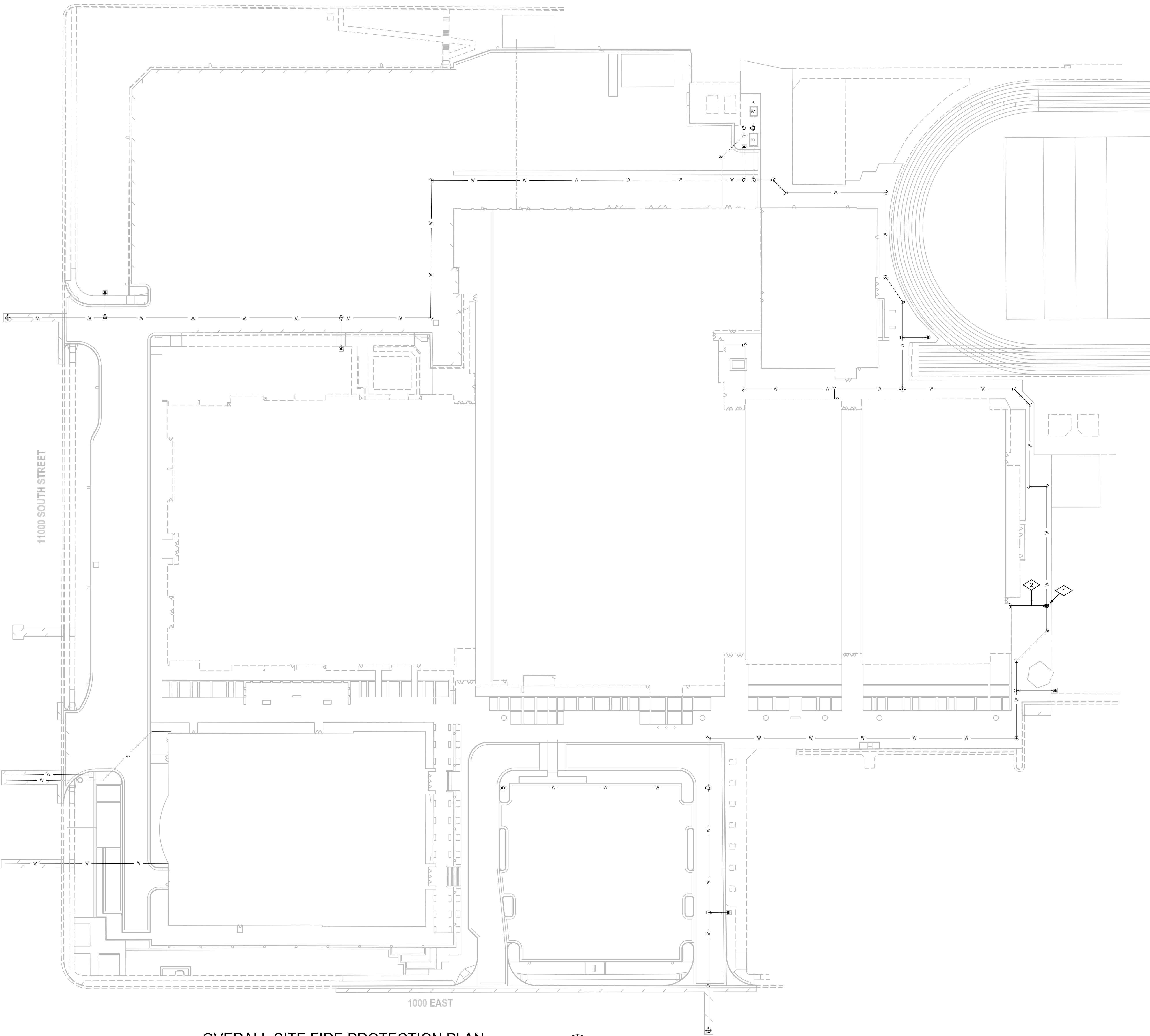


23122  
 Project No. FEB. 2024  
 Date: STAFF  
 Drawn: MFT  
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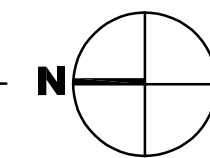
**REFERENCE NOTES**

- 1 CONTRACTOR TO CONNECT INTO EXISTING FIRE LINE LOCATED IN THIS APPROXIMATE LOCATION. CONTRACTOR TO PROVIDE WATER VALVE AND THRUST BLOCK AS REQUIRED.
- 2 CONTRACTOR TO SAW CUT EXISTING SLAB AND EXCAVATE AS NEEDED TO RUN NEW FIRE LINE TO BUILDING. CONTRACTOR TO BACKFILL, COMPACT AND REPAIR CONCRETE TO MATCH EXISTING.



**OVERALL SITE FIRE PROTECTION PLAN**

SCALE: 1" = 40'-0"  
 0 20'-0" 40'-0" 80'-0"



Sheet Title

**OVERALL SITE FIRE PROTECTION PLAN**

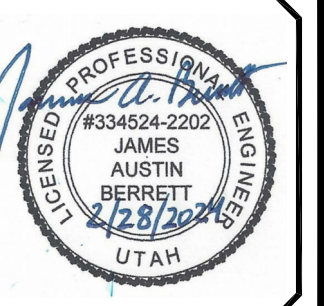
Project Title

CANYONS SCHOOL DISTRICT  
**ALTA HIGH SCHOOL  
 GYM FIRE PROTECTION**  
 11055 S 1000 E, SANDY, UT 84094

**OLSEN & PETERSON**  
 consulting engineers, inc.  
 14 E. 2700 S. Salt Lake City, UT. 84115  
 PH: (801) 486-4646

Sheet No.

**FP100**



Project No. 23122  
 Date: FEB. 2024  
 Drawn: STAFF  
 Checked: MFT

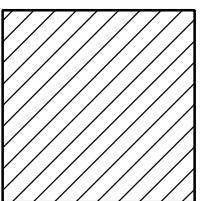
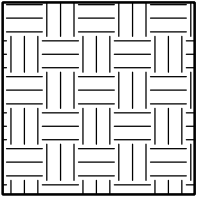
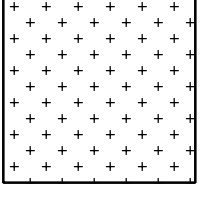



Sheet Title  
**OVERALL FIRE PROTECTION PLAN**

Project Title  
**CANYONS SCHOOL DISTRICT  
 ALTA HIGH SCHOOL  
 GYM FIRE PROTECTION**  
 11055 S 1000 E, SANDY, UT 84094

**OLSEN & PETERSON**  
 consulting engineers, inc.  
 14 E. 2700 S, Salt Lake City, UT, 84115  
 PH: (801) 486-4646

Sheet No.  
**FP101**

**FIRE PROTECTION LEGEND**

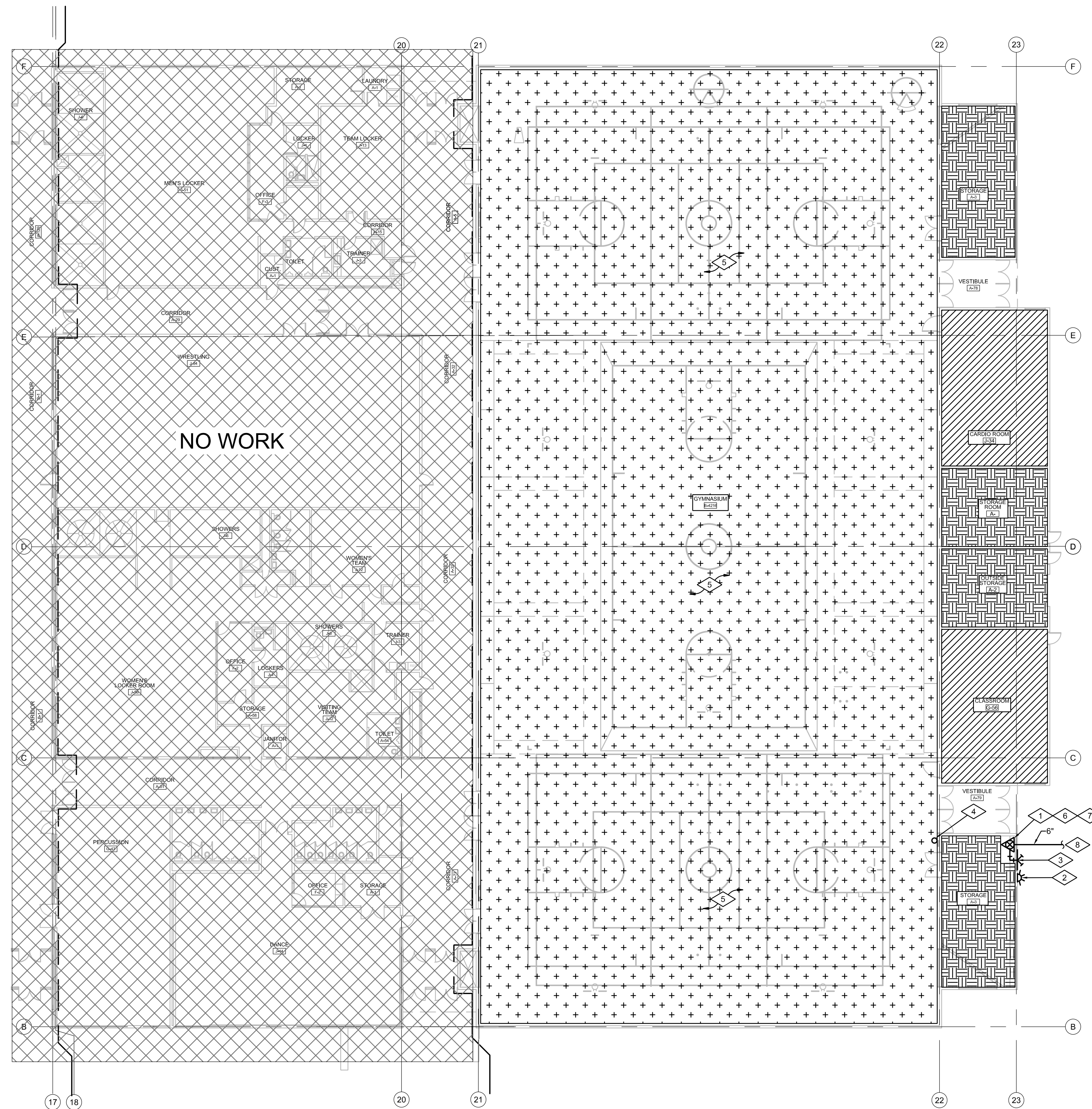
-  LIGHT HAZARD LAY-IN OR GYP. BOARD CEILING FULLY CONCEALED TYPE SPRINKLER HEADS SIMILAR TO VIKING V4621 INSTALLED TIGHT TO CEILING WITH BRIGHT WHITE COVER PLATE.
-  ORDINARY HAZARD, GROUP 1 LAY-IN OR GYP. BOARD CEILING FLUSH TYPE FULLY CONCEALED HEADS, INSTALLED TIGHT TO CEILING WITH OFF-WHITE DISC SIMILAR TO "RELIABLE" G4QR QUICK RESPONSE TYPE.
-  LIGHT HAZARD - EXPOSED STRUCTURE (NO CEILING) UPRIGHT BRASS HEADS ON EXPOSED PIPING.
-  FIRE SPRINKLER RISER
-  SPRINKLER ALARM BELL
-  WALL MOUNTED SIAMESE FIRE DEPARTMENT CONNECTION

