

**STATE OF LOUISIANA
SOWELA TECHNICAL COMMUNITY COLLEGE
ADDENDUM 3**

PURCHASING AGENT: Susan Tucek

BID NUMBER
83271

EMAIL: bids@sowela.edu

BID OPENING DATE/TIME:		DELIVERY TERMS/FOB POINT			
10/21/24 11/18/24		FOB DESTINATION			
10:00 AM					
VENDOR NAME		DELIVER BID BEFORE OPENING DATE/TIME TO:			
EMAIL ADDRESS:		SOWELA TECHNICAL COMMUNITY COLLEGE			
		SUSAN TUCEK			
SIGNATURE:		3820 SEN J B JOHNSTON AVENUE			
		LAKE CHARLES, LA 70615			
DATE:		INVOICE TO:			
		ACCOUNTS PAYABLE			
		SOWELA TECHNICAL COMMUNITY COLLEGE			
		3810 SEN J B JOHNSTON AVENUE			
		LAKE CHARLES, LA 70615			
LINE NO	COMMODITY/SERVICE DESCRIPTION	QUANTITY ORDERED	UNIT	UNIT PRICE	EXTENDED AMOUNT
	ADDENDUM 3 IS TO ANSWER THE FOLLOWING 8 QUESTIONS, ADD 3 ALTERNATE LINES & PROVIDE ADDITIONAL INFORMATION AND UPDATED DRAWINGS.				
1	IS THERE AN APPROVED MANUFACTURER'S LIST FOR THE PROJECT? NO				
2	CAN THE PIPE AND FITTINGS BE FOREIGN? NO				
3	DOES EVERYTHING NEED TO BE MADE IN AMERICA? YES				
4	UNDER EQUIPMENT ADDITIONAL BID INSTRUCTIONS, IT CALLS FOR A 3000 GAL WATER TANK. IN THE PRE				
CONTINUED ON NEXT PAGE					

LINE NO	COMMODITY/SERVICE DESCRIPTION	QUANTITY ORDERED	UNIT	UNIT PRICE	EXTENDED AMOUNT
	<p>BID MEETING IT WAS MENTIONED USING A 600 GAL WATER TANK. PLEASE ADVISE ON THE TANK SIZE.</p> <p>UNDER ADDITIONAL INFORMATION IN ADDENDUM 3.</p>				
5	<p>UNDER EQUIPMENT ADDITIONAL INSTRUCTIONS, IT CALLS FOR SAFETY SIGNAGE. PLEASE CLARIFY WHAT TYPE OF SAFETY SIGNAGE IS BEING CALLED FOR.</p> <p>NO SAFETY SIGNAGE NEEDED AT THIS TIME</p>				
6	<p>WILL A NEW BID FORM BE SENT OUT WITH ADDITIONAL ALTERNATE LINE FOR BIDDING PURPOSES TO ADD ADDITIONAL ALTERNATE PRICING PER PRE BID MEETING DISCUSSIONS?</p> <p>YES, INCLUDED IN THIS ADDENDUM</p>				
7	<p>IS ALL WELDING 100% XRAY?</p> <p>NON-DESTRUCTIVE TESTING REQUIRED TO BE 10% AS STATED IN ADDENDUM 3.</p>				
8	<p>JUST WANT TO CLARIFY THAT THERE ARE NO ELECTRICAL DRAWINGS FOR THIS BID PACKET, CORRECT?</p> <p>NO ELECTRICAL DRAWINGS, REFERENCE EQUIPMENT SPECIFICATIONS LIST "SHEET 2/27 STCC-01-A" FOR EQUIPMENT. PLEASE APPLY POWER REQUIREMENTS TO LIST OF EQUIPMENT REFERENCED.</p>				
	<p>BID QUESTIONS DUE 11/08/24.</p> <p>CONTINUED ON NEXT PAGE</p>				

LINE NO	COMMODITY/SERVICE DESCRIPTION	QUANTITY ORDERED	UNIT	UNIT PRICE	EXTENDED AMOUNT
ALTERNATES					
1	ALTERNATE 4 IS THE VERTICAL PLATFORM AND VERTICAL PIPING LAUNCHER SECTION				
2	ALTERNATE 5 PRE-ENGINEERED METAL AWNING 15" X 15" OVER THE PUMP AND COMPRESSOR SLAB AREA, COLUMNS TO BE EPOXY ANCHOR BOLT TO THE SLAB				
3	ALTERNATE 6 JOB PER THE UPDATED DRAWINGS				

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: _____ **BID FOR:** _____

(Owner to provide name and address of owner) *(Owner to provide name of project and other identifying information)*

The undersigned bidder hereby declares and represents that she/he; a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: _____ and dated: _____
(Owner to provide name of entity preparing bidding documents.)

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA:** (Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging) _____.

TOTAL BASE BID: For all work required by the Bidding Documents (including any and all unit prices designated "Base Bid" * but not alternates) the sum of:
_____ Dollars (\$ _____)

ALTERNATES: For any and all work required by the Bidding Documents for Alternates including any and all unit prices designated as alternates in the unit price description.

Alternate No. 4 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:
_____ Dollars (\$ _____)

Alternate No. 5 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:
_____ Dollars (\$ _____)

Alternate No. 6 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:
_____ Dollars (\$ _____)

NAME OF BIDDER: _____

ADDRESS OF BIDDER: _____

LOUISIANA CONTRACTOR'S LICENSE NUMBER: _____

NAME OF AUTHORIZED SIGNATORY OF BIDDER: _____

TITLE OF AUTHORIZED SIGNATORY OF BIDDER: _____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER **: _____

DATE: _____

THE FOLLOWING ITEMS ARE TO BE INCLUDED WITH THE SUBMISSION OF THIS LOUISIANA UNIFORM PUBLIC WORK BID FORM:

* The Unit Price Form shall be used if the contract includes unit prices. Otherwise it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

** **A CORPORATE RESOLUTION OR WRITTEN EVIDENCE** of the authority of the person signing the bid for the public work as prescribed by LA R.S. 38:2212(B)(5).

BID SECURITY in the form of a bid bond, certified check or cashier's check as prescribed by LA R.S. 38:2218(A) attached to and made a part of this bid.

LOUISIANA UNIFORM PUBLIC WORK BID FORM

UNIT PRICE FORM

TO: _____

(Owner to provide name and address of owner)

BID FOR: _____

(Owner to provide name of project and other identifying information)

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>

Wording for "DESCRIPTION" is to be provided by the Owner.

All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner

- Rain days - 45 rain days.
 - Add one more month to the duration of the project.
 - Elevation of foundations to be 10'
 - The construction fill is per the geo report and compaction test are noted.
 - Energy transformer currently on site to stay, Contractor to run conduit from transformer to power panel location. 80 foot run.
 - Please reference updated drawings for updated Pipe schedule and Flange class.
 - Non-destructive testing required to be 10%.
-
- Refer to updated drawings for defective pipe sections to fabricate and pipe rack for sections with jib.
 - Electric service meter at the pump location.
 - Produce Red Line drawings per the final build to the Engineer for As-build production.
 - 7 day break on concrete.
 - 6' ht. vinyl coated chain link fence, pedestrian gate, and double gate for equipment access. "360 total linear footage fencing"
-
- Water Tank Specs: 3000 Gallon Vertical Water Storage Tank in Dark Green. 3000 gallon vertical plastic water tanks are FDA approved for fresh potable drinking water storage. In recent years they have become quite popular with the rainwater collection industry providing year round irrigation. With built-in UV inhibitors prolonging the life of your tank, one should expect 20+ years on the tank lifecycle.
 - **Features Include:**
 - 16 Vented Lid
 - 2" Inlet / Overflow Fitting
 - 2" Female Threaded Outlet Fitting
 - Molded-In Gallon Calibrations
 - Rotomolded using FDA approved polyethylene plastic resin.
 - Available Colors: Dark Green, Black, Beige
 - This is a 1.1 specific gravity (approx. 9 lbs. per gallon) water weight tank. Water weighs approx. 8 lbs. per gallon.

Key Specs

Diameter	90"
Gallon Capacity	3060
Inlet	2"
Lid Size	16"
Outlet	2"
Specific Gravity	1.1 (Max 9.18 lbs/gal)
Orientation	Vertical

Dimensions

Length	90"
Width	90"
Height	125"
Weight	440lbs

General

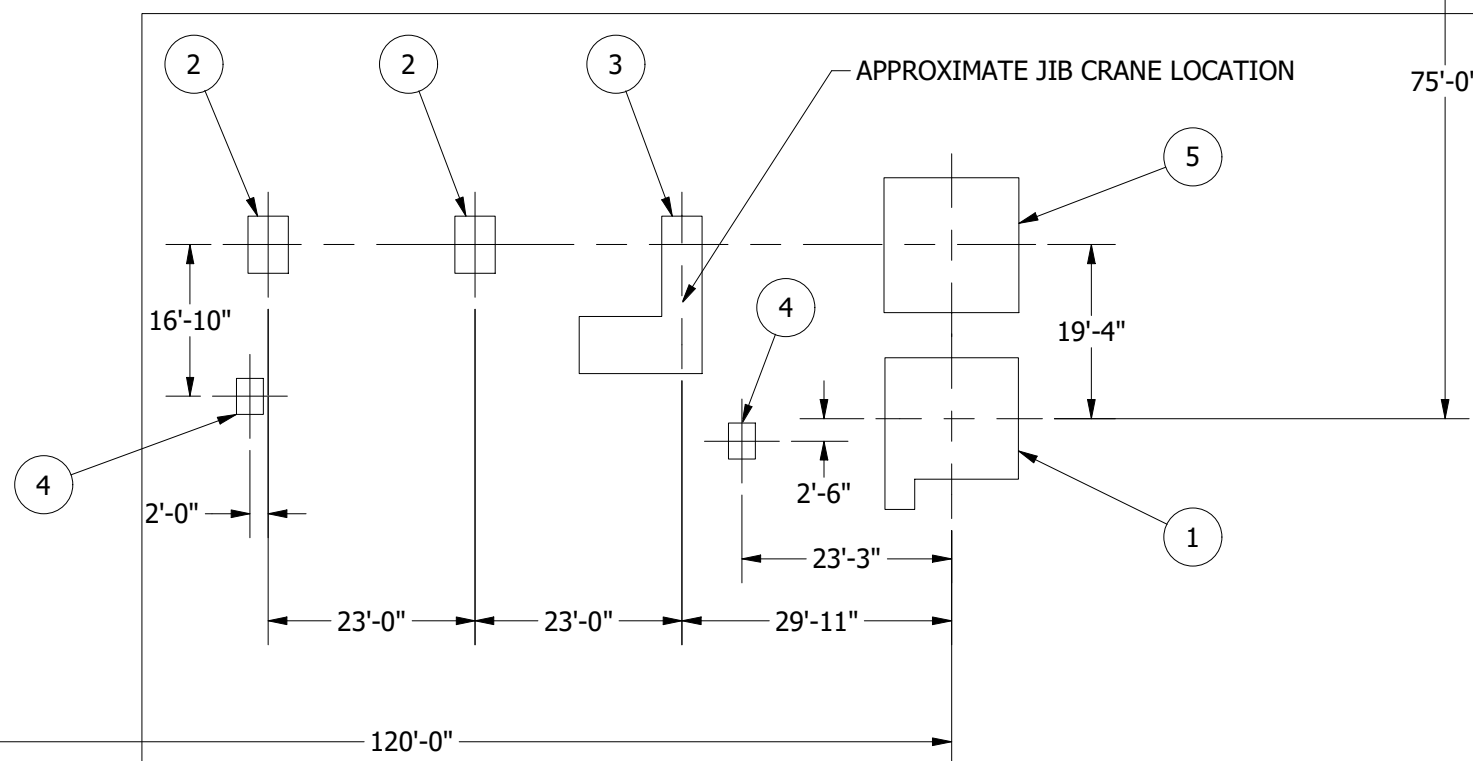
Material	Polyethylene
Manufacturer	Enduraplas
Manufacturer Part Number	TLV03000DG
Color	TBD
Warranty	10 years
Country of Manufacture	US



EXISTING R/R SPIKE 1' EAST
OF HUTCHINS STREET

HUTCHINS STREET

AVENUE C



NOTE: SET FINISH ELEVATION TO 10' AND SLOPE TO DRAIN

FOUNDATION SLAB CALLOUTS			
ITEM	QTY	DESCRIPTION	SHEET DETAIL
1	1	TOWER FOUNDATION	SEE SHEET 3 & 4
2	2	PIPE LOOP SUPPORT FOUNDATION	SEE SHEET 5
3	1	PIPE LOOP SUPPORT, JIB CRANE, ANOMALY PIPE RACK FOUNDATION	SEE SHEET 5
4	2	SINGLE PIPE SUPPORT FOUNDATION	SEE SHEET 6
5	1	EQUIPMENT SLAB FOUNDATION	SEE SHEET 7

UNLESS OTHERWISE STATED
TOLERANCES:
FABRICATION MACHINE
FRACTIONS = .X ± .030
 ± 1/16" .XX ± .015
 .XXX ± .005
ANGLES ± 3° .XXXX ± .0010
 ANGLES ± 0.50°



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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. OUTSIDE CORNERS .015 X 45°
6. MACHINE FINISH.

PIPELINE TRAINING FLOW LOOP
SITE LAYOUT

MATERIAL	DRAWN BY HB	DATE 11/5/2024	CHECKED BY DCK	APPROVED BY DCK	SIZE B
HEAT TREATMENT	SCALE	DWG NO. STCC-01-B	REV. 4	SHEET 1 OF 7	

DATE	REV	DESCRIPTION	BY
6/24/2022	0	INITIAL RELEASE	HB
7/20/2022	1	CHANGED TEST LOOP ORIENTATION	HB
3/28/2023	2	ADDED FINISH ELEVATION NOTE	HB
8/29/2023	3	SHORTENED FLOW LOOP	HB
11/5/2024	4	SHIFTED PIPE LOOP OVER, ADDED ANOMALY PIPE RACK AND JIB CRANE	HB



**UNLESS OTHERWISE STATED
TOLERANCES:**

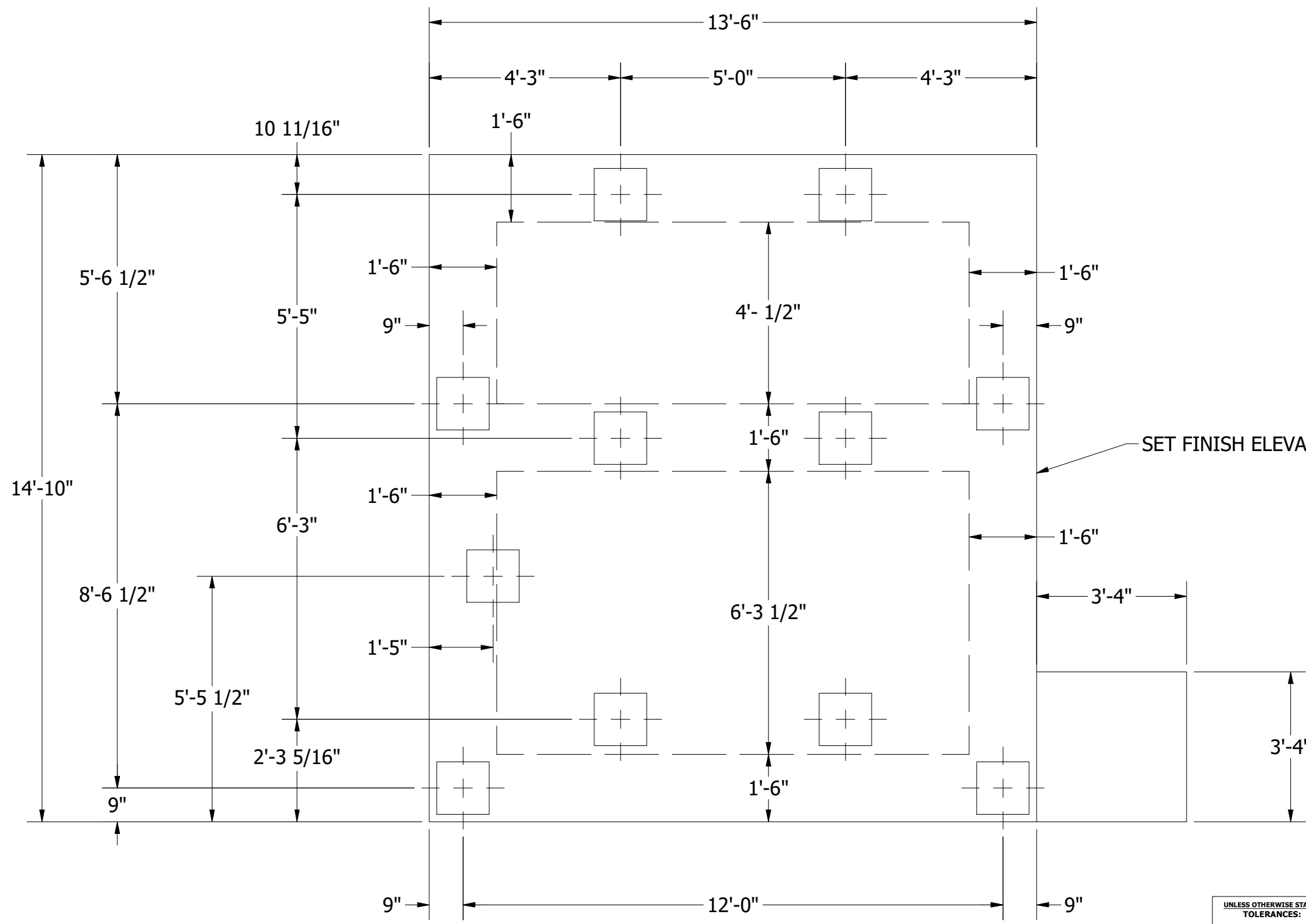
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ±0.50°



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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. OUTSIDE CORNERS .015 X 45°
5. MACHINE FINISH.

TITLE				
PIPELINE TRAINING FLOW LOOP SITE LAYOUT - SATELLITE VIEW				
MATERIAL	DRAWN BY	DATE	CHECKED BY	APPROVED BY
HEAT TREATMENT	HB	11/5/2024	DCK	DCK
SCALE	DWG NO.	REV.	SHEET 2 OF 7	
	STCC-01-B	4		
			SIZE	B



ITEM 1 TOP VIEW (FOOTING & BASE PLATE LAYOUT)
SCALE 3/8" = 1'-0"

UNLESS OTHERWISE STATED TOLERANCES:

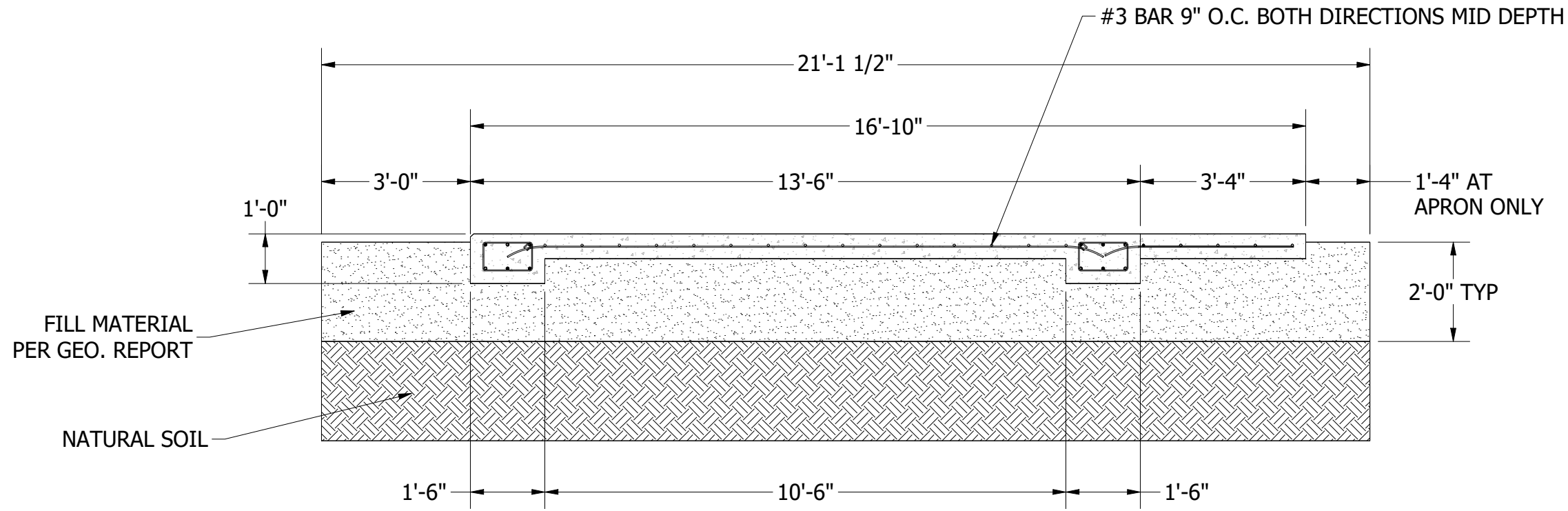
FABRICATION	MACHINE
FRACTIONS = .X ± .030 ± 1/16"	.XX ± .015
ANGLES ± 3°	.XXX ± .005 .XXXX ± .0010
	ANGLES ± 0.50°



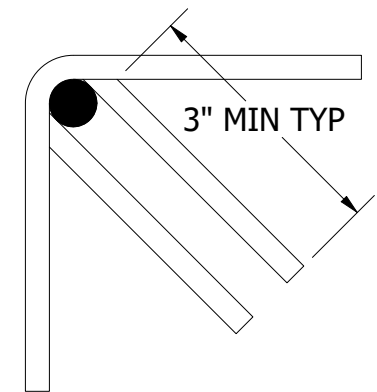
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MATERIAL	DRAWN BY	DATE	CHECKED BY	APPROVED BY	SIZE
HEAT TREATMENT	HB	11/5/2024	DCK	DCK	B
	SCALE	DWG NO.	REV.	SHEET 3 OF 7	
		STCC-01-B	4		

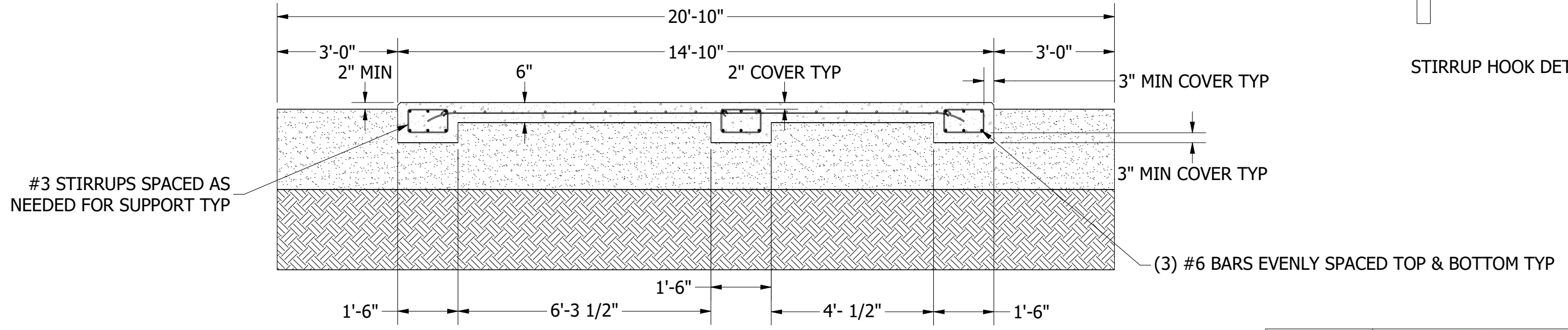
TITLE
**PIPELINE TRAINING FLOW LOOP
TOWER FOUNDATION**



ITEM 1 SIDE VIEW
SCALE 3/8" = 1'-0"



STIRRUP HOOK DETAIL



ITEM 1 FRONT VIEW
SCALE 3/8" = 1'-0"

NOTE: 42" MIN LAP SPLICE ON #6 BAR

UNLESS OTHERWISE STATED
TOLERANCES:

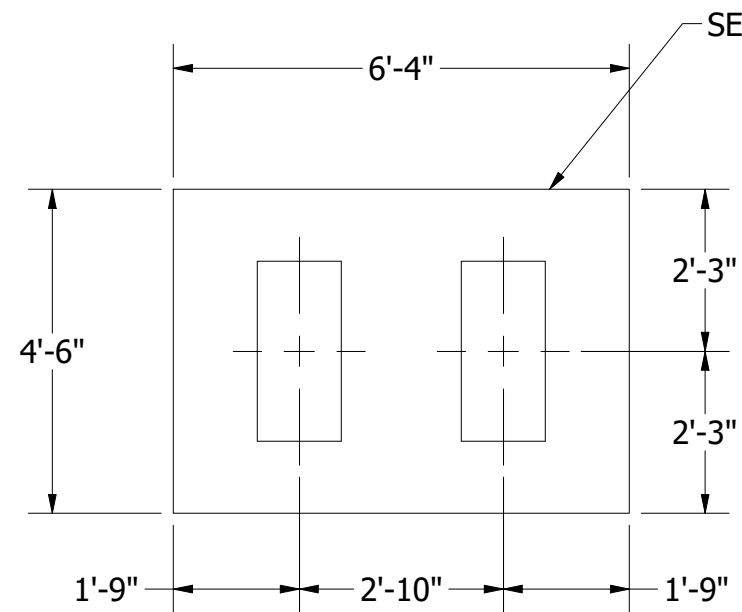
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ± 0.50°



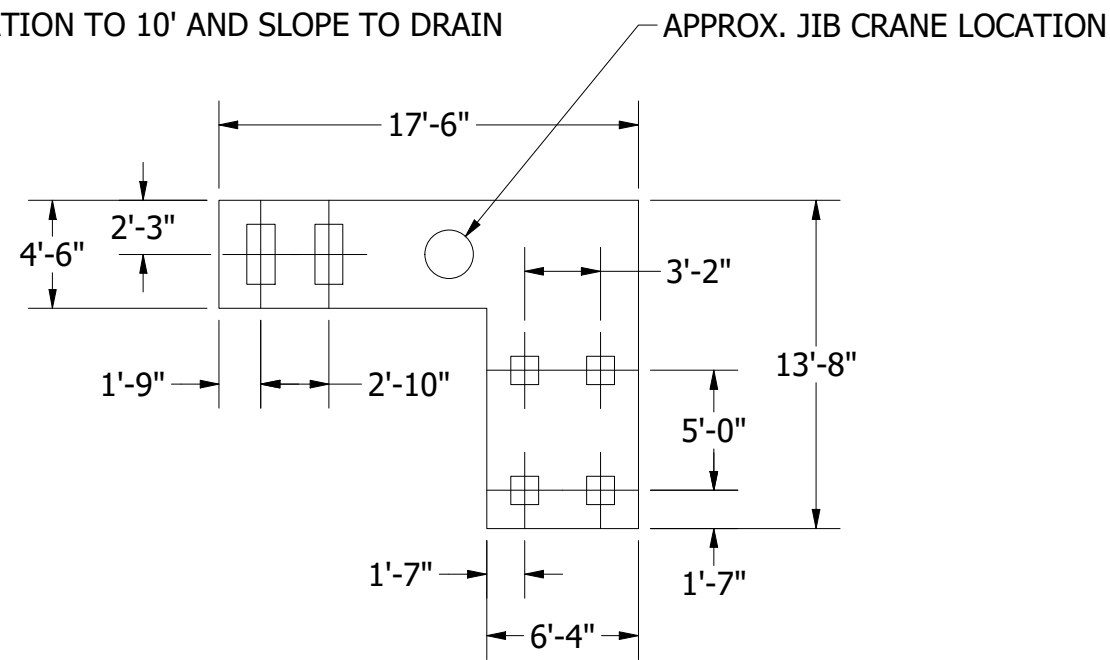
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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
OUTSIDE CORNERS .015 X 45°
5. MACHINE FINISH.

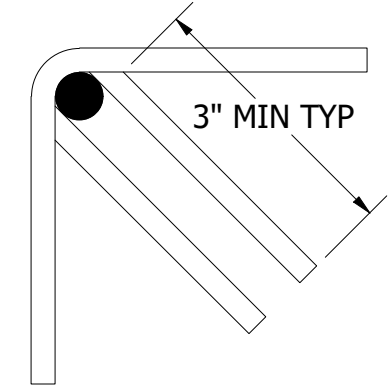
TITLE				
PIPELINE TRAINING FLOW LOOP TOWER FOUNDATION				
DRAWN BY	DATE	CHECKED BY	APPROVED BY	SIZE
HB	11/5/2024	DCK	DCK	B
HEAT TREATMENT	SCALE	DWG NO.	REV.	SHEET 4 OF 7
		STCC-01-B	4	



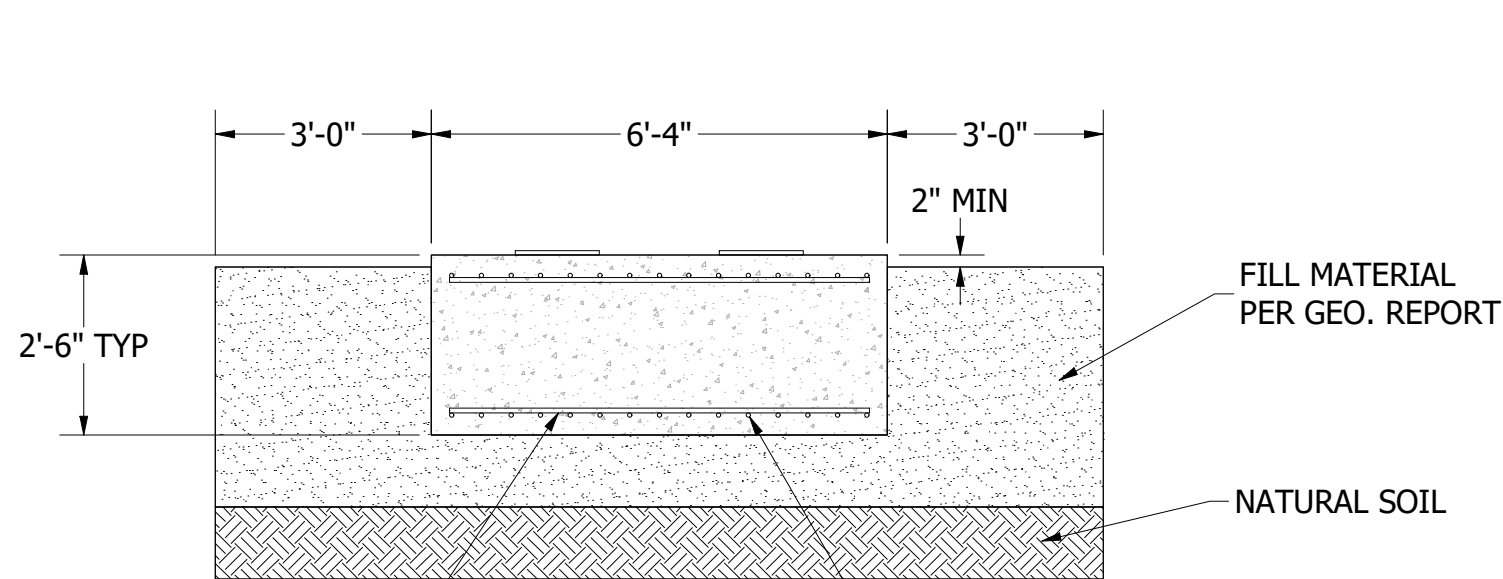
ITEM 2 TOP VIEW (BASE PLATE LAYOUT)
SCALE 3/8" = 1'-0"



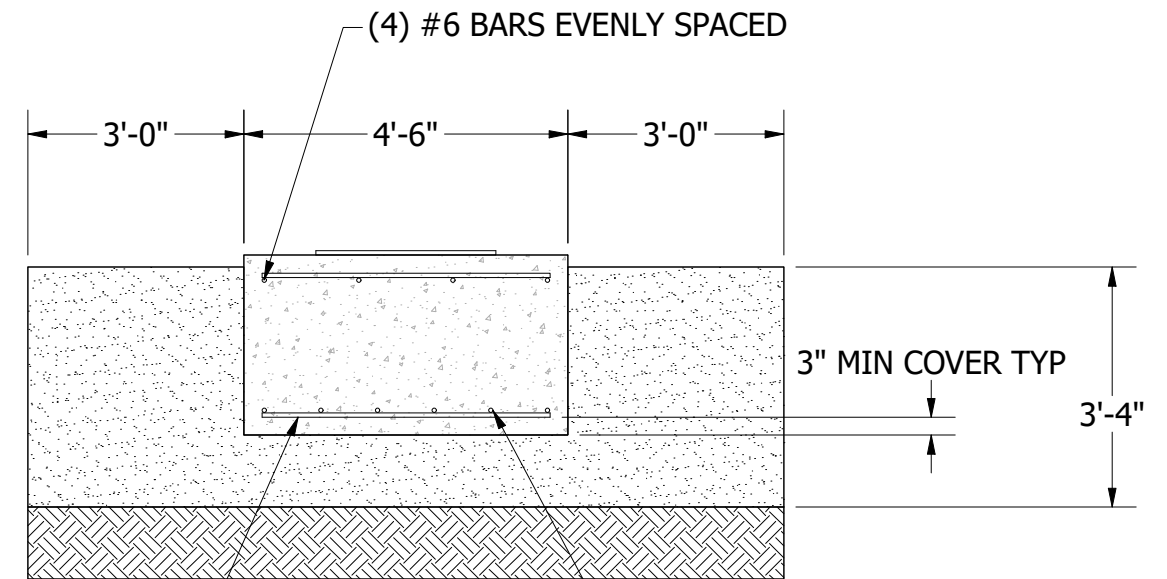
ITEM 3 TOP VIEW (BASE PLATE LAYOUT)
SCALE 1/8" = 1'-0"



STIRRUP HOOK DETAIL



(6) #6 BARS EVENLY SPACED
ITEM 2 & 3 FRONT VIEW
SCALE 3/8" = 1'-0"
(14) #6 BARS EVENLY SPACED TOP & BOTTOM



(6) #6 BARS EVENLY SPACED
ITEM 2 & 3 SIDE VIEW
SCALE 3/8" = 1'-0"
(14) #6 BARS EVENLY SPACED

NOTES:

- USE #3 BAR FOR STIRRUPS SPACED AS NEEDED FOR SUPPORT. TYP
- USE THE SAME BAR SIZING/SPACING AND FOUNDATION DEPTH FOR ITEM 2 AND ITEM 3

UNLESS OTHERWISE STATED
TOLERANCES:

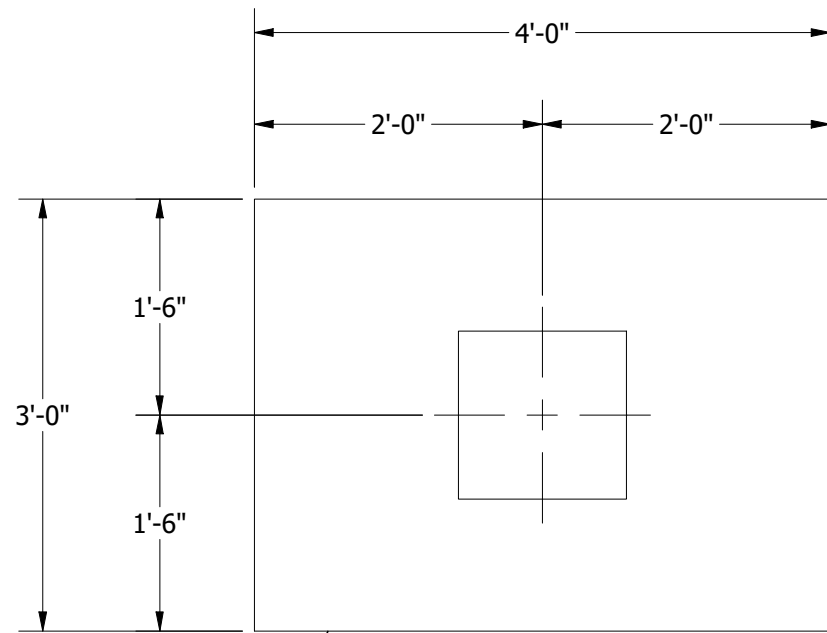
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ± 0.50°



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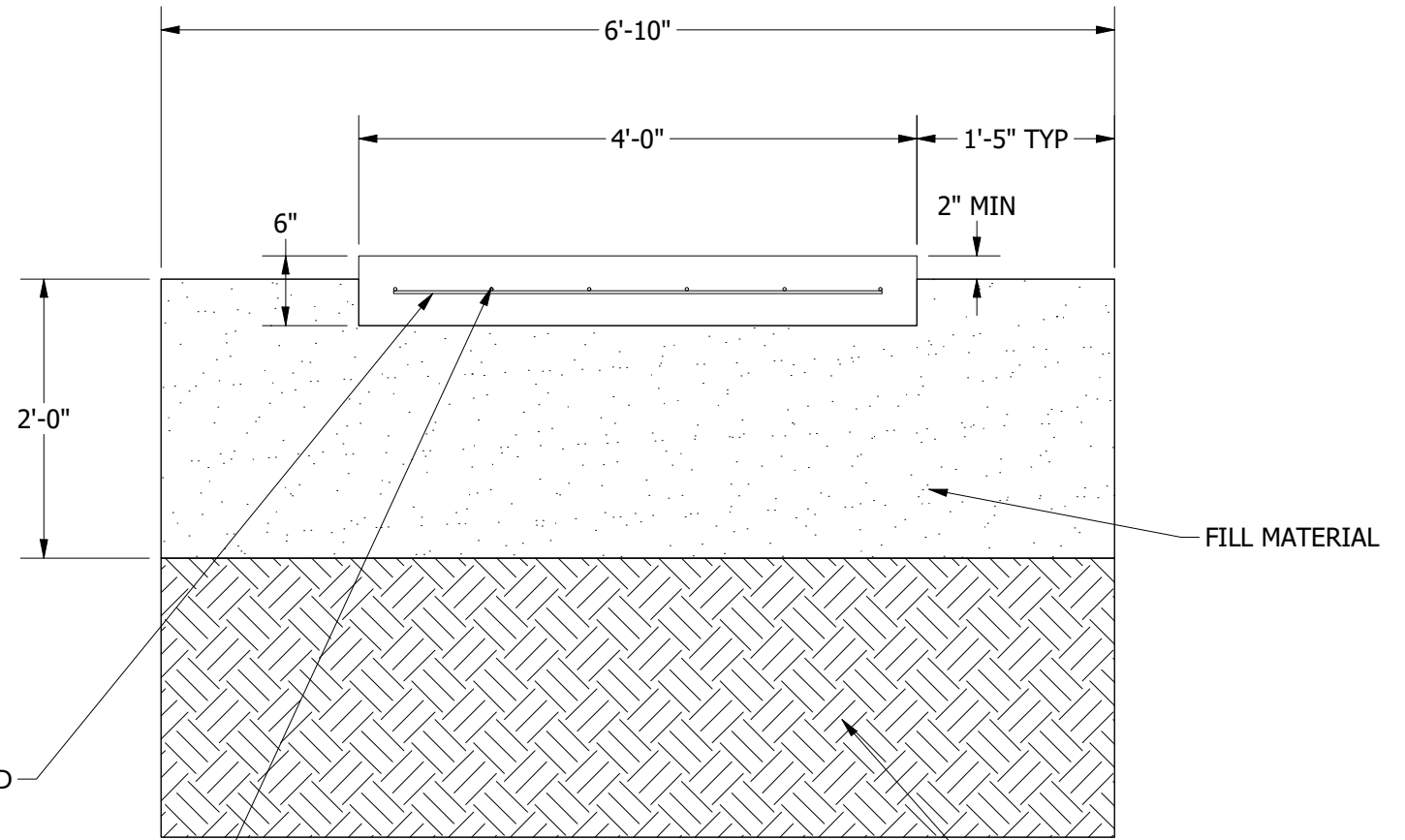
1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
OUTSIDE CORNERS .015 X 45°
5. MACHINE FINISH.

