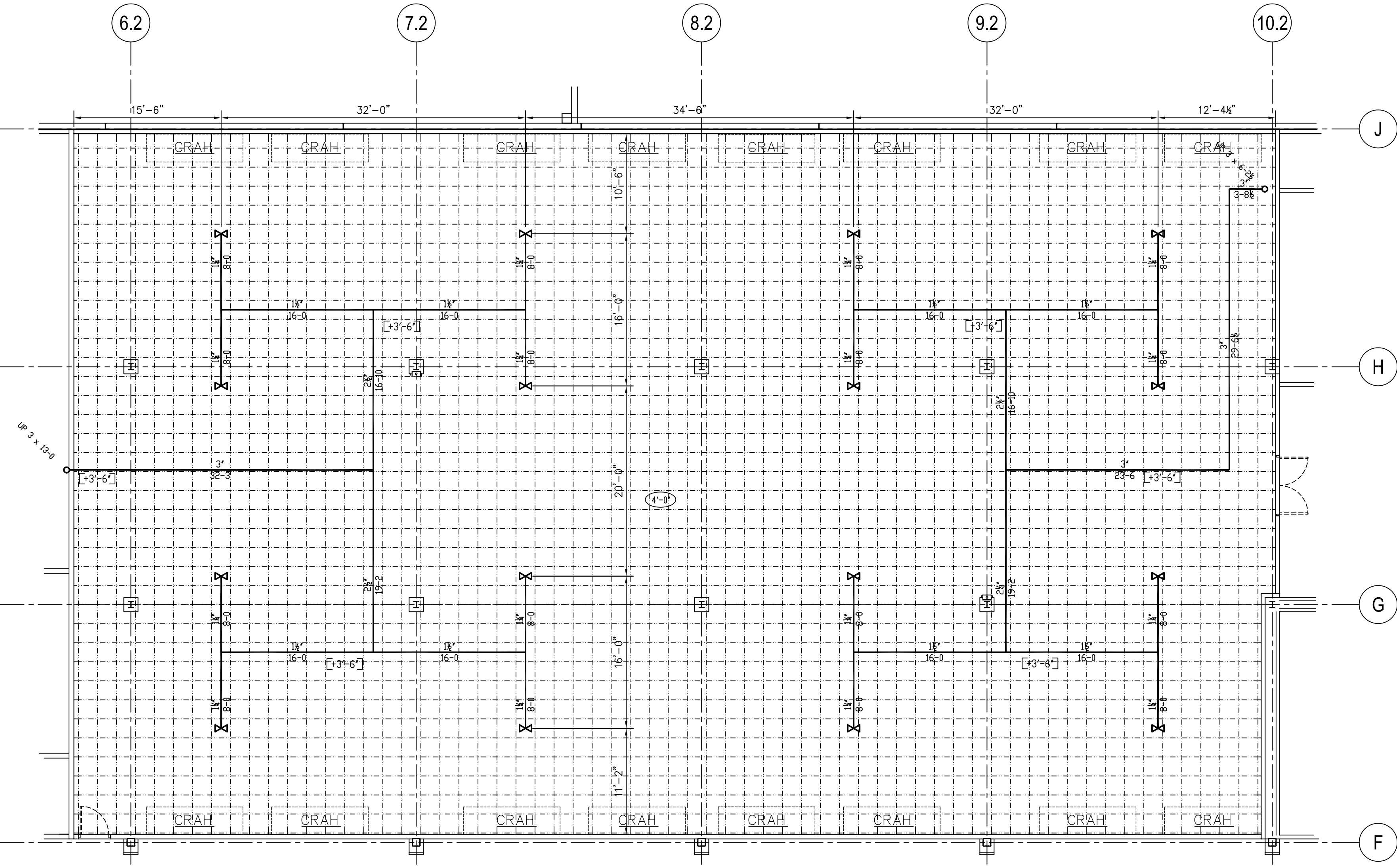


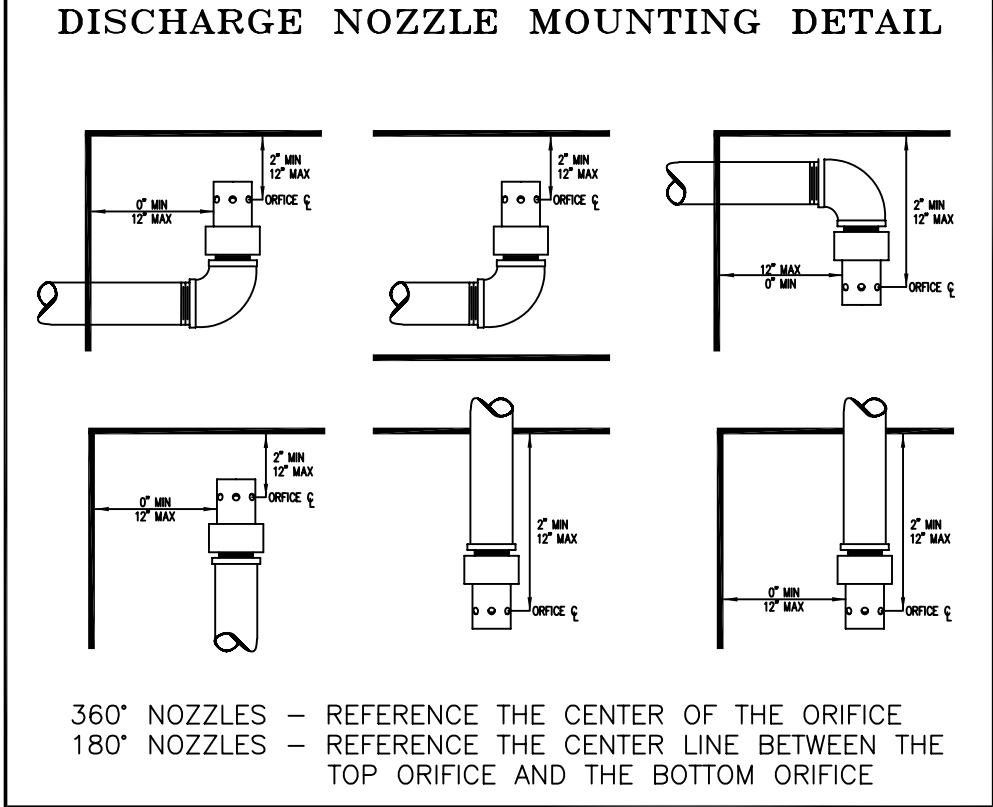
MECHANICAL PLAN - CEILING  
FF=501.0'  
1/8"=1'-0"



MECHANICAL PLAN - SUBFLOOR  
FF=497.0'  
1/8"=1'-0"

- ECARO-25 GENERAL PIPING NOTE**
- NO CHANGES SHALL BE ALLOWED IN THE PIPE LAYOUT UNLESS APPROVED BY [REDACTED]
  - MATERIALS:
    - PIPE: GALVANIZED THREADED AND GROOVED  
ASTM A-53, CLASS F, FURNACE WELD, SE8640 SCH-40 1/2" THRU 8" NPS
    - FITTINGS: MINIMUM WORKING PRESSURE GREATER  
THAN MAXIMUM CYLINDER WORKING PRESSURE OF 500 PSI
  - BLACK OR GALVANIZED MALLEABLE-IRON 300LB CLASS SCREWED
  - VICTAULIC STYLE 07 "ZERO-FLEX" 1" THRU 8" ROLL GROOVED
  - WELDED FITTINGS, AND WELDING ALLOYS SHALL EXCEED  
FITTING WORKING PRESSURES LISTED ABOVE.
  - APPLY TEFLON TAPE TO ALL THREADED MALE ENDS.
  - APPLY APPROVED GROOVED FITTING GASKET LUBRICANT TO ALL GROOVED GASKETS.
  - PIPE LENGTHS GIVEN ARE FROM CENTER TO CENTER OF FITTINGS.
  - ALL PIPE SHALL BE CLEAR OF PARTICULATE MATTER, AND OIL RESIDUE  
PRIOR TO INSTALLATION. INTERNAL PIPE CLEANING SHALL UTILIZE NONFLAMMABLE SOLVENTS.

