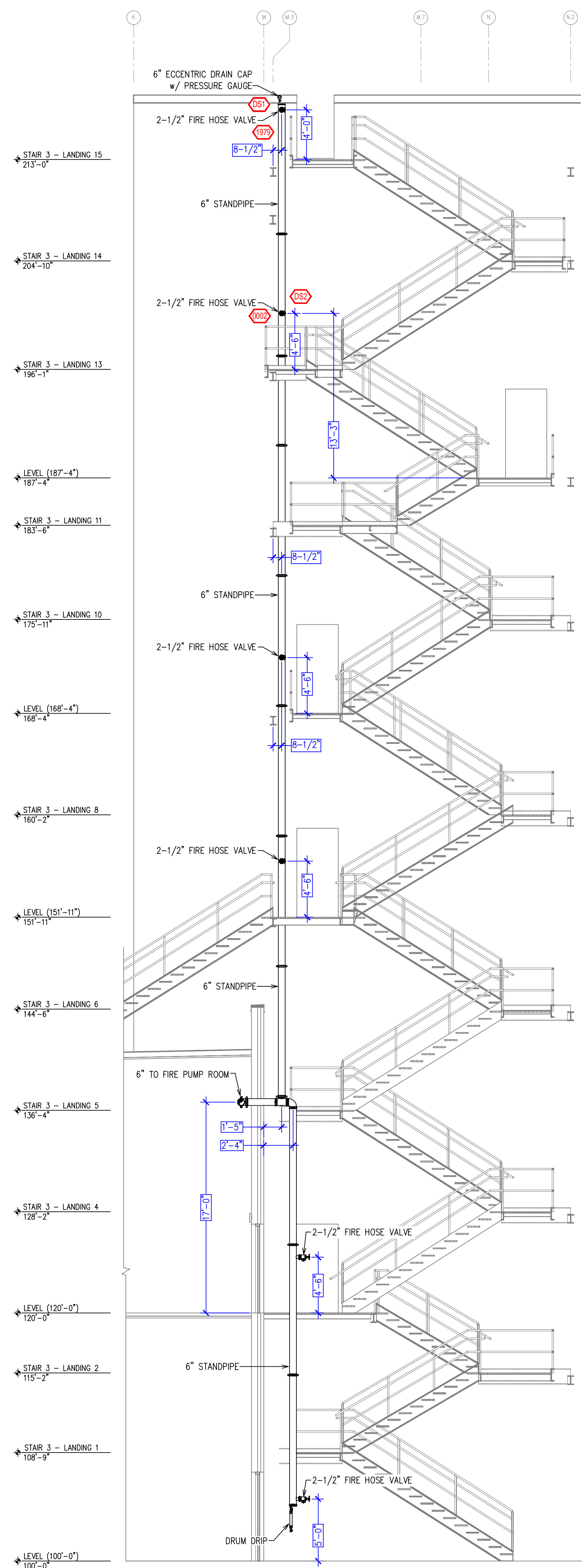
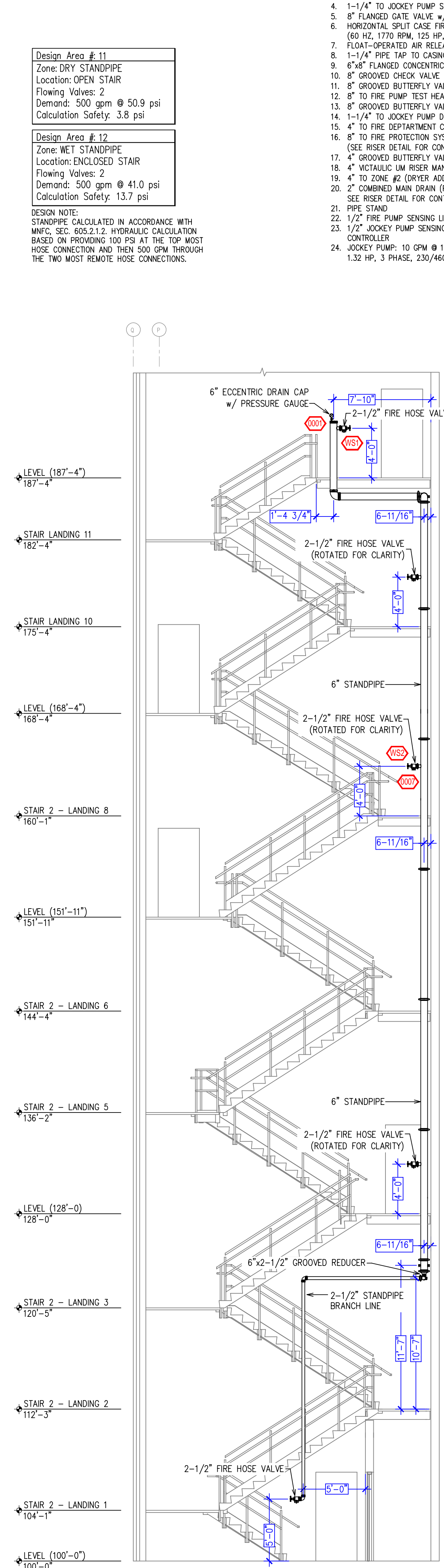


- MINNESOTA BUILDING CODE (MNBC) (2020)
- OCCUPANCY FACTOR (GROUP F-1)
- TYPE OF CONSTRUCTION: IB (NONCOMBUSTIBLE CONSTRUCTION)
- SPRINKLERED AREAS:
 - ZONE #1 (DESIGNED AND SUBMITTED, LISTED ONLY FOR REFERENCE)
 - WHEY LOAD OUT = 5,365 SF (DESIGNED UNDER JOB# 201480)
 - CHEESE TEMPERING = 4,495 SF (DESIGNED UNDER JOB# 2012780)
 - TOTAL = 9,860 SF
- ZONE #2 (OTHER ADDITION AND OFFICE ADDITION - AREA D)
 - LEVEL 100'-0" = 2,510 SF
 - LEVEL 120'-0" = 5,045 SF
 - LEVEL 128'-0" = 3,950 SF
 - LEVEL 151'-11" = 5,655 SF
 - LEVEL 168'-4" = 5,655 SF
 - LEVEL 187'-4" = 5,655 SF
 - OFFICE AREA D = 2,555 SF
 - TOTAL = 50,025 SF
- INSTALLATION STANDARDS: NFPA 13 (2016), NFPA 14 (2016), NFPA 20 (2016), AND MINNESOTA FIRE CODE (MNBC) (2020)
- SPRINKLER PIPE TYPES:
 - 1" BRANCH LINES TO BE BLACK AND/OR GALVANIZED STEEL SCH. 40 PIPING WITH THREADED FITTINGS (SEE PLAN FOR PIPE TYPES)
 - 1-1/4" THROUGH 6" MAIN & BRANCH LINES TO BE BLACK AND/OR GALVANIZED STEEL SCH. 10 PIPING WITH GROOVED SHORT RADII
 - FITTINGS (SEE PLAN FOR PIPE TYPES)
 - FITTINGS TO BE BLACK AND/OR PAINTED WITH BLACK PIPING AND GALVANIZED WITH GALVANIZED PIPING
- DESIGN CRITERIA:
 - LIGHT HAZARD AREAS DESIGNED TO DELIVER 0.10 GPM/SF OVER THE MOST DEMANDING 1500 SF
 - ORDINARY HAZARD GROUP 2 AREAS DESIGNED TO DELIVER 0.15 GPM/SF OVER THE MOST DEMANDING 1500 SF
 - ORDINARY HAZARD GROUP 2 AREAS DESIGNED TO DELIVER 0.20 GPM/SF OVER THE MOST DEMANDING 1500 SF
 - STANDPIPE SYSTEMS DESIGNED TO PROVIDE A MINIMUM OF 100 PSI AT THE UPPERMOST OUTLET AND A MINIMUM FLOW OF 250 GPM AT THE TWO HYDRAULICALLY MOST REMOTE HOSE CONNECTIONS PER MNBC, SEC. 605.2.1.2
- NOTE: A DESIGN PRESSURE OF MORE THAN 150 PSI SHALL BE REQUIRED AT THE FIRE DEPARTMENT CONNECTION IF THE STANDPIPE SYSTEM WERE SUPPLIED BY LOCAL FIRE DEPARTMENT APPARATUS. THEREFORE, THE STANDPIPE SYSTEMS ARE DESIGNED USING THE WATER SUPPLY SUPPLEMENTED BY THE FIRE PUMP.
- NOTES:
 - ALL MATERIAL TO BE NEW AND MEET U.L. STANDARDS
 - HANGERS TO BE INSTALLED IN ACCORDANCE WITH NFPA 13
 - NO INSTALLATION OR FABRICATION TO BEGIN WITHOUT APPROVED SHOP DRAWINGS
 - ALL PIPE LOCATIONS ARE TO BE FIELD MEASURED PRIOR TO FABRICATION AND INSTALLATION BY SPRINKLER CONTRACTOR
 - ALL DIMENSIONS SHOWN ARE CENTER TO CENTER
 - HIGH TEMPERATURE HEADS TO BE FIELD LOCATED WHERE REQUIRED
 - PROVIDE ONE SPARE HEAD CABINET WITH 8 HEADS AND ONE HEAD WRENCH
 - ELECTRICAL WIRING, ALARM, DETECTION AND SUPERVISORY BY OWNER
 - OWNER'S RESPONSIBILITY TO PROVIDE ADEQUATE HEATING TO PREVENT WET SYSTEM PIPING FROM FREEZING
- SYMBOLS USED ON DRAWINGS:
 - PIPE ELEVATION A.F.F.
 - PIPE ELEVATION BELOW B.O.D.
 - ROOM HAZARD CLASSIFICATION (ALL ROOMS ARE CONSIDERED LIGHT HAZARD UNLESS NOTED)
 - HYDRAULIC CALCULATION JUNCTION POINT
 - VALVE (BUTTERFLY OR GATE, SEE FIRE PUMP AND RISER DETAILS FOR MORE INFORMATION)
 - FIRE PUMP (1500 GPM @ 100 PSI)
 - CHECK VALVE
 - HEAD VALVE
 - PIPE SLEEVE
- SCOPE OF WORK:
 - TO INSTALL NEW WET FIRE SPRINKLER SYSTEM(S) AND NEW CLASS I STANDPIPE SYSTEM(S) AS SHOWN ON THESE PLANS.
 - THE DRYER STRUCTURE WILL ONLY BE FREQUENTED BY PLANT PERSONNEL FOR THE PURPOSE OF MAINTENANCE, REPAIR, AND MONITORING OF EQUIPMENT. THEREFORE, THESE AREAS ARE NOT REQUIRED TO BE ACCESSIBLE (PER MNBC, SEC. 1103.2.9) AND THE DRYER STRUCTURE IS NOT CONSIDERED A HIGH-RISE BUILDING.
 - ALL AREAS OF THE BUILDING TO BE INSTALLED AND COVERED IN ACCORDANCE WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PER NFPA 13