**REFERENCE NOTES**

- 1 FIRE SPRINKLER RISER.
- 2 SPRINKLER SYSTEM ALARM BELL MOUNTED HIGH ON OUTSIDE WALL.
- 3 WALL MOUNTED SIAMESE FIRE DEPARTMENT CONNECTION.
- 4 FIRE PROTECTION PIPING TO RISE EXPOSED TIGHT TO WALL. COORDINATE WITH EXISTING CONDITIONS.
- 5 CONTRACTOR TO PROTECT GYM FLOOR DURING CONSTRUCTION.
- 6 CONTRACTOR TO PROVIDE 6'-0" TALL CHAIN LINK FENCE WITH LOCKABLE GATE. COORDINATE LOCATION WITH OWNER.
- 7 CONTRACTOR TO COORDINATE WITH OWNER ON REMOVING EXISTING CABINETS.
- 8 MAKE CONNECTION FROM AMES IN BUILDING RISER TO FIRE LINE OUTSIDE. SEE SHEET FP100.

**GENERAL NOTES**

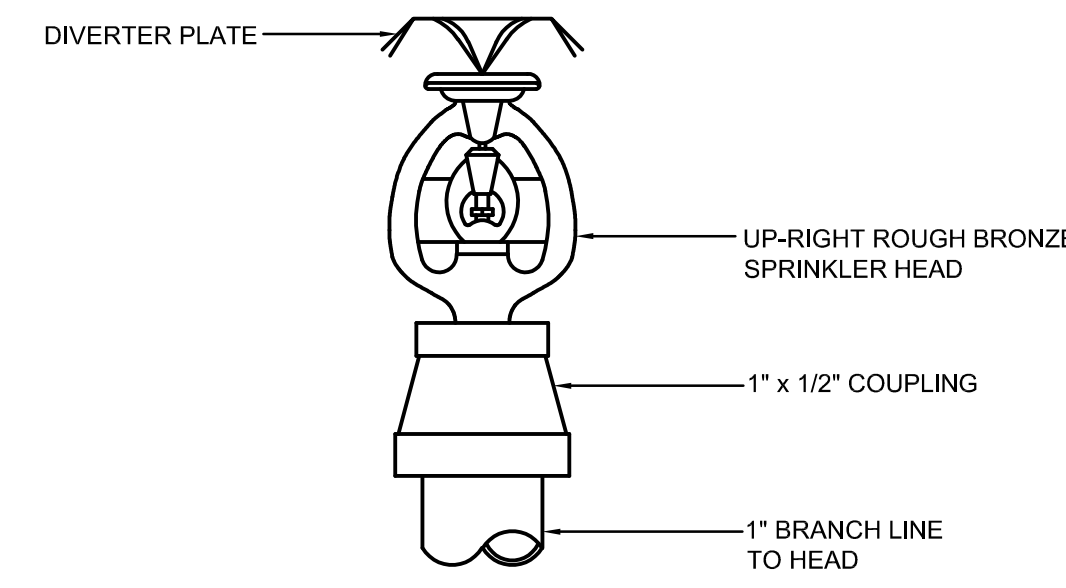
- A. CONTRACTOR IS TO WALK WITH OWNER REPRESENTATIVE AND INSPECT THE EXISTING GYM FLOOR AND DOCUMENT ALL EXISTING DAMAGES PRIOR TO WORK STARTING IN GYM AREA.
- B. CONTRACTOR IS RESPONSIBLE FOR COVERING AND PROTECTING THE EXISTING GYM FLOOR DURING CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE TO REPAIR ANY DAMAGES CAUSED DURING NEW INSTALLATION.



**OVERALL FIRE PROTECTION PLAN**

SCALE: 1/16" = 1'-0"  
 0 8'-0" 16'-0" 32'-0"

