CASCADE NATURAL GAS CORPORATION
A Subsidiary of MDU Resources Group, Inc.

8113 W. GRANDRIDGE BLVD., KENNEWICK, WASHINGTON 99336-7166
TELEPHONE 509-734-4500 FACSIMILE 509-737-9803
www.cngc.com

Date: July 31, 2019

Subject: Proximity Request – Southridge High-Pressure Line

Sender: Sam Hamilton, Manager Compliance and Operations Programs
Cascade Natural Gas Corporation

Mailing Address: 8113 W. Grandridge Blvd., Kennewick WA 99336-7166

Phone Number: (509) 734-4595

Email Address: sam.hamilton@cngc.com

Identification of Proceeding: N/A

Identification of Documents: CNG-Southridge HP-Proximity Request-7-31-19

CASCADE NATURAL GAS CORPORATION
A Subsidiary of MDU Resources Group, Inc.

8113 WEST GRANDRIDGE BOULEVARD, KENNEWICK, WASHINGTON 99336-7166

July 31, 2019

Sean Mayo
Director, Pipeline Safety
Utilities & Transportation Commission
PO Box 47250
Olympia, WA 98504-7250

Subject: WAC 480-93-020 Southridge High-Pressure Line Proximity Request

Dear Mr. Mayo:

Pursuant to the requirements of WAC 480-93-020 Proximity Considerations and 49 CFR Part 192 Sub Part K Uprating, Cascade Natural Gas Corporation (CNGC) requests to increase the pressure from 250 psig to 500 psig on the existing Southridge high-pressure pipeline within 100 feet of existing buildings or those that are under construction. CNGC is performing this work due to a necessary increase in capacity to residential customers in Richland and the addition of a new industrial customer.

Proposed Scope of Work:
The existing Southridge high-pressure pipeline was designed, constructed, and pressure tested to operate at 500 psig based on a previous 750 psig pressure test. The requested increase of pressure affects approximately 2,200 feet of 8'' steel pipe and approximately 5.3 miles of 6'' steel pipe that begins at the Southridge Gate and ends at R-77 on Gage Boulevard. The complete route of this line is depicted on the attached aerial maps located in Appendix A. This Proximity Request is for approval to operate the Southridge pipeline and two pending regulator stations at a 500 psig MAOP.

The two new regulator stations proposed to be installed in conjunction with this uprated line are regulator station 124 (R-124) and regulator station 123 (R-123). R-124 will tie-in the newly uprated 500 psig MAOP Southridge line to the existing 8", 250 psig MAOP line and R-123 will be tying in from the Southridge high-pressure line to our distribution system located at the northwest corner of West 10th Avenue and South Clodfelter Road. The new regulator stations and associated pipeline necessary for their installation will be designed with a minimum component rating of 720 psig and will be pressure tested to a minimum of 750 psig. The proposed regulator stations and associated pipeline drawings can be found in Appendix B.

At the proposed MAOP of 500 psig, the stress level of the regulator station, pipe, and pipeline fittings will be a maximum of 16.94% of the specified minimum yield strength. Thus, the Southridge pipeline section will be classified as high-pressure distribution main, not Transmission. One hundred percent (100%) NDT will be performed on all newly installed pipe.

Specifications of the 8” and 6” pipeline and associated facilities are as follows:

- All components (valves, line stoppers, etc.) will be ANSI Class 300 with a maximum working pressure rating of 720 psig.

Proximity:
The Southridge high-pressure pipeline will be within 100 feet of 98 structures as shown in Appendix A. As a proactive measure, CNGC will be moving the Southridge high-pressure line further into the road away from the homes identified as 6, 7 and 8 in Figure 3 of Appendix A.

It is not possible to increase the distance between the pipeline and the other buildings as this is an existing pipeline; however, the newly proposed regulator stations do not increase the number of buildings within that same proximity limit.

Closing:
CNGC respectfully requests your approval to move forward with the installation of the proposed two regulator stations and operation of the Southridge high-pressure pipeline at 500 psig. Construction is scheduled to begin immediately upon approval of this request in September of 2019.

If you have any questions or require additional information, feel free to contact me at (509) 734-4595 or via email at sam.hamilton@cngc.com

Sincerely,
CASCADE NATURAL GAS CORPORATION

Sam Hamilton

/s/ Sam Hamilton
Manager of Compliance Ops. Programs

CC: Pat Darras
Mike Schoepp
Craig Chapin

Enclosures

Appendix A
- Buildings within 100-foot proximity to the pipeline and facilities.

Appendix B
- Regulator Drawings
    - Proposed Regulator R-123
    - Proposed Regulator R-124

Appendix A

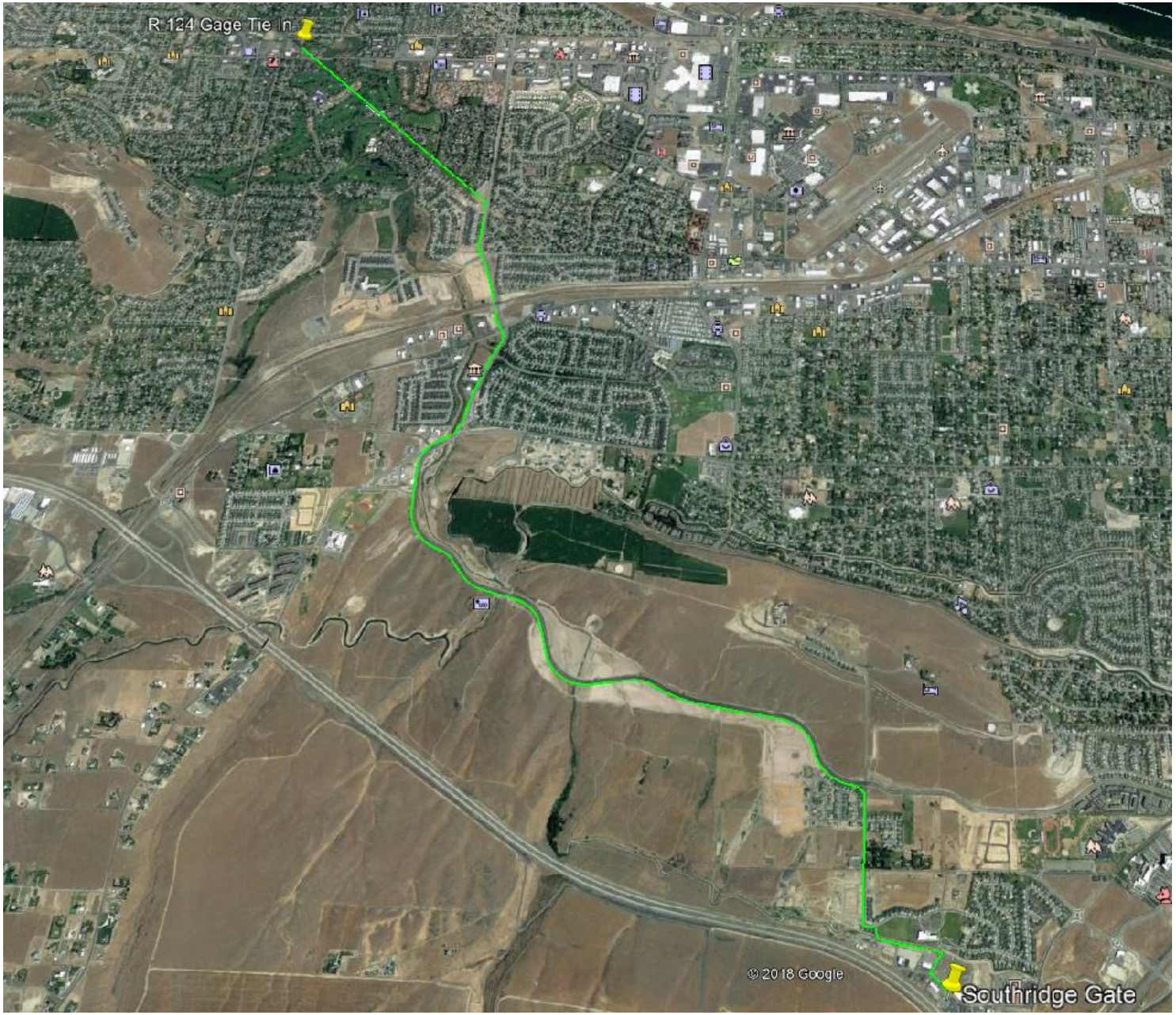


Figure 1: Overall view of the existing Southridge HP pipeline route from the Southridge Gate station to the pending R-124 regulator station.

Figure 2: First section of Southridge HP line feeding from the Southridge gate station containing buildings 1-5 within the 100-foot proximity to the pipeline.

Figure 3: Second section of Southridge HP showing buildings 6-34 within the 100-foot proximity to the pipeline.

Figure 4: Third section of Southridge HP showing buildings 35-53 & 58 within the 100-foot proximity to the pipeline.

Figure 5: Fourth section of Southridge HP showing buildings 54-56 within the 100-foot proximity to the pipeline.

Figure 6: Fifth section of Southridge HP showing buildings 57 & 59 within the 100-foot proximity to the pipeline.