TITLE				
PIPELINE TRAINING FLOW LOOP PIPE LOOP SUPPORT FOUNDATION				
DRAWN BY	DATE	CHECKED BY	APPROVED BY	SIZE
HB	11/4/2024	DCK	DCK	B
SCALE	DWG NO.	REV.	SHEET 5 OF 7	
	STCC-01-B	4		



SET FINISH ELEVATION TO 10' AND SLOPE TO DRAIN

ITEM 4 TOP VIEW (BASE PLATE LAYOUT)
SCALE 3/4" = 1'-0"



#3 BAR 9" O.C. MIDWAY SPACED

QTY 6 #3 BAR EVENLY SPACED

ITEM 4 SIDE VIEW
SCALE 3/4" = 1'-0"

UNLESS OTHERWISE STATED TOLERANCES:

FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ± 0.50°

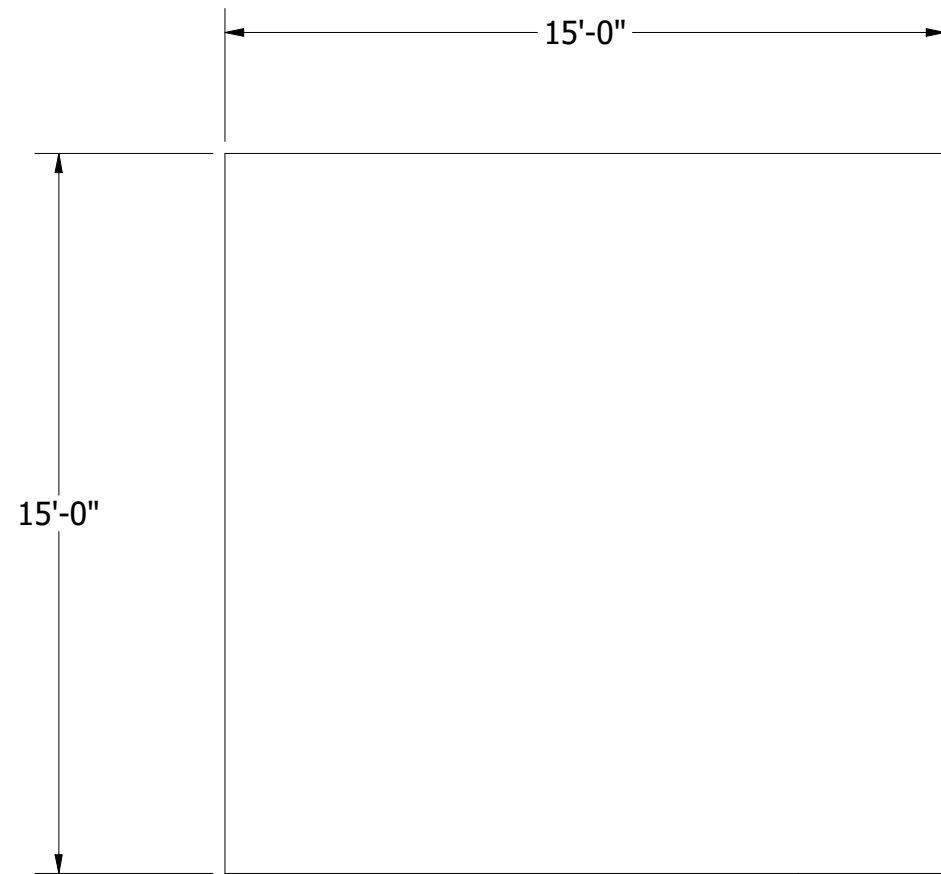


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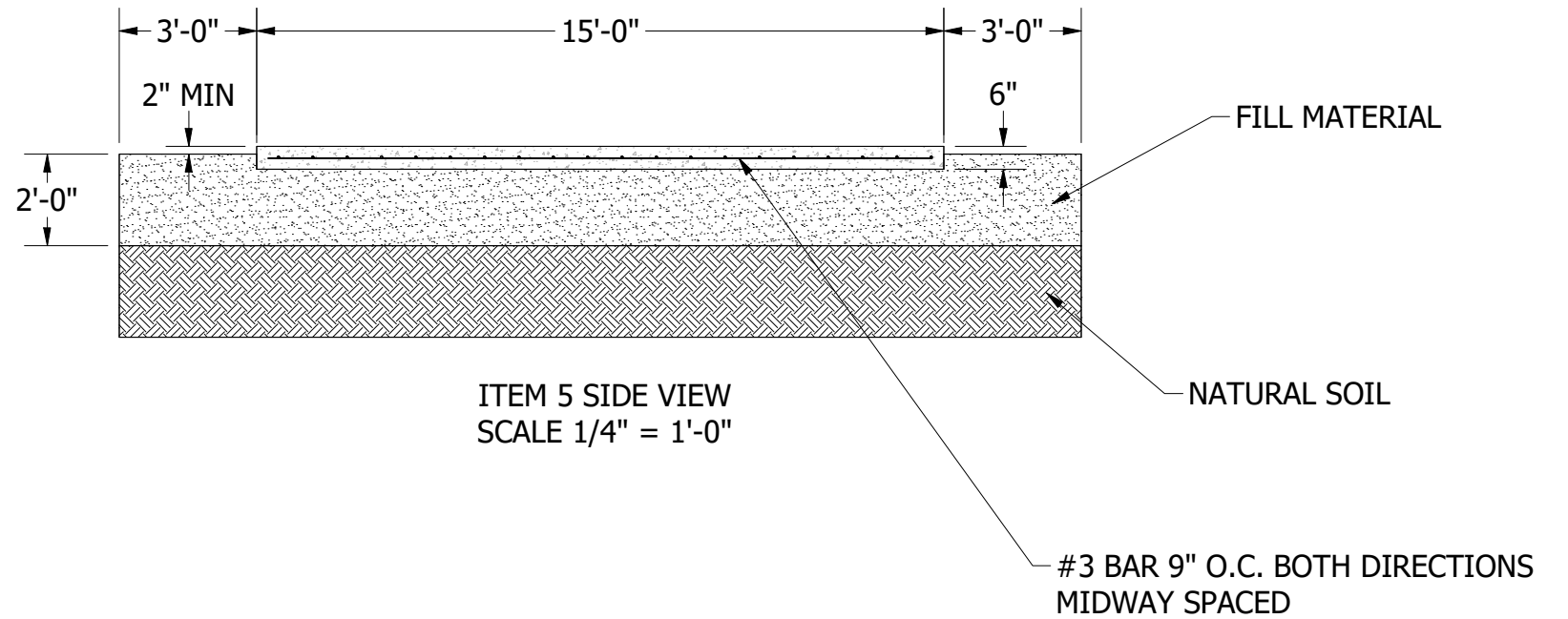
1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. OUTSIDE CORNERS .015 X 45°
5. MACHINE FINISH.

TITLE
**PIPELINE TRAINING FLOW LOOP
SINGLE PIPE SUPPORT FOUNDATION**

MATERIAL	DRAWN BY	DATE	CHECKED BY	APPROVED BY	SIZE
HEAT TREATMENT	HB	11/5/2024	DCK	DCK	B
SCALE	DWG NO.	REV.	SHEET 6 OF 7		
	STCC-01-B	4			



ITEM 5 TOP VIEW
SCALE 1/4" = 1'-0"



ITEM 5 SIDE VIEW
SCALE 1/4" = 1'-0"

DIMENSIONS (L X W) MAY NEED TO BE ADJUSTED
ONCE THE ACTUAL EQUIPMENT HAS BEEN DETERMINED.

SET FINISH ELEVATION TO 10' AND SLOPE TO DRAIN

UNLESS OTHERWISE STATED TOLERANCES:

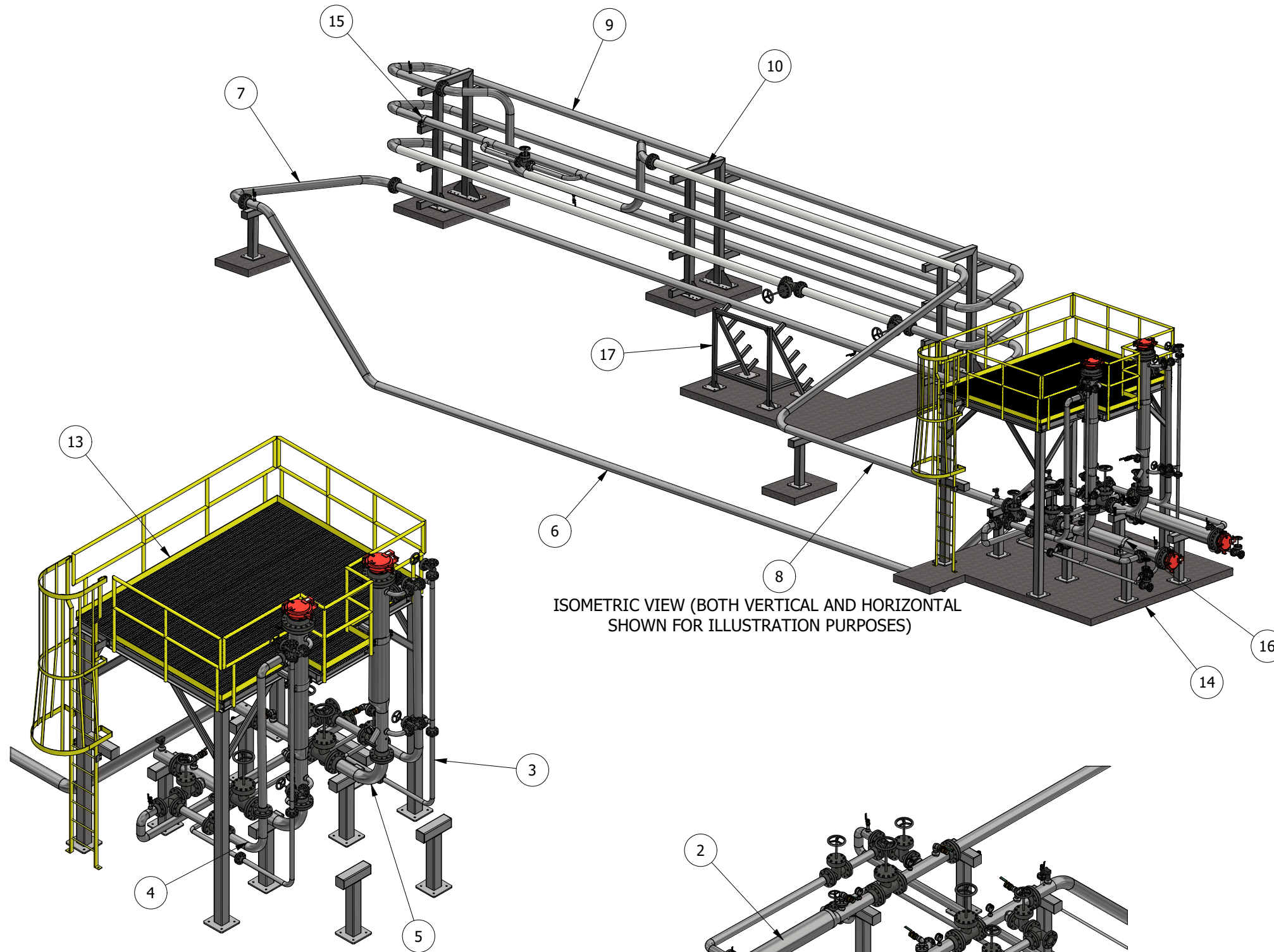
FABRICATION	MACHINE
FRACTIONS = ± 1/16"	.X ± .030 .XX ± .015 .XXX ± .005 .XXXX ± .0010
ANGLES ± 3°	ANGLES ±0.50°



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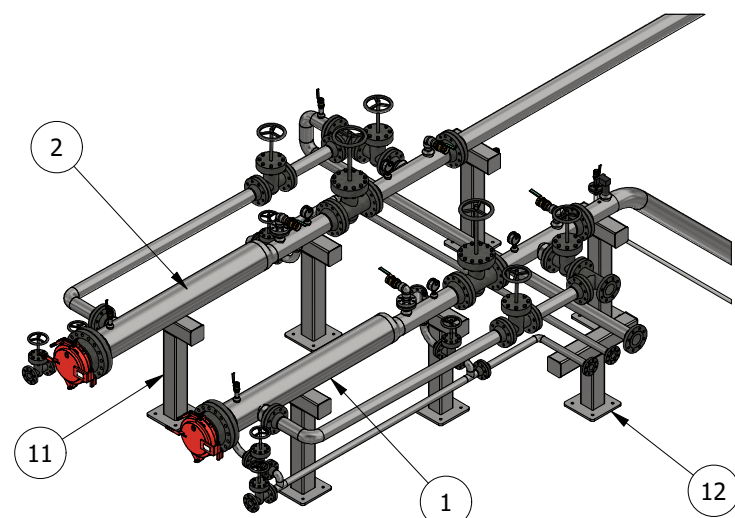
MATERIAL	HEAT TREATMENT
----------	----------------

TITLE				
PIPELINE TRAINING FLOW LOOP EQUIPMENT SLAB FOUNDATION				
DRAWN BY	DATE	CHECKED BY	APPROVED BY	SIZE
HB	11/5/2024	DCK	DCK	B
SCALE	DWG NO.	REV.	SHEET 7 OF 7	
	STCC-01-B	4		



ISOMETRIC VIEW (BOTH VERTICAL AND HORIZONTAL SHOWN FOR ILLUSTRATION PURPOSES)

DETAIL VIEW (VERTICAL LAUNCHER/RECEIVER POSITION)



DETAIL VIEW (HORIZONTAL LAUNCHER/RECEIVER POSITION)

BILL OF MATERIALS			
ITEM	QTY	DESCRIPTION	SHEET DETAIL
1	1	LAUNCHER ASSEMBLY	SEE SHEET 3
2	1	RECEIVER ASSEMBLY	SEE SHEET 5
3	2	2" VERTICAL ELBOW SPOOL ASSEMBLY	SEE SHEET 7
4	2	4" VERTICAL ELBOW SPOOL ASSEMBLY	SEE SHEET 7
5	2	6" VERTICAL ELBOW SPOOL ASSEMBLY	SEE SHEET 7
6	1	LAUNCHER UNDERGROUND PIPE SPOOL	SEE SHEET 8
7	1	LAUNCHER CONNECTING SPOOL	SEE SHEET 9
8	1	RECEIVER CONNECTING SPOOL	SEE SHEET 9
9	1	PIPE LOOP ASSEMBLY	SEE SHEET 10
10	3	PIPE LOOP SUPPORT	SEE SHEET 12
11	8	PIPE SUPPORT	SEE SHEET 13
12	1	PIPE SUPPORT SHORT	SEE SHEET 13
13	1	TOWER ASSEMBLY (OPTIONAL)	SEE SHEET 14
14	1	FOUNDATION	SEE DWG STCC-01-B
15	27	6" PIPE CLAMP ASSEMBLY	SEE SHEET 25
16	2	10" PIPE CLAMP ASSEMBLY	SEE SHEET 26
17	1	ANOMALY PIPE RACK ASSEMBLY	SEE SHEET 27

NOTE: THE TOWER ASSEMBLY (ITEM 13) AND VERTICAL LAUNCHER/RECEIVER SHALL BE BID SEPARATELY AS AN OPTION

DATE	REV	DESCRIPTION	BY
6/17/2022	0	RELEASE FOR BID	HB
7/20/2022	1	ISSUE FOR CONSTRUCTION	HB
9/19/2022	2	CORRECTED IMAGE OVERLAPPING ON SHEET 14	HB
3/28/2023	3	ADDED FINISH ELEVATION NOTE	HB
8/29/2024	4	SHORTENED FLOW LOOP	HB
11/5/2024	5	REDUCED FLANGES TO CL 300, INCREASED PUMP PRESSURE, SHORTENED ANOMALY PIPE, ADDED ANOMALY PIPE RACK, ADDED 2 VENT VALVES	HB

UNLESS OTHERWISE STATED TOLERANCES:	
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ±0.50°



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MATERIAL		DRAWN BY		DATE	CHECKED BY	APPROVED BY	SIZE
SEE BOM		HB		11/5/2024	DCK	DCK	B
HEAT TREATMENT		SCALE	DWG NO.	REV.	SHEET		
N/A		DNS	STCC-01-A	5	1 OF 27		

PIPELINE TRAINING FLOW LOOP FABRICATION DRAWINGS

GENERAL NOTES:

1. ALL PIPING IS DESIGNED PER ASME B31.3-2016.
2. ALL STRUCTURAL STEEL IS DESIGNED PER AISC STEEL CONSTRUCTION MANUAL
3. ALL WELDING AND PIPE CONSTRUCTION SHALL CONFORM TO AWS D1.1 WELDING SPECIFICATION AND SHALL BE FULL PENETRATION WELDS UNLESS NOTED OTHERWISE. SEE 'BRANCH CONNECTION WELDS' TABLE FOR MIN WELD LEG HEIGHTS OF BRANCH CONNECTIONS
4. ALL COATING SHALL CONFORM TO KEC PAINT SPECIFICATION LATEST EDITION
5. DESIGN PRESSURE = 600 PSI; HYDROSTATIC TEST PRESSURE = 900 PSI
6. ALL CONCRETE FOUNDATION SURFACES ARE ASSUMED TO BE AT ELEVATION 0'-0". ALL SUPPORTING STRUCTURES AND PLATFORM WERE DESIGNED ACCORDINGLY
7. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING HARD PIPING FROM PUMPING EQUIPMENT AND WATER TANK TO FLOW LOOP
8. ALL PIPE TO SUPPORT CONTACT SHALL USE DYNAGARD OR FRP WEAR PADS INSTALLED TO MANUFACTURER'S RECOMMENDATION. CONTRACTOR MAY USE COATED U-BOLT/I-ROD SYSTEM AS A REPLACEMENT TO THE WELD ON BRACKETS SHOWN IN FABRICATION DRAWINGS
9. ONLY ONE LAUNCHER AND RECEIVER SHALL BE USED FOR BOTH HORIZONTAL AND VERTICAL (OPTIONAL) POSITIONS
10. THE TOWER ASSEMBLY (ITEM 13) AND VERTICAL LAUNCHER/RECEIVER SHALL BE BID SEPARATELY AS AN OPTION
11. ALTERNATIVE PIPE GRADE FOR Ø6 SCH 40 = ASTM A106 GRADE B OR ASTM A53 GRADE B
12. CONTRACTOR HAS THE LIBERTY TO LOCATE Ø6 CL 300 FLANGES AS NEEDED TO MINIMIZE COST, FIELD WELDING, AND TRANSPORTATION ISSUES WITH THE FOLLOWING EXCEPTIONS
-FLANGES ALREADY SHOWN ON THE DRAWINGS
-UNDERGROUND PIPE

BRANCH CONNECTION WELDS	
CONNECTION SIZE	MIN WELD LEG HEIGHT
Ø6 x Ø1 WELDOLET	3/8"
Ø6 x Ø2 WELDOLET	1/2"
Ø6 x Ø4 WELDOLET	3/4"
Ø10 x Ø1 WELDOLET	3/8"
Ø10 x Ø2 WELDOLET	3/8"
Ø10 x Ø4 WELDOLET	5/8"
Ø6 x Ø2 LWN @ 45°	1/2"
Ø6 x Ø2 LATROLET @ 45°	1/4"

FOUNDATION NOTES:

1. ALL CONCRETE IS DESIGNED PER ACI 318-11
2. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI
3. ALL CONCRETE REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 DEFORMED TYPE Fy = 60,000 PSI
4. UNLESS NOTED OTHERWISE, CONCRETE COVER OF REINFORCING BARS SHALL CONFORM TO MINIMUM REQUIREMENTS OF ACI 318-11
5. PROVIDE 3/4 X 45 DEG CHAMFER ON ALL EXPOSED CORNERS
6. FOUNDATIONS HAVE BEEN DESIGNED TO REST ON COMPACTED SOIL PER GEOTECHNICAL REPORT WITH A MINIMUM ALLOWABLE NET VERTICAL BEARING CAPACITY OF 1,500 PSI. IF UNDERSIREABLE SOIL CONDITIONS ARE ENCOUNTERED, THE ENGINEERS WILL BE NOTIFIED.
7. SET FINISH ELEVATION TO 10' AND SLOPE TO DRAIN
8. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WELDED STEEL WIRE FABRIC IF USED
9. INSTALLATION OF CONCRETE ANCHORS SHALL BE ONE OF THE FOLLOWING OPTIONS AND BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS:

- DRILL AND EPOXY HILTI HIT-HY 200 V3 + HAS-V-36 (ASTM F1554 GRADE 36) Ø3/4" x 8" OR EQUIVALENT
- CAST IN PLACE HEX HEAD ASTM F 1554 GRADE 36 Ø3/4" OR EQUIVALENT

ANCHOR BOLT SCHEDULE		
LOCATION	ANCHOR DIA	MIN EMB DEPTH
PIPE SUPPORT	3/4"	6"
BASE PLATE OVER FOOTING	3/4"	6"
BASE PLATE OVER 6" SLAB	3/4"	3"

EQUIPMENT NOTES:

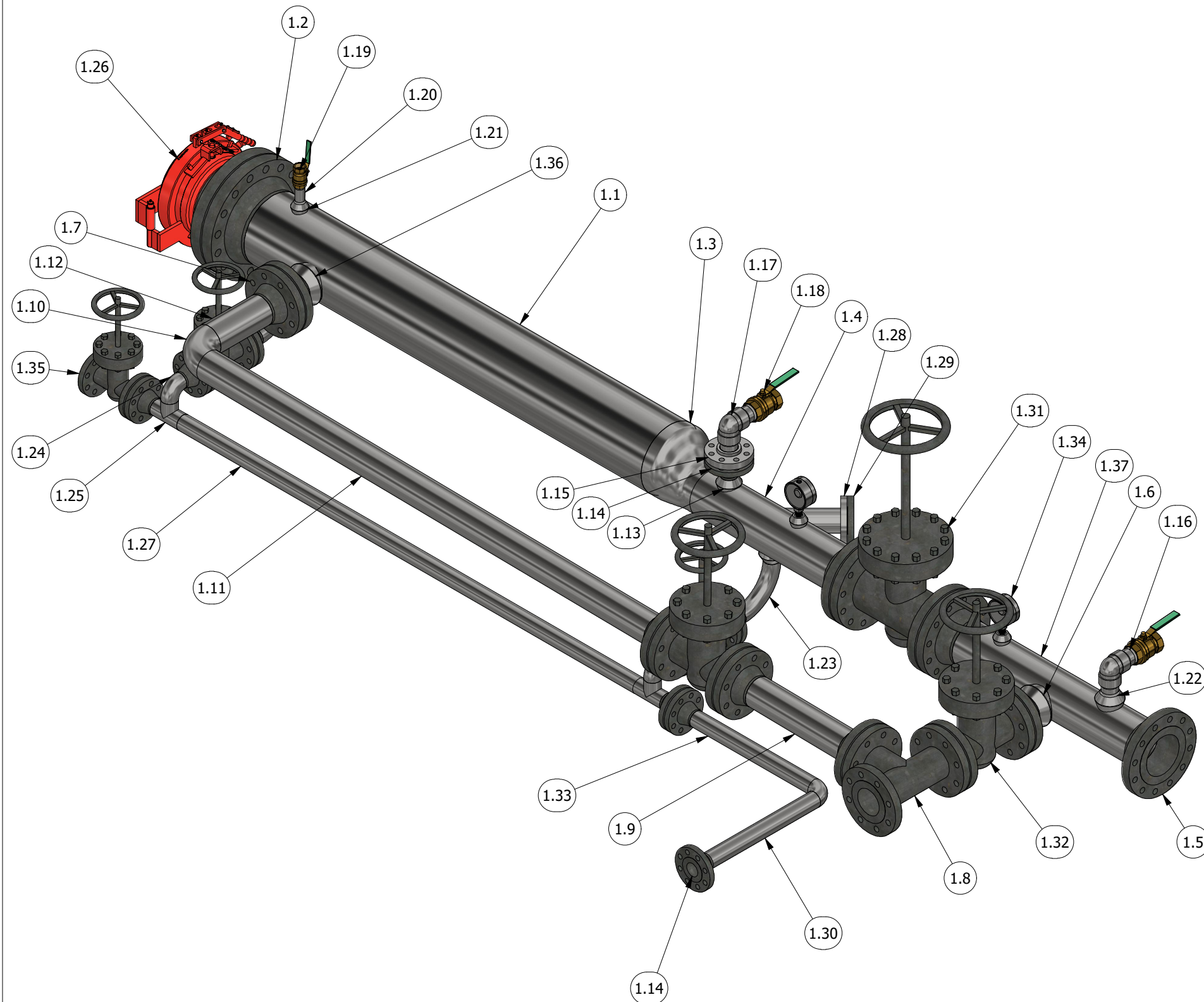
1. ELECTRIC WATER PUMP: 600 PSI, 700 GPM, TEFC 150 HP MOTOR, 460 VOLT, 3 PHASE, 60 Hz (460/3/60)
2. 3,000 GAL WATER TANK
3. ELECTRIC AIR COMPRESSOR W/ DRYER: 190 PSI, MIN 325 CFM, TEFC 100 HP MOTOR, 460 VOLT, 3 PHASE, 60 Hz, (460/3/60) W/ MIN 50 GAL AIR TANK
4. JIB CRANE: 1/2 TON PEDESTAL JIB CRANE, 10' SPAN, 10' HUB. 1/2 TON CHAINFALL AND MANUAL TROLLEY
5. FOR HYDROSTATIC PRESSURE TESTING, UTILIZE A CENTRIFUGAL PUMP THAT IS CAPABLE OF 700 GPM AT 500 PSI. ONCE PIPELINE IS FILLED, SWITCH TO A SMALL POSITIVE DISPLACEMENT PUMP OR PNEUMATIC DRIVEN LIQUID PUMP TO GET TO THE DESIRED TEST PRESSURE OF 600 PSI.

UNLESS OTHERWISE STATED TOLERANCES:

FABRICATION	MACHINE
FRACTIONS = ± 1/16"	.X ± .030 .XX ± .015 .XXX ± .005 .XXXX ± .0010
ANGLES ± 3°	ANGLES ±0.50°



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	MATERIAL SEE BOM HEAT TREATMENT N/A	DRAWN BY HB SCALE DNS	DATE 11/5/2024 DWG NO. STCC-01-A	CHECKED BY DCK REV. 5	APPROVED BY DCK	SIZE B SHEET 2 OF 27



BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
1.1	1	PIPE	Ø10 SCH 60 (74)	ASTM A106 GRADE B
1.2	2	WELD NECK FLANGE	Ø10 CL 300 RF	ASTM A105
1.3	1	ECCENTRIC REDUCER	Ø10 SCH 60 X Ø6 SCH 40	ASTM A234
1.4	1	PIPE	Ø6 SCH 40 (25)	API 5L X42
1.5	3	WELD NECK FLANGE	Ø6 CL 300 RF	ASTM A105
1.6	1	WELDOLET	Ø4 SCH 40 X Ø6	ASTM A105
1.7	6	WELD NECK FLANGE	Ø4 CL 300 RF	ASTM A105
1.8	1	FLANGED TEE	Ø4 CL 300 RF	ASTM A105
1.9	1	PIPE	Ø4 SCH 40 (17-3/16)	ASTM A106 GRADE B
1.10	1	ELBOW	Ø4 SCH 40 90 DEG SR	ASTM A106 GRADE B
1.11	1	PIPE	Ø4 SCH 40 (83-1/4)	ASTM A106 GRADE B
1.12	1	PIPE	Ø4 SCH 40 (9-11/16)	ASTM A106 GRADE B
1.13	2	WELDOLET	Ø2 SCH 40 X Ø6	ASTM A105
1.14	9	WELD NECK FLANGE	Ø2 CL 300 RF	ASTM A105
1.15	1	THREADED FLANGE	Ø2 CL 300 RF	ASTM A105
1.16	4	NIPPLE	Ø2 SCH 40 NPT (4)	ASTM A106 GRADE B
1.17	2	THREADED ELBOW	Ø2 CL 3000 90 DEG W/ NPT	ASTM A105
1.18	2	BALL VALVE	Ø2 CL 3000 NPT	BRASS
1.19	1	BALL VALVE	Ø1 CL 3000 NPT	BRASS
1.20	1	NIPPLE	Ø1 SCH 40 NPT (4)	ASTM A106 GRADE B
1.21	3	THREDOLET	Ø1 CL 3000 X Ø10 - Ø6	ASTM A105
1.22	1	THREDOLET	Ø2 CL 3000 X Ø6	ASTM A105
1.23	2	ELBOW	Ø2 SCH 40 90 DEG 3D	ASTM A106 GRADE B
1.24	3	ELBOW	Ø2 SCH 40 90 DEG SR	ASTM A106 GRADE B
1.25	2	TEE	Ø2 SCH 40	ASTM A105
1.26	1	CLOSURE	Ø10 CL 300 RF S-2000 RH (CCR-103)	STEEL
1.27	1	PIPE	Ø2 SCH 40 (85)	ASTM A106 GRADE B
1.28	1	LWN FLANGE	Ø2 CL 300 LWN RF	ASTM A105
1.29	1	BLIND FLANGE	Ø2 CL 300 RF	ASTM A105
1.30	1	PIPE	Ø2 SCH 40 (20)	ASTM A106 GRADE B
1.31	1	GEAR OPERATED BALL VALVE	Ø6 CL 300 RF 2-PIECE TRUNNION	CARBON STEEL
1.32	2	GEAR OPERATED BALL VALVE	Ø4 CL 300 RF 2-PIECE TRUNNION	CARBON STEEL
1.33	1	PIPE	Ø2 SCH 40 (22)	ASTM A106 GRADE B
1.34	2	GAUGE	2,000 PSI MIN	STEEL
1.35	3	LEVER OPERATED BALL VALVE	Ø2 CL 300 RF 2-PIECE TRUNNION	CARBON STEEL
1.36	1	WELDOLET	Ø4 SCH 40 X Ø10	ASTM A105
1.37	1	PIPE	Ø6 SCH 40 (32-1/8)	API 5L X42
1.38	1	WELDOLET	Ø2 SCH 40 X Ø10-Ø8	ASTM A105

NOTE: ALL Ø6 CL 300 VALVES SHALL BE FULL PORT BALL VALVES

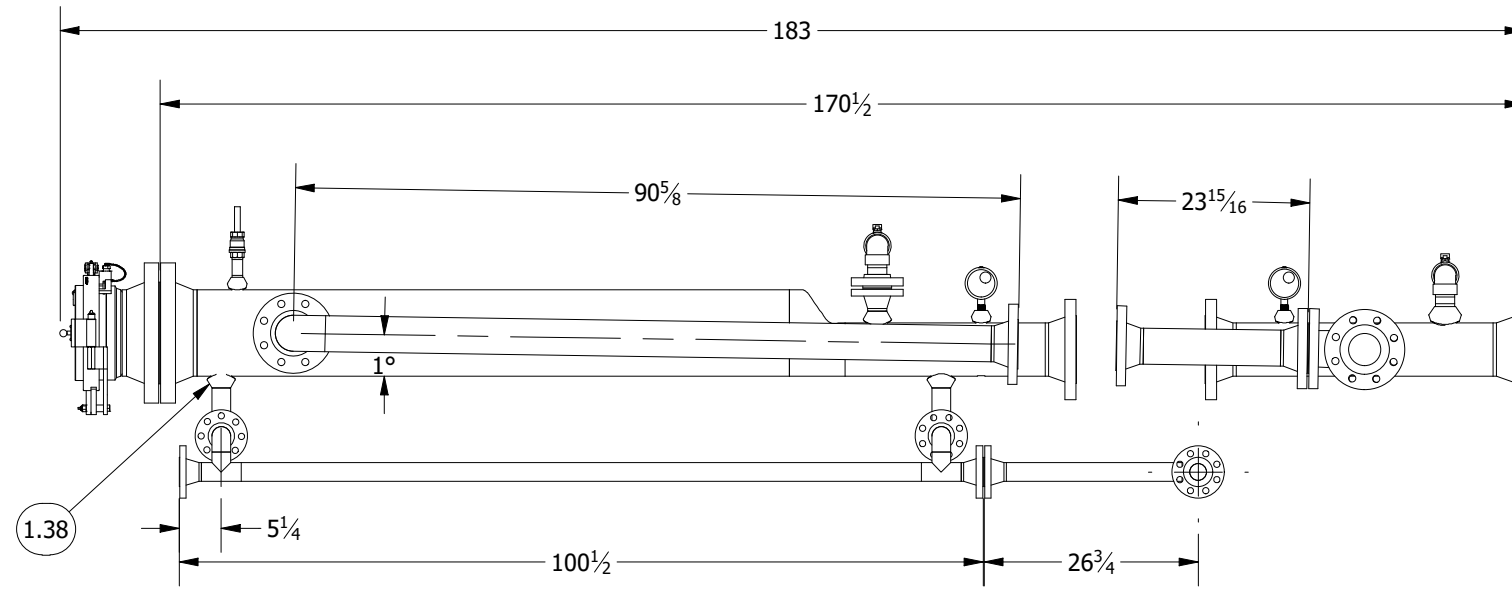
UNLESS OTHERWISE STATED TOLERANCES:	
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
ANGLES ± 3°	.XXX ± .005
	.XXXX ± .0010
	ANGLES ±0.50°



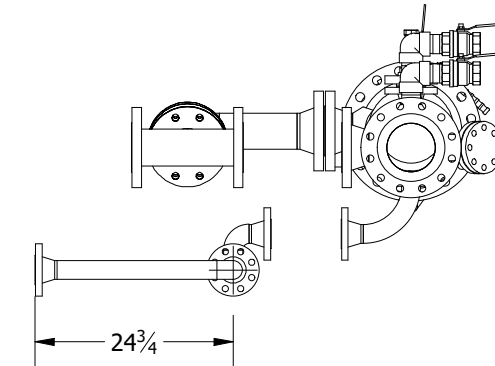
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1. DIMENSIONS ARE IN INCHES.
 2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
 3. REMOVE ALL BURRS AND SHARP CORNERS.
 4. INSIDE CORNERS R.032
 5. MACHINE FINISH.

