

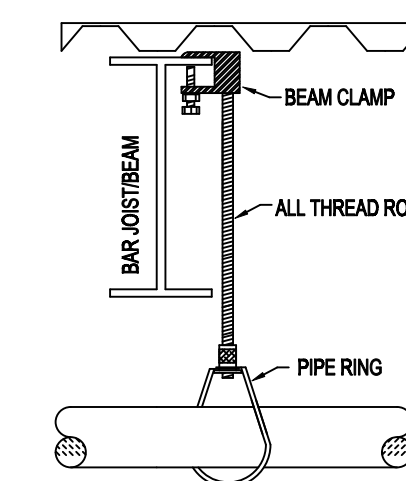
1 BUILDING SECTION
SCALE= 3/32" : 1'-0"

SYM	QTY	POSITION	FINISH	TEMP	K	NPT	SIN	MFG.	MODEL#	ESCLT/CHGR
151	PEND	WHITE	200	5.60	1/2"	TY3531	TY3531	TY3531	RFII	CONCEALED
351	PEND	WHITE	212	11.20	3/4"	TY5522	TY5522	TY5522	ELOC	CONCEALED
126	UPR	BRASS	200	5.60	1/2"	TY313	TY313	TY-FRB	NA	
13	UPR	BRASS	200	5.60	1/2"	TY313	TY313	TY-FRB	NA	
3	PEND	CHROME	200	5.60	1"	TY235	TY235	DS-1	401	
2	UPR	BRASS	285	5.60	1/2"	TY313	TY313	TY-FRB	NA	

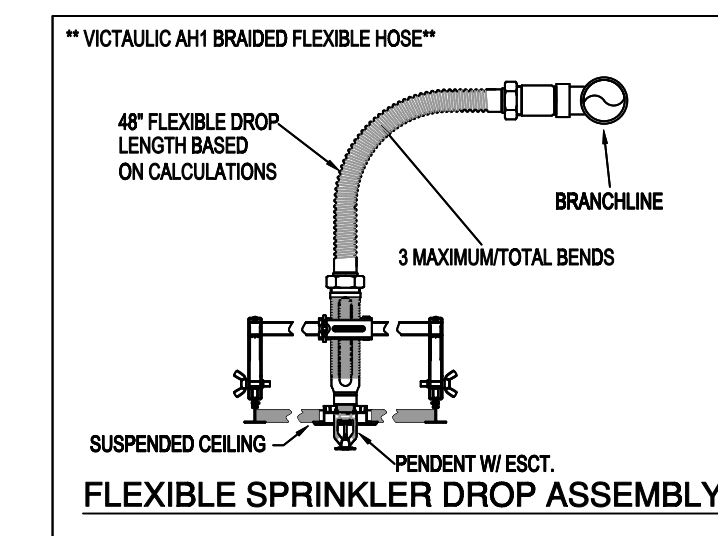
846 TOTAL HEADS

SPRINKLER HEAD LEGEND

NOMINAL SIZE INCHES	MAX SPACING FEET
1"	12'-0"
1-1/4"	12'-0"
1-1/2"	15'-0"
2"	15'-0"
2-1/2"	15'-0"
3"	15'-0"
4" & LARGER	15'-0"

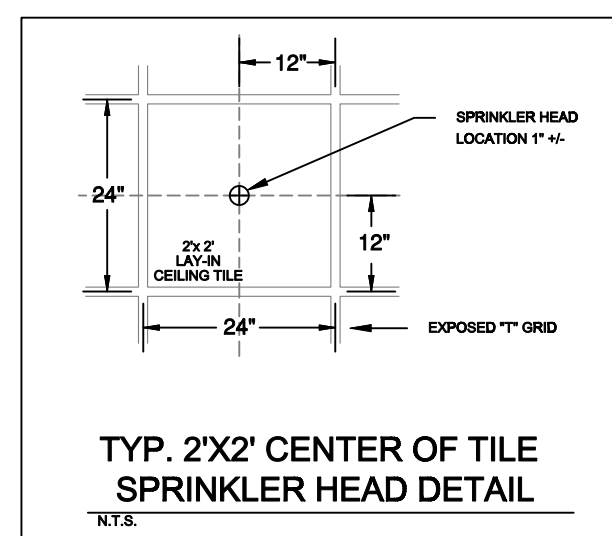


HANGER DETAILS

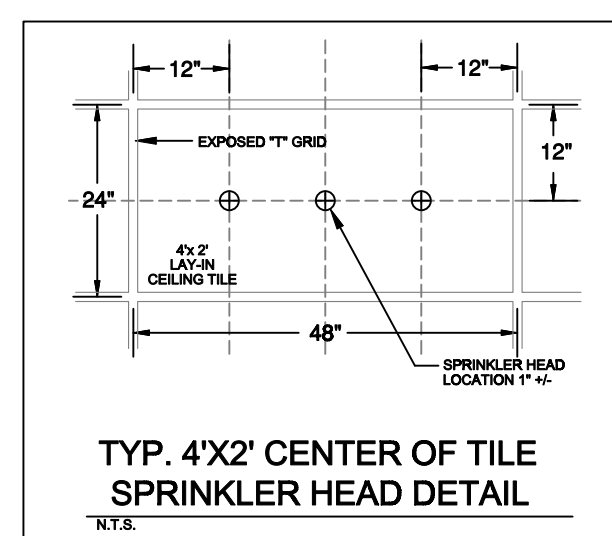


GENERAL NOTES

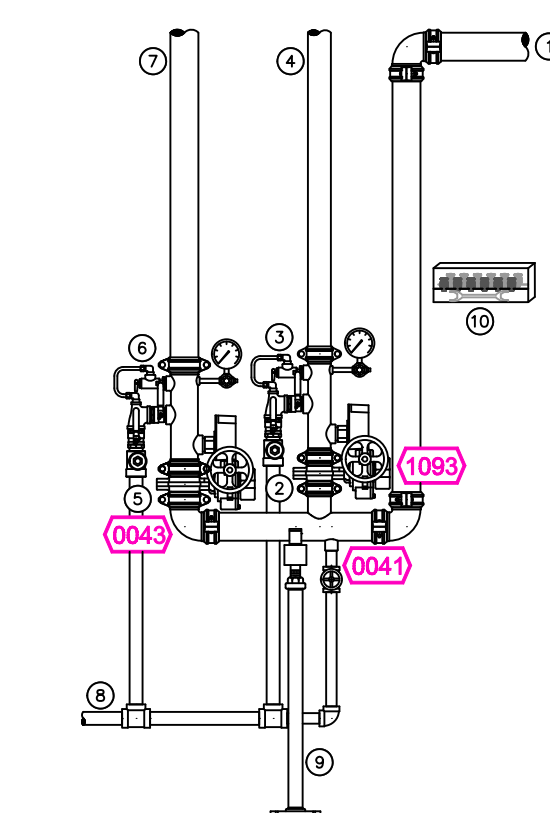
- MINNESOTA STATE BUILDING CODE (2020)
 - OCCUPANCY/EDUCATIONAL TYPE E; ELEMENTARY SCHOOL
 - TYPE OF CONSTRUCTION: B-B (UNPROTECTED, NON-COMBUSTIBLE CONSTRUCTION)
 - SPRINKLERED AREAS (APPROXIMATE - SEE ARCHITECTURAL PLANS FOR ACTUAL)
 - 1ST FLOOR = 62,804 S.F.
 - 2ND FLOOR = 48,192 S.F.
 - TOTAL = 111,996 S.F.
 - INSTALLATION STANDARDS:
 - SPRINKLER SYSTEM DESIGNED AND INSTALLED PER NFPA-13 (2016)
- SPRINKLER PIPE TYPES:
 - WET-
 - 2.1. 1" BRANCH LINES TO BE BLK SCHEDULE 40 PIPING WITH THREADED FITTINGS
 - 2.2. 1/2" THROUGH 3" MAIN & BRANCH LINES TO BE BLK SCHEDULE 10 PIPING WITH GROOVED FITTINGS
 - 2.3. 1/2" BRANCH LINES TO BE BLK SCHEDULE 40 PIPING WITH GROOVED FITTINGS IN GYMNASIUM
 - 2.4. MAIN & BRANCH LINES TO BE ROLL-GROOVED BLK SCHEDULE 10 PIPING
- DESIGN CRITERIA
 - CLASSROOMS, OFFICES, CORRIDORS, GYM, AND OTHER SIMILAR AREAS DESIGNED TO LIGHT HAZARD. DESIGNED TO DELIVER 0.10 GPM/S.F. OVER THE MOST DEMANDING 1500 S.F.
 - KITCHEN, MECHANICAL, ELECTRICAL, STORAGE ROOMS, AND OTHER SIMILAR AREAS DESIGNED TO ORDINARY HAZARD GROUP 1. DESIGNED TO DELIVER 0.15 GPM/S.F. OVER THE MOST DEMANDING 1500 S.F.
 - REMOTE AREA REDUCTIONS HAVE BEEN TAKEN WHERE APPLICABLE PER NFPA 13 SEC. 11.2.3.2.3
- NOTES:
 - ALL MATERIAL TO BE NEW AND MEET U.L. STANDARDS
 - HANGERS TO BE INSTALLED IN ACCORDANCE WITH NFPA 13 (2016) - SEE PLAN FOR HANGING REQ.
- SYMBOLS USED ON DRAWINGS:
 - PIPE ELEVATION A.F.F.
 - ROOM HAZARD CLASSIFICATION (ALL ROOMS ARE CONSIDERED LIGHT HAZARD UNLESS NOTED)
 - HYDRAULIC CALCULATION JUNCTION POINT
 - CEILING HEIGHT
- SCOPE OF WORK:
 - TO INSTALL A NEW SPRINKLER SYSTEM IN THE NEW CASS LAKE-BENA ELEMENTARY SCHOOL.
 - THE SYSTEM WILL CONSIST OF TWO WET SPRINKLER ZONES SUPPLIED BY A FIRE PUMP.
 - THE FIRE DEPARTMENT CONNECTION AND FIRE PUMP TEST HEADER WILL BE LOCATED AT THE SOUTH SIDE OF THE BUILDING OUTSIDE THE FIRE PUMP ROOM
 - ALL AREAS OF THE BUILDING TO BE INSTALLED AND COVERED IN ACCORDANCE WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PER NFPA 13 (2016)