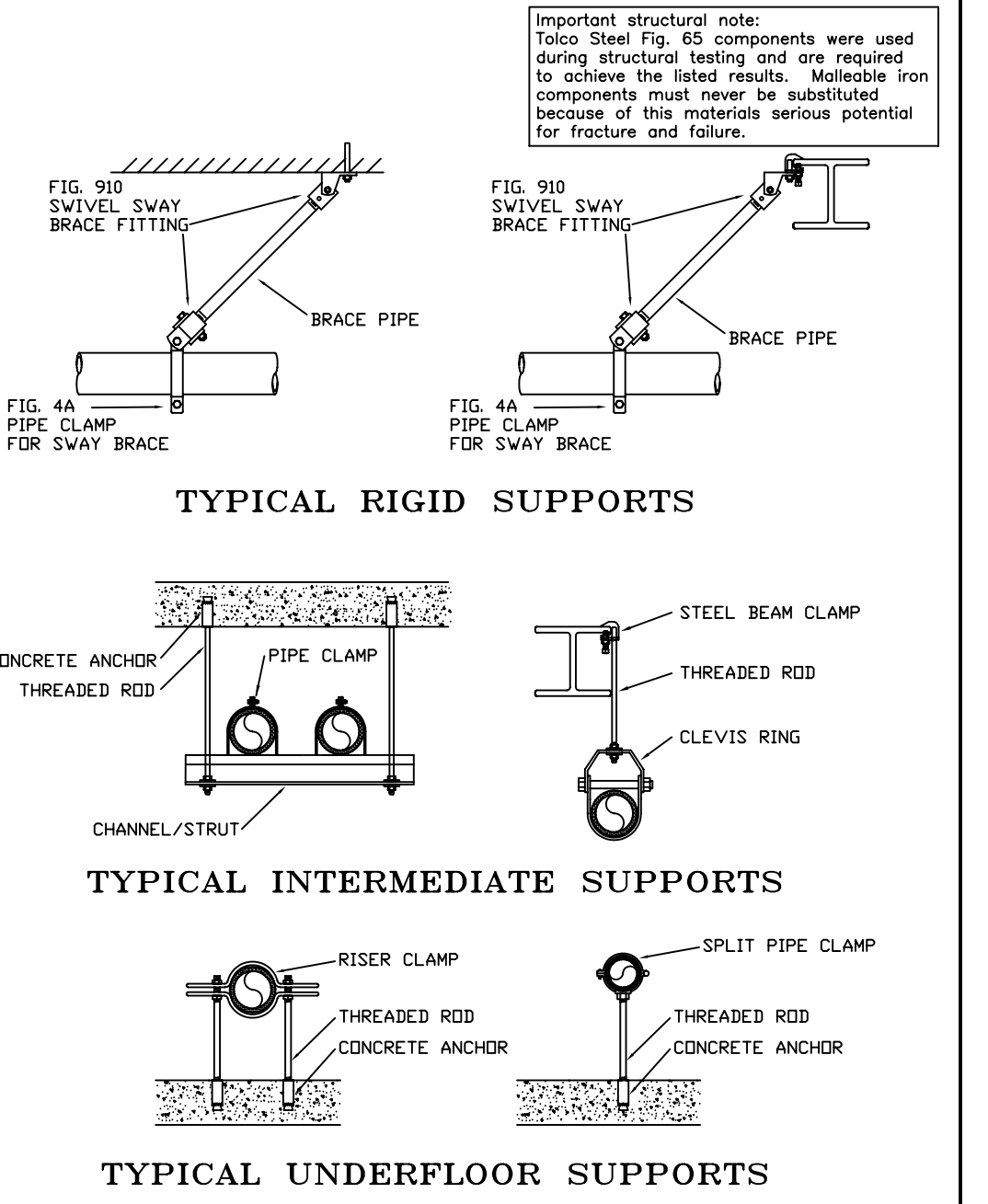
DEVICE LEGEND	
	RELEASING CONTROL PANEL
	AGENT DISCHARGE 360° NOZZLE - AFF
	AGENT DISCHARGE 360° NOZZLE - UNDERFLOOR/ABOVE CLG
	AGENT DISCHARGE 180° NOZZLE - AFF
	AGENT DISCHARGE 180° NOZZLE - UNDERFLOOR/ABOVE CLG
	AGENT PIPING
	AGENT CYLINDER



