

EXHIBIT 1

TEMPORARY LICENSE AGREEMENT

MINNESOTA POWER, a division of ALLETE, Inc. hereinafter Licensor, insofar as it has the right so to do, hereby grants to the City of Duluth, hereinafter Licensee, authorization to access certain areas within Licensor's parking ramp, subject to the following provisions:

1. Licensee's access shall be limited to those locations as legally described and shown and labeled as the Easement Area on Exhibit A attached hereto and made a part hereof (the "Licensed Property").
2. Licensee through its employees and its agents, employees, contractors and invitees, (other than Licensee employees, each a "Subcontractor") with necessary equipment, may enter upon the parking ramp for the purpose of installing and maintaining Licensee's steam line(s) and manifold(s) (collectively, the "Utilities Apparatus") as shown in the construction plans attached as Exhibit B (the "Issued for Bid Drawings") within the Licensed Property. The installed Utilities Apparatus may remain on the Licensed Property throughout the term of this License Agreement.
3. Licensee's activities shall comply with the Issued for Bid Drawings. Based on Licensor's review of the Issued for Bid Drawings, Licensor will allow the Licensee to conduct the activities depicted on those plans. Licensee must submit to Licensor any modification which requires a change to the Issued for Bid Drawings that impacts the Licensed Property or Licensor's parking ramp, and such modification must be reviewed and acknowledged by Licensor prior to work commencing. Licensor's review and acknowledgement of any drawings, plans or other documents submitted to Licensor by Licensee, including the Issued for Bid Drawings (the "Documents") shall not be deemed approval or acceptance of the Documents themselves or the matters described therein. Review and acknowledgement by the Licensor of any Document shall not be considered an assumption of any responsibility, risk or liability by the Licensor.
4. Licensee shall give Licensor no less than 48 hours' notice of Licensee's access to the parking ramp.
5. Licensee assumes all risk of and agrees to indemnify, defend and hold Licensor harmless from any and all claims for injury or death to persons or damage to property caused by reason of Licensee's exercise of the rights herein granted; except to the extent such claims arise from the negligent or intentional acts or omissions of Licensor.
6. Licensor and Licensee intend to create a permanent utility easement in favor of Licensee over and across the Licensed Property (the "Utility Easement"). This License shall expire as of the date the Utility Easement becomes effective. This License is not revocable.
7. This agreement is not assignable by Licensee without the prior written consent of Licensor.

8. Licensee shall conduct activity upon the Licensed Property and Licensor's parking ramp, in a manner that will not interfere with Licensor's operations, the rights of Licensor in the use and enjoyment of Licensor's parking ramp, or endanger the safety of persons or property within the parking ramp.
9. Licensee shall conduct activities within Licensor's parking ramp in compliance with all applicable federal, state and local statutes, rules and regulation, and ordinances.
10. Licensee shall cause all members of its project team (including any Subcontractors) to fully comply with all Licensor mandated security and safety policies and procedures.
 - a. Licensee shall furnish and maintain all necessary safety equipment, such as barriers, signs, warning lights and other protective measures, to provide adequate protection of persons and property.
 - b. Licensee shall immediately notify Licensor of any claims presented against Licensee resulting from its operations under this agreement and the resolution of such claims.
 - c. Any spill, release, or threat of release of a hazardous substance shall be reported immediately to Licensor's Environmental Group at 218.355.3200. Licensor retains the right to manage any clean-up or other enforcement action resulting from the spill or release of a hazardous substance; provided that nothing herein, nor any action taken by Licensor hereunder, shall be deemed a waiver of Licensee's liability for any such spill or release.
 - d. When required by Licensor, Licensee and its Subcontractors, shall comply with all applicable provisions of Licensor's instructions and procedures pertaining to security, industrial safety, environmental compliance, emergency plans, and hazardous materials. Licensor shall provide Licensee with such instructions and procedures.
 - e. All Licensee employees and Subcontractors shall attend Licensor's orientation training and any site-specific training required by Licensor prior to being allowed access to the site.
 - f. Subcontractors whom Licensee intends to work on the Licensed Property shall not be granted access the Licensed Property unless approved by Licensor.
 - g. Licensee shall remove any individual or Subcontractor from the Licensed Property upon Licensor's reasonable request.
11. In the event that any judgment, lien or other encumbrance is placed upon or levied against the property interests of Licensor due to Licensee's activities, Licensee will at once cause the same to be dissolved and discharged by giving bond or otherwise
12. Notices pursuant to this agreement shall be sufficient if hand delivered or sent by regular United States mail, postage prepaid, addressed to Minnesota Power, ATTN: Real Estate Services, 30 West Superior Street, Duluth, MN 55802, and to City of Duluth, Attn: Property and Facilities Manager, 1532 W. Michigan Street, Duluth, MN 55806, or to such other persons or addresses as the Parties may designate to each other in writing from time to time.

13. If, for any reason, Licensee shall not keep and perform any of the covenants and agreements contained herein, and should Licenses fail to correct the condition violated within 30 days after receiving written notice to do so from Licensor, the rights granted herein shall thereafter automatically terminate without further act by licensor and Licensee shall surrender the Licensed property to licensor in substantially its original condition.

Date: _____

Date: _____

Licensor
MINNESOTA POWER
a division of ALLETE, Inc.

Licensee
CITY OF DULUTH

By: _____

By: _____

Its _____

Its Mayor

ATTEST:

City Clerk

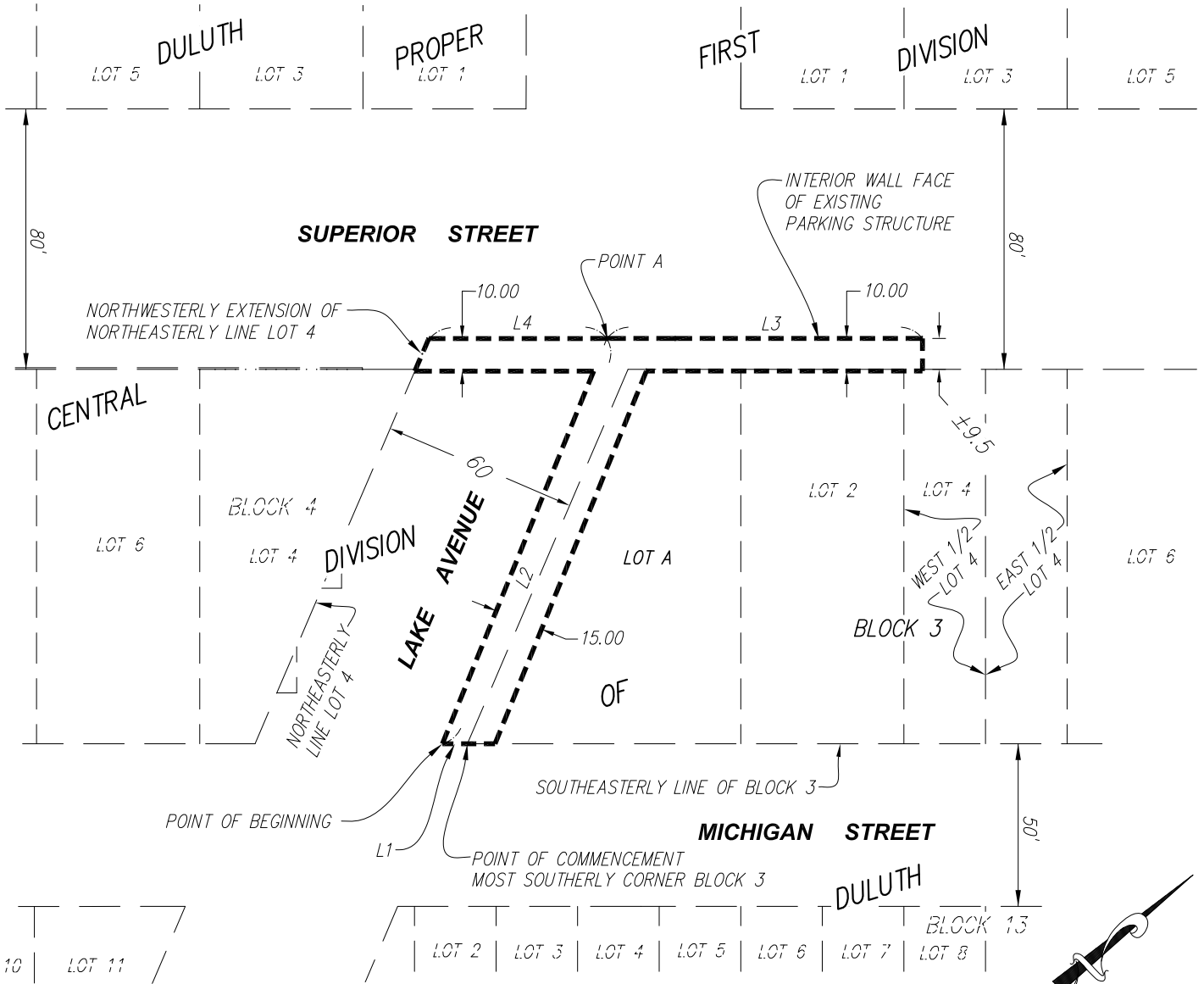
COUNTERSIGNED:

City Auditor

APPROVED AS TO FORM:

City Attorney

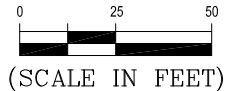
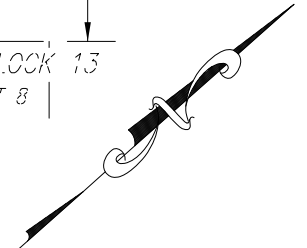
EXHIBIT A



LINE TABLE		
LINE	BEARING	LENGTH
L1	S41°37'41"W	7.70
L2	N26°16'30"W	134.40
L3	N41°36'49"E	97.00
L4	S41°36'49"W	54.74

= EASEMENT AREA

APPROVED BY: _____
CITY ENGINEER



Basis of Bearing is Grid North,
St. Louis County Transverse
Mercator 96 Coordinate System.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Print Name: Paul A. Vogel License # 44075