TYP. 2'X2' CENTER OF TILE SPRINKLER HEAD DETAIL



TYP. 4'X2' CENTER OF TILE SPRINKLER HEAD DETAIL



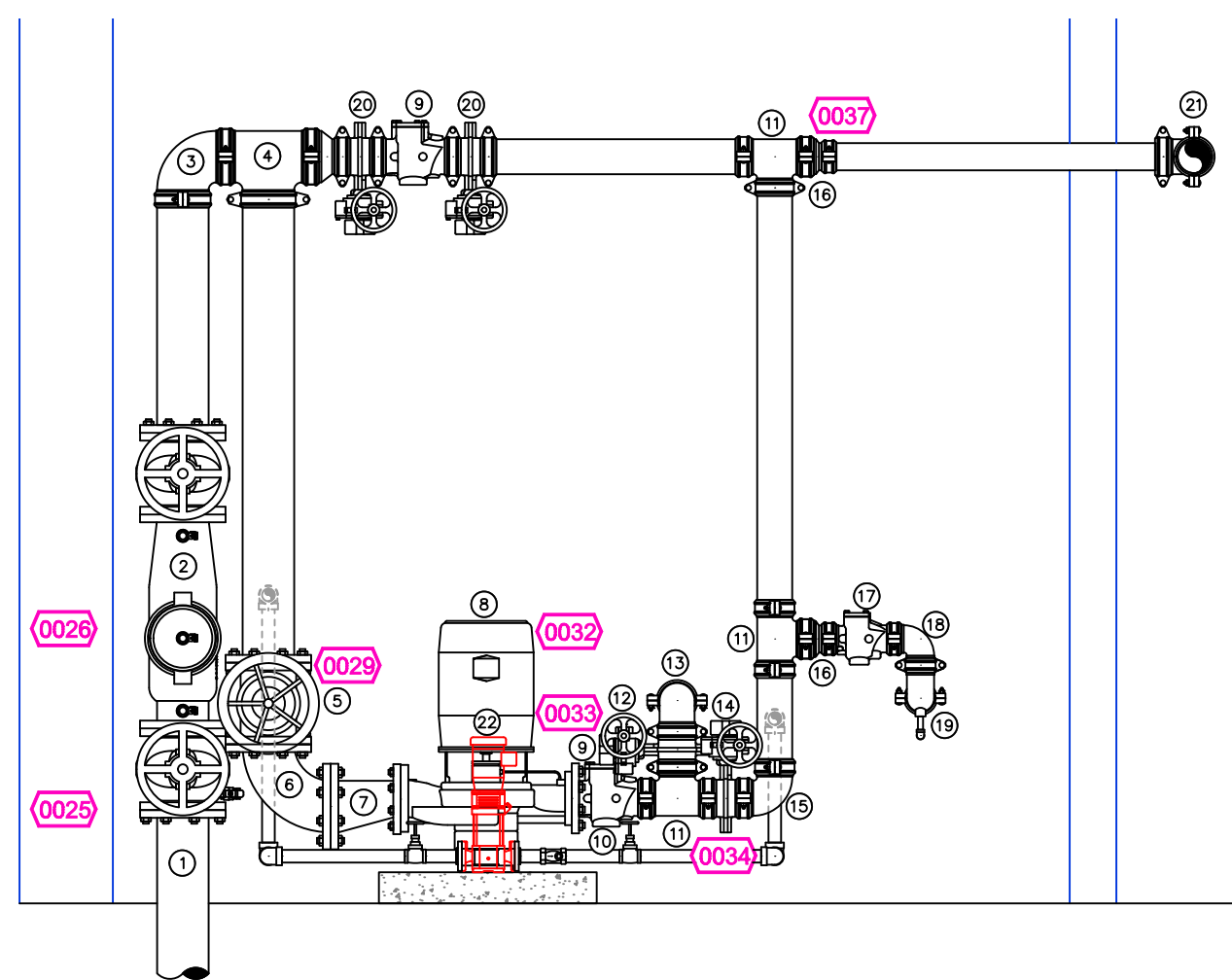
REMOTE RISER LEGEND

- 3" FROM FIRE PUMP ROOM
- 2-1/2" GROOVED BUTTERFLY VALVE w/ TAMPER
- 2-1/2" GROOVED COMMERCIAL RISER MANIFOLD w/ FLOW SWITCH, PRESSURE GAUGE, & TEST AND DRAIN w/ PRV
- 2-1/2" TO ZONE #1
- 3" GROOVED BUTTERFLY VALVE w/ TAMPER
- 3" GROOVED COMMERCIAL RISER MANIFOLD w/ FLOW SWITCH, PRESSURE GAUGE, & TEST AND DRAIN w/ PRV
- 3" TO ZONE #2
- MAIN DRAIN PIPED TO OUTSIDE
- PIPE STAND
- SPARE HEAD BOX

PIPE LEGEND

BLACK STEEL SPRINKLER PIPING

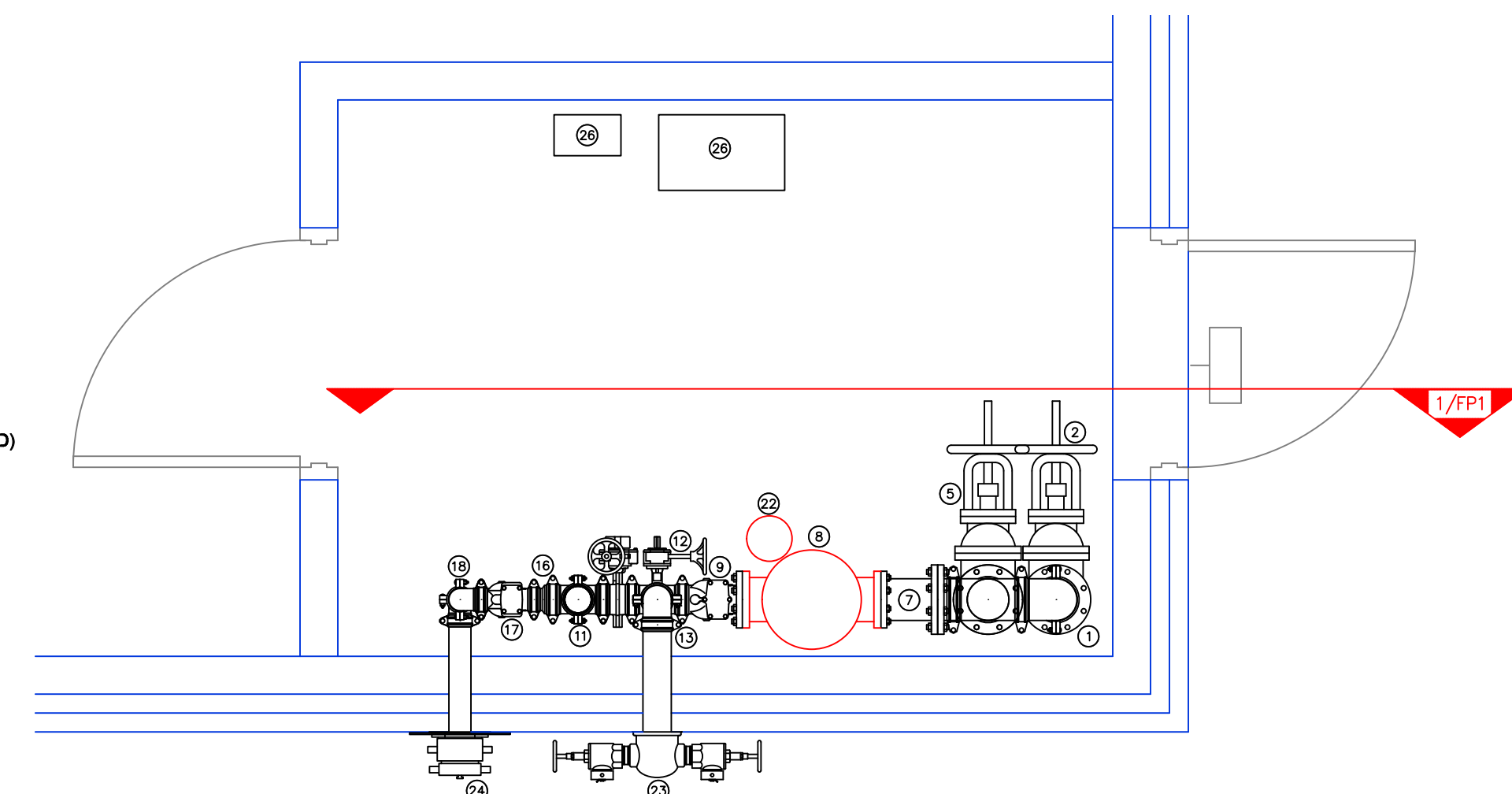
3 REMOTE RISER DETAIL
SCALE= 1/2" : 1'-0"



