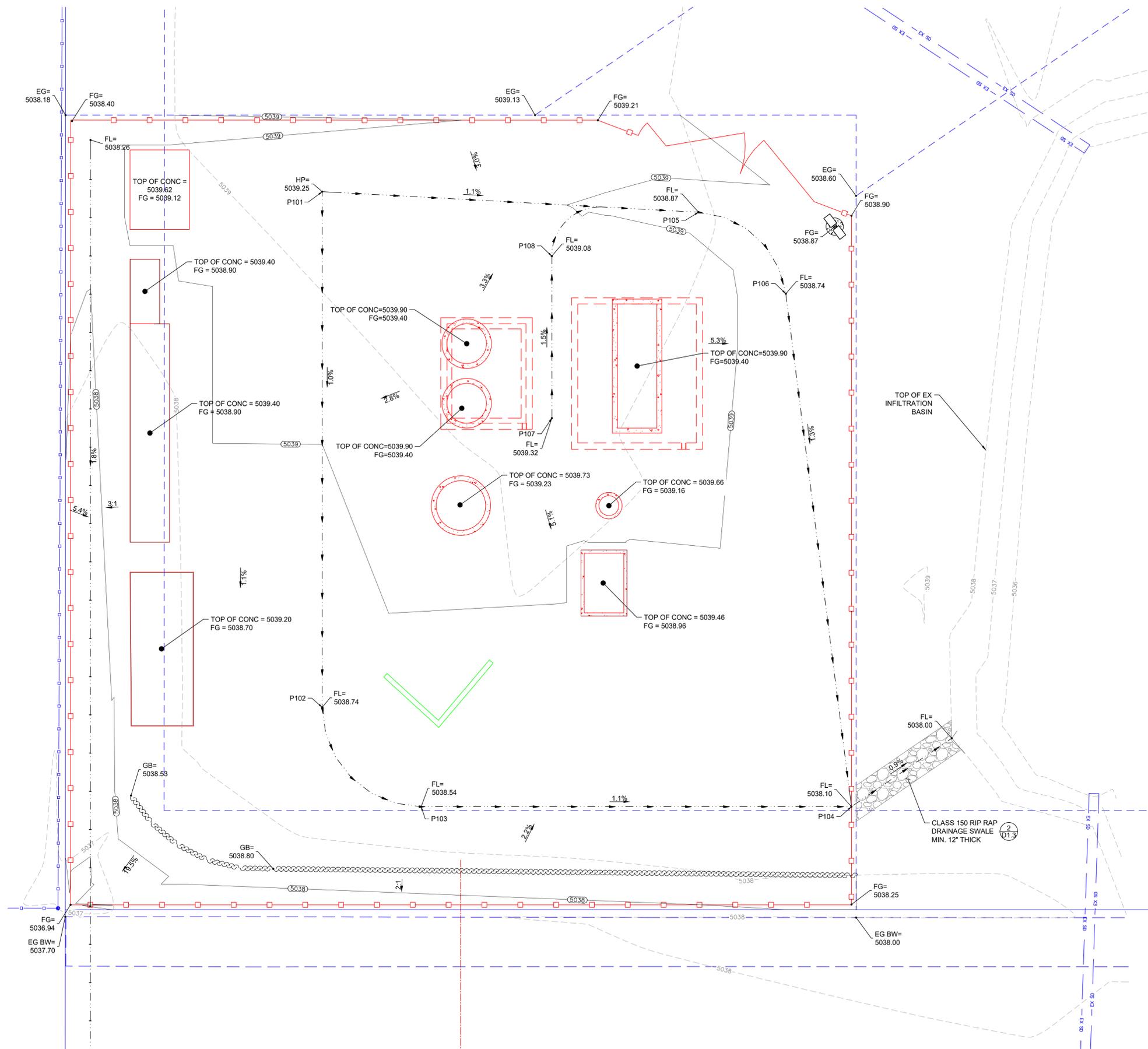


GRADING CONTROL POINTS			
POINT #	NORTHING	EASTING	DESCRIPTION
101	28463367.65	590570.42	FLOWLINE
102	28463325.57	590600.81	FLOWLINE
103	28463323.32	590614.78	FLOWLINE
104	28463348.81	590650.06	FLOWLINE
105	28463388.26	590602.48	FLOWLINE
106	28463386.78	590614.44	FLOWLINE
107	28463362.77	590602.59	FLOWLINE
108	28463375.98	590593.04	FLOWLINE

NOTES:

- SITE SHALL BE CLEARED AND GRUBBED TO A MINIMUM DEPTH OF 12". ADDITIONAL DEPTH MAY BE REQUIRED WHERE THICKER VEGETATION/ROOTS ARE PRESENT.
- REFERENCE GEOTECHNICAL REPORT FOR SITE GRADING AND SUBGRADE PREPARATION REQUIREMENTS.
- MATCH EXISTING GRADE AT EDGE OF EASEMENT.
- FG PROVIDED AT SLABS REPRESENTS THE SURROUNDING GROUND.



CITY OF ELKO
EXIT 298 LIFT STATION AND FORCE MAIN
LIFT STATION GRADING PLAN
 ELKO COUNTY NEVADA

REV	DATE	DESCRIPTION	BY

FINAL DESIGN
 MARH 2020

BAR IS 1/4" ON ORIGINAL DRAWING
 0 5'
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

C3.0

DRAWN BY: MCQ
 DESIGNED BY: MCQ/KT
 CHECKED BY: KT
 JOB NO.: 9718.000



L:\APro\9718.000 - WRF - Exit 298 Lift Station (DWG) Sheets\9718000SHEETS.dwg,C3.0 GRADING PLAN, 06/19/2023 01:49 pm systech

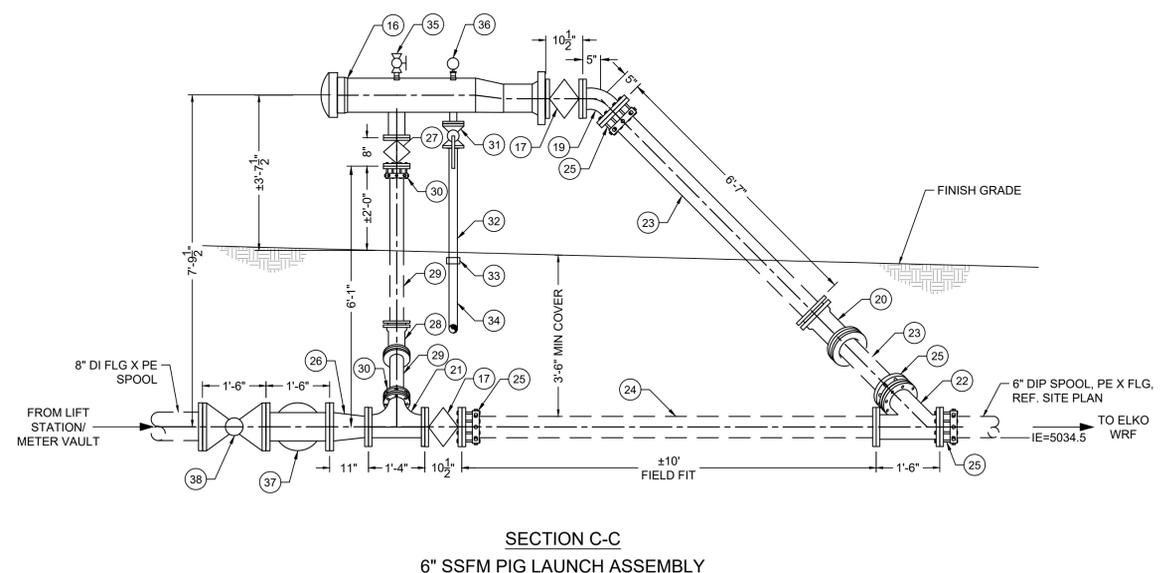
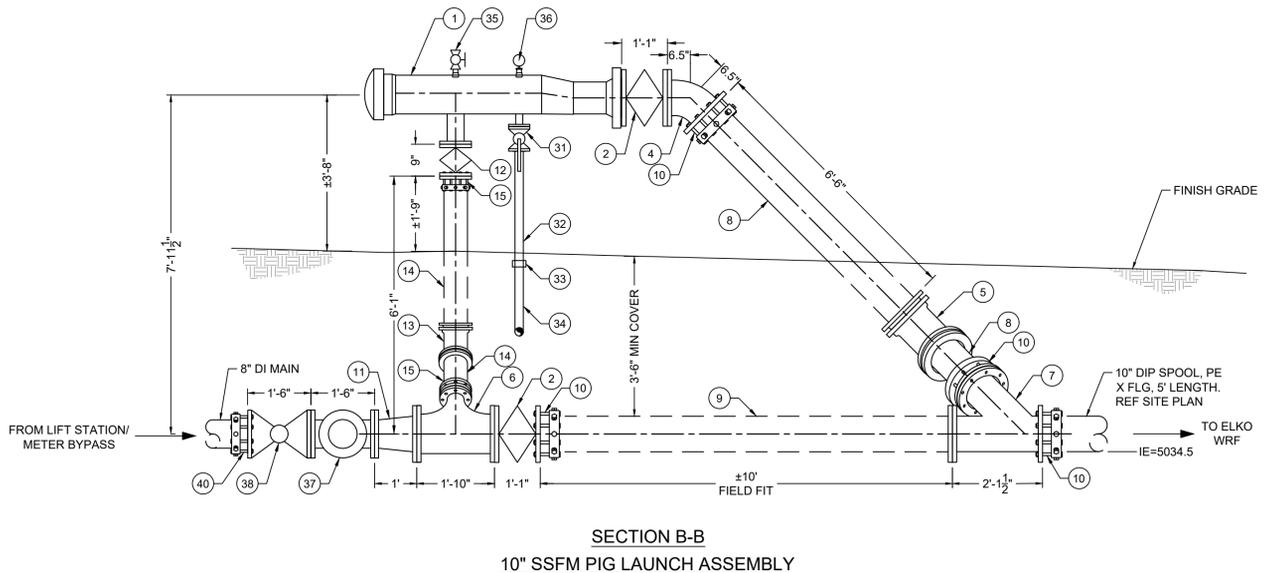
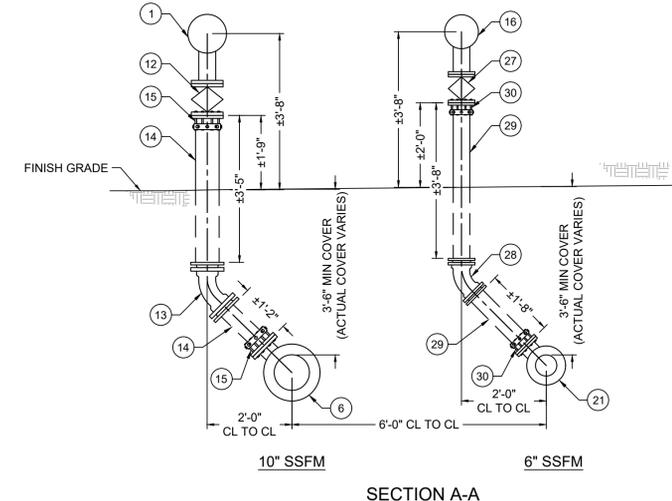
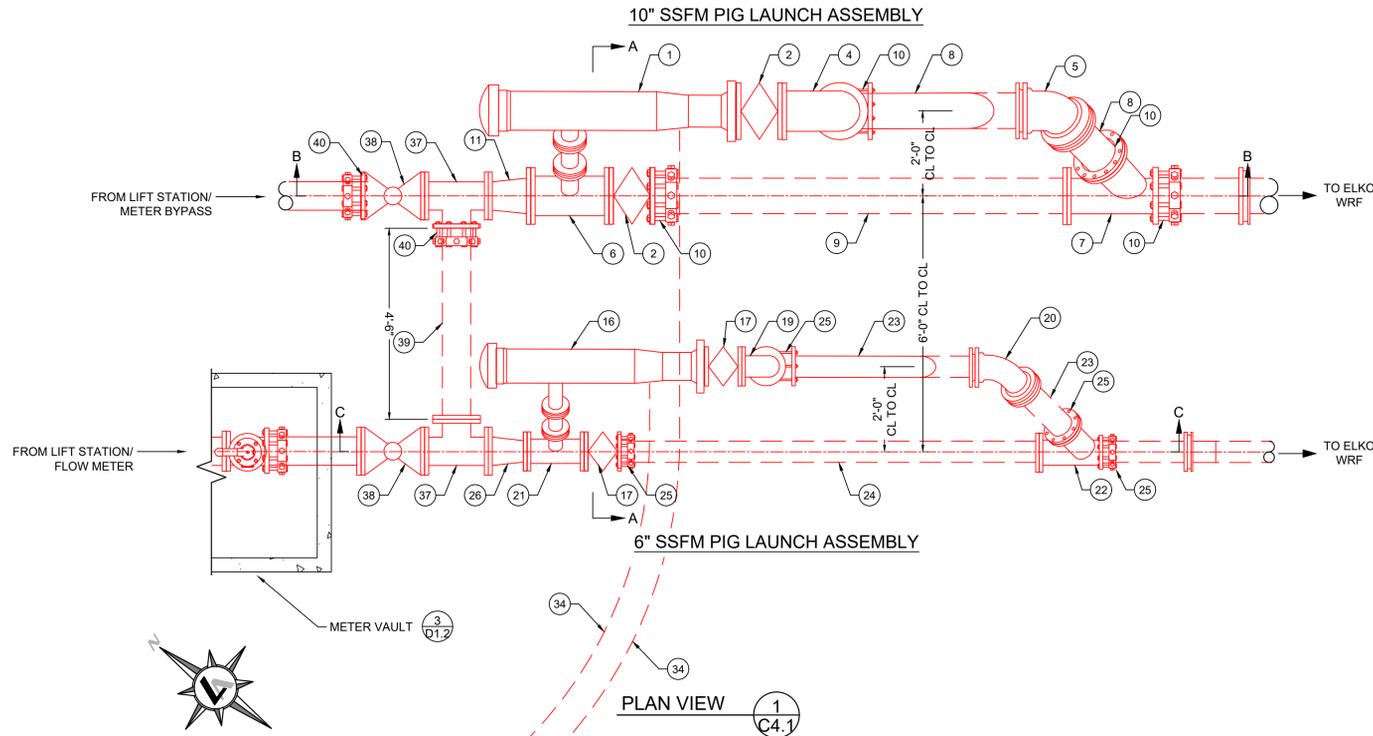
REV	DATE	DESCRIPTION	BY

MATERIAL NOTES:

- FOR PIPE TRENCH, SEE DETAIL 1, SHEET D1.0.
- DUCTILE IRON PIPE SHALL BE CLASS 150 CONFORMING TO AWWA C150/C151. PIPE FITTINGS SHALL BE DUCTILE IRON CONFORMING TO AWWA C110 OR AWWA C153 WITH SBR GASKETS IN ACCORDANCE WITH AWWA C111. BURIED PIPE AND FITTINGS SHALL HAVE EXTERIOR ZINC COATING (AS APPLICABLE) WITH AN ASPHALTIC TOP COAT AND BE WRAPPED WITH ENHANCED POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH AWWA C105. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE LINED WITH A CERAMIC-EPOXY INTERNAL LINING. PIPE AND FITTINGS ABOVE-GRADE OR WITHIN STRUCTURES SHALL BE EPOXY COATED. SEE TECHNICAL SPECIFICATIONS FOR COATING, LINING, AND ENCASEMENT REQUIREMENTS.
- PLUG VALVES SHALL BE 100% PORT ECCENTRIC, WITH A RESILIENT PLUG AND EPOXY COATED INTERIOR/EXTERIOR, CONFORMING TO AWWA C517. PLUG VALVES SHALL BE VALMATIC SERIES 5000 OR APPROVED EQUAL:
A. BURIED PLUG VALVES: FLANGED ENDS, 2" ACTUATOR NUT AND EXTENSION STEM, BURIED SERVICE WORM GEAR ACTUATOR.
B. ABOVE-GRADE PLUG VALVES: FLANGED ENDS, HAND WHEEL OPERATOR, AND WORM GEAR ACTUATOR.
C. ALL VALVE HARDWARE, INCLUDING SHAFT-TO-NUT PIN SHALL BE CORROSION RESISTANT (TYPE 304 STAINLESS STEEL).
- BALL VALVES SHALL BE FULL PORT WITH FLOATING BALL, SPLIT-BODY, CLASS 150, CARBON STEEL, WITH AN EPOXY COATED INTERIOR/EXTERIOR. BALL VALVES SHALL BE BY KITZ CORPORATION, WILLIAMS VALVE CORPORATION, OR APPROVED EQUAL:
A. BALL VALVES SHALL HAVE FLANGED ENDS, A 2" ACTUATOR NUT, AND AN EXTENSION STEM FOR BURIED SERVICE.
B. ALL VALVE HARDWARE, INCLUDING FLOATING BALL, SHALL BE CORROSION RESISTANT TYPE 316 STAINLESS STEEL.
- RESTRAINED FLANGED COUPLING ADAPTERS SHALL BE FUSION EPOXY COATED, EBAA 2100 MEGAFANGE, OR APPROVED EQUAL.
- ALL BOLT KITS SHALL BE CORROSION RESISTANT (TRIPAC 2000 BLUE).
- ALL JOINTS AND FITTINGS ON THE SANITARY SEWER FORCE MAIN SHALL BE RESTRAINED. MECHANICAL JOINT RESTRAINTS SHALL BE EBAA MEGALUG 1100, OR APPROVED EQUAL.
- PIG LAUNCHER BARRELS SHALL BE JAMISON BRAND OR APPROVED EQUAL. PIG LAUNCHING STATIONS VARY IN LENGTH, ACCESSORIES, AND PORT LOCATIONS BETWEEN MANUFACTURERS. CONTRACTOR ASSUMES THE RESPONSIBILITY FOR THE SIZE, LAYOUT, ACCESSORIES, AND GEOMETRY OF THE PIG LAUNCHING STATIONS. CONTRACTOR SHALL ADJUST LOCATION OF DOWNSTREAM WYE TO ACCOUNT FOR VARIATION IN DIMENSIONS.
- BARREL SHALL BE STAINLESS STEEL. SEE BID SCHEDULE FOR ALTERNATE BID ITEM TO SUBSTITUTE EPOXY COATED STEEL FOR STAINLESS STEEL BARREL. SEE TECHNICAL SPECIFICATIONS FOR COATING REQUIREMENTS.
- SIZE OF PIPE AND FITTINGS FROM TEE ON MAIN TO KICKER LINE OF BARREL TO BE CONFIRMED WITH MANUFACTURER AND MAY VARY.
- PRESSURE GAUGE SHALL BE GLYCERINE FILLED, WITH 3 1/2" DIAL SIZE, TYPE 316 STAINLESS STEEL CASE AND TUBE, 0-150 PSI RANGE, AND ±1% ACCURACY. PRESSURE GAUGE SHALL BE ASHCROFT MODEL 351009 OR APPROVED EQUAL.
- CONTRACTOR SHALL SUPPLY (1) 6" AND (1) 10" COATED 5-7LB FOAM PIG W/TRACKING CAVITY TO THE CITY OF ELKO. EACH PIG SHALL BE EQUIPPED WITH A ROPE LOOP ON THE FRONT AND BACK END FOR RETRIEVAL PURPOSES (TWO ROPE LOOPS FOR EACH PIG.)

