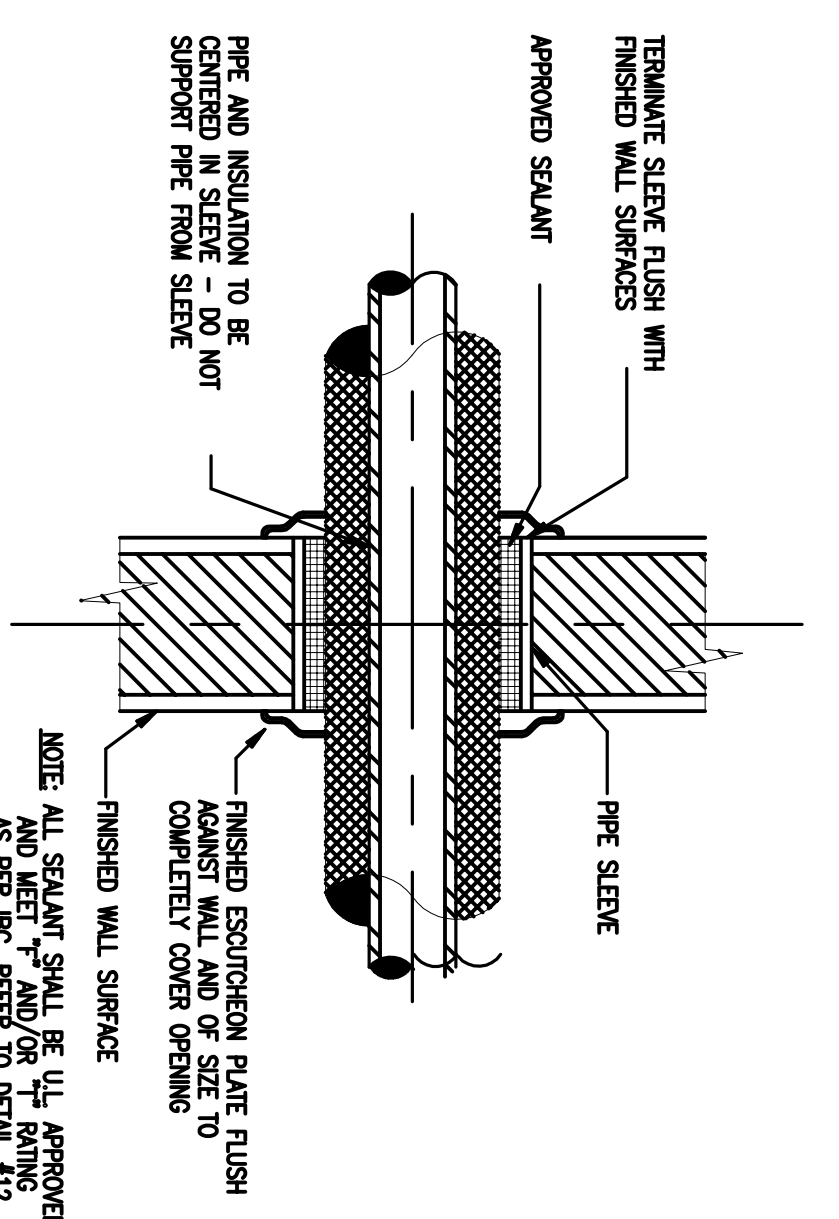
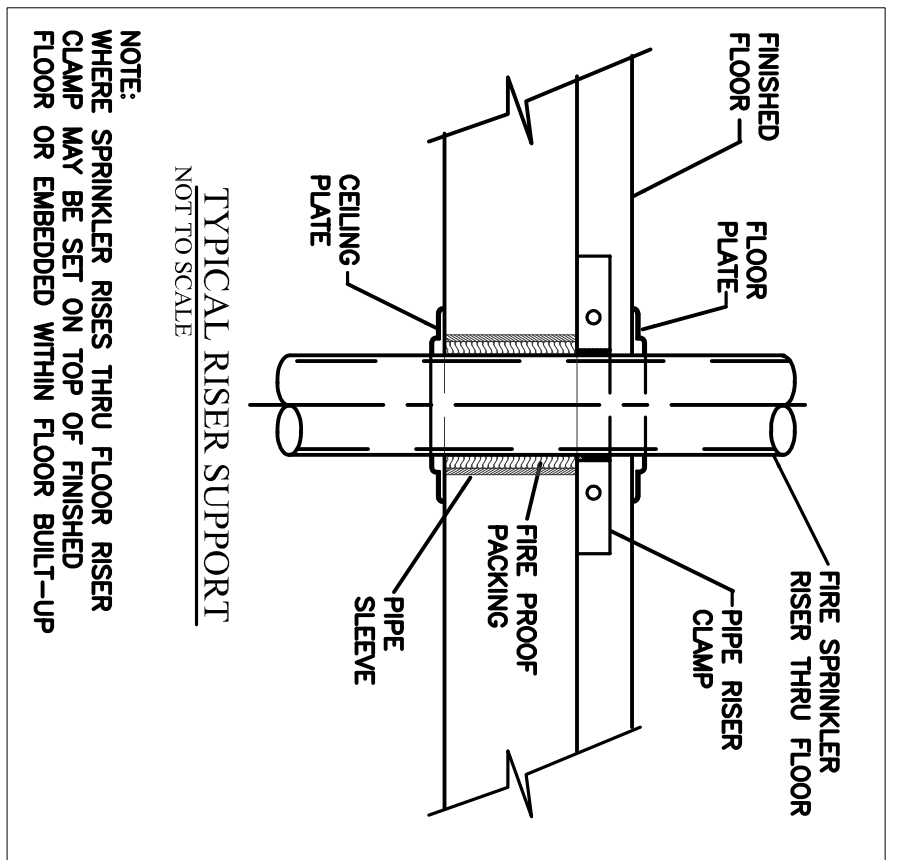
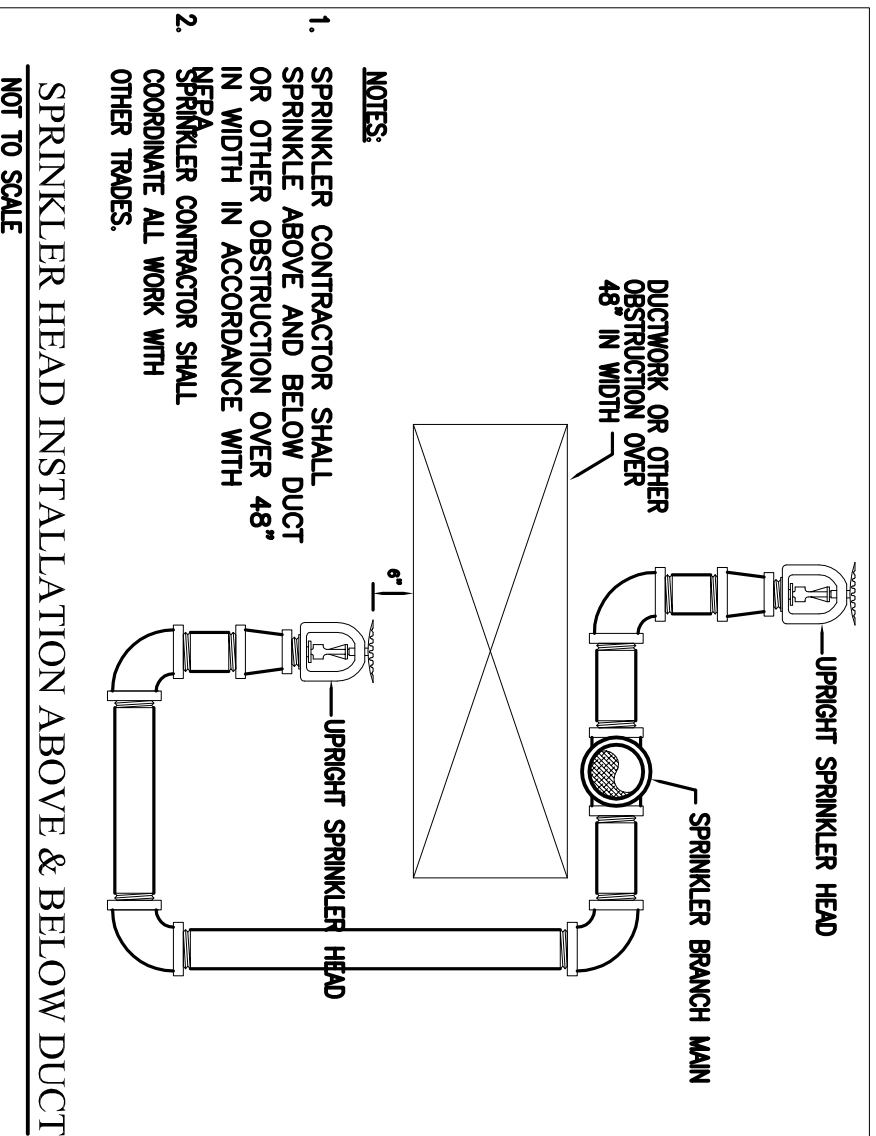
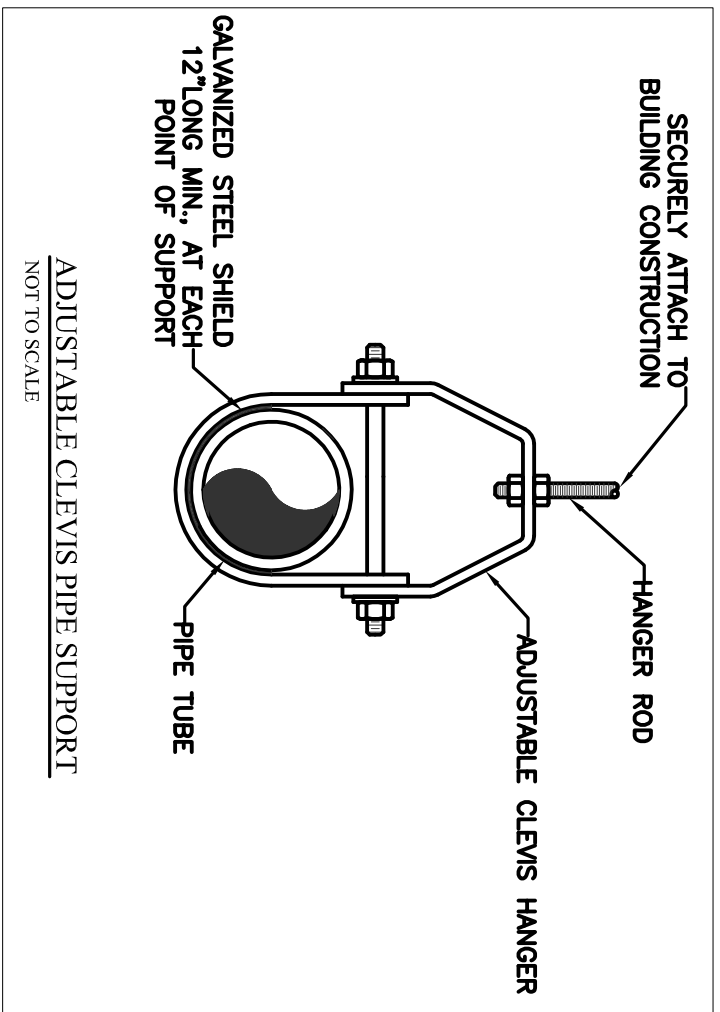
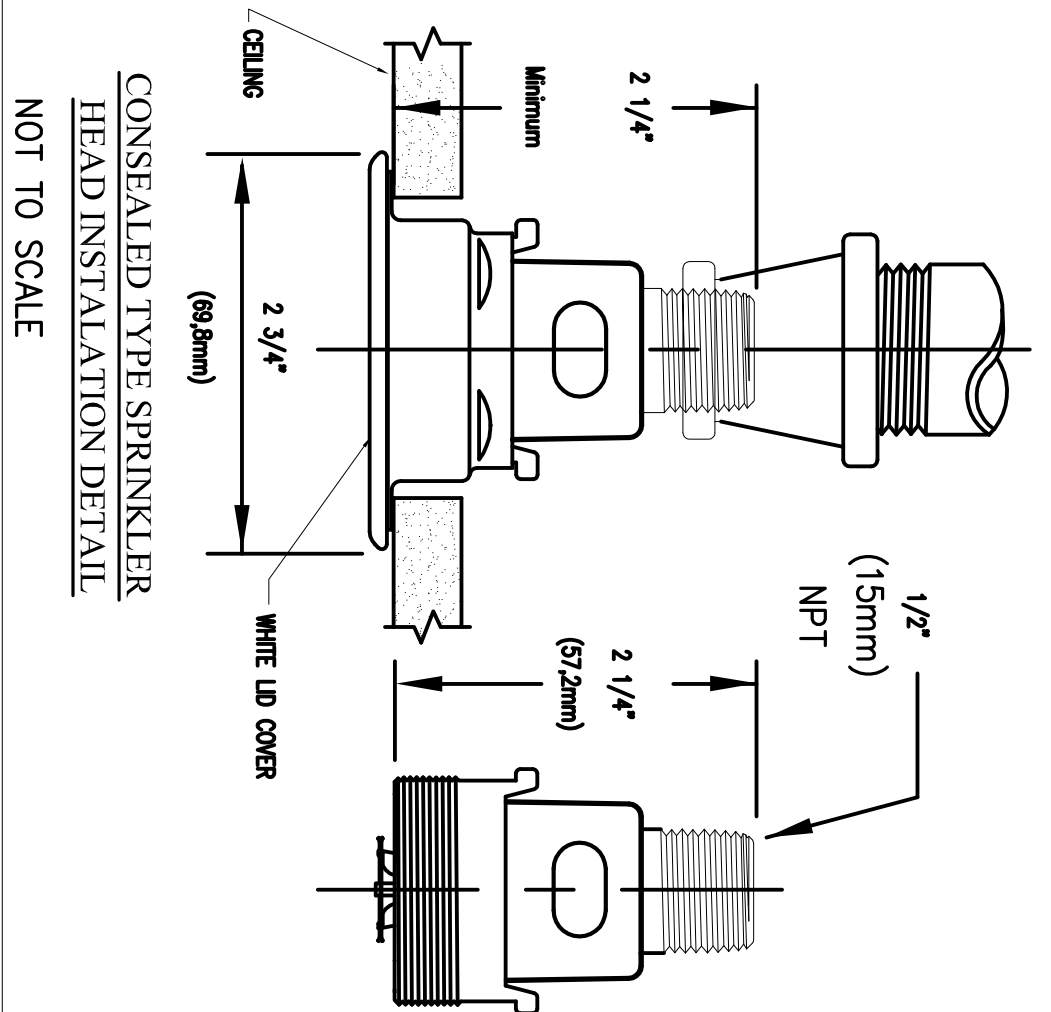
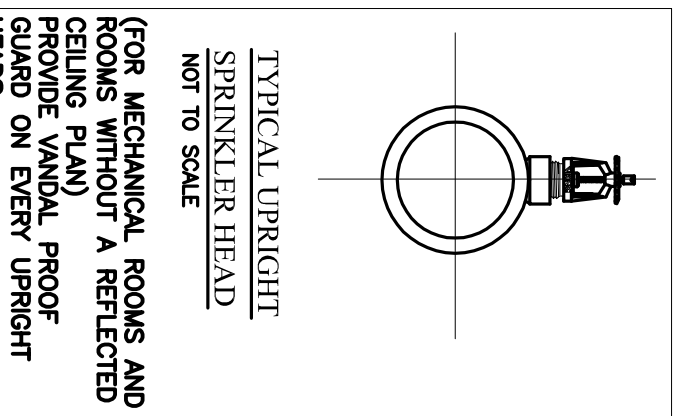