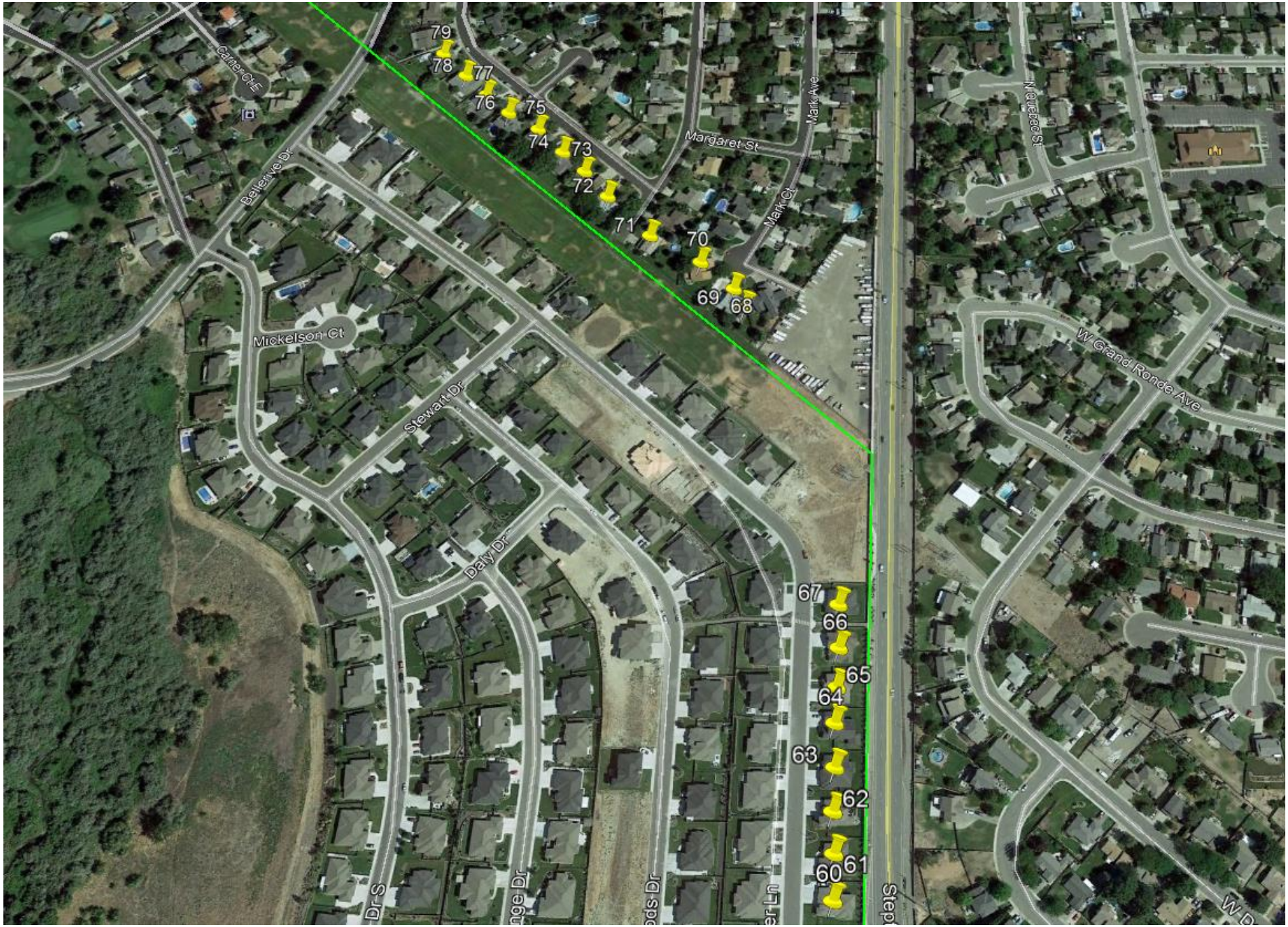


Figure 7: Sixth section of Southridge HP showing buildings 60-79 within the 100-foot proximity to the pipeline.

Figure 8: Seventh section of Southridge HP showing buildings 80-93 within the 100-foot proximity to the pipeline.

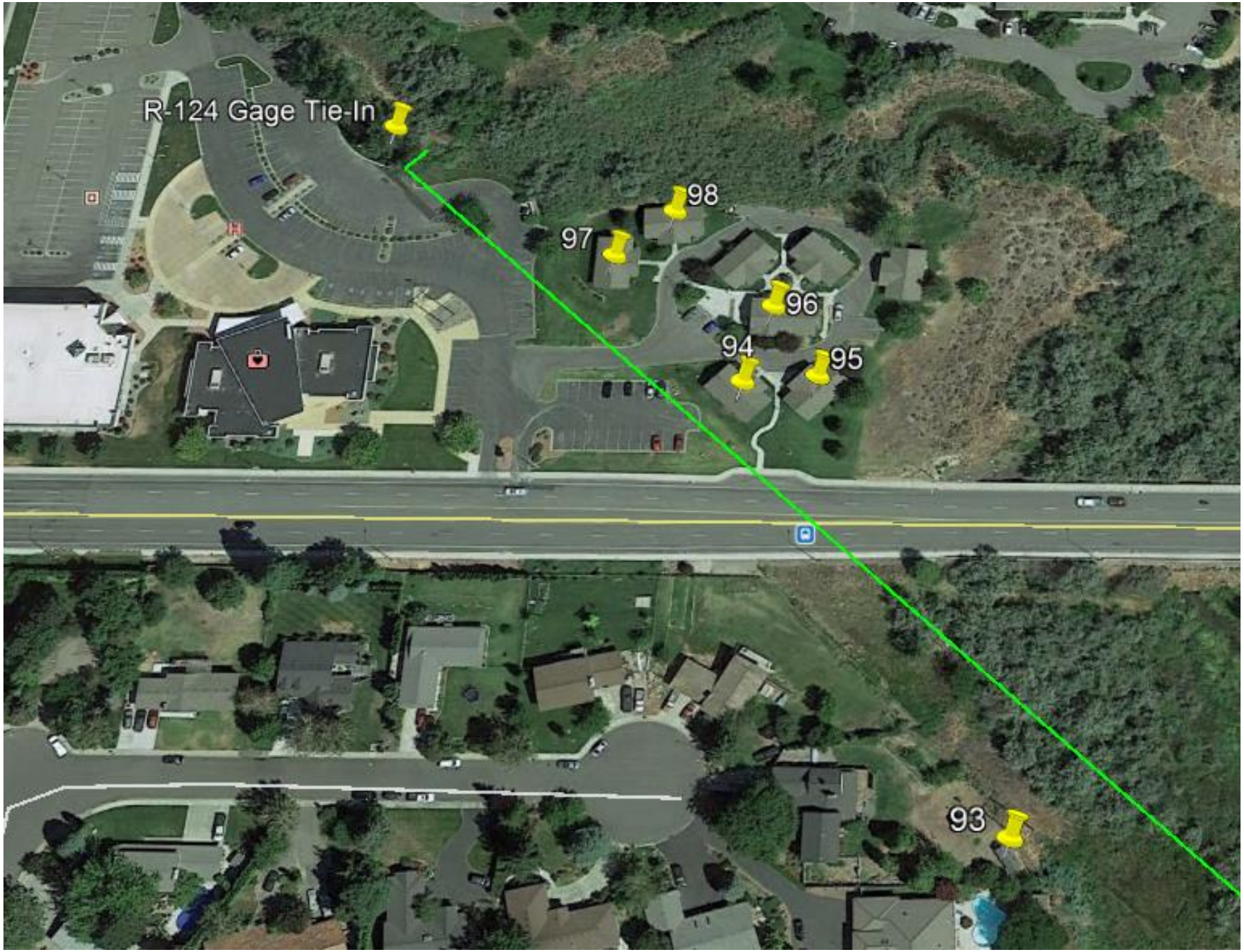


Figure 9: Eighth section of Southridge HP showing buildings 93-98 within the 100-foot proximity to the pipeline.

Proximity to HP Buildings

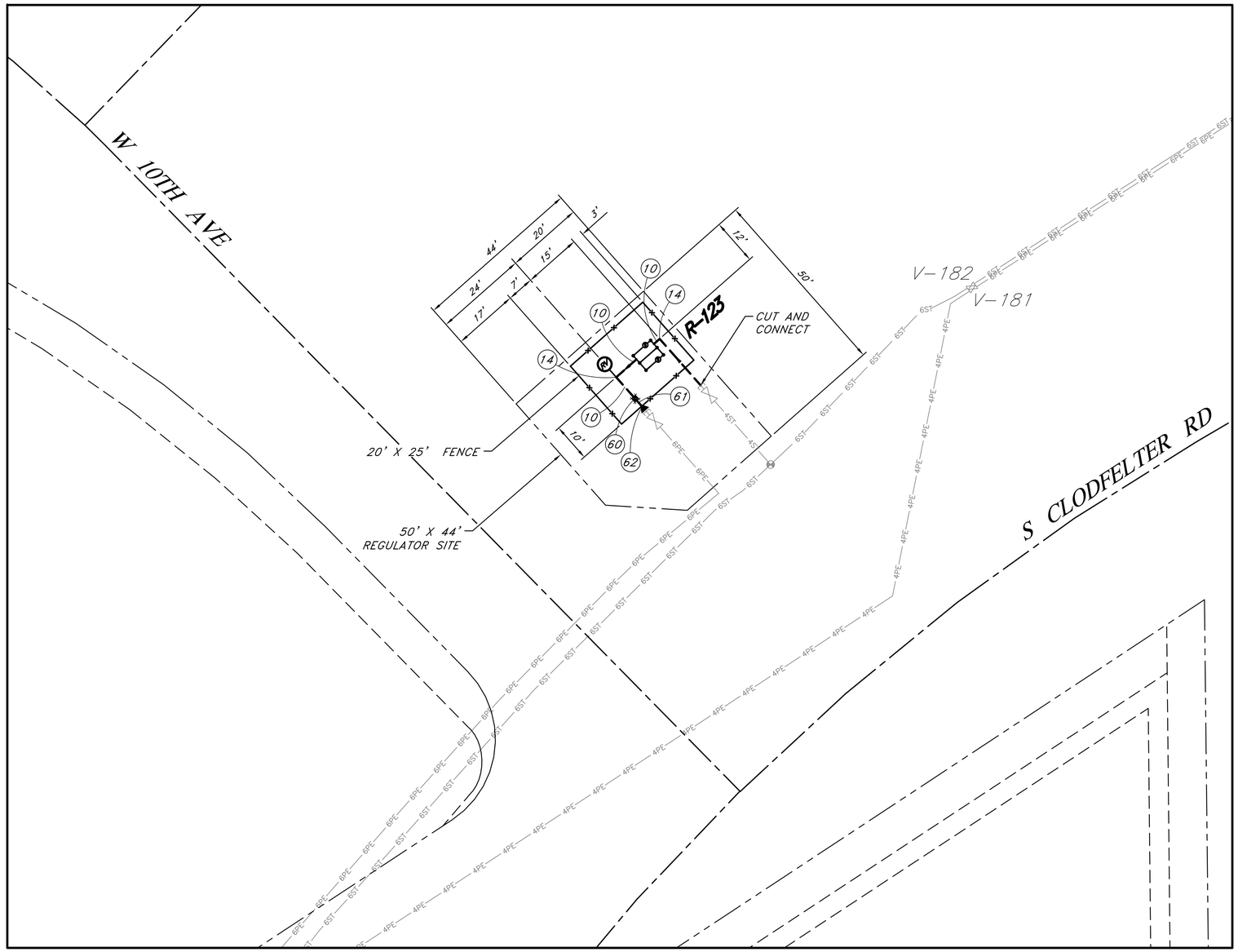
Bldg. #	Distance to HP Line (feet)	Bldg. Description
1	81	Business
2	35	Shed
3	63	Business
4	69	Business
5	30	Business
6	10	Home
7	10	Home
8	10	Home
9	72	Home
10	66	Home
11	66	Home
12	66	Home
13	66	Home
14	66	Home
15	66	Home
16	66	Home
17	66	Home
18	66	Home
19	66	Home
20	66	Home
21	37	Home
22	37	Home
23	37	Home
24	37	Home
25	37	Home
26	37	Home
27	37	Home
28	37	Home
29	37	Home
30	37	Home

