2 working days Call before you Dig.
1-800-227-2600
AVOID CUTTING UNDERGROUND UTILITIES

CITY OF ELKO

EXIT 298 SEWER AND WATER DESIGN
PHASE 2 SEWER CONSTRUCTION

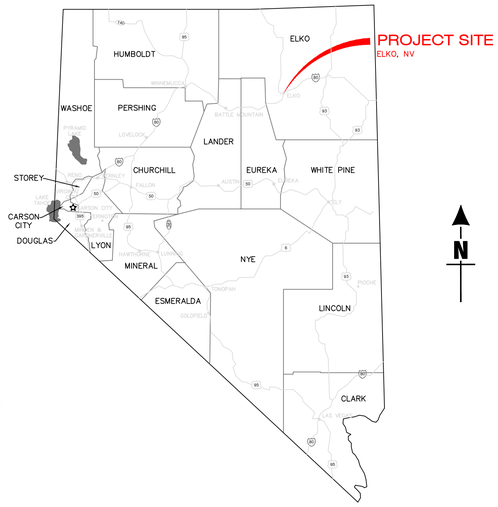
Digitally signed by Robert Thibault
Date: 2022.06.02 16:28:05-07'00'

OWNER/DEVELOPER:

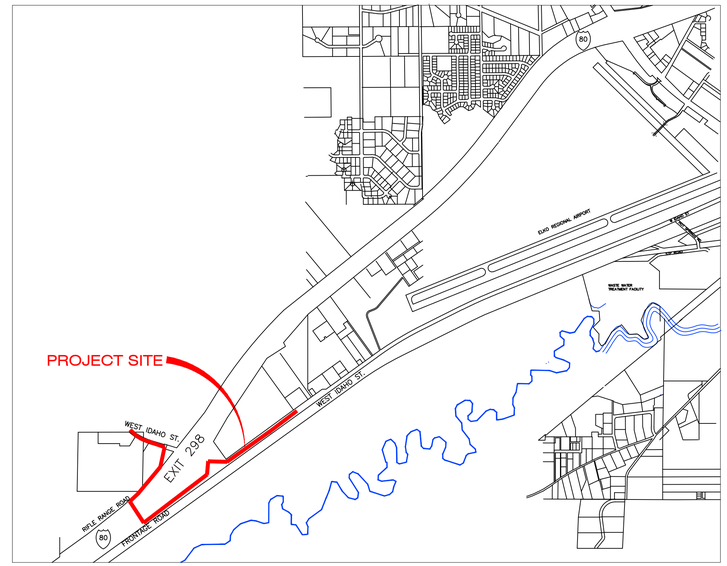
CITY OF ELKO
ATTN: MR. DALE JOHNSON
1550 STP ROAD.
ELKO, NV 89801
PH.: (775) 777-7210
FAX: (775) 774-7388

ENGINEER

1751 COLLEGE AVE.
ELKO, NV 89801
PH.: (775) 777-7210
FAX: (775) 774-7219



LOCATION MAP



VICINITY MAP

BASIS OF BEARING:

NORTH AMERICAN DATUM OF 1983/2007 PER THE NATIONAL GEODETIC SURVEY'S (NGS) PUBLISHED COORDINATES FOR NGS STATION "FUZZY". A STANDARD BRONZE DISK STAMPED "FUZZY 1957" SET IN THE TOP OF A ROUND CONCRETE POST WHICH PROJECTS 2 INCHES ABOVE THE GROUND, OF LATITUDE 40° 54' 25.01325"N, LONGITUDE 115° 41' 47.52810"W AND NEVADA STATE PLANE COORDINATE SYSTEM EAST ZONE GRID COORDINATES OF 28,488,522.75N, 624,878.27E. GROUND COORDINATES ARE USED HEREIN AND REFLECT GRID COORDINATES MULTIPLIED BY THE CITY OF ELKO ACCEPTED COMBINED GRID TO GROUND SCALE FACTOR OF 1.000357 WITH THE RESULTING GROUND COORDINATES FOR NGS "FUZZY" BEING 28,498,693.15N, 625,101.35E.

BASIS OF ELEVATION:

NORTH AMERICAN VERTICAL DATUM OF 1988, PER THE NATIONAL GEODETIC SURVEY'S (NGS) PUBLISHED ELEVATION FOR NGS BENCHMARK B 52. A STABILITY CLASS A MARK STAMPED "B 52 1934" SET VERTICALLY IN THE NORTHWEST WALL OF THE ELKO MAIN POST OFFICE (BRICK WITH STONE CORNERS), 0.9 FOOT SOUTHWEST OF THE NORTH CORNER, AND 4 FEET ABOVE THE GROUND.

SHEET INDEX:

TITLE SHEET 1
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PLAN AND PROFILE 3
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PLAN AND PROFILE 6
PLAN AND PROFILE 7
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PLAN AND PROFILE 9
DETAIL SHEET 10

GENERAL NOTES:

1. IN GENERAL HYDRANTS SHOULD BE LOCATED A MINIMUM DISTANCE OF SIX FEET FROM ABOVE GROUND UTILITIES.
2. WATER TAPS ONTO THE WATER MAIN ARE TO BE IN ACCORDANCE WITH CITY DETAIL U-12.1
3. WATER TAPS ONTO THE WATER MAIN ARE TO BE A MINIMUM OF SIX FEET FROM HYDRANT TAPS
4. ABOVE GROUND UTILITIES ARE NOT PERMITTED WITHIN THE RIGHT-OF-WAY.
5. THE OWNER WILL PROVIDE AN AS-BUILT TO THE CITY OF ELKO AND N.D.O.T. THE AS-BUILT WILL INCLUDE ALL RELEVANT QUALITY ASSURANCE AND QUALITY CONTROL INFORMATION AND BE STAMPED BY A PROPERLY LICENSED PROFESSIONAL ENGINEER. THE CONTRACTOR SHALL WORK WITH THE PROJECT ENGINEER TO ENSURE ACCURATE AS-BUILT CAN BE GENERATED AND SUBMITTED TO THE CITY OF ELKO AND N.D.O.T. BY THE PROJECT ENGINEER.
6. THE CONTRACTOR SHALL HAVE A STAMPED AGENCY APPROVED SET OF PLANS AT THE WORK SITE DURING CONSTRUCTION. CONSTRUCTION SHALL NOT PROCEED UNTIL THIS SET OF PLANS IS ISSUED WITH INCLUDED REVISIONS AND COMMENTS MADE BY THE AGENCIES.
7. THE CONTRACTOR SHALL MAINTAIN A 24-HOUR DUST CONTROL PROGRAM INCLUDING WATERING OF OPEN AREAS. DUST CONTROL PROGRAM SHALL BE IN COMPLIANCE WITH ALL FEDERAL, STATE, COUNTY AND CITY CODES AND ORDINANCES.
8. THE CONTRACTOR SHALL MAINTAIN AN ONGOING PROCESS FOR REMOVAL OF SPILLAGE OF EXCAVATED MATERIAL ON ALL PAVED STREETS.
9. ALL CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS & DETAILS FOR PUBLIC WORKS CONSTRUCTION-"ORANGE BOOK" AS PUBLISHED BY THE WASHOE COUNTY RTC.
10. ALL AREAS DISTURBED AND LEFT UNDEVELOPED FOR A PERIOD OF MORE THAN 30 DAYS SHALL BE STABILIZED BY THE APPLICATION OF A DUST PALLIATIVE. ALL AREAS LEFT UNDEVELOPED FOR A PERIOD OF MORE THAN 90 DAYS SHALL BE HYDRO-SEEDED WITH AN APPROVED SEED MIX AND TACKIFIER AND SHALL BE IRRIGATED UNTIL FIRMLY ESTABLISHED AS APPROVED BY THE CITY OF ELKO.
11. THE CONTRACTOR SHALL VERIFY IN THE FIELD, ALL ELEVATIONS, DIMENSIONS, FLOW LINES, EXISTING CONDITIONS, AND POINTS OF CONNECTIONS WITH ADJOINING PROPERTY (PUBLIC OR PRIVATE), ANY DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE PROJECT ENGINEER BEFORE PROCEEDING WITH THE WORK.
12. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE SOILS ENGINEER, THE CITY OF ELKO, AND ALL UTILITY COMPANIES AT LEAST 48 HOURS PRIOR OF COMMENCEMENT OF WORK.
13. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICES ALERT AT 1.800.227.2600 AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGE TO THE EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION. IT SHALL BE THE CONTRACTOR RESPONSIBILITY TO CONTACT THE UTILITY COMPANIES FOR LOCATIONS PRIOR TO CONSTRUCTION. HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE ONLY.
15. CONTRACTOR TO OBTAIN A STREET CUT PERMIT FROM THE PUBLIC WORKS DEPARTMENT AND PAY ANY APPLICABLE FEES TO THE CITY OF ELKO PRIOR TO EXCAVATING WITHIN THE CITY RIGHT OF WAY.
16. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM N.D.O.T. PRIOR TO WORK IN THEIR RIGHTS-OF-WAY.
17. AT ALL POINTS WHERE SEWER (SANITARY OR STORM), WATER MAINS AND LATERALS CROSS, VERTICAL AND HORIZONTAL SEPARATION SHALL BE MAINTAINED PER NAC. ENGINEER AND CONTRACTOR TO REFERENCE SECTION 445A.6715 TO SECTION 445A.6718 OF THE NEVADA ADMINISTRATIVE CODE FOR UTILITY SEPARATION AND CLEARANCES.
18. ALL SANITARY SEWER MAINS SHALL BE A MINIMUM OF 8" SDR 35 PVC (GREEN) PIPE. ALL RESIDENTIAL SANITARY SEWER LATERALS SHALL BE 4" SDR 35 PVC PIPE WITH A 2% SLOPE MINIMUM UNLESS OTHERWISE SHOWN. ALL COMMERCIAL SANITARY SEWER LATERALS SHALL BE 6" SDR 35 PVC PIPE WITH A 2% SLOPE MINIMUM UNLESS OTHERWISE SHOWN.
19. ALL WATER MAINS SHALL BE A MINIMUM 10" DIAMETER, THICKNESS CLASS 50 OR PRESSURE CLASS 350 DUCTILE IRON PIPE, WITH POLYETHYLENE ENCASEMENT, OR DR 18 C900 PVC PIPE, UNLESS OTHERWISE SHOWN.
20. ALL CONSTRUCTION TO BE AWWA C-600 OR AWWA C-605 COMPLIANT AS APPROPRIATE.
21. MINIMUM COVER OVER THE WATER MAIN SHALL BE 42".
22. THE CITY OF ELKO UTILITY DEPARTMENT SHALL BE CONTACTED TO PERFORM ALL TAPS ONTO CITY OF ELKO UTILITIES.
23. THE CITY OF ELKO UTILITY DEPARTMENT SHALL BE CONTACTED FOR AUTHORIZATION TO PLACE ANY NEW WATER SYSTEMS, EXTENSIONS, REPLACEMENTS IN EXISTING SYSTEMS AND VALVED SECTIONS INTO SERVICE FOR TESTING OR FINAL ACCEPTANCE.
24. ALL WATER SERVICE LINES SHALL BE 1" IRON PIPE SIZE (IPS), RATED 200 PSI POLYETHYLENE UNLESS OTHERWISE SHOWN.
25. BEFORE BEING CERTIFIED BY AN ENGINEER OR ACCEPTED BY THE CITY OF ELKO, ANY NEW WATER SYSTEMS, EXTENSIONS, REPLACEMENTS IN EXISTING SYSTEMS AND VALVED SECTIONS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C-651, "DISINFECTING WATER MAINS".
26. BEFORE BEING CERTIFIED BY AN ENGINEER OR ACCEPTED BY THE CITY OF ELKO, ANY NEW WATER SYSTEMS, EXTENSIONS, REPLACEMENTS IN EXISTING SYSTEMS AND VALVED SECTIONS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH NAC445A.67145.7 (A) AND (B).
27. BEFORE BEING CERTIFIED BY AN ENGINEER OR ACCEPTED BY THE CITY OF ELKO, ANY NEW SEWER SYSTEMS, EXTENSIONS, REPLACEMENTS IN EXISTING SYSTEMS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION; LATEST EDITION.
28. A TRAFFIC CONTROL PLAN SHALL BE PROVIDED BY THE CONTRACTOR AND APPROVED BY THE CITY OF ELKO AND N.D.O.T. PRIOR TO CONSTRUCTION.
29. ALL WATER MAIN EXTENSIONS ARE TO BE TESTED IN ACCORDANCE WITH AWWA STANDARD C651 REQUIRING TWO SETS OF CONSECUTIVE SAMPLES AT LEAST 24 HOURS APART FROM EVERY 1200 FEET OF MAIN.