Signature: Date: 08/14/2019

DATE PREPARED: 08/14/19
PROJ NO: 160479
FILE: 190597vEXHIB
SHEET 1 of 2 SHEETS

**PERFORMANCE
DRIVEN DESIGN.**

LHBcorp.com

21 W. Superior St., Ste. 500 | Duluth, MN 55802 | 218.727.8446

DESCRIPTION :

THOSE PARTS OF LOT A, BLOCK 3 AND LAKE AVENUE, CENTRAL DIVISION OF DULUTH AND THAT PART OF SUPERIOR STREET, DULUTH PROPER FIRST DIVISION LYING BETWEEN TWO LINES 0.00 FEET AND 15.00 FEET NORTHEASTERLY OF AND PARALLEL WITH THE FOLLOWING DESCRIBED LINE:

COMMENCING AT THE MOST SOUTHERLY CORNER OF SAID BLOCK 3, THENCE SOUTH 41 DEGREES 37 MINUTES 41 SECONDS WEST ALONG THE SOUTHWESTERLY EXTENSION OF THE SOUTHEASTERLY LINE OF SAID BLOCK 3, A DISTANCE OF 7.70 FEET TO THE POINT OF BEGINNING OF THE LINE TO BE DESCRIBED; THENCE NORTH 26 DEGREES 16 MINUTES 30 SECONDS WEST, A DISTANCE OF 134.40 FEET TO THE INTERIOR WALL FACE OF EXISTING PARKING STRUCTURE, BEING A POINT HEREINAFTER REFERRED TO AS POINT "A" AND SAID LINE THERE TERMINATING.

THE SOUTHEASTERLY SIDELINE EXTENDING TO SAID SOUTHEASTERLY LINE OF BLOCK 3, CENTRAL DIVISION OF DULUTH.

AND

THOSE PARTS OF LOT A, LOT 2 AND THE WEST ONE-HALF OF LOT 4, ALL IN BLOCK 3 AND LAKE AVENUE, CENTRAL DIVISION OF DULUTH AND THAT PART OF SUPERIOR STREET, DULUTH PROPER FIRST DIVISION LYING BETWEEN TWO LINES 0.00 AND 10.00 FEET SOUTHEASTERLY OF AND PARALLEL WITH THE FOLLOWING DESCRIBED LINE:

BEGINNING AT THE AFOREMENTIONED POINT "A"; THENCE NORTH 41 DEGREES 36 MINUTES 49 SECONDS EAST ALONG THE INTERIOR WALL FACE OF EXISTING PARKING STRUCTURE, A DISTANCE OF 97.00 FEET AND SAID LINE THERE TERMINATING.

AND

THAT PART OF LAKE AVENUE, CENTRAL DIVISION OF DULUTH AND THAT PART OF SUPERIOR STREET, DULUTH PROPER FIRST DIVISION LYING BETWEEN TWO LINES 0.00 AND 10.00 FEET SOUTHEASTERLY OF AND PARALLEL WITH THE FOLLOWING DESCRIBED LINE:

BEGINNING AT THE AFOREMENTIONED POINT "A"; THENCE SOUTH 41 DEGREES 36 MINUTES 49 SECONDS WEST ALONG THE INTERIOR WALL FACE OF EXISTING PARKING STRUCTURE, A DISTANCE OF 54.74 FEET TO THE NORTHWESTERLY EXTENSION OF THE NORTHEASTERLY LINE OF LOT 4, BLOCK 4, CENTRAL DIVISION OF DULUTH.

THE SOUTHEASTERLY SIDELINE EXTENDING TO SAID NORTHEASTERLY LINE OF LOT 4, BLOCK 4, CENTRAL DIVISION OF DULUTH.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Print Name: Paul A. Vogel

License # 44075

Signature: 

Date: 08/14/2019

DATE PREPARED: 08/14/19

PROJ NO: 190597

FILE: 190597vEXHIB

SHEET 2 of 2 SHEETS



**PERFORMANCE
DRIVEN DESIGN.**

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EXHIBIT B



21 W. Superior St., Ste. 500 | Duluth, MN 55802 | 218.727.8446

CLIENT:
DULUTH ENERGY SYSTEMS

**ONE LAKE PLACE DRIVE
DULUTH, MN 55802**

THIS SQUARE APPEARS 1/2" x 1/2" ON FULL SIZE SHEETS.

B	07/15/19	BID
A	02/22/19	REVIEW
NO	DATE	ISSUED FOR

NO	DATE	REVISION
----	------	----------

I HEREBY CERTIFY that this specification or report was prepared under my direct supervision and I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

ISSUED FOR BID
NOT FOR CONSTRUCTION

DATE: _____ PROJECT NO.: 50402

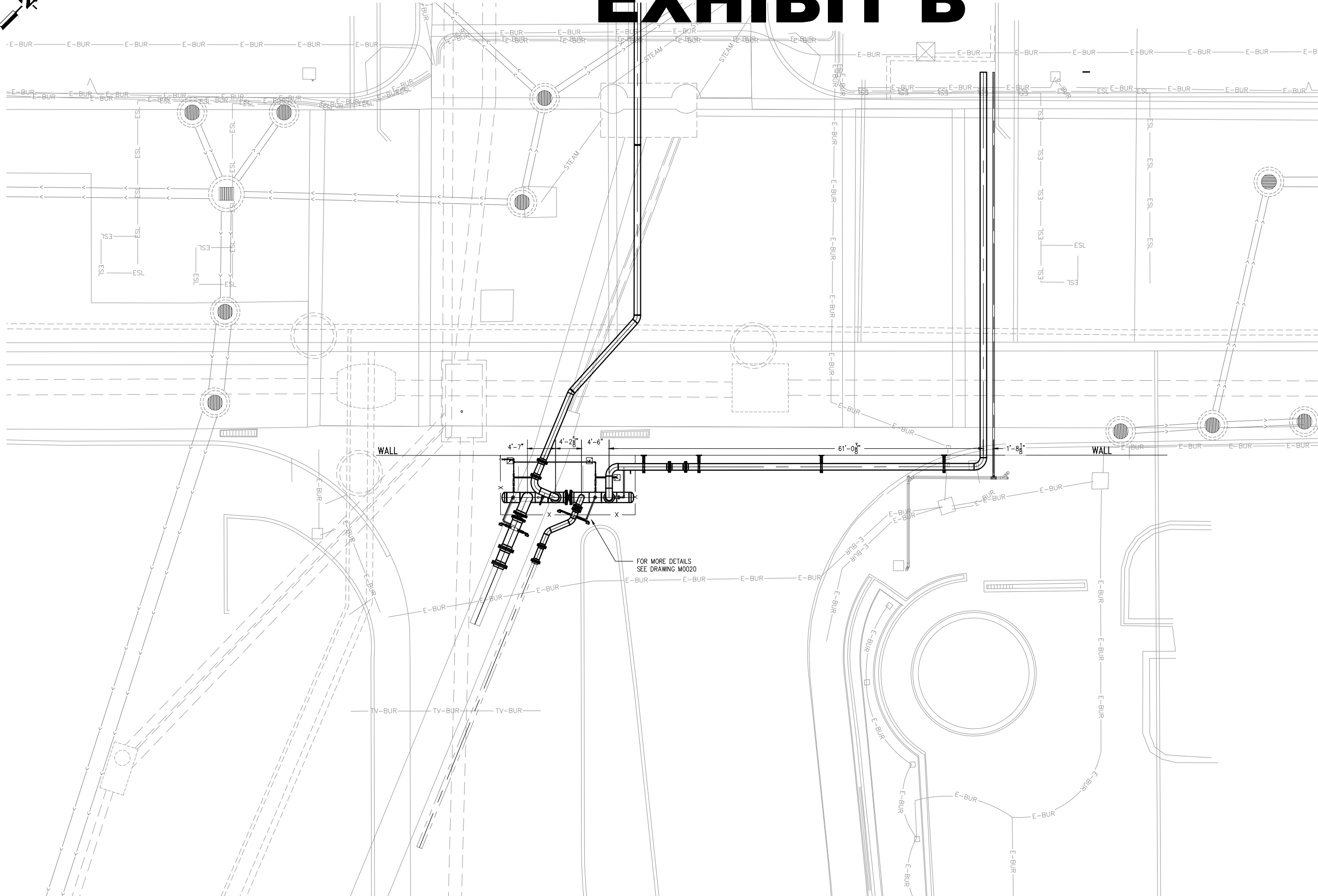
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PROJECT NAME:

DRAWING TITLE:
**SUPERIOR PLAZA
STEAM MANIFOLD
LOCATION PLAN**

FILE: ..1160607600 Drawings\PI2019-07-15 IFB\I0010.dwg
DRAWN BY:
CHECKED BY:
PROJ. NO: 160607
DRAWING NO:

M0010



PLAN VIEW
1/8" = 1'-0"



NOTES:
 1. FOR PIPE SUPPORT DETAILS SEE SHEET M0040

CLIENT:
**DULUTH ENERGY
 SYSTEMS**

ONE LAKE PLACE DRIVE
 DULUTH, MN 55802

THIS SQUARE APPEARS 1/2" x 1/2" ON
 FULL SIZE SHEETS.

NO	DATE	REVISION
B	07/15/19	BID
A	02/22/19	REVIEW
NO	DATE	ISSUED FOR

NO	DATE	REVISION

I HEREBY CERTIFY that this specification or report was prepared under my direct supervision by a duly Licensed Professional Engineer in the State of Minnesota in accordance with the laws of the State of Minnesota.

