CNGC 4" GAS PIPE REPLACEMENT

HERMISTON, OR

INDEX OF DRAWINGS		
GENERAL		
SHEET NUMBER	SHEET TITLE	DATE
C1	COVER SHEET	
C2	LEGEND SHEET	
M1	MATERIALS LIST	
M2	SHEET INDEX	

PLANS & DETAILS		
SHEET NUMBER	SHEET TITLE	LOCATION
P01	PLAN & PROFILE	STA 5+50 TO STA 9+00
P02	PLAN & PROFILE	STA 9+00 TO STA 12+00
P03	PLAN & PROFILE	STA 12+00 TO STA 16+00
D1	DETAILS	
D2	DETAILS	

OWNER:
MDU UTILITIES GROUP
RICK SELENSKY, PE 406-860-0714

ENGINEER:
MACKAY SPOSITO
RUSS CHRISMAN, PE 509-619-7087
1110 OSPREY POINTE BLVD, SUITE 105
PASCO, WA 99301

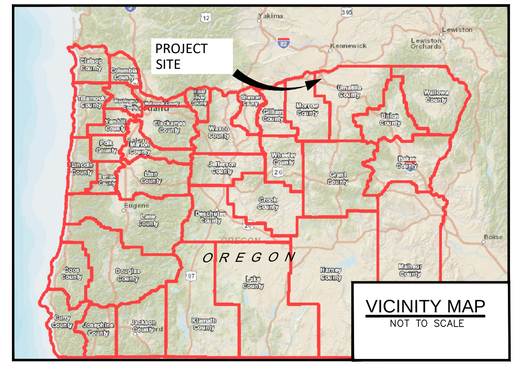
SURVEYOR:
MACKAY SPOSITO
CORY DOPP, PLS 360-823-1354
1325 SE TECH CENTER DR, SUITE 140
VANCOUVER, WA 98683

PERMITS:
CITY OF HERMISTON PUBLIC RIGHT OF WAY PERMIT

EASEMENTS:
TBD

CONTRACTOR:
TBD

START DATE: ------
COMPLETION DATE:------





CALL BEFORE YOU DIG:
UTILITIES UNDERGROUND
LOCATION CENTER
811

CONTRACTOR TO VERIFY SIZE, TYPE AND LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. NOTIFY PROJECT ENGINEER IMMEDIATELY IF CONFLICTS ARISE.

PRELIMINARY

NO	REVISION	BY	DATE

Approved For Construction
By:_____ Date_____
TITLE:_____
Approval Expires:_____ Date

CASCADE NATURAL GAS CORPORATION
A Subsidiary of MDU Resources Group, Inc.
In the Community to Serve®

MacKay Sposito
ENERGY PUBLIC WORKS LAND DEVELOPMENT
www.mackaysposito.com

CAD Tech: TS	Scale: 1=20
CAD Review: RC	Grid #:
Engineer: RC	Date: 6/30/21
Design Review: RC	
Funding Project Number: XXX	
Work Order Number: XXXX	
Drawing No: 17567_C1_COVER SHEET	

MDU 4" REPLACEMENT PIPELINE
HERMISTON, OR
UMATILA COUNTY
COVER SHEET

T4N, R28E, SECTION 14 W.M.

C1

LINETYPES

EXISTING	PROPOSED	DESCRIPTION
REFERENCE LINETYPES		
		PROPERTY LINES
		EASEMENT
	TCE	TEMPORARY CONSTRUCTION EASEMENT
R/W		RIGHT OF WAY
		CENTER LINE
FEATURE LINETYPES		
		EDGE OF PAVEMENT
		EDGE OF GRAVEL
X		FENCE
		BUILDINGS
		RAILROAD TRACKS
	TOB	TOP OF BANK
	TOE	TOE OF BANK
		CURB
UTILITIES		
G		GAS – UNKNOWN SIZE
12ST 12ST	12ST 12ST	GAS – 12" STEEL
W		WATER LINE
SD		STORM DRAIN
COM COM		COMMUNICATION CABLE (BURIED)
FO		FIBER OPTICS (BURIED)
T		TELEPHONE (BURIED)
OHE		OVERHEAD ELECTRIC
UGE		UNDERGROUND ELECTRIC
IRR		IRRIGATION
CONTOURS		
121	FG 121	CONTOURS (MINOR)
120	FG 120	CONTOURS (MAJOR)

SYMBOLS

EXIST.	PROP.	DESCRIPTION
WATER		
		FIRE HYDRANT
		WATER VALVE
POWER		
		POWER POLE
		GUY WIRE ANCHOR
		ELECTRIC BOX
ESJB		ELECTRIC BOX (HOUSE)
		YARD LIGHT
TRAN		TRANSFORMER
EM		BREAKER BOX
TELEPHONE		
TP		TELEPHONE PEDESTAL
GAS		
		GAS FINK
		GAS VALVE
		GAS METER
GLR		GAS LOCATE RISER
GVNT		GAS VENT
		GAS MARKER
		GAS CAP/PLUG
		GAS VALVE
		GAS REDUCER
		SAV-A-VALVE

EXIST.	PROP.	DESCRIPTION
SURFACE / LANDSCAPING		
B		BOLLARD
		SIGN
SHADING / HATCHING		
		AC PAVEMENT
		GRAVEL
		LANDSCAPING
NOTE BUBBLES		
#		WATER NOTE
#		SANITARY NOTE
#		MATERIAL CALL OUT
#		DRY UTILITY, SITE, DEMOLITION NOTE
#		AS-BUILT NOTE
#		REVISION NOTE

