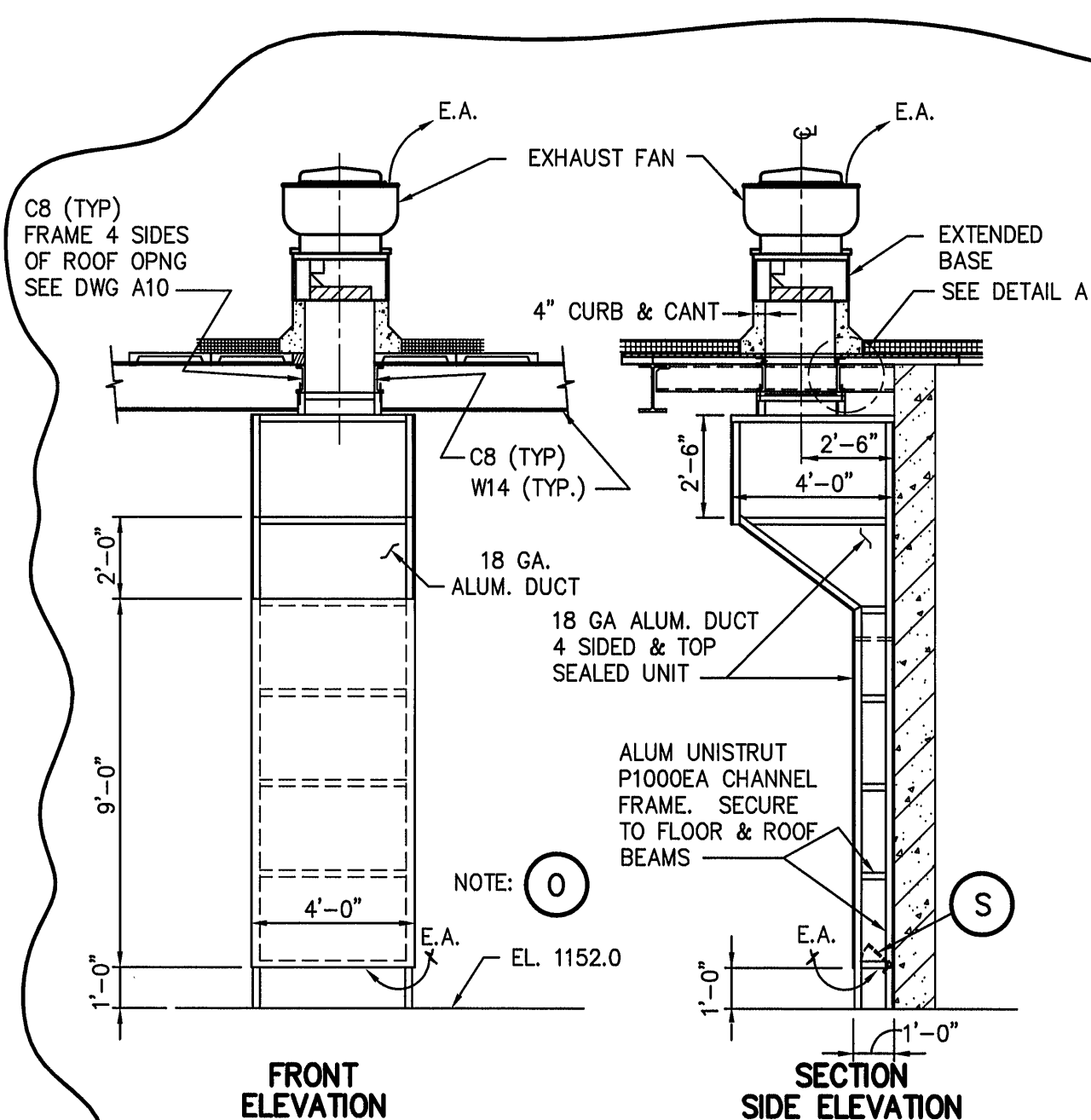


CHEMICAL BUILDING 1 – ROOF PLAN

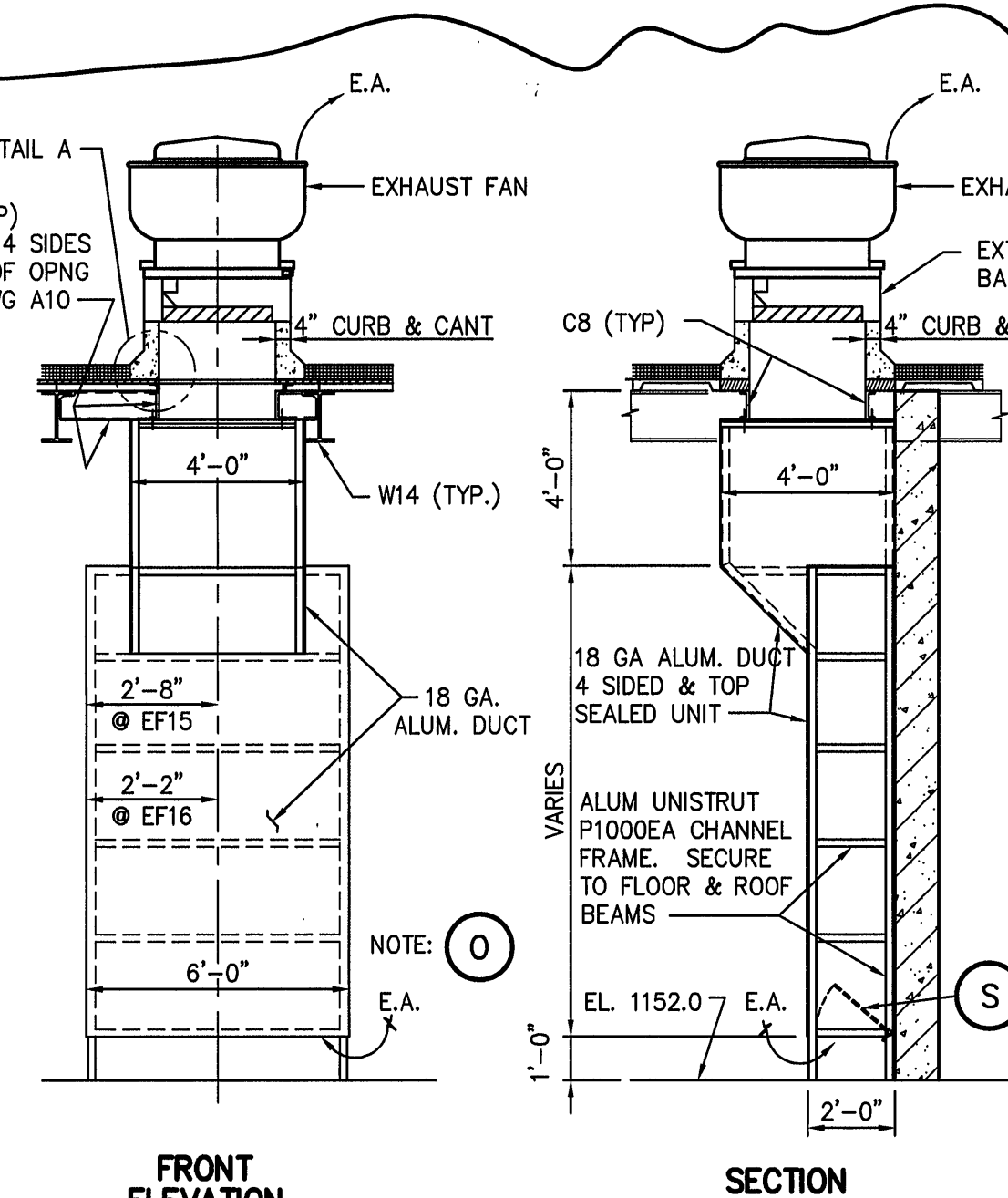
