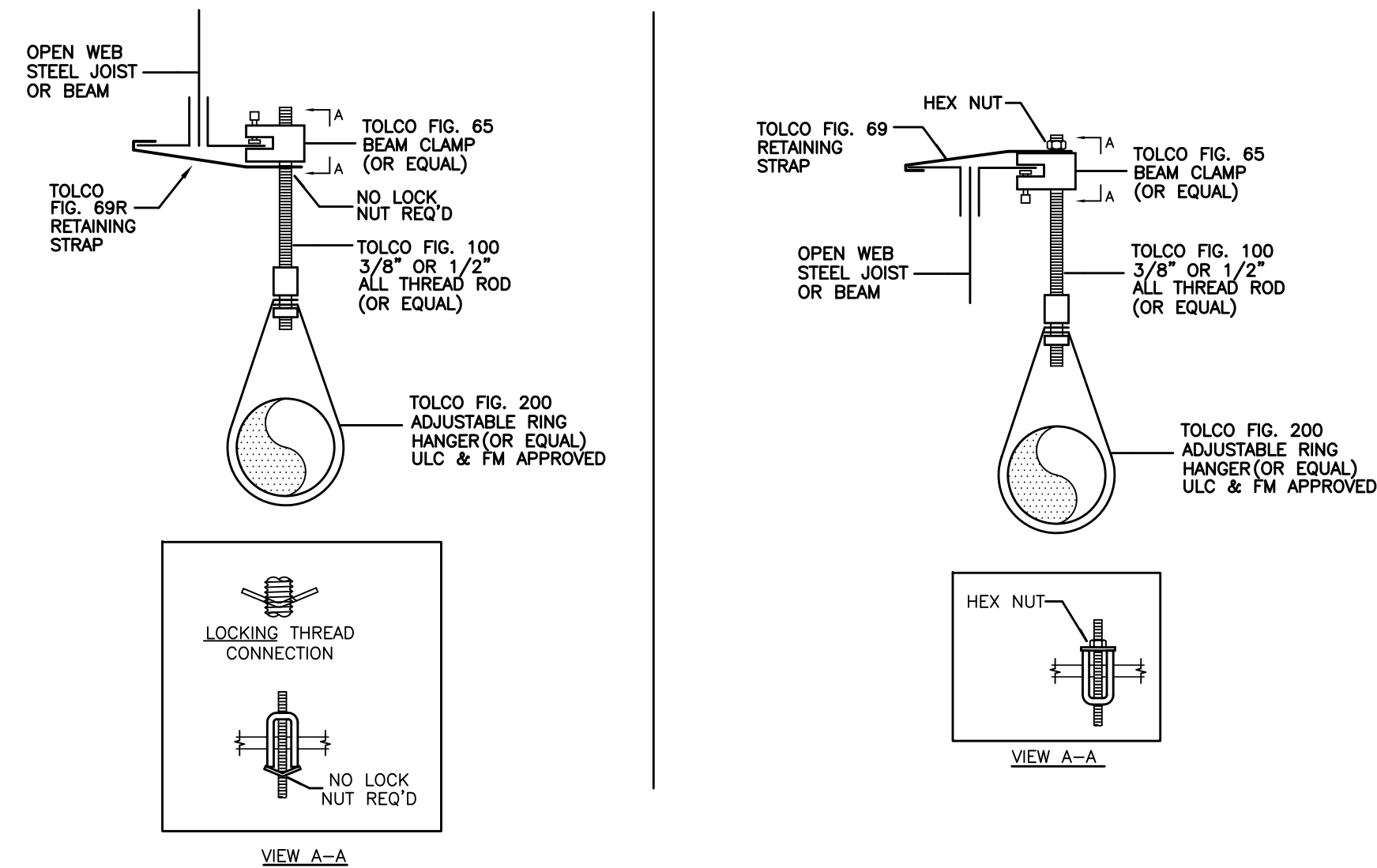


GENERAL SPECIFICATIONS



C-TYPE CLAMPS (INCLUDING BEAM AND LARGE FLANGE CLAMPS) USED TO ATTACH HANGERS TO THE BUILDING STRUCTURE IN AREAS SUBJECT TO EARTHQUAKES SHALL BE EQUIPPED WITH A RESTRAINING STRAP.

HANGER DETAIL
N.T.S.

CONTRACTOR TO CO-ORDINATE LOCATION OF SPRINKLERS WITH RESPECT TO SURFACE MOUNTED LIGHT FIXTURES AND MAINTAIN MINIMUM CLEARANCE AS REQUIRED BY NFPA 13 TO AVOID ANY OBSTRUCTION TO SPRAY PATTERN OF SPRINKLERS.

CONTRACTOR TO CO-ORDINATE COLOUR AND TYPE OF SPRINKLER HEADS WITH ARCHITECT.

CONTRACTOR TO CO-ORDINATE LOCATION AND ELEVATION OF PIPING AND SPRINKLERS WITH ARCHITECT AND OTHER TRADES PRIOR TO FABRICATION AND INSTALLATION.

CONTRACTOR TO INCLUDE FOR OFFSETTING BRANCH LINES AROUND ROOF TOP OPENINGS

- 1.0 THESE DRAWINGS ARE FOR PERMIT, AND FOR PRICING, AND MUST BE ADHERED TO FOR INSTALLATION. IF CONTRACTOR WISHES TO ALTER DRAWINGS, THEN HE IS RESPONSIBLE FOR OBTAINING RE-APPROVALS.
- 2.0 CONTRACTOR TO SUPPLY AND INSTALL A COMPLETE AND FULLY OPERATIONAL AUTOMATIC SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS AND AS INDICATED IN THE SPECIFICATIONS AND CONFORMING TO N.F.P.A. REQUIREMENTS, O.B.C. REQUIREMENTS AND THE REQUIREMENTS OF THE LOCAL AUTHORITIES.
- 3.0 UPON COMPLETION OF THE INSTALLATION, THE CONTRACTOR SHALL TEST THE SYSTEM AND SUBMIT TO THE ENGINEER COMPLETED CONTRACTORS TEST CERTIFICATES STATING THAT THE SYSTEMS HAVE BEEN INSTALLED, TESTED AND APPROVED BY THE AUTHORITIES HAVING JURISDICTION IN ACCORDANCE WITH N.F.P.A.#13, LATEST OR APPLICABLE EDITION.
- 4.0 ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL CODES, STANDARDS BY-LAWS AND AUTHORITIES HAVING JURISDICTION.
- 5.0 SYSTEMS TO BE INSTALLED AS PER N.F.P.A. STANDARDS, AND LOCAL AUTHORITIES
- 6.0 SPRINKLER CONTRACTOR TO CO-ORDINATE INSTALLATION WITH EXISTING SITE CONDITIONS AND ACCEPT RESPONSIBILITY FOR AND COST OF MAKING ADJUSTMENTS TO PIPING TO AVOID INTERFERENCE WITH MECHANICAL, ELECTRICAL AND OTHER BUILDING COMPONENTS.
- 7.0 SPRINKLER CONTRACTOR TO INCLUDE FOR OFFSETS IN SPRINKLER PIPING AND MUST SUPPLY AND INSTALL TRAPEZE HANGERS WHERE REQUIRED. HANGERS FOR MAINS TO BE INSTALLED AT PANEL POINTS OF JOISTS.
- * 8.0 ALL SPRINKLER VALVES TO BE SUPERVISED, AND U.L.C. LISTED.
- * 9.0 SPRINKLER CONTRACTOR TO ALLOW FOR ADDITIONAL PRESSURE SWITCHES WHERE REQUIRED FOR ALARM SYSTEM.
- 10.0 CONTRACTOR TO ALLOW IN PRICE FOR SUFFICIENT PIPE AND FITTINGS TO INSTALL PENDENT SPRINKLERS WITHIN A 5 FT. RADIUS OF THE LOCATION SHOWN ON DRAWINGS.
- 11.0 ALL MATERIALS USED IN THE INSTALLATION OF THE SPRINKLER SYSTEM SHALL BE CANADIAN MADE, UNLESS SPECIFICALLY APPROVED IN WRITING PRIOR TO INSTALLATION BY THE ARCHITECTS AND/OR ENGINEERS RESPONSIBLE FOR THE SYSTEM DESIGN.
- 12.0 ALL SPRINKLER EQUIPMENT SHALL BE OF ONE MANUFACTURER FROM THE FOLLOWING: GRINNELL, VIKING, CENTRAL, RELIABLE OR APPROVED EQUAL. ALL SHALL BE U.L.C. LISTED FOR THEIR SPECIFIC APPLICATION.
- 13.0 DRAWINGS ARE NOT TO BE SCALED.
- 14.0 THESE DRAWINGS ARE THE PROPERTY OF THE ENGINEERS AND SHALL NOT BE ALTERED WITHOUT APPROVAL. DRAWINGS SHALL BE RETURNED UPON REQUEST.
- 15.0 SPRINKLER HEADS SHALL BE U.L.C. LISTED AND SHALL BE THE TYPE AND TEMPERATURE RATING SPECIFIED ON THE DRAWINGS.
- 16.0 PROVIDE SPARE SPRINKLER HEADS AND WRENCH IN A METAL CABINET, MOUNTED ON THE WALL NEAR THE MAIN SPRINKLER VALVE HEADER, AMOUNT AS PER N.F.P.A. STANDARD # 13 LATEST OR APPLICABLE EDITION.
- 17.0 SPRINKLERS OF SUITABLE TEMPERATURE RATING SHALL BE INSTALLED NEAR HEATING EQUIPMENT AS SPECIFIED IN N.F.P.A. STANDARD # 13 LATEST OR APPLICABLE EDITION.
- 18.0 PROVIDE ALL NECESSARY TRIM REQUIRED FOR ALARM CHECK VALVES TO COMPLY WITH APPLICABLE CODES AND REQUIREMENTS.
- 19.0 PENDENT SPRINKLERS INSTALLED WHERE SUSPENDED CEILING TILES OR DRYWALL OCCUR ARE TO BE EQUIPPED WITH TWO PIECE ESCUTCHEONS. (WHERE APPLICABLE)
- 20.0 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF THE FIRE PROTECTION SYSTEMS AND FOR CO-ORDINATION WITH ALL SITE CONDITIONS. BEFORE COMMENCING WORK, EXAMINE THE SITE AND THE EXISTING CONDITIONS AND REPORT IMMEDIATELY TO THE ENGINEER ANY DEFECT OR INTERFERENCE AFFECTING THE COMPLETION OF THE WORK OR THE GUARANTEE OF THIS CONTRACTOR.
- 21.0 CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB AND REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- * 22.0 PROVIDE FLOW ALARM DEVICES, SUPERVISORY SWITCHES AND PRESSURE SWITCHES WHERE SHOWN ON DRAWINGS. WIRING TO ANNUNCIATOR SHALL BE BY ELECTRICAL CONTRACTOR. PROVIDE NECESSARY SIGNS WHERE REQUIRED BY THE LOCAL FIRE AUTHORITIES.

* DENOTES * IF APPLICABLE *

- 23.0 PROVIDE SHOP DRAWINGS FOR THE FOLLOWING:
 - * A) - SPRINKLER HEADS
 - * B) - ALARM VALVE AND TRIM
 - * C) - SUPERVISORY DEVICES
 - * D) - HANGERS
 - * E) - FLOW SWITCHES
- 24.0 A COPY OF N.F.P.A. STANDARD # 25 IS TO BE PROVIDED AND LEFT IN A VISIBLE LOCATION IN THE SPRINKLER ROOM.
- 25.0 DIMENSIONS AND/OR MEASUREMENTS INDICATED ON THE DRAWINGS ARE TO BE VERIFIED AT SITE AND ANY MAJOR DISCREPANCIES TO BE REPORTED PRIOR TO FABRICATION AND INSTALLATION. (IF APPLICABLE)
- 26.0 EXACT LOCATION AND ELEVATION OF MAINS TO BE DETERMINED BY CONTRACTOR TO SUIT SITE CONDITIONS.
- 27.0 CONTRACTOR TO CO-ORDINATE LOCATION OF SPRINKLERS WITH RESPECT TO SURFACE MOUNTED LIGHT FIXTURES AND MAINTAIN MINIMUM CLEARANCE AS REQUIRED BY NFPA 13 TO AVOID ANY OBSTRUCTION TO SPRAY PATTERN OF SPRINKLERS.
- 28.0 CONTRACTOR TO PROVIDE NECESSARY HANGERS AND ASSEMBLY TO COMPLY WITH THE FOLLOWING:
 - A) UNSUPPORTED LENGTH BETWEEN END SPRINKLER AND LAST HANGER SHALL NOT EXCEED 36 INCHES FOR 1" DIA. PIPE, 48" FOR 1 1/2" DIA PIPE AND 60" FOR 2" DIA. PIPE OR LARGER. NOTE: WHEN PRESSURE EXCEEDS 100 PSI, REFER TO NFPA STANDARD # 13
 - B) THE LENGTH OF AN UNSUPPORTED ARM-OVER TO A SPRINKLER SHALL NOT EXCEED 24". NOTE: WHEN PRESSURE EXCEEDS 100 PSI, REFER TO NFPA STANDARD # 13
- 29.0 MINIMUM WALL THICKNESS OF SPRINKLER PIPING TO BE EQUIVALENT TO SCHEDULE # 10S.
- 30.0 CONTRACTOR TO INCLUDE FOR AN ADDITIONAL 10 SPRINKLERS FOR BELOW OBSTRUCTIONS, TO SUIT SITE CONDITIONS AND MINOR REVISIONS ETC.
- 31.0 SPRINKLERS IN LIGHT HAZARD OCCUPANCIES (ie OFFICES, SCHOOLS ETC.) TO BE QUICK RESPONSE TYPE.
- * 32.0 SPRINKLER SYSTEM TO BE SEISMICALLY RESTRAINED TO ONTARIO BUILDING CODE AND NFPA #13 REQUIREMENTS.
- 33.0 CONTRACTOR TO PROVIDE ADEQUATE DRAINS AS REQUIRED BY N.F.P.A.#13 AND DISCHARGE TO A LOCATION TO SUIT SITE CONDITIONS.

REVISIONS	
ISSUED FOR PERMIT	JAN/20/23

DESIGN CRITERIA

XX INDICATES HYDRAULIC REFERENCE POINT FOR CALCULATIONS

ALAIMO ARCHITECTURE INC.