ABBREVIATIONS

&	AND	CF	CUBIC FEET	E	EAST	GA	GAUGE	MISC	MISCELLANEOUS	RT	RIGHT
@	AT	CCI	COMBINATION CURB INLET	EA	EACH	GALV	GALVANIZED				
℄, CL	CENTERLINE	CI	CURB INLET	EG	EXISTING GROUND	GV	GATE VALVE	N	NORTH	S	SOUTH, SLOPE
ℙ, PL	PROPERTY LINE	CMP	CORRUGATED METAL PIPE	EJ	EXPANSION JOINT			NO.	NUMBER	SAN	SANITARY SEWER
%	PERCENT	CMU	CONCRETE MASONRY PIPE	EL, ELEV	ELEVATION	HB	HOSE BIB	NTS	NOT TO SCALE	SF	SQUARE FEET
#	NUMBER	CO	CLEANOUT	EP	EDGE OF PAVEMENT	HORIZ	HORIZONTAL			SHT	SHEET
		CONC	CONCRETE	EQ	EQUAL	HP	HIGH POINT	OC	ON CENTER	SPECS	SPECIFICATIONS
AC	ASPHALTIC CONCRETE	CONST	CONSTRUCTION	ER	END OF RETURN			OD	OUTSIDE DIAMETER	SQ	SQUARE
AD	AREA DRAIN	CONT	CONTINUOUS	ESMT	EASEMENT	ID	INSIDE DIAMETER			STA	STATION
ALT	ALTERNATE	CR	CURB RETURN	EVC	END VERTICAL CURVE	IE	INVERT ELEVATION	PC	POINT OF CURVATURE	STD	STANDARD
APPROX	APPROXIMATELY	CROWN	TOP OF PIPE	EX, EXIST	EXISTING	IN	INCHES	PERF	PERFORATED	STM	STORM SEWER
ARVA	AIR RELEASE VALVE	CY	CUBIC YARDS					PI	POINT OF INTERSECTION		
ASSY	ASSEMBLY			FDC	FIRE DEPARTMENT CONNECTION	JT	JOINT	P.P.	PERFORATED PIPE	TB	THRUST BLOCK
		DCVA	DOUBLE CHECK VALVE ASSEMBLY	FF	FINISH FLOOR ELEVATION	LAT	LATERAL	PRC	POINT OF REVERSE CURVE	TC	TOP OF CURB
BOC	BACK OF CURB	DET	DETAIL	FG	FINISHED GRADE	LF	LINEAR FEET	PT	POINT OF TANGENCY	TEL	TELEPHONE
BLDG	BUILDING	DI	DITCH INLET	FH	FIRE HYDRANT	LP	LOW POINT	PUE	PUBLIC UTILITY EASEMENT	TOG	TOP OF GRATE
BO	BLOW OFF	DIA	DIAMETER	FL	FLOW LINE	LT	LEFT	PUD	POWER	TS	TRAFFIC SIGNAL CONDUIT
BOT	BOTTOM	DIM	DIMENSION	FLG	FLANGE	MAX	MAXIMUM	PVC	POLYVINYL CHLORIDE PIPE	TSFO	TRAFFIC SIGNAL CONDUIT FIBEROPTIC
BVC	BEGIN VERTICAL CURVE	DIP	DUCTILE IRON PIPE	FO	FIBEROPTIC	MH	MANHOLE	R, RAD	RADIUS		
BW	BOTTOM OF WALL	DW	DRY WELL	FOC	FACE OF CURB	MJ	MECHANICAL JOINT	RIM	RIM ELEVATION	TV	CABLE TELEVISION
		D/W	DRIVEWAY	FM	FORCE MAIN	MIN	MINIMUM	REQD	REQUIRED	TW	TOP OF WALL
CB	CATCH BASIN			FT	FOOT OR FEET			ROW, R/W	RIGHT OF WAY	TYP	TYPICAL

VC	VERTICAL CURVE	
VERT	VERTICAL	
W	WEST	
W/	WITH	

PRELIMINARY

NO	REVISION	BY	DATE

Approved For Construction

By:_____ Date_____

TITLE:_____

Approval Expires:_____ Date

CASCADE NATURAL GAS CORPORATION
A Subsidiary of MDU Resources Group, Inc.
In the Community to Serve®

MacKay & Sposito
ENERGY PUBLIC WORKS LAND DEVELOPMENT
www.mackayposito.com

CAD Tech: TS	Scale: 1=20
CAD Review: RC	Grid #: XX
Engineer: RC	Date: 6/30/21
Design Review: RC	
Funding Project Number: XXX	
Work Order Number: XXXX	
Drawing No: 17567 C2_LEGEND_SHEET	

MDU 4" REPLACEMENT PIPELINE
HERMISTON, OR
UMATILA COUNTY
LEGEND
T4N, R28E, SECTION 14 W.M.

C2

2 OF 9

FILE: K:\17567 MDU AIRPORT WAY\500 DESIGN\502 DRAWINGS\SHEETS\17567 C2_LEGEND_SHEET.DWG

GENERAL NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH CASCADE NATURAL GAS CORPORATION PROCEDURES AND CITY OF HERMISTON STANDARDS. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL SAFETY STANDARDS AND REQUIREMENTS AS SET FORTH BY OSHA, WISHA, AND THE STATE OF OREGON DEPARTMENT OF LABOR AND INDUSTRIES.
2. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF HERMISTON STANDARDS.
3. ALL APPROVALS AND PERMITS REQUIRED BY THE CITY OF HERMISTON SHALL BE OBTAINED PRIOR TO THE START OF CONSTRUCTION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL PUBLIC INFRASTRUCTURE CONSTRUCTION DEFICIENCIES FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE CITY OF HERMISTON.
5. CONTRACTOR SHALL TAKE ANY NECESSARY MEANS TO KEEP FROM TRACKING MUD AND DEBRIS OUT ONTO THE EXISTING STREETS, AND SHALL ALSO KEEP MUD AND ANY OTHER DEBRIS FROM THE SITE FROM ENTERING THE EXISTING PUBLIC STORM DRAINAGE SYSTEM.
6. SURFACE TREATMENT FOR THE PROPOSED PIPE ALIGNMENT RESTORATION OUTSIDE OF THE ROADWAY SHALL BE RESTORED TO ORIGINAL SURFACE CONDITION.
7. A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE CITY OF HERMISTON PRIOR TO THE START OF CONSTRUCTION. A MINIMUM OF 48 HOURS NOTICE SHALL BE GIVEN TO THE CITY OF HERMISTON.
8. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. CONTRACTOR SHALL VERIFY THE LOCATIONS PRIOR TO CONSTRUCTION BY CALLING 811 A MINIMUM OF 2 DAYS PRIOR TO ANY EXCAVATION.
9. ALL ASPHALT REMOVAL, COMPACTION, AND RESTORATIONS SHALL BE IN ACCORDANCE WITH THE CITY OF HERMISTON STANDARDS.
10. TRAFFIC CONTROL SHALL BE IMPLEMENTED IN ACCORDANCE WITH MUTCD STANDARDS OR AS SPECIFIED BY THE CITY ENGINEER. ALL IMPACTS TO LOCAL TRAFFIC SHALL BE COORDINATED WITH THE CITY OF HERMISTON AT LEAST ONE WEEK PRIOR TO SAID IMPACT.
11. IT IS CONTRACTOR'S RESPONSIBILITY TO COORDINATE STREET CLOSURES AND ROUTE OBSTRUCTIONS WITH THE CITY OF HERMISTON, AND IF REQUIRED BY THE CITY, TO NOTIFY EMERGENCY SERVICES (FIRE, POLICE, ETC).
12. CONTRACTOR SHALL RESTORE WORK AREA TO SAME OR BETTER CONDITION UNLESS OTHERWISE APPROVED OR SPECIFIED BY THE CITY OF HERMISTON.
13. CONTRACTOR IS PERMITTED TO WORK WITHIN THE CITY RIGHT-OF-WAY OR THE CITY OF HERMISTON PROPERTY. IT IS CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF THE RIGHT-OF-WAY.
14. CONTRACTOR SHALL NOTIFY AND WORK WITH ALL AFFECTED PROPERTY OWNERS. CASCADE SHALL PROVIDE THE CITY OF HERMISTON WITH EMERGENCY TELEPHONE NUMBERS AT THE TIME OF THE PRE-CONSTRUCTION MEETING AND SHALL SUPPLY A FOREMAN ON-SITE AT ALL TIMES.
15. THE CITY OF HERMISTON UTILITY SERVICE LINES BROKEN ON PRIVATE PROPERTY SHALL BE REPAIRED IMMEDIATELY BY CONTRACTOR. MARKED CITY SERVICE LINES BROKEN IN THE CITY RIGHT-OF-WAY SHALL BE REPAIRED BY THE CONTRACTOR, AT CONTRACTOR/PROJECT PROPONENT'S EXPENSE.
16. CONTRACTOR SHALL COORDINATE WITH AND ACCOMMODATE OTHER CONTRACTORS WORKING ON SITE.
17. CONTRACTOR SHALL CONTRACT WITH INDEPENDENT TESTING COMPANY TO PROVIDE COMPACTION TESTING AT 300' INTERVALS ALONG THE CENTERLINE OF THE GAS MAIN THAT IS INSTALLED IN CITY RIGHT-OF-WAY. COPIES OF THE COMPACTION TEST RESULTS SHALL BE PROVIDED WEEKLY TO THE CITY OF HERMISTON.