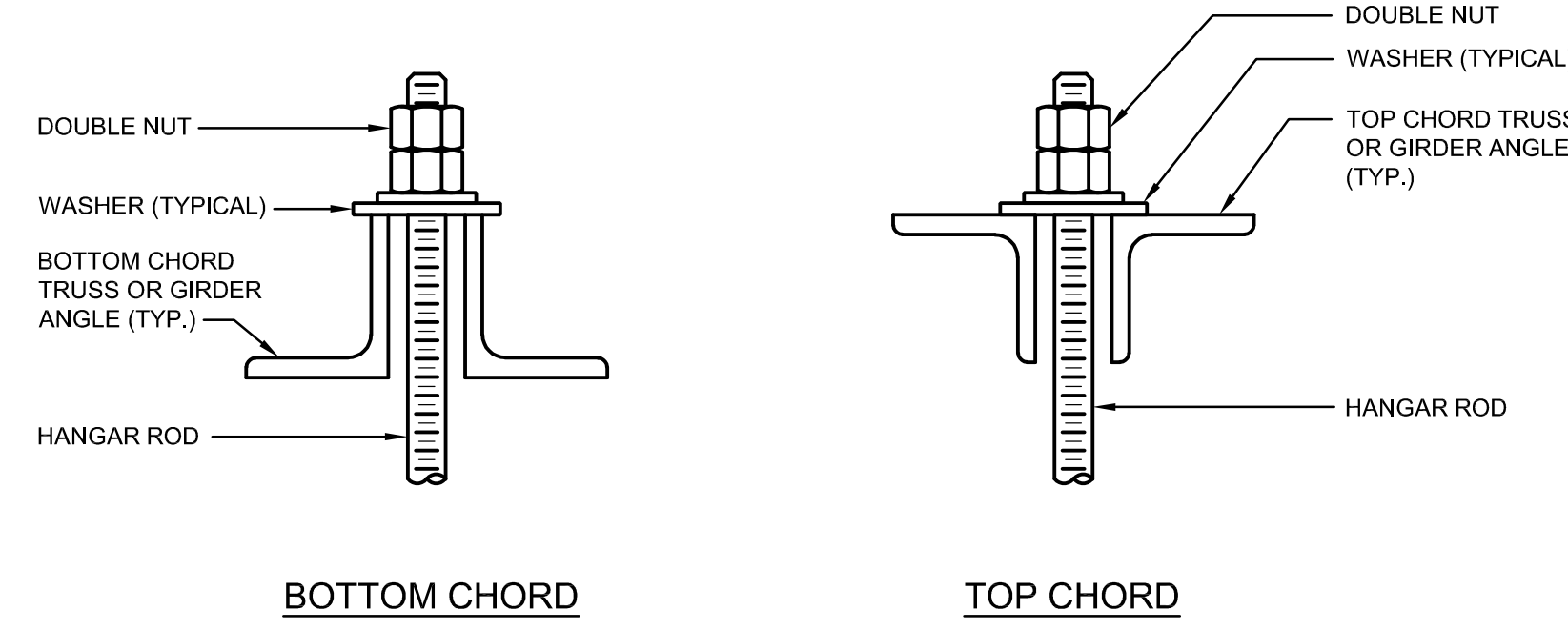




**UPRIGHT ROUGH BRONZE, WHITE OR CHROME SPRINKLER HEAD DETAIL**

NOT TO SCALE

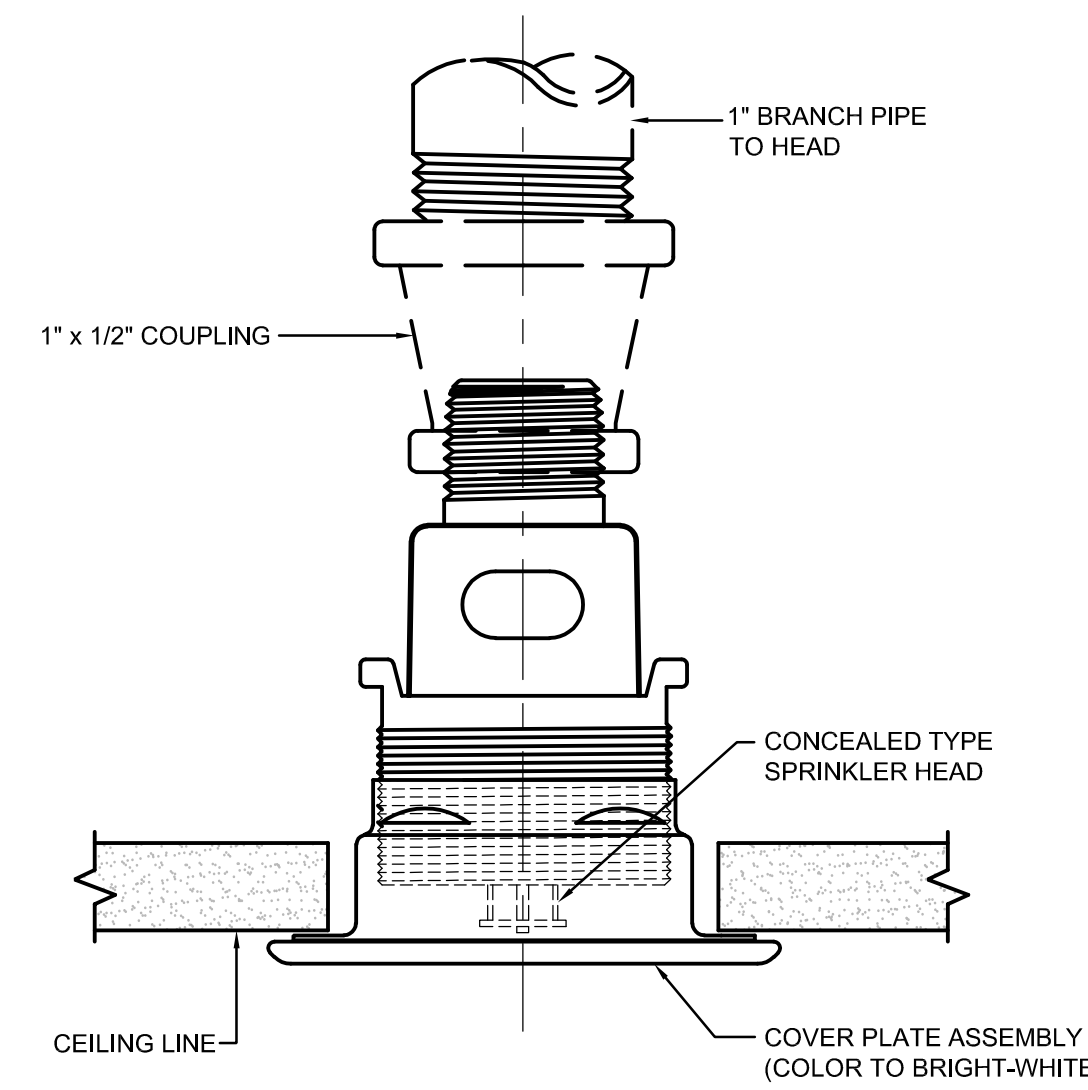
4  
FP501



**PIPING OR EQUIPMENT HANGAR ATTACHMENT TO TRUSS OR GIRDER**

NOT TO SCALE

1  
FP501



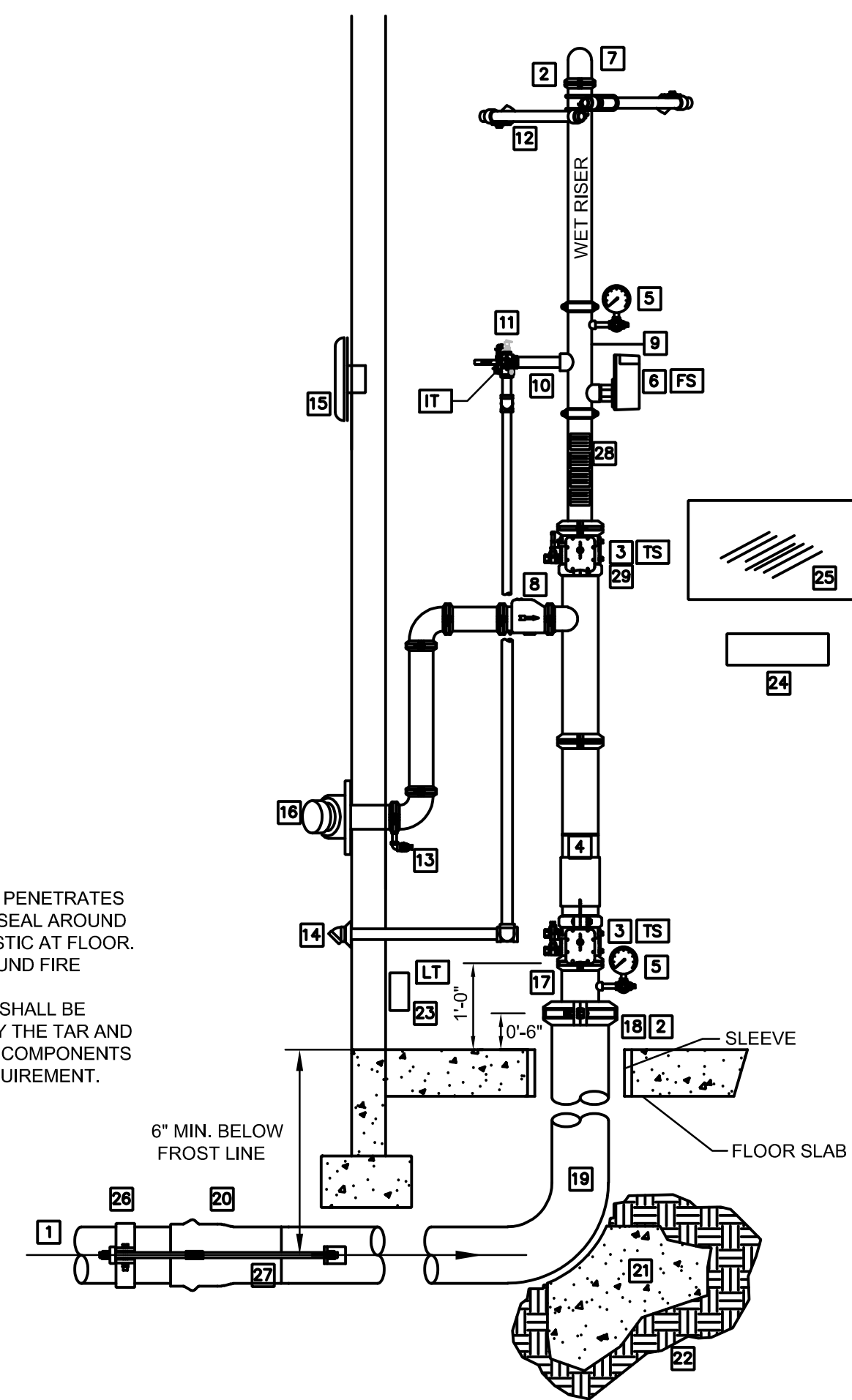
**CONCEALED SPRINKLER HEAD DETAIL**

NOT TO SCALE

5  
FP501

**GENERAL NOTES:**

1. PROVIDE SLEEVES WHERE PIPING PENETRATES BUILDING AT FLOOR AND WALLS. SEAL AROUND PENETRATION WITH FLEXIBLE MASTIC AT FLOOR. PROVIDE 2" ANNULAR SPACE AROUND FIRE SERVICE PIPE.
2. ALL BURIED STEEL COMPONENTS SHALL BE PROTECTED FROM CORROSION BY THE TAR AND WRAPPED METHOD. GALVANIZED COMPONENTS ARE NOT EXEMPT FROM THIS REQUIREMENT.