ABBREVIATION

AC	ASPHALT CONCRETE	GB	GRADE BREAK	R	RADIUS
ACP	ASBESTOS CEMENT PIPE	GDW	GRAVEL DRIVEWAY	RCP	REINFORCED CONCRETE PIPE
AGG	AGGREGATE	GD	GROUND	REF	REFERENCE
BC	BEGIN CURVE (HORIZONTAL)	GV	GATE VALVE	RET	CURB RETURN
BOW	BACK OF WALK	H	HANDICAPPED	RP	RADIUS POINT
BF, BOF	BOTTOM OF FOOTING	HGL	HYDRAULIC GRADE LINE	RT	RIGHT
BV	BUTTERFLY VALVE	HORIZ	HORIZONTAL	R/W, ROW	RIGHT-OF-WAY
BVC	BEGIN VERTICAL CURVE	HP	HIGH POINT	S=	SLOPE (FT./FT.)
BW	BOTH WAYS	ID	INSIDE DIAMETER	S	SOUTH
CB	CATCH BASIN	IE	INVERT ELEVATION	SD	STORM DRAIN
cfs	CUBIC FEET PER SECOND	INT	INTERSECTION	SDMH	STORM DRAIN MANHOLE
C&G	CURB AND GUTTER	IRR	IRRIGATION	SL	STREET LIGHT
℄	CENTER LINE	LAT	LATERAL	SS	SANITARY SEWER
CL	CLASS	LF	LINEAR FEET	SSCO	SANITARY SEWER CLEAN OUT
CMP	CORRUGATED METAL PIPE	LP	LOW POINT	SSMH	SANITARY SEWER MANHOLE
COMP	COMPACTION	LT	LEFT	SSPWC	STANDARD SPEC. for PUBLIC WORKS CONST.
CONC	CONCRETE	MAX	MAXIMUM	STA	STATION
CONTR/CTR	CONTRACTOR	MDD	MAXIMUM DRY DENSITY	SW	SIDEWALK
CP	CONCRETE PAD	MH	MANHOLE	TELE	TELEPHONE
CTV	CABLE TELEVISION	MIN	MINIMUM	TBO	TEMPORARY BLOW OFF VALVE
DI	DROP INLET	MJ	MECHANICAL JOINT	TC	TOP OF CURB
DIA	DIAMETER	MMD	MAXIMUM MARSHALL DENSITY	TG	TO GRADE
DWY	DRIVEWAY	MUTCD	MANUAL FOR TRAFFIC CONTROL DEVICES	TOB	TOP OF BERM
E	EAST	N	NORTH	TF, TOF	TOP OF FOOTING
EA	EACH	NAP	NOT A PART	TW, TOW	TOP OF WALL
EC	END CURVE (HORIZONTAL)	NIP	NOT IN PROJECT	TS	TRAFFIC SIGNAL
ELL	ELBOW	NTS	NOT TO SCALE	TSCB	TRAFFIC SIGNAL CONTROL BOX
ELEC	ELECTRICAL	OC	ON CENTER	TR	TOP OF RAIL
ELEV	ELEVATION	OD	OUTSIDE DIAMETER	TRANS	TRANSITION
EVC	END VERTICAL CURVE	OH	OVERHEAD	TYP	TYPICAL
EX, EXIST, (E)	EXISTING	(P)	PROPOSED	UG/P	UNDER GROUND POWER
EXT	EXTERIOR	PCC	PORTLAND CEMENT CONCRETE	UNO	UNLESS NOTED OTHERWISE
FCA	FLANGE COUPLING ADAPTER	PG	PAD GRADE	V_5	VELOCITY AT 5 YEAR PEAK
FE	FINISH ELEVATION	PI	POINT OF INTERSECTION	VC	VERTICAL CURVE
FES	FLARED END SECTION	PIVC	POINT OF INTERSECTION VERTICAL CURVE	VEL	VELOCITY
FF	FINISH FLOOR	PL	PROPERTY LINE	VERT	VERTICAL
FFC	FRONT FACE OF CURB	POCC	POINT OF COMPOUND CURVATURE	VG	VALLEY GUTTER
FG	FINISH GRADE	POT	POINT OF TANGENCY	W	WEST
FH	FIRE HYDRANT	PP	POWER POLE	W/G	WATER AND GAS
FL	FLOW LINE	PRC	POINT OF REVERSE CURVE	WL	WATER LINE
FLG	FLANGE	PRVC	POINT OF REVERSE VERTICAL CURVE	WM	WATER METER
fps	FEET PER SECOND	PVC	POLYVINYL CHLORIDE	WS	WATER SURFACE
FTG	FOOTING	PVMT	PAVEMENT	WV	WATER VALVE
G	GAS	Q_5	5 YEAR PEAK FLOW	WWF	WELDED WIRE FABRIC
GALV	GALVANIZED	Q_{100}	100 YEAR PEAK FLOW		

PROFESSIONAL ENGINEER ROBERT THIBAULT Exp. 06/30/22 CIVIL Reg. No. 20723 STATE OF NEVADA
Robert Thibault

CITY OF ELKO
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DESIGN BY: BT
DRAWN BY: ACAD_C3D_2020
CHECKED BY: BT
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JOB NO:

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VERT: NONE

EXIT 298 SEWER & WATER DESIGN
PHASE 2
TITLE SHEET
ELKO COUNTY NEVADA

SHEET 1 OF 10

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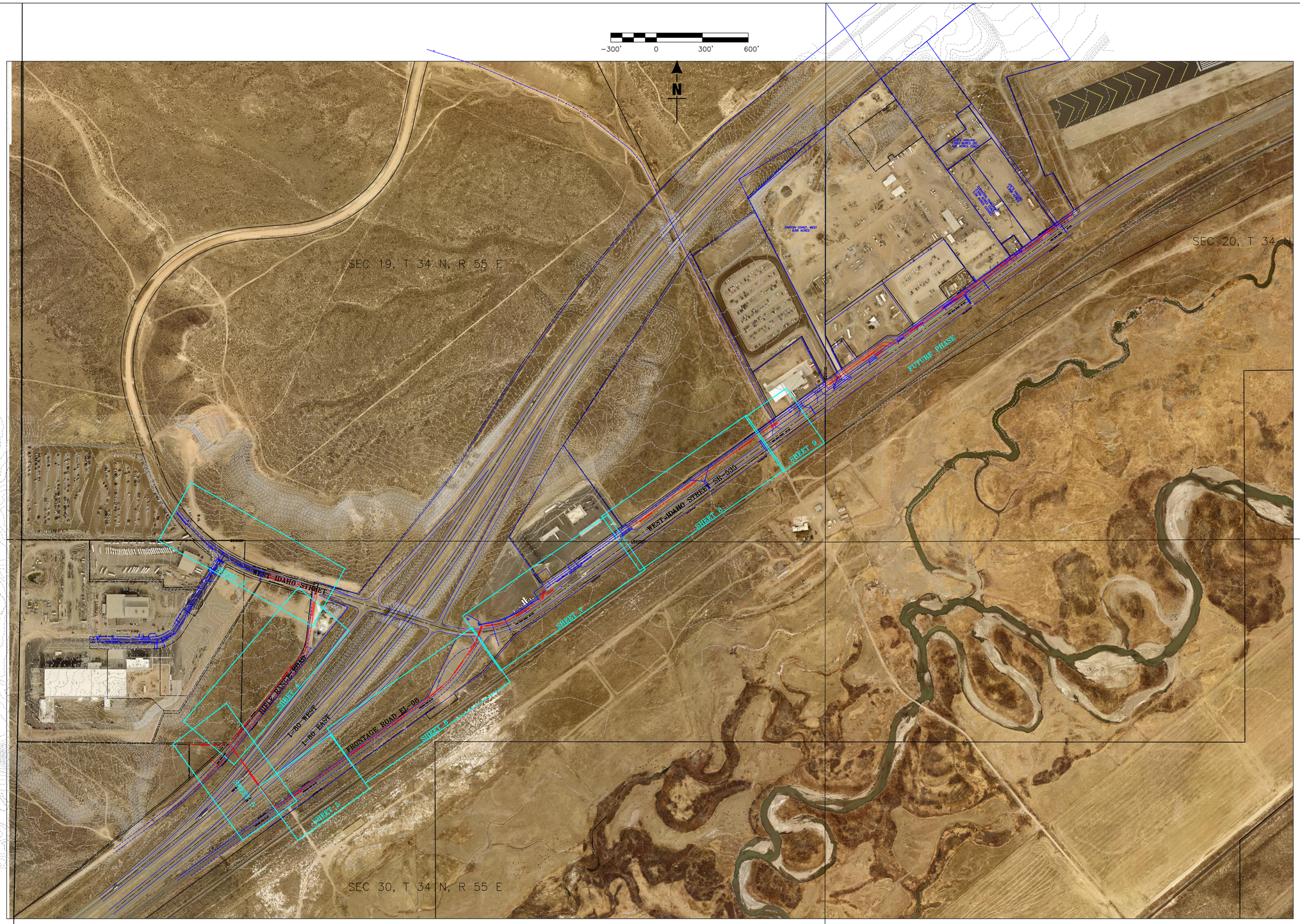