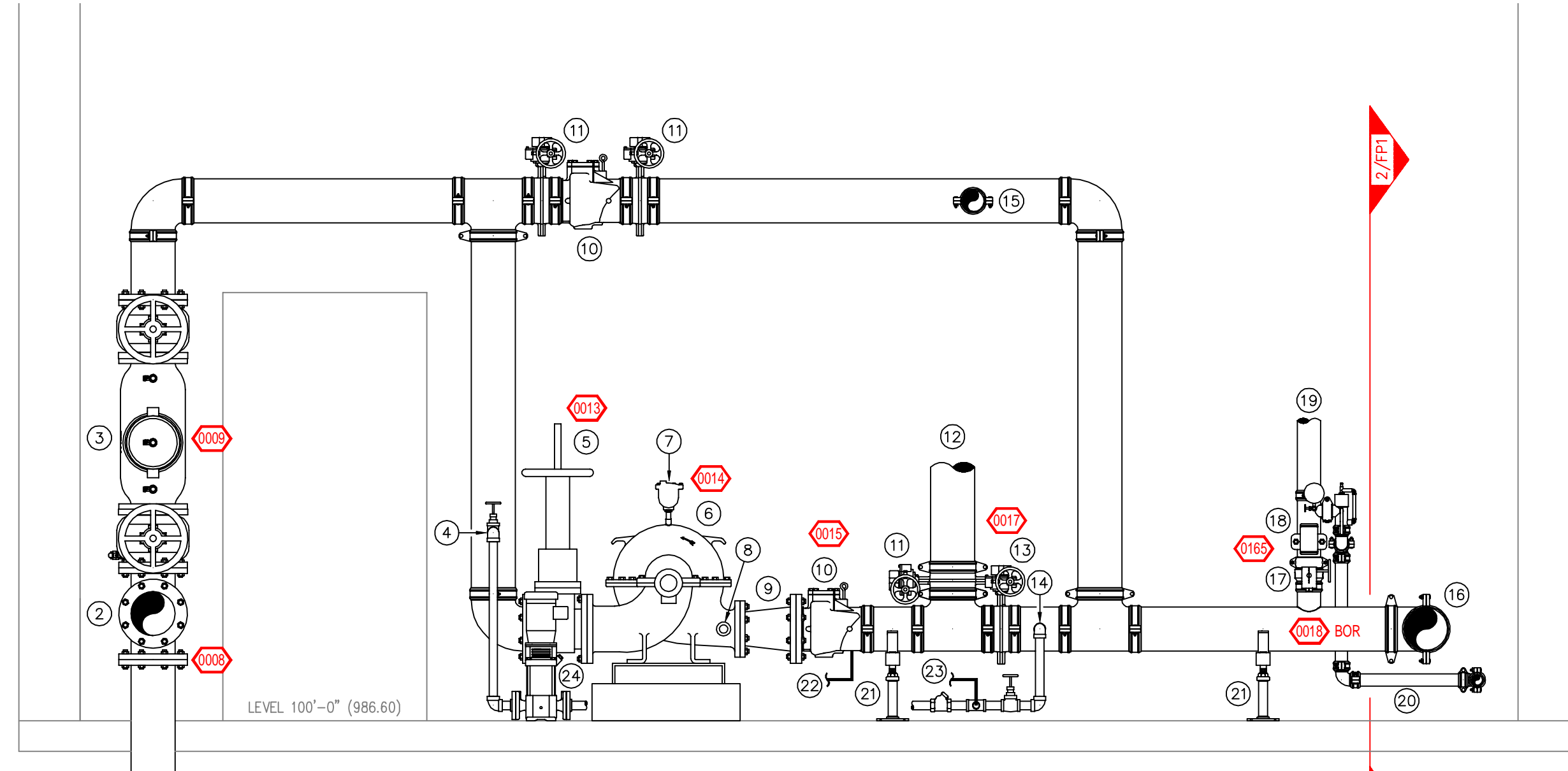
- FIRE PUMP LEGEND**
- 8" UNDERGROUND WATER SERVICE (BY OTHERS)
 - 8" FLANGED TEE (OUTLET TO DOMESTIC)
 - 8" ANES 2000SS 1/4" GATE VALVES w/ TAMPERS
 - 1-1/4" TO JOCKEY PUMP SUCTION
 - 8" FLANGED GATE VALVE w/ TAMPER
 - HORIZONTAL SPLIT CASE FIRE PUMP: 1500 GPM @ 100 PSI (60 HZ, 1770 RPM, 125 HP, 3 PHASE, 230/460V)
 - FLOAT-OPERATED AIR RELEASE VALVE
 - 1-1/4" PIPE TAP TO CASING RELIEF VALVE
 - 6"x8" FLANGED CONCENTRIC DISCHARGE INCREASER
 - 8" GROOVED CHECK VALVE
 - 8" GROOVED BUTTERFLY VALVE (NORMALLY OPEN)
 - 8" TO FIRE PUMP TEST HEADER
 - 8" GROOVED BUTTERFLY VALVE (NORMALLY OPEN)
 - 1-1/4" TO JOCKEY PUMP DISCHARGE
 - 4" TO FIRE DEPARTMENT CONNECTION
 - 8" TO FIRE PROTECTION SYSTEM RISERS (SEE RISER DETAIL FOR CONTINUATION)
 - 4" GROOVED BUTTERFLY VALVE (NORMALLY OPEN)
 - 4" VICTALIC LM RISER MANIFOLD
 - 4" TO ZONE #2 (DRYER ADDITION)
 - 2" COMBINED MAIN DRAIN (PIPED TO BUILDING EXTERIOR, SEE RISER DETAIL FOR CONTINUATION)
 - 1/2" JOCKEY PUMP SENSING LINE TO JOCKEY PUMP CONTROLLER
 - PIPE STAND
 - 1/2" FIRE PUMP SENSING LINE TO FIRE PUMP CONTROLLER
 - 1/2" JOCKEY PUMP SENSING LINE TO JOCKEY PUMP CONTROLLER
 - JOCKEY PUMP: 10 GPM @ 115 PSI (60 HZ, 3500 RPM, 1.32 HP, 3 PHASE, 230/460V)



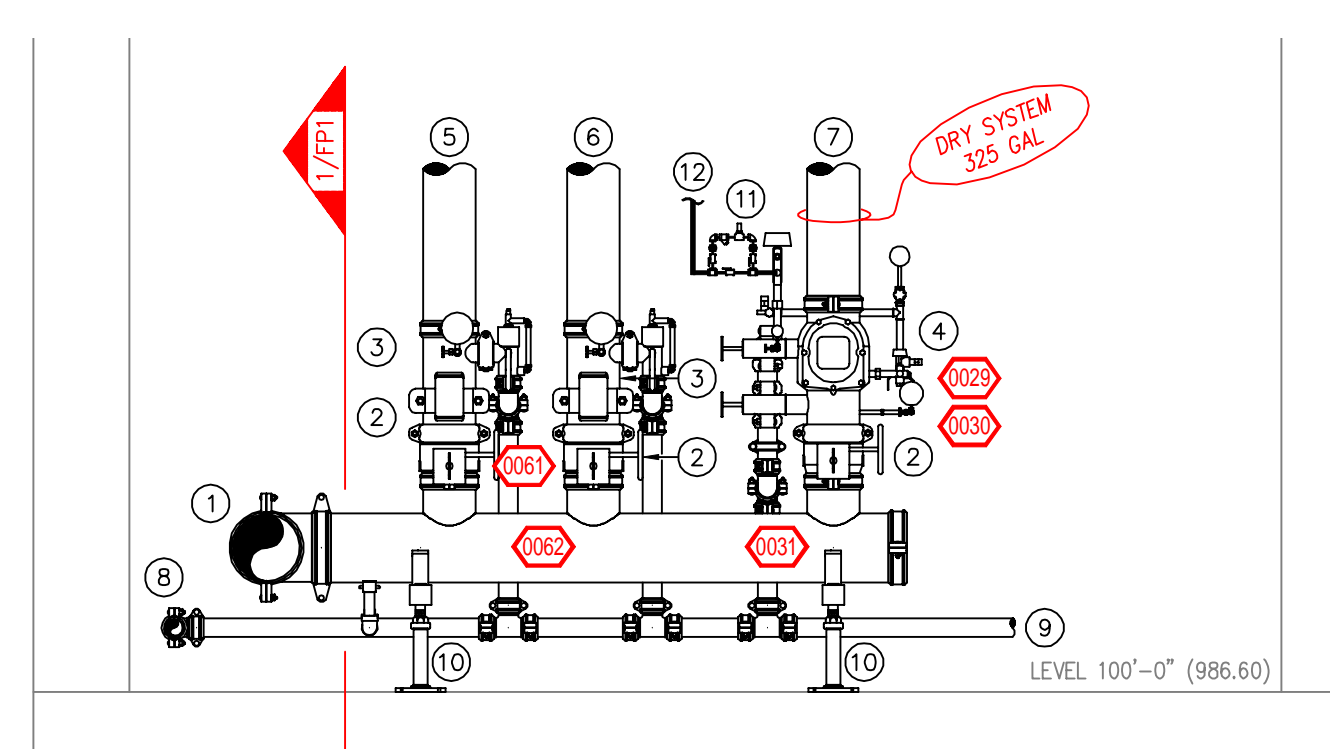
SECTION A-
SCALE = 3/16" : 1'-0"



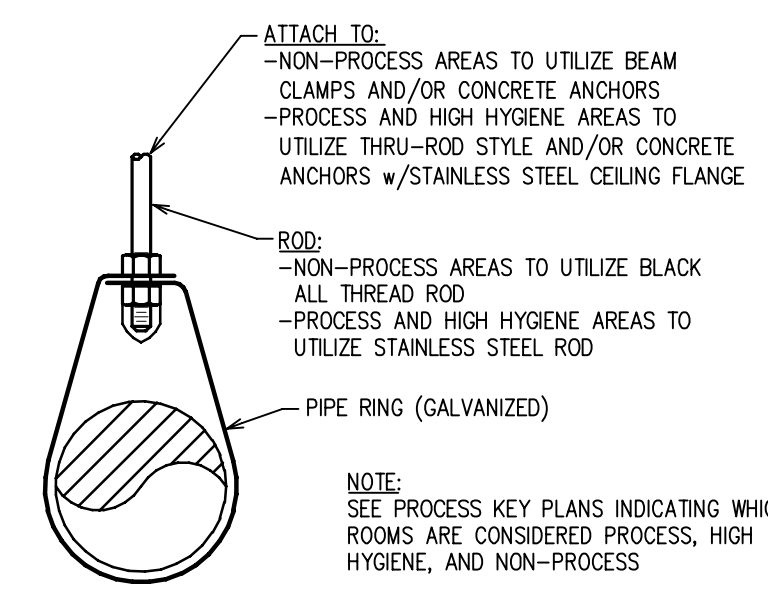
SECTION B-
SCALE = 3/16" : 1'-0"