SCALE OF DRAWING 1/8" = 1'-0"



EF 10 EXHAUST FAN AND DUCT SYSTEM

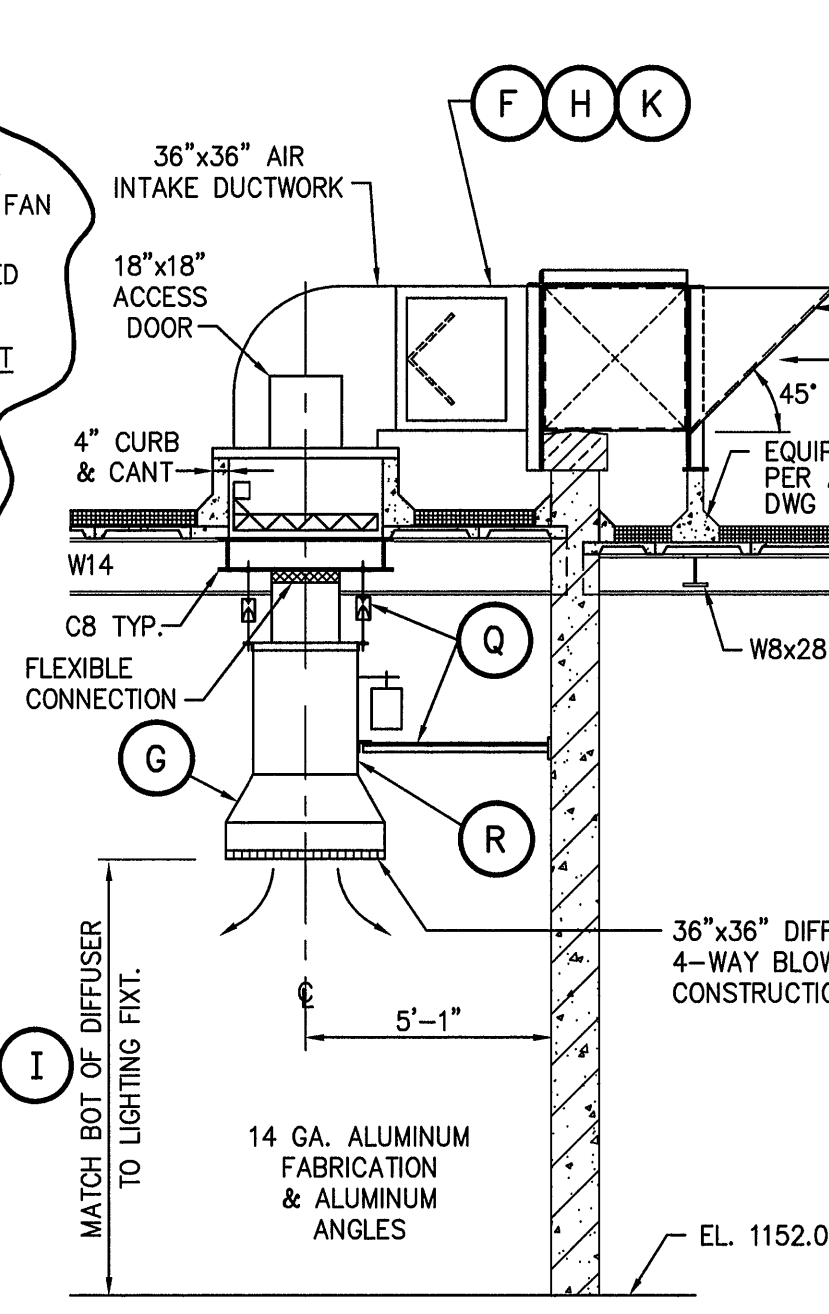
SCALE OF DRAWING 1/4" = 1'-0"

