

NOTE: SUBSTRUCTURE SPRINKLER

IN ADDITION TO THE APPLICABLE PROVISIONS OF NFPA 13, NFPA-307 STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS, THE FOLLOWING PROVISIONS SHALL APPLY:

- (a) WHERE NARROW HORIZONTAL CHANNELS OR SPACES ARE CAUSED BY CAPS, STRINGERS, TIES AND OTHER STRUCTURAL MEMBERS, THE STANDARD UPRIGHT SPRINKLER MAY NOT PROJECT SUFFICIENT WATER UPWARD TO EXTINGUISH OR CONTROL FIRES ON THE UNDERSIDE OF THE PIER OR WHARF DECK. IN THESE CASES, A SPRINKLER THAT PROJECTS WATER UPWARD TO WET THE OVERHEAD, SUCH AS A STANDARD PENDENT SPRINKLER INSTALLED IN AN UPRIGHT POSITION, OR THE OLD-STYLE SPRINKLER SHALL BE USED. LOCATION, SPACING AND DEFLECTOR POSITION SHALL BE GOVERNED BY THE DISCHARGE PATTERN OF THE SPRINKLER AND THE STRUCTURE BEING PROTECTED. THE FOLLOWING DESIGN AND INSTALLATION GUIDES APPLY WHERE STANDARD PENDENT SPRINKLERS IN THE UPRIGHT POSITION OR OLD-STYLE SPRINKLERS ARE TO BE UTILIZED.
 - (1) THE MAXIMUM COVERAGE PER SPRINKLER HEAD SHALL BE LIMITED TO 80 SQ.FT. (7.44m).
 - (2) WHERE SPACING OR ARRANGEMENT OF STRINGERS CONSTITUTES TYPICAL OPEN-JOIST CONSTRUCTION DIRECTLY SUPPORTING THE DECK, SPRINKLER BRANCH LINES SHALL BE INSTALLED BETWEEN THE BENTS AT RIGHT ANGLES TO THE STRINGERS. SPACING BETWEEN BRANCH LINES SHALL NOT EXCEED 10 FT (3.05m). SPRINKLERS ON BRANCH LINES SHALL BE STAGGERED AND SPACED NOT TO EXCEED 8 FT (2.44m) ON CENTERS.
 - (3) WHERE CRISSCROSS CONSTRUCTION (TYPICALLY TIES ON STRINGERS) IS INVOLVED, CLOSER SPACING OF SPRINKLERS SHALL BE NECESSARY TO PROVIDE WETTING OF THE ENTIRE STRUCTURE.
 - (4) DEFLECTOR OF SPRINKLERS ON LINES UNDER STRINGERS SHALL BE LOCATED NOT LESS THAN 4 IN. (101.6mm) NOR MORE THAN 10 IN. (254mm) BELOW THE BOTTOM PLANE OF THE STRINGER AND NOT MORE THAN 18 IN. (457mm) BELOW THE UNDERSIDE OF THE PIER OR WHARF DECK.
 - (5) THE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 13, NFPA-307 STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS. SPRINKLERS SHALL BE 3/4 IN. (19.05mm) ORIFICE AND SHALL DISCHARGE AT A MINIMUM PRESSURE OF 12.5 PSI (0.86 x 10⁵ PA) DESIGN AREA SHALL BE BASED UPON THE LARGEST AREA BETWEEN FIRE STOPS PLUS ADDITIONAL AREA EMBRACING AT LEAST TWO BRANCH LINES ON OPPOSITE SIDES OF THE FIRE-STOP. MINIMUM DESIGN AREA SHALL BE NOT LESS THAN 5,000 SQ FT (465m²).
 - (6) THE TEMPERATURE RATING OF THE SPRINKLER SHALL NOT EXCEED 165°F (73.9°C).
 - (7) THE MAXIMUM AREA TO BE PROTECTED BY ANYONE SYSTEM SHALL BE LIMITED TO 25,000 SQ FT (2325m²).
- (b) SPRINKLERS DESIGNED AND APPROVED SPECIFICALLY FOR THE PROTECTION OF COMBUSTIBLE SUBSTRUCTURES SHALL BE INSTALLED IN CONFORMITY WITH THEIR LISTING.
- (c) THE PIPE HANGERS SHALL BE PLACED WHERE THEY WILL BE IN THE WETTING PATTERN OF THE SPRINKLER TO PREVENT THE LAG SCREWS FROM "BURNING OR CHARRING OUT" DROPPING SPRINKLER PIPING, AND BLEEDING THE SYSTEM. THE DISTANCE FROM THE SPRINKLER TO THE HANGER SHALL NOT EXCEED 18 IN. (457mm).
- (d) HORIZONTAL AND VERTICAL BRACING SHALL BE PROVIDED AT NOT MORE THAN 20-FT (6.1m) INTERVALS ON ALL SPRINKLER PIPING 3 IN. (76.2mm) OR LARGER, WHICH IS PARALLEL TO AND WITHIN 50 FT (15.2m) OF THE FACE OF THE PIER OR WHARF AND WHERE IT MAY BE SUBJECTED TO HEAVY FIREBOAT NOZZLE STREAMS.
- (e) SPRINKLER SYSTEMS, INCLUDING HANGER ASSEMBLIES AND BRACING, IN UNDER-DECK AREAS SHALL BE PROPERLY PROTECTED THROUGHOUT AGAINST CORROSION. REFER TO SPECIFICATIONS FOR PROTECTION.