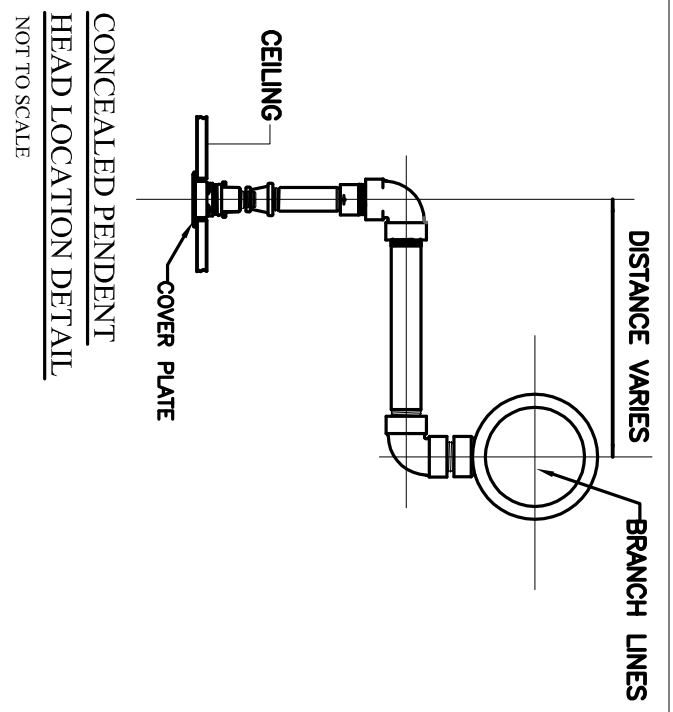


FIRE PROTECTION GENERAL SPECIFICATIONS

- DRAWINGS ARE DIAGRAMATIC, SMALL SCALE AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED. CERTAIN COMPONENTS, APPURTENANCES AND RELATED SPECIALTIES ARE NOT SHOWN BUT MUST BE PROVIDED. IT IS THE INTENT OF THE DRAWINGS AND THESE SPECIFICATIONS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK REQUIRED AND TO TURN OVER COMPLETE AND OPERABLE SYSTEMS TO THE OWNER.