PRESSURE TEST INSTRUCTIONS:

1. ALL HIGH PRESSURE MAINS SHALL BE INSTALLED AND PRESSURE TESTED AT THE SAME TIME.
2. NOTIFY ENGINEERING WHEN TEST IS PUT ON. ENGINEERING APPROVAL VIA PHONE OR EMAIL REQUIRED BEFORE PULING PRESSURE TEST.
3. AFTER TEST COMPLETED, BLOW DOWN PIPE TO 50 PSIG OF NITROGEN UNTIL PIPE CAN BE CONNECTED TO SYSTEM.

PRESSURE TEST CERTIFICATION AS SPECIFIED BY ENGINEERING/SYSTEM INTEGRITY

STEP 1 – LEAK TEST		
MINIMUM TEST PRESSURE	100	P.S.I.G.
MAXIMUM TEST PRESSURE	250	P.S.I.G.
TEST MEDIUM	NITROGEN	
TEST DURATION	1	HOURS

STEP 2 – STRENGTH TEST		
CERTIFICATION PRESSURE	500	P.S.I.G.
MINIMUM TEST PRESSURE	750	P.S.I.G.
MAXIMUM TEST PRESSURE	850	P.S.I.G.
TEST MEDIUM	NITROGEN	
TEST DURATION	24	HOURS
PRESSURE @ 20% SMYS	612	P.S.I.G.

NON DESTRUCTIVE TESTING REQUIREMENTS: X-RAY 10% OF ALL BUTT WELDS, TIE-IN WELDS, AND MAG PARTICLE 100% OF FILLET WELDS

CALL BEFORE YOU DIG:
UTILITIES UNDERGROUND LOCATION CENTER
811

CONTRACTOR TO VERIFY SIZE, TYPE AND LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. NOTIFY PROJECT ENGINEER IMMEDIATELY IF CONFLICTS ARISE.

PRELIMINARY

NO	REVISION	BY	DATE

Approved For Construction
By:_____ Date_____
TITLE:_____
Approval Expires:_____ Date

CASCADE NATURAL GAS CORPORATION
A Subsidiary of MDU Resources Group, Inc.
In the Community to Serve®

MacKay Sposito
ENERGY PUBLIC WORKS LAND DEVELOPMENT
www.mackaysposito.com

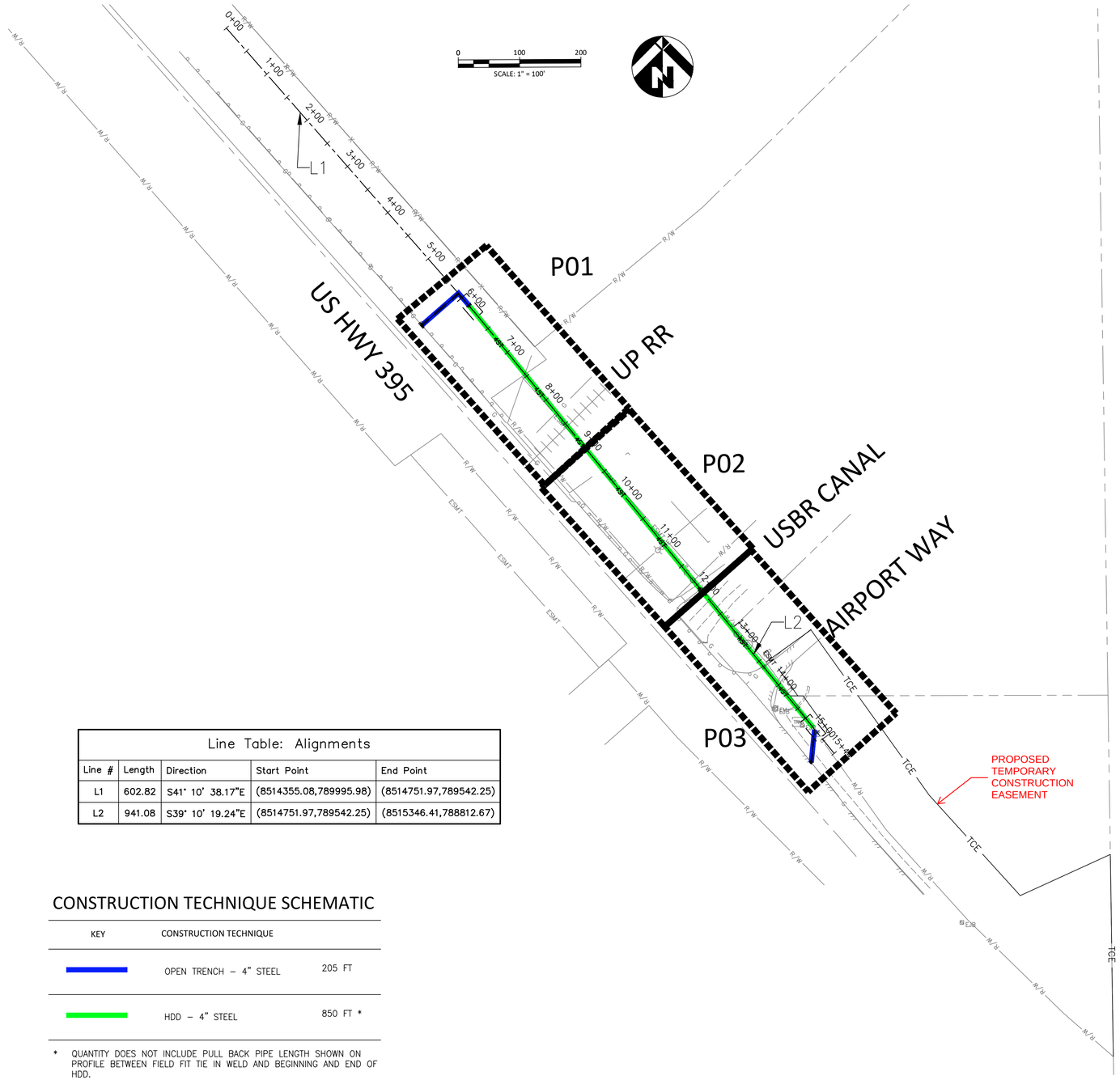
CAD Tech: TS	Scale: 1=20
CAD Review: RC	Grid #:
Engineer: RC	Date: 6/30/21
Design Review: RC	
Funding Project Number: XXX	
Work Order Number: XXXX	
Drawing No: 17567_M1_MATERIAL SHEET	

