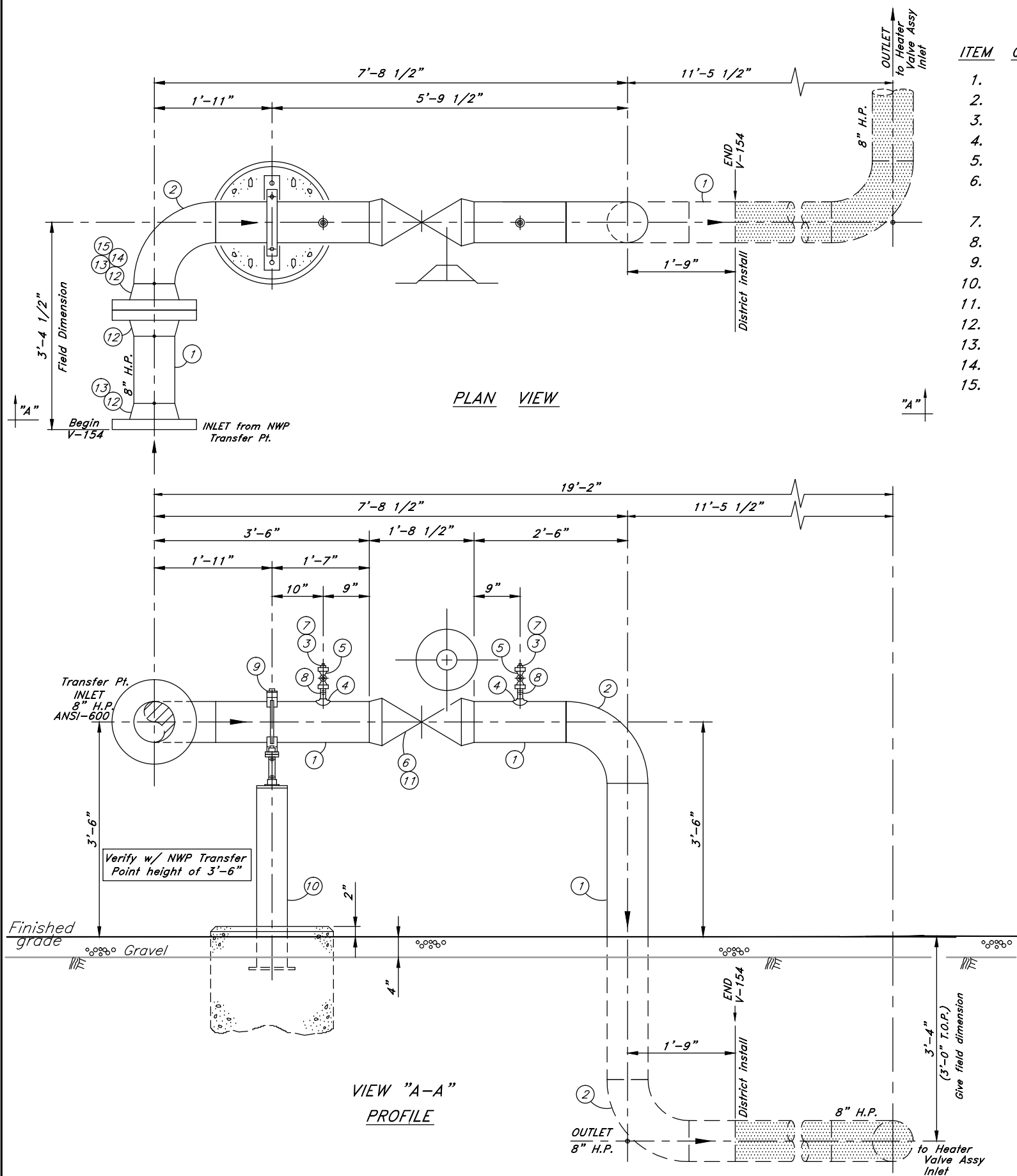


# MATERIAL LIST

ITEM	QUANTITY	STOCK NO.	DESCRIPTION
1.	11'	NONE	8"x.322" w.t. Bare steel pipe, API 5L, Grade X65, P.O. _____ (Special order)
2.	3	NONE	8" 90° Weld elbow, Std. weight, Grade Y65 (Special order)
3.	2	PL-025	1/4" Pipe plug, Square head, Solid, 3,000#
4.	2	SA-210	1"x8" Weld saddle
5.	2	VA-210	1" WKM Ball Valve #1F-B138-CS2-43-S2-WR, Threaded, 3,000#
6.	1	NONE	8" Nordstrom plug valve, Fg 2249 1/2, Horizontal gear operated, WxW, 0.322" w.t., ANSI-600 (Special order)
7.	2	H-34	1"x 1/4" Steel hexagon bushing
8.	2	H-114	1"x3" Mueller Save-A-Valve body only #63494, 1400#
9.	1	H-155	8" UHMW Polyethylene pipe guide
10.	1	NONE	8" Pipe supports w/ 6" pipe (Fab shop fabricate) ref sh 2/2
11.	1	NONE	Chain & lock for 8 Nordstrom plug valve (District purchase)
12.	3	FL-703	8" W.N. R.F., Flange, Std. bore, ANSI-600
13.	2	FL-823	8" Type "E" Gasket, G-10, Buna seal, Full face, ANSI-600
14.	12	H-335	1 1/8"-7x7 3/4" Stud bolt, ASTM A193, Gr B7
15.	24	H-297	1 1/8"-7 Heavy hex. nut, ASTM A194, Gr 2H



FAB SHOP TEST:	
STEP 1	
PRESSURE TEST	
TEST PRESSURE	100 P.S.I.G.
TEST MEDIUM	NITROGEN
TEST DURATION	1 HR. HOURS
LEAK SURVEY BY	Lock up only
DATE	DATE
STEP 2	
PRESSURE TEST	
CERTIFICATION PRESSURE	815 P.S.I.G.
TEST PRESSURE	1223 P.S.I.G.
TEST MEDIUM	NITROGEN
TEST DURATION	1 HOURS
DATE COMPLETED	
BY	CONTRACTOR