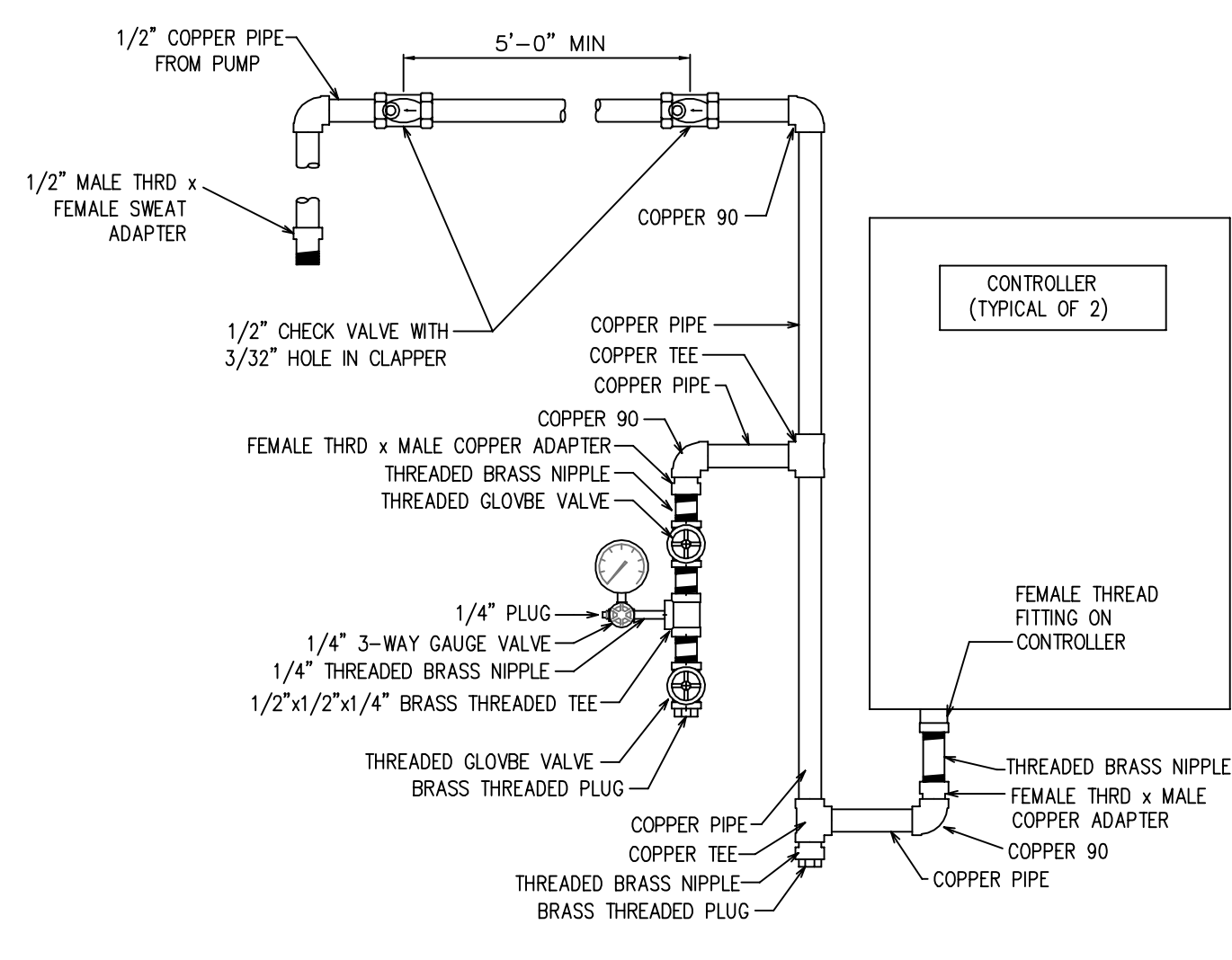
1 FIRE PUMP DETAIL
SCALE: 1/2" = 1'-0"



2 RISER DETAIL
SCALE: 1/2" = 1'-0"



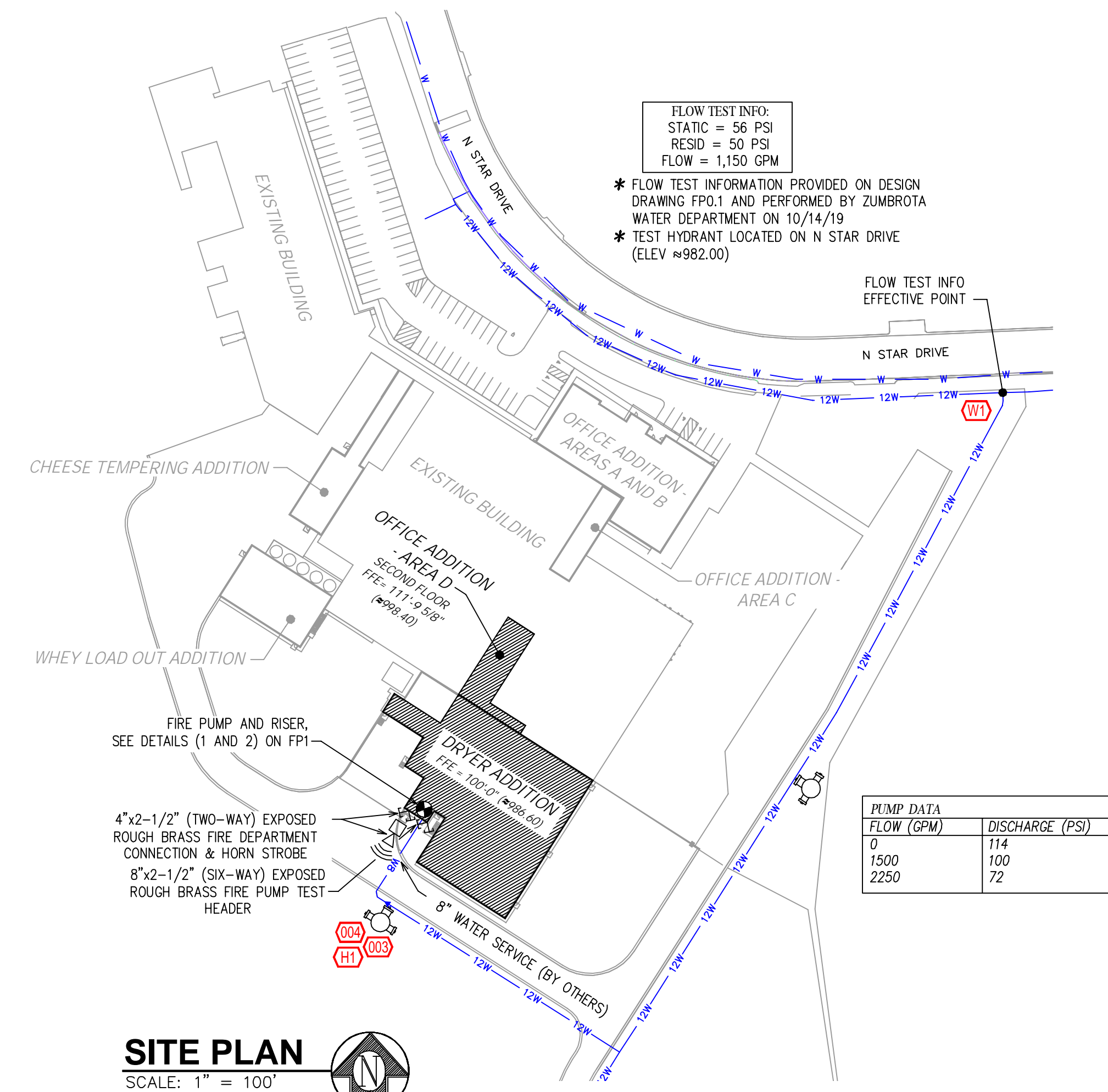
PIPE HANGER DETAIL
SCALE= NONE



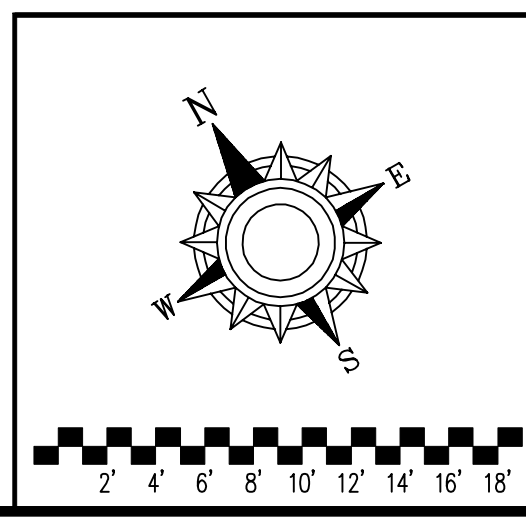
CONTROLLER DETAIL
SCALE= NONE

STEEL PIPE	MAXIMUM DISTANCE BETWEEN HANGERS (FT.-IN.)						
	1"	1 1/4"	1 1/2"	2"	2 1/2"	4"	6"
	12-0	12-0	15-0	15-0	15-0	15-0	15-0

NFPA 13 HANGER SPACING



SITE PLAN
SCALE: 1" = 100'



SYM	QTY	POSITION	FINISH	TEMP	K	NPT	SN	MFG.	MODEL#	ESCUTCHION	HEAD BOX (2 mm)
8	PENDENT	WHITE	200	5.60	1/2"	TY323	TYCO	TY-FRB	WHITE, SEMI-RECESSED	2	
20	PENDENT	WHITE	155	5.60	1/2"	TY3531	TYCO	RFH	CONCEALED	2	
40	PENDENT	WHITE	212	5.60	1/2"	R1015	RELIABLE	G-SERIES	ONE-PIECE, SS	2	
5	PENDENT	WHITE	212	8.00	3/4"	R1017	RELIABLE	G-SERIES	ONE-PIECE, SS	2	
20	PENDENT	BRASS	212	5.60	1/2"	TY3221	TYCO	TY-FRL	NONE	2	
19	PENDENT	WHITE	212	5.60	1/2"	R1015	RELIABLE	G-SERIES	NONE	2	
24	PENDENT	WHITE	212	8.00	3/4"	R1017	RELIABLE	G-SERIES	NONE	2	
198	UPRIGHT	BRASS	212	5.60	1/2"	TY3121	TYCO	TY-FRL	NONE / ON SPRNG	2	
3	UPRIGHT	BRASS	286	5.60	1/2"	TY3121	TYCO	TY-FRL	NONE	2	
143	UPRIGHT	WHITE	212	5.60	1/2"	R1025	RELIABLE	G-SERIES	NONE / ON SPRNG	2	
111	UPRIGHT	WHITE	212	8.00	3/4"	R1027	RELIABLE	G-SERIES	NONE / ON SPRNG	2	
2	SIDEWALL	BRASS	212	5.60	1/2"	TY3321	TYCO	TY-FRL	NONE	2	
592 Total Title Job											

APPROVAL STAMPS

Contract No. **C-20-92**

Drawing Title: **FIRE PROTECTION PLAN**

DFA - PROJECT VIKING
DRYER ADDITION
1313 N STAR DRIVE
ZUMBROTA, MN 55992

Drawing Date: 10/4/2021
Scale: 1/8" = 1'-0"
Drawn By:
Approval By: LOCAL FIRE MARSHAL DIV.
SHEET NO. 1 of 4

Design Area # 2 HAZARD: OH1
 Zone: 2 System Type: WET
 Location: CORRIDOR 1104 AND MIXING 1008
 Flowing Outlets: 19
 Density: 0.15 Remote Area: 1560
 BOR: 367.8 gpm @ 108.1 psi
 Calculation Safety: 51.2 psi
 Includes 250 gpm Hose allowance

INSTALLATION NOTE
 SPRINKLERS TO BE INSTALLED WITH THE DEFLECTOR 1" TO 4" BELOW THE BOTTOM OF THE BEAMS AND NO MORE THAN 22" BELOW THE DECK (TYPICAL FOR AREAS WITH BEAMS)

Design Area # 1 HAZARD: OH1
 Zone: 2 System Type: WET
 Location: PALLET TRANSFER 1020, JUNCTION 1022, AND STRIP&CLEAN 1005
 Flowing Outlets: 19
 Density: 0.15 Remote Area: 1575
 BOR: 322.8 gpm @ 96.2 psi
 Calculation Safety: 63.5 psi
 Includes 250 gpm Hose allowance