Bldg. #	Distance to HP Line (feet)	Bldg. Description
31	37	Home
32	37	Home
33	45	Home
34	62	Shed
35	87	Home
36	87	Home
37	55	Home
38	72	Home
39	36	Home
40	36	Home
41	36	Home
42	30	Home
43	30	Home
44	30	Home
45	34	Home
46	34	Home
47	34	Home
48	34	Home
49	34	Home
50	34	Home
51	34	Home
52	34	Home
53	34	Home
54	25	Business
55	93	Business
56	100	Construction
57	10	Business
58	31	Home
59	53	Business
60	27	Home

Bldg. #	Distance to HP Line (feet)	Bldg. Description
61	27	Home
62	27	Home
63	27	Home
64	27	Home
65	30	Home
66	30	Home
67	30	Home
68	45	Home
69	45	Home
70	45	Home
71	45	Home
72	64	Home
73	72	Home
74	84	Home
75	71	Home
76	71	Home
77	71	Home
78	71	Home
79	90	Home
80	98	Home
81	58	Home
82	61	Home
83	94	Home
84	58	Home
85	33	Home
86	75	Business
87	26	Business
88	64	Home
89	64	Home
90	44	Home

Bldg. #	Distance to HP Line (feet)	Bldg. Description
91	44	Home
92	44	Home
93	98	Home
94	42	Business
95	80	Business
96	100	Business
97	24	Business
98	96	Business

Appendix B



PLOT PLAN

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

NE 1/4, Sec 12, T-8-N, R-28-E
Benton County Kennewick, WA

INITIAL INSTALLATION FIELD SETTINGS		
OPERATING REGULATOR LOCKUP	54	P.S.I.G.
STANDBY REGULATOR LOCKUP	50	P.S.I.G.
R/V SET POINT	59	P.S.I.G.
MAXIMUM ALLOWABLE SETTINGS		
REGULATOR LOCKUP	59	P.S.I.G.
R/V SET POINT	63	P.S.I.G.
SYSTEM PRESSURES		
INLET MAOP	250	P.S.I.G.
DESIGN	500	P.S.I.G.
OUTLET MAOP	60	P.S.I.G.
DESIGN	60	P.S.I.G.

Field Test- R-123- Inlet Main

Test through all new 4" HP main upstream of R-123, including through V-167, and R-123, with the outlet to R-123 capped. 4" BOS to be welded on pipe and included in the test prior to tapping. All valves to be in the open position.

STEP 1

PRESSURE TEST		
TEST PRESSURE	100	P.S.I.G.
TEST MEDIUM	NITROGEN	
TEST DURATION	1 HR	HOURS

STEP 2

PRESSURE TEST		
CERTIFICATION PRESSURE	500	P.S.I.G.
TEST PRESSURE	750	P.S.I.G.
TEST MEDIUM	NITROGEN	
TEST DURATION	4	HOURS

Field Test- R-123- Outlet Main

Testing Instructions: Test through all new 4" IP main downstream of R-123, including through V-168 and the relief stack from the R-123 tie-in point. All valves to be in the open position, with a blind flange installed atop the relief stack valve.

PRESSURE TEST		
CERTIFICATION PRESSURE	60	P.S.I.G.
TEST PRESSURE	90	P.S.I.G.
TEST MEDIUM	NITROGEN	
TEST DURATION	4	HOURS

NOTE:

Document pressure test on appropriate CNG302 & CNG303 form and include in as-built packet.

NON DESTRUCTIVE TESTING REQUIREMENTS
1. NOTHING DOWNSTREAM OF REGS OR LAST BYPASS VALVE NEEDS NDT.
2. 10% BETWEEN INLET VALVE AND REGS.

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

PRELIMINARY

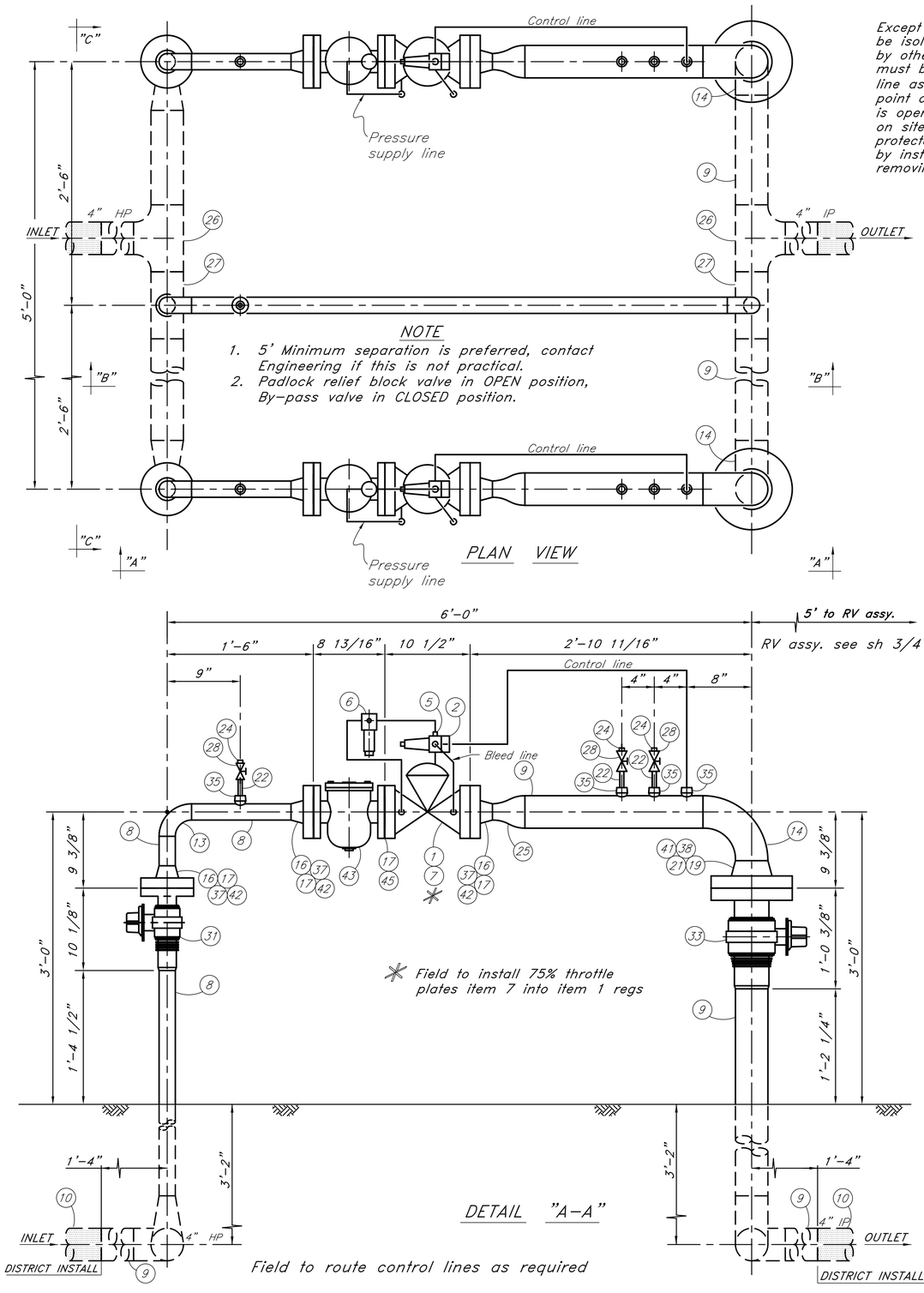
INLET CERTIFIED FOR 500 P.S.I.G.

WO# 245161

Scale	3/16"=1'-0"	Drawn	JW
Date	5/31/19	Grid No.	0-H
Eng.	TH	Meas.	BH
Dwg No.	R123 Ken 1/4		

CASCADE NATURAL GAS CORPORATION
8113 W Grandridge Blvd Kennewick, WA 99336

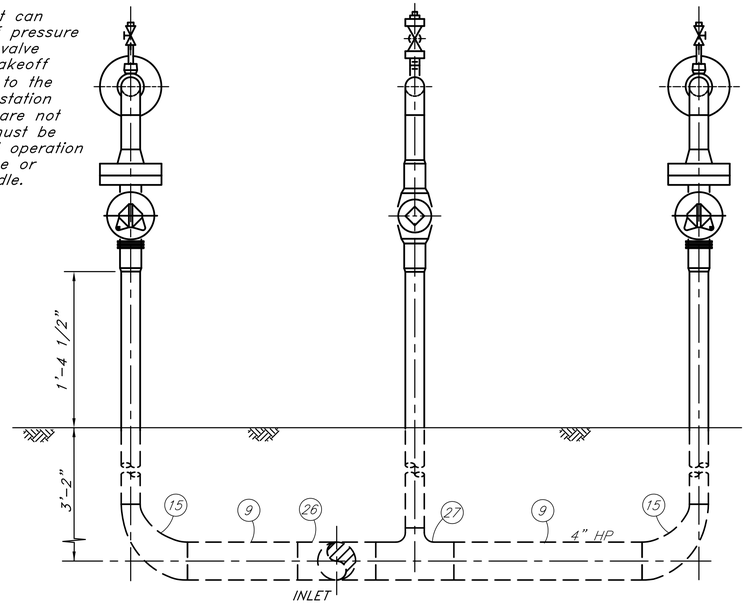
R-123 Regulator
W 10th & S. Clodfelter Rd. Kennewick, WA



PLAN VIEW

NOTE

Except for takeoff lines that can be isolated from sources of pressure by other valving, a shutoff valve must be installed in each takeoff line as near as practicable to the point of takeoff. When the station is operating and personnel are not on site, the shutoff valve must be protected from unauthorized operation by installing a locking device or removing the operating handle.