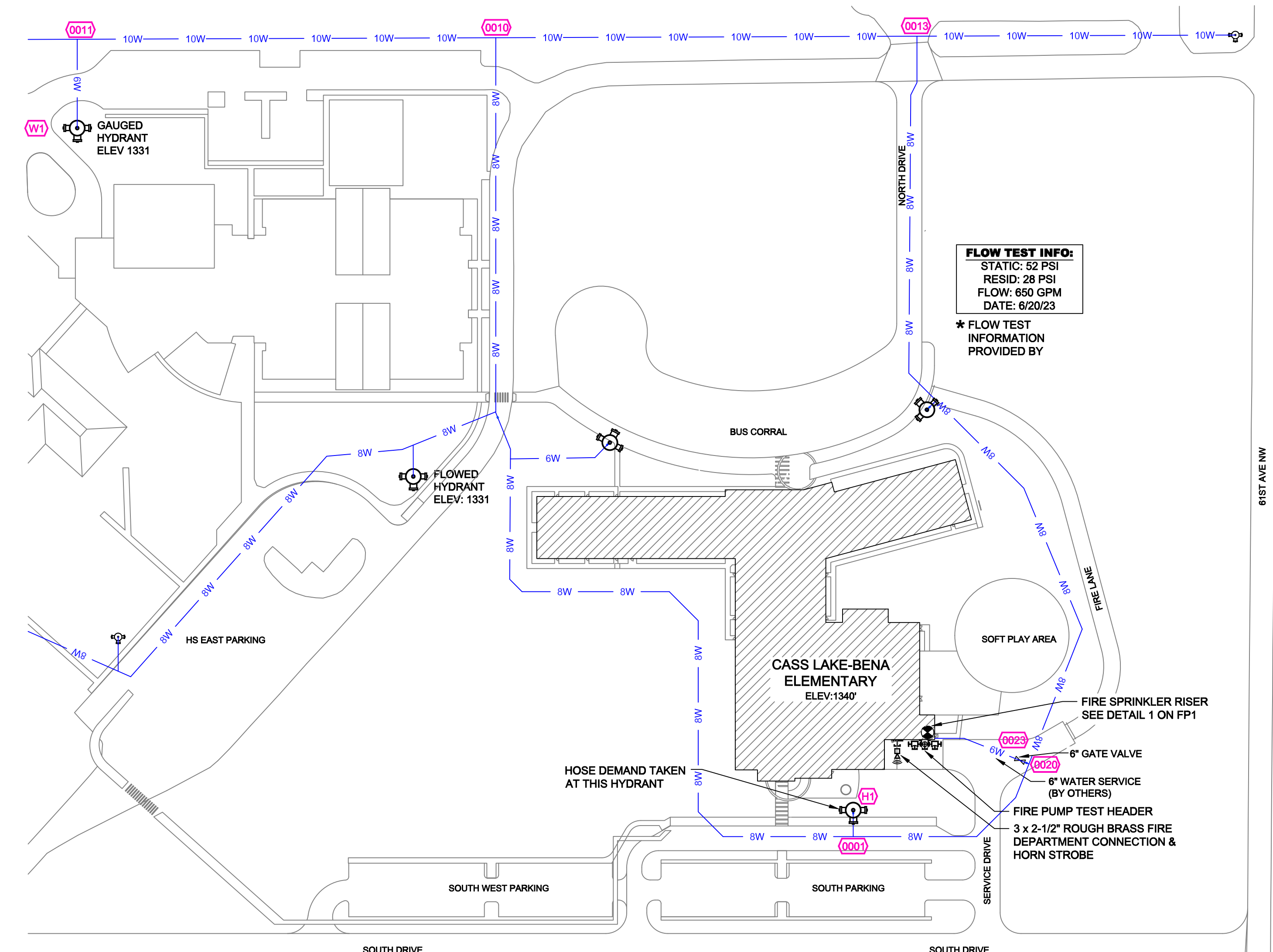
1 FIRE PUMP ROOM RISER DETAIL
SCALE= 1/2" : 1'-0"

FIRE PUMP ROOM RISER LEGEND

- 6" UNDERGROUND WATER SERVICE (BY OTHERS) (FLUSHING & TESTING OF THE UNDERGROUND SHALL BE COMPLETED PRIOR TO THE SPRINKLER SYSTEM HOOKUP. UNDERGROUND PAPERS ARE TO BE SUPPLIED TO THE "FP" CONTRACTOR BY THE G.C.)
- 6" AMES 2000SS BACKFLOW FxP GATE VALVES w/ TAMPERS
- 6" GROOVED 90 ELBOW
- 6" GROOVED TEE
- 6" FLANGED GATE VALVE w/ TAMPER
- 6" FLANGED 90 ELBOW
- 6" x 6" FLANGED ECCENTRIC REDUCER
- AURORA FIRE PUMP 400GPM @ 80PSI
- 4" FLANGE x GROOVE ADAPTER
- 4" GROOVED CHECK VALVE
- 4" GROOVED TEE
- 4" GROOVED BUTTERFLY VALVE w/ TAMPER (NORMALLY CLOSED)
- 4" GROOVED 90 TO FIRE PUMP TEST HEADER
- 4" GROOVED BUTTERFLY VALVE w/ TAMPER (NORMALLY OPEN)
- 4" GROOVED 90 ELBOW
- 4" x 3" GROOVED CONIC. REDUCER
- 3" GROOVED CHECK VALVE
- 3" GROOVED 90 ELBOW
- 3" GROOVED DRAIN 90 TO FDC
- 4" GROOVED BUTTERFLY VALVE w/ TAMPER (NORMALLY OPEN)
- 4" GROOVED TO REMOTE RISER
- AURORA JOCKEY PUMP 100GPM @ 110PSI
- 2 OUTLET FIRE PUMP TEST HEADER
- 3 x 2-1/2" ROUGH BRASS FIRE DEPT. CONNECTION
- TORNATECH FIRE PUMP CONTROLLER
- TORNATECH JOCKEY PUMP CONTROLLER