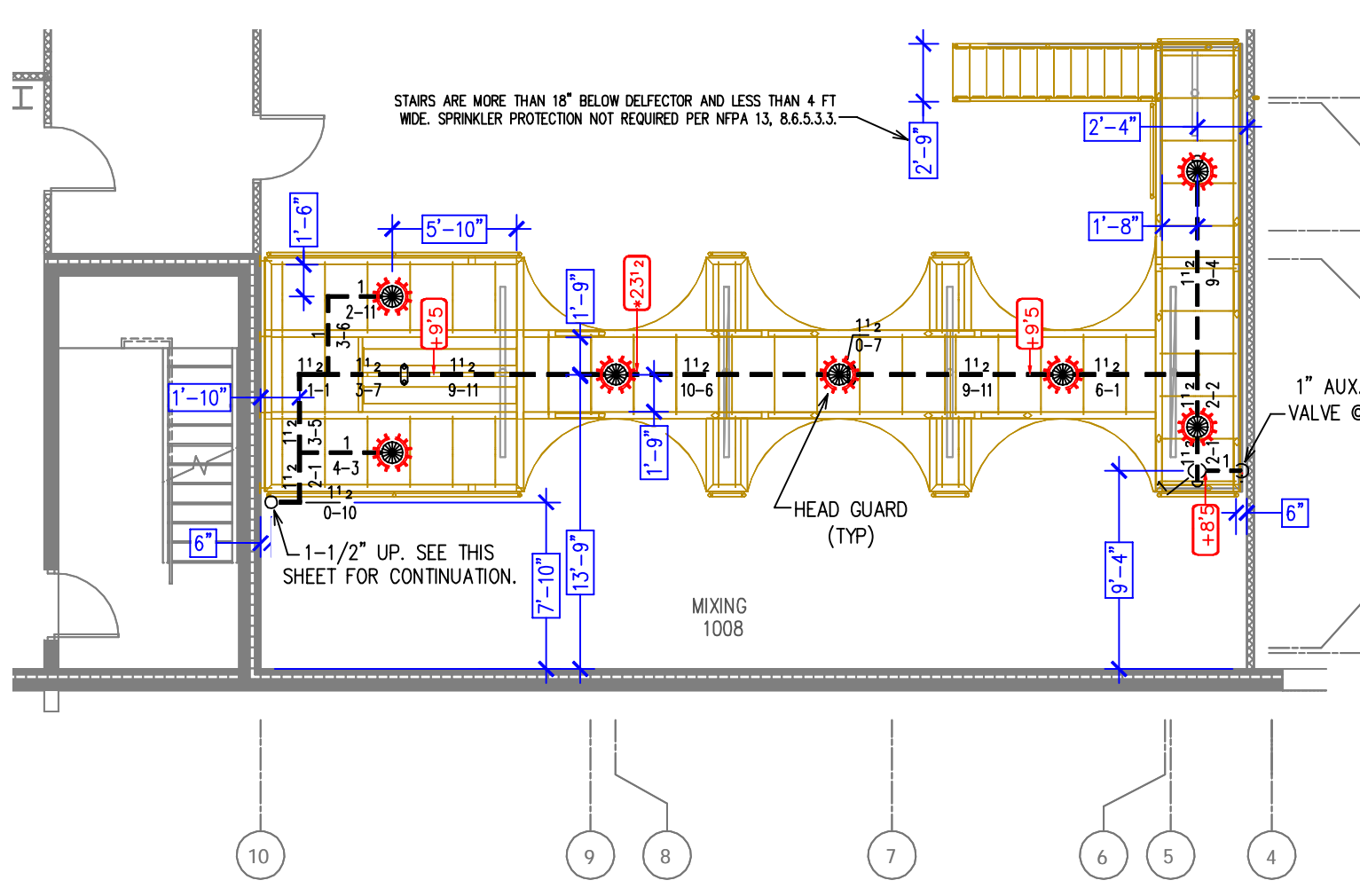
INSTALLATION NOTE
 PENDENT SPRINKLERS WITH FLEXIBLE GROUPS (TYP FOR ALL)

Design Area # 8 HAZARD: OH2/OH1
 Zone: 2 System Type: WET
 Location: PACKAGING 1014, AIR LOCK 1023, AND PALLETIZING 1021
 Flowing Outlets: 22
 Density: 0.20/0.15 Remote Area: 1505
 BOR: 503.4 gpm @ 105.2 psi
 Calculation Safety: 52.8 psi
 Includes 250 gpm Hose allowance

DESIGN NOTE:
 1500 SF CALCULATED PER NFPA 13

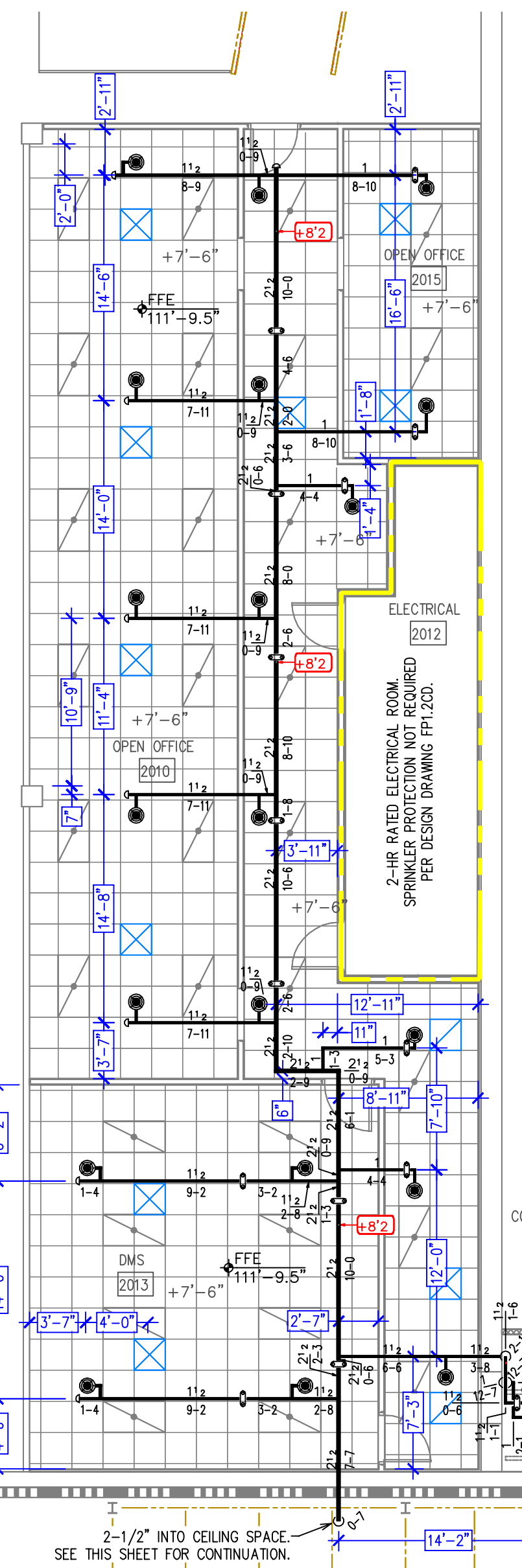
LEVEL (100'-0") - PACKAGING 1014 PLATFORM

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



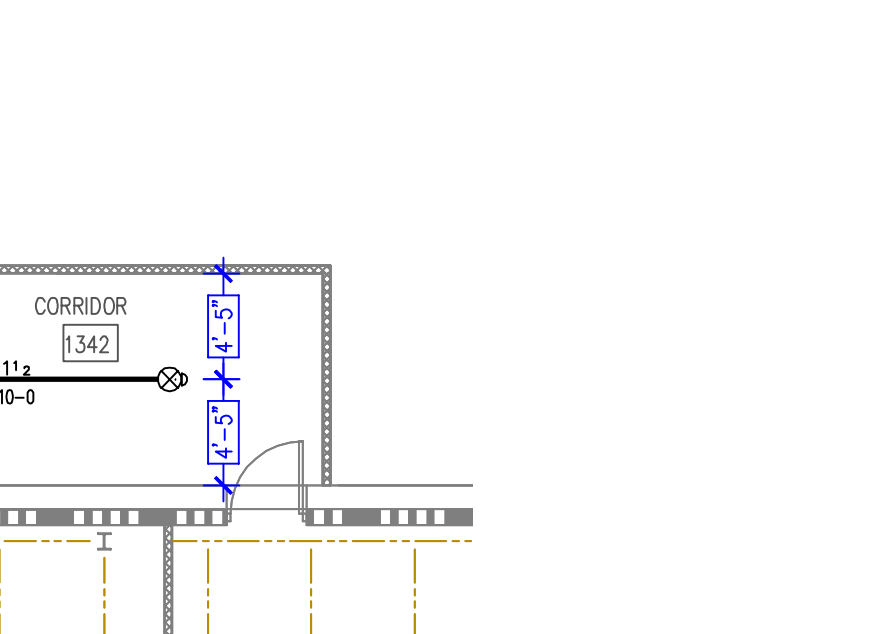
LEVEL (100'-0") - MIXING 1008 MEZZ

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



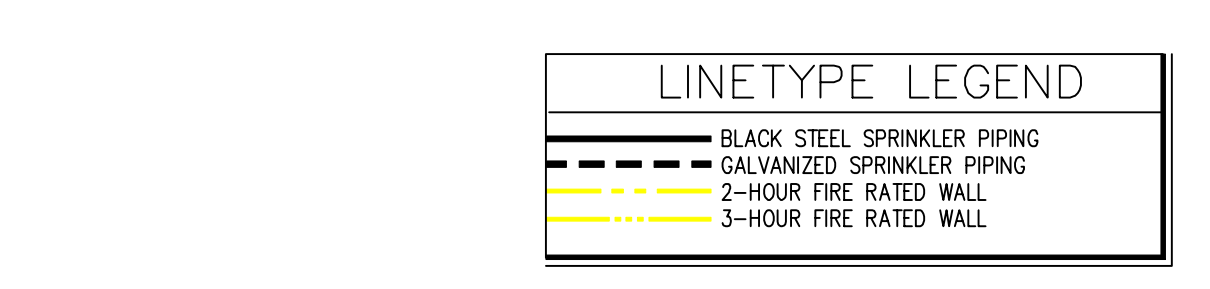
LEVEL (100'-0") TO (120'-0")