MATERIAL LIST

- 12" PIG LAUNCH TRAP BARREL (FOR 10" SSFM), JAMISON LAUNCHER OR APPROVED EQUAL. SEE NOTE 8 & 9.
- 10" PLUG VALVE, FLG X FLG, SEE NOTE 3
- not used
- 10" 45° DUCTILE IRON ELBOW, FLG X FLG
- 10" 45° DUCTILE IRON ELBOW, MJ X MJ W/(2) MECHANICAL RESTRAINTS
- 10" X 4" DUCTILE IRON TEE, FLG X FLG
- 10" 45° DUCTILE IRON WYE, FLG X FLG X FLG
- 10" DIP SPOOL PIECE, PE X PE
- 10" DIP SPOOL PIECE, FLG X PE
- 10" RFCA (OR FLG X MJ ADAPTOR W/MECHANICAL RESTRAINT)
- 10" X 8" DUCTILE IRON REDUCER, FLG X FLG
- 4" PLUG VALVE, FLG X FLG, SEE NOTE 3
- 4" 45° DUCTILE IRON ELBOW, MJ X MJ W/(2) MECHANICAL RESTRAINTS
- 4" DIP SPOOL PIECE, PE X PE
- 4" RFCA (OR FLG X MJ ADAPTOR W/MECHANICAL RESTRAINT FOR BURIED PIPE)
- 8" PIG LAUNCH TRAP BARREL (FOR 6" SSFM), JAMISON LAUNCHER OR APPROVED EQUAL. SEE NOTE 8 & 9.
- 6" PLUG VALVE, FLG X FLG, SEE NOTE 3
- not used
- 45° DUCTILE IRON ELBOW, FLG X FLG
- 45° DUCTILE IRON ELBOW, MJ X MJ W/(2) MECHANICAL RESTRAINTS
- 6" X 3" DUCTILE IRON TEE, FLG X FLG
- 45° DUCTILE IRON WYE, FLG X FLG X FLG
- DIP SPOOL PIECE, PE X PE
- DIP SPOOL PIECE, FLG X PE
- RFCA (OR FLG X MJ ADAPTOR W/MECHANICAL RESTRAINT)
- 8" X 6" DUCTILE IRON REDUCER, FLG X FLG
- 3" PLUG VALVE, FLG X FLG, SEE NOTE 3
- 45° DUCTILE IRON ELBOW, MJ X MJ W/(2) MECHANICAL RESTRAINTS
- DIP SPOOL PIECE, PE X PE
- 3" RFCA (OR FLG X MJ ADAPTOR W/MECHANICAL RESTRAINT FOR BURIED PIPE)
- NPT THREADED BALL VALVE W/STAINLESS STEEL NIPPLE
- 2" STAINLESS STEEL PIPE
- STEEL TO POLY PIPE COUPLER
- POLY PIPE DRAIN LINE, ROUTED TO WET WELL
- 1" NPT THREADED BALL VALVE W/STAINLESS STEEL NIPPLE (PORT SIZE TO BE CONFIRMED W/MANUFACTURER)
- PRESSURE GAUGE, SEE NOTE 11. (PORT SIZE TO BE CONFIRMED W/MANUFACTURER)
- 8" DUCTILE IRON TEE, FLG X FLG
- FULL PORT BALL VALVE, FLG X FLG, SEE NOTE 4
- DIP SPOOL PIECE, FLG X PE
- 8" RFCA OR FLG X MJ ADAPTOR W/MECHANICAL RESTRAINT



L:\AP\9718\000 - WRF - Exit 298 Lift Station (DWG) Sheets\9718000DETAILS.dwg,c4.1 PIG LAUNCHER DETAILS, 06/19/2023 01:50 pm srs006

MATERIAL/EQUIPMENT LIST

- DEMO - FOR EACH PUMP**
- 1 REMOVE INITIAL PUMP
 - 2 REMOVE CONCRETE BLOCK AND ANCHORS
 - 3 REMOVE 6" SPOOL PIECE
 - 4 REMOVE 6" RFCA
 - 5 REMOVE 6" X 4" 90° REDUCING ELBOW
 - 6 REMOVE 6" X 4" ECCENTRIC REDUCER
 - 7 REMOVE 4" SPOOL PIECE
 - 8 REMOVE 4" RFCA

- NEW - FOR EACH PUMP (NIP)**
- 9 BUILDOUT PUMP, SEE NOTE 2
 - 10 6" DIP SPOOL PIECE, FLG X PE, ±1'-6" LENGTH
 - 11 6" DIP SPOOL PIECE, PE X PE, ±2'-2" LENGTH
 - 12 6" RFCA, EBAA SERIES 2100 OR APPROVED EQUAL
 - 13 6" 90° DIP ELBOW, FLG X FLG
 - 14 RAISE HIGH LEVEL FLOAT, SEE "LEVEL CONTROL SETTINGS"

NOTES:

1. THE CONVERSION PROCESS OUTLINED IN THESE PLANS SHALL SERVE AS A GUIDELINE FOR FUTURE LIFT STATION EXPANSION (INCLUDED HERE FOR REFERENCE, BUT NOT PART OF THIS CONTRACT) BUT MAY NOT NECESSARILY REFLECT ACTUAL STEPS TAKEN.
2. SUBMERSIBLE PUMPS (2 DUTY + 1 STANDBY) SHALL BE HOMA AKX434-310 WITH 6" FLANGED DISCHARGE, OR APPROVED EQUAL. MOTOR SHALL BE 75.0 HP, 230 VOLTS/3 PHASE/60 HZ. TWO PUMPS IN PARALLEL SHALL BE CAPABLE OF DELIVERING 1500 GPM AT 131 FT TDH AND SHALL OPERATE IN ALTERNATING LEAD-LAG ARRANGEMENT VIA LEVEL SET POINTS AND SCADA CONTROLS.

ELECTRICAL CONVERSION NOTES

1. REMOVE EXISTING #10 WIRING TO EACH PUMP.
2. INSTALL NEW #2 THHN CU WIRING TO EACH OF THE MOTORS FROM EACH OF THE NEW 75HP VFDS.
3. REPLACE SEALTITE TO NEW MOTORS.
4. MOVE CONTROL WIRING FROM 15HP VFDS TO 75HP VFDS AND TERMINATE.
5. SET UP NEW 75HP VFDS.

LEVEL CONTROL SETTINGS

INITIAL	
HIGH WATER LEVEL ALARM	5027.60
LAG PUMP ON	5027.10
LEAD PUMP 2 ON	5026.60
LEAD PUMP 1 ON	5026.60
PUMPS OFF	5025.60
BUILDOUT (FUTURE, NIP)	
HIGH WATER LEVEL ALARM	5028.00
LAG PUMP ON	5027.50
LEAD 2 PUMP ON	5027.00
LEAD 1 PUMP ON	5027.00
PUMPS OFF	5023.20

PUMPING SYSTEM CRITERIA

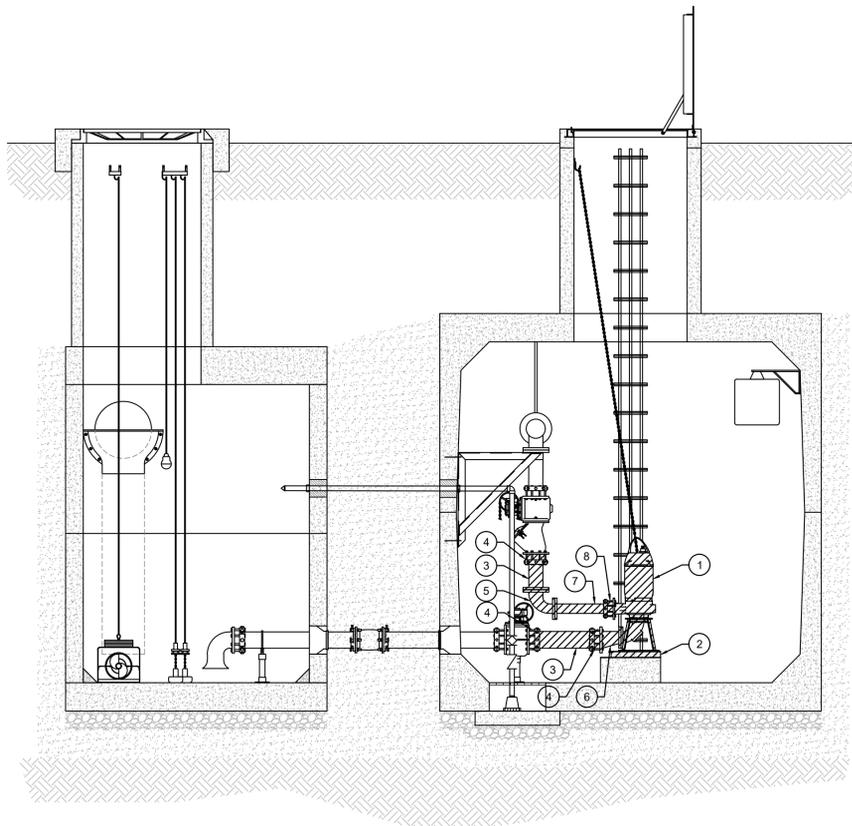
INITIAL	
NO. OF PUMPS	2 DUTY + 1 STANDBY
DESIGN FLOW	400 GPM
DESIGN TDH	46 FT
PUMP INTAKE DIAMETER	4 IN
PUMP DISCHARGE DIAMETER	4 IN
PUMP MODEL	HOMA AMS434-230 OR EQUAL

BUILDOUT (FUTURE, NIP)	
NO. OF PUMPS	2 DUTY + 1 STANDBY
DESIGN FLOW	1,500 GPM
DESIGN TDH	131 FT
PUMP INTAKE DIAMETER	6 IN
PUMP DISCHARGE DIAMETER	6 IN
PUMP MODEL	HOMA AKX434-310 OR EQUAL

NOT FOR INITIAL CONSTRUCTION
FOR REFERENCE ONLY

WET PIT

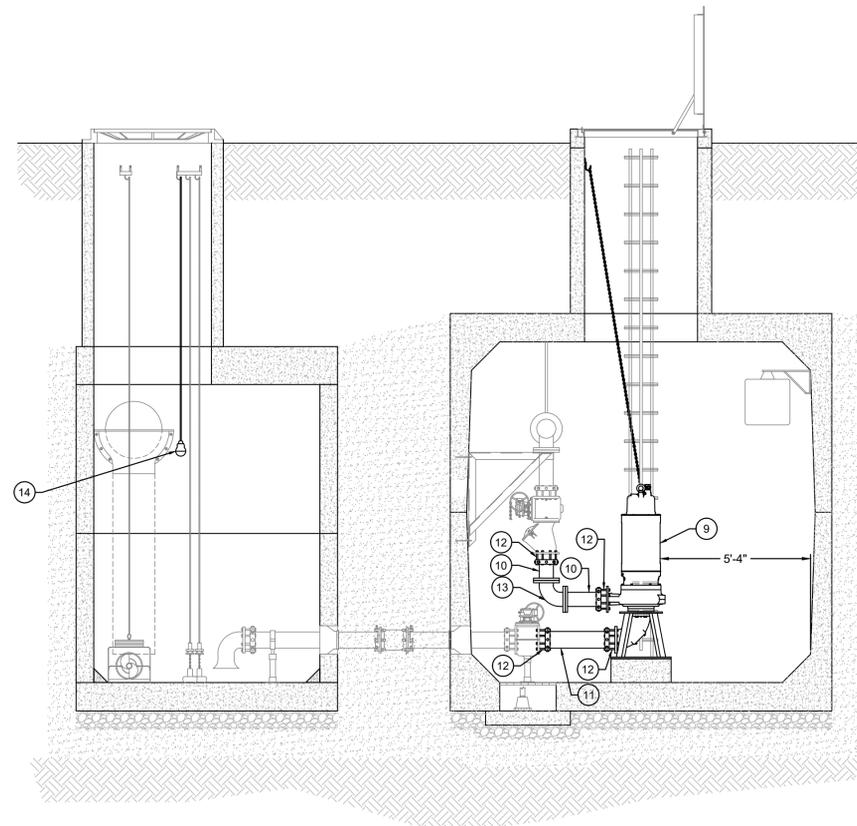
DRY PIT



INITIAL LIFT STATION CONFIGURATION

WET PIT

DRY PIT



BUILDOUT LIFT STATION CONFIGURATION (NIP)

CITY OF ELKO
EXIT 298 LIFT STATION AND FORCE MAIN
BUILDOUT LIFT STATION CONVERSION
ELKO COUNTY
NEVADA

REV	DATE	DESCRIPTION	BY

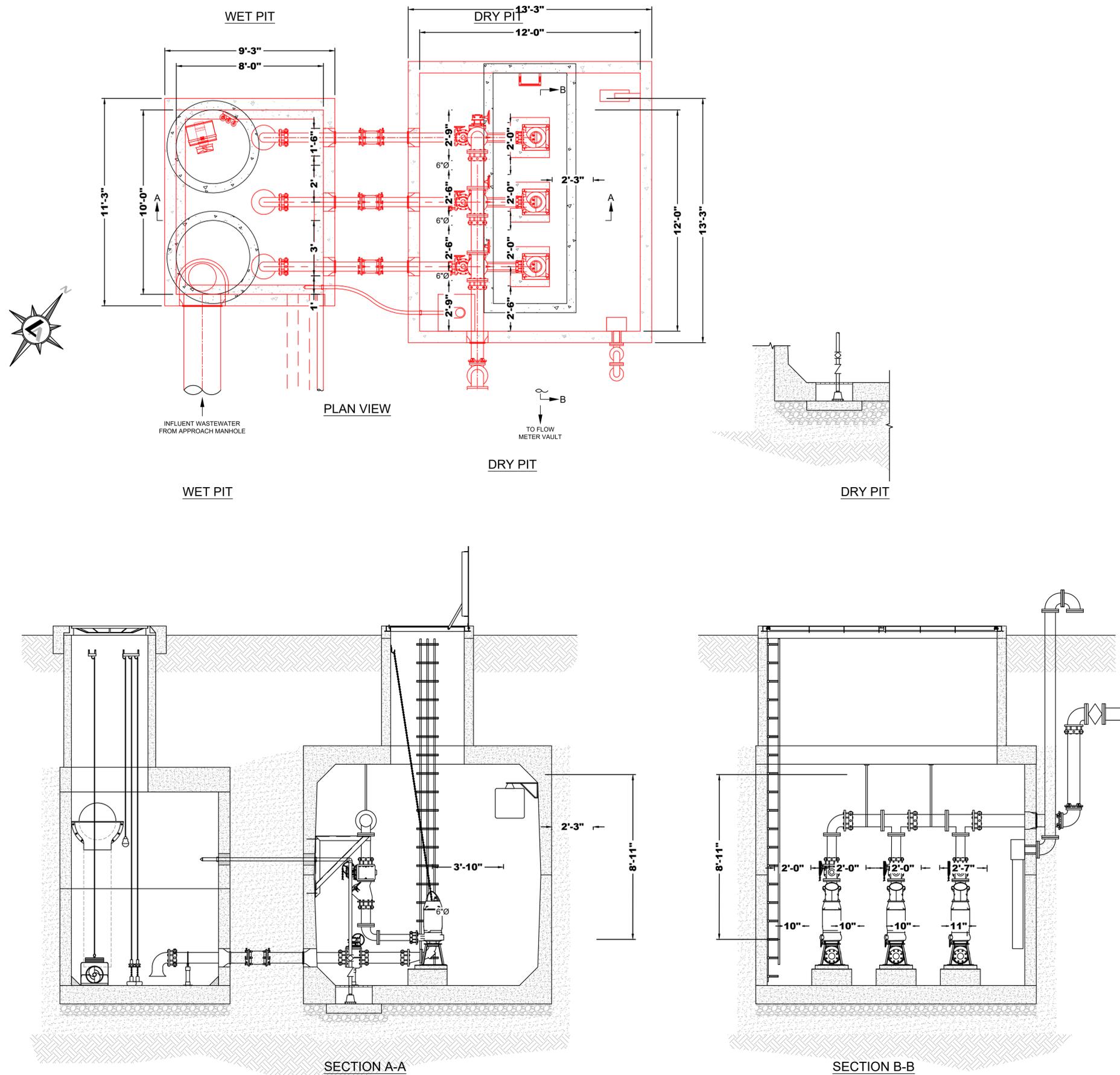
FINAL DESIGN
MARH 2020

BAR IS 1 INCH ON ORIGINAL DRAWING
0 3'
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

C4.2

DRAWN BY: MCQ
DESIGNED BY: MCQ/KT
CHECKED BY: KT
JOB NO.: 9718.000

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CITY OF ELKO
EXIT 298 LIFT STATION
SECTION VIEW CLEARANCES
 ELKO COUNTY
 NEVADA
 ELKO

REV.	DATE	DESCRIPTION	BY

BAR IS 1/8 INCH ON ORIGINAL DRAWING
 0 3'
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

NOT FOR CONSTRUCTION
 OCTOBER 2019

DRAWN BY: MCQ
 DESIGNED BY: MCQ/KT
 CHECKED BY: KT
 JOB NO.: 9718.000

UNDERGROUND WARNING TAPE PLACED 12"-18" BELOW SURFACE

FINISH SUBGRADE

BACKFILL

BEDDING

TRACE WIRE TAPED TO TOP OF PIPE

DUCTILE IRON PIPE, PVC, PE & HDPE PIPE

NOTES:

- WATER DENSIFIED BACKFILL AND TUNNELING SHALL NOT BE ALLOWED.
- BACKFILL SHALL MEET THE REQUIREMENTS FOR STRUCTURAL BACKFILL AS DEFINED IN THE TECHNICAL SPECIFICATIONS AND GEOTECHNICAL REPORT, WITH NO ROCKS SIZED OVER 4" COMPACTED IN 8" (MAX.) LIFTS TO 90% (MIN.) RELATIVE COMPACTION AS DETERMINED BY ASTM D1557 STANDARD. ALTERNATIVELY, CLASS "E" BACKFILL MAY BE USED FOR TRENCH BACKFILL.
- BEDDING MATERIAL FOR PIPE UNDER NORMAL CONDITIONS SHALL BE CLASS "A" BACKFILL AS SPECIFIED IN THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. CLASS "A" BEDDING MATERIAL SHALL BE COMPACTED IN 8" (MAX.) LIFTS TO 95% (MIN.) RELATIVE COMPACTION AS DETERMINED BY ASTM 1557 STANDARD.
- BEDDING MATERIAL FOR PIPE LOCATED BELOW THE WATER TABLE SHALL BE CLASS "C" BACKFILL AS SPECIFIED IN THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, AND SHALL BE EXTENDED TO AN ELEVATION AT LEAST ONE (1) FOOT ABOVE GROUNDWATER ELEVATION. CLASS "C" BACKFILL SHALL BE WRAPPED IN MIRAF180N NONWOVEN GEOTEXTILE, OR APPROVED EQUAL. CLASS "C" BEDDING MATERIAL SHALL BE COMPACTED IN ONE (1) FOOT (MAX.) LIFTS WITH A VIBRA PLATE TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.
- FOR TRENCHES AND EXCAVATIONS LOCATED WITHIN ROADWAY SECTION, SEE PAVEMENT PATCH DETAIL.
- ALL TRENCHES AND EXCAVATIONS SHALL CONFORM TO THE LATEST EDITION OF O.S.H.A. AND M.U.T.C.D. REQUIREMENTS.
- NATIVE MATERIAL MUST BE APPROVED BY THE CITY OF ELKO ENGINEERING PRIOR TO USING AS BACKFILL OR BEDDING.
- UNDERGROUND WARNING TAPE SHALL BE METALLIC AND APPROPRIATELY LABELED AND COLORED.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION UTILITIES
1	LUMOS REVS	JUL 19	TRENCH EXCAVATION & BACKFILL	DRAWING NO. U-2.1
CITY OF ELKO, NEVADA				DATE 11/30/07 PAGE 1

MANHOLES - GENERAL NOTES:

- ALL MANHOLES SHALL MEET THE REQUIREMENTS OF SECTION 204 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- MANHOLE COVERS SHALL BE IDENTIFIED AS STORM DRAIN, WATER OR SEWER CLEARLY DISPLAYED ON THE COVER.
- ALL TRENCHES AND EXCAVATIONS SHALL CONFORM WITH THE LATEST EDITION OF THE O.S.H.A. REQUIREMENTS.
- 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.
- 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.