MDU 4" REPLACEMENT PIPELINE
HERMISTON, OR
UMATILA COUNTY
MATERIAL SHEET

T4N, R28E, SECTION 14 W.M.

M1

3 OF 9



Line Table: Alignments				
Line #	Length	Direction	Start Point	End Point
L1	602.82	S41° 10' 38.17"E	(8514355.08,789995.98)	(8514751.97,789542.25)
L2	941.08	S39° 10' 19.24"E	(8514751.97,789542.25)	(8515346.41,788812.67)

CONSTRUCTION TECHNIQUE SCHEMATIC

KEY	CONSTRUCTION TECHNIQUE	
	OPEN TRENCH – 4" STEEL	205 FT
	HDD – 4" STEEL	850 FT *

* QUANTITY DOES NOT INCLUDE PULL BACK PIPE LENGTH SHOWN ON PROFILE BETWEEN FIELD FIT TIE IN WELD AND BEGINNING AND END OF HDD.

CALL BEFORE YOU DIG:
UTILITIES UNDERGROUND LOCATION CENTER
811

CONTRACTOR TO VERIFY SIZE, TYPE AND LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. NOTIFY PROJECT ENGINEER IMMEDIATELY IF CONFLICTS ARISE.

PRELIMINARY

NO	REVISION	BY	DATE

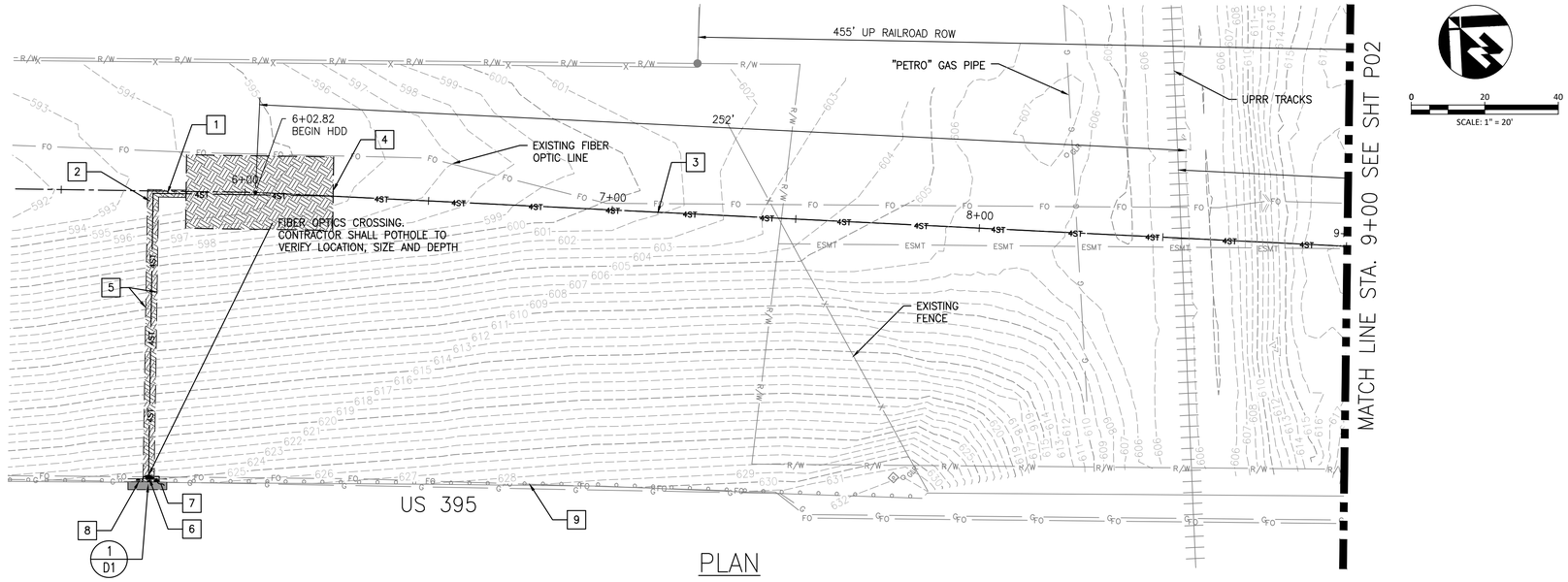
Approved For Construction
By:_____ Date_____
TITLE:_____
Approval Expires:_____ Date

CASCADE NATURAL GAS CORPORATION
A Subsidiary of MDU Resources Group, Inc.
In the Community to Serve®