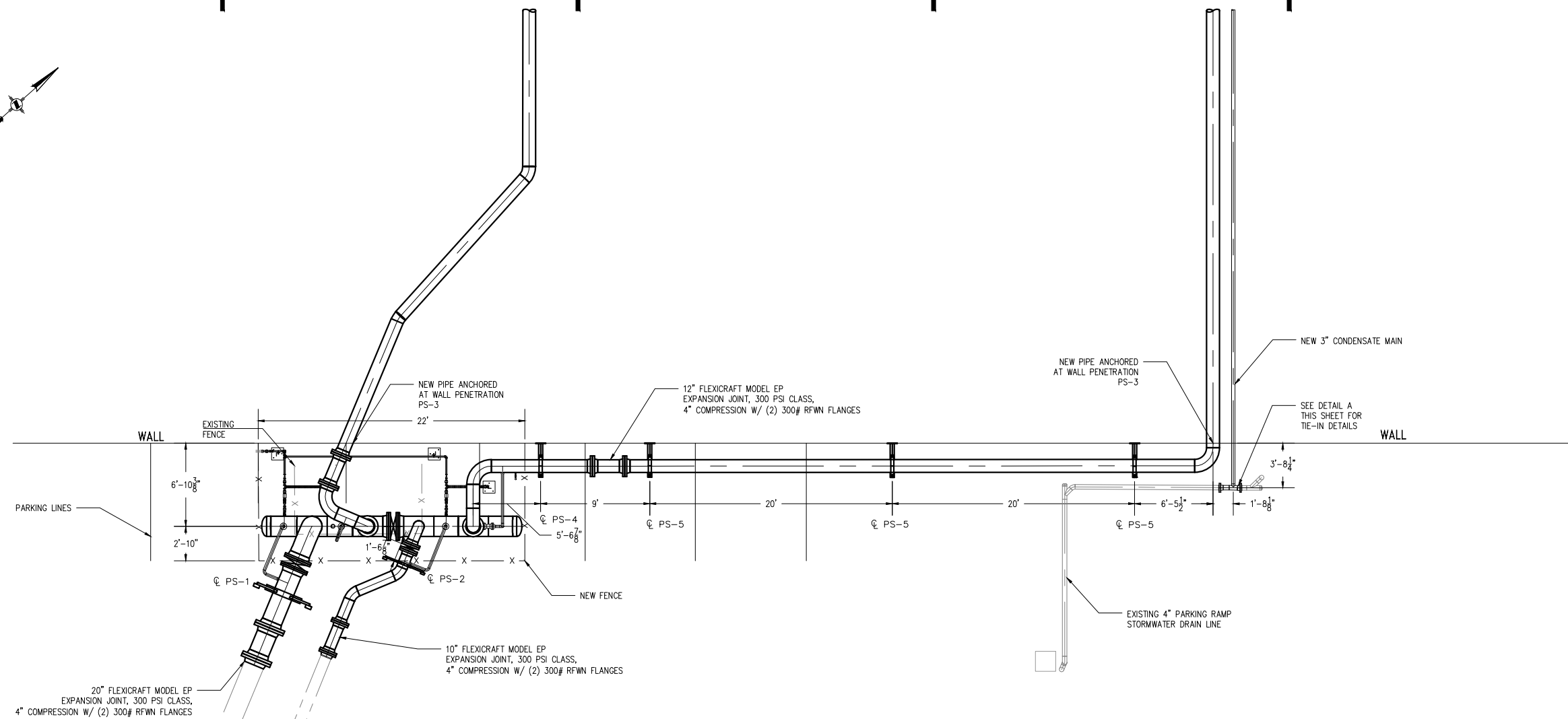
**ISSUED FOR
 BID
 NOT FOR CONSTRUCTION**

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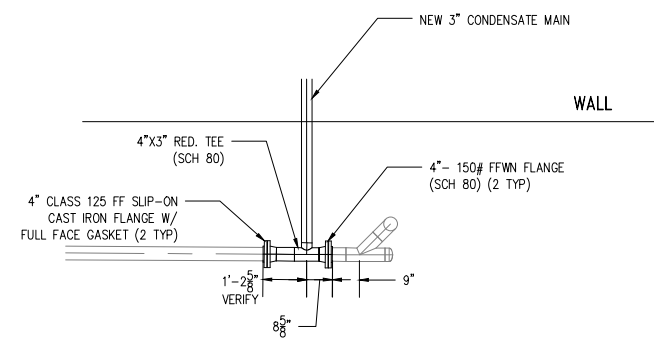
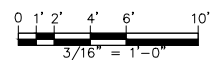
PROJECT NAME:

DRAWING TITLE:
**SUPERIOR PLAZA
 STEAM MANIFOLD
 PIPING PLAN**

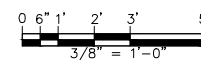
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 DRAWN BY:
 CHECKED BY:
 PROJ. NO: 160607
 DRAWING NO: **M0020**



PLAN VIEW
 $\frac{3}{16}'' = 1'-0''$



DETAIL A
 $\frac{3}{8}'' = 1'-0''$





CLIENT:
**DULUTH ENERGY
 SYSTEMS**

**ONE LAKE PLACE DRIVE
 DULUTH, MN 55802**

THIS SQUARE APPEARS 1/2" x 1/2" ON
 FULL SIZE SHEETS.

NO	DATE	ISSUED FOR
A	07/15/19	BID

NO	DATE	REVISION
----	------	----------

I HEREBY CERTIFY that this specification or report was prepared under my direct supervision and I am a duly Licensed Professional Engineer in the State of Minnesota.

**ISSUED FOR
 BID
 NOT FOR CONSTRUCTION**

DATE: 07/15/19
 PROJECT NO: 160607

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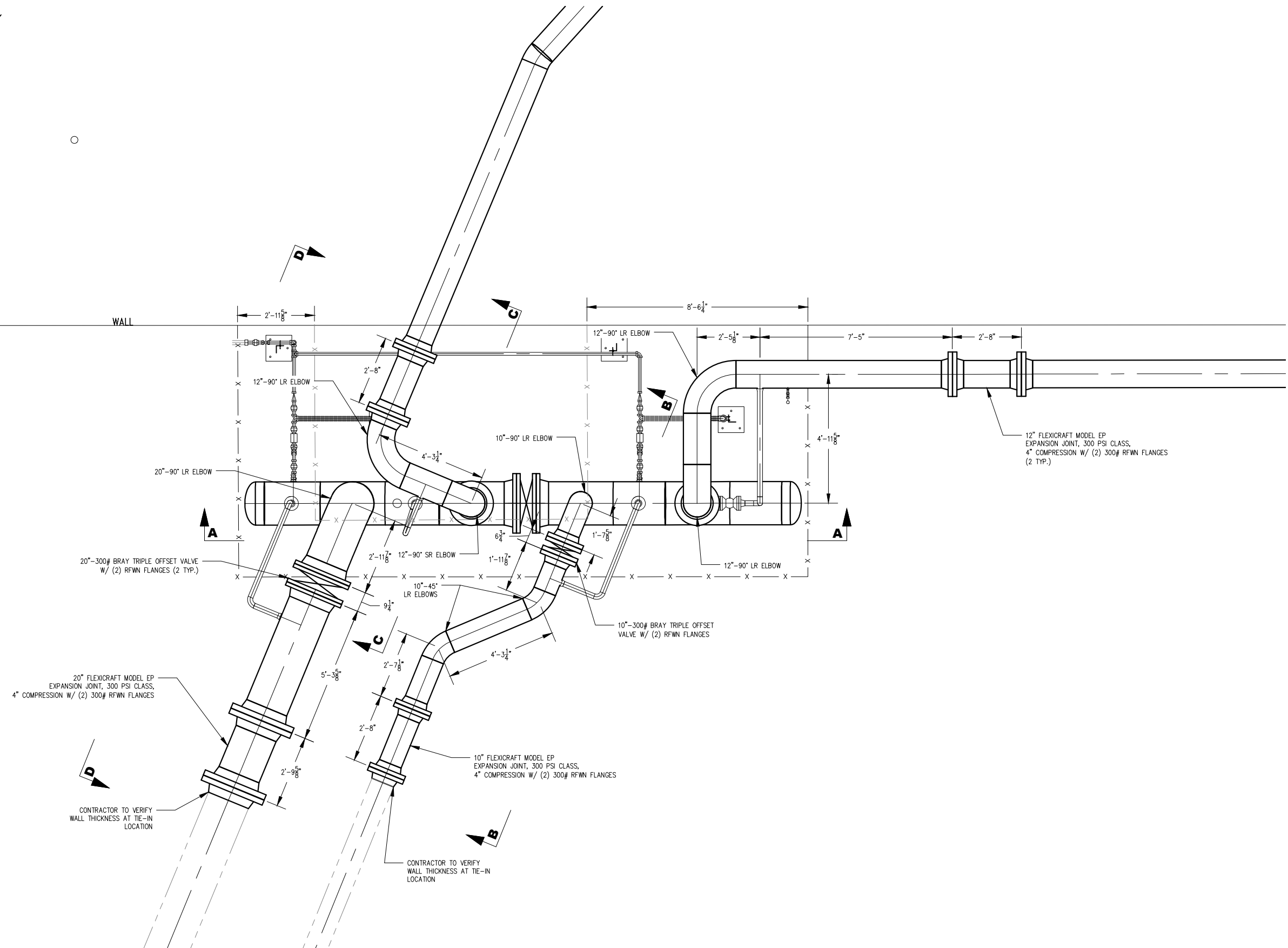
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DRAWING TITLE:
**SUPERIOR PLAZA
 STEAM MANIFOLD
 PIPING DETAILS**

FILE: ..1160607600 Drawings\PI\2019-07-15 IFB\M0025.dwg

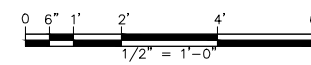
DRAWN BY:
 CHECKED BY:
 PROJ. NO: 160607
 DRAWING NO:

M0025



PLAN VIEW

1/2" = 1'-0"





CLIENT:
**DULUTH ENERGY
 SYSTEMS**

**ONE LAKE PLACE DRIVE
 DULUTH, MN 55802**

THIS SQUARE APPEARS 1/2" x 1/2" ON
 FULL SIZE SHEETS.