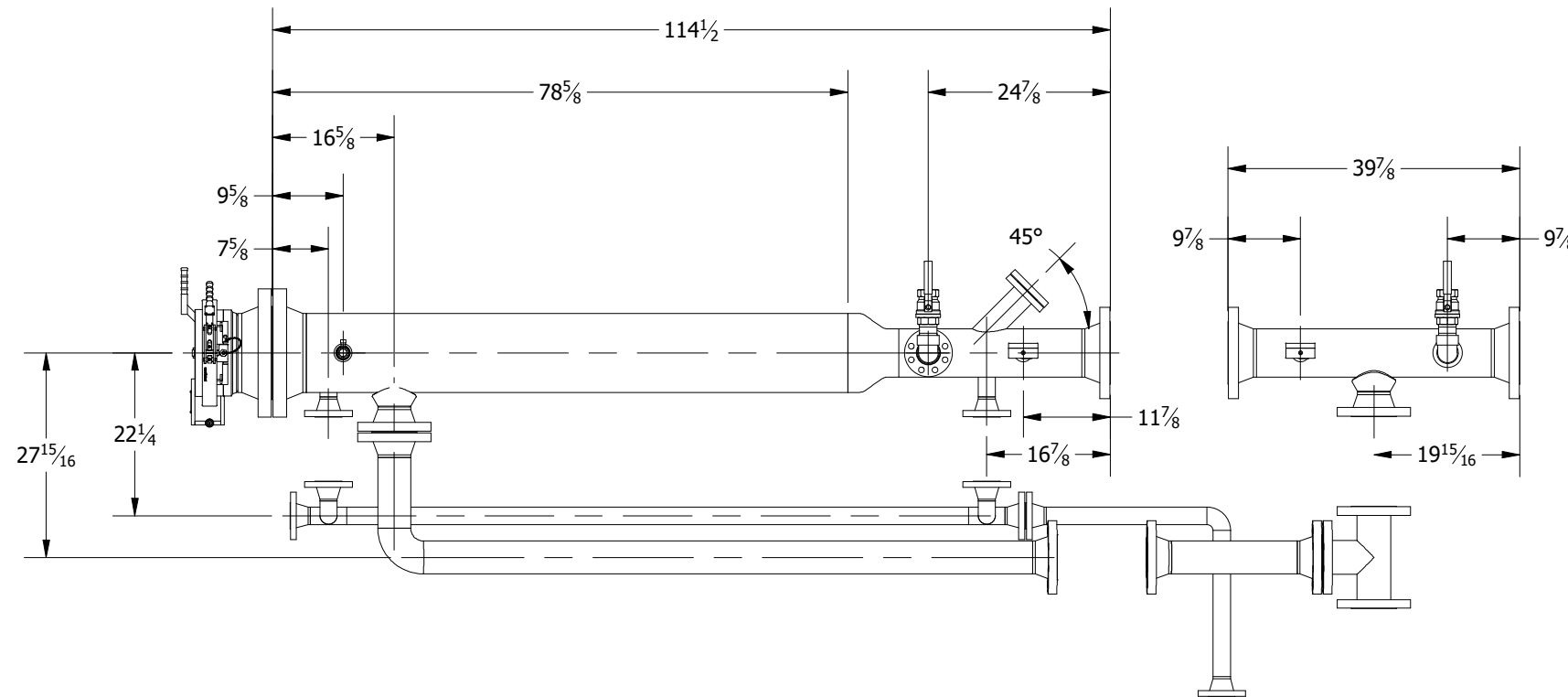
TITLE				
PIPELINE TRAINING FLOW LOOP LAUNCHER ASSEMBLY				
MATERIAL	SEE BOM	DRAWN BY	DATE	CHECKED BY
HEAT TREATMENT	N/A	HB	11/5/2024	DCK
SCALE	DNS	DWG NO.	STCC-01-A	REV.
			5	
APPROVED BY	DCK	SIZE	B	
				SHEET 3 OF 27



ITEM 1 FRONT VIEW (VALVES REMOVED)
SCALE 1/2" = 1'-0"



ITEM 1 SIDE VIEW (VALVES REMOVED)
SCALE 1/2" = 1'-0"



ITEM 1 TOP VIEW (VALVES REMOVED)
SCALE 1/2" = 1'-0"

UNLESS OTHERWISE STATED TOLERANCES:

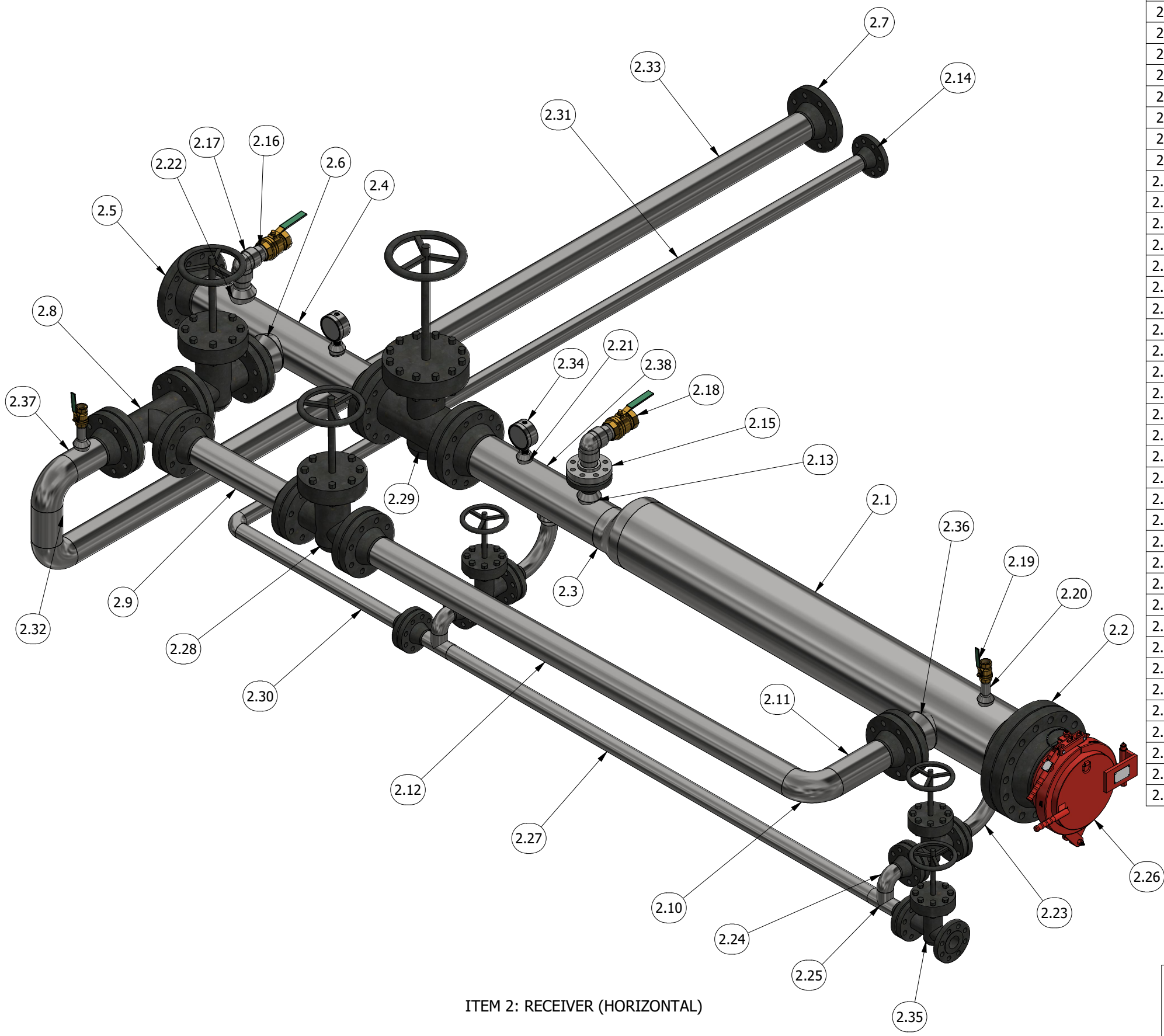
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ± 0.50°



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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. MACHINE FINISH.

TITLE				
PIPELINE TRAINING FLOW LOOP LAUNCHER ASSEMBLY				
MATERIAL	SEE BOM	DRAWN BY	HB	DATE
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.
		CHECKED BY	DCK	APPROVED BY
		DATE	11/5/2024	DCK
		REV.	5	SIZE
				B
				SHEET 4 OF 27



ITEM 2: RECEIVER (HORIZONTAL)

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
2.1	1	PIPE	Ø10 SCH 60 (74)	ASTM A106 GRADE B
2.2	2	WELD NECK FLANGE	Ø10 CL 300 RF	ASTM A105
2.3	1	ECCENTRIC REDUCER	Ø10 SCH 60 X Ø6 SCH 40	ASTM A234
2.4	1	PIPE	Ø6 SCH 40 (32-1/8)	API 5L X42
2.5	3	WELD NECK FLANGE	Ø6 CL 300 RF	ASTM A105
2.6	1	WELDOLET	Ø4 SCH 40 X Ø6	ASTM A105
2.7	7	WELD NECK FLANGE	Ø4 CL 300 RF	ASTM A105
2.8	1	FLANGED TEE	Ø4 CL 300 RF	ASTM A105
2.9	1	PIPE	Ø4 SCH 40 (17-3/16)	ASTM A106 GRADE B
2.10	3	ELBOW	Ø4 SCH 40 90 DEG SR	ASTM A106 GRADE B
2.11	1	PIPE	Ø4 SCH 40 (9-11/16)	ASTM A106 GRADE B
2.12	1	PIPE	Ø4 SCH 40 (83-1/4)	ASTM A106 GRADE B
2.13	3	WELDOLET	Ø2 SCH 40 X Ø6	ASTM A105
2.14	9	WELD NECK FLANGE	Ø2 CL 300 RF	ASTM A105
2.15	1	THREADED FLANGE	Ø2 CL 300 RF	ASTM A105
2.16	4	NIPPLE	Ø2 SCH 40 NPT (4)	ASTM A106 GRADE B
2.17	2	THREADED ELBOW	Ø2 CL 2000 90 DEG W/ NPT	ASTM A105
2.18	2	BALL VALVE	Ø2 CL 3000 NPT	BRASS
2.19	1	BALL VALVE	Ø1 CL 3000 NPT	BRASS
2.20	1	NIPPLE	Ø1 SCH 40 NPT (4)	ASTM A106 GRADE B
2.21	3	THREDOLET	Ø1 CL 3000 X Ø10 - Ø6	ASTM A105
2.22	1	THREDOLET	Ø2 CL 3000 X Ø6	ASTM A105
2.23	2	ELBOW	Ø2 SCH 40 90 DEG 3D	ASTM A234
2.24	3	ELBOW	Ø2 SCH 40 90 DEG SR	ASTM A234
2.25	2	TEE	Ø2 SCH 40	ASTM A234
2.26	1	CLOSURE	Ø10 CL 300 RF S-2000 RH (CCR-103)	STEEL
2.27	1	PIPE	Ø2 SCH 40 (85)	ASTM A106 GRADE B
2.28	2	GEAR OPERATED BALL VALVE	Ø4 CL 300 RF 2-PIECE TRUNNION	CARBON STEEL
2.29	1	GEAR OPERATED BALL VALVE	Ø6 CL 300 RF 2-PIECE TRUNNION	CARBON STEEL
2.30	1	PIPE	Ø2 SCH 40 (31-7/8)	ASTM A106 GRADE B
2.31	1	PIPE	Ø2 SCH 40 (124-11/16)	ASTM A106 GRADE B
2.32	1	PIPE	Ø4 SCH 40 (6-1/4)	ASTM A106 GRADE B
2.33	1	PIPE	Ø4 SCH 40 (148-1/4)	ASTM A106 GRADE B
2.34	2	GAUGE	2,000 PSI MIN	STEEL
2.35	3	LEVER OPERATED BALL VALVE	Ø2 CL 300 RF 2-PIECE TRUNNION	CARBON STEEL
2.36	1	WELDOLET	Ø4 SCH 40 X Ø10	ASTM A105
2.37	1	PIPE	Ø4 SCH 40 (6)	ASTM A106 GRADE B
2.38	1	PIPE	Ø6 SCH 40 (25)	API 5L X42
2.39	1	WELDOLET	Ø2 SCH 40 X Ø10-Ø8	ASTM A105

NOTE: ALL Ø6 CL 300 VALVES SHALL BE FULL PORT BALL VALVES

UNLESS OTHERWISE STATED TOLERANCES:

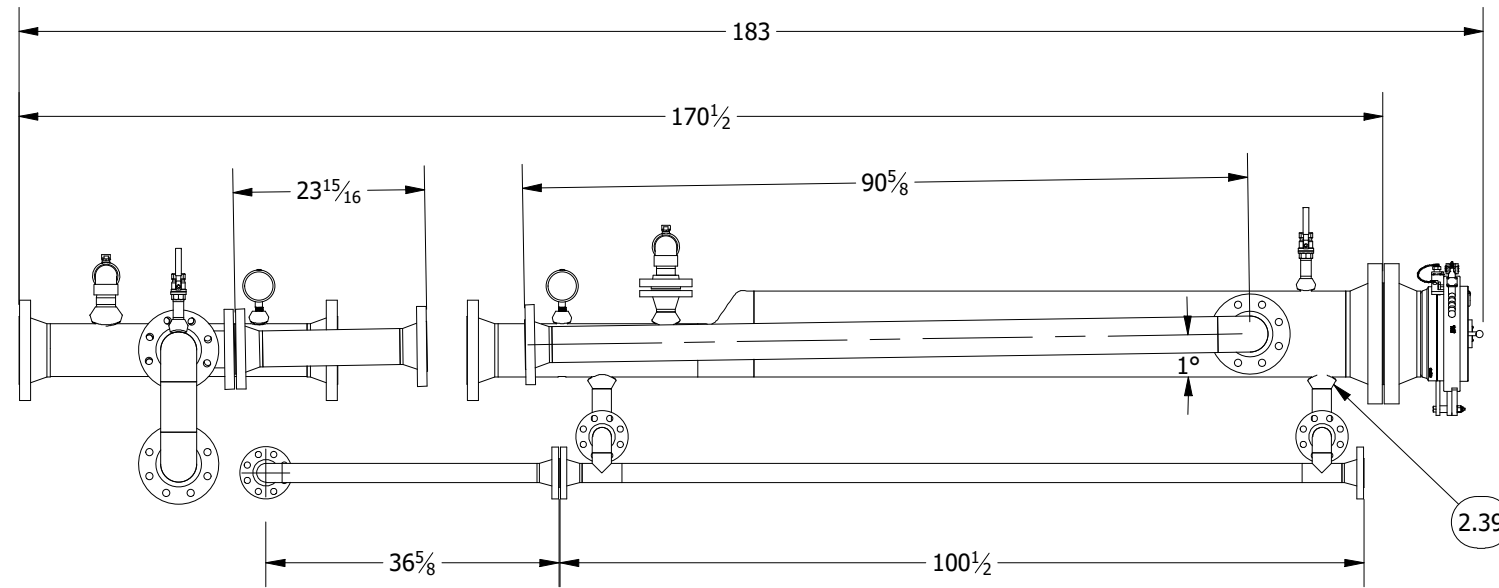
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ±0.50°



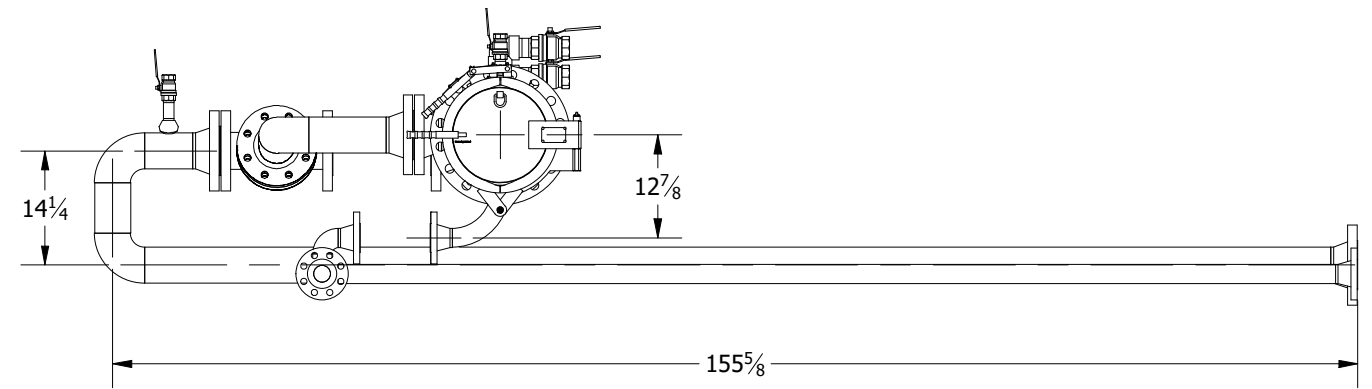
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MATERIAL	SEE BOM
HEAT TREATMENT	N/A

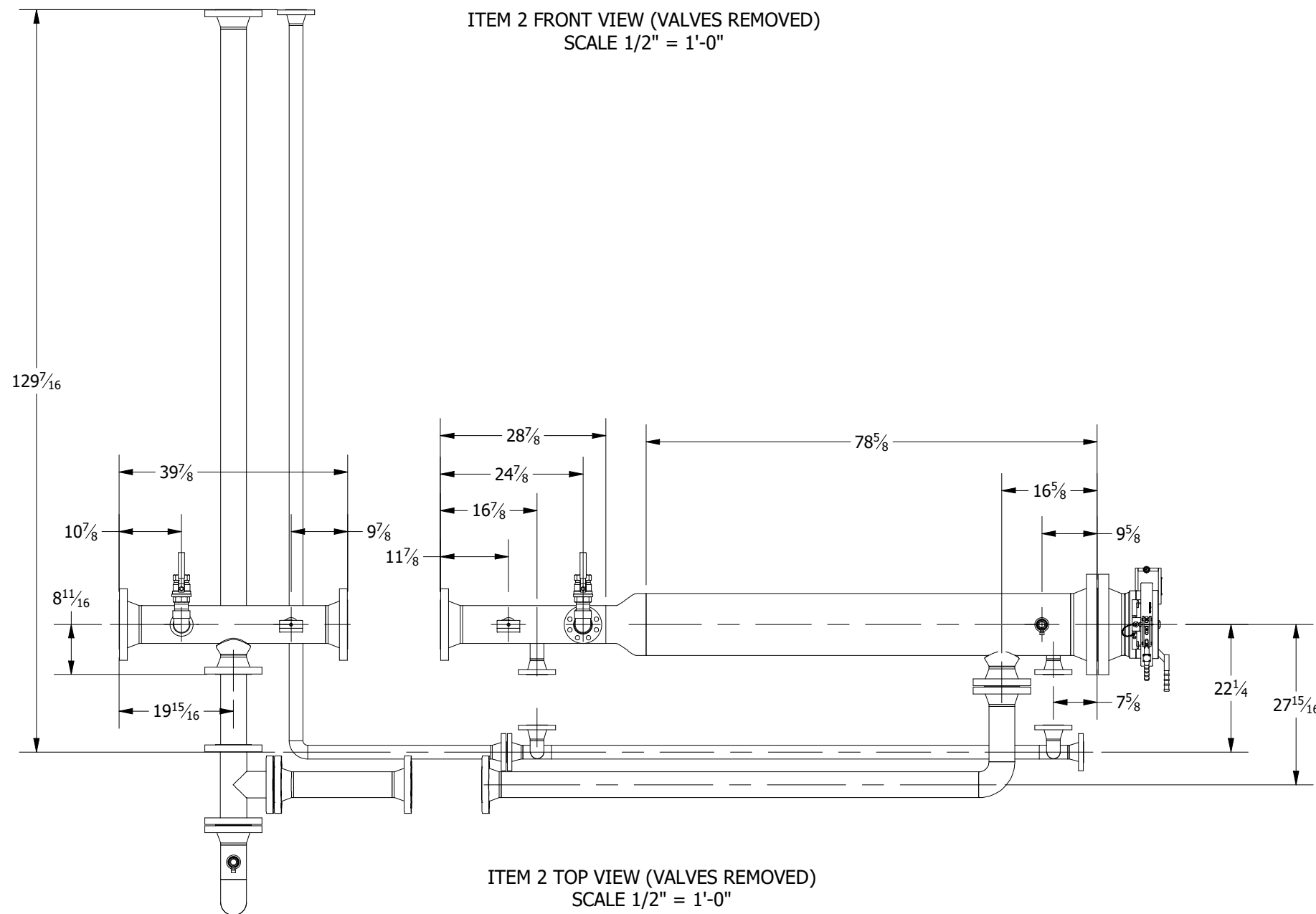
TITLE									
PIPELINE TRAINING FLOW LOOP RECEIVER ASSEMBLY									
DRAWN BY	HB	DATE	11/5/2024	CHECKED BY	DCK	APPROVED BY	DCK	SIZE	B
SCALE	DNS	DWG NO.	STCC-01-A	REV.	5	SHEET 5 OF 27			



ITEM 2 FRONT VIEW (VALVES REMOVED)
SCALE 1/2" = 1'-0"



ITEM 2 SIDE VIEW (VALVES REMOVED)
SCALE 1/2" = 1'-0"



ITEM 2 TOP VIEW (VALVES REMOVED)
SCALE 1/2" = 1'-0"

**UNLESS OTHERWISE STATED
TOLERANCES:**

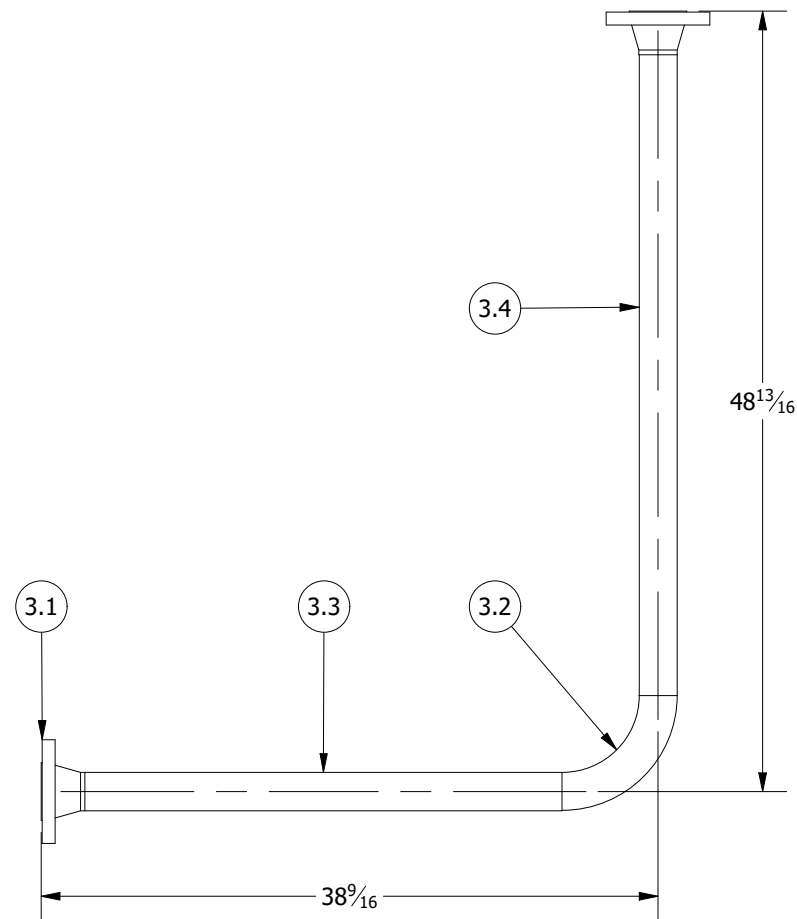
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
ANGLES ± 3°	.XXX ± .005
	.XXXX ± .0010
	ANGLES ± 0.50°



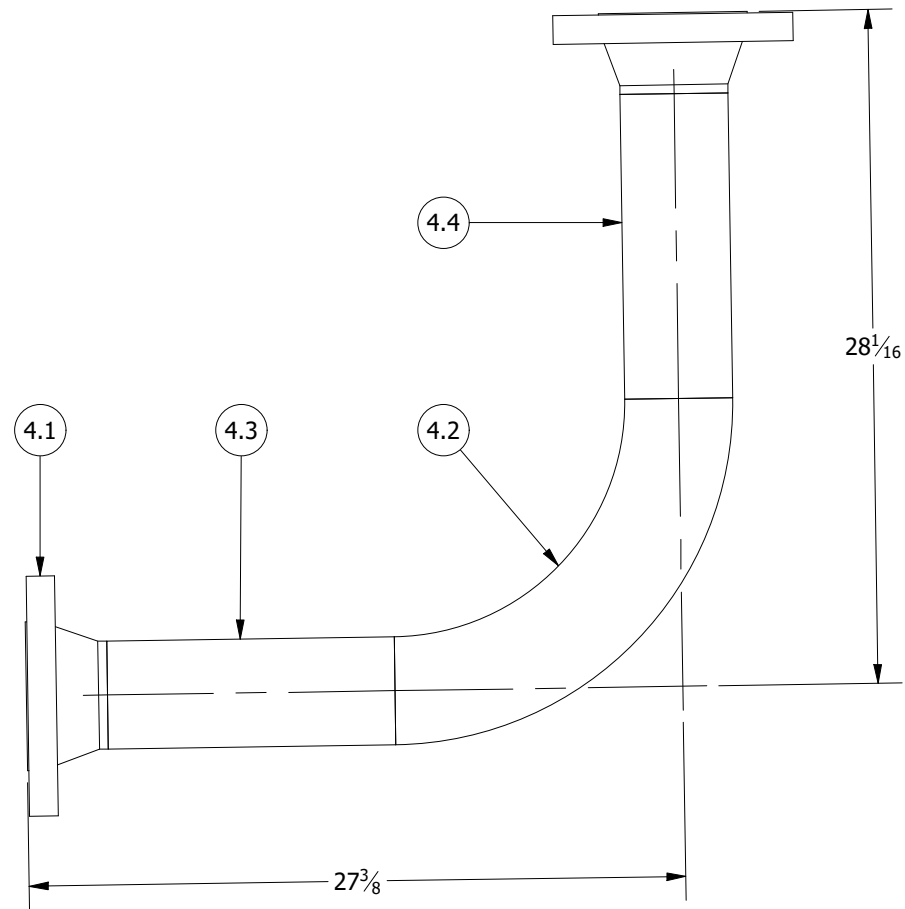
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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. MACHINE FINISH.

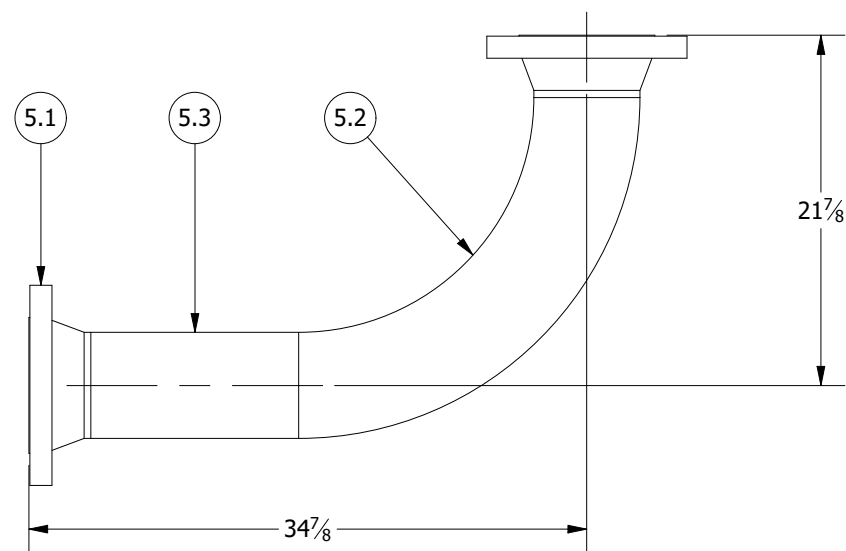
TITLE					
PIPELINE TRAINING FLOW LOOP RECEIVER ASSEMBLY					
MATERIAL	SEE BOM	DRAWN BY	HB	DATE	11/5/2024
HEAT TREATMENT	N/A	CHECKED BY	DCK	APPROVED BY	DCK
SCALE	DNS	DWG NO.	STCC-01-A	REV.	5
				SIZE	B
				SHEET	6 OF 27



ITEM 3
SCALE 1" = 1'-0"



ITEM 4
SCALE 1 1/2" = 1'-0"



ITEM 5
SCALE 1" = 1'-0"

ITEM 3 BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
3.1	2	WELD NECK FLANGE	Ø2 CL 300 RF	ASTM A105
3.2	1	ELBOW	Ø2 SCH 40 90 DEG 3D	ASTM A106 GRADE B
3.3	1	PIPE	Ø2 SCH 40 (29-13/16)	ASTM A106 GRADE B
3.4	1	PIPE	Ø2 SCH 40 (40-1/16)	ASTM A106 GRADE B

*QTY'S ARE PER ASSEMBLY

ITEM 4 BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
4.1	2	WELD NECK FLANGE	Ø4 CL 300 RF	ASTM A105
4.2	1	ELBOW	Ø4 SCH 40 90 DEG 3D	ASTM A106 GRADE B
4.3	1	PIPE	Ø4 SCH 40 (12)	ASTM A106 GRADE B
4.4	1	PIPE	Ø4 SCH 40 (12-11/16)	ASTM A106 GRADE B

*QTY'S ARE PER ASSEMBLY

BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
5.1	2	WELD NECK FLANGE	Ø6 CL 300 RF	ASTM A105
5.2	1	ELBOW	Ø6 SCH 40 90 DEG 3D	ASTM A106 GRADE B
5.3	1	PIPE	Ø6 SCH 40 (13)	API 5L GRADE X42

*QTY'S ARE PER ASSEMBLY

UNLESS OTHERWISE STATED TOLERANCES:	
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ± 0.50°

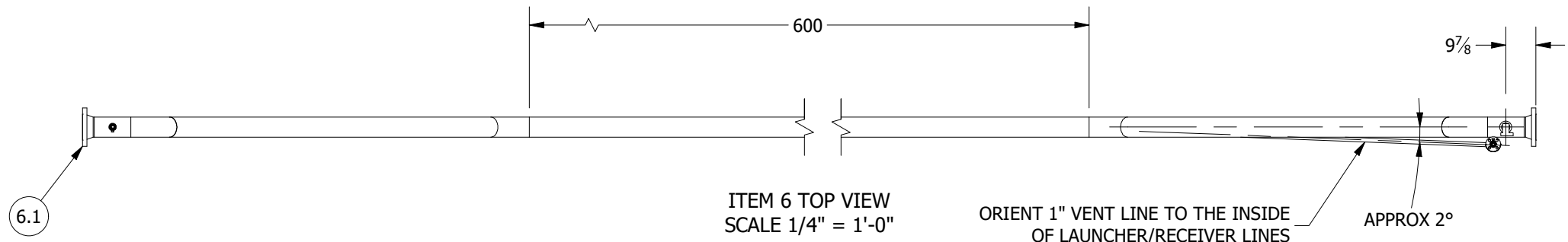


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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. MACHINE FINISH.