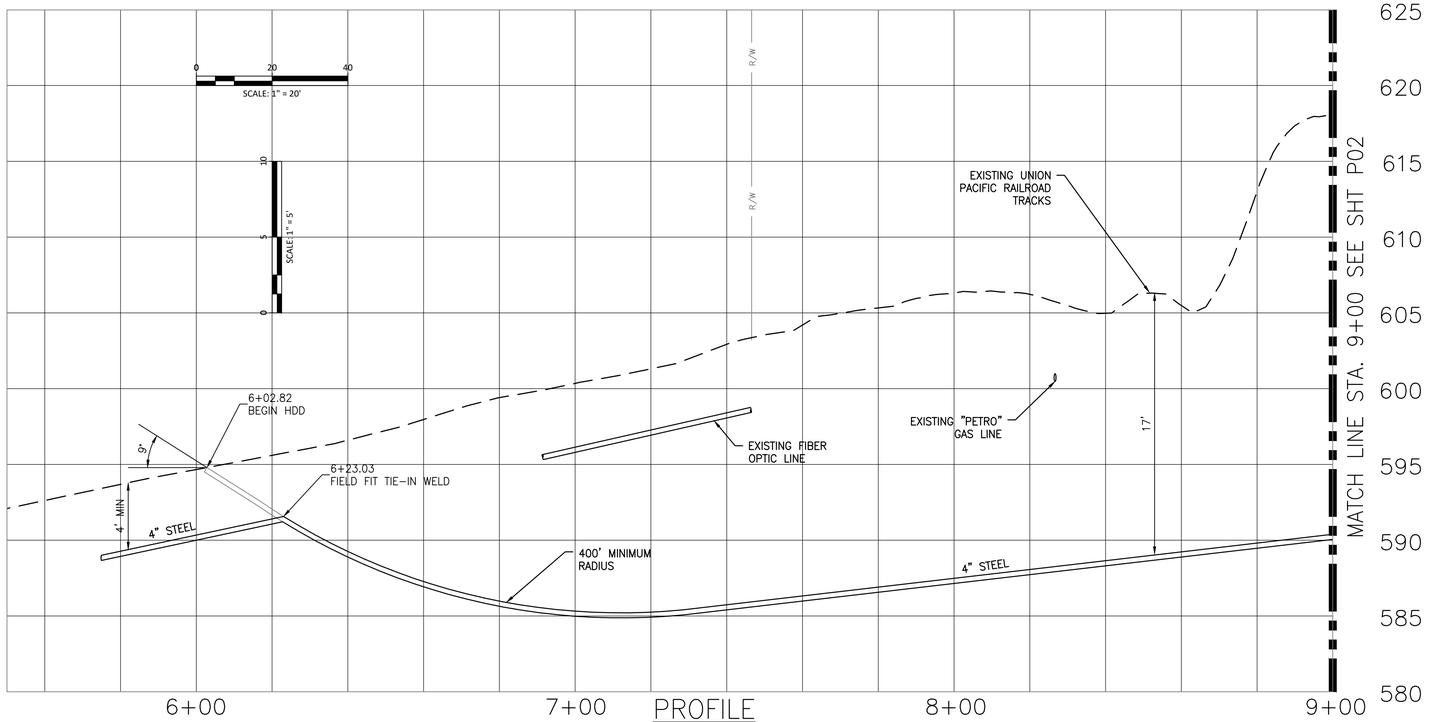
CAD Tech: TS	Scale: 1=20
CAD Review: RC	Grid #:
Engineer: RC	Date: 6/30/21
Design Review: RC	
Funding Project Number: XXX	
Work Order Number: XXXX	
Drawing No: 17567_M2_SHEET INDEX	

MDU 4" REPLACEMENT PIPELINE
HERMISTON, OR
UMATILA COUNTY
PLAN & PROFILE
T4N, R28E, SECTION 14 W.M.

M2



PLAN



PROFILE

KEY NOTES:

1. 4" ST OPEN TRENCH GAS PIPE
2. RESTORE TRENCH WITH TOP SOIL IN UNIMPROVED AREA PER ODOT STANDARD DWG RD300
3. 4" ST HDD GAS PIPE
4. 20'X40' HDD PIT CENTERED ABOUT STA 6+02.82
5. TRENCH LIMITS
6. CONNECT TO EXISTING GAS LINE
7. RESTORE ASPHALT PAVEMENT PER ODOT STANDARD DETAIL RD302
8. REMOVE AND REPLACE GUARDRAIL
9. EXISTING GUARDRAIL

PRELIMINARY

CALL BEFORE YOU DIG:
UTILITIES UNDERGROUND
LOCATION CENTER
811

CONTRACTOR TO VERIFY SIZE, TYPE AND LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. NOTIFY PROJECT ENGINEER IMMEDIATELY IF CONFLICTS ARISE.

NO	REVISION	BY	DATE

Approved For Construction

By:_____ Date_____

TITLE:_____

Approval Expires:_____ Date

CASCADE NATURAL GAS CORPORATION
A Subsidiary of MDU Resources Group, Inc.
In the Community to Serve®

CAD Tech: TS	Scale: 1=20
CAD Review: RC	Grid #:
Engineer: RC	Date: 6/30/21
Design Review: RC	
Funding Project Number: XXX	
Work Order Number: XXXX	
Drawing No: 17573 1HDD P01-P02	