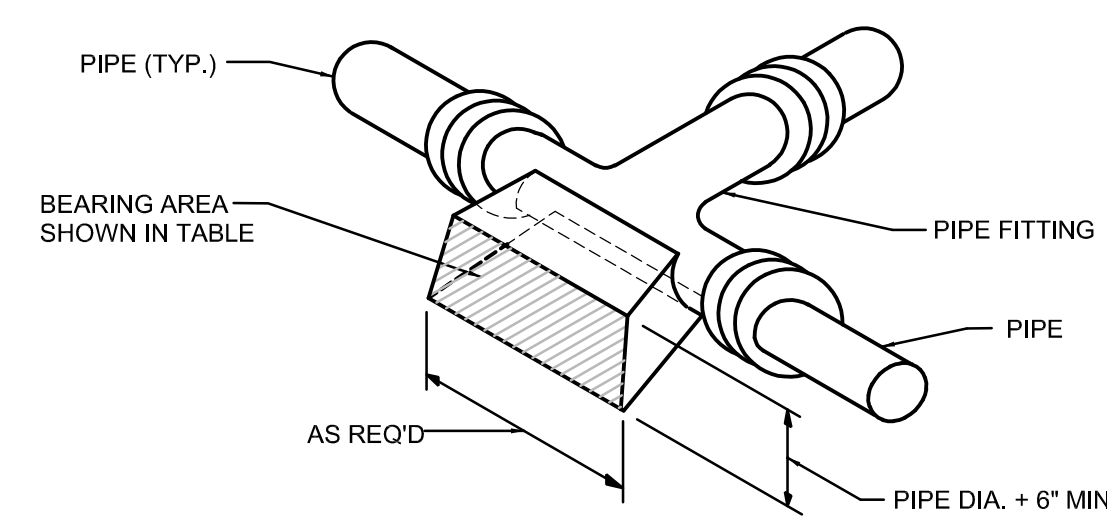


**FIRE SPRINKLER RISER DETAIL**

NOT TO SCALE

**DETAIL KEYED NOTES:**

1. WATER SUPPLY FROM CITY WATER MAIN. SEE SITE UTILITY PLAN FOR CONTINUATION.
2. FLEXIBLE GROOVED PIPE COUPLING WHEN SEISMIC BRACING IS REQUIRED. SEE NOTE #12.
3. GROOVED BUTTERFLY VALVE WITH INTEGRAL SUPERVISORY SWITCH
4. DOUBLE CHECK BACKFLOW PREVENTER WITH RELATED TRIM AND GAUGES
5. 3/2" DIAMETER WATER GAUGE WITH "X" TEST AND ISOLATION VALVE.
6. VANE TYPE WATER FLOW SWITCH
7. SUPPLY TO WET PIPE FIRE SPRINKLER SYSTEM
8. SWING CHECK VALVE
9. RISER MANIFOLD - INCLUDES PRESSURE GAUGE, FLOW SWITCH, PRESSURE RELIEF VALVE, AND TEST AND MAIN DRAIN DEVICE.
10. INSPECTOR'S TEST & DRAIN VALVE - PIPE TO OUTSIDE.
11. PRESSURE RELIEF VALVE - REQUIRED - SET AT 175 PSI
12. SEISMIC BRACING REQUIRED IN SEISMIC DESIGN CATEGORY C, D, E, F. SEE DESIGN CRITERIA SCHEDULE ON SHEET S601.
13. 1/2" AUTOMATIC BALL DRIP VALVE
14. DRAIN PIPING TO OUTSIDE WITH GALVANIZED PIPE, 45 ELL, AND 1-PC GALV. COLLAR.
15. WEATHERPROOF ELECTRIC HORN AND STROBE MOUNTED OR EXTERIOR WALL PER AHJ
16. OUT TO FIRE DEPARTMENT CONNECTION WITH GALVANIZED SCH 40 PIPING - PROVIDE BALL DRIP WHEN TRAPPING PIPE. SIZE CONNECTION AS REQUIRED.
17. GALVANIZED SPOOL PIECE WITH PRESSURE GAUGE.
18. REDUCING GROOVED COUPLING OR CONCENTRIC GROOVED REDUCER.
19. AMES STAINLESS STEEL "IN-BUILDING-RISER" - NO SUBSTITUTIONS. MINIMUM 6 INCH.
20. TYPON JOINT PIPE CONNECTION WITH GASKET.
21. CONCRETE THRUST BLOCK WITH 8 SQ. FEET HORIZONTAL BEARING AREA (MIN).
22. UNDISTURBED EARTH
23. LOW TEMPERATURE SENSOR - MOUNTED ON WALL - THIS SENSOR IS PROVIDED UNDER DIVISION 28 OF THE SPECIFICATIONS.
24. SPARE HEAD CABINET WITH SPARE SPRINKLER HEADS AND WRENCHES.
25. LAMINATED SYSTEM MAP WITH SYSTEM START-UP AND SHUT-DOWN INSTRUCTIONS.
26. GALVANIZED STEEL PIPE RETAINER CLAMP.
27. GALVANIZED STEEL RODS, SIZE PER NFPA 24, TO INCLUDE WASHERS, ROD COUPLINGS, AND ALL-THREAD RODS WITH DOUBLE HEX NUTS.
28. HYDRAULIC CALCULATION PLACARDS
29. WIRING FOR ELECTRIC ALARM - BY ELECTRICIAN TO FIRE ALARM

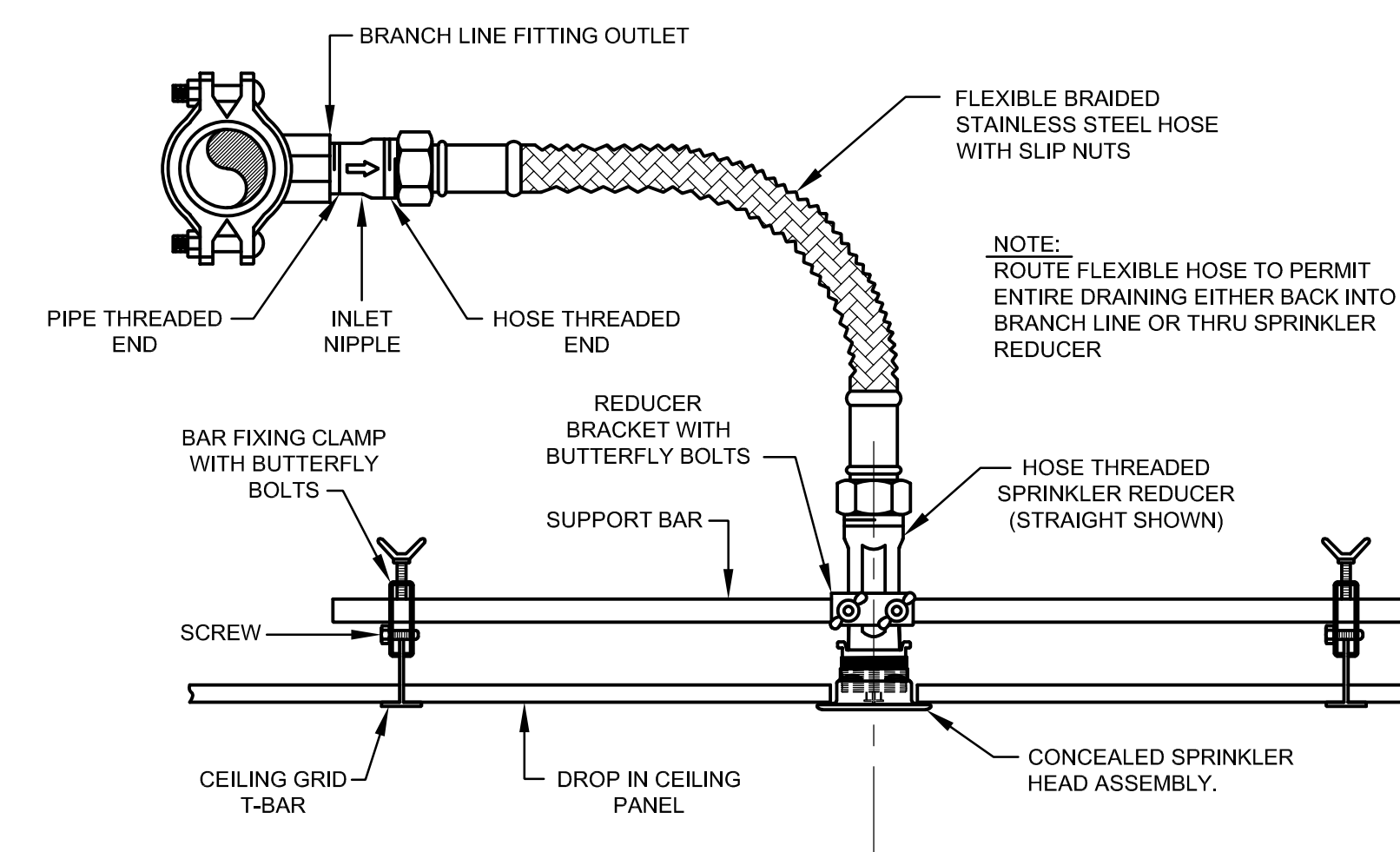


PIPE SIZE	TEES & DEADEND	90° ELBOW	45° ELBOW CROSSES IN DIRECTION OF FL.	22 1/2° ELBOW
4"	2.0	3.0	2.0	2.0
6"	4.0	5.5	3.0	2.0
8"	7.0	9.5	5.0	3.0
10"	9.5	13.5	7.0	4.0
12"	13.5	19.0	10.0	5.0
14"	18.0	23.5	14.0	7.0
16"	23.0	33.0	18.0	9.0

**CONCRETE THRUST BLOCK DETAIL**

NOT TO SCALE

6  
FP501



**SPRINKLER HOSE DETAIL**

NOT TO SCALE

3  
FP501

**GENERAL FIRE PROTECTION NOTES**

1. THE FIRE SPRINKLER CONTRACTOR SHALL COORDINATE HIS WORK WITH EXISTING CONDITIONS TO AVOID ANY CONFLICTS IN PIPE ROUTING OR HEAD LOCATIONS.
2. RUN SPRINKLING PIPING AS HIGH AS POSSIBLE IN SPACE ABOVE CEILING AND COORDINATE WITH EXISTING CONDITIONS.
3. FIRE SPRINKLER PLANS SHALL BE APPROVED BY ALL GOVERNING AGENCIES PRIOR TO SUBMITTING PLANS TO THE ENGINEER.
4. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE COMPLETE FIRE SPRINKLER SYSTEMS, INCLUDING ALL ITEMS AS REQUIRED OR RECOMMENDED BY ALL GOVERNING AGENCIES.
5. FIRE SPRINKLER SYSTEM SHALL COMPLY WITH N.F.P.A. 13, AND ALL GOVERNING AGENCIES.
6. PIPE SLEEVES THROUGH FIRE-RATED WALLS, PARTITIONS, AND CEILINGS SHALL BE OF FIRE RATED CONSTRUCTION. SPACE BETWEEN PIPE AND SLEEVE SHALL BE PACKED WITH FIREPROOF MATERIAL, U.L. LISTED. (FIRE SHIELDS, INC. MODEL DFB-CS)
7. FIRE SPRINKLER HEADS IN INDIVIDUAL ROOMS TO BE RUN IN STRAIGHT LINES AND COORDINATED WITH EXISTING CEILING AND LIGHTS.
8. HEAD GUARDS TO BE PROVIDED IN ACCORDANCE WITH N.F.P.A.
9. FIRE SPRINKLER TEST VALVES TO BE LOCATED IN AREAS CONVENIENT TO MAINTENANCE PERSONNEL, BUT AWAY FROM PUBLIC ACCESS.
10. THE UTAH STATE FIRE MARSHALS OFFICE SHALL BE NOTIFIED (IN WRITING) AT LEAST THREE DAYS IN ADVANCE OF THE FOLLOWING:
  - A. HYDROSTATIC TEST AND FINAL INSPECTION OF OVERHEAD SYSTEMS PRIOR TO INSTALLATION OF CEILINGS.
  - B. FLUSHING OF UNDERGROUND PRIOR TO CONNECTION OF OVERHEAD.
  - C. HYDROSTATIC TEST AND FINAL INSPECTION OF UNDERGROUND PRIOR TO BACKFILLING.
11. CONTRACTOR SHALL FIELD VERIFY ALL PIPE LOCATIONS PRIOR TO FABRICATION OF PIPE SYSTEMS.
12. FIRE PROTECTION DRAWINGS ARE DIAGRAMMATIC ONLY.
13. FIRE PROTECTION CONTRACTOR SHALL COORDINATE ROUTING, HANGING AND BRACING WITH ROOF STRUCTURE. ALL FIRE SPRINKLER PIPING SHALL COMPLY WITH THE FOLLOWING:
 

**CORE DRILLING WALLS AND SLABS**

  - A. CONTRACTOR SHALL USE GROUND PENETRATING RADAR OR OTHER APPROVED METHOD TO SCAN CONCRETE OVER METAL DECK, CONCRETE SUSPENDED SLABS, MASONRY WALLS, AND CONCRETE WALLS TO LOCATE REBAR PRIOR TO CORE DRILLING ANY HOLES. HOLES SHALL BE LOCATED TO AVOID REBAR DETECTED. ALL OPENINGS AND GROUPS OF OPENINGS SHALL BE REINFORCED AS SHOWN ON THE STRUCTURAL DRAWINGS. OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER PRIOR TO DRILLING.