PROFESSIONAL ENGINEER
ROBERT THIBAULT
Exp. 06/30/22
CIVIL
No. 20723
STATE OF NEVADA

Elko

CITY OF ELKO
1751 COLLEGE AVE
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(775) 777-7210
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DESIGN BY: BT
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EXIT 298 SEWER & WATER DESIGN
PHASE 2
KEY INDEX SHEET

ELKO ELKO_COUNTY NEVADA

SHEET 2 OF 10

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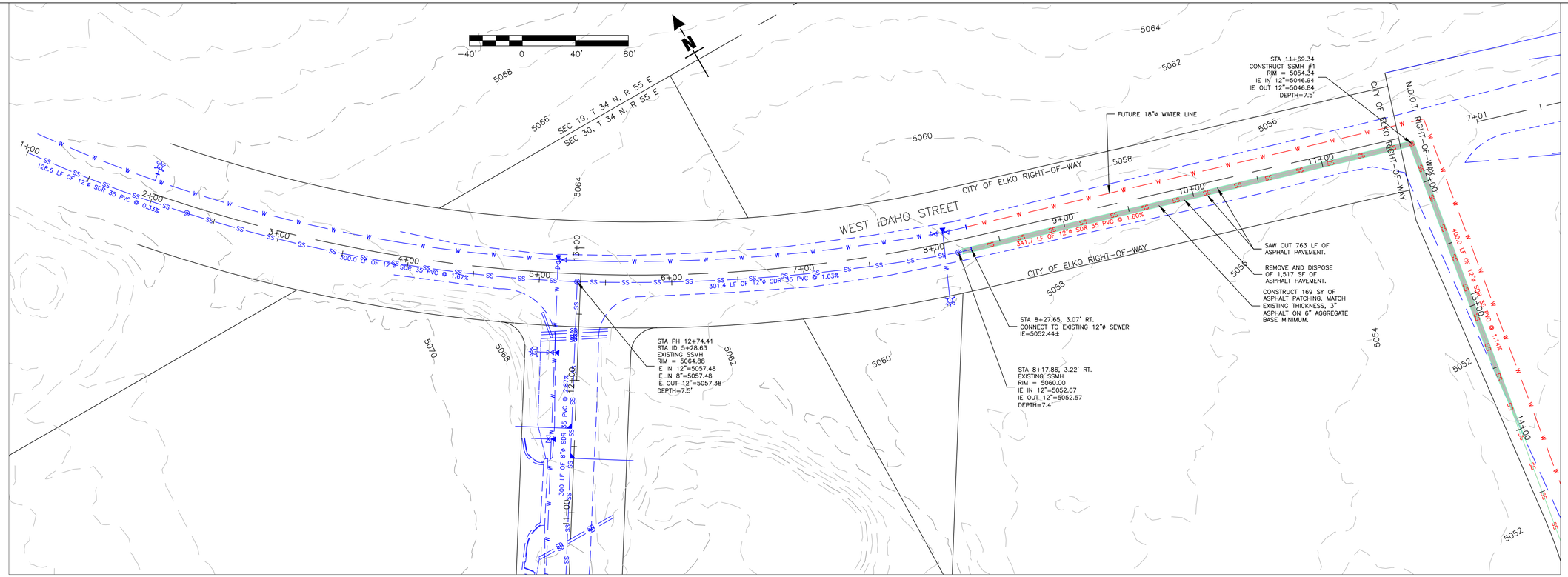

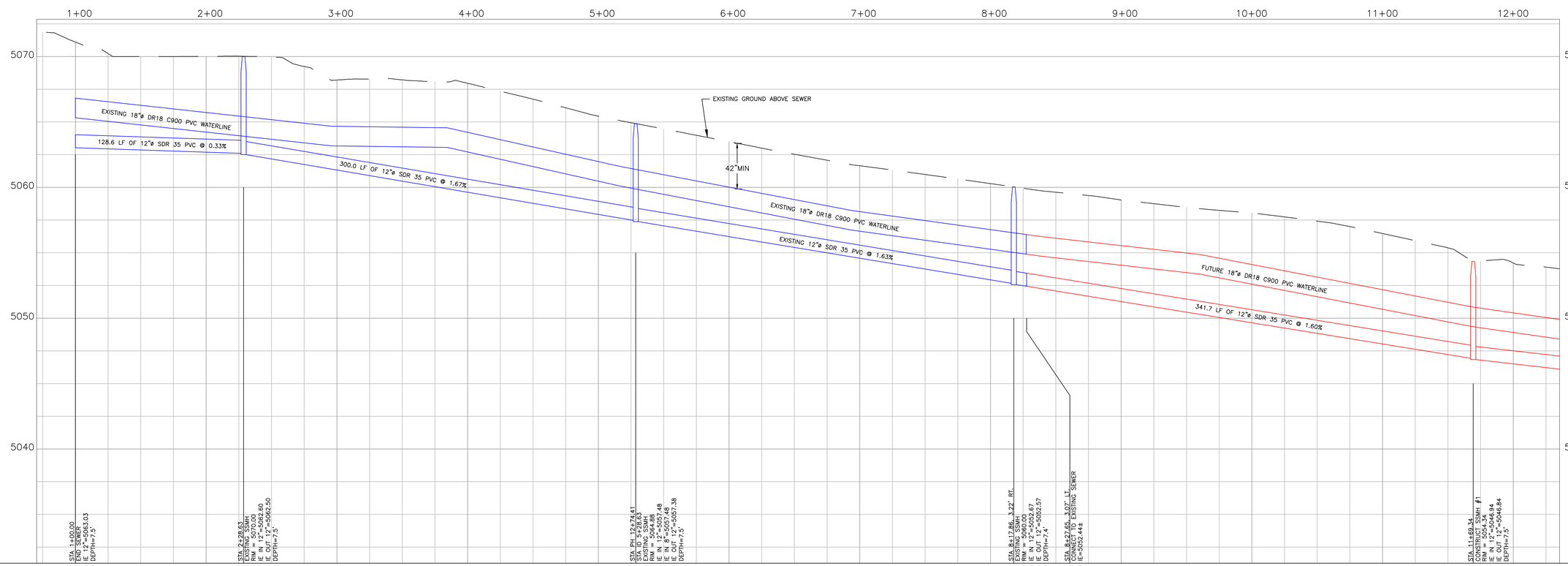

CITY OF ELKO
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ELKO, NEVADA 89801
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EXIT 298 SEWER & WATER DESIGN
PHASE 2
WEST IDAHO STREET
PLAN AND PROFILE

ELKO — ELKO_COUNTY — NEVADA

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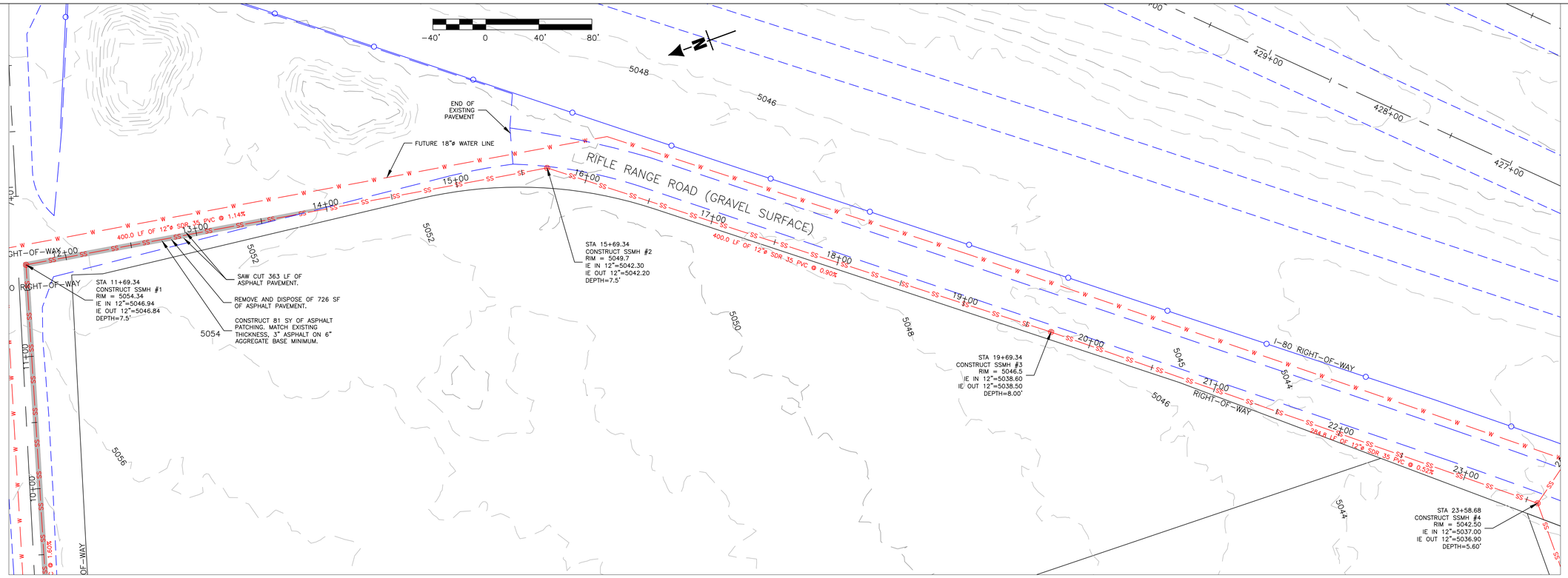
SHEET 3 OF 10