ATTESTED	CASCADE NATURAL GAS CORP.

Reference 011Ken R117Ken Site plan  
 Rev A: Added 1' spool to inlet  
 Rev B: Revised material list

1/2 SIZE DRAWING— Scaled to 1/2 indicated

Scale	1"=1'-0"	Drawn	SB
Date	2-25-15	Check	N/A
Eng.	JF	Meas.	N/A
Drawing Number	V154Ken B 12		

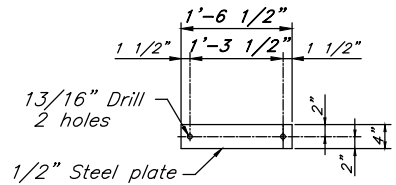


WO# 214539-1  
 CASCADE NATURAL GAS CORPORATION  
 8113 W Grandridge Blvd Kennewick, WA 99336  
 V-154 8" HP Inlet Valve R-117  
 6300 Brinkely Rd Kennewick, WA

Note: All underground bare steel pipe to be field wrapped during installation.

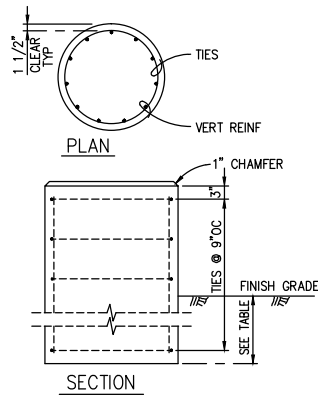
**8" Guide- 6" Pipe Leg Material**

ITEM	QUAN.	STOCK NO.	DESCRIPTION
1.	1'	PB-350	2"x0.154" w.t. Bare steel pipe, Grade B, ASTM A106
2.	2'	PB-653X52	6"x0.280" w.t., Bare steel pipe, Gr X52, API5L
3.	2	H-39	3/4"- [ ]x2 1/2" Cap screw, ASTM A307, Grade B
4.	1	H-155	8" UHMW Polyethylene pipe guide
5.	2	H-266	3/4"- [ ] Heavy hex nut, ASTM A194 Grade 2H
6.	2	H-822	3/4" Heavy galvanized lock washer
7.	1	NONE	1 1/4" High strength flat washer, galvanized
8.	1	NONE	3/4"x2" Flat washer, galvanized
9.	1	H-298	1 1/4"- 8 Heavy Hex. nut
10.	1	NONE	1 1/4"- 8x12" Continuous thread steel rod
11.	1	NONE	1/2"x6.625" Dia. Steel plate (Fab shop fabricate)
12.	1	NONE	1/2"x4"x18 1/2" Steel plate (Fab shop fabricate)
13.	1	NONE	1/2"x9"x9" Steel plate (Fab shop fabricate)

