCT
CR	CEILING REGISTER	CV	FACE VELOCITY	CA	OUTSIDE AIR	TT	THERMOSTATIC TRAP
CT-#	COOLING TOWER	GC	GENERAL CONTRACTOR	OAT	OUTDOOR AIR TEMPERATURE	TYP	TYPICAL
CTD	CEILING TRANSFER DUCT	GH	GRAVITY INTAKE HOOD	OAI	OUTDOOR AIR INTAKE	UC	UNDERCUT DOOR
CUH-#	CABINET UNIT HEATER	GPH	GALLONS PER HOUR	OBD	OPPOSED BLADE DAMPER	UH-#	UNIT HEATER HOT WATER
CV	CONTROL VALVE	GPM	GALLONS PER MINUTE	OD	OUTSIDE DIMENSION	UV-#	UNIT VENTILATOR
D&T	DRIP AND TRAP	H/C	HEATING/COOLING	O.E. T.D.	OPEN END TRANSFER DUCT	VD	VOLUME DAMPER
DB	DRY BULB	H#	HUMIDIFIER	OED	OPEN END DUCT	VE	VOLUME EXTRACTOR
DD	DIRECT DRIVE	H-O-A	HAND-OFF-AUTOMATIC	P-#	PUMP	VFD	VARIABLE FREQUENCY DRIVE
DDC	DIRECT DIGITAL CONTROL	HC-#	HEATING COIL	PB	PUSH BUTTON	VI	VIBRATION ISOLATOR
DIFF	DIFFUSER	HD	FEET OF HEAD	PBD	PARALLEL BLADE DAMPER	VSF	VARIABLE SPEED FAN SWITCH
DL	DOOR LOUVER	HP	HORSEPOWER	PD	PRESSURE DROP	W	WITH
DN	DOWN	HTG	HEATING	PF	PREFILTER	WB	WET BULB
DP	DEWPOINT TEMPERATURE	HTR	HEATER	PH	PHASE	WFM	WATER FLOW MEASURING STATION
DR	DROP	HV-#	HEATING AND VENTILATING UNIT	PHC	PREHEAT COIL	WMS	WIRE MESH SCREEN
DX	DIRECT EXPANSION	HVAC	HEATING, VENTILATING & AIR CONDITIONING	PPH	POUND PER HOUR	WPD	WATER PRESSURE DROP
EF-#	EXHAUST FAN			PRV	PRESSURE REDUCING VALVE	WT	WEIGHT (LBS)
						ZD	ZONE DAMPER

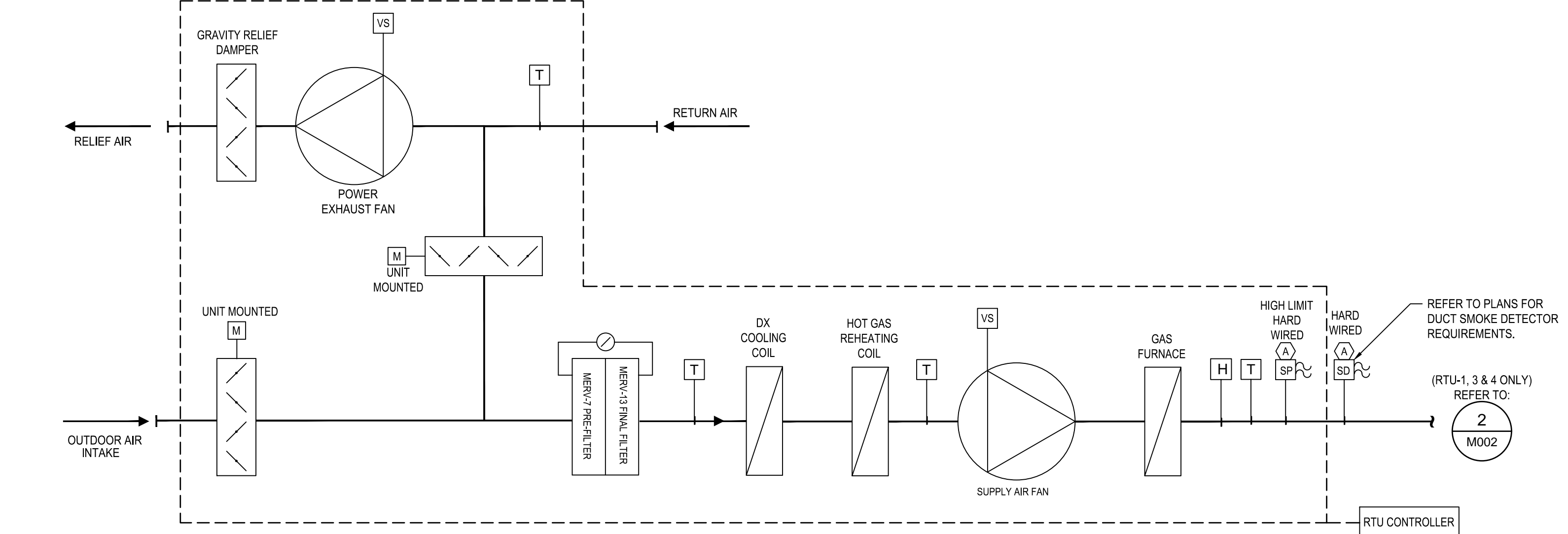
\* ALL ABBREVIATIONS MAY NOT BE USED IN THESE DOCUMENTS.

**MECHANICAL DEMOLITION NOTES**

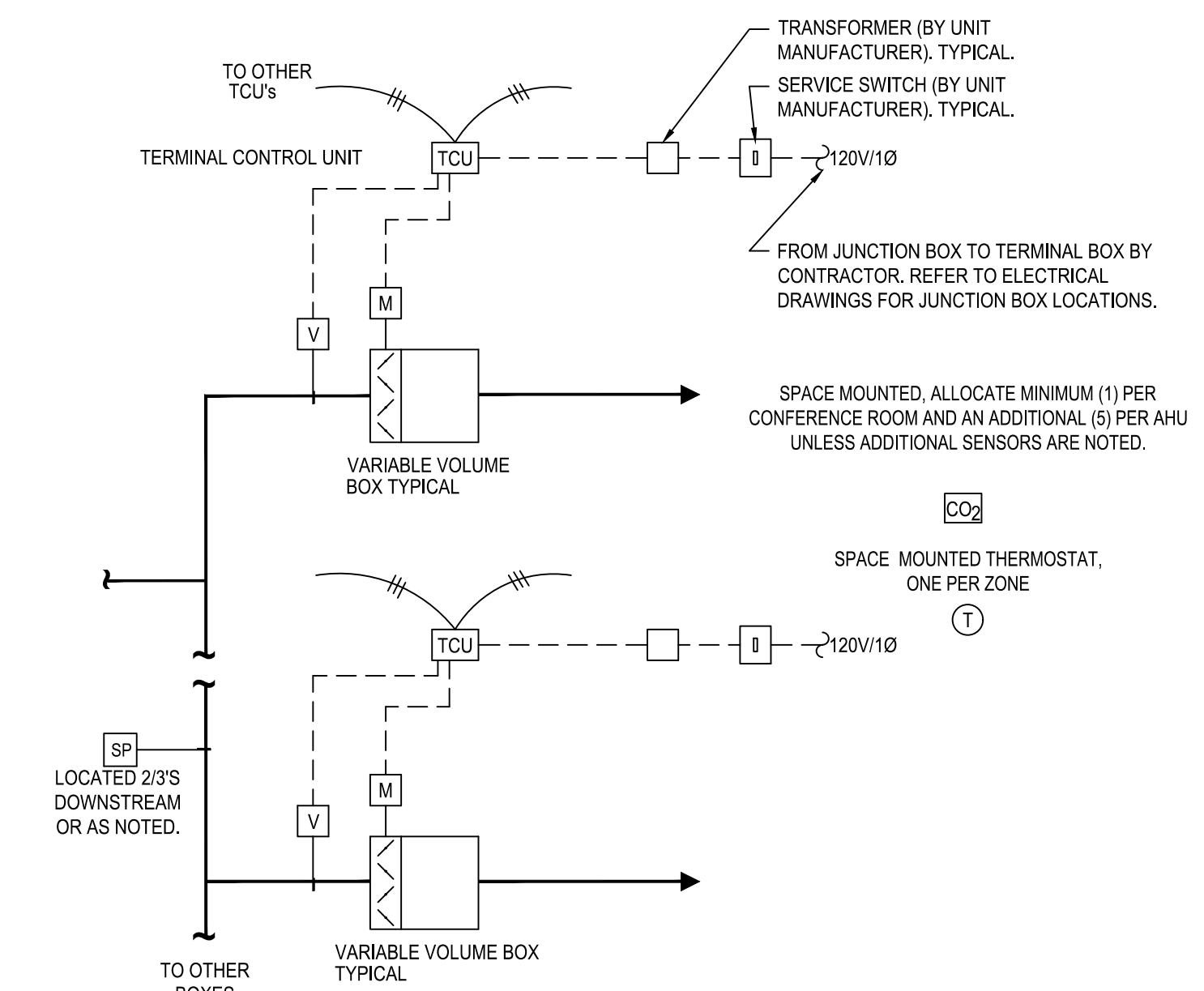
- COORDINATE PHASING OF DEMOLITION AND PROPOSED CONSTRUCTION SCHEDULE TO MAINTAIN MECHANICAL SERVICES (HEATING, TEMPERATURE CONTROLS, EXHAUSTS, MAKE UP AIR ETC.) TO OCCUPIED AREAS OF THE BUILDING DURING CONSTRUCTION.
- THE EXISTING FACILITY WILL BE OCCUPIED AND IN OPERATION DURING THE PERFORMANCE OF THE WORK.
- WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING PIPING OR DUCTWORK WHICH MAY CAUSE DISRUPTION TO OCCUPIED FACILITIES, CONFER WITH THE OWNER, AND SCHEDULE A MUTUALLY AGREEABLE PERIOD OF INTERRUPTION.
- WHERE REPLACEMENT, RELOCATION OR MODIFICATION OF EXISTING EQUIPMENT IS INDICATED, PROVIDE AND MAINTAIN ALL TEMPORARY SERVICES, CONNECTIONS, CONTROLS, AND ANY OTHER MATERIALS AND APPURTENANCES REQUIRED TO MAINTAIN SERVICES TO OCCUPIED AREAS.
- NO WORK SHALL BE LEFT INCOMPLETE, NOR ANY HAZARDOUS SITUATION CREATED, WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS, AT NO TIME SHALL THE WORK INTERFERE WITH OR CUT OFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S PRIOR WRITTEN PERMISSION.
- THE OWNER RESERVES THE RIGHT TO OPERATE ALL EXISTING MECHANICAL EQUIPMENT UNTIL THE NEW SYSTEMS COME ON LINE.
- IT IS REQUIRED THAT THE WORK INDICATED AND/OR SPECIFIED SHALL BE CARRIED OUT WITH A MINIMUM OF INTERFERENCE TO THE ESTABLISHED OPERATIONS OF THE BUILDING.
- REMOVED MATERIALS SHALL BE DISPOSED OF USING LICENSED CARTING SERVICE.
- HAZARDOUS MATERIALS - SHALL BE DISPOSED OF BY AN EPA APPROVED, LICENSED DISPOSAL SERVICE. CONTRACTOR SHALL OBTAIN AND HAVE ON FILE, AFFIDAVIT, AND RECEIPTS STATING HOW AND WHERE THE WASTE WAS DISPOSED OF OR CONVERTED.
- IT IS THE INTENTION OF THESE DEMO DRAWINGS TO INDICATE GENERAL SYSTEMS AND MATERIALS TO BE REMOVED. CONTRACTOR SHALL REMOVE ALL OBSOLETE PIPING, DUCTWORK, EQUIPMENT, CONTROLS, ETC, INDICATED OR NOT.
- DUCTWORK, EQUIPMENT AND TERMINAL DEVICES HAVE BEEN TAKEN FROM FIELD OBSERVATION AND ARE TO BE USED FOR REFERENCE AND SHALL NOT BE CONSTRUED TO BE ACTUAL FIELD CONDITIONS. CONTRACTOR IS RESPONSIBLE TO VERIFY ALL SYSTEMS PRIOR TO COMMENCEMENT OF DEMOLITION WORK.
- ALL EQUIPMENT TO BE REMOVED SHALL BE DISPOSED OF PER OR STORED PER DIRECTION OF OWNER. ANY ITEM NOT RETAINED BY OWNER SHALL BE REMOVED FROM SITE AND DISCARDED IN AN APPROVED MANNER.
- IT IS THE INTENTION OF THESE SPECIFICATION TO REMOVE ALL MATERIALS ABANDONED BY THE SCOPE OF THIS CONSTRUCTION PROJECT. NO OBSOLETE MATERIALS (I.E. HANGERS, SUPPORTS, INSULATION, DUCTWORK, ETC.) SHALL REMAIN.
- CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION TO ANY EXPOSED OR UNCAPPED NEW OR EXISTING DUCTWORK TO REMAIN TO MINIMIZE DUST CONTAMINATION IN ANY AND ALL OF THE AIR SYSTEMS. THIS SHALL INCLUDE BUT IS NOT LIMITED TO TEMPORARY FILTERS, CAPS, ENCLOSURES, ETC.

**MECHANICAL SCHEDULING NOTES**

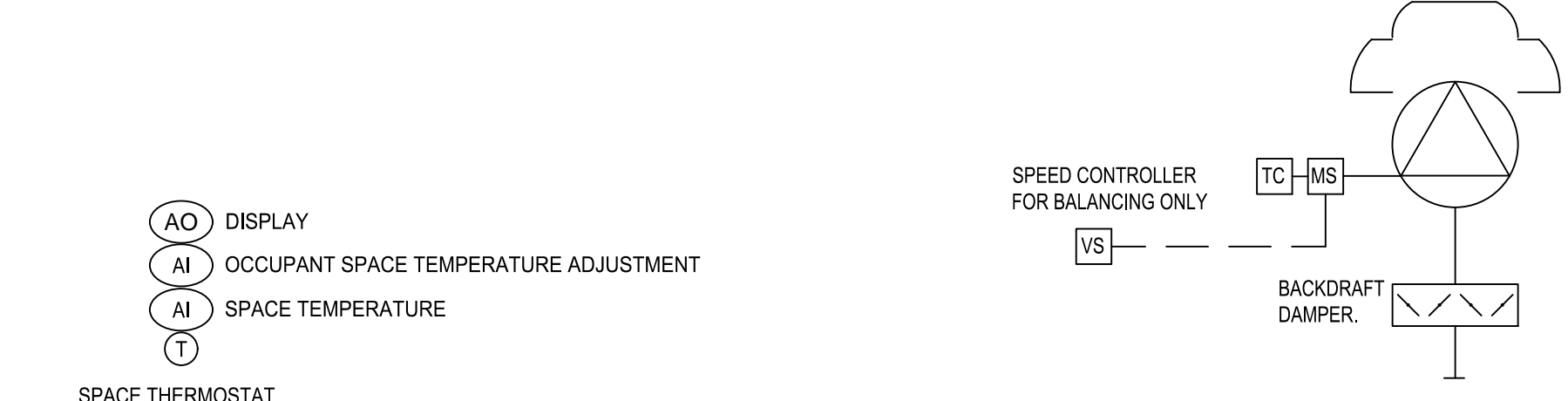
THE BUILDING WILL REMAIN OCCUPIED DURING CONSTRUCTION. ALL INTERIOR WORK SHALL BE PERFORMED ON SUNDAYS AND MONDAYS UNLESS PERMISSION IS OBTAINED FROM OWNER TO WORK INSIDE THE BUILDING ON OTHER DAYS OF THE WEEK.



**1 RTU-1, 2, 3 & 4 ROOF TOP UNIT DIAGRAM**  
 M002 SCALE: NONE



**2 TERMINAL BOX**  
 M002 SCALE: NONE



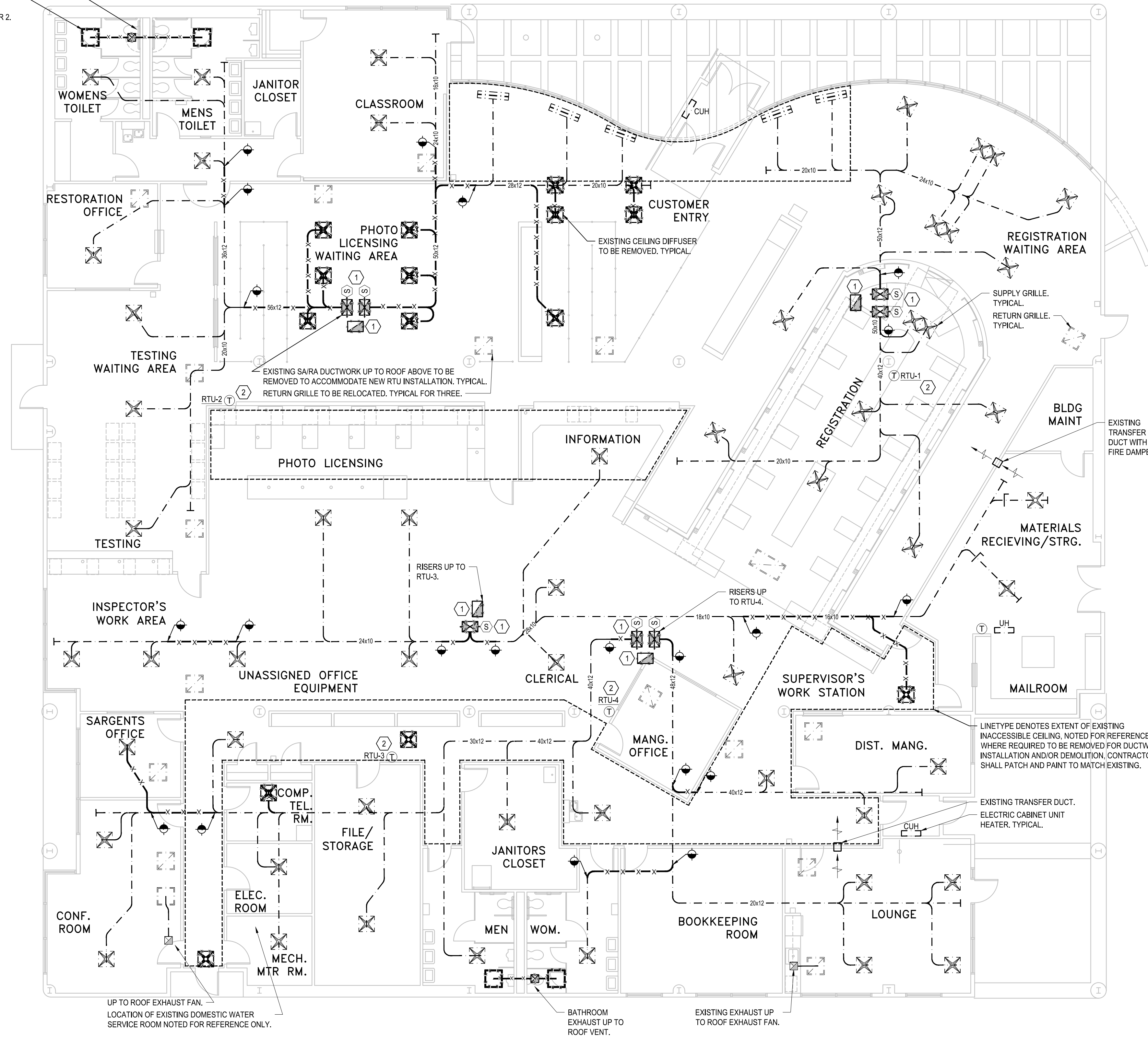
**3 SPACE THERMOSTAT**  
 M002 SCALE: NONE

**4 NEW/EXISTING EXHAUST FAN CONTROL DIAGRAM**  
 M002 NOT TO SCALE



drawing title		<b>GENERAL NOTES - MECHANICAL</b>		<b>STATE OF CONNECTICUT</b> DEPARTMENT OF ADMINISTRATIVE SERVICES	
REVISIONS		drawing prepared by		date	
mark	date	description		scale	
X.X.X	8.17.19	DESIGN DEVELOPMENT		01/22/2019	
X.X.X	12.03.19	CONSTRUCTION DOCUMENTS		NONE	
project		drawing no.		approved by	
540 MAIN AVENUE		M-002		FMD	
NORWALK, CT		BI-MM-53		KR	
drawing no.		project no.		drawing no.	
M-002		160284M-100-Cover Sheet.dwg		M-002	

BATHROOM EXHAUST TO ROOF VENT ABOVE TO BE REMOVED.  
EXISTING EXHAUST GRILLE/FAN TO BE REMOVED, TYPICAL FOR 2.