A	07/15/19	BID
NO	DATE	ISSUED FOR

NO	DATE	REVISION
----	------	----------

I HEREBY CERTIFY that this specification or report was prepared under my direct supervision and I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

**ISSUED FOR
 BID
 NOT FOR CONSTRUCTION**

DATE: _____

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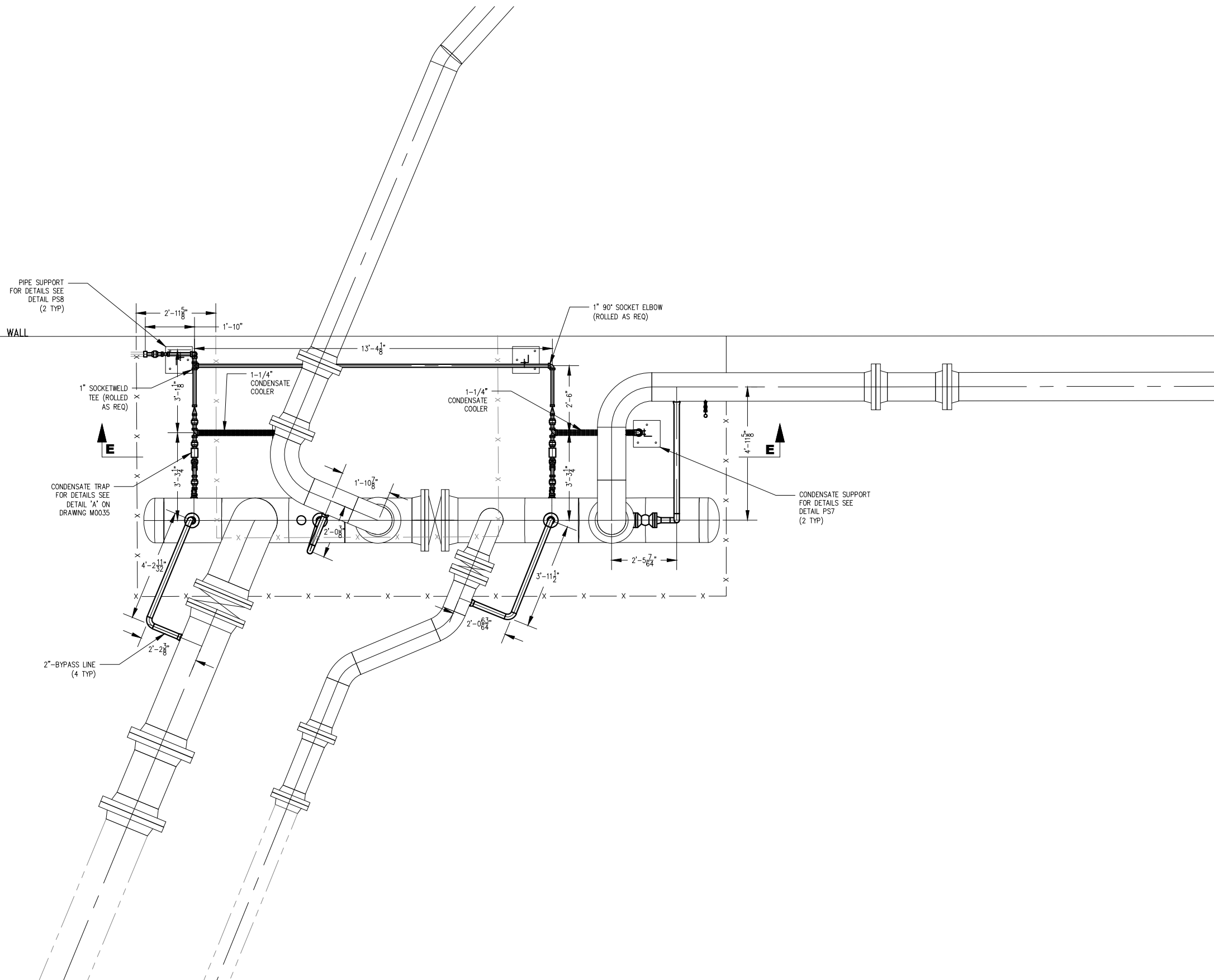
PROJECT NAME:

DRAWING TITLE:
**SUPERIOR PLAZA
 STEAM MANIFOLD
 SMALL DIAMETER
 PIPING DETAILS**

FILE: ..1160907600 Drawings\PI\2019-07-15 IFS\M0027.dwg

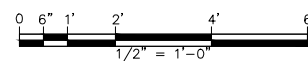
DRAWN BY:
 CHECKED BY:
 PROJ. NO: 160907
 DRAWING NO:

M0027



PLAN VIEW

1/2" = 1'-0"



NOTES:
 1. FOR PIPE SUPPORT DETAILS SEE SHEET M0040
 2. MANIFOLD HEADER IS TO BE SLOPED A MINIMUM OF 2% TO THE WEST.

CLIENT:
**DULUTH ENERGY
 SYSTEMS**

ONE LAKE PLACE DRIVE
 DULUTH, MN 55802

THIS SQUARE APPEARS 1/2" x 1/2" ON
 FULL SIZE SHEETS.

NO	DATE	REVISION
B	07/15/19	BID
A	02/22/19	REVIEW
NO	DATE	ISSUED FOR

NO DATE REVISION

I HEREBY CERTIFY that this specification or report was prepared under my direct supervision and I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
**ISSUED FOR
 BID
 NOT FOR CONSTRUCTION**
 DATE: 02/22/19
 NO.: 50402