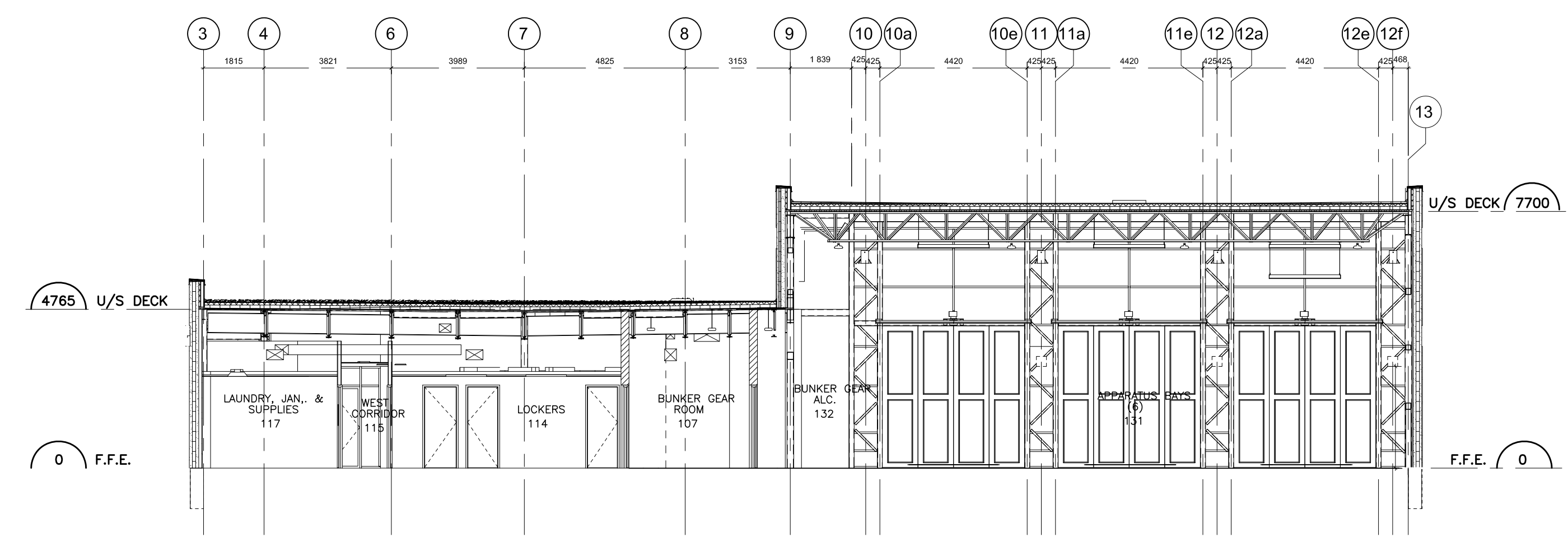
DISANO DESIGN
80 TIVERTON COURT
SUITE 700
MIDLAND ONTARIO
L3R 6S4
T 905-477-4474
F 905-477-5366
E disano@disanosprinkler.ca
BCIN NO. 30002

NORTH	STAMP

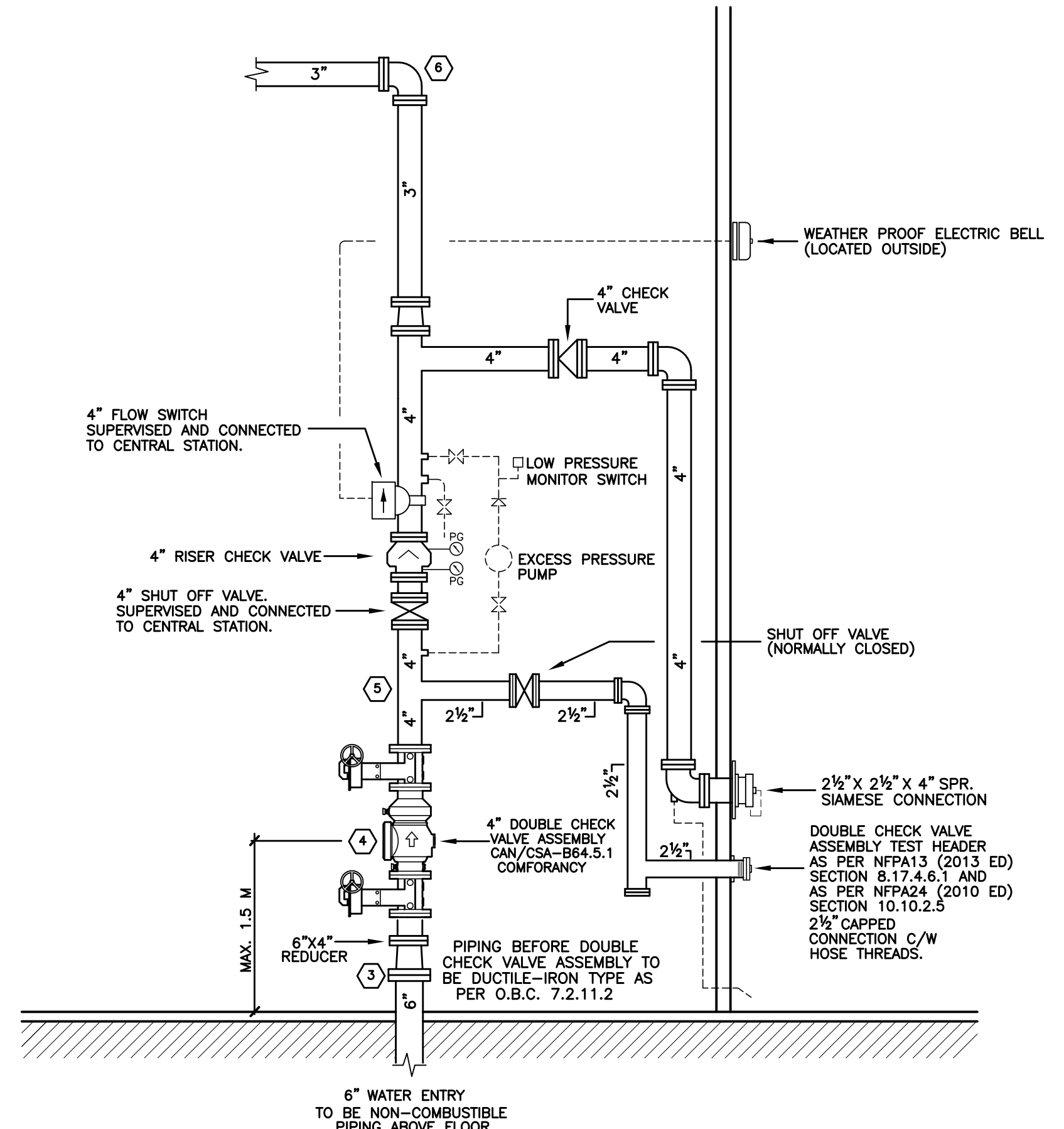
PROJECT
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FIRE STATION #4**
6375 14TH LINE NEW TECUMSETH ONT.

DWG TITLE
**SPECIFICATIONS
AND DETAILS**

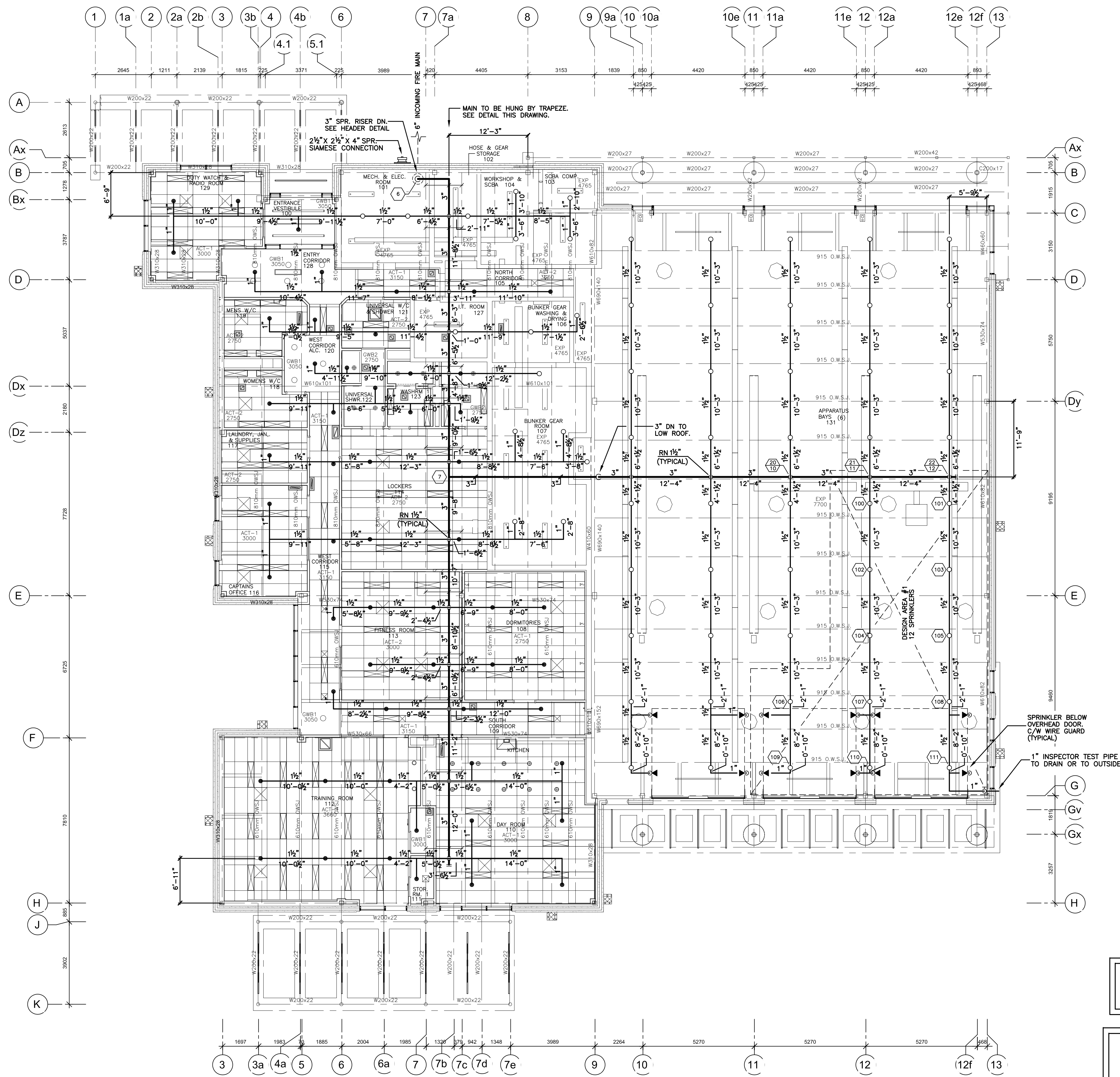
DATE JANUARY 2023	PROJECT NO. 23-14587
SCALE 1:100	DWG NO. SP1
DWN BY KR	ISSUED FOR REVISION NO.
	OF 2



BUILDING CROSS SECTION
N.T.S.



HEADER DETAIL SCHEMATIC
N.T.S.

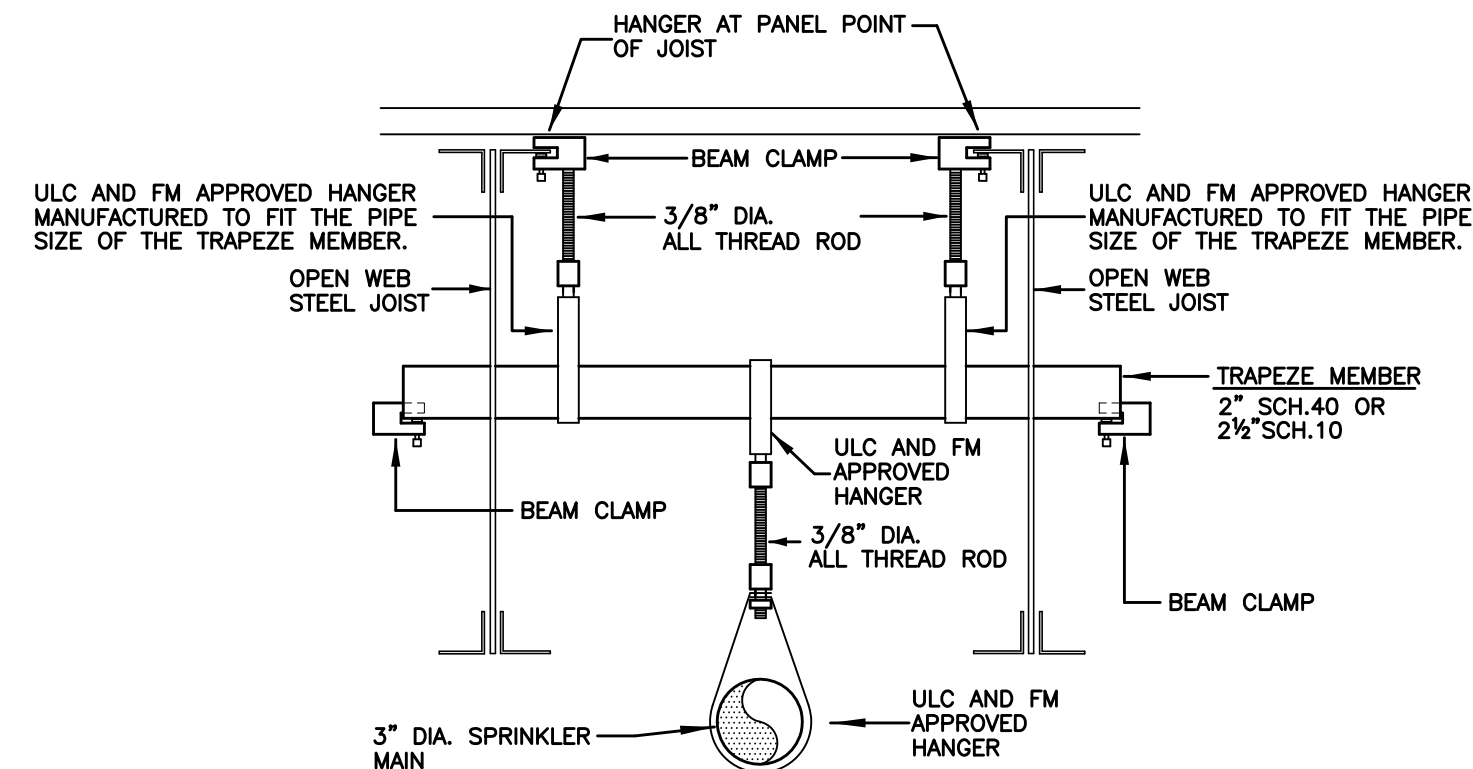


OWNER (OR OTHERS) TO PROVIDE ADEQUATE HEAT IN ALL AREAS OF BUILDING SUBJECT TO FREEZING THAT ARE PROTECTED BY A WET TYPE SPRINKLER SYSTEM.

