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SPRINKLER LEGEND

(NOT ALL SYMBOLS LISTED BELOW ARE BEING USED IN THIS SET OF SPRINKLER DRAWINGS)

SYMBOL	ABBR	DESCRIPTION
		SECTION NO.
		SECTION VIEW SHEET NO.
		SHEET KEY NOTES
	POC	POINT OF CONN. (CONN. NEW TO EXISTING)
	POD	POINT OF DISCONNECTION
		ARROW INDICATES DIRECTION OF FLOW
		RISE IN DIRECTION OF FLOW
		DROP IN DIRECTION OF FLOW
	DN	DOWN
	AFF	ABOVE FINISHED FLOOR
	AFG	ABOVE FINISHED GRADE
	TOP	TOP OF PIPE (AFF)
	BOP	BOT. OF PIPE (AFF)
	I.E.	INVERT ELEVATION
	NTS	NOT TO SCALE
	(E)	EXISTING
	(R)	REMOVE
	FD	FLOOR DRAIN
	O.C.	ON CENTER
	SPR	SPRINKLER
	SQ.FT	SQUARE FEET
	TEMP	TEMPERATURE

SYMBOL	ABBR	DESCRIPTION
		EXISTING SPRINKLER PIPING (LIGHT SOLID LINE)
		EXISTING SPRINKLER PIPING TO BE REMOVED (DASHED LINE)
	SP	SPRINKLER PIPING
	ST	STANDPIPE PIPING
	DR	DRAIN
		PIPE SIZE

SYMBOL	ABBR	DESCRIPTION
	DV	DRAIN VALVE W/ HOSE END CONN.
	CV	CHECK VALVE W/ INDICATION OF FLOW DIRECTION
	PRV	PRESSURE REDUCING VALVE
	BFV	BUTTERFLY VALVE
	BV	BALL VALVE
	TPR	TEMPERATURE/PRESSURE RELIEF VALVE
		VALVE IN RISER
	STR	STRAINER W/ BLOW-OFF & CAPPED HOSE-END CONNECTION
	GV	GATE VALVE
	OS&Y	OUTSIDE STEM AND YOKE
		VALVE WITH TAMPER SWITCH

SYMBOL	ABBR	DESCRIPTION
		MECHANICAL/PLUMBING/SPRINKLER/ELECTRICAL COORDINATION REQUIREMENTS

FOR MECHANICAL, PLUMBING AND SPRINKLER EQUIPMENT AS INDICATED ON THE DIVISION 21, 22, AND 23 DRAWINGS, THE DIVISION 21, 22 AND 23 CONTRACTORS SHALL COORDINATE WITH DIVISION 26 CONTRACTOR TO CONNECT ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON THE MECHANICAL, PLUMBING AND SPRINKLER DRAWINGS. COORDINATE FOR COMPLETE WIRING, STARTERS, AND DISCONNECTING MEANS FOR ALL MECHANICAL, PLUMBING AND SPRINKLER EQUIPMENT.

SYMBOL	ABBR	DESCRIPTION
	E	EXISTING HEAD TO REMAIN
		EXISTING HEAD TO BE REMOVED
		NEW HEAD TO MATCH EXISTING
	U	UPRIGHT
		CONCEALED PENDANT
	EC	EXTENDED COVERAGE CONCEALED PENDANT HEAD
	D	DRY CONCEALED PENDANT HEAD
	D	DRY UPRIGHT HEAD
	IT	INTERMEDIATE TEMPERATURE RATED HEAD
	HT	HIGH TEMPERATURE RATED HEAD
		SIDEWALL HEAD
	EC	EXTENDED COVERAGE SIDEWALL HEAD

SYMBOL	ABBR	DESCRIPTION
	EJ	EXPANSION JOINT
	U	UNION
	FC	FLEXIBLE PIPE CONNECTOR
	FS	FLOW SWITCH
	PS	PRESSURE SWITCH
	TS	TAMPER SWITCH
	PG	PRESSURE GAUGE W/GAUGE COCK
		ELBOW UP
		ELBOW DOWN
		TEE UP
		TEE DOWN
		PIPE CAP OR PLUG
	CR	CONCENTRIC REDUCER
	ER	ECCENTRIC REDUCER

SYMBOL	ABBR	DESCRIPTION
	SIA	FIRE DEPARTMENT (SIAMESE) CONNECTION
	FCVA	FLOOR CONTROL VALVE ASSEMBLY
	FHC	FIRE HOSE VALVE CABINET
	FHV	FIRE HOSE VALVE
	DCDA	DOUBLE CHECK DETECTOR ASSEMBLY

DESCRIPTION	MANUFACTURER	MODEL NO.	K-FACTOR	REQ. PRESSURE (PSI)	REMARKS
QUICK RESPONSE SIDEWALL	RELIABLE	F1FR	5.6	7	NONE
QUICK RESPONSE CONCEALED PENDANT	RELIABLE	G5-56	5.6	7	NONE
QUICK RESPONSE PENDANT	RELIABLE	F1FR	5.6	7	NONE
QUICK RESPONSE RECESSED PENDANT	RELIABLE	F1FR	5.6	7	NONE
QUICK RESPONSE UPRIGHT	RELIABLE	F1FR	5.6	7	NONE
QUICK RESPONSE DRY HEADS	RELIABLE	F3QR	5.6	7	NONE
QUICK RESPONSE EXTENDED COVERAGE CONCEALED SIDEWALL	RELIABLE	G6-80	8.0	13.1	NONE

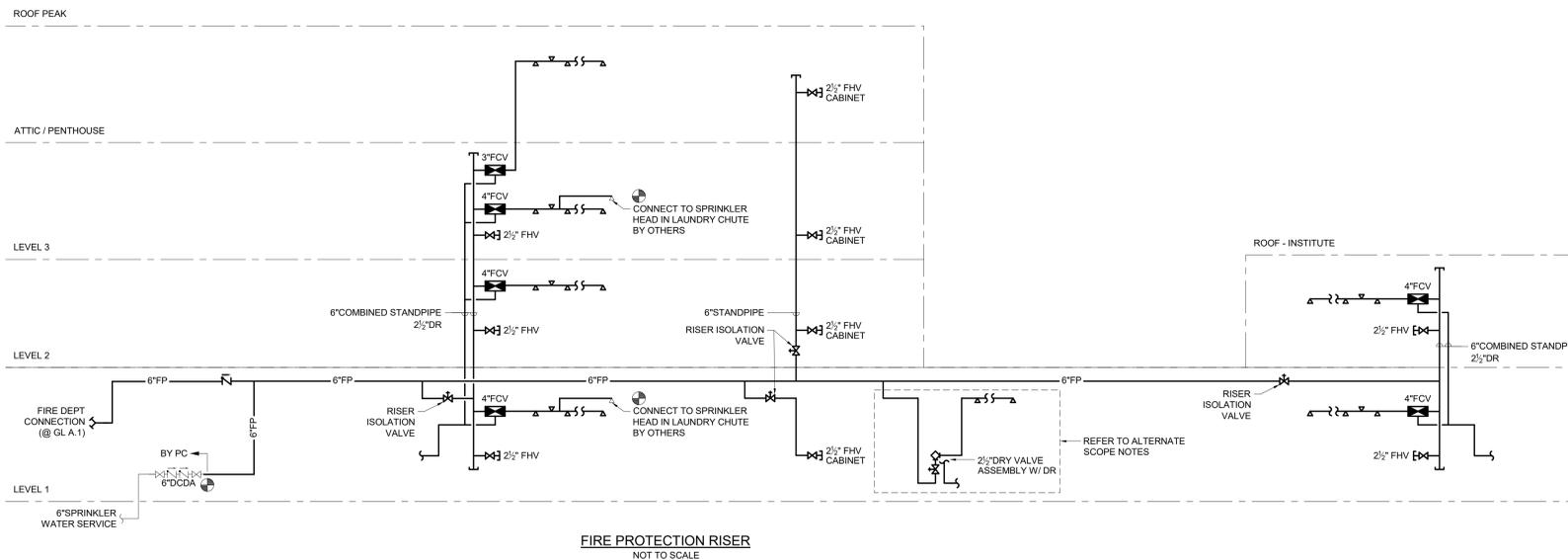
ALTERNATE SCOPE NOTES:

PROVIDE ALTERNATE PRICING FOR THE SCOPE DESCRIBED BELOW:

- PROVIDE A DRY PIPE SPRINKLER SYSTEM TO SERVE THE EAST LOBBY OVERHANG. REFER TO PLANS FOR VALVE LOCATION AND SYSTEM LAYOUT.

SPECIAL FLOOD HAZARD AREA NOTES:

BUILDING SITE IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA



GENERAL FIRE PROTECTION CONTRACT REQUIREMENTS:

GENERAL:

- UNLESS OTHERWISE NOTED, THE WORK DESCRIBED ON THE PLANS AND SPECIFICATIONS SHALL INCLUDE THE FURNISHING AND INSTALLATION OF ALL LABOR AND MATERIALS NECESSARY FOR COMPLETE AND OPERATIONAL HVAC, FIRE PROTECTION AND PLUMBING SYSTEMS. CONTRACTOR SHALL FURNISH THESE EVEN IF ITEMS REQUIRED TO ACHIEVE THIS (I.E. OFFSETS, ISOLATION AND BALANCING DEVICES, MAINTENANCE CLEARANCES, ETC.) ARE NOT SPECIFICALLY SHOWN.
- DATA GIVEN ON THE DRAWINGS IS AS EXACT AS COULD BE SECURED. ABSOLUTE ACCURACY IS NOT GUARANTEED AND THE CONTRACTOR SHALL OBTAIN AND VERIFY EXACT LOCATIONS, MEASUREMENTS, LEVELS, SPACE REQUIREMENTS, POTENTIAL CONFLICTS WITH OTHER TRADES, ETC. AT THE SITE AND SHALL SATISFACTORILY ADAPT HIS WORK TO THE ACTUAL CONDITIONS OF THE JOB.
- THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND SHALL NOT BE SCALED. THEY SHOW CERTAIN PHYSICAL RELATIONSHIPS WHICH MUST BE ESTABLISHED WITHIN THE DIVISION 23 WORK AND ITS INTERFACE WITH OTHER WORK. ESTABLISHING THIS RELATIONSHIP IN THE FIELD IS THE EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR. THIS DIVISION SHALL COORDINATE ITS WORK WITH ALL DIVISIONS OF THE WORK AND ADJUST ITS WORK AS REQUIRED BY THE ACTUAL CONDITIONS OF THE PROJECT.
 - THE CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A BID TO BECOME THOROUGHLY FAMILIAR WITH THE ACTUAL CONDITIONS OF THE PROJECT. NO EXTRAS WILL BE ALLOWED DUE TO LACK OF KNOWLEDGE OF EXISTING CONDITIONS.
 - CERTAIN SYSTEMS REQUIRE ENGINEERING OF INSTALLATION DETAILS BY CONTRACTOR. UNLESS FULLY DETAILED IN THE CONTRACT DOCUMENTS, SUCH ENGINEERING IS THE EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHERE CLEARANCES ARE LIMITED, AND WHERE INSTALLATION DRAWINGS OR SCHEMATICS, "CONSTRUCTION DRAWINGS", OR COORDINATION DRAWINGS MAY BE REQUIRED IN ACCORDANCE WITH, OR IN EXCESS OF, THOSE REQUIRED BY THE SPECIFICATIONS. THE CONTRACTOR SHALL PREPARE ALL SUCH COORDINATION DRAWINGS AS PART OF THE BASE CONTRACT.
- THESE NOTES ONLY SUPPLEMENT, AND DO NOT REPLACE, THE SPECIFICATIONS.
- DEFINITIONS AND TERMINOLOGY
 - THE DEFINITIONS OF DIVISION 1 AND THE GENERAL CONDITIONS OF THIS SPECIFICATION ALSO APPLY TO THE DIVISION 23 CONTRACT DOCUMENTS.
 - "CONTRACT DOCUMENTS" CONSTITUTE THE DRAWINGS, SPECIFICATIONS, GENERAL CONDITIONS, PROJECT MANUALS, ETC., PREPARED BY ENGINEER (OR OTHER DESIGN PROFESSIONAL IN ASSOCIATION WITH ENGINEER) FOR CONTRACTOR'S BID OR CONTRACTOR'S NEGOTIATIONS WITH THE OWNER. THE DIVISION 23 DRAWINGS AND SPECIFICATIONS PREPARED BY THE ENGINEER ARE NOT CONSTRUCTION DOCUMENTS.
 - "CONSTRUCTION DOCUMENTS": "CONSTRUCTION DRAWINGS", AND SIMILAR TERMS FOR DIVISION 23 WORK REFER TO INSTALLATION DIAGRAMS, SHOP DRAWINGS AND COORDINATION DRAWINGS PREPARED BY THE CONTRACTOR USING THE DESIGN INTENT INDICATED ON THE ENGINEER'S CONTRACT DOCUMENTS. THESE SPECIFICATIONS DETAIL THE CONTRACTOR'S RESPONSIBILITY FOR "ENGINEERING BY CONTRACTOR" AND FOR PREPARATION OF CONSTRUCTION DOCUMENTS.
 - "FURNISH" MEANS TO "SUPPLY" AND USUALLY REFERS TO AN ITEM OF EQUIPMENT.
 - "INSTALL" MEANS TO "SET IN PLACE, CONNECT AND PLACE IN FULL OPERATIONAL ORDER".
 - "PROVIDE" MEANS TO "FURNISH AND INSTALL".
 - "EQUIVALENT" MEANS "MEETS THE SPECIFICATIONS OF THE REFERENCE PRODUCT OR ITEM IN ALL SIGNIFICANT ASPECTS". SIGNIFICANT ASPECTS SHALL BE AS DETERMINED BY THE ARCHITECT/ENGINEER.
 - "WORK BY OTHER(S) DIVISIONS": "RE: XX DIVISION", AND SIMILAR EXPRESSIONS MEANS WORK TO BE PERFORMED UNDER THE CONTRACT DOCUMENTS, BUT NOT NECESSARILY UNDER THE DIVISION OR SECTION OF THE WORK ON WHICH THE NOTE APPEARS. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE THE WORK OF THE CONTRACT BETWEEN HIS/HER SUPPLIERS, SUBCONTRACTORS AND EMPLOYEES. IF CLARIFICATION IS REQUIRED, CONSULT ARCHITECT/ENGINEER BEFORE SUBMITTING BID.
 - BY INFERENCE, ANY REFERENCE TO A "CONTRACTOR" OR "SUB-CONTRACTOR" MEANS THE ENTITY WHICH HAS CONTRACTED WITH THE OWNER FOR THE WORK OF THE CONTRACT DOCUMENTS.
 - "ENGINEER" MEANS THE DESIGN PROFESSIONAL FIRM WHICH HAS PREPARED THESE CONTRACT DOCUMENTS. ALL QUESTIONS, SUBMITTALS, ETC. OF THIS DIVISION SHALL BE ROUTED THROUGH THE ARCHITECT TO THE ENGINEER (THROUGH PROPER CONTRACTUAL CHANNELS).