FIRE PROTECTION NOTES

- 1.1 CODES, STANDARDS AND APPROVALS
DESIGN, INSTALLATION, AND TESTING SHALL CONFORM TO THE FOLLOWING STANDARDS:
1. BRITISH COLUMBIA BUILDING CODE (2018)
2. NATIONAL FIRE PROTECTION ASSOCIATION #13 (2013)
3. NATIONAL FIRE PROTECTION ASSOCIATION #307 (2013)
- 1.2 DESCRIPTION OF WORK
THE FOLLOWING FIRE PROTECTION SYSTEMS ARE INCLUDED IN THIS SECTION OF THE WORK:
1. NEW DRY SPRINKLER SYSTEMS

BY UTILIZING THESE FIRE SPRINKLER DRAWINGS FOR INSTALLATION, THE INSTALLATION CONTRACTOR ACKNOWLEDGES THAT THEY HAVE FULLY REVIEWED THESE PLANS TO ENSURE THEY COMPLY WITH THE CONTRACT SCOPE AND HAVE READ AND UNDERSTOOD ALL CONSULTANT DRAWINGS AND SPECIFICATIONS INCLUDING RELEVANT SYSTEM COMPONENT DESIGN & INSTALLATION CRITERIA.

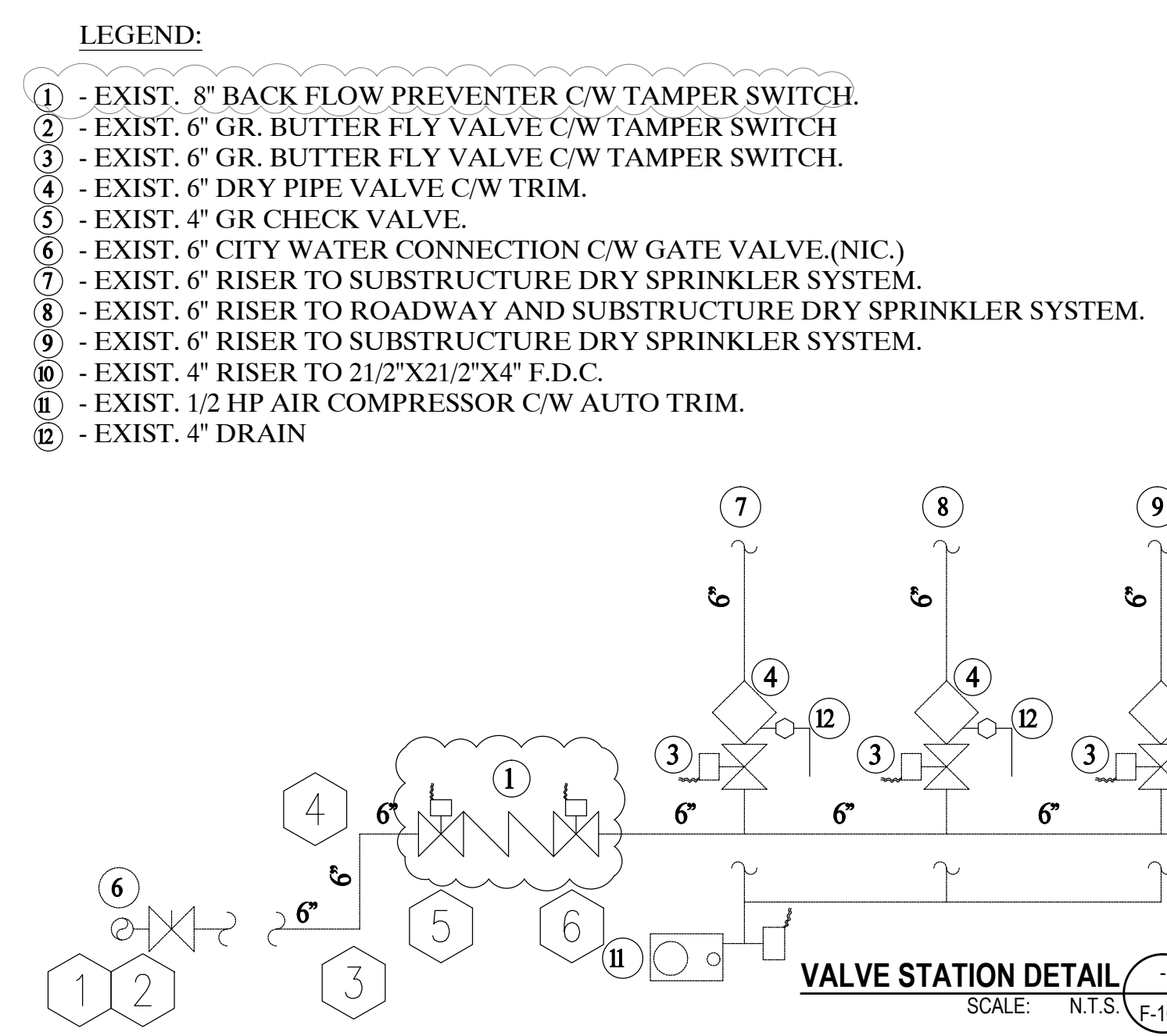
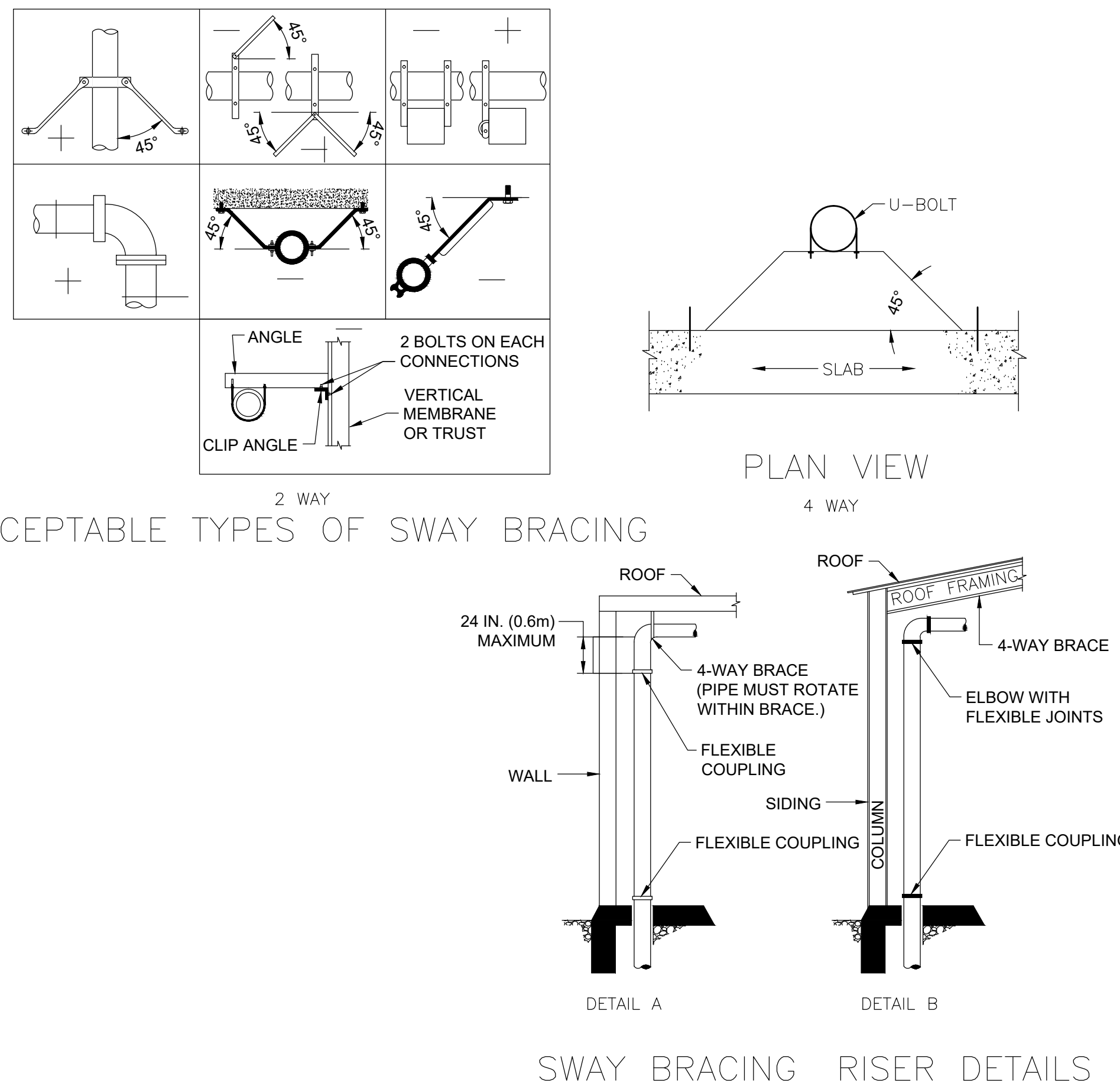
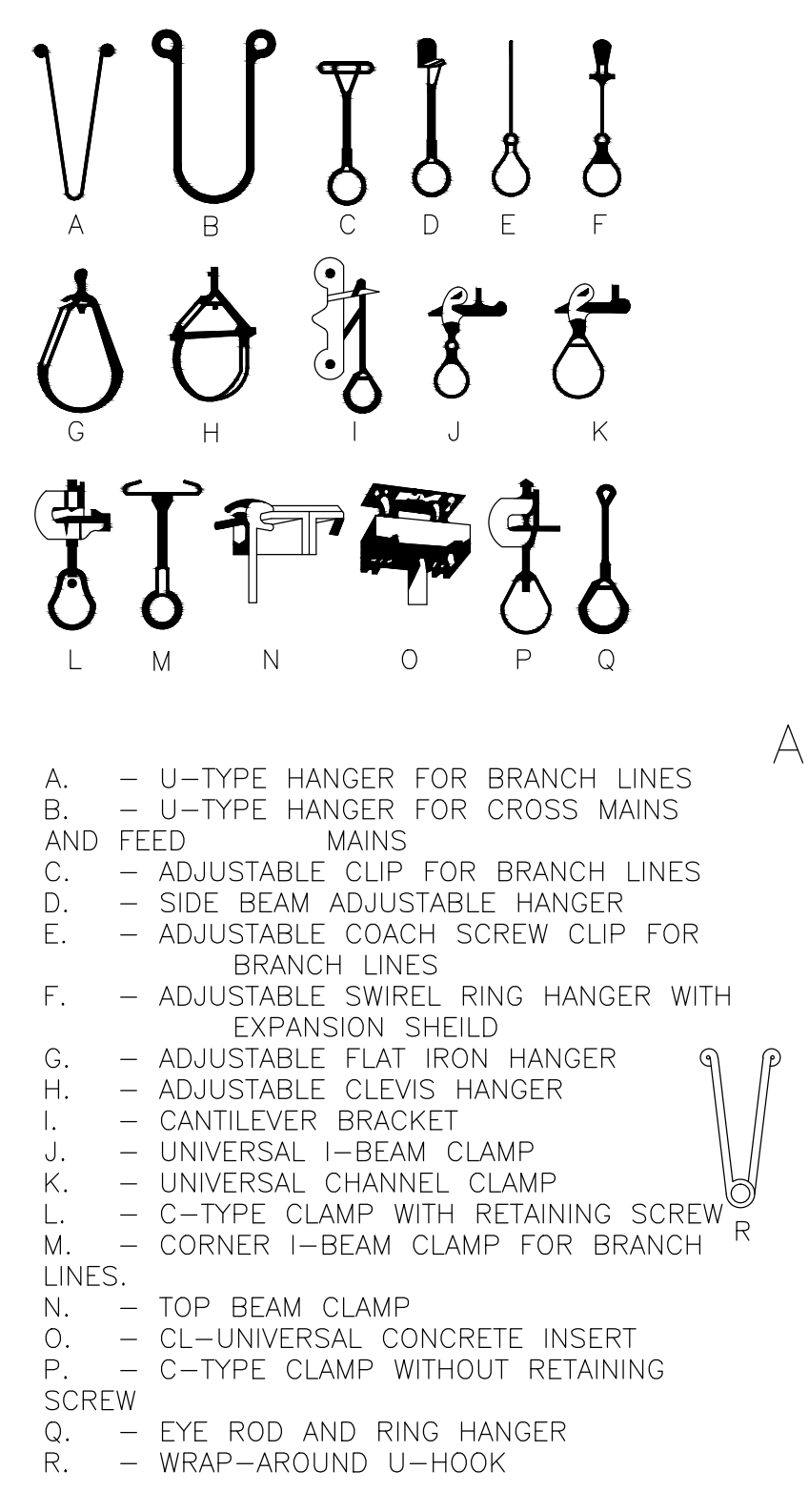
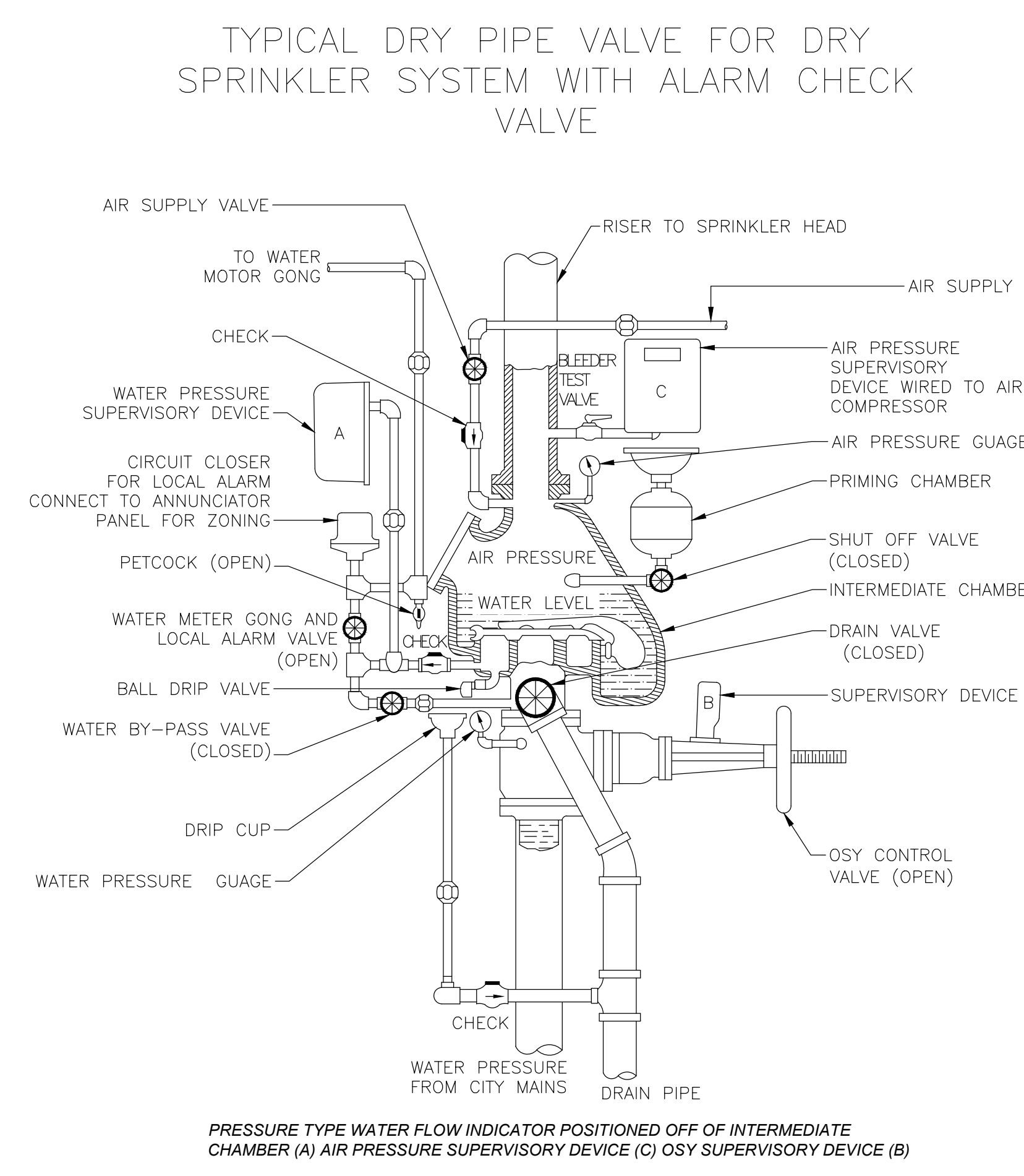
- 1.3 DESIGN CRITERIA