NOTE:
VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.
PLAN VIEW LOCATION OF EXHAUST DUCT IS BASED ON THE ROOM LAYOUT. THE LOCATION OF EXHAUST FAN IS DETERMINED BY THE ROOF OPENING LOCATION. THE EXHAUST FAN CENTER LINE LOCATION WILL NOT ALWAYS BE ON THE DUCT CENTER-LINE.
THE EXHAUST SYSTEM IS TO BE SEALED, WELDED AND GASKETED FABRICATION SELF SUPPORTED FROM THE FLOOR.



EF 15 & 16 TYPICAL EXHAUST FAN AND DUCT

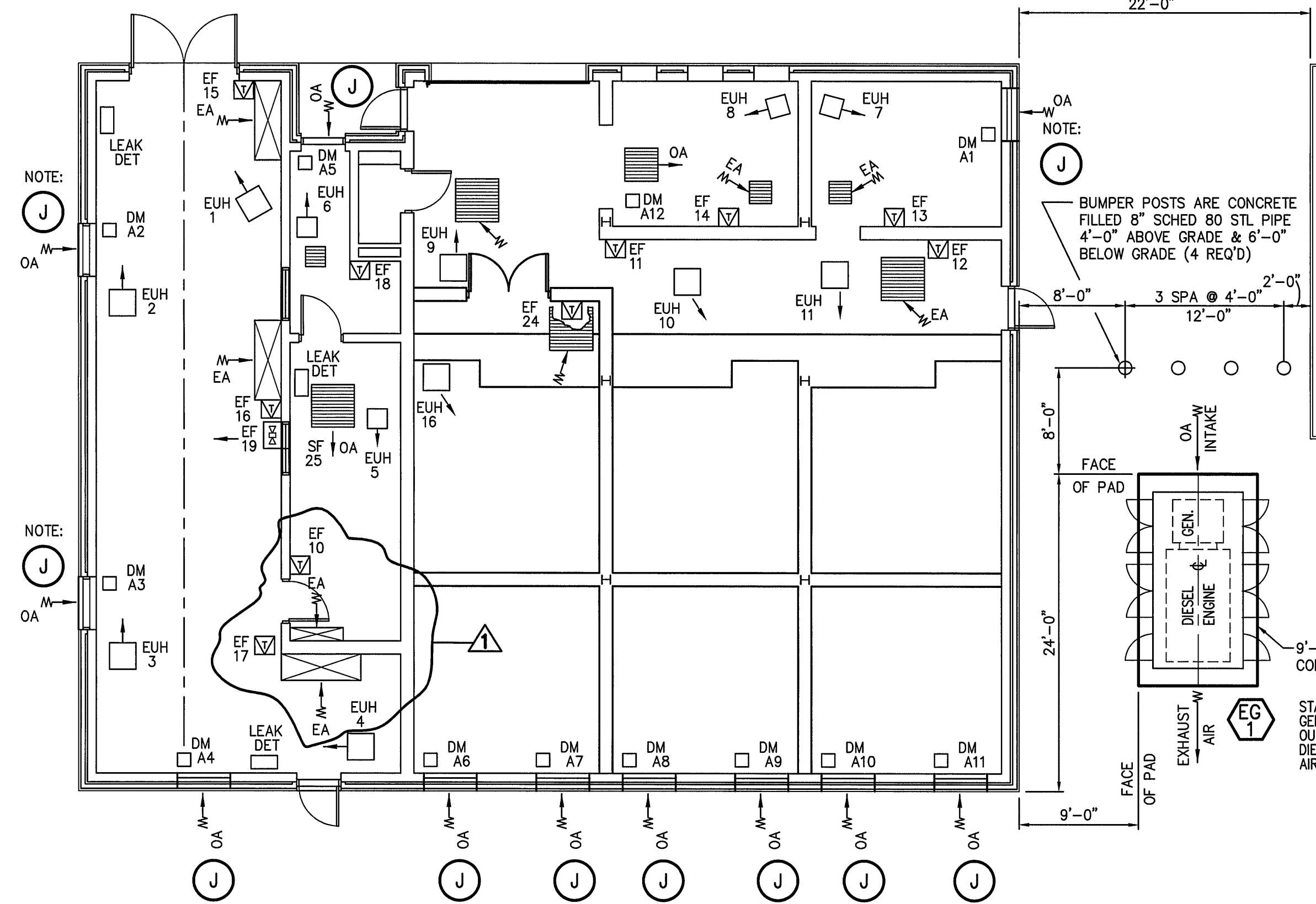
SCALE OF DRAWING 1/4" = 1'-0"