**ATTACHMENT TO STEEL DECK**

  - A. STEEL DECK WITHOUT CONCRETE FILL SHALL NOT BE USED TO SUPPORT LOADS FROM PLUMBING, HVAC DUCTS, LIGHT FIXTURES, ARCHITECTURAL ELEMENTS OR EQUIPMENT OF ANY KIND, UNLESS SPECIFICALLY NOTED OTHERWISE.
  - B. STEEL DECK WITH CONCRETE FILL MAY BE USED TO SUPPORT LOADS OF UP TO 500# FROM PLUMBING, HVAC DUCTS, LIGHT FIXTURE, ARCHITECTURAL ELEMENTS AND MISCELLANEOUS EQUIPMENT. LOADS SHALL BE DISTRIBUTED SUCH THAT THE AVERAGE LOAD DOES NOT EXCEED 50 LBS/SQ.FT. AND NOT MORE THAN 500# IS LOCATED ON ANY SINGLE DECK FLUTE SPAN BETWEEN SUPPORT BEAMS. ATTACHMENTS TO STEEL DECK WITH CONCRETE FILL SHALL ENGAGE THE CONCRETE, AND SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

**ATTACHMENT TO OPEN WEB STEEL JOISTS AND GIRDERS**

  - A. ALL CONCENTRATED LOADS GREATER THAN 100 POUNDS AND NOT MEETING THE REQUIREMENTS OF ITEM 2 BELOW SHALL BE LOCATED WITHIN 6 INCHES OF THE JOIST OR GIRDER PANEL POINTS OR THE JOIST OR GIRDER BETWEEN ADJACENT PANEL POINTS WITHOUT MEETING THE REQUIREMENTS OF ITEM 1 ABOVE. PROVIDED THE LOADS ARE APPLIED TO THE JOIST SUCH THAT BOTH ANGLES OF THE TOP OR BOTTOM CHORD ARE EQUALLY LOADED.
  - B. CONCENTRATED POINT LOADS, SINGLE OR MULTIPLE, TOTALING 100 POUNDS OR LESS BETWEEN PANEL POINTS CAN BE LOCATED AT ANY POINT ALONG THE TOP OR BOTTOM CHORD OF A JOIST OR GIRDER BETWEEN ADJACENT PANEL POINTS WITHOUT MEETING THE REQUIREMENTS OF ITEM 1 ABOVE. PROVIDED THE LOADS ARE APPLIED TO THE JOIST SUCH THAT BOTH ANGLES OF THE TOP OR BOTTOM CHORD ARE EQUALLY LOADED.
  - C. JOIST BRACING SHALL NOT BE USED TO SUPPORT HANGING LOADS
  - D. BRACING OF MISCELLANEOUS ITEMS INCLUDING MECHANICAL, PLUMBING, CONDUIT, ARCHITECTURAL ELEMENTS, ETC. SHALL CONNECT TO THE TOP CHORD OF THE JOIST OR GIRDER UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.

**ATTACHMENT TO STEEL BEAMS**

  - A. BRACING FOR SEISMIC LOADS SHALL ATTACH WITHIN 4" OF THE TOP FLANGE OF THE BEAM, UNLESS NOTED OTHERWISE.
14. STEEL ROOF DECKING SHALL NOT BE USED TO SUPPORT LOADS FROM FIRE SPRINKLER ELEMENTS OR EQUIPMENT OF ANY KIND, UNLESS SPECIFICALLY NOTED OTHERWISE.
15. FIRE SPRINKLER HEADS SHALL BE INSTALLED IN 2' x 4' CEILING TILE IN THE CENTER OF TILES AND ON QUARTER POINTS IN THE LONGITUDINAL DIRECTION. SPRINKLER HEADS SHALL BE INSTALLED IN 2' x 2' CEILING TILE IN THE CENTER OF TILES. SPRINKLER HEADS LOCATED IN HEXAGON CEILING SHALL BE INSTALLED IN CENTER OF HEXAGON.

# ELECTRICAL SPECIFICATIONS

## ELECTRICAL GENERAL PROVISIONS

DESCRIPTION OF WORK: EXTENT OF ELECTRICAL WORK IS INDICATED ON DRAWINGS. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, SUPERVISION AND SERVICE NECESSARY FOR A COMPLETE ELECTRICAL SYSTEM. WORK INCLUDES, BUT IS NOT NECESSARILY LIMITED TO THE FOLLOWING ITEMS:

- ELECTRICAL CONNECTIONS FOR EQUIPMENT
- CONDUCTORS AND CABLES
- GROUNDING
- SUPPORTING DEVICES
- CONDUIT RACEWAYS
- ELECTRICAL BOXES AND FITTINGS
- DEMOLITION
- FIRE ALARMS AND DETECTION SYSTEMS

**INTERPRETATION OF DRAWINGS AND SPECIFICATIONS:** BEFORE BIDDING, CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE DRAWINGS, SPECIFICATIONS AND PROJECT SITE.

VISIT THE SITE DURING THE BIDDING PERIOD TO DETERMINE EXISTING CONDITIONS AFFECTING ELECTRICAL AND OTHER WORK. ALL COSTS ARISING FROM SITE CONDITIONS AND/OR PREPARATION SHALL BE INCLUDED IN THE BASE BID. NO ADDITIONAL CHARGES WILL BE ALLOWED DUE TO THE INADEQUATE SITE INSPECTION.

**QUALITY ASSURANCE:** PERFORM WORK IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC), COMPLY WITH REQUIREMENTS OF STATE AND LOCAL ORDINANCES. OBTAIN ALL PERMITS, INSPECTIONS, ETC FOR AUTHORITY HAVING JURISDICTION (AHJ). EMPLOY ONLY QUALIFIED CRAFTSMEN WITH AT LEAST THREE (3) YEARS OF EXPERIENCE. WORKMANSHIP SHALL BE NEAT, HAVE A GOOD MECHANICAL APPEARANCE AND CONFORM TO BEST ELECTRICAL STATE CONTRACTING LICENSE. PROVIDE EQUIPMENT AND MATERIALS THAT ARE UNDERWRITERS LABORATORIES INC. (UL) LISTED AND LABELED.

**SUBMITTALS:** AFTER THE CONTRACT IS AWARDED BUT PRIOR TO MANUFACTURE OR INSTALLATION OF ANY EQUIPMENT, PREPARE COMPLETE SHOP DRAWINGS.