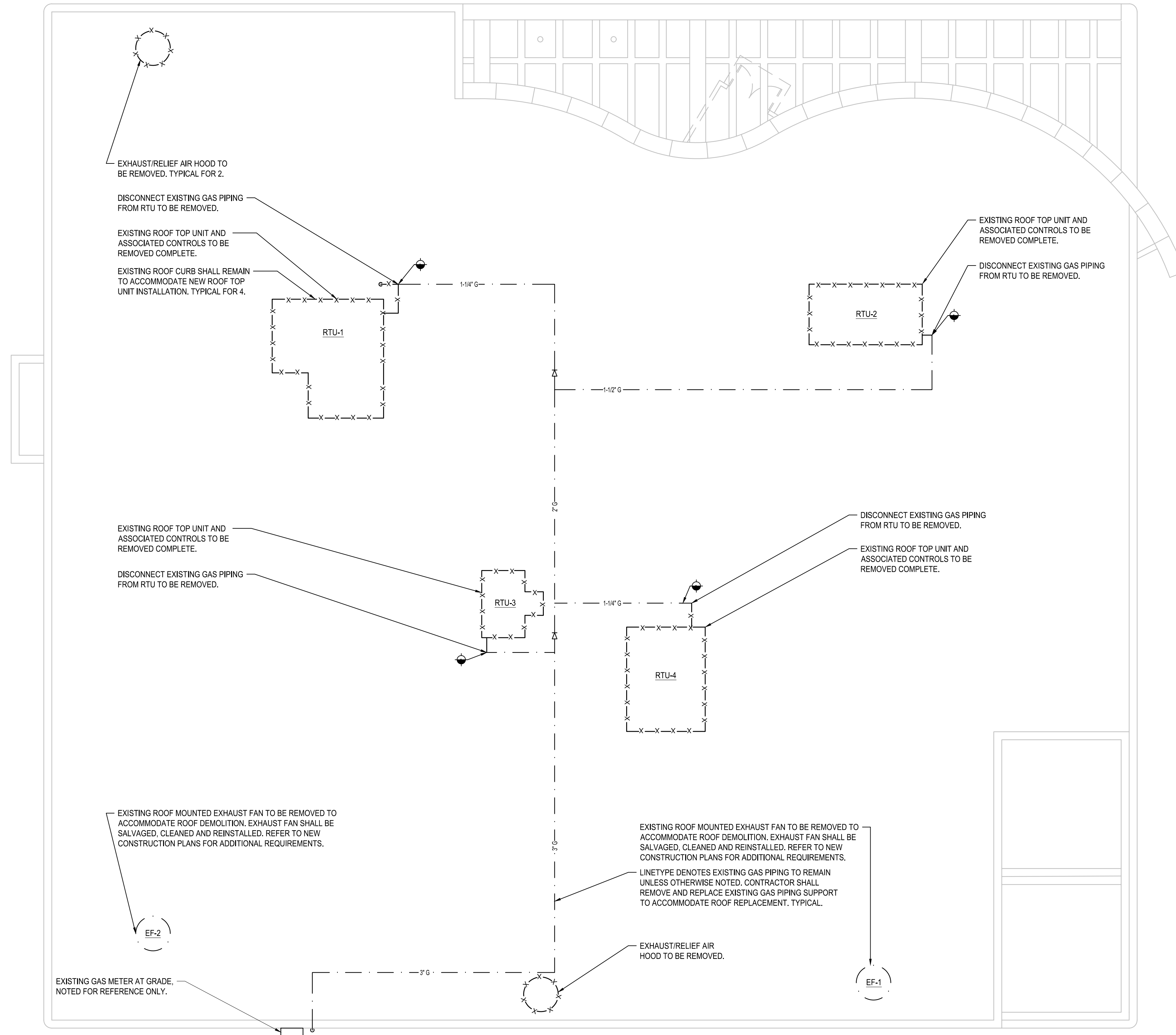


DEMOLITION KEY NOTES	
MECHANICAL	
1	EXISTING SUPPLY/RETURN DUCT MOUNTED SMOKE DETECTOR AND ASSOCIATED SAMPLING TUBE TO BE REMOVED AND SALVAGED. EXISTING DUCT SMOKE DETECTORS AND NEW SAMPLING TUBES SHALL BE INSTALLED IN NEW DUCT RISER UP TO NEW RTU'S TO BE INSTALLED. DUCT SMOKE DETECTORS SHALL BE RECONNECTED TO EXISTING FIRE ALARM SYSTEM. REFER TO NEW CONSTRUCTION PLANS FOR ADDITIONAL DETAILS.
2	EXISTING WALL MOUNTED THERMOSTAT AND ASSOCIATED WIRING TO BE REMOVED COMPLETE.

1 FIRST FLOOR DEMOLITION PLAN  
MD-100 SCALE: 1/8" = 1'-0"



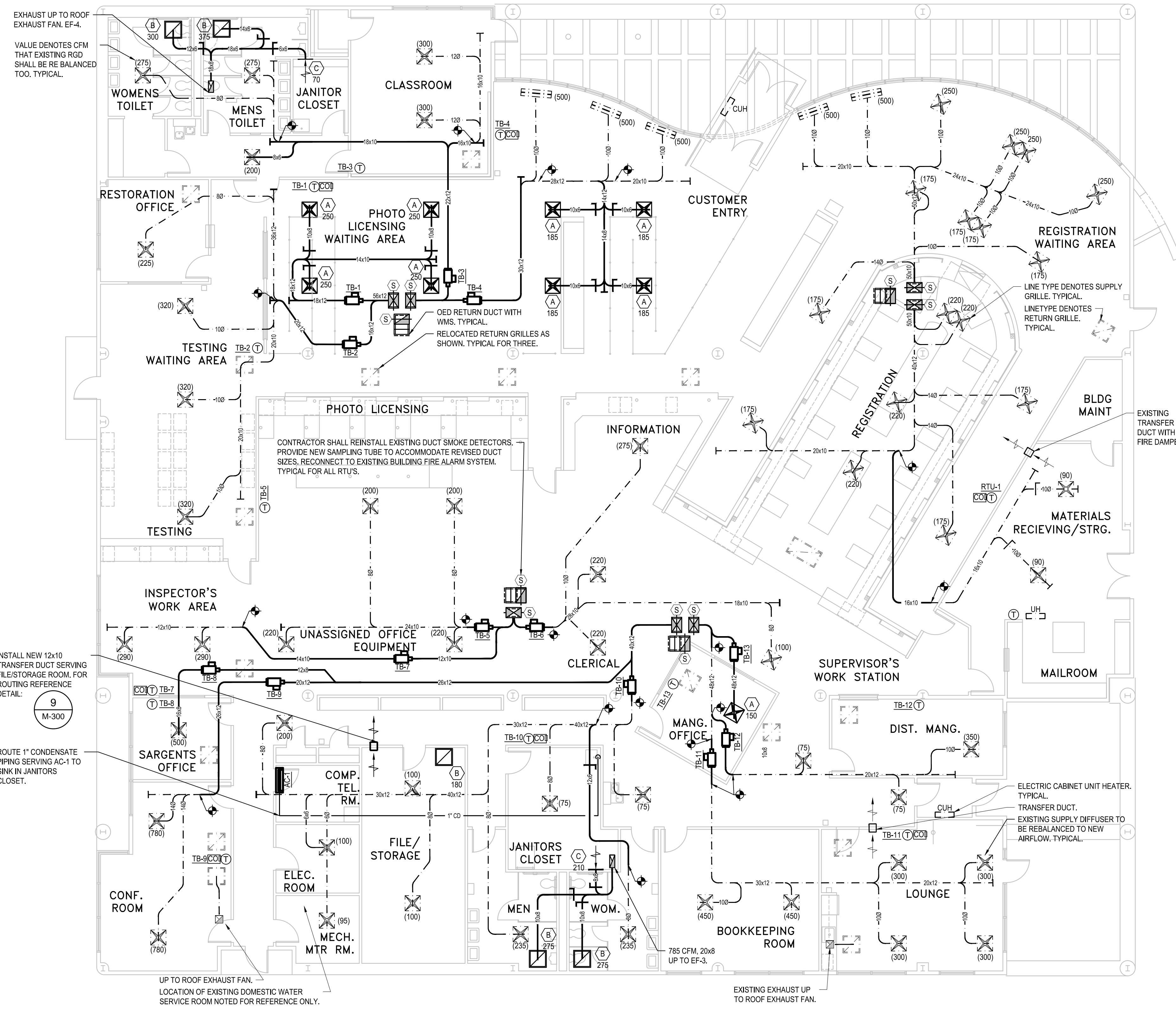
drawing title <b>FIRST FLOOR DEMOLITION PLAN - MECHANICAL</b>		<b>STATE OF CONNECTICUT</b> DEPARTMENT OF ADMINISTRATIVE SERVICES	
REVISIONS			
mark	date	description	date
X.X.X	8.17.19	DESIGN DEVELOPMENT	01/22/2019
X.X.X	12.03.19	CONSTRUCTION DOCUMENTS	scale 1/8" = 1'-0"
drawing prepared by <b>KOHLER RONAN</b> 93 LAKE AVENUE DANBURY, CT 06810		date	
project <b>540 MAIN AVENUE NORWALK DMV ROOF HVAC</b> NORWALK, CT		drawn by KE	
CUI no. 18285-MD-100-First Floor Demolition Plan.dwg		approved by KR	
project no. BI-MM-53		drawing no. <b>MD-100</b>	



1 ROOF DEMOLITION PLAN  
MD-101 SCALE: 1/8" = 1'-0"



drawing title <b>ROOF DEMOLITION PLAN - MECHANICAL</b>			STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES		
REVISIONS					
mark	date	description	drawing prepared by	date	
X.X.X	8.17.19	DESIGN DEVELOPMENT	KOHLER RONAN 93 LAKE AVENUE DANBURY, CT 06810	01/22/2019	
X.X.X	12.03.19	CONSTRUCTION DOCUMENTS		scale 1/8" = 1'-0"	
			project	drawn by	
			540 MAIN AVENUE NORWALK DMV ROOF HVAC NORWALK, CT	FMD	
				approved by	
				KR	
				drawing no.	
					<b>MD-101</b>
			CAD no. 18060-MD-101-Roof Demolition Plan.dwg	project no. BI-MM-53	



1 FIRST FLOOR PLAN  
M-100 SCALE: 1/8" = 1'-0"



drawing title <b>FIRST FLOOR PLAN - MECHANICAL</b>			<b>STATE OF CONNECTICUT</b> DEPARTMENT OF ADMINISTRATIVE SERVICES		
REVISIONS			drawing prepared by <b>KOHLER RONAN</b> 93 LAKE AVENUE DANBURY, CT 06810		
mark	date	description	date	date 01/22/2019	
X.X.X	8.17.19	DESIGN DEVELOPMENT		scale 1/8" = 1'-0"	
X.X.X	12.03.19	CONSTRUCTION DOCUMENTS		drawn by KE	
				approved by KR	
				drawing no. <b>M-100</b>	
CADD no. 18880-M-100-First Floor Plan.dwg			project no. BI-MM-53		

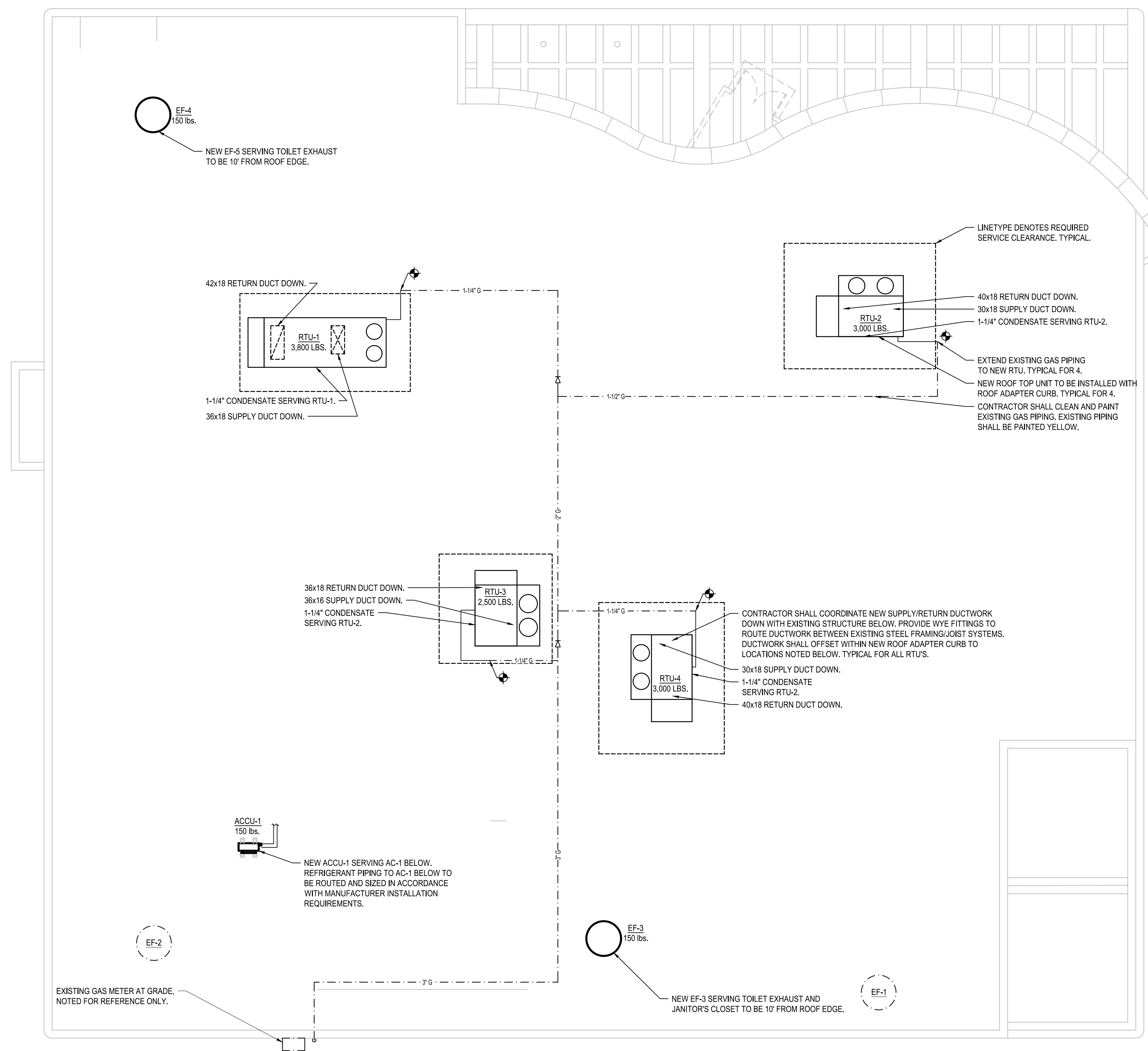
**GAS METER ASSEMBLY**

CONNECTED LOADS		
EXISTING:		
RTU-1 =	470 CFH *	
RTU-2 =	470 CFH *	
RTU-3 =	270 CFH *	
RTU-4 =	480 CFH *	
-----		
TOTAL (EXISTING)	1,690 CFH TOTAL	CONNECTED LOAD @ 7-PSI DELIVERY PRESSURE
PROPOSED NEW:		
REPLACEMENT RTU-1 =	480 CFH	
REPLACEMENT RTU-2 =	300 CFH	
REPLACEMENT RTU-3 =	200 CFH	
REPLACEMENT RTU-4 =	300 CFH	
-----		
TOTAL (NEW)	1,280 CFH TOTAL	CONNECTED LOAD @ 7-14" PSI DELIVERY PRESSURE

**NOTES**

COORDINATE GAS PRESSURE REQUIREMENTS W/ GAS COMPANY & PROVIDE GAS PRESSURE REGULATOR VALVE ASSEMBLY SIZED AT INDICATED PRESSURES & CAPACITIES.