AREA	SYSTEM	DENSITY	DESIGN AREA	HAZARD GROUP	AREA PER HEAD (SQ. MTS)
SUBSTRUCTURE	DRY	0.21	465 SQ. MTS (5000 SQ.FT.)	EXTRA HAZARD	7.44 SQ. MTS (80 SQ.FT.)

- 1.4 WATER SUPPLY INFORMATION
TAKEN ON OCT. 28, 2020 BY RICHMOND MUNICIPALITY WATERWORKS
STATIC PRESSURE: 89 PSI
RESIDUAL PRESSURE: 20 PSI AT 540 LITERS/SEC. (8599.20 USGPM)

SPRINKLERS LEGEND

⊙	NEW UPRIGHT SPRINKLER HEADS
○	EXISTING UPRIGHT SPRINKLER HEADS
—	NEW SPRINKLER PIPE
---	EXISTING SPRINKLER PIPE



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REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'Ouest

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No.	DATE	DESCRIPTION
4	May 07 2021	RE-ISSUED FOR BUILDING PERMIT
3	Mar. 15 2021	ISSUED FOR BUILDING PERMIT
2	Nov. 10 2020	ISSUED FOR TENDER
1	Nov. 05 2020	ISSUED FOR CLIENT REVIEW

DESTROY ALL PRINTS DATED PREVIOUS TO FINAL DATE ABOVE.