MATCH LINE 12+00
SEE SHEET 3



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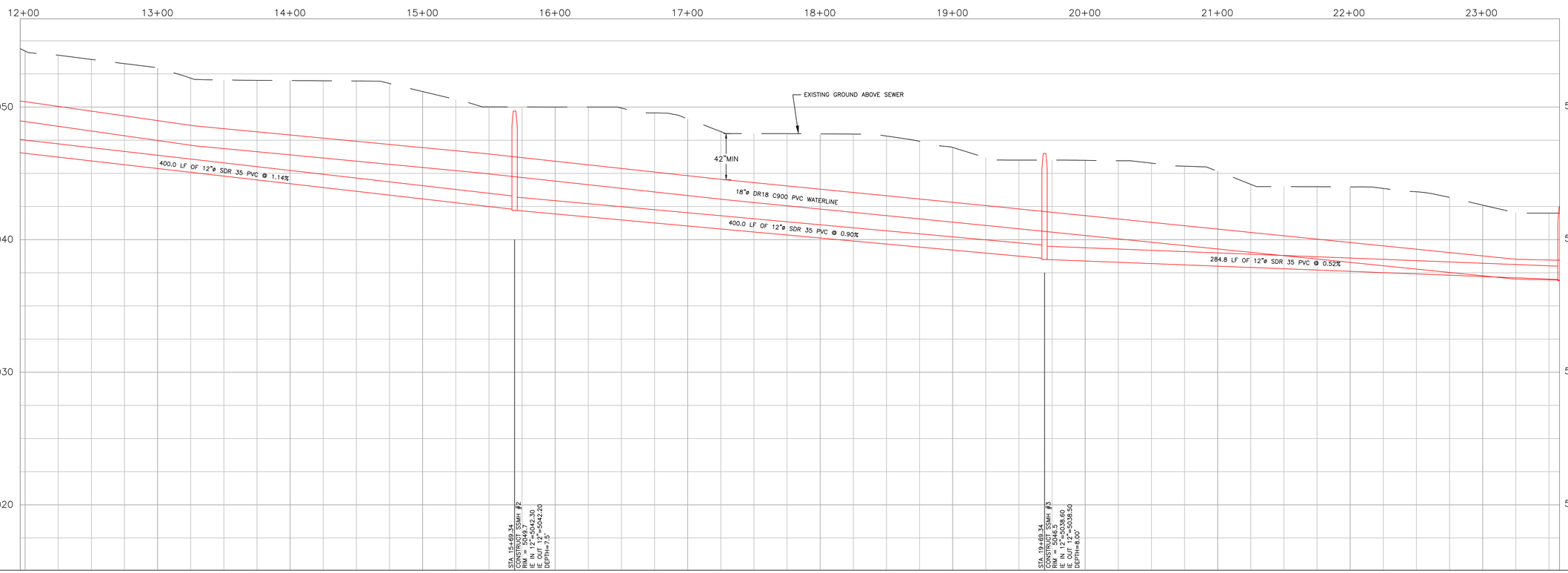

MATCH LINE 23+50
SEE SHEET 5

MATCH LINE 12+00
SEE SHEET 3

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PROFESSIONAL ENGINEER
ROBERT THIBAULT
Exp. 06/30/22
CIVIL
No. 20723
STATE OF NEVADA

CITY OF ELKO
1751 COLLEGE AVE
ELKO, NEVADA 89801
(775) 777-7210
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DESIGN BY:	BT
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DATE:	6/2/2022 3:19 PM
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REV	DATE	DESCRIPTION	BY	APVD

SCALE
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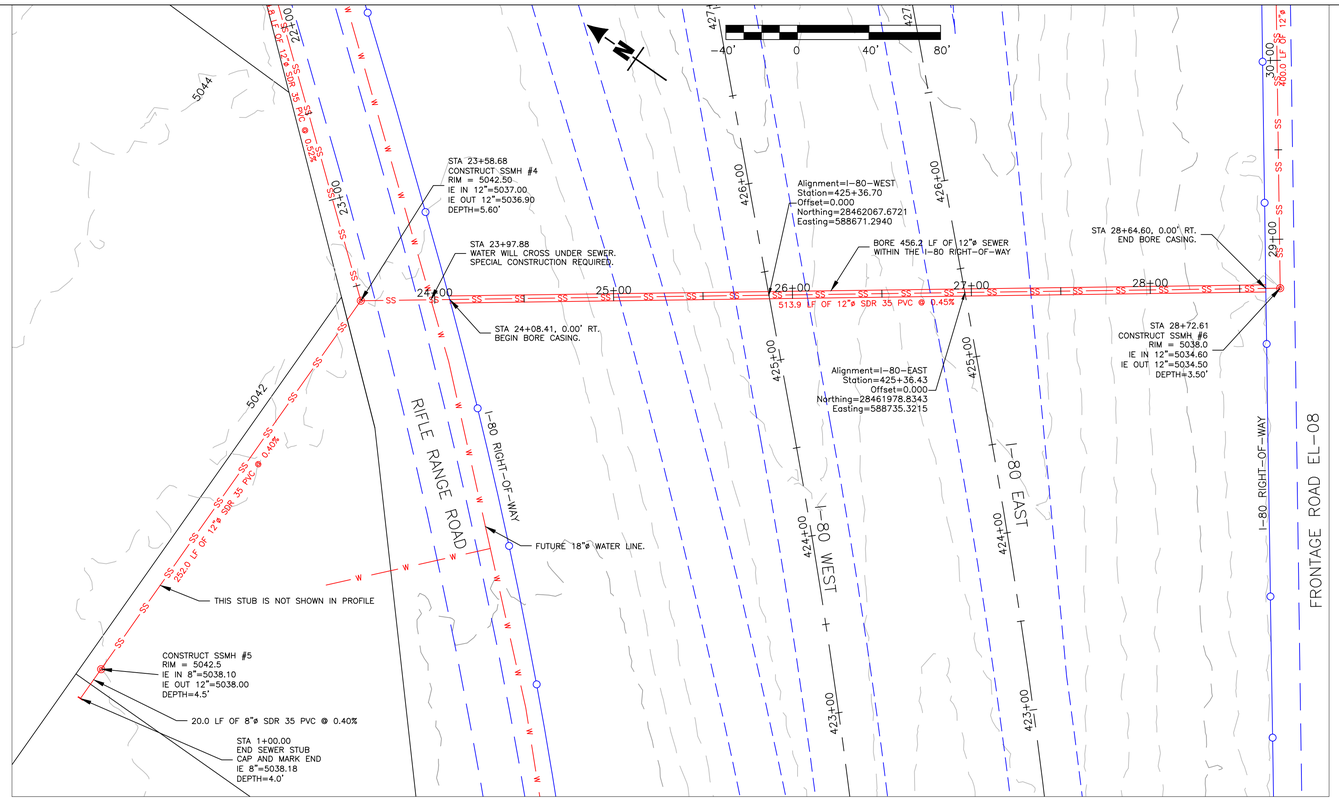
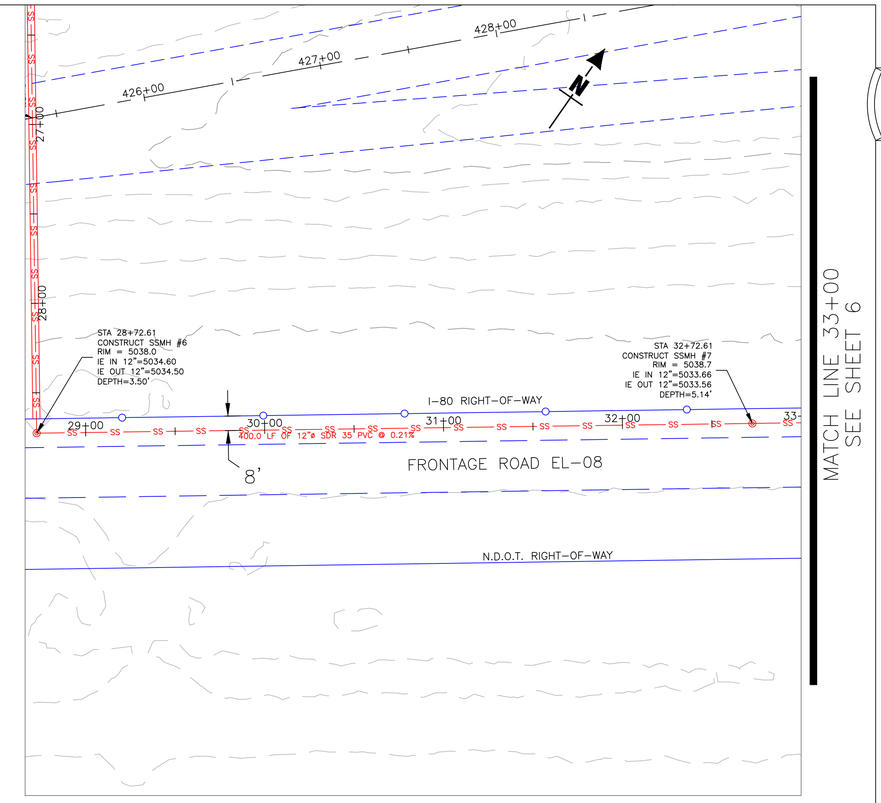
VERT: NONE

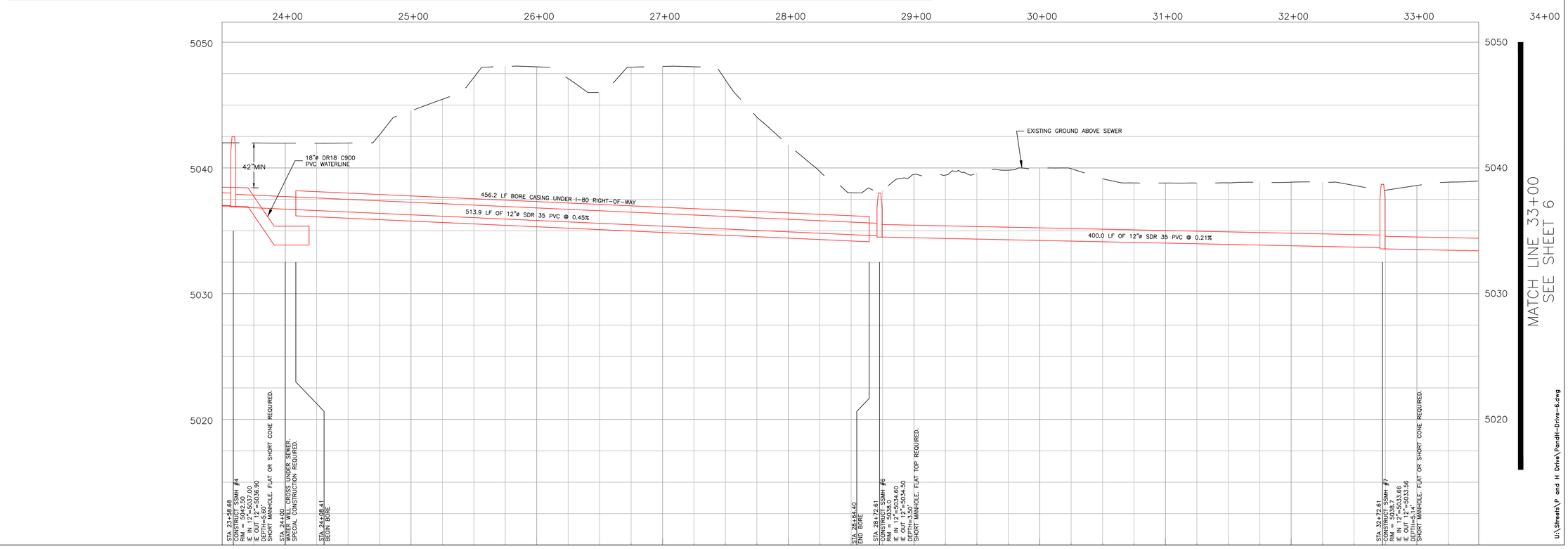
EXIT 298 SEWER & WATER DESIGN
PHASE 2
FRONTAGE ROAD
PLAN AND PROFILE

ELKO NEVADA
ELKO_COUNTY

SHEET
4 OF 10







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CITY OF ELKO
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ELKO, NEVADA 89801
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PROFESSIONAL ENGINEER
ROBERT THIBAULT
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No. 20723
STATE OF NEVADA