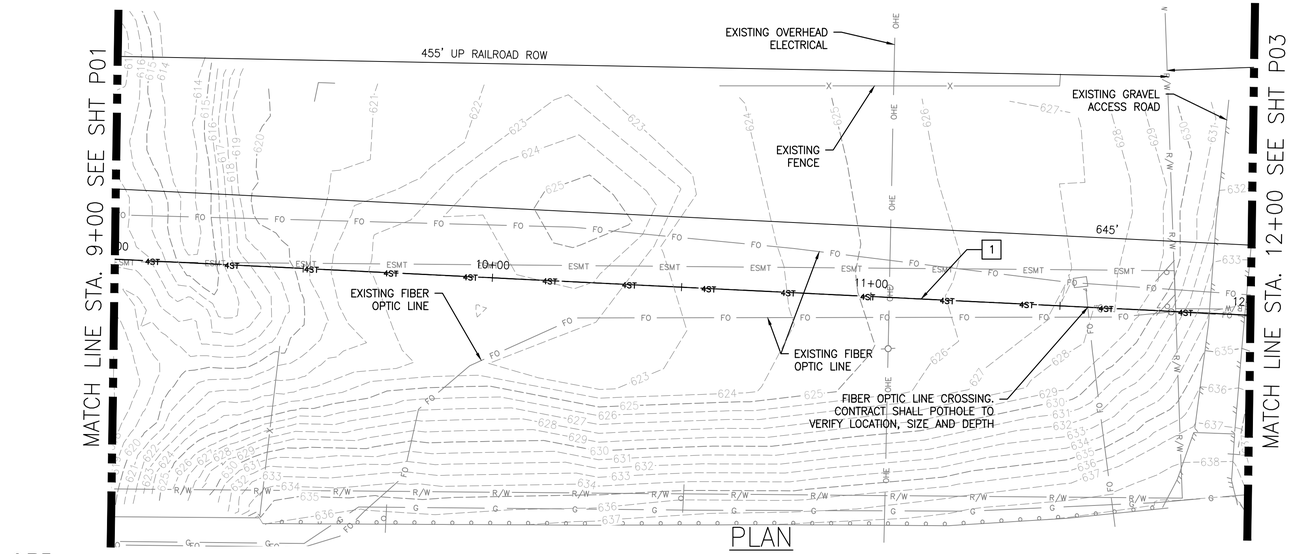
MDU 4" REPLACEMENT PIPELINE

HERMISTON, OR
UMATILA COUNTY
PLAN & PROFILE

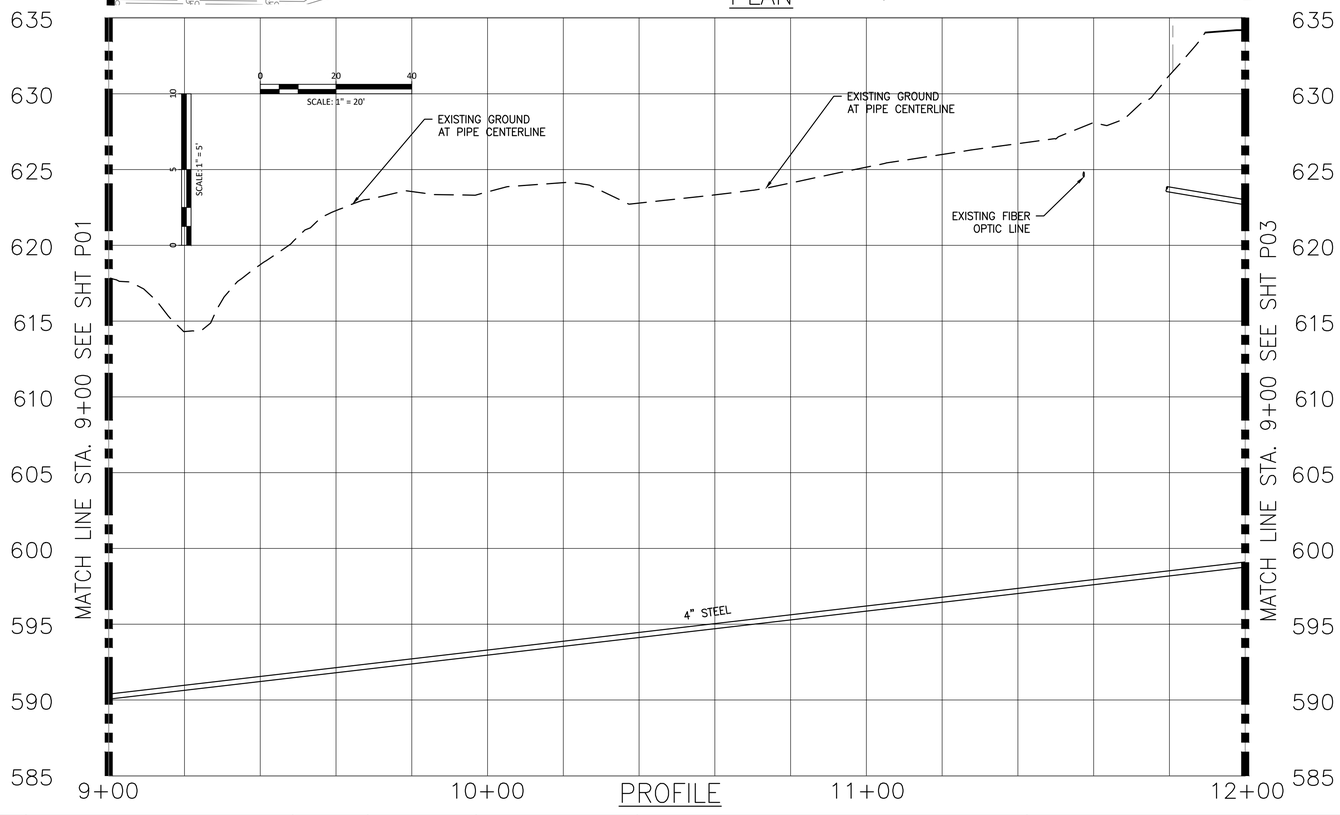
T4N, R28E, SECTION 14 W.M.

P01

5 OF 9



PLAN



PROFILE



KEY NOTES:

1 4" ST HDD GAS PIPE

PRELIMINARY

CALL BEFORE YOU DIG:
UTILITIES UNDERGROUND LOCATION CENTER
811

CONTRACTOR TO VERIFY SIZE, TYPE AND LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. NOTIFY PROJECT ENGINEER IMMEDIATELY IF CONFLICTS ARISE.

NO	REVISION	BY	DATE

Approved For Construction

By:_____ Date_____

TITLE:_____

Approval Expires:_____ Date

CASCADE NATURAL GAS CORPORATION
A Subsidiary of MDU Resources Group, Inc.
In the Community to Serve®

CAD Tech:	TS	Scale:	1=20
CAD Review:	RC	Grid #:	
Engineer:	RC	Date:	6/30/21
Design Review:	RC		
Funding Project Number:	XXX		
Work Order Number:	XXXX		
Drawing No:	17573 1HDD P01-P02		