- 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.
- THE TOTAL HEIGHT OF MANHOLE GRADE RINGS SHALL NOT EXCEED 12 INCHES.

PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C-478

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

NOTES:

- PIPE SECTION LENGTHS ARRANGED TO FIT DEPTH.
- PRECAST BASE MAY BE USED IF APPROVED BY GOVERNING AGENCY.
- MANHOLE STEPS ARE NOT REQUIRED.
- REFER TO DETAIL SHEET (MANHOLE - GENERAL NOTES) FOR ADDITIONAL INFORMATION.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION UTILITIES
1	CONCENTRIC	9/16/19	TYPE 2 MANHOLE	DRAWING NO. U-4.1
CITY OF ELKO, NEVADA				DATE 11/30/07 PAGE 1

Score 4 Lines on Top of Concrete Collar at a depth equal to 1/4 the concrete thickness. Edge the score lines at a 1/4" Radius. Two Parallel & Two Perpendicular to Centerline of Roadway

Place Collar Flush with Areas Other than Finished Roadway Surface

Place Manhole Cover & Frame 1/4" - 1/2" Below Finished Roadway Surface

ROUGH BROOM FINISH

CONCRETE COLLAR

MANHOLE TAPER

NOTES:

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

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION UTILITIES
1	lor	10/09/08	MANHOLE COLLAR	DRAWING NO. U-5.1
CITY OF ELKO, NEVADA				DATE 11/30/07 PAGE 1

Place Collar Flush with Areas Other than Finished Roadway Surface

Place Collar 1/4" - 1/2" Below Finished Roadway Surface

CONCRETE COLLAR TO BOTTOM OF TAPER

TYLER MODEL 6855 564-A CAST IRON VALVE BOX WITH LID

MUELLER VALVE

10 GAUGE COPPER TRACE WIRE TAPED TO LINE AND LOOPED TO TOP OF BOX

WATER MAIN

THRUST BLOCK

NOTES:

- CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 337.10 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, UNLESS OTHERWISE SPECIFIED.
- VALVE COLLAR SHALL BE SET 1/4" TO 1/2" BELOW FINISHED CONCRETE OR BITUMINOUS SURFACE. VALVE COLLARS IN ALL OTHER AREAS SHALL BE SET FLUSH WITH FINISHED GRADE, UNLESS OTHERWISE SPECIFIED.
- CONCRETE COLLAR REQUIRED WHEN VALVE IS NOT LOCATED IN CONCRETE OR BITUMINOUS SURFACE.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION UTILITIES
1	ADJ. WIRE	3/2011	VALVE DETAIL	DRAWING NO. U-19.1
CITY OF ELKO, NEVADA				DATE 11/30/07 PAGE 1

1 1/2" VENT PIPE, INSTALL 22 TO 24 MESH PER INCH SCREEN ON OUTLET OF PIPE, ROUTE PIPE TO WET PIT

2" COMBINATION AIR VALVE WITH THREADED NPT CONNECTION (A.R.I. D-025 OR APPROVED EQUAL)

PRESSURE GAUGE, SEE NOTE 3

1"Ø X 1/2" SST REDUCING BUSHING

1"Ø SST ELBOW

1"Ø SST NIPPLE

2"Ø SST HEX NIPPLE

2"Ø X 1" SST TEE

2"Ø SST HEX NIPPLE

2"Ø SST BALL VALVE

2"Ø SST HEX NIPPLE

2" SERVICE SADDLE W/ STAINLESS STEEL STRAP

NOTES:

- SIZE OF FITTINGS AND APPURTENANCES SHALL COMPLY WITH MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.
- PROVIDE DIELECTRIC UNIONS BETWEEN DISSIMILAR METALS.
- PRESSURE GAUGE SHALL BE GLYCERINE FILLED, WITH 3/2" DIAL SIZE, TYPE 316 STAINLESS STEEL CASE AND TUBE, 0-150 PSI RANGE, AND ±1% ACCURACY. PRESSURE GAUGE SHALL BE ASHCROFT MODEL 351009, OR APPROVED EQUAL.
- CONTRACTOR TO INSTALL STAINLESS STEEL FITTINGS WITH ANTI-GALLING LUBRICANT.

AIR/VAC VALVE & PRESSURE GAUGE DETAIL AT LIFT STATION

NOT TO SCALE

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION UTILITIES
1				DRAWING NO. U-4.1
CITY OF ELKO, NEVADA				DATE 11/30/07 PAGE 1

RADIUS TO MATCH SUPPORTED PIPE

RADIUS TO MATCH SUPPORTED FITTING

FOR SUPPORT AT PIPE: U-BOLT ADJUSTABLE PIPE SUPPORT B-LINE B3092 OR APPROVED EQUAL

FOR SUPPORT AT VALVE: ADJUSTABLE PIPE SADDLE SUPPORT B-LINE B3093 OR APPROVED EQUAL

THREADED PIPE STAND B-LINE B3088T-2 OR APPROVED EQUAL

ANCHOR TO FLOOR w/ (4) 2 1/2" ADHESIVE ANCHORS w/ EPOXY GROUT

1" NON-SHRINK GROUT

NOTES:

- PAINT PIPE SUPPORT ASSEMBLY SAME AS PIPE PER TECHNICAL SPECIFICATIONS.
- IF SUPPORT IS LOCATED IN WET WELL, ALL MATERIAL SHALL BE STAINLESS STEEL IN ALL OTHER AREAS, MATERIALS SHALL BE HOT-DIP GALVANIZED STEEL AND FIELD PAINTED, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- IF SUPPORT IS LOCATED UNDER FITTING, USE SADDLE SUPPORT. IF SUPPORT IS LOCATED UNDER PIPE, USE U-BOLT SUPPORT.

FLOOR MOUNT PIPE SUPPORT DETAIL

NOT TO SCALE

FINISH GRADE

4" MIN. MAX. BELOW FINISHED GRADE

ADJUST BOX, LID & CONCRETE COLLAR TO FINISH GRADE

VALVE BOX, LID & CONCRETE COLLAR (SEE NOTES 1 AND 2)

REMOVABLE THREADED WATERTIGHT PLUG

SOLID MASONRY BLOCKS (TYP 3)

SDR35, DIAMETER TO MATCH DRAIN PIPE

45 DEGREE BEND

WRAP 24" OF TRACER WIRE AROUND CLEANOUT IN BOX

CONTINUOUS TRACER WIRE (GREEN) TAPED TO CLEANOUT RISER & 45 DEGREE BEND, NO SPLICES ALLOWED

DEPTH VARIES 42" MIN.

4" MIN. TYPE 2, CLASS B, AGG. BASE BENEATH SIDEWALK

4" CONCRETE

-4" Native Material Compacted to 90% Min.

1-WAY CLEANOUT WYE, TOWARDS WET PIT

PLUG, CAP SEWER EXTENSION

NOTES:

- VALVE BOX AND LID SHALL BE H20 TRAFFIC RATED WITH A MINIMUM INSIDE DIAMETER OF 10 INCHES (CHRISTY G3 TRAFFIC VALVE BOX & LID). CAST IRON LID SHALL BE MARKED AT THE FACTORY "SSCO". CAST IRON LID SHALL BE EPOXY COATED AT THE FACTORY, OR POWDER COATED, COLOR SHALL BE GREEN FOR SANITARY SEWER APPLICATIONS.
- VALVE BOX SHALL BE SET TO GRADE.

SANITARY SEWER CLEANOUT DETAIL

N.T.S.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION UTILITIES
1				DRAWING NO. U-4.3
CITY OF ELKO, NEVADA				DATE 9/16/19 PAGE 1

CURB & GUTTER

EXPANSION JOINT

WEAKENED PLANE JOINTS

SIDEWALK

CURB & GUTTER

VARIES

1.5%

12"

BACKSLOPE

FORESLOPE

4" CONCRETE

-4" Native Material Compacted to 90% Min.

NOTES:

- CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 337.10 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- ALL CONCRETE SIDEWALK SHALL HAVE 1/4" EXPANSION JOINTS EVERY 30 FEET AND AT ALL CURB RETURNS. WEAKENED PLANE JOINTS SHALL BE EVERY 5 FEET AND CONJOINT WITH THE ADJACENT CURB AND GUTTER WEAKENED PLANE JOINTS. THE WEAKENED PLANE JOINTS PLACED EVERY 5' IN THE SIDEWALK MAY BE SAWCUT WITH CITY OF ELKO APPROVAL AND SHALL MEET THE REQUIREMENTS OF SECTION 314 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- AGGREGATE BASE MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION 302 & 308 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- FORESLOPES & BACKSLOPES SHALL BE APPROVED BY THE CITY OF ELKO PRIOR TO CONSTRUCTING.
- CROSS SLOPE OF SIDEWALK SHALL NOT EXCEED 2%.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION UTILITIES
1				DRAWING NO. R-3.1
CITY OF ELKO, NEVADA				DATE 11/30/07 PAGE 1

CITY OF ELKO

EXIT 298 LIFT STATION AND FORCE MAIN

NEVADA

ELKO COUNTY

ELKO

LIFT STATION DETAILS - 1

REV	DATE	DESCRIPTION

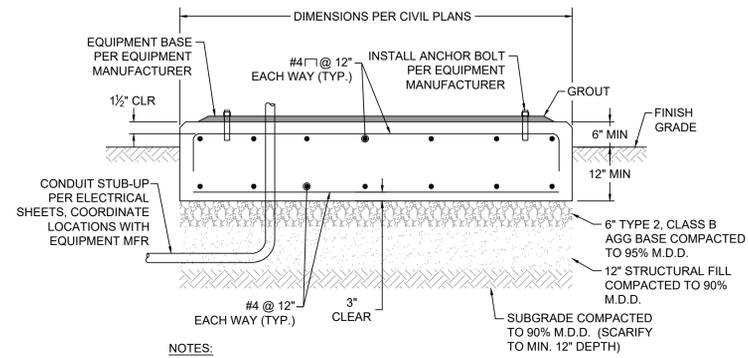
BAR IS 1/4" INCH ON ORIGINAL DRAWING

0 NTS

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

D1.0

DRAWN BY: MCQ
DESIGNED BY: MCQ/KT
CHECKED BY: KT
JOB NO.: 9718.000



NOTES:

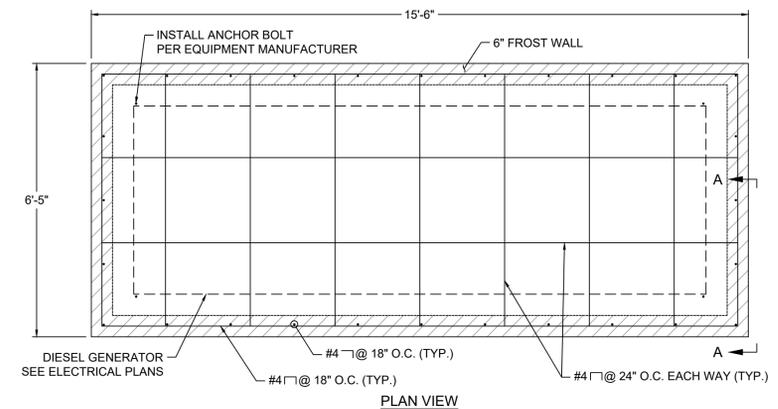
- CONCRETE SHALL HAVE A MINIMUM 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS AND SHALL CONFORM TO SSPWC, SECTION 202.

EQUIPMENT PAD DETAIL
NOT TO SCALE

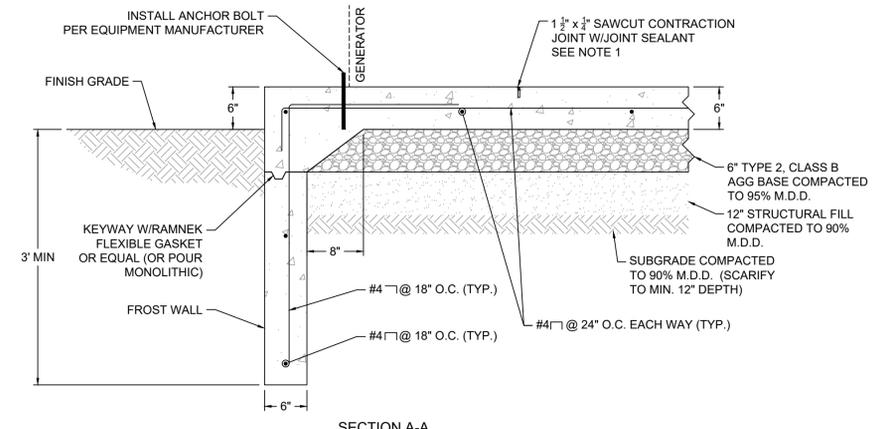
1
D1.1

GENERATOR PAD NOTES:

- CONCRETE SHALL HAVE A MINIMUM 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS AND SHALL CONFORM TO SSPWC, SECTION 202.
- PLACE JOINTS AT MAXIMUM SPACING OF 15'-0" FOR 3/4" AGGREGATE. 12'-0" MAXIMUM SPACING FOR AGGREGATE SMALLER THAN 3/4". SAW CUT JOINTS AS SOON AS POSSIBLE AFTER CONCRETE FINISH. CLEAN JOINTS PRIOR TO PLACING JOINT SEALANT.
- REBAR SHALL BE GRADE 40 AND SHALL BE CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS. MINIMUM CLEAR CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
3" FOR CONCRETE PLACED DIRECTLY AGAINST EARTH
1 1/2" INCHES FOR FORMED SURFACES EXPOSED TO WEATHER OR EARTH
CENTER OF SLAB FOR SLABS ON GRADE
- LAPPED SPLICES SHALL BE DESIGNED IN CONFORMANCE WITH THE CURRENT ADOPTED BUILDING CODE. NO TWO ADJACENT BARS SHALL BE SPLICED IN THE SAME LOCATION UNLESS NOTED OTHERWISE.
- ANCHOR BOLTS SHALL BE DRILLED AND EPOXIED, CAST IN PLACE, OR WEDGE ANCHORS WITH MINIMUM GRADE 36 KSI.



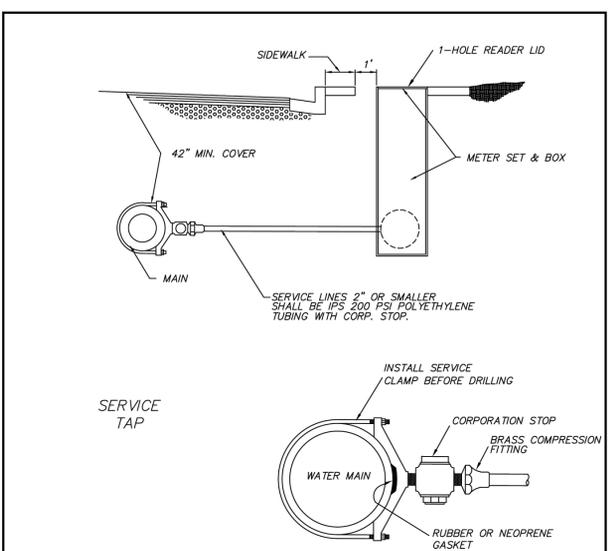
PLAN VIEW



SECTION A-A

GENERATOR PAD DETAIL
NOT TO SCALE

2
D1.1

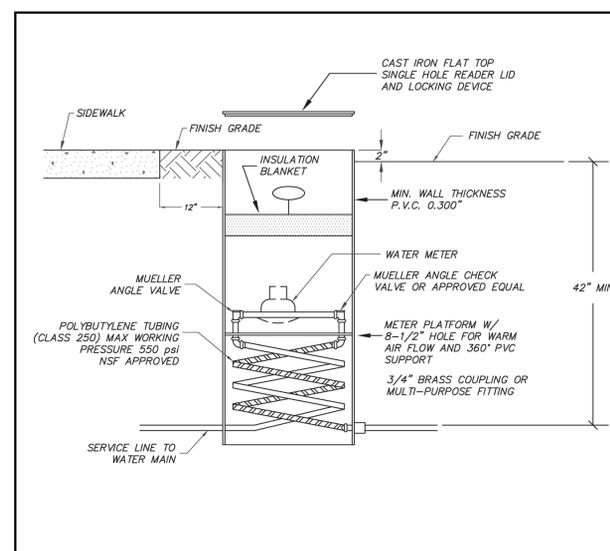


NOTES:

- CORPORATION STOP, CURB STOP, (GATE VALVE 4" OR LARGER) AND SERVICE LINE TO BE SAME SIZE.
- SERVICE CLAMPS SHALL BE DOUBLE STRAP FOR ALL SERVICE TAP SIZES, EXCEPT WHERE SIZE OF TAP EXCEEDS MANUFACTURER'S RECOMMENDED LIMIT FOR SIZE OF MAIN.
- TAPS SHALL BE STAGGERED AND PLACED A MINIMUM OF 12" APART FOR DUCTILE IRON PIPE. TAPS SHALL BE STAGGERED AND PLACED A MINIMUM OF 18" APART FOR C900. NO TAPS SHALL BE CLOSER THAN 2 FEET FROM THE ENDS OF PIPE.
- ALL JOINT FITTINGS SHALL BE OF BRASS COMPRESSION TYPE.