GENERAL FIRE PROTECTION NOTES:

- ALL FIRE PROTECTION PIPING SHALL BE SCHEDULE 40 OR GREATER. THE USE OF SCHEDULE 10 PIPE WILL NOT BE ACCEPTED FOR ANY REASON.

CUTTING, PATCHING AND DEMOLITION:

- ALL PIPING SHALL BE ADEQUATELY SUPPORTED FROM THE BUILDING STRUCTURE TO PREVENT SAGGING, POCKETING, SWAYING OR DISPLACEMENT BY MEANS OF HANGERS AND SUPPORTS. PIPING IS NOT TO BE SUPPORTED BY EQUIPMENT.
- FLUSH OUT PIPING AND REMOVE CONTROL DEVICES BEFORE PERFORMING PRESSURE TEST. THE ENTIRE FIRE PROTECTION SYSTEM SHALL BE TESTED HYDROSTATICALLY AT NOT LESS THAN 200 PSI PRESSURE FOR TWO HOURS, OR AT 50 PSI IN EXCESS OF THE MAXIMUM STATIC PRESSURE WHEN THE MAXIMUM STATIC PRESSURE IN EXCESS OF 150 PSI. ANY SYSTEM FAILING TO MEET THE PRESSURE TEST SHALL BE REPAIRED AND RETESTED AT NO ADDITIONAL COST, UNTIL THE TEST REQUIREMENTS ARE MET.
- INSTALL ALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHIN THE PIPING SYSTEM. ENSURE ALL REQUIRED PIPE EXPANSION WILL OCCUR IN THE PROPER DIRECTION AND SEGMENT OF PIPE. PROPERLY ANCHOR (RE: SPECIFICATIONS) ALL PIPING REQUIRING EXPANSION/CONTRACTION ISOLATION. COORDINATE PIPE EXPANSION/CONTRACTION TO PREVENT DAMAGE TO ANY AND ALL BUILDING COMPONENTS.

- THE CONTRACTOR SHALL BE RESPONSIBLE TO PREPARE AS-BUILT DRAWING AND HYDRAULIC CALCULATIONS AND OBTAIN APPROVAL FROM ALL AUTHORITIES HAVING JURISDICTION OVER THE SPRINKLER WORK AND OBTAIN AGENCY APPROVALS FOR DRAWING AND HYDRAULICS PRIOR TO INSTALLATION OF NEW WORK. DRAWING AND HYDRAULIC CALCULATIONS SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER RETAINED BY THE SPRINKLER CONTRACTOR. SPRINKLER CONTRACTOR SHALL PREPARE ALL DOCUMENTS REQUIRED FOR ANY SUBSEQUENT FILING WITH AUTHORITIES HAVING JURISDICTION.
- COORDINATE ROUTING OF ALL FIRE PROTECTION PIPING WITH STRUCTURAL BEAMS, COLUMNS, ETC. ALLOW FOR REROUTING OF PIPING AS REQUIRED.
- PIPING ROUTING ON DRAWINGS IS GENERALLY DIAGRAMMATIC WITH EFFORTS DURING DESIGN TO AVOID STRUCTURAL CONFLICTS. CONTRACTOR SHALL COORDINATE ROUTING OF ALL PIPING THROUGH BUILDING WITH STRUCTURAL CONDITIONS. CONTRACTOR COORDINATION DRAWINGS SHALL REFLECT ALL PIPE ROUTING AND PIPING THAT MAY HAVE TO BE SHIFTED AND/OR MOVED TO AVOID CONFLICTS. SHIFTED OR MOVED PIPING SHALL REFLECT NO ADDITIONAL COST TO THE PROJECT.
- ALL REQUIRED OPENINGS IN STEEL BEAMS AND STRUCTURAL WALLS ARE TO BE ACCOMPLISHED USING SLEEVES/PENETRATIONS PROPERLY SIZED FOR THE PIPE THEY SERVE. ALL BEAM PENETRATIONS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. CORE DRILLING IN PANS IS ALLOWED UPON PRIOR APPROVAL OF ARCHITECT AND STRUCTURAL ENGINEER.
- ALL EQUIPMENT AND PIPING SHALL BE BRACED FOR SEISMIC REQUIREMENTS APPLICABLE FOR SEISMIC ZONE REQUIREMENTS FOR THIS PROJECT.

ELECTRICAL COORDINATION:

- VERIFY THE ELECTRICAL SERVICE PROVIDED BY THE ELECTRICAL CONTRACTOR BEFORE ORDERING ANY PLUMBING EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS.
- THE ELECTRICAL POWER FOR CERTAIN EQUIPMENT PROVIDED UNDER DIVISION 21 HAS NOT BEEN SPECIFICALLY INDICATED ON THE ELECTRICAL DRAWINGS AND MUST BE PROVIDED BY AND FIELD COORDINATED BY THE DIVISION 21 TRADE REQUIRING SUCH POWER.

SUCH EQUIPMENT IS HEREBY DEFINED AS:

 - DIVISION 26 SHALL PROVIDE INTERCONNECTION BETWEEN FIRE COMMAND CENTER ALARM PANEL (PROVIDED UNDER DIVISION 26) AND REMOTE COMMUNICATION FIRE ALARM PANEL (PROVIDED UNDER DIVISION 26).

INSTALLATION:

- SUSPEND EACH TRADE'S WORK SEPARATELY FROM THE STRUCTURE. DUCTWORK SHALL BE HELD TIGHT TO STRUCTURE EXCEPT WHERE OTHERWISE SHOWN.
- INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE DOCUMENTS OF ALL TRADES TO COMPLETELY FAMILIARIZE INDICATED OTHERWISE OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
- PROVIDE MANUFACTURER'S RECOMMENDED SERVICE CLEARANCE AROUND ALL EQUIPMENT REQUIRING SAME.
- PROVIDE FOR SAFE CONDUCT OF THE WORK, CAREFUL REMOVAL AND DISPOSAL OF MATERIALS AND PROTECTION OF PROPERTY WHICH IS TO REMAIN UNDISTURBED.
- FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL CONCRETE EQUIPMENT PAD DIMENSIONS, BASED ON THE FINAL EQUIPMENT SELECTION, TO THE STRUCTURAL AND GENERAL CONTRACTOR FOR INCLUSION IN THOSE CONTRACTORS WORK AS DESCRIBED BY THE GENERAL CONTRACTOR.
- UNDER THE BASE CONTRACT, THE CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS NECESSARY TO SPLIT EQUIPMENT INTO MULTIPLE PIECES TO FACILITATE RIGGING TO FINAL INSTALLED LOCATION. CONTRACTOR SHALL REASSEMBLE THE EQUIPMENT AND TEST TO CONFIRM PROPER OPERATION AND MAINTAIN ALL THE MANUFACTURER'S WARRANTIES.
- WARRANTY: AT A MINIMUM, THE ENTIRE FIRE PROTECTION SYSTEM SHALL BE WARRANTED AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR AFTER ACCEPTANCE OF THE SYSTEM BY THE OWNER. REFER TO INDIVIDUAL SPECIFICATION SECTIONS FOR SPECIFIC WARRANTY REQUIREMENTS.

PIPE INSTALLATION:

- ALL PIPING SHALL BE ADEQUATELY SUPPORTED FROM THE BUILDING STRUCTURE TO PREVENT SAGGING, POCKETING, SWAYING OR DISPLACEMENT BY MEANS OF HANGERS AND SUPPORTS. PIPING IS NOT TO BE SUPPORTED BY EQUIPMENT.
- FLUSH OUT PIPING AND REMOVE CONTROL DEVICES BEFORE PERFORMING PRESSURE TEST. THE ENTIRE FIRE PROTECTION SYSTEM SHALL BE TESTED HYDROSTATICALLY AT NOT LESS THAN 200 PSI PRESSURE FOR TWO HOURS, OR AT 50 PSI IN EXCESS OF THE MAXIMUM STATIC PRESSURE WHEN THE MAXIMUM STATIC PRESSURE IN EXCESS OF 150 PSI. ANY SYSTEM FAILING TO MEET THE PRESSURE TEST SHALL BE REPAIRED AND RETESTED AT NO ADDITIONAL COST, UNTIL THE TEST REQUIREMENTS ARE MET.
- INSTALL ALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHIN THE PIPING SYSTEM. ENSURE ALL REQUIRED PIPE EXPANSION WILL OCCUR IN THE PROPER DIRECTION AND SEGMENT OF PIPE. PROPERLY ANCHOR (RE: SPECIFICATIONS) ALL PIPING REQUIRING EXPANSION/CONTRACTION ISOLATION. COORDINATE PIPE EXPANSION/CONTRACTION TO PREVENT DAMAGE TO ANY AND ALL BUILDING COMPONENTS.

- KEEP DEMOLITION & CUTTING TO MINIMUM REQUIRED FOR PROPER EXECUTION OF WORK.
- BE RESPONSIBLE FOR ALL CUTTING AND PATCHING NECESSARY FOR THE COMPLETION OF THE WORK.
- NO CUTTING (NOT SHOWN ON THE CONTRACT DOCUMENTS) SHALL BE DONE WITHOUT THE APPROVAL OF THE ARCHITECT AS TO LOCATIONS, METHOD AND EXTENT OF THE CUTTING.
- REPAIR ALL ACCIDENTAL OR INTENTIONAL DAMAGE TO MATCH EXISTING CONSTRUCTION WITH NO NOTICEABLE DIFFERENCE IN CONTINUITY, APPEARANCE OR FUNCTION.
- DEMOLISH AND CAP ALL INDICATED PIPING BACK AT NEAREST MAIN.

SUBMITTAL REQUIREMENTS:

- AFTER RECEIPT OF NOTICE TO PROCEED, THE CONTRACTOR SHALL SUBMIT A TYPED LIST OF SUBMITTALS AND THE SCHEDULED DATE OF SUBMISSION. LIST SHALL INCLUDE SUBMITTAL NUMBER, SECTION NUMBER AND SCHEDULED DATE OF SUBMISSION.
- REFER TO THE SPECIFICATIONS FOR ADDITIONAL SUBMITTAL REQUIREMENTS.