REVISIONS

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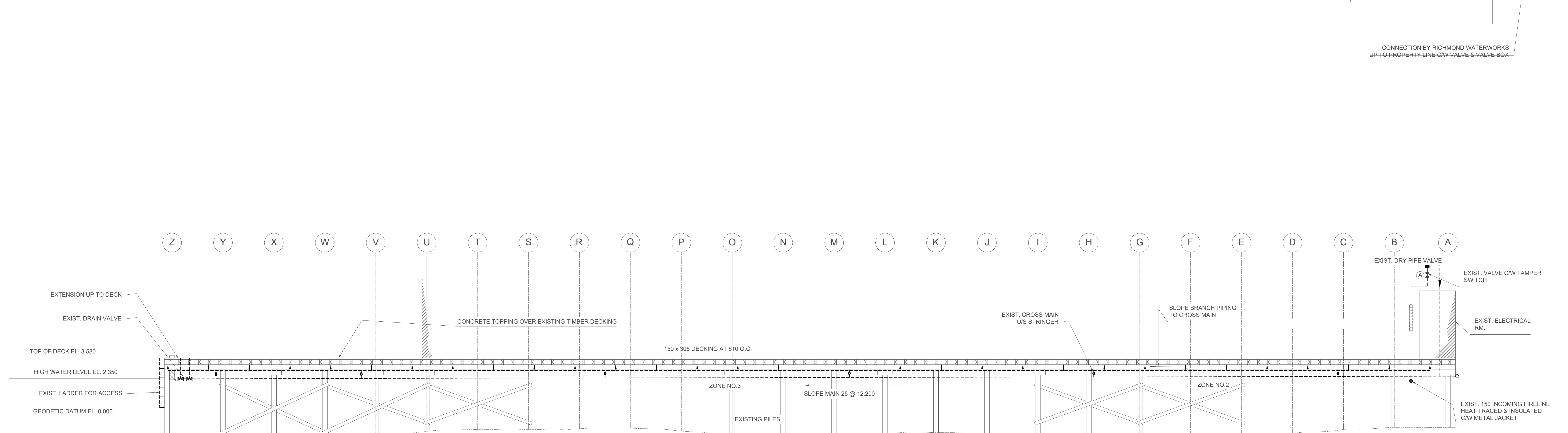
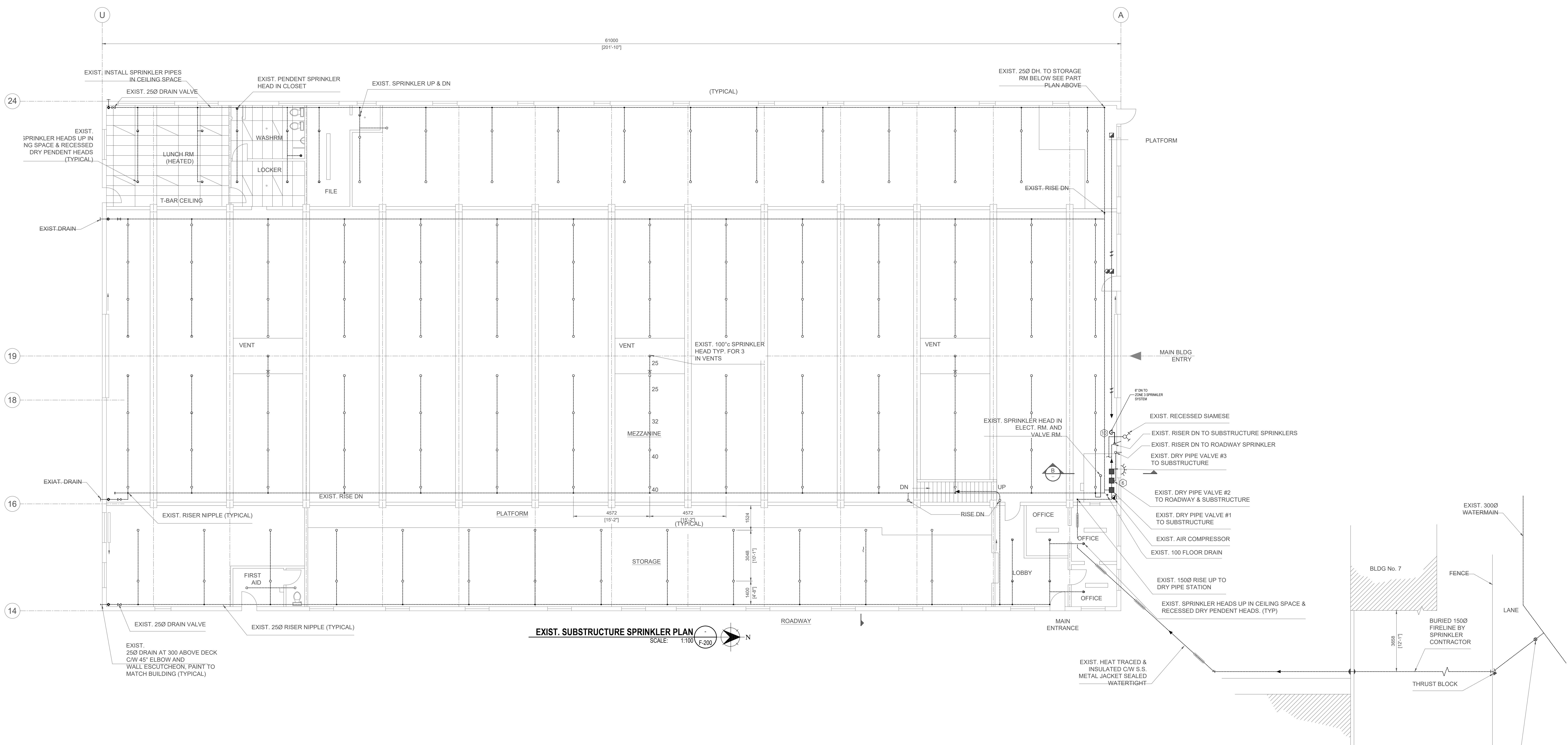
PROJECT: STEVESTON GULF BUILDING 8 SUBSTRUCTURE FIRE SPRINKLER REHABILITATION ZONE 3

BLDG 8, 12331 3RD AVENUE
RICHMOND, B.C.