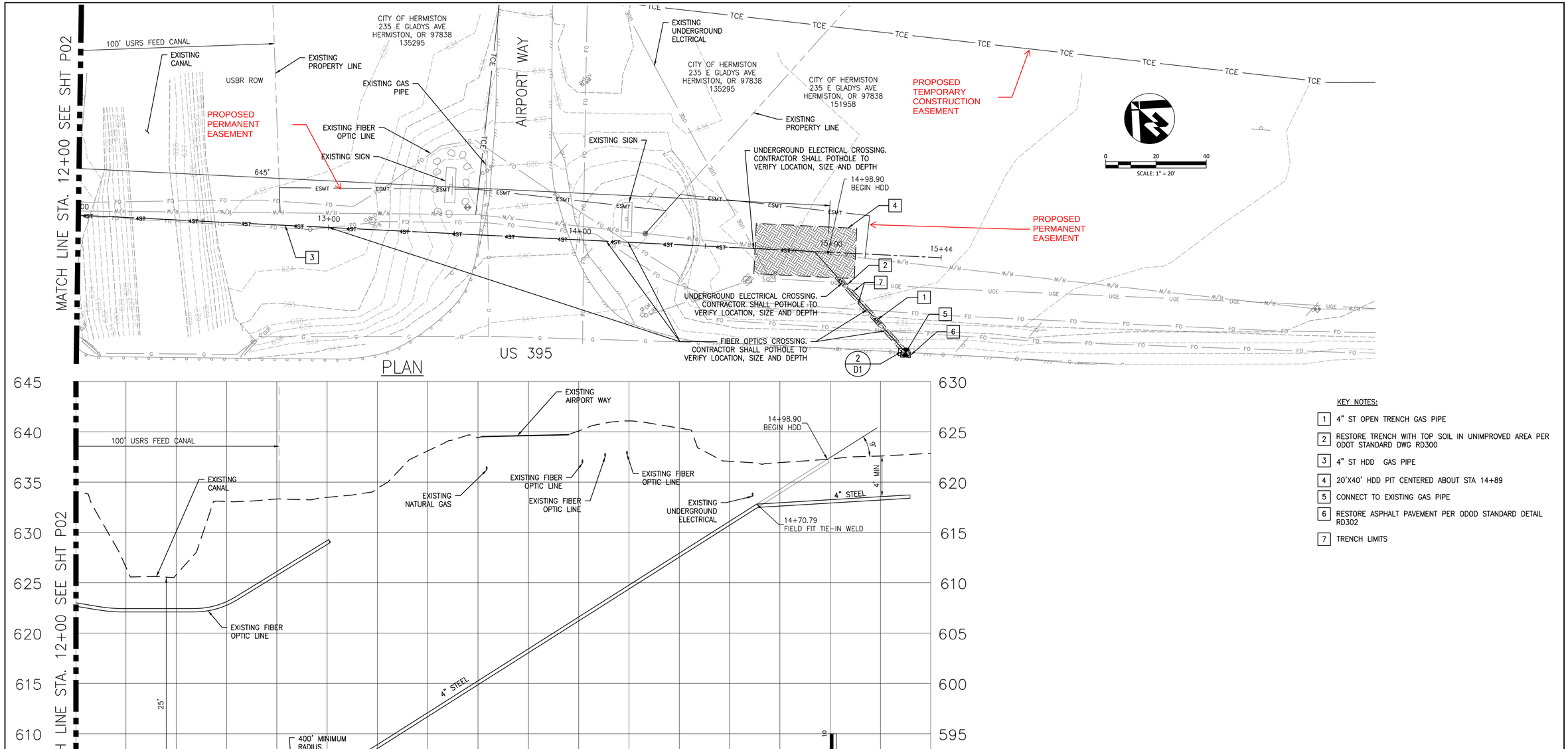
MDU 4" REPLACEMENT PIPELINE

HERMISTON, OR
UMATILA COUNTY
PLAN & PROFILE

T4N, R28E, SECTION 14 W.M.

P02

6 OF 9



KEY NOTES:

1. 4" ST OPEN TRENCH GAS PIPE
2. RESTORE TRENCH WITH TOP SOIL IN UNIMPROVED AREA PER ODOT STANDARD DWG RD300
3. 4" ST HDD GAS PIPE
4. 20'X40' HDD PIT CENTERED ABOUT STA 14+89
5. CONNECT TO EXISTING GAS PIPE
6. RESTORE ASPHALT PAVEMENT PER ODOD STANDARD DETAIL RD302
7. TRENCH LIMITS

PRELIMINARY

CALL BEFORE YOU DIG:
UTILITIES UNDERGROUND LOCATION CENTER
811

CONTRACTOR TO VERIFY SIZE, TYPE AND LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. NOTIFY PROJECT ENGINEER IMMEDIATELY IF CONFLICTS ARISE.

NO	REVISION	BY	DATE

Approved For Construction

By:_____ Date_____

TITLE:_____

Approval Expires:_____ Date

CASCADE NATURAL GAS CORPORATION
A Subsidiary of MDU Resources Group, Inc.
In the Community to Serve®

CAD Tech: TS	Scale: 1=20
CAD Review: RC	Grid #:
Engineer: RC	Date: 6/30/21
Design Review: RC	
Funding Project Number: XXX	
Work Order Number: XXXX	
Drawing No: 17573 1HDD P01-P02	

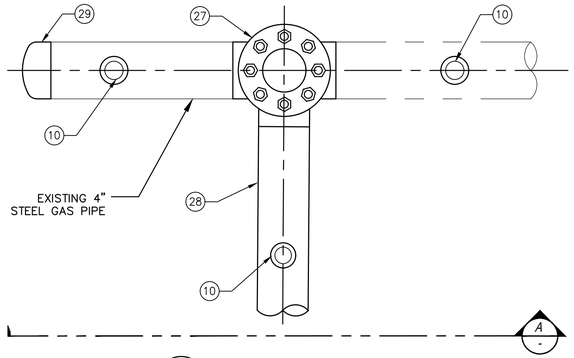
MDU 4" REPLACEMENT PIPELINE

HERMISTON, OR
UMATILA COUNTY
PLAN & PROFILE

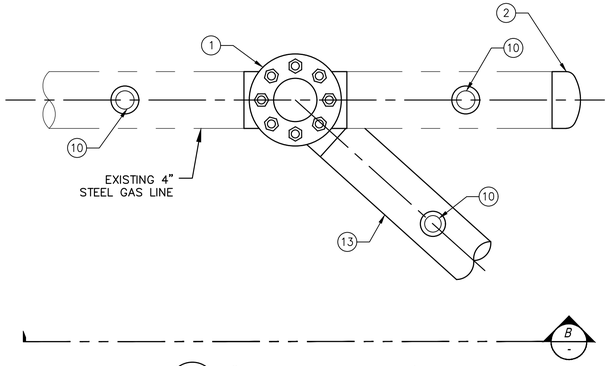
T4N, R28E, SECTION 14 W.M.