STRUCTURE:

- DO NOT PENETRATE STRUCTURAL MEMBERS. ALL EQUIPMENT SUPPORTS SHALL BE ATTACHED TO THE LOAD BEARING MEMBERS OF STRUCTURAL ELEMENTS. DO NOT OVER-STRESS ANY STRUCTURAL MEMBERS. CONTACT STRUCTURAL ENGINEER FOR ALLOWABLE LOADS FOR SPECIFIC MEMBERS.
- DO NOT UTILIZE POWDER DRIVEN ANCHORS FOR ANY LOCATIONS WHICH REQUIRE THE LOAD TO BE HELD IN TENSION. SEE STRUCTURAL DIVISION FOR ADDITIONAL RESTRICTIONS.
- SEE ALSO STRUCTURAL DIVISION FOR ACCEPTABLE ANCHORING AND SUPPORT MEANS, METHODS, AND LOCATIONS.

FIRE STOPPING:

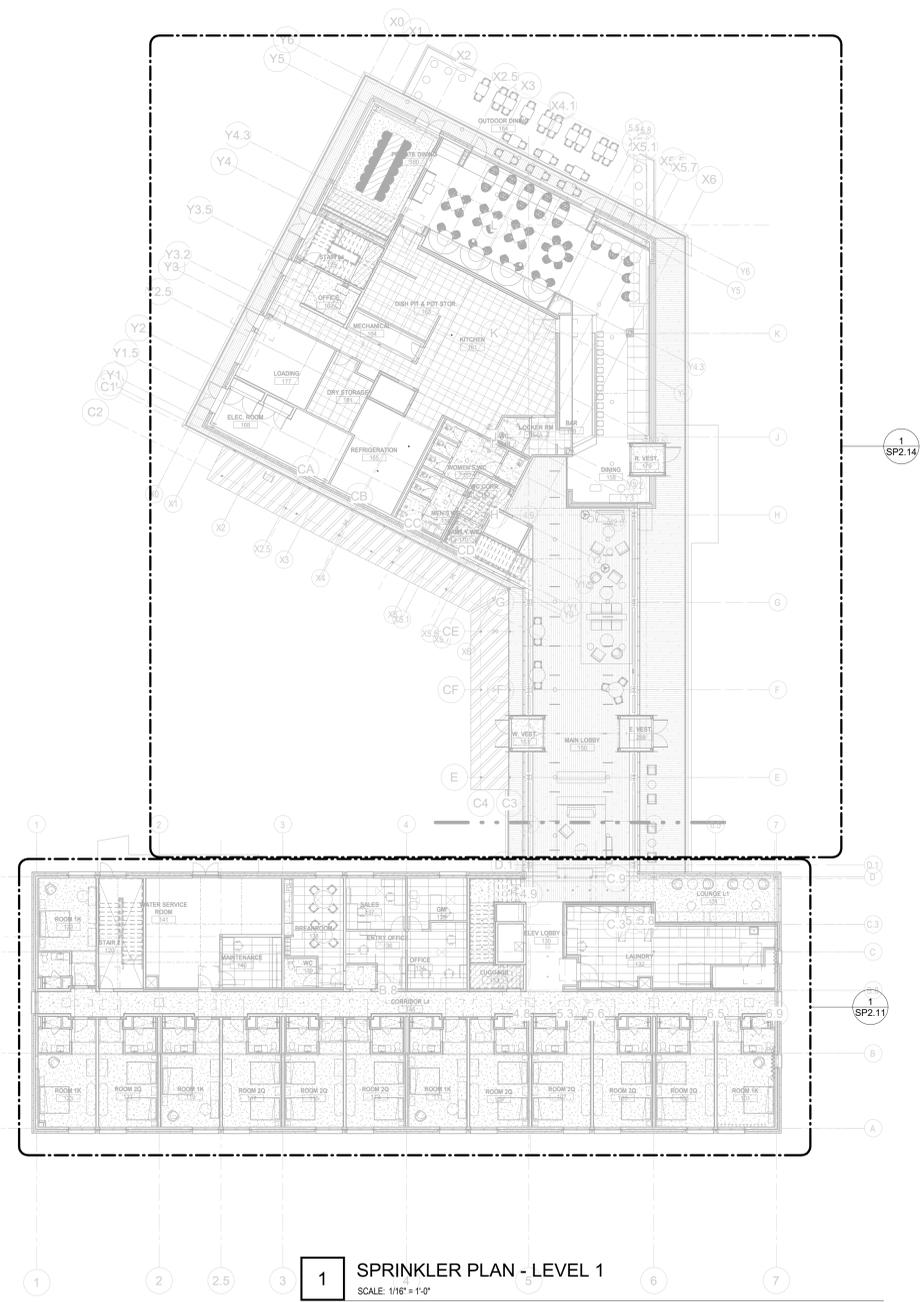
- FIRE STOPPING REQUIREMENT: PENETRATIONS THROUGH RATED WALLS AND FLOORS SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASES WHEN SUBJECTED TO THE REQUIREMENTS OF THE TEST STANDARD SPECIFIC FOR FIRE STOPS ASTM-E-814. ACCEPTANCE MATERIALS INCLUDE: DOW CORNING RTV FIRE STOP FOAM FOR BARE PIPE, METAL CONDUIT, AND ELECTRICAL CABLE; 3M FIRE DAM 150 CAULK FOR BARE PIPE, METAL CONDUIT, AND BUILDING CONSTRUCTION; GAPS 3M FS-185 INTUMESCENT STRIPS FOR INSULATED PIPES, PLASTIC PIPE OR CONDUIT, AND ELECTRICAL CABLE.

SCOPE CLARIFICATION NOTES:

- THESE DOCUMENTS SERVE TO DEFINE THE NATURE OF THE SYSTEMS, LEVEL OF CONTROL AND FINISH RELATIONSHIPS WITH OTHER BUILDING SYSTEMS, AND GENERAL DESIGN INTENT OF THIS DIVISION'S WORK. THE CONTRACTOR SHALL EXAMINE THE DOCUMENTS OF ALL TRADES TO COMPLETELY FAMILIARIZE HIM/HERSELF WITH THE VARIOUS CONCEPTS PRESENTED BY OTHER TRADES AND ADAPT THIS WORK AND ANY ASSOCIATED PRICING ACCORDINGLY, WHERE CONFLICTS EXIST BETWEEN THESE DOCUMENTS AND THOSE OF OTHER DIVISIONS. THE MORE STRINGENT (AS DETERMINED BY THE ENGINEER) SHALL TAKE PRECEDENCE. IN PARTICULAR, WHERE ARCHITECTURAL BACKGROUNDS INDICATE PROGRAMMATIC DIFFERENCES IN ROOM LOCATIONS, ROOM FUNCTIONS, PLUMBING FIXTURE COUNTS, CEILING TYPES, RATED CONSTRUCTION CLEARANCES, OR ROOM RELATIONSHIPS, THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE AND THIS CONTRACTOR SHALL ADAPT HIS/HER WORK ACCORDINGLY WHILE MAINTAINING THE DESIGN INTENT REPRESENTED BY THE DOCUMENTS OF THIS DIVISION.
- PROVIDE FIRE STOPPING ON ALL NEW PIPES, DEVICES, ETC. PENETRATING ALL STAIR ENCLOSURES AND FIRE RATED CONSTRUCTION ASSEMBLIES.
- THE DRAWINGS ARE DIAGRAMMATIC IN NATURE. THE CONTRACTOR IS RESPONSIBLE FOR ALL OFFSETS, TRANSITIONS, ELBOWS, ETC. AS REQUIRED IN DUCTWORK, PIPING, SUPPORTS, ETC. TO COMPLETE HIS/HER WORK IN A CLEAN, FUNCTIONAL INSTALLATION.
- THIS CONTRACTOR IS RESPONSIBLE FOR ALL SLEEVES FOR PENETRATIONS THROUGH SLABS AND BEAMS INDICATED BY THE INTENT OF THE SCOPE OF WORK INDICATED ON THE DRAWINGS. COORDINATION OF QUANTITY AND LOCATIONS OF ALL PENETRATIONS SHALL BE DONE BY THIS CONTRACTOR DURING THE SHOP DRAWINGS PROCESS FOR REVIEW BY THE STRUCTURAL ENGINEER.



2 SPRINKLER PLAN - LEVEL 2
SCALE: 1/16" = 1'-0"



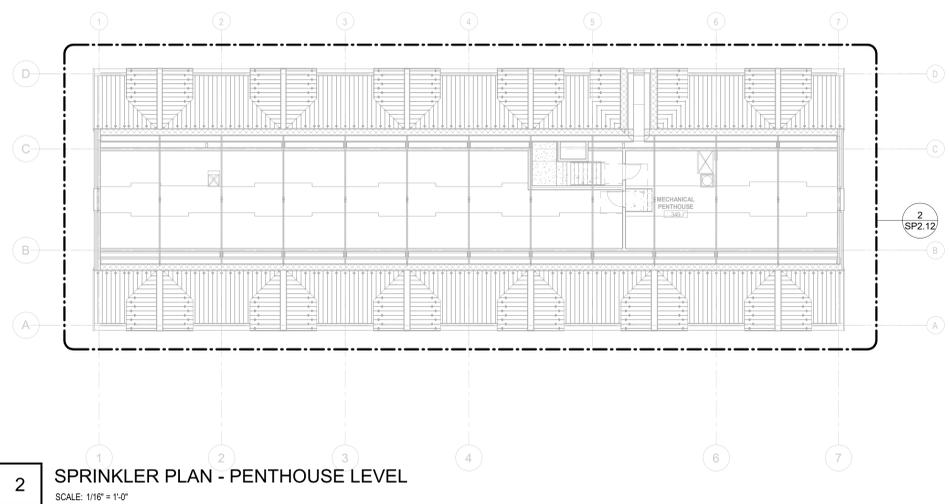
1 SPRINKLER PLAN - LEVEL 1
SCALE: 1/16" = 1'-0"

GENERAL NOTES:

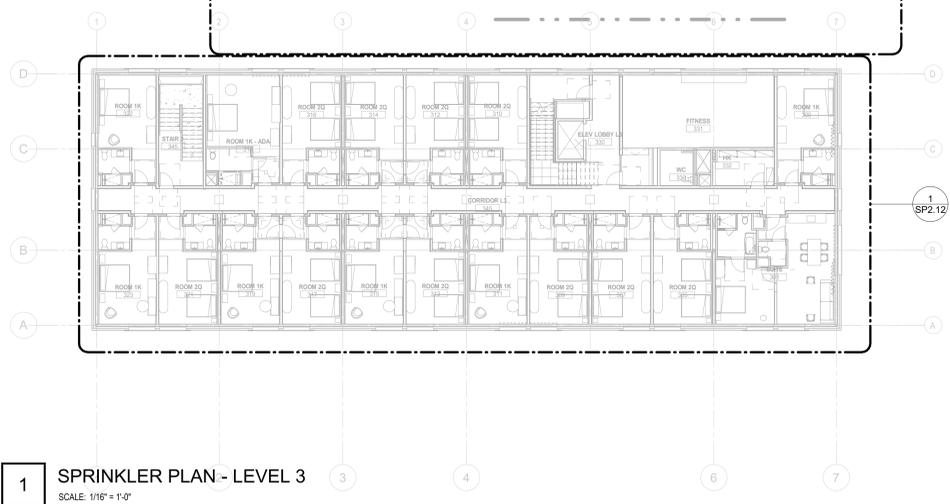
- CONTRACTOR IS RESPONSIBLE FOR ALL CEILING REMOVALS AND REINSTALLATIONS REQUIRED TO COMPLETE WORK. PROVIDE CEILING TILES AS REQUIRED. CEILING TILES SHALL MATCH EXISTING.
- CONTRACTOR SHALL PROVIDE CORE DRILLING AS REQUIRED FOR NEW PIPE PENETRATIONS.
- COORDINATION DRAWINGS SHALL BE PREPARED TO ENSURE ROUTING AVOIDS CONFLICTS. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.
- CONTRACTOR SHALL PERFORM HYDRAULIC CALCULATIONS AND SUBMIT WITH SHOP DRAWINGS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- ALL WORK AFFECTING BUILDING SYSTEM OPERATION SHALL BE COORDINATED WITH BUILDING ENGINEERING.
- MINIMUM PIPE SIZE FOR ALL SPRINKLER BRANCH TO SPRINKLER HEADS SHALL BE 1".
- SPRINKLER HEADS SHALL BE LOCATED CENTERED ON CEILING WITH RESPECT TO NEW CEILING GRID.
- NEW PIPING SHALL BE RELOCATED TO ALLOW FOR INSTALLATION OF OTHER TRADES AS NECESSARY.
- FIRE HOSE VALVE LOCATION IS APPROXIMATE. VALVE SHOULD BE EASILY ACCESSIBLE OUT OF THE WAY OF PUBLIC TRAFFIC.
- COORDINATE COLOR OF CONCEALED HEADS WITH ARCHITECT.
- THE CONTRACTOR IS RESPONSIBLE TO PREPARE AS-BUILT DRAWING AND HYDRAULIC CALCULATIONS AND OBTAIN APPROVAL FROM ALL AUTHORITIES HAVING JURISDICTION AND OBTAIN AGENCY APPROVALS FOR DRAWING AND HYDRAULICS PRIOR TO INSTALLATION OF NEW WORK. DRAWING AND HYDRAULIC CALCULATIONS SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER RETAINED BY THE SPRINKLER CONTRACTOR. SPRINKLER CONTRACTOR SHALL PREPARE ALL DOCUMENTS REQUIRED FOR ANY SUBSEQUENT FILING WITH AUTHORITIES HAVING JURISDICTION.
- PIPING SHALL BE SIZED ACCORDING TO HOW MANY HEADS ARE FED DOWNSTREAM OF BRANCH. REFER TO CHART BELOW:

BRANCH DIA.	MAX NO. OF HEADS
1"	2
1-1/4"	3
1-1/2"	5
2"	10
2-1/2"	30
3"	60
4"	>100

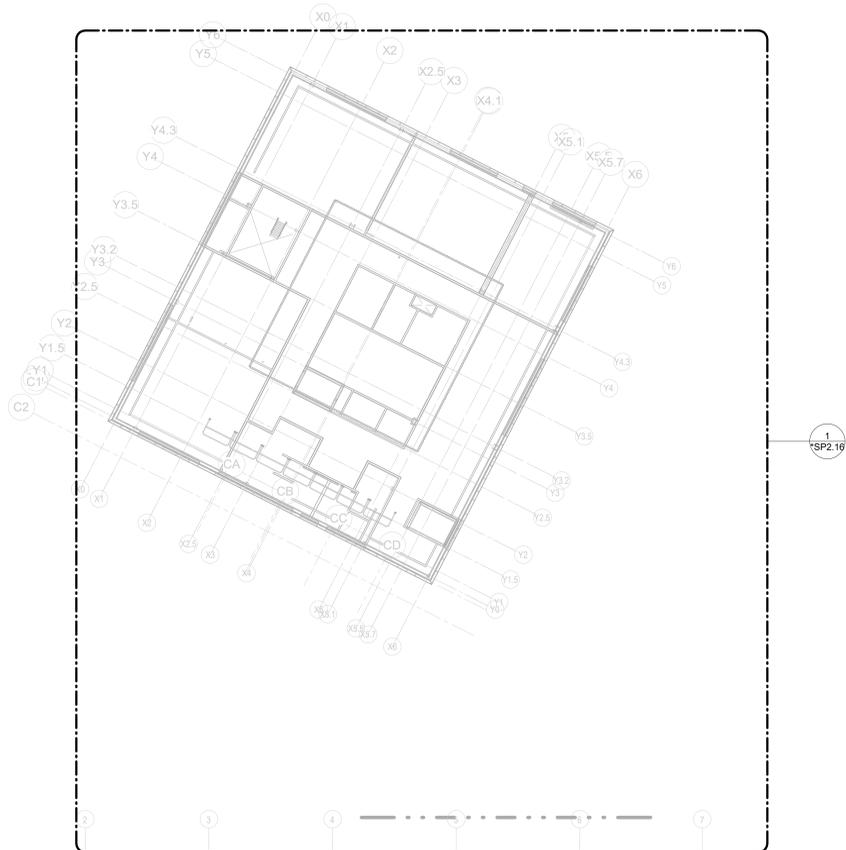
KEYNOTES



2 SPRINKLER PLAN - PENTHOUSE LEVEL
SCALE: 1/16" = 1'-0"



1 SPRINKLER PLAN - LEVEL 3
SCALE: 1/16" = 1'-0"



- GENERAL NOTES:**
- CONTRACTOR IS RESPONSIBLE FOR ALL CEILING REMOVALS AND REINSTALLATIONS REQUIRED TO COMPLETE WORK. PROVIDE CEILING TILES AS REQUIRED. CEILING TILES SHALL MATCH EXISTING.
 - CONTRACTOR SHALL PROVIDE CORE DRILLING AS REQUIRED FOR NEW PIPE PENETRATIONS.
 - COORDINATION DRAWINGS SHALL BE PREPARED TO ENSURE ROUTING AVOIDS CONFLICTS. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.
 - CONTRACTOR SHALL PERFORM HYDRAULIC CALCULATIONS AND SUBMIT WITH SHOP DRAWINGS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
 - ALL WORK AFFECTING BUILDING SYSTEM OPERATION SHALL BE COORDINATED WITH BUILDING ENGINEERING.
 - MINIMUM PIPE SIZE FOR ALL SPRINKLER BRANCH TO SPRINKLER HEADS SHALL BE 1".
 - SPRINKLER HEADS SHALL BE LOCATED CENTERED ON CEILING WITH RESPECT TO NEW CEILING GRID.
 - NEW PIPING SHALL BE RELOCATED TO ALLOW FOR INSTALLATION OF OTHER TRADES AS NECESSARY.
 - FIRE HOSE VALVE LOCATION IS APPROXIMATE. VALVE SHOULD BE EASILY ACCESSIBLE OUT OF THE WAY OF PUBLIC TRAFFIC.
 - COORDINATE COLOR OF CONCEALED HEADS WITH ARCHITECT.
 - THE CONTRACTOR IS RESPONSIBLE TO PREPARE AS-BUILT DRAWING AND HYDRAULIC CALCULATIONS AND OBTAIN APPROVAL FROM ALL AUTHORITIES HAVING JURISDICTION AND OBTAIN AGENCY APPROVALS FOR DRAWING AND HYDRAULICS PRIOR TO INSTALLATION OF NEW WORK. DRAWING AND HYDRAULIC CALCULATIONS SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER RETAINED BY THE SPRINKLER CONTRACTOR. SPRINKLER CONTRACTOR SHALL PREPARE ALL DOCUMENTS REQUIRED FOR ANY SUBSEQUENT FILING WITH AUTHORITIES HAVING JURISDICTION.
 - PIPING SHALL BE SIZED ACCORDING TO HOW MANY HEADS ARE FED DOWNSTREAM OF BRANCH. REFER TO CHART BELOW:

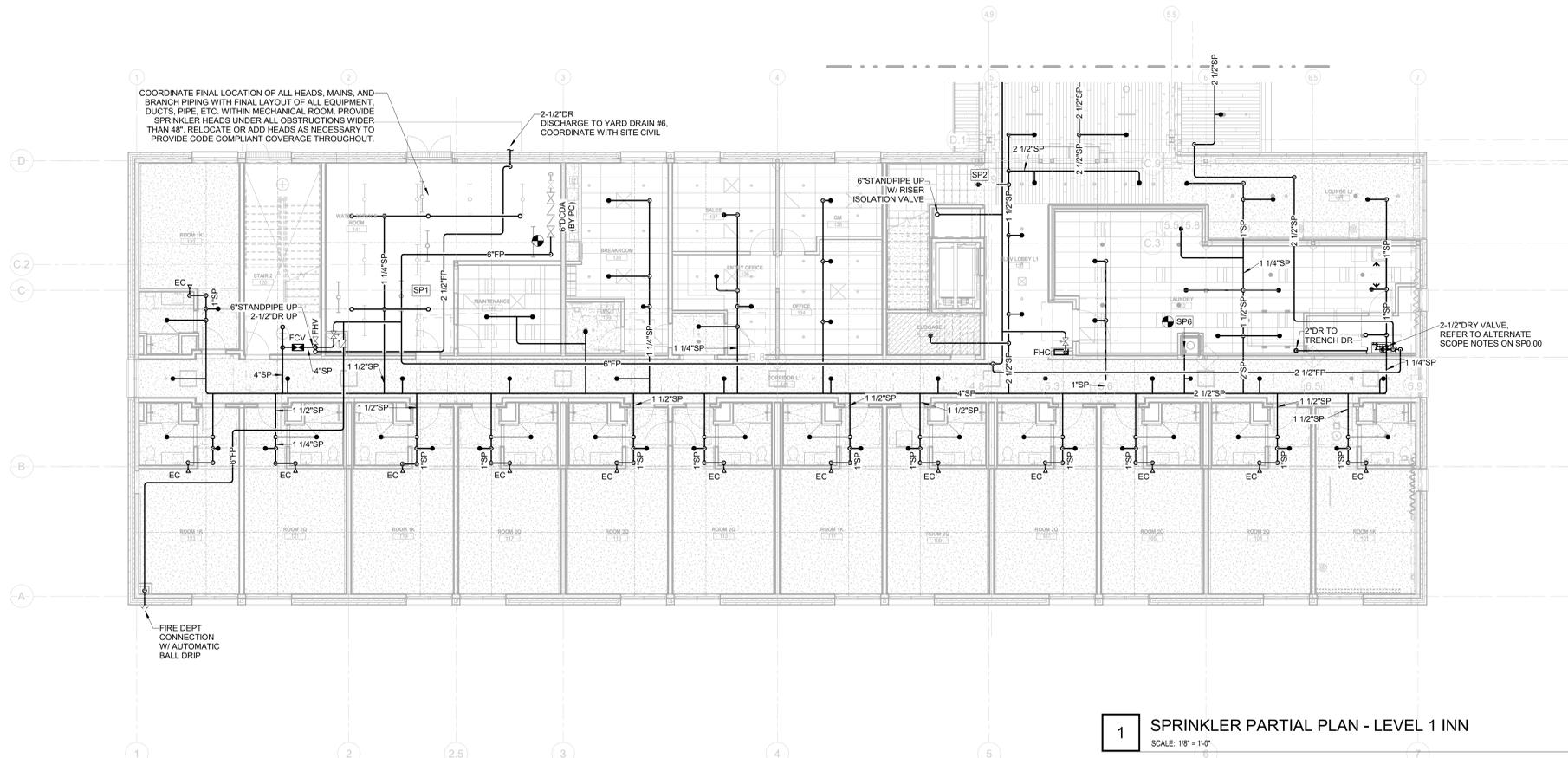
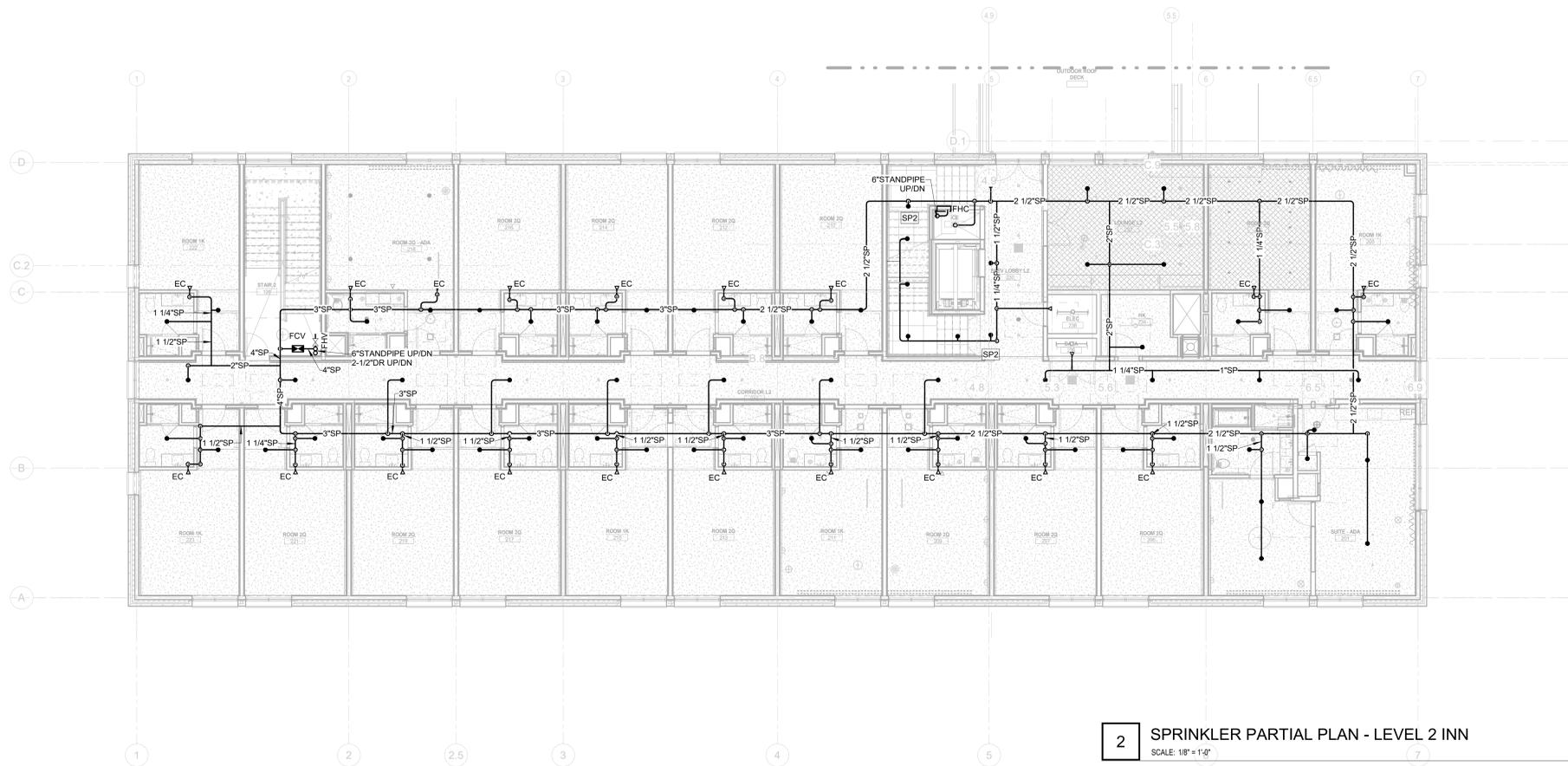
BRANCH DIA.	MAX NO. OF HEADS
1"	2
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1-1/2"	5
2"	10
2-1/2"	30
3"	60
4"	>100