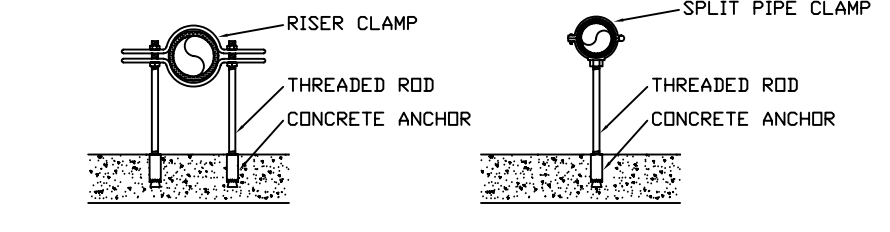
- AGENT PIPE HANGER NOTE**
- ALL PIPING SHALL BE SUPPORTED FROM THE BUILDING  
STRUCTURE IN A NEAT AND WORKMANLIKE MANNER. HANGING  
PIPES FROM OTHER PIPES SHALL NOT BE PERMITTED. NO  
PIPE SHALL BE SUPPORTED FROM ANY MECHANICAL OR  
ELECTRICAL PIPES OR EQUIPMENT.
  - ALL PIPING SHOULD BE SECURELY SUPPORTED WITH DUE  
ALLOWANCE FOR AGENT THRUST FORCES, THERMAL EXPANSION  
AND CONTRACTION, AND SHOULD NOT BE SUBJECTED TO  
MECHANICAL, CHEMICAL, VIBRATION, OR OTHER DAMAGE.
  - ALL PIPING MUST BE SOLIDLY ANCHORED TO WALLS, CEILING  
STRUCTURE, FLOORS, OR COLUMNS WHERE LONGITUDINAL OR  
LATERAL SWAY MAY OCCUR.
  - RIGID PIPE SUPPORTS ARE REQUIRED AT EACH DIRECTIONAL  
CHANGE, FITTING, TEE, AND NOZZLE. ALL DROPS TO 180°  
NOZZLES REQUIRE BACK BRACING IN THE OPPOSITE DIRECTION  
OF DISCHARGE.
  - "C" CLAMPS ARE NOT ACCEPTABLE TO SUPPORT ROD HANGERS

NOMINAL PIPE SIZE	MAXIMUM DISTANCE BETWEEN PIPE SUPPORTS	MINIMUM ROD DIAMETER
1/4"	7'-0"	3/8"
1/2"	7'-0"	3/8"
3/4"	7'-0"	3/8"
1"	7'-0"	3/8"
1-1/4"	7'-0"	3/8"
1-1/2"	9'-0"	3/8"
2"	10'-0"	3/8"
2-1/2"	11'-0"	1/2"
3"	12'-0"	1/2"
4"	14'-0"	5/8"
5"	16'-0"	5/8"
6"	17'-0"	3/4"
8"	19'-0"	3/4"

