



PROCUREMENT SERVICES
City of Surrey, Surrey City Hall
13450 – 104th Avenue
Surrey, B.C., V3T 1V8
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E-mail: purchasing@surrey.ca

ADDENDUM No. 2

INVITATION TO TENDER No.:	1220-020-2020-003
TITLE:	ENERGY TRANSFER STATIONS (ETS) AND INTERIOR PIPING CONSTRUCTION AT PCI
ADDENDUM ISSUE DATE:	APRIL 3, 2020
(REVISED) CLOSING TIME:	ON OR BEFORE THE FOLLOWING DATE AND TIME (THE “CLOSING TIME”):
	TIME: 11:00 a.m. (Local Time)
	DATE: April 15, 2020

INFORMATION FOR TENDERERS

Tenderers are advised that this Addendum No. 2 to *Contract* No. **1220-020-2020-003** is hereby issued by the *Owner*. This addendum shall form part of the *Contract Documents* and is to be read, interpreted and coordinated with all other parts. The following revisions supersede the information contained in the original *Contract Documents* and preceding addendums (if any). The cost of all *Work* herein shall be included in the Unit Prices tendered in the *Schedule of Quantities and Prices*.

As the situation around Novel Coronavirus (COVID-19) continues to evolve, this procurement document needs to be amended as follows:

1. REFER TO SECTION 1.0 OF PART B – INSTRUCTION TO TENDERERS DOCUMENT.

Delete the reference to hard copy delivery in its entirety. The City prefers to receive all submissions by email copy only.

General Information:

2. **Revised Closing Time:**
Time: 11:00 a.m. (Local Time)
Date: April 15, 2020

3. In Part C – FORM OF TENDER

Delete Appendix 1 – Schedule of Quantities and Prices as issued for tender in its entirety and substitute with the revised Appendix 1 – Schedule of Quantities as attached to this addendum:

- Mechanical Interior Piping separated by size

4. In Part G –DRAWINGS

Delete the following Contract Drawings as issued for tender in their entirety and substitute with the revised Contract Drawings as attached to this addendum:

- M106
- M206
- M207
- M208
- M209
- M501

4. In Part E – SUPPLEMENTARY GENERAL

CONDITIONS GC 6.5 DELAYS

48. New GC 6.5.11:

Add the following:

“6.5.11 Notwithstanding GC 6.5.3, the parties acknowledge that the *Contract* has been entered into during the on-going COVID-19 pandemic (the “Pandemic”). The *Contractor* advises that it is able to proceed with the *Work* under the Pandemic conditions and restrictions (collectively the “Pandemic Restrictions”) as they exist as of the date of this *Contract*. The parties acknowledge that Pandemic Conditions may change so as to cause unavoidable interruptions or interference to the *Contractor’s* performance of the *Work*. The parties confirm:

(a) notwithstanding the known existence of the Pandemic, GC 6.5.11 will apply to new Pandemic Restrictions, which arise after the date of this *Contract*, whether anticipated or not, which reasonably interfere with the *Contractor’s* performance of the *Work*, such that upon giving required notice the *Contractor* shall be entitled to an extension of the *Contract Time*, but shall not be entitled to reimbursement of any costs;

(b) notwithstanding any such new Pandemic Restrictions, the *Contract* will remain valid and in force, subject to the terms of the *Contract* including, without limitation, Part 9 PROTECTION OF PERSONS AND PROPERTY; and

(c) if new Pandemic Restrictions occur that cause or threaten *Work* interruptions the *Contractor* will, as required by GC 6.5.4 give the *Owner* immediate notice, and a written plan of the interim steps the *Contractor* will take, if any, during the *Work* interruption, and when Pandemic Restrictions permit, provide the *Owner* with a written plan for the resumption of the *Work*.”

49. New GC 6.8:

“GC 6.8 CONTRACTOR TO MITIGATE

6.8.1 For clarity, in the event of any delay the *Contractor* shall take all reasonable measures to

minimize the effects and costs of the delay which are at the Contractors' sole cost and this obligation shall be taken into account in the determination of the *Contractor's* entitlement to an extension of the *Contract Time*."

- END OF ADDENDUM -

All Addenda will become part of the ITT Documents.

APPENDIX 1 – SCHEDULE OF QUANTITIES AND PRICES

For the purposes of comparison of *Tenders* and for subsequent payment, each *Tenderer* should breakdown its total *Tender Price* into the following lump sum items. We certify that the following is an accurate and balanced breakdown of our *Tender Price(s)*. *Work* required, but not specifically mentioned, is included in the item with which it is most closely associated with. Refer to *Drawings* and *Specifications* for a description of the *Work* to be involved in each item.

All prices and quotations including the *Tender Prices* shall include all taxes, but should not include GST. GST should be shown separately.

Reference No.: 1220-020-2020-003

Schedule of Quantities and Prices – Summary Sheet

Item No.	Description	Unit	Est. Qty.	Unit Price	AMOUNT
1.	<u>GENERAL</u>				
1.1	Bonding and Insurance	L.S.	-		
1.2	Mobilization/Demobilization	L.S.	-		
1.3	Shop Drawings	L.S.	-		
1.4	O&M Manual and As-Builts	L.S.	-		
	Subtotal Items 1.1 to 1.4				
2.	<u>Mechanical (Mechanical Room Only)</u>				
2.1	BIM	L.S.	-		
2.2	Heat Exchangers	L.S.	-		
2.3	Piping & Supports	L.S.	-		
2.4	Insulation	L.S.	-		
	Subtotal Items 2.1 to 2.4				
3.	<u>Mechanical (Interior 6” Piping to Mechanical Room)</u>				
3.1	Piping & Supports	L.S.	-		
3.2	Insulation	L.S.	-		
	Subtotal Items 3.1 to 3.2				

4.	<u>Mechanical (Interior Piping to 6" Connections)</u>				
4.1	Piping & Supports	L.S.			
4.2	Insulation	LS.			
	Subtotal Items 4.1 to 4.2				
5.	<u>Electrical</u>				
5.1	Electrical & Controls	L.S.	-		
5.2	Commissioning	L.S.	-		
	Subtotal Items 5.1 to 5.2				

OTHERS NOT LISTED ABOVE (SPECIFY):

					\$

Schedule of Quantities and Prices – Summary Sheet

Subtotals Summary Sheet		
Section	Items	Amount
1. General	1.1 to 1.4	\$
2. Mechanical (Mechanical Room Only)	2.1 to 2.4	\$
3. Mechanical (Interior 6” Piping to Mechanical Room)	3.1 to 3.2	\$
4. Mechanical (Interior Piping to 6” Connections)	4.1 to 4.2	\$
5. Electrical	5.1 to 5.2	\$
Subtotal (excludes GST):		
GST:		
TENDER PRICE, including GST:		

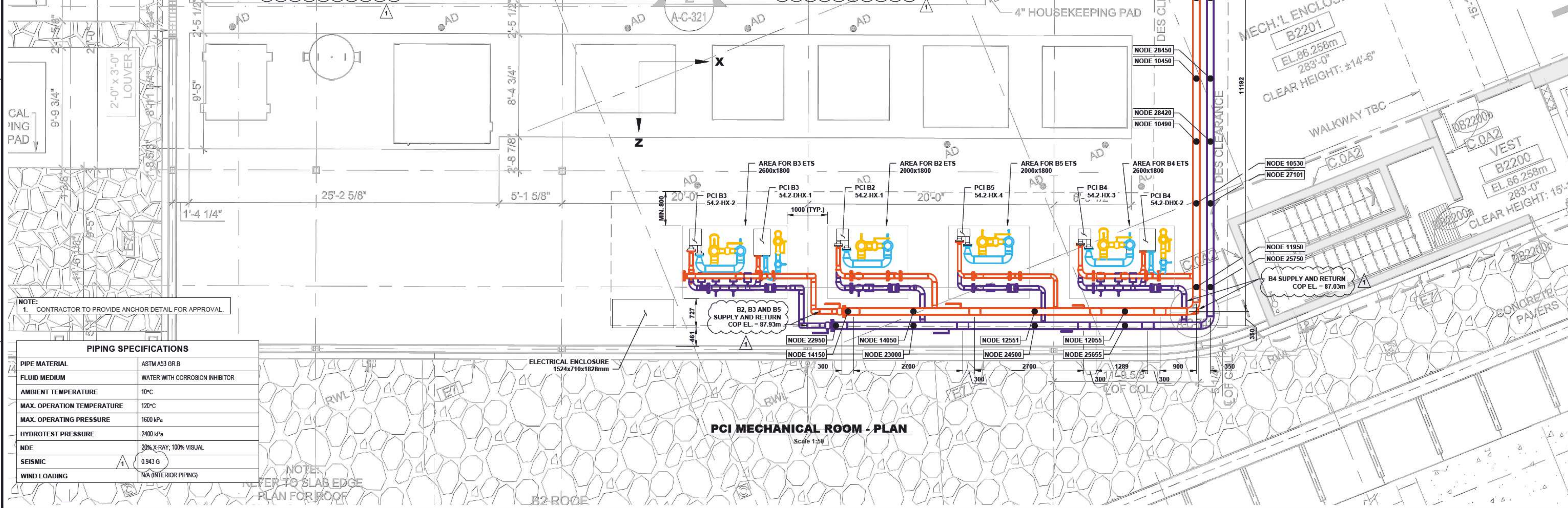
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STRESS ANALYSIS STATIC REPORT - DPS SUPPLY

NODE	TYPE	F _x N.	F _y N.	F _z N.	DETAIL REFERENCE AS PER DWG. 501
28850	RIGID ANC	3690	-2660	-2080	SEE NOTE 1
10100	RIGID +Y	0	-980	0	D/E
10200	RIGID +Y	0	-810	0	D/E
10250	RIGID +Y	0	-1460	0	D/E
10363	RIGID +Y	0	-2000	0	D/E
10425	RIGID +Y	0	-900	0	D/E
10450	RIGID +Y	0	-820	0	D/E
10490	RIGID +Y	0	-700	0	D/E
10530	RIGID ANC	7300	-930	6780	SEE NOTE 1
11950	RIGID +Y	0	-1680	0	D/E
12055	RIGID +Y	0	-2080	0	D/E
12551	RIGID +Y	0	-1710	0	D/E
14050	RIGID +Y	0	-1770	0	D/E
14150	RIGID +Y; RIGID +X (GAP=5mm); RIGID GUI	-7670	-860	1950	A & C (SUB-DETAIL 2 & 3)

STRESS ANALYSIS STATIC REPORT - DPS RETURN

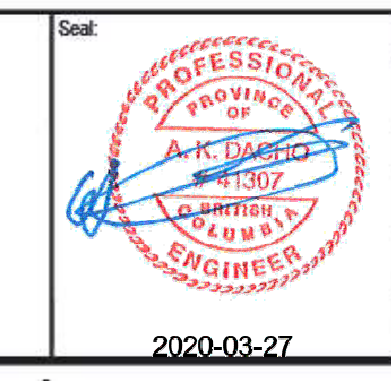
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22950	RIGID +Y; RIGID +X (GAP=5mm); RIGID GUI	-8020	-930	2170	A & C (SUB-DETAIL 2 & 3)
23000	RIGID +Y	0	-2000	0	D/E
24500	RIGID +Y	0	-1690	0	D/E
25555	RIGID +Y	0	-2450	0	D/E
25750	RIGID +Y	0	-1710	0	D/E
27101	RIGID ANC	6690	-1050	6660	SEE NOTE 1
28420	RIGID +Y	0	-720	0	D/E
28450	RIGID +Y	0	-760	0	D/E
28480	RIGID +Y	0	-1070	0	D/E
28538	RIGID +Y	0	-1660	0	D/E
28600	RIGID +Y	0	-1520	0	D/E
28650	RIGID +Y	0	-820	0	D/E
28700	RIGID +Y	0	-800	0	D/E
28800	RIGID ANC	3580	-2620	-2000	SEE NOTE 1



PIPING SPECIFICATIONS

PIPE MATERIAL	ASTM A53 GR.B
FLUID MEDIUM	WATER WITH CORROSION INHIBITOR
AMBIENT TEMPERATURE	10°C
MAX. OPERATION TEMPERATURE	120°C
MAX. OPERATING PRESSURE	1600 kPa
HYDROTEST PRESSURE	2400 kPa
NDE	20% X-RAY, 100% VISUAL
SEISMIC	0.943 G
WIND LOADING	NA (INTERIOR PIPING)

NOTE: REFER TO SLAB EDGE PLAN FOR ROOF



Rev	Date	Des	Dwn	Chk	Description
0	2020-02-18	KSP	KSP	AKD	ISSUED FOR TENDER
1	2020-03-26	KSP	KSP	AKD	PIPE ELEVATION AND STRESS TABLE UPDATED