ALL GLASS BULB TYPE SPRINKLERS TO BE OF RECENT ISSUE. MANUFACTURE DATE OF AT LEAST YEAR 2010.

NOTES

- THIS DRAWING ASSOCIATED CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF THE DESIGNER AND MUST BE RETURNED AT THE COMPLETION OF THE WORK OR UPON REQUEST.
- DIMENSIONS TAKE PRECEDENCE OVER SCALE.
- THE SPRINKLER SYSTEM IS TO BE INSTALLED AS PER N.F.P.A. STANDARD # 13 AND O.B.C. STANDARDS.
- (IF APPLICABLE) CONTRACTOR TO INCLUDE FOR OFFSETS IN BRANCH LINES AND MAINS WHERE REQUIRED.
- ALL MATERIALS TO BE U.L.C. LISTED AND APPROVED BY LOCAL AUTHORITIES.
- UNDERGROUND WATERMAIN TO BE INSTALLED ACCORDING TO LOCAL AUTHORITIES AND INSURANCE CO. STANDARDS.
- INSTALL HIGH TEMPERATURE HEADS WHERE REQUIRED AS PER N.F.P.A. STANDARD # 13.
- ALL INTERIOR GRID BRANCH LINE MEASUREMENTS ARE GIVEN AS CENTER LINE TO CENTER LINE DIMENSIONS. (SCH.10 PIPE)
- ALL OTHER BRANCH LINE MEASUREMENTS ARE GIVEN AS CENTER LINE TO CENTER LINE (SCH.40 PIPE)
- ALL MAIN MEASUREMENTS ARE GIVEN AS CENTER LINE TO CENTER LINE DIMENSIONS. (THIN WALL PIPE)
- ⊙ DENOTES DISTANCE IN INCHES FROM CENTER LINE OF PIPE TO UNDERSIDE OF CEILING.
- RN DENOTES RISER NIPPLE.
- DN DENOTES DOWN.
- ALL SUPERSEDED VALVES, FLOW (PRESSURE) SWITCHES AND LOW PRESSURE MONITORING SWITCHES TO BE CONNECTED TO FIRE ALARM SYSTEM (IF F.A.S. IS INSTALLED)
- CONTRACTOR TO VISIT SITE TO DETERMINE EXACT LOCATION AND ELEVATION OF MAINS (TO BE INSTALLED) AS INDICATED ON DRAWINGS. ANY MAJOR DISCREPANCIES TO BE REPORTED TO THE DESIGNER PRIOR TO FABRICATION AND INSTALLATION.



TRAPEZE HANGER DETAIL N.T.S.

ALL BEAM CLAMPS FOR HANGERS TO BE C/W TOLCO OR EQUIVALENT FIG. 69 RESTRAINING STRAP.

ALL COUPLINGS TO BE LISTED RIGID COUPLINGS UNLESS NOTED OTHERWISE. SEE DRAWING "EARTHQUAKE PROTECTION" DRAWINGS FOR LOCATION OF FLEXIBLE COUPLINGS

REVISIONS

ISSUED FOR PERMIT	JAN/20/23

DESIGN CRITERIA

OFFICES, WASHROOMS, LOCKERS, DORMITORY ETC. DESIGNED FOR LIGHT HAZARD
 0.10 GPM/SQ.FT. OVER 1500 MINUS 40X (QUICK RESPONSE SPR.) = 900 SQ.FT. PLUS 100 GPM FOR HOSES.
 AS PER NFPA 13 FIG. 11.2.3.1.1 AND SECTION 11.2.3.2.3 2013 EDITION.

APPARATUS BAY, MECHANICAL RM., BUNKER GEAR ETC. DESIGNED FOR ORDINARY HAZARD GROUP 1
 0.15 GPM/SQ.FT. OVER 1500 SQ.FT. PLUS 250 GPM FOR HOSES.
 AS PER NFPA 13 FIG. 11.2.3.1.1 2013 EDITION.

XX INDICATES HYDRAULIC REFERENCE POINT FOR CALCULATIONS

○	1/2" 165°F STD. RESPONSE UPRIGHT (K=5.6)	61
●	1/2" 165°F QUICK RESPONSE SEMI-RECESSED PENDENT (K=5.6)	57
▶	1/2" 165°F STD. RESPONSE SIDEWALL C/W WIRE GUARD (K=5.6)	12

ALAIMO ARCHITECTURE INC.

DISANO DESIGN
 80 TIVERTON COURT SUITE 700 MARKHAM ONTARIO
 T 905-477-4474 F 905-477-8088
 d.disano@alaimoarchitecture.ca
 BCIN NO. 30002

NORTH

STAMP

PROJECT
NEW TUCUMSETH FIRE STATION #4
 6375 14TH LINE NEW TUCUMSETH ONT.

DWG TITLE
PROPOSED SPRINKLER LAYOUT

DATE JANUARY 2023	PROJECT NO. 23-14587
SCALE 1:100	DWG NO. SP2
DWN BY KR	ISSUED FOR REVISION NO.
OF 2	

PROTECTION OF PIPING AGAINST DAMAGE WHERE SUBJECT TO EARTHQUAKES

FLEXIBLE COUPLINGS

- ALL COUPLINGS TO BE LISTED RIGID COUPLINGS UNLESS NOTED OTHERWISE
- SYSTEMS HAVING MORE FLEXIBLE COUPLINGS THAN REQUIRED BY THIS SECTION SHALL BE PROVIDED WITH ADDITIONAL SWAY BRACING AS PER NFPA 13

FLEXIBLE COUPLINGS TO BE PROVIDED ONLY AS FOLLOWS.

ALL PIPING 2 1/2" DIA. OR LARGER

FLEXIBLE COUPLINGS SHALL BE INSTALLED WITHIN 24" OF THE TOP AND BOTTOM OF ALL RISERS. EXCEPTION: (A) FLEXIBLE COUPLING NOT REQUIRED FOR RISERS LESS THAN 3 FT IN LENGTH. (B) RISERS 3FT-7FT IN LENGTH REQUIRE ONLY ONE FLEXIBLE COUPLING.

FLEXIBLE COUPLINGS SHALL BE INSTALLED ON BOTH SIDES OF CONCRETE OR MASONARY WALLS WITHIN 1 FT. OF THE WALL SURFACE, UNLESS CLEARANCE IS PROVIDED.

FLEXIBLE COUPLINGS SHALL BE INSTALLED WITHIN 24" OF BUILDING EXPANSION JOINTS.

FLEXIBLE COUPLINGS SHALL BE INSTALLED ABOVE AND BELOW ANY INTERMEDIATE POINTS OF SUPPORT FOR A RISER OR OTHER VERTICAL PIPE.

REGARDLESS OF PIPE SIZE

FLEXIBLE COUPLINGS SHALL BE INSTALLED WITHIN 24" OF THE TOP OF DROPS EXCEEDING 15 FT. IN LENGTH TO PORTIONS OF SYSTEMS SUPPLYING MORE THAN 1 SPRINKLER.

FOR DROPS (WHERE NO "DROP SUPPORTS" ARE PROVIDED.)

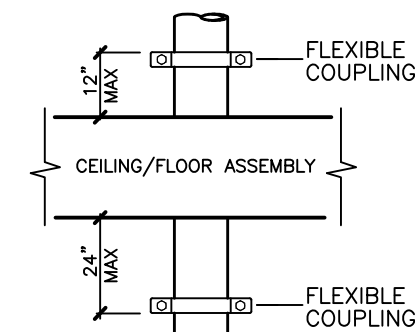
FLEXIBLE COUPLINGS FOR DROPS TO HOSE LINES, RACK SPRINKLERS AND MEZZANINES SHALL BE INSTALLED WITHIN 24" OF THE TOP OF THE DROP AND WITHIN 24" OF THE BOTTOM OF THE DROP

FOR DROPS (WHERE "DROP SUPPORTS" ARE PROVIDED.)

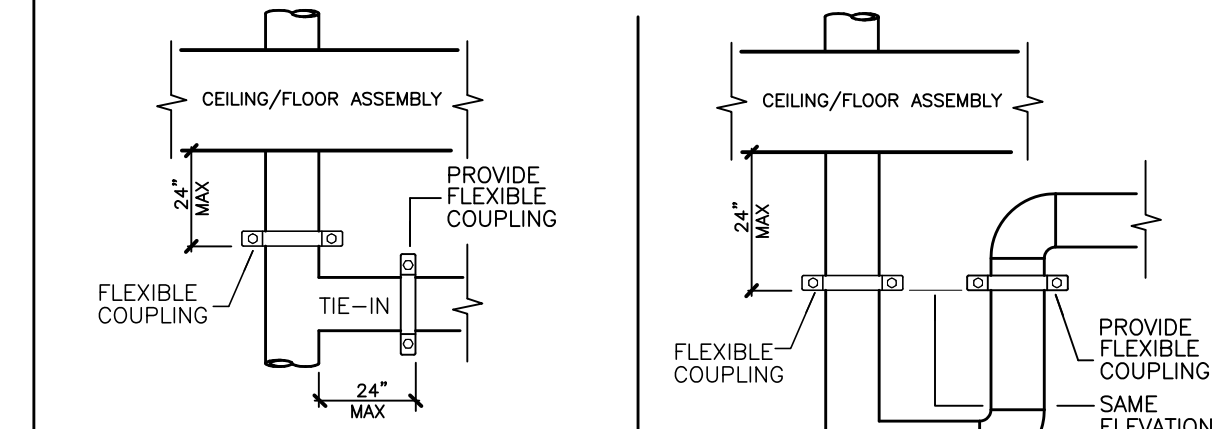
FLEXIBLE COUPLINGS FOR DROPS TO HOSE LINES, RACK SPRINKLERS AND MEZZANINES SHALL BE INSTALLED WITHIN 24" OF THE TOP OF THE DROP AND WITHIN 24" ABOVE THE UPPERMOST DROP SUPPORT.

MULTI-STORY BUILDINGS:

FLEXIBLE COUPLINGS SHALL BE INSTALLED WITHIN 12" ABOVE AND WITHIN 24" BELOW THE FLOOR.



WHEN A FLEXIBLE COUPLING BELOW THE FLOOR IS ABOVE A TIE-IN MAIN SUPPLYING THAT FLOOR, A FLEXIBLE COUPLING SHALL BE PROVIDED AS FOLLOWS:



(A) WHERE THE TIE-IN MAIN IS HORIZONTAL - WITHIN 24" OF THE TIE-IN
(B) WHERE THE TIE-IN MAIN IS VERTICAL - WITHIN 24" OF THE TIE-IN

SEISMIC SEPARATION ASSEMBLY

AN APPROVED SEISMIC SEPARATION ASSEMBLY SHALL BE INSTALLED WHERE SPRINKLER PIPING CROSSES BUILDING SEISMIC SEPARATION JOINTS ABOVE GROUND LEVEL.

CLEARANCE HOLES

CLEARANCE SHALL BE PROVIDED AROUND ALL PIPING EXTENDING THRU WALLS, FLOORS, PLATFORMS AND FOUNDATIONS, INCLUDING DRAINS, FIRE DEPARTMENT CONNECTIONS AND OTHER AUXILIARY PIPING.

NOTE: NO CLEARANCE IS REQUIRED IF FLEXIBLE COUPLINGS ARE LOCATED WITHIN 1 FT. OF EACH SIDE OF A WALL, FLOOR, PLATFORM OR FOUNDATION.

WHERE PIPE PASSES THROUGH HOLES IN PLATFORMS, FOUNDATIONS, FLOORS AND WALLS THE HOLES SHALL BE SIZED SUCH THAT THE DIAMETER OF THE HOLE IS 2" LARGER THAN THE PIPE (FOR 1" TO 3.5" DIA. PIPE) AND 4" LARGER THAN THE PIPE (FOR 4" DIA. AND LARGER PIPE)

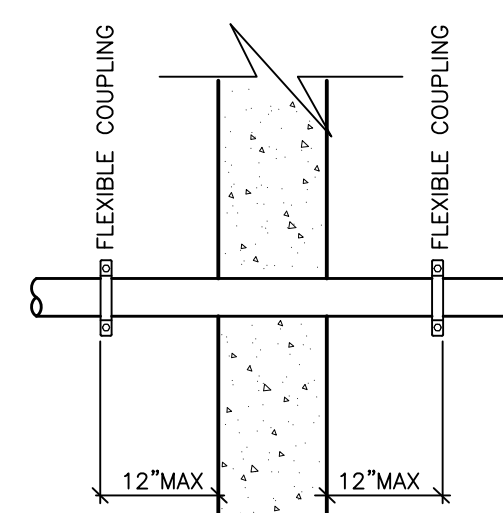
WHERE CLEARANCE IS PROVIDED BY A PIPE SLEEVE, A SLEEVE DIAMETER 2" LARGER THAN THE PIPE DIA. IS ACCEPTABLE FOR PIPE SIZES 1" DIA. TO 3.5" DIA. AND A PIPE SLEEVE DIAMETER 4" LARGER THAN THE PIPE DIAMETER IS ACCEPTABLE FOR PIPE SIZES 4" DIAMETER AND LARGER.

NO CLEARANCE IS REQUIRED FOR PIPING PASSING THROUGH GYPSUM BOARD OR EQUALLY FRANGIBLE CONSTRUCTION THAT IS NOT REQUIRED TO HAVE A FIRE RESISTANCE RATING.

WHERE REQUIRED, CLEARANCE SHALL BE FILLED WITH A FLEXIBLE MATERIAL THAT IS COMPATIBLE WITH THE PIPING MATERIAL.

CLEARANCE FROM STRUCTURAL MEMBERS NOT PENETRATED OR USED, COLLECTIVELY OR INDEPENDENTLY, TO SUPPORT THE PIPING SHALL BE AT LEAST 2 INCHES.