DETAIL "C-C" INLET HEADER

FAB SHOP TEST- R-123 REGULATOR

STEP 1

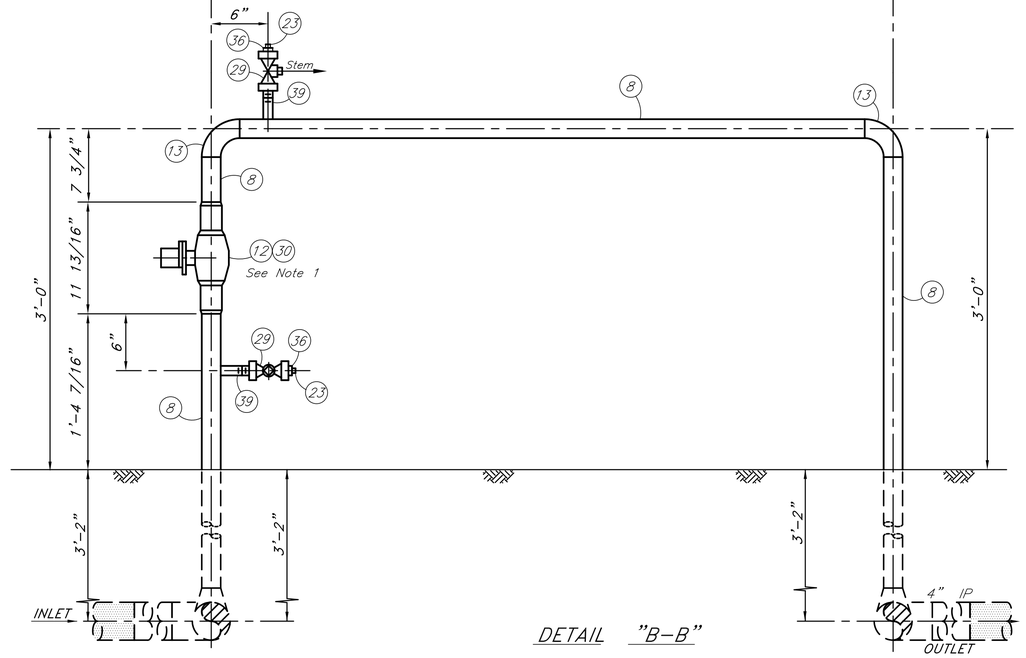
PRESSURE TEST		
TEST PRESSURE	100	P.S.I.G.
TEST MEDIUM	NITROGEN	
TEST DURATION	1 HR	HOURS
LEAK SURVEY BY		
DATE	TIME	

STEP 2

PRESSURE TEST		
CERTIFICATION PRESSURE	500	P.S.I.G.
TEST PRESSURE	750	P.S.I.G.
TEST MEDIUM	NITROGEN	
TEST DURATION	4	HOURS
DATE COMPLETED		
BY (CONTRACTOR)		
ATTESTED (CASCADE NATURAL GAS CORP.)		

DETAIL "A-A"

Field to route control lines as required



DETAIL "B-B"
BY-PASS RUN

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

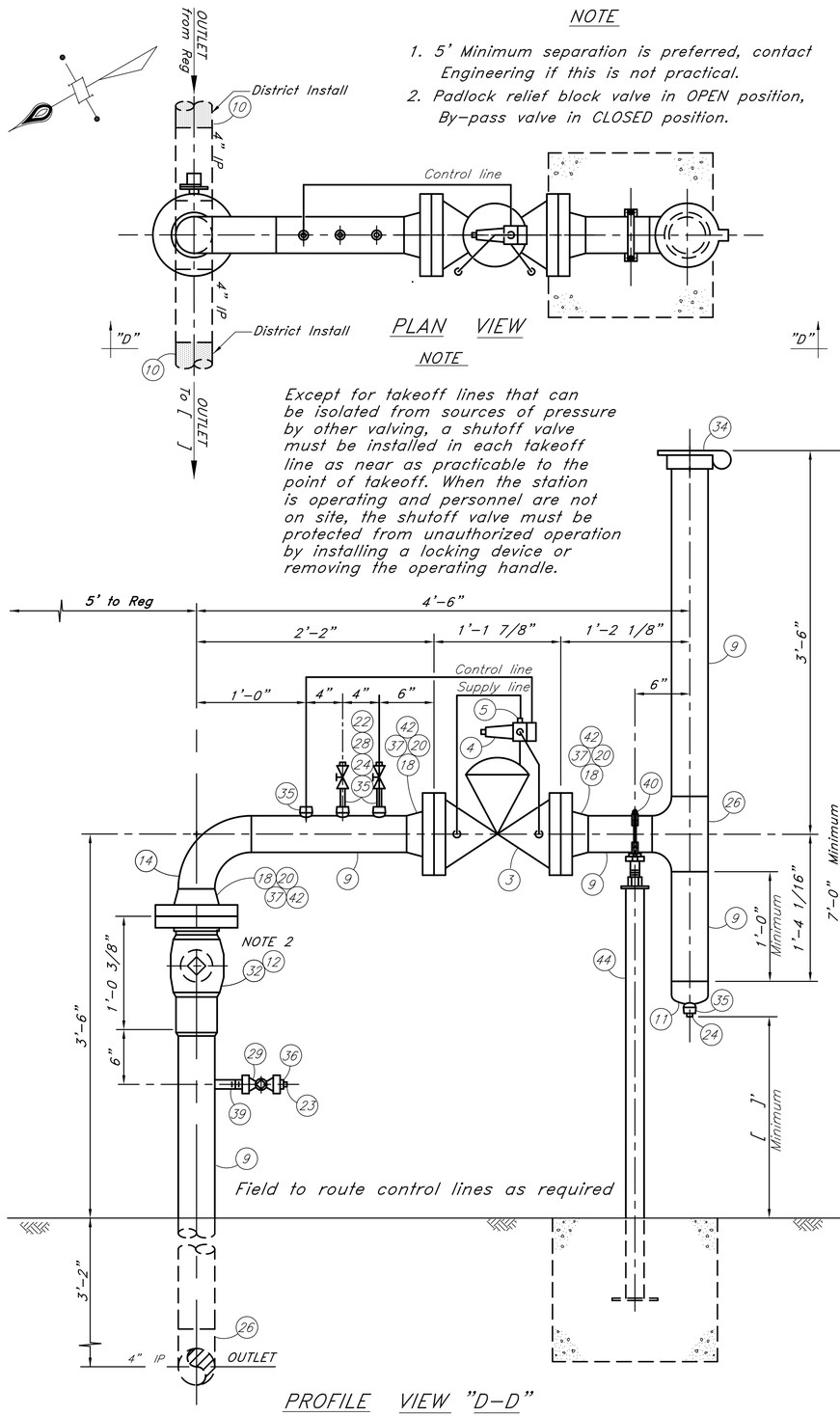
PRELIMINARY

WO# 245161

INLET CERTIFIED FOR 500 P.S.I.G.

Scale	1-1/2"=1'-0	Drawn	JW
Date	5/31/19	Grid No.	0-H
Eng.	TH	Meas.	BH
Dwg No.	R123 Ken 2/4		

CASCADE NATURAL GAS CORPORATION
8113 W Grandridge Blvd Kennewick, WA 99336
R-123 Regulator
W 10th & S. Clodfelter Rd. Kennewick, WA



NOTE

1. 5' Minimum separation is preferred, contact Engineering if this is not practical.
2. Padlock relief block valve in OPEN position, By-pass valve in CLOSED position.

FAB SHOP TEST
RELIEF VALVE
STEP 1

PRESSURE TEST		
CERTIFICATION PRESSURE	60	P.S.I.G.
TEST PRESSURE	90	P.S.I.G.
TEST MEDIUM	NITROGEN	
TEST DURATION	1	HOURS
DATE COMPLETED		
BY (CONTRACTOR)		
ATTESTED (CASCADE NATURAL GAS CORP.)		