- DO NOT SCALE DRAWINGS.
- ARRANGEMENT OF EQUIPMENT AND ROUTING OF PIPES, ETC. INDICATED ON THE DRAWINGS MAY REQUIRE MODIFICATIONS DURING CONSTRUCTION. IF CONDITIONS ARISE CAUSING SUCH MODIFICATION TO THE WORK THE CONTRACTOR SHALL MAKE SUCH MODIFICATIONS WITHOUT CHARGE TO THE CONTRACT. THE CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE FOR DIRECTION. ANY MODIFICATIONS REQUIRED TO WORK PREVIOUSLY INSTALLED BECAUSE OF THE CONTRACTOR'S FAILURE TO VERIFY THE SITE CONDITIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE DUE FROM THE OWNER FOR THIS FAILURE.
- THE CONTRACTOR IS REQUIRED TO VISIT THE SITE AND NOTE EXISTING CONDITIONS THAT MAY AFFECT THE WORK OR THE ABILITY OF THE CONTRACTOR TO PERFORM THE WORK AS INTENDED. THE CONTRACTOR SHALL CONSIDER THE EFFECTS OF THE EXISTING CONDITIONS ON THE CONTRACTOR'S WORK.
- ALL SLEEVES, OPENINGS, CUTTING AND PATCHING NECESSARY FOR THE INSTALLATION OF FIRE PROTECTION WORK IS THE RESPONSIBILITY OF THE FIRE PROTECTION CONTRACTOR. THE FIRE PROTECTION CONTRACTOR WILL BE TO PROVIDE ALL INFORMATION TO THE GENERAL CONTRACTOR REQUIRED FOR THE WORK.
- PIPING PASSING THROUGH WALLS, FLOORS OR ROOF SHALL BE PROVIDED WITH SLEEVES, SLEEVES IN WATER OR ROOF AND MADE WATER TIGHT. SLEEVES PASSING THROUGH FIRE RATED CONSTRUCTION SHALL BE FIRE PROOFED WITH MATERIALS APPROVED FOR THE RATING OF THE STRUCTURE AND U.L. LISTED. PIPING PASSING THROUGH FINISHED OR EXPOSED WALLS, FLOORS OR CEILING SHALL BE PROVIDED WITH CHROME PLATED STEEL SLEEVES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER SLEEVES IN PLACE. THE CONTRACTOR WILL BE REQUIRED TO REDO THE WORK WITH THE PROPER SLEEVES IN PLACE.
- COORDINATE LOCATION OF ALL DEVICES WITH ARCHITECT'S DETAILED ELEVATIONS, SECTIONS, REFLECTED CEILING PLAN, STRUCTURAL DRAWINGS, AND FIELD CONDITIONS. LOCATIONS INDICATED ON FIRE PROTECTION DRAWINGS ARE STRICTLY DIAGRAMATIC. FAILURE TO COMPLY WILL RESULT IN THE CONTRACTOR CORRECTING THE WORK AT THEIR OWN COSTS.
- ALL WORK SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE.
- COORDINATE ALL EQUIPMENT CLEARANCES WITH OTHER TRADES. FAILURE TO COORDINATE THE WORK WITH ALL OTHER TRADES RESULTING IN CONFLICTS WILL RESULT IN THIS CONTRACTOR CORRECTING THE WORK AT THEIR OWN COSTS.
- ALL PIPING IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN FURRED CHASES OR SUSPENDED CEILING UNLESS OTHERWISE SPECIFICALLY NOTED.
- ACCESS PANELS ARE REQUIRED FOR ALL VALVES, APPURTENANCES, CONTROLS, ETC. AND SHALL BE FURNISHED BY THIS CONTRACTOR AND INSTALLED BY THE GENERAL CONSTRUCTION CONTRACTOR. IT WILL BE THE FIRE PROTECTION CONTRACTOR'S RESPONSIBILITY TO INFORM THE GENERAL CONSTRUCTION CONTRACTOR WHERE EACH ACCESS PANEL IS REQUIRED AND ALSO COORDINATE ALL LOCATIONS WITH THE ARCHITECT.
- ANY EQUIPMENT AND/OR PIPING ETC. SUBJECT TO VIBRATION IS TO BE ISOLATED FROM BUILDING STRUCTURAL MEMBERS.