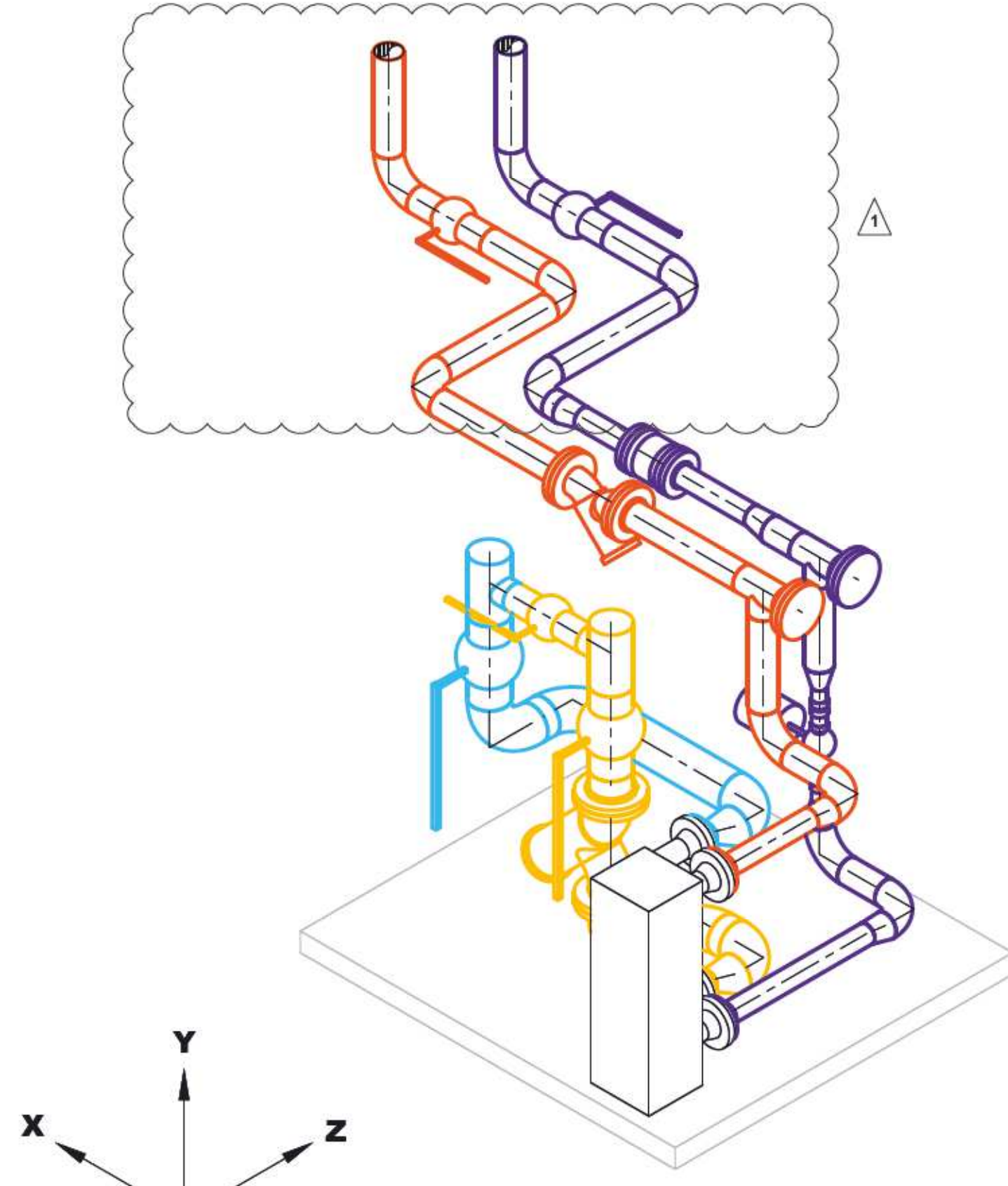
Rev	Date	Des	Dwn	Chk	Description

CITY OF SURREY
E-17570 PCI KING GEORGE HUB PHASE B

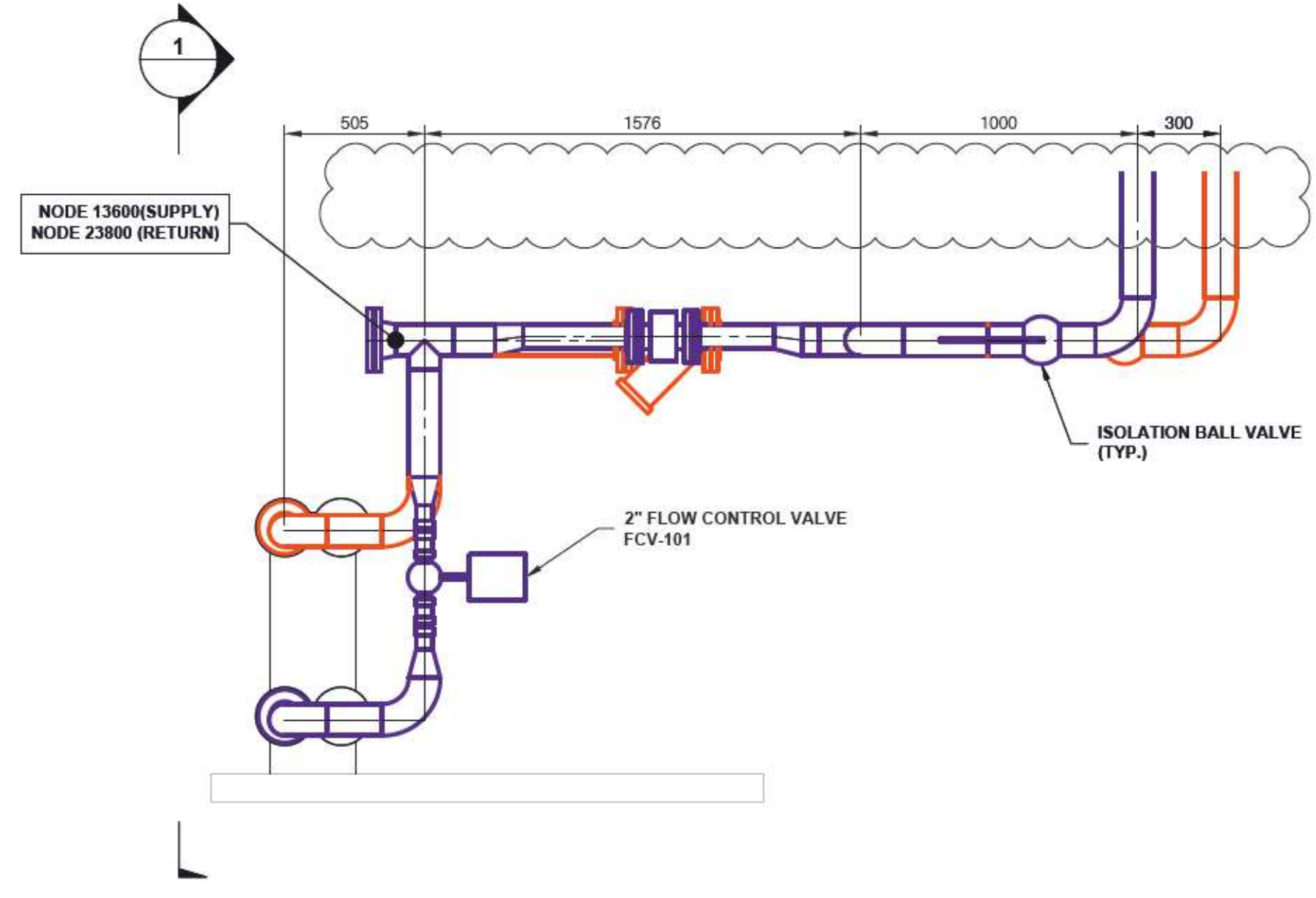
INTERIOR PIPING

Project No. 471.328 Drawing No. M-106 Rev. 1
 Group MECHANICAL

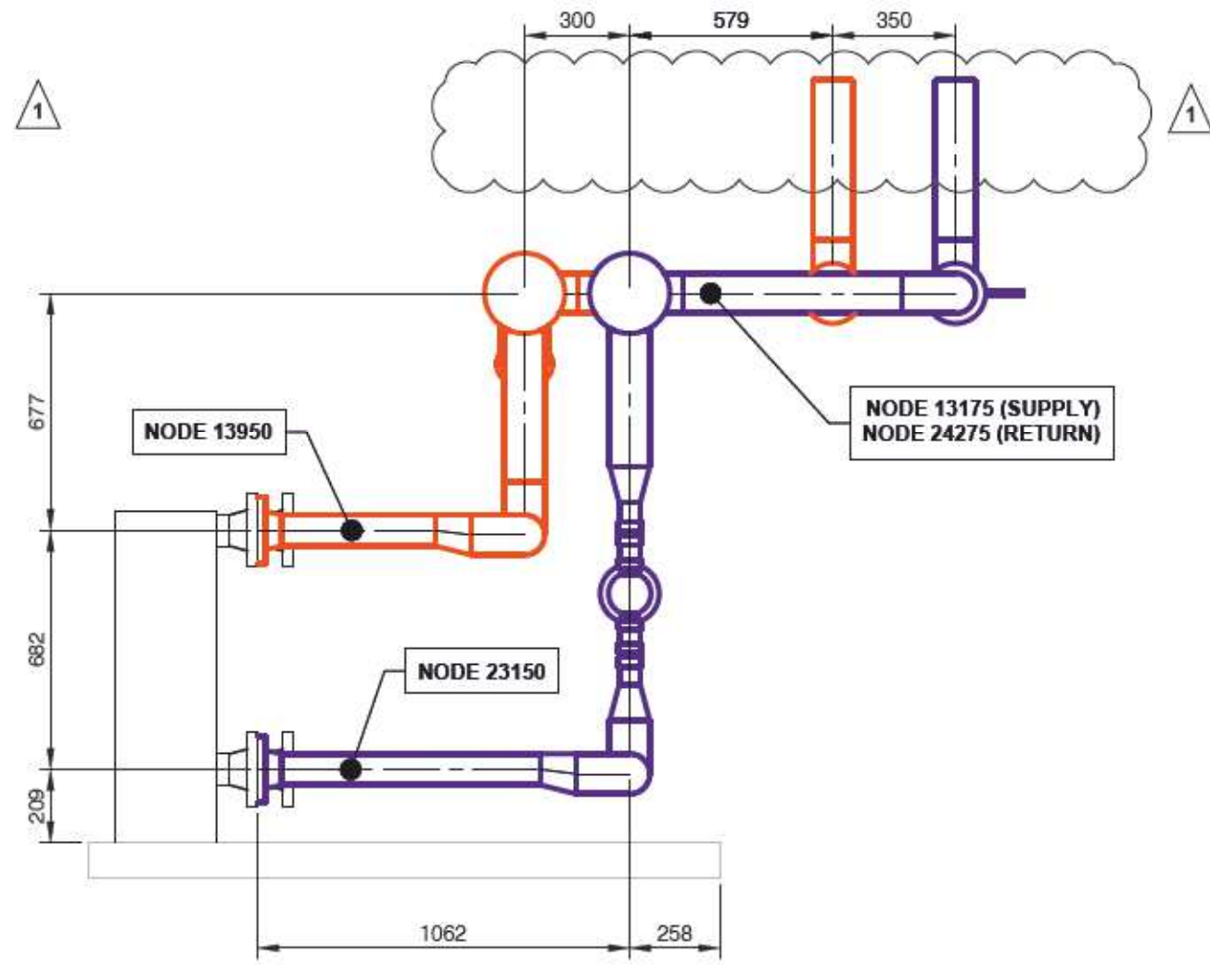
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B2 ETS - ISOMETRIC VIEW
Scale 1:20

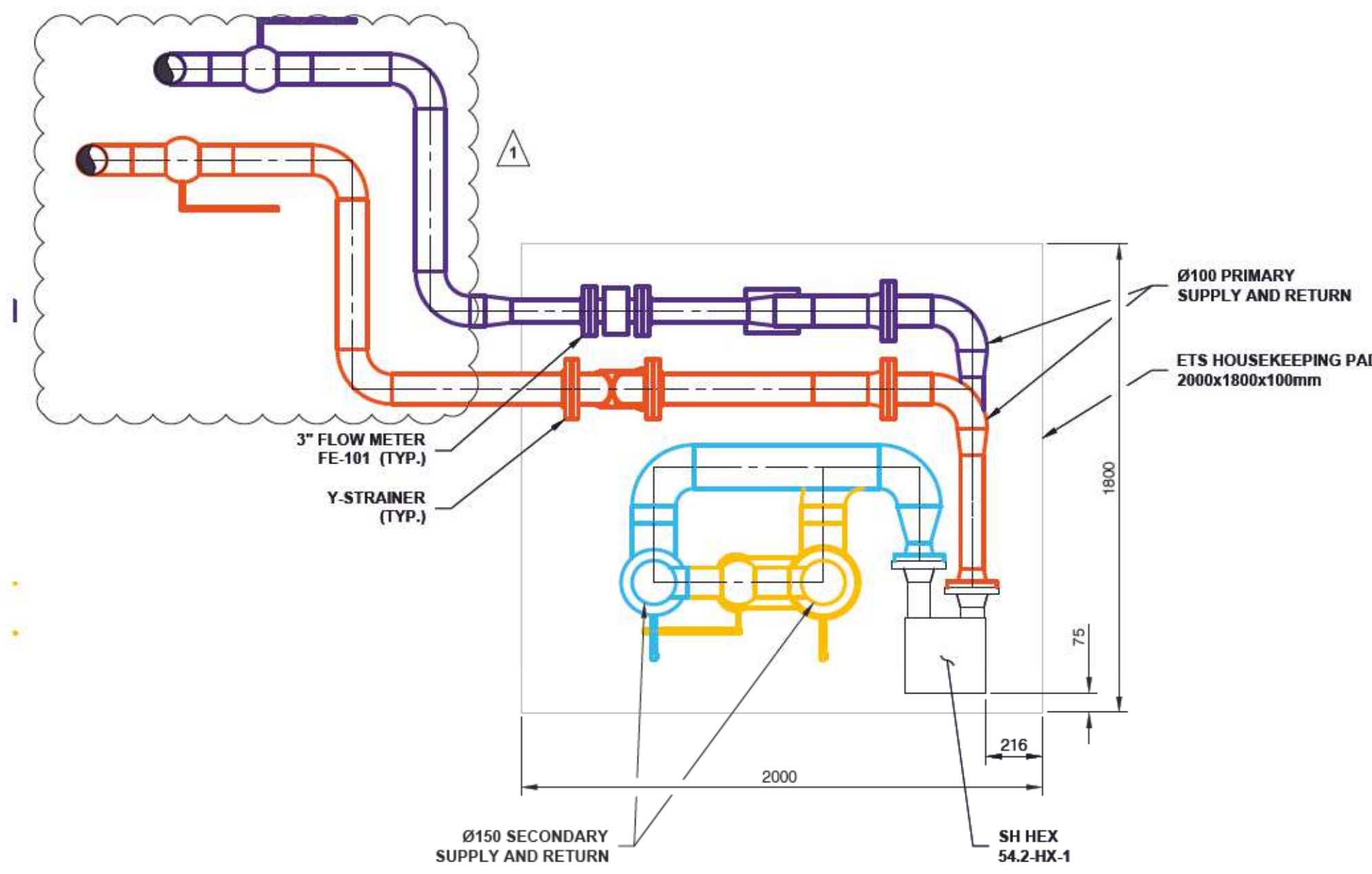


PRIMARY SUPPLY AND RETURN - BACK
Scale 1:20

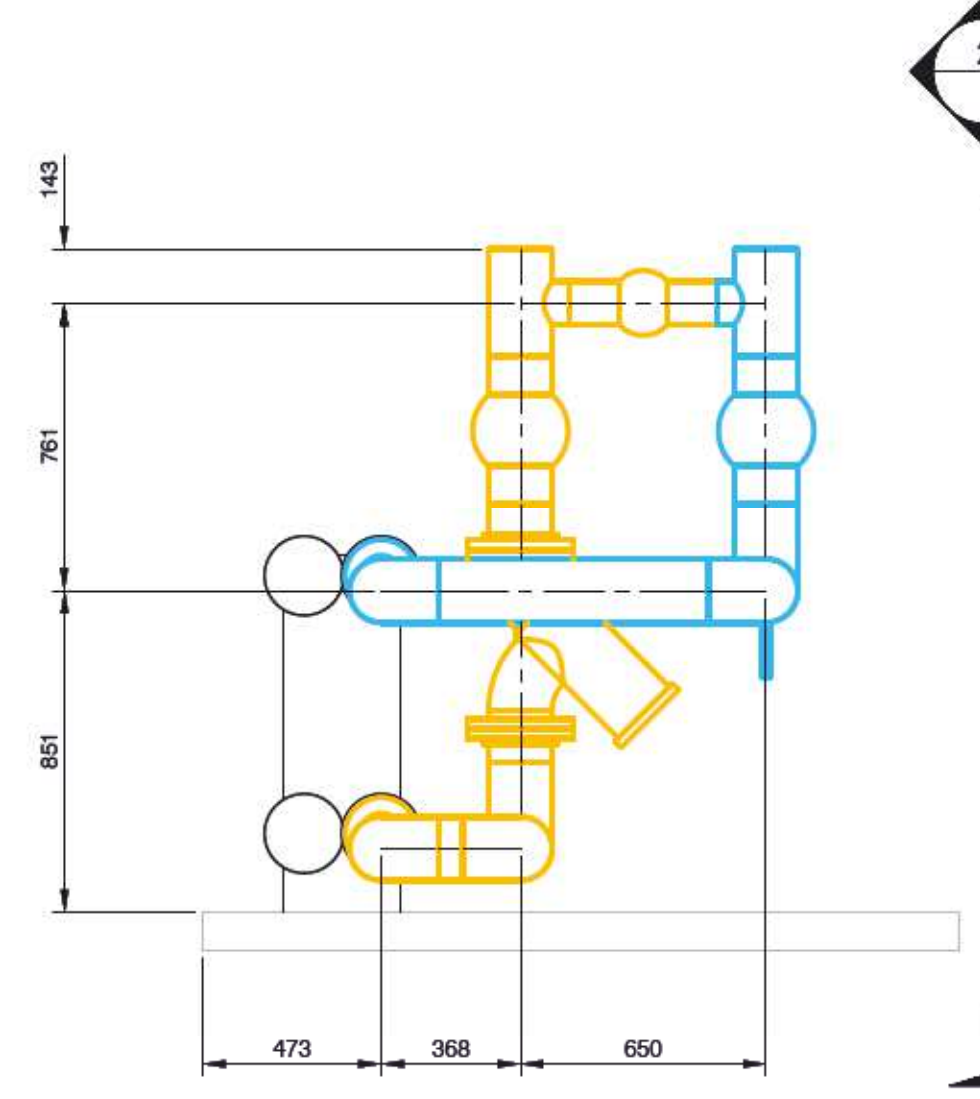


PRIMARY SH SUPPLY AND RETURN - TOP VIEW
Scale 1:20

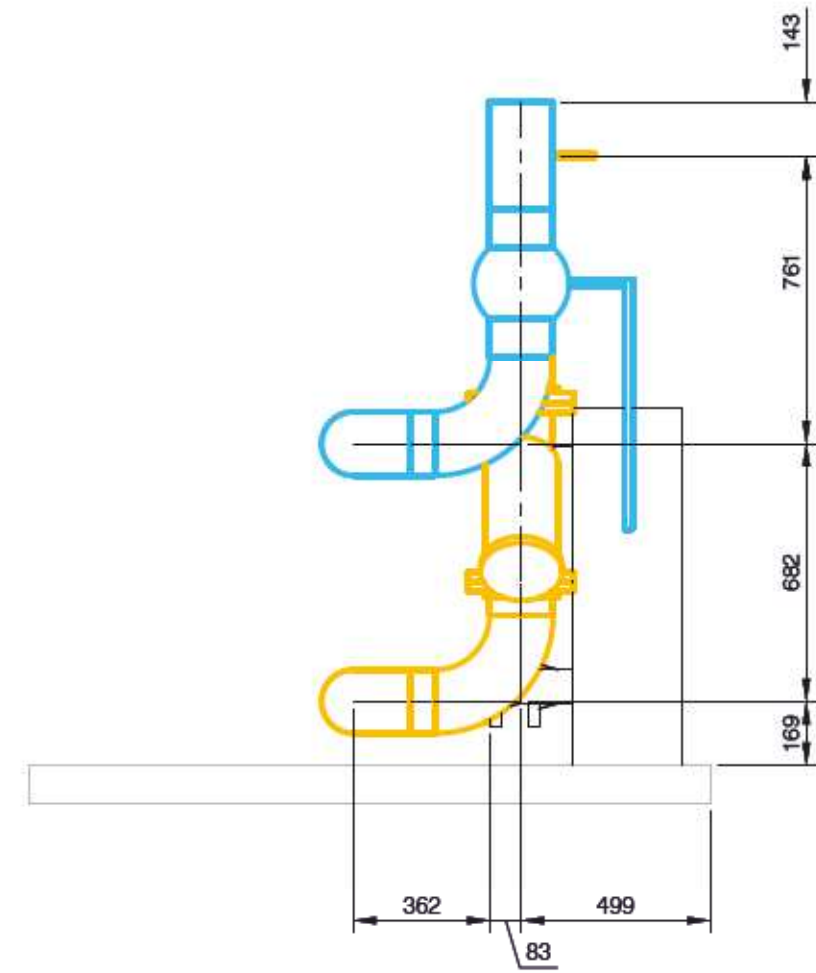
- GENERAL NOTES:**
1. ALL DIMENSIONS ARE IN "mm".
 2. TOP-FLAT REDUCERS ON ALL HORIZONTAL PIPES, CONCENTRIC REDUCERS ON ALL VERTICAL PIPES.
 3. DRAWINGS SHALL BE READ IN CONJUNCTION WITH PROJECT SPECIFICATIONS AND P&IDs.
 4. REFER TO DRAWINGS M-501 FOR DETAILS.
 5. ADD A UNION FOR ALL EQUIPMENT AND INSTRUMENTS WITH THREADED CONNECTION FOR EASY MAINTENANCE.
 6. REFER TO SPECIFICATIONS FOR FLOW METER MINIMUM LENGTH REQUIREMENTS.
 7. CONTRACTOR TO CONFIRM TIE-IN LOCATIONS AND ELEVATION PRIOR TO CONSTRUCTION.
 8. CONTRACTOR TO CONFIRM SUPPLY AND RETURN ORIENTATION PRIOR TO CONSTRUCTION.
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 10. CONDUIT AND FIBRE CONNECTIONS FROM BUILDING PENETRATION TO CONTROL PANEL ARE NOT SHOWN ON DRAWINGS.
 11. SECONDARY SIDE PIPE SUPPORTS NOT SHOWN. CONTRACTOR TO PROVIDE SECONDARY SIDE PIPE SUPPORTS.
 12. LOADS ARE UNFACTORED.



PRIMARY & SECONDARY SUPPLY AND RETURN - PLAN
Scale 1:20



SECONDARY SH SUPPLY AND RETURN - BACK
Scale 1:20



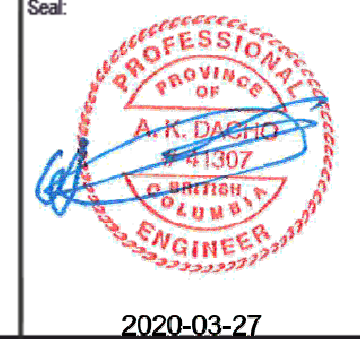
SECONDARY SH SUPPLY AND RETURN - SIDE
Scale 1:20

STRESS ANALYSIS STATIC REPORT

NODE	TYPE	Fx N.	Fy N.	Fz N.	DETAIL REFERENCE AS PER DWG. M-501
13175	RIGID +Y	0	-1660	0	D/E
13600	RIGID +Y	0	-610	0	D/E
13950	RIGID +Y	0	-300	0	H
23150	RIGID +Y	0	-2980	0	H
23800	RIGID +Y	0	-630	0	D/E
24275	RIGID +Y	0	-1810	0	D/E

PIPING SPECIFICATIONS

PIPE MATERIAL	ASTM A53 GR.B
FLUID MEDIUM	WATER WITH CORROSION INHIBITOR
AMBIENT TEMPERATURE	10°C
MAX. OPERATION TEMPERATURE	120°C
MAX. OPERATING PRESSURE	1600 kPa
HYDROTEST PRESSURE	2400 kPa
NDE	20% X-RAY, 100% VISUAL
SEISMIC	0.943g
WIND LOADING	N/A (INTERIOR PIPING)



Rev	Date	Des	Dwn	Chk	Description
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1	2020-03-26	KSP	KSP	AKD	PIPE HEADER AND STRESS TABLE UPDATED