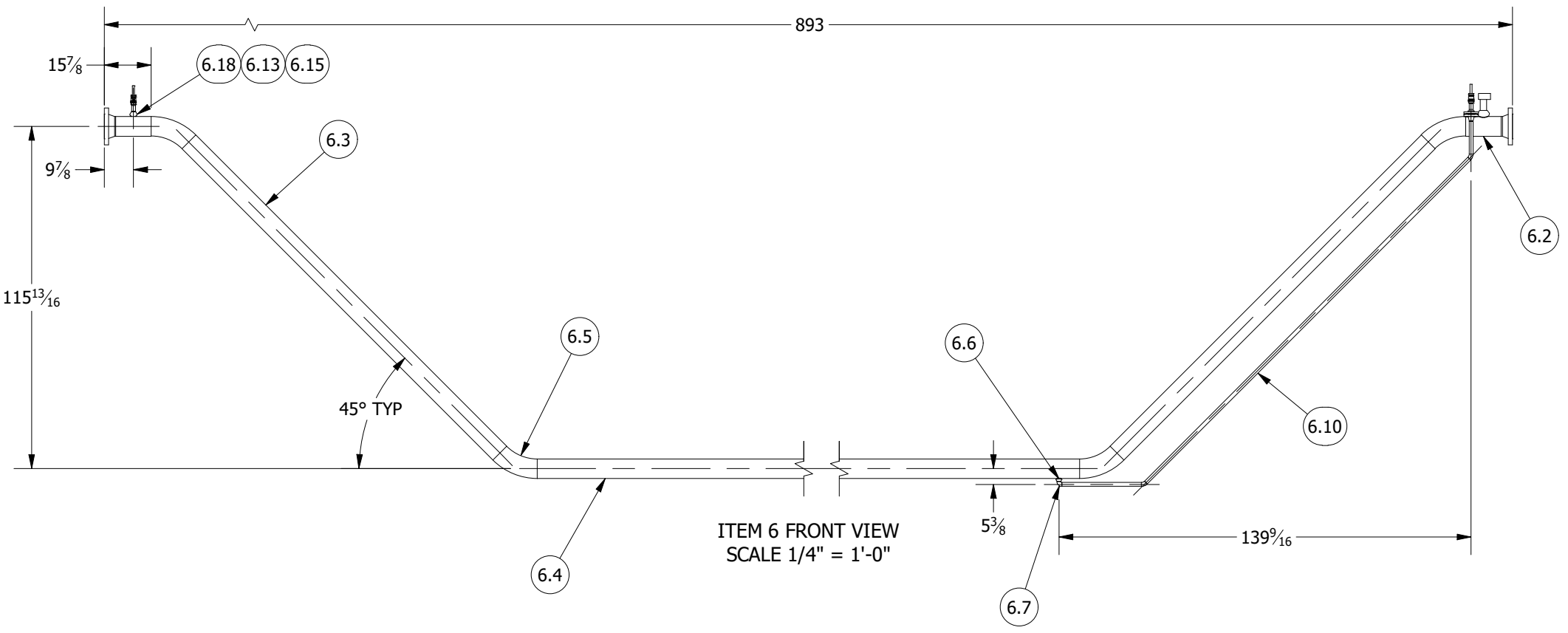
TITLE
**PIPELINE TRAINING FLOW LOOP
VERTICAL ELBOW SPOOL ASSEMBLIES**

MATERIAL	SEE BOM	DRAWN BY	HB	DATE	11/5/2024	CHECKED BY	DCK	APPROVED BY	DCK	SIZE	B
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.	STCC-01-A	REV.	5	SHEET	7	OF	27

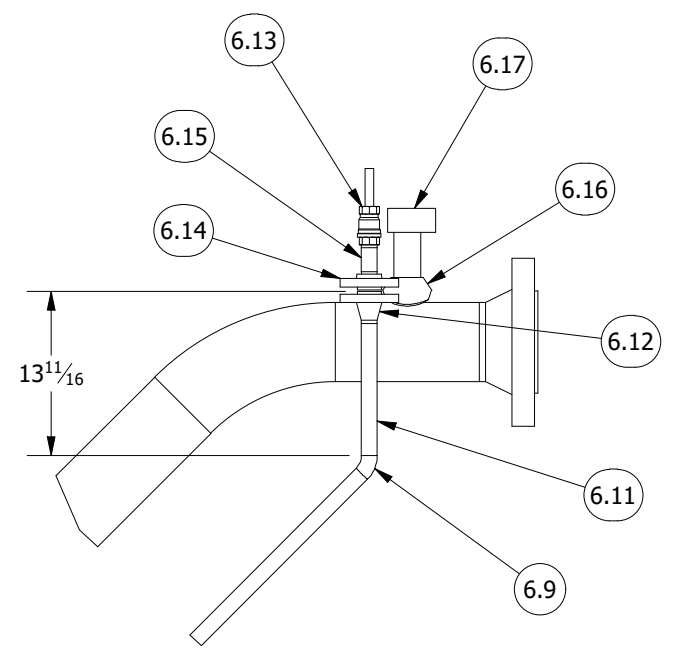


ITEM 6 TOP VIEW
SCALE 1/4" = 1'-0"

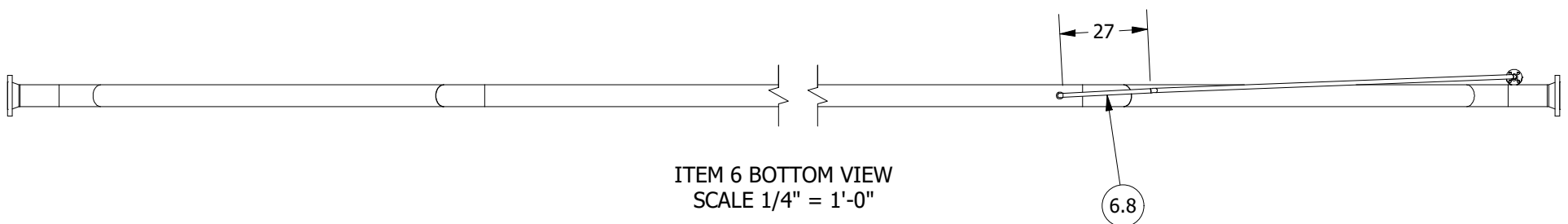
ORIENT 1" VENT LINE TO THE INSIDE
OF LAUNCHER/RECEIVER LINES
APPROX 2°



ITEM 6 FRONT VIEW
SCALE 1/4" = 1'-0"



DETAIL A
SCALE 3/4" = 1'-0"



ITEM 6 BOTTOM VIEW
SCALE 1/4" = 1'-0"

ITEM 6 BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
6.1	2	WELD NECK FLANGE	Ø6 CL 300 RF	ASTM A105
6.2	2	PIPE	Ø6 SCH 40 (12)	API 5L X42
6.3	2	PIPE	Ø6 SCH 40 (148-7/8)	API 5L X42
6.4	1	PIPE	Ø6 SCH 40 (600)	API 5L X42
6.5	4	ELBOW	Ø6 SCH 40 45 DEG 3D	ASTM A234
6.6	1	WELDOLET	Ø1 SCH 40 x Ø10 - Ø6	ASTM A105
6.7	1	ELBOW	Ø1 SCH 40 90 DEG SR	ASTM A234
6.8	1	PIPE	Ø1 SCH 40 (27)	ASTM A106 GRADE B
6.9	2	ELBOW	Ø1 SCH 40 45 DEG LR	ASTM A234
6.10	1	PIPE	Ø1 SCH 40 (155)	ASTM A106 GRADE B
6.11	1	PIPE	Ø1 SCH 40 (11)	ASTM A106 GRADE B
6.12	1	WELD NECK FLANGE	Ø1 CL 300 RF	ASTM A105
6.13	2	BALL VALVE	Ø1 CL 2000 MIN	BRASS
6.14	1	THREADED FLANGE	Ø1 CL 300 RF	ASTM A105
6.15	2	NIPPLE	Ø1 SCH 40 NPT (3)	ASTM A106 GRADE B
6.16	1	THREDOLET	Ø2 CL 3000 x Ø6	ASTM A105
6.17	1	PIG DETECTOR	PIG DETECTOR	STEEL
6.18	1	THREDOLET	Ø1 CL 3000 x Ø6	ASTM A105

UNLESS OTHERWISE STATED
TOLERANCES:
FABRICATION MACHINE
FRACTIONS = .X ± .030
 ± 1/16" .XX ± .015
 .XXX ± .005
ANGLES ± 3° .XXXX ± .0010
 ANGLES ±0.50°

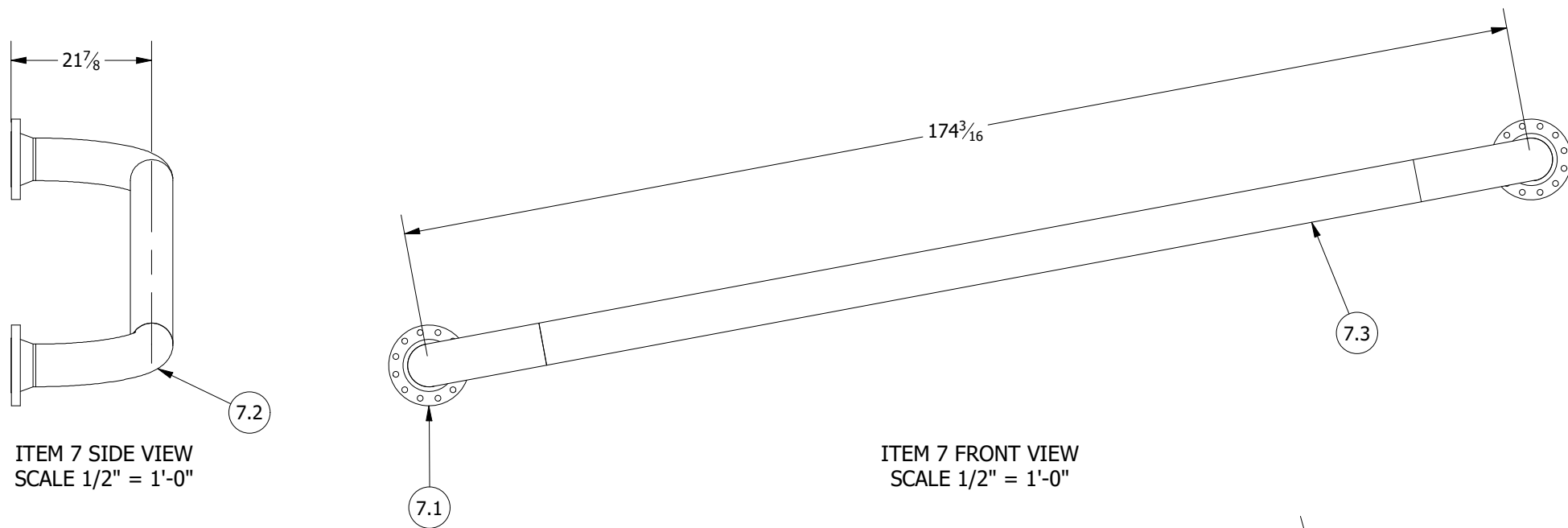


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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. MACHINE FINISH.

TITLE
**PIPELINE TRAINING FLOW LOOP
UNDERGROUND PIPE SPOOL ASSEMBLY**

MATERIAL	SEE BOM	DRAWN BY	HB	DATE	11/5/2024	CHECKED BY	DCK	APPROVED BY	DCK	SIZE	B
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.	STCC-01-A	REV.	5	SHEET	8 OF 27		



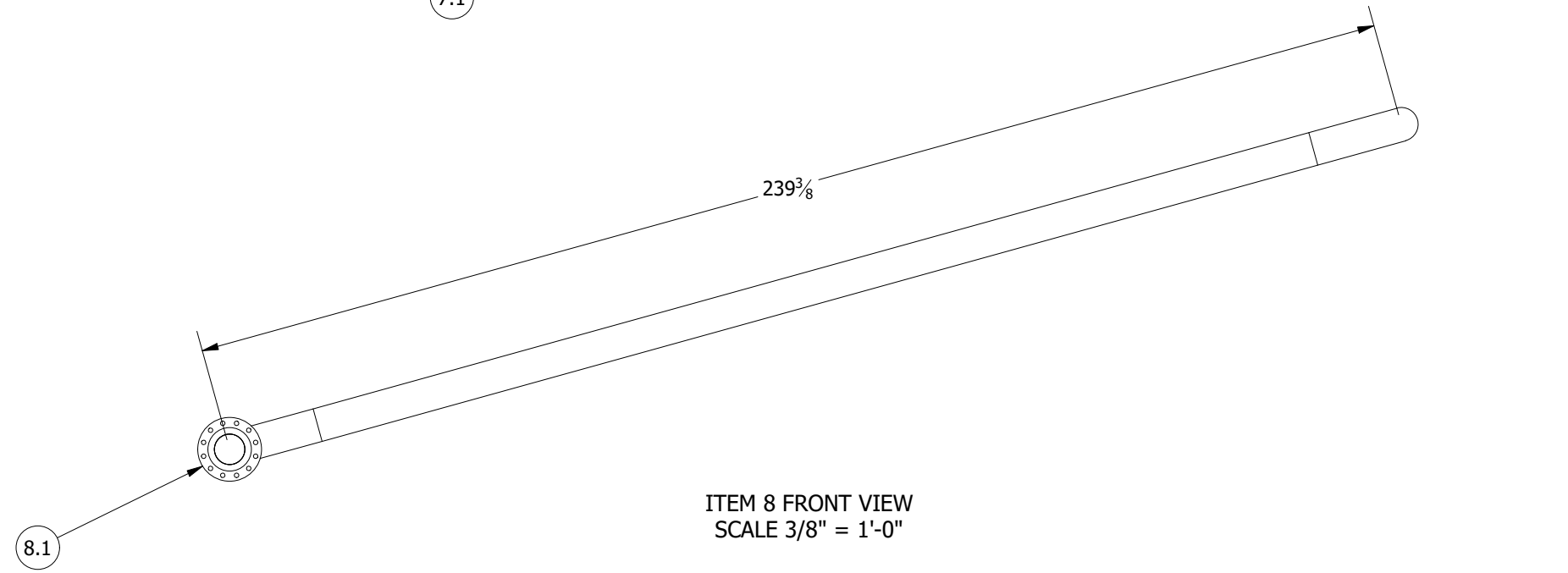
ITEM 7 SIDE VIEW
SCALE 1/2" = 1'-0"

ITEM 7 FRONT VIEW
SCALE 1/2" = 1'-0"

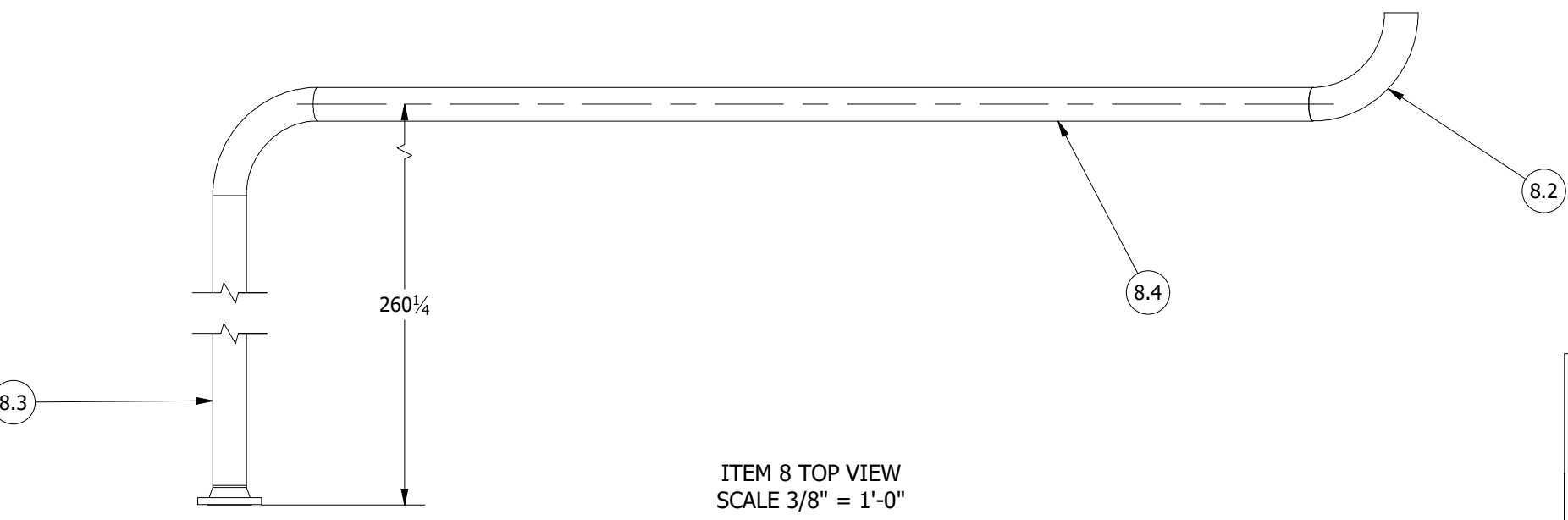
ITEM 7 BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
7.1	2	WELD NECK FLANGE	Ø6 CL 300 RF	ASTM A105
7.2	2	ELBOW	Ø6 SCH 40 90 DEG 3D	ASTM A106 GRADE B
7.3	1	PIPE	Ø6 SCH 40 (138-3/16)	API 5L GRADE X42

ITEM 8 BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
8.1	2	WELD NECK FLANGE	Ø6 CL 300 RF	ASTM A105
8.2	2	ELBOW	Ø6 SCH 40 90 DEG 3D	ASTM A106 GRADE B
8.3	1	PIPE	Ø6 SCH 40 (238-3/8)	API 5L GRADE X42
8.4	1	PIPE	Ø6 SCH 40 (203-3/8)	API 5L GRADE X42

NOTE: DIMENSIONS FOR CONNECTING LAUNCHER/RECEIVER TO PIPE LOOP ARE APPROXIMATE. FIELD FIT TO ENSURE PROPER ALIGNMENT.



ITEM 8 FRONT VIEW
SCALE 3/8" = 1'-0"



ITEM 8 TOP VIEW
SCALE 3/8" = 1'-0"

UNLESS OTHERWISE STATED TOLERANCES:

FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ±0.50°

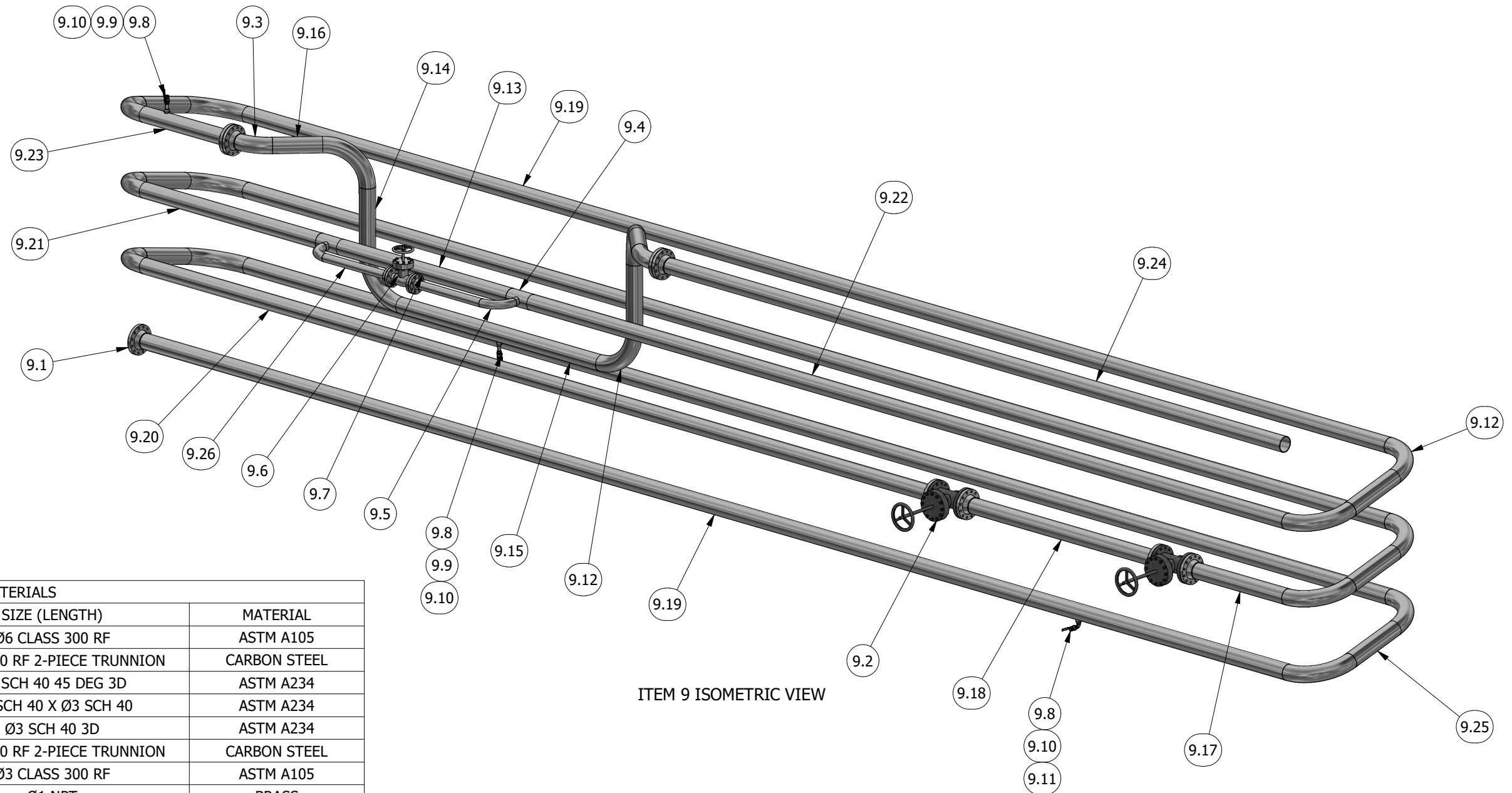


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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. MACHINE FINISH.

**PIPELINE TRAINING FLOW LOOP
CONNECTING SPOOL ASSEMBLIES**

MATERIAL	SEE BOM	DRAWN BY	HB	DATE	11/5/2024	CHECKED BY	DCK	APPROVED BY	DCK	SIZE	B
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.	STCC-01-A	REV.	5	SHEET	9	OF	27



ITEM 9 ISOMETRIC VIEW

BILL OF MATERIALS

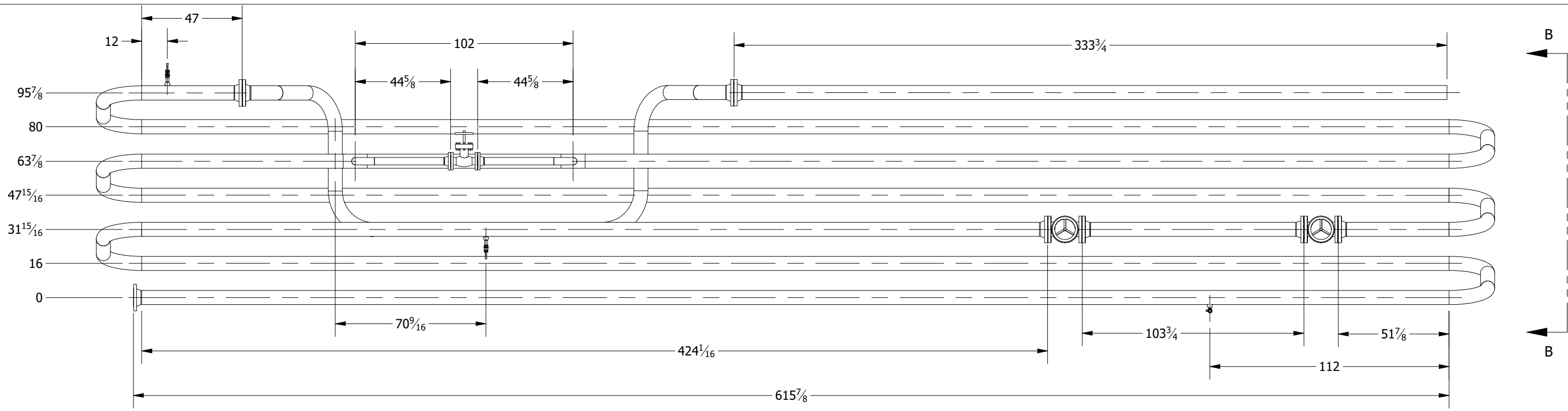
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
9.1	9	WELD NECK FLANGE	Ø6 CLASS 300 RF	ASTM A105
9.2	2	GEAR OPERATED BALL VALVE	Ø6 CL 300 RF 2-PIECE TRUNNION	CARBON STEEL
9.3	2	ELBOW	Ø6 SCH 40 45 DEG 3D	ASTM A234
9.4	2	REDUCING TEE	Ø6 SCH 40 X Ø3 SCH 40	ASTM A234
9.5	2	ELBOW	Ø3 SCH 40 3D	ASTM A234
9.6	1	BALL VALVE	Ø3 CL 300 RF 2-PIECE TRUNNION	CARBON STEEL
9.7	2	WELD NECK FLANGE	Ø3 CLASS 300 RF	ASTM A105
9.8	3	BALL VALVE	Ø1 NPT	BRASS
9.9	2	THREADED NIPPLE	Ø1 SCH 40 W/ 1 NPT (3)	ASTM A106 GRADE B
9.10	3	THREDOLET	Ø1 X Ø6 SCH 40	ASTM A105
9.11	1	THREADED ELBOW	Ø1 SCH 40 W/ 1 NPT	ASTM A105
9.12	16	ELBOW	Ø6 SCH 40 90 DEG 3D	ASTM A106 GRADE B
9.13	1	PIPE	Ø6 SCH 40 (90-3/4)	API 5L X42
9.14	2	PIPE	Ø6 SCH 40 (28)	API 5L X42
9.15	1	PIPE	Ø6 SCH 40 (107-1/16)	API 5L X42
9.16	2	PIPE	Ø6 SCH 40 (20)	API 5L X42
9.17	1	PIPE	Ø6 SCH 40 (48)	API 5L X42
9.18	1	PIPE	Ø6 SCH 40 (96)	API 5L X42
9.19	4	PIPE	Ø6 SCH 40 (612)	API 5L X42
9.20	1	PIPE	Ø6 SCH 40 (420-3/16)	API 5L X42
9.21	1	PIPE	Ø6 SCH 40 (94-5/16)	API 5L X42
9.22	1	PIPE	Ø6 SCH 40 (404-7/16)	API 5L X42
9.23	1	PIPE	Ø6 SCH 40 (43-1/8)	API 5L X42
9.24	1	PIPE	Ø6 SCH 40 (329-7/8)	API 5L X42
9.25	6	PIPE	Ø6 SCH 40 (27-9/16)	API 5L X42
9.26	2	PIPE	Ø3 SCH 40 (32-9/16)	ASTM A106 GRADE B

UNLESS OTHERWISE STATED TOLERANCES:	
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ±0.50°

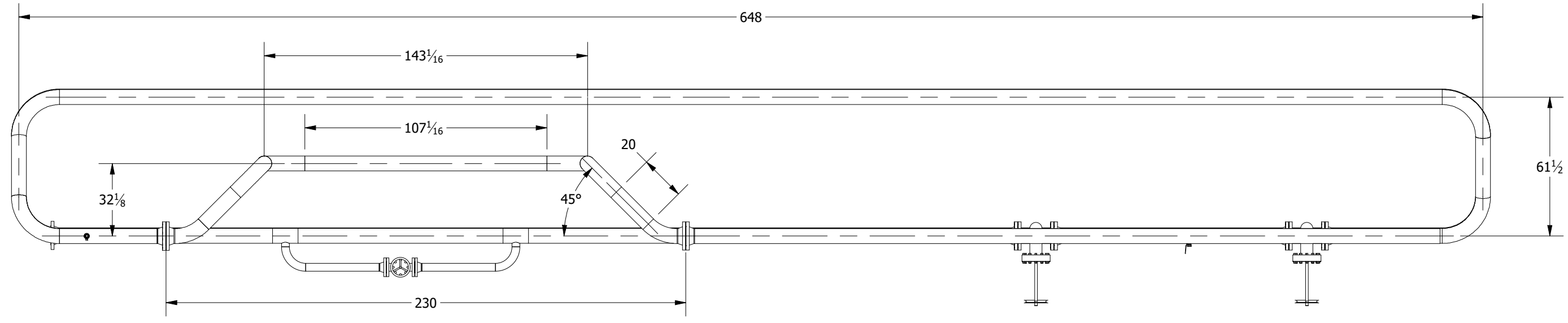


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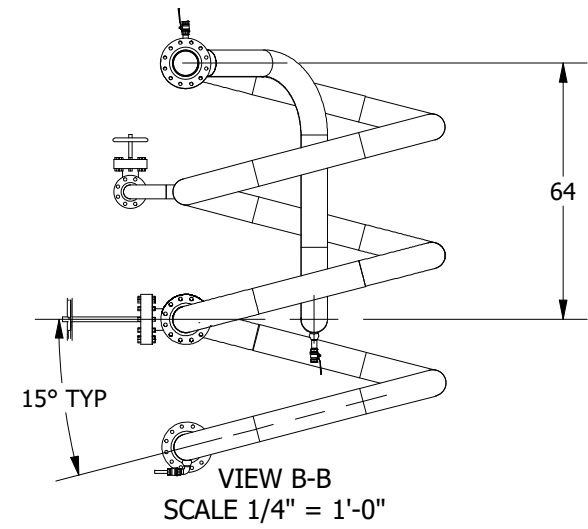
TITLE				
PIPELINE TRAINING FLOW LOOP PIPE LOOP ASSEMBLY				
MATERIAL	SEE BOM	DRAWN BY	HB	DATE
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.
				11/5/2024
		CHECKED BY	DCK	APPROVED BY
				DCK
		REV.	5	SIZE
				B
				SHEET 10 OF 27



PIPE LOOP FRONT VIEW
SCALE 1/4" = 1'-0"



PIPE LOOP TO VIEW
SCALE 1/4" = 1'-0"



UNLESS OTHERWISE STATED TOLERANCES:

FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
ANGLES ± 3°	.XXX ± .005
	.XXXX ± .0010
	ANGLES ± 0.50°



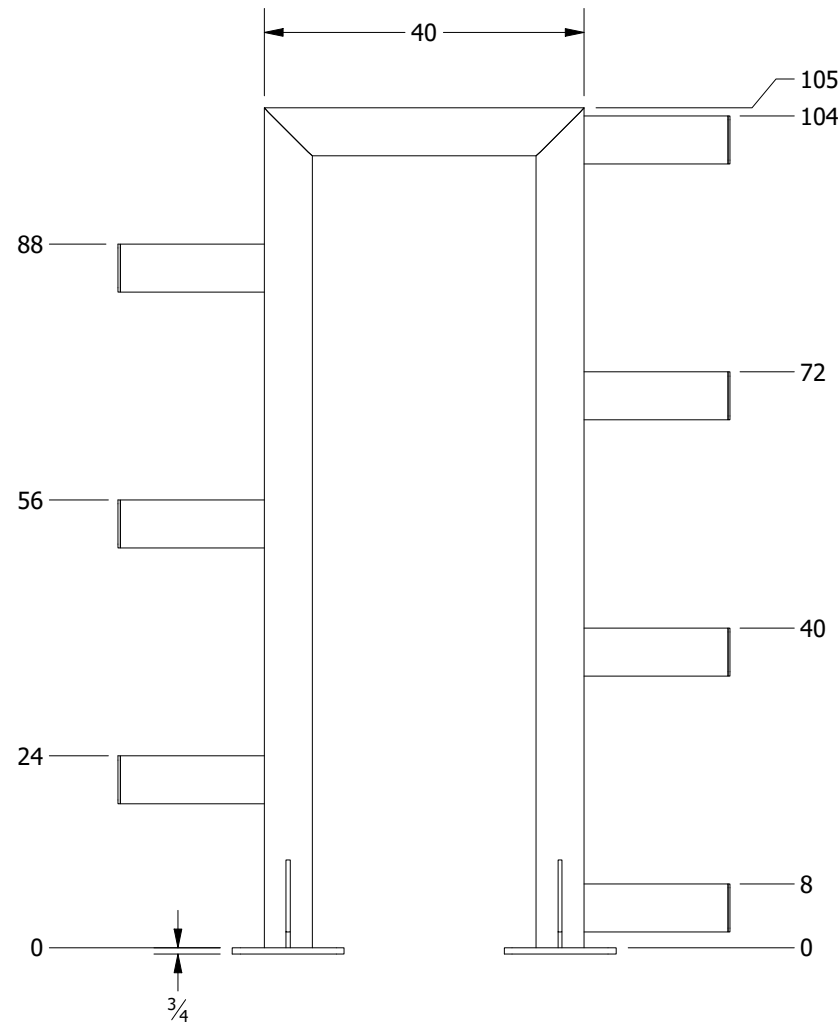
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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. OUTSIDE CORNERS .015 X 45°
5. MACHINE FINISH.