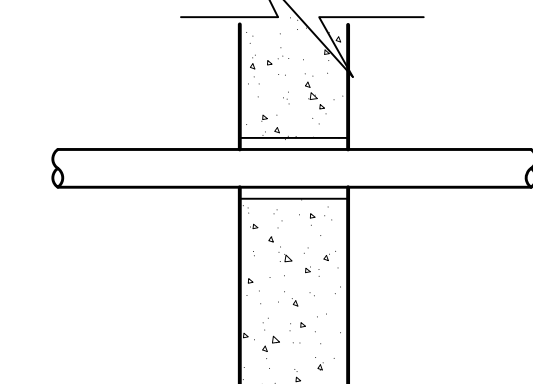
FLEXIBLE COUPLINGS SHALL BE INSTALLED ON BOTH SIDES OF CONCRETE OR MASONARY WALLS WITHIN 1 FT. OF THE WALL SURFACE.



1
FLEXIBLE COUPLINGS

PROVIDE CLEARANCE HOLE. HOLES SHALL BE SIZED SUCH THAT THE DIAMETER OF THE HOLE IS 2" LARGER THAN THE PIPE (FOR 1" TO 3.5" DIA. PIPE) AND 4" LARGER THAN THE PIPE (FOR 4" DIA. AND LARGER PIPE)

WHERE REQUIRED, CLEARANCE SHALL BE FILLED WITH A FLEXIBLE MATERIAL THAT IS COMPATIBLE WITH THE PIPING MATERIAL.



2
CLEARANCE HOLE

PROVIDE ONE OF THE FOLLOWING
PIPE PASSING THRU CONCRETE OR MASONARY WALLS

DETAIL NO.1

SWAY BRACING

SWAY BRACING IS REQUIRED FOR:

- 1) THE TOP OF SYSTEM RISERS
- 2) ALL FEEDMANS AND CROSSMANS REGARDLESS OF SIZE.
- 3) BRANCH LINES 2 1/2" DIA. AND LARGER (LATERAL BRACING ONLY)

EACH RUN OF PIPE BETWEEN CHANGES IN DIRECTION SHALL BE PROVIDED WITH BOTH LATERAL AND LONGITUDINAL BRACING. PIPE RUNS OF LESS THAN 12 FT. IN LENGTH SHALL BE PERMITTED TO BE SUPPORTED BY THE BRACES ON ADJACENT RUNS OF PIPE.

LATERAL SWAY BRACING

LATERAL SWAY BRACING SHALL BE SPACED AT A MAXIMUM INTERVAL OF 40 FT. ON CENTER

THE DISTANCE BETWEEN THE LAST BRACE AND THE END OF THE PIPE SHALL NOT EXCEED 6 FT.

THE LAST LENGTH OF PIPE AT THE END OF A FEED OR CROSS MAIN SHALL BE PROVIDED WITH A LATERAL BRACE.

LATERAL BRACES SHALL BE ALLOWED TO ACT AS LONGITUDINAL BRACES IF THEY ARE WITHIN 24 INCHES OF THE CENTERLINE OF THE PIPING BRACED LONGITUDINALLY FOR LINES THAT ARE 2 1/2" DIA. AND LARGER.

LATERAL SWAY BRACING IS NOT REQUIRED WHERE PIPE IS SUPPORTED BY RODS LESS THAN 6" LONG MEASURED BETWEEN THE TOP OF PIPE AND THE POINT OF ATTACHMENT TO THE BUILDING STRUCTURE.

* IF LATERAL BRACING IS ELIMINATED, CONTRACTOR MUST INFORM ENGINEER IN ORDER TO CONFIRM IF ADDITIONAL LONGITUDINAL BRACING IS REQUIRED.

LONGITUDINAL SWAY BRACING

LONGITUDINAL SWAY BRACING SPACED AT A MAXIMUM INTERVAL OF 80 FT. ON CENTER SHALL BE PROVIDED ON ALL FEED AND CROSS MAINS.

THE DISTANCE BETWEEN THE LAST BRACE AND THE END OF THE PIPE SHALL NOT EXCEED 40 FT.

LONGITUDINAL BRACES SHALL BE ALLOWED TO ACT AS LATERAL BRACES IF THEY ARE WITHIN 24 INCHES OF THE CENTERLINE OF THE PIPING BRACED LATERALLY.

RISERS

TOPS OF RISERS (EXCEEDING 3 FT IN LENGTH) SHALL BE PROVIDED WITH A 4-WAY BRACE. DISTANCE BETWEEN 4-WAY BRACES SHALL NOT EXCEED 25 FT.

4-WAY BRACE TO BE MAXIMUM 24" BELOW CENTERLINE OF HORIZONTAL PIPE.

4-WAY BRACING SHALL NOT BE REQUIRED WHERE RISERS PENETRATE INTERMEDIATE FLOORS IN MULTI-STORY BUILDINGS WHERE THE "CLEARANCE" DOES NOT EXCEED THAT STATED UNDER "CLEARANCE HOLES"

BRANCH LINE RESTRAINT

RESTRAINT IS REQUIRED FOR ALL BRANCH LINES THAT ARE NOT OTHERWISE REQUIRED TO BE LATERALLY BRACED.

WHERE BRANCH LINES ARE SUPPORTED BY RODS LESS THAN 6" LONG MEASURED BETWEEN THE TOP OF PIPE AND THE POINT OF ATTACHMENT TO THE BUILDING STRUCTURE, ADDITIONAL RESTRAINT SHALL NOT BE REQUIRED.

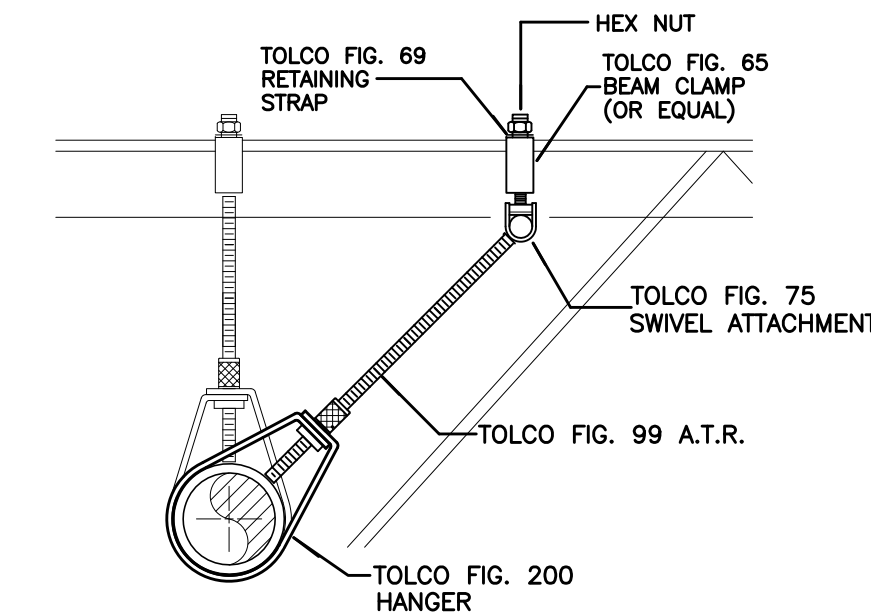
SPRIGS 4 FT. OR LONGER SHALL BE RESTRAINED AGAINST LATERAL MOVEMENT.

THE END SPRINKLER ON A LINE SHALL BE RESTRAINED AGAINST EXCESSIVE VERTICAL AND LATERAL MOVEMENT.

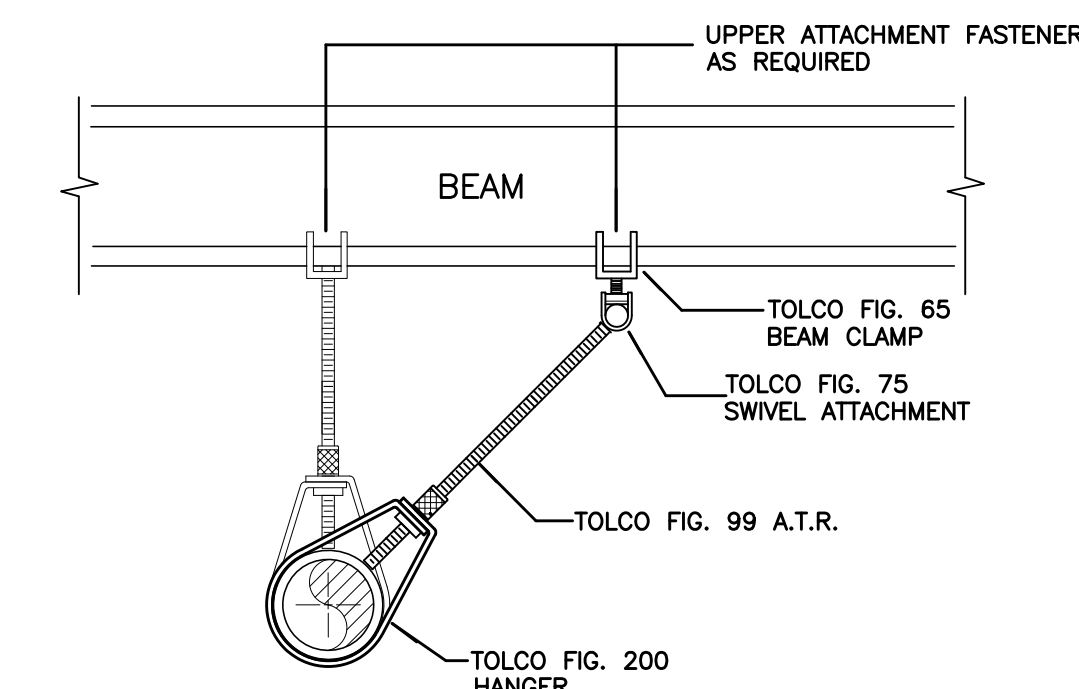
WHERE UPWARD OR LATERAL MOVEMENT OF THE SYSTEM PIPING RESULTS IN DAMAGE TO THE SPRINKLER THROUGH IMPACT AGAINST THE BUILDING STRUCTURE, EQUIPMENT, OR FINISH MATERIALS, BRANCH LINES SHALL BE RESTRAINED AT INTERVALS NOT EXCEEDING 45 FT. FOR 1" DIA. PIPE
48 FT. FOR 1-1/4" DIA. PIPE
51 FT. FOR 1-1/2" DIA. PIPE
55 FT. FOR 2" DIA. PIPE

RESTRAINT SHALL BE PROVIDED BY ONE OF THE FOLLOWING:

- 1) A LISTED SWAY BRACE ASSEMBLY
- 2) A WRAPAROUND U-HOOK AS PER NFPA 13 SECTION 9.3.5.3.9 (2007 ED)
- 3) NO.12 (440 LB) WIRE INSTALLED AT LEAST 45" FROM THE VERTICAL PLANE AND ANCHORED ON BOTH SIDES OF THE PIPE
- 4) A HANGER NOT LESS THAN 45" FROM VERTICAL INSTALLED WITHIN 6 INCHES OF THE VERTICAL HANGER ARRANGED FOR RESTRAINT AGAINST UPWARD MOVEMENT



ALL A.T.R. TO BE INSTALLED HARD UP AGAINST ALL PIPE.

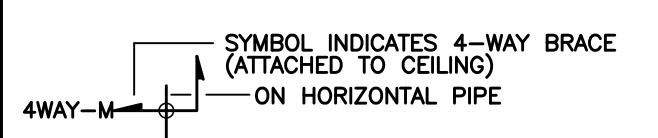
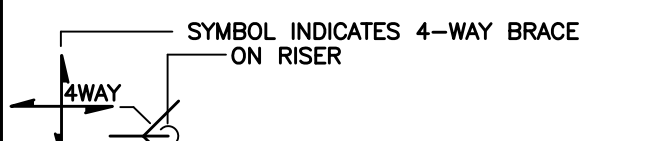
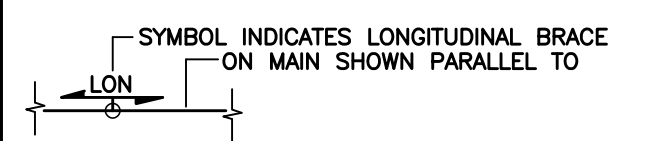
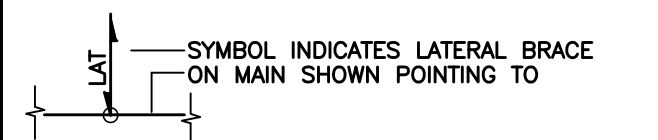


ALL A.T.R. TO BE INSTALLED HARD UP AGAINST ALL PIPE.

REVISIONS

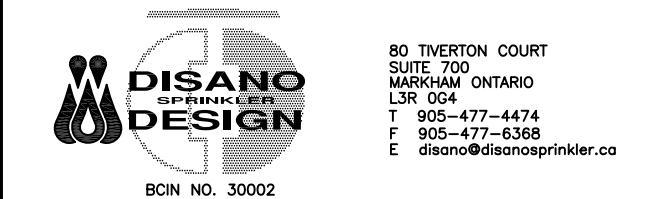
ISSUED FOR PERMIT	JAN/20/23

BRACE IDENTIFICATION

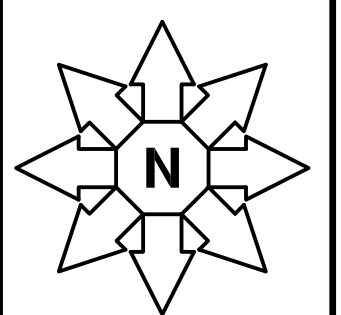


RES X — INDICATES "BRANCH LINE RESTRAINT" WHERE BRANCH LINES ARE SUPPORTED BY RODS LESS THAN 6 INCHES LONG MEASURED BETWEEN THE TOP OF PIPE AND THE POINT OF ATTACHMENT TO STRUCTURE, BRANCH LINE RESTRAINT IS NOT REQUIRED.

ALAIMO ARCHITECTURE INC.