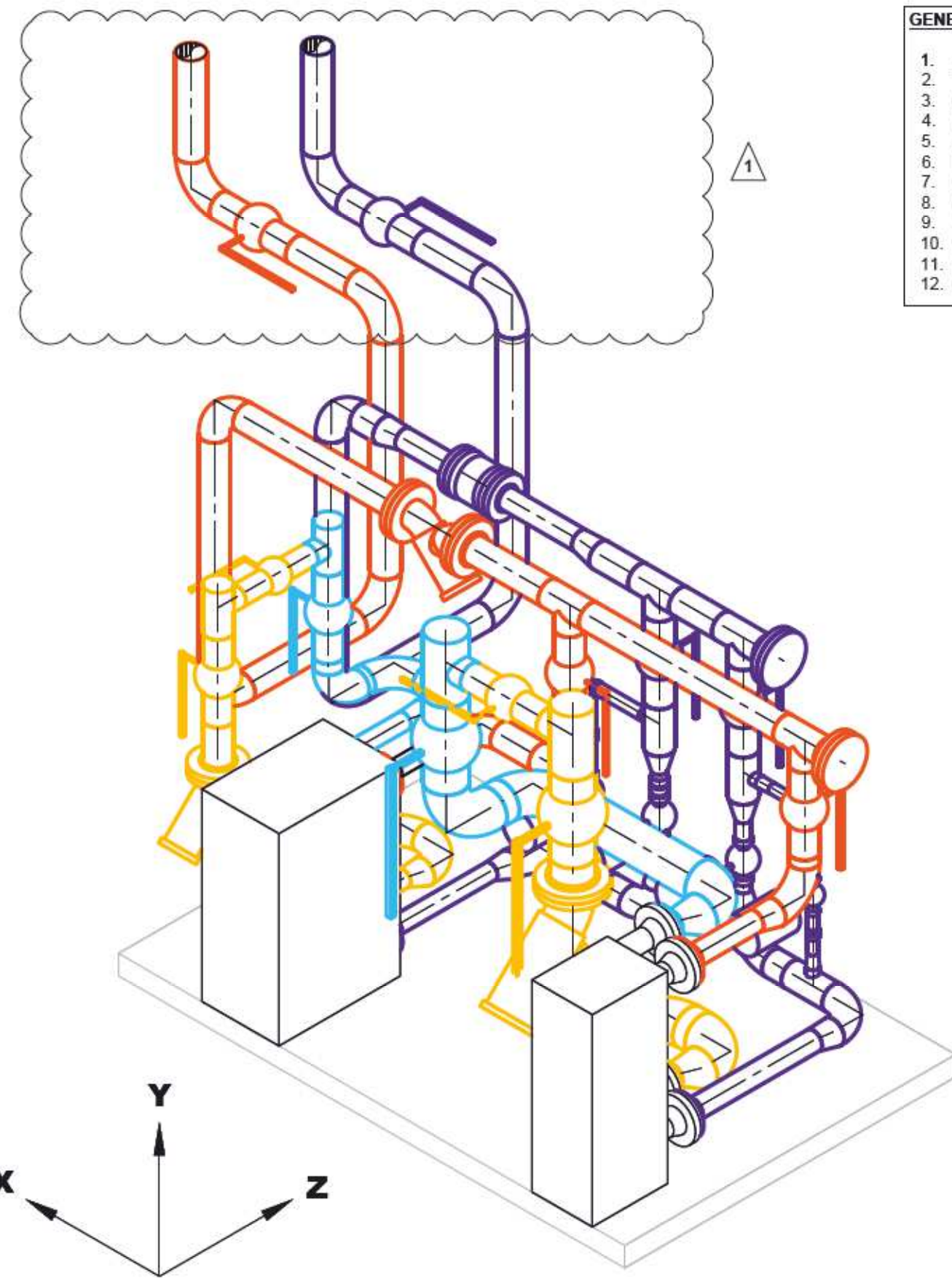
Rev	Date	Des	Dwn	Chk	Description

CITY OF SURREY
E-17570 PCI KING GEORGE HUB PHASE B

PCI B2
ENERGY TRANSFER STATION
PLAN AND SECTIONS

Project No. **0471-328** Drawing No. **M-206** Rev. **1**
Group **MECHANICAL**

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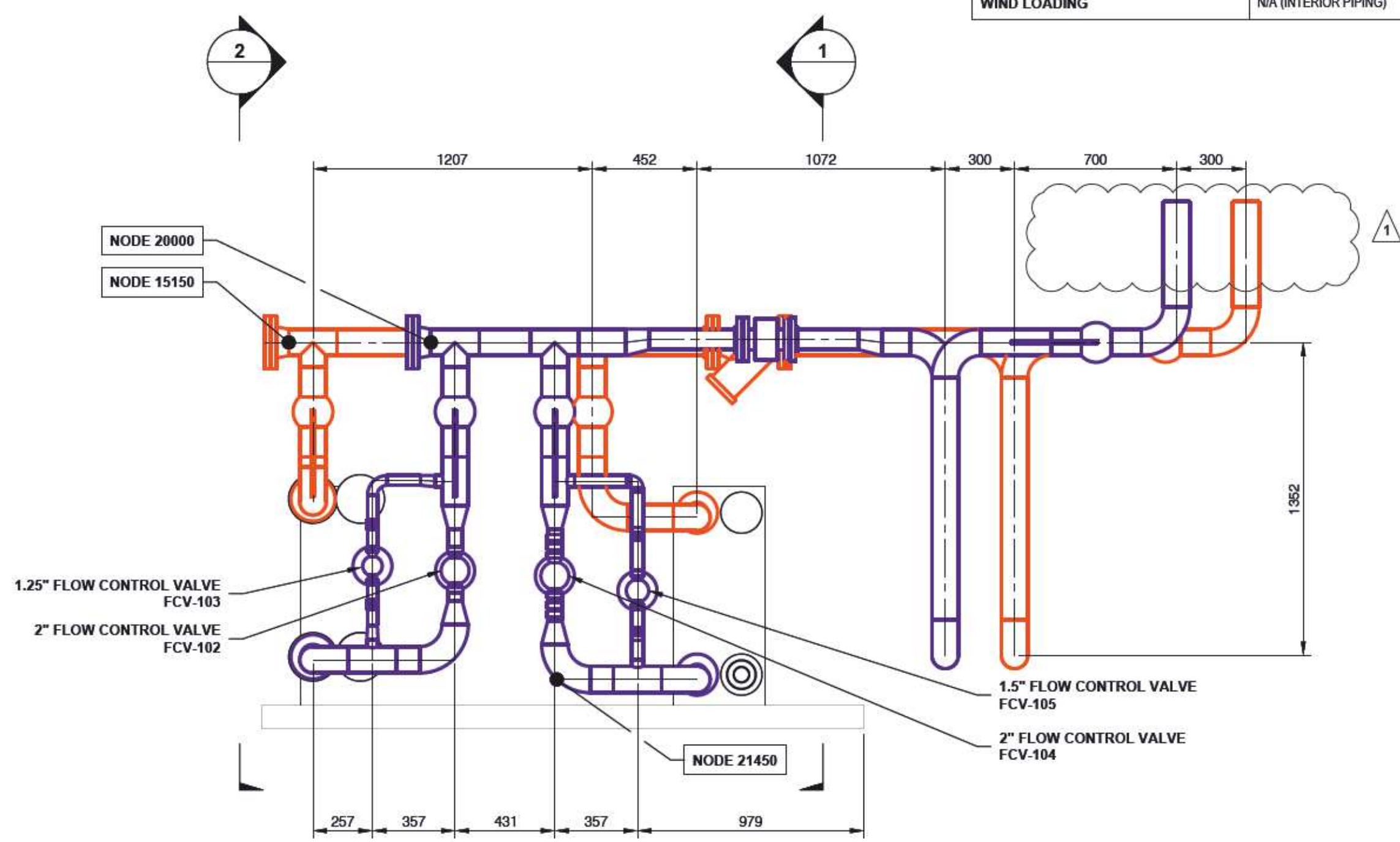


B3 ETS - ISOMETRIC VIEW
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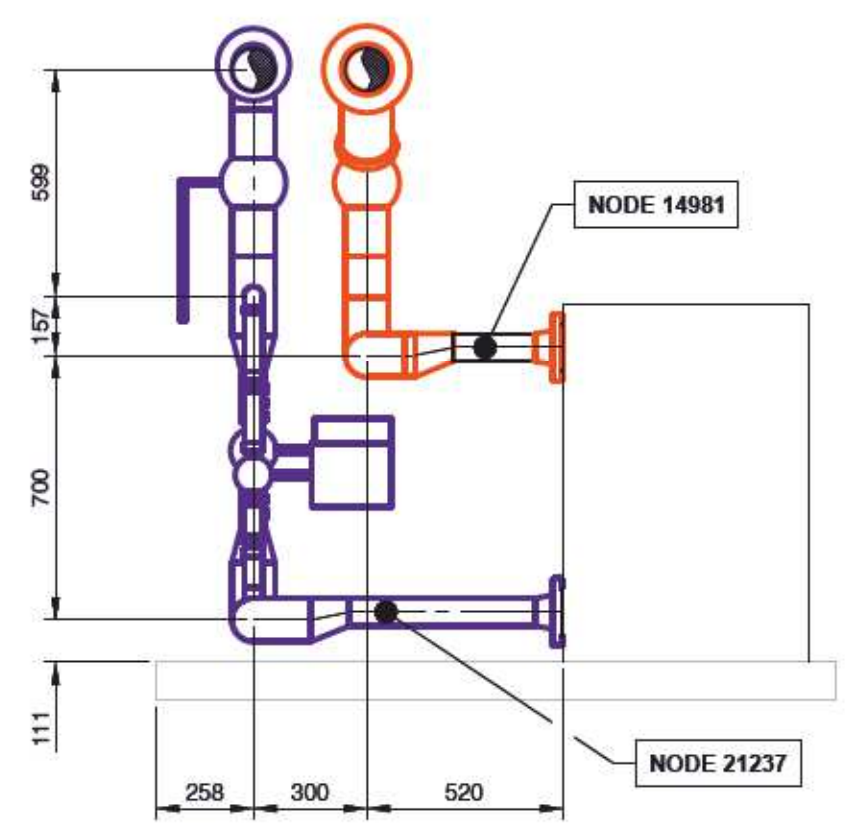
- GENERAL NOTES:**
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 11. SECONDARY SIDE PIPE SUPPORTS NOT SHOWN, CONTRACTOR TO PROVIDE SECONDARY SIDE PIPE SUPPORTS.
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PIPING SPECIFICATIONS	
PIPE MATERIAL	ASTM A53 GR.B
FLUID MEDIUM	WATER WITH CORROSION INHIBITOR
AMBIENT TEMPERATURE	10°C
MAX. OPERATING TEMPERATURE	120°C
MAX. OPERATING PRESSURE	1600 kPa
HYDROTEST PRESSURE	2400 kPa
NDE	20% X-RAY, 100% VISUAL
SEISMIC	0.943 G
WIND LOADING	N/A (INTERIOR PIPING)

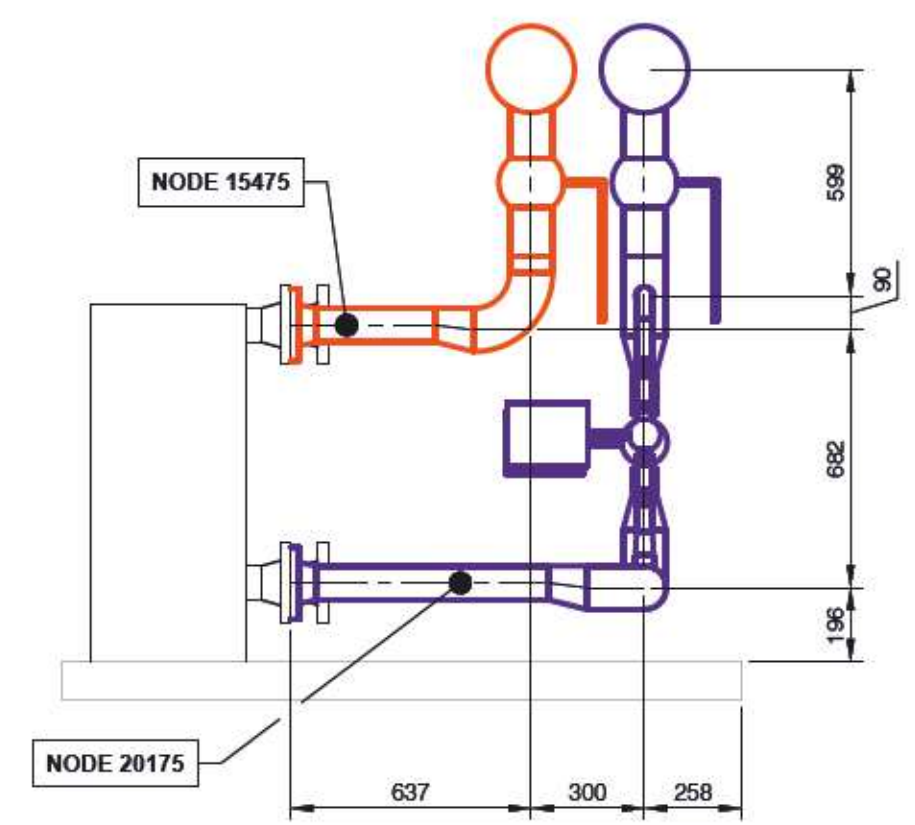
STRESS ANALYSIS STATIC REPORT					
NODE	TYPE	Fx N.	Fy N.	Fz N.	DETAIL REFERENCE AS PER DWG. M-501
14275	RIGID +Y	0	-3340	0	H
14400	RIGID +Y, RIGID GUI (GAP=0mm)	0	-520	2460	A & C (SUB-DETAIL 3)
14981	RIGID +Y, RIGID GUI (GAP=1mm)	-2580	-1460	0	J & C (SUB-DETAIL 3)
15150	RIGID +Y	0	-720	0	D/E
15475	RIGID +Y	0	-310	0	H
20000	RIGID +Y	0	-400	0	D/E
20175	RIGID +Y	0	-2120	0	H/B (SUB-DETAIL 02A)
21237	RIGID +Y, RIGID GUI (GAP=1mm)	1830	-2940	0	B (SUB-DETAIL 02B)
21450	RIGID +Y	0	-1370	0	B (SUB-DETAIL 02A)
22650	RIGID +Y, RIGID GUI (GAP=1mm)	0	-140	1930	A & C (SUB-DETAIL 3)
22750	RIGID +Y	0	-3270	0	H



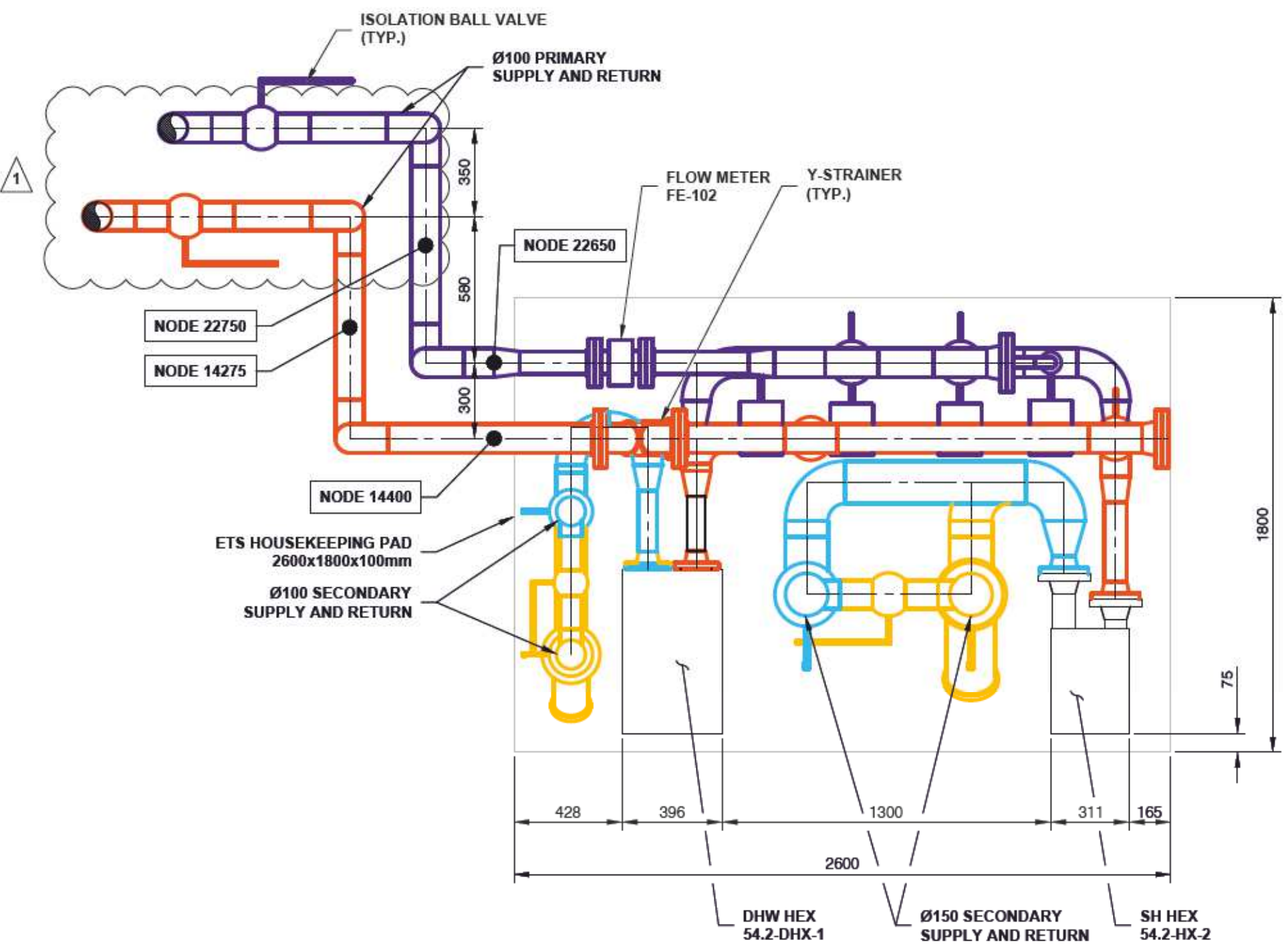
PRIMARY SUPPLY AND RETURN - BACK
Scale 1:20



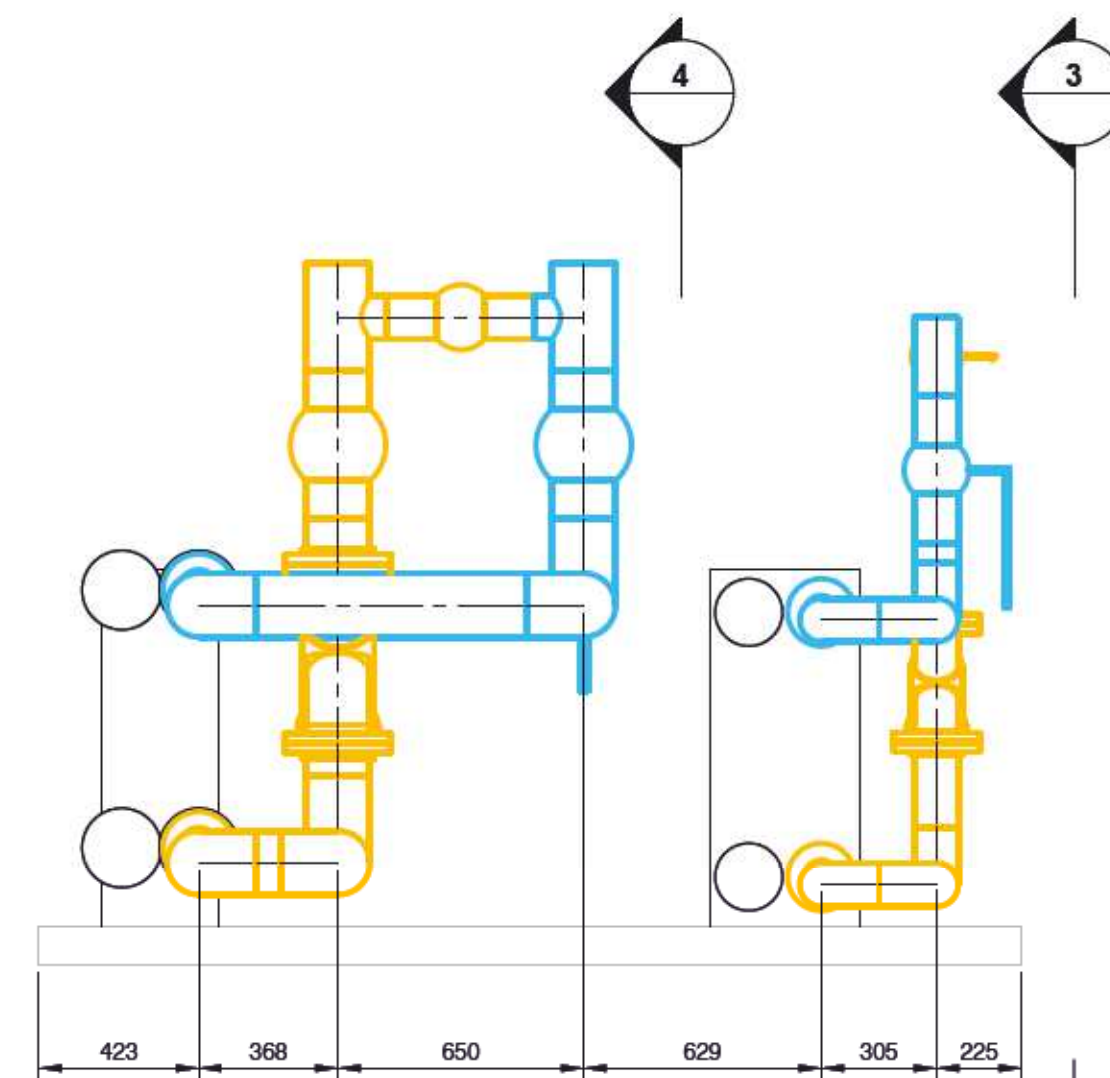
PRIMARY DHW SUPPLY AND RETURN - SIDE 1
Scale 1:20