4
D1.1

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION UTILITIES
1	UPDATE	5/26/11	WATER SERVICE CONNECTION	DRAWING NO. U-12.1
			CITY OF ELKO, NEVADA	DATE 11/30/07 PAGE 1

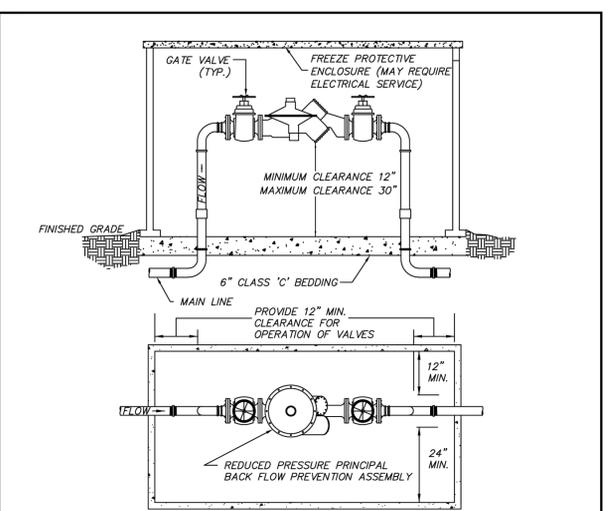


NOTES:

- 4" WATER METER BOX SHALL BE MUELLER / McCULLOUGH THERMA-COIL METER BOX.
- NO MORE THAN ONE EXTENSION ALLOWED.
- LOCATE WATER METER 1 FT. BEHIND THE PROPERTY LINE AND LOCATED IN THE UTILITY EASEMENT.

5
D1.1

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION UTILITIES
1	1-HOLE LID	1/13	3/4" & 1" WATER METER	DRAWING NO. U-13.1
			CITY OF ELKO, NEVADA	DATE 11/30/07 PAGE 1

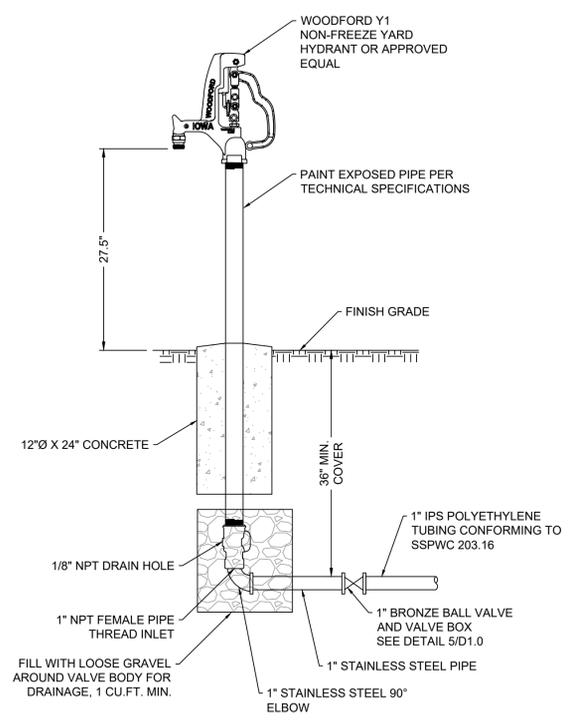


NOTES:

- REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY SHALL BE APPROVED BY THE CITY OF ELKO UTILITIES & TESTED BY AN APPROVED CERTIFIED BACKFLOW ASSEMBLY TESTER PRIOR TO APPROVAL OF ANY CERTIFICATE OF OCCUPANCY.
- NO OUTLET TEE, TAP OR CONNECTION BETWEEN SERVICE CONNECTION & BACKFLOW PREVENTION ASSEMBLY.
- INSTALL ADEQUATE DRAINAGE, REFER TO RELIEF VALVE DISCHARGE RATE FOR SIZING.
- SUPPORTS REQUIRED FOR ASSEMBLIES 2.5" AND LARGER.
- LOCATE DIRECTLY DOWNSTREAM FROM WATER METER, WITH A SEPARATION OF AT LEAST 4 TIMES THE PIPE DIAMETER. ALL OTHER LOCATIONS REQUIRE PRIOR APPROVAL BY CITY OF ELKO UTILITIES DEPARTMENT.
- BACKFLOW PREVENTER ASSEMBLIES SHALL MEET THE REQUIREMENTS OF NAC 445A.67185-67255.

6
D1.1

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION UTILITIES
			BACKFLOW PREVENTER ASSEMBLY (REDUCED PRESSURE TYPE)	DRAWING NO. U-17.1
			CITY OF ELKO, NEVADA	DATE 11/30/07 PAGE 1



NOTE:

- PROVIDE DIELECTRIC UNIONS BETWEEN DISSIMILAR METALS.

YARD HYDRANT DETAIL
N.T.S.

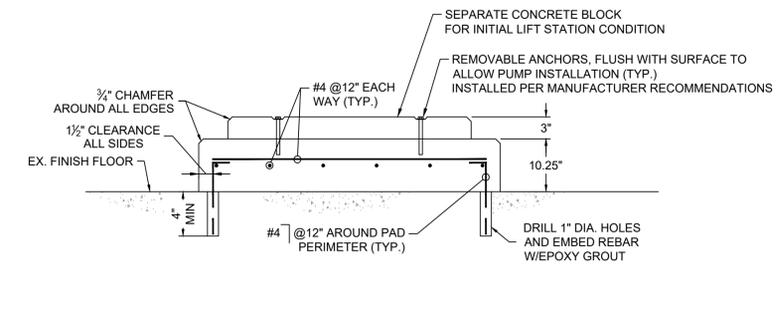
7
D1.1

CITY OF ELKO
NEVADA
ELKO COUNTY
ELKO
EXIT 298 LIFT STATION AND FORCE MAIN
LIFT STATION DETAILS - 2

REV	DATE	DESCRIPTION

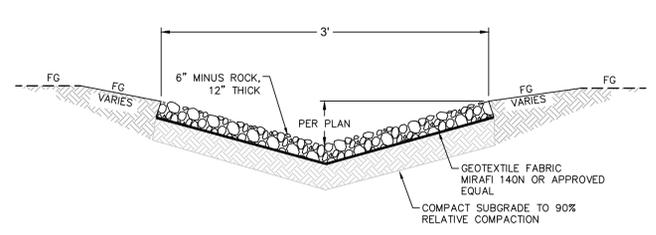
BAR IS 1/4 INCH ON ORIGINAL DRAWING
0 NTS
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY
D1.1

FINAL DESIGN
MARCH 2020
DRAWN BY: MCQ
DESIGNED BY: MCQ/KT
CHECKED BY: KT
JOB NO.: 9718.000



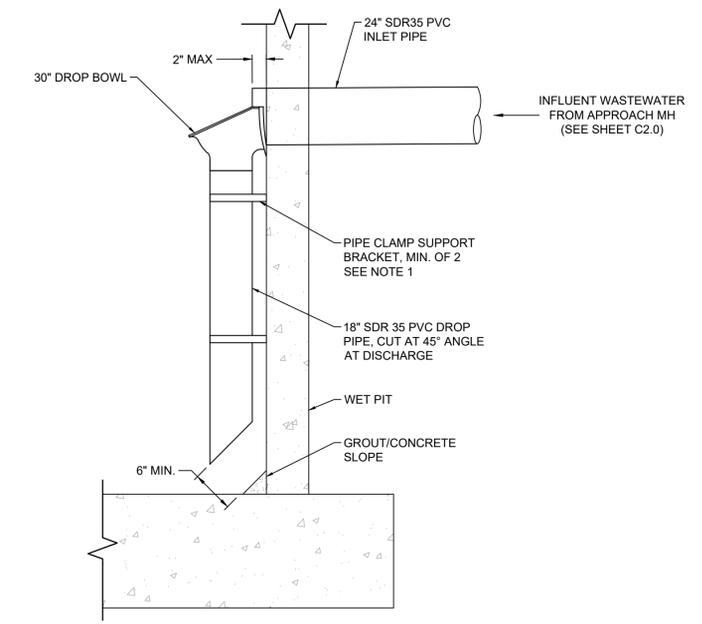
CONCRETE PUMP PEDESTAL
NOT TO SCALE

1
D1.3



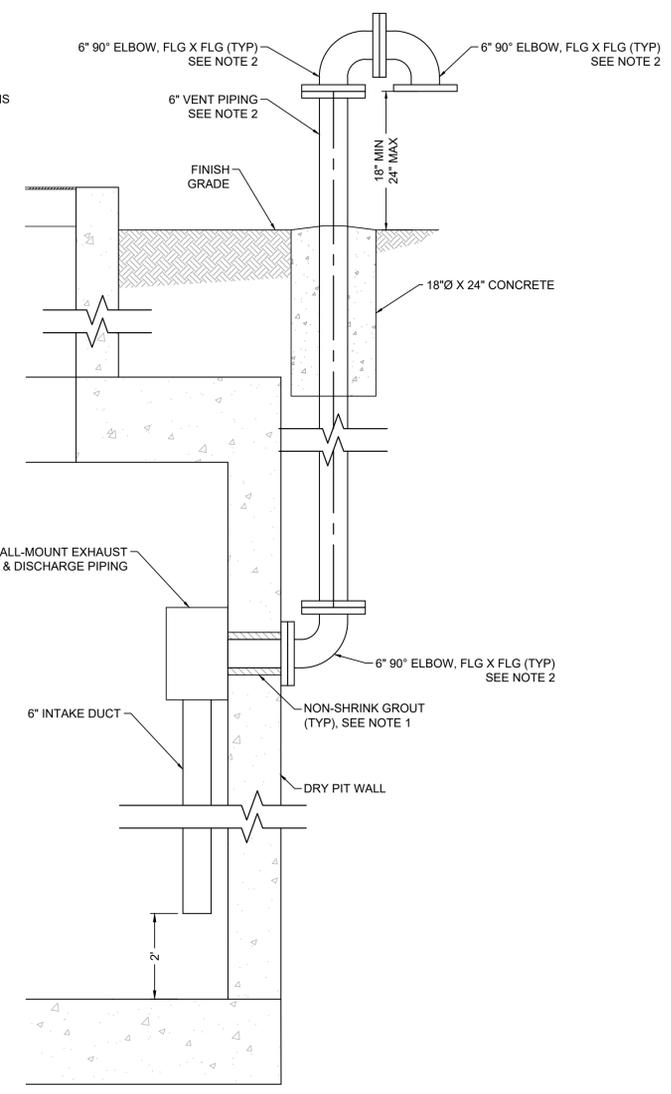
ROCK LINED SWALE
NOT TO SCALE

2
D1.3



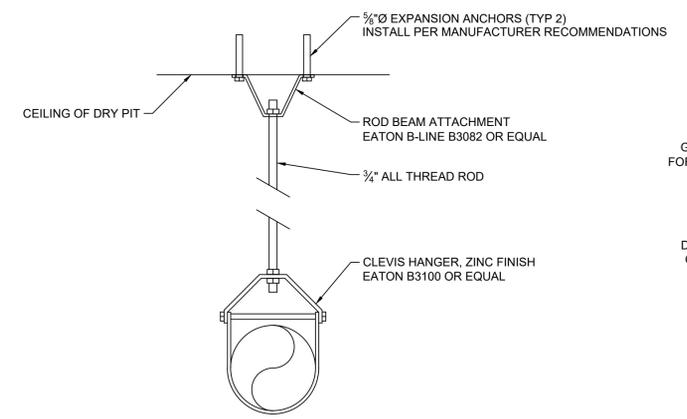
INSIDE DROP BOWL ASSEMBLY DETAIL
NOT TO SCALE

3
D1.3



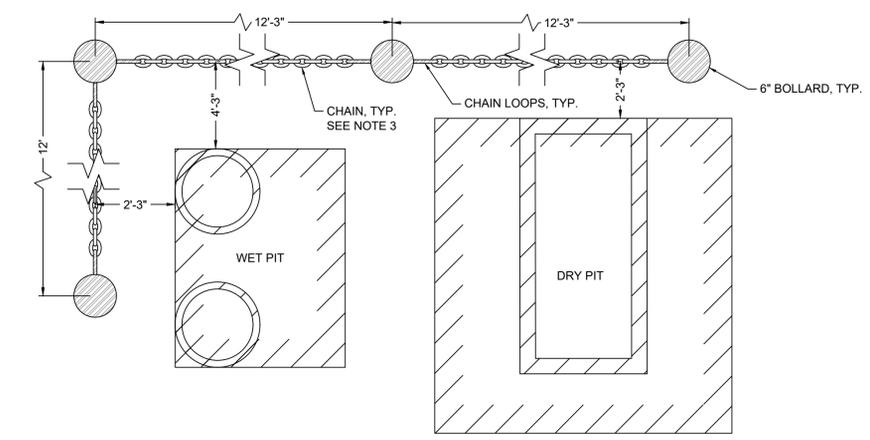
EXHAUST FAN AND DISCHARGE PIPING
NOT TO SCALE

4
D1.3

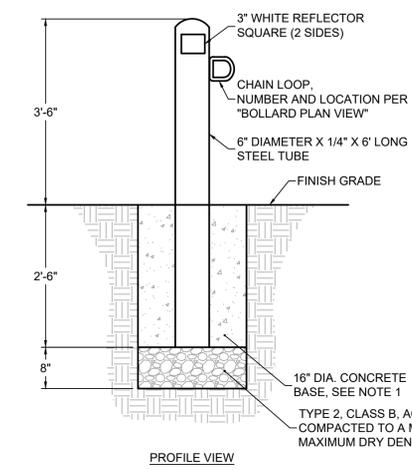


PIPE HANGER
NOT TO SCALE

6
D1.3

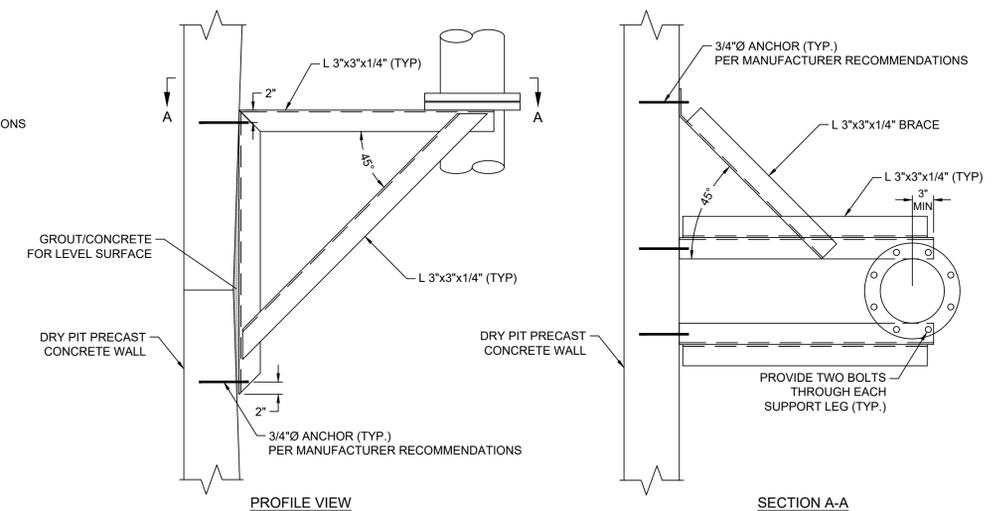


WET PIT/DRY PIT BOLLARD PLAN VIEW
NOT TO SCALE



BOLLARD
NOT TO SCALE

5
D1.3



WALL MOUNT PIPE SUPPORT
NOT TO SCALE

7
D1.3

- NOTES:**
1. PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD WITH SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC, SECTION 202.
 2. ALL WELDS AND BENDS SHALL BE SMOOTH, EVEN AND PAINTED.
 3. CHAIN TO BE GALVANIZED STEEL WITH SNAP HOOKS ON BOTH ENDS.
 4. BOLLARDS AND SAFETY CHAIN SHALL BE COATED/PAINTED SAFETY YELLOW.