P03

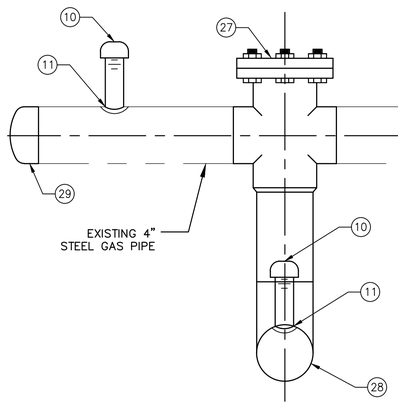
7 OF 9



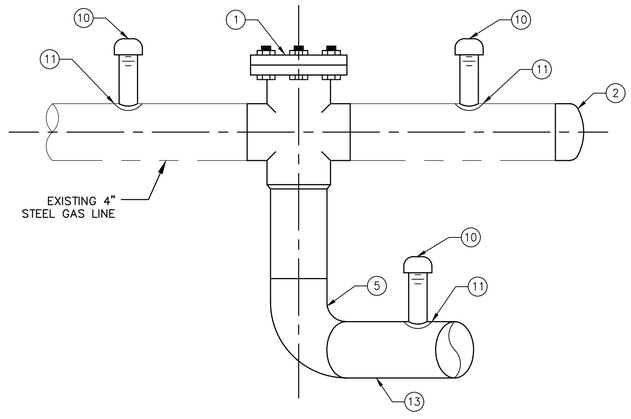
1 / P01 4" STL TIE-IN DETAIL W/BOTTOM OUT
SCALE: NONE



2 / P03 4" STL TIE-IN DETAIL W/BOTTOM OUT
SCALE: NONE



A / - 4" STL TIE-IN PROFILE W/BOTTOM OUT
SCALE: NONE



B / - 4" STL TIE-IN PROFILE W/BOTTOM OUT
SCALE: NONE

PRELIMINARY

NO	REVISION	BY	DATE

Approved For Construction
By:_____ Date_____
TITLE:_____
Approval Expires:_____ Date

CASCADE NATURAL GAS CORPORATION®
A Subsidiary of MDU Resources Group, Inc.
In the Community to Serve®

MacKay Sposito
ENERGY PUBLIC WORKS LAND DEVELOPMENT
www.mackaysposito.com

CAD Tech: TS	Scale:AS SHOWN
CAD Review: RC	Grid #:
Engineer: RC	Date: 6/30/21
Design Review: RC	
Funding Project Number: XXX	
Work Order Number: XXXX	
Drawing No: 17567_D1_D3	

MDU 4" REPLACEMENT PIPELINE
HERMISTON, OR
UMATILA COUNTY
DETAILS
T4N, R28E, SECTION 14 W.M.

D1

8 OF 9

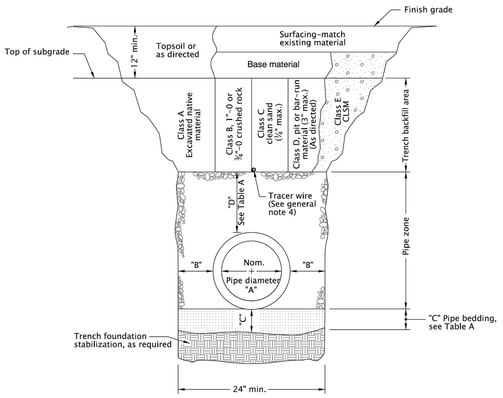
RD300

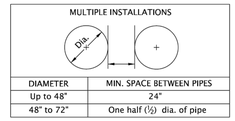
rd300.dgn 25-JUL-2017

TABLE A

"A" (in)	"B" (in)	"C" (in)	"D" (in)
4	10	4	8
6	10	4	8
8	10	6	10
10	10	6	10
12	12	6	10
15	12	6	10
18	16	6	12
21	16	6	12
24	18	6	12
30	18	6	12
36	24	6	14
42	24	6	14
48	24	6	14
54	24	6	14
60	24	6	14
66	24	6	14
72	24	6	14

For pipes over 72" diameter, see general note 3.





DIAMETER	MIN. SPACE BETWEEN PIPES
Up to 48"	24"
48" to 72"	One half (½) dia. of pipe

GENERAL NOTES FOR ALL DETAILS:

1. Surfacing of paved areas shall comply with street cut Std. Dwg. RD302.
2. For pipe installation in embankment areas where the trench method will not be used and the pipe is ≥ 36" diameter, increase dimension "B" to nominal pipe diameter.
3. Pipes over 72" diameter are structures, and are not applicable to this drawing.
4. See Std. Dwg. RD336 for tracer wire details (When required).

CALC. BOOK NO. N/A | BASELINE REPORT DATE 14-JUL-2014

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

TRENCH BACKFILL, BEDDING, PIPE ZONE AND MULTIPLE INSTALLATIONS

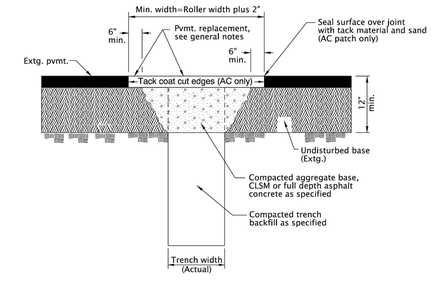
2018

DATE	REVISION DESCRIPTION

Effective Date: December 1, 2017 - May 31, 2018 **RD300**

RD302

rd302.dgn 25-JUL-2017



GENERAL NOTES FOR ALL DETAILS:

1. All existing AC or PCC pavement shall be sawcut prior to repaving.
2. Concrete pavement shall be replaced with concrete to a minimum thickness of 6" or to the thickness of removed pavement, whichever is greater.
3. Place AC mix minimum thkn. of 4" or the thkn. of the removed pavement, whichever is greater. Compact as specified.

CALC. BOOK NO. N/A | BASELINE REPORT DATE 12-JUN-2008

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

STREET CUT

2018

DATE	REVISION DESCRIPTION

RD302

Effective Date: June 1, 2019 - November 30, 2019

RD302

rd302.dgn 25-JUL-2017

PRELIMINARY

NO	REVISION	BY	DATE

Approved For Construction

By:_____ Date_____

TITLE:_____

Approval Expires:_____ Date

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

In the Community to Serve®

MacKay Sposito
ENERGY PUBLIC WORKS LAND DEVELOPMENT
www.mackaysposito.com

CAD Tech: TS	Scale:AS SHOWN
CAD Review: RC	Grid #:
Engineer: RC	Date: 6/30/21
Design Review: RC	
Funding Project Number: XXX	
Work Order Number: XXXX	
Drawing No: 17567_D1_D3	

MDU 4" REPLACEMENT PIPELINE

HERMISTON, OR
UMATILA COUNTY
DETAILS

T4N, R28E, SECTION 14 W.M.

D2

9 OF 9