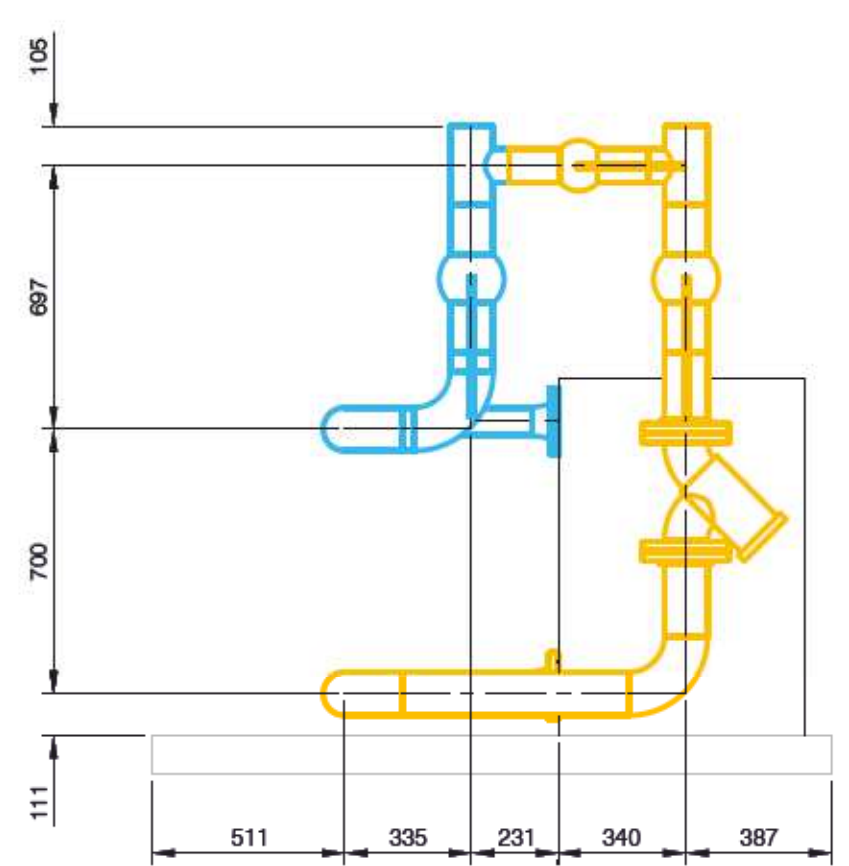
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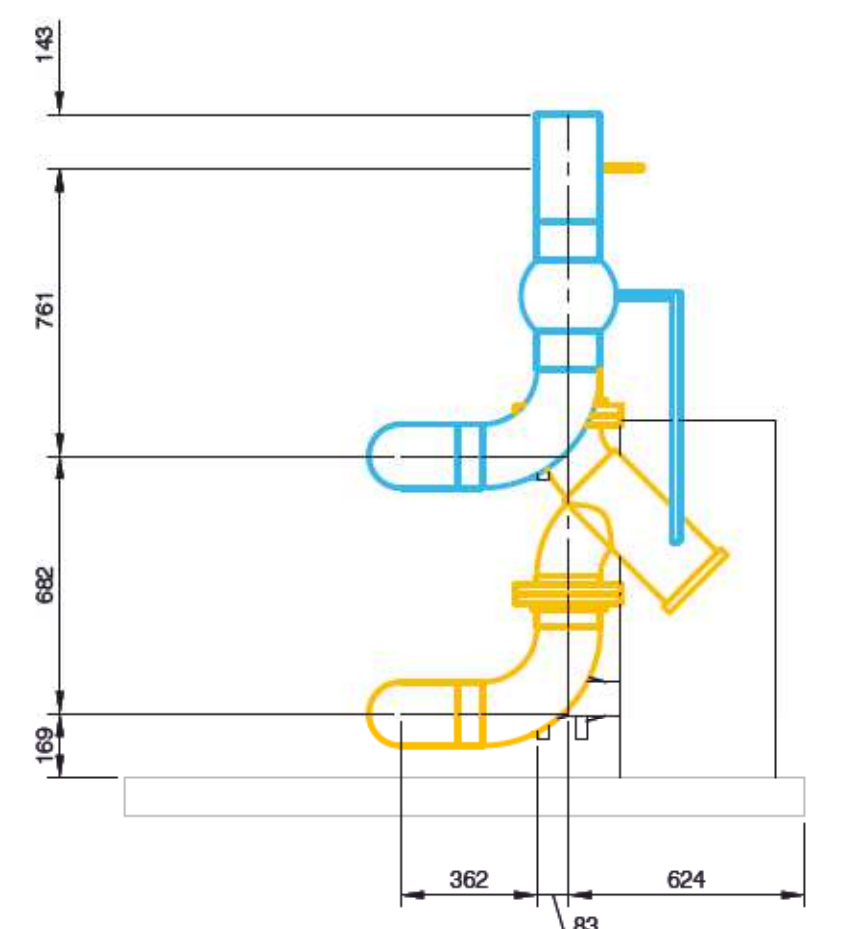
PRIMARY & SECONDARY SUPPLY AND RETURN - PLAN
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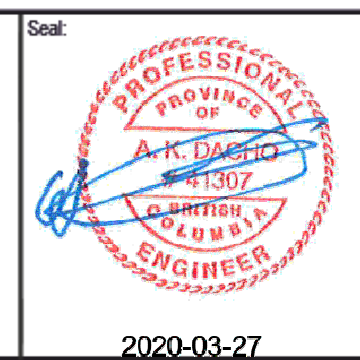
SECONDARY SUPPLY AND RETURN - BACK
Scale 1:20



SECONDARY DHW SUPPLY AND RETURN - SIDE 3
Scale 1:20



SECONDARY SH SUPPLY AND RETURN - SIDE 4
Scale 1:20



Rev	Date	Des	Dwn	Chk	Description
0	2020-02-18	KSP	KSP	AKD	ISSUED FOR TENDER
1	2020-03-26	KSP	KSP	AKD	PIPE HEADER AND STRESS TABLE UPDATED

Rev	Date	Des	Dwn	Chk	Description

CITY OF SURREY
E-17570 PCI KING GEORGE HUB PHASE B
PCI - B3
ENERGY TRANSFER STATION
PLAN AND SECTIONS

Project No. 0471.328 Drawing No. M-207 Rev. 1
 Group MECHANICAL

GENERAL NOTES:

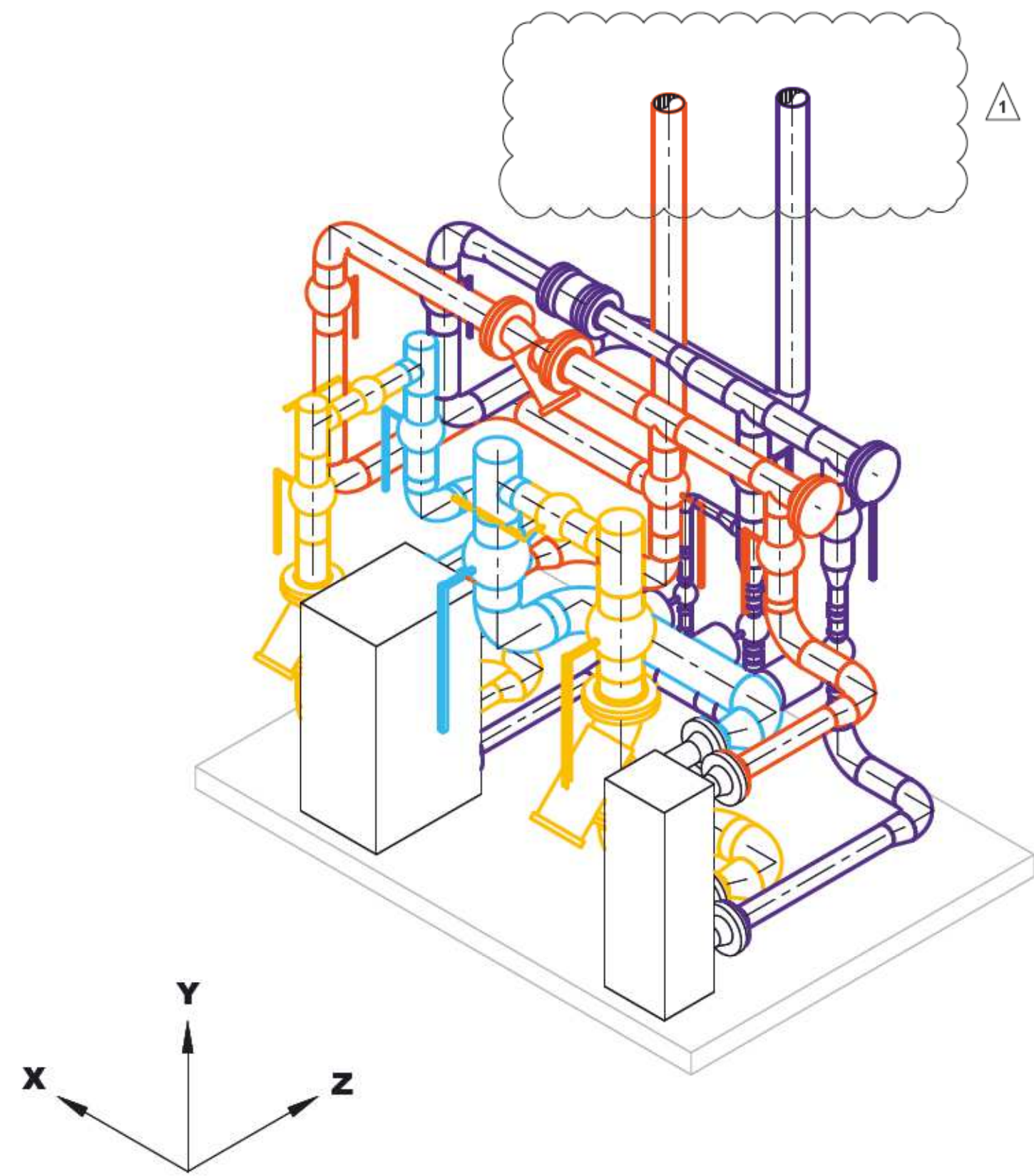
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12. LOADS ARE UNFACTORED.

PIPING SPECIFICATIONS

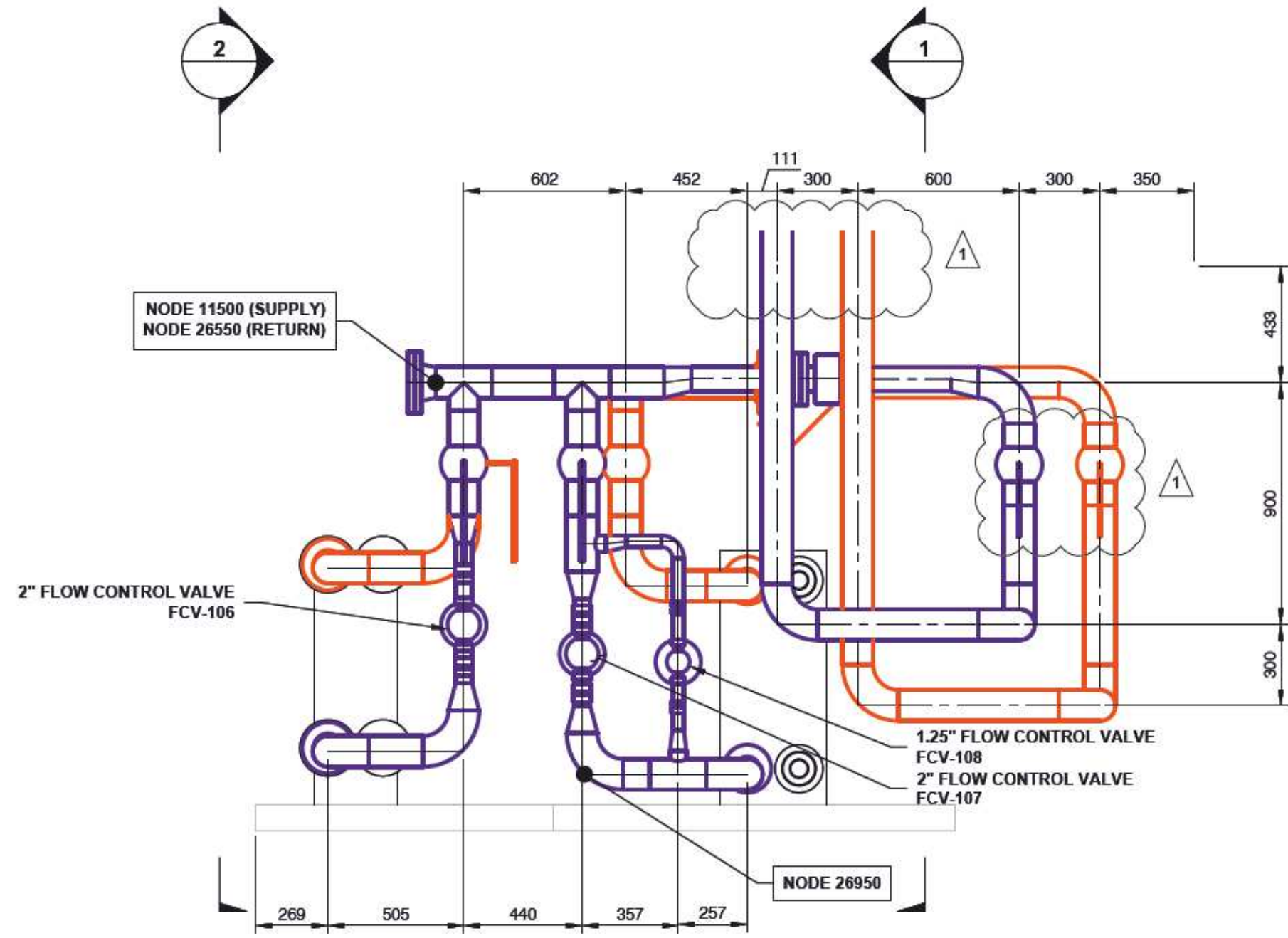
PIPE MATERIAL	ASTM A53 GR.B
FLUID MEDIUM	WATER WITH CORROSION INHIBITOR
AMBIENT TEMPERATURE	10°C
MAX. OPERATION TEMPERATURE	120°C
MAX. OPERATING PRESSURE	1600 kPa
HYDROTEST PRESSURE	2400 kPa
NDE	20% X-RAY, 100% VISUAL
SEISMIC	0.943 G
WIND LOADING	N/A (INTERIOR PIPING)

STRESS ANALYSIS STATIC REPORT

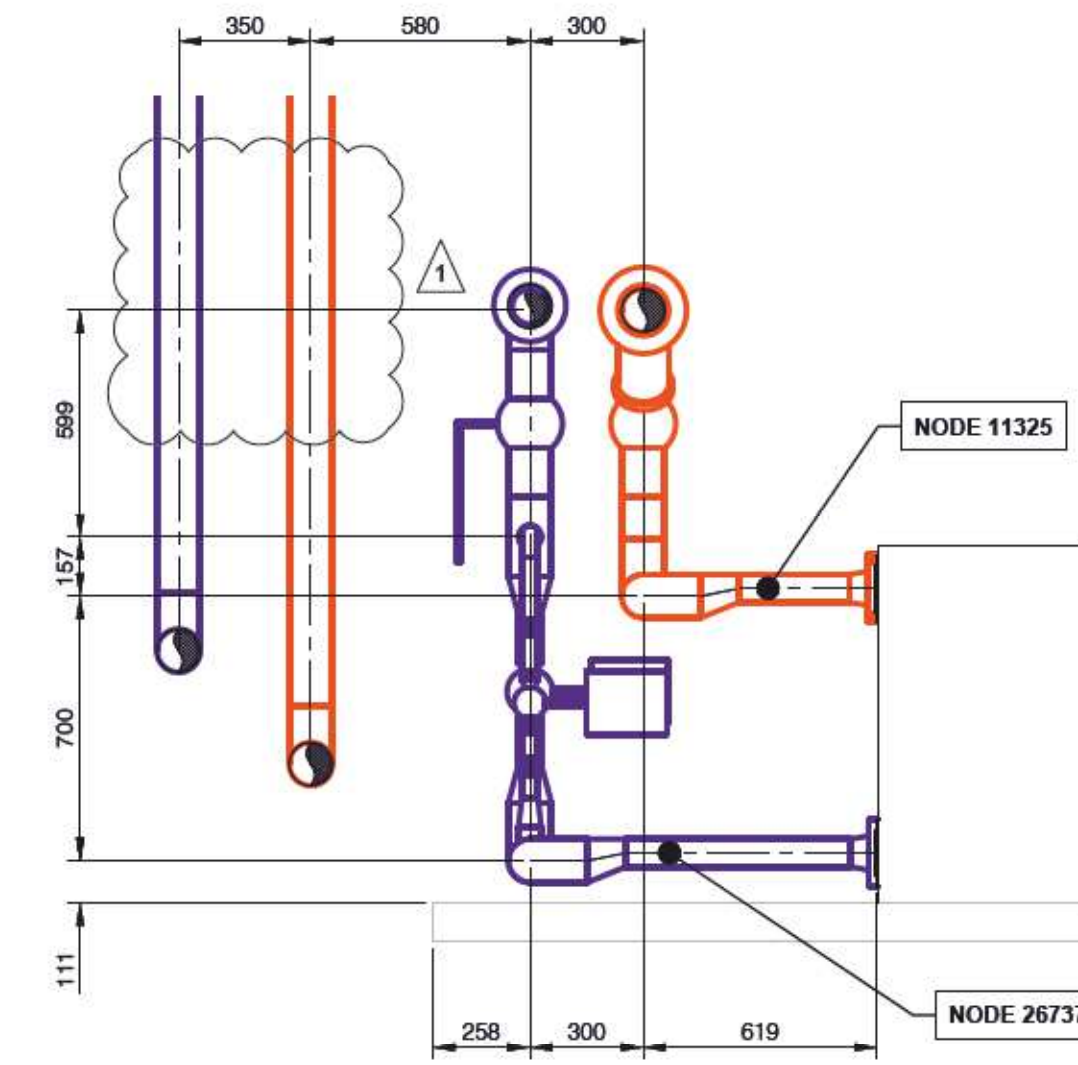
NODE	TYPE	Fx N.	Fy N.	Fz N.	DETAIL REFERENCE AS PER DWG. M-501
11325	RIGID +Y; RIGID GUI (GAP=0mm)	-1830	-600	0	J & C (SUB-DETAIL 3)
11500	RIGID +Y; RIGID GUI (GAP=0mm)	0	-890	1500	A & C (SUB-DETAIL 3)
11850	RIGID +Y	0	-130	0	H
12027	RIGID +Y; RIGID GUI (GAP=0mm)	2740	-3700	0	J & C (SUB-DETAIL 3)
12035	RIGID +Y	0	-780	0	D/E
25900	RIGID +Y	0	-2980	0	H
26550	RIGID +Y; RIGID GUI (GAP=0mm)	0	-370	1280	A & C (SUB-DETAIL 3)
26737	RIGID +Y; RIGID GUI (GAP=0mm); RIGID +Z (GAP=0mm)	-1370	-2020	-2640	J & C (SUB-DETAIL 2 & 3)
26950	RIGID +Y	0	-2060	0	B (SUB-DETAIL 02A)
28200	RIGID +Y	0	-380	0	D/E
28217	RIGID +Y; RIGID GUI (GAP=0mm)	2980	-3520	0	J & C (SUB-DETAIL 3)