KEYNOTES

ISSUE DATES

02/20/14 70% DESIGN DEVELOPMENT
08/03/14 80% DESIGN DEVELOPMENT
12/02/14 90% CONSTRUCTION DOCUMENTS
04/10/15 95% CONSTRUCTION DOCUMENTS
04/10/15 95% CONSTRUCTION DOCUMENTS
05/01/15 95% CONSTRUCTION DOCUMENTS
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GENERAL NOTES:

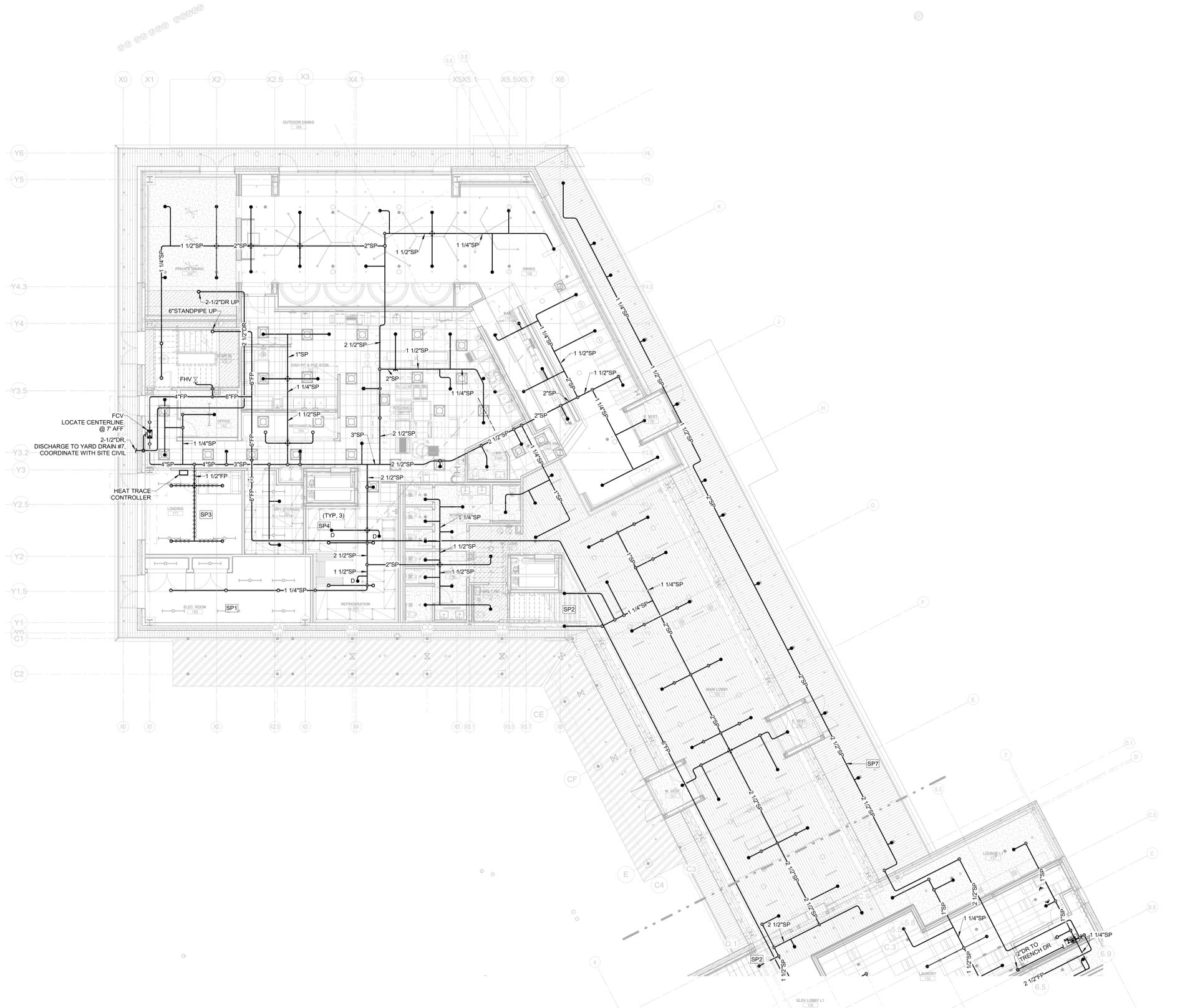
- CONTRACTOR IS RESPONSIBLE FOR ALL CEILING REMOVALS AND REINSTALLATIONS REQUIRED TO COMPLETE WORK. PROVIDE CEILING TILES AS REQUIRED. CEILING TILES SHALL MATCH EXISTING.
- CONTRACTOR SHALL PROVIDE CORE DRILLING AS REQUIRED FOR NEW PIPE PENETRATIONS.
- COORDINATION DRAWINGS SHALL BE PREPARED TO ENSURE ROUTING AVOIDS CONFLICTS. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.
- CONTRACTOR SHALL PERFORM HYDRAULIC CALCULATIONS AND SUBMIT WITH SHOP DRAWINGS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- ALL WORK AFFECTING BUILDING SYSTEM OPERATION SHALL BE COORDINATED WITH BUILDING ENGINEERING.
- MINIMUM PIPE SIZE FOR ALL SPRINKLER BRANCH TO SPRINKLER HEADS SHALL BE 1".
- SPRINKLER HEADS SHALL BE LOCATED CENTERED ON CEILING WITH RESPECT TO NEW CEILING GRID.
- NEW PIPING SHALL BE RELOCATED TO ALLOW FOR INSTALLATION OF OTHER TRADES AS NECESSARY.
- FIRE HOSE VALVE LOCATION IS APPROXIMATE. VALVE SHOULD BE EASILY ACCESSIBLE OUT OF THE WAY OF PUBLIC TRAFFIC.
- COORDINATE COLOR OF CONCEALED HEADS WITH ARCHITECT.
- THE CONTRACTOR IS RESPONSIBLE TO PREPARE AS-BUILT DRAWING AND HYDRAULIC CALCULATIONS AND OBTAIN APPROVAL FROM ALL AUTHORITIES HAVING JURISDICTION AND OBTAIN AGENCY APPROVALS FOR DRAWING AND HYDRAULICS PRIOR TO INSTALLATION OF NEW WORK. DRAWING AND HYDRAULIC CALCULATIONS SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER RETAINED BY THE SPRINKLER CONTRACTOR. SPRINKLER CONTRACTOR SHALL PREPARE ALL DOCUMENTS REQUIRED FOR ANY SUBSEQUENT FILING WITH AUTHORITIES HAVING JURISDICTION.
- PIPING SHALL BE SIZED ACCORDING TO HOW MANY HEADS ARE FED DOWNSTREAM OF BRANCH. REFER TO CHART BELOW:

BRANCH DIA.	MAX NO. OF HEADS
1"	2
1-1/4"	3
1-1/2"	5
2"	10
2-1/2"	30
3"	60
4"	>100

KEYNOTES

- SP1 PIPING AND HEADS SHALL NOT BE LOCATED ABOVE ELECTRICAL EQUIPMENT. COORDINATE WITH ELECTRICAL CONTRACTOR.
- SP2 PROVIDE SPRINKLER HEADS 6'-0" ON CENTER TO PROTECT STAIR OPENING.
- SP6 CONNECT TO SPRINKLER HEAD WITHIN THE LINEN CHUTE. SPRINKLER HEAD PROVIDED BY CHUTE VENDOR. HEAD SHALL BE RECESSED OUT OF THE CHUTE AREA THROUGH WHICH THE MATERIALS TRAVEL.

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GENERAL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR ALL CEILING REMOVALS AND REINSTALLATIONS REQUIRED TO COMPLETE WORK. PROVIDE CEILING TILES AS REQUIRED. CEILING TILES SHALL MATCH EXISTING.
2. CONTRACTOR SHALL PROVIDE CORE DRILLING AS REQUIRED FOR NEW PIPE PENETRATIONS.
3. COORDINATION DRAWINGS SHALL BE PREPARED TO ENSURE ROUTING AVOIDS CONFLICTS. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.
4. CONTRACTOR SHALL PERFORM HYDRAULIC CALCULATIONS AND SUBMIT WITH SHOP DRAWINGS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
5. ALL WORK AFFECTING BUILDING SYSTEM OPERATION SHALL BE COORDINATED WITH BUILDING ENGINEERING.
6. MINIMUM PIPE SIZE FOR ALL SPRINKLER BRANCH TO SPRINKLER HEADS SHALL BE 1".
7. SPRINKLER HEADS SHALL BE LOCATED CENTERED ON CEILING WITH RESPECT TO NEW CEILING GRID.
8. NEW PIPING SHALL BE RELOCATED TO ALLOW FOR INSTALLATION OF OTHER TRADES AS NECESSARY.
9. FIRE HOSE VALVE LOCATION IS APPROXIMATE. VALVE SHOULD BE EASILY ACCESSIBLE OUT OF THE WAY OF PUBLIC TRAFFIC.
10. COORDINATE COLOR OF CONCEALED HEADS WITH ARCHITECT.
11. THE CONTRACTOR IS RESPONSIBLE TO PREPARE AS-BUILT DRAWING AND HYDRAULIC CALCULATIONS AND OBTAIN APPROVAL FROM ALL AUTHORITIES HAVING JURISDICTION AND OBTAIN AGENCY APPROVALS FOR DRAWING AND HYDRAULICS PRIOR TO INSTALLATION OF NEW WORK. DRAWING AND HYDRAULIC CALCULATIONS SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER RETAINED BY THE SPRINKLER CONTRACTOR. SPRINKLER CONTRACTOR SHALL PREPARE ALL DOCUMENTS REQUIRED FOR ANY SUBSEQUENT FILING WITH AUTHORITIES HAVING JURISDICTION.
12. PIPING SHALL BE SIZED ACCORDING TO HOW MANY HEADS ARE FED DOWNSTREAM OF BRANCH. REFER TO CHART BELOW:

BRANCH DIA.	MAX NO. OF HEADS
1"	2
1-1/4"	3
1-1/2"	5
2"	10
2-1/2"	30
3"	60
4"	>100

KEYNOTES

- SP1 PIPING AND HEADS SHALL NOT BE LOCATED ABOVE ELECTRICAL EQUIPMENT. COORDINATE WITH ELECTRICAL CONTRACTOR.
- SP2 PROVIDE SPRINKLER HEADS 6'-0" ON CENTER TO PROTECT STAIR OPENING.
- SP3 SPRINKLER PIPING WITHIN LOADING ROOM SHALL BE PROVIDED WITH HEAT TRACE. HEAT TRACE CONTROLLER SHALL MAINTAIN HEAT TRACE TEMPERATURE SETPOINT. PIPE MOUNTED AQUASTAT SHALL ALARM THE BMS IF PIPE TEMPERATURE DROPS BELOW 40F. COORDINATE WITH BMS AND FIRE ALARM CONTRACTORS.
- SP4 PROVIDE DRY PENDANT HEADS IN CEILING OF WALK-IN COOLERS. COORDINATE WITH KITCHEN EQUIPMENT CONTRACTOR.
- SP7 DRY PIPE MAIN WITHIN OVERHANG CEILING CONSTRUCTION. LOW POINT DRAINS SHALL BE CONCEALED. COORDINATE ACCESS WITH ARCHITECT. COORDINATE ALL BEAM PENETRATIONS WITH STRUCTURAL CONTRACTOR.