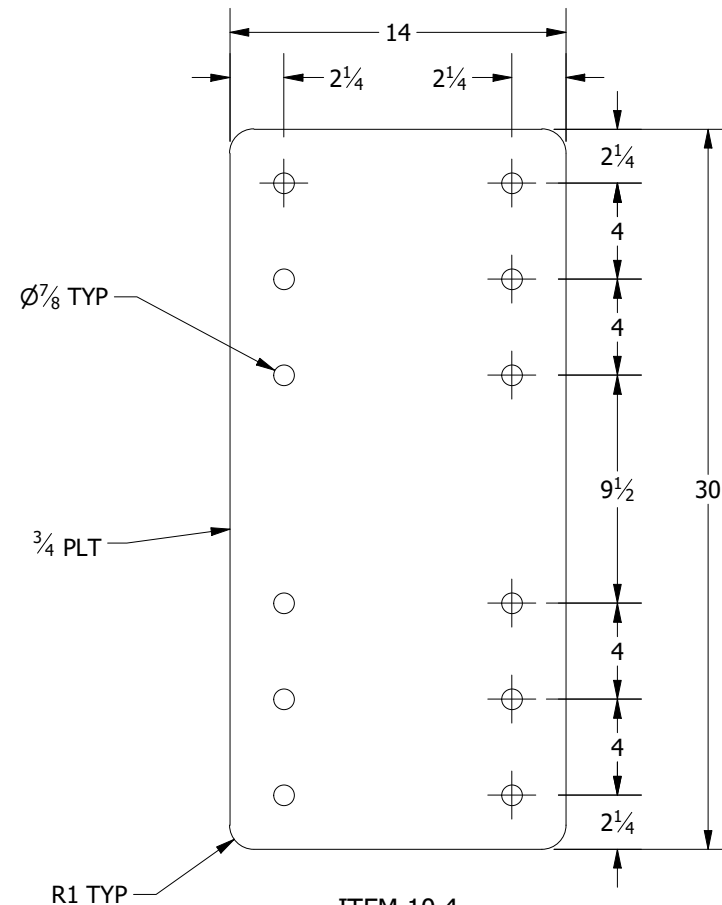
TITLE					
PIPELINE TRAINING FLOW LOOP PIPE LOOP ASSEMBLY					
MATERIAL	SEE BOM	DRAWN BY	HB	DATE	11/5/2024
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.	STCC-01-A
		CHECKED BY	DCK	APPROVED BY	DCK
		REV.	5	SIZE	B
				SHEET	11 OF 27

ITEM 10 BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
10.1	2	VERTICAL FRAME TUBE	6 x 6 x 1/4 (153)	ASTM A500 GRADE B
10.2	1	HORIZONTAL FRAME TUBE	6 x 6 x 1/4 (40)	ASTM A500 GRADE B
10.3	7	PIPE SUPPORT TUBE	6 x 4 x 1/4 (18)	ASTM A500 GRADE B
10.4	2	BASE PLATE	3/4 PLT (30 x 14)	ASTM A36
10.5	4	GUSSET	1/2 PLT (11 x 11)	ASTM A36
10.6	7	END CAP	1/4 PLT (6 x 4)	ASTM A36

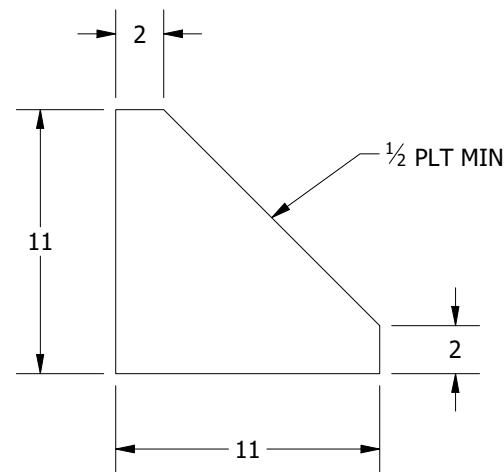
*QTY'S ARE PER ASSEMBLY



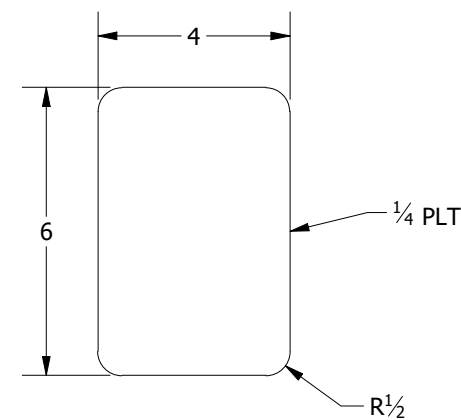
PIPE LOOP SUPPORT FRONT VIEW
SCALE 1/2" = 1'-0"



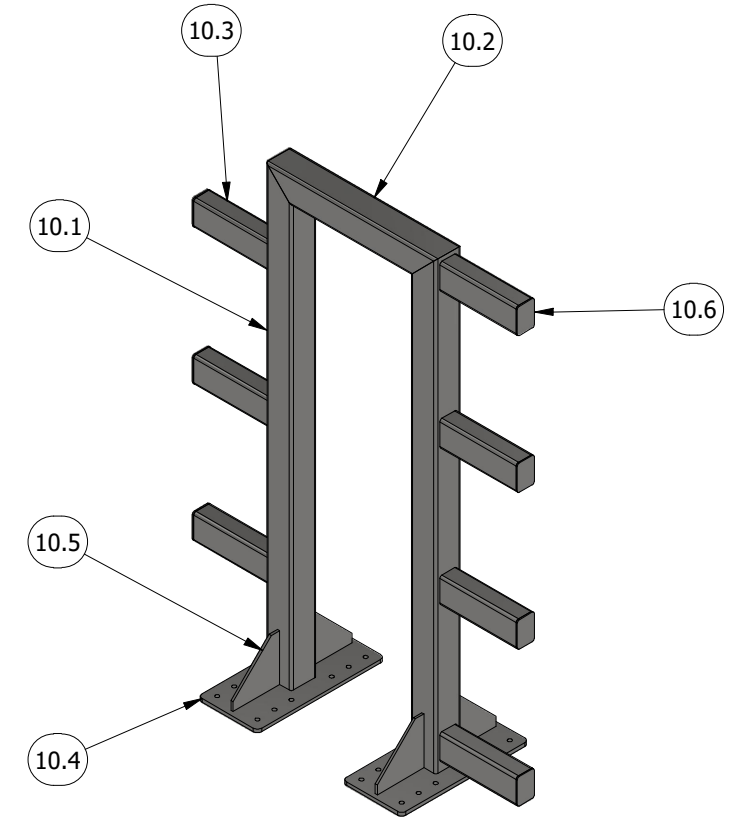
ITEM 10.4
SCALE 1 1/2" = 1'-0"



ITEM 10.5
SCALE 1 1/2" = 1'-0"



ITEM 10.6
SCALE 3" = 1'-0"



ITEM 10 ISOMETRIC VIEW

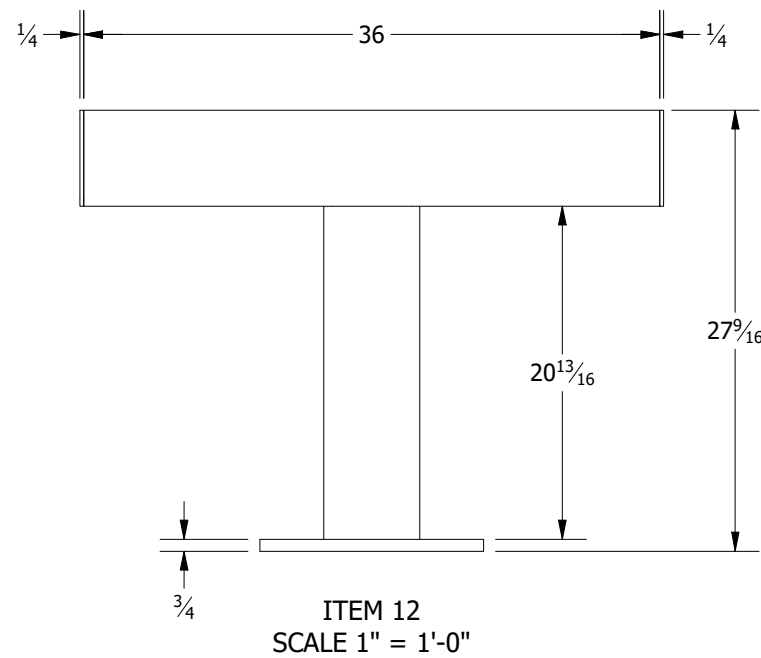
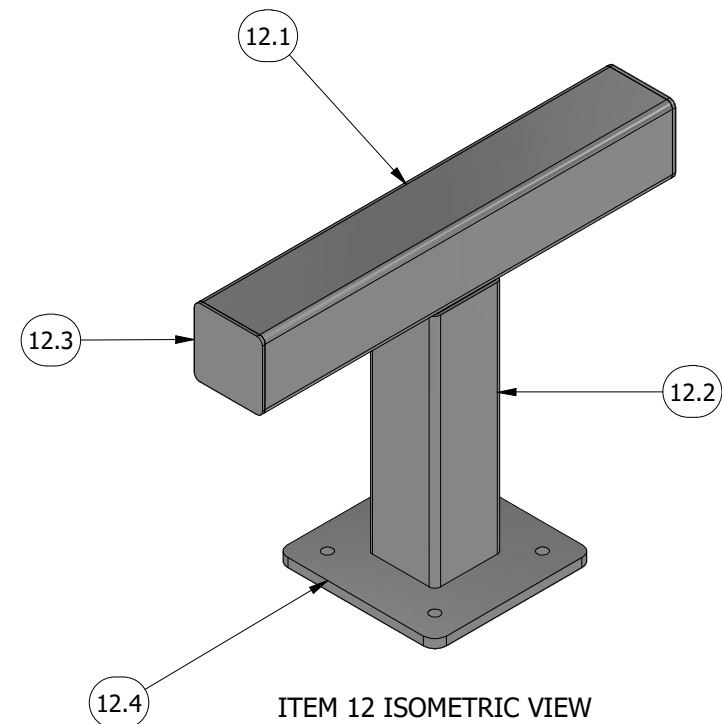
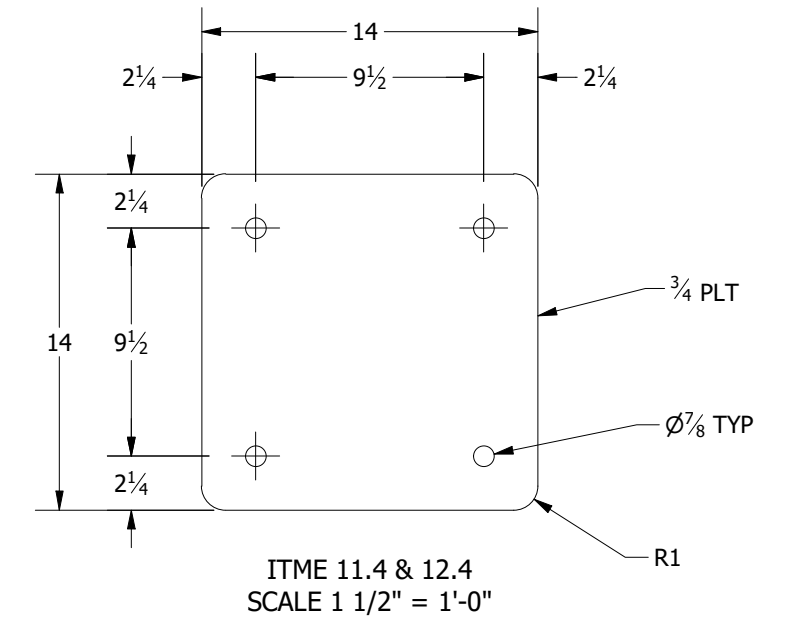
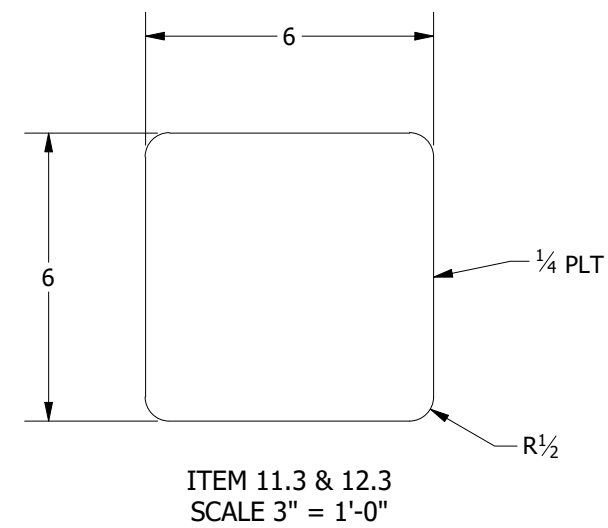
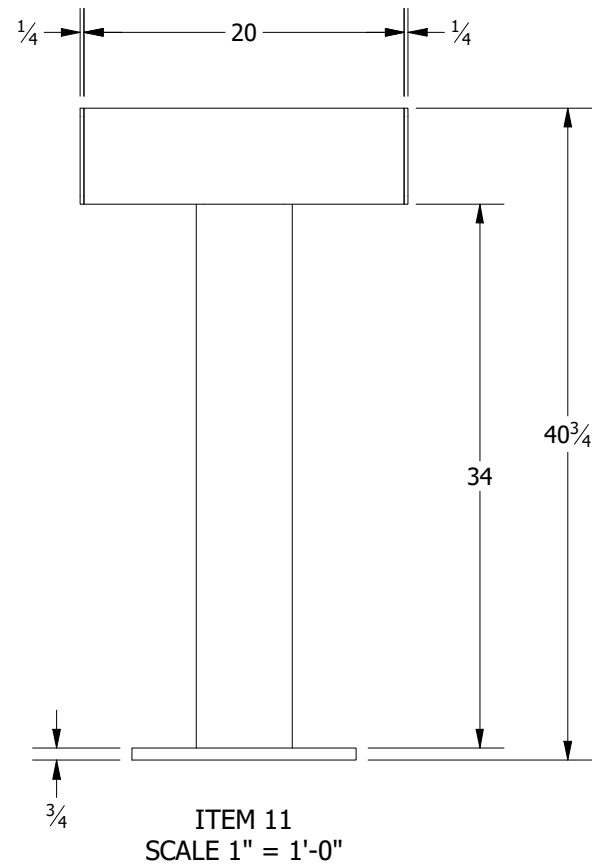
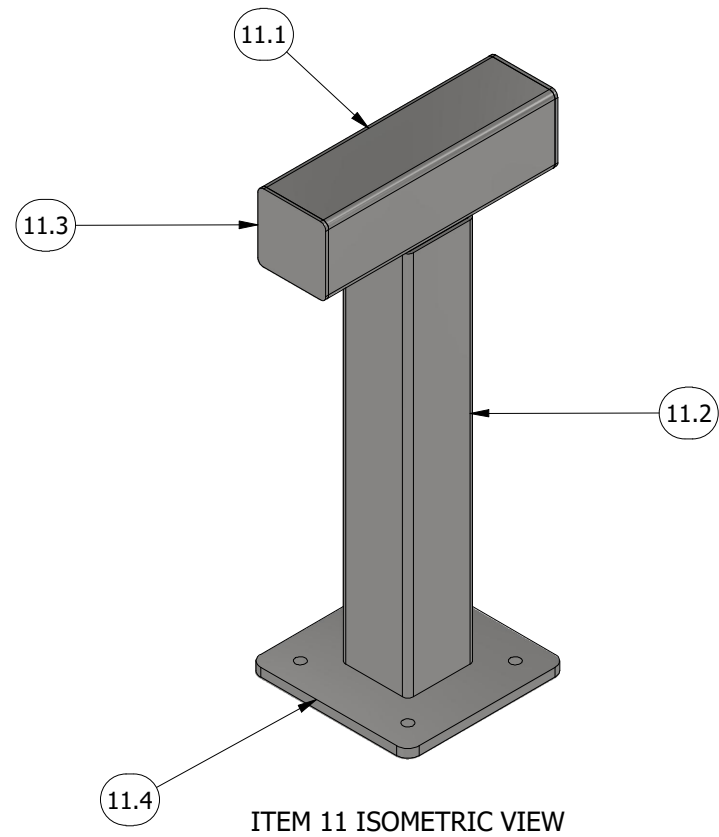
UNLESS OTHERWISE STATED TOLERANCES:	
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
ANGLES ± 3°	.XXX ± .005
	.XXXX ± .0010
	ANGLES ±0.50°



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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
OUTSIDE CORNERS .015 X 45°
5. MACHINE FINISH.

TITLE					
PIPELINE TRAINING FLOW LOOP PIPE LOOP SUPPORT ASSEMBLY					
MATERIAL	SEE BOM	DRAWN BY	HB	DATE	11/5/2024
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.	STCC-01-A
		CHECKED BY	DCK	APPROVED BY	DCK
		REV.	5	SIZE	B
				SHEET	12 OF 27



ITEM 11 BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
11.1	1	HORIZONTAL TUBE	6 x 6 x 1/4 (20)	ASTM A500 GRADE B
11.2	1	VERTICAL TUBE	6 x 6 x 1/4 (34)	ASTM A500 GRADE B
11.3	2	TUBE CAP	1/4 PLT (6 x 6)	ASTM A36
11.4	1	BASE PLATE	3/4 PLT (14 x 14)	ASTM A36

*QTY'S ARE PER ASSEMBLY

ITEM 12 BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
12.1	1	HORIZONTAL TUBE	6 x 6 x 1/4 (36)	ASTM A500 GRADE B
12.2	1	VERTICAL TUBE	6 x 6 x 1/4 (20-13/16)	ASTM A500 GRADE B
12.3	2	TUBE CAP	1/4 PLT (6 x 6)	ASTM A36
12.4	1	BASE PLATE	3/4 PLT (14 x 14)	ASTM A36

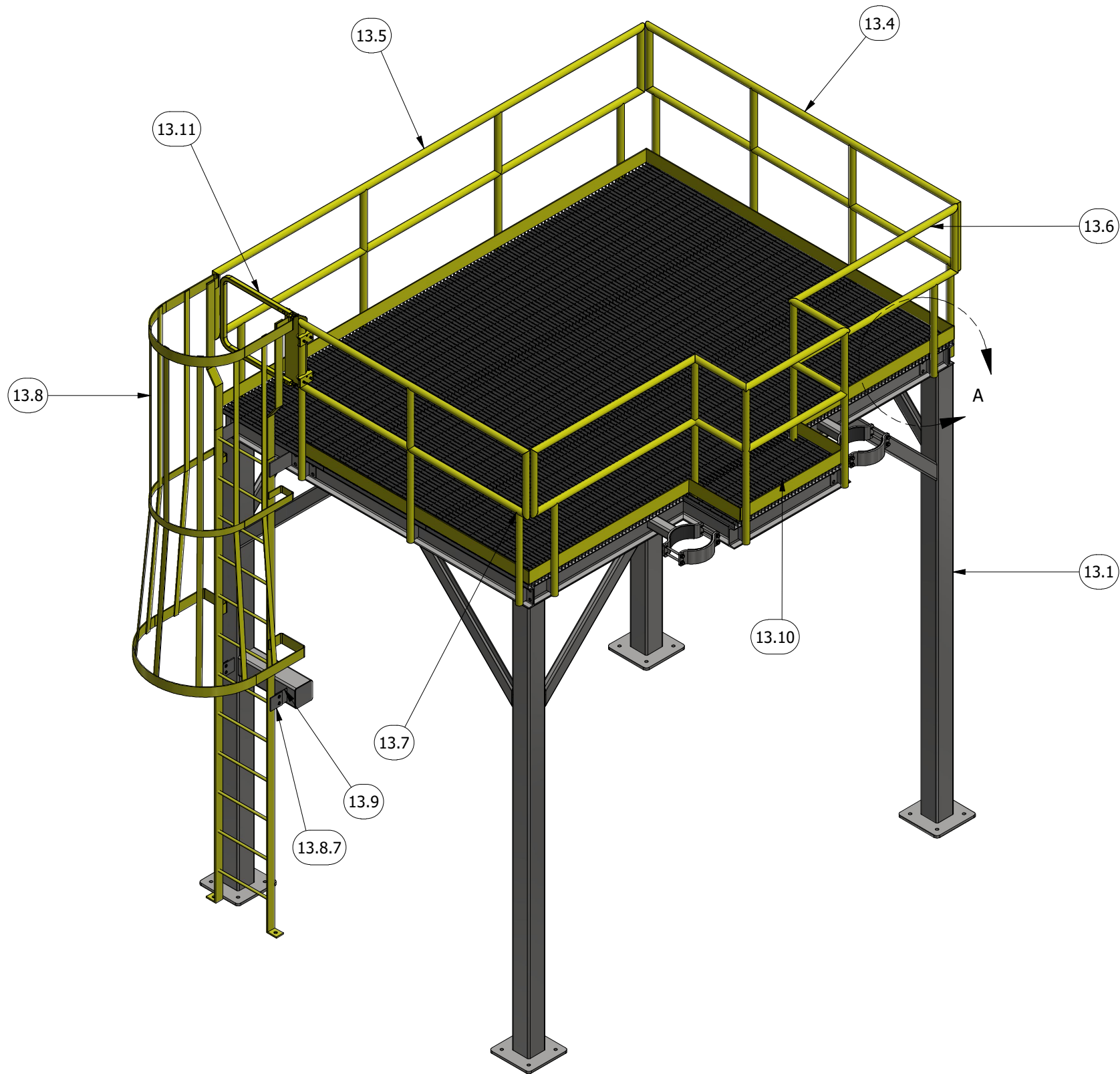
UNLESS OTHERWISE STATED TOLERANCES:	
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
	± 1/16" .XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ± 0.50°



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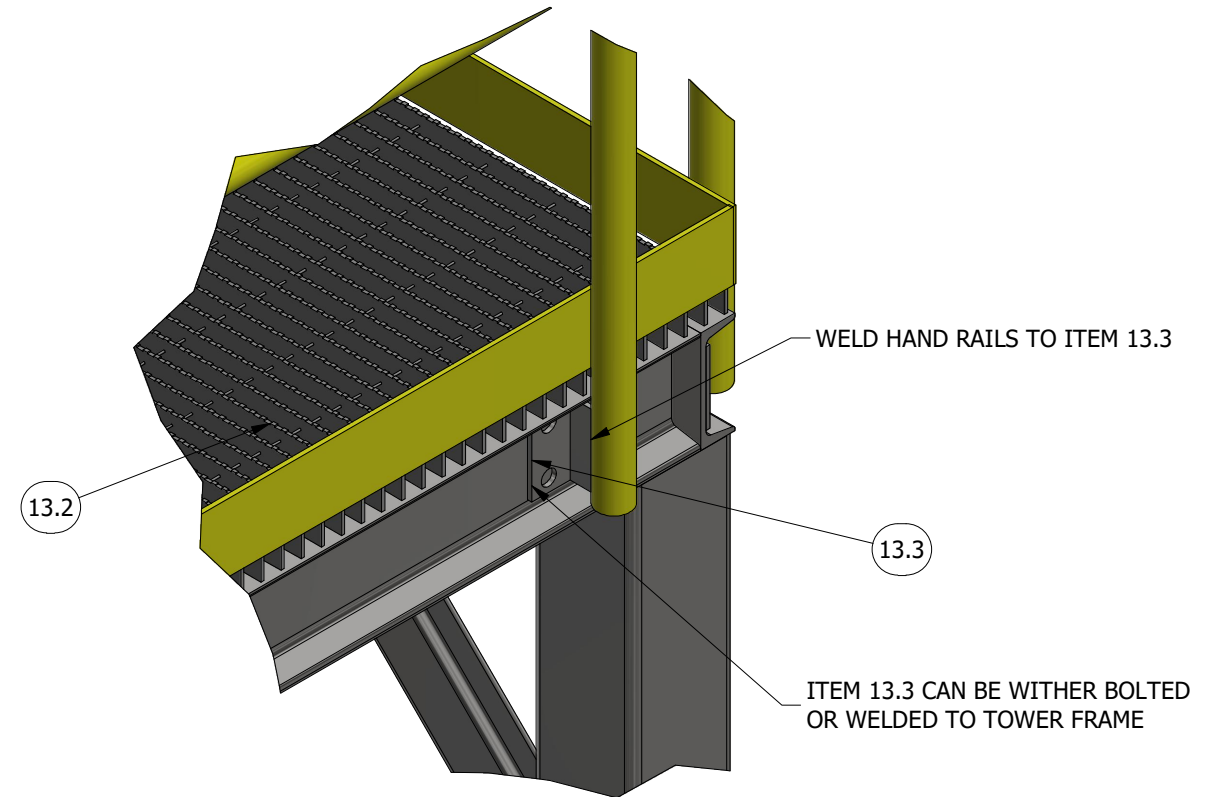
1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
OUTSIDE CORNERS .015 X 45°
5. MACHINE FINISH.

TITLE					
PIPELINE TRAINING FLOW LOOP PIPE SUPPORT ASSEMBLIES					
MATERIAL	SEE BOM	DRAWN BY	HB	DATE	11/5/2024
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.	STCC-01-A
		CHECKED BY	DCK	APPROVED BY	DCK
		REV.	5	SIZE	B
				SHEET	13 OF 27



ITEM 13 ISOMETRIC VIEW

ITEM 13 BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
13.1	1	TOWER FRAME	SEE SHEET 15	SEE SHEET 15
13.2	3	GRATING LARGE	19-W-4 1-1/4 x 1/8 (150 X 36)	GALVANIZED STEEL
13.3	17	HAND RAIL CONNECTOR PLT	1/4 PLT	ASTM A36
13.4	1	HAND RAIL MEDIUM	SEE SHEET 18	SEE SHEET 18
13.5	1	HAND RAIL LONG	SEE SHEET 19	SEE SHEET 19
13.6	1	HAND RAIL LAUNCHER/RECEIVER	SEE SHEET 20	SEE SHEET 20
13.7	1	HAND RAIL LADDER SHORT	SEE SHEET 21	SEE SHEET 21
13.8	1	SAFETY LADDER	SEE SHEET 22	SEE SHEET 22
13.9	2	LADDER CONNECTING PLATE	1/4 PLT	ASTM A36
13.10	1	GRATING SMALL	19-W-4 1-1/4 x 1/8 (40-1/2 X 19-1/2)	GALVANIZED STEEL
13.11	1	LADDER SAFETY GATE	FOR 28-1/2" OPENING	STEEL



DETAIL A
SCALE 1 1/2" = 1'-0"

UNLESS OTHERWISE STATED
TOLERANCES:
FABRICATION MACHINE
FRACTIONS = .X ± .030
 ± 1/16" .XX ± .015
 .XXX ± .005
ANGLES ± 3° .XXXX ± .0010
 ANGLES ±0.50°

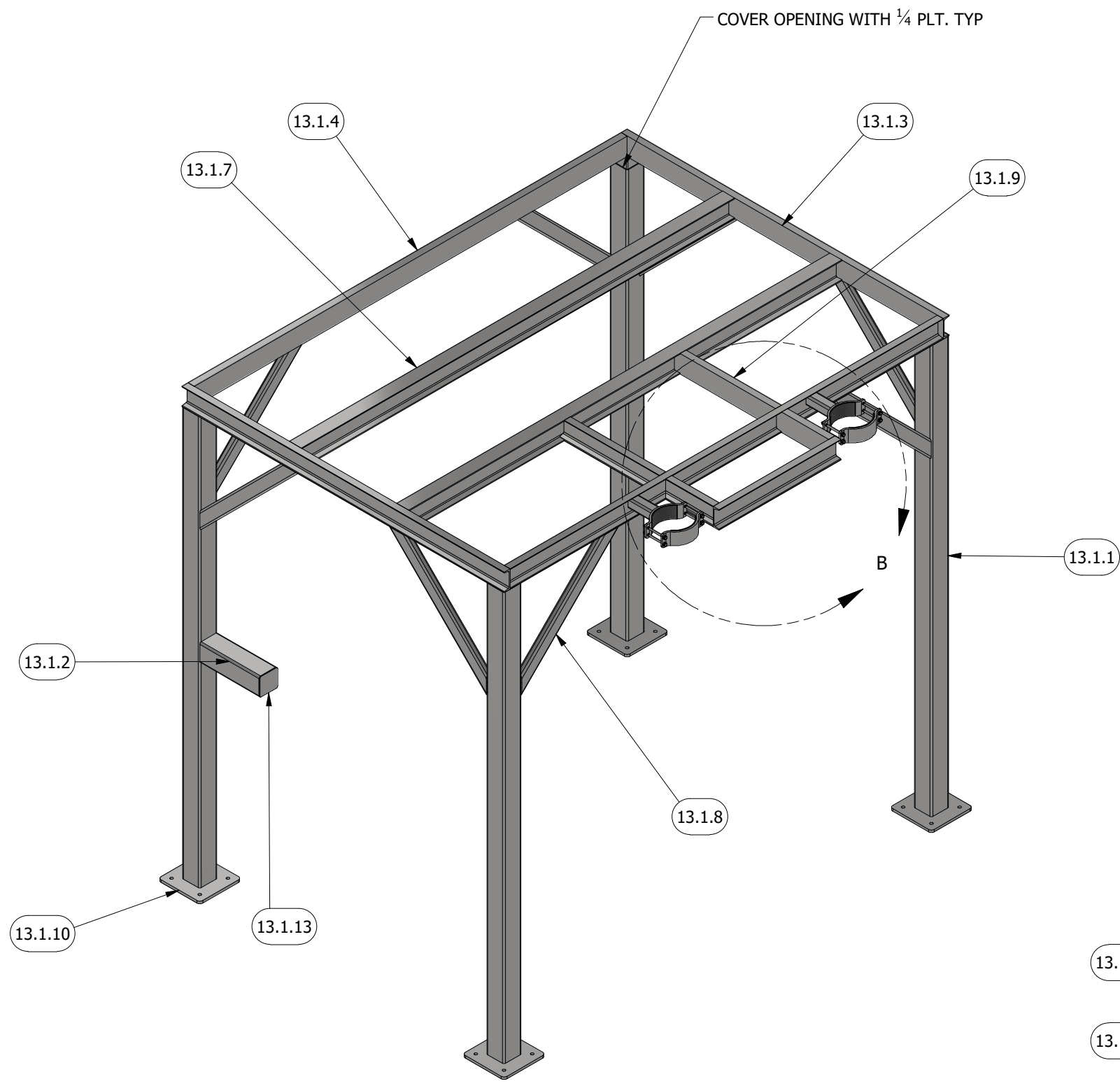


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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. MACHINE FINISH.

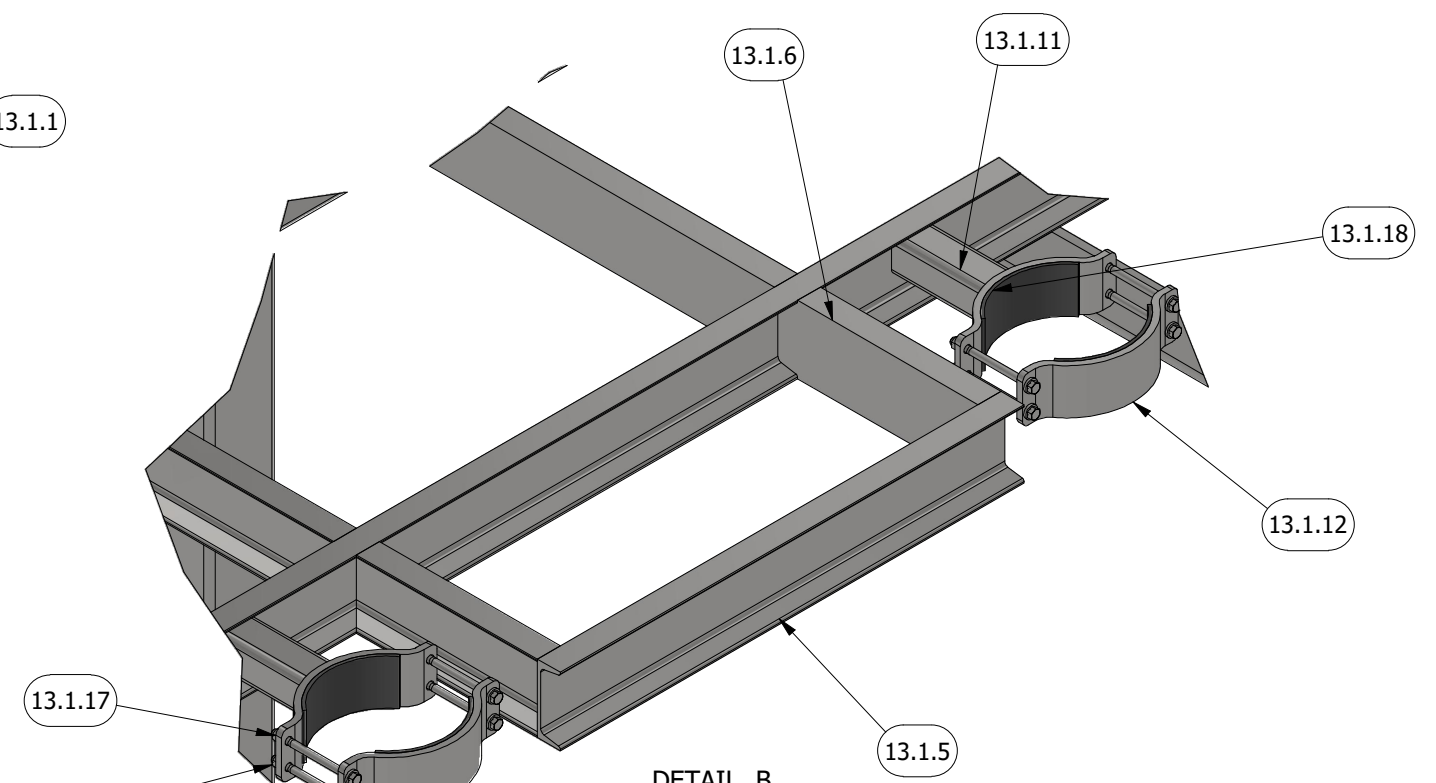
MATERIAL		SEE BOM	DRAWN BY	HB	DATE	11/5/2024	CHECKED BY	DCK	APPROVED BY	DCK	SIZE	B
HEAT TREATMENT		N/A	SCALE	DNS	DWG NO.	STCC-01-A	REV.	5	SHEET 14 OF 27			

TITLE
**PIPELINE TRAINING FLOW LOOP
TOWER ASSEMBLY**



ITEM 13.1 ISOMETRIC VIEW

ITEM 13.1 BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
13.1.1	4	CORNER POST	6 x 6 x 1/4 (137-1/2)	ASTM A500 GRADE B
13.1.2	1	LADDER SUPPORT	6 x 6 x 1/4 (20)	ASTM A500 GRADE B
13.1.3	2	SIDE RAIL SHORT	C 6x10.5 (108-1/2)	ASTM A36
13.1.4	2	SIDE RAIL LONG	C 6x10.5 (145-15/16)	ASTM A36
13.1.5	1	CHANNEL	C 6x10.5 (41)	ASTM A36
13.1.6	2	CHANNEL	C 6x10.5 (17-11/16)	ASTM A36
13.1.7	2	GRATING SUPPORT	W 6x12 (145-15/16)	ASTM A992
13.1.8	8	CORNER BRACE	4 x 2 x 1/4 (46-11/16)	ASTM A500 GRADE B
13.1.9	2	CHANNEL	C 6x10.5 (34)	ASTM A36
13.1.10	4	BASE PLATE	3/4 PLT (14 x 14)	ASTM A36
13.1.11	2	SADDLE SUPPORT TUBE	3 x 3 x 1/4 (8-5/16)	ASTM A500 GRADE B
13.1.12	4	SADDLE	1/4 PLT	ASTM A36
13.1.13	1	TUBING CAP	1/4 PLT (6 x 6)	ASTM A36
13.1.14	8	HEX BOLT	Ø1/2-13 UNC (7)	GRADE 8 ZINC PLATED
13.1.15	8	HEX NUT	Ø1/2-13 UNC	GRADE 8 ZINC PLATED
13.1.16	8	FLAT WASHER	Ø1/2	ZINC PLATED STEEL
13.1.17	8	LOCK WASHER	Ø1/2	ZINC PLATED STEEL
13.1.18	4	FRP WEAR PADS	12 x 4 x 1/4	FRP



DETAIL B
SCALE 1" = 1'-0"

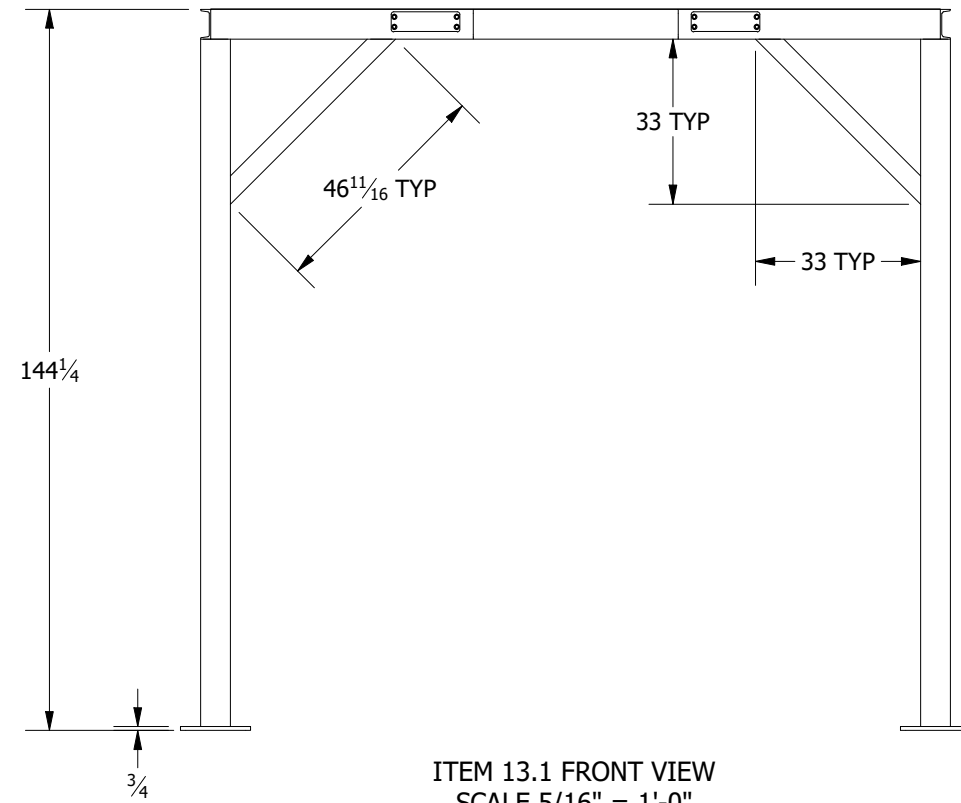
UNLESS OTHERWISE STATED TOLERANCES:	
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ±0.50°



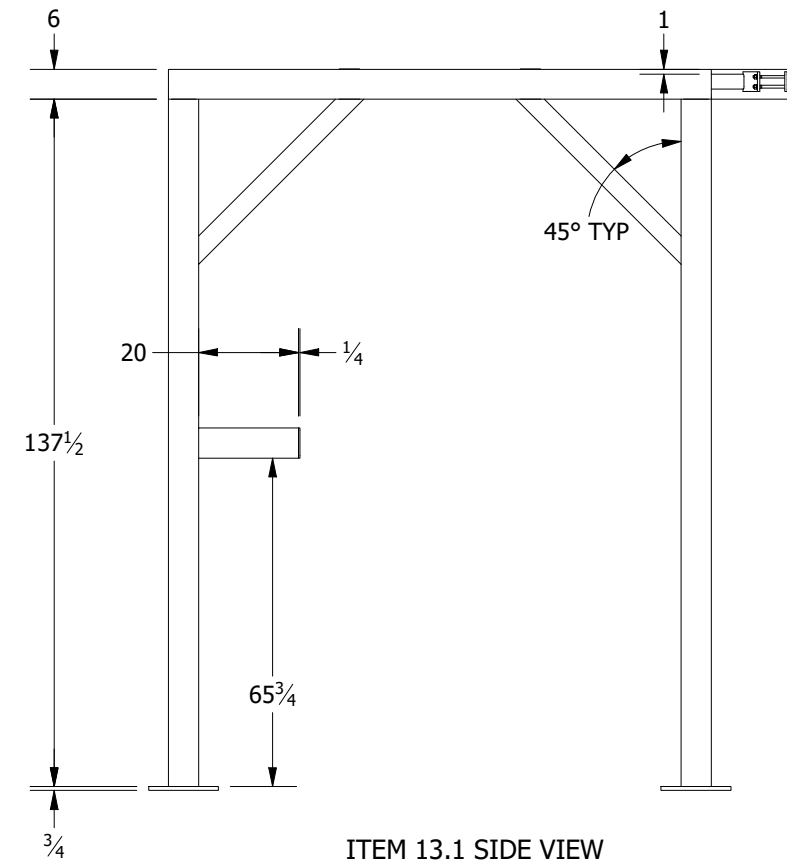
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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. MACHINE FINISH.