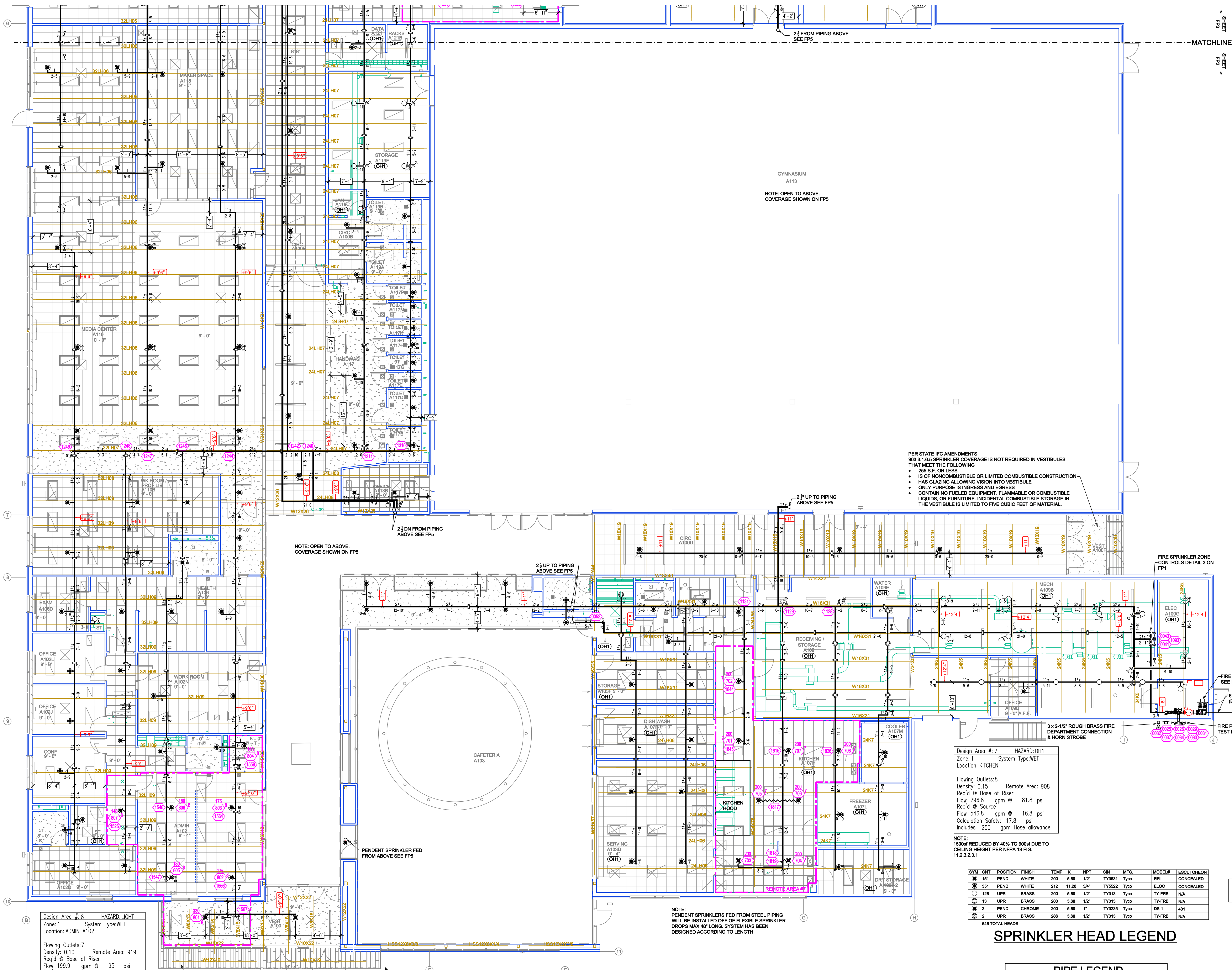
2 FIRE PUMP ROOM RISER DETAIL
SCALE= 1/2" : 1'-0"



SITE PLAN
SCALE: 1" = 100'-0"

FLOW TEST INFO:
STATIC: 52 PSI
RESID: 28 PSI
FLOW: 850 GPM
DATE: 8/20/23
* FLOW TEST INFORMATION PROVIDED BY

	GENERAL NOTES	NO	REVISIONS	DATE	APPROVAL STAMPS	Drawing Title: FIRE PROTECTION PLAN CASS LAKE-BENA ELEMENTARY 15308 MN HIGHWAY 371 CASS LAKE, MN 56633	Contract No. C23-20 Drawing Date: 10/02/2023 Scale: 1/8" = 1'-0" Drawn By: HL Approval By: STATE FIRE MARSHAL DIV. SHEET NO. FP 1 of 7
	1. SYSTEM INSTALLED PER NFPA-13 (2016 EDITION) AND STATE FIRE MARSHAL 2. ALL EQUIPMENT FOR THIS SYSTEM SHALL BE U.L. LISTED 3. MINIMUM PIPE SIZE SHALL BE 1" NOMINAL PIPE 4. ALL SCH-10 & LIGHTWALL PIPING HAS WELDED OUTLETS & GROOVED SHORT RADIUS FITTINGS 5. ALL WELDING PER NFPA-514(C.2) 6. NO INSTALLATION OR FABRICATION TO BEGIN WITHOUT APPROVED SHOP DRAWINGS 7. ALL FIRE LOCATIONS ARE TO BE FIELD MEASURED PRIOR TO FABRICATION AND INSTALLATION BY SPRINKLER CONTRACTOR 8. ALL DIMENSIONS SHOWN ARE CENTER TO CENTER 9. HIGH TEMPERATURE HEADS ARE TO BE FIELD LOCATED WHERE REQUIRED 10. PROVIDE ON SPARE HEAD CABINET W/ HEADS & 1 HEAD WRENCH 11. HANGERS ARE TO BE U.L. LISTED AND I.M. APPROVED 12. ELECTRICAL WIRING, ALARM, DETECTION AND SUPERVISORY BY OWNER 13. OWNER'S RESPONSIBILITY TO PROVIDE ADEQUATE HEATING TO PREVENT WET SYSTEM PIPING FROM FREEZING.						



PER STATE IFC AMENDMENTS
 903.3.1.6.5 SPRINKLER COVERAGE IS NOT REQUIRED IN VESTIBULES THAT MEET THE FOLLOWING:

- 255 S.F. OR LESS
- IS OF NONCOMBUSTIBLE OR LIMITED COMBUSTIBLE CONSTRUCTION
- HAS GLAZING ALLOWING VISION INTO VESTIBULE
- ONLY PURPOSE IS INGRESS AND EGRESS
- CONTAIN NO FIELDED EQUIPMENT, FLAMMABLE OR COMBUSTIBLE LIQUIDS, OR FURNITURE. INCIDENTAL COMBUSTIBLE STORAGE IN THE VESTIBULE IS LIMITED TO FIVE CUBIC FEET OF MATERIAL.

Design Area #7 HAZARD: OH1
 Zone: 1 System Type: WET
 Location: KITCHEN

Flowing Outlets: 8 Remote Area: 908
 Density: 0.15
 Req'd @ Base of Riser
 Flow 296.8 gpm @ 81.8 psi
 Req'd @ Source
 Flow 546.8 gpm @ 16.8 psi
 Calculation Safety: 17.8 psi
 Includes 250 gpm Hose allowance

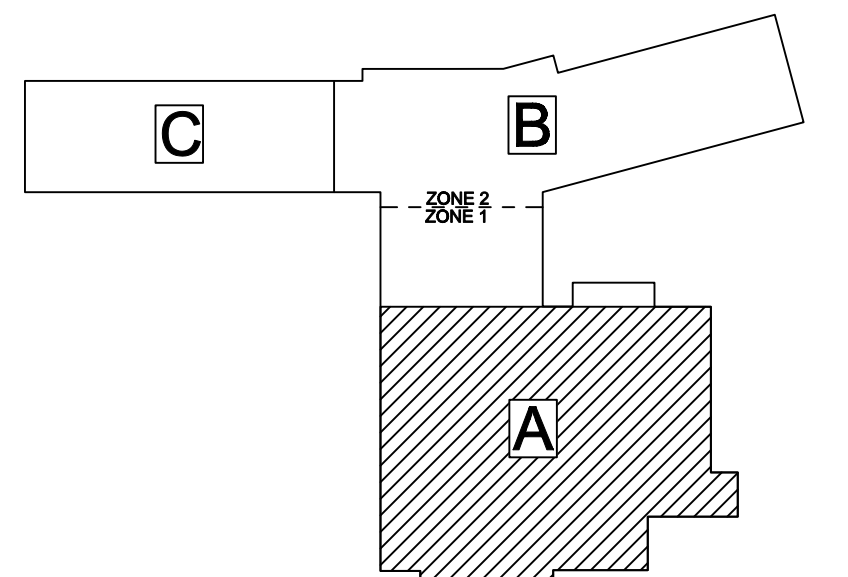
NOTE:
 1500ft REDUCED BY 40% TO 900ft DUE TO
 CEILING HEIGHT PER NFPA 13 FIG.
 11.2.3.2.1

SYM	QTY	POSITION	FINISH	TEMP	K	NPT	SIN	MFG	MODEL#	ESOUT/CON
151	PEND	WHITE	212	11.20	3/4"	TY3531	Typo	RFII	CONCEALED	
158	UPR	BRASS	200	5.80	1/2"	TY313	Typo	TY-FRB	N/A	
13	UPR	BRASS	200	5.80	1/2"	TY313	Typo	TY-FRB	N/A	
3	PEND	CHROME	200	5.80	1"	TY3236	Typo	DS-1	401	
2	UPR	BRASS	286	5.80	1/2"	TY313	Typo	TY-FRB	N/A	