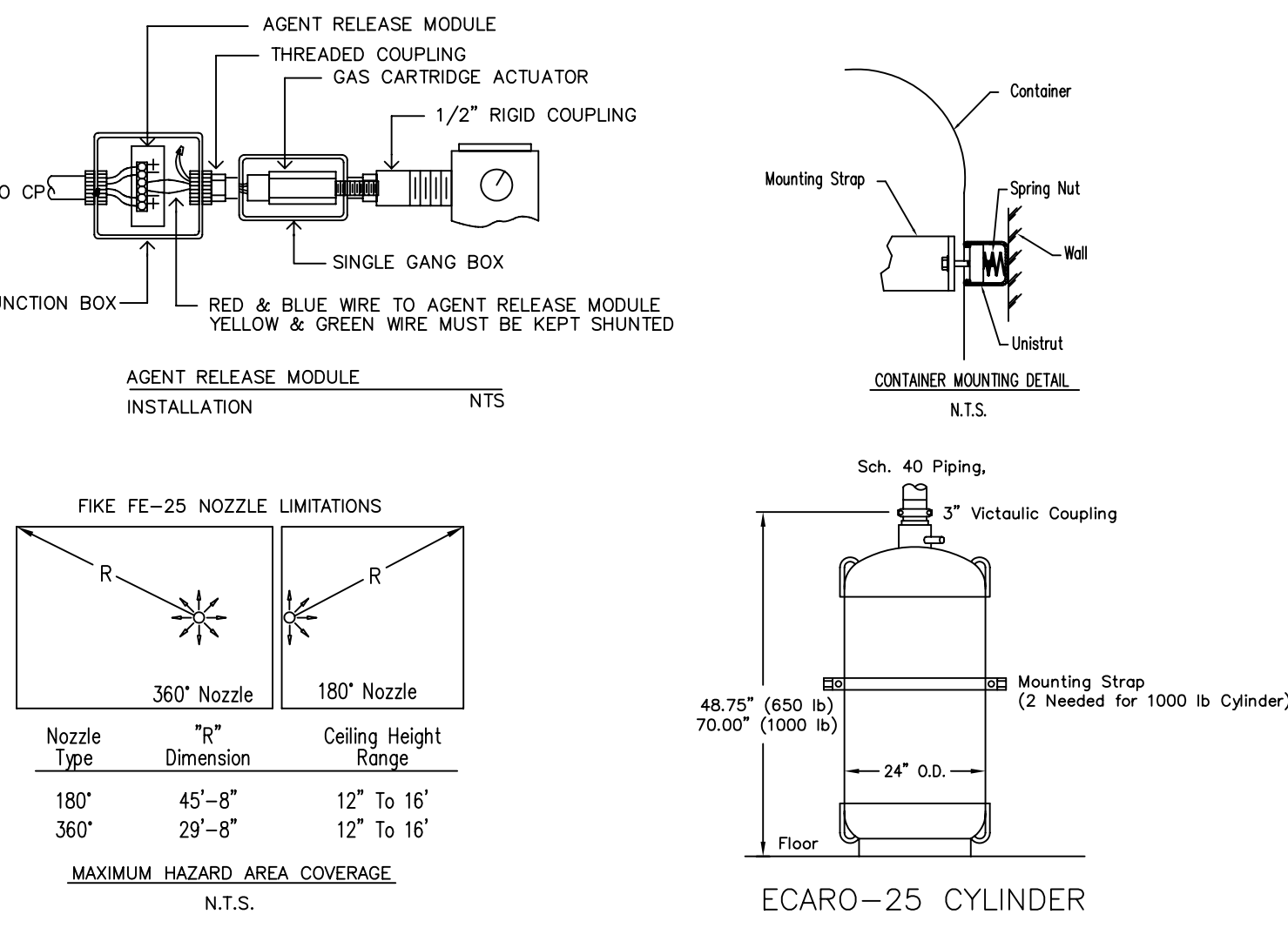
\*INFORMATION FROM FSSA PIPE DESIGN HANDBOOK



TYPICAL INTERMEDIATE SUPPORTS