MATERIAL LIST - R-123

ITEM	QUANTITY	STOCK NO.	DESCRIPTION	PO
1	2	R-340	2"x1" Mooney Single Port Flowgrid Regulator, Stock No. FG-52, ANSI-300	
2	2	R-361	1/4" Mooney Series 20 Pilot FP-7PRV with 25-90 psig blue spring	
3	1	R-383	4" Mooney Single Port Flowgrid Relief Valve, Stock No. FG-39, ANSI-150	
4	1	R-362	1/4" Mooney Series 20 Pilot FP-17BPV with 25-90 psig blue spring	
5	3	R-370	Mooney Type 24	
6	2	R-375	1/4" Mooney Series 30S Pilot Supply Filter	
7	2	R-403	75% Throttle plate for FG-52, 2" x 1" Mooney Regulator	
8	30'	PB-350	2" x 0.154" Grade B, ASTM A106 seamless bare steel pipe	
9	40'	PB-552X42	4" x 0.237" Grade X-42, API 5L bare steel pipe	
10	40'	PFBE-551X52	4" x 0.188" Grade X-52, API 5L, FBE coated steel line pipe, 14-16 mil	
11	1	CA-551	4" Standard Weight Weld Cap	
12	2	CS-455	Standard Brass Padlock	
13	4	EL-360	2" 90° Standard Weight Weld Elbow	
14	7	EL-555	4" 90° Standard Weight Weld Elbow	
15	2	EL-559	4"x2" 90° Standard Weight Weld Reducing Elbow	
16	6	FL-351	2" W.N., R.F. Flange, ANSI-300	
17	8	FL-353	2" Type "E" Gasket, ANSI-300	
18	3	FL-550	4" W.N., F.F. Flange, ANSI-150	
19	2	FL-551	4" W.N., R.F. Flange, ANSI-300	
20	3	FL-563	4" Type "E" Gasket, ANSI-150	
21	2	FL-564	4" Type "E" Gasket, ANSI-300	
22	8	NP-104XH	1/2" x 3" X.H. Nipple	
23	3	PL-025	1/4" Pipe Plug, Square Head Solid, 3000#	
24	9	PL-101	1/2" Pipe Plug, Square Head Solid, 3000#	
25	2	RE-554	4"x2" Standard Weight Concentric Weld Reducer	
26	4	TE-551	4"x4"x4" Standard Weight Weld Tee	
27	2	TE-555	4"x4"x2" Standard Weight Weld Tee	
28	8	VA-110	1/2" Ball Valve, 3000#	
29	3	VA-210	1" Full Port Ball Valve, 3000#	
30	1	VA-382	2" Ballomax WxW Ball Valve Fig #2BMW740RP, ANSI-300	
31	2	VA-384	2" Balon WxF Ball Valve Fig #2RUS33WF, ANSI-300	
32	1	VA-582	4" Ballomax WxF Ball Valve Fig #4BMW285RP, ANSI-150	
33	2	VA-583	4" Balon WxF Ball Valve Fig #4RUS33WF, ANSI-300	
34	1	H-4	4" Weathercap c/w Flag	
35	12	H-11	1/2" Bonney Thread-O-Let, 3000#	
36	3	H-34	1" x 1/4" Steel Hexagon Bushing	
37	72	H-64	5/8" x 3" Cap Screw, ASTM A307 Grade B, CNG Spec 9	
38	16	H-66	3/4" x 3-3/4" Cap Screw, ASTM A307 Grade B, CNG Spec 9	
39	3	H-114	1" x 3" Mueller Save-A-Valve, Body Only, 1440#	
40	1	H-153	4" UHMW Polyethylene Pipe Guide	
41	16	H-266	3/4" Heavy Nex Nut, ASTM A194 Grade 2H, CNG Spec 28	
42	72	H-268	5/8" Heavy Nex Nut, ASTM A194 Grade 2H, CNG Spec 28	
43	2	H-533	2" Keckly Strainer, FxF #SGFV, ANSI-300	
44	5'	PB-350	2" Pipe support (Fab shop fabricate)	
45	4	H-331	5/8" Stud	

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

PRELIMINARY

WO# 245161

Scale 1-1/2"=1'-0	Drawn JW	CASCADE NATURAL GAS CORPORATION
Date 5/31/19	Grid No. 0-H	8113 W Grandridge Blvd Kennewick, WA 99336
Eng. TH	Meas. BH	R-123 Regulator
Dwg No. R123 Ken 3/4		W 10th & S. Clodfelter Rd. Kennewick, WA

MATERIAL LIST – R123 OUTLET MAIN & V-198

ITEM	QUANTITY	PART NO	DESCRIPTION
60	1	H-110	4" Schedule 40 X 4" IPS Transition Fitting with Tracer Wire Connection Lyall #LT400S400Y
61	[']	PPE-560	4" x 0.409" wall MDPE (SDR-11) plastic pipe (40 foot sticks)
62	1	PRE-650	6"x4" PE Reducer SDR-11 PE3408
63	[']	PPE-660	6" x .602" wall MDPE (SDR-11) plastic pipe (40 foot sticks)

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

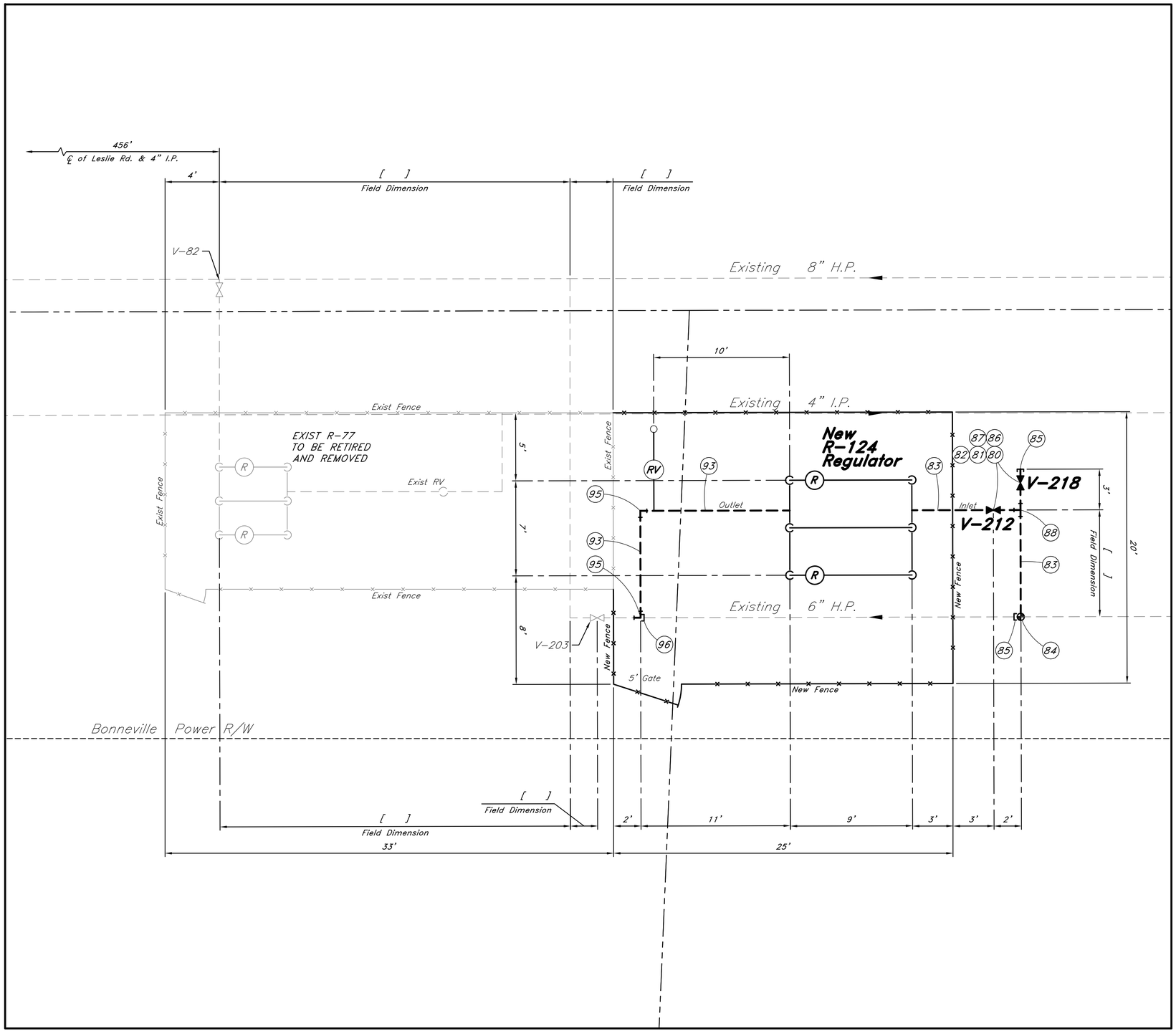
PRELIMINARY

WO# 245161

Scale	1-1/2"=1'-0	Drawn	JW
Date	5/31/19	Grid No.	O-H
Eng.	TH	Meas.	BH
Dwg No.	R123 Ken 4/4		

CASCADE NATURAL GAS CORPORATION
8113 W Grandridge Blvd Kennewick, WA 99336

R-123 Regulator
W 10th & S. Clodfelter Rd. Kennewick, WA



PLOT PLAN
Scale: 1"=4'

SW 1/4, Sec 25, T-19-N, R-26-E
Benton County Richland, WA

INITIAL INSTALLATION FIELD SETTINGS		
OPERATING REGULATOR LOCKUP	240	P.S.I.G.
STANDBY REGULATOR LOCKUP	235	P.S.I.G.
R/V SET POINT	248	P.S.I.G.
MAXIMUM ALLOWABLE SETTINGS		
REGULATOR LOCKUP	245	P.S.I.G.
R/V SET POINT	250	P.S.I.G.
SYSTEM PRESSURES		
INLET MAOP	500	P.S.I.G.
DESIGN	500	P.S.I.G.
OUTLET MAOP	250	P.S.I.G.
DESIGN	500	P.S.I.G.

Field Test- R-124- Inlet Main

Test through all new 6" HP main upstream of R-124, including through V-212, and R-124, with the outlet to R-124 capped. All valves to be in the open position.

STEP 1

PRESSURE TEST		
TEST PRESSURE	100	P.S.I.G.
TEST MEDIUM	NITROGEN	
TEST DURATION	1 HR	HOURS

STEP 2

PRESSURE TEST		
CERTIFICATION PRESSURE	500	P.S.I.G.
TEST PRESSURE	750	P.S.I.G.
TEST MEDIUM	NITROGEN	
TEST DURATION	24	HOURS

Field Test- R-124- Outlet Main

Testing Instructions: Test through all new 6" HP main downstream of R-124, and the relief stack from the R-124 tie-in point. All valves to be in the open position, with a blind flange installed atop the relief stack valve.

STEP 1

PRESSURE TEST		
TEST PRESSURE	100	P.S.I.G.
TEST MEDIUM	NITROGEN	
TEST DURATION	1 HR	HOURS

STEP 2

PRESSURE TEST		
CERTIFICATION PRESSURE	500	P.S.I.G.
TEST PRESSURE	750	P.S.I.G.
TEST MEDIUM	NITROGEN	
TEST DURATION	24	HOURS

NOTE:

Document pressure test on appropriate CNG302 form and include in as-built packet.

NON DESTRUCTIVE TESTING REQUIREMENTS
1. 10% ON ENTIRE INSTALLMENT.

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

INLET CERTIFIED FOR 500 P.S.I.G.