846 TOTAL HEADS

SPRINKLER HEAD LEGEND

PIPE LEGEND
 — BLACK STEEL SPRINKLER PIPING



KEY PLAN
 SCALE= 1/8" = 1'-0"

LEVEL 1 FIRE SPRINKLER PLAN AREA A
 SCALE= 1/8" = 1'-0"

Design Area #8 HAZARD: LIGHT
 Zone: 1 System Type: WET
 Location: ADMIN A102

Flowing Outlets: 7 Remote Area: 919
 Density: 0.10
 Req'd @ Base of Riser
 Flow 169.9 gpm @ 95 psi
 Req'd @ Source
 Flow 299.9 gpm @ 20.4 psi
 Calculation Safety: 25.9 psi
 Includes 100 gpm Hose allowance

NOTE:
 1500ft REDUCED BY 40% TO 900ft DUE TO
 CEILING HEIGHT PER NFPA 13 FIG.
 11.2.3.2.1

NONCOMBUSTIBLE ROOF
 OVERHANG. SPRINKLER
 PROTECTION NOT REQUIRED
 PER NFPA 13 SEC. 8.16.7.2

PENDENT SPRINKLER FED
 FROM ABOVE SEE FPS

NOTE:
 PENDENT SPRINKLERS FED FROM STEEL PIPING
 WILL BE INSTALLED OFF OF FLEXIBLE SPRINKLER
 DROPS MAX 48" LONG. SYSTEM HAS BEEN
 DESIGNED ACCORDING TO LENGTH

GENERAL NOTES

1. SYSTEM INSTALLED PER NFPA-13 (2016 EDITION) AND STATE FIRE MARSHAL
2. ALL EQUIPMENT FOR THIS SYSTEM SHALL BE U.L. LISTED
3. MINIMUM PIPE SIZE SHALL BE 1" NOMINAL PIPE
4. ALL SCH-80 & LIGHTWALL PIPING HAS WELDED OUTLETS & GROOVED SHORT RADIUS FITTINGS
5. ALL WELDING PER NFPA-514 (2011)
6. NO INSTALLATION OR FABRICATION TO BEGIN WITHOUT APPROVED SHOP DRAWINGS
7. ALL PIPE LOCATIONS ARE TO BE FIELD MEASURED PRIOR TO FABRICATION AND INSTALLATION BY SPRINKLER CONTRACTOR
8. ALL DIMENSIONS SHOWN ARE CENTER TO CENTER
9. HIGH TEMPERATURE HEADS ARE TO BE FIELD LOCATED WHERE REQUIRED
10. PROVIDE ON SPARE HEAD CABINET WE HEADS & HEAD WRENCH
11. HANGERS ARE TO BE U.L. LISTED AND I.M. APPROVED
12. ELECTRICAL WIRING, ALARM, DETECTION AND SUPERVISORY BY OWNER
13. OWNERS RESPONSIBILITY TO PROVIDE ADEQUATE HEATING TO PREVENT WET SYSTEM PIPING FROM FREEZING.

NO	REVISIONS	DATE	APPROVAL STAMPS

Drawing Title: **FIRE PROTECTION PLAN**

CASS LAKE-BENA
ELEMENTARY

15308 MN HIGHWAY 371
CASS LAKE, MN 56633

Contract No. **C23-20**

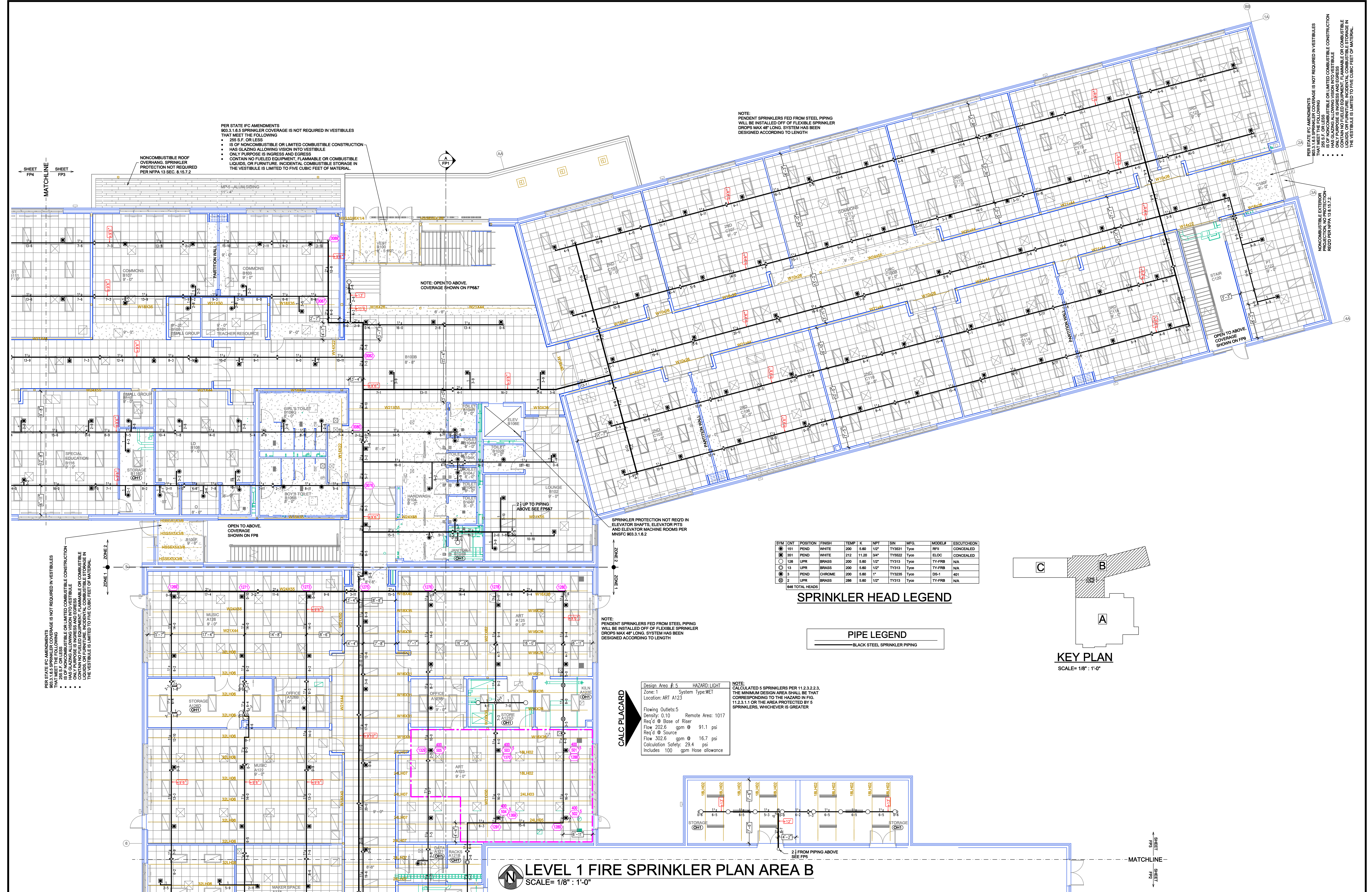
Drawing Date: 10/02/2023

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

Drawn By: HL

Approval By: STATE FIRE MARSHAL DIV.

SHEET NO. **FP 2 of 7**



PER STATE IFC AMENDMENTS 903.3.1.6 SPRINKLER COVERAGE IS NOT REQUIRED IN VESTIBULES THAT MEET THE FOLLOWING:

- 255 S.F. OR LESS
- IS OF NONCOMBUSTIBLE OR LIMITED COMBUSTIBLE CONSTRUCTION
- HAS GLAZING ALLOWING VISION INTO VESTIBULE
- ONLY PURPOSE IS INGRESS AND EGRESS
- CONTAIN NO FUELED EQUIPMENT, FLAMMABLE OR COMBUSTIBLE LIQUIDS, OR FURNITURE. INCIDENTAL COMBUSTIBLE STORAGE IN THE VESTIBULE IS LIMITED TO FIVE CUBIC FEET OF MATERIAL.