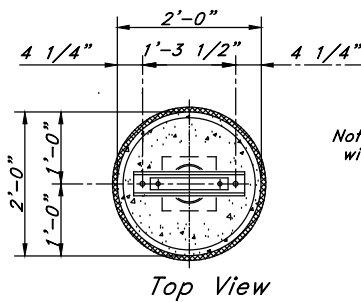


Pipe Leg Top Plate Detail

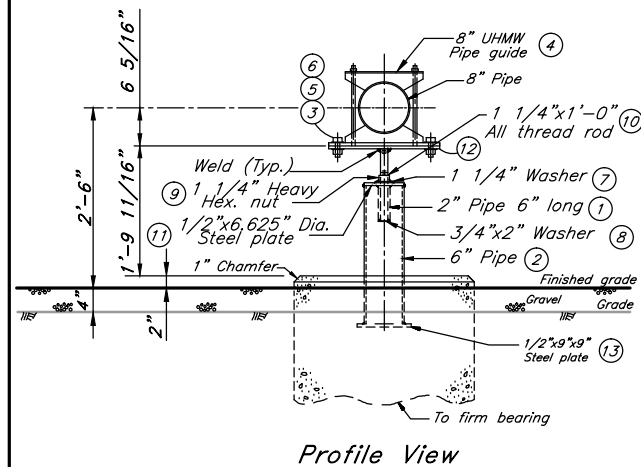
PIER REINFORCING TABLE			
PLAN DIM	VERT REINF	TIES	MAXIMUM LOAD (LBS.)
12" DIA	4 - #5	#3	1,100
18" DIA	4 - #5	#3	2,400
24" DIA	11 - #6	#4	4,400
30" DIA	12 - #7	#4	6,800
36" DIA	13 - #8	#4	9,900
42" DIA	14 - #9	#4	13,400
48" DIA	18 - #9	#4	17,600



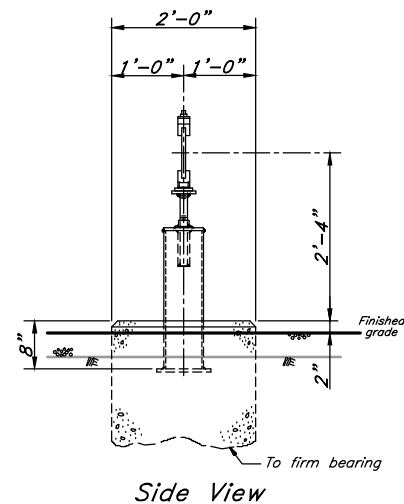
NOTES:  
 1. FOR SOIL BEARING CAPACITY AND CONCRETE AND REINFORCING STEEL CRITERIA, SEE FOUNDATION PLAN & DETAILS.  
 2. FORM SIDEWALLS OF PIER TO A POINT 6" BELOW FINISH GRADE.  
 3. IF A SITE SPECIFIC GEOTECHNICAL REPORT IS NOT PROVIDED, EXTEND FOUNDATION TO 3' DEPTH FROM GRADE IN GROUND USING 3' SONOTUBE.



Note: Piers to be installed with appropriate rebar.



Profile View



Side View

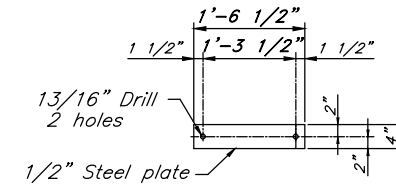
8" GUIDE- 6" PIPE LEG & 24" PIER DETAIL No. 2

Scale: 3/4" = 1'-0"

Note: All underground bare steel pipe to be field wrapped during installation.