PRELIMINARY
Main WO# 267787
Regulator WO# 267402

Scale	SHOWN	Drawn	JW
Date	7/19/19	Grid No.	6-V
Eng.	TH	Meas.	BH
Dwg No.	R124Ric 1/5		

CASCADE NATURAL GAS CORPORATION
8113 W Grandridge Blvd Kennewick, WA 99336
R-124 Regulator
Leslie Rd. & Gage Blvd Richland, WA

MATERIAL LIST – REG

ITEM	QUANTITY	STOCK NO.	DESCRIPTION
1.	2	R–406	4" Mooney Large Single Port Flowgrid Regulator, Stock No. FG–40, install 75% throttle plate* item 5, ANSI–300
2	2	R–367	Mooney Series 20 Pilot c/w green spring 200–450 PSIG, Stock No.FP–10 (PRV)
3.	2	R–370	Mooney Type 24 restrictor
4.	2	R–375	1/4" Mooney Series 30S pilot supply filter, 1500 P.S.I.G.
5.	2	R–399	75% Throttle plate for FG–40, 4" Mooney regulator, #104–022–01
6.	2	H–539	4" Keckly Strainer, FxF #SGFV, ANSI–300
7.	22'	PB–552X52	4"x0.237" w.t., Bare steel pipe, Grade X–52, API 5L, P.O.#
8.	22'	PB–653X52	6"x0.280" w.t., Bare steel pipe, Grade X–52, API 5L, P.O.#_____
9.	4'	PB–705X52	8"x0.322" w.t., Bare steel pipe, Grade X–52, API 5L, P.O.#_____
10.	22'	PB–805X52	12"x0.375" w.t., Bare steel pipe, Grade X–52, API 5L, P.O.#_____
11.	2	CS–455	Standard brass padlock to lock valve
12.	2	EL–555X52	4" 90° Standard Weight Weld Elbow Grade Y52
13.	6	EL–657X52	6" 90° Weld elbow, Std. Wt., Grade Y52
14.	2	EL–702X52	8"x6" 90° Weld reducing elbow, Std. Wt., Grade Y52
15.			
16.	4	FL–551	4" W.N., R.F. Flange, ANSI–300
17.	6	FL–564	4" Type "E" Gasket, ANSI–300
18.	4	FL–651	6" W.N., R.F. Flange, ANSI–300
19.	4	FL–660	6" Type "E" Gasket, ANSI–300
20.	6	NP–104XH	1/2"x3" X.H. Nipple
21.	3	PL–025	1/4" Pipe plug, Square head, Solid, 3,000#
22.	8	PL–101	1/2" Pipe plug, Square head, Solid, 3,000#
23.	4	RE–652X52	6"x4" Weld Reducer, Std. Wt., Grade Y52
24.	1	TE–701X52	8"x8"x8" Weld Tee, Std. Wt., Grade Y52
25.	1	TE–707X52	8"x8"x4" Weld Tee, Std. Wt., Grade Y52
26.	1	TE–659X52	6"x6"x4" Weld Tee, Std. Wt., Grade Y52
27.	1	TE–651X52	6"x6"x6" Weld Tee, Std. Wt., Grade Y52
28.	6	VA–120	1/2" Ball valve, WKM# 1/2R–B136–CS2–42–S2–WR, 1,500#
29.	3	VA–220	1" Ball valve, WKM# 1F–B138–CS2–42–S2–WR, 1,500#
30.	2	VA–581	4" Ballomax WxW Ball Valve Fig #4BMW740RP, ANSI–300
31.	4	VA–617	6" Ballomax WxF Ball Valve Fig #6BMWF740RP, ANSI–300
32.	8	H–65	3/4"x3 1/4" Cap Screw, ASTM A307 Grade B, CNG Spec 9
33.	8	H–11	1/2" Bonney Thred–O–Let, 3,000#
34.	3	H–34	1"x1/4" Steel hexagon bushing
35.	36	H–66	3/4" x 3 3/4" Cap Screw, ASTM A307 Grade B, CNG Spec 9
36.	48	H–181	3/4"x4 1/2" Cap Screw, ASTM A307 Grade B, CNG Spec 9
37.	100	H–266	3/4" Heavy Nex Nut, ASTM A194 Grade 2H, CNG Spec 28
38.	3	H–114	1"x3" Mueller Save–A–Valve body only #63494, 1440#
39.	4	H–332	3/4" Stud

All 6" or above X52 pipe/fittings: Fabrication requirements

*Field to install new 75% throttle plate item (5) into item 1

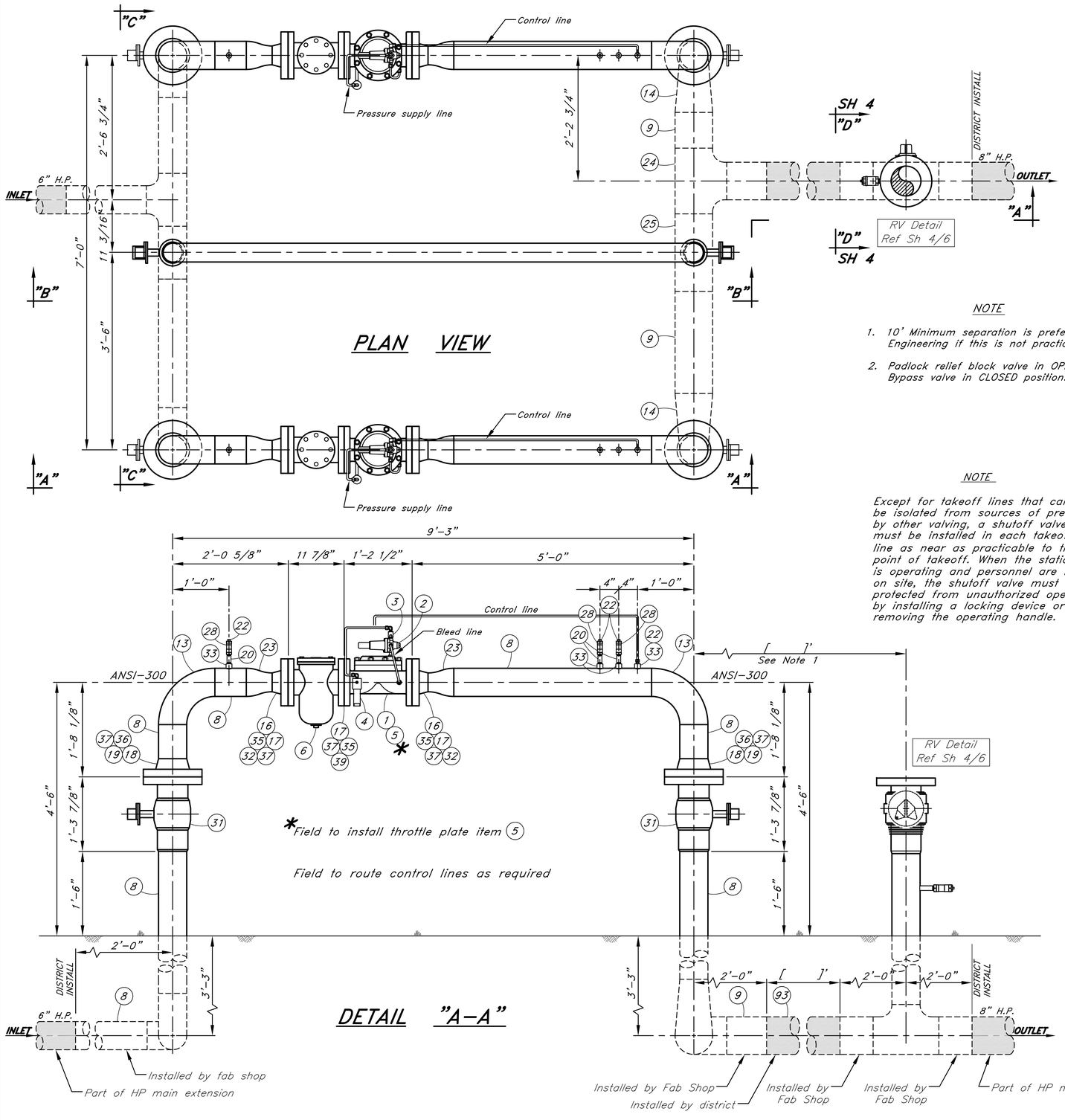
Note: All underground bare steel pipe to be field wrapped during installation.

PRELIMINARY

INLET CERTIFIED FOR 500 P.S.I.G.

Regulator WO# 267402

Scale NONE	Drawn JW	CASCADE NATURAL GAS CORPORATION
Date 7/19/19	Grid No. 6–V	8113 W Grandridge Blvd Kennewick, WA 99336
Eng. TH	Meas. BH	R–124 Regulator
Dwg No. R124Ric 2/5		Leslie Rd. & Gage Blvd Richland, WA

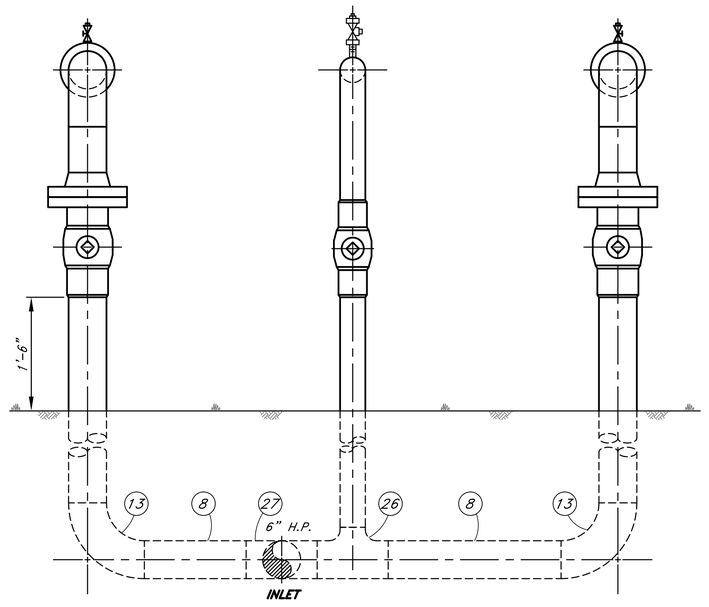


NOTE

1. 10' Minimum separation is preferred, contact Engineering if this is not practical.
2. Padlock relief block valve in OPEN position, Bypass valve in CLOSED position.