\* INDICATES LOADS PROVIDED BY EXISTING EQUIPMENT MANUFACTURER



**1 ROOF PLAN**  
M-101 SCALE: 1/8" = 1'-0"



drawing title		STATE OF CONNECTICUT	
ROOF PLAN - MECHANICAL		DEPARTMENT OF ADMINISTRATIVE SERVICES	
REVISIONS			
mark	date	description	date
X.X.X	8.17.19	DESIGN DEVELOPMENT	01/22/2019
X.X.X	12.03.19	CONSTRUCTION DOCUMENTS	scale 1/8" = 1'-0"
drawing prepared by <b>KOHLER RONAN</b> 93 LAKE AVENUE DANBURY, CT 06810			date
project <b>540 MAIN AVENUE NORWALK DMV ROOF HVAC</b> NORWALK, CT			drawn by KE
drawing no. <b>M-101</b>			approved by KR
CJD no. 16060-M-101-Roof Plan.dwg		project no. BI-MM-53	



### ROOFTOP AIR CONDITIONING UNITS

SYMBOL	AREA SERVED	LOCATION	VENTILATION MAX/MIN	HEATING CAPACITY				COOLING CAPACITY DX COIL					HOT GAS REHEAT COIL			COMPRESSOR DATA					CONDENSER FAN DATA				SUPPLY FAN DATA					CONV.	UNIT	MAKE/MODEL	REMARKS								
				HEATING (MBH)		FUEL	% AFUE	AIR DATA		AMB. TEMP.	ENT. AIR DB°	LEAV. AIR WB°	CAPACITY MBH	REFRIG. TYPE	ENT. AIR DB°	LEAV. AIR DB°	CAPACITY MBH	NOM. TON	# COMP.	STEPS	VOLT	Ø	AMPS	QTY.	FLA	MOTOR DATA (EA.)		TSP	ESP					MOTOR DATA							
				INPUT	OUTPUT			EAT	LAT																	H.P.	VOLT							H.P.	VOLT	Ø	FLA				
RTU-1	FIRST FLOOR	ROOF	1,000 MAX 500 MIN	480	384	NATURAL GAS	81	6,500	56.6°F	115.6°F	0°F	78.3°F	64.4°F	51.3°F	50.5°F	238.4-T 177.5-S	R-410a	51.3°F	68.0°F	118.9	20.0	4	5	408	3	(2) @ 9.6 (1) @ 18.6	2	2.0	-	408	3	2.54"	1.25"	6,000	7.5	408	3	9.7	YES	61.1	DAIKIN APPLIED MPS020G
RTU-2	FIRST FLOOR	ROOF	900 MAX 300 MIN	300	240	NATURAL GAS	80	7,500	59.5°F	103.7°F	0°F	76.1°F	63.6°F	52.0°F	52.0°F	188.2-T 131.5-S	R-410a	52.0°F	70.0°F	97.5	15.0	2	-	408	3	(1) @ 7.9 (1) @ 12.8	2	1.8	-	408	3	2.29"	1.00"	5,000	4.0	408	3	4.0	YES	33.7	DAIKIN APPLIED DPS015A
RTU-3	FIRST FLOOR	ROOF	375 MIN/MAX	200	160	NATURAL GAS	80	3,500	58.0°F	107.2°F	0°F	76.1°F	63.6°F	53.6°F	53.5°F	89.6-T 73.9-S	R-410a	53.6°F	70.0°F	53.4	8.0	2	-	408	3	(1) @ 5.4 (1) @ 9.9	2	1.8	-	408	3	1.65"	1.00"	3,000	4.0	408	3	4.0	YES	20.4	DAIKIN APPLIED DPS007A
RTU-4	FIRST FLOOR	ROOF	950 MAX 500 MIN	300	240	NATURAL GAS	80	6,000	53.5°F	102.7°F	0°F	76.9°F	64.8°F	52.1°F	52.0°F	188.6-T 122.2-S	R-410a	52.1°F	70.0°F	87.6	15	2	-	408	3	(1) @ 7.9 (1) @ 12.8	2	1.8	-	408	3	2.38"	1.25"	4,500	4.0	408	3	4.0	YES	33.7	DAIKIN APPLIED DPS015A

- NOTES:
- 1. ALL ROOF TOP UNITS SHALL BE MOUNTED UNITS PROVIDED WITH ROOF ADAPTER CURB TO ACCOMMODATE INSTALLATION ON EXISTING ROOF CURBS.
  - 2. ALL ROOF TOP UNITS SHALL BE PROVIDED WITH HOT GAS REHEAT, CONVENIENCE OUTLET AND ALL ACCESSORIES REQUIRED FOR AIR SIDE ECONOMIZER.
  - 3. ALL ROOF TOP UNIT FANS SHALL BE SELECTED BASED ON THE PRESSURE DROP ACROSS DIRTY FILTERS.
  - 4. RTU-2, RTU-3 & RTU-4 SHALL BE PROVIDED WITH ONE INVERTER SCROLL COMPRESSOR FOR PART LOADING.
  - 5. RTU SHALL BE FURNISHED AND INSTALLED WITH CONTROLLER FOR VAV OPERATION SIMILAR TO DAIKIN SYSTEM MANAGER. COORDINATE FIELD WIRING OF TERMINAL BOXES TO CONTROL PANEL WITH MANUFACTURER. FINAL LOCATION OF CONTROL PANEL AND ASSOCIATED POWER SHALL BE COORDINATED WITH BUILDING OWNER.

### PIPE AND FITTING SCHEDULE

DESCRIPTION	SIZE	PIPE		FITTING		REMARKS	ABBREV.	DESCRIPTION
		TYPE	SCHEDULE	TYPE	RATING			
GAS PIPING	2" AND BELOW	STL-BLK	40	MIT	CLASS 150		MIT	MALLEABLE IRON THREADED
GAS PIPING	ABOVE 2"	STL-BLK	40	WE	SCHED 40		STL-BLK	BLACK STEEL SEAMLESS
							WE	BUTT WELD

### REGISTERS, GRILLES, & DIFFUSERS

SYM	SERVICE	TYPE	MAKE	MODEL	MATERIAL FINISH	CFM	NECK SIZE	FACE SIZE	NC LEVEL	REMARKS
A	SUPPLY	CD	PRICE	ASPD	ALUMINUM WHITE	0-125 126-215	6" 8"	24" x 24"		SELECTION SHALL BE ≤ NC-25
A	SUPPLY	CD	PRICE	ASPD	ALUMINUM WHITE	216-330 331-475	10" 12"	24" x 24"		SELECTION SHALL BE ≤ NC-25
B	RETURN	CD	PRICE	10	ALUMINUM WHITE	0-1250	-	24" x 24"		SELECTION SHALL BE ≤ NC-25
C	RETURN	RG	PRICE	630	ALUMINUM WHITE	0-150 150-230	-	6" x 6" 12" x 6"		SELECTION SHALL BE ≤ NC-25

- NOTES:
- 1. PROVIDE 3 WAY DIFFUSER AT ALL LOCATIONS WHERE DIFFUSER IS LOCATED WITHIN 2' OF ANY WALL. ALL OTHER DIFFUSERS ARE TO BE 4 WAY.
  - 2. COORDINATE AIR TERMINAL LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS, AND SECTIONS.
  - 3. PROVIDE STANDARD COLOR CHART FOR COLOR SELECTION BY ARCHITECT.
  - 4. BORDER, FRAME, & MOUNTING STYLE SHALL BE COORDINATED WITH ARCHITECT.
  - 5. PROVIDE CONCEALED MOUNTING FOR ALL REGISTERS, GRILLES AND DIFFUSERS.

### HVAC DUCT/PLENUM MATERIAL

APPLICATION	SUPPLY	RETURN	EXHAUST
TYPICAL (UNLESS OTHERWISE SPECIFIED)	G90 GALVANIZED STEEL	G90 GALVANIZED STEEL	G90 GALVANIZED STEEL

1. DUCT CONSTRUCTION SHALL MEET SMACNA METAL & FLEXIBLE 2005 3RD EDITION STANDARDS.

### VALVE SCHEDULE

DESCRIPTION	SIZE	TYPE							REMARKS	ABBREVIATIONS	
		GATE	GLOBE	CHECK	BALL	PLUG	BALAN.	CLASS		ABB.	DESCRIPTION
GAS	2" AND SMALLER	--	--	--	--	PGVF	--	125 PSI	--	PGVF	PLUG VALVE FLANGED - AGA APPROVED
						PGVT	--	125 PSI	--	PGVT	PLUG VALVE THREADED - AGA APPROVED
GAS	2-1/2" AND OVER	--	--	--	--	PGVF	--	125 PSI	--	PRODUCTS INCLUDED IN THIS SECTION SHALL BE "LEAD FREE" IN ACCORDANCE WITH THE REQUIREMENTS OF THE "REDUCTION OF LEAD IN DRINKING WATER ACT".	
SOLENOID VALVE: UL LISTED, FM APPROVED FOR GAS SERVICE, EXPLOSION PROOF, TWO-WAY NORMALLY CLOSED, SOLENOID VALVE: ASCO 8044 SERIES W/ MANUAL RESET. (EMERGENCY GAS SHUT-OFF VALVE ASSEMBLY)											

### HVAC DUCT/PLENUM INSULATION

SYSTEM	INSULATION TYPE	MINIMUM INSTALLED INSULATION VALUES	NOMINAL DENSITY
INDOOR DUCT/PLENUM CONCEALED SA, RA, OA. OTHER THAN PRE-MANUFACTURED LINEAR SUPPLY AND RETURN GRILLE PLENUMS.	MINERAL FIBER BLANKET	2" R-6.0	3/4 LB/FT³
	MINERAL FIBER BOARD WITH REFLECTIVE VAPOR BARRIER.	2" R-6.0	3 LB/FT³
INDOOR DUCT/PLENUM EXPOSED SA AND RA. LOCATED IN MECHANICAL ROOMS, OTHER NON-OCCUPIED SPACES, NON-AIR CONDITIONED SPACES, PASSING THROUGH AIR CONDITIONED SPACES.	MINERAL FIBER BOARD WITH REFLECTIVE VAPOR BARRIER.	2" R-6.0	3 LB/FT³
INDOOR DUCT/PLENUM EXPOSED SA, RA, OA, EA. ALL ATTIC SPACES AND CRAWL SPACES	MINERAL FIBER BLANKET	2" R-6.0	3/4 LB/FT³
	MINERAL FIBER BOARD WITH REFLECTIVE VAPOR BARRIER.	2" R-6.0	3 LB/FT³
DUCT LINING DUCTS/PENUMS INSTALLED IN INDOOR SPACES EXPOSED AND CONCEALED SA OR RA DUCTWORK WHERE INDICATED ON THE DRAWINGS AND IN THE SPECIFICATION. 15 FT UPSTREAM & DOWNSTREAM OF SUPPLY FANS, RETURN FANS AND 10 FT DOWNSTREAM OF TERMINAL BOXES WHETHER INDICATED OR NOT.	FIBROUS-GLASS DUCT LINER WITH CLEANABLE COMPOSITE COATING ON AIRSTREAM SIDE. METAL NOSING SHALL BE FURNISHED ON ALL LEADING EDGES.	1-1/2" R-6.0	1.5 LB/FT³

1. INSULATION TYPES INDICATED IN THE SCHEDULE SHALL USED UNLESS OTHERWISE INDICATED ON THE PLANS OR SPECIFICATIONS.

OA = OUTDOOR AIR DUCTWORK  
SA = SUPPLY AIR DUCTWORK  
RA = RETURN AIR DUCTWORK  
EA = EXHAUST AIR DUCTWORK

### FANS

UNIT NO	LOCATION	SYSTEM SERVED	TYPE	CFM	SP	MAX BHP	FAN RPM	TIP SPEED	SOUND SONES	ELECTRICAL			MAKE/MODEL	REMARKS
										HP	VOLTS	RPM		
EF-1	ROOF	LOUNGE EXHAUST	CENT.	-	-	-	-	-	-	115	1	1725	-	EXISTING
EF-2	ROOF	CONFERENCE ROOM EXHAUST	CENT.	-	-	-	-	-	-	115	1	1725	-	EXISTING
EF-3	ROOF	TOILET EXHAUST	CENT.	785	0.38"	0.13	1601		9.1	1/6	115	1	1725	GREENHECK G-90-VG
EF-4	ROOF	TOILET EXHAUST	CENT.	735	0.38"	0.12	1547		8.7	1/6	115	1	1725	GREENHECK G-90-VG

- NOTES:
- 1. ALL FANS SHALL BE BALANCED TO AIRFLOW QUANTITY INDICATED ON PLANS AT INLETS AND OUTLETS.
  - 2. PROVIDE NEW ROOF CURB FOR EF-1 & EF-2. REBALANCE EXISTING EXHAUST FAN TO EXISTING AIR FLOW.
  - 3. EF-3 & EF-4 FANS SHALL BE FURNISHED WITH SPEED CONTROLLER FOR BALANCING.

### SPLIT AIR-CONDITIONING UNITS

UNIT NO.	LOCATION	INDOOR UNIT DATA					OUTDOOR UNIT					MAKE / MODEL	REMARKS		
		CFM	CAP. MBH	VOLT	Ø	HZ	UNIT NO.	CAPACITY (MBH)	VOLT	Ø	HZ			SEER	
AC-1	COMPUTER TELECOM ROOM	579 MIN 713 MAX	17.1-C 18.0-H	208	1	60	DAIKIN / FTXN18NMVJU	ACCU-1	17.1-C 18.0-H	208	1	60	15	DAIKIN / RXN18NMVJU	-

- NOTES:
- 1. ALL SPLIT SYSTEMS SHALL BE FURNISHED WITH NON-LOCKING DISCONNECT SWITCH FOR INDOOR UNIT. CONDENSER FUSED DISCONNECT SWITCH.
  - 2. ALL SPLIT SYSTEMS SHALL BE FURNISHED WITH SUPPORTS FOR INDOOR, 7 DAY PROGRAMMABLE CONTROLLER AND CONDENSATE LIFT PUMP.

### TERMINAL BOXES

UNIT NO	OCCUPIED CFM		TOTAL SP	DUCT CONN		MAKE/MODEL	REMARKS
	DESIGN	MINIMUM		INLET	OUTLET		
TB-1	1,000	300	0.1"	10"Ø	14" x 12-1/2"	PRICE SDV SERIES	
TB-2	1,185	356	0.1"	10"Ø	14" x 12-1/2"	PRICE SDV SERIES	
TB-3	1,050	315	0.1"	10"Ø	14" x 12-1/2"	PRICE SDV SERIES	
TB-4	2,240	675	0.1"	16"Ø	24" x 18"	PRICE SDV SERIES	
TB-5	840	250	0.1"	10"Ø	14" x 12-1/2"	PRICE SDV SERIES	
TB-6	815	245	0.1"	10"Ø	14" x 12-1/2"	PRICE SDV SERIES	
TB-7	580	175	0.1"	8"Ø	12" x 10"	PRICE SDV SERIES	
TB-8	500	150	0.1"	10"Ø	14" x 12-1/2"	PRICE SDV SERIES	
TB-9	1,560	470	0.1"	12"Ø	15" x 16"	PRICE SDV SERIES	
TB-10	1,275	380	0.1"	12"Ø	15" x 16"	PRICE SDV SERIES	
TB-11	2,100	630	0.1"	14"Ø	20" x 17-1/2"	PRICE SDV SERIES	
TB-12	500	150	0.1"	8"Ø	12" x 10"	PRICE SDV SERIES	
TB-13	150	70	0.1"	6"Ø	12" x 10"	PRICE SDV SERIES	

- NOTES:
- 1. TERMINAL BOXES SHALL BE FURNISHED WITH FACTORY INSTALLED/TESTED CONTROLS WHICH ARE COMPATIBLE WITH DAIKIN SYSTEM MANAGER.
  - 2. CONTRACTOR RESPONSIBLE FOR COORDINATING CONTROL PANEL ARRANGEMENT (LEFT/RIGHT HAND)

### HVAC PIPING/TUBING INSULATION

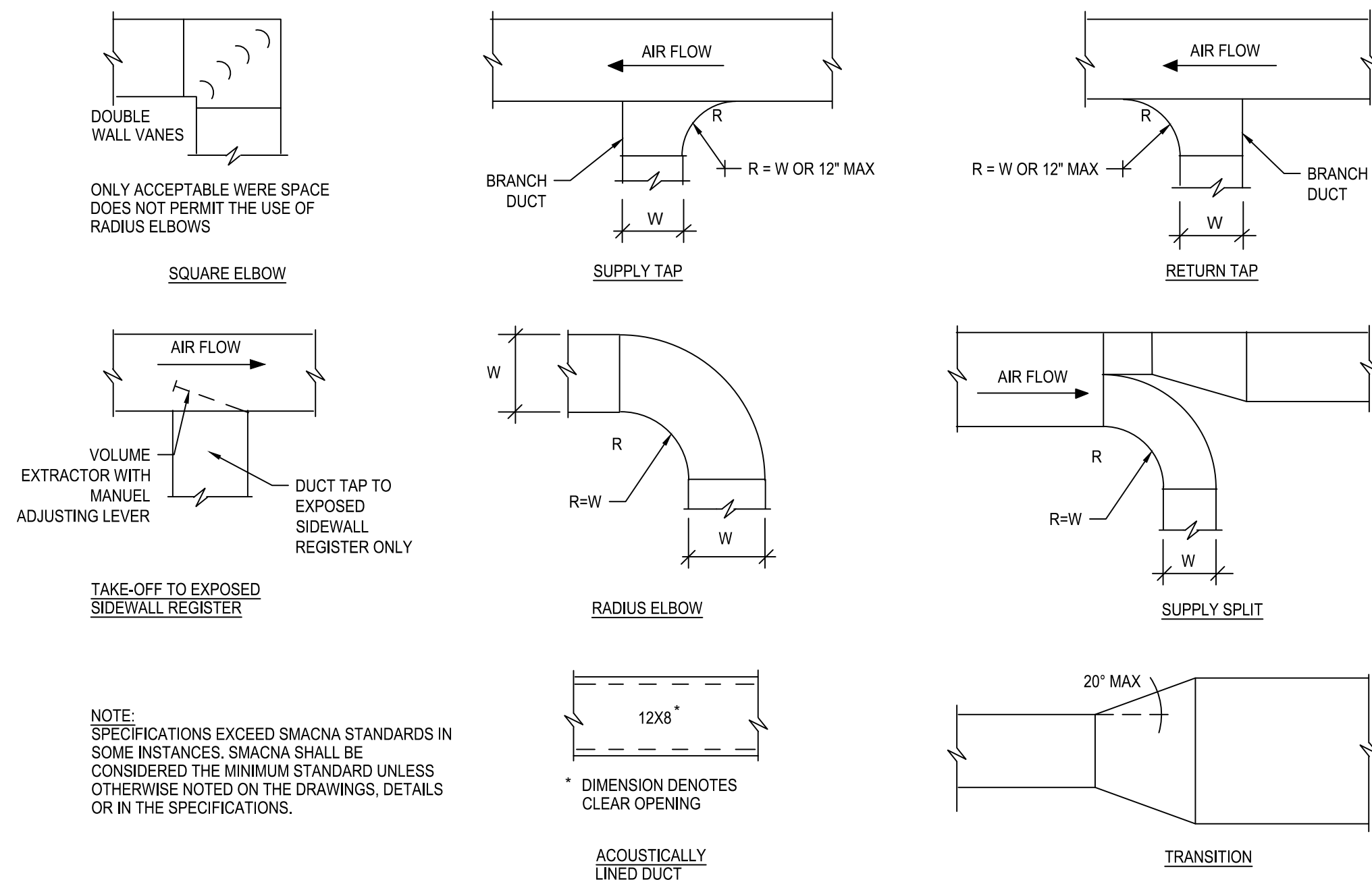
SYSTEM	LOCATION	PIPE SIZE	FLEXIBLE ELASTOMERIC		MINERAL-FIBER TYPE I	
			THICKNESS, IN.	CONDUCTIVITY, k	THICKNESS, IN.	CONDUCTIVITY, k
CONDENSATE & EQUIPMENT DRAIN, BELOW 60°F	INDOOR	ALL	-	-	1"	0.23
	OUTDOOR ABOVE GRADE	ALL	-	-	-	-
REFRIGERANT (ALL) SUCTION, HOT GAS, VAPOR, & LIQUID PIPING	INDOOR	ALL	1"	0.26	1"	0.23
	OUTDOOR ABOVE GRADE	ALL	1"	0.26	-	-
REFRIGERANT (ALL) SUCTION, HOT GAS, VAPOR, & LIQUID FLEXIBLE TUBING	INDOOR	ALL	1"	0.26	-	-
	OUTDOOR ABOVE GRADE	ALL	1"	0.26	-	-

BLANKS (-) INDICATE INSULATION TYPE SHALL NOT BE USED. THICKNESS BASED ON INSULATION HAVING A THERMAL CONDUCTIVITY (K) NOT EXCEEDING VALUES NOTED IN TABLE ABOVE (BTU PER INCH\* FT\* F). FOR ALL OTHER K VALUES CONTRACTOR TO PERFORM CALCULATIONS IN SECTION C403.2.8 OF THE IECC 2015 CODE TO PROVE OTHER INSULATION THICKNESSES.