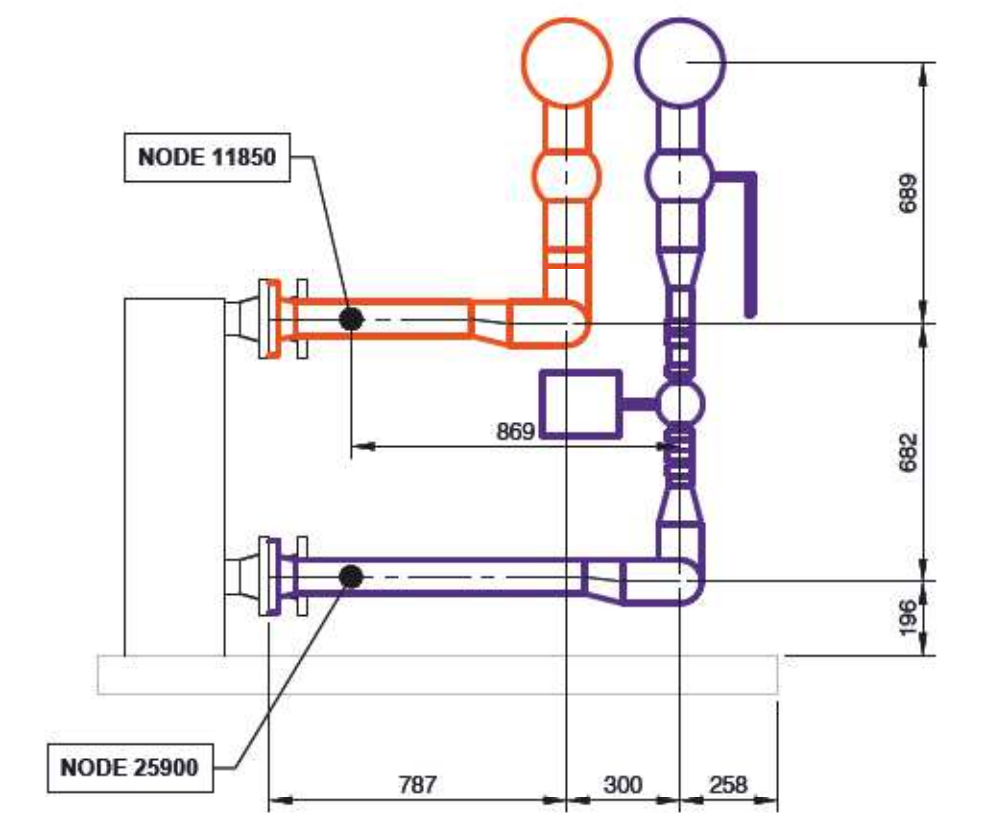
B4 ETS - ISOMETRIC VIEW
Scale 1:20



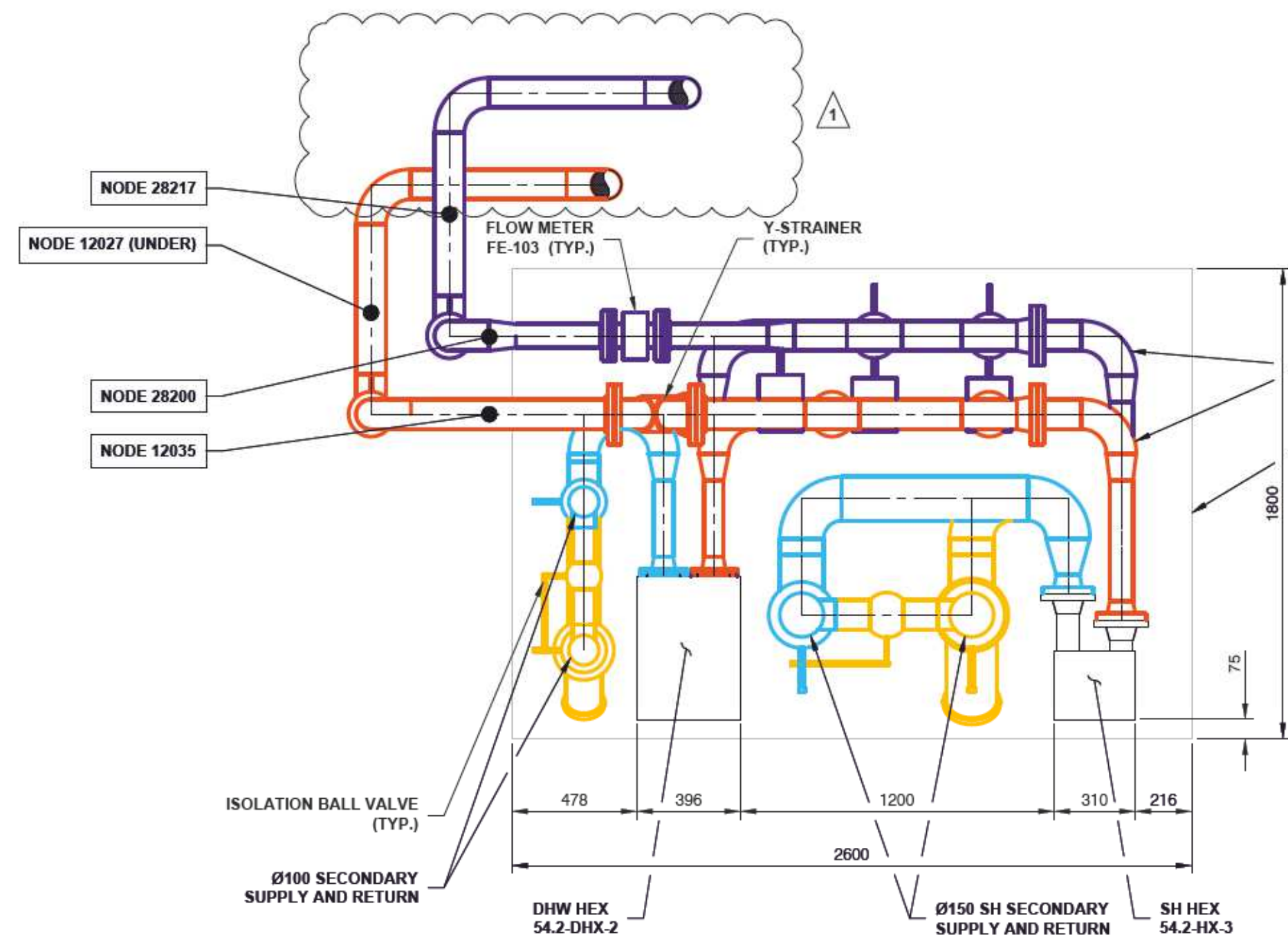
PRIMARY SUPPLY AND RETURN - BACK
Scale 1:20



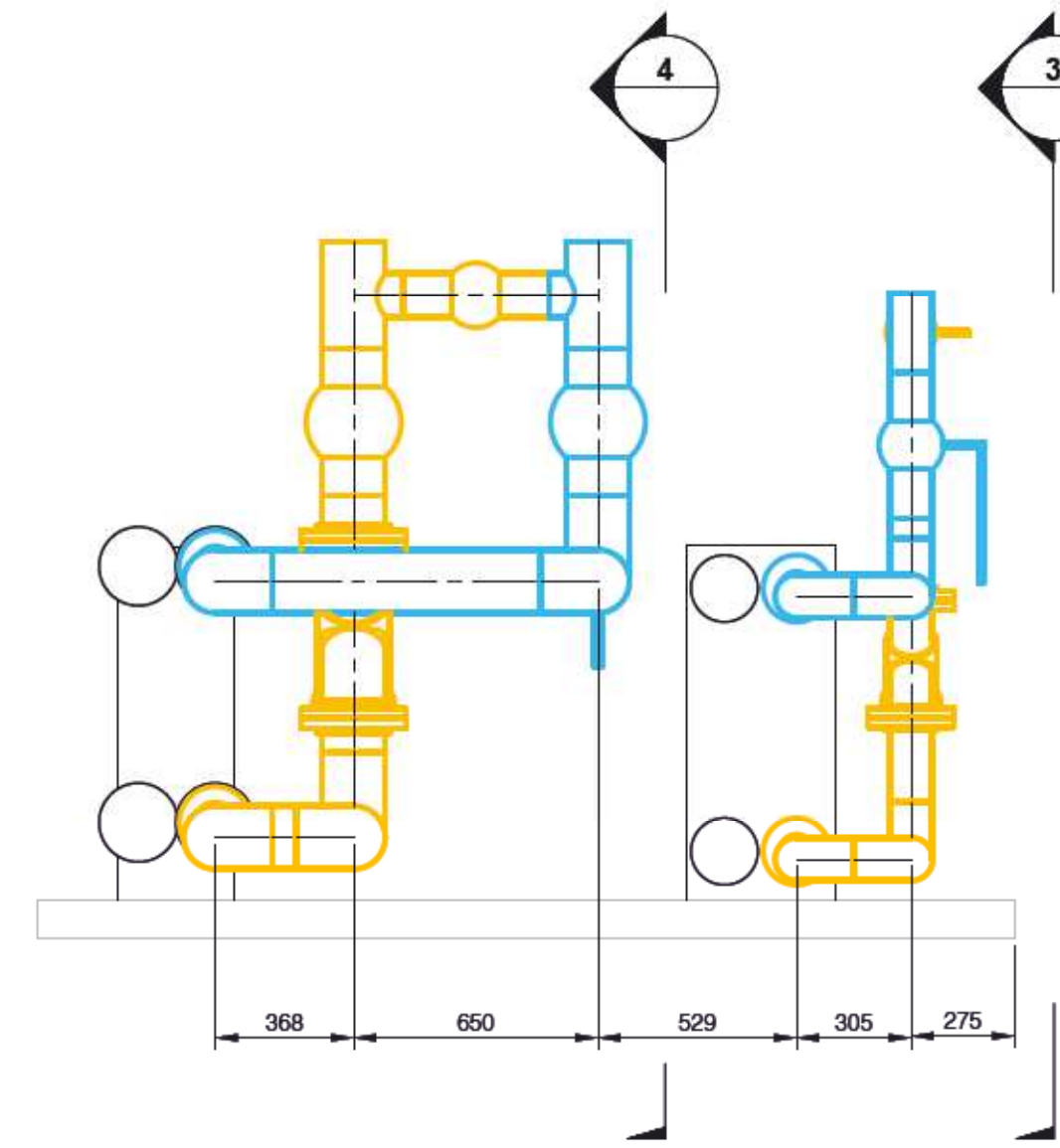
PRIMARY DHW SUPPLY AND RETURN - TOP
Scale 1:20



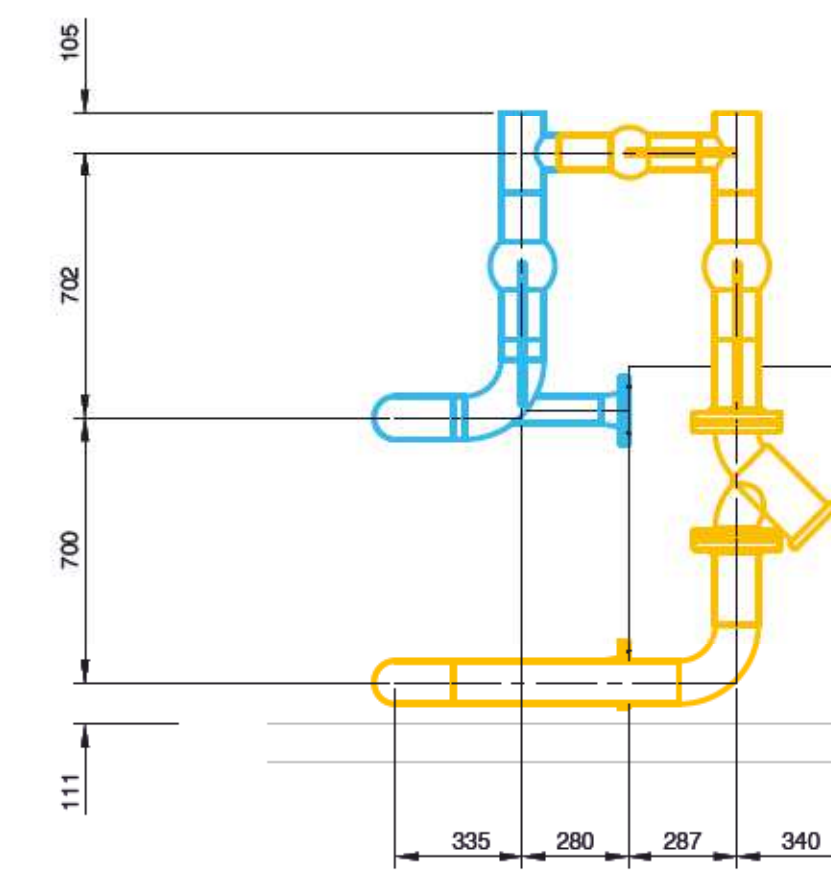
PRIMARY SH SUPPLY AND RETURN - TOP VIEW
Scale 1:20



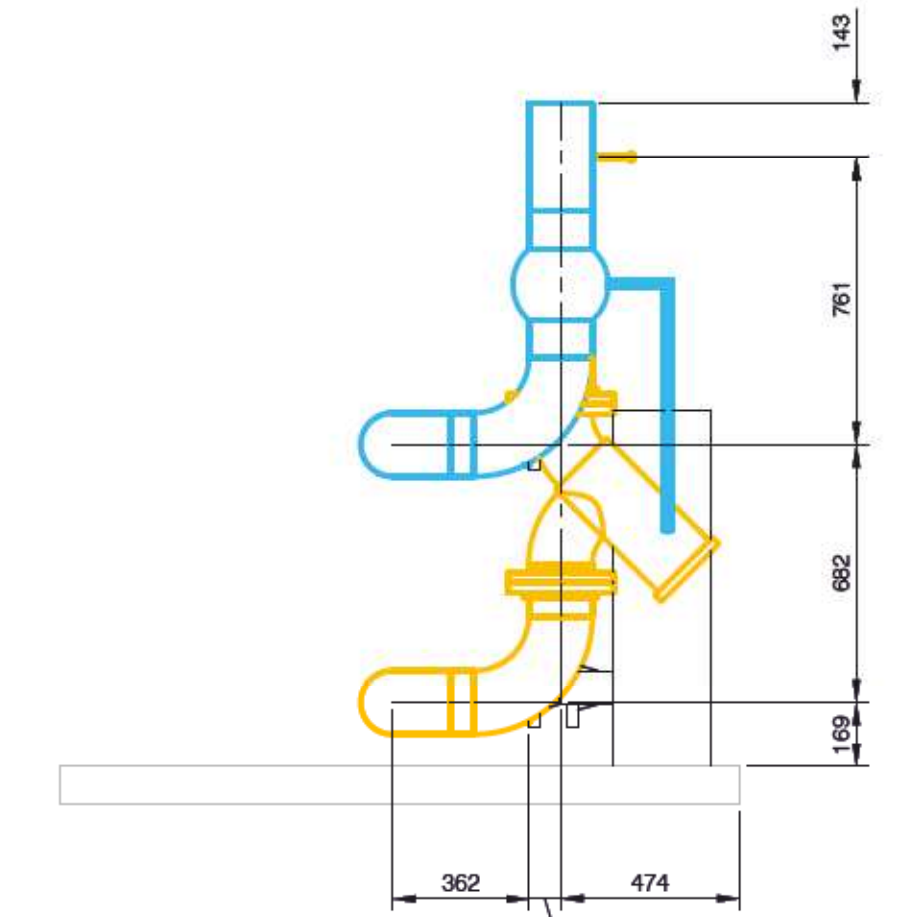
PRIMARY & SECONDARY SUPPLY AND RETURN - PLAN
Scale 1:20



SECONDARY SUPPLY AND RETURN - BACK
Scale 1:20



SECONDARY DHW SUPPLY AND RETURN - SIDE
Scale 1:20

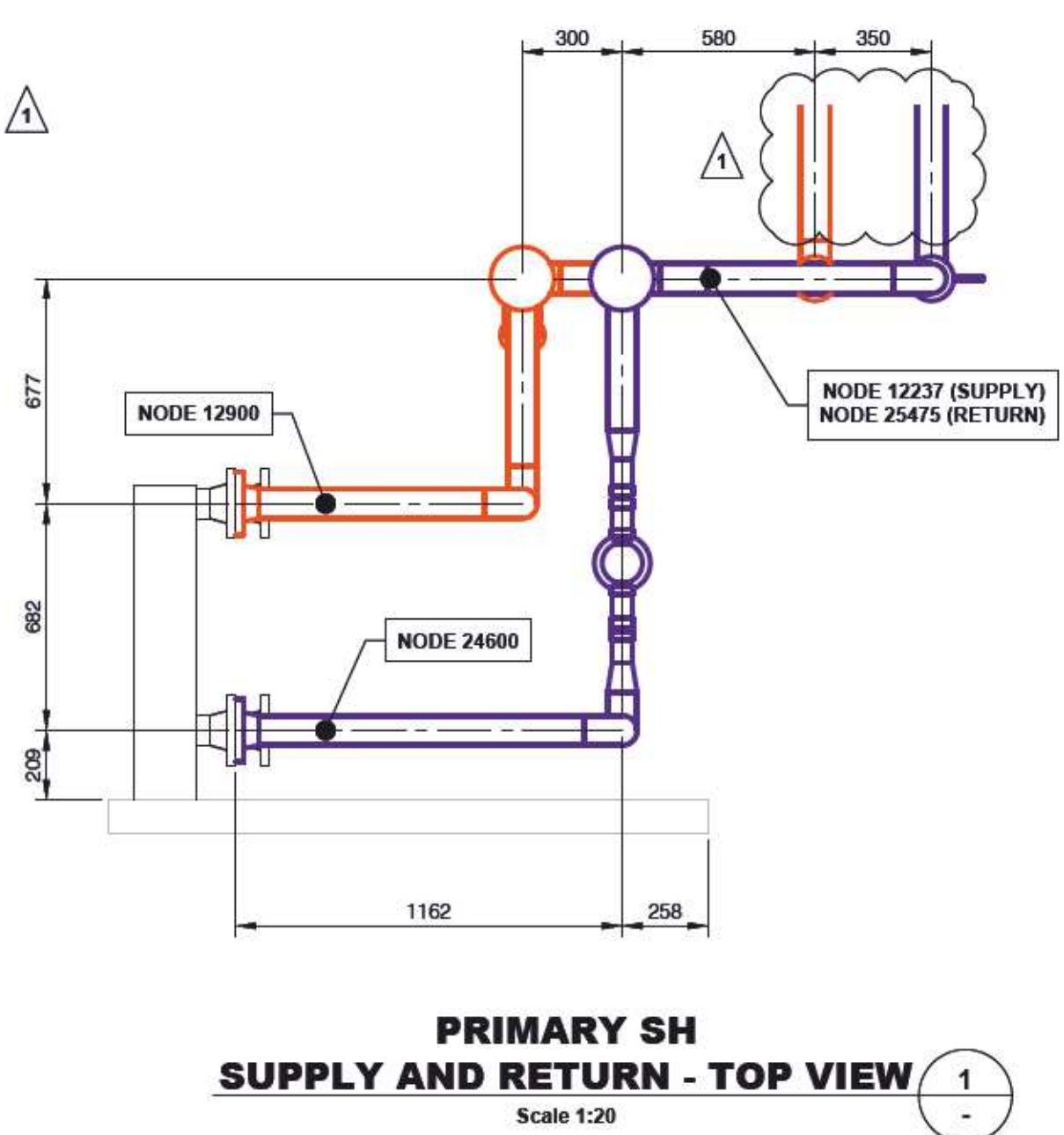
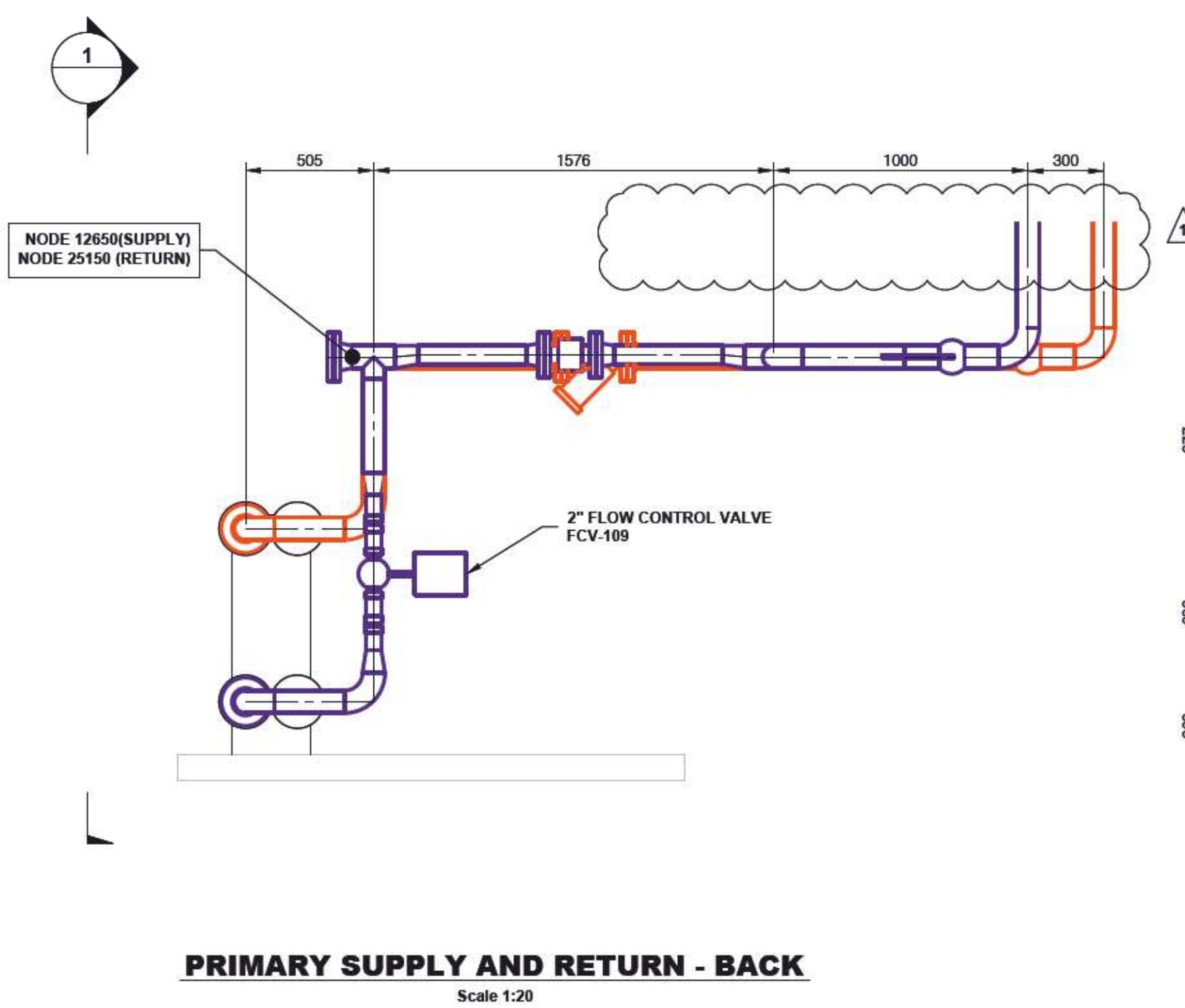
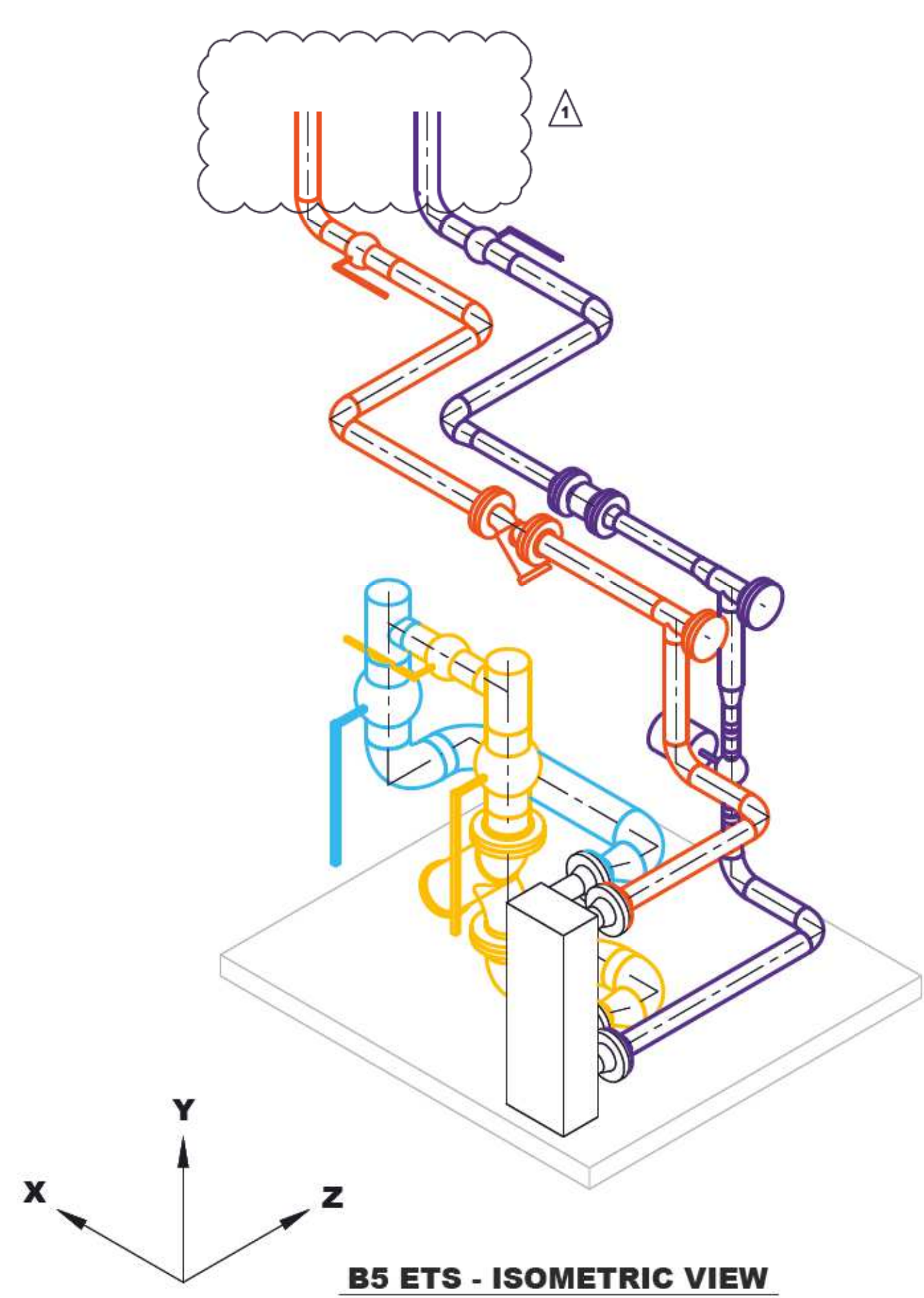