1 SPRINKLER PARTIAL PLAN - LEVEL 1 INSTITUTE
SCALE: 1/8" = 1'-0"

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1 SPRINKLER PARTIAL PLAN - LEVEL 2 INSTITUTE
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

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2. CONTRACTOR SHALL PROVIDE CORE DRILLING AS REQUIRED FOR NEW PIPE PENETRATIONS.
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4. CONTRACTOR SHALL PERFORM HYDRAULIC CALCULATIONS AND SUBMIT WITH SHOP DRAWINGS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
5. ALL WORK AFFECTING BUILDING SYSTEM OPERATION SHALL BE COORDINATED WITH BUILDING ENGINEERING.
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BRANCH DIA.	MAX NO. OF HEADS
1"	2
1-1/4"	3
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2"	10
2-1/2"	30
3"	60
4"	>100

KEYNOTES

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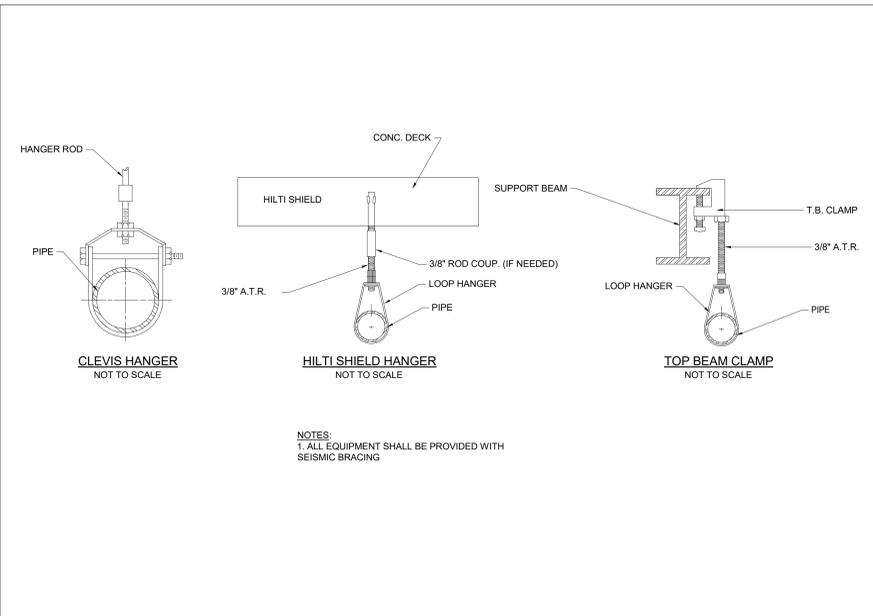
ISSUE DATES
02/02/14 70% DESIGN DEVELOPMENT
08/03/14 80% DESIGN DEVELOPMENT
12/02/14 85% CONSTRUCTION DOCUMENTS
04/10/15 90% CONSTRUCTION DOCUMENTS
07/02/15 95% CONSTRUCTION DOCUMENTS

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350 West 28th St, Suite 1802, New York, NY 10001

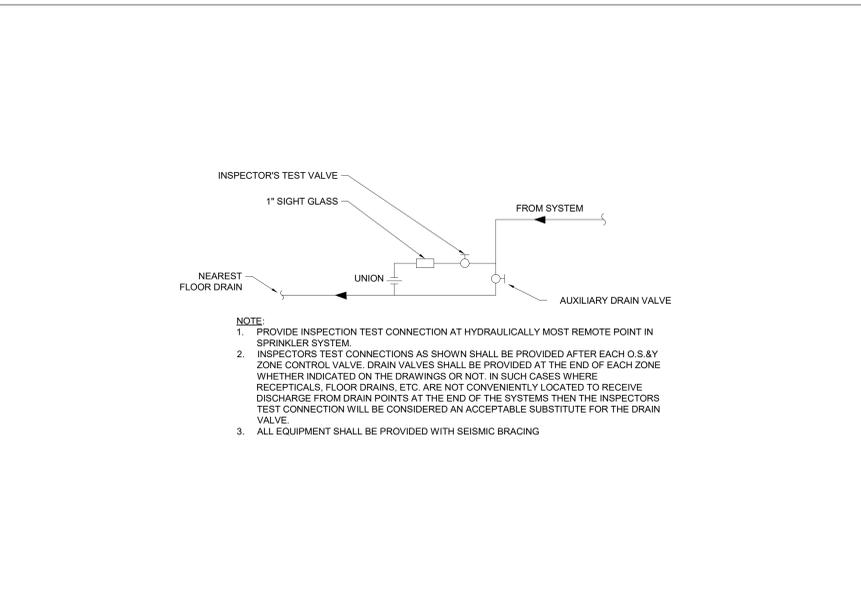
SPRINKLER PARTIAL PLAN - LEVEL 2 INSTITUTE
SCALE: AS INDICATED

SP2.15

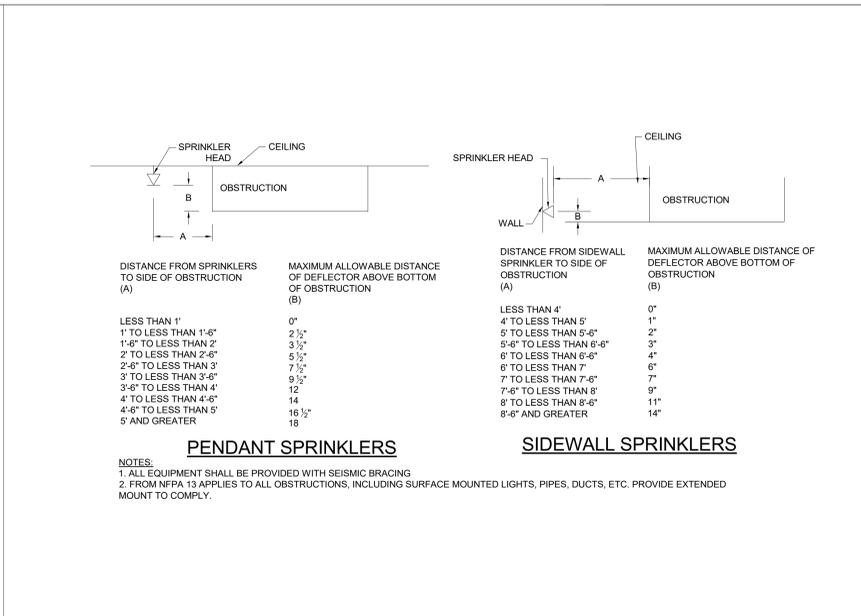
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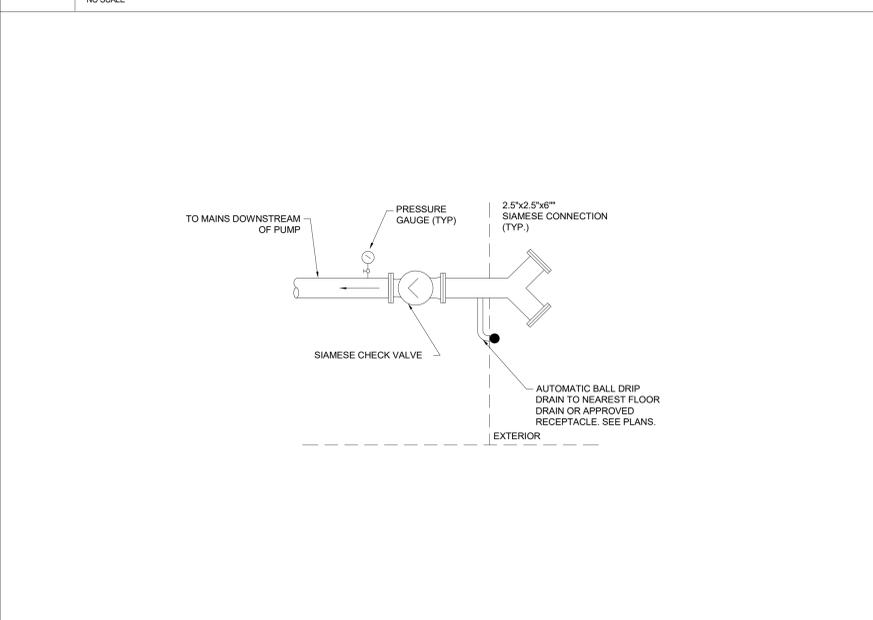
HAN5 HANGER DETAILS
NO SCALE