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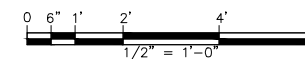
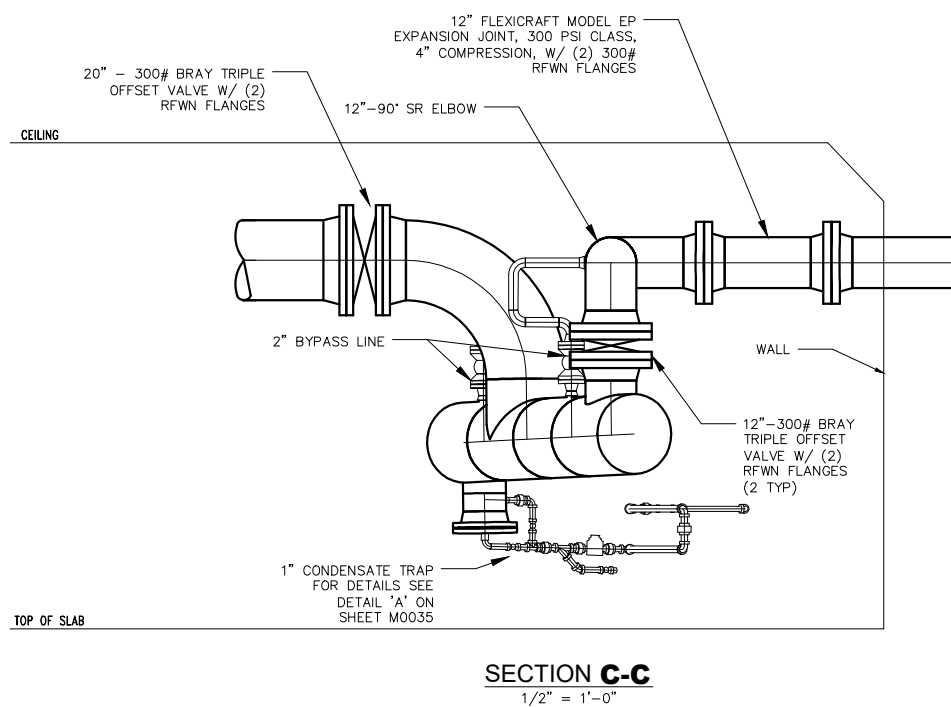
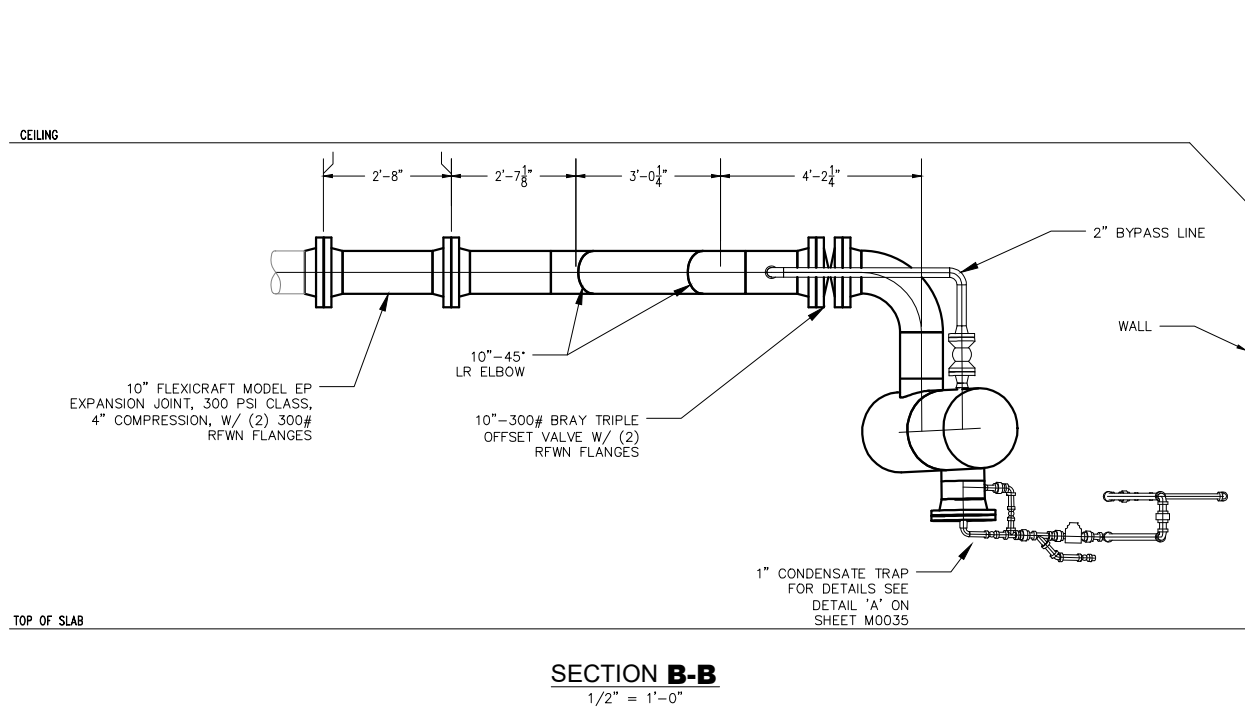
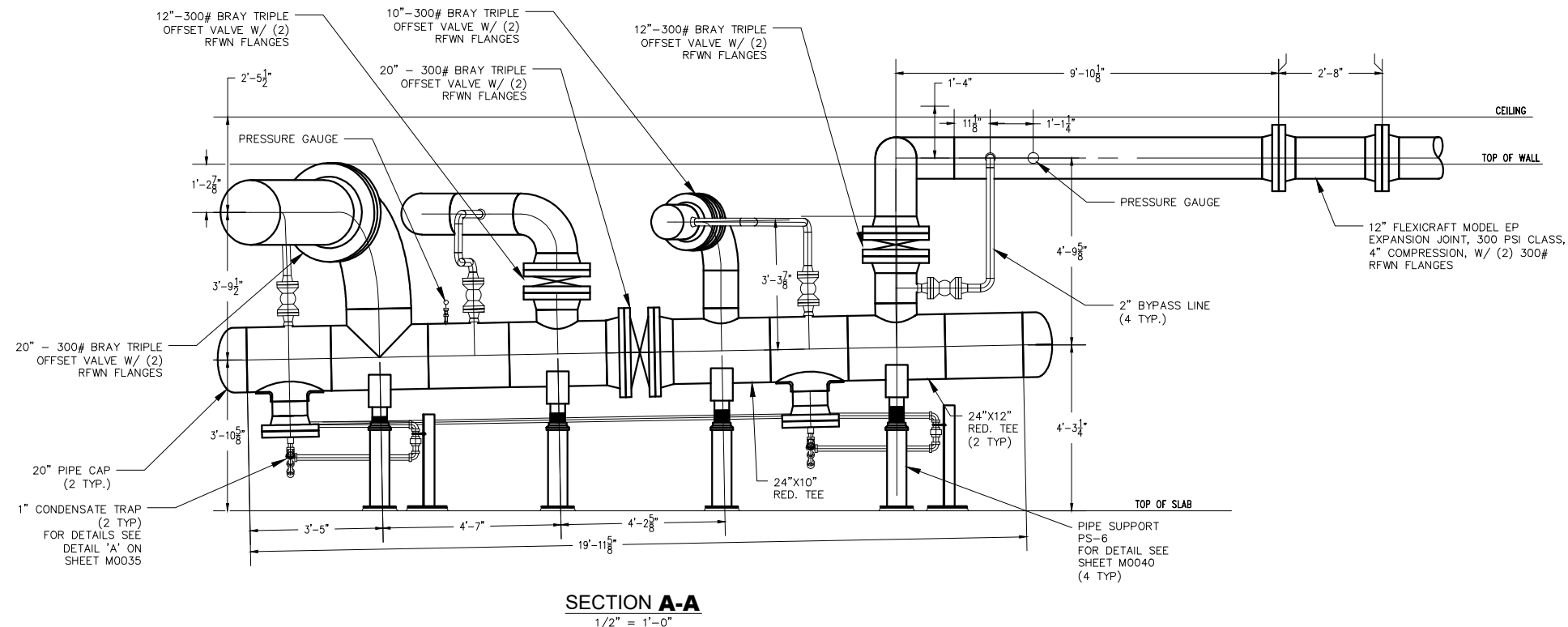
PROJECT NAME:

DRAWING TITLE:
**SUPERIOR PLAZA
 STEAM MANIFOLD
 SECTIONS**

FILE: ..1160607600 Drawings\IP2019-07-15 IFS\M0030.dwg

DRAWN BY:
 CHECKED BY:
 PROJ. NO: 160607
 DRAWING NO:

M0030



NOTES:
 1. FOR PIPE SUPPORT DETAILS SEE SHEET M0040

CLIENT:
**DULUTH ENERGY
 SYSTEMS**

ONE LAKE PLACE DRIVE
 DULUTH, MN 55802

THIS SQUARE APPEARS 1/2" x 1/2" ON
 FULL SIZE SHEETS.

NO	DATE	REVISION
A	07/15/19	BID
NO	DATE	ISSUED FOR

NO	DATE	REVISION

I HEREBY CERTIFY that this specification or report was prepared under my direct supervision and I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

**ISSUED FOR
 BID
 NOT FOR CONSTRUCTION**

DATE: 07/15/19
 PROJECT NO.: 50402

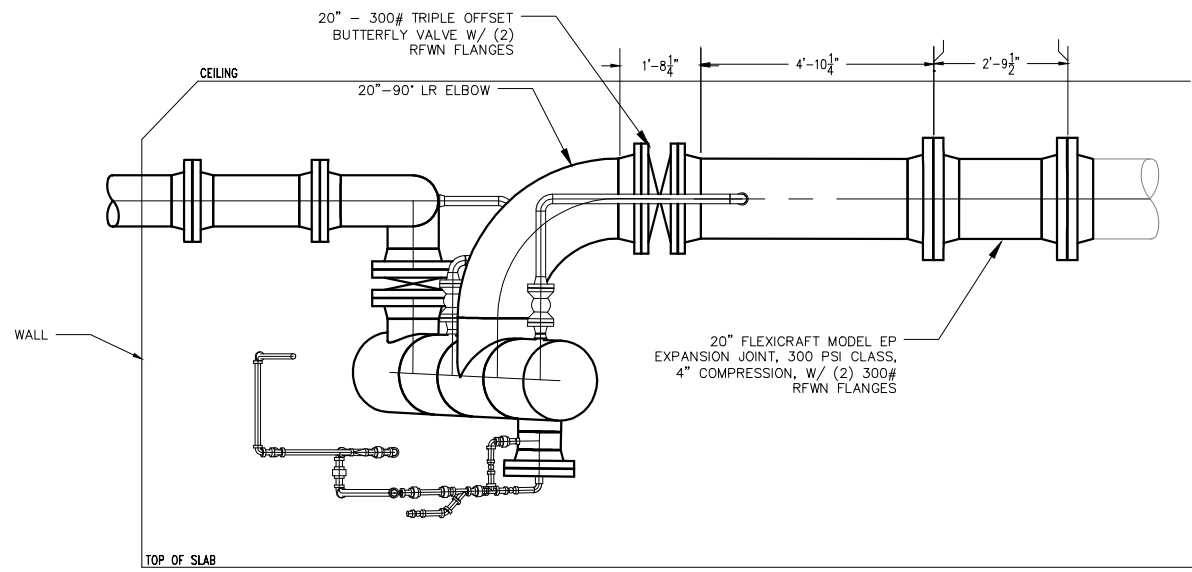
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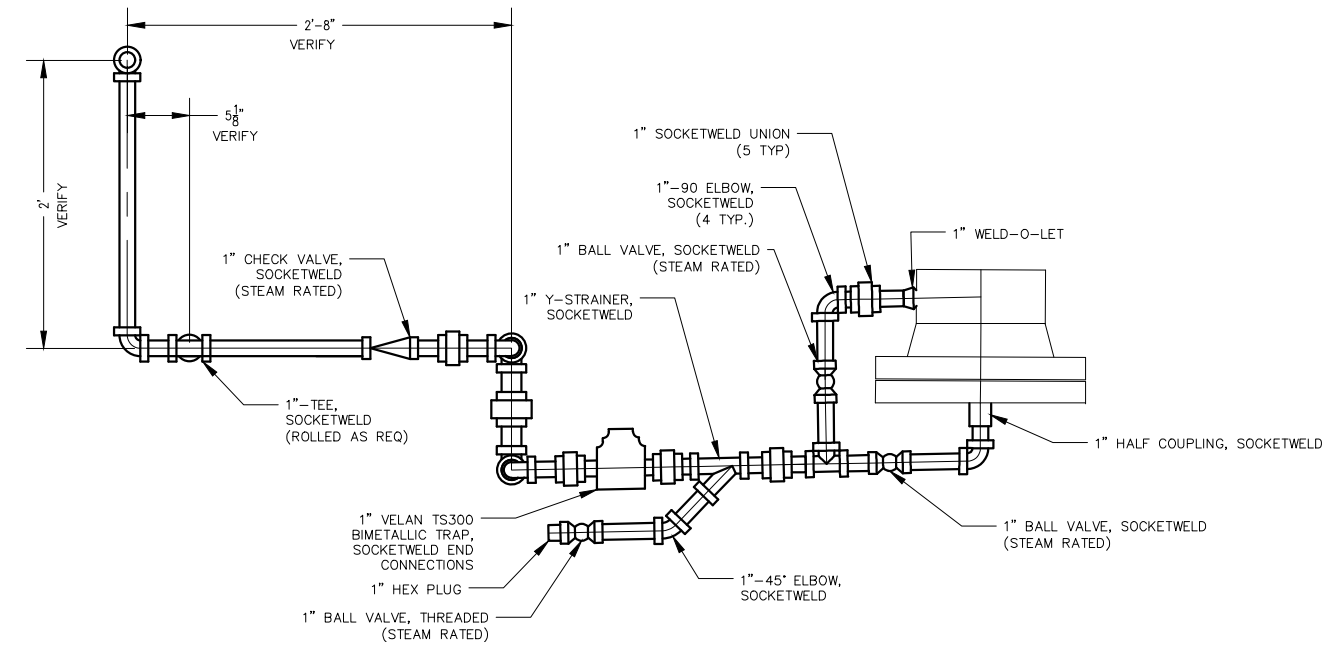
DRAWING TITLE:
**SUPERIOR PLAZA
 STEAM MANIFOLD
 SECTIONS**