CITY OF ELKO
EXIT 298 LIFT STATION AND FORCE MAIN
LIFT STATION DETAILS - 4
NEVADA
ELKO COUNTY
ELKO

REV	DATE	DESCRIPTION

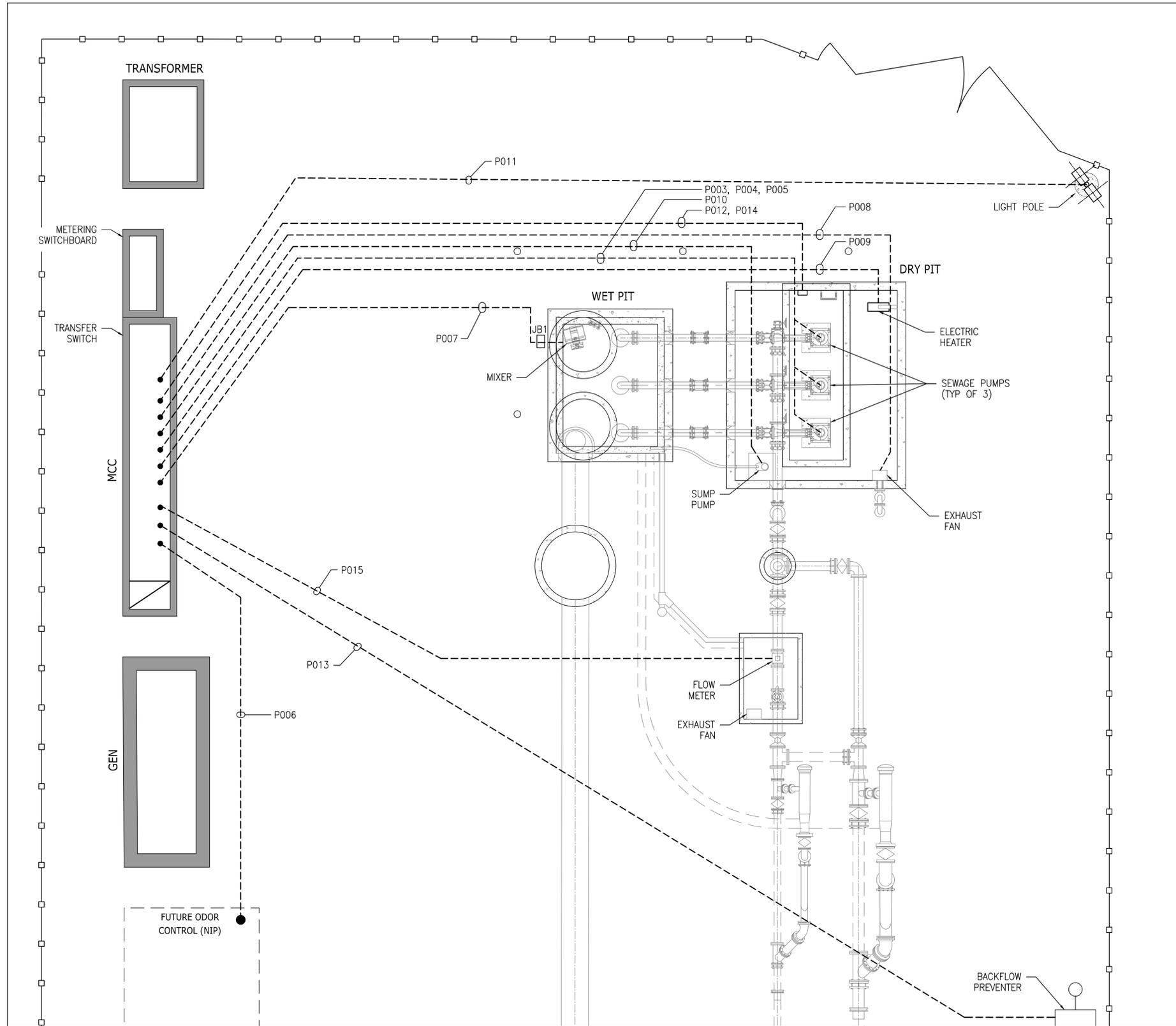
BY: _____
DESIGNED BY: MCQ
CHECKED BY: KT
JOB NO.: 9718.000

BAR IS 1/8 INCH ON ORIGINAL DRAWING
0 NTS
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

D1.3

FINAL DESIGN
MARH 2020

L:\LAP\9718.000 - WRF - Exit 298 Lift Station (DWG) Sheets\9718000DETAILS.dwg,01.3 DETAILS, 06/19/2023 01:53 pm srsosob



WET PIT IS CLASSIFIED CLASS1 DIV1 NEC APPLICABLE ARTICLES TO BE FOLLOWED

UNDERGROUND CONDUIT
 (CONDUIT ROUTING FOR REFERENCE ONLY)
 (CONTRACTOR TO VERIFY MCC & WET PIT PENETRATIONS)
 SCALE: 1" = 4'-0"

CITY OF ELKO
 EXIT 298 LIFT STATION AND FORCE MAIN
 CONDUIT PLAN
 ELKO COUNTY
 NEVADA

REV	DATE	DESCRIPTION	BY

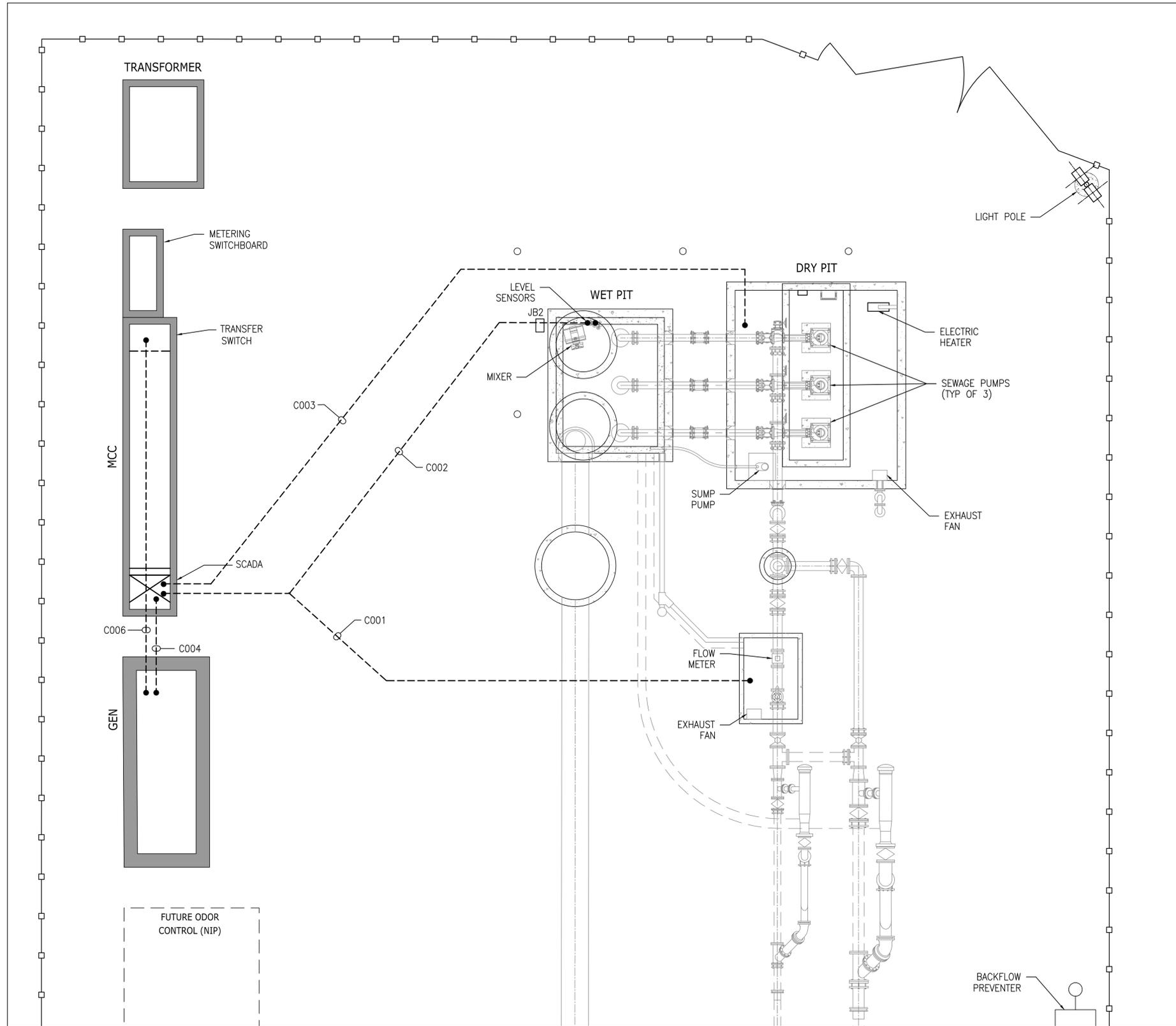
FINAL DESIGN
 DECEMBER 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
 0 4'
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

E1.1

I&E ELECTRIC Inc
 1425 DOERR DRIVE
 ELKO, NV 89801
 775.738.3058

L:\A\Proj\1718.000 - WRF - Exit 298 Lift Station\DWG\Sheets\971800ELEC E1.1.dwg E1.1
 06/19/2023 04:10 pm ayd066



WET PIT IS CLASSIFIED CLASS 1 DIV 1 NEC APPLICABLE ARTICLES TO BE FOLLOWED



UNDERGROUND CONDUIT
(CONDUIT ROUTING FOR REFERENCE ONLY)
(CONTRACTOR TO VERIFY MCC & WET PIT PENETRATIONS)
SCALE: 1" = 4'-0"

CITY OF ELKO
EXIT 298 LIFT STATION AND FORCE MAIN UNDERGROUND CONTROL PLAN
ELKO COUNTY
NEVADA

REV	DATE	DESCRIPTION	BY

FINAL DESIGN
DECEMBER 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
0 4'
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

E1.2

I&E ELECTRIC Inc
1425 DOERR DRIVE
ELKO, NV 89801
775.738.3058

L:\A\Proj\1718.000 - WRP - Exit 298 Lift Station\DWG\Sheets\971800ELEC E1.2.dwg E1.2
06/19/2023 04:10 pm ayv006

CONDUIT SCHEDULE							
CONDUITS	SIZE	# OF CONDUITS	WIRE SIZE	GROUND	SERVICE	FROM	TO
P001	TBD	TBD	BY UTILITY	---	---	---	---
P002	4"	2	350Kcm Cu	1C/ Cu #1	480V	GENERATOR	MCC/TRANSFER SWITCH
P003	2"	1	3C/#10 Thhn Cu	1C/ #10 Cu	480V	SEWAGE PUMP #1	MCC
P004	2"	1	3C/#10 Thhn Cu	1C/ #10 Cu	480V	SEWAGE PUMP #2	MCC
P005	2"	1	3C/#10 Thhn Cu	1C/ #10 Cu	480V	SEWAGE PUMP #3	MCC
P006	1.25"	1	FUTURE	FUTURE	---	ODOR CONTROL	MCC
P007	.75"	1	3C/#12 Thhn Cu	1C/#12 Thhn Cu	480V	MIXER	MCC
P008	.75"	1	2C/#12 Thhn Cu	1C/#12 Thhn Cu	120V	DRY PIT EXHAUST FAN	PNL2
P009	0.75	1	3C/#12 Thhn Cu	1C/#12 Thhn Cu	480V	DRY PIT ELECTRIC HEATER	MCC
P010	0.75	1	2C/#12 Thhn Cu	1C/#12 Thhn Cu	120V	SUMP PUMP	PNL2
P011	0.75	1	2C/#12 Thhn Cu	1C/#12 Thhn Cu	120V	YARD LIGHTS	PNL2
P012	0.75	1	2C/#12 Thhn Cu	1C/#12 Thhn Cu	120V	GFI RECEPTACLE	PNL2
P013	0.75	1	2C/#12 Thhn Cu	1C/#12 Thhn Cu	120V	HOT BOX POWER (BF)	PNL2
P014	0.75	1	2C/#12 Thhn Cu	1C/#12 Thhn Cu	120V	DRY PIT LIGHTS	PNL2
P015	0.75	1	2C/#12 Thhn Cu	1C/#12 Thhn Cu	120V	FLOWMETER VAULT EX. FAN	PNL2
P016	0.75	1	---	---	SPARE	DRY PIT	MCC
P017	0.75	1	---	---	SPARE	WET WELL	MCC
P018	0.75	1	4C/#12 Thhn Cu	1C/#12 Thhn Cu	120V	GENERATOR	PNL2
---	---	---	---	---	---	---	---
C001	1"	1	FACTORY CABLES	---	SIGNAL	FIT100	SCADA PANEL
C002	1"	1	TWISTED SHIELDED #18	---	SIGNAL	PT100	SCADA PANEL
C002	1"	---	TWISTED SHIELDED #18	---	SIGNAL	PT101	SCADA PANEL
C002	1"	---	2C/ #14 Thhn Cu	---	SIGNAL	LSH100	SCADA PANEL
C003	.75"	1	2C/ #14 Thhn Cu	1C/#14 Thhn Cu	SIGNAL	LSH200	SCADA PANEL
C004	.75"	1	6C/ #14 Thhn Cu	---	SIGNAL	GEN-Y11,Y12,Y13	SCADA PANEL
C005	1.5"	1	20C/ #16 TYPE TC	---	SIGNAL	MCC	SCADA PANEL
C006	.75"	1	2C/ #14 Thhn Cu	---	CONTROL	GENERATOR	TRANSFER SWITCH

MCC LOAD CALCULATION							
				PHASE A	PHASE B	PHASE C	
LOAD NOTES		CKT	CB RATING	AMPS	AMPS	AMPS	
CURRENT LOAD	SEWAGE PUMP #1	15hp	1	80	21	21	21
CURRENT LOAD	SEWAGE PUMP #2	15hp	2	80	21	21	21
CURRENT LOAD	SEWAGE PUMP #3	15hp	3	80	21	21	21
*FUTURE BUILDOUT	SEWAGE PUMP #1	75hp	4	250	96	96	96
*FUTURE BUILDOUT	SEWAGE PUMP #2	75hp	5	250	96	96	96
*FUTURE BUILDOUT	SEWAGE PUMP #3	75hp	6	250	96	96	96
CURRENT LOAD	MIXER	5hp	7	20	7.6	7.6	7.6
CURRENT LOAD	DRY PIT HEATER	5kw	8	20	6	6	6
*FUTURE BUILDOUT	ODOR CONTROL	20hp	9	80	27	27	27
CURRENT LOAD	480-240/120V TRANSFORMER	15kva	10	20	32	32	0
*FUTURE BUILDOUT	SPARE		11	20	18	18	18
TOTAL AMPS				441.6	441.6	409.6	

PANEL - 2													
ACCESSORIES: GROUND BUS, ALL COPPER BUS													
TYPE: SERVICE: 240/120V, 1Ø, 3 WIRE													
POLES: 16													
LOCATION: EXIT 298 LIFT STA.													
UNLESS OTHERWISE NOTED, SIZE: CONDUITS PER NEC, BASE ON TYPE THW													
BUS AMPACITY: 100A													
MAINS: 80A													
NEUTRAL: FULL													
A/C: 10KAIC													
<input checked="" type="checkbox"/> SURFACE <input type="checkbox"/> FLUSH <input type="checkbox"/> NEMA 1 <input checked="" type="checkbox"/> NEMA 3R													
CKT KVA	CB TRIP	LOAD CONT *	WIRE	LOAD NAME	POLE	POLE	LOAD NAME	WIRE	CONT LOAD *	CB TRIP	CKT KVA		
1200	20/1	#12	#12	P4 PUMP 1/2 HP	1	2	OUTLETS	#12	20/1	1500			
	1800	20/1	#12	HOT BOX POWER	3	4	YARD LIGHTING	#12	*	20/1	1800		
300	20/1	#12	#12	FLOWMETER VAULT EF	5	6	DRY PIT LIGHTING	#12	*	20/1	500		
	500	20/1	#12	DRY PIT EXHAUST FAN	7	8	GENERATOR HEATER	#12	*	20/1	1500		
	20/1			SPARE	9	10	GENERATOR CHARGER	#12	*	20/1	500		
	20/1			SPARE	11	12	SPARE			20/1			
	20/1			SPARE	13	14	SPARE			20/1			
	20/1			SPARE	15	16	SPARE			20/1			
1500	2300	SUBTOTAL KVA		SUBTOTAL KVA:		2500	3300	TOTAL KVA:		4000	5600		
										TOTAL AMPS:		33	47

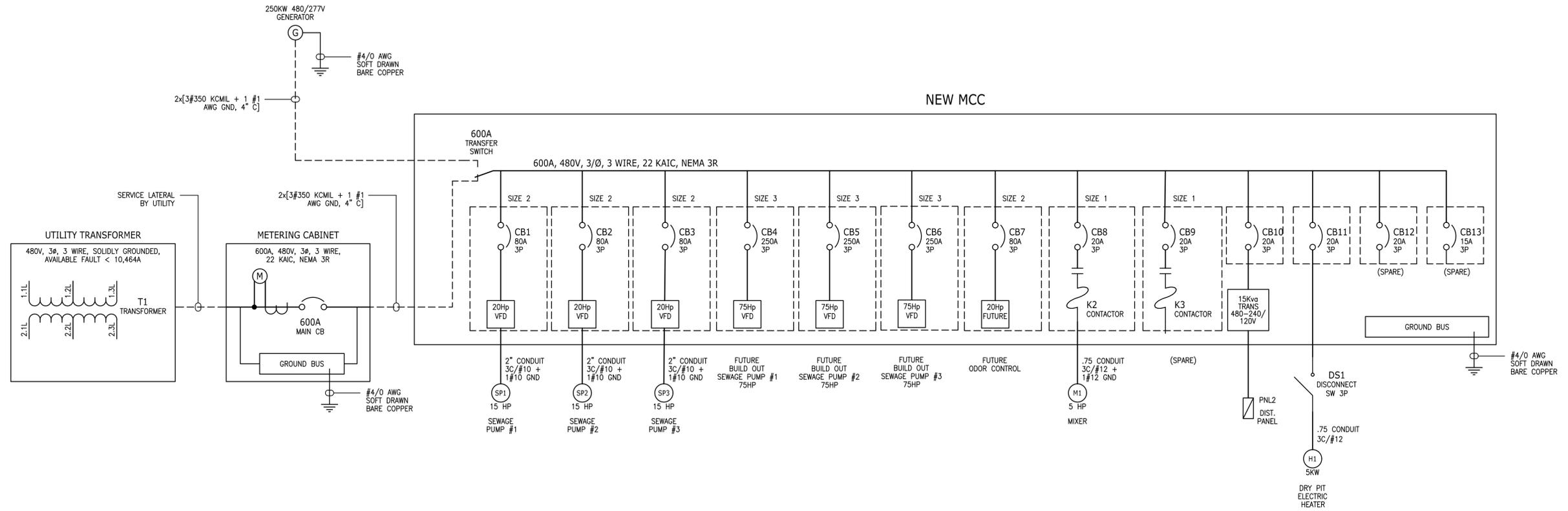
INSTRUMENT SCHEDULE						
TAG	DESCRIPTION	MAKE	MODEL	SUPPLY	RANGE	COMMENTS
FE-100	SEWAGE FLOW	SIEMENS	7ME6580-4PJ14-2AA2	---	---	8" MAGMETER
FIT-100	MAG TRANSMITTER	SIEMENS	7ME6910-2CA10-1AA0	120VAC	---	REMOTE DISPLAY
PT-100	WET WELL LEVEL TRANSMITTER	DWYER	PBLT2-15-40	24VDC	0-15 PSI	PRESSURE TRANSMITTER 4-20 ma (OR EQUAL)
PT-101	WET WELL LEVEL TRANSMITTER	DWYER	PBLT2-15-40	24VDC	0-15 PSI	PRESSURE TRANSMITTER 4-20 ma (OR EQUAL)
LSH-100	HIGH LEVEL FLOAT	MERCOID	FSW2-CNPN-40	24VDC	---	WET WELL HIGH LEVEL ALARM (OR EQUAL)
LSH-200	HIGH LEVEL FLOAT	MERCOID	FSW2-CNPN-40	24VDC	---	PUMP ROOM FLOODED FLOOR ALARM (OR EQUAL)

EQUIPMENT SCHEDULE						
TAG	DESCRIPTION	MAKE	MODEL	SUPPLY	RANGE	COMMENTS
H1	5 KW 480V ELECTRIC UNIT HEATER	BERKO	HUHAA-548	480V	---	HUH-AAB-10 WALL BRACKET, UHMT1 THERMOSTAT (OR EQUAL)
DS1	NEMA 3R DISCONNECT SWITCH	SIEMENS	HF361R	480V	30A	NEMA 3R DISCONNECT W/FRS-R20 FUSES (OR EQUAL)
F1	DRY PIT EXHAUST FAN	EXTRACT ALL	B-982-1A	120V	---	5" EXHAUST BLOWER (OR EQUAL)
F2	FLOW METER PIT EXHAUST FAN	SOLER & PALAU	TD-150	120V	---	6" MIXED FLOW DUCT FAN