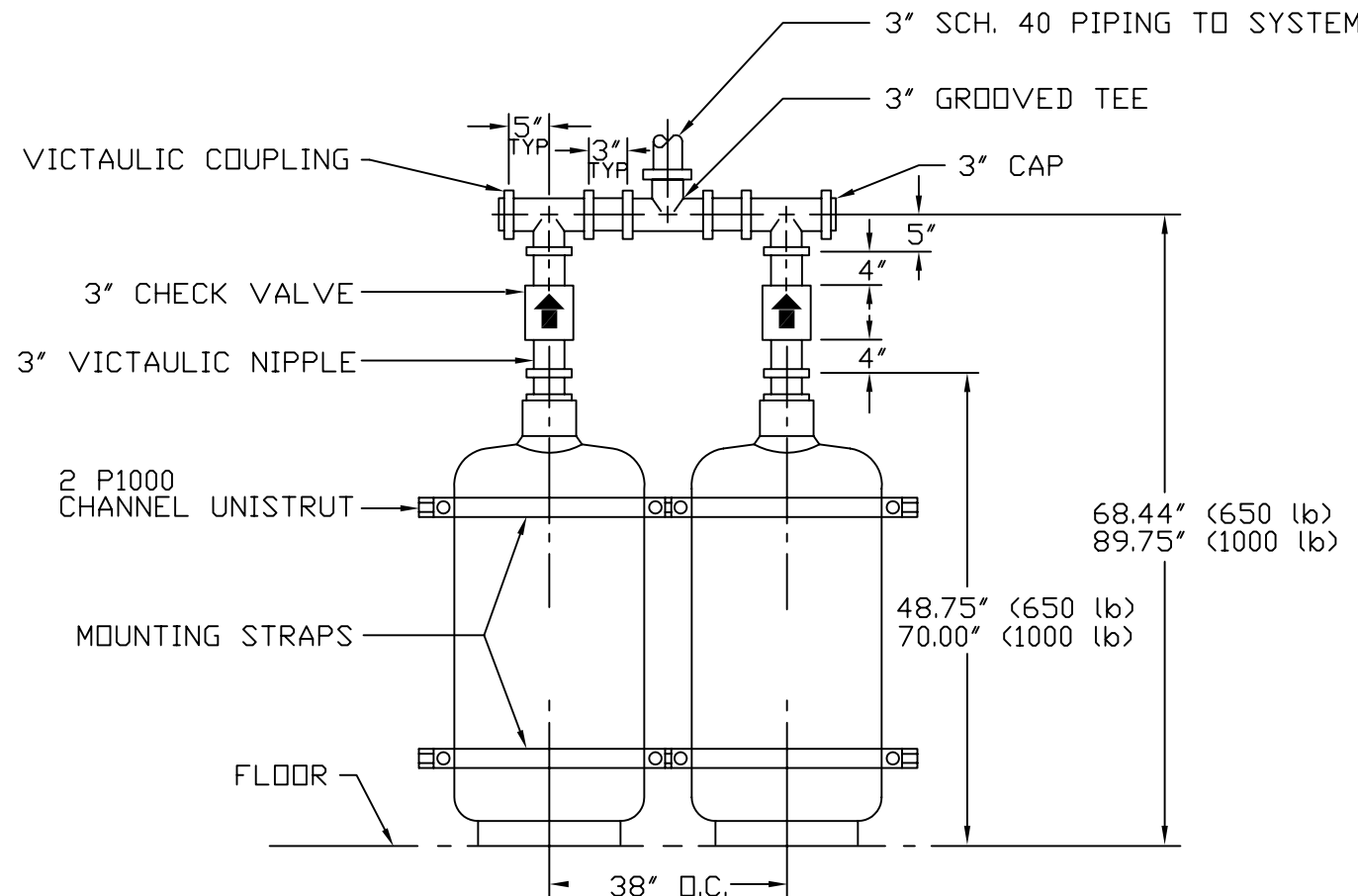


TYPICAL UNDERFLOOR SUPPORTS



**ECARO-25 GENERAL DETAILS**

SCALE: N.T.S.