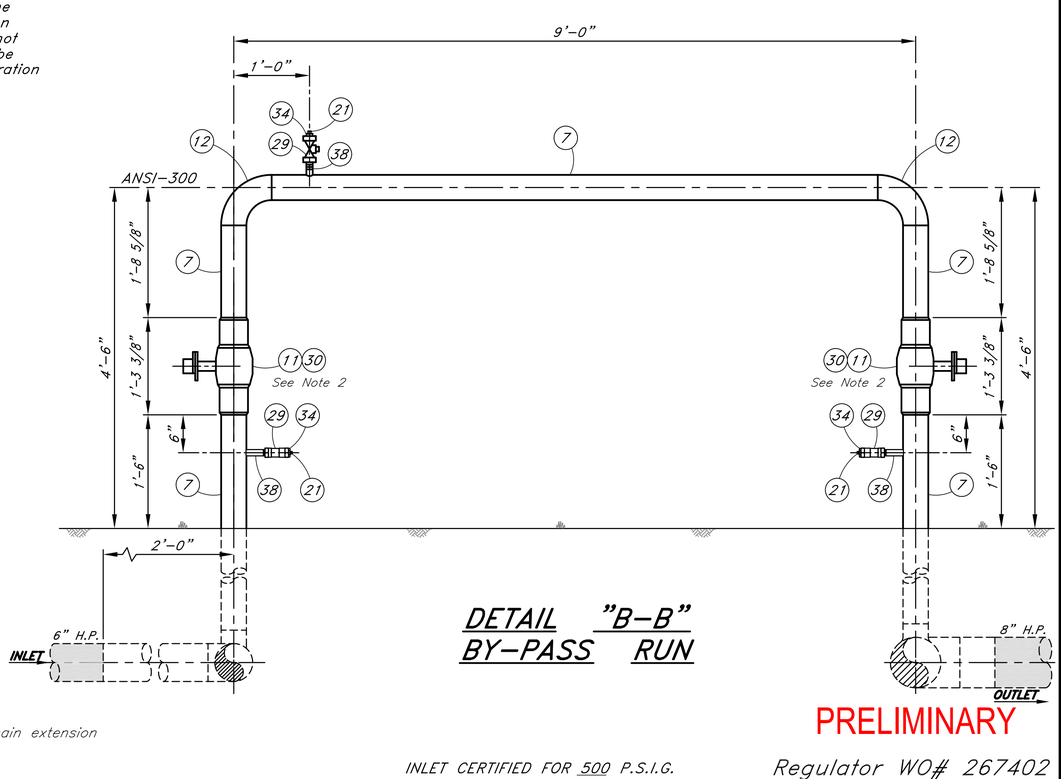
NOTE

Except for takeoff lines that can be isolated from sources of pressure by other valving, a shutoff valve must be installed in each takeoff line as near as practicable to the point of takeoff. When the station is operating and personnel are not on site, the shutoff valve must be protected from unauthorized operation by installing a locking device or removing the operating handle.



DETAIL "C–C" INLET HEADER

DETAIL "A–A"



DETAIL "B–B" BY–PASS RUN

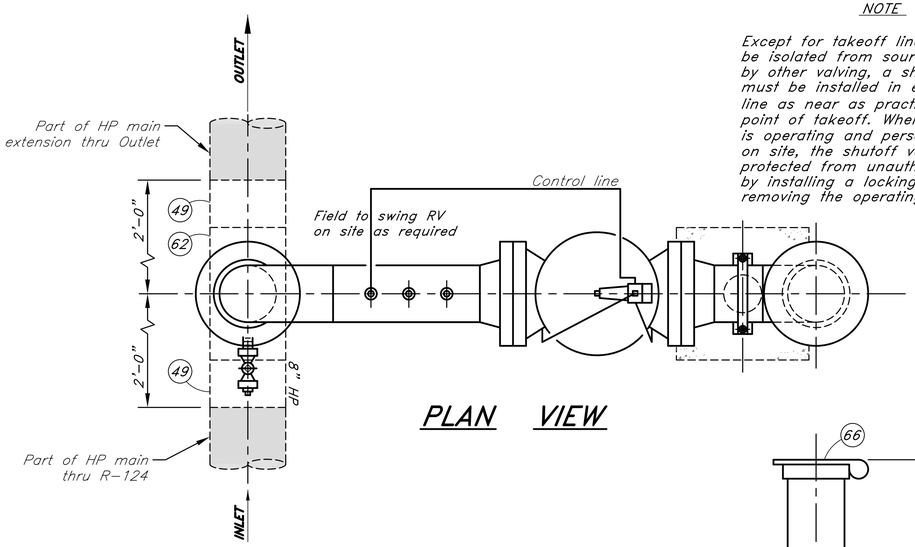
PRELIMINARY

INLET CERTIFIED FOR 500 P.S.I.G.

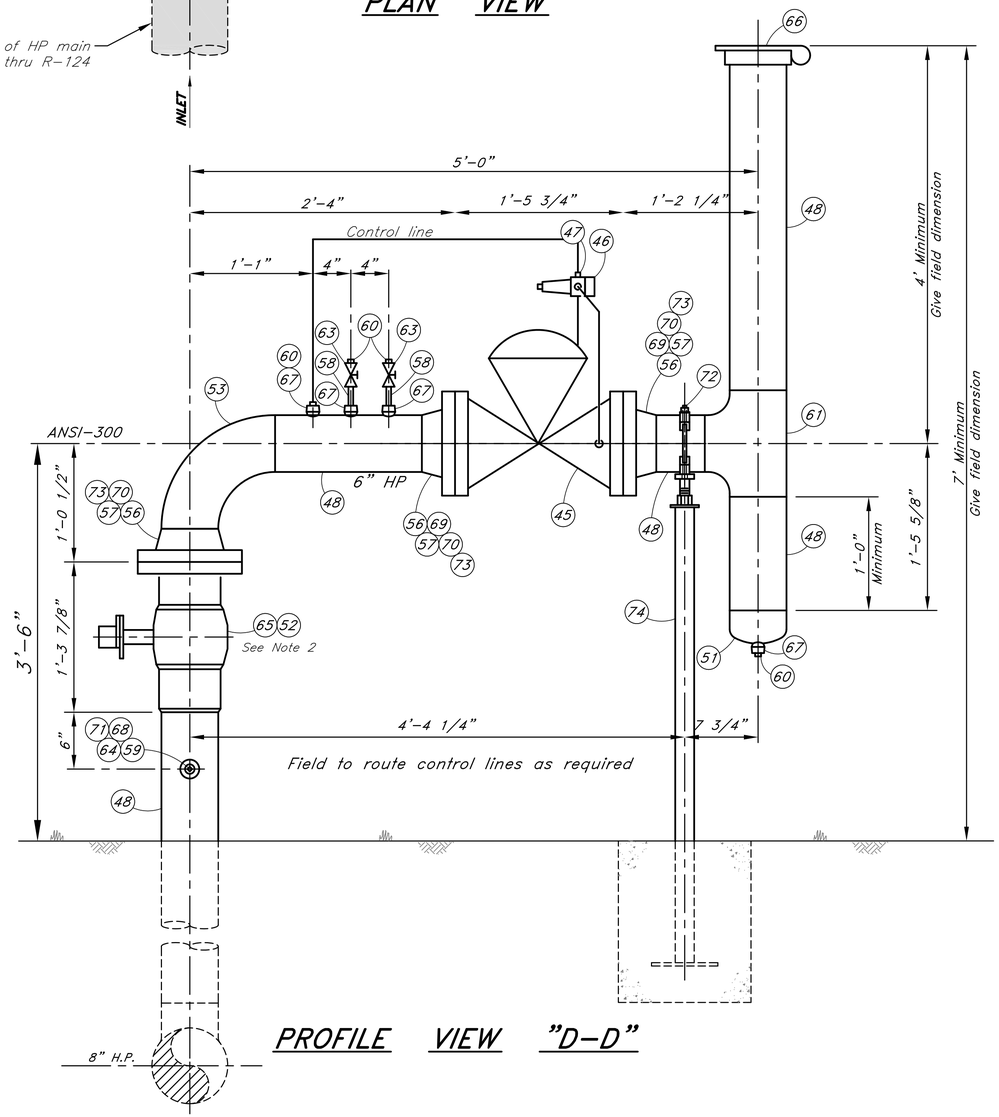
Regulator WO# 267402

Scale NONE	Drawn JW	CASCADE NATURAL GAS CORPORATION	
Date 7/19/19	Grid No. 6–V	8113 W Grandridge Blvd	Kennewick, WA 99336
Eng. TH	Meas. BH	R–124 Regulator	
Dwg No. R124Ric 3/5		Leslie Rd. & Gage Blvd	Richland, WA

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



PLAN VIEW



PROFILE VIEW "D-D"

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

NOTE

Except for takeoff lines that can be isolated from sources of pressure by other valving, a shutoff valve must be installed in each takeoff line as near as practicable to the point of takeoff. When the station is operating and personnel are not on site, the shutoff valve must be protected from unauthorized operation by installing a locking device or removing the operating handle.

FAB SHOP TEST– R–124 REGULATOR

STEP 1

PRESSURE TEST		
TEST PRESSURE	100	P.S.I.G.
TEST MEDIUM	NITROGEN	
TEST DURATION	1 HR	HOURS

STEP 2

PRESSURE TEST		
CERTIFICATION PRESSURE	500	P.S.I.G.
TEST PRESSURE	750	P.S.I.G.
TEST MEDIUM	NITROGEN	
TEST DURATION	4	HOURS

RELIEF VALVE TEST

PRESSURE TEST		
TEST PRESSURE	100	P.S.I.G.
TEST MEDIUM	NITROGEN	
TEST DURATION	1 HR	HOURS

STEP 2

PRESSURE TEST		
CERTIFICATION PRESSURE	500	P.S.I.G.
TEST PRESSURE	750	P.S.I.G.
TEST MEDIUM	NITROGEN	
TEST DURATION	4	HOURS

NOTE:

Document pressure test on appropriate CNG302 form and include in as–built packet.