TITLE: **SITE PLAN, SECTION, DETAILS AND NOTES**

DRAWN	CHECKED	PROJECT No.
HK	SS	13454
SCALE	DRAWING No.	
AS NOTED		
DATE		
18 May 2021		

F-100



No.	DATE	DESCRIPTION
4	May 07 2021	RE-ISSUED FOR BUILDING PERMIT
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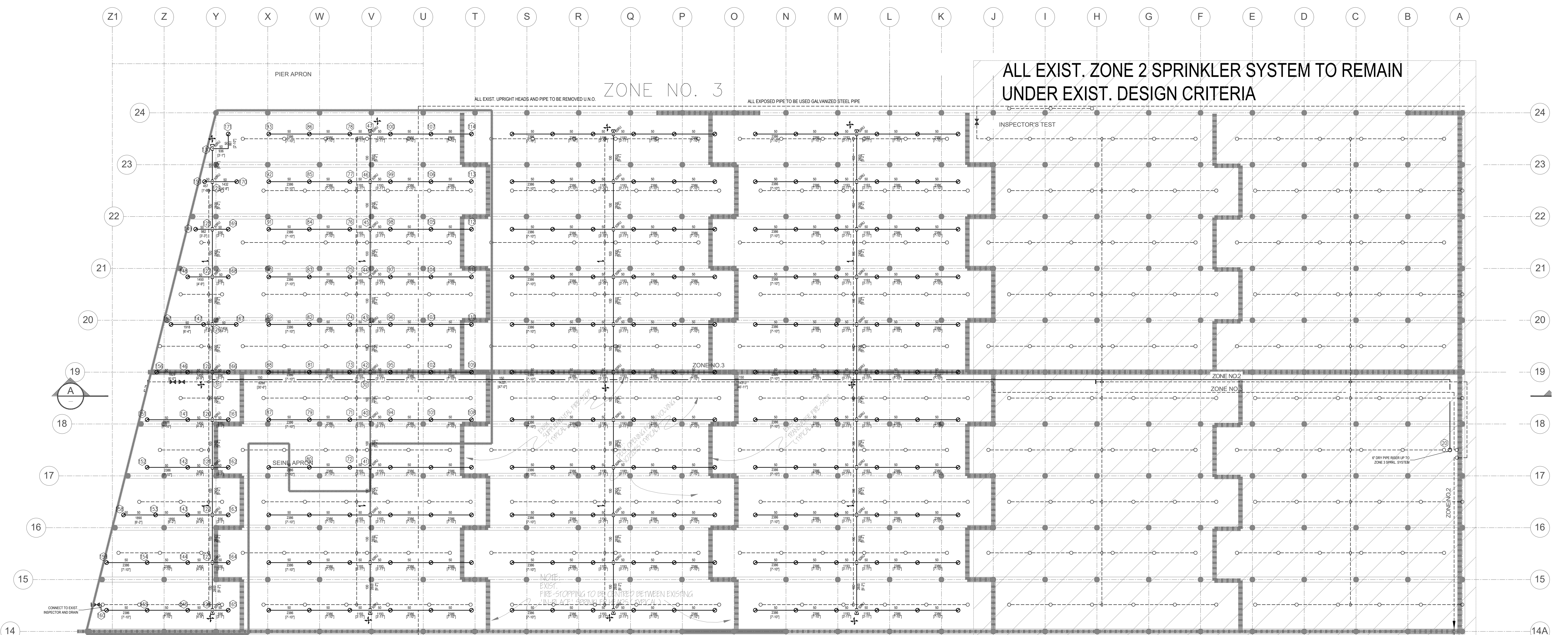
PROJECT
STEVESTON GULF BUILDING 8 SUBSTRUCTURE FIRE SPRINKLER REHABILITATION ZONE 3

BLDG 8, 12331 3RD AVENUE
RICHMOND, B.C.