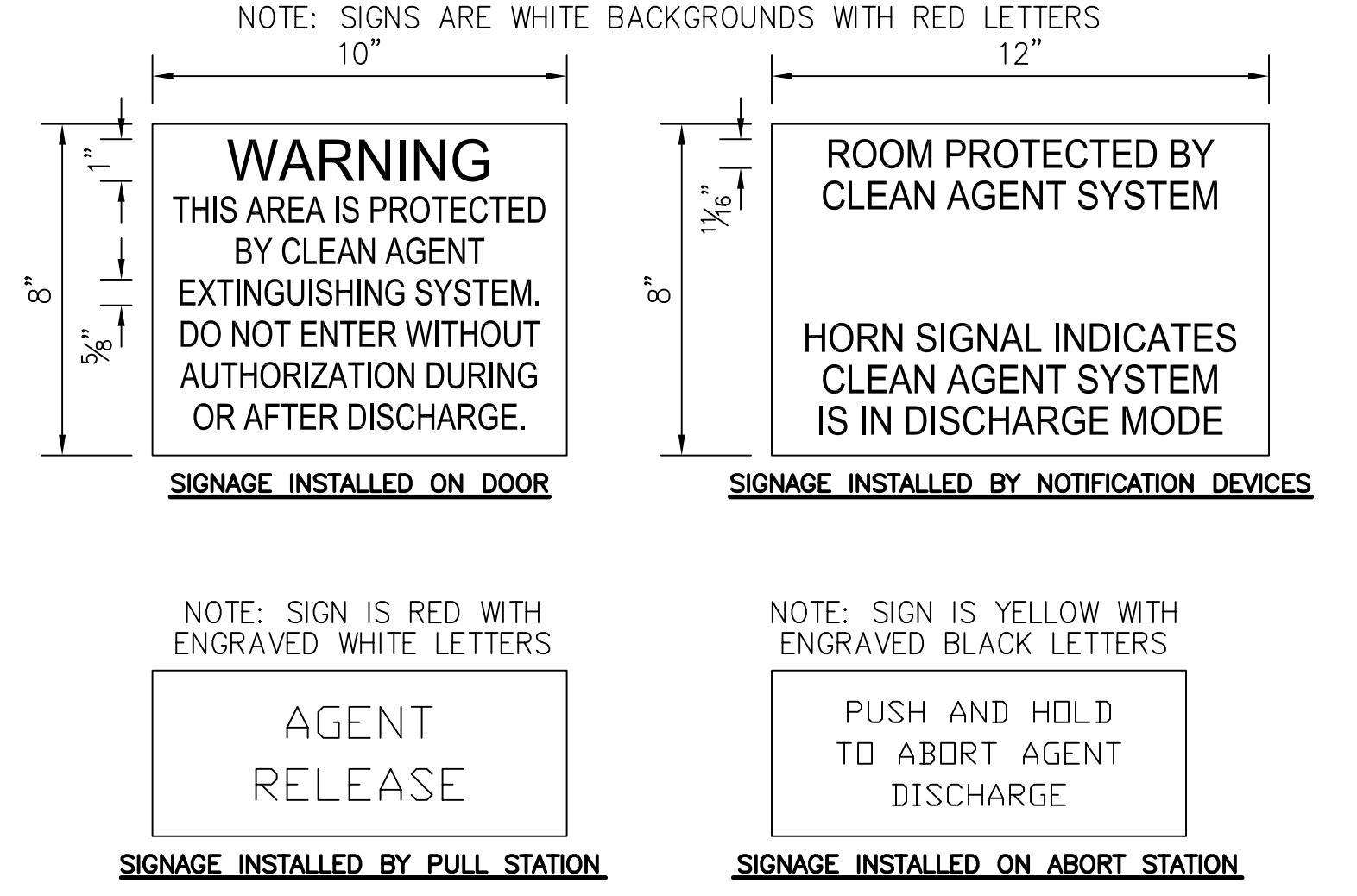


**MAIN/RESERVE MANIFOLD DETAIL**

SCALE: N.T.S.