- a. THE FIRE PROTECTION CONTRACTOR AND/OR SUBCONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE, DESIGNED DRY PIPE SPRINKLER SYSTEM INDICATING ALL REQUIRED SPRINKLER HEADS, RUNOUTS, MAINS, PIPE SIZES, APPURTENANCES, AND HYDRAULIC CALCULATIONS FOR BUCCYE APARTMENTS KRAM, SPACE AND ATTIC. CONTRACTOR TO PROVIDE SHOP DRAWINGS INDICATING ALL REQUIRED SPRINKLER HEADS, RUNOUTS, MAINS, PIPE SIZES, APPURTENANCES, AND HYDRAULIC CALCULATIONS WITH ALL OTHER TRADES TO THE OWNER. THESE SHOP DRAWINGS WILL BE SUBMITTED TO NJ DCA, LOCAL FIRE MARSHALL AND THE LOCAL PLAN EXAMINER FOR APPROVAL AND ISSUANCE OF PERMIT. THE SYSTEM SHOWN IS BASED ON LIGHT HAZARD OCCUPANCY, IN ACCORDANCE WITH THE FOLLOWING CRITERIA & DENSITIES:
  - DRY SYSTEM,
  - LIGHT HAZZARD, 0.10 GPM/ SQ. FT. OVER 1500 SQ.FT
  - ORDINARY HAZARD, 0.15 GPM/SQ.FT OVER 1500 SQ. FT. IN ALL STORAGE AREAS
  - 0.20 GPM/SQ.FT OVER 3000 SQ. FT. IN MECHANICAL SPACES
- c. SPRINKLER HEADS MUST BE COORDINATED WITH LIGHT FIXTURE LAYOUT, HVAC DIFFUSERS & GRILLES. TYPE HEADS SHALL BE AS INDICATED ON PLANS.
- d. FIRE SERVICE WATER DEMAND REQUIREMENTS:
  - MIN 15 PSI RESIDUAL PRESSURE AT MOST REMOTE SPRINKLER HEAD.
  - 500 GPM AT BASE OF STANDPIPE RISER, MIN. 100 PSI AT TOP
  - DURATION 30-60 MINUTES.
  - HOSE STREAM DEMAND = 100 GPM FOR 30 MINUTES.
  - MINIMUM BRANCH LINES TO BE 1".
14. SPRINKLER HEADS MUST BE COORDINATED WITH ARCHITECTURAL, STRUCTURAL, HVAC AND REFLECTED CEILING PLANS.
15. CONTRACTOR TO PERFORM FLOW TEST TO VERIFY SYSTEM PRESSURE AT SITE PRIOR TO PROPOSAL SUBMITTALS.
16. REFER TO ELECTRICAL DRAWINGS FOR FIRE ALARM PANEL LOCATION AND EQUIPMENT.
17. SPRINKLER HEADS:
  - GENERAL - SEMI RECESSED PENDANT, 155T, QUICK RESPONSE.
  - SIDEWALL - RECESSED HORIZONTAL SIDEWALL 155T, QUICK RESPONSE.
18. PIPE 2" AND SMALLER MAY BE CPVC PLASTIC PIPE OR SCHEDULE 40 BLACK STEEL. PIPE 2 1/2" AND LARGER SHALL BE SCHEDULE 10 BLACK STEEL.
19. ALL DEVICES AND SPRINKLER HEADS SHALL HAVE U.L. LISTINGS AND BE INSTALLED IN ACCORDANCE WITH SUCH LISTINGS.
20. PROVIDE AUXILIARY DRAINS FOR ALL TEST CONNECTIONS AND DEVICES REQUIRING SAME.
21. SYSTEM SHALL BE HYDROSTATICALLY TESTED AT COMPLETION OF INSTALLATION. ALL NFPA REPORTS SHALL BE PROVIDED TO THE OWNER'S REPRESENTATIVE.
22. SPRINKLERS
  - A. PENDANT CONCEALED SPRINKLERS - FM APPROVED AND U.L. LISTED, ADJUSTABLE TYPE. HEADS SHALL BE 1/2" STANDARD ORIFICE WITH 1/2" NPT THREAD, 165T TEMPERATURE RATING.
  - B. UPRIGHT SPRINKLERS - FM APPROVED AND U.L. LISTED, ADJUSTABLE TYPE. HEADS SHALL BE 1/2" STANDARD ORIFICE WITH 1/2" NPT TREAD, 165T TEMPERATURE RATING.