FILE: ...1160607600 Drawings\IP2019-07-15 IFBM0035.dwg
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 CHECKED BY:
 PROJ. NO: 160607
 DRAWING NO:

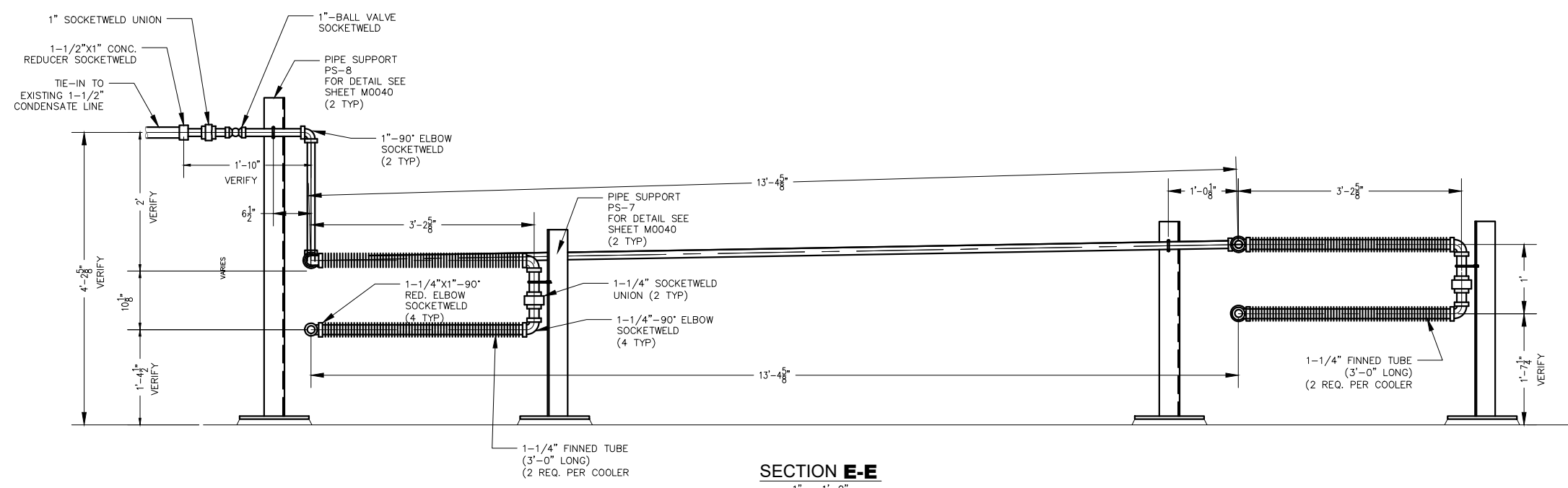
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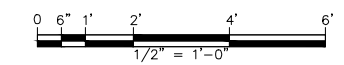
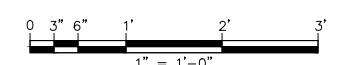
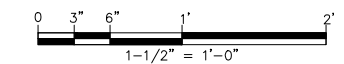
SECTION D-D
 1/2" = 1'-0"



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



SECTION E-E
 1" = 1'-0"





PERFORMANCE
DRIVEN DESIGN.
LHBgroup.com

21 W. Superior St., Ste. 500 | Duluth, MN 55802 | 218.727.8446

NOTES:
1. ALL NEW STRUCTURAL STEEL TO BE HOT-DIPPED GALVANIZED POST WELDING.
2. CONTRACTOR TO FIELD VERIFY ALL SUPPORT DIMENSIONS PRIOR TO FABRICATION.

CLIENT:
DULUTH ENERGY SYSTEMS

ONE LAKE PLACE DRIVE
DULUTH, MN 55802

THIS SQUARE APPEARS 1/2" x 1/2" ON FULL SIZE SHEETS.

NO	DATE	ISSUED FOR
B	07/15/19	BID
A	02/22/19	REVIEW
NO		

NO	DATE	REVISION

I HEREBY CERTIFY that this specification or report was prepared under my direct supervision and I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

ISSUED FOR BID

NOT FOR CONSTRUCTION

DATE: 07/15/19
PROJECT NO.: 50402

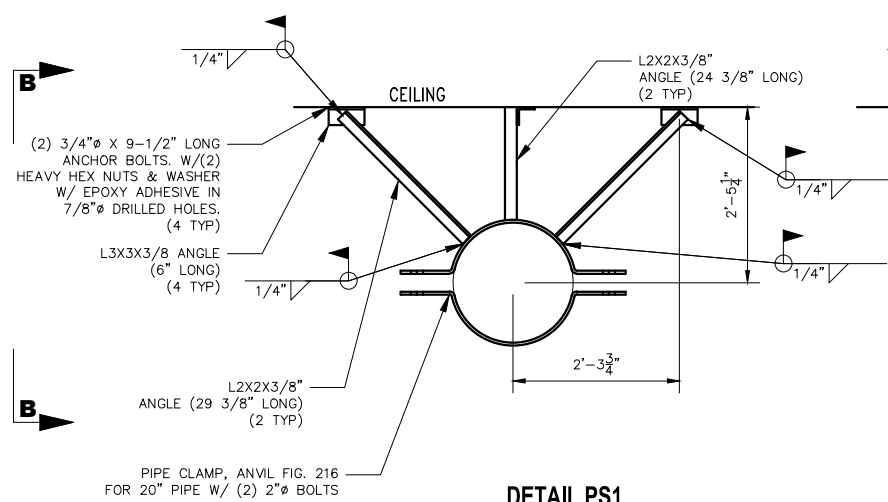
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PROJECT NAME:

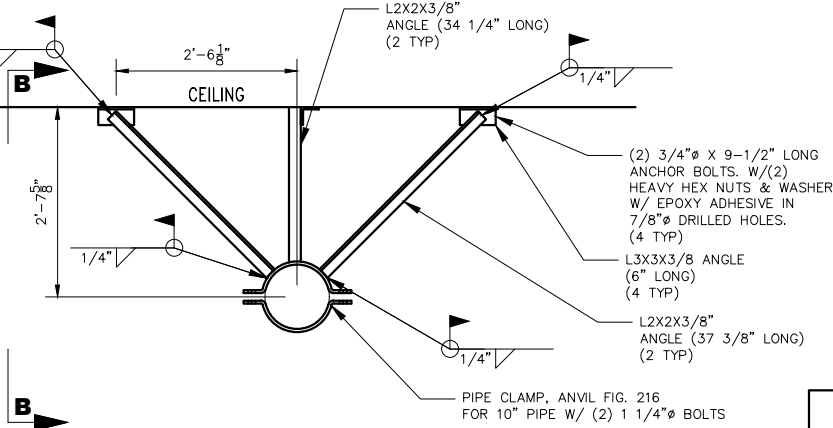
DRAWING TITLE:
SUPERIOR PLAZA STEAM MANIFOLD SUPPORT DETAILS SHEET 1

FILE: ..1160807600 Drawings\IP2019-07-15\IFB\M0040.dwg
DRAWN BY: AJF
CHECKED BY: BES
PROJ. NO: 160607
DRAWING NO:

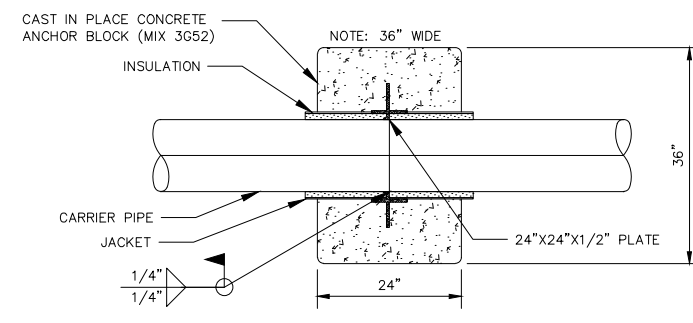
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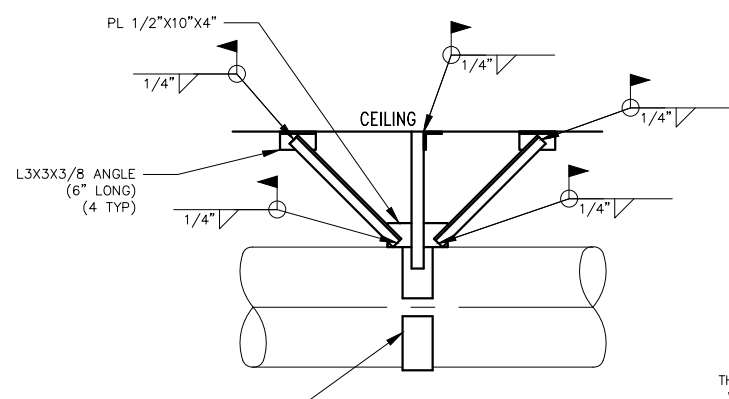
DETAIL PS1
3/4"=1'-0"



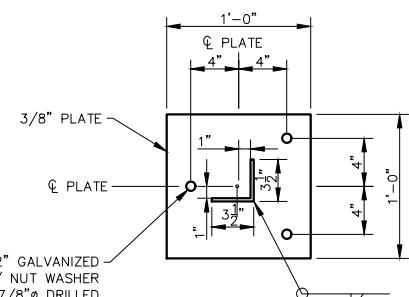
DETAIL PS2
3/4"=1'-0"