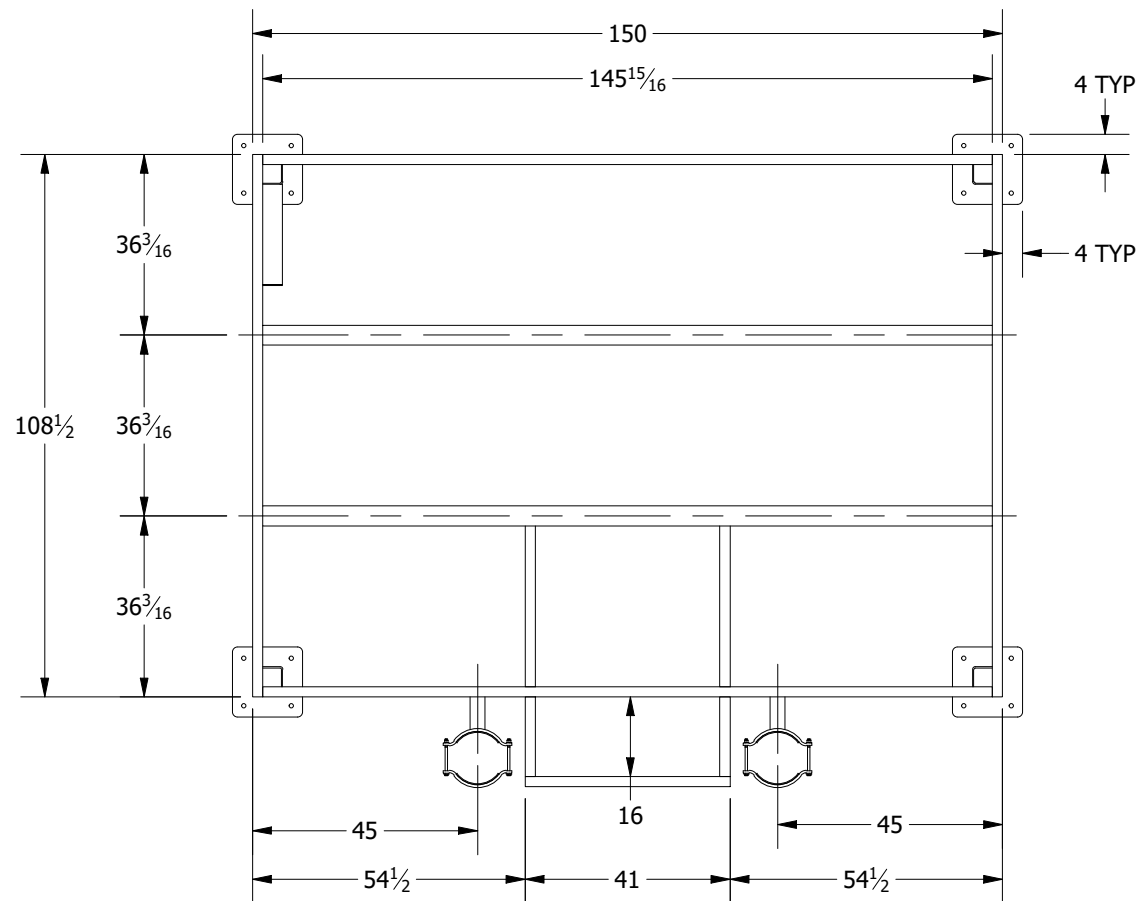
TITLE				
PIPELINE TRAINING FLOW LOOP TOWER FRAME				
MATERIAL	SEE BOM	DRAWN BY	DATE	11/5/2024
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO. STCC-01-A
		CHECKED BY	DCK	APPROVED BY DCK
		REV.	5	SIZE B
				SHEET 15 OF 27



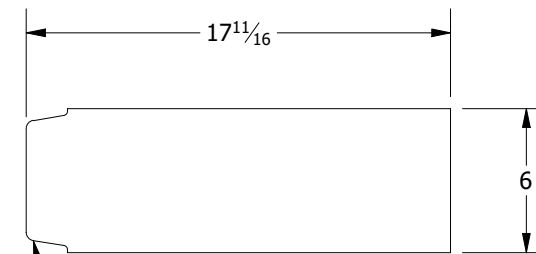
ITEM 13.1 FRONT VIEW
SCALE 5/16" = 1'-0"



ITEM 13.1 SIDE VIEW
SCALE 5/16" = 1'-0"

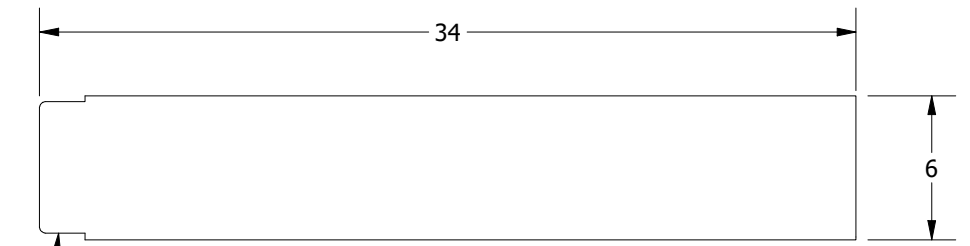


ITEM 13.1 TOP VIEW
SCALE 5/16" = 1'-0"



ITEM 13.6
SCALE 1 1/2" = 1'-0"

NOTCH TO FIT INSIDE ITEM 13.4



ITEM 13.9
SCALE 1 1/2" = 1'-0"

NOTCH TO FIT INSIDE ITEM 13.7

UNLESS OTHERWISE STATED TOLERANCES:

FABRICATION	MACHINE
FRACTIONS = ± 1/16"	.X ± .030 .XX ± .015 .XXX ± .005 .XXXX ± .0010
ANGLES ± 3°	ANGLES ± 0.50°

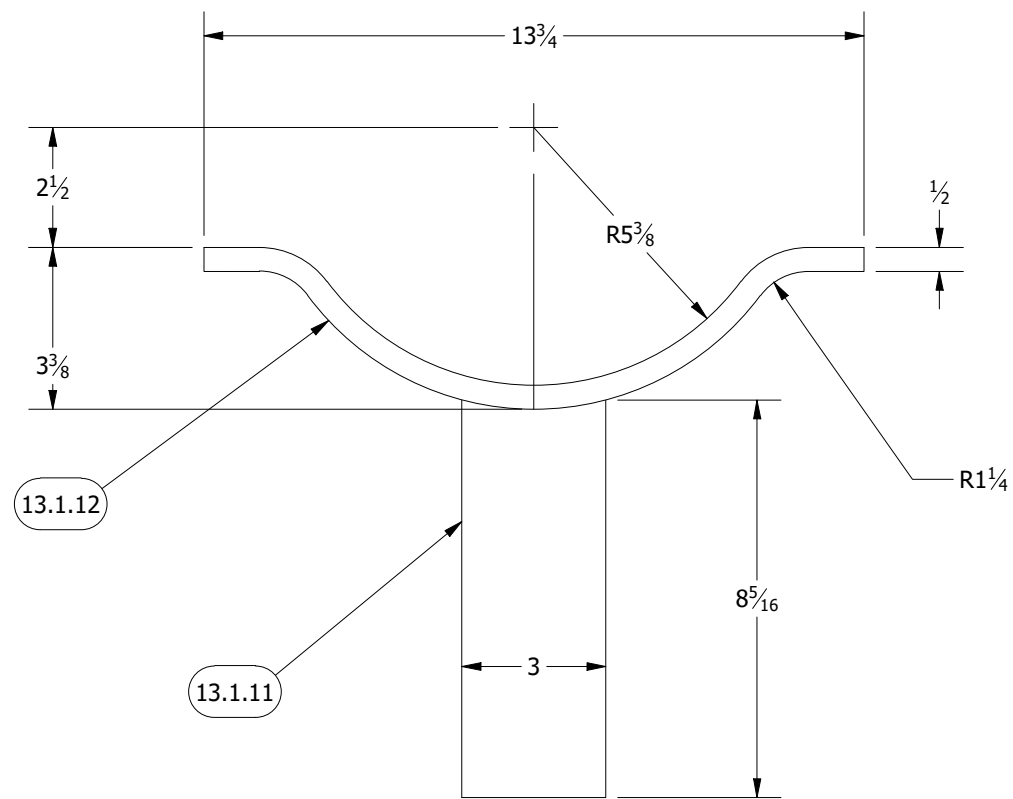


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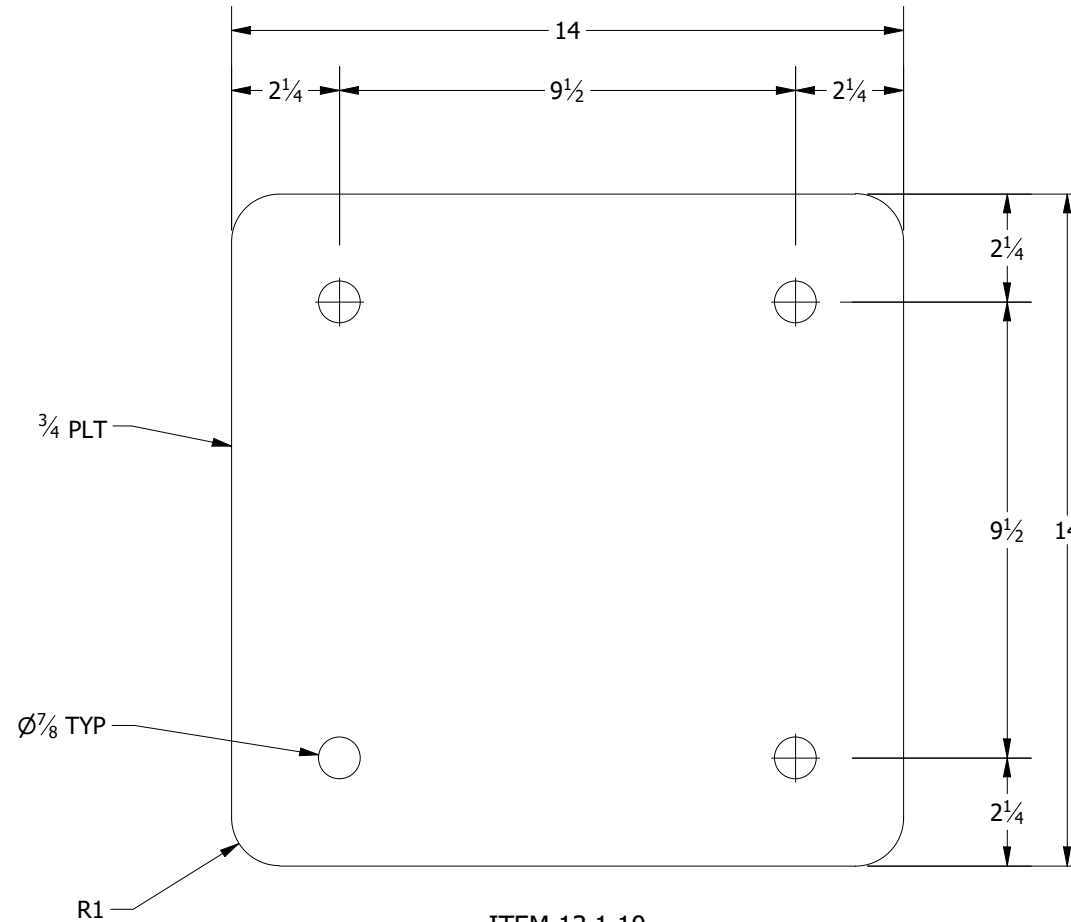
1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. MACHINE FINISH.

**PIPELINE TRAINING FLOW LOOP
TOWERL FRAME**

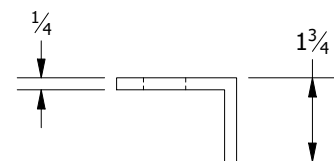
MATERIAL	SEE BOM	DRAWN BY	HB	DATE	11/5/2024	CHECKED BY	DCK	APPROVED BY	DCK	SIZE	B
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.	STCC-01-A	REV.	5	SHEET 16 OF 27			



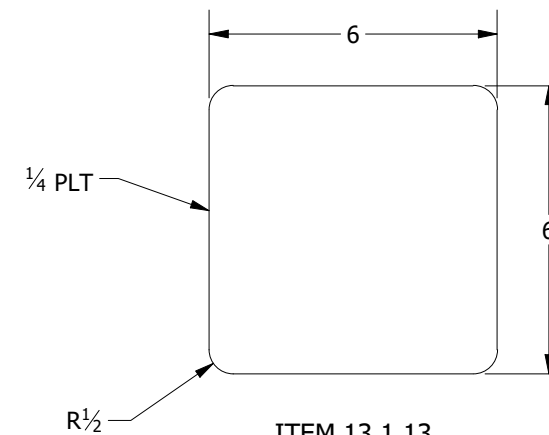
ITEM 13.1.11 & 13.1.12
SCALE 3" = 1'-0"



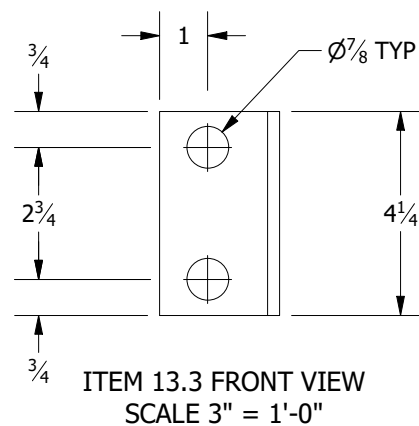
ITEM 13.1.10
SCALE 3" = 1'-0"



ITEM 13.3 TOP VIEW
SCALE 3" = 1'-0"



ITEM 13.1.13
SCALE 3" = 1'-0"



ITEM 13.3 FRONT VIEW
SCALE 3" = 1'-0"

UNLESS OTHERWISE STATED TOLERANCES:

FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
ANGLES ± 3°	.XXX ± .005
	.XXXX ± .0010
	ANGLES ± 0.50°

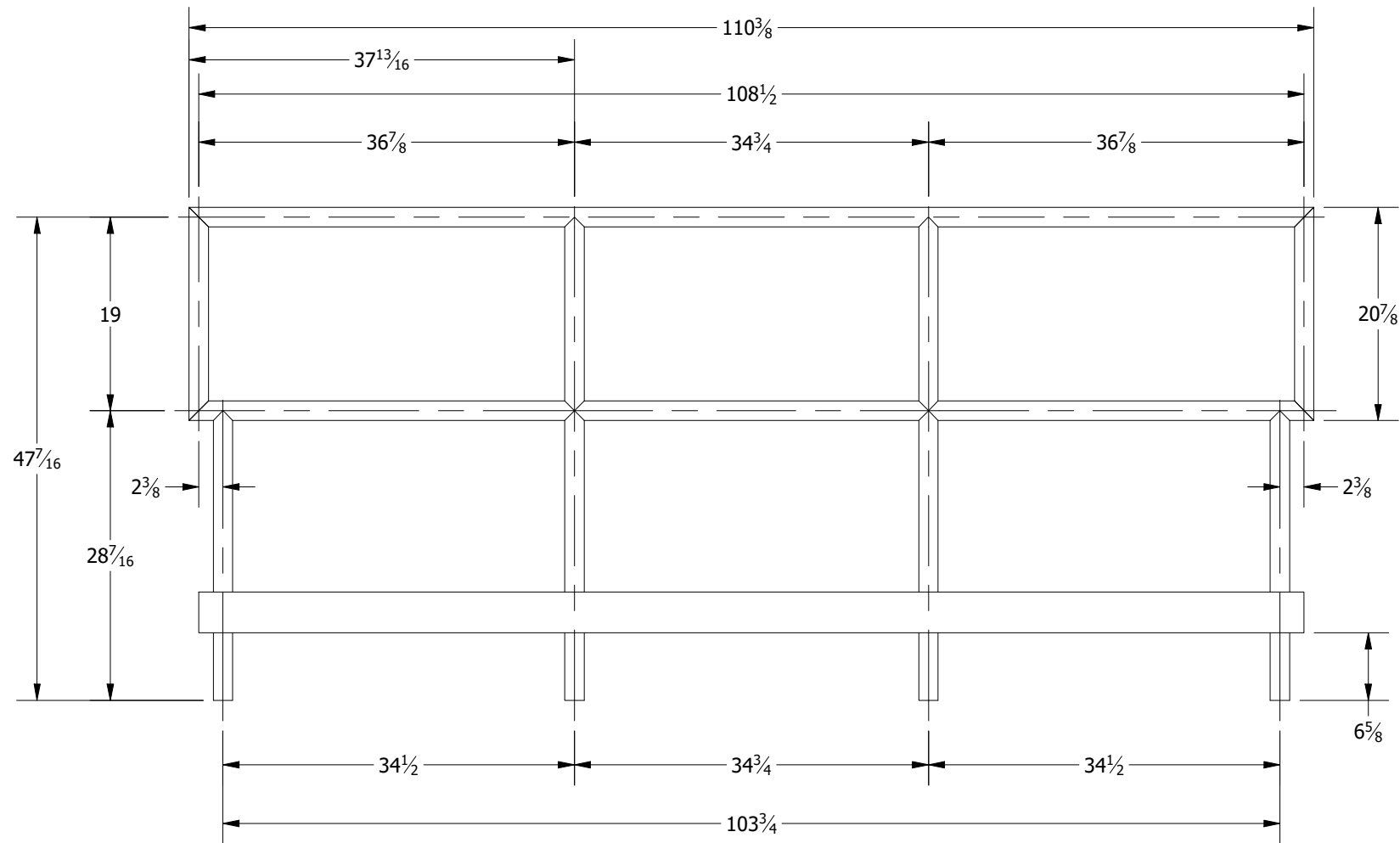


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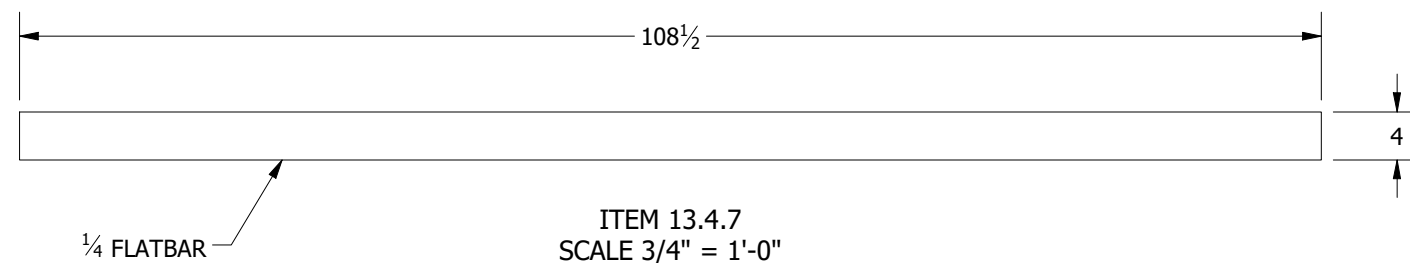
1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. OUTSIDE CORNERS .015 X 45°
5. MACHINE FINISH.

**PIPELINE TRAINING FLOW LOOP
TOWER ASSEMBLY DETAILS**

MATERIAL	SEE BOM	DRAWN BY	HB	DATE	11/5/2024	CHECKED BY	DCK	APPROVED BY	DCK	SIZE	B
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.	STCC-01-A	REV.	5	SHEET 17 OF 27			

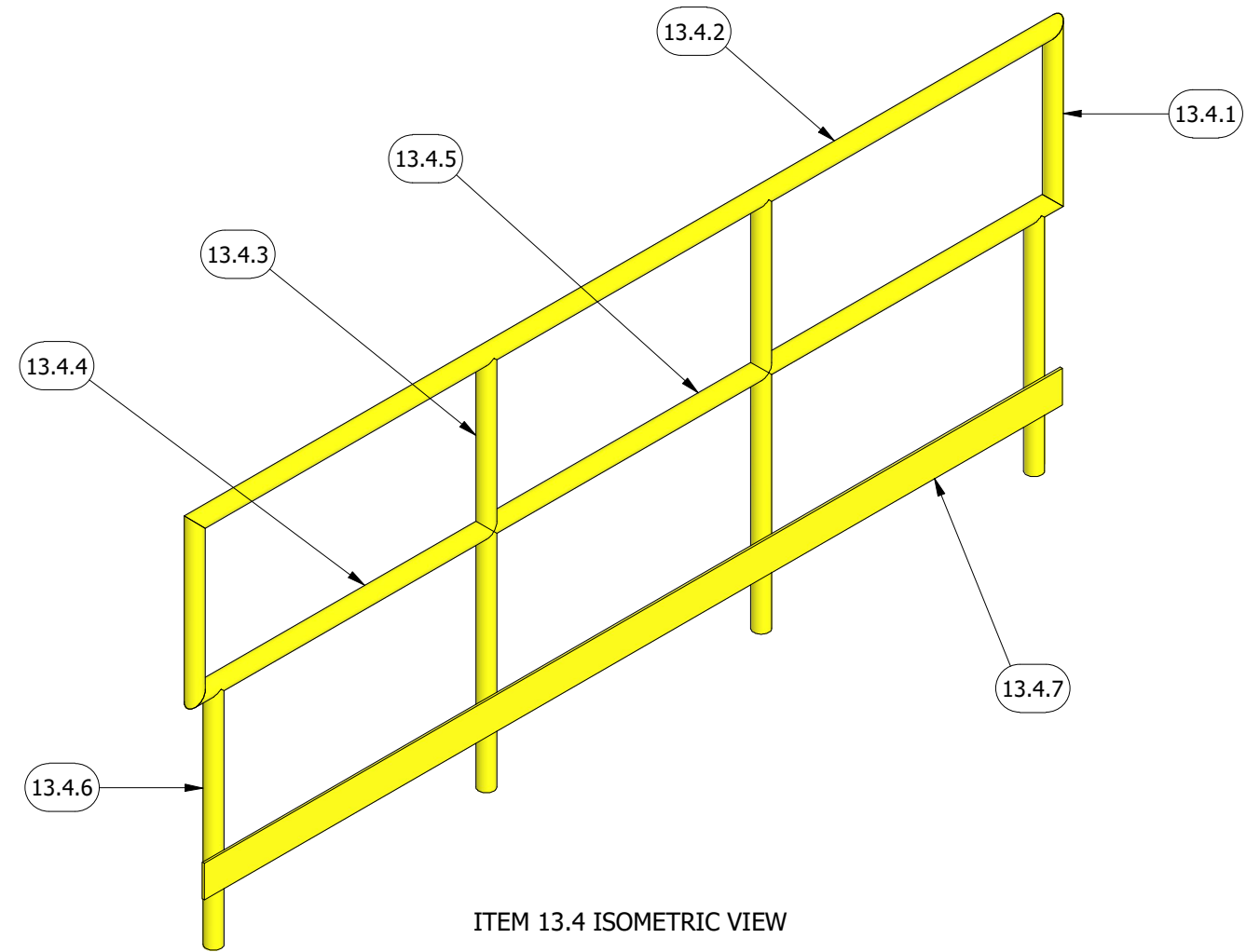


ITEM 13.4 FRONT VIEW
SCALE 3/4" = 1'-0"



ITEM 13.4.7
SCALE 3/4" = 1'-0"

ITEM 13.4 BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
13.4.1	2	PIPE	Ø1-1/2 SCH 40 (20-7/8)	ASTM A53 GRADE B
13.4.2	1	PIPE	Ø1-1/2 SCH 40 (110-3/8)	ASTM A53 GRADE B
13.4.3	2	PIPE	Ø1-1/2 SCH 40 (47-7/16)	ASTM A53 GRADE B
13.4.4	2	PIPE	Ø1-1/2 SCH 40 (37-13/16)	ASTM A53 GRADE B
13.4.5	1	PIPE	Ø1-1/2 SCH 40 (34-3/4)	ASTM A53 GRADE B
13.4.6	2	PIPE	Ø1-1/2 SCH 40 (28-7/16)	ASTM A53 GRADE B
13.4.7	1	KICK PLATE	4 x 1/4 (108-1/2)	ASTM A36



ITEM 13.4 ISOMETRIC VIEW

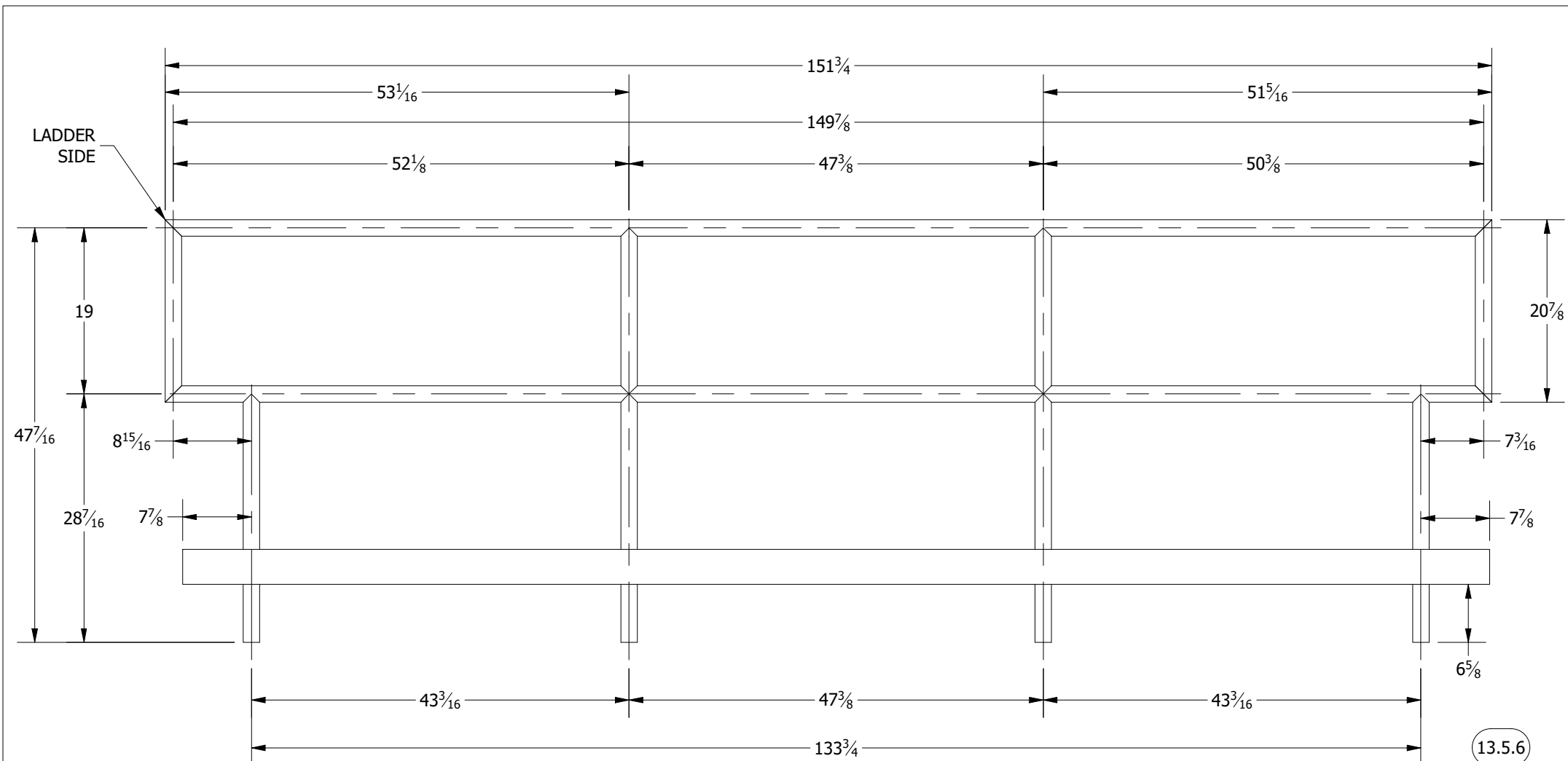
UNLESS OTHERWISE STATED TOLERANCES:	
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ±0.50°



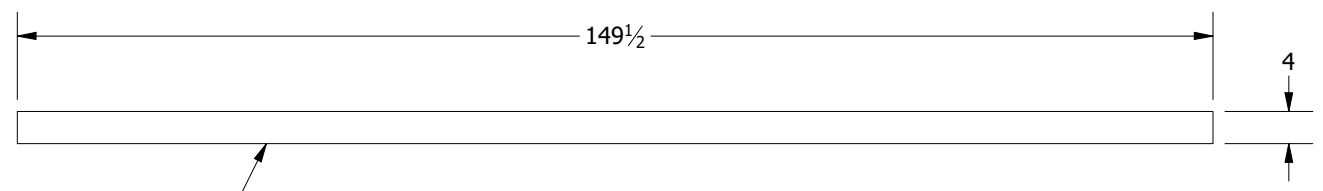
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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. OUTSIDE CORNERS .015 X 45°
5. MACHINE FINISH.

TITLE				
PIPELINE TRAINING FLOW LOOP HAND RAIL MEDIUM				
MATERIAL	SEE BOM	DRAWN BY	DATE	CHECKED BY
HEAT TREATMENT	N/A	HB	11/5/2024	DCK
		SCALE	DWG NO.	REV.
		DNS	STCC-01-A	5
		APPROVED BY	SIZE	
		DCK	B	
			SHEET	18 OF 27

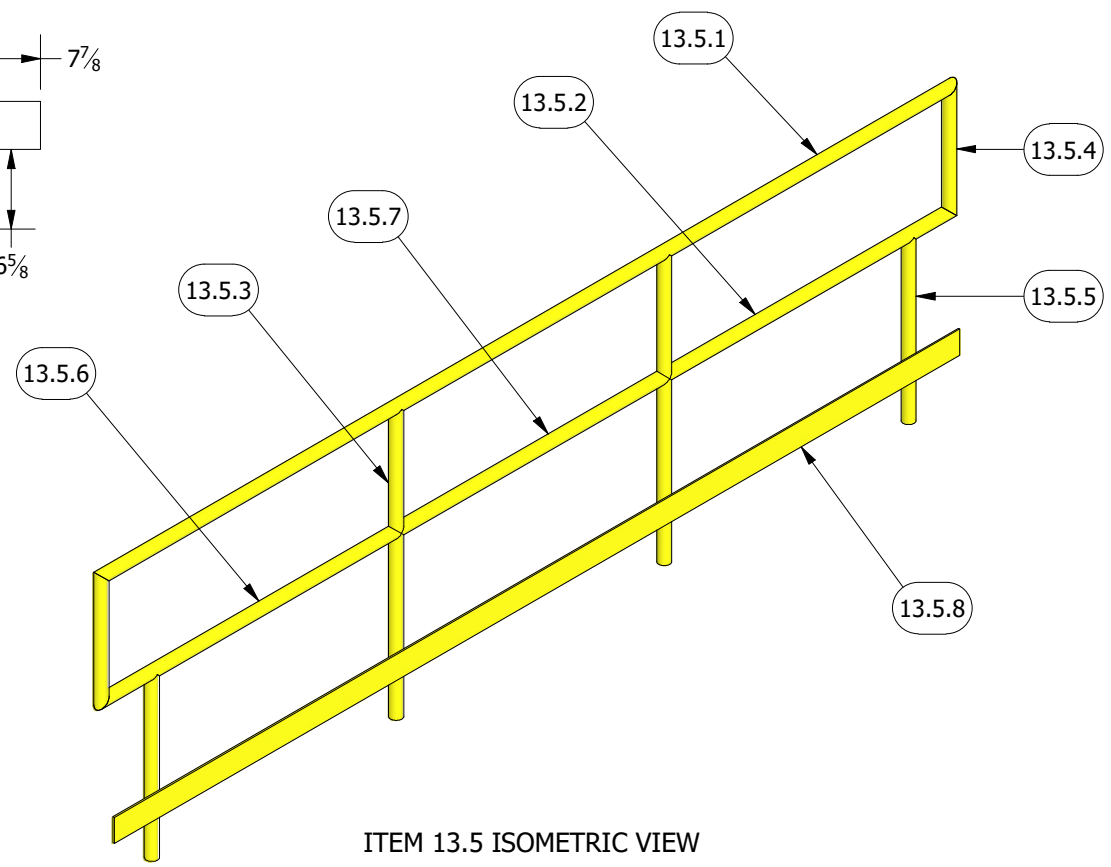


ITEM 13.5
SCALE 3/4" = 1'-0"



1/4 FLATBAR
ITEM 13.5.6
SCALE 1/2" = 1'-0"

ITEM 13.5 BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
13.5.1	1	PIPE	Ø1-1/2 SCH 40 (151-3/4)	ASTM A53 GRADE B
13.5.2	2	PIPE	Ø1-1/2 SCH 40 (51-5/16)	ASTM A53 GRADE B
13.5.3	2	PIPE	Ø1-1/2 SCH 40 (47-3/8)	ASTM A53 GRADE B
13.5.4	2	PIPE	Ø1-1/2 SCH 40 (20-7/8)	ASTM A53 GRADE B
13.5.5	2	PIPE	Ø1-1/2 SCH 40 (28-7/16)	ASTM A53 GRADE B
13.5.6	1	PIPE	Ø1-1/2 SCH 40 (53-1/16)	ASTM A53 GRADE B
13.5.7	1	PIPE	Ø1-1/2 SCH 40 (47-3/8)	ASTM A53 GRADE B
13.5.8	1	KICK PLATE	4 x 1/4 (149-1/2)	ASTM A36



ITEM 13.5 ISOMETRIC VIEW

UNLESS OTHERWISE STATED TOLERANCES:	
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ±0.50°

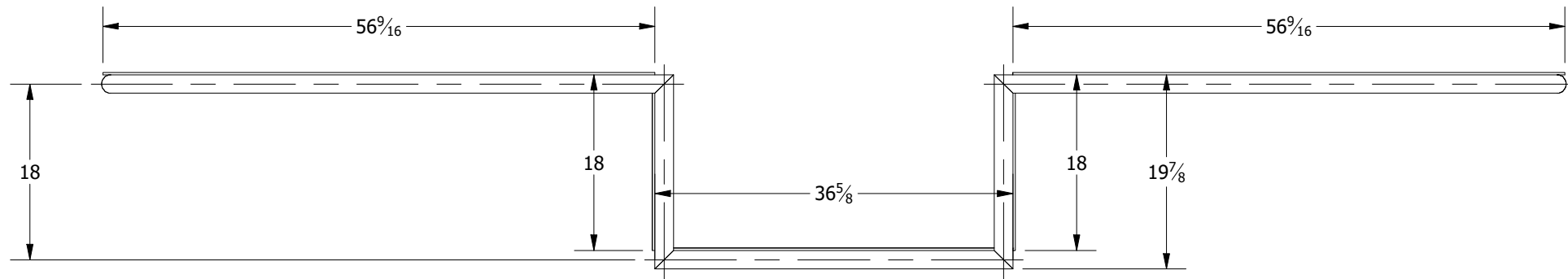


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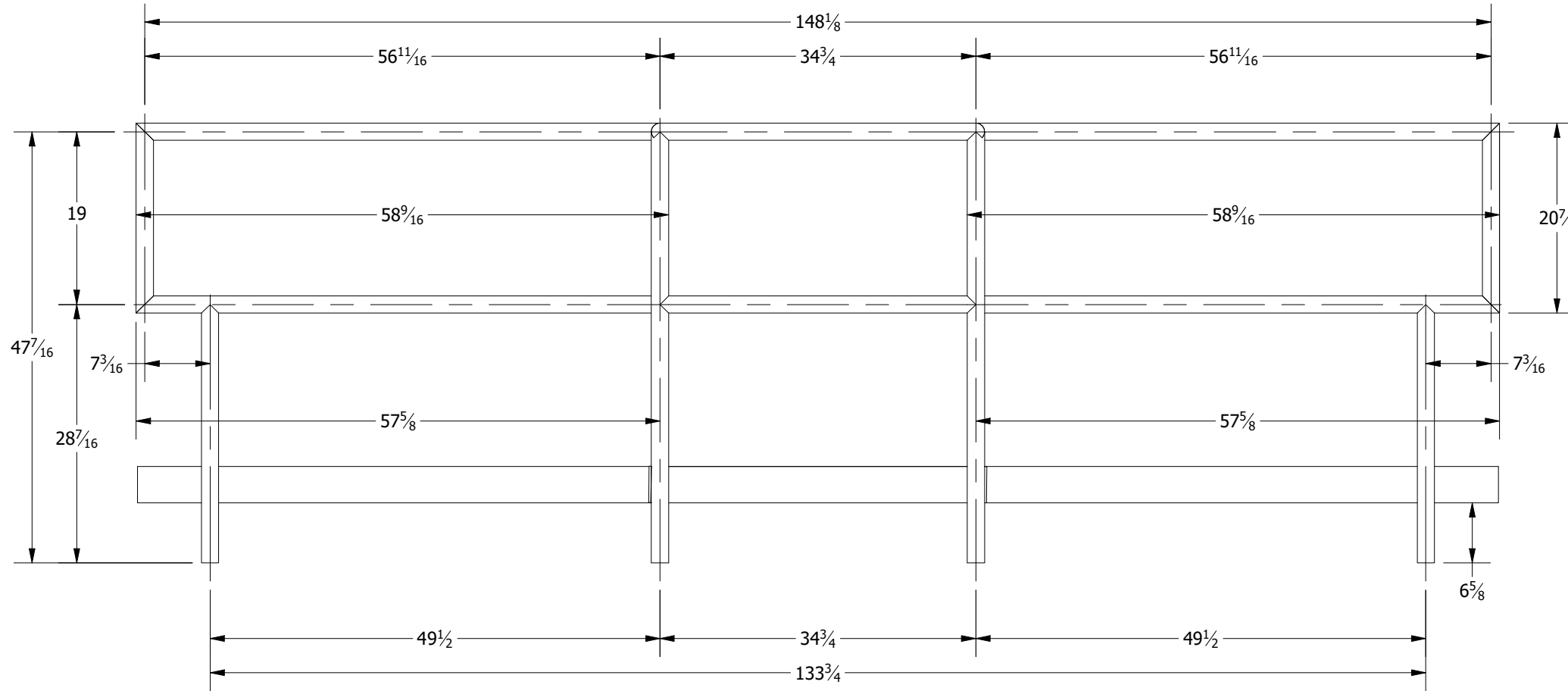
1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. MACHINE FINISH.