NONCOMBUSTIBLE ROOF OVERHANG. SPRINKLER PROTECTION NOT REQUIRED PER NFPA 13 SEC. 8.15.7.2

NOTE: PENDENT SPRINKLERS FED FROM STEEL PIPING WILL BE INSTALLED OFF OF FLEXIBLE SPRINKLER DROPS MAX 48\"/>

PER STATE IFC AMENDMENTS 903.3.1.6 SPRINKLER COVERAGE IS NOT REQUIRED IN VESTIBULES THAT MEET THE FOLLOWING:

- 255 S.F. OR LESS
- IS OF NONCOMBUSTIBLE OR LIMITED COMBUSTIBLE CONSTRUCTION
- HAS GLAZING ALLOWING VISION INTO VESTIBULE
- ONLY PURPOSE IS INGRESS AND EGRESS
- CONTAIN NO FUELED EQUIPMENT, FLAMMABLE OR COMBUSTIBLE LIQUIDS, OR FURNITURE. INCIDENTAL COMBUSTIBLE STORAGE IN THE VESTIBULE IS LIMITED TO FIVE CUBIC FEET OF MATERIAL.

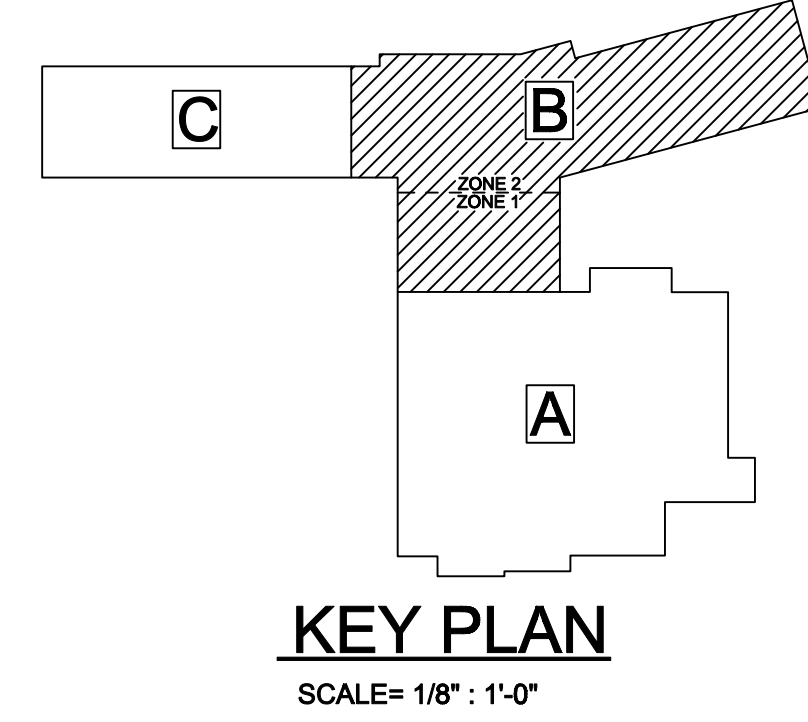
NONCOMBUSTIBLE EXTERIOR PROJECTION, NO PROTECTION REQUIRED PER NFPA 13.8.15.7.2

SYM	QTY	POSITION	FINISH	TEMP	K	NPT	SN	MFG.	MODEL#	ESCUTCHEON
151	PEND	WHITE	200	5.80	12"	TY3631	Typo	RFII	CONCEALED	
351	PEND	WHITE	212	11.20	3/4"	TY5622	Typo	ELOC	CONCEALED	
128	UPR	BRASS	200	5.80	12"	TY313	Typo	TY-FRB	N/A	
13	UPR	BRASS	200	5.80	12"	TY313	Typo	TY-FRB	N/A	
3	PEND	CHROME	200	5.80	1"	TY3255	Typo	DS-1	401	
2	UPR	BRASS	296	5.80	12"	TY313	Typo	TY-FRB	N/A	

646 TOTAL HEADS

SPRINKLER HEAD LEGEND

PIPE LEGEND
 — BLACK STEEL SPRINKLER PIPING



CALC PLACARD

Design Area #: 5 HAZARD: LIGHT
 Zone: 1 System Type: WET
 Location: ART A123

Flowing Outlets: 5 Remote Area: 1017
 Density: 0.10
 Req'd @ Slope of Riser: 202.6 gpm @ 91.1 psi
 Flow 202.6 gpm @ 16.7 psi
 Req'd @ Source: 302.6 gpm @ 16.7 psi
 Calculation Safety: 29.4 psi
 Includes: 100 gpm hose allowance

NOTE: CALCULATED 5 SPRINKLERS PER 11.2.3.2.3. THE MINIMUM DESIGN AREA SHALL BE THAT CORRESPONDING TO THE HAZARD IN FIG. 11.2.3.1 OR THE AREA PROTECTED BY 5 SPRINKLERS, WHICHEVER IS GREATER

LEVEL 1 FIRE SPRINKLER PLAN AREA B
 SCALE= 1/8" : 1'-0"

	<p>GENERAL NOTES</p> <ol style="list-style-type: none"> 1. SYSTEM INSTALLED PER NFPA-13 (2016 EDITION) AND STATE FIRE MARSHAL 2. ALL EQUIPMENT FOR THIS SYSTEM SHALL BE U.L. LISTED 3. MINIMUM PIPE SIZE SHALL BE 1" NOMINAL PIPE 4. ALL SCH-80 & LIGHTWALL PIPING HAS WELDED OUTLETS & GROOVED SHORT RADIUS FITTINGS 5. ALL WELDING PER NFPA-54(2) 6. NO INSTALLATION OR FABRICATION TO BEGIN WITHOUT APPROVED SHOP DRAWINGS 7. ALL PIPE LOCATIONS ARE TO BE FIELD MEASURED PRIOR TO FABRICATION AND INSTALLATION BY SPRINKLER CONTRACTOR 8. ALL DIMENSIONS SHOWN ARE CENTER TO CENTER 9. HIGH TEMPERATURE HEADS ARE TO BE FIELD LOCATED WHERE REQUIRED 10. PROVIDE ON SPRIE HEAD CABINET W/ HEAD & HEAD WRENCH 11. HANDERS ARE TO BE U.L. LISTED AND I.M. APPROVED 12. ELECTRICAL WIRING, ALARM, DETECTION AND SUPERVISORY BY OWNER 13. OWNER'S RESPONSIBILITY TO PROVIDE ADEQUATE HEATING TO PREVENT WET SYSTEM PIPING FROM FREEZING. 	<p>NO REVISIONS</p>	<p>DATE</p>	<p>APPROVAL STAMPS</p>	<p>Drawing Title: FIRE PROTECTION PLAN</p> <p>CASS LAKE-BENA ELEMENTARY 15308 MN HIGHWAY 371 CASS LAKE, MN 56633</p>	<p>Contract No. C23-20</p> <p>Drawing Date: 10/02/2023</p> <p>Scale: 1/8" = 1'-0"</p> <p>Drawn By: HL</p> <p>Approval By: STATE FIRE MARSHAL DIV.</p> <p>SHEET NO. FP 3 of 7</p>

Design Area #: 4 HAZARD: LIGHT
 Zone: 2 System Type: WET
 Location: CORRIDOR

Flowing Outlets: 4 Remote Area: 978
 Req'd @ Base of Riser
 Flow 161 gpm @ 95.8 psi
 Req'd @ Source
 Flow 261 gpm @ 17.5 psi
 Calculation Safety: 30 psi
 Includes 100 gpm Hose allowance

NOTE:
 4 SPRINKLER CALCULATED PER NFPA 13
 SEC. 11.2.3.3 & CORRIDOR CALC.

SHEET FP4 MATCHLINE SHEET FP3

NOTE:
 PENDENT SPRINKLERS FED FROM STEEL PIPING
 WILL BE INSTALLED OFF OF FLEXIBLE SPRINKLER
 DROPS MAX 48" LONG. SYSTEM HAS BEEN
 DESIGNED ACCORDING TO LENGTH

PER STATE IFC AMENDMENTS
 903.3.1 & SPRINKLER COVERAGE IS NOT REQUIRED IN VESTIBULES THAT
 MEET THE FOLLOWING

- 200 S.F. OR LESS
- IS OF NONCOMBUSTIBLE OR LIMITED COMBUSTIBLE CONSTRUCTION
- HAS GLAZING ALLOWING VISION INTO VESTIBULE
- ONLY PURPOSE IS INGRESS AND EGRESS
- CONTAIN NO FUELED EQUIPMENT, FLAMMABLE OR COMBUSTIBLE LIQUIDS, OR FURNITURE, INCIDENTAL COMBUSTIBLE STORAGE IN THE VESTIBULE IS LIMITED TO FIVE CUBIC FEET OF MATERIAL.