OUTDOOR AIR ROOF INTAKE VENT RV-2

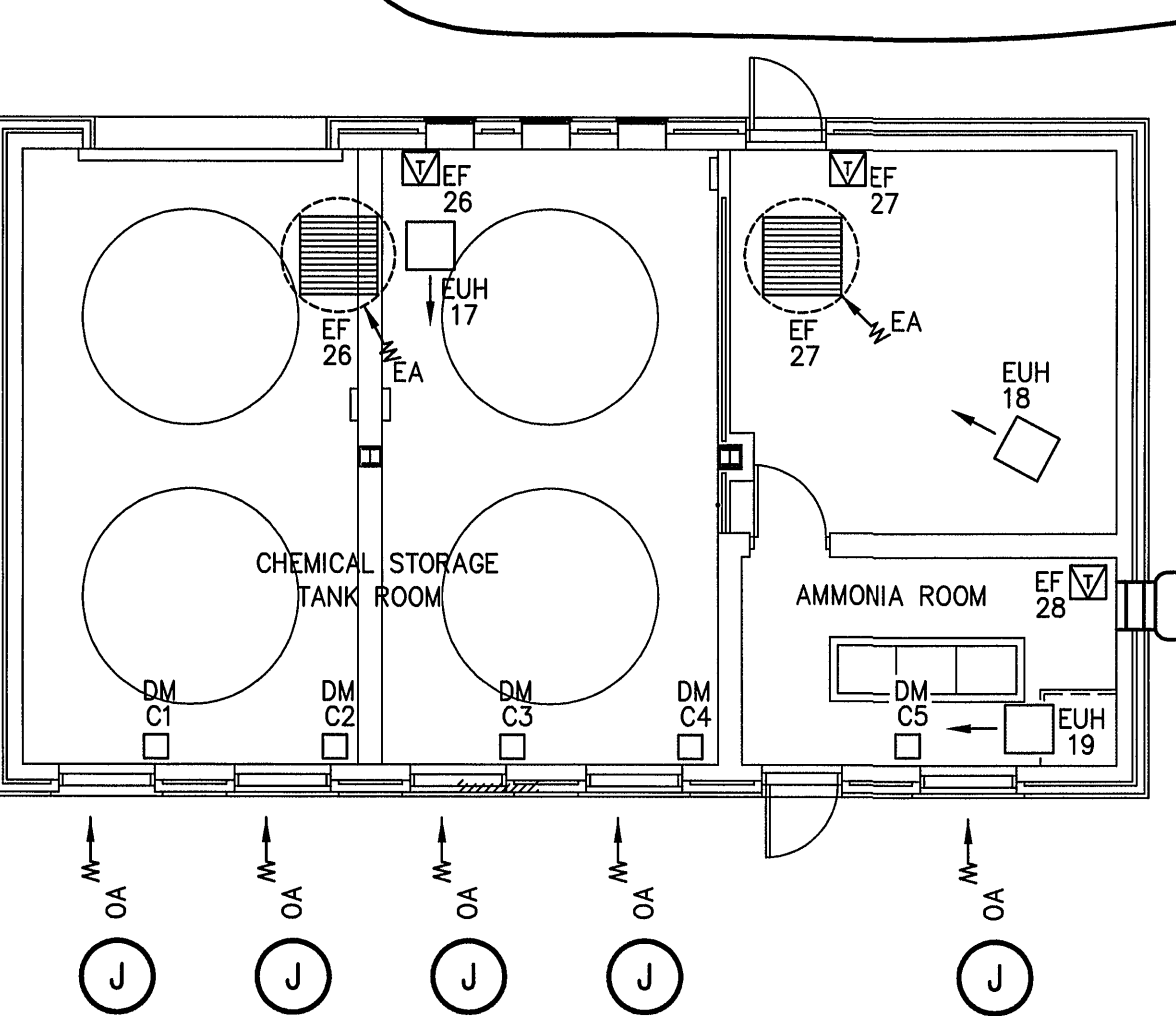
SCALE OF DRAWING 1/4" = 1'-0"