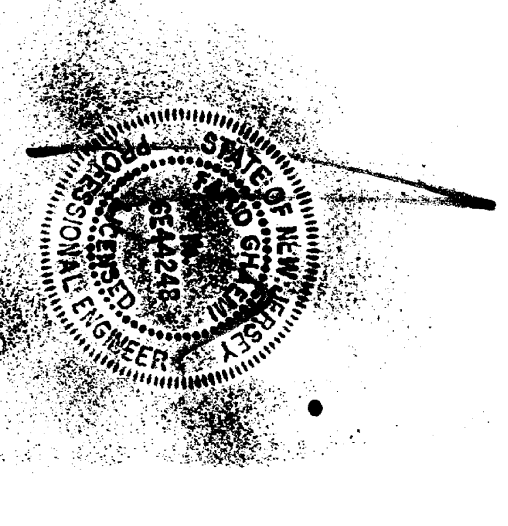
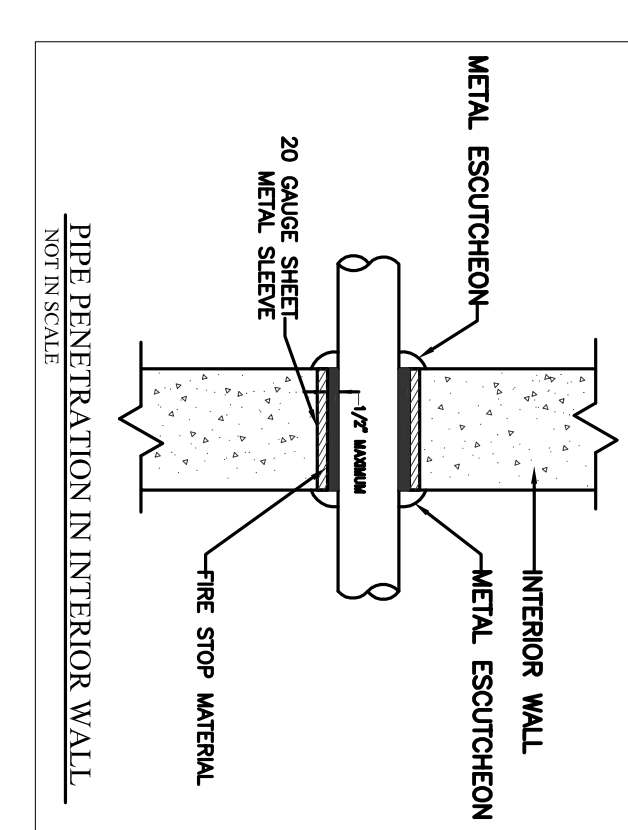
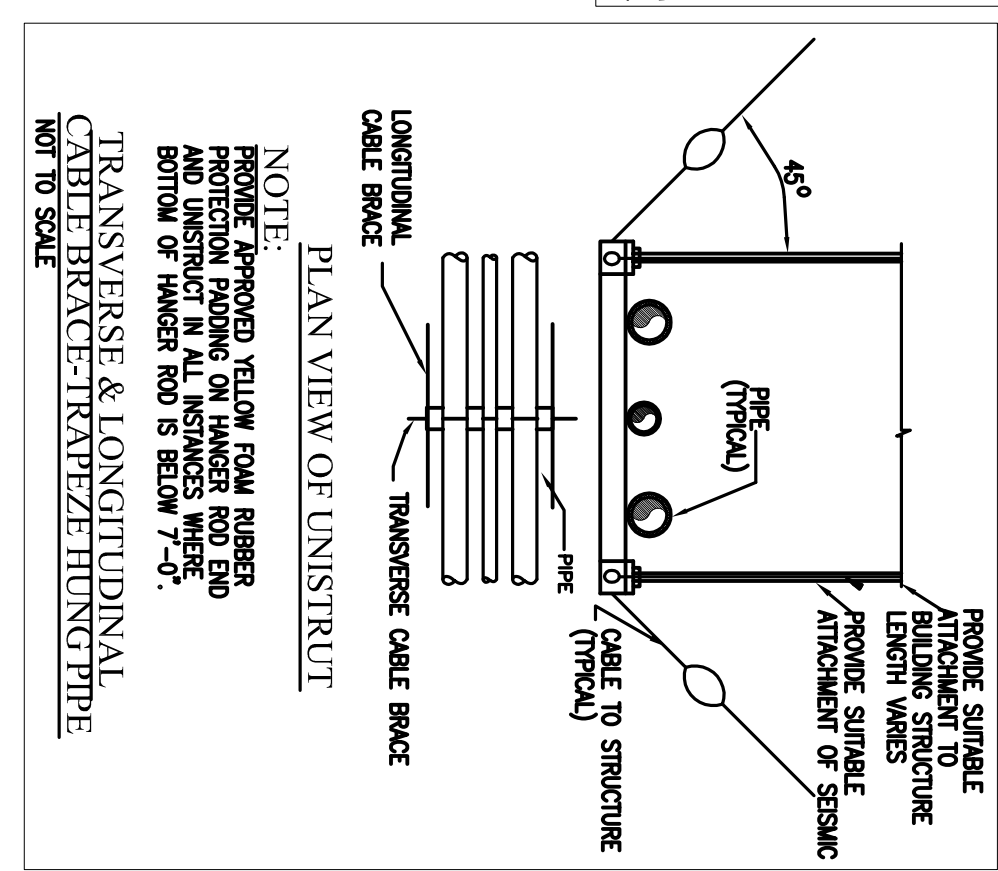
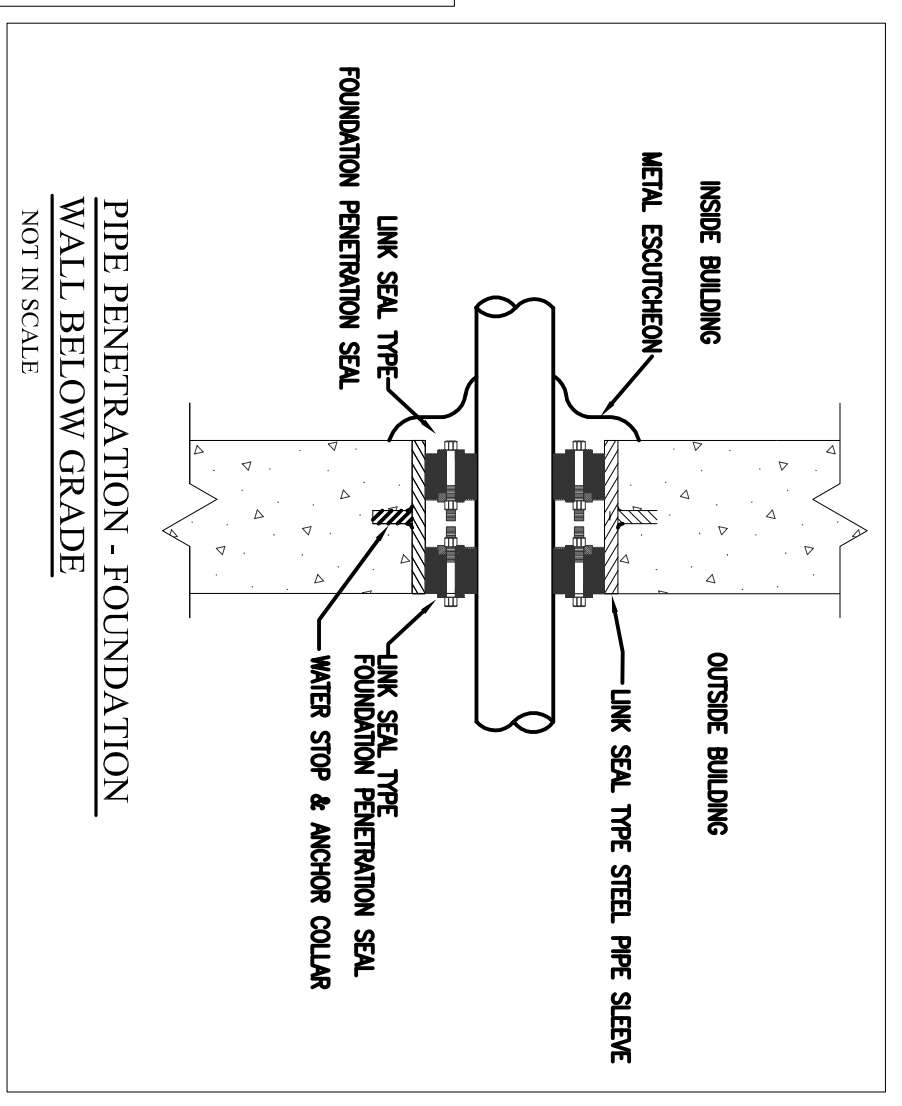
FIRE PROTECTION GENERAL NOTES

- EACH BORDER SHALL VISIT THE SITE AND BECOME INGRESS AS TO THE EXISTING CONDITIONS AND LOCATIONS OF THE WORK REQUIRED. NO ADDITIONAL COMPENSATION WILL BE APPROVED DUE TO FIELD CONDITIONS.
- THE CONTRACTOR SHALL PROVIDE A FULLY SPRINKLED CRAWL SPACE AND ATTIC IN THE BUCKEYE BUILDING. THE CONTRACTOR SHALL PROVIDE ADDITIONAL SPRINKLERS FOR THOSE AREAS THAT REQUIRE ADDITIONAL SPRINKLER PROTECTION BELOW DUCTS DUE TO INTERFERENCE OF NORMAL SPRAY PATTERNS OF SPRINKLER HEADS LOCATED AT THE UNDERSIDE OF FLOOR SLAB ABOVE AND INCLUDING AT LOCATIONS WHERE BEAMS EXIST. MATERIAL:
  - 3. CPVC PIPE, SCHEDULE 40 OR SCHEDULE 80 CPVC FITTINGS, AND SOLVENT-CEMENTED JOINTS MAY BE USED FOR LIGHT-HAZARD AND RESIDENTIAL OCCUPANCIES.
  - 1) PIPING JOINING CPVC PIPE AND FITTINGS
  - PIPE IN THIS ARTICLE IS AVAILABLE IN NPS 3/4" TO NPS 3 (DN 20 TO DN 80) AND MUST BE INSTALLED IN A FIRE-RATED ENCLOSURE.