NORTH



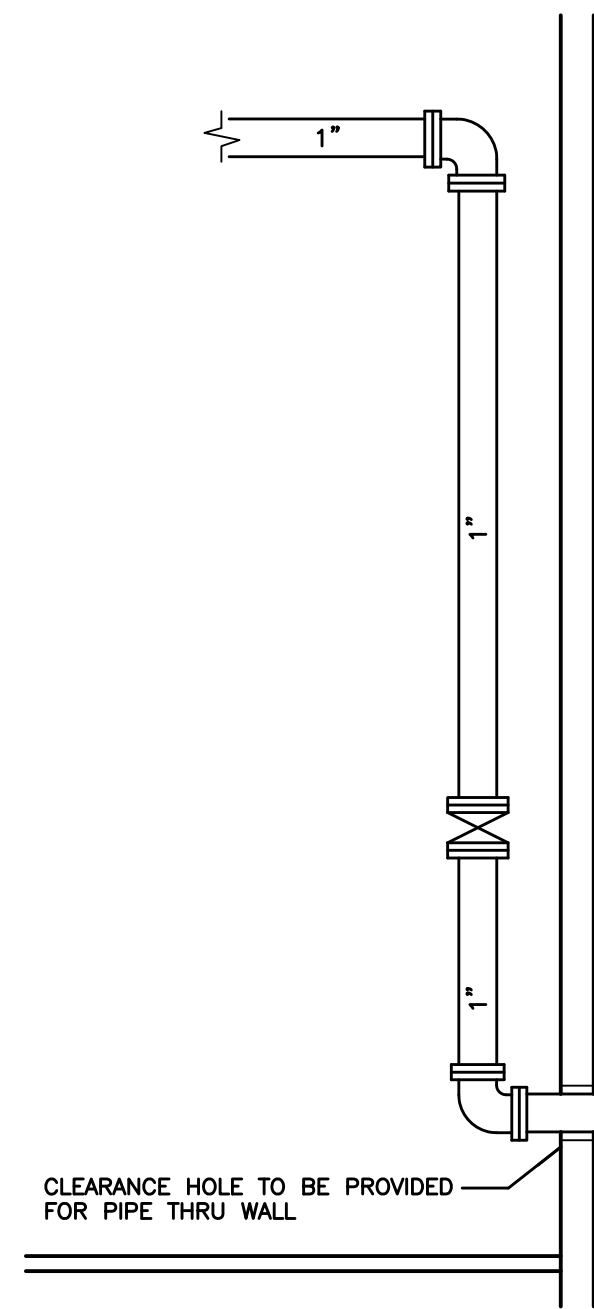
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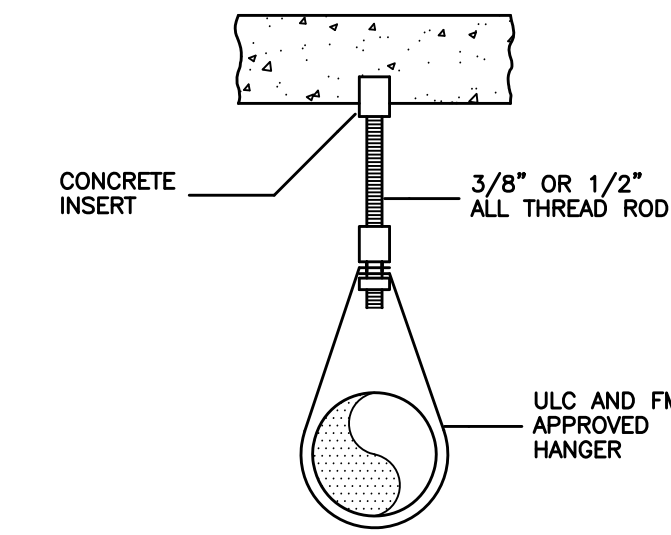
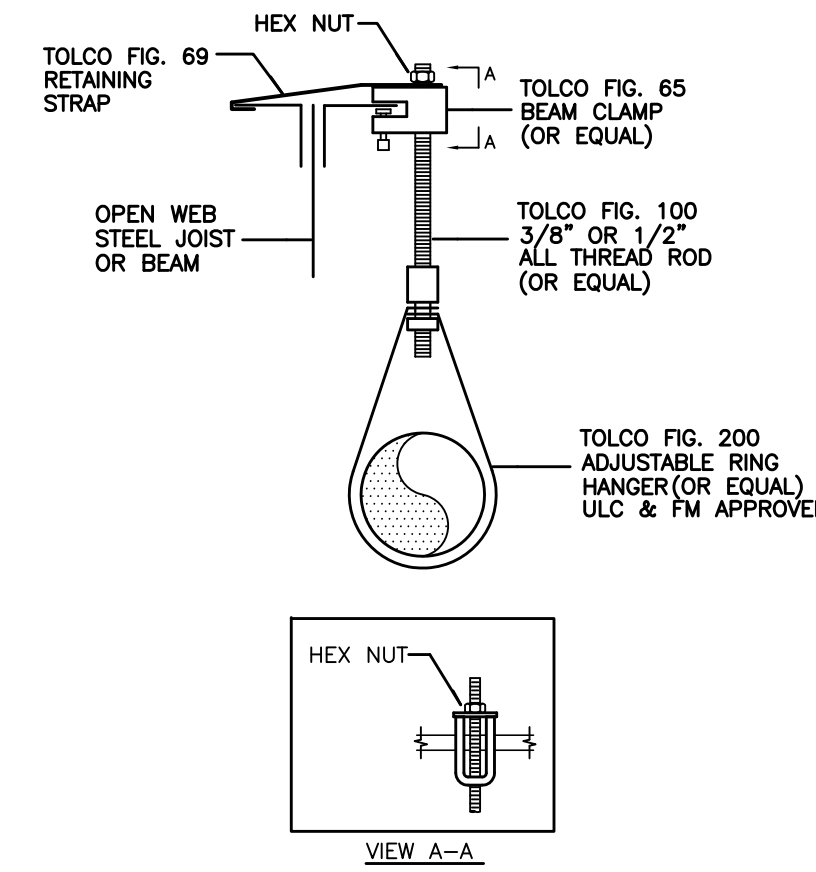
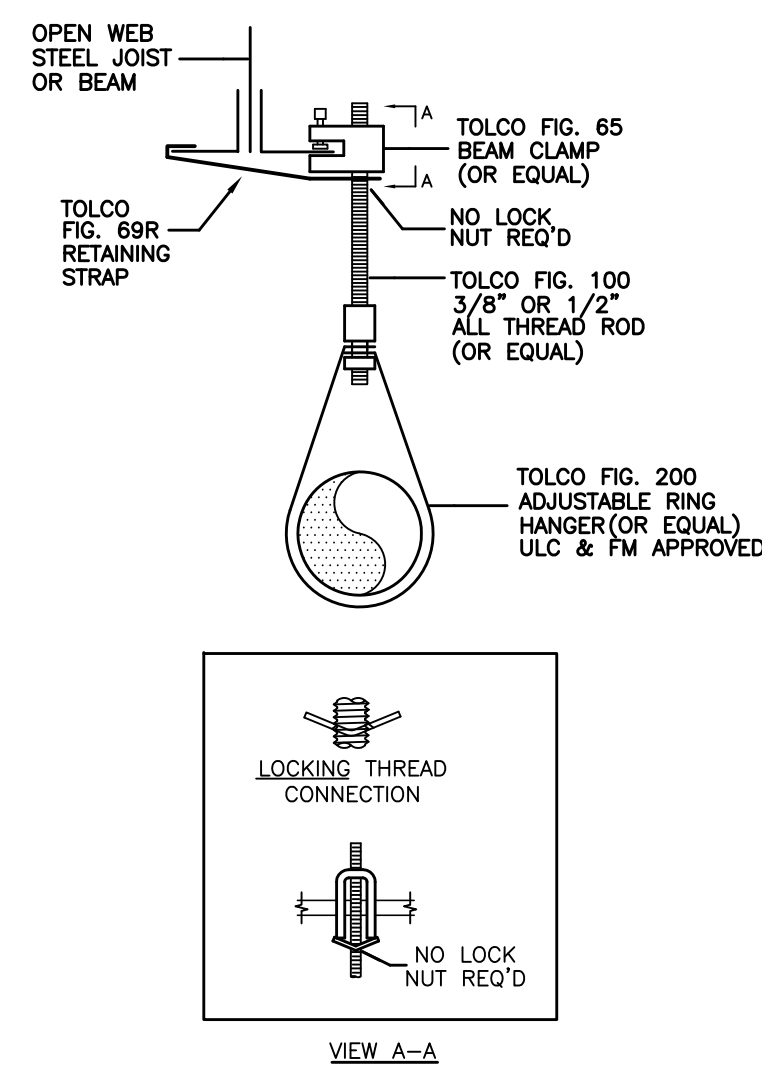
PROJECT
NEW TECUMSETH
FIRE STATION #4
6375 14TH LINE NEW TECUMSETH ONT.

DWG TITLE
EARTHQUAKE PROTECTION
DETAILS

DATE JANUARY 2023	PROJECT NO. 23-14587
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DWN BY KR	ISSUED FOR REVISION NO.
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TYPICAL INSPECTOR TEST PIPE DETAIL
N.T.S.

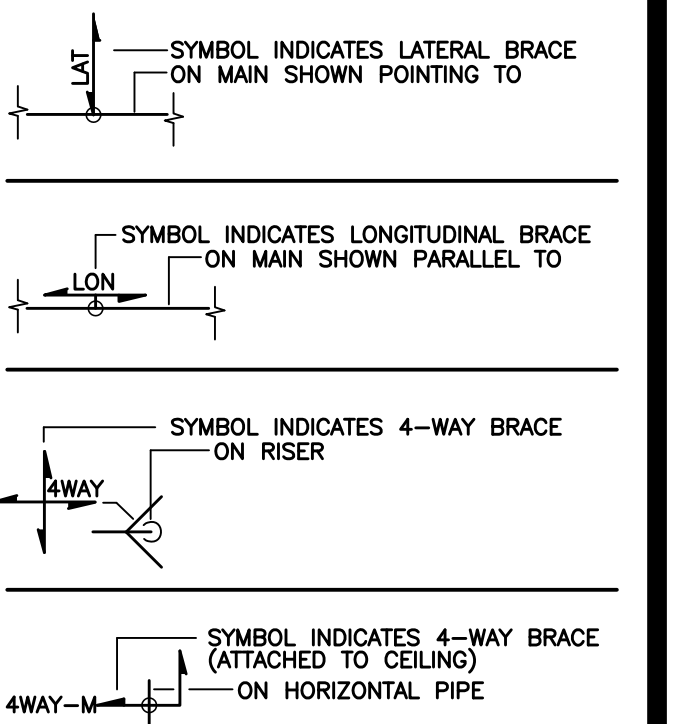


C-TYPE CLAMPS (INCLUDING BEAM AND LARGE FLANGE CLAMPS) USED TO ATTACH HANGERS TO THE BUILDING STRUCTURE IN AREAS SUBJECT TO EARTHQUAKES SHALL BE EQUIPPED WITH A RESTRAINING STRAP.

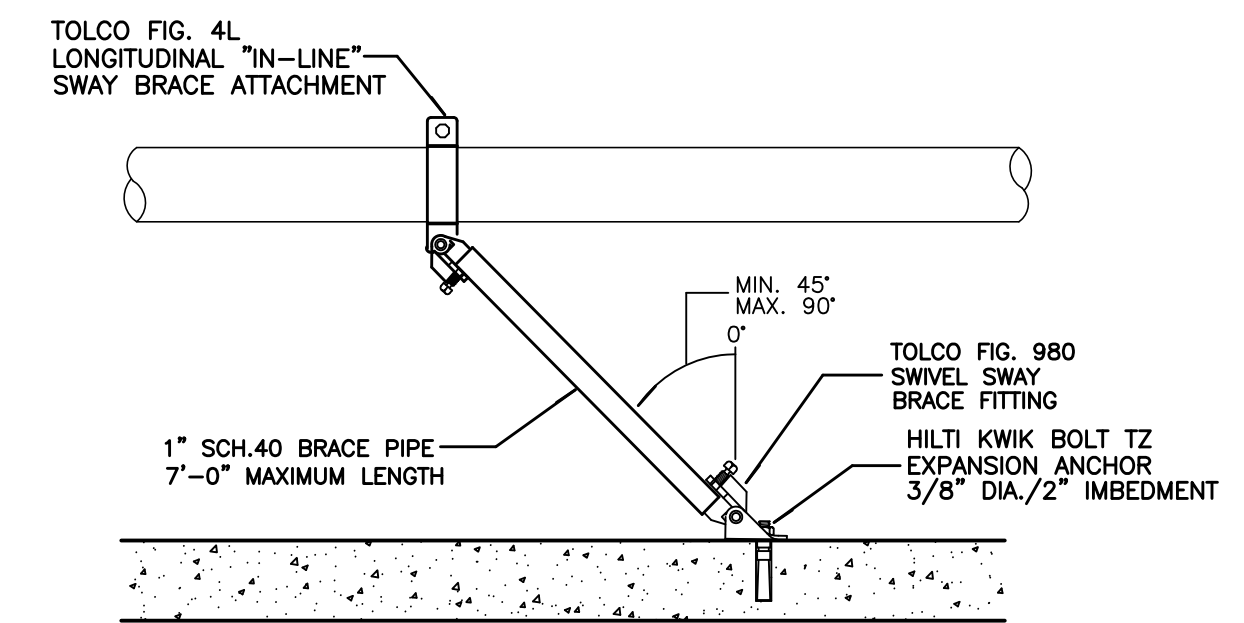
HANGER DETAILS
N.T.S.