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



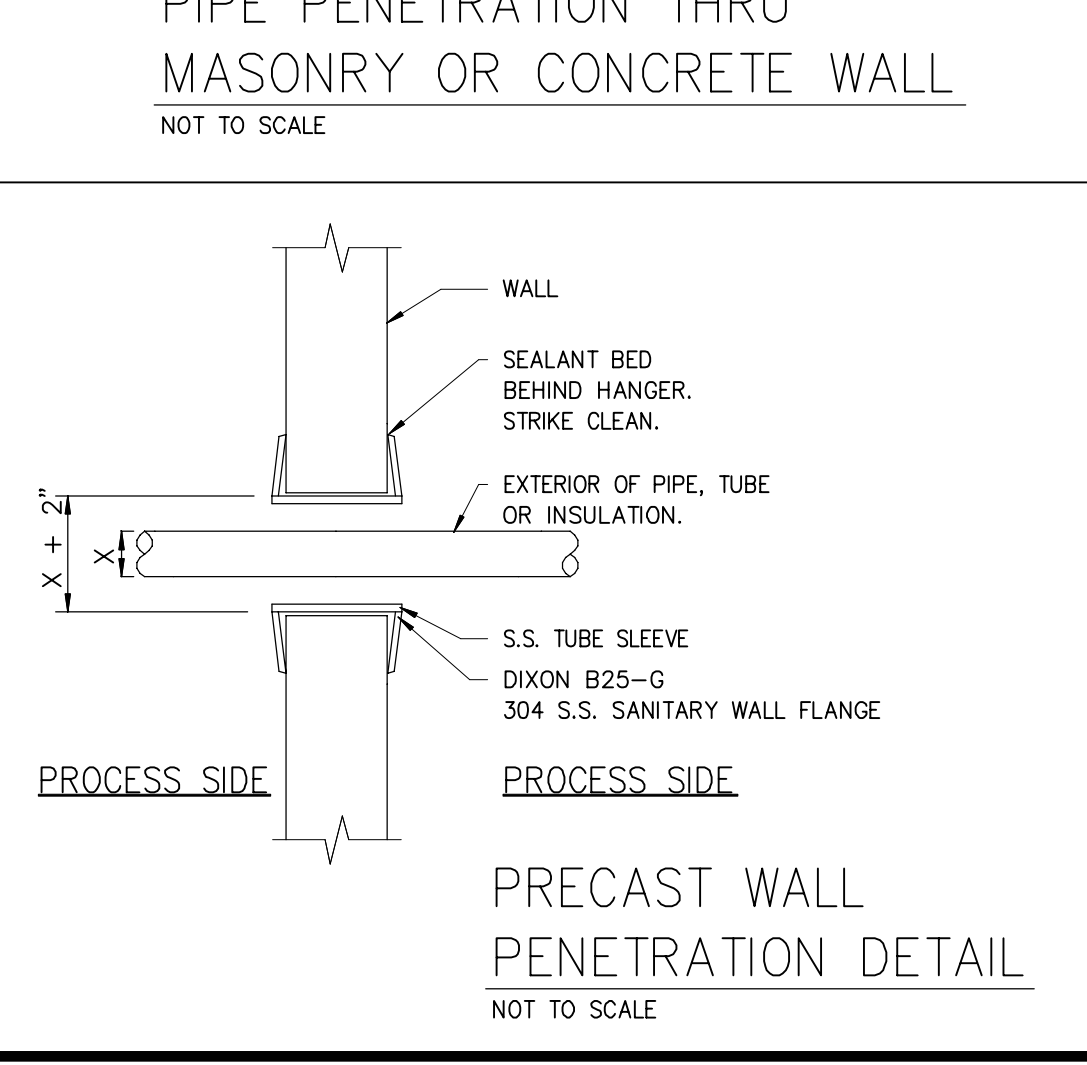
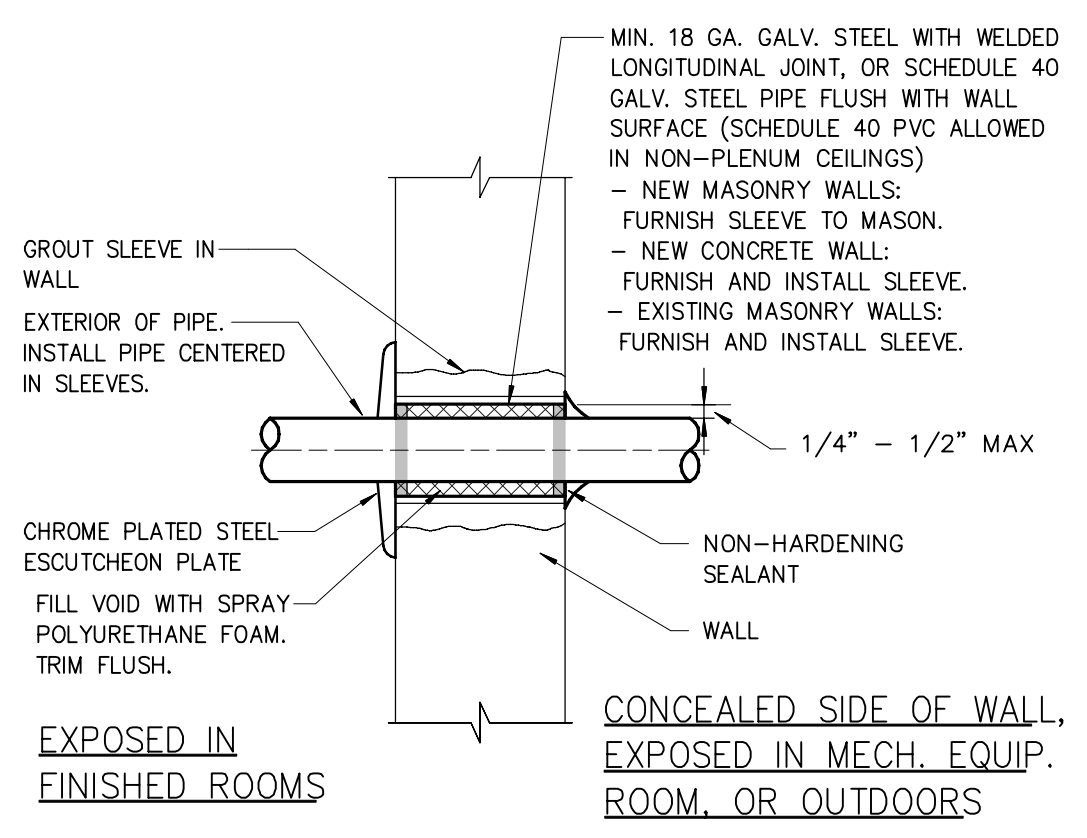
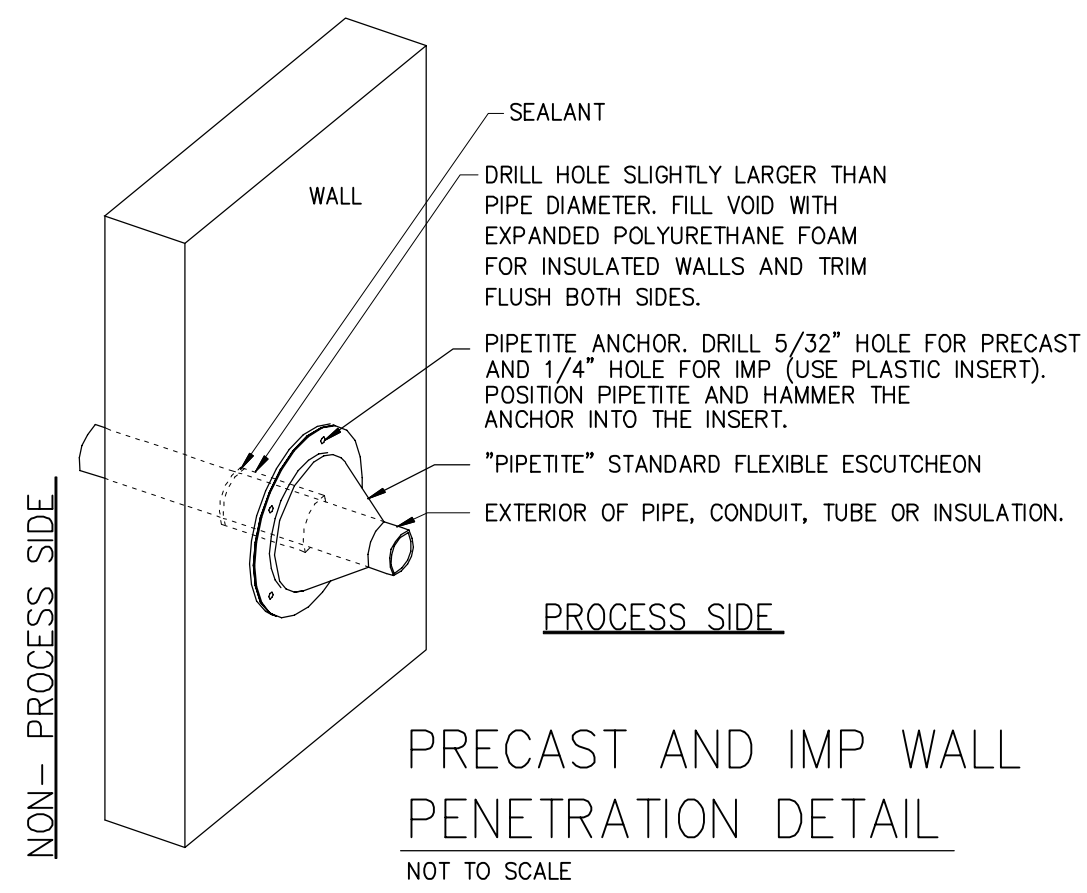
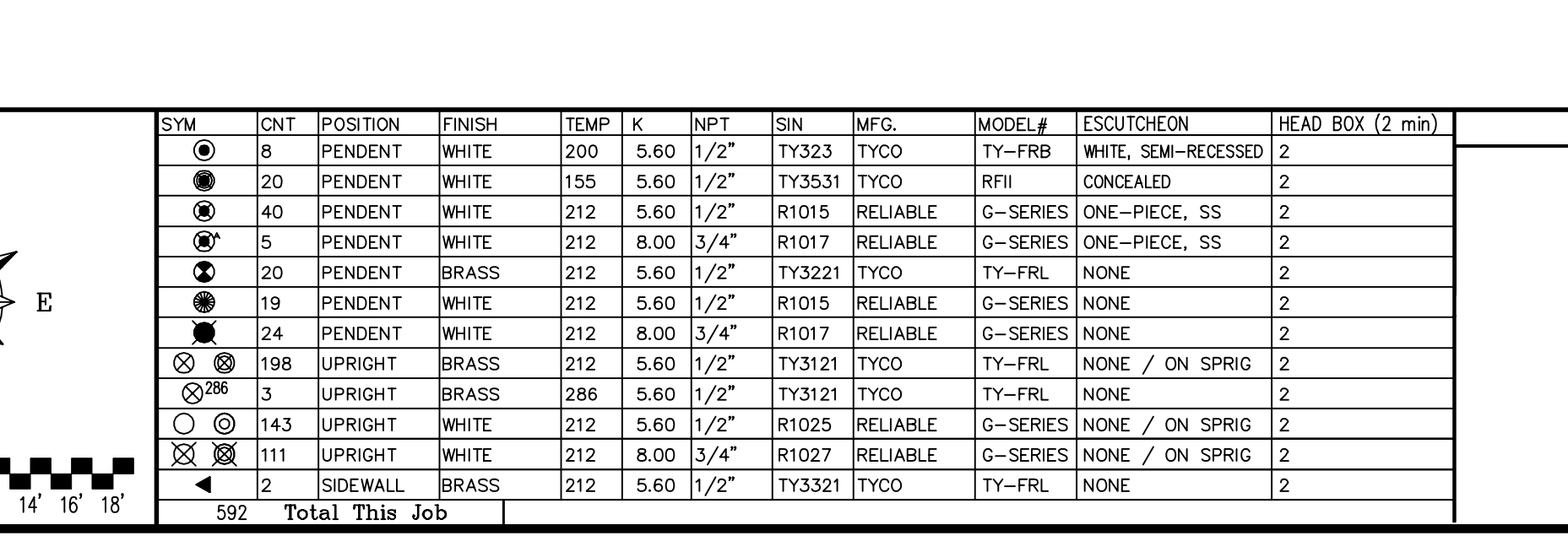
LEVEL (100'-0") - DRYER ADDITION