- ### GENERAL NOTES
- SUPPORT ELECTRIC UNIT HEATERS FROM WALL BRACKETS WHERE FEASIBLE OR FROM OVERHEAD CONCRETE ROOF DECK PER TYPICAL DETAILS. MAINTAIN 11'-0" B.O.H. CLEARANCE WHERE POSSIBLE. WITH MINIMUM OF 9'-0" IN PROBLEM AREAS. BRACE HEATERS TO PREVENT SWAYING.
 - ALL EXPOSED STEEL SURFACES, INCLUDING GALVANIZED, TO BE COATED WITH EPOXY PAINT PRIMER AND FINISH COAT. THIS INCLUDES PIPING HANGERS, REGISTERS, GRILLES, LADDERS, STRUCTURAL STEEL, DOORS, WINDOW FRAMES, ETC.
 - MOUNT WALL THERMOSTATS 4'-6" A.F. PROVIDE APPROVED ALUMINUM VENTILATED TYPE THERMOSTAT GUARDS. FAN THERMOSTATS TO BE PROVIDED AND INSTALLED BY THE HVAC CONTROLS CONTRACTOR.
 - ALL DUCTWORK WITHIN CHEMICAL BUILDING TO BE FABRICATED OF 18 GA. ALUMINUM. ALL DUCT STRUCTURAL ITEMS TO BE OF ALUMINUM FABRICATION.
 - ROOF EXHAUST FANS WITH EXTENDED BASES TO BE MOUNTED ON FIELD INSTALLED ROOF CURBS PER ARCHITECTURAL DRAWINGS. CURB THICKNESS TO BE NOMINAL 4" THICK FOR FLANGE COVER. FAN VENDOR MUST PROVIDE FLANGE DIMENSION TO ALLOW FOR CURB THICKNESS.
 - OUTDOOR AIR INTAKE RV-2 TO BE FIELD FABRICATED. PROVIDE VEE TYPE AIR FILTER ASSEMBLY, MIN. 7.5 SF AREA, 2" THK. WASHABLE ALUM. WITH 24" x 30" H. ACCESS DOOR. MOUNT INTAKE DUCT ON PARAPET WALL AND ROOF EQUIPMENT RAIL WITH 3x3x3/8 ANGLE FRAMING. ROOF DUCTWORK TO BE 14 GA. ALUMINUM SINGLE WALL FABRICATION WITH 1-1/2x1-1/2x3/16 ANGLE REINFORCING. INSTALL BIRD SCREENING AT INLET AND MOTORIZED BACKDRAFT DAMPER SET IN A 36" SQ. CURBED ROOF OPENING. ALL COMPONENTS TO BE OF ALUMINUM FABRICATION.
 - DUCTWORK EXPOSED TO AND HANDLING OUTDOOR AIR WITHIN THE BUILDING SHALL HAVE BOTH INTERNAL & EXTERNAL INSULATION AS PER SPECIFICATIONS. DUCT SIZES FOR INTERNALLY LINED RECTANGULAR DUCTS ARE OUTSIDE DIMENSIONS WITH ALLOWANCE FOR 1" THICK ACOUSTIC/INSULATING DUCT LINER.
 - PROVIDE ACCESS DOORS IN FIXED CEILING, CHASES AND DUCTWORK TO BALANCING DAMPERS, FIRE DAMPERS, OR OTHER MECHANICAL DEVICES NEEDING SERVICE ACCESS.
 - COORDINATE LOCATION OF ELECTRIC UNIT HEATERS, CEILING GRILLES, REGISTERS, ETC., WITH LIGHTING LAYOUT.
 - OUTDOOR AIR INTAKE COMBINATION FIXED RAIN LOUVER AND 120V MOTORIZED DAMPER SETS TO BE PROVIDED PER ARCHITECTURAL SPECIFICATIONS AND DRAWINGS.
 - EXHAUST FANS, ROOF SUPPLY FAN AND OUTDOOR AIR INLET UNITS WITH MOTORIZED BACKDRAFT DAMPERS WILL HAVE THE UNITS PROVIDED BY THE EQUIPMENT VENDOR PER THE EQUIPMENT SCHEDULE.
 - PROVIDE 6x8x2# GALVANIZED CHANNEL SUPPORT BEAMS FROM BUILDING ROOF STEEL TO SUPPORT ELECTRIC UNIT HEATERS.
 - GENERAL CONTRACTOR TOGETHER WITH ELECTRICAL CONTRACTOR AND HVAC CONTROLS CONTRACTOR ARE RESPONSIBLE FOR PROVIDING ELECTRICAL POWER AND ELECTRICAL CONTROL WIRING SYSTEMS TO HVAC RELATED EQUIPMENT DEFINED ON MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS.
 - ALL ALUMINUM EXHAUST SYSTEM DUCTWORK AND ROOF MOUNTED DUCTWORK TO BE COATED WITH EPOXY PAINT PRIMER AND FINISH COAT.
 - PROVIDE INLET SCREEN - EXPANDED ALUMINUM FLATTENED MESH 1 1/2 SIZE .0125" WIRE.
 - VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.
 - PROVIDE OVERHEAD HANGER ROD SUPPORT W/VIBRATION ISOLATORS & HORIZONTAL SWAY BRACES ANCHORED TO WALL. (4) 1/2" Ø THREADED ROD HANGERS AND (2) L3x3x1/4 BRACES - ALL ALUMINUM FABRICATION.
 - SUPPLY FAN SF 25 - INLINE BELT DRIVEN CENTRIFUGAL FAN WITH MANUAL VARIABLE VANE VOLUME CONTROL.
 - PROVIDE 18 GA. ALUM. VOLUME CONTROL DAMPER, HINGED PLATE DIMENSIONS ADJUSTED TO CROSS SECTION OF DUCT SIZE. HINGE SHAFT TO BE 1" DIA. SCHED 40 ALUM. PIPE WITH END BEARINGS. PROVIDE SETTINGS ON 2' CENTERS OF ARC.