REVISIONS	
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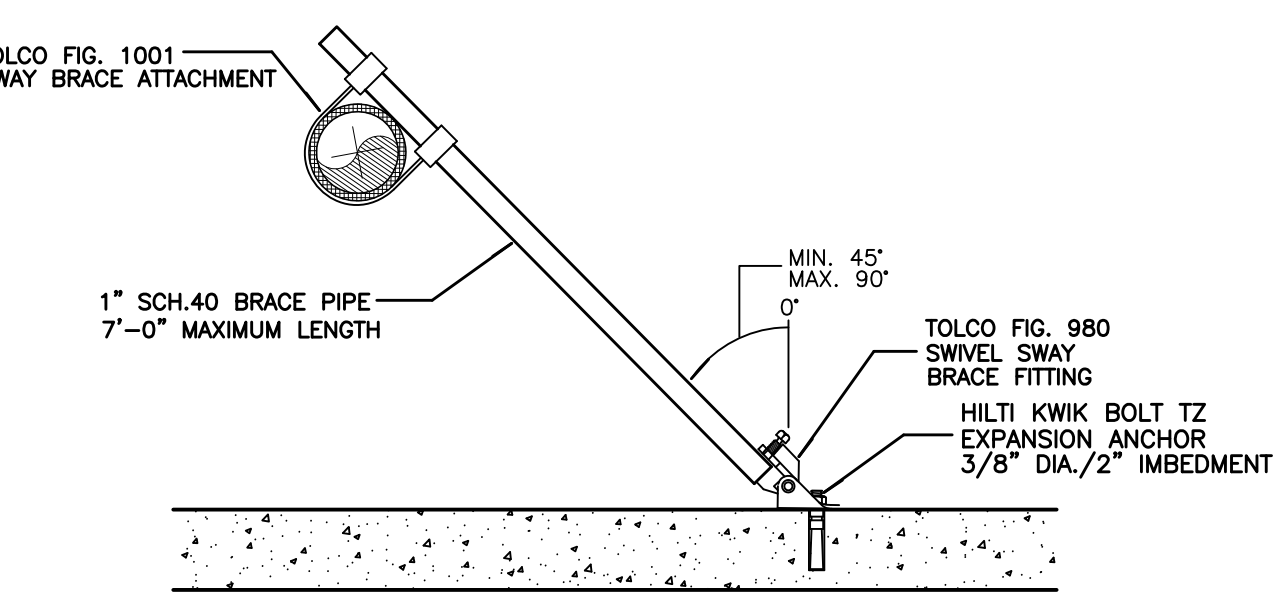
BRACE IDENTIFICATION



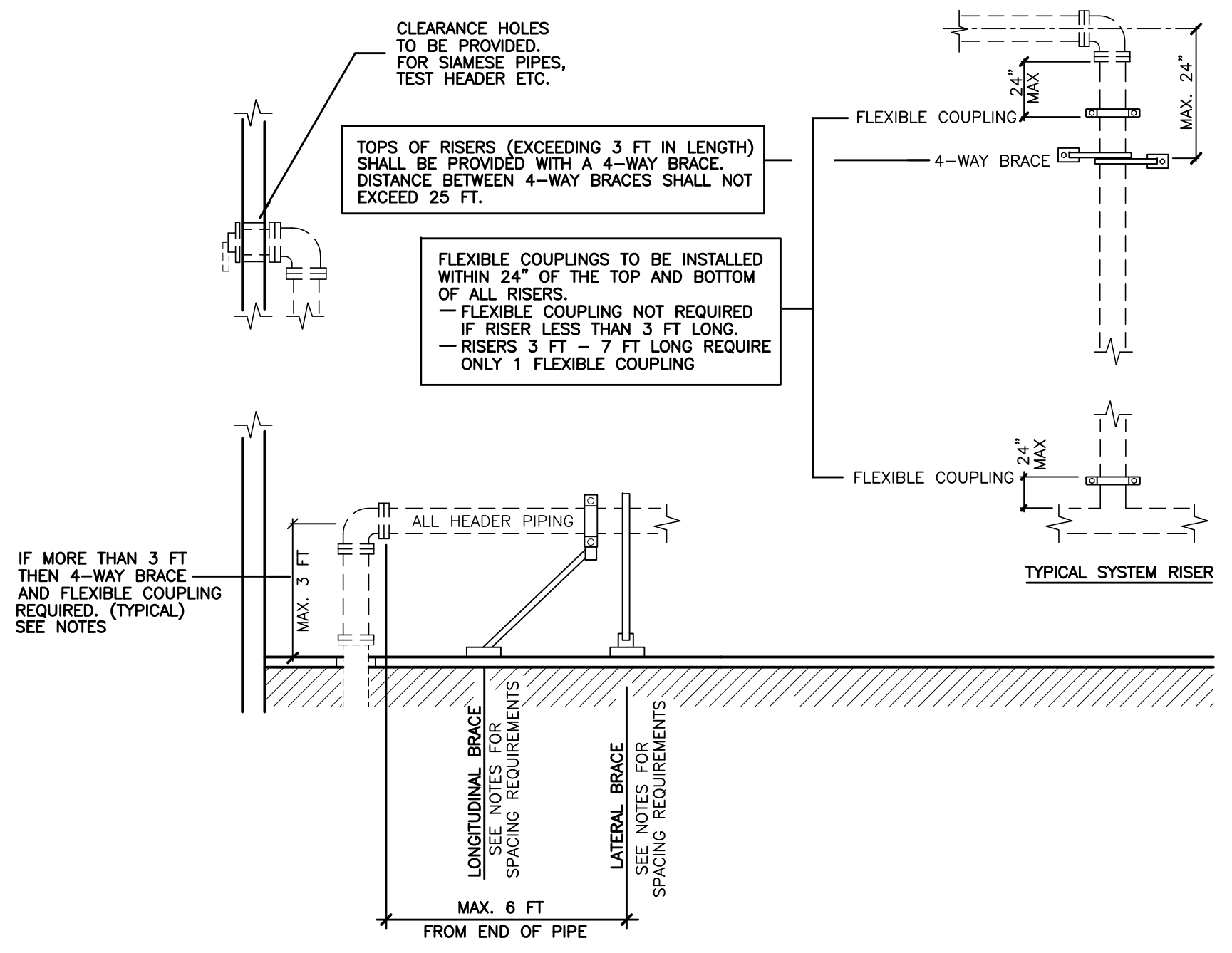
RES X INDICATES "BRANCH LINE RESTRAINT", WHERE BRANCH LINES ARE SUPPORTED BY RODS LESS THAN 6 INCHES LONG MEASURED BETWEEN THE TOP OF PIPE AND THE POINT OF ATTACHMENT TO STRUCTURE, BRANCH LINE RESTRAINT IS NOT REQUIRED.



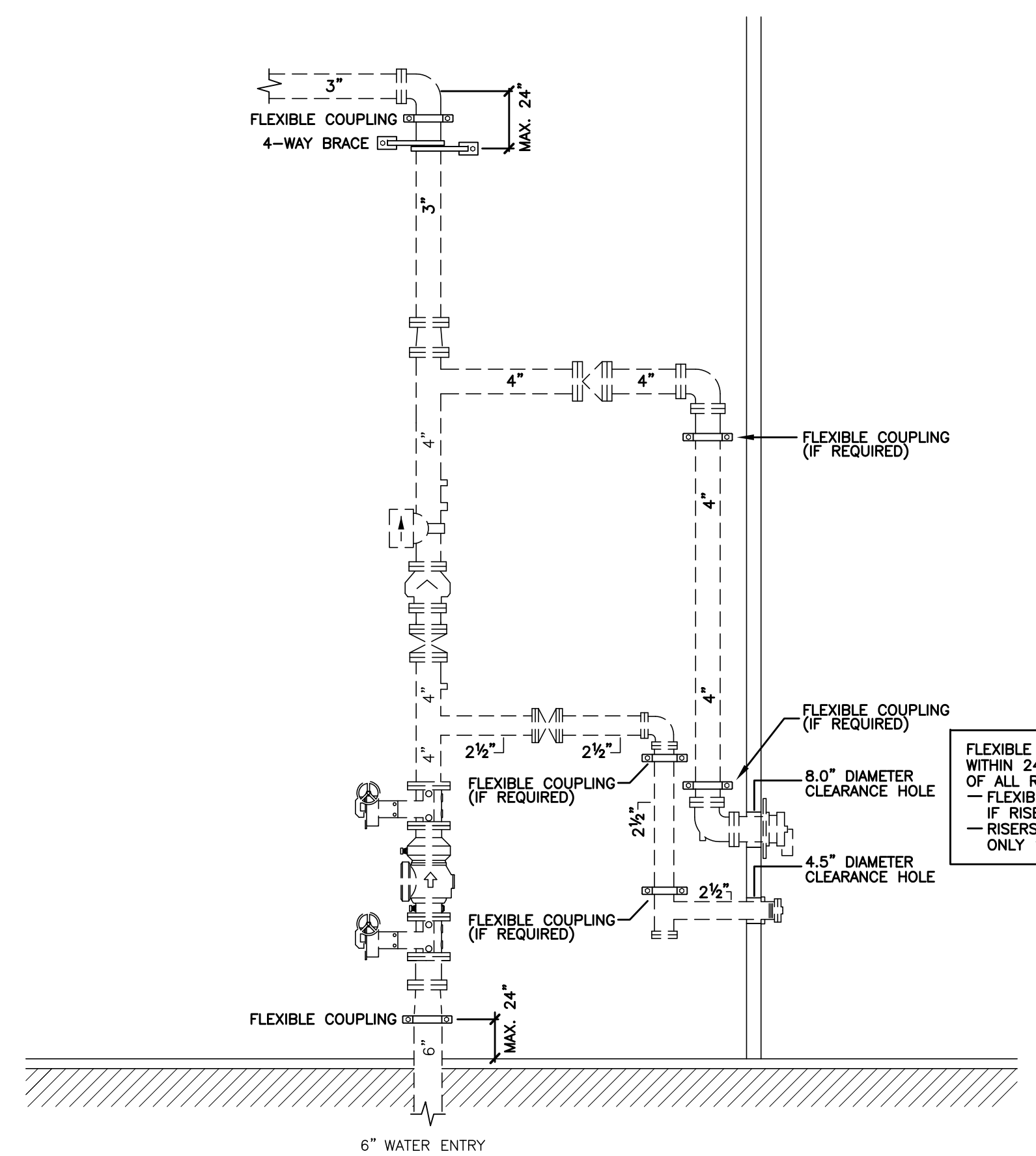
LONGITUDINAL BRACE



LATERAL BRACE
N.T.S.



STANDARD HEADER DETAILS
N.T.S.



HEADER DETAIL
N.T.S.

EACH RUN OF PIPE BETWEEN CHANGES IN DIRECTION SHALL BE PROVIDED WITH BOTH LATERAL AND LONGITUDINAL BRACING. PIPE RUNS OF LESS THAN 12 FT. IN LENGTH SHALL BE PERMITTED TO BE SUPPORTED BY THE BRACES ON ADJACENT RUNS OF PIPE.
(REFER TO NOTES FOR BRACING AND COUPLING REQUIREMENTS)

ALAIMO ARCHITECTURE INC.

DISANO DESIGN
80 TIVERTON COURT
SUITE 100
WARRINGTON ONTARIO
L9C 2S8
T: 905-477-4474
F: 905-477-6368
E: disano@disanodesign.com
BCIN NO. 30002

NORTH

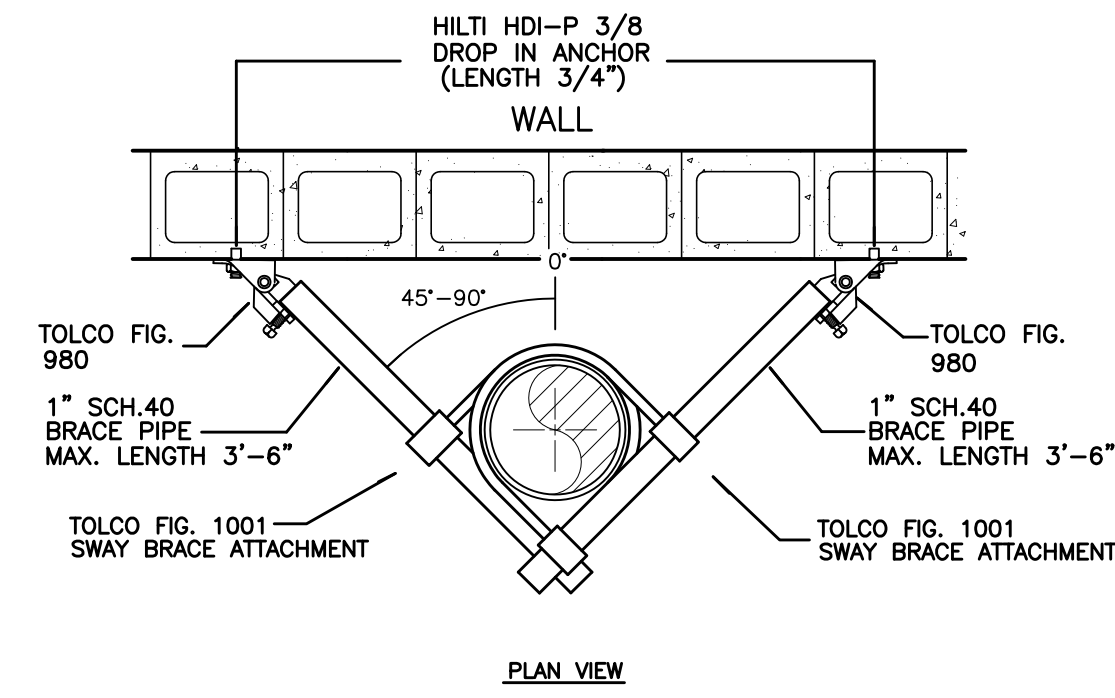
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REGISTERED PROFESSIONAL ENGINEER
2023 JAN 20
K.M. NITSCH
P. ENGINEER OF ONTARIO