SECONDARY SH SUPPLY AND RETURN - SIDE
Scale 1:20

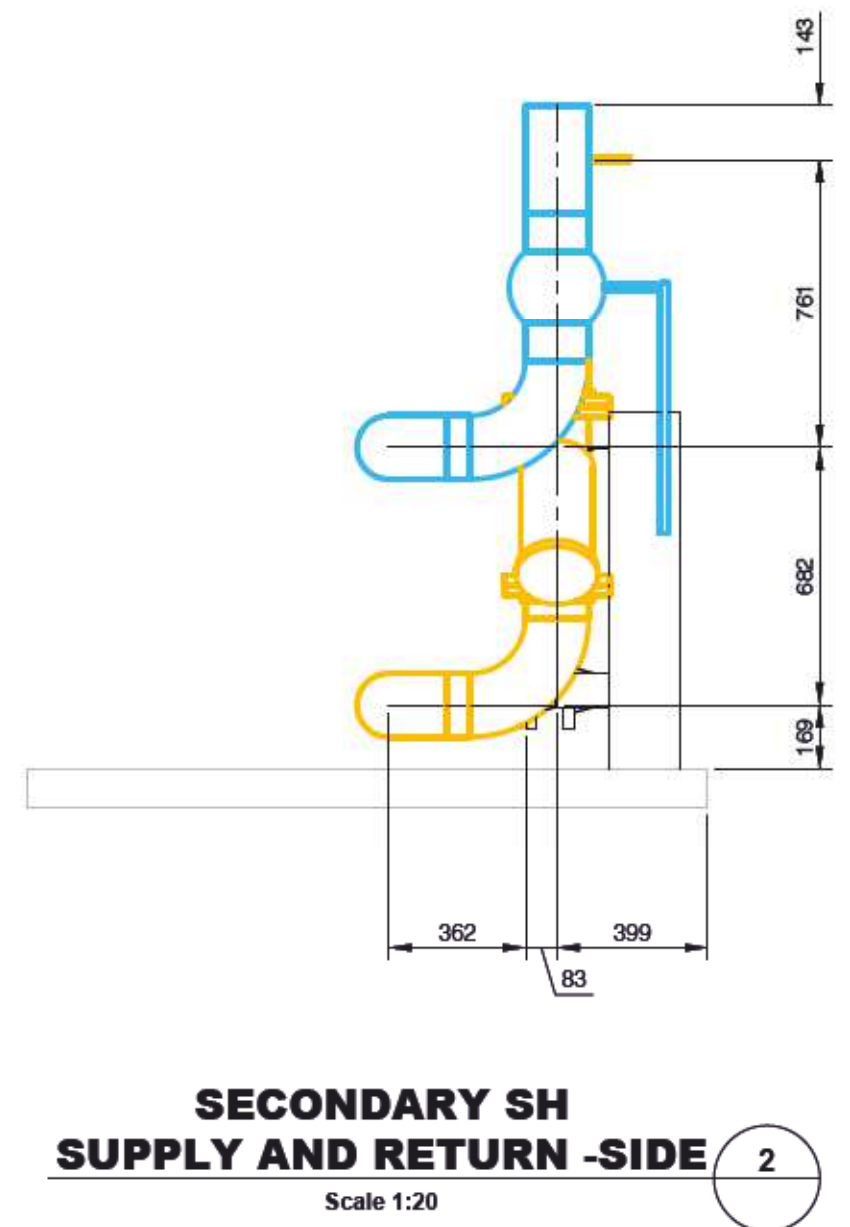
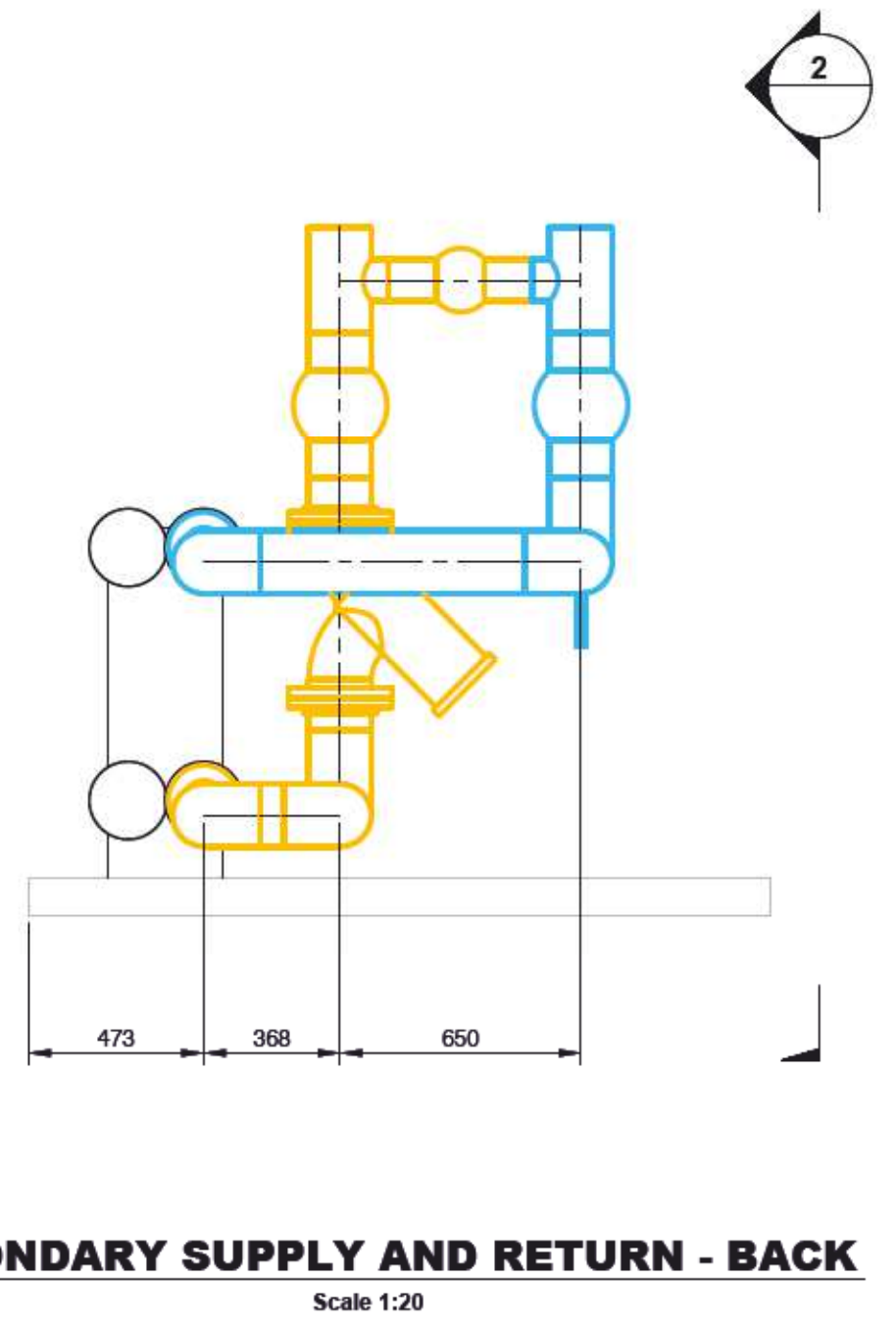
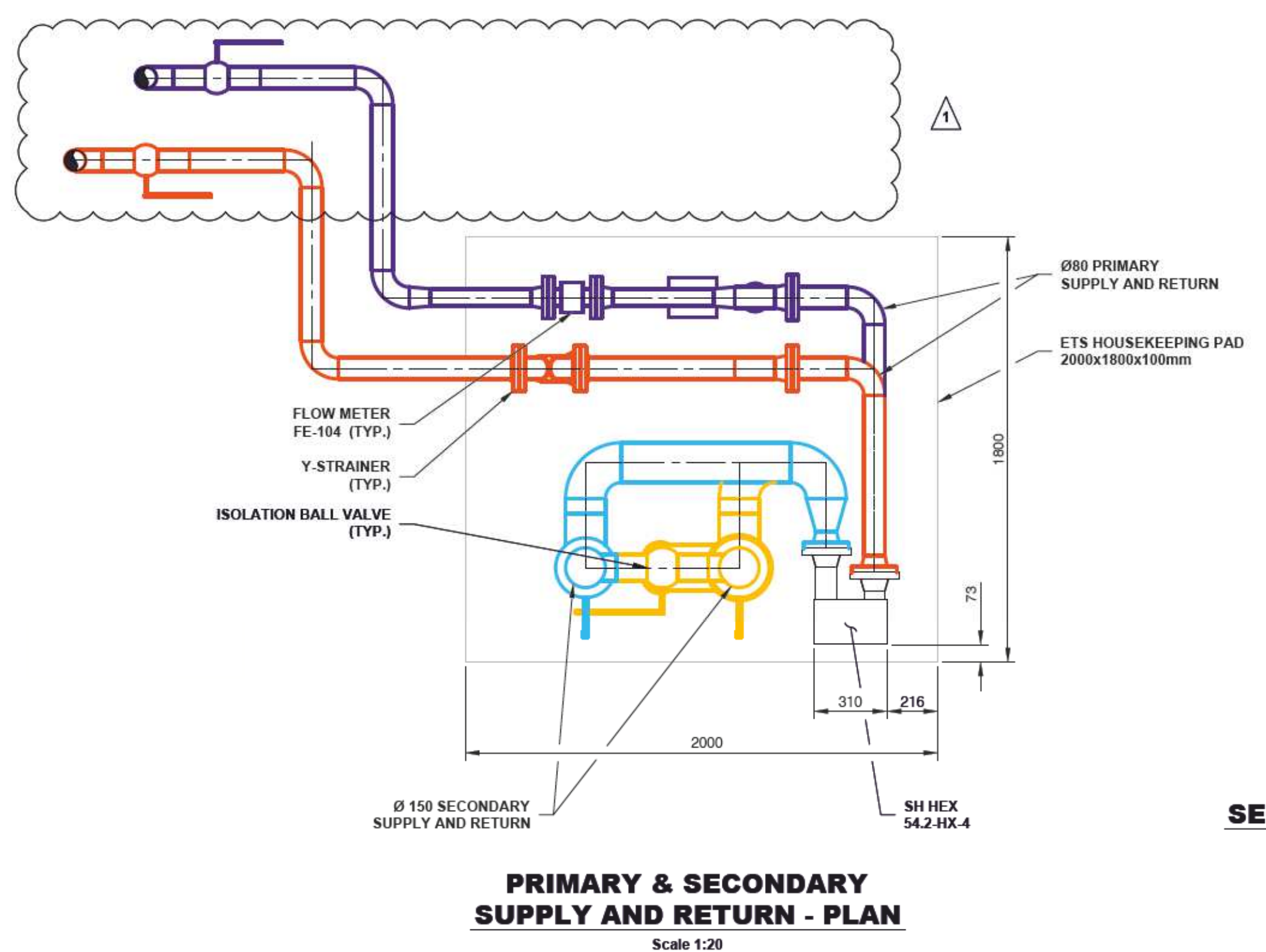
Rev	Date	Des	Dwn	Chk	Description
0	2020-02-18	KSP	KSP	AKD	ISSUED FOR TENDER
1	2020-03-26	KSP	KSP	AKD	STRESS TABLE UPDATED

Rev	Date	Des	Dwn	Chk	Description

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 millimeters



- GENERAL NOTES:**
1. ALL DIMENSIONS ARE IN 'mm'.
 2. TOP-FLAT REDUCERS ON ALL HORIZONTAL PIPES, CONCENTRIC REDUCERS ON ALL VERTICAL PIPES.
 3. DRAWINGS SHALL BE READ IN CONJUNCTION WITH PROJECT SPECIFICATIONS AND P&IDs.
 4. REFER TO DRAWINGS M-501 FOR DETAILS.
 5. ADD A UNION FOR ALL EQUIPMENT AND INSTRUMENTS WITH THREADED CONNECTION FOR EASY MAINTENANCE.
 6. REFER TO SPECIFICATIONS FOR FLOW METER MINIMUM LENGTH REQUIREMENTS.
 7. CONTRACTOR TO CONFIRM TIE-IN LOCATIONS AND ELEVATION PRIOR TO CONSTRUCTION.
 8. CONTRACTOR TO CONFIRM SUPPLY AND RETURN ORIENTATION PRIOR TO CONSTRUCTION.
 9. WRITTEN APPROVAL IS REQUIRED FROM THE ENGINEER FOR ANY CHANGES TO DESIGN, INCLUDING SUPPORT LOCATIONS.
 10. CONDUIT AND FIBRE CONNECTIONS FROM BUILDING PENETRATION TO CONTROL PANEL ARE NOT SHOWN ON DRAWINGS.
 11. SECONDARY SIDE PIPE SUPPORTS NOT SHOWN. CONTRACTOR TO PROVIDE SECONDARY SIDE PIPE SUPPORTS.
 12. LOADS ARE UNFACTORED.