CITY OF ELKO
 EXIT 298 LIFT STATION AND FORCE MAIN
 CONDUIT, PANEL 2, MCC LOAD CALC
 INSTRUMENT & EQUIPMENT SCHEDULE
 ELKO COUNTY
 NEVADA

REV	DATE	DESCRIPTION	BY

FINAL DESIGN
 DECEMBER 2019
 BAR IS 1 INCH ON ORIGINAL DRAWING
 0 NTS
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY
E2.0
 I&E ELECTRIC Inc
 1425 DOERR DRIVE
 ELKO, NV 89801
 775.738.3058



CITY OF ELKO
EXIT 298 LIFT STATION AND FORCE MAIN
NEVADA
ELKO COUNTY
ONE-LINE DIAGRAM
ELKO

REV	DATE	DESCRIPTION	BY

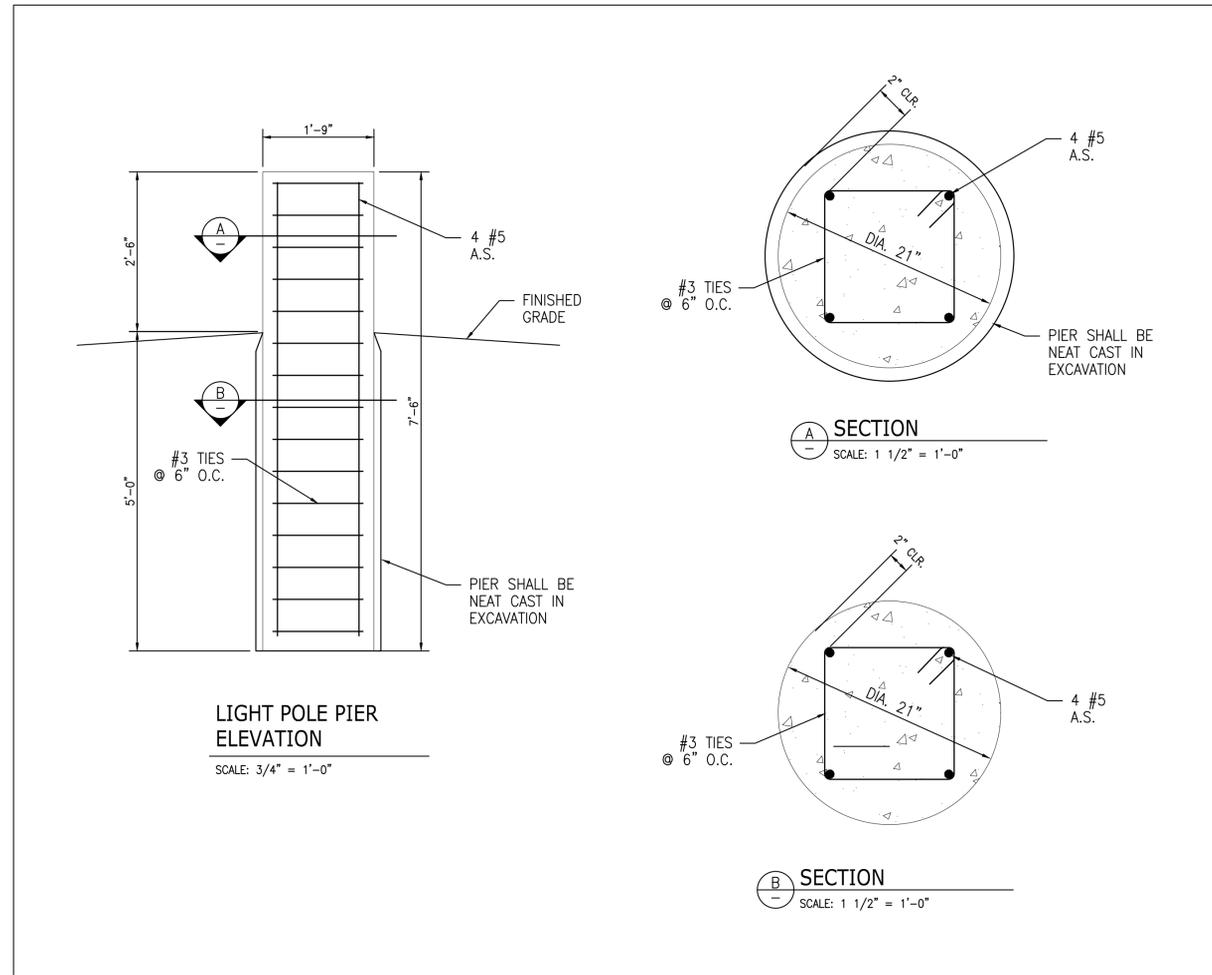
FINAL DESIGN
DECEMBER 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

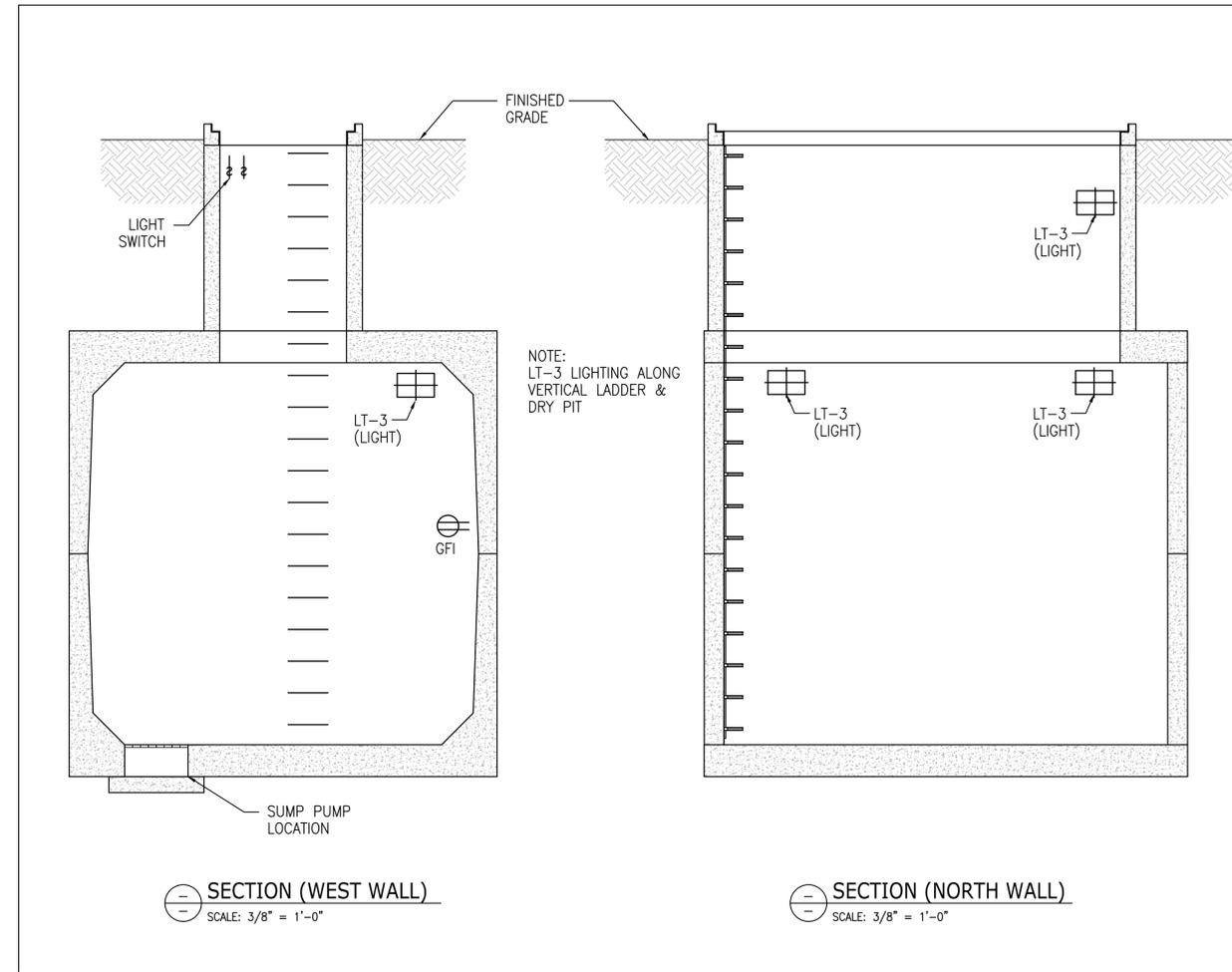
E3.0

I&E ELECTRIC Inc
1425 DOERR DRIVE
ELKO, NV 89801
775.738.3058

L:\A\Proj\1718.000 - WRF - Exit 298 Lift Station\DWG\Sheets\971800ELEC E3.0.dwg E3.0
06/19/2023 04:19 pm system



PLAN - YARD LIGHT POLE LIGHTING DETAILS



DRY PIT - LIGHTING FIXTURE LOCATION SECTION

STRUCTURAL NOTES:

- I. DESIGN INFORMATION AND LIVE LOADS USED:
 1. 2003 INTERNATIONAL BUILDING CODE (IBC)
 2. WIND 90 MPH (3 SECOND GUST) EXPOSURE C, I = 1.00, OPEN
 3. SEISMIC SDS = 0.78, SDI = 0.40, SC D, I = 1.00
- II. FOUNDATION:
 1. SPREAD FOOTING AREA TO BE FOUNDED ON THE NATURAL SOIL OR COMPACTED STRUCTURAL FILL. SPREAD FOOTING ARE DESIGNED FOR A MAXIMUM ALLOWABLE SOIL BEARING OF 1500 PSF WITH ALLOWABLE INCREASES.
 2. SLOPE ALL FINISH GRADE SURFACES AWAY FROM BUILDING A MINIMUM OF SIX INCHES IN TEN FEET TO PROVIDE DRAINAGE.
 3. FOOTING SHALL BE CAST IN A "NEAT" CUT EXCAVATION. ALL LOOSE EARTH OR OTHER MATERIALS SHALL BE REMOVED PRIOR TO PLACING CONCRETE.
- III. CONCRETE:
 1. COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 3000 PSI FOR FOOTINGS AND FOUNDATIONS.
 2. REINFORCING STEEL SHALL CONFORM TO ASTM 615. ALL BARS #4 AND LARGER SHALL BE GRADE 60 AND #3 BARS SHALL BE GRADE 40.
 3. SHOP DRAWINGS FOR FABRICATION AND ERECTION OF ALL REINFORCING AND EMBEDDED ITEMS SHALL BE REQUIRED.
 4. REINFORCING SHALL BE CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS.
 5. MINIMUM CLEAR CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
 - 3 INCHES FOR CONCRETE PLACED DIRECTLY AGAINST EARTH.
 - 2 INCHES FOR FORMED SURFACES EXPOSED TO WEATHER OF EARTH.
 6. LAPPED SPLICES SHALL BE DESIGNED IN CONFORMANCE WITH THE CURRENT IBC. NO TWO ADJACENT BARS ARE SPLICED IN THE SAME LOCATION UNLESS SHOWN OTHERWISE.

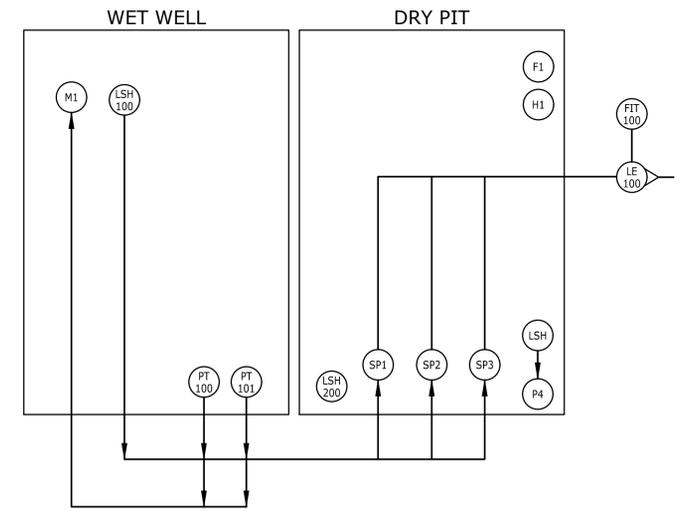
FIXTURE SCHEDULE			
TYPE	QUANTITY	CATALOG #	DESCRIPTION
LT-1	2	FXLED125SF/DT	FLOOD LIGHT (YARD LIGHTS)
P1	1	RAB PS4-11-20WT POLE	BULL2 BRACKET
LT-3	4	RABWP2LED24	WALL PACK (DRY PIT)

CITY OF ELKO
EXIT 298 LIFT STATION AND FORCE MAIN
LIGHT POLE PIER DETAILS &
LIGHT FIXTURE LOCATION SECTION
ELKO COUNTY
NEVADA

REV	DATE	DESCRIPTION	BY

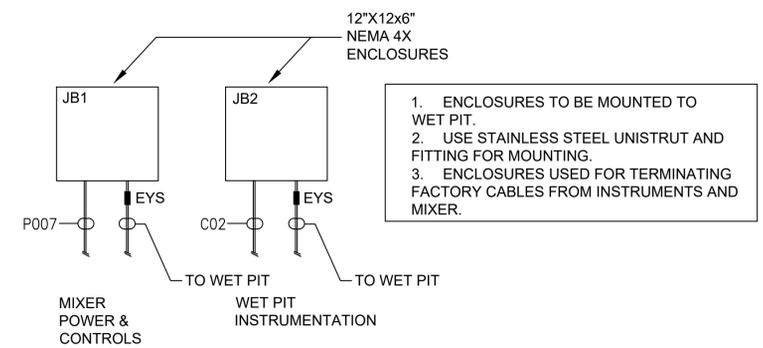
BAR IS 1 INCH ON ORIGINAL DRAWING
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E4.0
I&E ELECTRIC Inc
1425 DOERR DRIVE
ELKO, NV 89801
775.738.3058



- | | |
|--|------------------------------|
| FLOW INDICATING TRANSMITTER
0-5000 GPM | FLOW TUBE |
| LEVEL CONTROL PRESSURE TRANSMITTER
0-15 psi (0-34.5') | DRY PIT EXHAUST FAN |
| LEVEL CONTROL PRESSURE TRANSMITTER
0-15 psi (0-34.5') | FLOW METER PIT EXHAUST FAN |
| EMERGENCY HIGH LEVEL BALL FLOAT | DRY PIT HEATER |
| SEWAGE PUMP 1 | SEWAGE PUMP 1 RUN INDICATION |
| SEWAGE PUMP 2 | SEWAGE PUMP 2 RUN INDICATION |
| SEWAGE PUMP 3 | SEWAGE PUMP 3 RUN INDICATION |
| MIXER | MIXER RUN INDICATION |
| EMERGENCY FLOODED FLOOR ALARM BALL FLOAT | TOUCH SCREEN INTERFACE |
| GENERATOR RUN INDICATION | |
| GENERATOR FAULT INDICATION | |
| GENERATOR LOW FUEL INDICATION | |
| ATS IN NORMAL POSITION | |
| ATS IN EMERGENCY POSITION | |

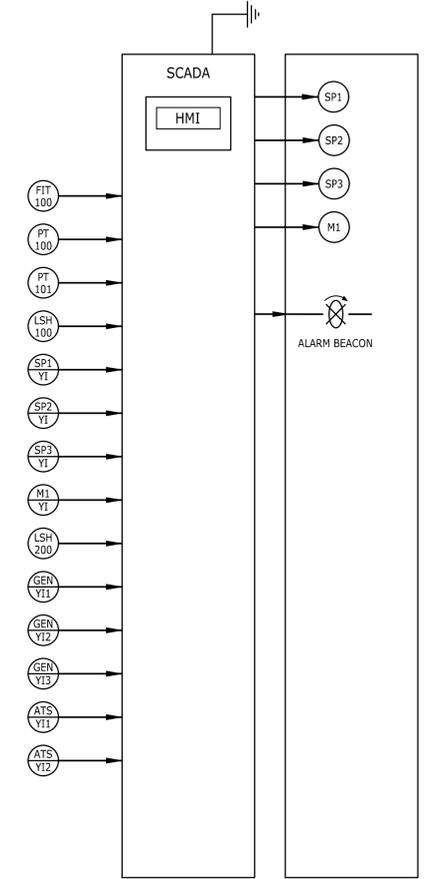
INSTRUMENTATION NOTES
NO SCALE



SEE SECTION 407000 SPECIFICATIONS FOR CONTROL NARATIVE

THE FOLLOWING CONTROL FUNCTIONALITY IS NOT BY THE CONTRACTOR FOR THIS PROJECT. THE SYSTEM INTEGRATOR FOR THE CITY OF ELKO WILL COORDINATE THESE ITEMS: THESE CONTROLS ARE NOT SHOWN ON THIS DRAWING.