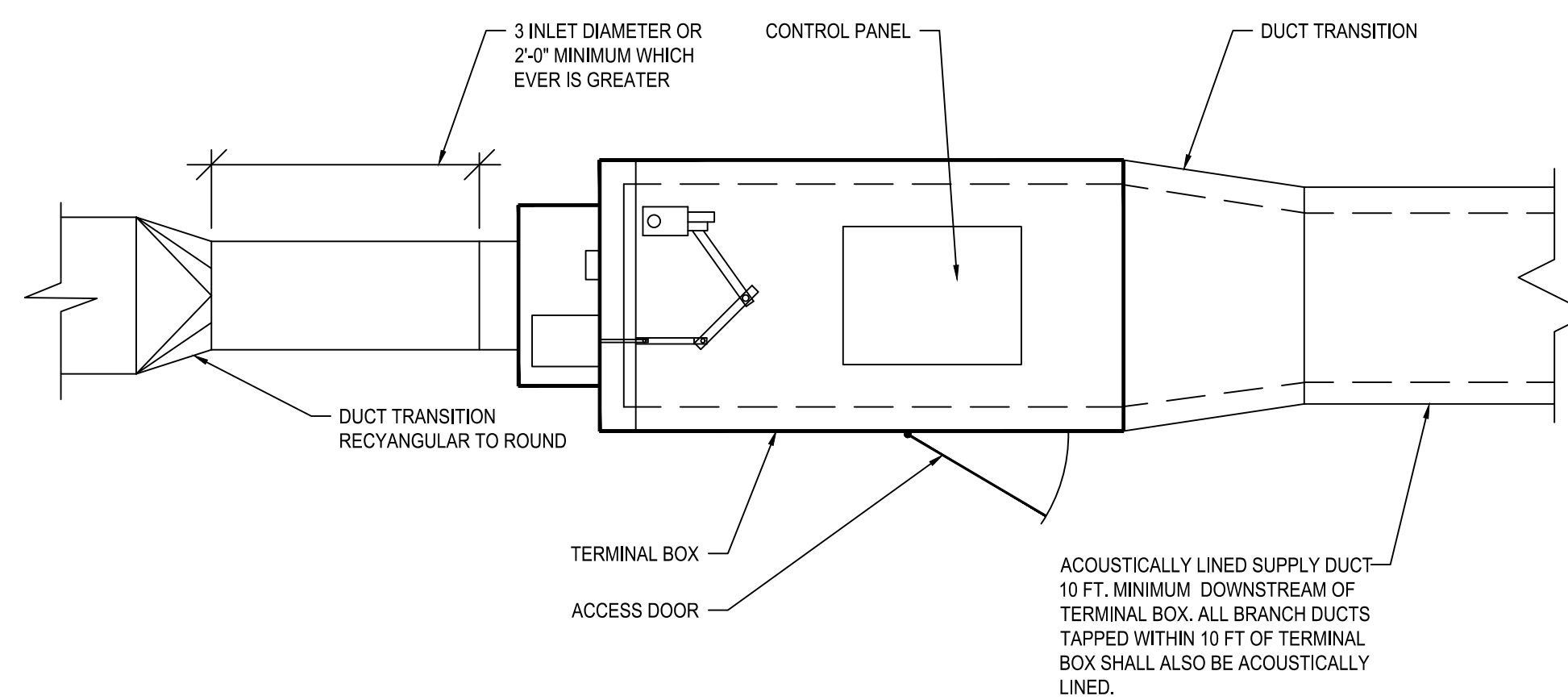
- 1. ALL EXPOSED INDOOR PIPING/TUBING AND FITTINGS WITHIN OCCUPIED SPACES, CORRIDORS, MECHANICAL ROOMS AND OTHER NON-CONCEALED LOCATIONS SHALL BE FITTED WITH PVC FITTING COVERS AND PVC PIPE COVERS FROM THE FLOOR LEVEL. PVC FITTING AND PIPE COVERS SHALL BE 25/50 FLAME AND SMOKE SPREAD RATED. COVERS AND JACKETING COLOR TO BE SELECTED BY ARCHITECT. PROVIDE TEMPLATE OF JACKET COLORS FOR THE ARCHITECT'S REVIEW.
- 2. ALL ELBOWS, CONCEALED OR EXPOSED, SHALL BE INSULATED WITH PRE-MOLDED, FACTORY FORMED FIBROUS GLASS WITH 3.5 PCF MINIMUM DENSITY AS MANUFACTURED BY HAMFAB OR APPROVED EQUAL. ALL ELBOWS, CONCEALED OR EXPOSED, SHALL BE COVERED WITH PVC FITTING COVERS. PVC FITTING COVERS SHALL BE 25/50 FLAME AND SMOKE SPREAD RATED. COVER COLOR TO BE SELECTED BY ARCHITECT. PROVIDE TEMPLATE OF JACKET COLORS FOR THE ARCHITECT'S REVIEW.
- 3. DIAPER AND LOOSE FILL STYLE INSULATION ON PIPE FITTINGS IS NOT ACCEPTABLE. ELBOWS WITHOUT PVC COVERS ARE NOT ACCEPTABLE.
- 4. INSULATE ALL COILS MOUNTED IN DUCTWORK OR TERMINAL BOXES. INSULATION THICKNESS SHALL BE EQUAL TO THE ASSOCIATED DUCT INSULATION THICKNESS.
- 5. ALL OUTDOOR PIPING/TUBING SHALL BE FITTED WITH A PRE-MANUFACTURED ALUMINUM JACKET PRODUCT. 0.024" ALUMINUM JACKET LOCK-ON OR SLIP-ON TYPE JACKETING TO BE COVERED WITH ACRYLIC COATING ON THE OUTER SURFACE AND A BAKED EPOXY MOISTURE BARRIER ON THE INNER SURFACE. MANUFACTURER SHALL BE SIMILAR TO CHILDERS PRODUCTS, DIVISION OF ITW, METAL JACKETING SYSTEMS. ALL EXPOSED JOINTS IN THE JACKET PRODUCT SHALL BE INSTALLED IN SUCH A WAY AS TO PREVENT THE INFILTRATION OF MOISTURE AND WATER.

drawing title		STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES	
SCHEDULES - MECHANICAL			
REVISIONS			
mark	date	description	drawing prepared by
X.X.X	8.17.19	DESIGN DEVELOPMENT	KOHLER RONAN
X.X.X	12.03.19	CONSTRUCTION DOCUMENTS	93 LAKE AVENUE DANBURY, CT 06810
project		date	
540 MAIN AVENUE NORWALK DMV ROOF HVAC		01/22/2019	
NORWALK, CT		scale NONE	
drawing no.		drawing no.	
M-200		M-200	
C:\31 no. 18086-M-001-Cover Sheet.dwg		project no. BI-MM-53	



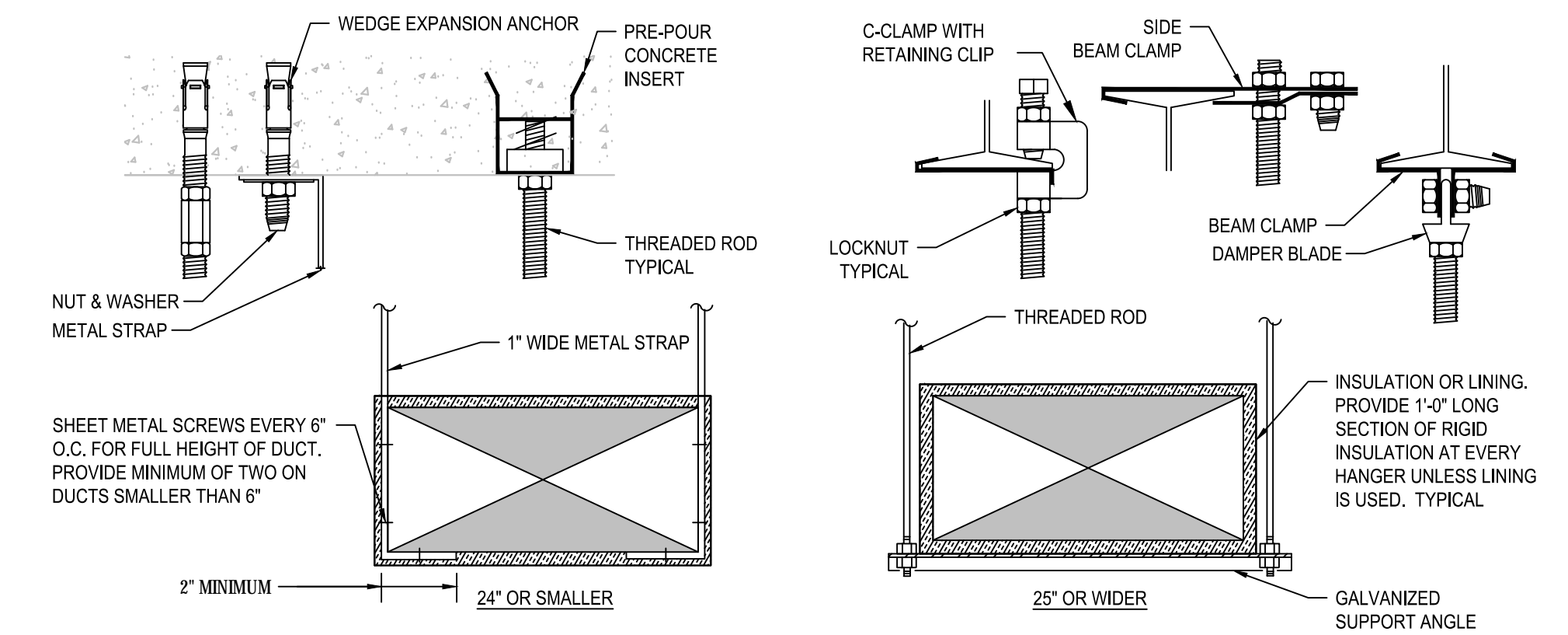


**1 DUCT CONSTRUCTION DETAIL**  
M-300 NONE



- NOTES:
1. WHEN MINIMUM UPSTREAM STRAIGHT DUCT CONNECTION TO TERMINALS AS INDICATED ABOVE CANNOT BE MAINTAINED, PROVIDE ORIFICE PLATE, STRAIGHTENING VANES OR OTHER DEVICE AS RECOMMENDED BY TERMINAL UNIT MANUFACTURER AND SUBMIT TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION.
  2. ARRANGE ACCESS TO PERMIT EASY FIELD BALANCE AND MAINTENANCE OF TERMINAL UNIT.
  3. CONTRACTOR SHALL INSTALL TERMINAL BOX TO ALLOW FOR A MINIMUM OF 18\"/>