TITLE
**PIPELINE TRAINING FLOW LOOP
HAND RAIL LONG**

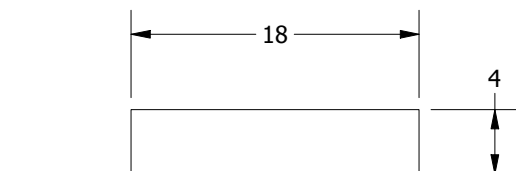
MATERIAL	SEE BOM	DRAWN BY	HB	DATE	11/5/2024	CHECKED BY	DCK	APPROVED BY	DCK	SIZE	B
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.	STCC-01-A	REV.	5	SHEET 19 OF 27			



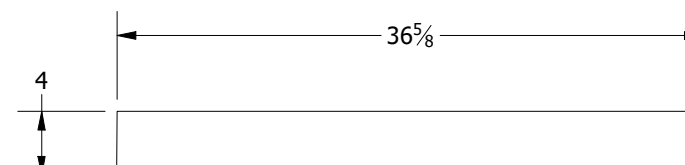
ITEM 13.6 TOP VIEW
SCALE 3/4" = 1'-0"



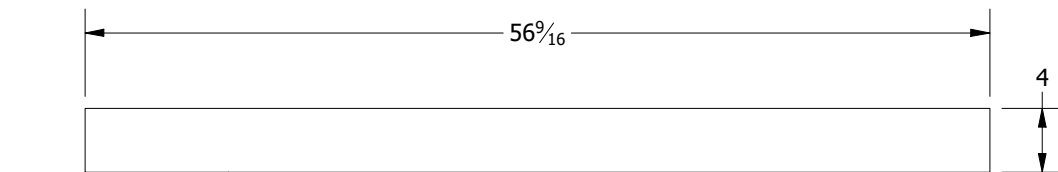
ITEM 13.6 FRONT VIEW
SCALE 3/4" = 1'-0"



ITEM 13.6.12
SCALE 1" = 1'-0"

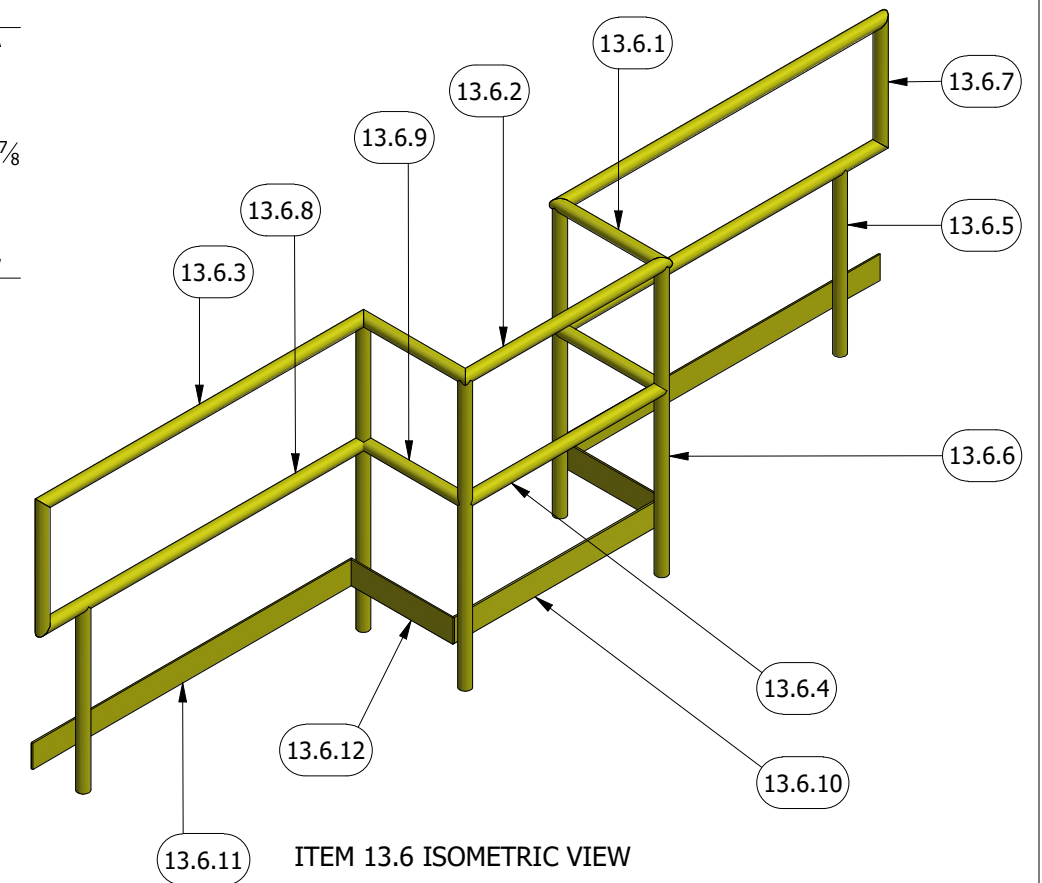


ITEM 13.6.10
SCALE 1" = 1'-0"



ITEM 13.6.11
SCALE 1" = 1'-0"

ITEM 13.6 BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
13.6.1	2	PIPE	Ø1-1/2 SCH 40 (19-7/8)	ASTM A53 GRADE B
13.6.2	1	PIPE	Ø1-1/2 SCH 40 (36-5/8)	ASTM A53 GRADE B
13.6.3	3	PIPE	Ø1-1/2 SCH 40 (58-9/16)	ASTM A53 GRADE B
13.6.4	1	PIPE	Ø1-1/2 SCH 40 (34-3/4)	ASTM A53 GRADE B
13.6.5	2	PIPE	Ø1-1/2 SCH 40 (28-7/16)	ASTM A53 GRADE B
13.6.6	4	PIPE	Ø1-1/2 SCH 40 (47-7/16)	ASTM A53 GRADE B
13.6.7	2	PIPE	Ø1-1/2 SCH 40 (20-7/8)	ASTM A53 GRADE B
13.6.8	2	PIPE	Ø1-1/2 SCH 40 (57-5/8)	ASTM A53 GRADE B
13.6.9	2	PIPE	Ø1-1/2 SCH 40 (18)	ASTM A53 GRADE B
13.6.10	1	TOE PLATE	4 x 1/4 (36-5/8)	ASTM A36
13.6.11	2	TOE PLATE	4x1/4 (56-9/16)	ASTM A36
13.6.12	2	TOE PLATE	4 x 1/4 (18)	ASTM A36



ITEM 13.6 ISOMETRIC VIEW

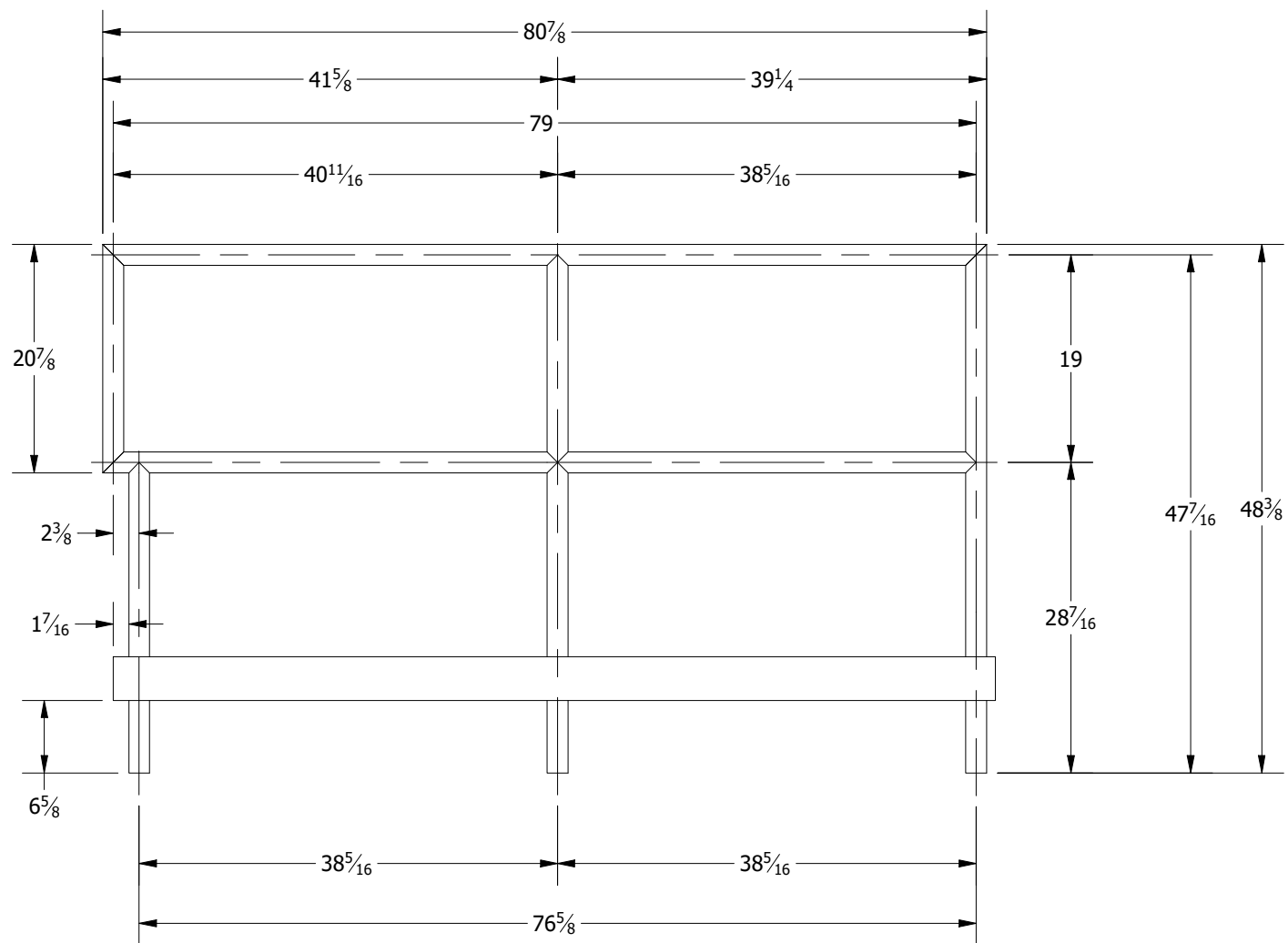
UNLESS OTHERWISE STATED
TOLERANCES:
FABRICATION MACHINE
FRACTIONS = .X ± .030
 .XX ± .015
 .XXX ± .005
ANGLES ± 3° .XXXX ± .0010
 ANGLES ±0.50°



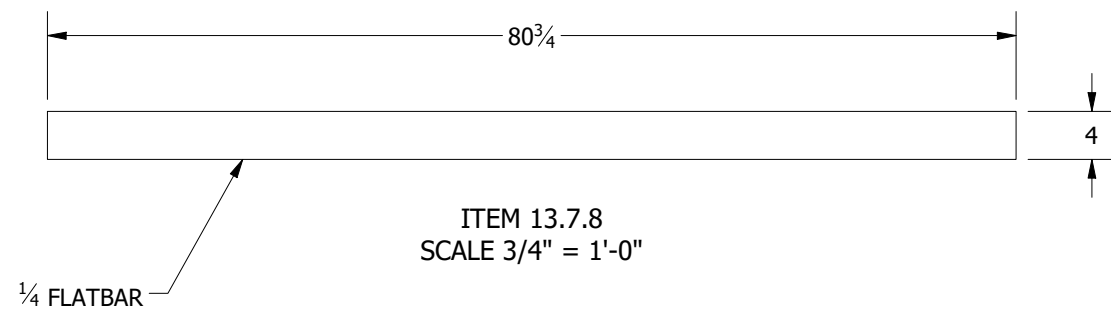
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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032 OUTSIDE CORNERS .015 X 45°
5. MACHINE FINISH.

TITLE					
PIPELINE TRAINING FLOW LOOP HAND RAIL LAUNCHER/RECEIVER					
MATERIAL	SEE BOM	DRAWN BY	HB	DATE	11/5/2024
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.	STCC-01-A
		CHECKED BY	DCK	APPROVED BY	DCK
		REV.	5	SHEET	20 OF 27

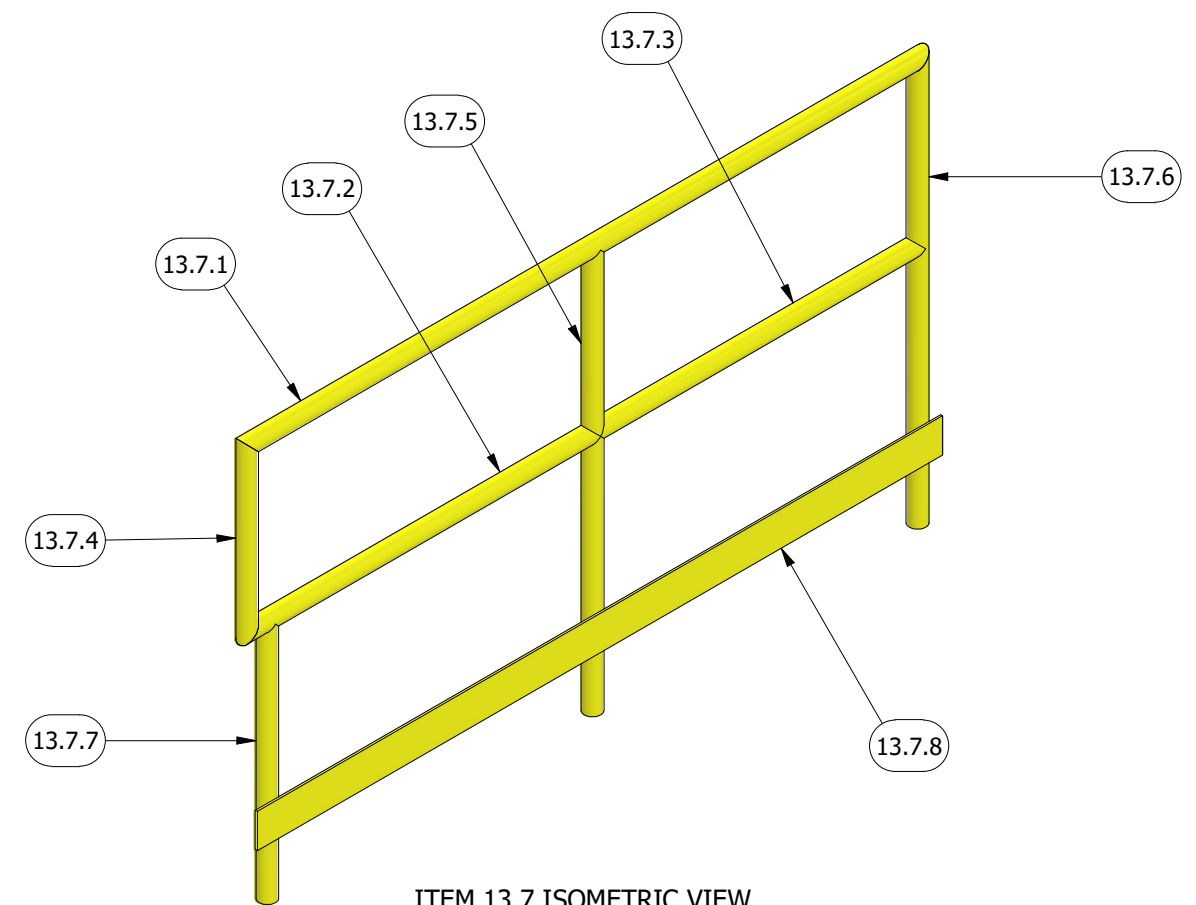


ITEM 13.7
SCALE 3/4" = 1'-0"



ITEM 13.7.8
SCALE 3/4" = 1'-0"

ITEM 13.7 BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
13.7.1	1	PIPE	Ø1-1/2 SCH 40 (80-7/8)	ASTM A53 GRADE B
13.7.2	1	PIPE	Ø1-1/2 SCH 40 (41-5/8)	ASTM A53 GRADE B
13.7.3	1	PIPE	Ø1-1/2 SCH 40 (39-1/4)	ASTM A53 GRADE B
13.7.4	1	PIPE	Ø1-1/2 SCH 40 (20-7/8)	ASTM A53 GRADE B
13.7.5	1	PIPE	Ø1-1/2 SCH 40 (47-7/16)	ASTM A53 GRADE B
13.7.6	1	PIPE	Ø1-1/2 SCH 40 (48-3/8)	ASTM A53 GRADE B
13.7.7	1	PIPE	Ø1-1/2 SCH 40 (28-7/16)	ASTM A53 GRADE B
13.7.8	1	TOE PLATE	4 x 1/4 (80-3/4)	ASTM A36



ITEM 13.7 ISOMETRIC VIEW

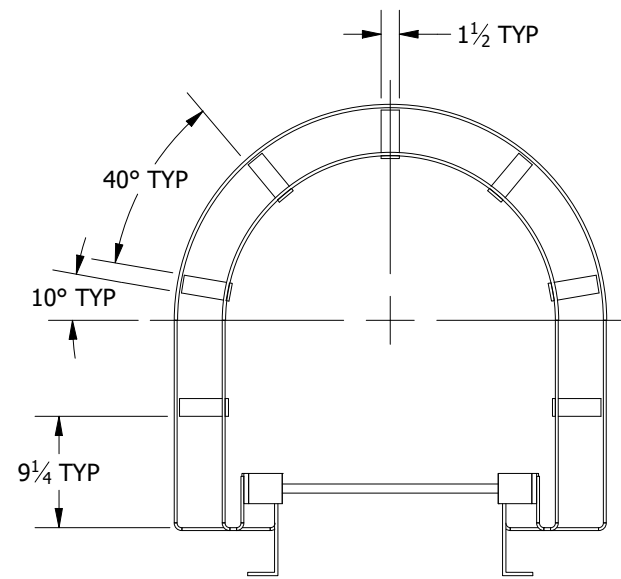
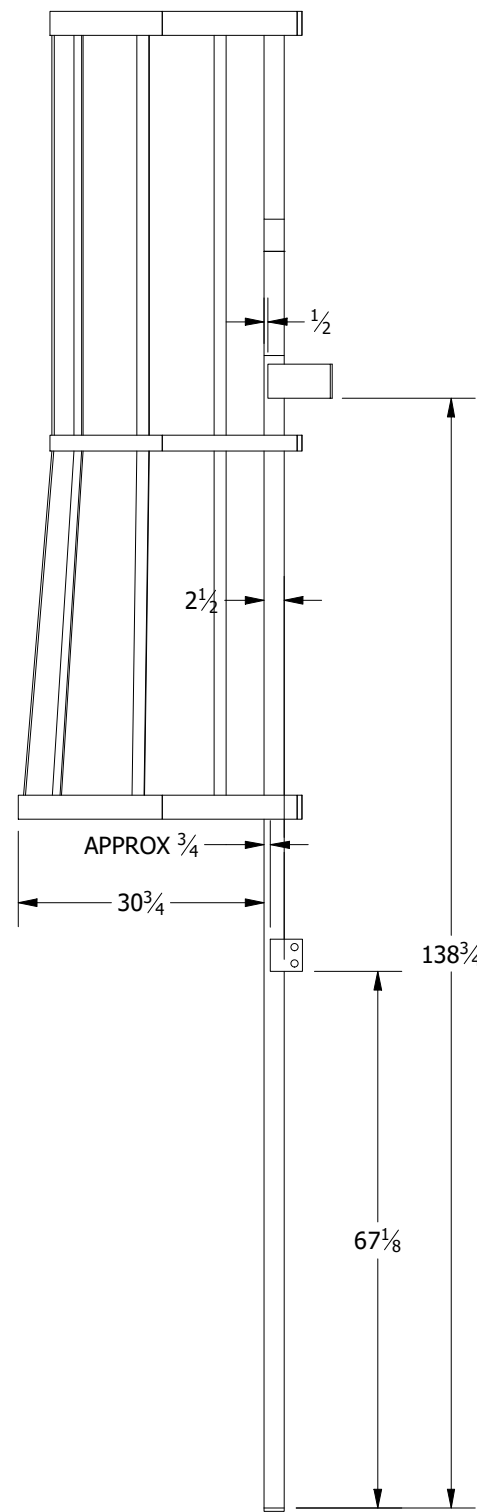
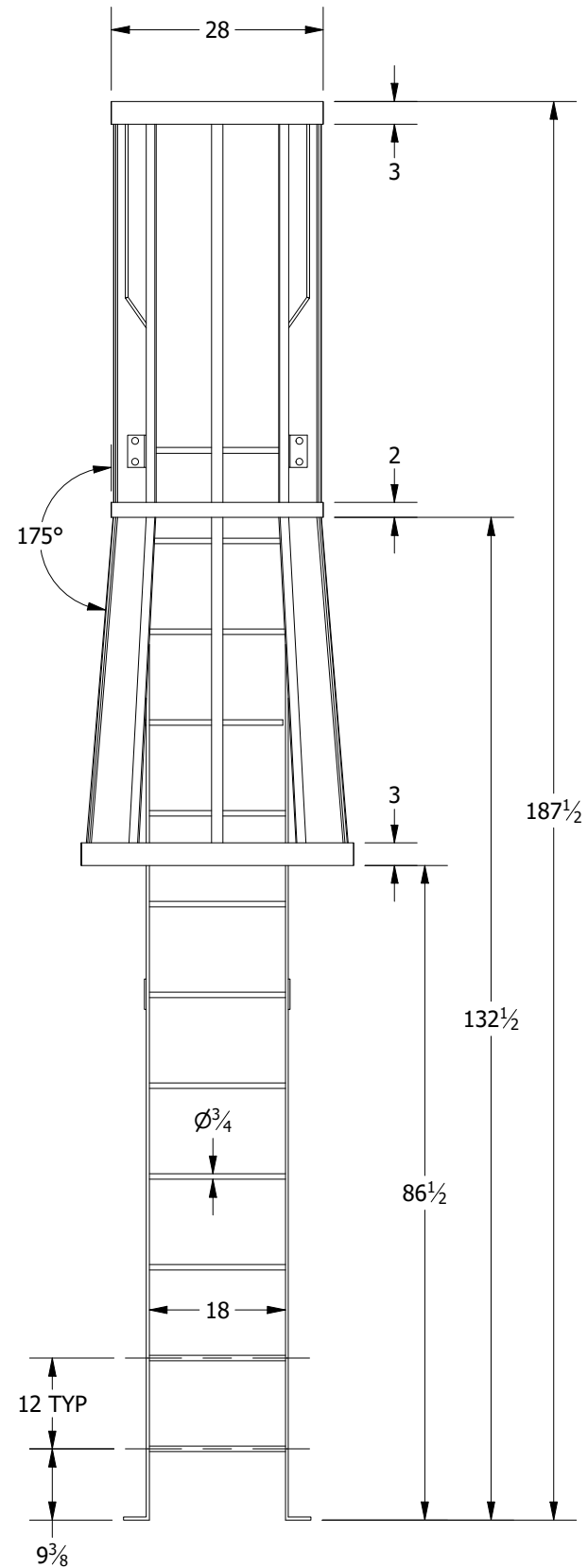
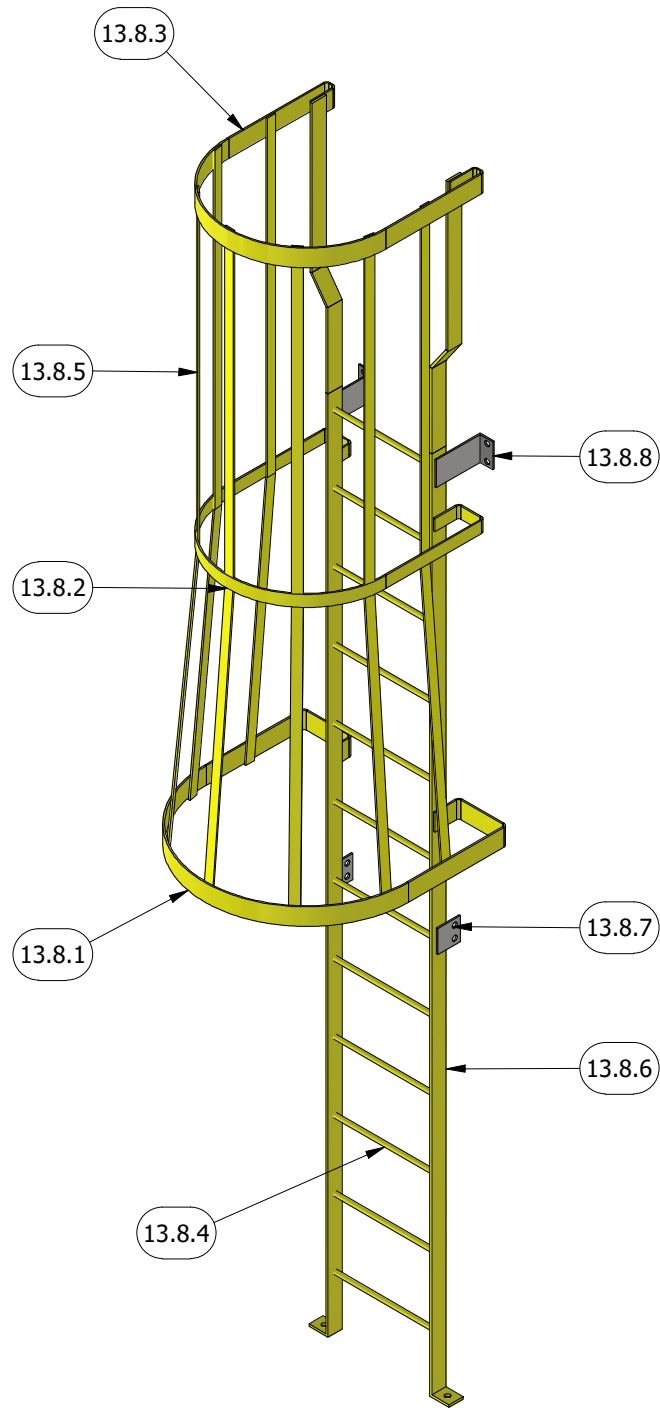
UNLESS OTHERWISE STATED TOLERANCES:	
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
ANGLES ± 3°	.XXX ± .005
	.XXXX ± .0010
	ANGLES ±0.50°



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2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
OUTSIDE CORNERS .015 X 45°
5. MACHINE FINISH.

TITLE				
PIPELINE TRAINING FLOW LOOP HAND RAIL SHORT				
MATERIAL	SEE BOM	DRAWN BY	HB	DATE
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.
				11/5/2024
		CHECKED BY	DCK	APPROVED BY
				DCK
		REV.	5	SIZE
				B
				STCC-01-A
				SHEET 21 OF 27



ITEM 13.8 BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
13.8.1	1	CAGE RING LOWER	1/4 x 3 (115-1/4)	ASTM A36
13.8.2	1	CAGE RING MIDDLE	1/4 x 2 (94-3/4)	ASTM A36
13.8.3	1	CAGE RING UPPER	1/4 x 3 (89-1/8)	ASTM A36
13.8.4	12	LADDER WRUNG	Ø3/4 BAR (18)	ASTM A36
13.8.5	7	VERTICAL CAGE MEMBER	1/4 x 1-1/2 (101-1/8)	ASTM A36
13.8.6	2	SIDE RAIL	3/8 x 2-1/2 (191-1/4)	ASTM A36
13.8.7	2	LADDER CONNECTING PLATE LOWER	1/4 PLT	ASTM A36
13.8.8	2	LADDER CONNECTING PLATE UPPER	1/4 PLT	ASTM A36

NOTE: SAFETY LADDER GATE TO BE PROVIDED BY CONTRACTOR

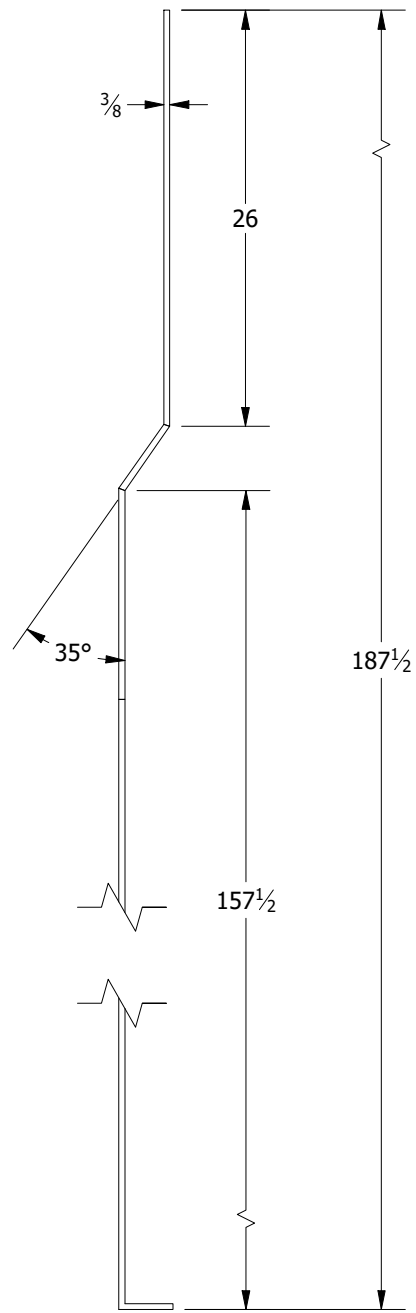
UNLESS OTHERWISE STATED TOLERANCES:	
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
	± 1/16" .XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ±0.50°



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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. MACHINE FINISH.