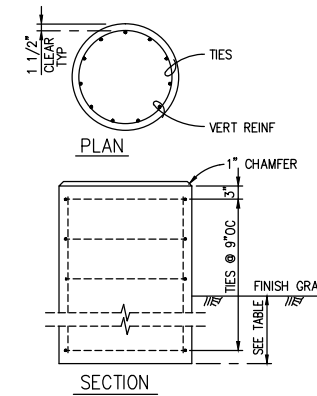
**8" Guide- 6" Pipe Leg Material**

ITEM	QUAN.	STOCK NO.	DESCRIPTION
1.	2'	PB-653X52	6"x0.280" w.t., Bare steel pipe, Gr X52, API5L
2.	1	H-155	8" UHMW Polyethylene pipe guide
3.	2	H-39	3/4"- [ ]x2 1/2" Cap screw, ASTM A307, Grade B
4.	2	H-266	3/4"- [ ] Heavy hex nut, ASTM A194 Grade 2H
5.	1	NONE	1 1/4"- 8x12" Continuous thread steel rod
6.	1	H-298	1 1/4" Heavy Hex. nut
7.	2	H-822	3/4" Heavy galvanized lock washer
8.	1	NONE	1/2"x6.625" Dia. Steel plate (Fab shop fabricate)
9.	1	NONE	1/2"x6.065" Dia. Steel plate (Fab shop fabricate)
10.	1	NONE	1/2"x4"x18 1/2" Steel plate (Fab shop fabricate)
11.	1	NONE	1/2"x9"x9" Steel plate (Fab shop fabricate)

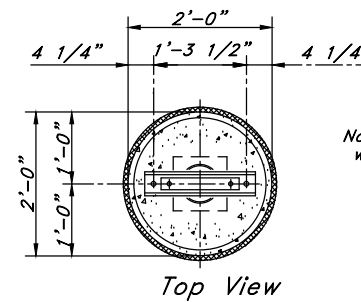


Pipe Leg Top Plate Detail

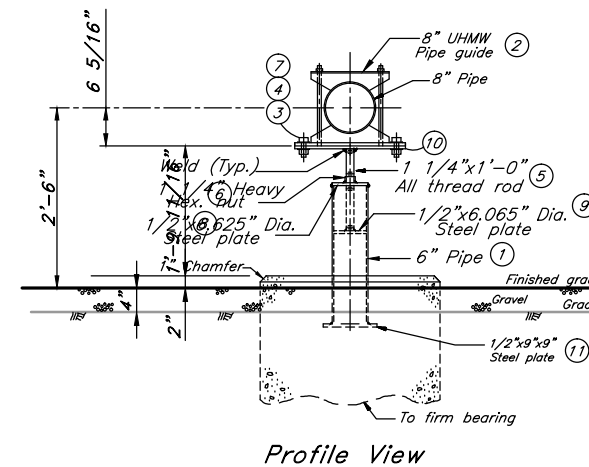
PIER REINFORCING TABLE			
PLAN DIM	VERT REINF	TIES	MAXIMUM LOAD (LBS.)
12" DIA	4 - #5	#3	1,100
18" DIA	4 - #5	#3	2,400
24" DIA	11 - #6	#4	4,400
30" DIA	12 - #7	#4	6,800
36" DIA	13 - #8	#4	9,900
42" DIA	14 - #9	#4	13,400
48" DIA	18 - #9	#4	17,600



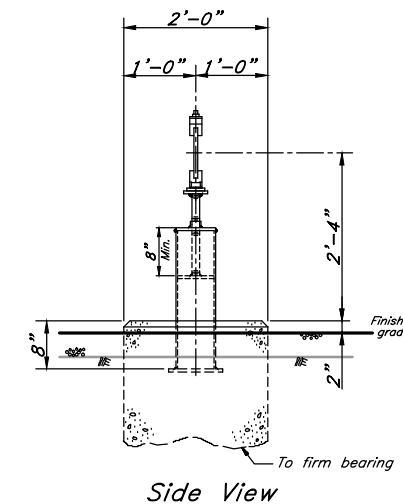
NOTES:  
 1. FOR SOIL BEARING CAPACITY AND CONCRETE AND REINFORCING STEEL CRITERIA, SEE FOUNDATION PLAN & DETAILS.  
 2. FORM SIDEWALLS OF PIER TO A POINT 6" BELOW FINISH GRADE.  
 3. IF A SITE SPECIFIC GEOTECHNICAL REPORT IS NOT PROVIDED, EXTEND FOUNDATION TO 3' DEPTH FROM GRADE IN GROUND USING 3' SONOTUBE.



Note: Piers to be installed with appropriate rebar.



Profile View



Side View

8" GUIDE- 6" PIPE LEG & 24" PIER DETAIL No. 2a

Scale: 3/4" = 1'-0"

1/2 SIZE DRAWING- Scaled to 1/2 indicated

Scale	As-Noted	Drawn	SB
Date	2-25-15	Check	N/A
Eng.	JF	Meas.	N/A
Drawing Number	V154Ken B 22		



WO# 214539-1  
 CASCADE NATURAL GAS CORPORATION  
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