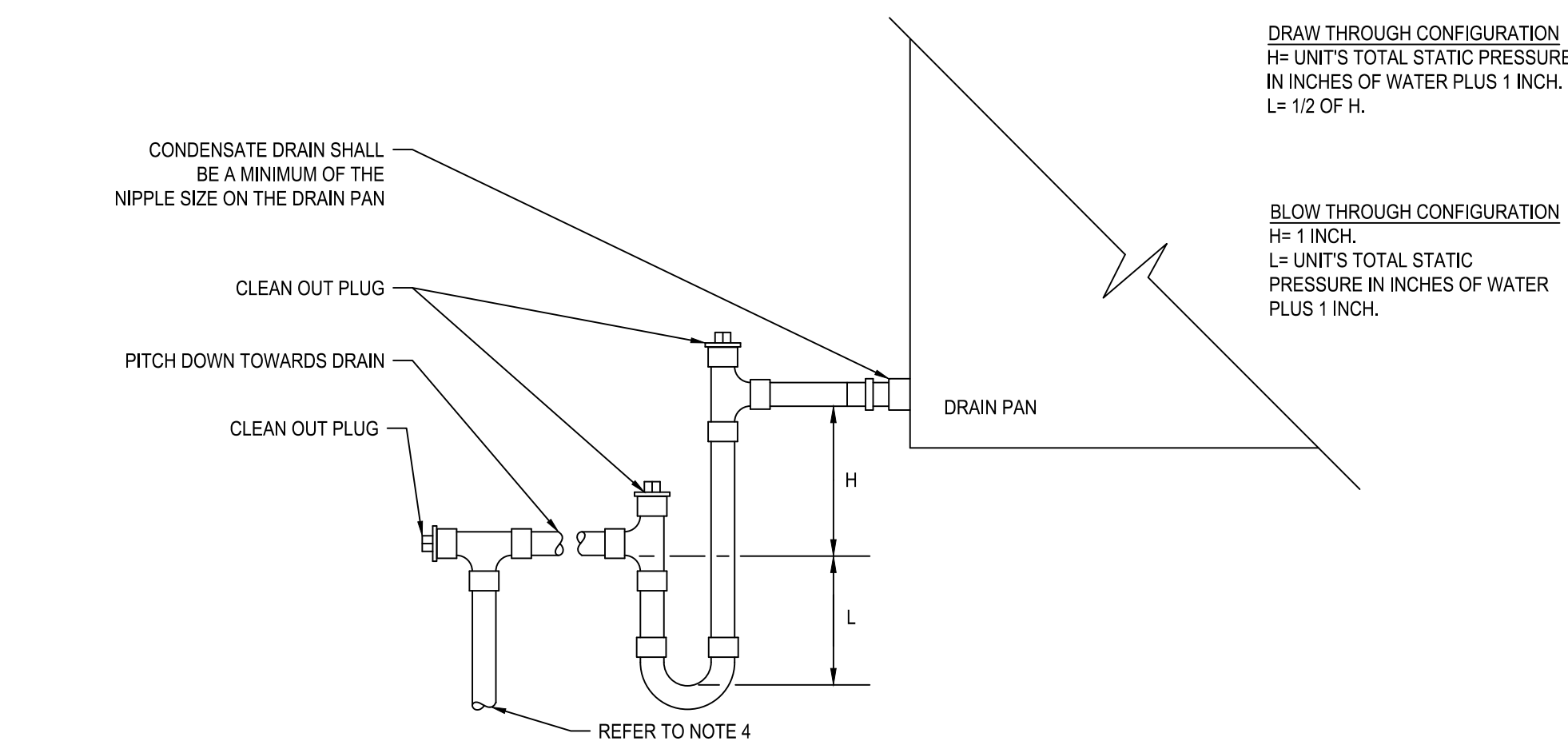
**2 TERMINAL BOX INSTALLATION DETAIL**  
M-300 NONE



DUCT WIDTH	SUPPORT ANGLE OR EQUIV. CHANNEL	ROD DIA.	MAXIMUM SPACING	MAXIMUM AREA *
25\"/>				

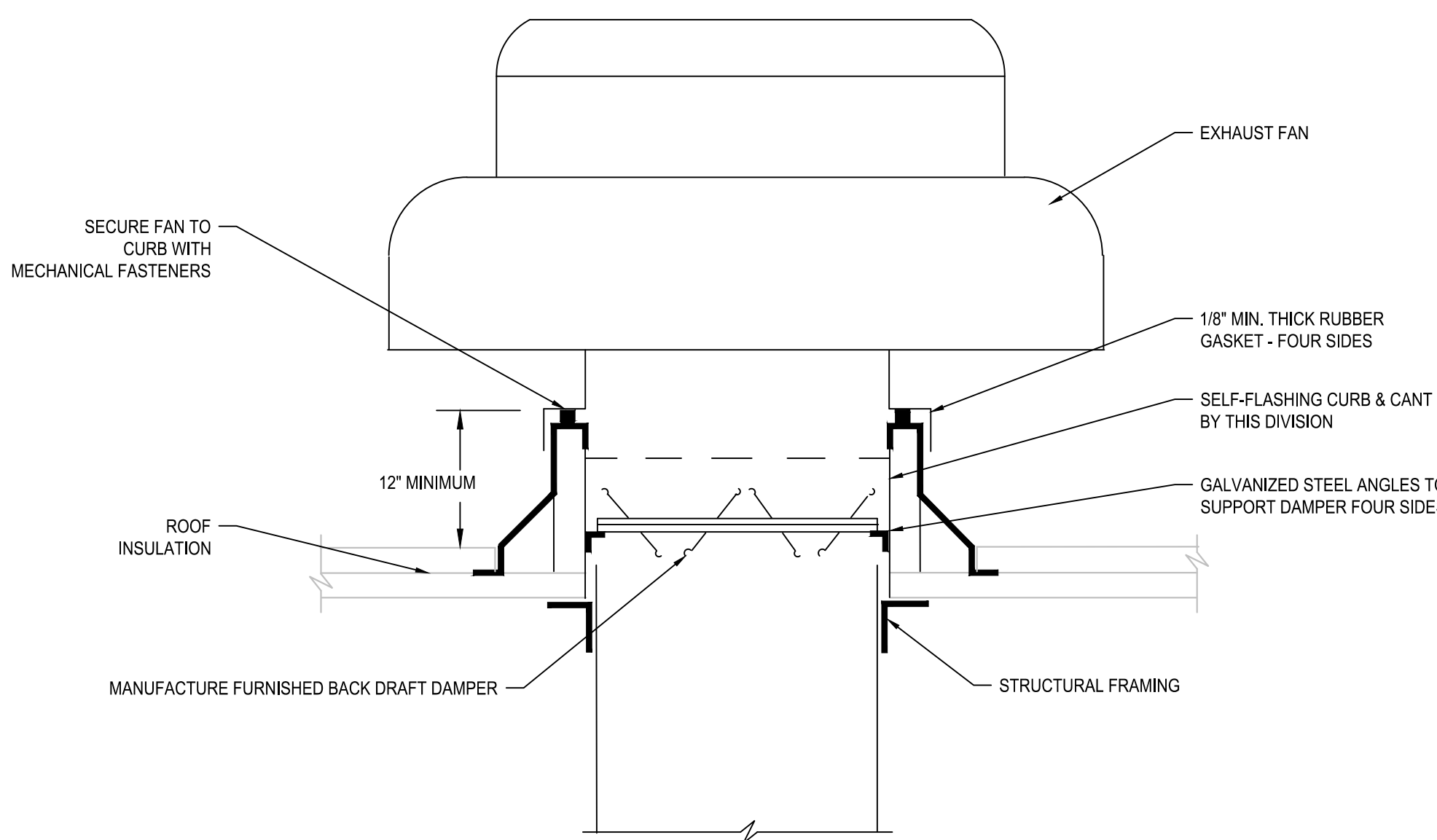
\* REDUCE SPACING TO NEXT SMALLER INTERVAL IF DUCT AREA EXCEEDS MAXIMUM

**3 DUCT SUPPORT DETAIL**  
M-300 NONE

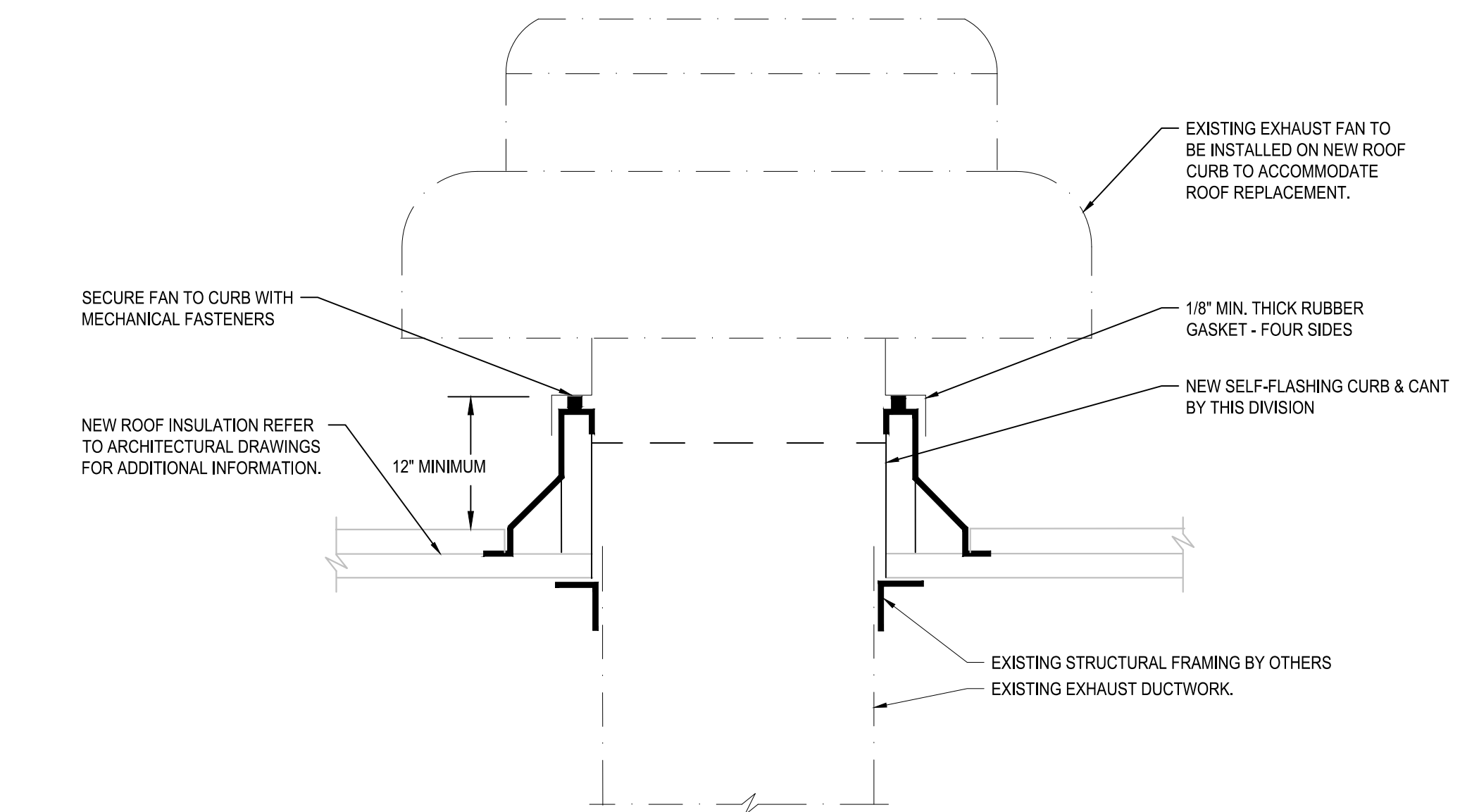


- NOTES:
1. REFER TO FLOOR PLANS AND SCHEDULES TO DETERMINE UNIT'S CONFIGURATION.
  2. REFER TO SCHEDULES FOR UNIT'S TOTAL STATIC PRESSURES.
  3. MANUALLY PRIME TRAP PRIOR TO START-UP OF UNIT.
  4. UNITS ABOVE CEILINGS: DRAIN PIPING SHALL BE INSULATED AND PIPED TO THE DISCHARGE POINT WITH AN AIR GAP OF 2 TIMES THE CONDENSATE DRAIN SIZE.
  5. UNITS ON ROOFS: DRAIN PIPING SHALL BE PIPED TO ROOF DRAIN, SPLASH BLOCK (BY THIS DIVISION) OR LOCATED INSIDE BUILDING.
  6. UNITS INSIDE BUILDING: DRAIN PIPING SHALL BE INSULATED AND PIPED TO THE DISCHARGE POINT WITH AN AIR GAP OF 2 TIMES THE CONDENSATE DRAIN SIZE.

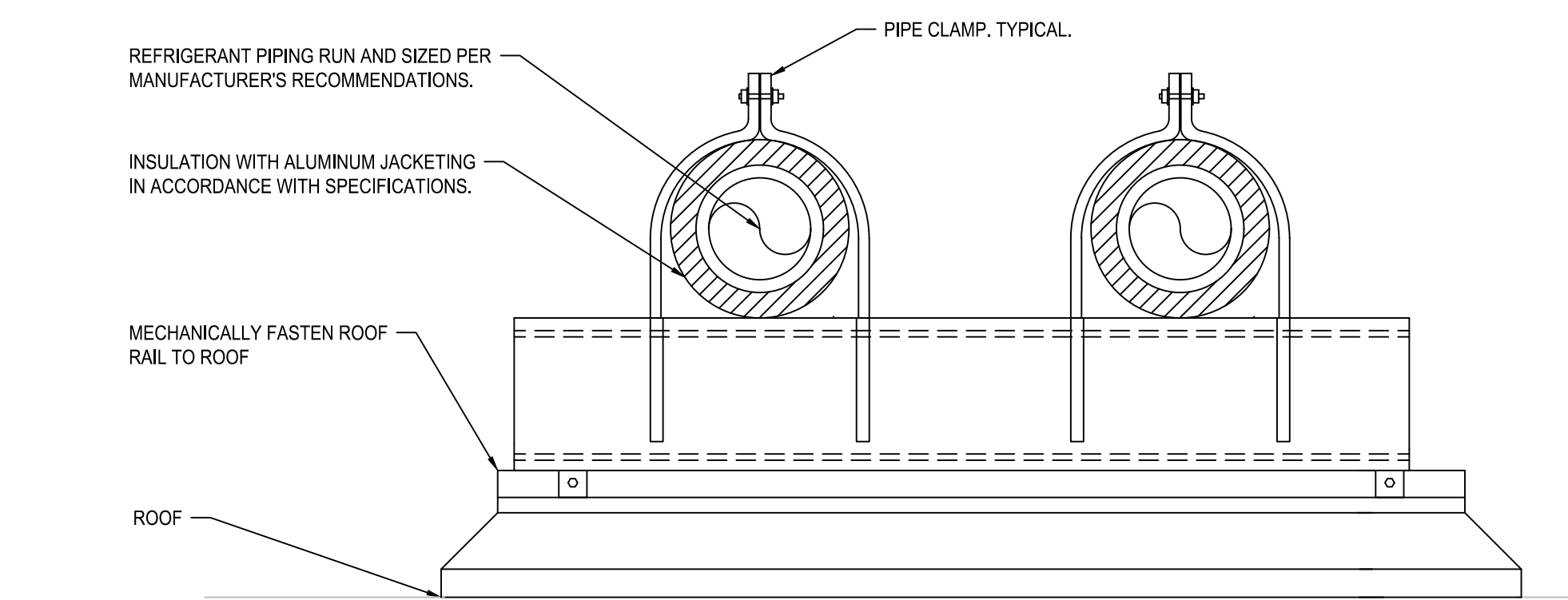
**4 COOLING COIL DRAIN TRAP DETAIL**  
M-300 NONE



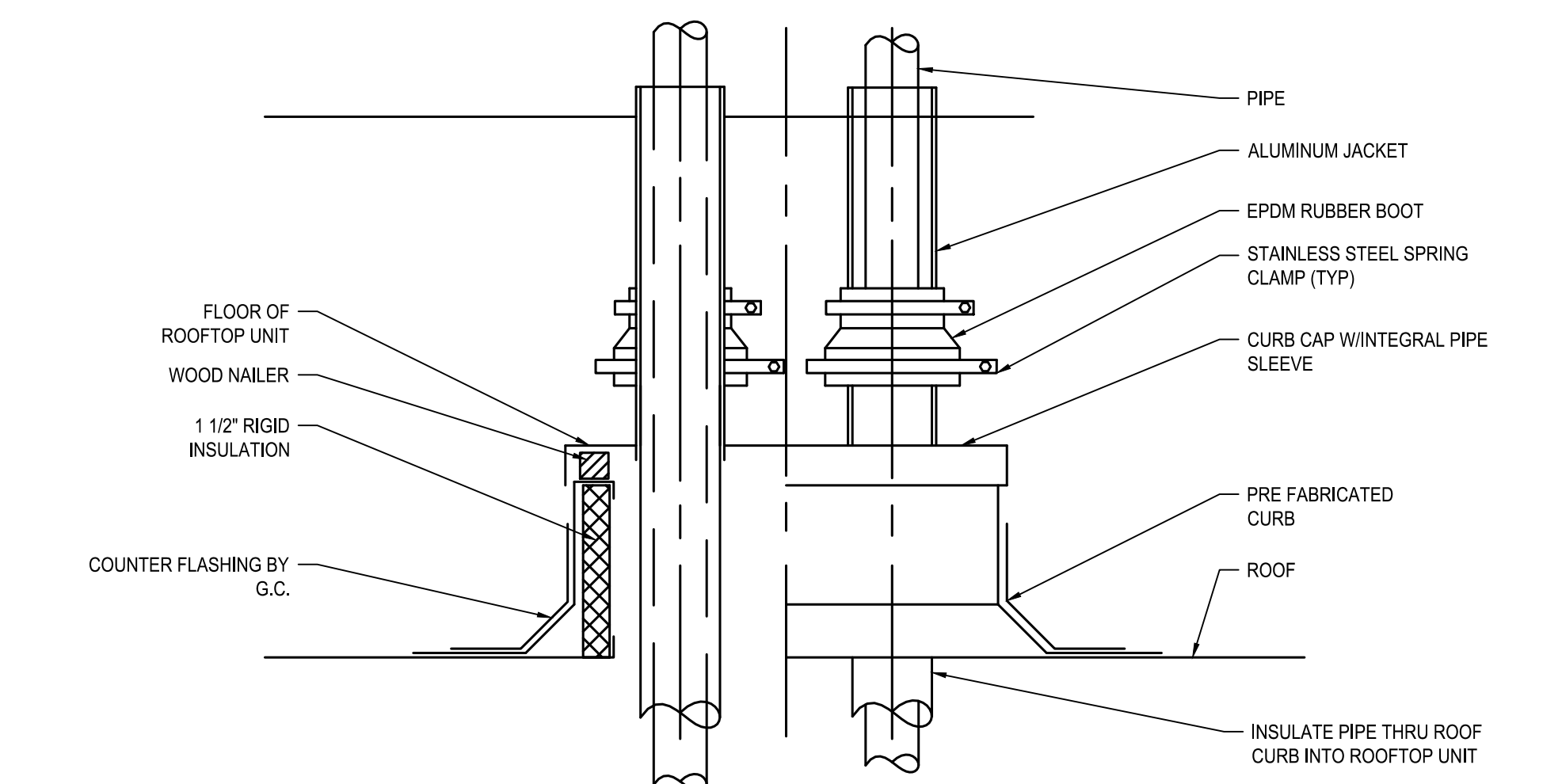
**5 NEW ROOF MOUNTED EXHAUST/RELIEF FAN DETAIL**  
M-300 NONE



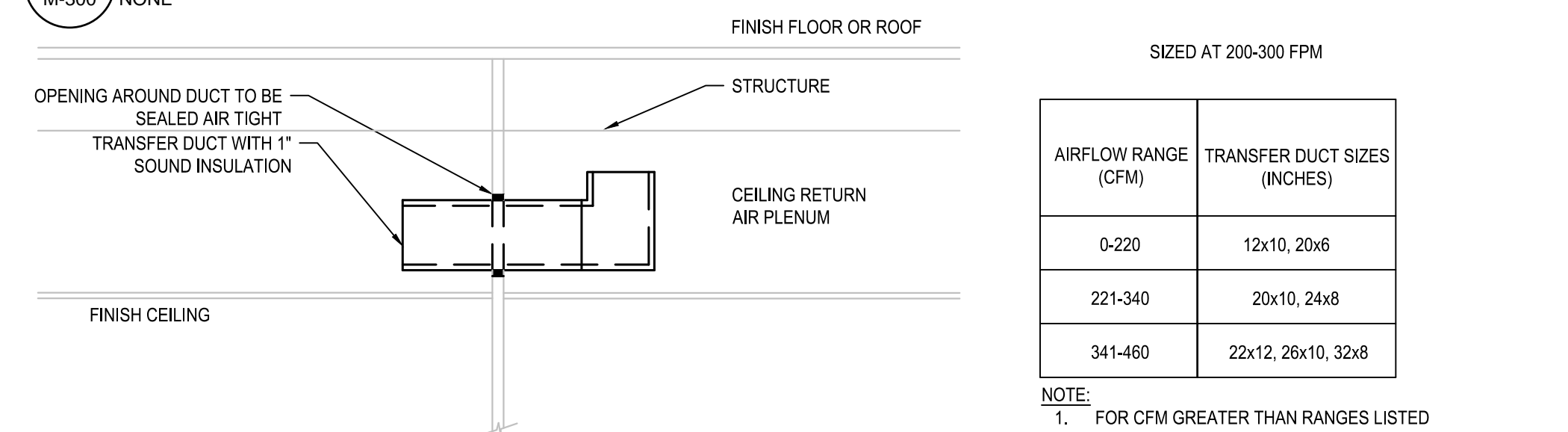
**6 EXISTING ROOF MOUNTED EXHAUST/RELIEF FAN DETAIL**  
M-300 NONE



**7 PIPING ROOF SUPPORT DETAIL**  
M-300 NOT TO SCALE



**8 PIPING ROOF PENETRATION DETAIL**  
M-300 NOT TO SCALE



AIRFLOW RANGE (CFM)	TRANSFER DUCT SIZES (INCHES)
0-220	12x10, 20x6
221-340	20x10, 24x8
341-460	22x12, 26x10, 32x8

- NOTE:
1. FOR CFM GREATER THAN RANGES LISTED ABOVE, PROVIDE MULTIPLE DUCTS.
  2. DUCTWORK SIZED AT 200-300 FPM

**9 RETURN AIR PLENUM TRANSFER DUCT DETAIL**  
M-300 NOT TO SCALE



drawing title <b>DETAILS - MECHANICAL</b>		<b>STATE OF CONNECTICUT</b> DEPARTMENT OF ADMINISTRATIVE SERVICES	
REVISIONS		drawing prepared by <b>KOHLER RONAN</b> 93 LAKE AVENUE DANBURY, CT 06810	
mark	date	description	date
X.X.X	8.17.19	DESIGN DEVELOPMENT	01/22/2019
X.X.X	12.03.19	CONSTRUCTION DOCUMENTS	scale NONE
project <b>540 MAIN AVENUE</b> <b>NORWALK DMV ROOF HVAC</b> <b>NORWALK, CT</b>		drawn by FMD	
CUI no. 19886-M-001-Cover Sheet.dwg		approved by KR	
project no. BI-MM-53		drawing no. <b>M-300</b>	