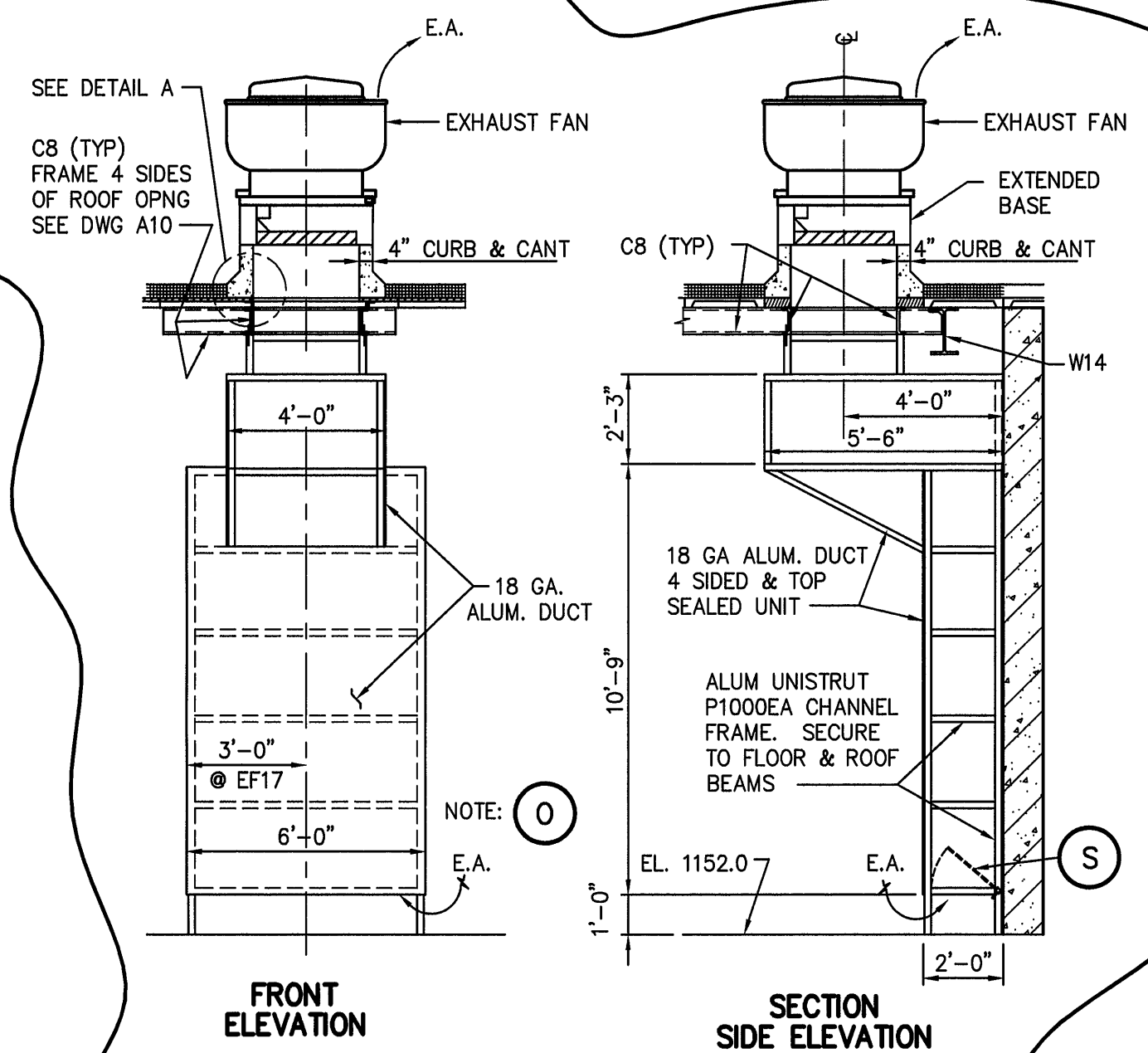
CHEMICAL BUILDING 1 – MAIN FLOOR PLAN

SCALE OF DRAWING 1/8" = 1'-0"