  - A. CPVC PIPE: ASTM F 442/F 442M AND UL 1821, SPR 13.5, FOR 175-PSIG RATED PRESSURE AT 150 DEG F, WITH PLAN ENDS. INCLUDE "LISTED" AND "CPVC SPRINKLER PIPE" MARKINGS.
  - B. CPVC FITTINGS: [U.L. LISTED] [06] [FM APPROVED] FOR 175-PSIG RATED PRESSURE AT 150 DEG F. SOCKET TYPE INCLUDE "LISTED" AND "CPVC SPRINKLER FITTING" MARKINGS.
  - 1. NPS 3/4" TO NPS 1-1/2" ASTM F 438 AND UL 1821, SCHEDULE 40, SOCKET TYPE.
  - 2. NPS 2 TO NPS 3
  - 3. ASTM F 438 AND UL 1821, SCHEDULE 80, SOCKET TYPE.
  - 4. CPVC-TO-METAL TRANSITION FITTINGS: CPVC ONE PIECE WITH DIMENSIONS EQUIVALENT TO PIPE; ONE END WITH THREADED BRASS INSERT, AND ONE SOCKET END.
  - C. SOLVENT CEMENTS FOR JOINING CPVC PIPING AND TUBING: ASTM F 483. SOLVENT CEMENT RECOMMENDED BY PIPE AND FITTING MANUFACTURER, AND MADE FOR JOINING CPVC SPRINKLER PIPE AND FITTINGS. INCLUDE CLEANER OR PRIMER RECOMMENDED BY PIPE AND FITTING MANUFACTURER.
- PLASTIC, PIPE-FLANGE GASKET, AND BOLTS AND NUTS. TYPE AND MATERIAL RECOMMENDED BY PIPING SYSTEM MANUFACTURER UNLESS OTHERWISE INDICATED
- SPRINKLER INSTALLATIONS SHALL BE COMPLETE WITH ALL EQUIPMENT, FITTINGS, PIPES, BRANCHES, TEST DRAINS, DRAINS AT LOW POINTS IN SYSTEM AND HANGERS.