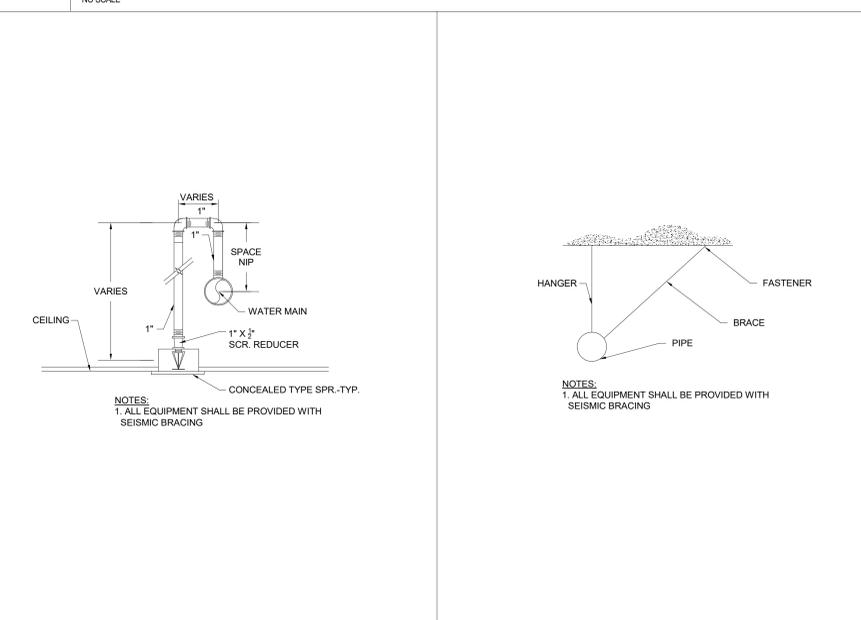
SPR9 INSPECTOR'S TEST CONN. ASSEMBLY
NO SCALE



SPR24 POSITIONING OF SPRINKLERS TO AVOID OBSTRUCTIONS TO DISCHARGE
NO SCALE

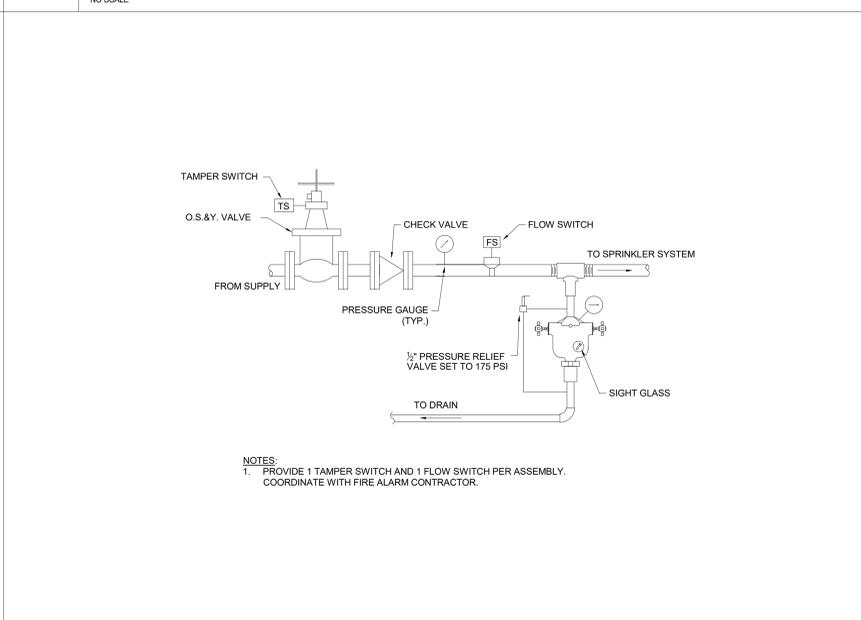


SPR23 FIRE DEPARTMENT CONNECTION DIAGRAM
NO SCALE

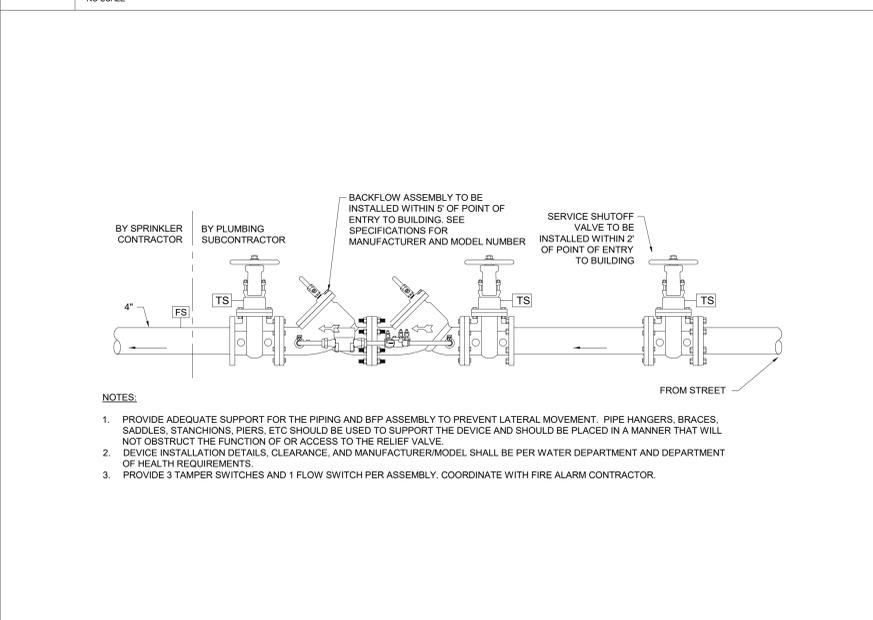


SPR16 RETURN - BEND DETAIL
NO SCALE

SPR21 SEISMIC BRACING DETAIL
NO SCALE



SPR8 DETAIL OF FLOOR CONTROL ASSEMBLY
NO SCALE



SPR14 DETAIL OF SPRINKLER DOUBLE-CHECK VALVE ASSEMBLY
NO SCALE

HYDRAULIC SPRINKLER SIZING CRITERIA

SHALL BE AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION BUT SHALL NOT BE SMALLER THAN THE FOLLOWING:

- OCCUPANCY CLASSIFICATION = LIGHT HAZARD/ORDINARY HAZARD
- DENSITY = 0.100-0.15 GPM/SQUARE FEET
- AREA OF APPLICATION = 1500 SQUARE FEET
- COVERAGE/SPRINKLER = 225 SQUARE FEET/HEAD MAXIMUM FOR LIGHT HAZARD, 130 SQUARE FEET/HEAD MAXIMUM FOR ORDINARY HAZARD
- STORAGE SPACES SHALL BE CONSIDERED ORDINARY HAZARD, GROUP 1 AND THE COVERAGE PER SPRINKLER SHALL BE 130 SQUARE FEET OR LESS

THE CONTRACTOR SHALL BE RESPONSIBLE TO PREPARE HYDRAULIC CALCULATIONS AND OBTAIN APPROVAL FROM ALL AUTHORITIES HAVING JURISDICTION OVER THE SPRINKLER WORK, INCLUDING THE BUILDING DEPARTMENT, THE OWNERS INSURANCE CO. OBTAIN AGENCY APPROVALS FOR HYDRAULICS PRIOR TO INSTALLATION OF NEW WORK. HYDRAULIC CALCULATIONS SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER RETAINED BY THE SPRINKLER CONTRACTOR. SPRINKLER CONTRACTOR SHALL PREPARE ALL DOCUMENTS REQUIRED FOR ANY SUBSEQUENT FILING WITH AUTHORITIES HAVING JURISDICTION.

NOTES:
1. ALL EQUIPMENT SHALL BE PROVIDED WITH SEISMIC BRACING

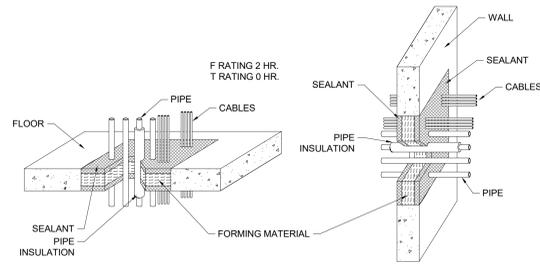
SPR18 HYDRAULIC SPRINKLER SIZING CRITERIA
NO SCALE

FIRE PROTECTION NOTES RELATING TO CONSTRUCTION IN NYS

- CONTRACTOR SHALL INCLUDE DRAWINGS, SPECIFICATIONS, AND CALCULATIONS FOR TEMPORARY SPRINKLER COVER, FIRE-WATCH, OR OTHER MEASURES TO INSURE FIRE SAFETY DURING CONSTRUCTION TO COMPLY WITH THE CURRENT CODES AND DOB, AND OSHA.
- BIDDERS SHALL INCLUDE LINE-ITEM COST FOR FIRE CODE AND DOB COMPLIANT FIRE PROTECTION SYSTEMS. THIS SHALL INCLUDE ALL REQUIRED TEMPORARY SYSTEMS AS WELL AS MAINTENANCE, ALTERATION AND RELOCATION OF THESE SYSTEMS AS REQUIRED TO ADAPT TO ONGOING CONSTRUCTION.
- CONTRACTOR SHALL SUBMIT A LETTER TO THE LOCAL FIRE DEPT REQUESTING APPROVAL OF FIRE PROTECTION METHOD DURING CONSTRUCTION. THE LETTER SHALL ADDRESS:
 - SCOPE OF WORK
 - METHOD OF INSTALLATION
 - IMPAIRMENT PROCEDURE, INCLUDING:
 - SYSTEM OPERATION
 - SHUT-DOWN AND CUT-IN
 - DAILY RETURN OF SERVICE
 - FIRE DEPT NOTIFICATIONS
 - FIRE-GUARD AND LOG-OF INSPECTIONS
 - CONTINUOUS STANDPIPE SERVICE
 - MAINTENANCE OF ACCESSIBILITY OF HOSE STATIONS
 - TENANT ELEVATOR BYPASS
 - OPERATION OF MANUAL PULL STATIONS
 - VISIBILITY AND MARKING OF EXITS
 - PROTECTION OF ELEVATORS AND STAIRWAYS
 - PROVISION OF PORTABLE FIRE EXTINGUISHERS
 - REMOVAL OF COMBUSTIBLE WASTE ON A DAILY BASIS
 - ENFORCEMENT OF "NO SMOKING" POLICY
- CONTRACTOR SHALL IDENTIFY "FIRE PREVENTION PROGRAM SUPERINTENDANT" TO ADMINISTRATOR FIRE CODE REQUIREMENTS UNDER NYS FIRE CODE #1408.1.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED APPROVALS AND SIGN-OFFS AT COMPLETION OF CONSTRUCTION AND SHALL SUBMIT ALL REQUIRED DOCUMENTS AND CALCULATIONS IN ORDER TO DO SO.

SPR27 FIRE PROTECTION NOTES RELATING TO CONSTRUCTION IN NYS
NO SCALE

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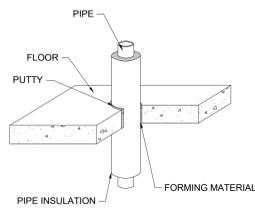


- FLOOR OR WALL ASSEMBLY - MIN 4-1/2" THICK LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR MIN 5" THICK WALL, OR CMU BLOCK WALL. THE MAX AREA OF THE OPENING IS 144 SQ IN WITH A MAX DIMENSION OF 24". OF THE FOUR PENETRANTS, ONLY ONE PIPE SHALL HAVE A NOM DIAMETER GREATER THAN 2".
- METALLIC PIPE - MAX NOMINAL 4" DIAMETER, OR SMALLER, SCH. 5 OR HEAVIER STEEL, CAST IRON, RMC, EMT OR TYPE L OR HEAVIER COPPER PIPE OR TUBING. SPACE BETWEEN PIPES IS NOM 1". SPACE BETWEEN PIPES AND PERIPHERY OF OPENING IS 1" TO 2".
- NONMETALLIC PIPE - ONE OR MORE NOMINAL 2" DIAMETER, OR SMALLER, SCH. 40 OR PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS.
- PIPE INSULATION - MAX 1" THICK AB/PVC (ARMAFLEX) FOAM INSULATION. THE INSULATION MAY BE INSTALLED ON ONE OF THE METALLIC PIPES OR TUBING HAVING A NOM DIAMETER OF 2" OR LESS. THE INSULATED PIPE OR TUBING SHALL BE SPACED A NOM 1" FROM THE OTHER THROUGH PENETRANTS. THE ANNULAR SPACE BETWEEN THE INSULATED PIPE OR TUBING AND PERIPHERY OF THE OPENING SHALL BE A NOM 1".
- CABLES - MAX 12 LENGTHS OF CABLES TO BE INSTALLED WITHIN THE OPENING. THE SPACE BETWEEN THE CABLES AND THE PERIPHERY OF OPENING SHALL RANGE FROM A MIN 1-7/16" TO A MAX 2-0/8". CABLES TO BE BUNDLED TOGETHER OR SPACED A NOM 1/8" APART. MAX 25PR 624AWG CABLES OR 62.5/125 UM FIBER OPTIC CABLES, BOTH JACKETED.
- FORMING MATERIAL - TIGHTLY PACK MIN 6PCF MINERAL WOOL BATT INSULATION TO FILL THE ANNULAR SPACE TO A MIN 2 1/2" DEPTH, AND RECESS 1-1/4" FROM THE TOP SURFACE OF THE FLOOR OR BOTH SIDES OF THE WALL.
- NELSON LBS3 SEALANT - APPLY OVER THE FORMING MATERIAL TO A MIN 1-1/4" DEPTH. FLUSH WITH THE TOP SURFACE OF THE FLOOR OR BOTH SURFACES OF THE WALL.

UL SYSTEM NO. C-AJ-8141
NELSON FIRESTOP DWG NO. FS-0544 RO

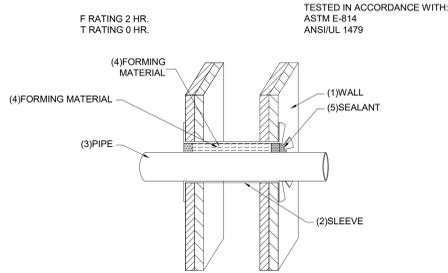
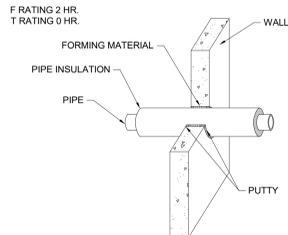
CONCRETE FLOOR OR WALL MULTIPLE METALLIC PIPES FIRE STOPPING DETAIL

NOT TO SCALE



- FLOOR OR WALL ASSEMBLY - MIN 4 1/2" THICK LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR 5 1/2" OR CMU BLOCK WALL. THE MAX OPENING DIAMETER IS 8". THE MAX ANNULAR SPACE IS 3 1/2"
- METALLIC PIPE OF CONDUIT - MAX NOMINAL 4" DIAMETER, SCH. 5 OR HEAVIER STEEL OR CAST IRON PIPE.
- PIPE INSULATION - NOMINAL 1" THICK, OR THINNER, FIBERGLASS OR MINERAL WOOL PIPE INSULATION.
- FORMING MATERIAL - TIGHTLY PACK MIN 4PCF MINERAL WOOL BATT INSULATION TO A MIN 3 1/2", AND RECESS 1" FROM THE TOP SURFACE OF THE FLOOR OR FROM BOTH SURFACES OF THE WALL.
- NELSON FSP PUTTY - APPLY OVER THE FORMING MATERIAL TO A MIN DEPTH OF 1". FLUSH WITH THE TOP SURFACE OF THE FLOOR OR WITH BOTH SURFACES OF THE WALL WITH AN ADDITIONAL 1/2" AROUND THE PIPE WHERE IT PENETRATES THE FLOOR OR WALL.