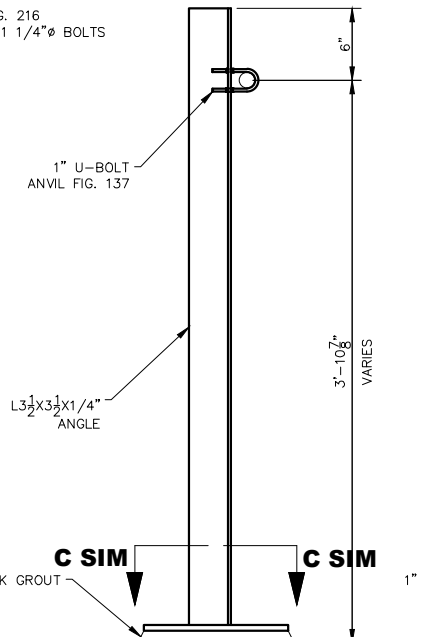
DETAIL PS3
3/4"=1'-0"



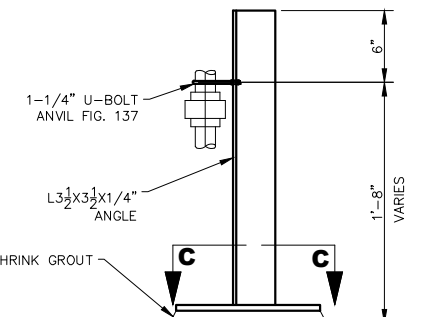
SECTION B-B
3/4"=1'-0"



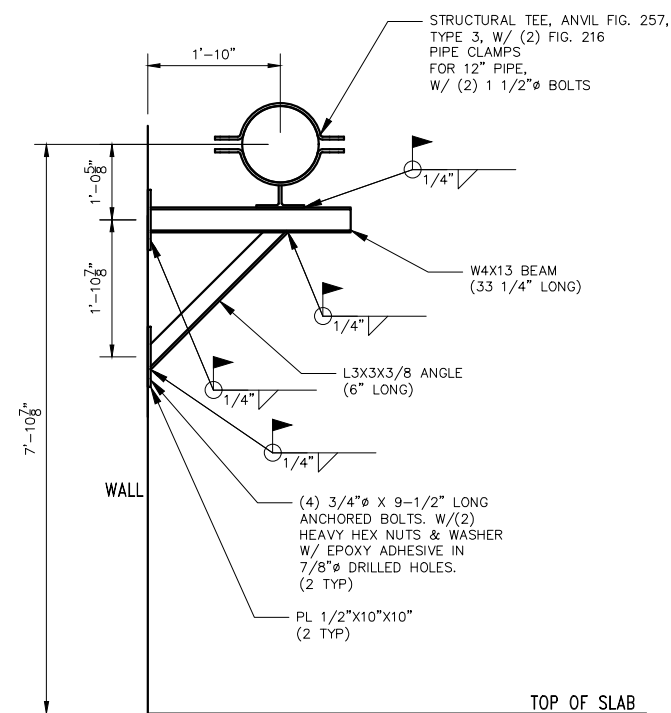
SECTION C-C
1-1/2"=1'-0"



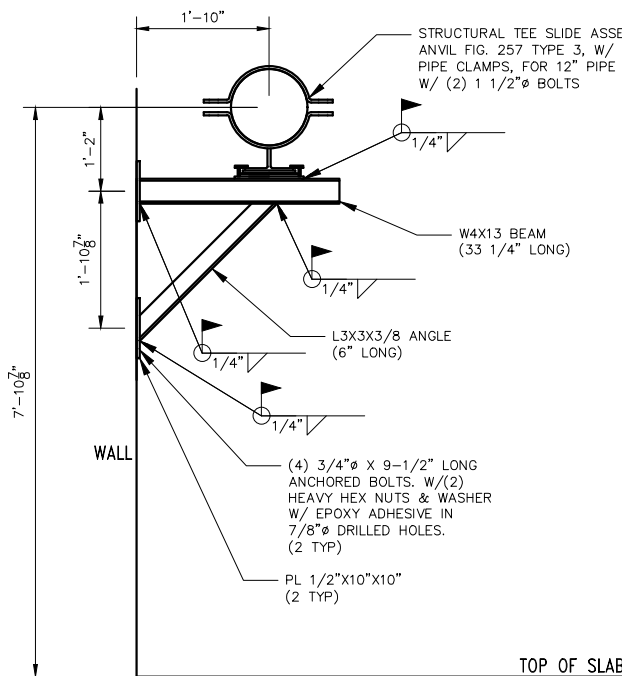
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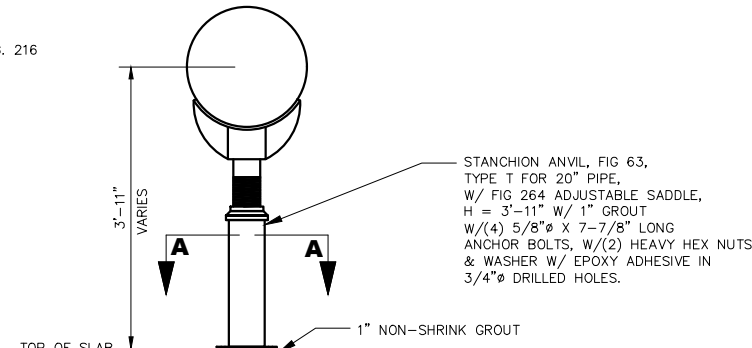
DETAIL PS7
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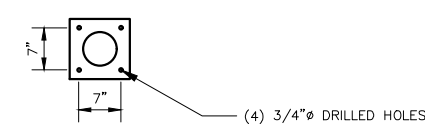
DETAIL PS4
3/4"=1'-0"



DETAIL PS5
3/4"=1'-0"



DETAIL PS6
3/4"=1'-0"



SECTION A-A
3/4"=1'-0"



3/4" = 1'-0"



PERFORMANCE
DRIVEN DESIGN.
LHBperformance

21 W. Superior St., Ste. 500 | Duluth, MN 55802 | 218.727.8446

NOTES:
1. FOR PIPE SUPPORT DETAILS SEE SHEET M0040

CLIENT:
**DULUTH ENERGY
SYSTEMS**

ONE LAKE PLACE DRIVE
DULUTH, MN 55802

THIS SQUARE APPEARS 1/2" x 1/2" ON
FULL SIZE SHEETS.

A 07/15/19 BID
NO DATE ISSUED FOR

NO DATE REVISION

I HEREBY CERTIFY that this specification or report was prepared under my direct supervision and I am a duly Licensed Professional Engineer in the State of Minnesota under the laws of the State of Minnesota.

**ISSUED FOR
BID
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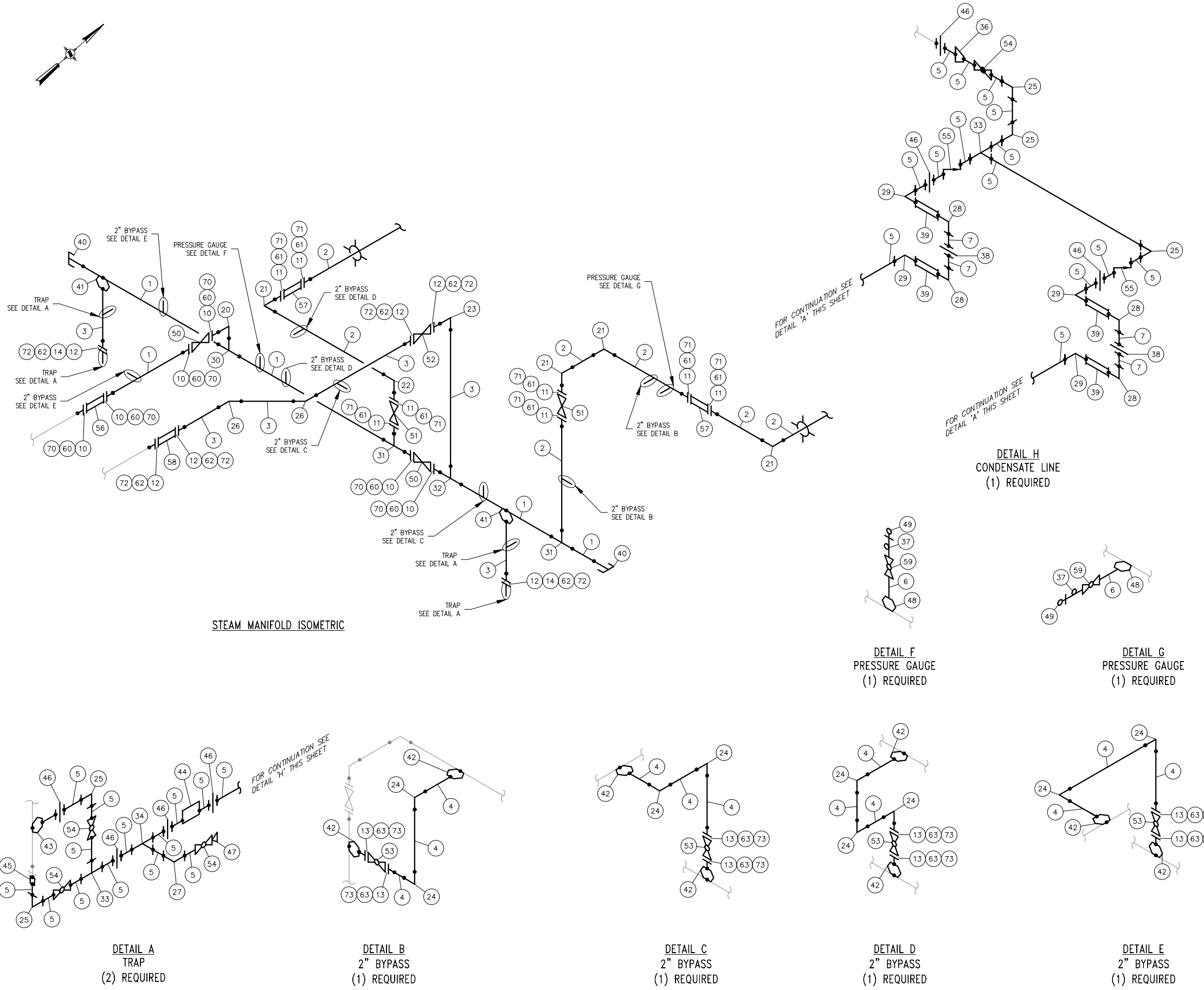
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PROJECT NAME:

DRAWING TITLE:
**SUPERIOR PLAZA
STEAM MANIFOLD
ISOMETRIC**

FILE: ...1160607600 Drawings\IP2019-07-15 IFB\M0100.dwg
DRAWN BY:
CHECKED BY:
PROJ. NO: 180607
DRAWING NO:

M0100



STEAM MANIFOLD ISOMETRIC

DETAIL A
TRAP
(2) REQUIRED

DETAIL B
2" BYPASS
(1) REQUIRED

DETAIL C
2" BYPASS
(1) REQUIRED

DETAIL D
2" BYPASS
(1) REQUIRED

DETAIL E
2" BYPASS
(1) REQUIRED

DETAIL F
PRESSURE GAUGE
(1) REQUIRED

DETAIL G
PRESSURE GAUGE
(1) REQUIRED

DETAIL H
CONDENSATE LINE
(1) REQUIRED

BILL OF MATERIALS						
Tag	QTY	SIZE	WALL THK.	DESCRIPTION	Mat/Grade	LENGTH
1	LF	20"	0.500"	PIPE, BE, API 5L PSL 2	GRADE B	40'
2	LF	12"	0.375"	PIPE, BE, API 5L PSL 2	GRADE B	120'
3	LF	10"	0.365"	PIPE, BE, API 5L PSL 2	GRADE B	40'
4	LF	2"	0.218"	PIPE, BE, ASTM A106 GR B	GRADE B	40'
5	LF	1"	0.179"	PIPE, PLAIN END, ASTM A106 GR B	GRADE B	40'
6	LF	1/2"	0.147"	PIPE, THREADED END, ASTM A106 GR B	GRADE B	40'
7	LF	1-1/4"	0.191"	PIPE, PLAIN END, ASTM A106 GR B	GRADE B	20'
10	6	20"	0.500"	FLANGE, RFWN, ANSI 300#, ASME B16.5	A105	
11	8	12"	0.375"	FLANGE, RFWN, ANSI 300#, ASME B16.5	A105	
12	6	10"	0.365"	FLANGE, RFWN, ANSI 300#, ASME B16.5	A105	
13	8	2"	0.218"	FLANGE, RFWN, ANSI 300#, ASME B16.5	A105	
14	2	10"	-	FLANGE, RF BLIND, ANSI 300#, ASME B16.5	A105	
20	1	20"	0.500"	ELBOW, 90, LR, BE, ASME B16.9	A234 WPB	
21	4	12"	0.375"	ELBOW, 90, LR, BE, ASME B16.9	A234 WPB	
22	1	12"	0.375"	ELBOW, 90, SR, BE, ASME B16.9	A234 WPB	
23	1	10"	0.365"	ELBOW, 90, LR, BE, ASME B16.9	A234 WPB	
24	9	2"	0.218"	ELBOW, 90, LR, BE, ASME B16.9	A234 WPB	
25	7	1"	-	ELBOW, 90, LR, SOCKETWELD, CLASS 3000, ASME B16.11	A105	
26	2	10"	0.365"	ELBOW, 45, LR, BE, ASME B16.9	A234 WPB	
27	2	1"	-	ELBOW, 45, LR, SOCKETWELD, CLASS 3000, ASME B16.11	A105	
28	4	1-1/4"	-	ELBOW, 90, LR, SOCKETWELD, CLASS 3000, ASME B16.11	A105	
29	4	1-1/4"x1"	-	ELBOW, REDUCING, 90, LR, SOCKETWELD, CLASS 3000, ASME B16.11	A105	
30	1	20"	0.500"	TEE, BE, ASME B16.9	A234 WPB	
31	2	20" X 12"	0.500"	TEE, REDUCING, BE, ASME B16.9	A234 WPB	
32	1	20" X 10"	0.500" X 0.365"	TEE, REDUCING, BE, ASME B16.9	A234 WPB	
33	3	1"	-	TEE, SOCKETWELD, CLASS 3000, ASME B16.11	A105	
34	2	1"	-	Y-STRAINER, SOCKETWELD, CLASS 3000, ASME B16.11		
35				NOT USED		
36	1	1-1/2"x1"		REDUCER, SOCKETWELD, CLASS 3000, ASME B16.11	A105	
37	2	1/2"		STEAM PIGTAIL, THREADED		
38	2	1-1/4"		UNION, SOCKETWELD, CLASS 3000, ASME B16.11	A105	
39	4	1-1/4"		FINNED TUBE, 3'-0" LONG		
40	2	20"	0.500"	CAP, BE, ASME B16.9	A234 WPB	
41	2	20"x10"		PIPE SADDLE	A105	
42	8	2"		WELD-O-LET	A105	
43	2	1"		WELD-O-LET	A105	
44	2	1"		STEAM TRAP, VELAN TS300 BIMETALLIC, SOCKETWELD END CONNECTIONS		
45	2	1"		HALF COUPLING, SOCKETWELD, CLASS 3000, ASME B16.11	A105	
46	11	1"		UNION, SOCKETWELD, CLASS 3000, ASME B16.11	A105	
47	2	1"		HEX PLUG, CLASS 3000, ASME B16.11	A105	
48	2	1/2"		THREAD-O-LET	A105	
49	2	1/2"		PRESSURE GAUGE, FNPT END CONNECTION		
50	2	20"		VALVE, BRAY TRIPLE OFFSET, ANSI 300#, DOUBLE FLANGED		
51	2	12"		VALVE, BRAY TRIPLE OFFSET, ANSI 300#, DOUBLE FLANGED		
52	1	10"		VALVE, BRAY TRIPLE OFFSET, ANSI 300#, DOUBLE FLANGED		
53	4	2"		VALVE, BALL, ANSI 300#, FXF, API 6D		
54	7	1"		VALVE, BALL, SOCKETWELD, STEAM RATED		
55	2	1"		VALVE, CHECK, SOCKETWELD, STEAM RATED		
56	1	20"		EXPANSION JOINT, FLEXICRAFT MODEL EP, 300 PSI CLASS, FLANGED END CONNECTIONS		
57	2	12"		EXPANSION JOINT, FLEXICRAFT MODEL EP, 300 PSI CLASS, FLANGED END CONNECTIONS		
58	1	10"		EXPANSION JOINT, FLEXICRAFT MODEL EP, 300 PSI CLASS, FLANGED END CONNECTIONS		
59	2	1/2"		VALVE, BALL, THREADED, STEAM RATED		
60	6	20"		GASKET, ANSI 300#, SPIRAL WOUND METALLIC, ASME B16.20, FLEXITALLIC TYPE 'CGI' OR EQUAL	316SS INNER RING	
61	8	12"		GASKET, ANSI 300#, SPIRAL WOUND METALLIC, ASME B16.20, FLEXITALLIC TYPE 'CGI' OR EQUAL	316SS INNER RING	
62	6	10"		GASKET, ANSI 300#, SPIRAL WOUND METALLIC, ASME B16.20, FLEXITALLIC TYPE 'CGI' OR EQUAL	316SS INNER RING	
63	8	2"		GASKET, ANSI 300#, SPIRAL WOUND METALLIC, ASME B16.20, FLEXITALLIC TYPE 'CGI' OR EQUAL	316SS INNER RING	
70	6	1-1/4" DIA.		(24) STUD BOLTS W/ 2 EA. HEX HEAD NUTS FOR 20" 300# FLANGE PAIR	A193 GR B7 STUDS A194 GR 2H NUTS	8-1/2"
71	8	1-1/8" DIA.		(16) STUD BOLTS W/ 2 EA. HEX HEAD NUTS FOR 12" 300# FLANGE PAIR	A193 GR B7 STUDS A194 GR 2H NUTS	7-1/4"
72	6	1" DIA.		(16) STUD BOLTS W/ 2 EA. HEX HEAD NUTS FOR 10" 300# FLANGE PAIR	A193 GR B7 STUDS A194 GR 2H NUTS	6-3/4"
73	8	5/8" DIA.		(8) STUD BOLTS W/ 2 EA. HEX HEAD NUTS FOR 2" 300# FLANGE PAIR	A193 GR B7 STUDS A194 GR 2H NUTS	4"

CLIENT:
**DULUTH ENERGY
SYSTEMS**

ONE LAKE PLACE DRIVE
DULUTH, MN 55802

THIS SQUARE APPEARS 1/2" x 1/2" ON
FULL SIZE SHEETS.

NO	DATE	ISSUED FOR
A	07/15/19	BID

NO	DATE	REVISION
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I HEREBY CERTIFY that this specification or report was prepared under my direct supervision and I am a duly Licensed Professional Engineer in the State of Minnesota.

**ISSUED FOR
BID
NOT FOR CONSTRUCTION**

DATE: 07/15/19
NO.: 50402

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PROJECT NAME:

DRAWING TITLE:
**SUPERIOR PLAZA
STEAM MANIFOLD
BILL OF MATERIAL**

FILE: ...1160607600 Drawings\2019-07-15 IFB\M0110.dwg
DRAWN BY:
CHECKED BY:
PROJ. NO: 160607
DRAWING NO:

M0110