- PROVIDE SUBMITTALS IN PORTABLE DOCUMENT FORMAT (PDF).
- DOCUMENTS MUST BE ELECTRONICALLY BOOKMARKED AND KEYWORD SEARCHABLE USING ADOBE ACROBAT (HTTP://ADOBE.COM/ACROBAT) OR BLUEBEAM REVU (HTTP://BLUEBEAM.COM) FOR EACH RELEVANT SECTION.
- ELECTRONICALLY HIGHLIGHT ALL OPTIONS FOR ELECTRICAL EQUIPMENT, ETC. MANUAL HIGHLIGHTING AND SCANNING OF THE DOCUMENTS IS NOT ACCEPTABLE AND WILL NOT BE REVIEWED.
- PROVIDE ONLY COMPLETED CUTSHEETS FOR ALL FIXTURE AND EQUIPMENT TYPES. BLANK CUTSHEETS SUBMITTED WITH A SCHEDULE ARE NOT ACCEPTABLE AND WILL NOT BE REVIEWED.
- A MAXIMUM OF ONE SUBMITTAL PER SPECIFICATION SECTION IS ALLOWED, IT IS NOT ACCEPTABLE TO PROVIDE PRODUCT BY PRODUCT SUBMITTAL. SINGLE PRODUCT SUBMITTALS WILL NOT BE REVIEWED.
- FIRE ALARMS AND DETECTION SYSTEMS
  - SHOP DRAWINGS: SUBMIT A WRITTEN STATEMENT TO THE ENGINEER AND STATE FIRE MARSHAL'S OFFICE THAT EACH DEVICE WILL BE INSTALLED, INSPECTED, TESTED IN ACCORDANCE WITH REQUIREMENTS OF NFPA STANDARD 72. SUBMIT A COMPLETE SET OF SHOP DRAWINGS INDICATING LOCATION OF ALL ALARM AND SIGNALING DEVICES, POINT-TO-POINT WIRING DIAGRAMS AND ALL INFORMATION REQUIRED BY THE STATE FIRE MARSHAL. O&M MANUALS: SUBMIT "AS-BUILT" DRAWINGS SHOWING ALL ADDED EQUIPMENT AND WIRING. ADD THE NEW DEVICES TO THE EXISTING BUILDING MAPS. PROVIDE A FINAL SUBMITTAL TO THE OFFICE OF THE STATE FIRE MARSHAL INCLUDING: RECORD OF COMPLETION IN ACCORDANCE WITH NFPA SECTION 4.5.3, ONE SET OF "AS-BUILT" DRAWINGS, AND ALL INFORMATION REQUIRED BY THE STATE FIRE MARSHAL.
  - ACCEPTABLE MANUFACTURER:** PROVIDE FIRE ALARM AND DETECTION DEVICES MANUFACTURED BY HONEYWELL/GAMEWELL-FCI AND REPRESENTED BY NELSON FIRE SYSTEMS. CONTACT TOBY TIMOTHY @ (801)652-7994.
  - RECORD DRAWINGS:** PROVIDE A COMPLETE SET OF RECORD DRAWINGS, REFLECTING AN ACCURATE DIMENSIONAL RECORD OF ALL BURIED OR CONCEALED WORK. MARK RECORD DRAWINGS TO SHOW THE PRECISE LOCATION OF CONCEALED WORK AND EQUIPMENT, INCLUDING CONCEALED OR EMBEDDED CONDUIT AND JUNCTION BOXES AND ALL CHANGES AND DEVIATIONS IN THE WORK FROM THAT SHOWN ON THE CONTRACT DOCUMENTS.
  - OPERATION AND MAINTENANCE MANUALS:** PROVIDE OPERATION AND MAINTENANCE DATA BOOKS FOR ALL EQUIPMENT AND MATERIALS FURNISHED UNDER THIS DIVISION.
  - GUARANTEE:** ENSURE THAT ELECTRICAL SYSTEMS INSTALLED UNDER THIS CONTRACT IS IN PROPER WORKING ORDER AND IN COMPLIANCE WITH DRAWINGS, SPECIFICATIONS, AND/OR AUTHORIZED CHANGES, WITHOUT ADDITIONAL CHARGE. REPLACE ANY WORK OR MATERIALS WHICH DEVELOP DEFECTS, EXCEPT FROM ORDINARY WEAR AND TEAR, WITHIN ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.
  - FIRE PROTECTION SEALS:** SEAL ALL PENETRATIONS FOR WORK OF THIS SECTION THROUGH FIRE RATED FLOORS, WALLS, CEILING TO PREVENT THE SPREAD OF SMOKE, FIRE, TOXIC GAS, OR WATER THROUGH THE PENETRATION EITHER BEFORE, DURING AND AFTER FIRE.
  - POWER OUTAGES:** ALL POWER OUTAGES REQUIRED FOR EXECUTION OF THIS WORK SHALL OCCUR DURING NON-STANDARD WORKING HOURS AND AT THE CONVENIENCE OF THE OWNER. INCLUDE ALL COSTS FOR OVERTIME WORK IN BID.

## ELECTRICAL CONNECTIONS FOR EQUIPMENT

- VERIFY EXACT LOAD AND LOCATION OF ALL EQUIPMENT BEFORE ROUGH-IN FOR EACH ELECTRICAL CONNECTION. PROVIDE COMPLETE ASSEMBLY OF MATERIAL, INCLUDING BUT NOT NECESSARILY LIMITED TO, RACEWAYS, CONDUCTORS, CORDS, CORD CAPS, PLUGS, WIRING DEVICES, PRESSURE CONNECTORS, TERMINALS (LUGS), ELECTRICAL INSULATION TAPE, HEAT-SHRINKABLE INSULATION TUBING, CABLE TIES, SOLDERLESS WIRE NUTS, AND OTHER ITEMS AND ACCESSORIES AS NEEDED TO COMPLETE SPLICES, TERMINATIONS, AND CONNECTIONS AS REQUIRED. FOR PERMANENTLY INSTALLED FIXED EQUIPMENT, PROVIDE FLEXIBLE SEAL-TITE CONNECTIONS. FOR MOVABLE AND/OR PORTABLE EQUIPMENT, PROVIDE WIRE DEVICE, CORD CAP, AND MULTI-CONDUCTOR CORD.

## CONDUCTORS AND CABLES

- PROVIDE FACTORY-FABRICATED CONDUCTORS FOR SIZES, RATINGS, MATERIAL, AND TYPES INDICATED FOR EACH SERVICE. PROVIDE COPPER CONDUCTORS, WITH THE THWV INSULATION. SIZE ALL CONDUCTORS IN ACCORDANCE WITH NEC. MINIMUM SIZE TO BE #14 AWG. PROVIDE STRANDED CONDUCTORS FOR #8 AWG AND LARGER.
- THE FOLLOWING COLOR SCHEME SHALL BE USED:

CONDUCTOR	208/120 V SYSTEM
PHASE A	BLACK
PHASE B	RED
PHASE C	BLUE
SHARED SINGLE NEUTRAL	WHITE
NEUTRAL A (DEDICATED)	WHITE W/ BLACK STRIPE
NEUTRAL B (DEDICATED)	WHITE W/ RED STRIPE
NEUTRAL C (DEDICATED)	WHITE W/ BLUE STRIPE
EQUIPMENT GROUND	GREEN
ISOLATED GROUND	GREY W/ YELLOW STRIPE

## GROUNDING

- PROVIDE GROUNDING AND BONDING OF ALL ELECTRICAL AND COMMUNICATION APPARATUS, MACHINERY, APPLIANCES, BUILDING COMPONENTS, AND ITEMS REQUIRED BY THE NEC TO PROVIDE A PERMANENT, CONTINUOUS LOW IMPEDANCE, GROUNDING SYSTEM. PROVIDE AN NEC BONDING/GROUNDING CONDUCTOR IN ALL RACEWAYS USE FOR POWER DISTRIBUTION.

## SUPPORTING DEVICES

- PROVIDE SUPPORTS, ANCHORS, SLEEVES AND SEALS AS REQUIRED FOR A COMPLETE RACEWAY SUPPORT SYSTEM, INCLUDING BUT NOT LIMITED TO: CLEVIS HANGERS, RISER CLAMPS, C-CLAMPS, BEAM CLAMPS, ONE AND TWO HOLE CONDUIT STRAPS, OFFSET CONDUIT CLAMPS, EXPANSION ANCHORS, TOGGLE BOLTS, THREADED RODS U-CHANNEL, STRUT SYSTEM, AND ALL OTHER ASSOCIATED ACCESSORIES. INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND WITH RECOGNIZED INDUSTRY PRACTICES TO INSURE SUPPORTING DEVICES COMPLY WITH REQUIREMENTS. PROVIDE RIGID ATTACHMENT OF ALL FLOOR MOUNTED EQUIPMENT TO THE FLOOR SLAB OR STRUCTURAL SYSTEM.

## CONDUIT RACEWAYS

- PROVIDE METAL CONDUIT, TUBING, AND FITTINGS OF TYPES, GRADES, SIZES, AND WEIGHTS (WALL THICKNESS) AS REQUIRED. WITH MINIMUM TRADE SIZE OF 3/4". INSTALL ELECTRICAL RACEWAY SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND APPLICABLE REQUIREMENTS OF NEC AND NECA "STANDARD OF INSTALLATION" IN ACCORDANCE WITH THE FOLLOWING:
  - BRANCH CIRCUITS, AND INDIVIDUAL EQUIPMENT CIRCUITS RATED LESS THAN 100 AMPS: INSTALL IN ELECTRICAL METALLIC TUBING (EMT).
  - INSTALL FLEXIBLE CONDUIT FOR CONNECTIONS TO MOTORS, TRANSFORMERS, AND OTHER ELECTRICAL EQUIPMENT WHERE SUBJECT TO MOVEMENT AND VIBRATIONS.
  - PROVIDE "OZ" EXPANSION FITTINGS ON ALL CONDUITS CROSSING BUILDING EXPANSION JOINTS, BOTH IN SLAB AND SUSPENDED.

## ELECTRICAL BOXES AND FITTINGS

- PROVIDE ONE PIECE GALVANIZED FLAT ROLLED SHEET STEEL INTERIOR OUTLET WIRING BOXES, CORROSION-RESISTANT CAST-METAL WEATHERPROOF OUTLET WIRING BOXES, CODE GAUGE SHEET STEEL JUNCTION AND PULL BOXES, GALVANIZED CAST IRON CONDUIT BODIES, CORROSION-RESISTANT FLUSH-STEEL BOX KNOCKOUT CLOSURES, CONDUIT LOCKOUTS AND METAL CABLE STEEL CONDUIT BUSHINGS AND OFFSET CONNECTORS, AND ALL ACCESSORIES AS REQUIRED TO SUIT EACH RESPECTIVE LOCATION AND INSTALLATION. FASTEN BOXES RIGIDLY TO SUBSTRATES OR STRUCTURAL SURFACES TO WHICH ATTACHED, OR SOLIDLY EMBED ELECTRICAL BOXES IN CONCRETE OR MASONRY. USE BAR HANGERS FOR STUD CONSTRUCTION.

## DEMOLITION

- PROVIDE DEMOLITION WORK AS NECESSARY TO COMPLETE THE WORK
  - THE NEW ELECTRICAL EQUIPMENT AND APPARATUS SHALL BE COORDINATED AND CONNECTED INTO THE EXISTING SYSTEM AS REQUIRED.
  - THE EXISTING ELECTRICAL DEVICES, CONDUIT AND/OR EQUIPMENT THAT FOR ANY REASON OBSTRUCTS CONSTRUCTION SHALL BE RELOCATED.
  - ALL EXISTING ELECTRICAL EQUIPMENT AND SYSTEMS IN PORTIONS OF THE BUILDING NOT BEING REMODELED SHALL BE KEPT OPERATIONAL, IN SERVICE AND IN WORKING CONDITION THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD. RESTORE ANY CIRCUITS AND SYSTEMS INTERRUPTED.