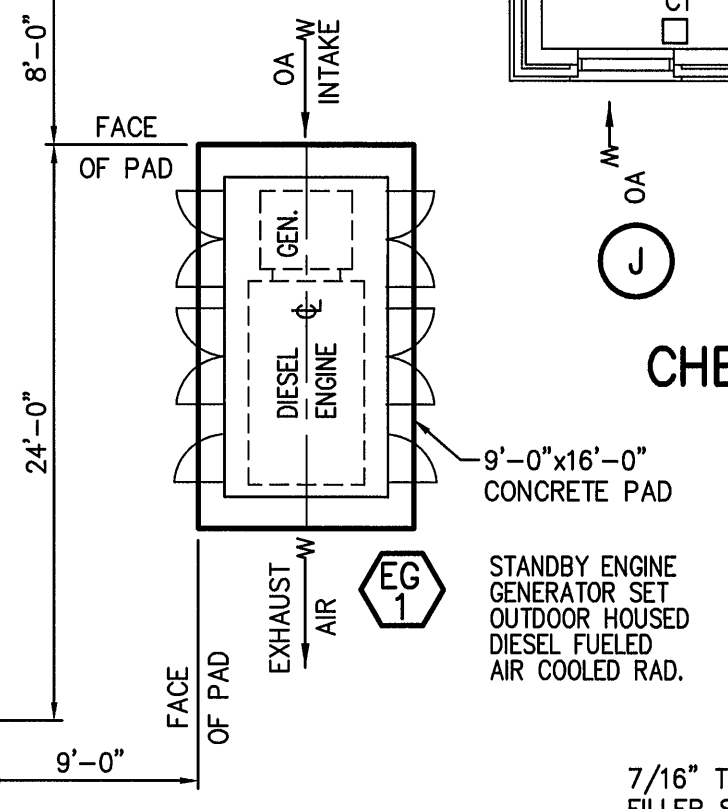
CHEMICAL BUILDING 2 – FLOOR PLAN

SCALE OF DRAWING 1/8" = 1'-0"



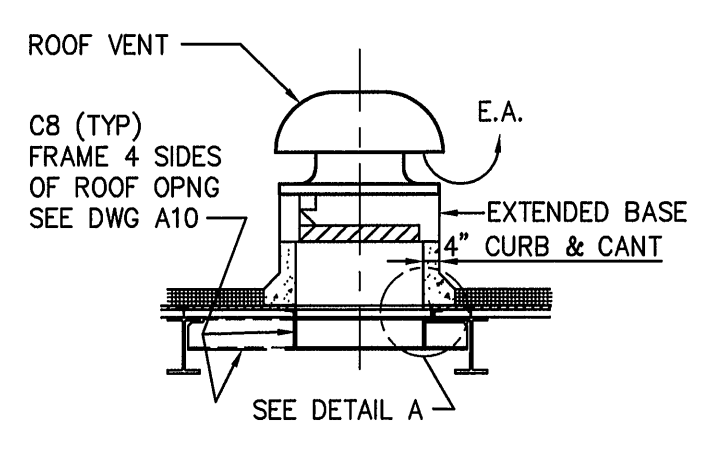
EF 17 TYPICAL EXHAUST FAN AND DUCT

SCALE OF DRAWING 1/4" = 1'-0"



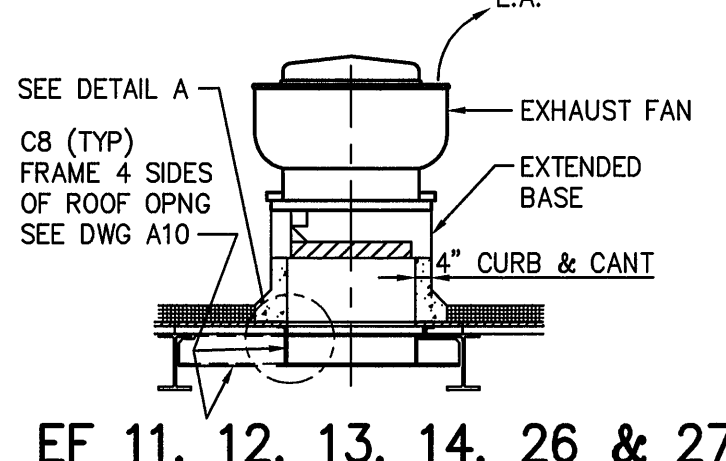
DETAIL A

SCALE OF DRAWING 1" = 1'-0"



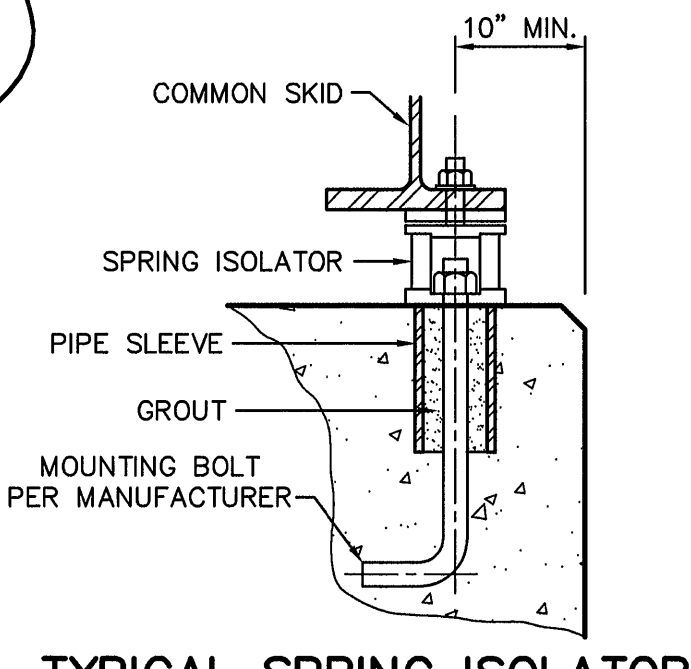
INTAKE VENT RV-1

SCALE OF DRAWING 1/4" = 1'-0"