TITLE
EXIST. SUBSTRUCTURE SPRINKLER PLAN AND SECTION

DRAWN	HK	CHECKED	SS	PROJECT No.	13454
SCALE	AS NOTED	DRAWING No.			
DATE	18 May 2021	F-200			

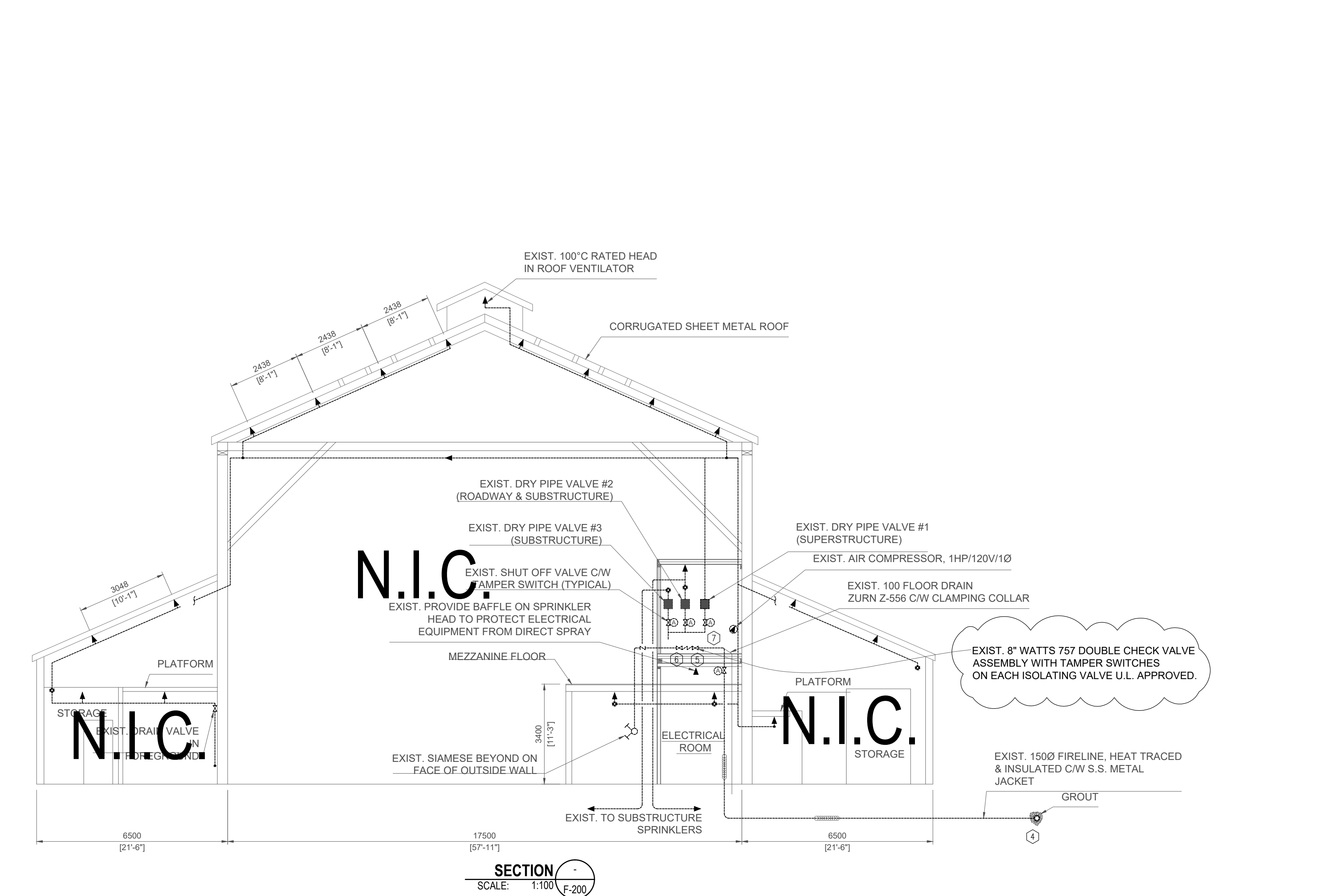
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ZONE 3 SUBSTRUCTURE SEINE LOFT AND APRON SPRINKLER PLAN
 SCALE: 1:100 (F-300)

HYDRAULIC CALCULATION ZONE 3 AREA: SUBSTRUCTURE NFPA 13 - EXTRA HAZARD DENSITY: 0.21 USGPM / FT² DESIGN AREA: 5,000.0 FT² ACTUAL DESIGN AREA: 5,045.0 FT² No. OF SPRINKLERS FLOWING: 75 No. OF SPRINKLERS: 80 FT² MAXIMUM DESIGN COVERAGE / OR PENDENT SPRINKLER: 12.5 PS MINIMUM PRESSURE / OR PENDENT SPRINKLER: 12.5 PS SYSTEM DEMAND AT CITY CONNECTION: 1891.66 USGPM @ 72.12 PSI EXCESS PRESSURE AT DEMAND FLOW: 12.66 PSI INCLUDING 250 USGPM OUTSIDE HOSE ALLOWANCE

SYM	SPRINKLER DESCRIPTION	ORIFICE TEMP	FINISH	QUANTITY	NOTE
⊙	VICTALIC VC250	127°	74°C	229	WAX COATED PENDENT HEAD TO BE INSTALLED IN THE UPRIGHT POSITION (TYP.)
TOTAL COUNT = 229					



NOTE: FIRE STOPPING

NOTES:

- TRANSVERSE FIRE-STOP SHALL BE CONSTRUCTED OF A MATERIAL HAVING A MIN. 60 MINUTE FIRE-RESISTANCE RATING. THE TRANSVERSE FIRE-STOP SHALL FIT TIGHTLY TO THE UNDERSIDE OF THE PIER DECK, AROUND STRUCTURAL MEMBERS, OR PIPING THAT PASS THROUGH THE FIRE-STOP, SO AS TO MAINTAIN AN EFFECTIVE BARRIER AGAINST FIRE SPREAD AND DRAFT. THE TRANSVERSE FIRE-STOP SHALL BE SUPPORTED BY CONCRETE FOUNDATIONS, OR PILES. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL.
- MATERIALS SUCH AS TREATED WOOD PLANKING, OR EQUIVALENT MATERIAL HAVING A MINIMUM 60 MINUTE FIRE-RESISTANCE RATING, AND EQUIVALENT IN STABILITY AND RESISTANCE TO PHYSICAL DAMAGE ARE ACCEPTABLE. MATERIALS MUST BE PRE-APPROVED PRIOR TO COMMENCING THE WORK.
- SUPPLEMENTAL FIRE-STOPS SHALL BE OF THE SAME CONSTRUCTION AS THE TRANSVERSE FIRE-STOPS. IT IS NOTED THAT FOR THIS PIER, ALL ELEMENTS ARE EXPOSED AND SUBJECT TO PHYSICAL DAMAGE. STEPS SHALL BE TAKEN TO PROTECT THE FIRE-STOPPING.
- BLOCKING SHALL BE MIN. 150mm THICK WEATHER TREATED WOOD BLOCKING, OR EQUIVALENT MATERIALS HAVING A FIRE-RESISTANCE RATING OF NOT LESS THAN 1 HR. EQUIVALENT MATERIALS MUST BE PRE-APPROVED.
- THE CONTRACTOR TO VERIFY THE DEPTH TO THE "LOW WATER LEVEL" OR TO THE RIVER BED, WHICHEVER IS THE LEAST.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS DETAILING THE PROPOSED METHOD OF ATTACHING THE FIRE-STOPPING, BLOCKING, AND DECK OPENINGS.
- THE CONTRACTOR SHALL MAKE THE NECESSARY MODIFICATIONS TO THE EXISTING FIRE-STOPPING (TRANSVERSE & SUPPLEMENTAL) TO BE CENTRED BETWEEN EXISTING "IN-PLACE" SPRINKLER HEADS.