NONCOMBUSTIBLE ROOF
 OVERHANG, SPRINKLER
 PROTECTION NOT REQUIRED
 PER NFPA 13 SEC. 8.15.7.2



NOTE:
 PENDENT SPRINKLERS FED FROM STEEL PIPING
 WILL BE INSTALLED OFF OF FLEXIBLE SPRINKLER
 DROPS MAX 48" LONG. SYSTEM HAS BEEN
 DESIGNED ACCORDING TO LENGTH

Design Area #: 3 HAZARD: LIGHT
 Zone: 2 System Type: WET
 Location: KINDERGARTEN B134

Flowing Outlets: 5 Remote Area: 987
 Density: 0.10
 Req'd @ Base of Riser
 Flow 189.9 gpm @ 100.4 psi
 Req'd @ Source
 Flow 288.9 gpm @ 23.4 psi
 Calculation Safety: 23.2 psi
 Includes 100 gpm Hose allowance

NOTE:
 1500M REDUCED BY 40% TO 900M DUE TO
 CEILING HEIGHT PER NFPA 13 FIG.
 11.2.3.2.3.1

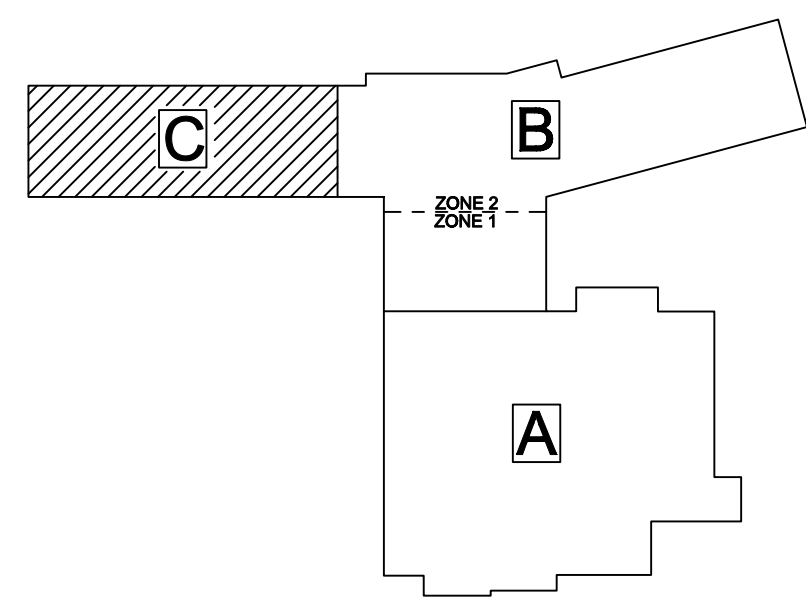
LEVEL 1 FIRE SPRINKLER PLAN AREA C
 SCALE= 1/8" : 1'-0"

SYM	QTY	POSITION	FINISH	TEMP	K	NPT	SIN	MFG.	MODEL#	ESCUTCHEON
151	PEND	WHITE	200	5.80	1/2"	TY3531	Typ	RFL	CONCEALED	
151	PEND	WHITE	212	11.20	3/4"	TY3532	Typ	ELCC	CONCEALED	
126	UPR	BRASS	200	5.80	1/2"	TY313	Typ	TY-FRB	N/A	
13	UPR	BRASS	200	5.80	1/2"	TY313	Typ	TY-FRB	N/A	
3	PEND	CHROME	200	5.80	1"	TY3235	Typ	DS-1	401	
2	UPR	BRASS	296	5.80	1/2"	TY313	Typ	TY-FRB	N/A	

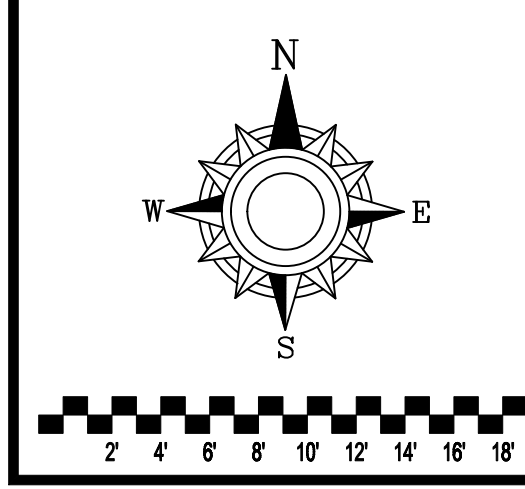
646 TOTAL HEADS

SPRINKLER HEAD LEGEND

PIPE LEGEND
 — BLACK STEEL SPRINKLER PIPING



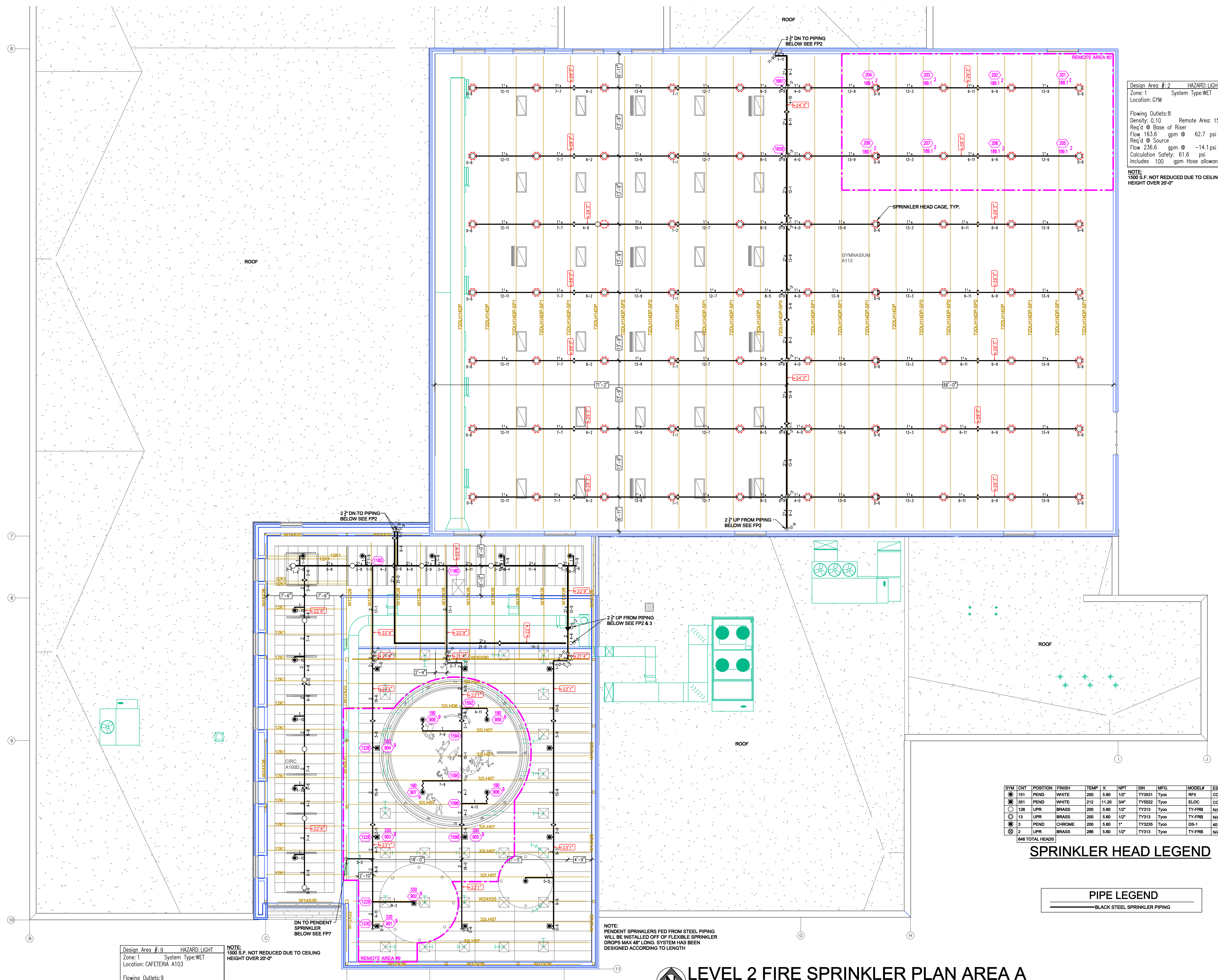
KEY PLAN
 SCALE= 1/8" : 1'-0"



- GENERAL NOTES
1. SYSTEM INSTALLED PER NFPA-13 (2016 EDITION) AND STATE FIRE MARSHAL
 2. ALL EQUIPMENT FOR THIS SYSTEM SHALL BE U.L. LISTED
 3. MINIMUM PIPE SIZE SHALL BE 1" NOMINAL PIPE
 4. ALL SCH-40 & LIGHTWALL PIPING HAS WELDED OUTLETS & GROOVED SHORT RADIUS FITTINGS
 5. ALL WELDING PER NFPA-514 (2011)
 6. NO INSTALLATION OR FABRICATION TO BEGIN WITHOUT APPROVED SHOP DRAWINGS
 7. ALL PIPE LOCATIONS ARE TO BE FIELD MEASURED PRIOR TO FABRICATION AND INSTALLATION BY SPRINKLER CONTRACTOR
 8. ALL DIMENSIONS SHOWN ARE CENTER TO CENTER
 9. HIGH TEMPERATURE HEADS ARE TO BE FIELD LOCATED WHERE REQUIRED
 10. PROVIDE ON SPARE HEAD CABINET W/ HEAD & 1 HEAD WRENCH
 11. HANGERS ARE TO BE U.L. LISTED AND I.M. APPROVED
 12. ELECTRICAL WIRING, ALARM, DETECTION AND SUPERVISORY BY OWNER
 13. OWNER'S RESPONSIBILITY TO PROVIDE ADEQUATE HEATING TO PREVENT WET SYSTEM PIPING FROM FREEZING.