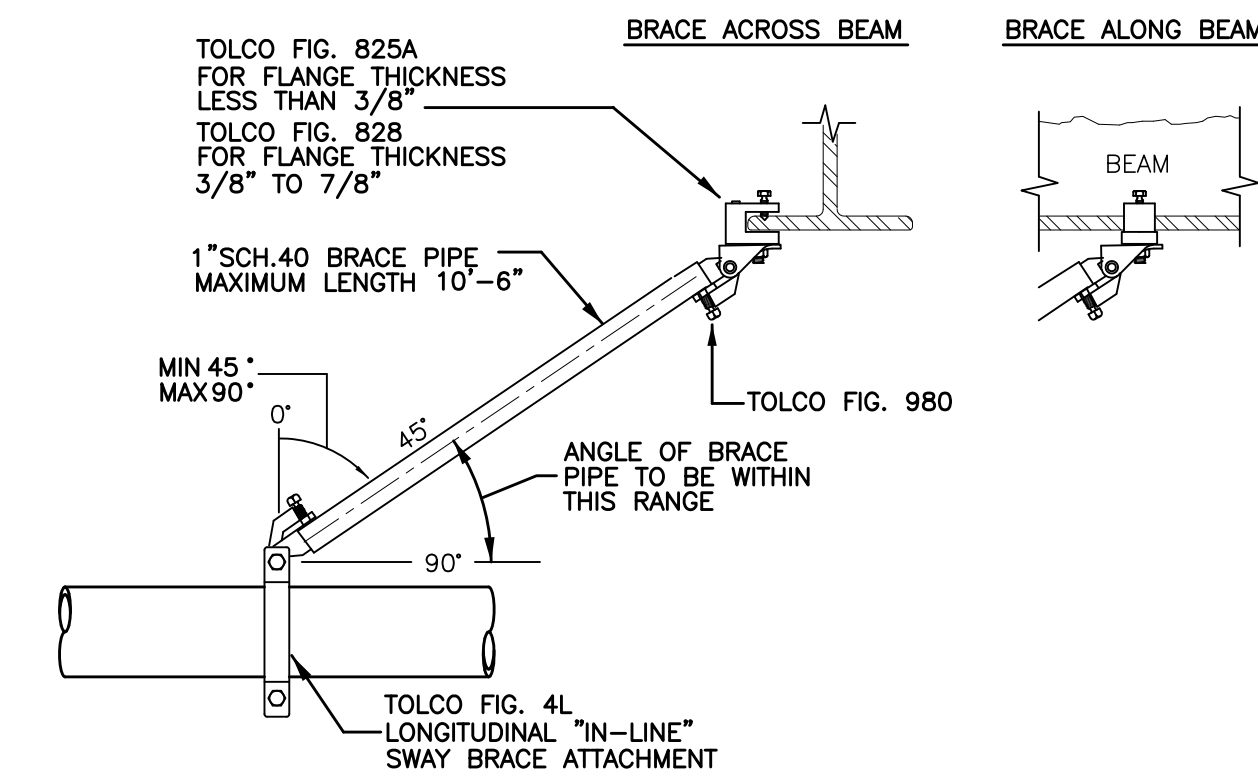
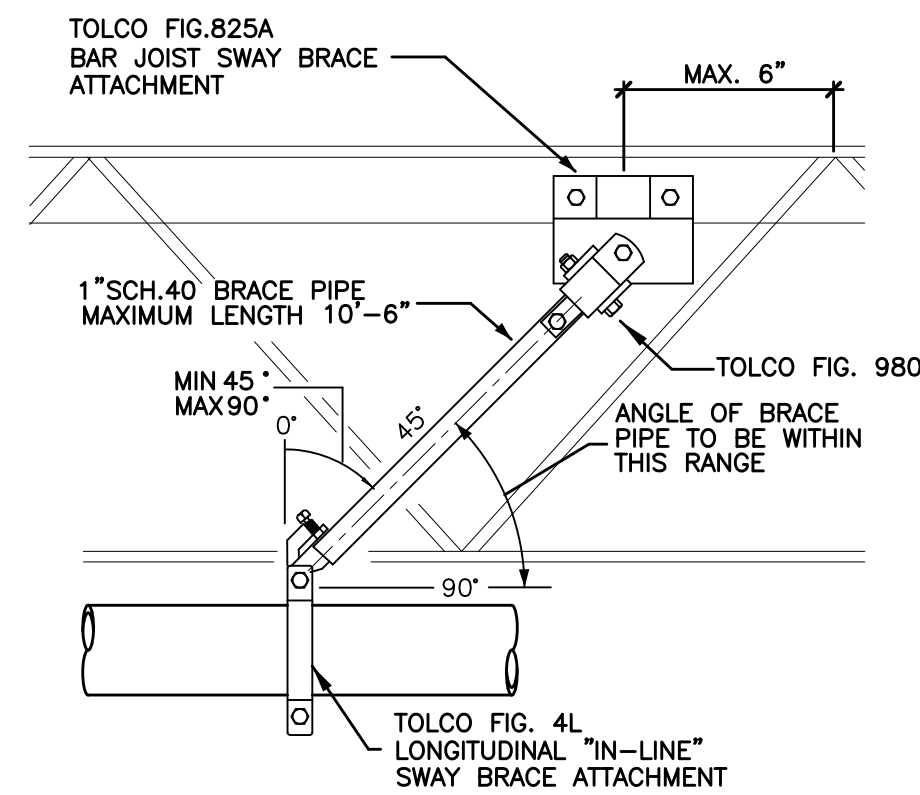
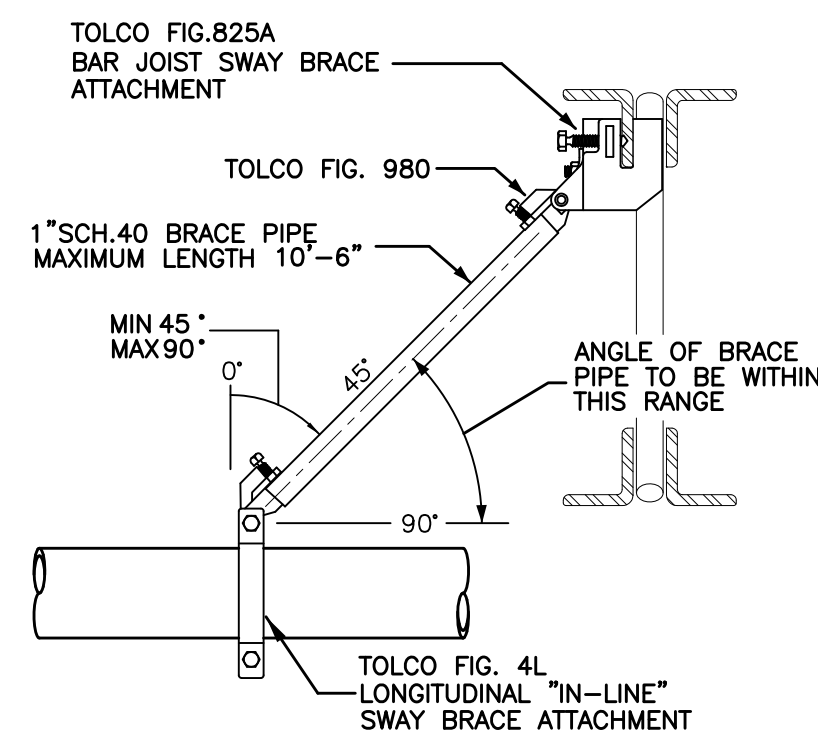
PROJECT
NEW TECUMSETH
FIRE STATION #4
6375 14TH LINE NEW TECUMSETH ONT.

DWG TITLE
EARTHQUAKE PROTECTION
DETAILS

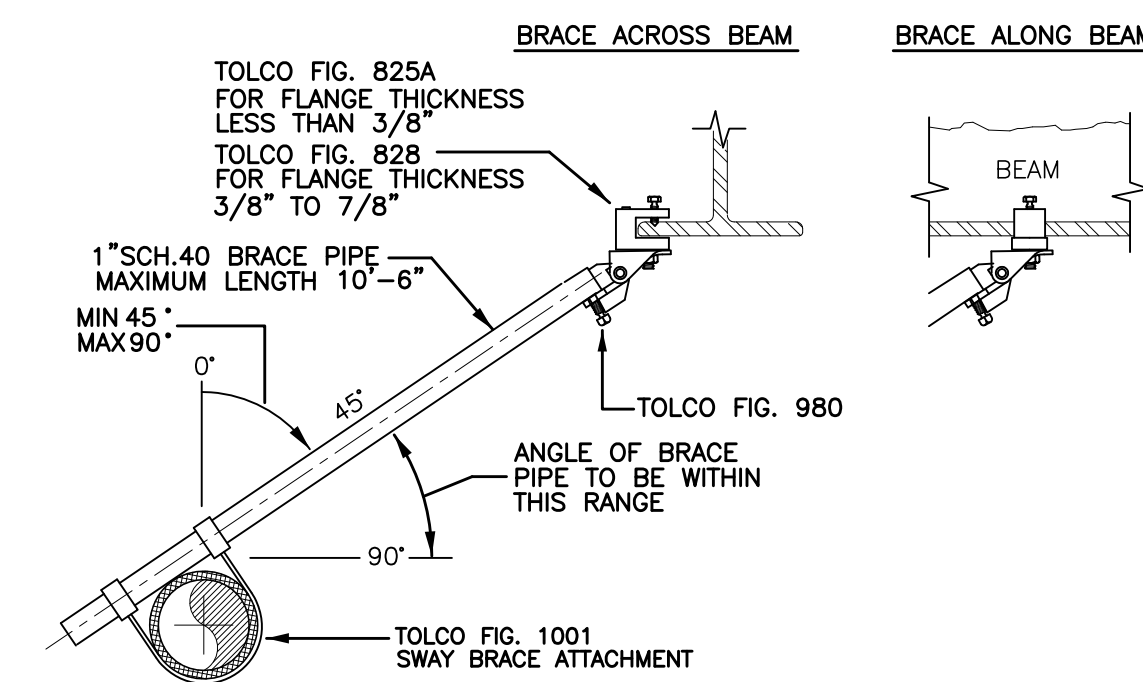
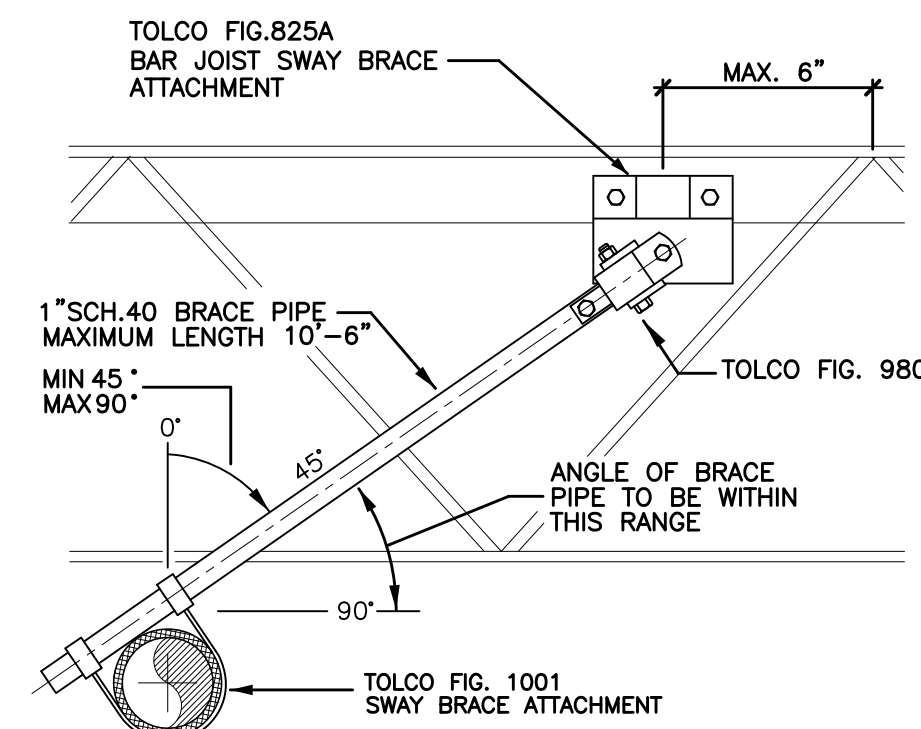
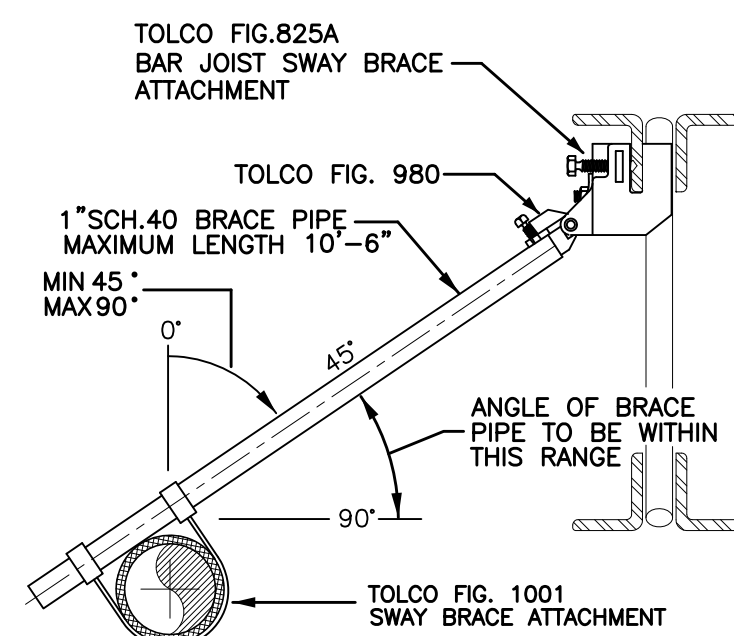
DATE JANUARY 2023	PROJECT NO. 23-14587
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4-WAY RISER BRACE - DETAIL #2



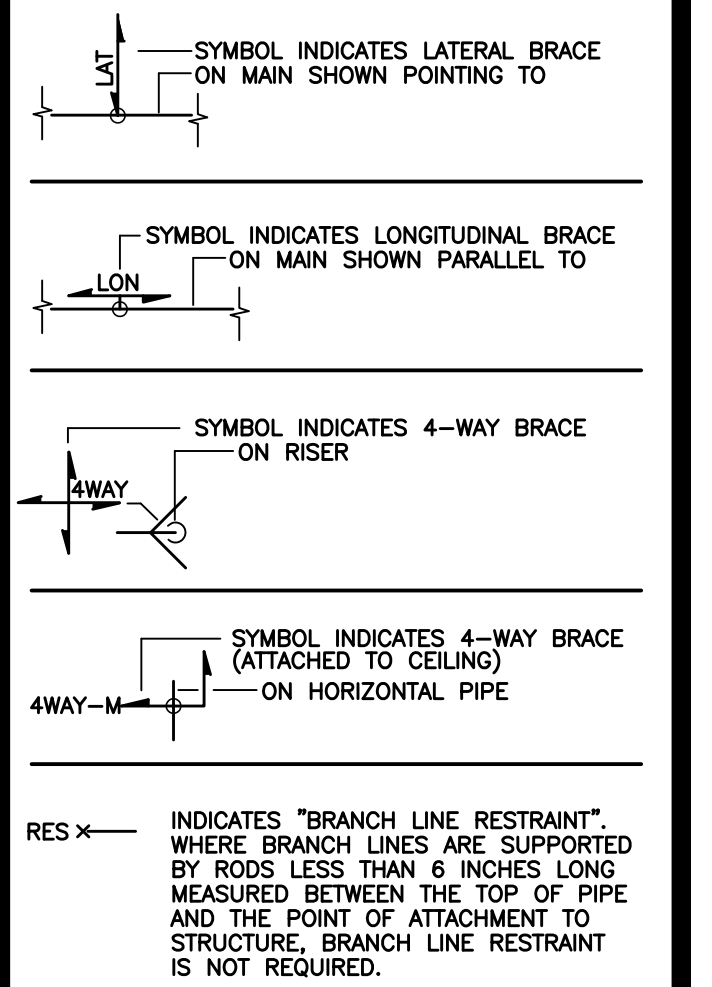
LONGITUDINAL BRACE "LON-1"



LATERAL BRACE "LAT-1"

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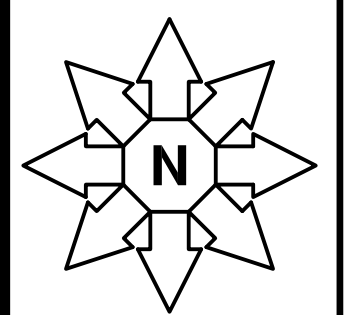
BRACE IDENTIFICATION



ALAIMO ARCHITECTURE INC.