DESIGN CRITERIA:

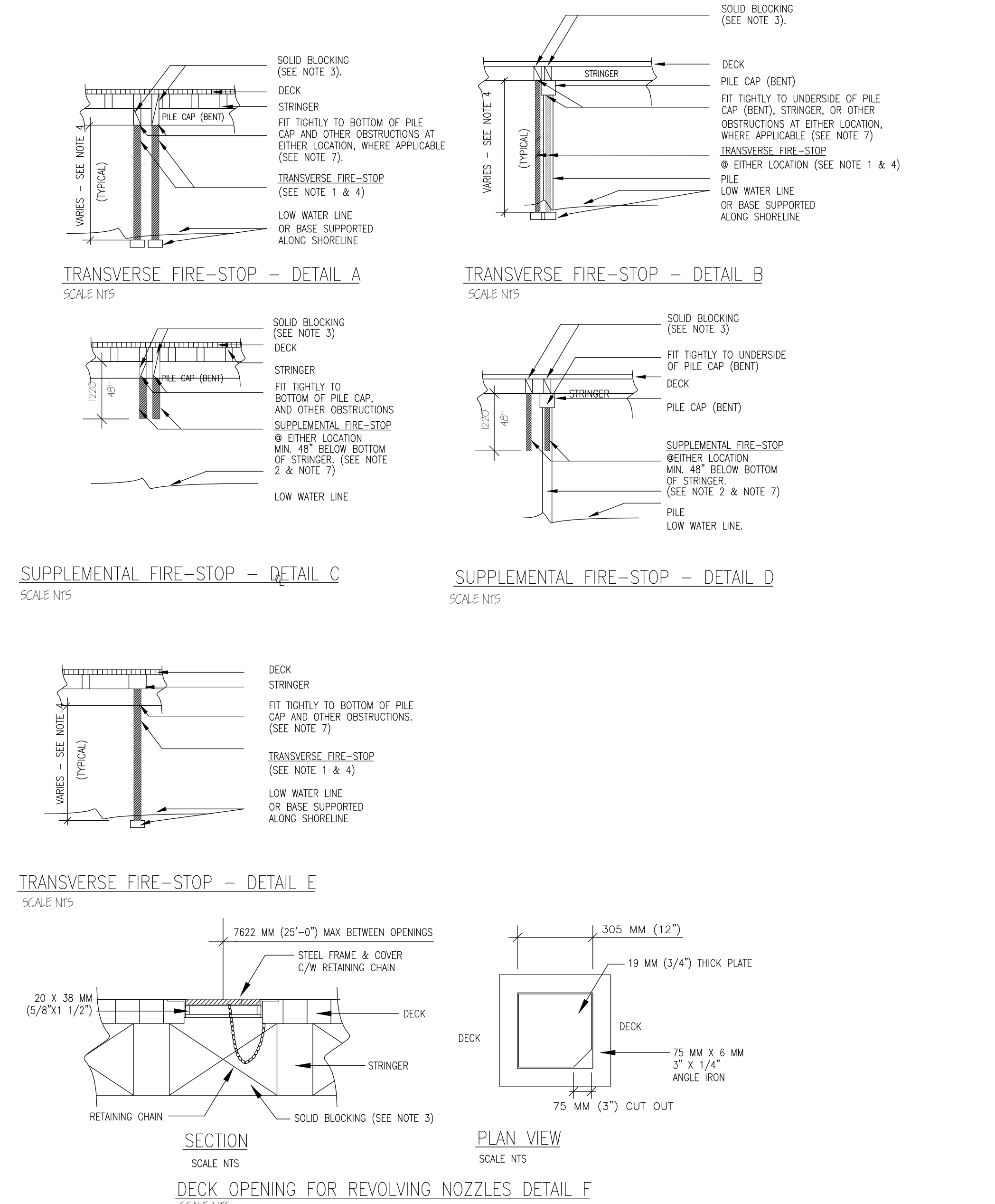
- NFPA 307, "STANDARD FOR THE CONSTRUCTION AND FIRE PROTECTION OF MARINE TERMINALS, PIERS, AND WHARVES."
- FOC 373, "STANDARD FOR PIERS & WHARVES," FIRE COMMISSIONER OF CANADA.

AUTHORITIES:

- FIRE COMMISSIONER OF CANADA
- STEVESTON HARBOUR AUTHORITY
- DEPARTMENT OF FISHERIES & OCEANS, SMALL CRAFT HARBOURS BRANCH.

PROJECT SCOPE:

- INSTALLATION OF TRANSVERSE AND SUPPLEMENTAL FIRE-STOPS, BLOCKING OVER THE BENTS & REVOLVING NOZZLE DECK OPENINGS TO SUPPLEMENT EXISTING SPRINKLER PROTECTION.



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BLDG 8, 12331 3RD AVENUE RICHMOND, B.C.

TITLE: SUBSTRUCTURE SEINE LOFT AND APRON (ZONE 3) SPRINKLER PLAN

DRAWN: HK
 CHECKED: SS
 PROJECT No: 13454
 SCALE: AS NOTED
 DRAWING No: F-300
 DATE: 18 May 2021