- ALL PIPING AND EQUIPMENT SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE. HANGERS AND SUPPORTS SHALL BE SPECIFICALLY APPROVED FOR USE IN SPRINKLER SYSTEM.
- A. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OF HANGER RODS IN REQUIRED LOCATIONS, PROVIDE ADDITIONAL STEEL FRAMING AS REQUIRED AND APPROVED.
- B. NO SPRINKLER PIPING SHALL BE HUNG FROM THE PIPING OF OTHER TRADES OR DUCTWORK. HANGERS SHALL BE OF HEAVY CONSTRUCTION, SUITABLE FOR THE SIZE OF PIPE TO BE SUPPORTED.
- SPRINKLER SYSTEM SHALL BE PROTECTED TO PREVENT PIPE BREAKAGE WHERE SUBJECT TO EARTHQUAKES IN ACCORDANCE WITH NFPA 134 AND LOCAL AUTHORITIES HAVING JURISDICTION.
- NEW SPRINKLER PIPING TO BE INSTALLED SHALL BE SIZED AT A MINIMUM OF 1-INCH AND ALL NEW DROP INPLEES SHALL BE 1-INCH, UNO.
- ALL SPRINKLER WORK SHALL MEET THE REQUIREMENTS OF NFPA, FIRE MARSHALL AND LOCAL AUTHORITIES HAVING JURISDICTION.
- COORDINATE ALL FIRE SUPPRESSION WORK WITH REFLECTED CEILING PLANS AND OTHER TRADES.
- THE CONTRACTOR SHALL PROVIDE SIGNED, SEALED HYDRAULIC CALCULATIONS FOR THE ENTIRE BUILDING BASED ON THE CRITERIA IN THE SPECIFICATIONS. ALL DESIGN DRAWINGS AND HYDRAULIC CALCULATIONS SHALL BE PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN NEW JERSEY
- CONTRACTOR SHALL PROVIDE U.L. APPROVED FIRE STOPS AT PENETRATION THRU FIRE-RATED WALLS.
- SPRINKLER CONTRACTOR SHALL OBTAIN SPRINKLER PERMIT, PREPARE AND FILE THE REQUIRED DRAWINGS AND CALCULATIONS WITH THE LOCAL AUTHORITY HAVING JURISDICTION.
- CONTRACTOR SHALL OBTAIN FLOW TEST INFORMATION FOR THIS PROJECT. FLOW TEST INFORMATION SHALL HAVE BEEN PERFORMED WITHIN THE LAST SIX(6) MONTHS OF PROJECT CONSTRUCTION START DATE.
- THE CONTRACTOR PERFORMING FIRE PROTECTION EQUIPMENT WORK SHALL HAVE THE APPROPRIATE CERTIFICATION IN EQUIPMENT FOR SPRINKLER, HOOD SUPPRESSION, OR OTHER RELATED WORK SHALL BE PROVIDED WHEN SHOP DRAWINGS ARE SUBMITTED. FIRE ALARM CERTIFICATION SHALL BE AT TIME OF PERMIT APPLICATION.
- FIRE SPRINKLER HYDRAULIC DATA PLATE SHALL BE PROVIDED AT ALL ALARM VALVES.
- ORDINARY TEMPERATURE CLASSIFICATION SPRINKLERS SHALL BE INSTALLED THROUGHOUT ENTIRE BUILDING IN ACCORDANCE WITH NFPA UNLESS LISTED BELOW. FOR SPECIFIC ROOMS NOT LISTED REFER TO NFPA, KITCHEN, KITCHEN AREAS, SERVARY - HIGH OR EXTRA HIGH TEMP CLASS MECHANICAL/BOILER ROOMS - HIGH TEMP CLASS



PIPE SLEEVE NOTES

ALL PIPING SYSTEM PENETRATIONS OF WALLS AND FLOORS SHALL BE SEALED WITH U.L. LISTED, 200" OR EQUIVALENT PART FORMER IN PLACE. SEALANT SHALL BE RESISTANT, SEALER SHALL BE TESTED IN ACCORDANCE WITH ASTM E 814. INSTALL SEALANT, INCLUDING FORMING, PACKING AND OTHER ACCESSORY MATERIALS TO FILL OPENINGS WHERE WALL AND FLOOR PENETRATIONS OCCUR. COMPLY WITH INSTALLATION REQUIREMENTS ESTABLISHED BY TESTERS AND INSPECTION AGENCY. OTHER APPROVED MATERIALS MAY BE USED IF THEY MEET THE REQUIREMENTS OF THE TESTING METHOD. PIPING SYSTEM PENETRATION SHALL HAVE A 2-HOUR F-RATING AND A 1-HOUR T-RATING.



GRANT ENGINEERING CONSULTANTS, LLC  
99 CARTERET STREET  
GLEN RIDGE, NJ 07028  
T: 732.740.7889  
F: 973.566.0123  
WWW.GRANTENGINEERING.ORG  
FIRM ORIGIN, PE NJ LIC. NO. 24629424800

RAMAPO COLLEGE OF NEW JERSEY  
"BUCCYE" RESIDENCE INTERIOR RENOVATION  
505 RAMAPO VALLEY ROAD, MAHWAH, NEW JERSEY

1	01/16/2015
REVISION	DATE
DRAWING TITLE	

FIRE PROTECTION SYSTEM  
NOTES, PERFORMANCE  
SPECIFICATIONS & DETAILS

DATE 11/12/2014  
SCALE AS NOTED  
DRAWN MO  
CHECKED JRG  
DRAWING #

FP-001