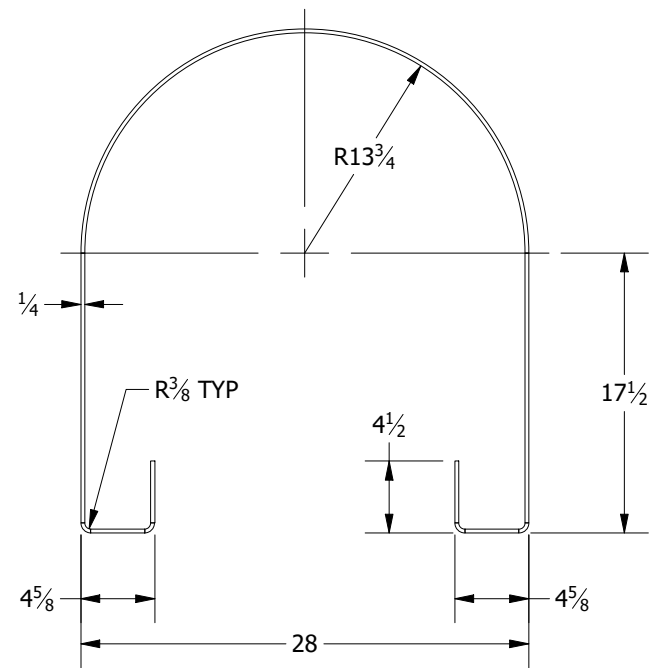
TITLE					
PIPELINE TRAINING FLOW LOOP SAFETY LADDER					
MATERIAL	SEE BOM	DRAWN BY	HB	DATE	11/5/2024
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.	STCC-01-A
		CHECKED BY	DCK	APPROVED BY	DCK
		REV.	5	SIZE	B
				SHEET	22 OF 27



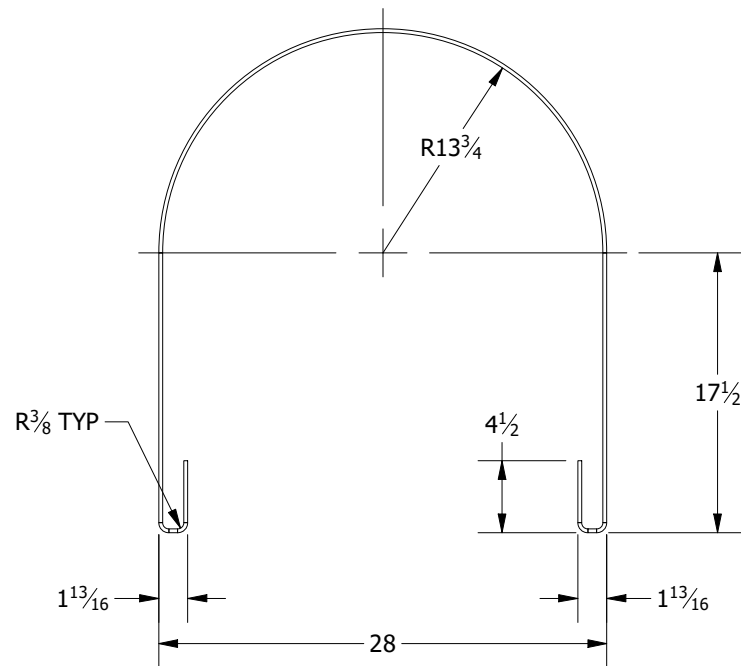
ITEM 13.8.6 FRONT VIEW
SCALE 1" = 1'-0"



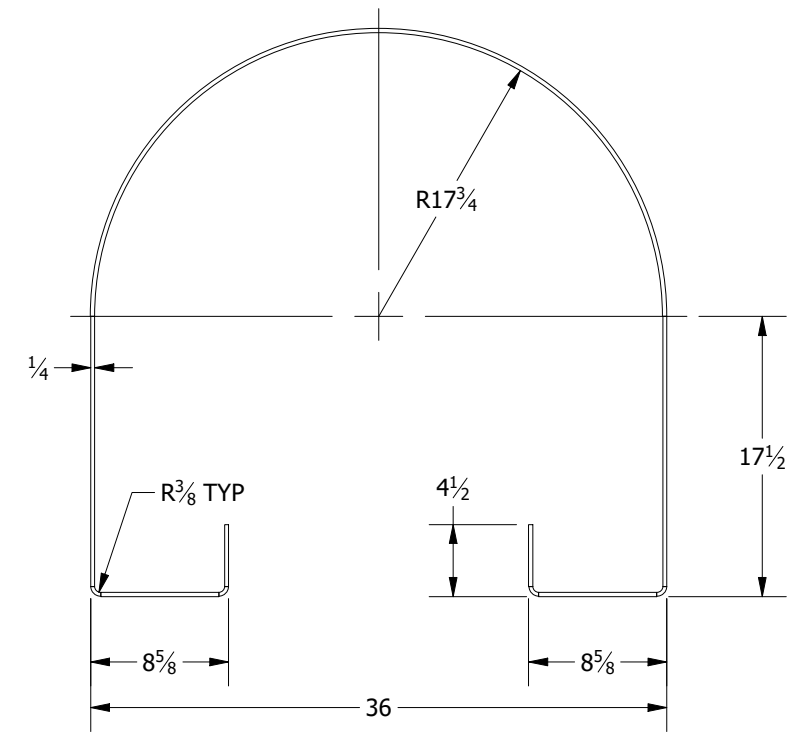
ITEM 13.8.6 BOTTOM VIEW
SCALE 1" = 1'-0"



ITEM 13.8.2
SCALE 1" = 1'-0"



ITEM 13.8.3
SCALE 1" = 1'-0"



ITEM 13.8.1
SCALE 1" = 1'-0"

UNLESS OTHERWISE STATED TOLERANCES:

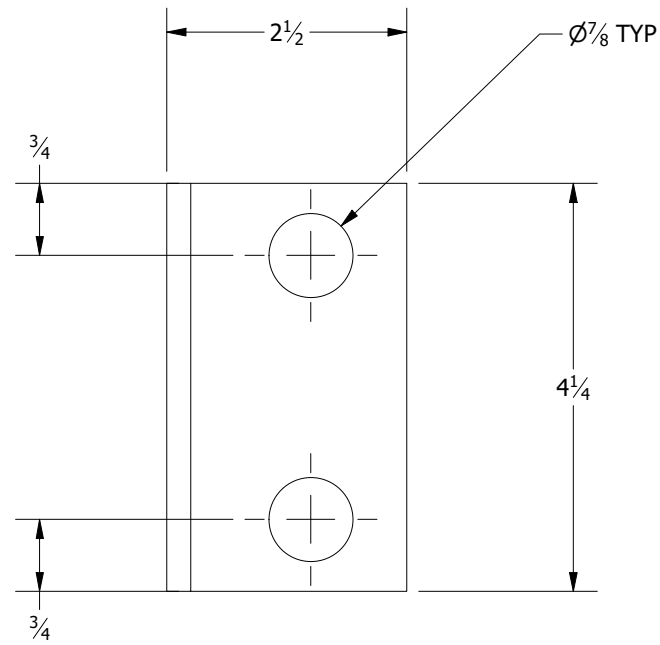
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
ANGLES ± 3°	.XXX ± .005
	.XXXX ± .0010
	ANGLES ± 0.50°



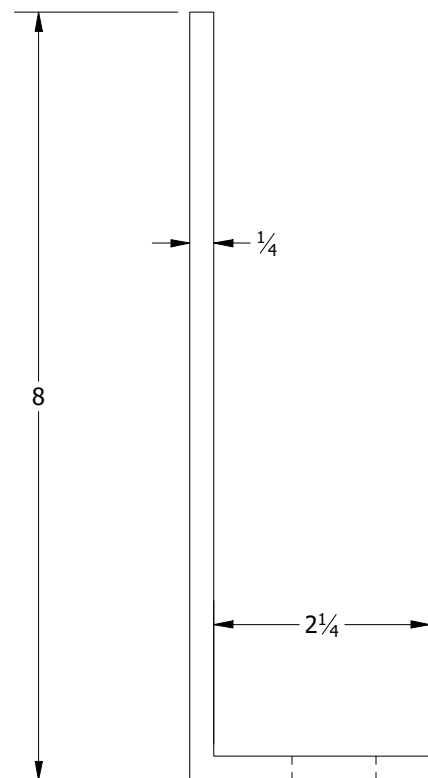
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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. MACHINE FINISH.

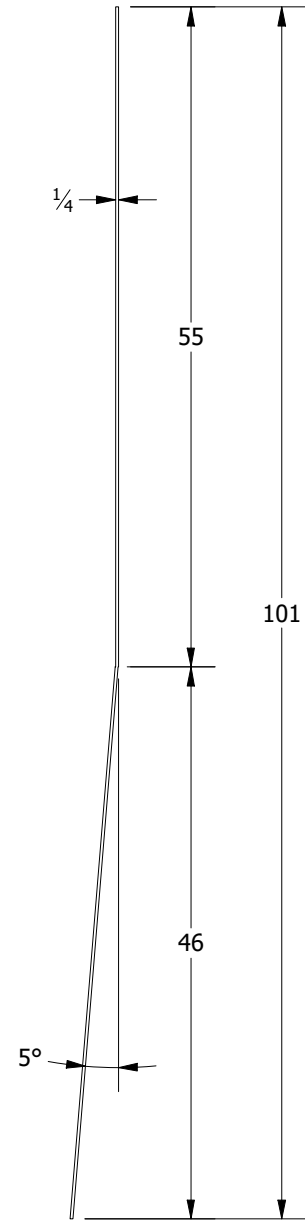
TITLE				
PIPELINE TRAINING FLOW LOOP SAFETY LADDER				
MATERIAL	SEE BOM	DRAWN BY	HB	DATE
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.
				11/5/2024
		CHECKED BY	DCK	APPROVED BY
				DCK
		REV.	5	SIZE
				B
				SHEET 23 OF 27



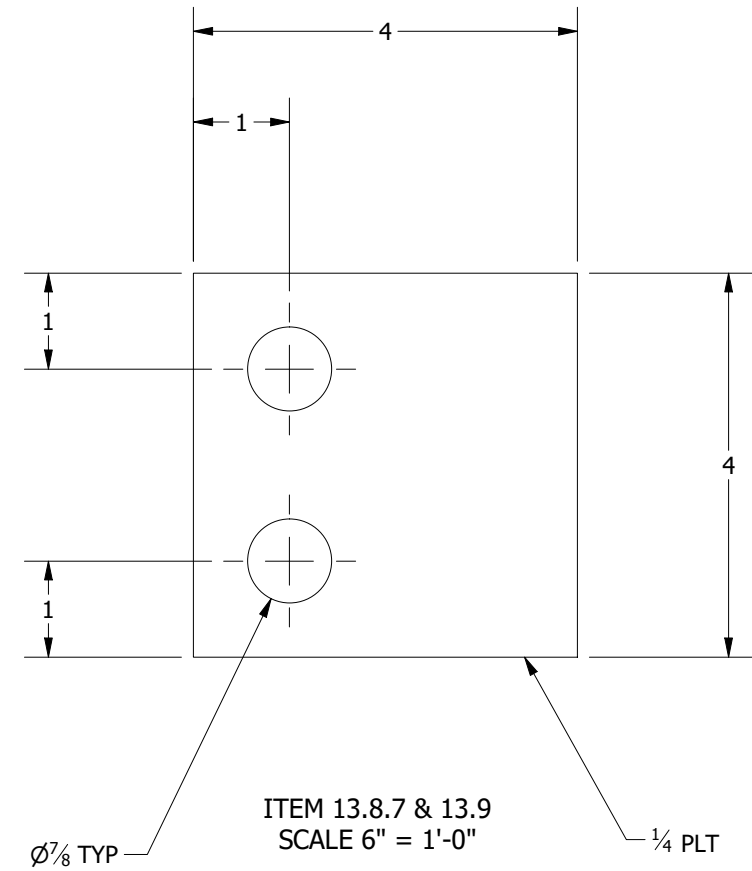
ITEM 13.8.8 TOP VIEW
SCALE 6" = 1'-0"



ITEM 13.8.8 SIDE VIEW
SCALE 6" = 1'-0"



ITEM 13.8.5
SCALE 3/4" = 1'-0"



ITEM 13.8.7 & 13.9
SCALE 6" = 1'-0"

UNLESS OTHERWISE STATED TOLERANCES:

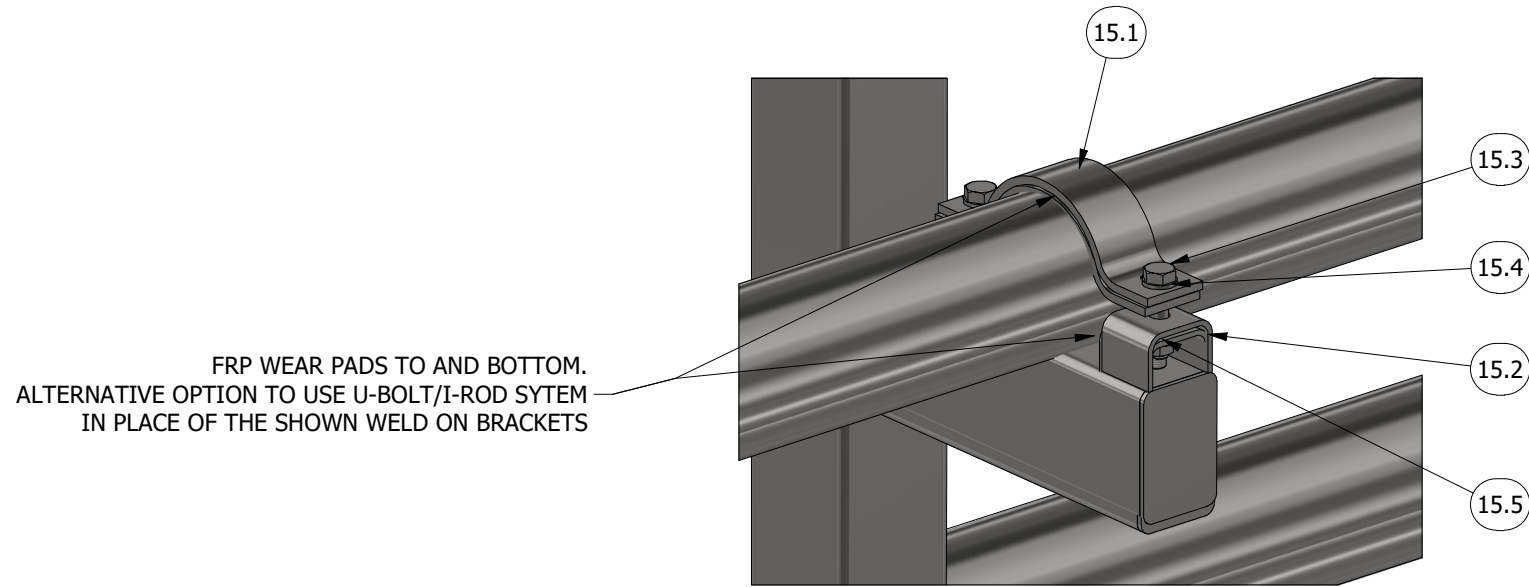
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ± 0.50°



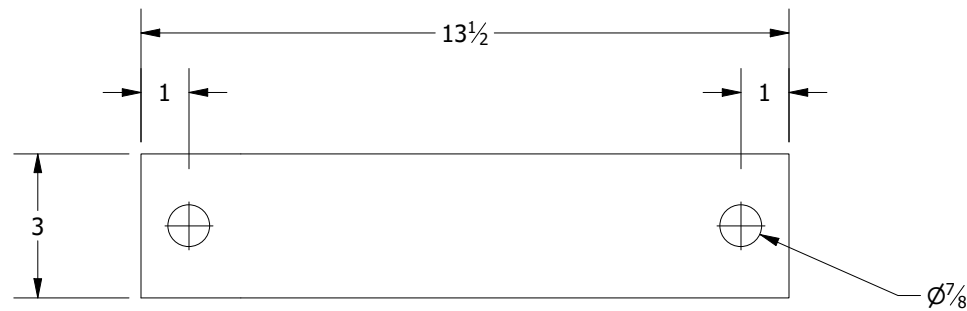
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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. MACHINE FINISH.

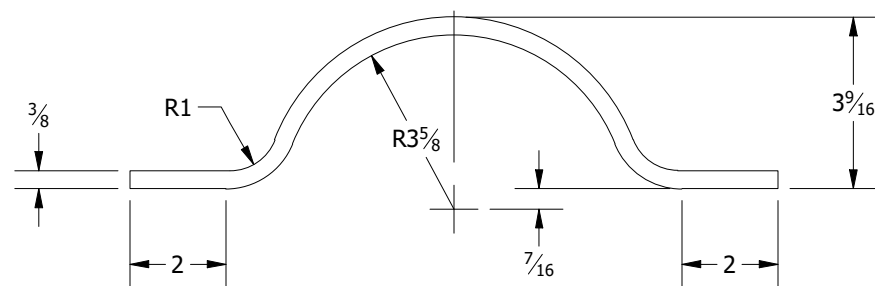
TITLE				
PIPELINE TRAINING FLOW LOOP SAFETY LADDER				
MATERIAL	SEE BOM	DRAWN BY	HB	DATE
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.
				11/5/2024
		CHECKED BY	DCK	APPROVED BY
				DCK
		REV.	5	SIZE
				B
				SHEET 24 OF 27



ITEM 15
SCALE 1 1/2" = 1'-0"



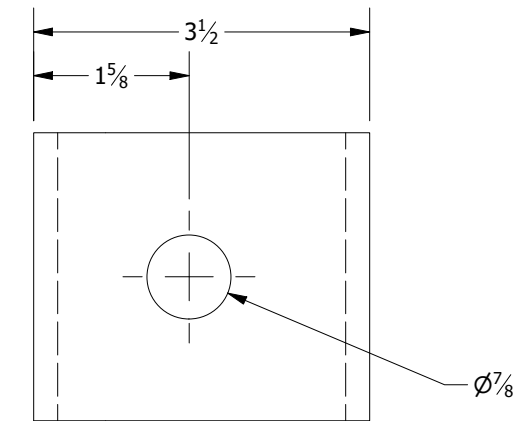
ITEM 15.1 TOP VIEW
SCALE 3" = 1'-0"



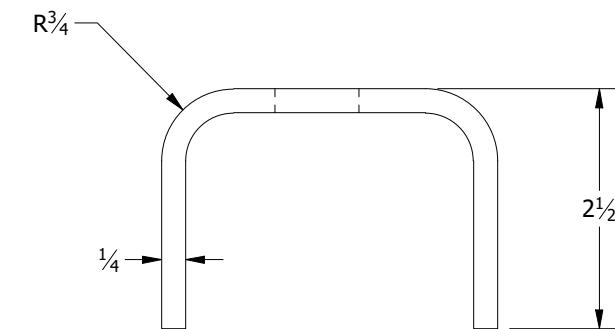
ITEM 15.1 SIDE VIEW
SCALE 3" = 1'-0"

BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
15.1	1	6" PIPE CLAMP	3/8 PLT	ASTM A36
15.2	2	PIPE CLAMP TIE DOWN	1/4 PLT	ASTM A36
15.3	2	HEX BOLT	Ø3/4-10 UNC (3-1/2)	GRADE 8 ZINC PLATED
15.4	2	FLAT WASHER	Ø3/4	ZINC PLATED STEEL
15.5	2	HEX NUT	Ø3/4-10 UNC	GRADE 8 ZINC PLATED
15.6	2	LOCK WASHER	Ø3/4	ZINC PLATED STEEL
15.7	1	FRP WEAR PAD LOWER	6 x 3 x 1/4	FRP
15.8	1	FRP WEAR PAD UPPER	9 x 3 x 1/4	FRP

*QTY'S ARE PER ASSEMBLY



ITEM 15.2 TOP VIEW
SCALE 6" = 1'-0"



ITEM 15.2 SIDE VIEW
SCALE 6" = 1'-0"

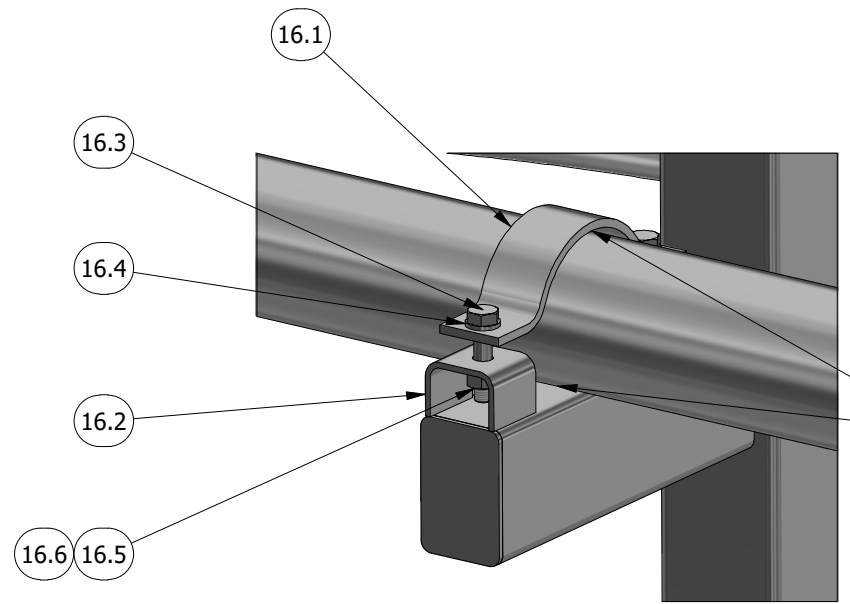
UNLESS OTHERWISE STATED TOLERANCES:	
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ± 0.50°



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1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. MACHINE FINISH.

TITLE					
PIPELINE TRAINING FLOW LOOP 6" PIPE CLAMP ASSEMBLY					
MATERIAL	SEE BOM	DRAWN BY	HB	DATE	11/5/2024
HEAT TREATMENT	N/A	CHECKED BY	DCK	APPROVED BY	DCK
SCALE	DNS	DWG NO.	STCC-01-A	REV.	5
				SHEET	25 OF 27

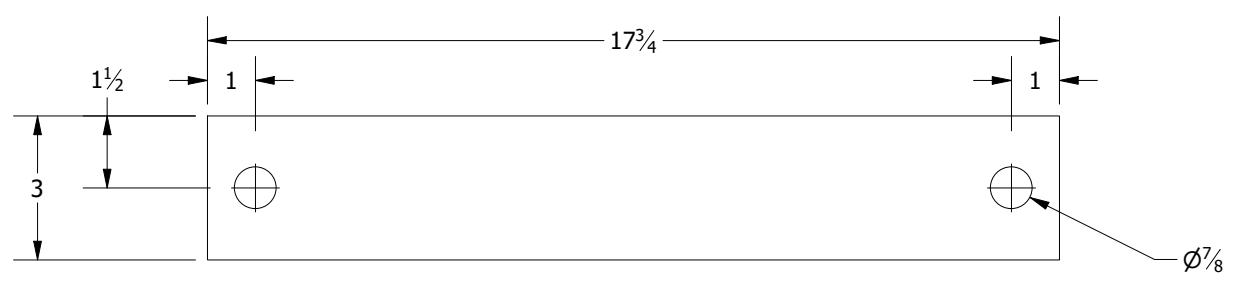


BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
16.1	1	10" PIPE CLAMP	3/8 PLT	ASTM A36
16.2	2	PIPE CLAMP TIE DOWN	1/4 PLT	ASTM A36
16.3	2	HEX BOLT	Ø3/4-10 UNC (4-1/2)	GRADE 8 ZINC PLATED
16.4	2	FLAT WASHER	Ø3/4	ZINC PLATED STEEL
16.5	2	HEX NUT	Ø3/4-10 UNC	GRADE 8 ZINC PLATED
16.6	2	LOCK WASHER	Ø3/4	ZINC PLATED STEEL
16.7	1	FRP WEAR PAD LOWER	10 x 3 x 1/4	FRP
16.8	1	FRP WEAR PAD UPPER	16 x 3 x 1/4	FRP

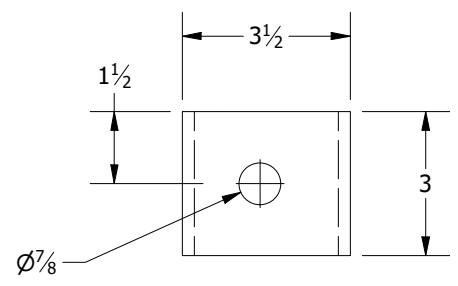
*QTY'S ARE PER ASSEMBLY

FRP WEAR PADS TOP AND BOTTOM.
ALTERNATIVE OPTION TO USE U-BOLT/I-ROD SYSTEM
IN PLACE OF THE SHOWN WELD ON BRACKETS

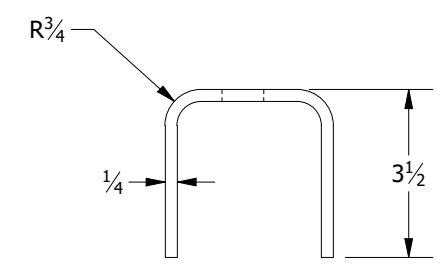
ITEM 16
SCALE 1 1/2" = 1'-0"



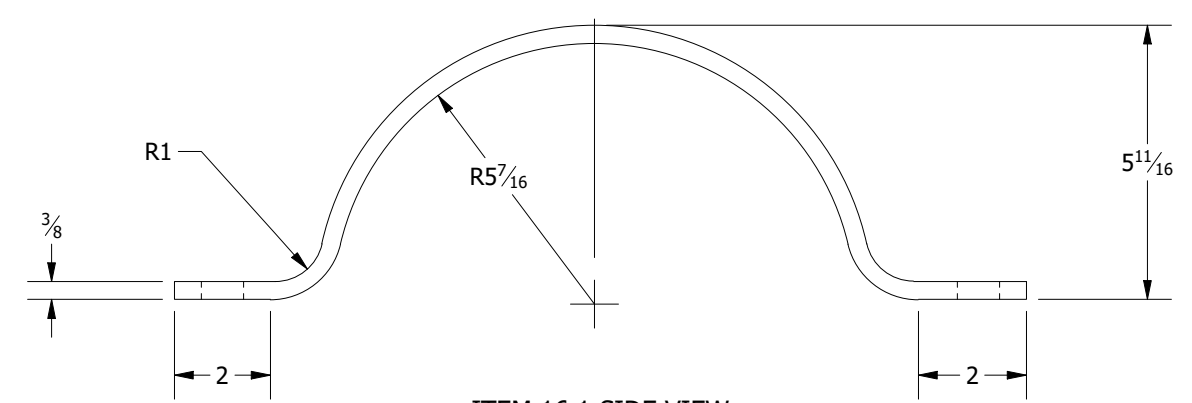
ITEM 16.1 TOP VIEW
SCALE 3" = 1'-0"



ITEM 16.2 TOP VIEW
SCALE 3" = 1'-0"



ITEM 16.2 SIDE VIEW
SCALE 3" = 1'-0"



ITEM 16.1 SIDE VIEW
SCALE 3" = 1'-0"

UNLESS OTHERWISE STATED
TOLERANCES:

FABRICATION	MACHINE
FRACTIONS =	.X ± .030
± 1/16"	.XX ± .015
ANGLES ± 3°	.XXX ± .005
	.XXXX ± .0010
	ANGLES ± 0.50°

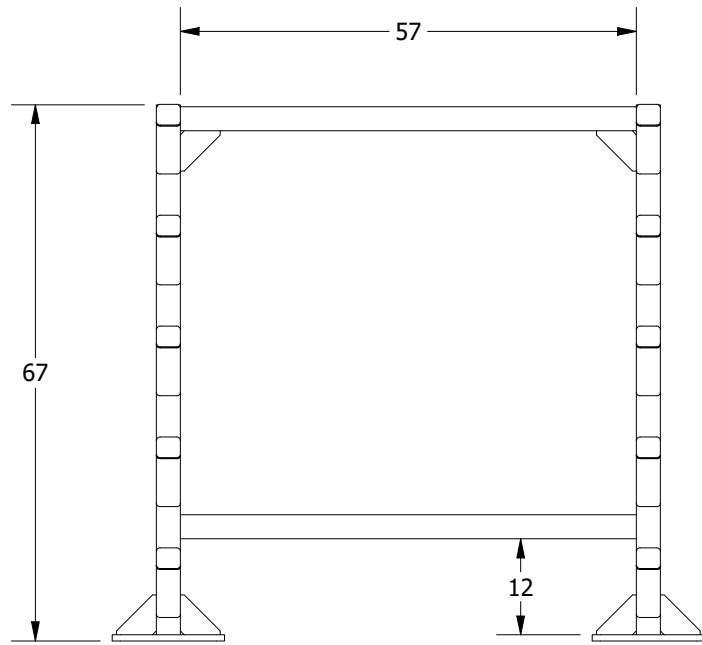


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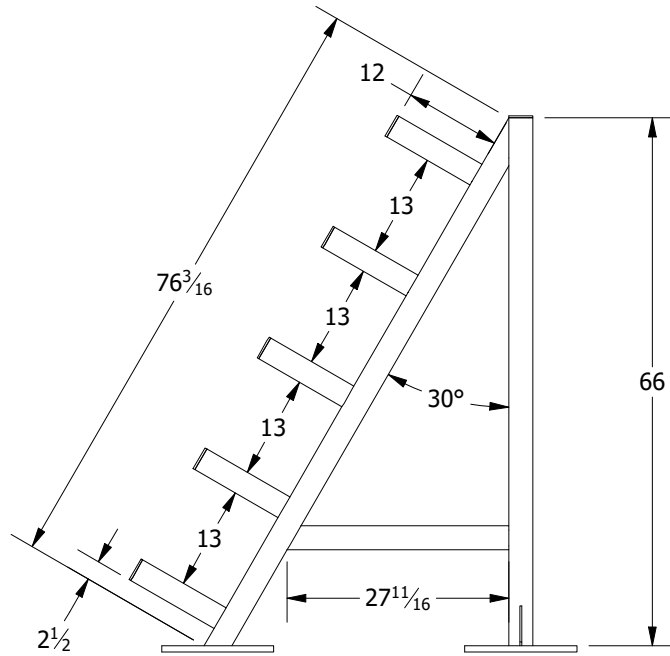
1. DIMENSIONS ARE IN INCHES.
2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. OUTSIDE CORNERS .015 X 45°
5. MACHINE FINISH.

MATERIAL	SEE BOM	DRAWN BY	HB	DATE	11/5/2024	CHECKED BY	DCK	APPROVED BY	DCK	SIZE	B
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.	STCC-01-A	REV.	5	SHEET 26 OF 27			

TITLE
**PIPELINE TRAINING FLOW LOOP
10" PIPE CLAMP ASSEMBLY**

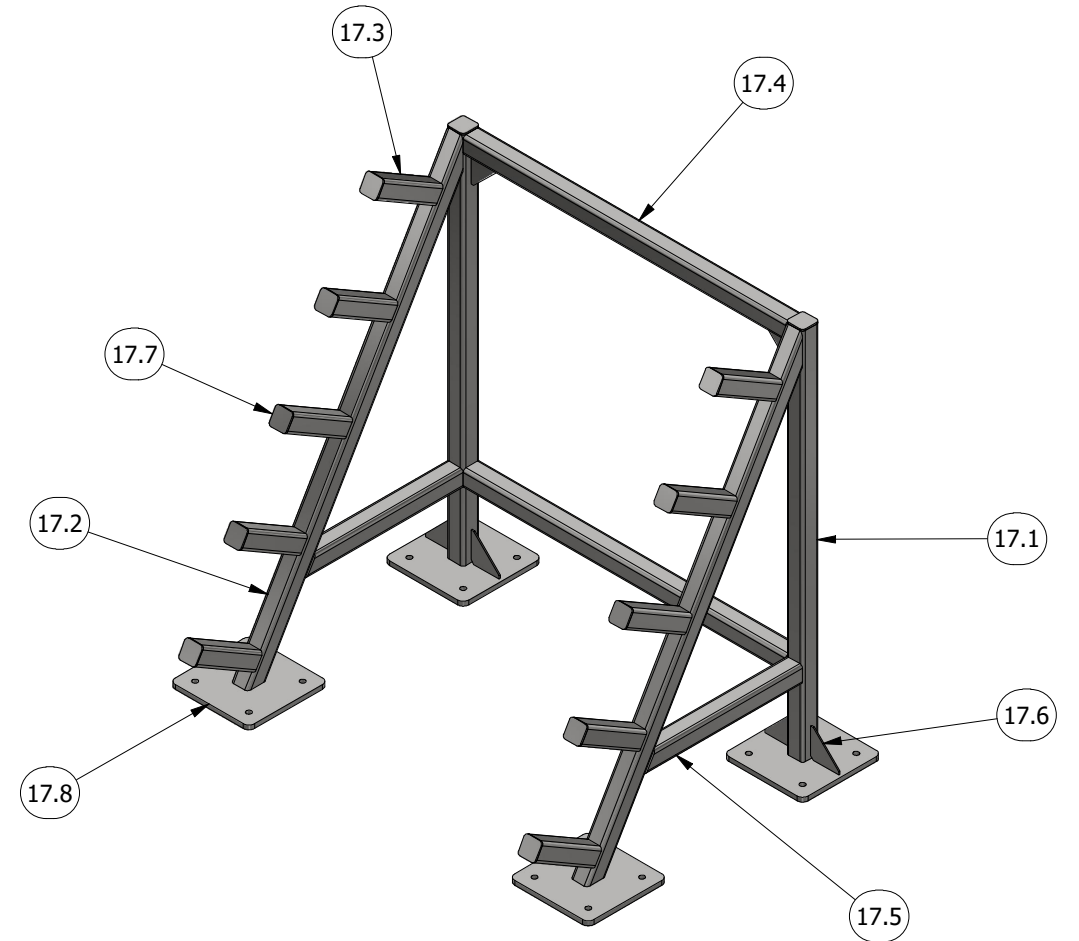


ITEM 17 FRONT VIEW
SCALE 1/2" = 1'-0"

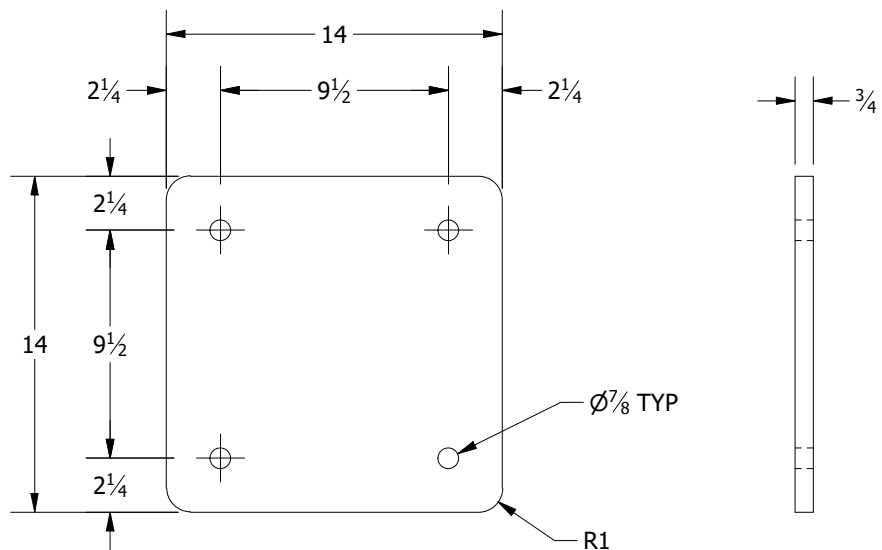


ITEM 17 SIDE VIEW
SCALE 1/2" = 1'-0"

ITEM 17 BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	SIZE (LENGTH)	MATERIAL
17.1	2	VERTICAL FRAME TUBE	3 x 3 x 1/4 (66)	ASTM A500 GRADE B
17.2	2	DIAGONAL FRAME TUBE	3 x 3 x 1/4 (76-3/16)	ASTM A500 GRADE B
17.3	10	PIPE SUPPORT	3 x 3 x 1/4 (12)	ASTM A500 GRADE B
17.4	2	HORIZONTAL BRACE (LONG)	3 x 3 x 1/4 (57)	ASTM A500 GRADE B
17.5	2	HORIZONTAL BRACE (SHORT)	3 x 3 x 1/4 (27-11/16)	ASTM A500 GRADE B
17.6	6	GUSSET	1/4 PLT (5 x 5)	ASTM A36
17.7	12	TUBING CAP	1/4 PLT (3 x 3)	ASTM A36
17.8	4	BASE PLT	3/4 PLT (14 x 14)	ASTM A36

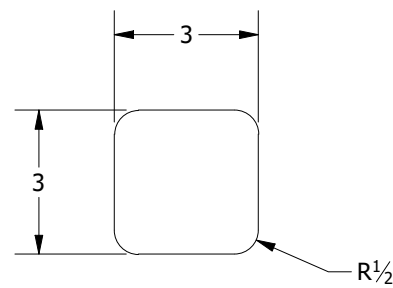


ITEM 17 ISOMETRIC VIEW

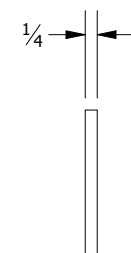


ITEM 17.8 FRONT VIEW
SCALE 1 1/2" = 1'-0"

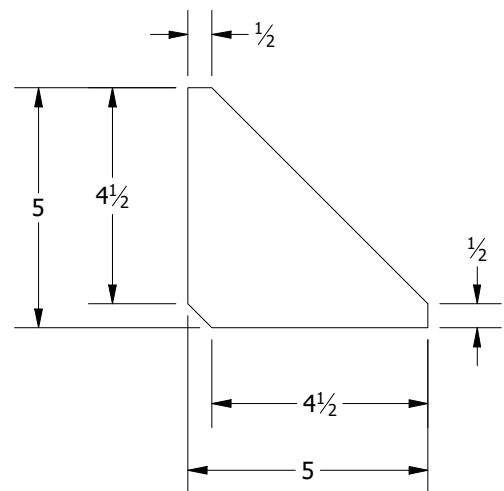
ITEM 17.8 SIDE VIEW
SCALE 1 1/2" = 1'-0"



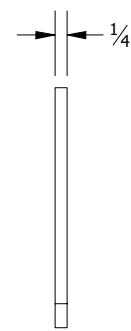
ITEM 17.7 FRONT VIEW
SCALE 3" = 1'-0"



ITEM 17.7 SIDE VIEW
SCALE 3" = 1'-0"



ITEM 17.6 FRONT VIEW
SCALE 3" = 1'-0"



ITEM 17.6 SIDE VIEW
SCALE 3" = 1'-0"

UNLESS OTHERWISE STATED TOLERANCES:	
FABRICATION	MACHINE
FRACTIONS =	.X ± .030
	± 1/16" .XX ± .015
	.XXX ± .005
ANGLES ± 3°	.XXXX ± .0010
	ANGLES ± 0.50°



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2. INTERPRET DIM. TOL. PER ASME Y14.5M-1994
3. REMOVE ALL BURRS AND SHARP CORNERS.
4. INSIDE CORNERS R.032
5. OUTSIDE CORNERS .015 X 45°
5. MACHINE FINISH.

TITLE					
PIPELINE TRAINING FLOW LOOP ANOMALY PIPE RACK					
MATERIAL	SEE BOM	DRAWN BY	HB	DATE	11/5/2024
HEAT TREATMENT	N/A	SCALE	DNS	DWG NO.	STCC-01-A
		CHECKED BY	DCK	APPROVED BY	DCK
		REV.	5	SHEET	27 OF 27