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



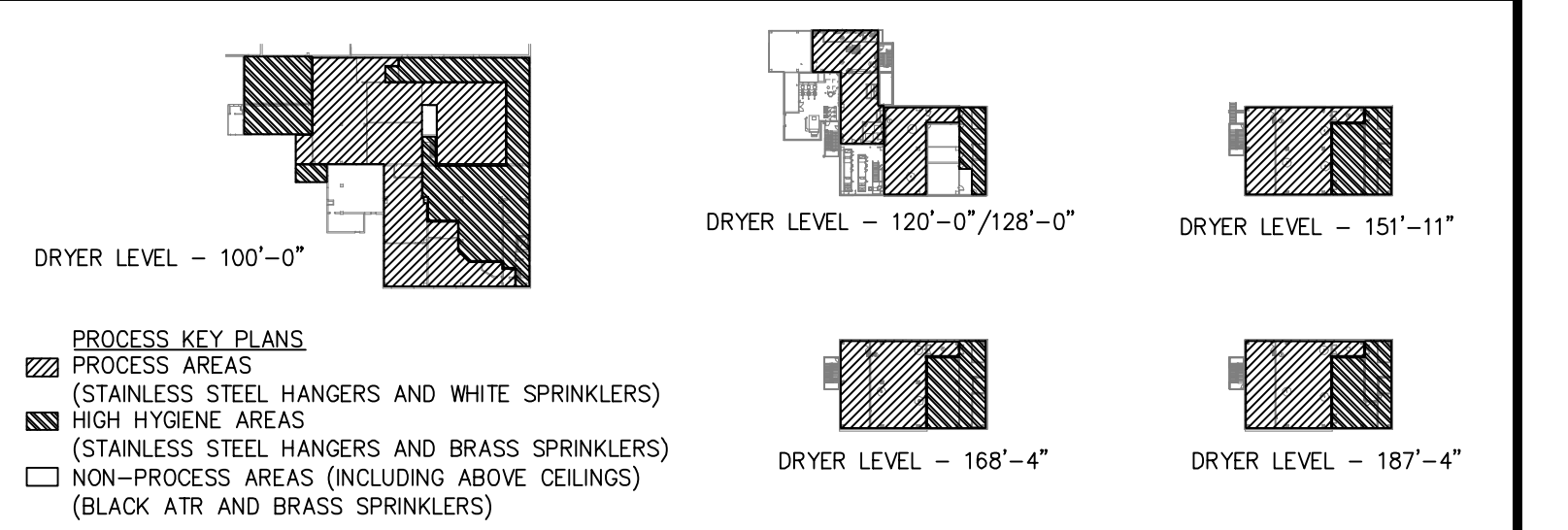
SECOND FLOOR (LEVEL 111'-9 5/8") - OFFICE ADDITION - AREA D

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



APPROVAL STAMPS

SYM	QNT	POSITION	FINISH	TEMP	K	NPT	SN	MFG.	MODEL#	ESCU/CHRON	HEAD BOX (2 min)
8	PENDENT	WHITE	200	5.60	1/2"	TY323	TYCO	TY-FRB	WHITE, SEMI-RECESSED		2
20	PENDENT	WHITE	155	5.60	1/2"	TY3531	TYCO	RFH	CONCEALED		2
40	PENDENT	WHITE	212	5.60	1/2"	R1015	RELIABLE	G-SERIES	ONE-PIECE, SS		2
5	PENDENT	WHITE	212	8.00	3/4"	R1017	RELIABLE	G-SERIES	ONE-PIECE, SS		2
20	PENDENT	BRASS	212	5.60	1/2"	TY3221	TYCO	TY-FRL	NONE		2
19	PENDENT	WHITE	212	5.60	1/2"	R1015	RELIABLE	G-SERIES	NONE		2
24	PENDENT	WHITE	212	8.00	3/4"	R1017	RELIABLE	G-SERIES	NONE		2
198	UPRIGHT	BRASS	212	5.60	1/2"	TY3121	TYCO	TY-FRL	NONE / ON SPRING		2
3	UPRIGHT	BRASS	286	5.60	1/2"	TY3121	TYCO	TY-FRL	NONE		2
143	UPRIGHT	WHITE	212	5.60	1/2"	R1025	RELIABLE	G-SERIES	NONE / ON SPRING		2
111	UPRIGHT	WHITE	212	8.00	3/4"	R1027	RELIABLE	G-SERIES	NONE / ON SPRING		2
2	SIDEWALL	BRASS	212	5.60	1/2"	TY3321	TYCO	TY-FRL	NONE		2



Drawing Title: FIRE PROTECTION PLAN

DFA - PROJECT VIKING

DRYER ADDITION

1313 N STAR DRIVE
 ZUMBROTA, MN 55992

Contract No: C-20-92

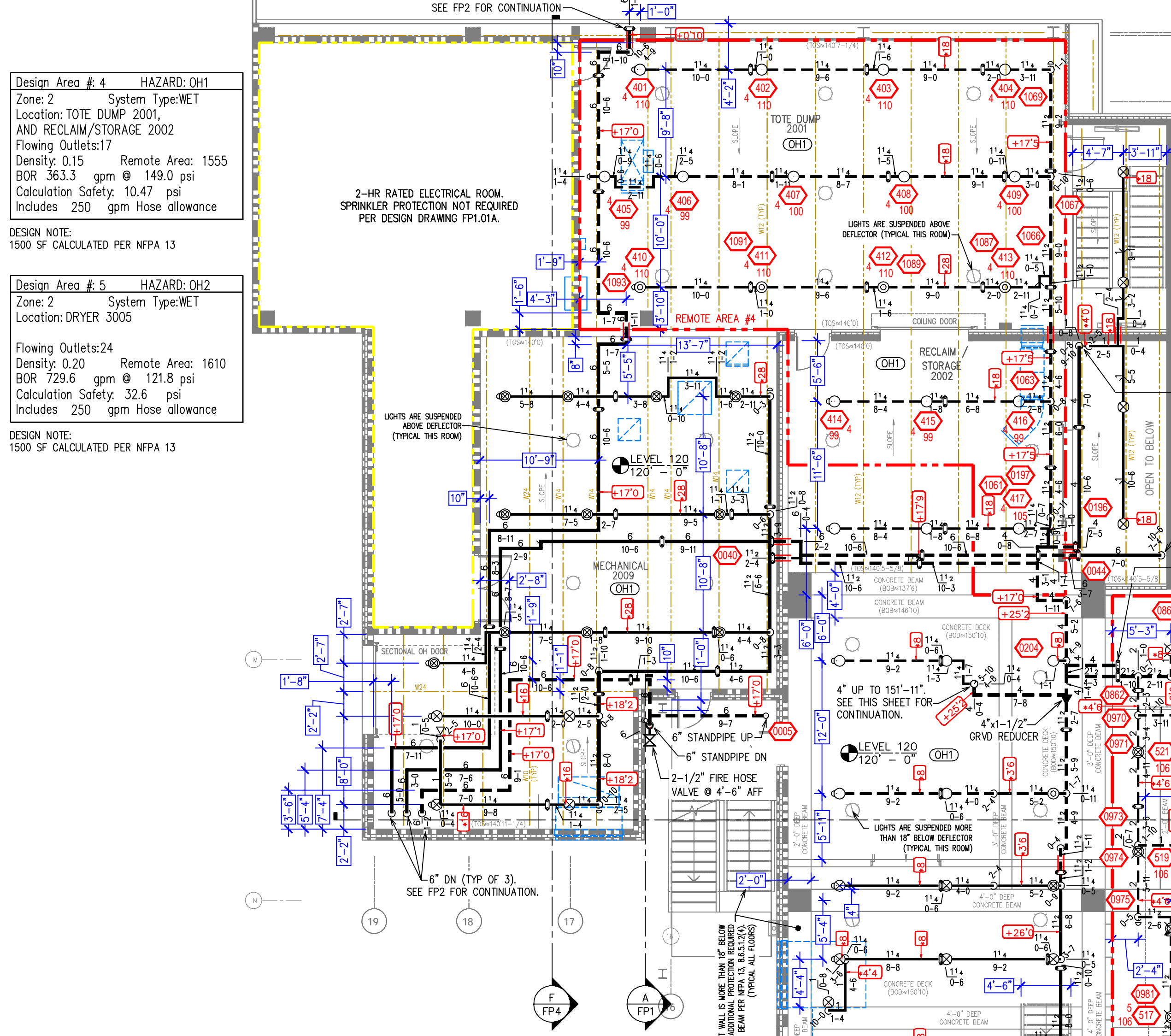
Drawing Date: 10/4/2021

Scale: 1/8" = 1'-0"

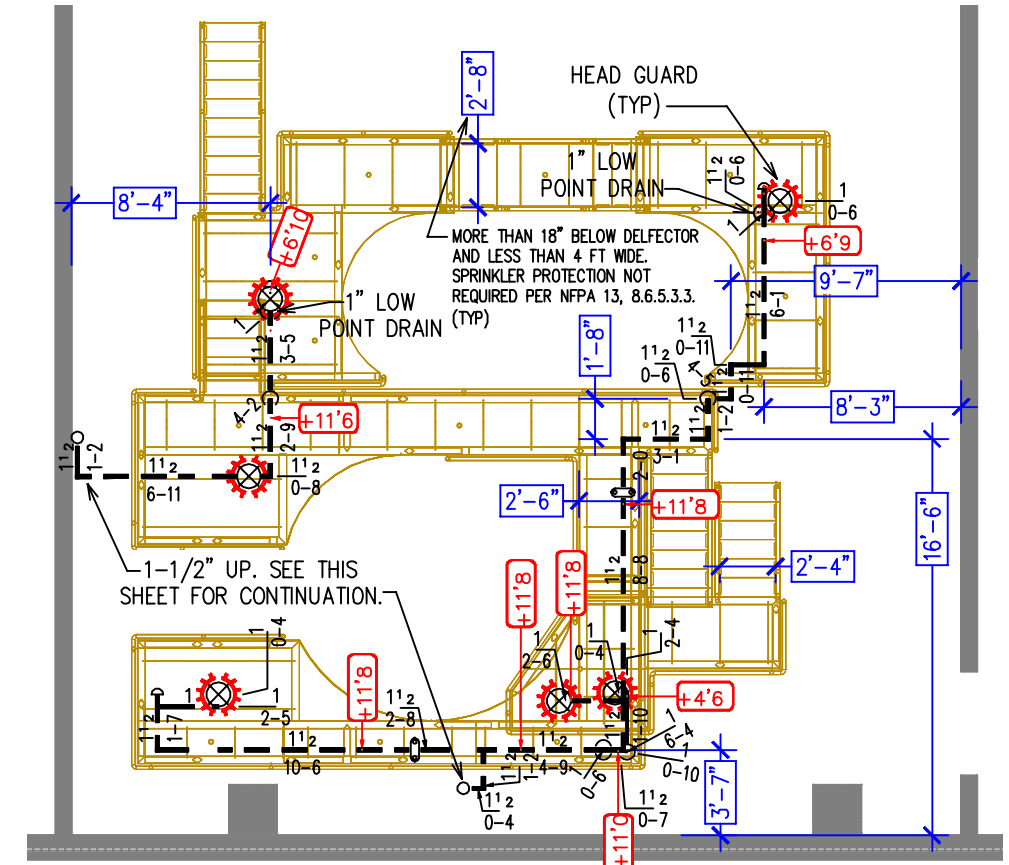
Drawn By: [Name]

Approval By: LOCAL FIRE MARSHAL DIV.