## GENERAL NOTES

GENERAL	MECHANICAL EQUIPMENT WIRING:																									
<p>1. WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT, AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.</p> <p><b>WIRING &amp; RACEWAY:</b></p> <p>1. THE DRAWINGS SHOW THE GENERAL LAYOUT AND TYPICAL DETAILS. PROVIDE COMPLETE SYSTEMS. DRAWINGS ARE BASED ON THE SPECIFIED EQUIPMENT, RACEWAY LAYOUTS, BOXES, AND WIRING OF THE SYSTEMS ARE SUBJECT TO APPROVED SHOP DRAWINGS.</p> <p>2. ENSURE THAT ITEMS TO BE FURNISHED FIT THE SPACE AVAILABLE. MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS, AND PROVIDE SUCH SIZES AND SHAPES OF EQUIPMENT THAT FINAL INSTALLATION SHALL SATISFY THE INTENT OF THE DRAWINGS AND SPECIFICATIONS.</p> <p>3. LOCATIONS OF OUTLETS, SWITCHES, APPLIANCES, ETC. AS SHOWN ON ELECTRICAL PLANS ARE APPROXIMATE. COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS AND DETAILS, AND WITH JOB CONDITIONS. INSTALL SWITCHES WITH "OFF" POSITION DOWN. INSTALL RECEPTACLES WITH GROUNDING POLE IN THE UP POSITION FOR VERTICAL MOUNTING AND AT LEFT FOR HORIZONTAL MOUNTING.</p> <p>4. LOCATE AND INSTALL ELECTRICAL EQUIPMENT, JUNCTION AND PULL BOXES, PANELBOARDS, SWITCHES, CONTROLS, AND OTHER APPARATUS REQUIRING MAINTENANCE, INSPECTION, AND OPERATION SO AS TO BE READILY ACCESSIBLE.</p> <p><b>RACEWAY INSTALLATION:</b></p> <p>1. IN ALL ARCHITECTURALLY FINISHED SPACES, CONDUITS AND CABLES SHALL BE RUN CONCEALED IN HUNG OR FURRED CEILINGS, SLABS, MASONRY, AND PARTITIONS UNLESS OTHERWISE INDICATED. SAW CUTTING AND FINISHED PATCHING SHALL BE REQUIRED IN EXISTING SLABS AND MASONRY WALLS. IN UNFINISHED SPACES, RACEWAYS MAY BE RUN EXPOSED.</p> <p>2. UNLESS OTHERWISE INDICATED, EXACT ROUTING OF RACEWAYS SHALL BE DETERMINED BY THE CONTRACTOR TO SUIT PROJECT REQUIREMENTS AND FIELD CONDITIONS.</p> <p>3. PROVIDE SEPARATE RACEWAYS, JUNCTION BOXES, PULL BOXES AND WIREWAYS FOR ALL EMERGENCY SYSTEM WIRING.</p> <p><b>WIRING INSTALLATION:</b></p> <p>1. DO NOT USE WIRE SMALLER THAN NO. 12 AWG FOR ANY POWER OR LIGHTING CIRCUIT. USE LARGER SIZES WHERE INDICATED, AS REQUIRED BY CODES, AND AS FOLLOWS:</p> <table border="1" style="margin: 5px auto; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">30 AMPERE CIRCUIT: NO. 10</th> <th style="text-align: center;">40 AMPERE CIRCUIT: NO. 8</th> <th style="text-align: center;">50 AMPERE CIRCUIT: NO. 6</th> <th style="text-align: center;">60 AMPERE CIRCUIT: NO. 4</th> </tr> </thead> <tbody> <tr> <td>LENGTH</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>0 TO 50'</td> <td style="text-align: center;">#12</td> <td style="text-align: center;">#12</td> <td style="text-align: center;">#10</td> <td style="text-align: center;">#8</td> </tr> <tr> <td>51 TO 100'</td> <td style="text-align: center;">#12</td> <td style="text-align: center;">#12</td> <td style="text-align: center;">#10</td> <td style="text-align: center;">#8</td> </tr> <tr> <td>101 TO 200'</td> <td style="text-align: center;">#10</td> <td style="text-align: center;">#8</td> <td style="text-align: center;">#6</td> <td style="text-align: center;">#4</td> </tr> </tbody> </table> <p>GREATER THAN 200' - REQUEST DIRECTION FROM ENGINEER.</p> <p>NOTE: PROVIDE DERATING PER CODE WHEN INSTALLING MORE THAN 3 CURRENT CARRYING CONDUCTORS IN CONDUIT.</p> <p>2. DO NOT USE WIRE SMALLER THAN NO. 14 AWG FOR CONTROL CIRCUITS UNLESS OTHERWISE RECOMMENDED BY THE EQUIPMENT OR SYSTEM MANUFACTURER ON WIRING SHOP DRAWINGS, AND SO APPROVED BY THE ARCHITECT.</p> <p>3. WHERE GREATER THAN THREE (3) CURRENT-CARRYING CONDUCTORS ARE INSTALLED IN ANY ONE CONDUIT OR CABLE, CONDUCTORS MUST BE DERATED AND SIZES INCREASED, IF NEEDED, TO ACCOMMODATE CONDUCTOR DERATING AS REQUIRED BY NEC ARTICLE 310.</p> <p>4. CONDUCTORS SHALL BE COMPLETELY INSTALLED AND CONNECTED. PROVIDE ALL TERMINALS, LUGS, AND CONNECTORS TO SUIT THE APPLICATION, AND IN COMPLIANCE WITH EQUIPMENT MANUFACTURERS' RECOMMENDATIONS.</p> <p>5. UNDER NO CIRCUMSTANCES SHALL ANY SWITCH OR CIRCUIT BREAKER BREAK A NEUTRAL CONDUCTOR.</p> <p>6. THE CIRCUIT NUMBERS INDICATED ON THE DRAWINGS ARE INTENDED AS A GUIDE FOR PROPER CONNECTION OF CIRCUITS AT PANELBOARDS; HOWEVER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE FINAL CIRCUITING WORK FULFILLS THE FOLLOWING CONDITIONS:</p> <p>A. LOADS ON PANELBOARD BUSES SHALL BE PHASE-BALANCED AS EVENLY AS POSSIBLE.</p> <p>7. PROVIDE SEPARATE NEUTRALS FOR EACH CIRCUIT, WHERE MULTIPLE CIRCUITS ARE INSTALLED IN THE SAME RACEWAY OR ENCLOSURE. IDENTIFY NEUTRALS WITH CORRESPONDING BRANCH CIRCUIT PHASE CONDUCTOR NUMBERS.</p> <p><b>GROUNDING INSTALLATION:</b></p> <p>1. EQUIPMENT GROUNDING</p> <p>A. INSTALL AN INSULATED GROUND CONDUCTOR, RUN IN THE RACEWAY WITH THE PHASE CONDUCTORS, FOR EACH FEEDER SERVING PANELBOARDS, LIGHTING DIMMER BOARDS, MOTOR CONTROL CENTERS, MOTORS, EQUIPMENT AND APPLIANCES UNLESS OTHERWISE NOTED.</p> <p>B. INCLUDE AN INSULATED GROUND CONDUCTOR IN ALL CONDUIT RUNS CONTAINING SECTIONS OF FLEXIBLE CONDUIT UNLESS OTHERWISE NOTED.</p> <p>C. INCLUDE AN INSULATED GROUND CONDUCTOR IN ALL BRANCH CIRCUIT RACEWAYS OR CABLES UNLESS OTHERWISE NOTED.</p>		30 AMPERE CIRCUIT: NO. 10	40 AMPERE CIRCUIT: NO. 8	50 AMPERE CIRCUIT: NO. 6	60 AMPERE CIRCUIT: NO. 4	LENGTH					0 TO 50'	#12	#12	#10	#8	51 TO 100'	#12	#12	#10	#8	101 TO 200'	#10	#8	#6	#4	<p>1. UNLESS OTHERWISE INDICATED OR SPECIFIED HEREIN, ALL MOTORS, MOTOR STARTERS, MOTOR CONTROLLERS, VARIABLE SPEED/FREQUENCY DRIVES, AND ASSOCIATED CONTROL DEVICES ARE FURNISHED UNDER OTHER DIVISIONS AND INSTALLED UNDER THIS DIVISION. COORDINATE INSTALLATION AND LOCATIONS WITH OTHER DIVISION CONTRACTORS.</p> <p>2. POWER WIRING FROM THE INDICATED SOURCE TO THE STARTER/CONTROLLER/DRIVE UNIT, AND FROM THE STARTER/CONTROLLER/DRIVE UNIT TO THE MOTOR, INCLUDING ANY LOCAL DISCONNECT SWITCHES PROVIDED AND INSTALLED BY THIS DIVISION, AND ALL ASSOCIATED LUGS, TERMINALS, AND CONNECTIONS, IS THE WORK OF THIS DIVISION.</p> <p>3. CONTROL CIRCUIT WIRING IS GENERALLY FURNISHED AND INSTALLED UNDER OTHER DIVISIONS, EXCEPT THAT ANY SUCH WIRING SHOWN ON ELECTRICAL DRAWINGS IS WORK OF THIS DIVISION.</p> <p>4. COOPERATE AND COORDINATE WITH THE OTHER TRADES IN THE INSTALLATION, CONNECTION, AND TESTING OF MECHANICAL EQUIPMENT. PERFORM WORK OF THIS SECTION IN ACCORDANCE WITH EQUIPMENT MANUFACTURERS' INSTRUCTIONS.</p> <p><b>COORDINATION DRAWINGS:</b></p> <p>1. DEVELOP AND SUBMIT COORDINATION DRAWINGS AS OUTLINED.</p> <p>A. SHEET METAL, PLUMBING AND FIRE PROTECTION SHOP DRAWINGS THAT HAVE BEEN COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW. DRAWINGS MUST BE RETURNED FROM ENGINEER EITHER "REVIEWED" OR "FURNISH AS CORRECTED" PRIOR TO BEING USED AS BASIS FOR COORDINATION DRAWINGS.</p> <p>B. AFTER SHEET METAL AND PIPING DRAWINGS HAVE BEEN REVISED PER ENGINEERS COMMENTS, REPRODUCIBLE COPIES SHALL BE SENT TO THE TRADES IN THE FOLLOWING SEQUENCE FOR THE INCLUSION OF THEIR WORK:</p> <ul style="list-style-type: none"> <li>-MECHANICAL SHEET METAL</li> <li>-MECHANICAL PIPING</li> <li>-ELECTRICAL WORK</li> </ul> <p>2. AFTER ALL TRADES HAVE INCLUDED THEIR WORK ON THE COORDINATION DRAWING AND NOTED CONFLICTS, ALL TRADES SHALL MEET TO RESOLVE CONFLICTS AND AGREE TO ACCEPTABLE SOLUTIONS. EACH TRADE SHALL SIGN COORDINATION DRAWINGS. ITEMS NOT SHOWN ON COORDINATION DRAWING IS RESPONSIBILITY OF OMITTING CONTRACTOR AND CONTRACTOR IS SUBJECT TO ADDITIONAL COSTS INCURRED BY OTHER TRADES.</p> <p>3. THE ARCHITECT AND ENGINEER ARE NOT PART OF THE COORDINATION DRAWING PROCESS. THE ENGINEER WILL PROVIDE ASSISTANCE FOR NOTED CONFLICTS ONLY. COORDINATION DRAWINGS ARE NOT TO BE CONSIDERED PIPING OR DUCT SHOP DRAWINGS. THE CONTRACTOR IS REQUIRED TO SUBMIT INDIVIDUAL PIPING AND DUCTWORK SHOP DRAWINGS FOR REVIEW BY THE ENGINEER. PIPING AND DUCTWORK SHOP DRAWINGS SHALL FOLLOW THE DESIGN INTENT OF THE CONTRACT DOCUMENTS.</p> <p>4. SUBMIT FINAL SIGNED COORDINATION DRAWING TO ENGINEER FOR REVIEW. ENGINEER WILL REVIEW COORDINATION DRAWINGS FOR GENERAL ARRANGEMENT AND FOR NOTED CONFLICTS ONLY. SPECIFIC INSTALLATION REQUIREMENTS WILL BE REVIEWED ONLY IN INDIVIDUAL TRADE SHOP DRAWINGS.</p> <p>5. ANY WORK FABRICATED OR INSTALLED PRIOR TO SIGN OFF BY ALL TRADES WHICH IS DEEMED TO BE IN CONFLICT WITH COORDINATION DRAWINGS SHALL BE REMOVED AND RE-INSTALLED IN CONFORMANCE WITH COORDINATION DRAWINGS.</p> <p>6. EACH CONTRACTOR (MENTIONED ABOVE) IS RESPONSIBLE FOR THE COORDINATION OF HIS SUB-CRTRACTORS.</p> <p>7. THE OVERALL COORDINATION OF THE COORDINATION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE ENGINEER IS NOT RESPONSIBLE FOR THE COORDINATION PROCESS. THE ENGINEER WILL RESPOND TO QUESTIONS THAT ARISE FROM THE COORDINATION PROCESS. DRAWINGS SUBMITTED WILL BE REVIEWED FOR CLEARLY IDENTIFIED CONFLICTS ONLY. SOLUTIONS TO CONFLICTS WILL NOT BEAR ADDITIONAL COST.</p> <p><b>AS BUILT DRAWINGS</b></p> <p>1. PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.</p> <p>2. PROVIDE "AS BUILT DRAWINGS" INDICATING IN A NEAT AND ACCURATE MANNER A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:</p> <p>A. INCLUDE ALL CHANGES AND AN ACCURATE RECORD, ON REPRODUCTIONS OF THE CONTRACT DRAWINGS OR APPROPRIATE SHOP DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND WORK INSTALLED.</p> <p>B. EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.</p> <p>C. APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.</p> <p>D. CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.</p> <p>E. SUBMIT FOR REVIEW BOUND SETS OF THE REQUIRED DRAWINGS, MANUALS AND OPERATING INSTRUCTIONS.</p>
	30 AMPERE CIRCUIT: NO. 10	40 AMPERE CIRCUIT: NO. 8	50 AMPERE CIRCUIT: NO. 6	60 AMPERE CIRCUIT: NO. 4																						
LENGTH																										
0 TO 50'	#12	#12	#10	#8																						
51 TO 100'	#12	#12	#10	#8																						
101 TO 200'	#10	#8	#6	#4																						

## DEMOLITION AND REMOVALS

<p>1. THE EXISTING FACILITY WILL BE OCCUPIED AND IN OPERATION DURING THE PERFORMANCE OF THE WORK.</p> <p>2. WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING FEEDER OR BRANCH CIRCUIT SUPPLYING OCCUPIED FACILITIES, CONFER WITH THE OWNER, AND SCHEDULE A MUTUALLY AGREED-UPON PERIOD OF INTERRUPTION.</p> <p>3. WHERE REPLACEMENT, RELOCATION OR MODIFICATION OF EXISTING EQUIPMENT IS INDICATED, PROVIDE AND MAINTAIN ALL TEMPORARY FEEDERS, CONNECTIONS, CIRCUIT PROTECTION, AND ANY OTHER MATERIALS AND APPURTENANCES REQUIRED TO MAINTAIN SERVICES TO OCCUPIED AREAS.</p> <p>4. NO WORK SHALL BE LEFT INCOMPLETE, NOR ANY HAZARDOUS SITUATION CREATED, WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. AT NO TIME SHALL THE WORK INTERFERE WITH OR CUT OFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S PRIOR WRITTEN PERMISSION.</p> <p>5. IT IS REQUIRED THAT THE WORK INDICATED AND/OR SPECIFIED SHALL BE CARRIED OUT WITH A MINIMUM OF INTERFERENCE TO THE ESTABLISHED OPERATIONS OF THE BUILDING.</p> <p>6. REMOVE, ABANDON, REROUTE, OR RELOCATE ANY CONDUIT, WIRING, LIGHTING FIXTURES, OUTLETS, AND OTHER ELECTRICAL ITEMS, WHICH ARE LADY BARE IN THE COURSE OF, OR INTERFERE WITH, THE ALTERATIONS. REMOVE ALL EXPOSED OUTLETS, CONDUIT, AND BRANCH CIRCUIT WORK, WHICH INTERFERE WITH THE ALTERATIONS.</p> <p>7. IT IS THE INTENTION OF THESE SPECIFICATIONS TO PROVIDE FOR THE CONTINUANCE OF ALL ELECTRICAL SERVICES PRESENTLY INSTALLED IN THE UNALTERED AREAS. PROVIDE ALL CONDUIT, WIRING, AND DEVICES NECESSARY TO MAINTAIN SERVICES TO THESE AREAS.</p> <p>8. COMPARE THE PLANS WITH THE EXISTING CONDITIONS TO DETERMINE THE AMOUNT OF WORK AFFECTED. REMOVE ALL UNUSED EXPOSED CIRCUIT WORK, OUTLETS, FIXTURES AND THE LIKE NOT REQUIRED BY THE ALTERATIONS.</p> <p>9. ALL MATERIALS REQUIRED TO BE REMOVED AND NOT REINSTALLED UNDER THIS DIVISION OF THE WORK, UNLESS OTHERWISE INDICATED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR, AND SHALL BE REMOVED FROM THE SITE.</p> <p>10. WHERE FEEDERS AND BRANCH CIRCUITS OR DEVICES AND EQUIPMENT ARE INDICATED TO BE REMOVED, CONDUCTORS AND CABLES SHALL BE COMPLETELY REMOVED BACK TO THEIR SOURCE. EXPOSED OR ACCESSIBLE CONDUITS SHALL BE REMOVED COMPLETELY; CONDUITS EMBEDDED IN CONCRETE OR MASONRY SHALL BE CUT OFF FLUSH AND THE SURFACE PATCHED SMOOTH AND LEVEL.</p> <p>11. WHERE DEVICES AND/OR EQUIPMENT ARE INDICATED TO BE RELOCATED, CONDUCTORS AND RACEWAY SHALL BE EXTENDED TO THE NEW LOCATION AND RECONNECTED TO PROVIDE A COMPLETE WORKING SYSTEM. IF THERE ARE ASSOCIATED DEVICES WITH THE RELOCATED EQUIPMENT THEY SHALL BE RELOCATED AS WELL, UNLESS OTHERWISE NOTED, AND CONNECTED INTO THE SYSTEM.</p> <p>12. REMOVED MATERIALS SHALL BE DISPOSED OF USING LICENSED CARTING SERVICE.</p> <p>13. HAZARDOUS MATERIALS - CONTAINING PCB'S (BALLASTS), AND THE LIKE SHALL BE DISPOSED OF BY AN EPA APPROVED, LICENSED DISPOSAL SERVICE. CONTRACTOR SHALL OBTAIN AND HAVE ON FILE, AFFIDAVIT, AND RECEIPTS STATING HOW AND WHERE THE WASTE WAS DISPOSED OF OR CONVERTED.</p> <p>14. CONDUCTORS THAT ARE NOT DEEMED REUSABLE SHALL BE REMOVED BACK TO THE NEAREST JUNCTION BOX, WHERE THE ENTIRE CIRCUIT IS TO BE REMOVED, THE CONDUCTORS SHALL BE REMOVED BACK TO THE PANELBOARD FROM WHICH THEY ORIGINATE.</p> <p>15. OUTAGES OF EXISTING ELECTRICAL (LIGHTING, POWER, AND SIGNAL) SYSTEMS NECESSITATED BY WORK OF ALL TRADES SHALL BE IN ACCORDANCE WITH FIELD SCHEDULES BY THE GENERAL CONTRACTOR AND OWNER - INCLUDE ALL ELECTRIC WORK OVERTIME AND SUPERVISION TO COMPLY - CONTRACTOR SHALL OBTAIN OWNER'S GENERAL CONTRACTOR'S APPROVAL PRIOR TO DISRUPTING EXISTING ELECTRICAL SYSTEM.</p> <p>16. CONTRACTOR TO MAINTAIN CONTINUITY AND ACCESSIBILITY OF ALL EXISTING SYSTEMS AND SYSTEM EQUIPMENT FEEDERS WHICH MAY BE DISRUPTED FOR WORK OF ANY TRADE.</p> <p>17. ANY EXISTING ELECTRICAL WORK WHICH IS PULLED OUT OR CUT AWAY SHALL BE REMOVED FROM THE SITE AS DIRECTED BY THE GENERAL CONTRACTOR AND THE OWNER.</p> <p>18. FOR PURPOSES OF THE CONTRACT, WHAT IS NOTED OR SHOWN ON DRAWINGS INDICATES THE SCOPE OF WORK REQUIRED AND QUALITY OF MATERIALS REQUIRED.</p> <p>19. CONTRACTOR TO EXAMINE ALL CONTRACT DOCUMENTS AND PERFORM ALL DEMOLITION BOTH FOR AREAS BEING RENOVATED AND FOR AREAS WHICH MUST BE REWORKED TO PERMIT THE INSTALLATION OF WORK BY THE VARIOUS TRADES.</p> <p>20. CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE EXTENT OF DEMOLITION AND REMOVALS PRIOR TO THE SUBMISSION OF BIDS. NO CONSIDERATION SHALL BE GIVEN FOR FAILURE TO VISIT THE SITE.</p> <p>21. CONTRACTOR SHALL UTILIZE ALL THE BREAKERS IN THE EXISTING PANELS THAT BECOME AVAILABLE WHEN BRANCH CIRCUITS ASSOCIATED WITH THEM ARE DISCONNECTED AND REMOVED DUE TO DEMOLITION OF THE ELECTRICAL WORK.</p>
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## ELECTRICAL DRAWING LIST

DRAWING NUMBER	DRAWING DESCRIPTION
E-001	COVER SHEET - ELECTRICAL
ED-101	ROOF DEMOLITION PLAN - ELECTRICAL
E-100	FIRST FLOOR PLAN - ELECTRICAL
E-101	ROOF PLAN - ELECTRICAL
E-500	SCHEDULES AND DETAILS - ELECTRICAL

## ELECTRICAL ABBREVIATIONS

A	AMPERES
AFF	ABOVE FINISHED FLOOR
C	CONDUIT
C/B	CIRCUIT BREAKER
CKT	CIRCUIT
E	EXISTING
E.C.	ELECTRICAL CONTRACTOR
EM	EMERGENCY
ER	EXISTING RELOCATED
ETBR	EXISTING TO BE RELOCATED
ETR	EXISTING TO REMAIN
G	GROUND
JB	JUNCTION BOX
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUG ONLY
MTD	MOUNTED
PNL	PANEL
R	EXISTING TO BE REMOVED
TCP	TEMPERATURE CONTROL PANEL
TW/SH	TWISTED SHIELD
U.O.N.	UNLESS OTHERWISE NOTED
V	VOLTS
VA	VOLT-AMPERES
WP	WEATHER PROOF

## TERMINAL BOX NOTES

<p>1. EACH ELECTRICAL BRANCH CIRCUIT IDENTIFIED FOR TERMINAL BOXES ON DRAWINGS SHALL BE USED TO ENERGIZE UP TO 13 TERMINAL BOXES. SUPPLEMENT WITH ADDITIONAL BRANCH CIRCUITS AS REQUIRED. REFER TO M SERIES DRAWINGS FOR ALL TERMINAL BOX LOCATIONS AND DETAILS.</p>
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## LIGHTING FIXTURE NOTES

<p>1. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL LIGHTING FIXTURES COMPLETE WITH MOUNTING HARDWARE, LAMPS, DRIVERS, TRANSFORMERS, ETC.</p>
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## LIGHTING FIXTURE SCHEDULE

TYPE	LAMP	VOLTAGE	LUMENS	MOUNTING	DESCRIPTION
KR1	20W LED	120V277V	1771 LM	WALL SURFACE	GLASS GLOBE FIXTURE, 4000K TEMPERATURE, 85 CRI, NEMA 4X, IP 66, WHITE COLOR, STANDARD PAL GLASS, 5 YEAR WARRANTY CANLET HIGH PERFORMANCE LED VAPORPROOF #68.

NOTE: PROVIDE LIGHTING FIXTURE SPECIFIED OR EQUIVALENT FROM SPECTRUM LIGHTING OR HUBBELL.