- MIXER CONTROLS
- MIXER THERMAL & SEAL FAIL SENSOR PROTECTION



CITY OF ELKO
EXIT 298 LIFT STATION AND FORCE MAIN
COMMUNICATION DETAILS
ELKO COUNTY
NEVADA

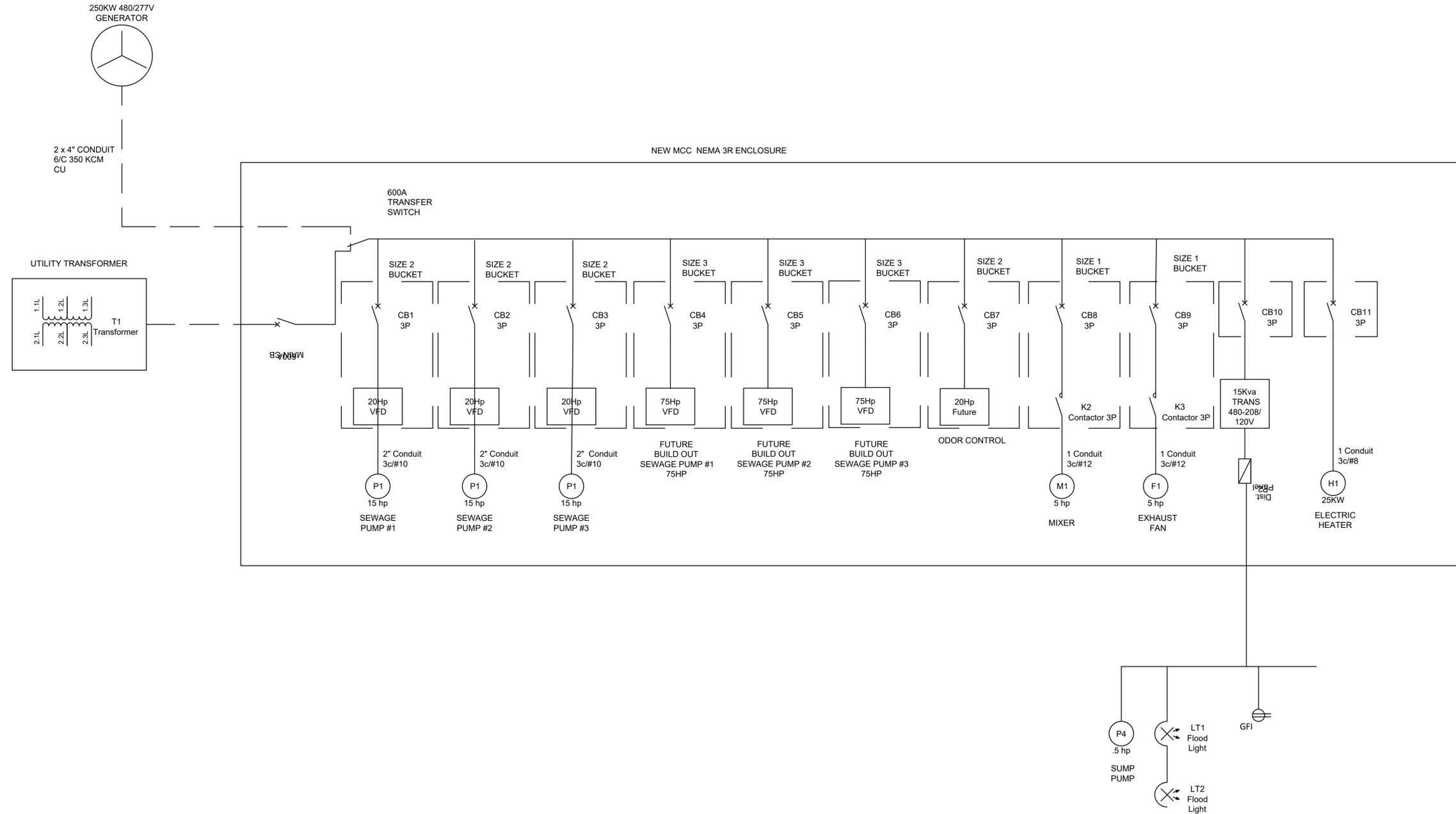
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FINAL DESIGN
DECEMBER 2019

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ELKO, NV 89801
775.738.3058

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CITY OF ELKO
EXIT 298 LIFT STATION
SINGLE LINE DIAGRAM
ELKO COUNTY
NEVADA

REV.	DATE	DESCRIPTION	BY

60% DESIGN
NOT FOR CONSTRUCTION
AUGUST 2019

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DESIGNED BY: SE
CHECKED BY: SE
JOB NO.: 9718.000

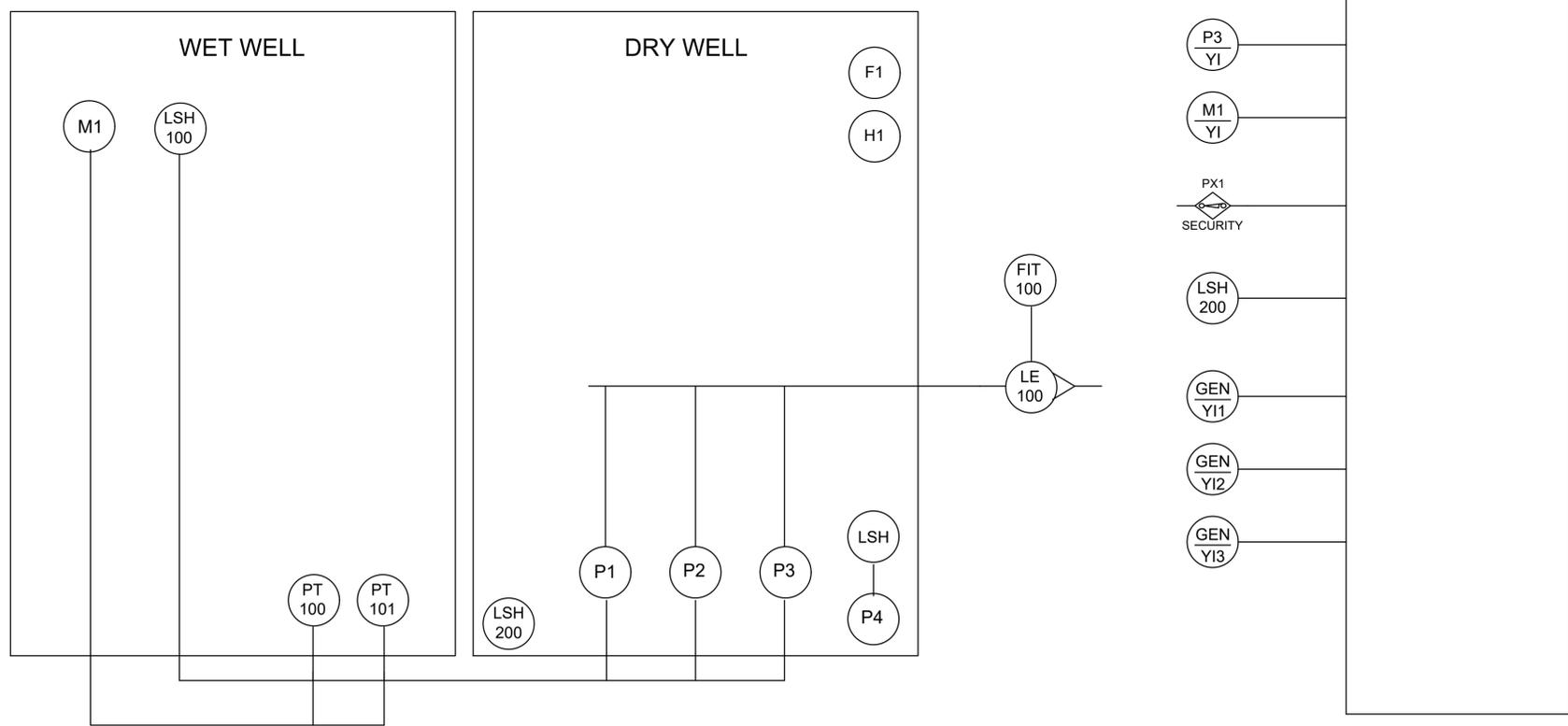


INSTRUMENTATION NOTES

-  FLOW INDICATING TRANSMITTER
0-5000 GPM
-  LEVEL CONTROL
PRESSURE TRANSMITTER
0-15PSI (0-34.5')
-  LEVEL CONTROL
PRESSURE TRANSMITTER
0-15PSI (0-34.5')
-  EMERGENCY HIGH LEVEL
BALL FLOAT
-  SEWAGE PUMP 1
-  SEWAGE PUMP 2
-  SEWAGE PUMP 3
-  MIXER
-  SECURITY MONITORING SWITCH
-  EMERGENCY FLOODED FLOOR ALARM
BALL FLOAT
-  GENERATOR RUN INDICATION
-  GENERATOR FAULT INDICATION
-  GENERATOR LOW FUEL INDICATION

-  FLOW TUBE
-  DRY WELL EXHAUST
FAN
-  DRY WELL HEATER
-  SEWAGE PUMP 1 RUN INDICATION
-  SEWAGE PUMP 2 RUN INDICATION
-  SEWAGE PUMP 3 RUN INDICATION
-  MIXER RUN INDICATION

 TOUCH SCREEN INTERFACE



CITY OF ELKO
EXIT 298 LIFT STATION
INSTRUMENTATION
NEVADA
ELKO COUNTY
ELKO

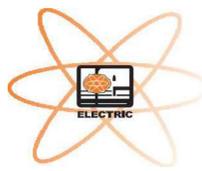
REV.	DATE	DESCRIPTION	BY

60% DESIGN
NOT FOR CONSTRUCTION
AUGUST 2019

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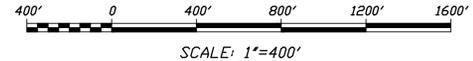
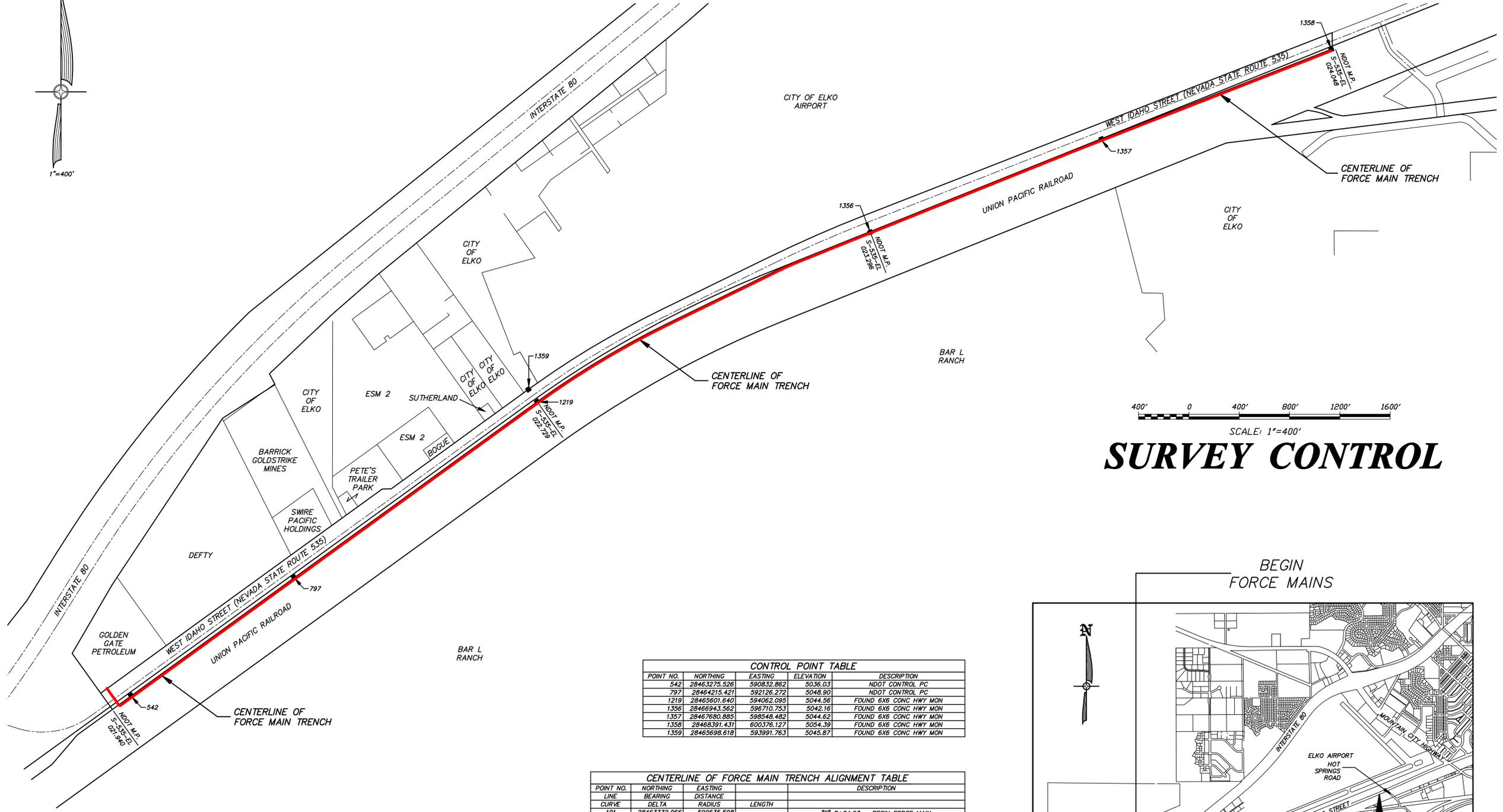
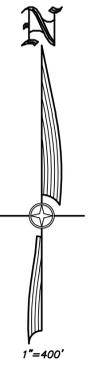
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DESIGNED BY: SE
CHECKED BY: SE
JOB NO.: 9718.000



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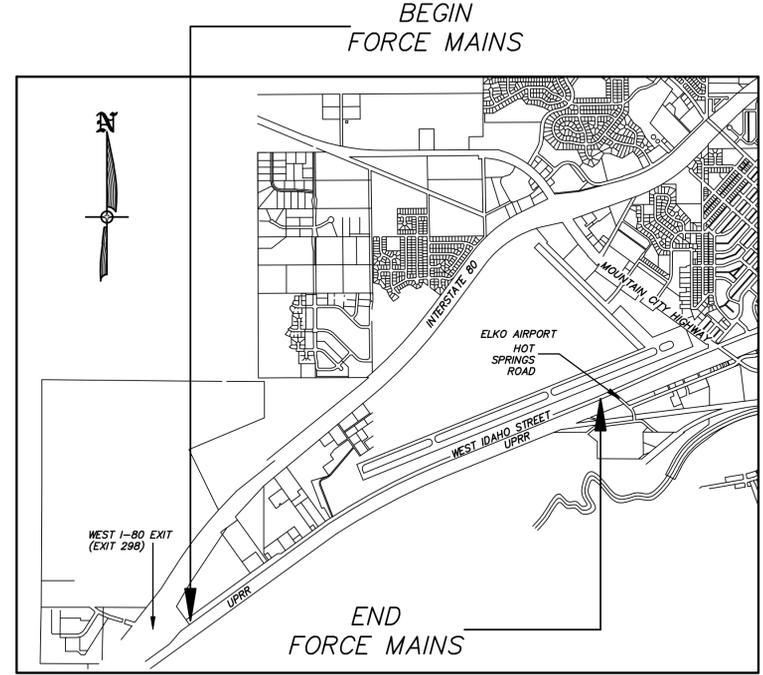
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SURVEY CONTROL

CONTROL POINT TABLE				
POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
542	28463275.526	590832.862	5036.03	NDOT CONTROL PC
797	28464215.421	592126.272	5048.90	NDOT CONTROL PC
1219	28465601.640	594062.095	5044.56	FOUND 6X6 CONC HWY MON
1356	28466943.562	596710.753	5042.16	FOUND 6X6 CONC HWY MON
1357	28467680.885	598548.482	5044.62	FOUND 6X6 CONC HWY MON
1358	28468391.431	600376.127	5054.39	FOUND 6X6 CONC HWY MON
1359	28465698.618	593991.763	5045.87	FOUND 6X6 CONC HWY MON

CENTERLINE OF FORCE MAIN TRENCH ALIGNMENT TABLE				
POINT NO.	NORTHING	EASTING	DESCRIPTION	
LINE	BEARING	DISTANCE		
CURVE	DELTA	RADIUS	LENGTH	
101	S 35°49'12" E	590635.598	171.30'	T ^m 8+04.63 - BEGIN FORCE MAIN
102	S 80°49'12" E	590735.852	7.07'	T ^m 9+75.93 - ANGLE POINT
103	N 54°10'48" E	590742.832	4101.42'	T ^m 9+83.00 - ANGLE POINT
104	D = 9°56'00" R = 6929.00'	594068.503	L = 1201.28'	T ^m 50+84.42 - PC
105	N 64°05'37" E	595098.276	1049.74'	T ^m 62+85.70 - PT
106	D = 4°05'58" R = 1000.00'	596042.530	L = 71.55'	T ^m 73+35.45 - PC
107	N 68°11'35" E	596107.954	2336.21'	T ^m 74+07.00 - PT
108	D = 19°26'28" R = 150.00'	598276.992	L = 50.90'	T ^m 97+43.21 - ANGLE POINT
109	N 68°45'07" E	600379.053	2255.38'	T ^m 119+98.60 - PC
110	D = 19°26'28" R = 150.00'	600423.483	L = 52.22'	T ^m 120+50.81 - PT
111	N 48°45'07" E	600434.653	14.86'	T ^m 120+65.67 - PC
112	D = 19°26'28" R = 150.00'	600477.829	L = 50.90'	T ^m 121+16.57 - PT
113	N 68°11'35" E	600675.781	213.21'	T ^m 123+29.78 - CL EXIST. SS. MAIN



VICINITY MAP

SURVEY CONTROL NOTES:
 1. HORIZONTAL CONTROL IS REFERENCED TO THE NEVADA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD83, USING THE LOCAL COMBINED SCALE FACTOR ESTABLISHED BY THE CITY OF ELKO.
 2. VERTICAL CONTROL IS REFERENCED TO NAVD88.