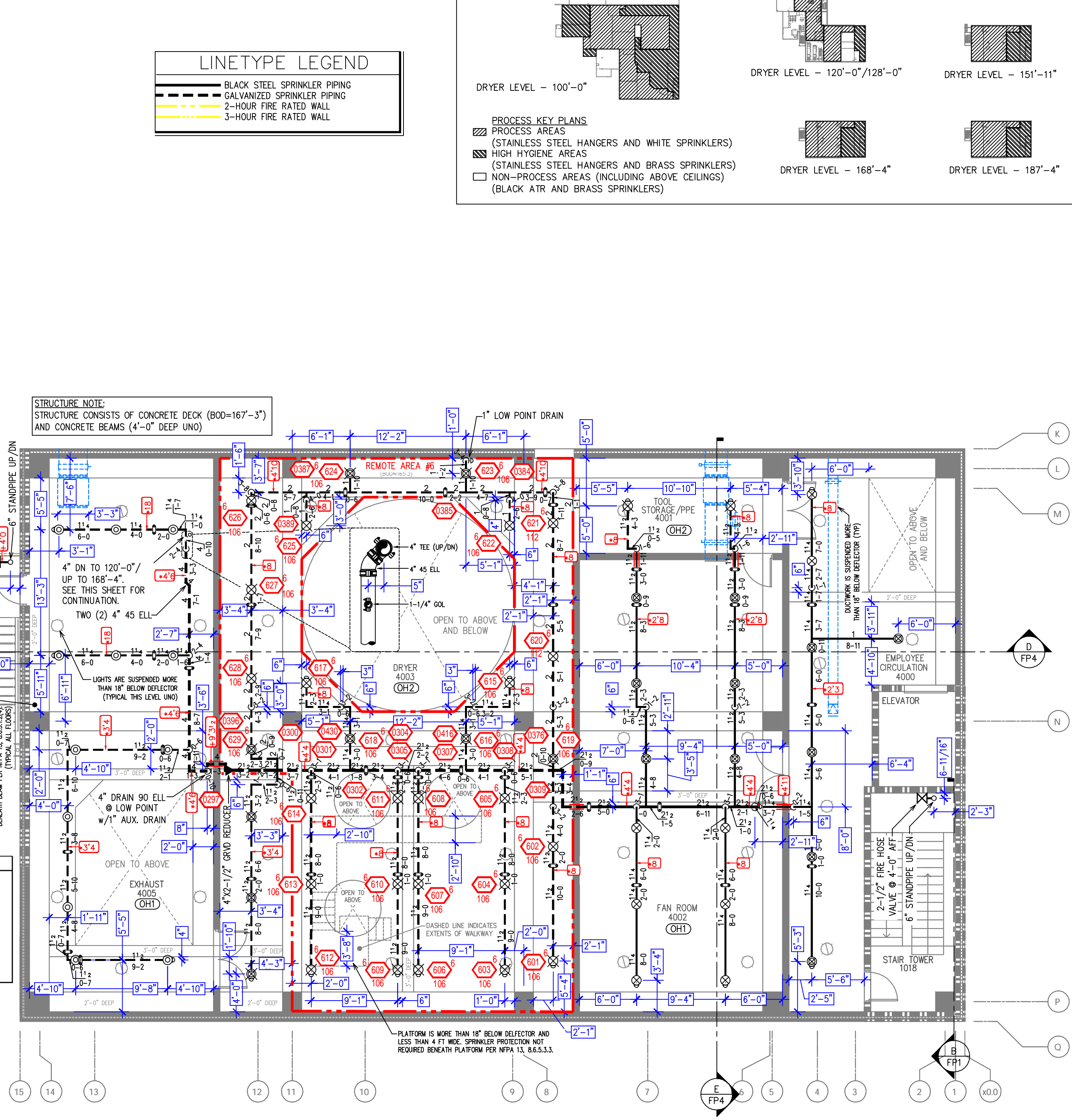
SHEET NO. 2 of 4



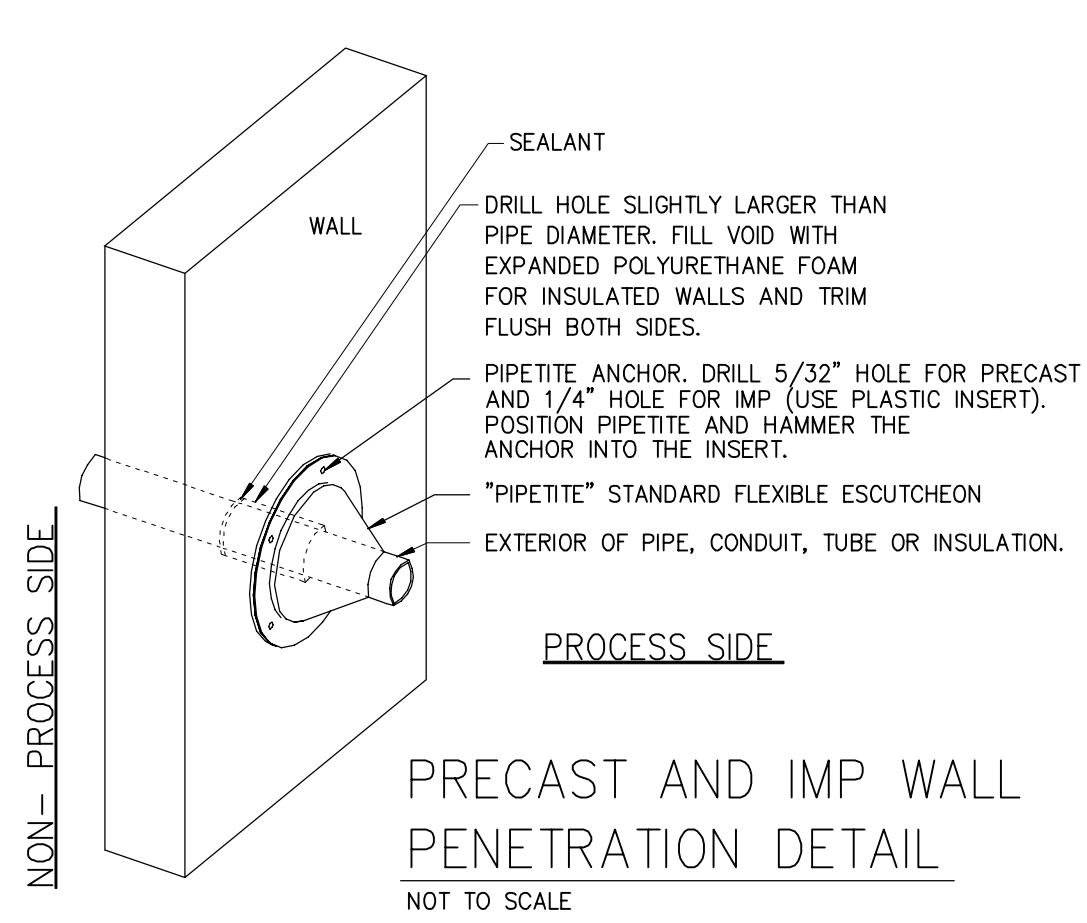
LEVEL (120'-0") AND (128'-0") - DRYER ADDITION
SCALE= 1/8" : 1'-0"



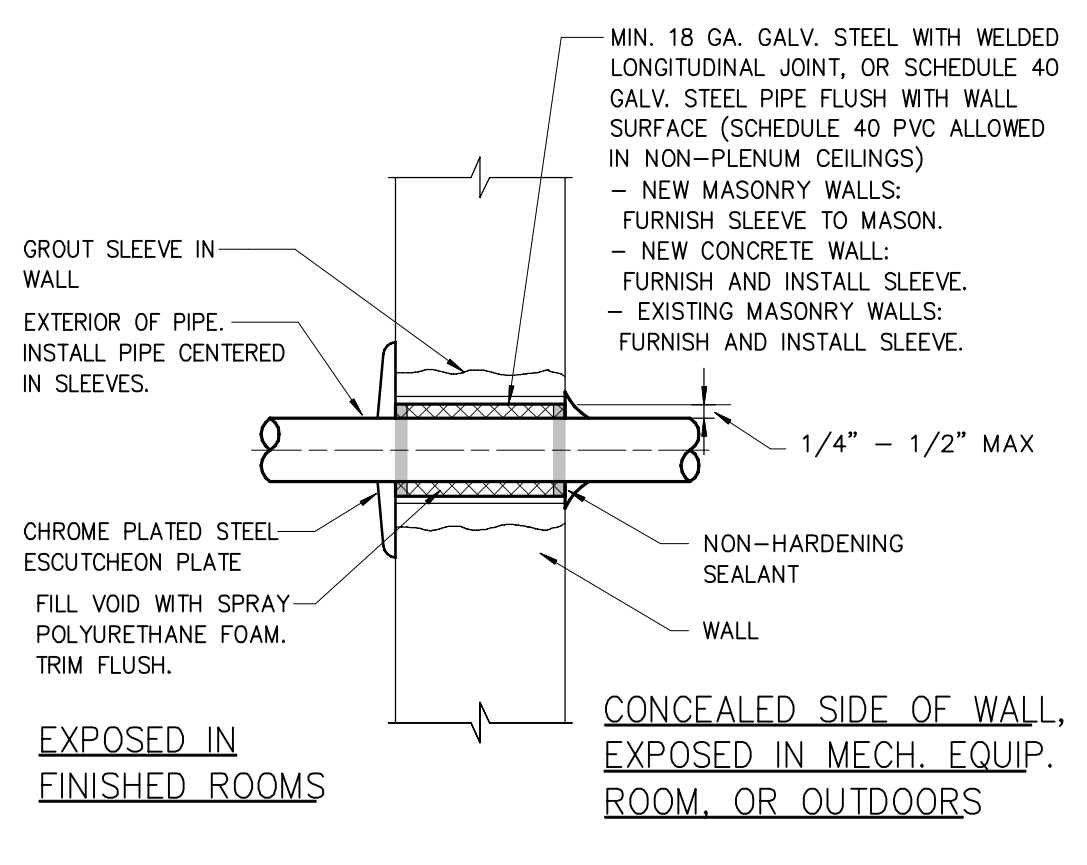
LEVEL (187'-4") - DRYER 6003 PLATFORM
SCALE= 1/8" : 1'-0"



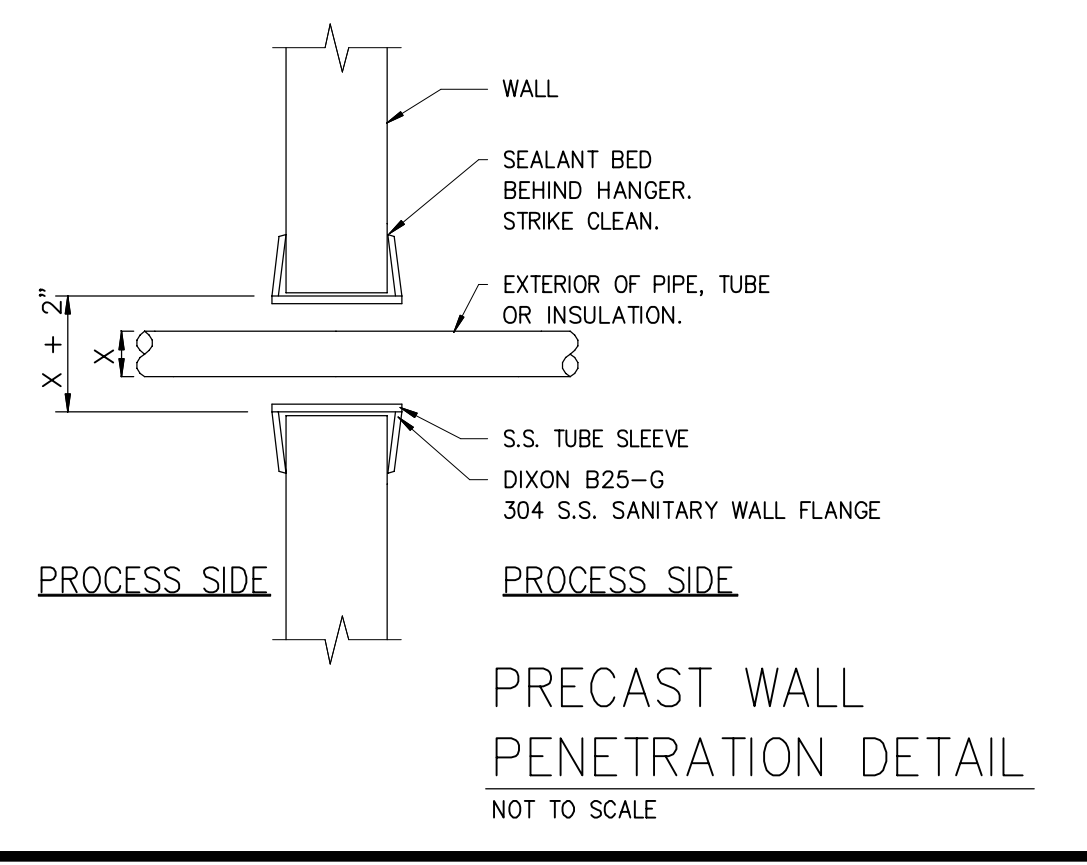
LEVEL (151'-11") - DRYER ADDITION
SCALE= 1/8" : 1'-0"