NON DESTRUCTIVE TESTING REQUIREMENTS
1. 10% FOR ENTIRE ASSEMBLY.

NOTES:

1. 10' Minimum separation is preferred, contact Engineering if this is not practical.
2. Padlock relief block valve in OPEN position, Bypass valve in CLOSED position.

MATERIAL LIST – RV

ITEM	QUANTITY	STOCK NO.	DESCRIPTION
45.	1	R–397	6" Mooney Single Port Flowgrid Relief Valve with 100% capacity throttle plate, Stock No. FG–45, ANSI–300
46.	1	R–508	Mooney Series 20 Pilot c/w green spring 200–450 PSIG, Stock No.FP–20 (BPV)
47.	1	R–370	Mooney Type 24 restrictor
48.	12'	PB–653X52	6"x0.280" w.t., Bare steel pipe, Grade X–52, API 5L, P.O.#_____
49.	4'	PB–705X52	8"x0.322" w.t., Bare steel pipe, Grade X–52, API 5L, P.O.#_____
50.			
51.	1	CA–651X52	6" Weld Cap, Std. Wt., Grade Y52
52.	1	CS–455	Standard brass padlock to lock valve
53.	1	EL–657X52	6" 90° Weld elbow, Std. Wt., Grade Y52
54.			
55.			
56.	3	FL–651	6" W.N., R.F. Flange, ANSI–300
57.	3	FL–660	6" Type "E" Gasket, ANSI–300
58.	2	NP–104XH	1/2"x3" X.H. Nipple
59.	1	PL–025	1/4" Pipe plug, Square head, Solid, 3,000#
60.	4	PL–101	1/2" Pipe plug, Square head, Solid, 3,000#
61.	1	TE–651X52	6"x6"x6" Weld Tee, Std. Wt., Grade Y52
62.	1	TE–711X52	8"x8"x6" Weld Tee, Std. Wt., Grade Y52
63.	2	VA–120	1/2" Ball valve, WKM# 1/2R–B136–CS2–42–S2–WR, 1,500#
64.	1	VA–220	1" Ball valve, WKM# 1F–B138–CS2–42–S2–WR, 1,500#
65.	1	VA–617	6" Ballomax WxF Ball Valve Fig #6BMWF740RP, ANSI–300
66.	1	H–5	6" Weathercap c/w Flag
67.	4	H–11	1/2" Bonney Thred–O–Let, 3,000#
68.	1	H–34	1"x1/4" Steel hexagon bushing
69.	4	H–294	3/4"x4 1/4" Cap Screw, ASTM A307 Grade B, CNG Spec 9
70.	32	H–181	3/4"x4 1/2" Cap Screw, ASTM A307 Grade B, CNG Spec 9
71.	1	H–114	1"x3" Mueller Save–A–Valve body only #63494, 1440#
72.	1	H–154	6" UHMW Poly pipe guide
73.	36	H–266	3/4" Heavy Nex Nut, ASTM A194 Grade 2H, CNG Spec 28
74.	5'	PB–350	2" Pipe support (Fab shop fabricate)

PRELIMINARY

INLET CERTIFIED FOR 500 P.S.I.G.

Regulator WO# 267402

Scale	1 1/2"=1'–0"	Drawn	JW
Date	7/19/19	Grid No.	6–V
Eng.	TH	Meas.	BH
Dwg No.	R124Ric 4/5		

CASCADE NATURAL GAS CORPORATION
8113 W Grandridge Blvd Kennewick, WA 99336

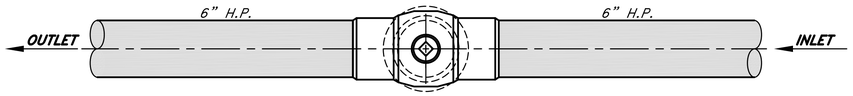
R–124 Regulator
Leslie Rd. & Gage Blvd Richland, WA

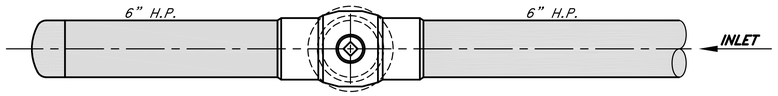
MATERIAL LIST – R124 INLET MAIN, V–212 & V–218

ITEM	QUANTITY	PART NO	DESCRIPTION
80.	2	VA–677	6" Ballomax WxW Ball Valve Fig #6BMW740RP, ANSI–300
81.	2	H–36	Ametek roadway valve box #5–155–24
82.	2	H–210	High Head Extension Kit for Wrench Operated Ball Valves
83.	[']	PFBE–653X52	6"x0.280" w.t., FBE coated steel pipe, Grade X–52, API 5L, ERW, P.O.#_____
84.	1	SP–660	6" Mueller side out line stopper fig.#H–17376 (720 psig)
85.	2	CA–651X52	6" Weld Cap, Std. Wt., Grade Y52
86.	2	SA–150	1"x6" Weld Saddle
87.	2	NP–210	1"x3" Save–A–Valve Nipple with steel cap, Mueller #H–17491300, 1440 PSIG
88.	1	TE–651X52	6"x6"x6" Weld Tee, Std. Wt., Grade Y52

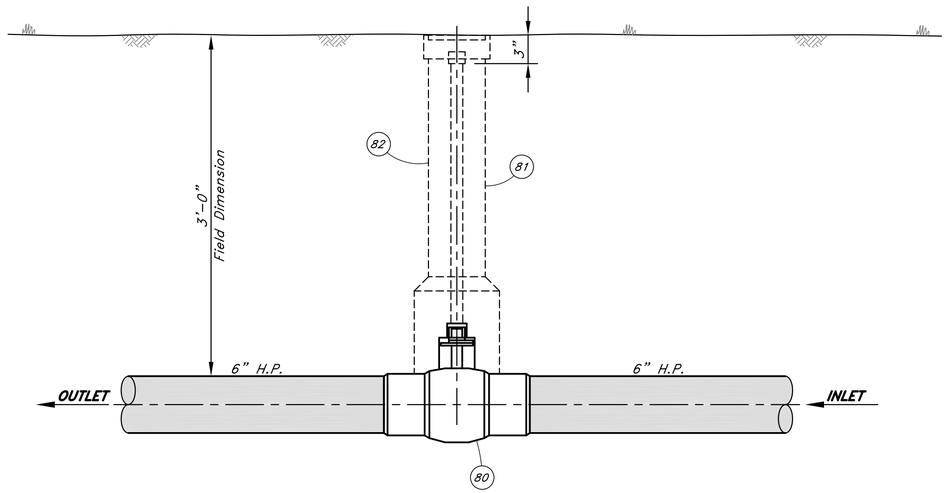
MATERIAL LIST – OUTLET PIPE

ITEM	QUANTITY	PART NO	DESCRIPTION
90.	[']	PFBE–653X52	6"x0.280" w.t., FBE coated steel pipe, Grade X–52, API 5L, ERW, P.O.#_____
91.	1	NP–210	1"x3" Save–A–Valve Nipple with steel cap, Mueller #H–17491300, 1440 PSIG
92.	1	SA–150	1"x6" Weld Saddle
93.	[']	PFBE–710X52	8"x0.250" w.t., FBE coated steel pipe, Grade X–52, API 5L, ERW, P.O.#_____
94.	1	RE–700X52	8"x6" Weld Reducer, Std. Wt., Grade Y52
95.	2	EL–657X52	6" 90° Weld elbow, Std. Wt., Grade Y52
96.	1	CA–651X52	6" Weld Cap, Std. Wt., Grade Y52

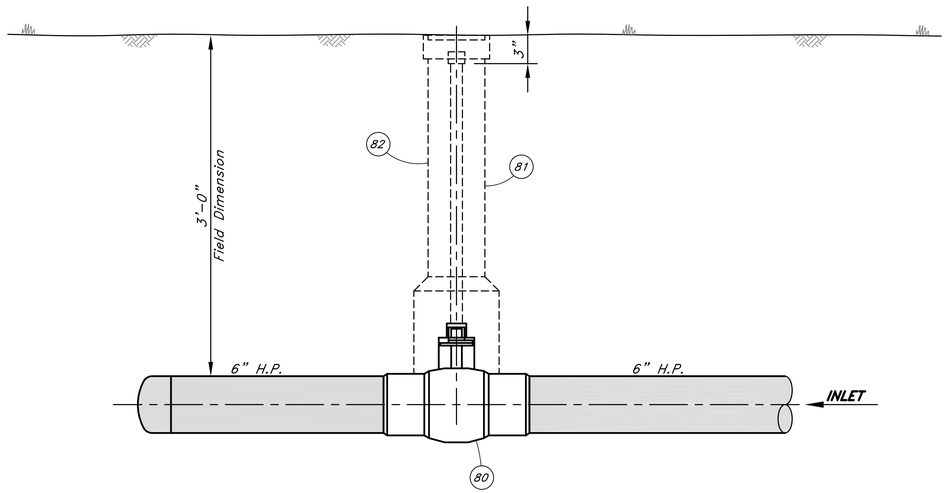




PLAN VIEW (V–212)



PLAN VIEW (V–218)



PROFILE VIEW (V–212)

NOTES:

1. **Make sure valve operating head is kept free of debris during installation and backfilling.**
2. **Weld high head extension to operating head per CP 740. Drawing No. 4490–A**

PROFILE VIEW (V–218)

NOTES:

1. **Make sure valve operating head is kept free of debris during installation and backfilling.**
2. **Weld high head extension to operating head per CP 740. Drawing No. 4490–A**

PRELIMINARY

INLET CERTIFIED FOR 500 P.S.I.G.

Main WO# 267787

Scale NONE	Drawn JW	CASCADE NATURAL GAS CORPORATION
Date 7/19/19	Grid No. 6–V	8113 W Grandridge Blvd Kennewick, WA 99336
Eng. TH	Meas. BH	R–124 Regulator
Dwg No. R124Ric 5/5		Leslie Rd. & Gage Blvd Richland, WA

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