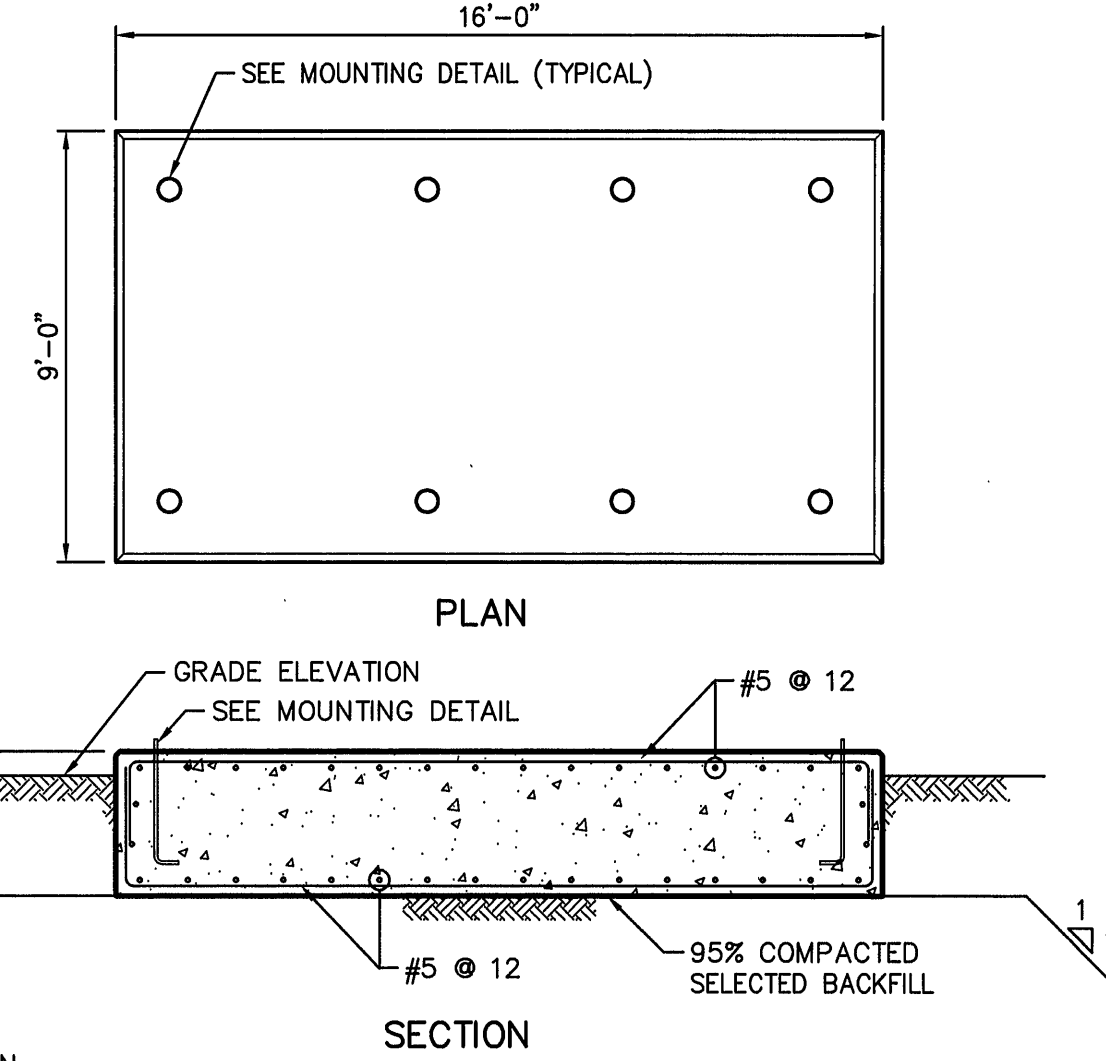
EF 11, 12, 13, 14, 26 & 27 EXHAUST FAN

SCALE OF DRAWING 1/4" = 1'-0"



TYPICAL SPRING ISOLATOR MOUNTING DETAIL

SCALE OF DRAWING 1 1/2" = 1'-0"





ENGINE GENERATOR FOUNDATION

SCALE OF DRAWING 1/4" = 1'-0"

- NOTES:
- CONCRETE PAD IS BASED ON SPECIFIED ENGINE/GENERATOR OR REDESIGNED FOR ALTERNATE EQUIPMENT.
 - STRIP APPROXIMATELY ONE FOOT OF TOP SOIL PRIOR TO PLACING BACKFILL.

DRAWING OF RECORD

DATE: SEP 30 1997

<div>MATTERN & CRAIG CONSULTING ENGINEERS • SURVEYORS ROANOKE VIRGINIA</div>		DESIGNED: S.C.			REV.	DATE	DESCRIPTION	BY	APP.	CARVINS COVE FILTER PLANT IMPROVEMENTS – PHASE I ROANOKE, VIRGINIA	DATE APRIL 1992
<div>ALVORD, BURDICK & HOWSON ENGINEERS CHICAGO</div>		DRAWN: H.F. L.M.J. K.G.P.			1	5-12-93	REDESIGN AND RELOCATION OF EXHAUST FANS AND DUCTS				COMM. NO. 9130
		CHECKED: S.C.									SHEET M7