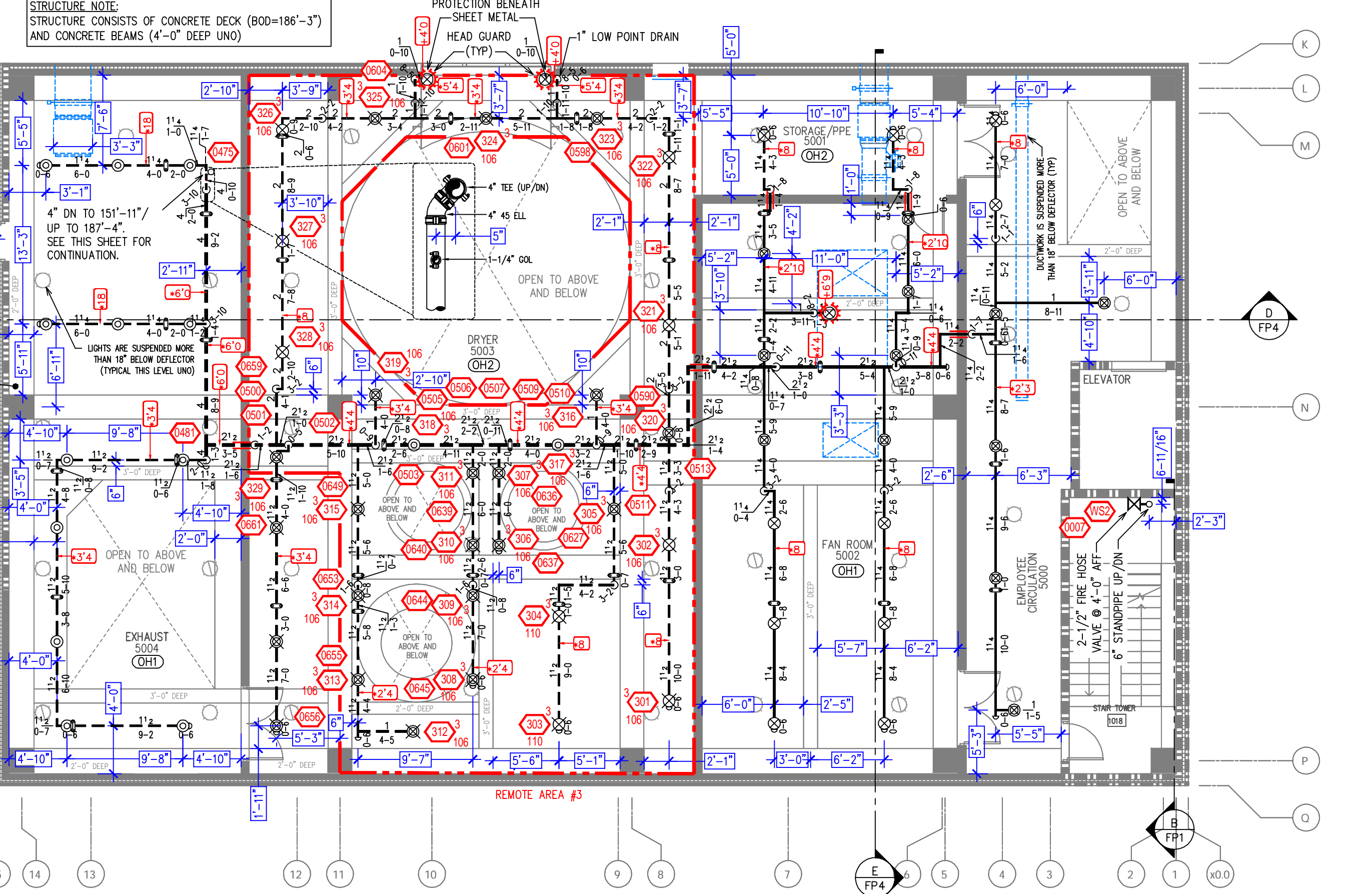
PRECAST AND IMP WALL PENETRATION DETAIL
NOT TO SCALE



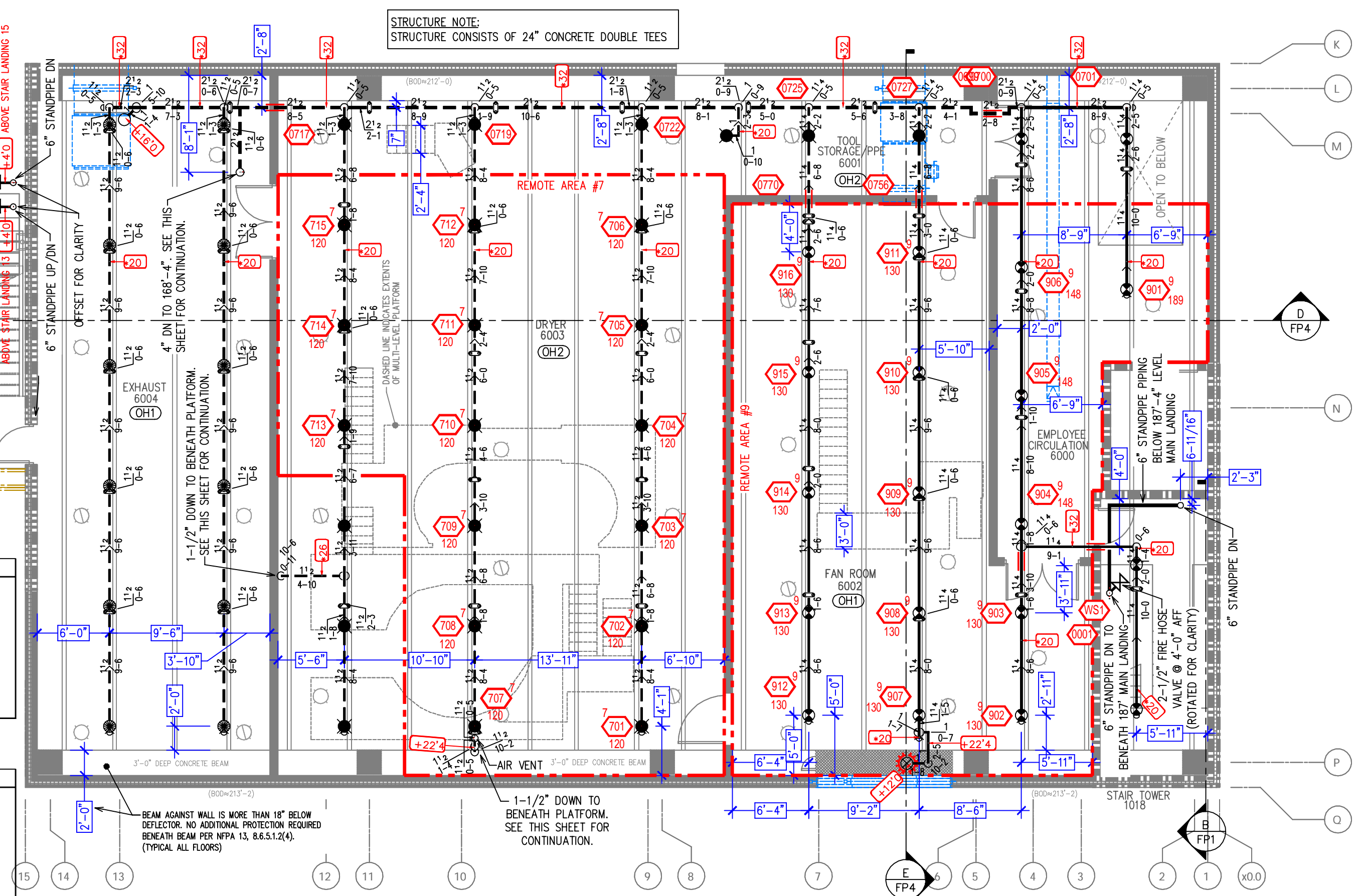
PIPE PENETRATION THRU MASONRY OR CONCRETE WALL
NOT TO SCALE



PRECAST WALL PENETRATION DETAIL
NOT TO SCALE



LEVEL (164'-8") - DRYER ADDITION
SCALE= 1/8" : 1'-0"



LEVEL (187'-4") - DRYER ADDITION
SCALE= 1/8" : 1'-0"

Design Area # 4 HAZARD: OH1
Zone: 2 System Type: WET
Location: TOTE DUMP 2001,
AND RECLAIM/STORAGE 2002
Flowing Outlets: 17
Density: 0.15 Remote Area: 1555
BOR 363.3 gpm @ 149.0 psi
Calculation Safety: 10.47 psi
Includes 250 gpm Hose allowance
DESIGN NOTE:
1500 SF CALCULATED PER NFPA 13

Design Area # 5 HAZARD: OH2
Zone: 2 System Type: WET
Location: DRYER 3005
Flowing Outlets: 24
Density: 0.20 Remote Area: 1610
BOR 729.6 gpm @ 121.8 psi
Calculation Safety: 32.6 psi
Includes 250 gpm Hose allowance
DESIGN NOTE:
1500 SF CALCULATED PER NFPA 13

Design Area # 6 HAZARD: OH2
Zone: 2 System Type: WET
Location: DRYER 4003
Flowing Outlets: 29
Density: 0.20 Remote Area: 1545
BOR 729.6 gpm @ 129.7 psi
Calculation Safety: 24.8 psi
Includes 250 gpm Hose allowance
DESIGN NOTE:
1500 SF CALCULATED PER NFPA 13

Design Area # 7 HAZARD: OH2
Zone: 2 System Type: WET
Location: DRYER 6003
Flowing Outlets: 15
Density: 0.20 Remote Area: 1585
BOR 449.7 gpm @ 137.9 psi
Calculation Safety: 20.7 psi
Includes 250 gpm Hose allowance
DESIGN NOTE:
1500 SF CALCULATED PER NFPA 13

Design Area # 8 HAZARD: OH1
Zone: 2 System Type: WET
Location: FAN ROOM 6002
Flowing Outlets: 16
Density: 0.15 Remote Area: 1555
BOR 362.5 gpm @ 133.6 psi
Calculation Safety: 25.8 psi
Includes 250 gpm Hose allowance
DESIGN NOTE:
1500 SF CALCULATED PER NFPA 13

SYM	QNT	POSITION	FINISH	TEMP	K	NPT	SIN	MFG.	MODEL #	ESCUTCHION	HEAD BOX (2 mm)
●	8	PENDENT	WHITE	200	5.60	1/2"	TY323	TYCO	TY-FRB	WHITE, SEMI-RECESSED	2
●	40	PENDENT	WHITE	155	5.60	1/2"	TY3531	TYCO	RFH	CONCEALED	2
●	20	PENDENT	WHITE	212	5.60	1/2"	R1015	RELIABLE	G-SERIES ONE-PIECE, SS		2
●	15	PENDENT	WHITE	212	8.00	3/4"	R1017	RELIABLE	G-SERIES ONE-PIECE, SS		2
●	20	PENDENT	BRASS	212	5.60	1/2"	TY3221	TYCO	TY-FRL	NONE	2
●	19	PENDENT	WHITE	212	5.60	1/2"	R1015	RELIABLE	G-SERIES NONE		2
●	24	PENDENT	WHITE	212	8.00	3/4"	R1017	RELIABLE	G-SERIES NONE		2
●	198	UPRIGHT	BRASS	212	5.60	1/2"	TY3121	TYCO	TY-FRL	NONE / ON SPRIG	2
●	3	UPRIGHT	BRASS	286	5.60	1/2"	TY3121	TYCO	TY-FRL	NONE	2
●	143	UPRIGHT	WHITE	212	5.60	1/2"	R1025	RELIABLE	G-SERIES NONE / ON SPRIG		2
●	111	UPRIGHT	WHITE	212	8.00	3/4"	R1027	RELIABLE	G-SERIES NONE / ON SPRIG		2
●	2	SIDEWALL	BRASS	212	5.60	1/2"	TY3211	TYCO	TY-FRL	NONE	2

APPROVAL STAMPS

Drawing Title: **FIRE PROTECTION PLAN**

DFA - PROJECT VIKING
DRYER ADDITION
1313 N STAR DRIVE
ZUMBROTA, MN 55992

Contract No: **C-20-92**
Drawing Date: 10/4/2021
Scale: 1/8" = 1'-0"
Drawn By:
Approval By: LOCAL FIRE MARSHAL DIV.
SHEET NO. 3 of 4