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SCALE
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VERT: NONE

EXIT 298 SEWER & WATER DESIGN
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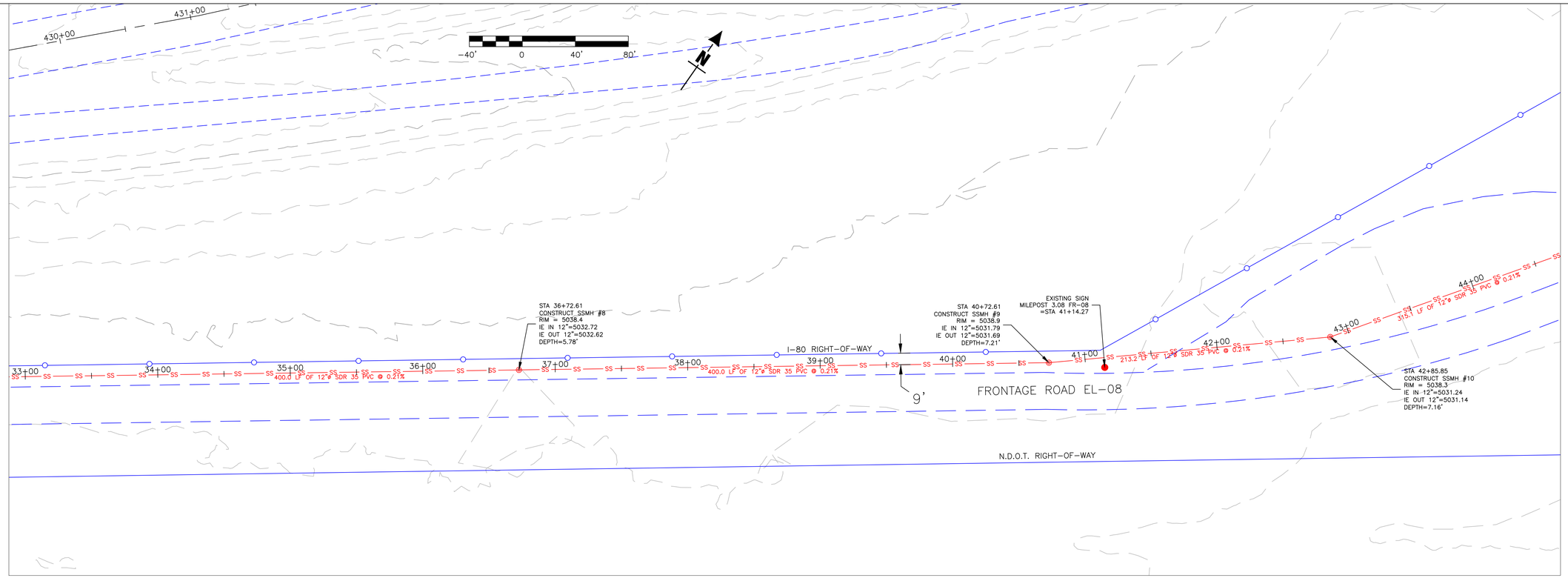
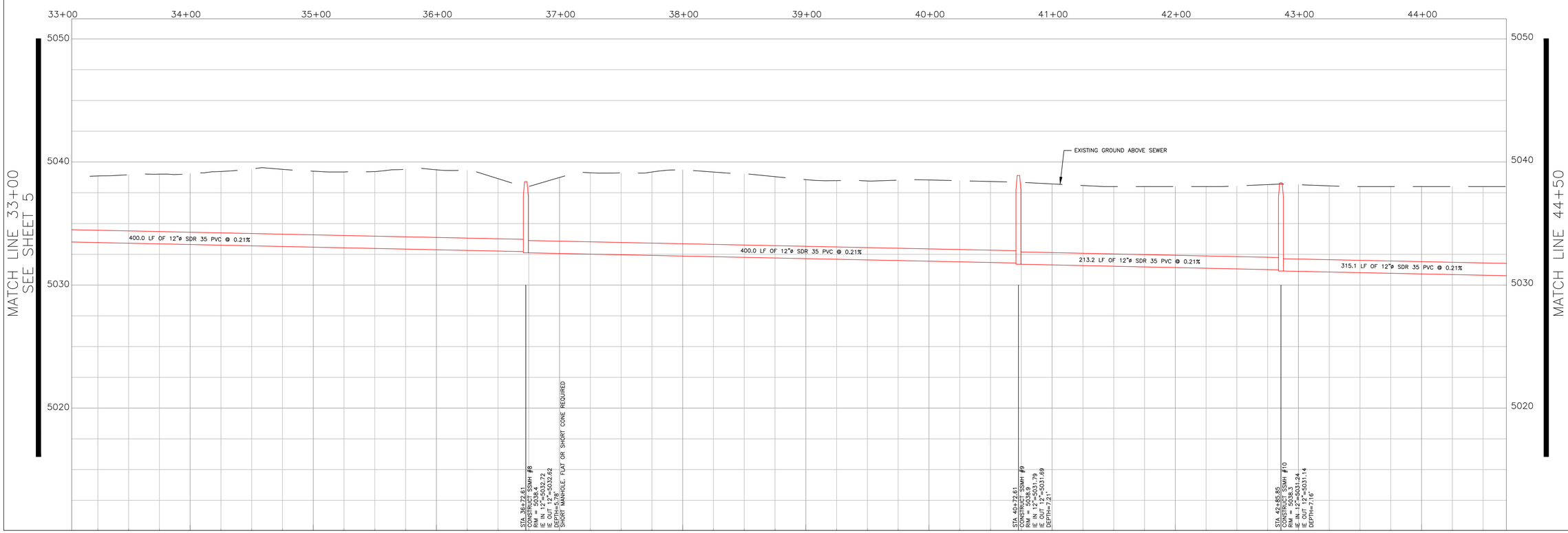
I-80 CROSSING
PLAN AND PROFILE

ELKO_COUNTY
ELKO NEVADA

SHEET
5 OF 10





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No. 20723
STATE OF NEVADA

CITY OF ELKO
1751 COLLEGE AVE
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SCALE
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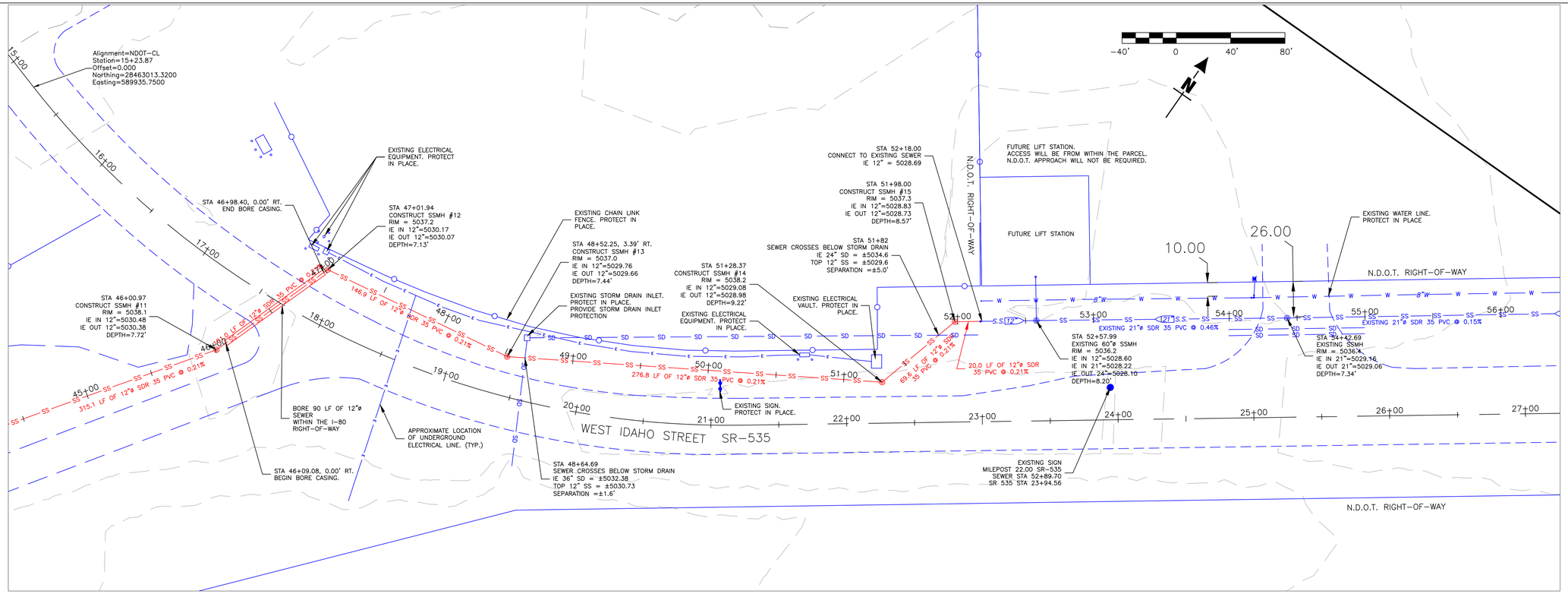
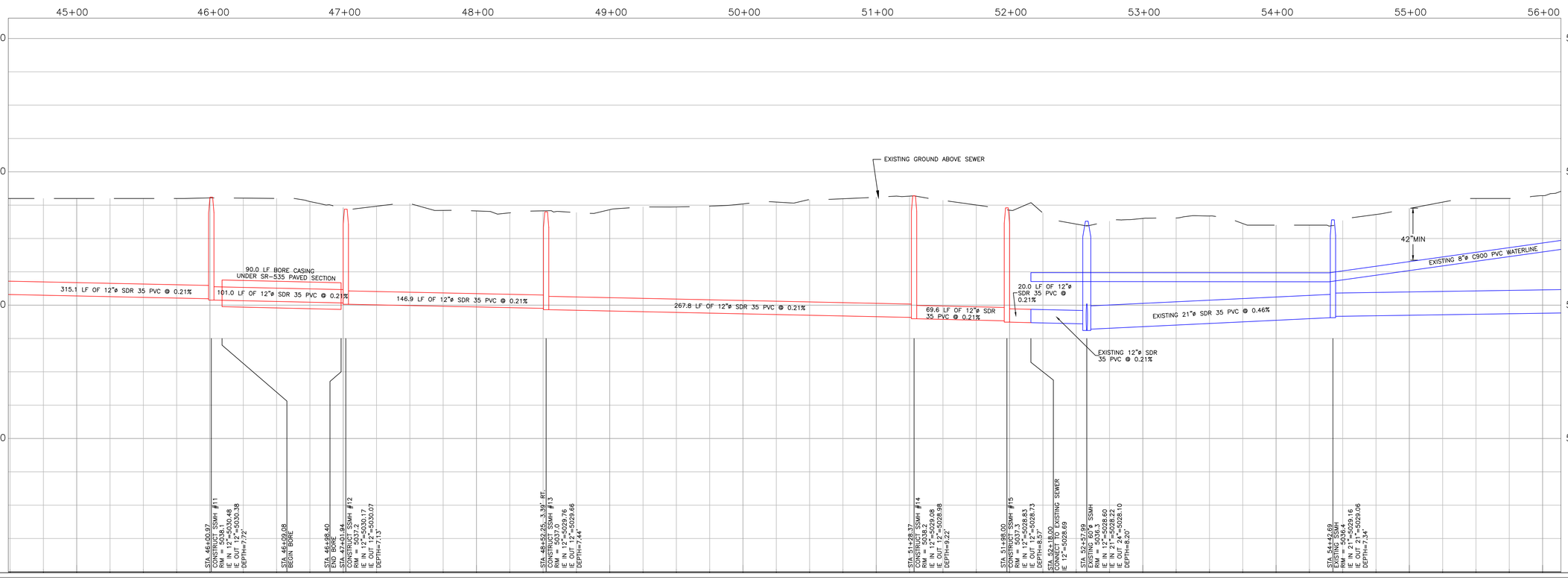
EXIT 298 SEWER & WATER DESIGN
PHASE 2
FRONTAGE ROAD
PLAN AND PROFILE