## FIRE ALARM AND DETECTION SYSTEMS

- PROVIDE FIRE ALARM SYSTEM DEVICES, SMOKE DETECTORS, HORN STROBES, MONITOR MODULES, RELAYS, ETC., MANUFACTURED BY HONEYWELL/GAMEWELL-FCI AND MATCH THE EXISTING SYSTEM DEVICES. PROVIDE ALL COMPONENTS AND EXPANSION REQUIRED IN EXISTING TRANSDUCER AS REQUIRED TO REPORT AND OPERATE THE NEW DEVICES ADDED. COMPLY WITH ALL APPLICABLE PROVISIONS OF THE CURRENT NFPA STANDARD 72 NATIONAL FIRE ALARM AND SIGNALING CODE (AS APPLICABLE), LOCAL BUILDING CODES, THE MOST CURRENT ADOPTED REVISION OF THE INTERNATIONAL BUILDING CODE (IBC) AND MEET REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION. PROVIDE A MINIMUM OF #14 AWG COPPER WIRING IN 3/4" CONDUIT. FIRE ALARM MC IS NOT ALLOWED. REFER TO DIAGRAM D002 FOR TYPICAL WIRING REQUIREMENTS. COORDINATE ALL REQUIREMENTS WITH NELSON FIRE SYSTEMS.

# SYMBOL SCHEDULE

## NOTES:

- SEE FIXTURE SCHEDULE FOR TYPE, MOUNTING AND WATTAGE.
- HEIGHT MEASURED TO CENTER LINE OF THE BOX FROM THE FINISHED FLOOR.
- REFER TO DRAWINGS FOR DIRECTIONAL ARROWS.
- SUBSCRIPT INDICATES FIXTURES TO BE CONTROLLED.
- NEMA TYPE 'ND' NON-FUSED UNLESS NOTED 'F' (FUSED), USE 'HD' 480 V.
- HEIGHT MEASURED TO TOP OF THE BOX FROM FINISHED FLOOR.
- PROVIDE H.O.A. AND S.S. PUSHBUTTONS AS REQUIRED.
- DOUBLE ARROWS INDICATES A DOUBLE FACE UNIT.
- DEVICES NOTED WITH AN 'X' INDICATE TO COORDINATE WITH MILLWORK SHOP DRAWINGS AND ELEVATIONS FOR HEIGHT.
- SUBSCRIPT INDICATES NEMA CONFIGURATION.
- SOLID BOX AROUND DEVICE INDICATES INSTALLED IN FLOOR. DASHED BOX AROUND DEVICE INDICATES INSTALLED IN CEILING.
- COORDINATE WITH DOOR HARDWARE SUPPLIER.
- FOR WATER COOLER LOCATION, SEE DIAGRAM R002. FOR ALL OTHER LOCATIONS, MOUNT AT +16" TO BOTTOM OF BOX FROM FINISHED FLOOR, OR AS NOTED.
- ARROWS SHOWN ON DEVICE INDICATE SENSOR OR ALARM DIRECTION.
- CAMERA NUMBERS ARE SHOWN INSIDE THE CAMERA SYMBOL. CAMERA TYPES ARE INDICATED IN TAG.
- MOUNT ON TRACK OF OVERHEAD DOOR, 6" FROM TOP OF DOOR, UNLESS OVERHEAD DOOR IS A ROLL UP DOOR, THEN MOUNT PER MANUFACTURER'S INSTRUCTIONS.
- INSTALL DEVICES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- DASHED LINE INDICATES EQUIPMENT CLEARANCES. ARROW INDICATES FRONT OF RACK.
- SPEAKER TO BE MOUNTED IN HORIZONTAL POSITION.
- MOUNTING HEIGHT IS TO BOTTOM OF DISPLAY.

\*TYPICAL SYMBOL SCHEDULE. SOME SYMBOLS MAY NOT BE USED ON THIS SET OF DRAWINGS.

## STANDARD MOUNTING HEIGHT UNLESS OTHERWISE NOTED ON PLANS

### GENERAL

SYMBOL	DESCRIPTION	MOUNTING HEIGHT	NOTES
	EQUIPMENT NUMBER		

### MULTIPLE SYSTEM SYMBOLS

	WEATHERPROOF RECEPTACLE (SUPPLIED ON THE UNIT)		
	FUSED DISCONNECT SWITCH	+60"	5, 6.

### POWER

	PANELBOARD	+72"	6.
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### FIRE ALARM

	BELL	+94"	2.
	CHIME / STROBE	+94"/CEILING	2.
	FIRE ALARM MANUAL STATION	+46"	2.
	FIRE ALARM SIGNAL HORN / STROBE	+94"/CEILING	2.
	CONCEALED FIRE ALARM HORN / STROBE	CEILING	
	CONCEALED FIRE ALARM HORN / STROBE WALL	+94"	2.
	FIRE ALARM SPEAKER / STROBE	+94"/CEILING	2.
	CONCEALED FIRE ALARM SPEAKER / STROBE	CEILING	
	CONCEALED FIRE ALARM SPEAKER / STROBE WALL	+94"	2.
	FIRE ALARM STROBE	+94"/CEILING	2.
	CONCEALED FIRE ALARM STROBE	CEILING	
	CONCEALED FIRE ALARM STROBE WALL	+94"	2.
	FIRE ALARM SPEAKER ONLY	+94"/CEILING	2.
	FIRE ALARM STROBE WITH BLUE COLORED LENS (CO VISUAL ALARM)	+94"/CEILING	2.
	FIRE ALARM ANNUNCIATOR PANEL	+58"	2. SEE DIAGRAM
	ASPIRATING SMOKE DETECTION SYSTEM	CEILING	MOUNT AS PER MFR
	BEAM DETECTOR		MOUNT AS PER MFR

	SMOKE DETECTOR	CEILING	
	SMOKE/CARBON MONOXIDE DETECTOR	CEILING	
	CARBON MONOXIDE DETECTOR	CEILING	
	HEAT DETECTOR	CEILING	
	DUCT SMOKE DETECTOR		MTD. IN DUCT
	FIRE/SMOKE DAMPER		
	DOOR HOLDER		AS NOTED
	FLOW SWITCH		
	TAMPER SWITCH		
	WATER FLOOD INDICATOR		
	O.S. & Y. VALVE		SEE DIAGRAM
	FIRE ALARM RELAY OR SECURITY RELAY		
	FIRE ALARM CONTROL MODULE		
	FIRE ALARM MONITOR MODULE		
	TWO-WAY COMMUNICATION SYSTEM CONTROL PANEL	+46"	2.
	TWO-WAY COMMUNICATION SYSTEM CALL STATION	+46"	2.
	FIRE ALARM RELAY		

# GENERAL NOTES

- VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS BEFORE BEGINNING ROUGH IN. CONSULT ALL APPLICABLE CONTRACT DRAWINGS AND SHOP DRAWINGS TO INSURE NEC CODE CLEARANCES REQUIRED AROUND ALL ELECTRICAL EQUIPMENT.
- CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC) OF ALL EQUIPMENT FURNISHED UNDER ALL DIVISIONS, INCLUDING ALL EXISTING EQUIPMENT TO BE RE-USED. REVIEW ALL SHOP DRAWINGS AND EXISTING EQUIPMENT BEFORE BEGINNING ROUGH-IN.
- THE ELECTRICAL CONTRACTOR SHALL NOTIFY AND COOPERATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO PIPING, DUCTS, OR EQUIPMENT FOREIGN TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THRU ELECTRICAL ROOMS OR SPACES, OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN OTHER AREAS.
- ELECTRICAL BOXES SHALL NOT BE LOCATED IN MASONRY COLUMNS IN BRICK WALLS OR IN GROUTED CELLS ADJACENT TO OPENINGS. COORDINATE LOCATION OF BOXES WITH MASONRY CONTRACTOR.
- ALL PENETRATIONS OF FIRE RATED FLOORS, WALLS, AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL TO MAINTAIN FIRE RATING OF SURFACE PENETRATED.

# DEMOLITION NOTES

- COORDINATE ALL NEW ELECTRICAL EQUIPMENT REQUIREMENTS AND MAKE CONNECTION TO EXISTING SYSTEMS. THIS INCLUDES LIGHTING, POWER, SIGNAL, RACEWAY AND OTHER SYSTEMS INCLUDED UNDER DIVISION 26 (16).
- RELOCATE, REWIRE AND/OR RECONNECT EXISTING ELECTRICAL DEVICES AND/OR EQUIPMENT THAT FOR ANY REASON OBSTRUCTS CONSTRUCTION.
- CONCEAL ALL RACEWAY AND WIRING IN EXISTING WALLS, CEILINGS, FLOORS, ETC. EXCEPT WHERE THE USE OF SURFACE METAL RACEWAYS (E.G. WIRE MOLD) IS INDICATED ON DRAWINGS OR IN SPEC.
- LEAVE ALL EXISTING EQUIPMENT, IN PORTIONS OF THE BUILDING NOT BEING REMODELED, IN WORKING CONDITION. RESTORE ALL INTERRUPTED BRANCH CIRCUITS, FEEDERS, ETC. TO WORKING CONDITION.
- EXISTING RACEWAYS MAY BE REUSED (IN PLACE) WHERE POSSIBLE, AND WHERE IN COMPLIANCE WITH THE SPECIFICATIONS AND THE INTENT OF THE CONTRACT DOCUMENTS. INSURE INTEGRITY OF EXISTING RACEWAY BEFORE REUSE.
- REMOVE ALL RACEWAYS, CONDUCTORS, BOXES, DEVICES, EQUIPMENT, ETC. THAT ARE NOT TO BE REUSED.
- DO NOT PENETRATE STRUCTURAL ELEMENTS OF FLOORS, WALLS, CEILINGS, ROOFS, ETC.
- DISCONNECT AND RECONNECT ANY/ALL FIXTURES, DEVICES, EQUIPMENT, ETC. REQUIRED FOR PROPER COMPLETION OF THE WORK.