NO	REVISIONS	DATE	APPROVAL STAMPS

Contract No. **C23-20**
 Drawing Date: 10/02/2023
 Scale: 1/8" = 1'-0"
 Drawing Title: **FIRE PROTECTION PLAN**
CASS LAKE-BENA ELEMENTARY
 15308 MN HIGHWAY 371
 CASS LAKE, MN 56633
 Drawing By: HL
 Approval By: STATE FIRE MARSHAL DIV.
 SHEET NO. **FP 4 of 7**



Design Area #2 HAZARD: LIGHT
 Zone: 1 System Type: WET
 Location: GYM
 Flowing Outlets: 8 Remote Area: 1512
 Density: 0.10 Req'd @ Base of Riser
 Flow 163.6 gpm @ 62.7 psi
 Req'd @ Source
 Flow 236.6 gpm @ -14.1 psi
 Calculation Safety: 61.6 psi
 Includes 100 gpm Hose allowance
 NOTE:
 1500 S.F. NOT REDUCED DUE TO CEILING
 HEIGHT OVER 20'-0"

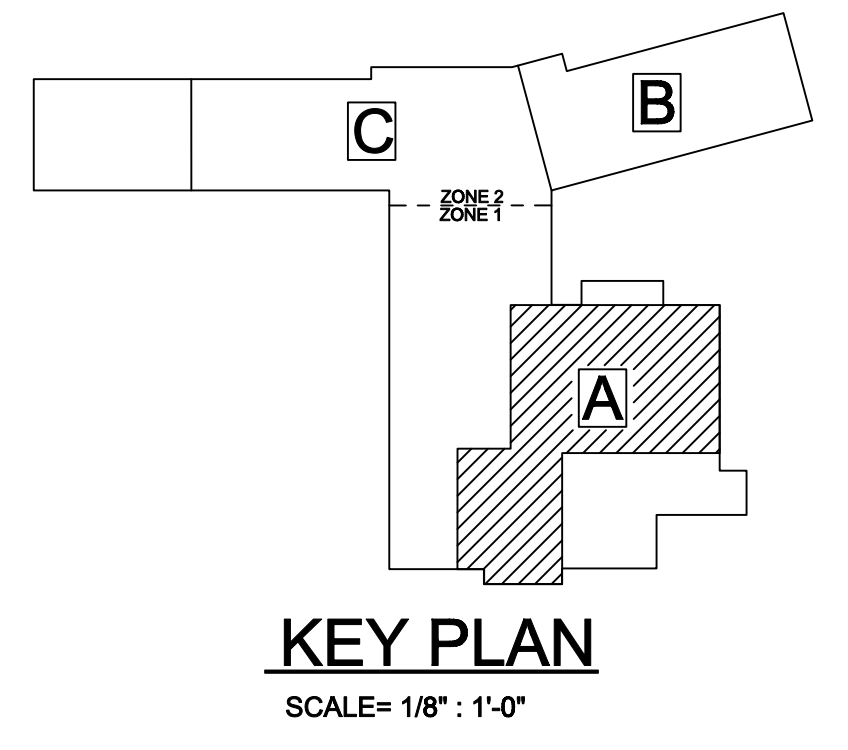
Design Area #9 HAZARD: LIGHT
 Zone: 1 System Type: WET
 Location: CAFETERIA A103
 Flowing Outlets: 9 Remote Area: 1632
 Density: 0.10 Req'd @ Base of Riser
 Flow 271 gpm @ 95 psi
 Req'd @ Source
 Flow 371 gpm @ 26.5 psi
 Calculation Safety: 17 psi
 Includes 100 gpm Hose allowance
 NOTE:
 1500 S.F. NOT REDUCED DUE TO CEILING
 HEIGHT OVER 20'-0"

NOTE: PENDENT SPRINKLERS FED FROM STEEL PIPING
 WILL BE INSTALLED OFF OF FLEXIBLE SPRINKLER
 GROUPS MAX 48" LONG. SYSTEM HAS BEEN
 DESIGNED ACCORDING TO LENGTH

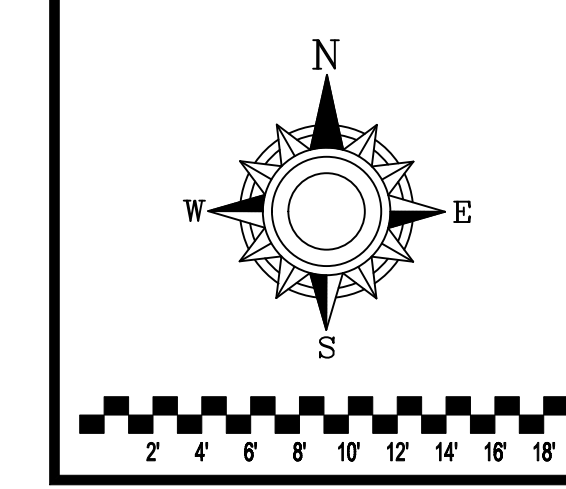
SYM	QTY	POSITION	FINISH	TEMP	K	NPT	ISN	MFG.	MODEL#	ESCUTCHEON
151	PEND	WHITE	200	5.80	12"	TY3631	Typo	RFI	CONCEALED	
351	PEND	WHITE	212	11.20	3/4"	TY5822	Typo	ELOC	CONCEALED	
128	UPR	BRASS	200	5.80	12"	TY913	Typo	TY-FRB	N/A	
13	UPR	BRASS	200	5.80	12"	TY913	Typo	TY-FRB	N/A	
3	PEND	CHROME	200	5.80	1"	TY3235	Typo	DS-1	ADJ	
2	UPR	BRASS	286	5.80	12"	TY913	Typo	TY-FRB	N/A	
646 TOTAL HEADS										

SPRINKLER HEAD LEGEND

PIPE LEGEND
 — BLACK STEEL SPRINKLER PIPING



LEVEL 2 FIRE SPRINKLER PLAN AREA A
 SCALE= 1/8" = 1'-0"



- GENERAL NOTES
1. SYSTEM INSTALLED PER NFPA-13 (2016 EDITION) AND STATE FIRE MARSHAL
 2. ALL EQUIPMENT FOR THIS SYSTEM SHALL BE U.L. LISTED
 3. MINIMUM PIPE SIZE SHALL BE 1" NOMINAL PIPE
 4. ALL SCH-40 & LIGHTWALL PIPING HAS WELDED OUTLETS & GROOVED SHORT RADIUS FITTINGS
 5. ALL WELDING PER NFPA-54(4.2)
 6. NO INSTALLATION OR FABRICATION TO BEGIN WITHOUT APPROVED SHOP DRAWINGS
 7. ALL PIPE LOCATIONS ARE TO BE FIELD MEASURED PRIOR TO FABRICATION AND INSTALLATION BY SPRINKLER CONTRACTOR
 8. ALL DIMENSIONS SHOWN ARE CENTER TO CENTER
 9. HIGH TEMPERATURE HEADS ARE TO BE FIELD LOCATED WHERE REQUIRED
 10. PROVIDE ON SPARE HEAD CABINET W/ HEADS & 1 HEAD WRENCH
 11. HANGERS ARE TO BE U.L. LISTED AND I.M. APPROVED
 12. ELECTRICAL WIRING, ALARM, DETECTION AND SUPERVISORY BY OWNER
 13. OWNER'S RESPONSIBILITY TO PROVIDE ADEQUATE HEATING TO PREVENT WET SYSTEM PIPING FROM FREEZING.

NO	REVISIONS	DATE	APPROVAL STAMPS

Drawing Title: FIRE PROTECTION PLAN

CASS LAKE-BENA ELEMENTARY
 15308 MN HIGHWAY 371
 CASS LAKE, MN 56633

Contract No. **C23-20**
 Drawing Date: 10/02/2023
 Scale: 1/8" = 1'-0"
 Drawn By: HL
 Approval By: STATE FIRE MARSHAL DIV.
 SHEET NO. **FP 5 of 7**