ELKO COUNTY NEVADA

SHEET
6 OF 10





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CITY OF ELKO
1751 COLLEGE AVE
ELKO, NEVADA 89801
(775) 777-7210
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SCALE
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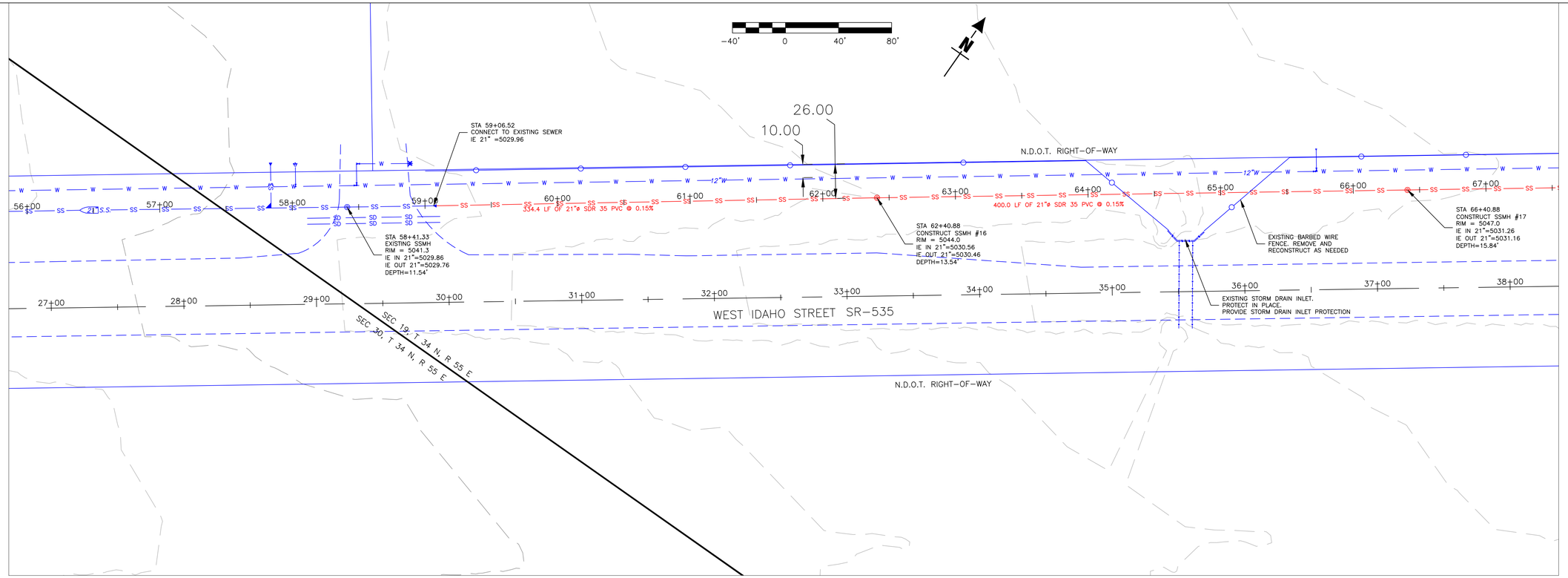
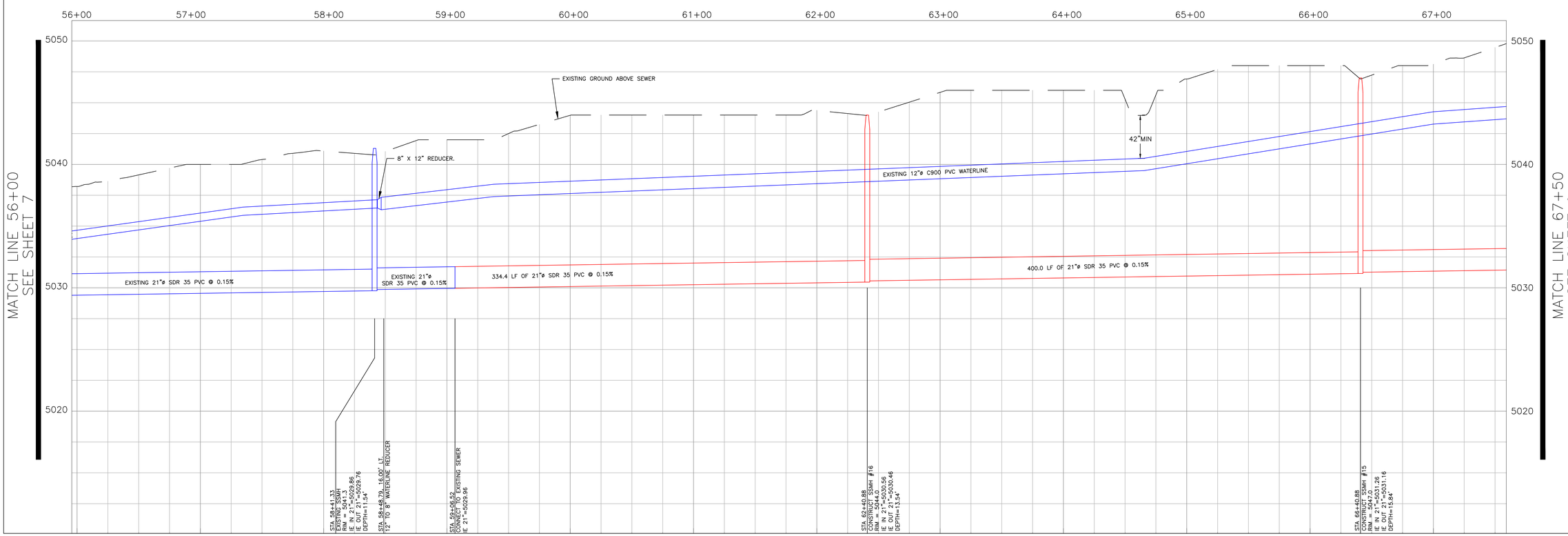
VERT: NONE

EXIT 298 SEWER & SEWER DESIGN
PHASE 2
WEST IDAHO STREET
PLAN AND PROFILE
ELKO_COUNTY NEVADA
ELKO

SHEET
7 OF 10





ENGINEER
ROBERT THIBAULT
Exp. 06/30/22
CIVIL
No. 20723
PROFESSIONAL ENGINEER
STATE OF NEVADA

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DESIGN BY: BT
DRAWN BY: ACAD_C3D_2020
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DATE: 6/21/2022 3:29 PM
JOB NO:

REV	DATE	DESCRIPTION	BY	APVD

SCALE
HORIZ: 1"=40'
VERT: NONE

EXIT 298 SEWER & WATER DESIGN
PHASE 2
WEST IDAHO STREET
PLAN AND PROFILE
ELKO ELKO_COUNTY NEVADA

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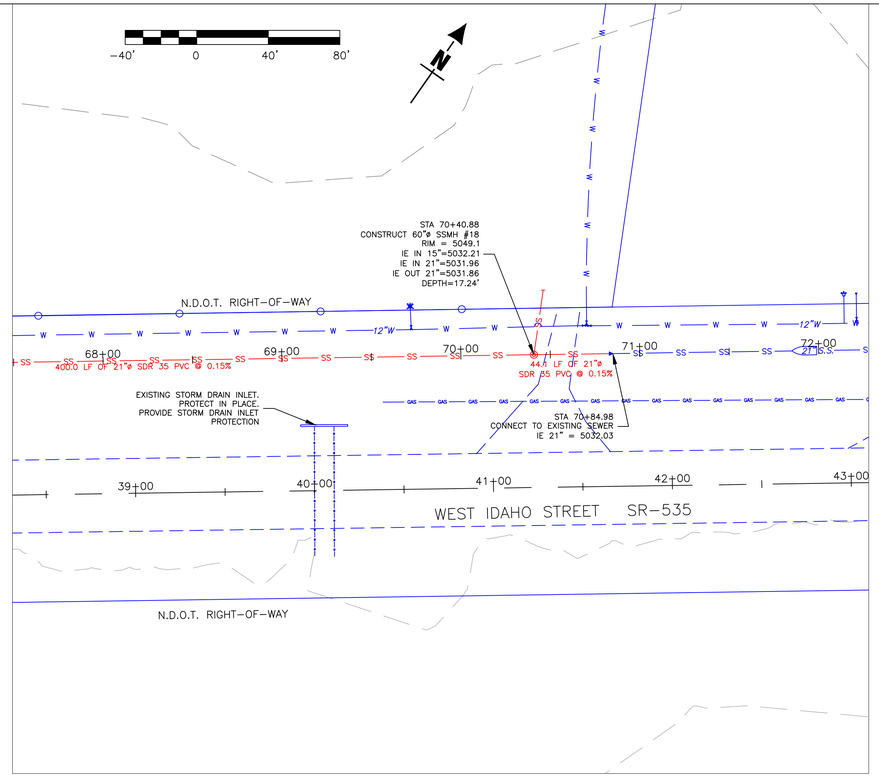
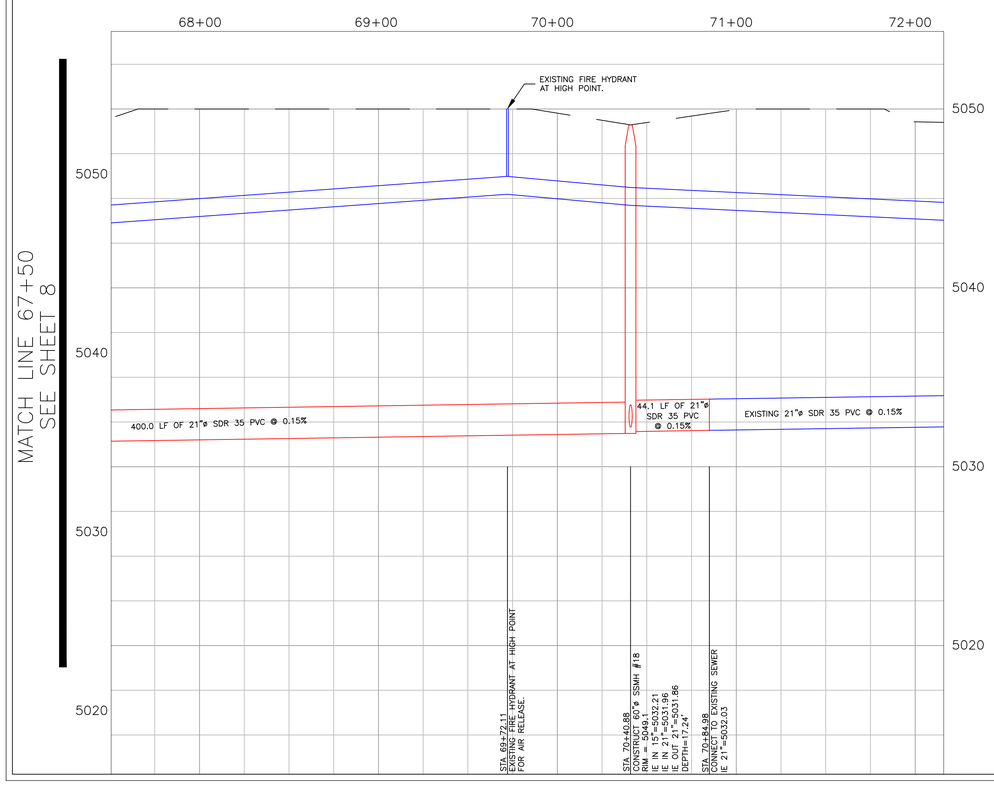
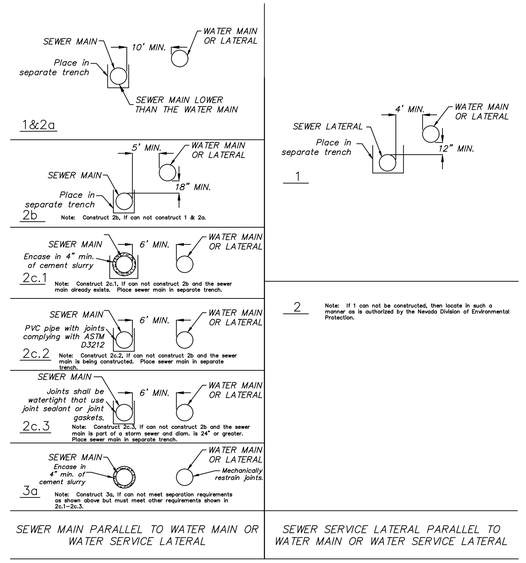
SHEET
8 OF 10





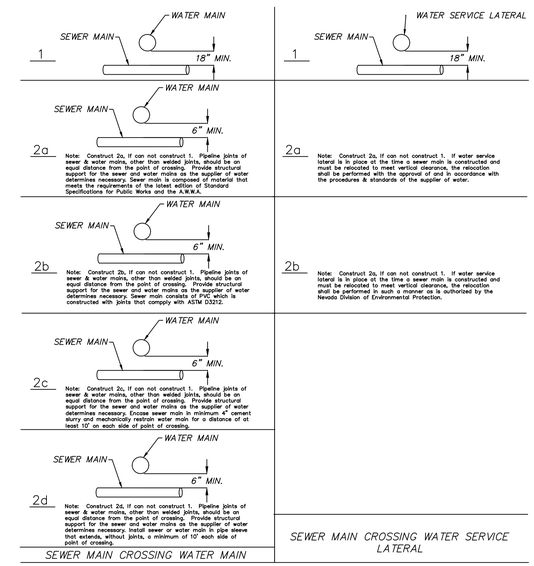
WATER SEPARATION REQUIREMENTS



1. SEWER MAIN/LATERAL PARALLEL TO WATER MAIN OR WATER SERVICE LATERAL SHALL MEET THE REQUIREMENTS OF NAC 445A.67155 & NAC 445A.6716.

PARALLEL LINE SEPARATION

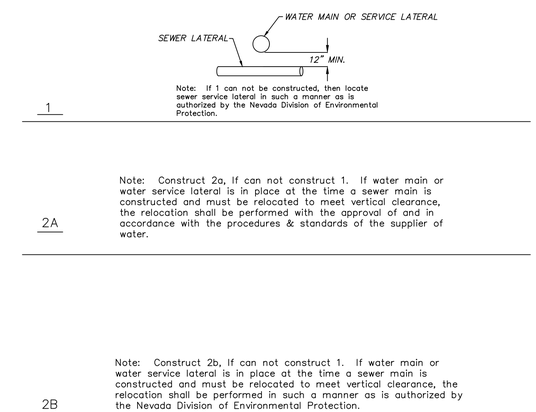
SEWER LINE PARALLEL TO WATER MAIN/LATERAL



1. SEWER MAIN CROSSING WATER MAIN OR WATER SERVICE LATERAL SHALL MEET THE REQUIREMENTS OF NAC 445A.67165 & NAC 445A.6717.

CROSSING LINE SEPARATION

SEWER MAIN CROSSING WATER MAIN/LATERAL



1. SEWER SERVICE LATERAL CROSSING WATER MAIN OR WATER SERVICE LATERAL SHALL MEET THE REQUIREMENTS OF NAC 445A.67175.

CROSSING LINE SEPARATION

SEWER LATERAL CROSSING WATER MAIN/LATERAL

ROBERT J. THIBAULT
Exp. 06/30/22
CIVIL
No. 20723
PROFESSIONAL ENGINEER
STATE OF NEVADA

CITY OF ELKO
1751 COLLEGE AVE
ELKO, NEVADA 89801
(775) 777-7210
fax: (775) 777-7219

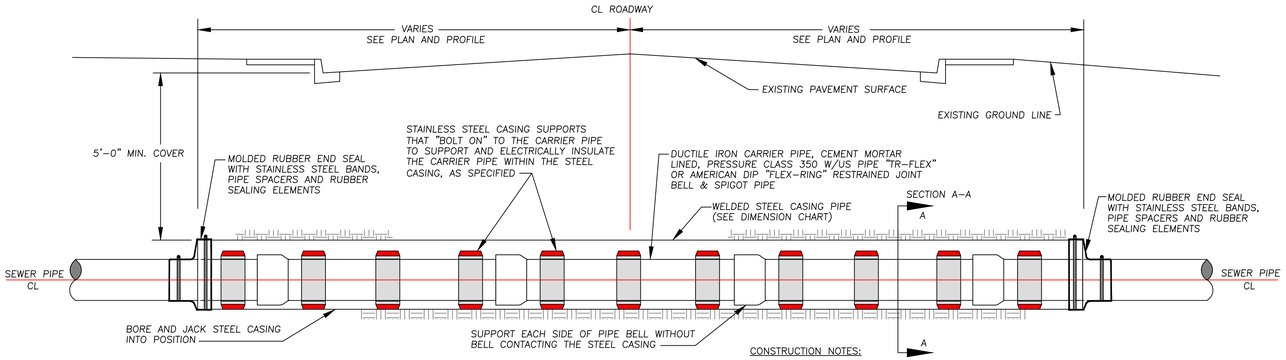
REV	DATE	DESCRIPTION	BY	APVD

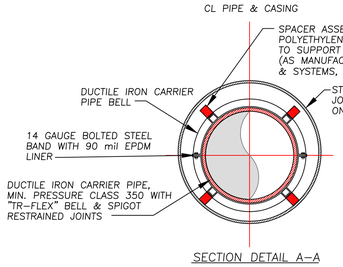
DESIGN BY: BT
DRAWN BY: ACAD_C3D_2020
CHECKED BY: BT
DATE: 6/2/2022 3:50 PM
JOB NO:

SCALE
HORIZ: 1"=40'
VERT: NONE

EXIT 298 SEWER & WATER DESIGN
PHASE 2
WEST IDAHO STREET
PLAN AND PROFILE
ELKO_COUNTY NEVADA

U:\Streets\P and H Drive\Pandh-Drive-6.dwg





SECTION DETAIL A-A

PIPE/CASING DIMENSIONS

CARRIER PIPE DIAM.	CASING MIN. O.D.	MINIMUM CASING THICKNESS
6"	16"	3/8"
8"	18"	3/8"
10"	20"	3/8"
12"	24"	7/16"
14"	24"	7/16"
16"	26"	7/16"
18"	30"	1/2"
20"	32"	1/2"
24"	36"	9/16"