## ELECTRICAL SYMBOLS

A $\phi$ <sub>#</sub>	LIGHTING FIXTURE, UPPERCASE LETTER INDICATES TYPE, # INDICATES CIRCUIT.
SW	MANUAL MOTOR STARTER WITH THERMAL OVERLOAD
SP	SINGLE POLE PILOT LIGHT SWITCH
$\phi$ <sup>GFI</sup>	DUPLEX CONVENIENCE RECEPTACLE - GROUND FAULT INTERRUPTING - 18" AFF U.O.N.
J	WALL MOUNTED JUNCTION BOX
$\odot$	CEILING MOUNTED JUNCTION BOX
$\odot$ <sub>TB</sub>	120VAC CIRCUIT AND JUNCTION BOX FOR TERMINAL BOX. (REFER TO TERMINAL BOX NOTES ON THIS DRAWING)
□	NON-FUSED DISCONNECT SWITCH
$\boxtimes$	COMBINATION MOTOR STARTER/DISCONNECT
$\otimes$	MOTOR, # INDICATES HORSEPOWER
$\odot$	SMOKE DETECTOR
$\odot$ <sub>□</sub>	DUCT MOUNTED SMOKE DETECTOR
FACP	FIRE ALARM CONTROL PANEL
□	SURFACE MOUNTED PANELBOARD AND CLEARANCE
—	CONDUCTOR
X/#	BRANCH CIRCUIT HOMERUN (X = PANELBOARD, # = CIRCUIT NO.)

## ELECTRICAL SCHEDULING NOTES

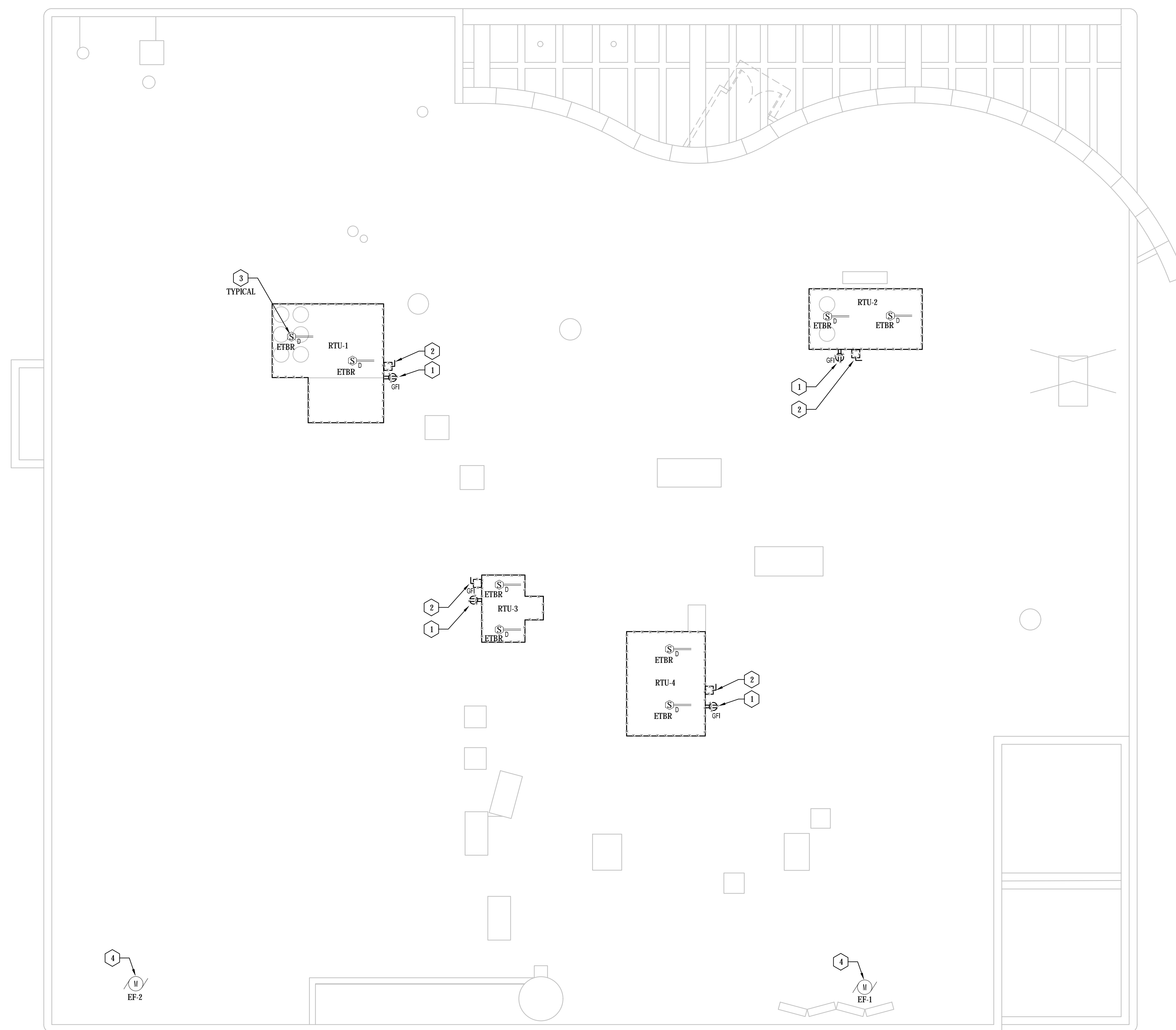
THE BUILDING WILL REMAIN OCCUPIED DURING CONSTRUCTION. ALL INTERIOR WORK SHALL BE PERFORMED ON SUNDAYS AND MONDAYS UNLESS PERMISSION IS OBTAINED FROM OWNER TO WORK INSIDE THE BUILDING ON OTHER DAYS OF THE WEEK.

drawing title			STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES		
COVER SHEET - ELECTRICAL					
REVISIONS					
mark	date	description	drawing prepared by	date	scale
X.X.X	8.17.19	DESIGN DEVELOPMENT	<b>KOHLER RONAN</b> 93 LAKE AVENUE DANBURY, CT 06810	01/22/2019	NONE
X.X.X	12.03.19	CONSTRUCTION DOCUMENTS			
			project	drawn by	approved by
			540 MAIN AVENUE NORWALK DMV ROOF HVAC NORWALK, CT	SW	JOC
			CAD no.	project no.	<b>E-001</b>
			8069-E-001-Cover Sheet.dwg	BI-MM-53	



**DEMOLITION KEY NOTES**

- 1 DISCONNECT AND REMOVE ALL EXISTING RECEPTACLES, BACKBOXES, CONDUIT AND WIRING SERVING EXISTING ROOFTOP UNITS BACK TO INTERIOR POINT BELOW ROOF. PROVIDE JUNCTION BOX AND NEW CONDUIT AND WIRING AS REQUIRED, MATCHING EXISTING, FROM INTERIOR POINT BELOW ROOF TO THE NEW RECEPTACLES MOUNTED ON THE ROOFTOP UNITS.
- 2 DISCONNECT AND REMOVE ALL FINAL CONNECTIONS, DISCONNECT SWITCHES, BOXES, AND CONDUIT AND WIRING SERVING ROOFTOP UNIT BACK TO SOURCE PANELBOARD.
- 3 EXISTING DUCT MOUNTED SMOKE DETECTORS ARE TO BE REMOVED AND SALVAGED. NEW SAMPLING TUBES SHALL BE PROVIDED. DISCONNECT EXISTING DETECTORS AND REINSTALL TO THE NEW DUCT RISER. RECONNECT TO THE EXISTING FIRE ALARM SYSTEM AND EXTEND EXISTING CONDUIT AND WIRING TO REVISED LOCATION, MATCHING EXISTING CONDUIT AND WIRING.
- 4 EXISTING EXHAUST FANS EF-1 & EF-2 ARE BEING TEMPORARILY DISCONNECTED AND REMOVED TO ACCOMMODATE THE ROOF DEMOLITION. DISCONNECT EXISTING CONDUIT AND WIRING AND MAKE SAFE FOR LATER RECONNECTION.



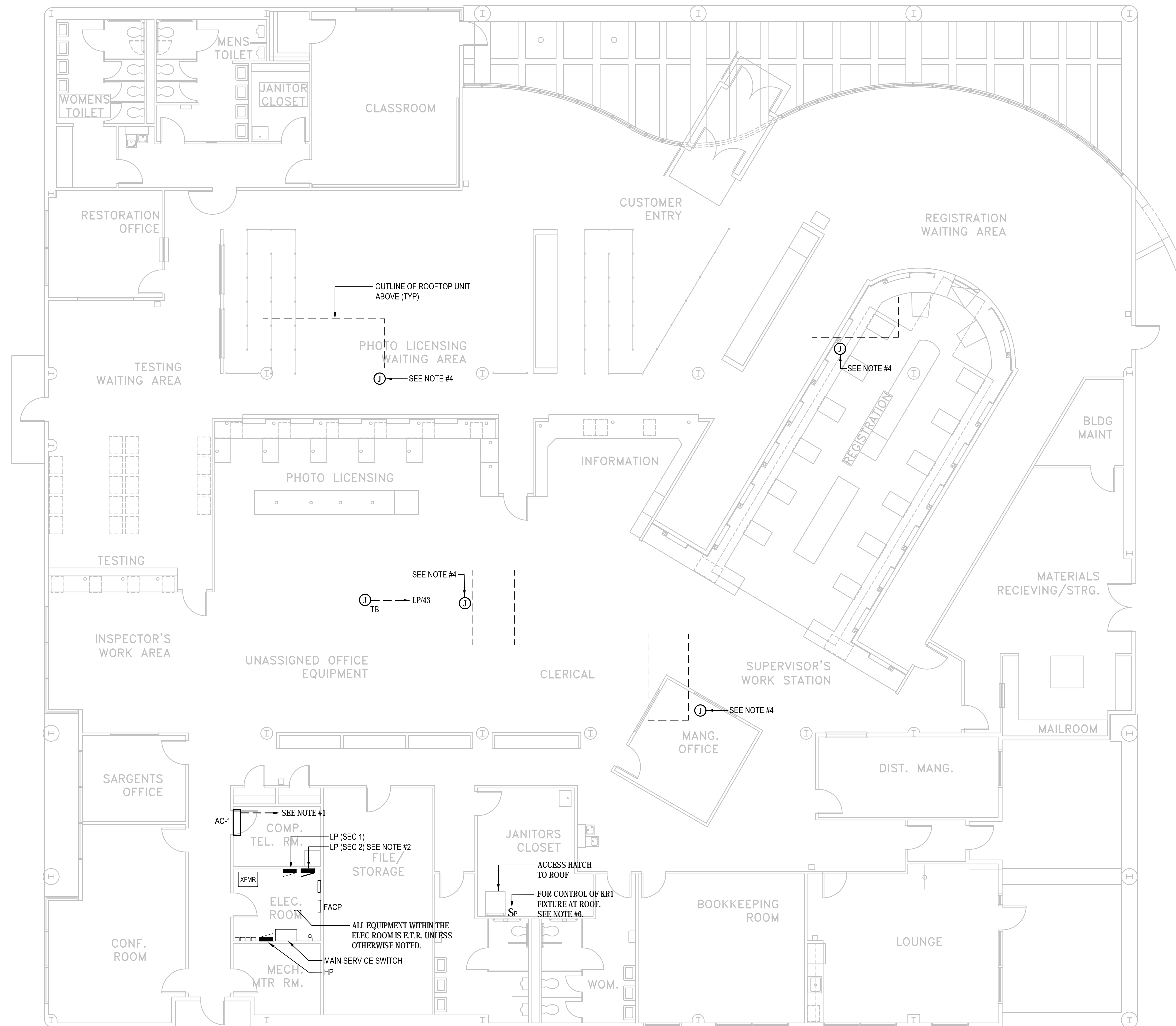
**1 ROOF DEMOLITION PLAN**  
ED-101 SCALE: 1/8" = 1'-0"



drawing title <b>ROOF DEMOLITION PLAN - ELECTRICAL</b>			<b>STATE OF CONNECTICUT</b> DEPARTMENT OF ADMINISTRATIVE SERVICES		
REVISIONS					
mark	date	description	drawing prepared by	date	
X.X.X	8.17.19	DESIGN DEVELOPMENT	<b>KOHLER RONAN</b> 93 LAKE AVENUE DANBURY, CT 06810	01/22/2019	
X.X.X	12.03.19	CONSTRUCTION DOCUMENTS		scale 1/8" = 1'-0"	
			project	drawn by	
			540 MAIN AVENUE NORWALK DMV ROOF HVAC NORWALK, CT	SW	
				approved by	
				JOC	
				drawing no.	
					<b>ED-101</b>
C3D no. 18060-ED-101-Demolition Roof Plan.dwg			project no. BI-MM-53		

**NOTES**

1. INDOOR UNIT AC-1 POWERED FROM OUTDOOR UNIT. PROVIDE 2#12 + 1#12G IN 3/4" C.
2. REPLACE EXISTING PANELBOARD LP-(SEC 2) WITH NEW. REFER TO DETAIL 2/E-500.
3. REFER TO DRAWING M-100 FOR TERMINAL BOX LOCATIONS.
4. PROVIDE JUNCTION BOX IN CEILING FOR EXTENSION OF EXISTING CONDUIT AND WIRING TO NEW 120V RECEPTACLES.
5. EXISTING FIRE ALARM SYSTEM & DEVICES IS TO REMAIN UNLESS OTHERWISE NOTED. PROVIDE NEW SAMPLING TUBES FOR EXISTING DUCT MOUNTED SMOKE DETECTORS.
6. PROVIDE PILOT LIGHT SWITCH FOR CONTROL OF ROOF LIGHTING FIXTURE. LOCATE SWITCH ON WALL ADJACENT TO ROOF HATCH. IDENTIFY SWITCH ACCORDINGLY. COORDINATE EXACT LOCATION IN FIELD. PROVIDE CONDUIT AND WIRE TO AND FROM SWITCH.



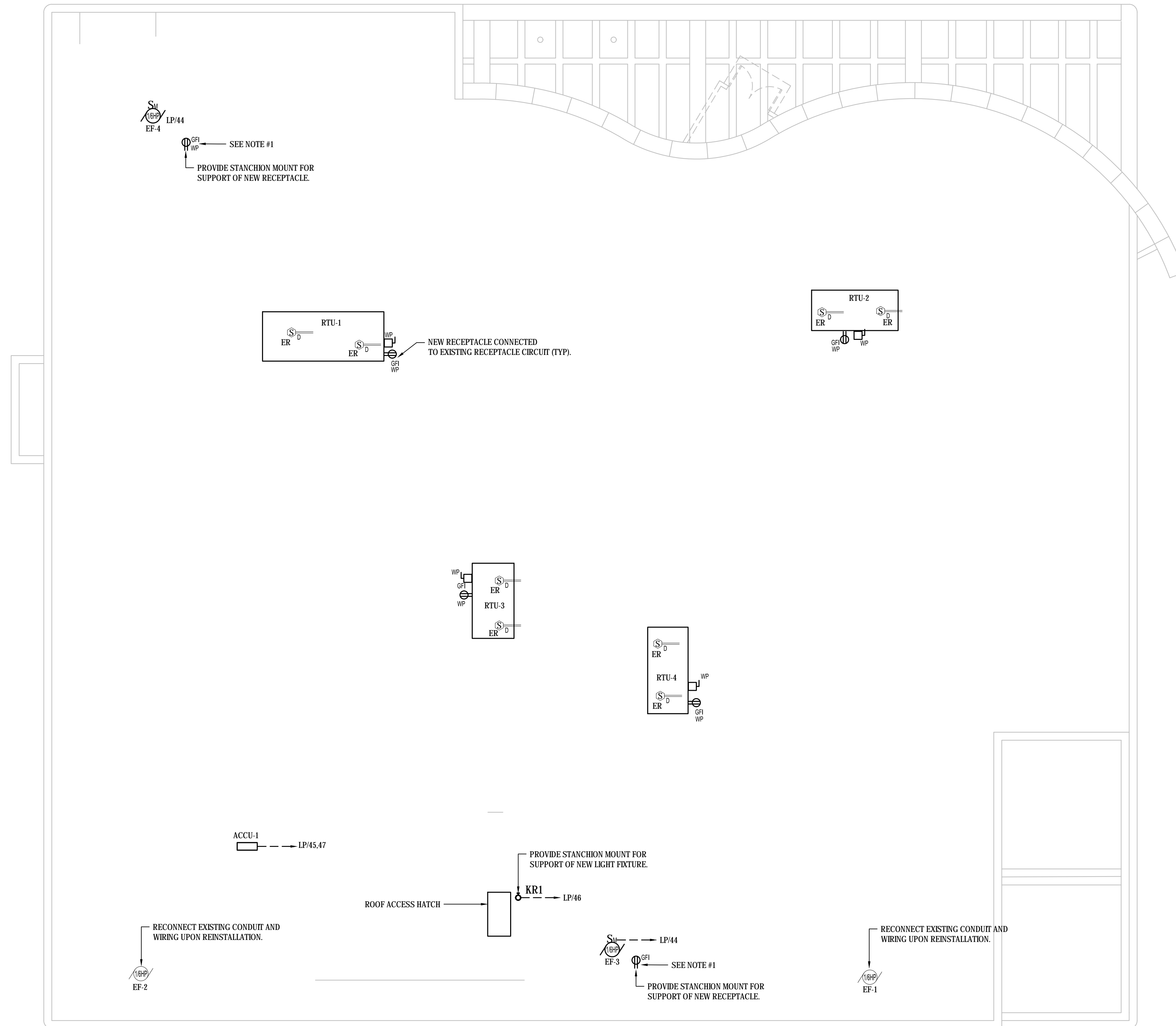
**1 FIRST FLOOR PLAN**  
E-100 SCALE: 1/8" = 1'-0"

drawing title <b>FIRST FLOOR PLAN - ELECTRICAL</b>			<b>STATE OF CONNECTICUT</b> DEPARTMENT OF ADMINISTRATIVE SERVICES		
REVISIONS					
mark	date	description	drawing prepared by	date	scale
X.X.X	8.17.19	DESIGN DEVELOPMENT	<b>KOHLER RONAN</b> 93 LAKE AVENUE DANBURY, CT 06810	01/22/2019	1/8" = 1'-0"
X.X.X	12.03.19	CONSTRUCTION DOCUMENTS		project <b>540 MAIN AVENUE NORWALK DMV ROOF HVAC</b> NORWALK, CT	drawn by SW
CUI no. 18029-E-100-First Floor Plan.dwg			project no. E1-MM-53	<b>E-100</b>	



NOTES

- CONNECT NEW RECEPTACLE TO EXISTING ROOFTOP RECEPTACLE CIRCUIT. PROVIDE 2#12 + 1#12G IN 3/4" FROM EXISTING JUNCTION BOX IN SPACE BELOW.