# SHEET INDEX

E100	ELECTRICAL SYMBOLS, SCHEDULES AND NOTES
E101	ELECTRICAL PLANS

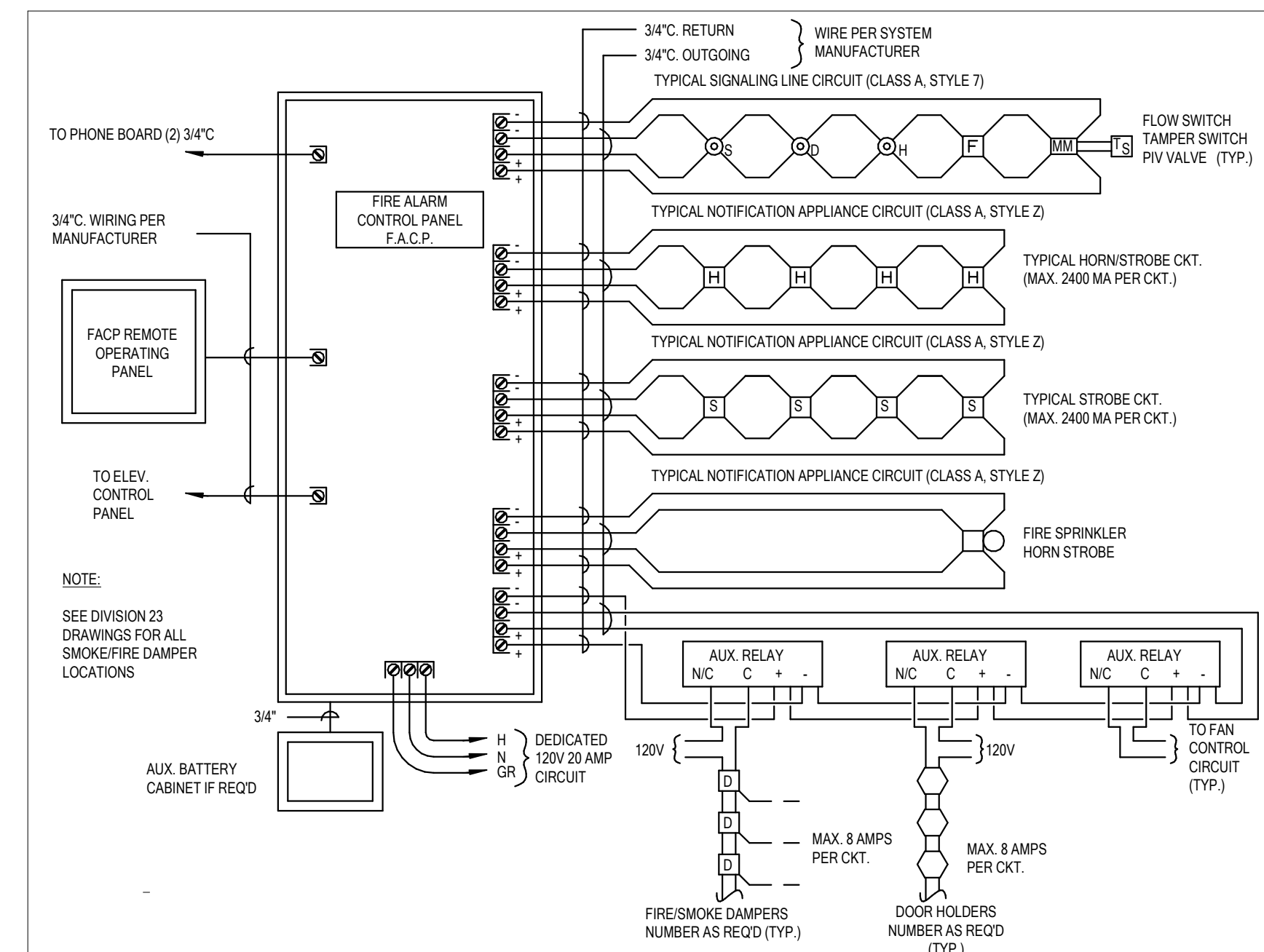
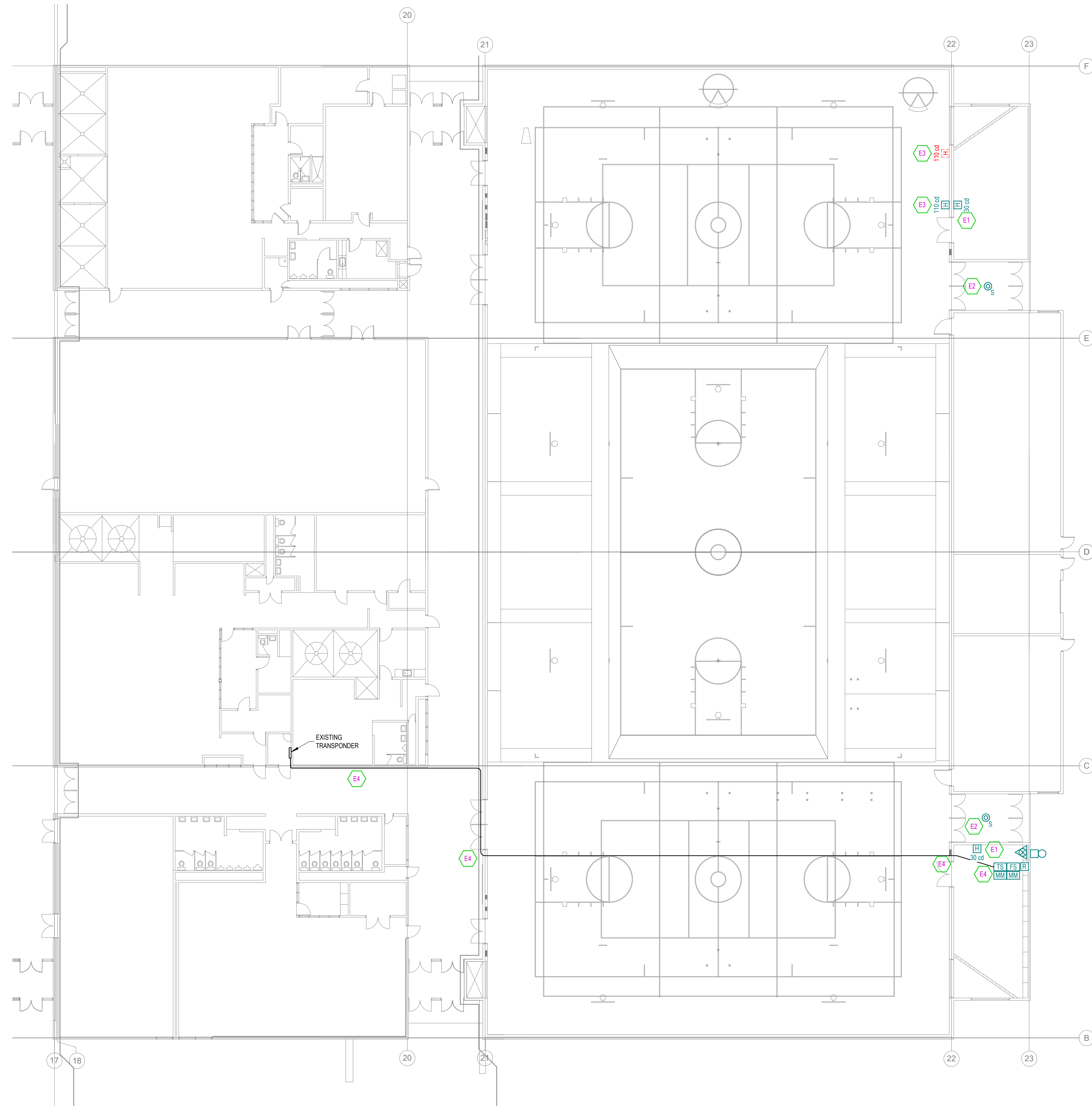


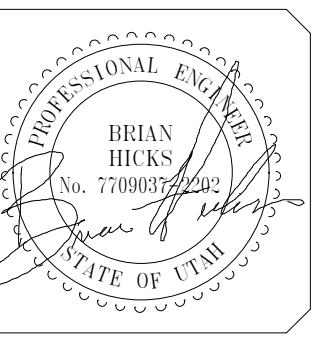
DIAGRAM (D002) TYPICAL FIRE ALARM RISER NTS



**ELECTRICAL GYM PLAN**  
SCALE = 1/16" = 1'-0"

**SHEET KEYNOTES**

- E1 PROVIDE A NEW DEVICE. PROVIDE CONDUIT AND WIRE AS REQUIRED TO CONNECT TO THE EXISTING NOTIFICATION LOOP.
- E2 PROVIDE A NEW DEVICE. PROVIDE CONDUIT AND WIRE AS REQUIRED TO CONNECT TO THE EXISTING DETECTON LOOP.
- E3 DISCONNECT EXISTING HORN STROBE AND PROVIDE CONDUIT AND WIRE AS REQUIRED TO RELOCATE AND RECONNECT OUT FROM BEHIND THE WRESTLING MATS.
- E4 PROVIDE CONDUIT AND WIRE AS REQUIRED TO CONNECT NEW DEVICES TO THE EXISTING TRANSPONDER. PENETRATE THE WALL INTO THE GYM AS HIGH AS POSSIBLE. RISE UP IN THE GYM AND ATTACH TO STRUCTURE TO CROSS THE GYM INTO THE CEILING OF THE CORRIDOR, THROUGH THE CORRIDOR TO THE EXISTING TRANSPONDER.



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Date: FEB. 2024  
Drawn: BNA  
Checked: JLB

Sheet Title

PROPOSED NEW CONSTRUCTION FOR:  
**ALTA HIGH SCHOOL**  
**GYM FIRE PROTECTION**  
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**OLSEN & PETERSON**  
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**E101**

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