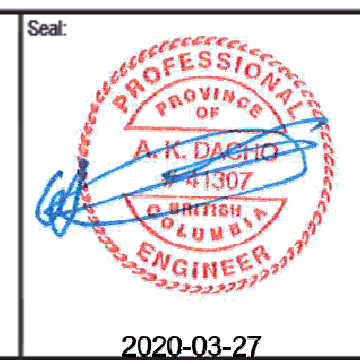


STRESS ANALYSIS STATIC REPORT

NODE	TYPE	Fx N.	Fy N.	Fz N.	DETAIL REFERENCE AS PER DWG. M-501
12237	RIGID +Y	0	-1290	0	DE
12650	RIGID +Y	0	-510	0	DE
12900	RIGID +Y	0	-300	0	H
24600	RIGID +Y	0	-2860	0	H
25150	RIGID +Y	0	-540	0	DE
25475	RIGID +Y	0	-1090	0	DE

PIPING SPECIFICATIONS

PIPE MATERIAL	ASTM A53 GR. B
FLUID MEDIUM	WATER WITH CORROSION INHIBITOR
AMBIENT TEMPERATURE	10°C
MAX. OPERATION TEMPERATURE	120°C
MAX. OPERATING PRESSURE	1600 kPa
HYDROTEST PRESSURE	2400 kPa
NDE	20% X-RAY, 100% VISUAL
SEISMIC	0.943 G
WIND LOADING	N/A (INTERIOR PIPING)



Rev	Date	Des	Dwn	Chk	Description
0	2020-02-18	KSP	KSP	AKD	ISSUED FOR TENDER
1	2020-03-26	KSP	KSP	AKD	PIPE HEADER AND STRESS TABLE UPDATED

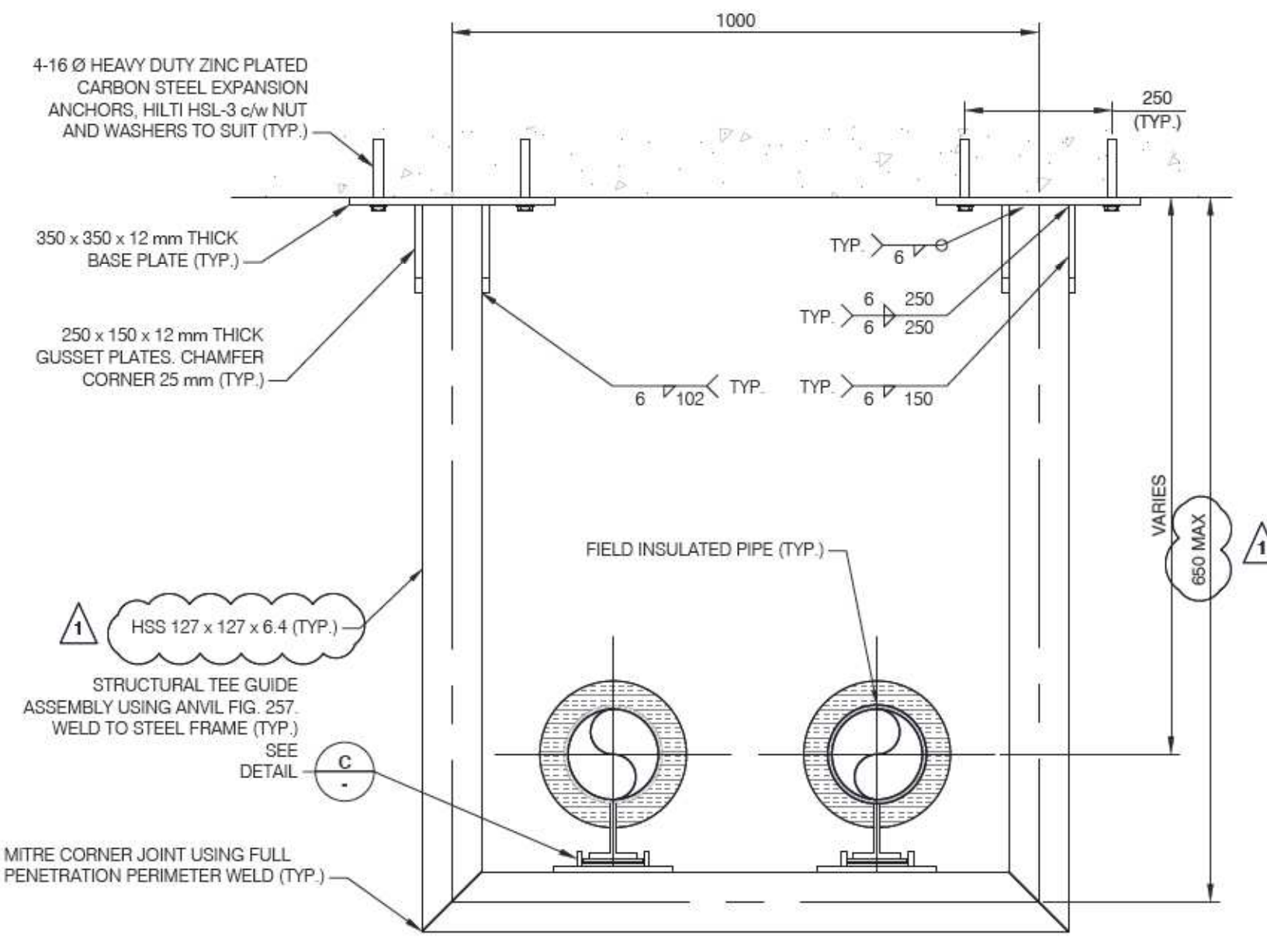
Rev	Date	Des	Dwn	Chk	Description

CITY OF SURREY
E-17570 PCI KING GEORGE HUB PHASE B

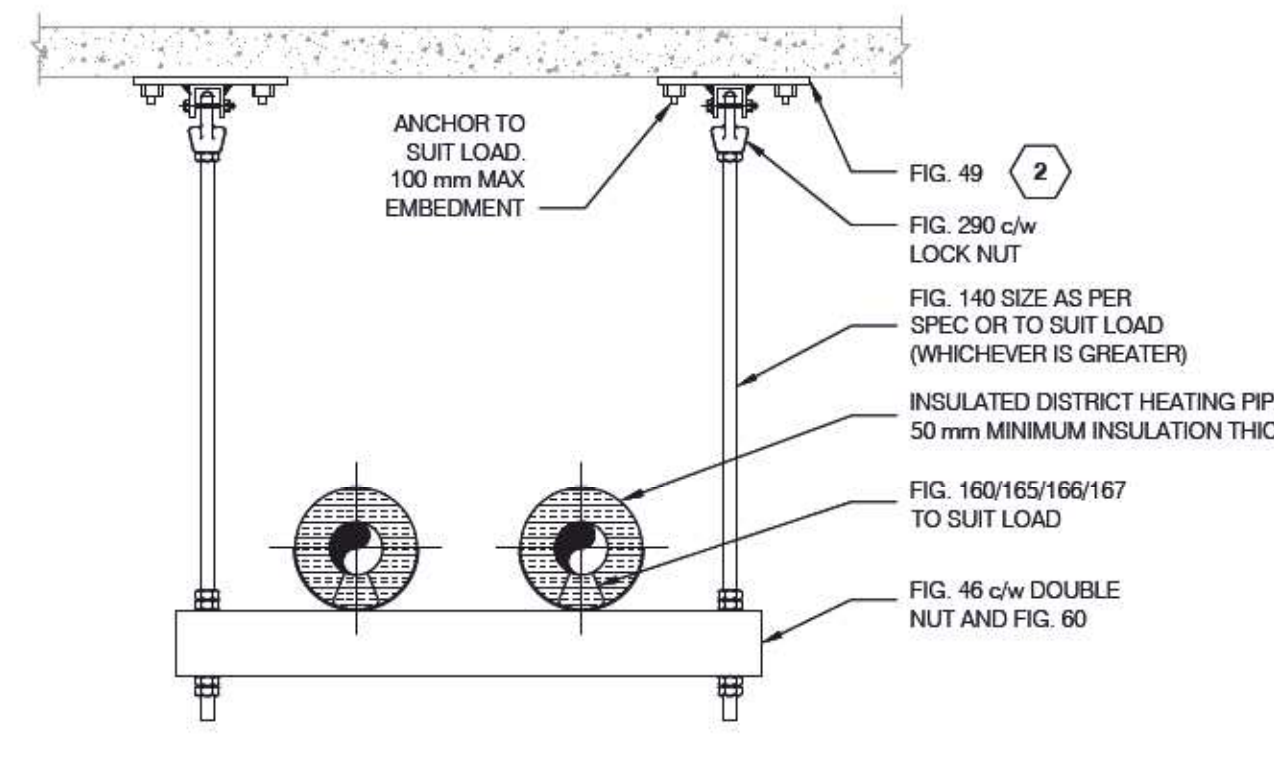
PCI - B5
ENERGY TRANSFER STATION
PLAN AND SECTIONS

Project No. **0471.328** Drawing No. **M-209** Rev. **1**
Group **MECHANICAL**

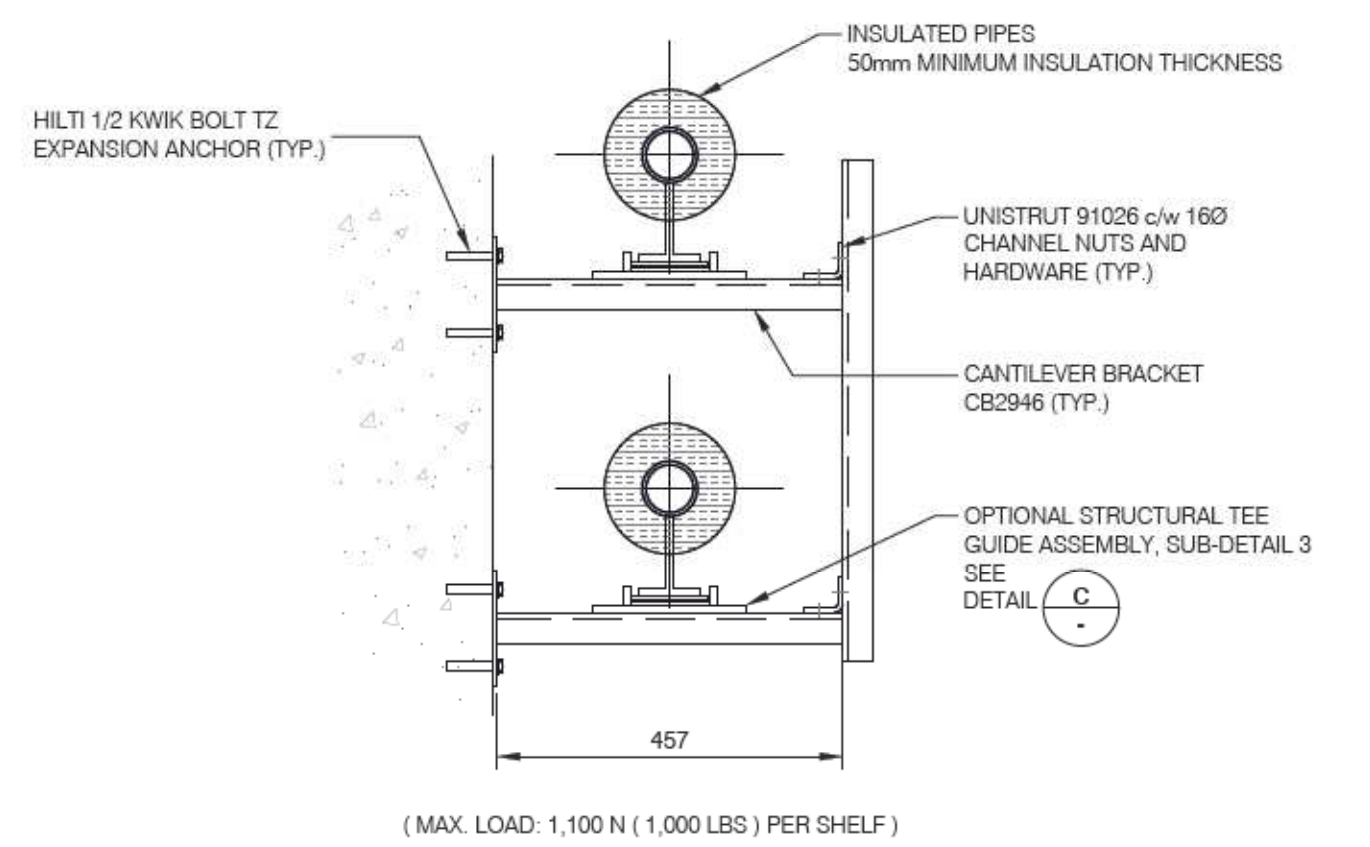
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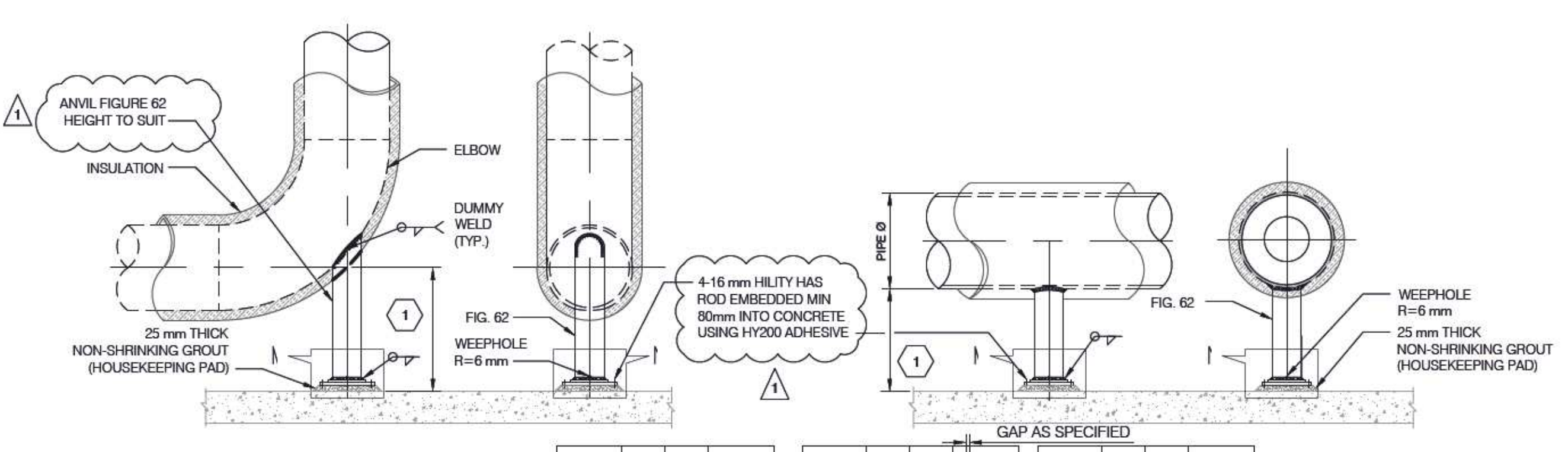
OVERHEAD GUIDE - DETAIL A
N.T.S.



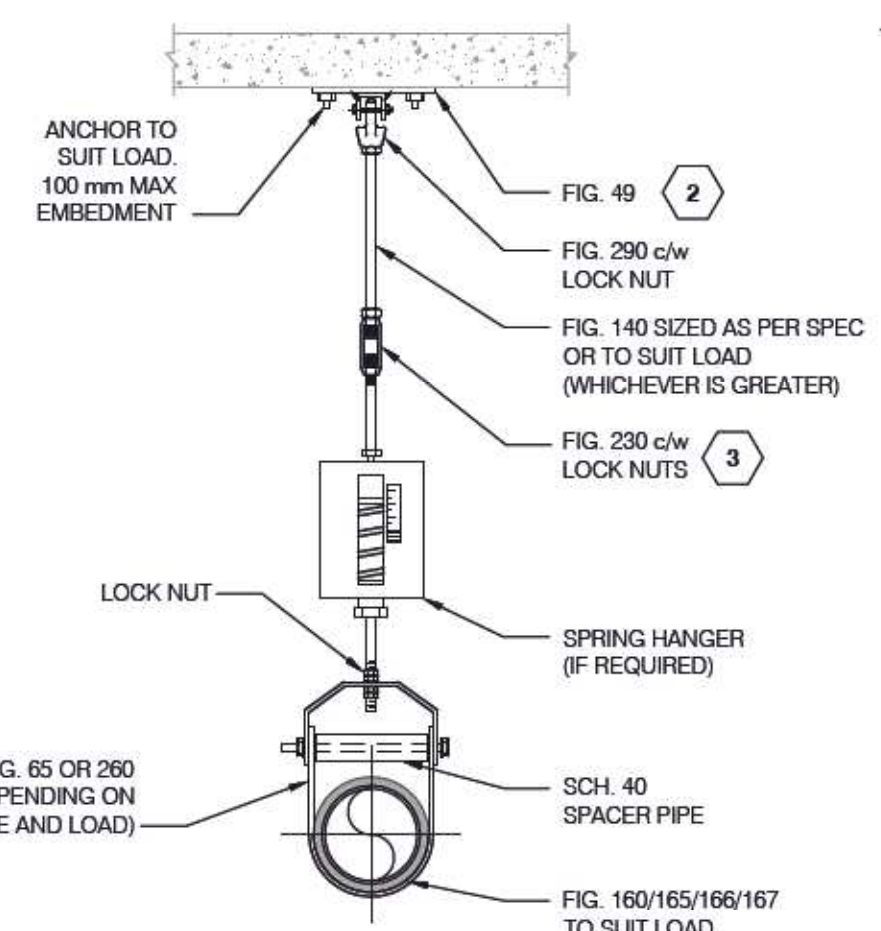
TRAPEZE HANGER - DETAIL D
N.T.S.



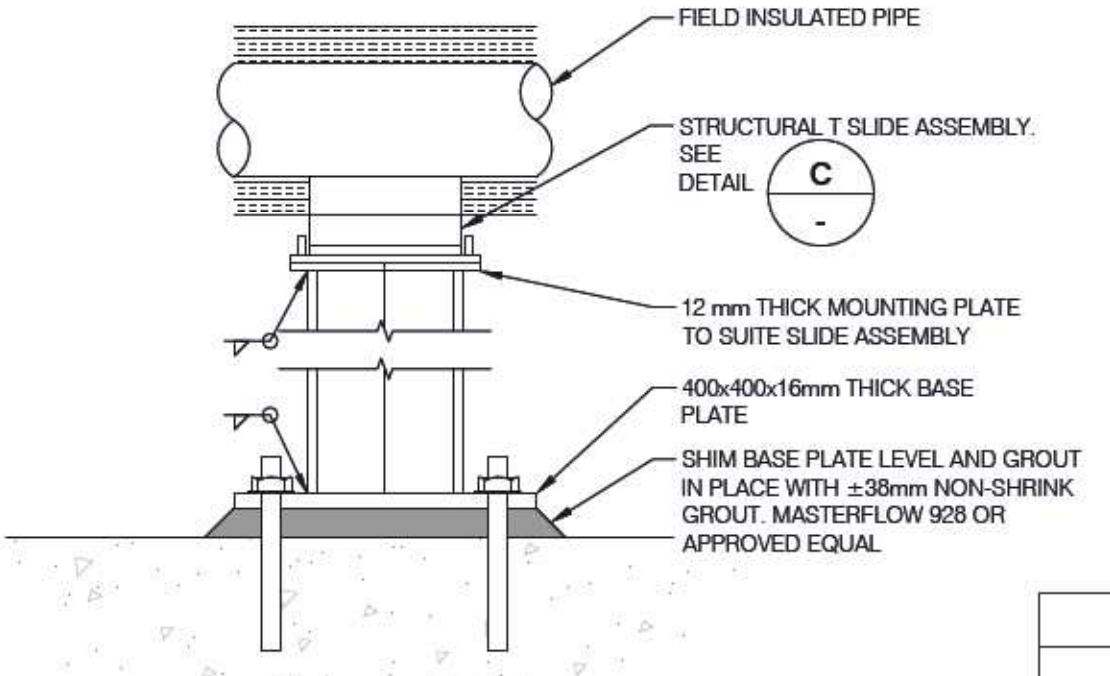
VERTICALLY STACKED PIPE SUPPORT - DETAIL G
Scale: 1:10



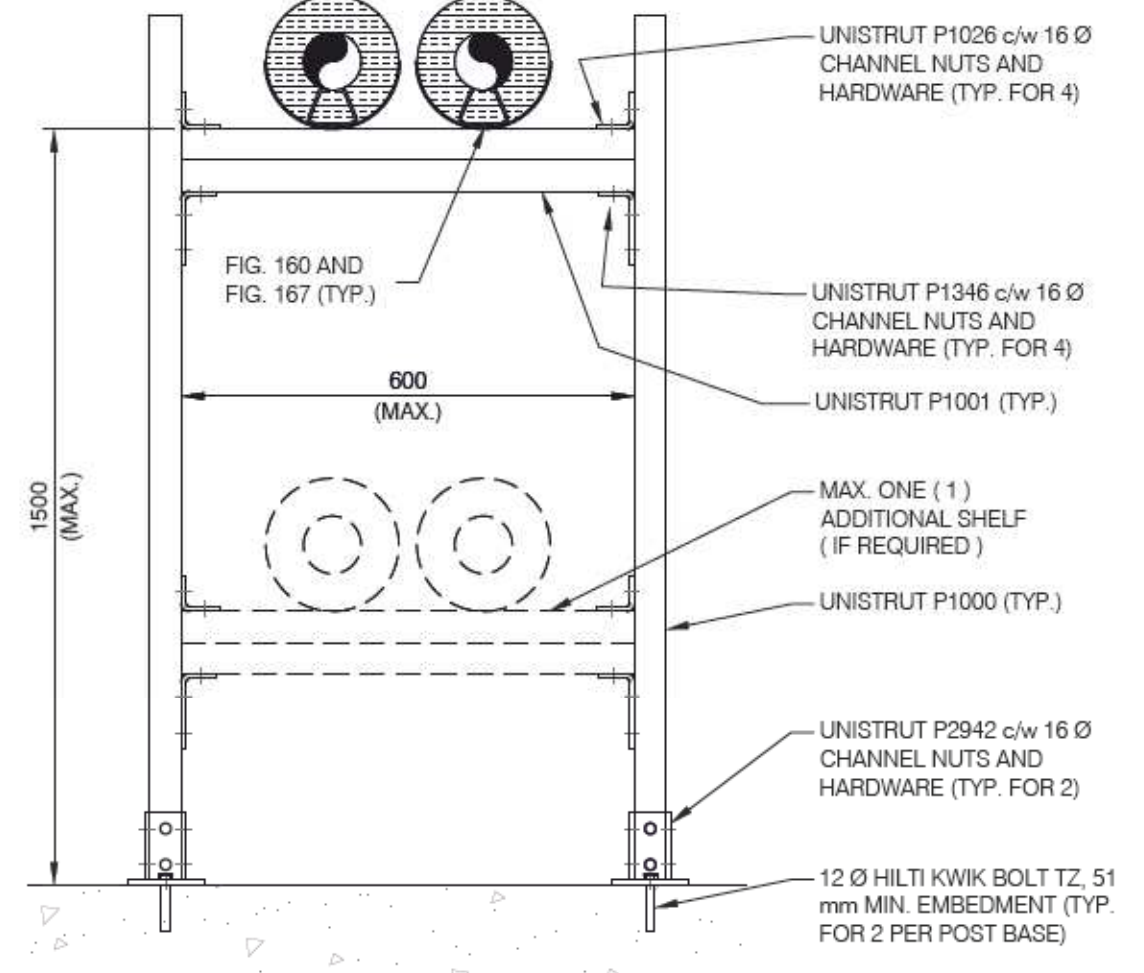
PIPE STANCHION ELBOW - DETAIL B
N.T.S.