UL SYSTEM NO. C-AJ-5012
NELSON FIRESTOP DWG NO. FS-0083 R3

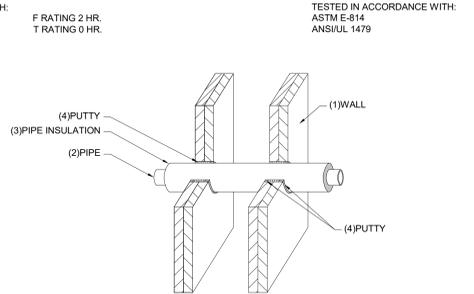


- WALL ASSEMBLY - CONSTRUCTED IN THE MANNER SPECIFIED IN THE U300 OR U400 SERIES DESIGNS AS SHOWN IN THE UL FIRE RESISTANCE DIRECTORY.
- METALLIC SLEEVE - NOMINAL 6 1/2" DIAMETER (OR SMALLER) STEEL SLEEVE FABRICATED FROM .018" (26 GA.) GALVANIZED SHEET STEEL, WITH A 2" OVERLAP ALONG LONGITUDINAL SEAM AND 1 1/2" LONG ANCHOR TABS SPACED A MAX. 6" ON CENTER. SECURE TO BOTH SIDES OF WALL WITH TOGGLE BOLTS AND FENDER WASHERS.
- METALLIC PIPE - THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES MAY BE USED:
(A) STEEL PIPE - NOM. 4" DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE
(B) IRON PIPE - NOM. 4" DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE ANNULAR SPACE RANGE IS MIN. 0" (POINT CONTACT) TO MAX. 2".
- FORMING MATERIAL - TIGHTLY PACK MIN. 4PCF MINERAL WOOL BATT INSULATION TO FILL THE ANNULAR SPACE TO MIN. 3 1/2" DEPTH FOR 1 HR. WALLS OR 4" DEPTH FOR 2 HR. WALLS. RECESS FIBER 1/2" FROM BOTH SURFACES OF WALL.
- NELSON CLK SEALANT - APPLY OVER THE FORMING MATERIAL TO A MIN. 1/2" DEPTH. FLUSH WITH WALL. AT AREAS OF POINT CONTACT, APPLY A 1/2" BEAD AT THE INTERFACE OF THE PIPE AND SLEEVE ON BOTH WALL SURFACES.

UL SYSTEM NUMBER W-L-1083

GYPSUM WALL UNINSULATED METALLIC PIPE FIRE STOPPING DETAIL

NOT TO SCALE



- WALL ASSEMBLY - CONSTRUCTED IN THE MANNER SPECIFIED IN THE U300 OR U400 SERIES DESIGNS AS SHOWN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAMETER OF OPENING IS 10".
- METALLIC PIPE - THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES MAY BE USED:
(A) STEEL PIPE - NOM. 6" DIAMETER (OR SMALLER) SCHEDULE 10 OR HEAVIER STEEL PIPE
(B) IRON PIPE - NOM. 6" DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE
(C) COPPER TUBING OR PIPE - NOM. 4" DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING OR REGULAR (OR HEAVIER) COPPER PIPE FOR STEEL OR CAST IRON PIPE THE T RATING IS 2 HOURS, FOR COPPER TUBING OR PIPE THE T RATING IS 0
- PIPE INSULATION - NOMINAL 1 1/2" THICK (OR THINNER) FIBERGLASS OR MINERAL FIBER PIPE INSULATION. THE MAX ANNULAR SPACE FOR PIPE LARGER THAN 4" DIAMETER IS 3/4" AND 3/4" OTHERWISE.
- NELSON FSP PUTTY (PART# AA445) - APPLY FSP TO FILL THE ANNULAR SPACE TO A NOMINAL 1 1/2" DEPTH ON BOTH SIDES OF THE WALL. ADDITIONAL MATERIAL TO BE INSTALLED SUCH THAT A 1/2" THICK CROWN IS FORMED AROUND THE PENETRATING ITEM.

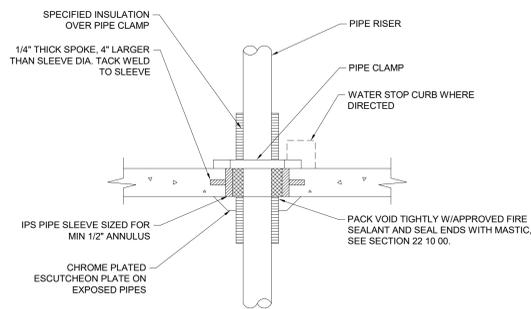
UL SYSTEM NUMBER W-L-5036

GYPSUM WALL INSULATED METALLIC PIPE FIRE STOPPING DETAIL

NOT TO SCALE

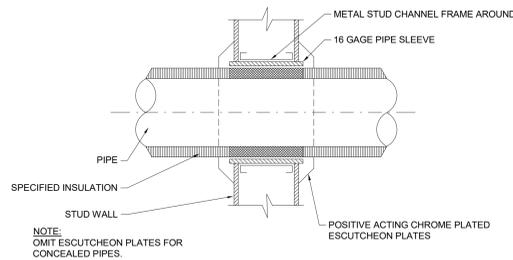
PEN7 CONCRETE FLOOR OR WALL MULTIPLE METALLIC PIPES FIRE STOPPING DETAIL

NO SCALE



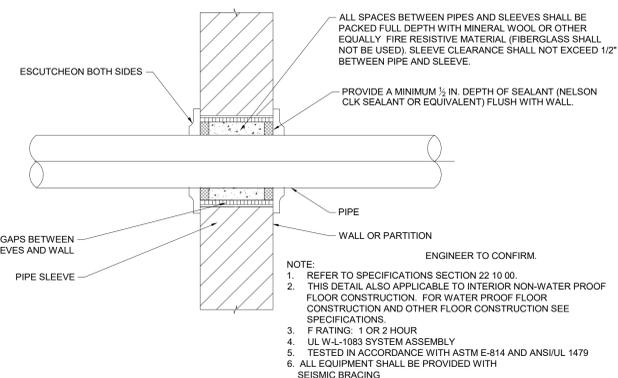
PEN2 PIPE THRU STUD WALL DETAIL

NO SCALE

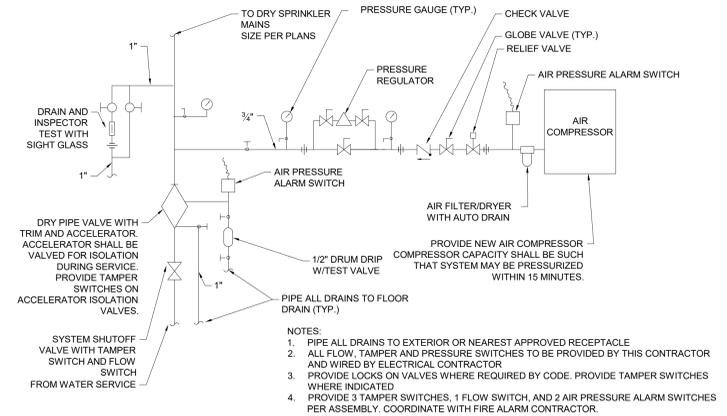
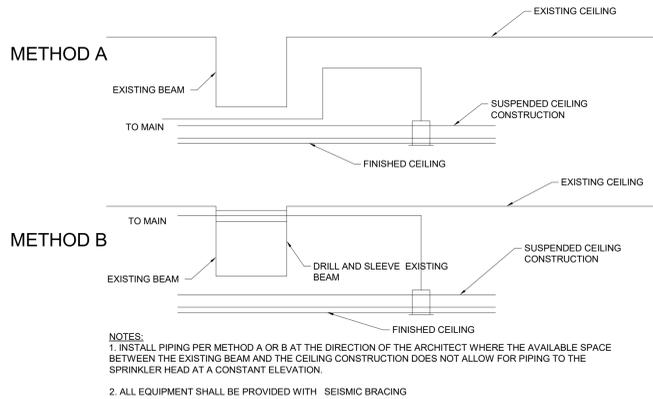
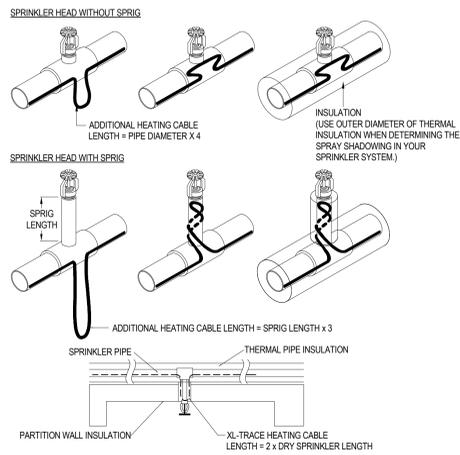


PEN1 DETAIL OF PIPING PIERCING REQUIRED FIRE RATE PARTITIONS AND WALL

NO SCALE



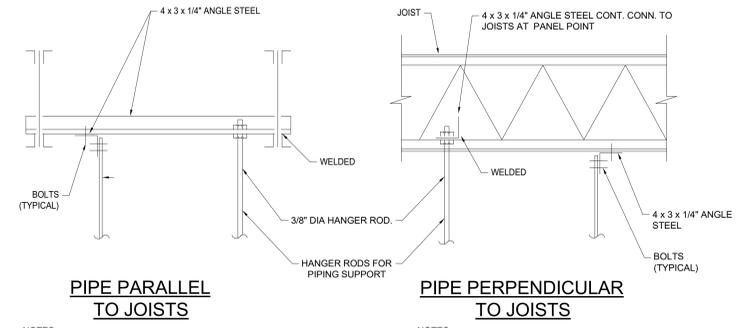
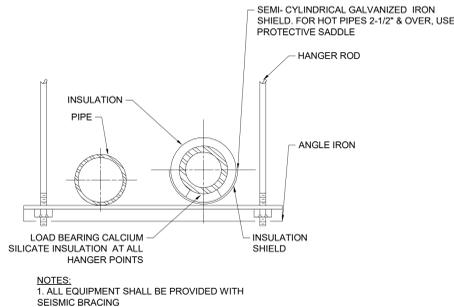
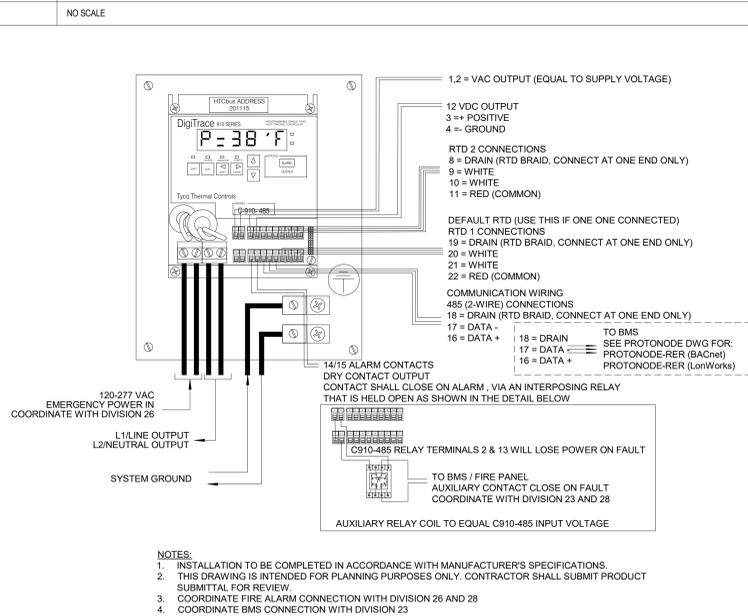
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FR2 FIRE SPRINKLER PIPE FREEZE PROTECTION - TYPICAL FIRE SPRINKLER INSTALLATION DETAIL

SPR15 LOW BEAM CROSSING DETAIL

SPR7 SCHEMATIC DIAGRAM OF DRY PIPE SPRINKLERS



FR3 FIRE SPRINKLER PIPE FREEZE PROTECTION - WIRING DIAGRAM TO FIRE ALARM PANEL

HAN9 TRAPEZE HANGER

HAN15 METHODS OF PIPE SUPPORT