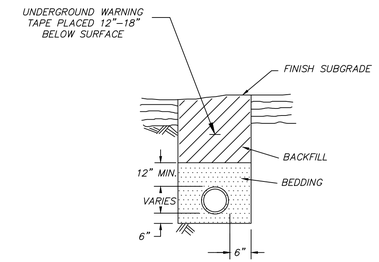
CONSTRUCTION NOTES:

1. INSTALL CASING SPACERS ON EACH SIDE OF THE CARRIER PIPE BELL & SPIGOT JOINT AND AT THE MIDPOINT OF EACH PIPE JOINT. THE MANUFACTURER MAY REQUIRE ADDITIONAL SPACERS ON LARGE DIAMETER PIPE IN ORDER TO PROPERLY DISTRIBUTE THE CARRIER PIPE AND CONTAINED FLUID LOAD. CONSULT MANUFACTURER FOR EXACT SPACER REQUIREMENTS.
2. CASING PIPE SHALL BE WELDED STEEL SMOOTH WALL PIPE WITH A MINIMUM YIELD STRENGTH OF 36,000 PSI (ASTM A1011 GRADE 36, OR ASTM A53, GRADE B) MEETING THE MINIMUM REQUIREMENTS OF THE GOVERNING AGENCY.
3. CARRIER PIPE (INSIDE THE CASING) SHALL BE CEMENT MORTAR LINED BELL & SPIGOT RESTRAINED JOINT DUCTILE IRON PIPE, "TR FLEX" BY US PIPE CO., OR "FLEX RING" BY AMERICAN DIP CO., MEETING THE MINIMUM SPECIFICATIONS SHOWN AND AS REQUIRED BY THE UTILITY COMPANY.
4. STEEL CASING SHALL BE INSTALLED BY BORING & JACKING, OR OPEN TRENCH METHODS AS SHOWN ON THE CASING/CARRIER PIPE PLAN & PROFILE. CARRIER PIPE SPACERS AND END SEALS SHALL BE OF THE TYPE AND DESIGN MANUFACTURED AND DISTRIBUTED BY ADVANCE PRODUCTS & SYSTEMS, INC., OR APPROVED EQUAL.
5. CARRIER PIPE SPACERS SHALL BE STAINLESS STEEL WITH INJECTION MOLDED POLYETHYLENE INSULATED PIPE SPACERS/SUPPORTS. STAINLESS STEEL SLEEVES SHALL BE INSLULATED FROM DIRECT CONTACT WITH THE DUCTILE IRON CARRIER PIPE USING A 90 mil EPDM LINER.
6. FOR PVC GRAVITY SEWER PIPE INSTALLATIONS INSTALL PIPE ADAPTOR COUPLINGS (PVC TO DIP) APPROXIMATELY 10-FEET UPSTREAM AND DOWNSTREAM FROM EACH END OF THE STEEL CASING AND END SEAL ASSEMBLIES TO TRANSITION TO AND FROM DUCTILE IRON PIPE WITH CEMENT MORTAR LINING.

TYPICAL ROADWAY/STREET BORE, JACK & CASING DETAIL

NOT TO SCALE

A



DUCTILE IRON PIPE, PVC, PE & HDPE PIPE

NOTES:

1. WATER DENSIFIED BACKFILL AND TUNNELING SHALL NOT BE ALLOWED.
2. BACKFILL SHALL MEET THE REQUIREMENTS FOR CLASS "E" BACKFILL WITH NO ROCKS SIZED OVER 4", COMPACTED IN 6" (MAX.) LIFTS TO 90% (MIN.) RELATIVE COMPACTION.
3. BEDDING MATERIAL FOR THE FOLLOWING PIPE SHALL MEET THE REQUIREMENTS OF SECTION 200 & 305 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND COMPACTED TO A MINIMUM 90% RELATIVE COMPACTION.
   A) DUCTILE IRON PIPE - CLASS "C"
   B) ALL OTHER PIPE - CLASS "A"
4. FOR TRENCHES & EXCAVATIONS LOCATED WITHIN ROADWAY SECTION, SEE PAVEMENT PATCH DETAIL.
5. ALL TRENCHES AND EXCAVATIONS SHALL CONFORM TO THE LATEST EDITION OF O.S.H.A. AND M.U.T.C.D. REQUIREMENTS.
6. NATIVE MATERIAL MUST BE APPROVED BY THE CITY OF ELKO ENGINEER PRIOR TO USING AS BACKFILL OR BEDDING.
7. UNDERGROUND WARNING TAPE SHALL BE METALLIC AND APPROPRIATLY LABELED AND COLORED.

TRENCH EXCAVATION AND BACKFILL

NOT TO SCALE

B

MANHOLES - GENERAL NOTES:

1. ALL MANHOLES SHALL MEET THE REQUIREMENTS OF SECTION 204 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
2. MANHOLE COVERS SHALL BE IDENTIFIED AS STORM DRAIN, WATER OR SEWER CLEARLY DISPLAYED ON THE COVER.
3. ALL TRENCHES AND EXCAVATIONS SHALL CONFORM WITH THE LATEST EDITION OF THE O.S.H.A. REQUIREMENTS.
4. PRECAST MANHOLE SECTIONS, OTHER THAN GRADE RINGS, SHALL BE JOINED WITH FLEXIBLE PLASTIC GASKET MATERIAL SUCH AS "RAM-NEK" OR EQUAL AS PER MANUFACTURER'S RECOMMENDATIONS.
5. TYPE & SIZE OF MANHOLE TO BE CONSTRUCTED IN A PARTICULAR LOCATION SHALL BE DETERMINED BY THE PIPE SIZE, ALIGNMENT AND GRADE AS FOLLOWS:

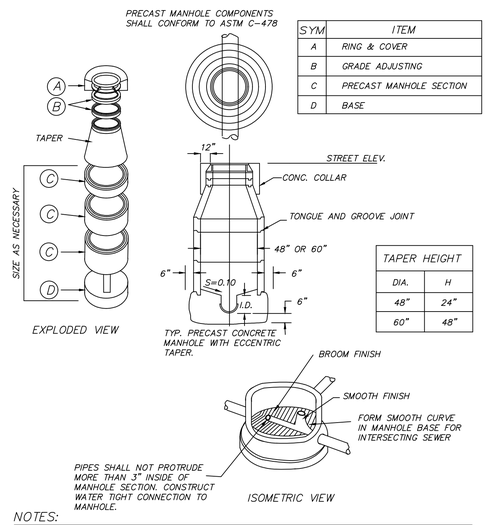
   TYPE 1 & 2
   48" SIZE
   A. ALL CASES FOR PIPE 18" AND SMALLER.
   B. 24" AND SMALLER PIPE ON TANGENT LINE & GRADE.

   60" SIZE
   A. 27" THROUGH 36" PIPE ON TANGENT LINE AND GRADE.
   B. 21" THROUGH 27" PIPE AT ANGLE POINTS AND CHANGES IN GRADE OR PIPE SIZE.
6. EXCAVATABLE SLURRY BACKFILL MAY BE USED AS STRUCTURAL BACKFILL FOR MANHOLES AND MUST MEET THE REQUIREMENTS OF SECTIONS 305.16 & 337.08 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
7. THE TOTAL HEIGHT OF MANHOLE GRADE RINGS SHALL NOT EXCEED 12 INCHES.
8. MANHOLE ACCESS DIAMETER SHALL BE 24" MINIMUM.

MANHOLE GENERAL NOTES

NOT TO SCALE

C



SYM	ITEM
A	RING & COVER
B	GRADE ADJUSTING
C	PRECAST MANHOLE SECTION
D	BASE

TAPER HEIGHT	
DIA.	H
48"	24"
60"	48"

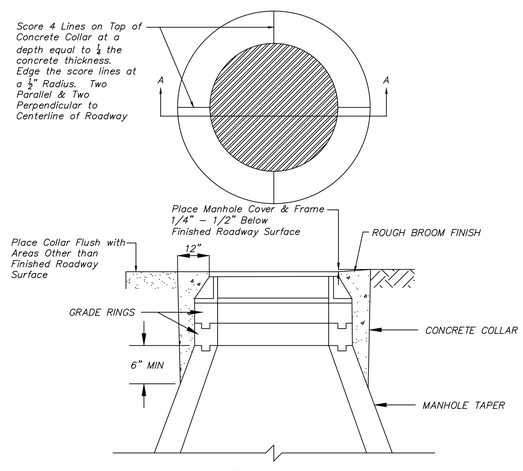
NOTES:

1. PIPE SECTION LENGTHS ARRANGED TO FIT DEPTH.
2. PRECAST BASE MAY BE USED.
3. MANHOLE STEPS ARE NOT REQUIRED.
4. REFER TO DETAIL SHEET (MANHOLE - GENERAL NOTES) FOR ADDITIONAL INFORMATION.

TYPE 1 MANHOLE

NOT TO SCALE

D



SECTION A-A

NOTES:

1. CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 337.10 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
2. MANHOLE COVER & FRAME SHALL BE SET ¼" TO ½" BELOW FINISHED CONCRETE OR BITUMINOUS SURFACE. MANHOLE COLLARS IN ALL OTHER AREAS SHALL BE SET FLUSH WITH FINISHED GRADE, UNLESS OTHERWISE SPECIFIED.
3. CONCRETE COLLAR IS REQUIRED WHEN MANHOLE IS NOT LOCATED IN CONCRETE OR BITUMINOUS SURFACE.
4. REFER TO DETAIL SHEET (MANHOLE - GENERAL NOTES) FOR ADDITIONAL INFORMATION.

CONCRETE COLLAR

NOT TO SCALE

E

ADDITIONAL CITY OF ELKO DETAILS CAN BE FOUND AT:

https://www.elkocity.com/departments/engineering_department/standard_details/index.php

PROFESSIONAL ENGINEER
ROBERT A. THIBAULT
Exp. 06/30/22
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Robert A. Thibault
Robert A. Thibault
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ELKO, NEVADA 89801
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fax: (775) 777-7219

DESIGN BY: BT
DRAWN BY: ACAD_C3D_2015
CHECKED BY: BT
DATE: 6/2/2022 4:25 PM
JOB NO:

REV	DATE	DESCRIPTION	BY	APVD

SCALE
HORIZ: 1"=300'
VERT: NONE

EXIT 298 SEWER & WATER DESIGN
PHASE 2
DETAIL SHEET
ELKO ELKO_COUNTY NEVADA

SHEET
10 OF 10

U:\Streets\P and H Drive\Pandh-Drive-6.dwg