DISANO DESIGN
 80 THURTON COURT
 MARKHAM ONTARIO
 L3R 0G4
 T 905-477-4474
 F 905-477-6360
 E disano@disanodesign.com
 BCN NO. 30002

NORTH



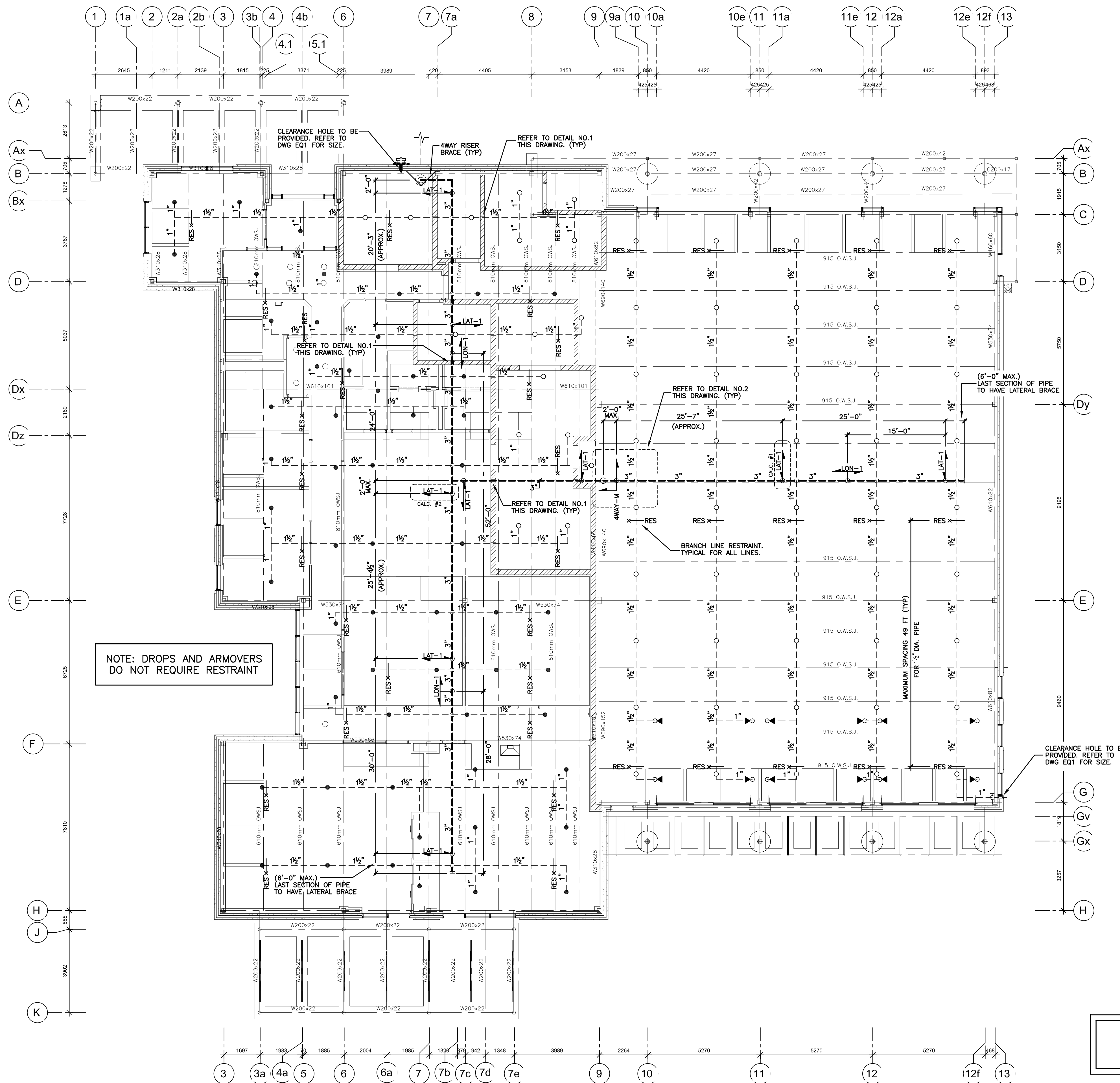
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PROJECT
 NEW TECUMSETH
 FIRE STATION #4
 6375 14TH LINE NEW TECUMSETH ONT.

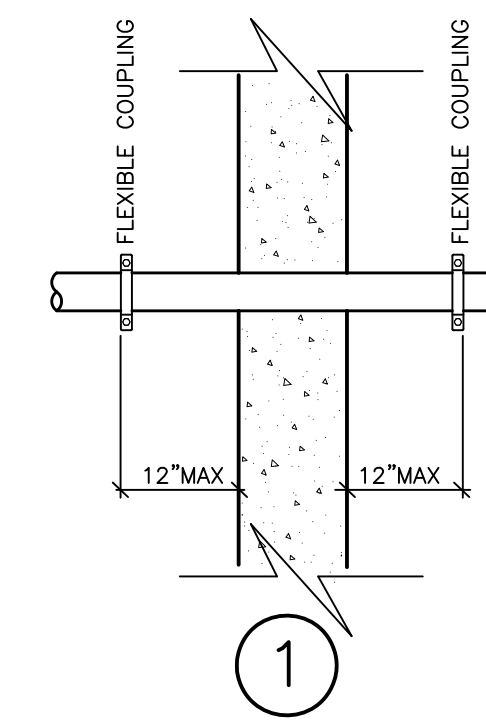
DWG TITLE
 EARTHQUAKE PROTECTION
 BRACE DETAILS

DATE JANUARY 2023	PROJECT NO. 23-14587
SCALE 1:100	DWG NO. EQ3
DWN BY KR	ISSUED FOR REVISION NO.
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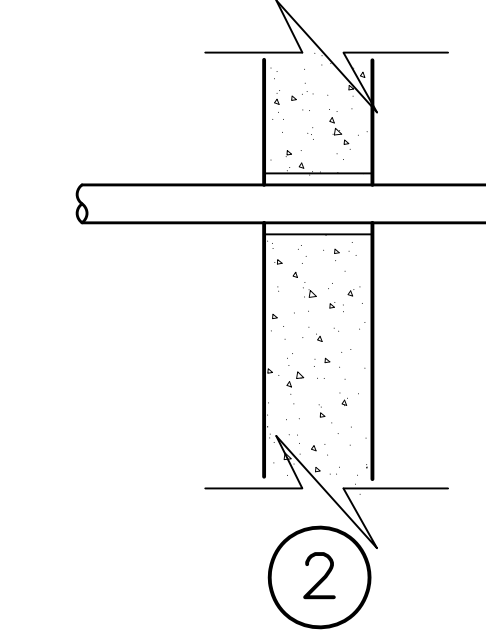


NOTE: DROPS AND ARMOVERS DO NOT REQUIRE RESTRAINT

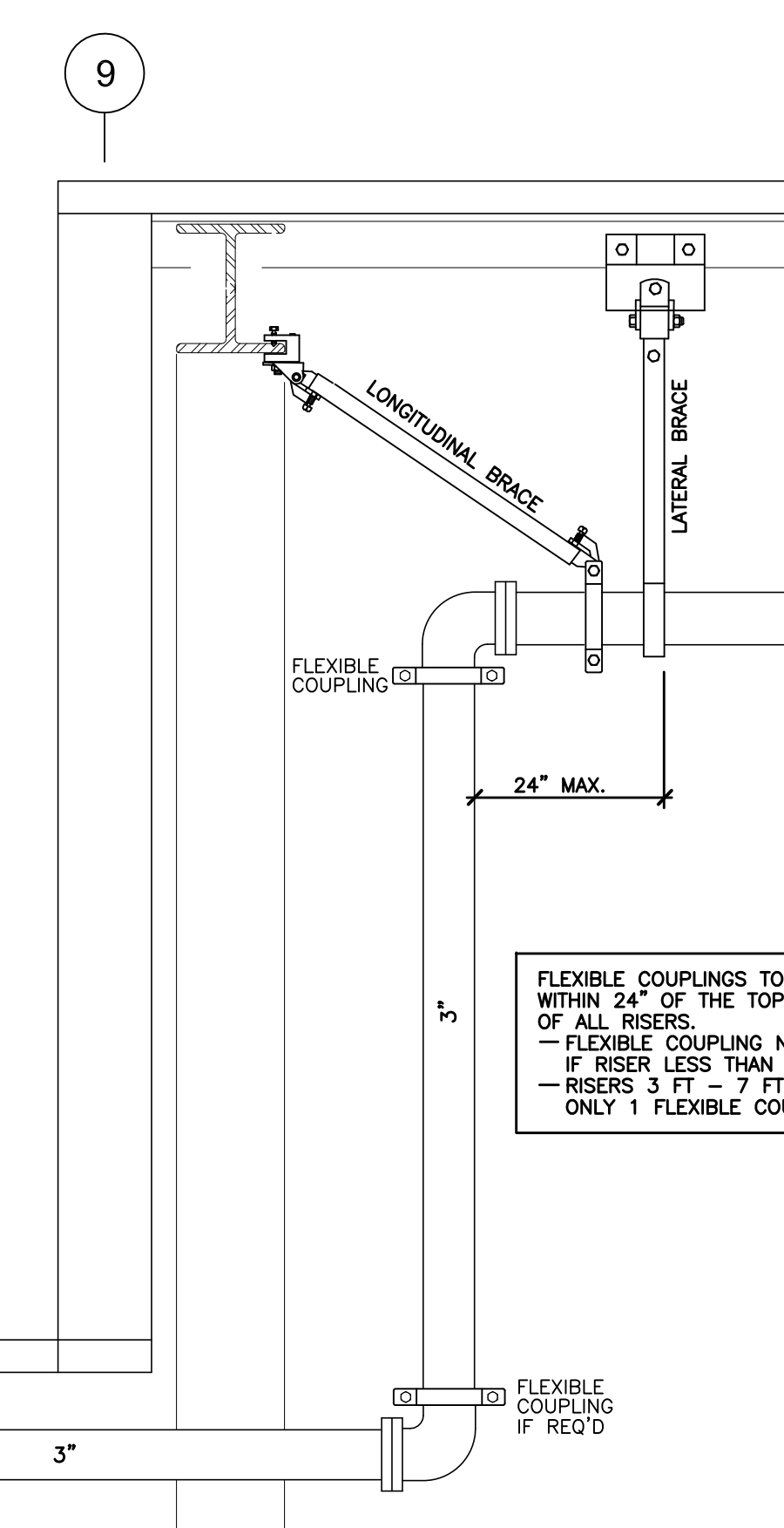
FLEXIBLE COUPLINGS SHALL BE INSTALLED ON BOTH SIDES OF CONCRETE OR MASONRY WALLS WITHIN 1 FT. OF THE WALL SURFACE.



PROVIDE CLEARANCE HOLE. HOLES SHALL BE SIZED SUCH THAT THE DIAMETER OF THE HOLE IS 2" LARGER THAN THE PIPE (FOR 1" TO 3.5" DIA. PIPE) AND 4" LARGER THAN THE PIPE (FOR 4" DIA. AND LARGER PIPE) WHERE REQUIRED, CLEARANCE SHALL BE FILLED WITH A FLEXIBLE MATERIAL THAT IS COMPATIBLE WITH THE PIPING MATERIAL.



PROVIDE ONE OF THE FOLLOWING PIPE PASSING THRU CONCRETE OR MASONRY WALLS
DETAIL NO.1



DETAIL NO.2
4WAY-M RISER BRACE AND FLEX COUPLINGS
N.T.S.

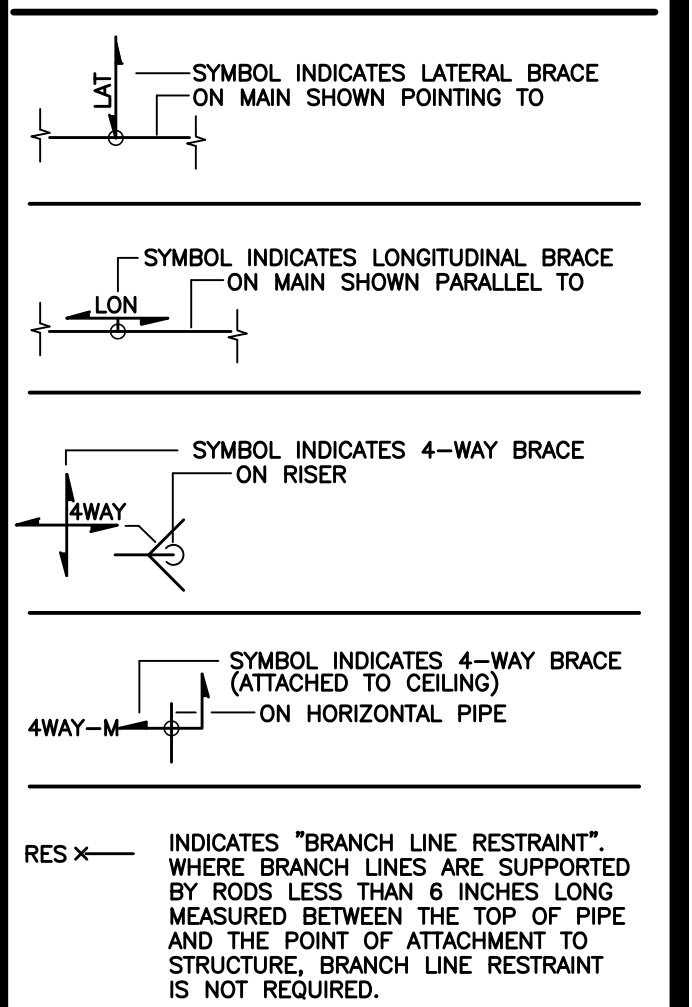
ALL BEAM CLAMPS FOR HANGERS TO BE C/W TOLCO FIG. 69 RESTRAINING STRAP. (SEE DETAIL ON DWG EQ1)

ALL COUPLINGS TO BE LISTED RIGID COUPLINGS UNLESS NOTED OTHERWISE. SEE DRAWING EQ1 FOR LOCATION OF FLEXIBLE COUPLINGS

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ALAIMO ARCHITECTURE INC.

NORTH

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PROJECT
NEW TECUMSETH
FIRE STATION #4
6375 14TH LINE NEW TECUMSETH ONT.

DWG TITLE
EARTHQUAKE PROTECTION
LAYOUT

DATE JANUARY 2023	PROJECT NO. 23-14587
SCALE 1:100	DWG NO. EQ4
DWN BY KR	ISSUED FOR REVISION NO.
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