NOTE:  
ALL CYLINDERS ON A MANIFOLD  
MUST BE THE SAME TYPE, SIZE,  
AND HAVE THE SAME FILL WEIGHT

- ENCLOSURE INTEGRITY NOTES**
- THIS ENCLOSURE IS TO BE SEALED BY MEANS INCLUDING (BUT NOT LIMITED TO):
- WALLS MUST EXTEND FROM THE SLAB BELOW A RAISED FLOOR TO THE OVERHEAD DECK AND  
BE SEALED AT BOTH DECKS. ALL CRACKS, HOLES, AND PENETRATIONS LEADING OUT OF THE  
PROTECTED ENCLOSURE MUST BE SEALED.
  - BLOCK WALLS MUST BE PAINTED WITH A MINIMUM OF 2-3 COATS OF PAINT.
  - WINDOWS SHOULD HAVE SILICONE SEALING PLACED AROUND THE GLASS AND AROUND THE FRAME.
  - DOORS MUST BE WEATHER-STRIPPED AND BE EQUIPPED WITH A DROP SEAL. BRUSH TYPE SEALS  
ARE GENERALLY NOT ADEQUATE. DOUBLE DOORS MUST HAVE AN ASTRALGAL SEAL. DOORS NORMALLY  
KEPT OPEN SHALL BE SELF-CLOSING AND BE EQUIPPED WITH A PANEL ACTUATED MAGNETIC RELEASE
  - BULKHEADS MUST BE IN PLACE BELOW DOORS WHERE THE RAISED FLOOR CONTINUES OUT OF  
THE PROTECTED ENCLOSURE. BULKHEADS MUST BE CAULKED AND SEALED AT BOTH LOWER  
SLAB AND UNDER RAISED FLOOR TILES. THE FLOOR TILES ABOVE THE BULKHEAD MUST BE OF  
GAS TIGHT CONSTRUCTION.
  - CEILING TILES ARE SUGGESTED TO BE CLIPPED AT A RADIUS OF 10'-0" AROUND NOZZLES (MIN).
  - FLOOR DRAINS MUST HAVE TRAPS WITH WATER IN TRAPS AT ALL TIMES.
  - ED AND ALL DUCTWORK AND DAMPERS SHOULD BE TIGHT FITTING.
  - ALL SEALING MATERIALS SHALL HAVE SAME FIRE RATING AS REQUIRED FOR WALL CONSTRUCTION.



**ECARO-25 SUPPRESSION SYSTEM**  
**VA MARTINSBURG CRRG**  
**CAPITAL REGION**  
**READINESS CENTER**  
**510 Butler Avenue**  
**MARTINSBURG, WV**

**NATIONAL INSTITUTE FOR CERTIFICATION  
IN ENGINEERING TECHNOLOGIES®**

LEVEL IV AUTOMATIC SPRINKLER  
SYSTEM LAYOUT  
LEVEL III SPECIAL HAZARDOUS  
SUPPRESSION SYSTEMS  
LEVEL II FIRE ALARM SYSTEMS  
DATE: \_\_\_\_\_

DRAWN BY: JRB  
CHECKED BY: SEP  
SCALE: AS NOTED  
JOB NO: T-10000-FM-09  
DATE: 06-15-09

REVISIONS:  
SHEET NO. 1 OF 2

NICET