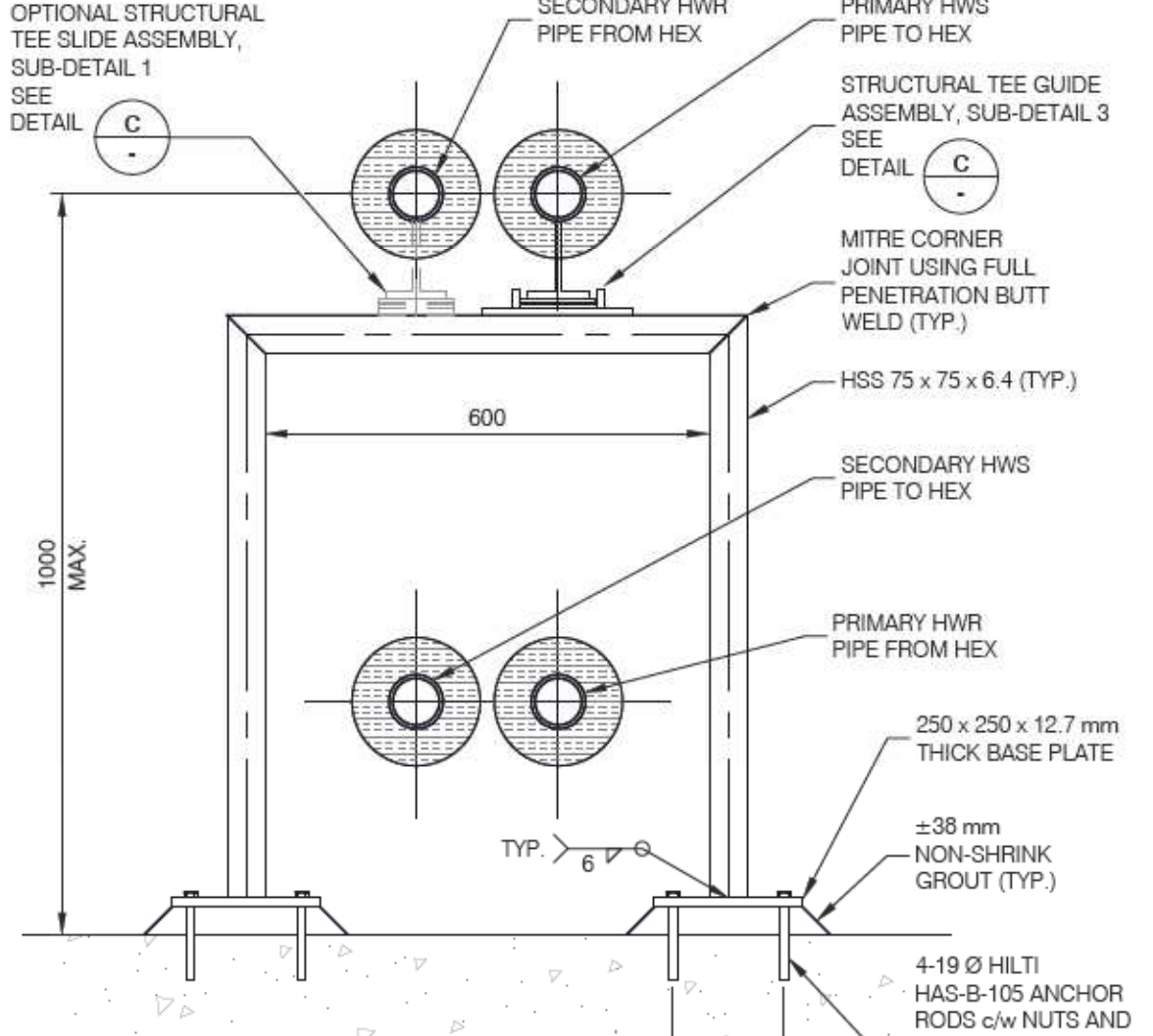
CLEVIS HANGER - DETAIL E
N.T.S.



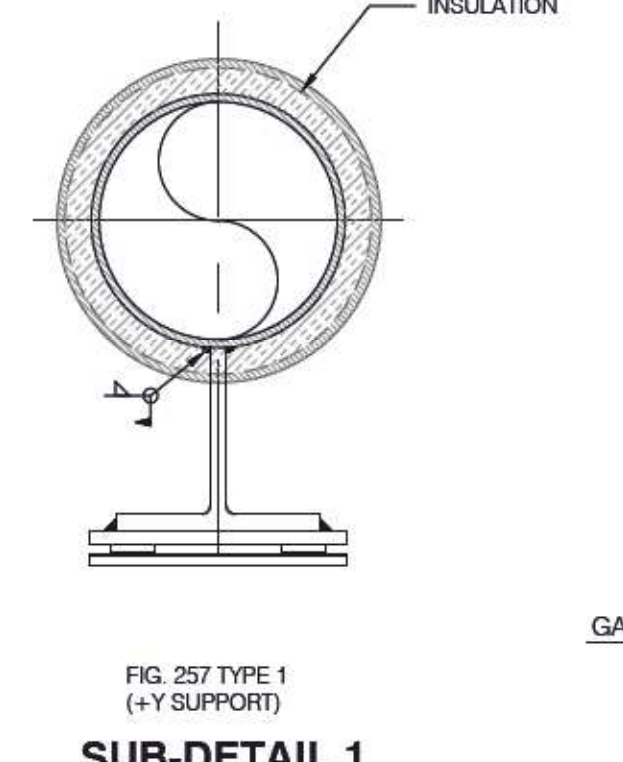
LIMIT STOP DETAIL F
Scale: 1:10



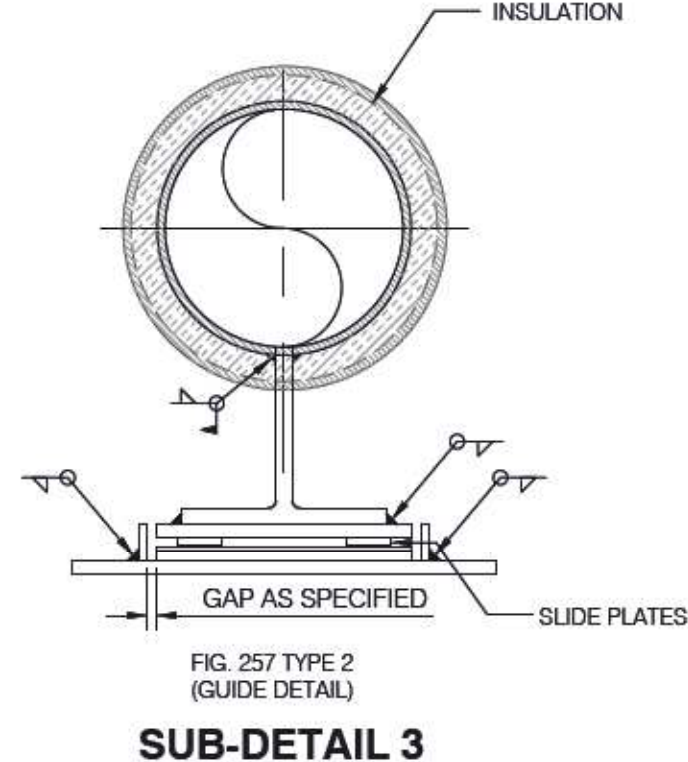
PIPE SUPPORT AT HEX DETAIL H
Scale: 1:10



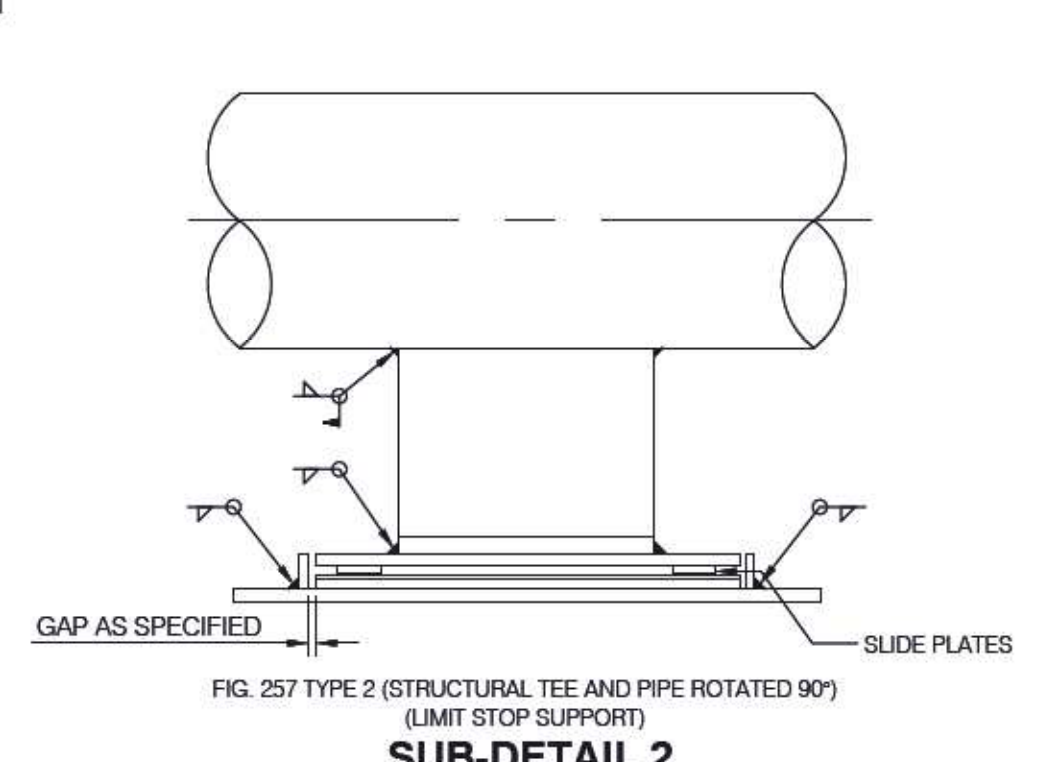
FLOOR MOUNTED GUIDE - DETAIL J
N.T.S.



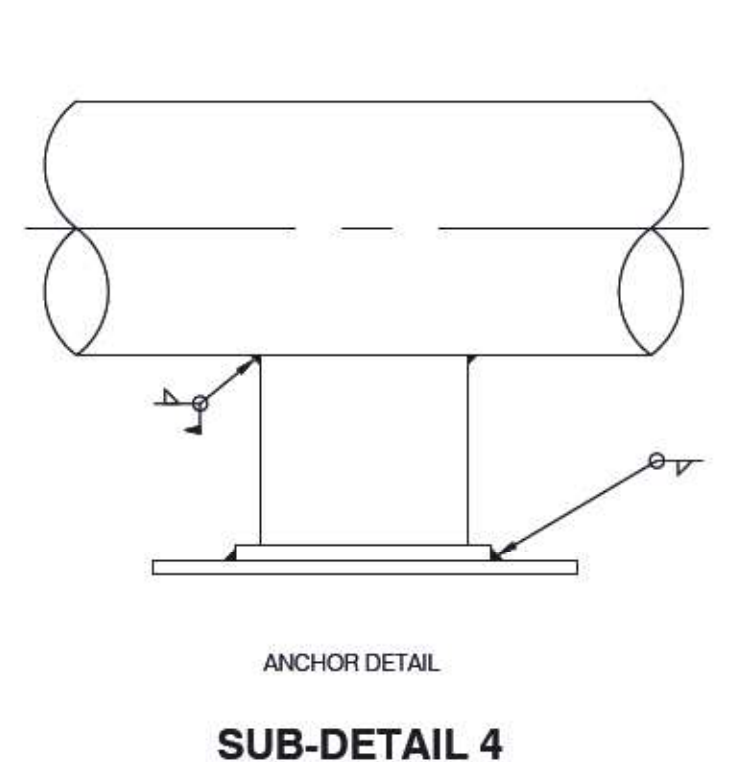
SUB-DETAIL 1



SUB-DETAIL 3



SUB-DETAIL 2



SUB-DETAIL 4

SLIDING AND ANCHOR SUPPORTS (MSS-SP-58 TYPE 35) - DETAIL C
N.T.S.

SIZE INCH (mm)	HANGER ROD DIAMETER INCH (MM)	HANGER SPACING		
		PVC PIPE (MM)	COPPER PIPE (MM)	STEEL PIPE (MM)
1/2 TO 1 (12 TO 25)	3/8 (10)	1,500	2,500	2,100
1 1/2 TO 2 (40 TO 50)	1/2 (13)	2,000	-	2,500
2 1/2 TO 3 (65 TO 80)	5/8 (16)	2,200	-	2,800
4 (100)	3/4 (19)	2,600	-	3,500
5 TO 6 (125 TO 150)	7/8 (22)	3,000	-	4,000
8 (200)	7/8 (22)	3,500	-	4,500
ABOVE 10 (250)	7/8 (22)	3,800	-	5,500

- GENERAL NOTES:**
- CONTRACTOR SHALL APPOINT A BC REGISTERED PROFESSIONAL ENGINEER TO REVIEW THE SEISMIC LOADING OF ALL SUPPORT SYSTEMS AS SHOWN ON THE CONTRACTOR'S SHOP DRAWINGS AND PROVIDE STAMPED APPROVAL INDICATING THE PROPOSED SUPPORT SYSTEMS MEET THE REQUIREMENTS OF ALL APPLICABLE CODES. ANY ADDITIONAL RESTRAINTS SHALL BE APPROVED BY THE ENGINEER.
 - ALL THE BASE PLATE SUPPORTS SITTING ON THE FLOOR SHOULD HAVE A 25mm HOUSEKEEPING PAD OF NON SHRINKING GROUT.
 - ALL WALL OR FLOOR PENETRATION SHALL BE FLASHED BY THE CONTRACTOR. ANY PENETRATION THROUGH PIPE BOUNDARIES SHALL BE FLASHED USING APPROVED FIRE RATED MATERIAL.
 - HANGER ROD COUPLING IS NOT ACCEPTABLE. THE ROD SHALL BE CONTINUOUS WITHOUT ANY KIND OF JOINT, EXCEPT TURNBUCKLE, ALONG ITS LENGTH.
 - FOR ALL FIGURE NUMBERS SHOWN REFER TO ANVIL INTERNATIONAL CATALOGUE. STANDARD OF ACCEPTANCE - ANVIL OR APPROVED EQUAL.
 - CONTRACTOR TO SUBMIT PIPE SUPPORT SHOP DRAWING SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN B.C.
 - CONTRACTOR ALLOWED TO USE UNISTRUT-TYPE SUPPORT PENDING REVIEW AND APPROVAL FROM THE ENGINEER.
 - ALL INSTRUMENTS SHALL BE VISIBLE FROM THE FLOOR.
 - ALL FABRICATED STRUCTURAL MEMBERS SHALL BE EPOXY COATED.
- SPECIFIC NOTES:**
- HEIGHT TO SUIT THE SITE CONDITION. NO SHIMS ARE ALLOWED UNLESS SPECIFIED IN PROJECT DOCUMENTS. ALL FLOOR MOUNTED SUPPORTS TO INCLUDE BASE PLATE WITH 25 mm NON SHRINK GROUT.
 - FOR PIPE SIZE OF NPS 4" AND BELOW AN APPROVED ANCHOR CAN BE UTILIZED.
 - INSULATE SUPPORT TO TURNBUCKLE.

- STRUT PRODUCT NOTES:**
- ALL STRUT CHANNELS, FITTINGS, AND HARDWARE SHALL BE MANUFACTURED BY UNISTRUT CORPORATION OR APPROVED EQUAL. SUBMIT ALTERNATE PRODUCTS FOR APPROVAL.
 - ALL COMPONENTS SHALL BE PRE-GALVANIZED IN CONFORMANCE WITH ASTM A653 WITH A ZINC WEIGHT OF G90.
 - INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND INDUSTRY BEST PRACTICE. TIGHTEN ALL CONNECTIONS TO THEIR MANUFACTURER RECOMMENDED TORQUES USING A CALIBRATED TORQUE WRENCH.
 - UNLESS NOTED OTHERWISE, PROVIDE P1000 CHANNEL SECTIONS WITH 16 mm Ø CHANNEL NUTS.

- STRUCTURAL STEEL NOTES:**
- MATERIALS TO CSA G40.21M

SHAPE	GRADE	YIELD STRESS
W SHAPES	350W	350 MPa
C AND L SHAPES	300W	300 MPa
HSS SHAPES	350W, GRADE C	350 MPa
STRUCTURAL PIPES	ASTM A53, GRADE B	240 MPa
PLATE AND BAR	300W	300 MPa
 - WELDING FOR STRUCTURAL STEEL AND MISCELLANEOUS ITEMS TO CSA W59M
 - FOR GRADE 300W, 350W, 350W GRADE C, USE E49xx EQUIVALENT
 - FOR A53 GRADE B STEEL, USE E43xx EQUIVALENT
 - PERFORM ALL STRUCTURAL WELDING USING WELDERS CERTIFIED IN ACCORDANCE WITH CSA W47.1
 - UNLESS NOTED OTHERWISE, WELDS ARE 6mm CONTINUOUS FILLET WELD
 - SEAL ENDS OF ALL TUBULAR AND HOLLOW-SECTION MEMBERS WITH 6mm THICK END PLATES AND CONTINUOUS FILLET WELD
 - PROVIDE VENTILATION HOLES AT BOTH ENDS OF COMPLETELY SEALED TUBULAR AND HOLLOW-SECTION MEMBERS TO AVOID WELDING BLOW OUT.
 - ALL STEEL TO BE COATED AS FOLLOWS:
 - PRIME THE STEEL FRAMES WITH ONE COAT OF 0.5 MILS DFT OF INTERPLATE 937. SURFACE PREP TO MANUFACTURER'S RECOMMENDATIONS.
 - FIELD WELD AS REQUIRED ON SITE. NO PRIMER REMOVAL REQUIRED.
 - PREP WELDS, CLEAN WITH SOLVENT WIPE WHERE NECESSARY.
 - APPLY WITH BRUSH OR ROLLER 2 COATS OF INTERPLUS 356 FOR TOTAL DFT OF 6-8 MILS. IF SPRAY APPLIED, ONLY 1 COAT IS NEEDED.
 - CONTRACTOR TO SUBMIT FABRICATION DRAWINGS TO ENGINEER FOR APPROVAL
 - INSTALL CONCRETE ANCHORS IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. UNLESS NOTED OTHERWISE, ANCHORS SHALL BE HILTI HIT-HY 200 EPOXY c/w HIT-Z-R ZINC PLATED RODS, NUTS AND WASHERS TO SUIT. 100 mm MINIMUM EMBEDMENT.

Rev	Date	Des	Dwn	Chk	Description of Revision
0	2020-02-18	AKD	KSP	AKD	ISSUED FOR TENDER
1	2020-03-27	AKD	KSP	CTM	OVERHEAD GUIDE AND STANCHION ELBOW DETAIL UPDATED