1 ROOF PLAN  
E-101 SCALE: 1/8" = 1'-0"



drawing title <b>ROOF PLAN - ELECTRICAL</b>			<b>STATE OF CONNECTICUT</b> DEPARTMENT OF ADMINISTRATIVE SERVICES		
REVISIONS					
mark	date	description	drawing prepared by	date	
X.X.X	8.17.19	DESIGN DEVELOPMENT	<b>KOHLER RONAN</b> 93 LAKE AVENUE DANBURY, CT 06810	01/22/2019	
X.X.X	12.03.19	CONSTRUCTION DOCUMENTS		scale 1/8" = 1'-0"	
			project	drawn by	
			<b>540 MAIN AVENUE</b> <b>NORWALK DMV ROOF HVAC</b> NORWALK, CT	SW	
			approved by	JOC	
			drawing no.		<b>E-101</b>
			CAD no. 18060-E-101-Roof Plan.dwg	project no. E1-MM-53	

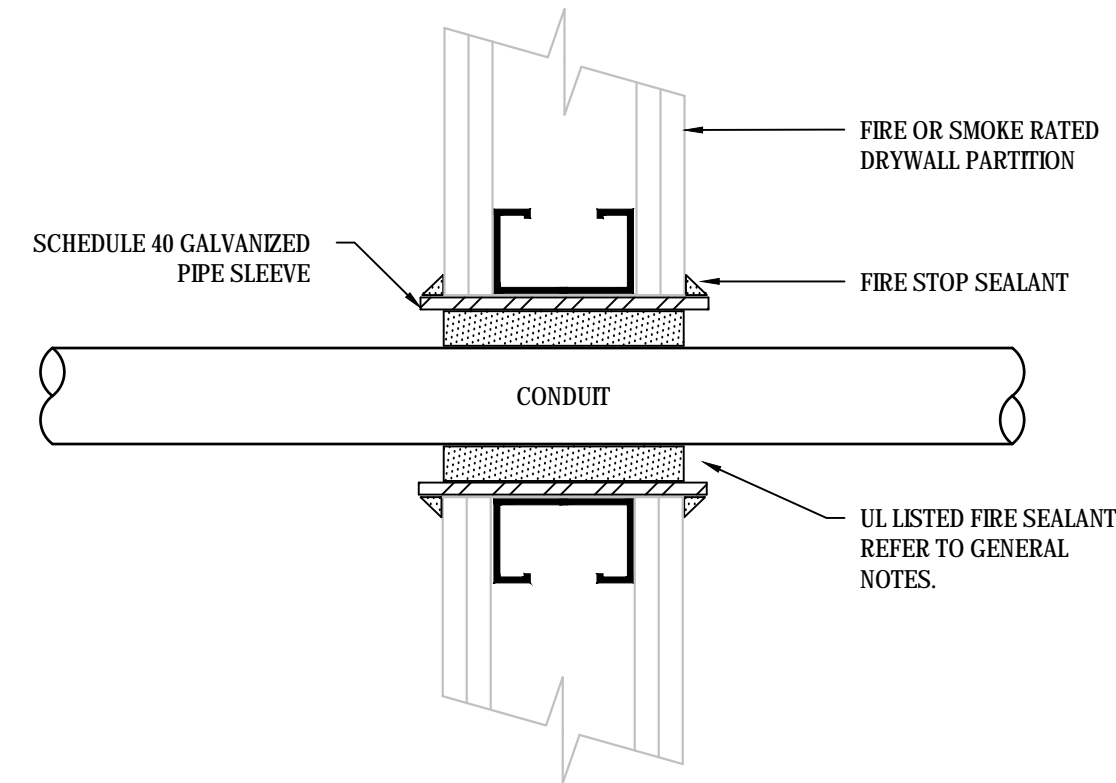
480/277V, 3 PHASE, 4 WIRE 65,000 A.I.C.										600A MLO 600A BUS		
	LOAD SERVED	WIRE & CONDUIT	TRIP	POLE	LOAD IN VOLT-AMPERES			POLE	TRIP	WIRE & CONDUIT	LOAD SERVED	
					QA	QB	QC					
1	EXIST.	EXIST.	20	1	0	0					2	
3	EXIST.	EXIST.	20	1		0	0		3	100	EXIST.	4
5	EXIST.	EXIST.	20	1			0	0				6
7	EXIST.	EXIST.	20	1								8
9	EXIST.	EXIST.	20	1					3	70	3#4 + 1#8G IN EXIST. CONDUIT	10
11	EXIST.	EXIST.	20	1								12
13	EXIST.	EXIST.	20	1								14
15	EXIST.	EXIST.	20	1					3	45	3#6 + 1#10G IN EXIST. CONDUIT	16
17	EXIST.	EXIST.	20	1								18
19	EXIST.	EXIST.	20	1								20
21	EXIST.	EXIST.	20	1					3	25	3#10 + 1#10G IN EXIST. CONDUIT	22
23	EXIST.	EXIST.	20	1								24
25	EXIST.	EXIST.	20	1								26
27	EXIST.	EXIST.	20	1					3	45	3#6 + 1#10G IN EXIST. CONDUIT	28
29	EXIST.	EXIST.	20	1								30
31	EXIST.	EXIST.	20	1					1	20	EXIST.	32
33	EXIST.	EXIST.	20	1					1	20	EXIST.	34
35	EXIST.	EXIST.	20	1					1	20	EXIST.	36
37	EXIST.	EXIST.	20	1					1	20	EXIST.	38
39	EXIST.	EXIST.	40	2					2	40	EXIST.	40
41	EXIST.	EXIST.	20	1					1	20	EXIST.	42
SURFACE MTD NEMA 1		LOAD PER PHASE			0	0	0					
		TOTAL =			0 VA							

DISCONNECT AND REMOVE EXISTING CIRCUIT BREAKERS AND PROVIDE NEW CIRCUIT BREAKERS IN EXISTING LOCATIONS WITHIN THE PANELBOARD. PROVIDE NEW CONDUIT AND WIRING (TYP OF 4).

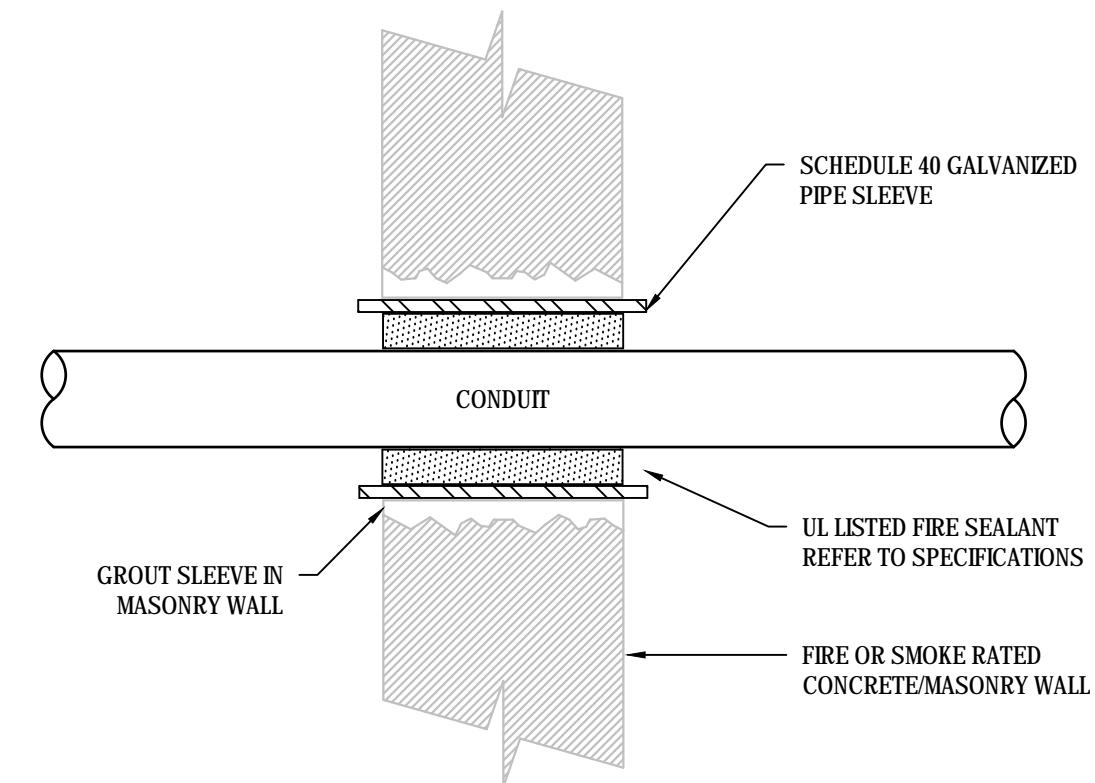
**GENERAL NOTES:**

PROVIDE UL LISTED FIRE/SMOKE PENETRATION ASSEMBLY IN ACCORDANCE W/ UL1479, ASTM E814 REQUIREMENTS FOR WALL TYPE, RATING, PIPE SIZE INSTALLED.

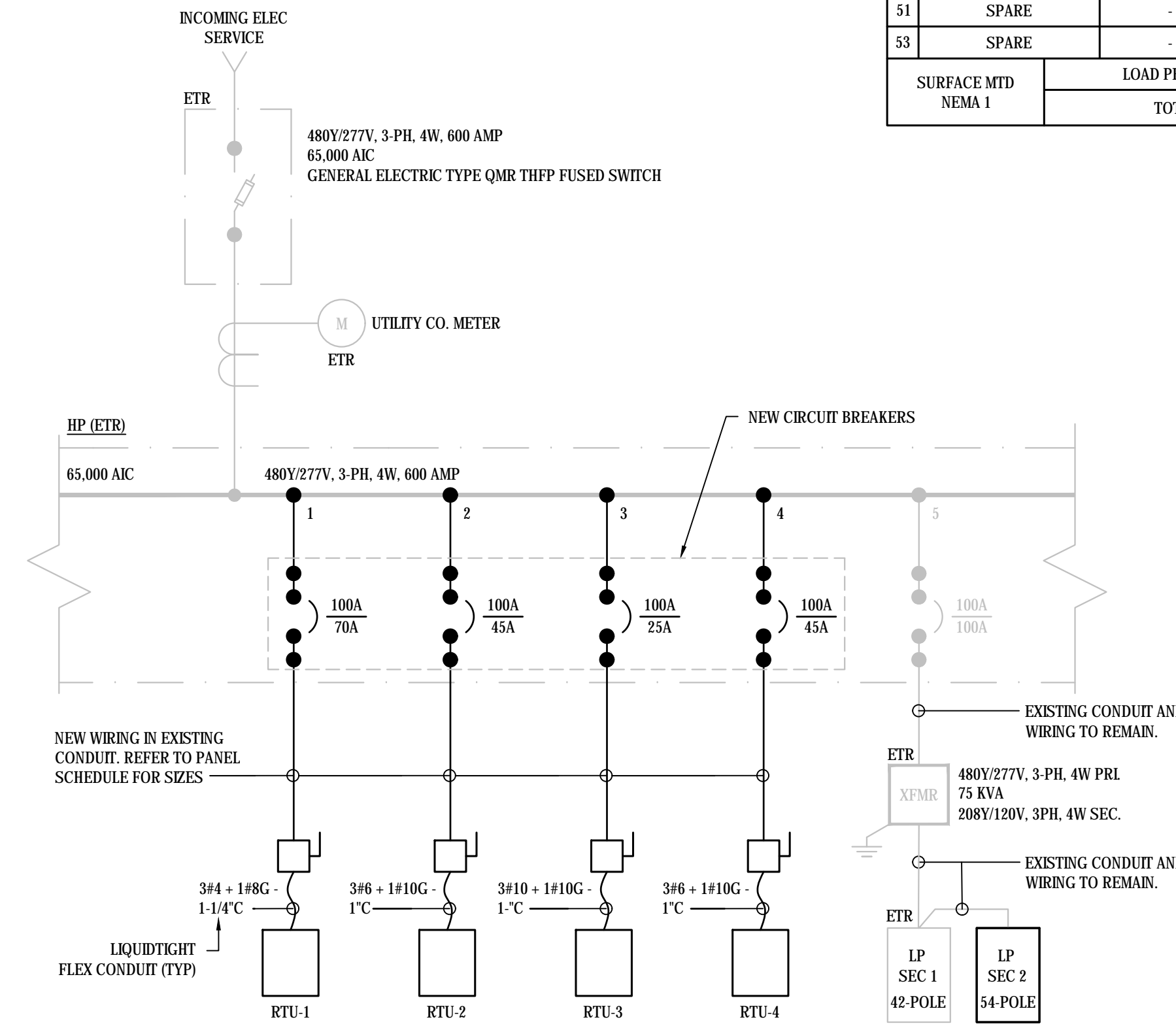
FIRE STOPPING SHALL HAVE A RATING EQUAL TO OR GREATER THAN THE WALL BEING PENETRATED - SEE SPECIFICATIONS.



**1 WALL PENETRATION W/ FIRE/SMOKE SEAL DETAIL**  
E-500 SCALE: NONE



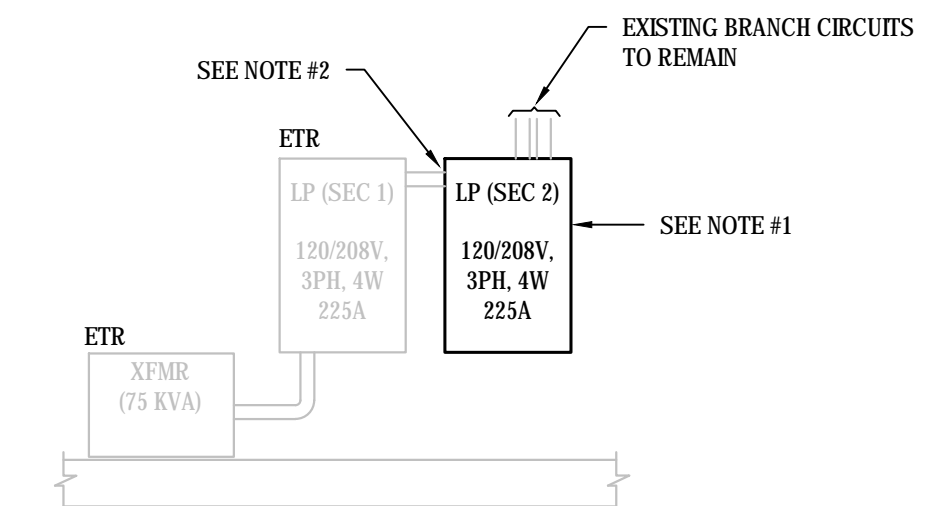
120/208V, 3 PHASE, 4 WIRE 22,000 A.I.C.										200A MCB 225A BUS		
	LOAD SERVED	WIRE & CONDUIT	TRIP	POLE	LOAD IN VOLT-AMPERES			POLE	TRIP	WIRE & CONDUIT	LOAD SERVED	
					QA	QB	QC					
1	EXIST.	EXIST.	20	1	0	0					2	
3	EXIST.	EXIST.	20	1		0	0		1	20	EXIST.	4
5	EXIST.	EXIST.	20	1			0	0				6
7	EXIST.	EXIST.	20	1					1	20	EXIST.	8
9	EXIST.	EXIST.	20	1					1	20	EXIST.	10
11	EXIST.	EXIST.	20	1					1	20	EXIST.	12
13	EXIST.	EXIST.	20	1					1	20	EXIST.	14
15	EXIST.	EXIST.	20	1					1	20	EXIST.	16
17	EXIST.	EXIST.	20	1					1	20	EXIST.	18
19	EXIST.	EXIST.	20	1					1	20	EXIST.	20
21	EXIST.	EXIST.	20	1					1	20	EXIST.	22
23	EXIST.	EXIST.	20	1					1	20	EXIST.	24
25	EXIST.	EXIST.	20	1					1	20	EXIST.	26
27	EXIST.	EXIST.	20	1					1	20	EXIST.	28
29	EXIST.	EXIST.	20	1					1	20	EXIST.	30
31	EXIST.	EXIST.	20	1					1	20	EXIST.	32
33	EXIST.	EXIST.	20	1					1	20	EXIST.	34
35	EXIST.	EXIST.	20	1					1	20	EXIST.	36
37	EXIST.	EXIST.	20	1					1	20	EXIST.	38
39	EXIST.	EXIST.	20	1					1	20	EXIST.	40
41	EXIST.	EXIST.	20	1					1	20	EXIST.	42
SURFACE MTD NEMA 1		LOAD PER PHASE			0	0	0					
		TOTAL =			0 VA							



**3 PARTIAL ONE-LINE DIAGRAM**  
E-500 SCALE: NONE

208/120V, 3 PHASE, 4 WIRE 22,000 A.I.C.										200A MLO 225A BUS		
	LOAD SERVED	WIRE & CONDUIT	TRIP	POLE	LOAD IN VOLT-AMPERES			POLE	TRIP	WIRE & CONDUIT	LOAD SERVED	
					QA	QB	QC					
1	EXIST.	EXIST.	20	1	0	0					2	
3	EXIST.	EXIST.	20	1		0	0		1	20	EXIST.	4
5	EXIST.	EXIST.	20	1			0	0				6
7	EXIST.	EXIST.	20	1					1	20	EXIST.	8
9	EXIST.	EXIST.	20	1					1	20	EXIST.	10
11	EXIST.	EXIST.	20	1					1	20	EXIST.	12
13	EXIST.	EXIST.	20	1					1	20	EXIST.	14
15	EXIST.	EXIST.	20	1					1	20	EXIST.	16
17	EXIST.	EXIST.	20	1					1	20	EXIST.	18
19	EXIST.	EXIST.	20	1					1	20	EXIST.	20
21	EXIST.	EXIST.	20	1					1	20	EXIST.	22
23	EXIST.	EXIST.	20	1					1	20	EXIST.	24
25	EXIST.	EXIST.	20	1					1	20	EXIST.	26
27	EXIST.	EXIST.	20	1					1	20	EXIST.	28
29	EXIST.	EXIST.	20	1					1	20	EXIST.	30
31	EXIST.	EXIST.	20	1					1	20	EXIST.	32
33	EXIST.	EXIST.	20	1					1	20	EXIST.	34
35	EXIST.	EXIST.	20	1					1	20	EXIST.	36
37	EXIST.	EXIST.	20	1					1	20	EXIST.	38
39	EXIST.	EXIST.	20	1					1	20	EXIST.	40
41	EXIST.	EXIST.	20	1					1	20	EXIST.	42
43	TERMINAL BOXES	2 #12-G-3/4"C.	20	1					1	20	2 #12-G-3/4"C.	44
45	ACCU-1	2 #12-G-3/4"C.	15	2					1	20	2 #12-G-3/4"C.	46
47	SPARE	-	20	1					1	20	-	48
49	SPARE	-	20	1					1	20	-	50
51	SPARE	-	20	1					1	20	-	52
53	SPARE	-	20	1					1	20	-	54
SURFACE MTD NEMA 1		LOAD PER PHASE			0	0	0					
		TOTAL =			0 VA							

- NOTES:**
- DISCONNECT AND REMOVE EXISTING 42-POLE PANELBOARD LP (SEC 2) AND REPLACE WITH NEW 54-POLE PANELBOARD AT SAME LOCATION. RECONNECT EXISTING BRANCH CIRCUITS TO SAME POSITIONS AS EXISTING WITHIN THE PANELBOARD. NEW BRANCH CIRCUIT BREAKERS SHALL MATCH EXISTING. PROVIDE NEW TYPEWRITTEN PANELBOARD DIRECTORY.
  - LP (SEC 2) IS SUB-FED FROM LP (SEC 1). DISCONNECT CONDUIT AND WIRING FROM EXISTING PANEL AND RECONNECT TO THE NEW PANEL.



**2 PANELBOARD REPLACEMENT DETAIL**  
E-500 SCALE: NONE



drawing title		STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES	
SCHEDULES AND DETAILS - ELECTRICAL		REVISIONS	
mark	date	description	
X.X.X	8.17.19	DESIGN DEVELOPMENT	
X.X.X	12.03.19	CONSTRUCTION DOCUMENTS	
drawing prepared by		date	
KOHLER RONAN		01/22/2019	
93 LAKE AVENUE DANBURY, CT 06810		scale	
		NONE	
drawing no.		project	
540 MAIN AVENUE NORWALK DMV ROOF HVAC NORWALK, CT		approved by	
		JOC	
drawing no.		drawing no.	
E-500		E-500	
CAD no. 18009-E-500-Schedules and Details.dwg		project no. BI-MM-53	