CITY OF ELKO
 ELKO COUNTY
 NEVADA
 EXIT 298 SANITARY SEWER
 LIFT STATION & FORCE MAINS
 SURVEY CONTROL

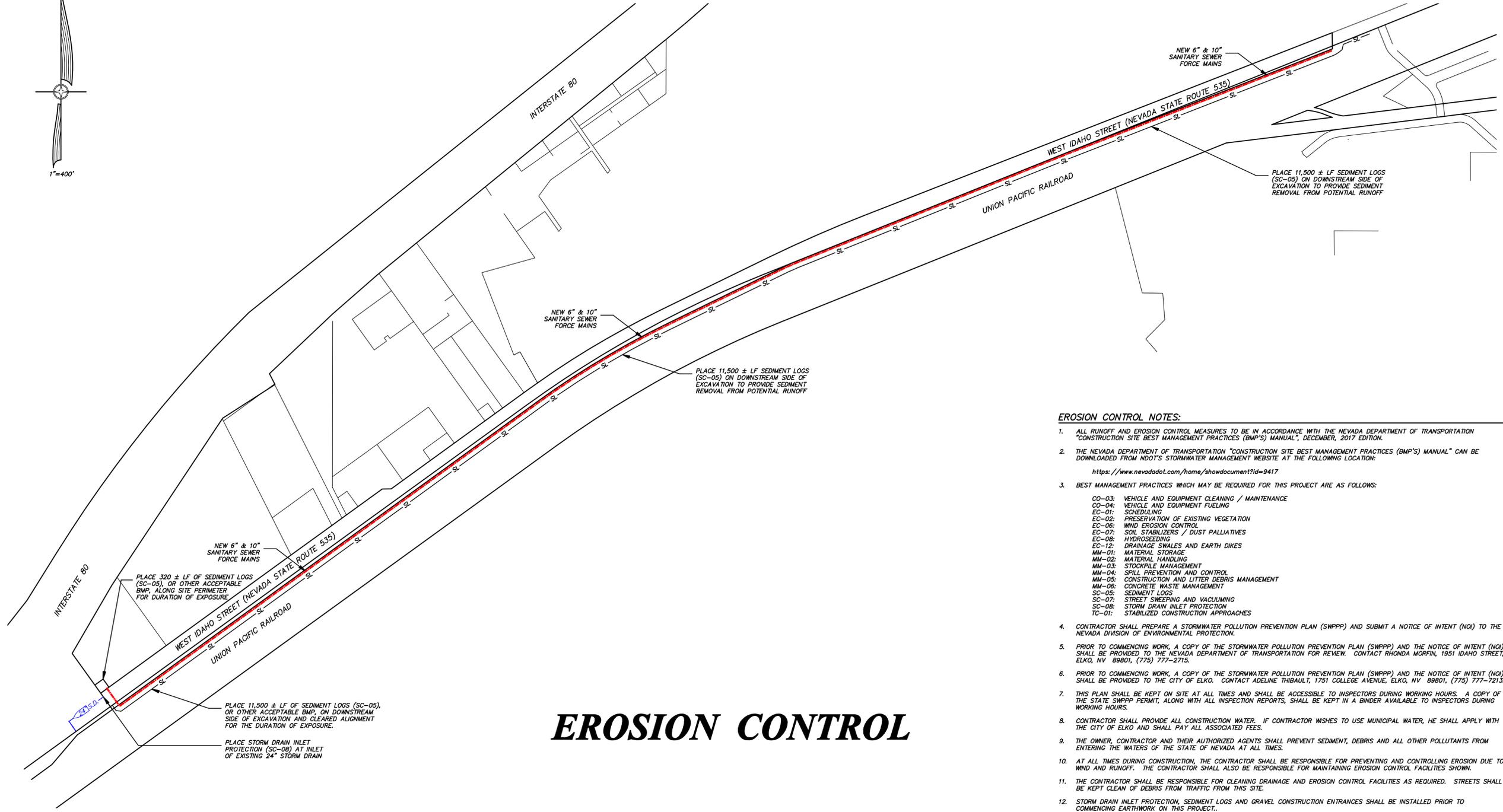
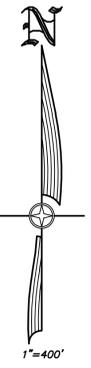
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C1.2

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 SHEETS:

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EROSION CONTROL

EROSION CONTROL NOTES:

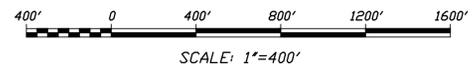
- ALL RUNOFF AND EROSION CONTROL MEASURES TO BE IN ACCORDANCE WITH THE NEVADA DEPARTMENT OF TRANSPORTATION "CONSTRUCTION SITE BEST MANAGEMENT PRACTICES (BMP'S) MANUAL", DECEMBER, 2017 EDITION.
- THE NEVADA DEPARTMENT OF TRANSPORTATION "CONSTRUCTION SITE BEST MANAGEMENT PRACTICES (BMP'S) MANUAL" CAN BE DOWNLOADED FROM NDOT'S STORMWATER MANAGEMENT WEBSITE AT THE FOLLOWING LOCATION:
<https://www.nevadadot.com/home/showdocument?id=9417>
- BEST MANAGEMENT PRACTICES WHICH MAY BE REQUIRED FOR THIS PROJECT ARE AS FOLLOWS:
 - CO-03: VEHICLE AND EQUIPMENT CLEANING / MAINTENANCE
 - CO-04: VEHICLE AND EQUIPMENT FUELING
 - EC-01: SCHEDULING
 - EC-02: PRESERVATION OF EXISTING VEGETATION
 - EC-06: WIND EROSION CONTROL
 - EC-07: SOIL STABILIZERS / DUST PALLIATIVES
 - EC-08: HYDROSEEDING
 - EC-12: DRAINAGE SWALES AND EARTH DIKES
 - MM-01: MATERIAL STORAGE
 - MM-02: MATERIAL HANDLING
 - MM-03: STOCKPILE MANAGEMENT
 - MM-04: SPILL PREVENTION AND CONTROL
 - MM-05: CONSTRUCTION AND LITTER DEBRIS MANAGEMENT
 - MM-06: CONCRETE WASTE MANAGEMENT
 - SC-05: SEDIMENT LOGS
 - SC-07: STREET SWEEPING AND VACUUMING
 - SC-08: STORM DRAIN INLET PROTECTION
 - TC-01: STABILIZED CONSTRUCTION APPROACHES
- CONTRACTOR SHALL PREPARE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND SUBMIT A NOTICE OF INTENT (NOI) TO THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION.
- PRIOR TO COMMENCING WORK, A COPY OF THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND THE NOTICE OF INTENT (NOI) SHALL BE PROVIDED TO THE NEVADA DEPARTMENT OF TRANSPORTATION FOR REVIEW. CONTACT RHONDA WOFFIN, 1951 IDAHO STREET, ELKO, NV 89801, (775) 777-2715.
- PRIOR TO COMMENCING WORK, A COPY OF THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND THE NOTICE OF INTENT (NOI) OF THE STATE SWPPP PERMIT, ALONG WITH ALL INSPECTION REPORTS, SHALL BE KEPT IN A BINDER AVAILABLE TO INSPECTORS DURING WORKING HOURS.
- CONTRACTOR SHALL PROVIDE ALL CONSTRUCTION WATER. IF CONTRACTOR WISHES TO USE MUNICIPAL WATER, HE SHALL APPLY WITH THE CITY OF ELKO AND SHALL PAY ALL ASSOCIATED FEES.
- THE OWNER, CONTRACTOR AND THEIR AUTHORIZED AGENTS SHALL PREVENT SEDIMENT, DEBRIS AND ALL OTHER POLLUTANTS FROM ENTERING THE WATERS OF THE STATE OF NEVADA AT ALL TIMES.
- AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED. STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THIS SITE.
- STORM DRAIN INLET PROTECTION, SEDIMENT LOGS AND GRAVEL CONSTRUCTION ENTRANCES SHALL BE INSTALLED PRIOR TO COMMENCING EARTHWORK ON THIS PROJECT.
- CONCRETE WASHOUT CONTAINMENT STRUCTURES SHALL BE CONSTRUCTED PRIOR TO COMMENCING CONCRETE OPERATIONS AND SHALL BE PLACED AT LOCATION(S) ACCEPTABLE TO THE OWNER. CONTAINMENT TO BE CLEANED AND REMOVED UPON COMPLETION OF WORK.
- 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.
- THE CONTRACTOR SHALL MAINTAIN AN ON-GOING PROCESS FOR REMOVAL OF SPILLAGE OF EXCAVATED MATERIAL ON ALL PAVED STREETS.
- 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 MAINTAINED UNTIL FIRMLY ESTABLISHED AS APPROVED BY THE CITY OF ELKO.
- ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORSEEN PROBLEMS.

PERMITTING NOTES:

- IF THE DISTURBED AREA WITHIN THE PROJECT IS GREATER THAN ONE (1) ACRE, THE CONTRACTOR SHALL OBTAIN A CONSTRUCTION STORMWATER PERMIT AND COMPLY WITH THE STATE OF NEVADA DIVISION OF ENVIRONMENTAL PROTECTION REQUIREMENTS FOR STORMWATER POLLUTION PREVENTION. A COPY OF THIS PERMIT MUST BE PROVIDED TO THE CITY OF ELKO AND NDOT PRIOR TO COMMENCING WORK ON THIS PROJECT. A COPY OF THIS PERMIT MUST BE KEPT ON SITE AT ALL TIMES WHILE THE CONTRACTOR IS WORKING ON THE PROJECT. THE CONTRACTOR SHALL INCORPORATE THE STORM WATER POLLUTION PREVENTION MEASURES SHOWN ON THESE PLANS AND COMPLY WITH ALL PROVISIONS OF THIS PERMIT.
- IF THE DISTURBED AREA WITHIN THE PROJECT IS GREATER THAN FIVE (5) ACRES, THE CONTRACTOR SHALL OBTAIN A SURFACE AREA DISTURBANCE PERMIT AND COMPLY WITH THE STATE OF NEVADA DIVISION OF ENVIRONMENTAL PROTECTION REQUIREMENTS FOR AIR POLLUTION PREVENTION. A COPY OF THIS PERMIT MUST BE PROVIDED TO THE CITY OF ELKO AND NDOT PRIOR TO COMMENCING WORK ON THIS PROJECT. A COPY OF THIS PERMIT MUST BE KEPT ON SITE AT ALL TIMES WHILE THE CONTRACTOR IS WORKING ON THE PROJECT. THE CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS OF THIS PERMIT.

GRADING NOTES:

- EXISTING BRUSH REMOVED AS PART OF THE TRENCHING OPERATION TO BE BROKEN UP AND STOCKPILED WITH ANY TOPSOIL REMOVED AS PART OF THE TRENCHING OPERATION, AND STOCKPILED IN A LOCATION ACCEPTABLE TO THE OWNER.
- STOCKPILED BRUSH / TOPSOIL SHALL BE TO BE SPREAD AND DISKED ONTO FINISHED TRENCH SURFACES PRIOR TO SEEDING.
- UPON COMPLETION OF THE WORK, ALL AREAS DISTURBED BY THE TRENCHING OPERATION SHALL BE HYDROSEEDED WITH A SEED MIX APPROVED BY THE OWNER, NDOT AND UPRR.
- BMP'S ARE TO REMAIN IN PLACE UNTIL DISTURBED AREAS HAVE BEEN RE-GRADED, COVERED IN TOPSOIL, AND HYDROSEEDING HAS BEEN COMPLETED.

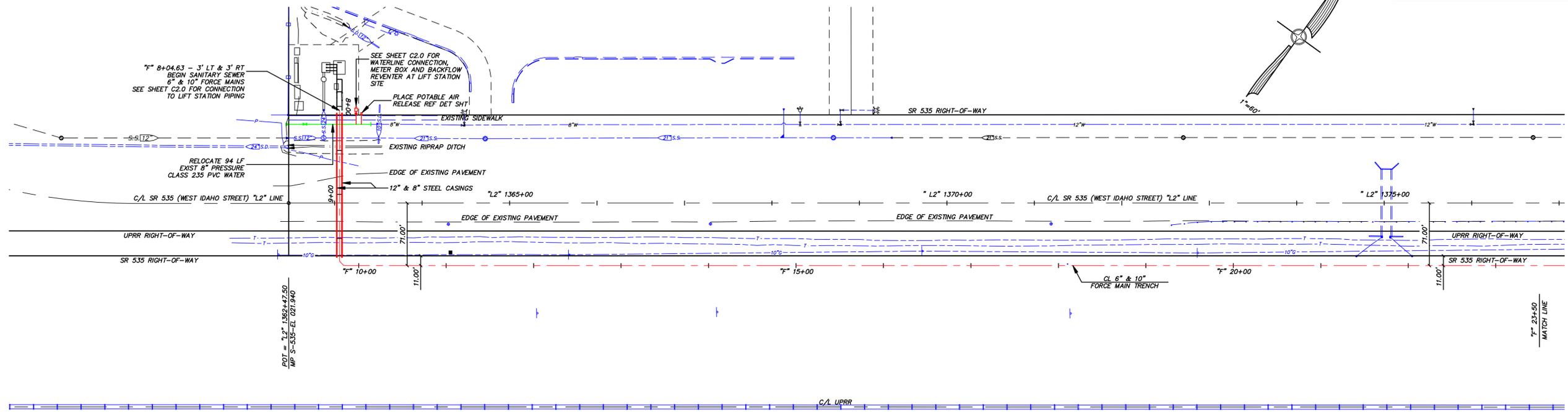


CITY OF ELKO
 EXIT 298 SANITARY SEWER
 LIFT STATION & FORCE MAINS
 EROSION CONTROL
 ELKO COUNTY
 NEVADA

REV	DATE	DESCRIPTION	BY

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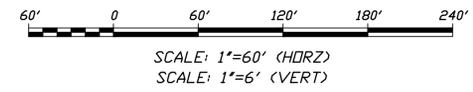


PLAN & PROFILE NOTES:

- LOCATIONS OF EXISTING UNDERGROUND UTILITIES BASED ON UTILITY COMPANY RECORDS AND UTILITY LOCATION MARKINGS PROVIDED BY UTILITY COMPANIES IN RESPONSE TO USA-DIG REQUESTS MADE IN MAY AND JUNE, 2019.
- EXISTING NATURAL GAS TRENCH FROM STATION "L2" 1405+24 ± AND "L2" 1478+03 ± CONTAINS BOTH A HIGH PRESSURE 10" GAS MAIN AND A 2" GAS SERVICE LINE.
- AN EXISTING ABANDONED 6" GAS MAIN (LOCATION UNKNOWN) LIES NORTHWEST OF THE EXISTING 10" GAS MAIN.
- QUANTITIES SHOWN ARE FOR INFORMATIONAL PURPOSES. CONTRACTOR TO VERIFY ALL QUANTITIES.
- REFERENCE SHEET PP1.7 FOR LEGEND AND ABBREVIATIONS APPLICABLE TO HIGH DESERT ENGINEERING PLANS.
- REFERENCE DETAIL SHEETS FOR CONSTRUCTION DETAILS AND NOTES.

SEWER FORCE MAINS

"F" LINE



Station	Profile Elevation	Description
7+00	5028.36	IE 10" FORCE MAIN & 6" FORCE MAIN
8+00	5029.59	
9+00	5030.81	
10+00	5032.04	
11+00	5033.27	
12+00	5034.50	
13+00	5035.73	
14+00	5036.96	
15+00	5038.19	
16+00	5039.42	
17+00	5040.65	
18+00	5041.88	
19+00	5043.11	
20+00	5044.34	
21+00	5045.57	
22+00	5046.80	
23+00	5048.03	

Station	Profile Elevation	Description
7+00	5038.0	EXISTING GROUND CENTERLINE OF TRENCH
8+00	5034.9	
9+00	5039.2	
10+00	5037.8	
11+00	5034.7	
12+00	5034.9	
13+00	5035.2	
14+00	5035.7	
15+00	5036.3	
16+00	5037.1	
17+00	5037.5	
18+00	5037.9	
19+00	5038.5	
20+00	5038.9	
21+00	5039.3	
22+00	5039.9	
23+00	5040.0	
24+00	5040.4	
25+00	5041.1	
26+00	5041.8	
27+00	5042.4	
28+00	5042.7	
29+00	5042.9	
30+00	5043.0	
31+00	5043.5	
32+00	5044.2	
33+00	5044.7	
34+00	5045.5	
35+00	5046.1	
36+00	5046.9	
37+00	5046.1	
38+00	5046.3	

FORCE MAIN INSTALLATION NOTES:

- CONTRACTOR SHALL INSURE THAT NO DISTURBANCE OF THE NDOT RIGHT-OF-WAY, OTHER THAN THAT PORTION NECESSARY TO INSTALL THE STEEL CASINGS CROSSING THE RIGHT-OF-WAY, WILL OCCUR.
- SHOULD THE CONTRACTOR NEED TO INSTALL TEMPORARY FENCING, BARRICADES, ETC. TO PROTECT THE NDOT RIGHTS-OF-WAY, CONTRACTOR SHALL PROVIDE SUBMITTALS DETAILING THE TYPES, SIZE AND LOCATIONS OF THESE ITEMS FOR REVIEW AND APPROVAL BY OWNER AND NDOT PRIOR TO COMMENCING WORK.

DEWATERING NOTES:

- CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE NEED FOR DEWATERING ANY TRENCHES, PITS, EXCAVATIONS, ETC.
- SHOULD DEWATERING BE NECESSARY, CONTRACTOR SHALL OBTAIN ALL NECESSARY DISCHARGE PERMITS AND PROVIDE COPIES OF SAID PERMITS FOR REVIEW AND APPROVAL.

SUBMITTALS SHALL BE SUBJECT TO OWNER, NDOT AND UPRR REVIEW AND APPROVAL PRIOR TO COMMENCING WORK.

STEEL CASING INSTALLATION NOTES:

- STEEL CASINGS SHALL BE STANDARD WEIGHT (MINIMUM) STEEL PIPE.
- CASINGS INSTALLED WITHIN THE ROADWAY CLEAR ZONE, DEFINED AS BEING LESS THAN OR EQUAL TO 30 FEET FROM THE EDGES OF THE EXISTING ROADWAY PAVEMENT (APPROX STA "F" 8+49 TO "F" 9+80), SHALL BE INSTALLED USING HORIZONTAL DIRECTIONAL DRILLING OR JACK AND BORE METHODS AS DETERMINED BY THE CONTRACTOR. METHOD SELECTED MUST MEET THE REQUIREMENTS SHOWN FOR LINE AND GRADE.
- CASINGS INSTALLED OUTSIDE OF THE ABOVE DEFINED CLEAR ZONE MAY BE INSTALLED USING OPEN TRENCH METHODS. SHOULD CONTRACTOR SELECT THIS METHOD OF INSTALLATION, ALL EXISTING IMPROVEMENTS DISTURBED USING THE OPEN TRENCH MUST BE REPAIRED TO ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL PROVIDE SUBMITTALS FOR REVIEW AND APPROVAL OF METHODS OF INSTALLATION ALONG WITH SIZE, DIMENSION AND LOCATION OF PROPOSED BORE PITS, RECEIVING PITS, DRILLING EQUIPMENT LOCATIONS, LAYDOWN AREAS, TEMPORARY FENCING AND BARRICADES.

STEEL CASING INSTALLATION NOTES:

- CONTRACTOR SHALL PROVIDE SUBMITTALS FOR REVIEW AND APPROVAL OF ALL PROPOSED MATERIALS.
- SUBMITTALS SHALL BE SUBJECT TO OWNER, NDOT AND UPRR REVIEW AND APPROVAL PRIOR TO COMMENCING WORK.
- ALL EXISTING UTILITIES ALONG THE PATH OF THE STEEL CASINGS SHALL BE EXPOSED, AND HORIZONTAL AND VERTICAL LOCATIONS VERIFIED, PRIOR TO COMMENCING CASING INSTALLATION.
- ALL UTILITY COMPANIES TO BE NOTIFIED PRIOR TO EXPOSING EXISTING UTILITIES AND PROVIDED AN OPPORTUNITY TO WITNESS EXCAVATIONS TO EXPOSE EXISTING UTILITIES.
- LOCATIONS OF EXISTING UTILITIES TO BE REVIEWED BY THE PROJECT ENGINEER AND ADJUSTMENTS TO GRADE TO BE MADE, IF NECESSARY, PRIOR TO COMMENCING CASING INSTALLATION.
- REFERENCE DETAIL SHEETS FOR CONSTRUCTION DETAILS AND NOTES.

CITY OF ELKO
 EXIT 298 SANITARY SEWER
 FORCE MAINS - PLAN & PROFILES
 START TO "F" 23+50

BY: [Signature]
 DESCRIPTION: [Blank]
 REV. DATE: [Blank]

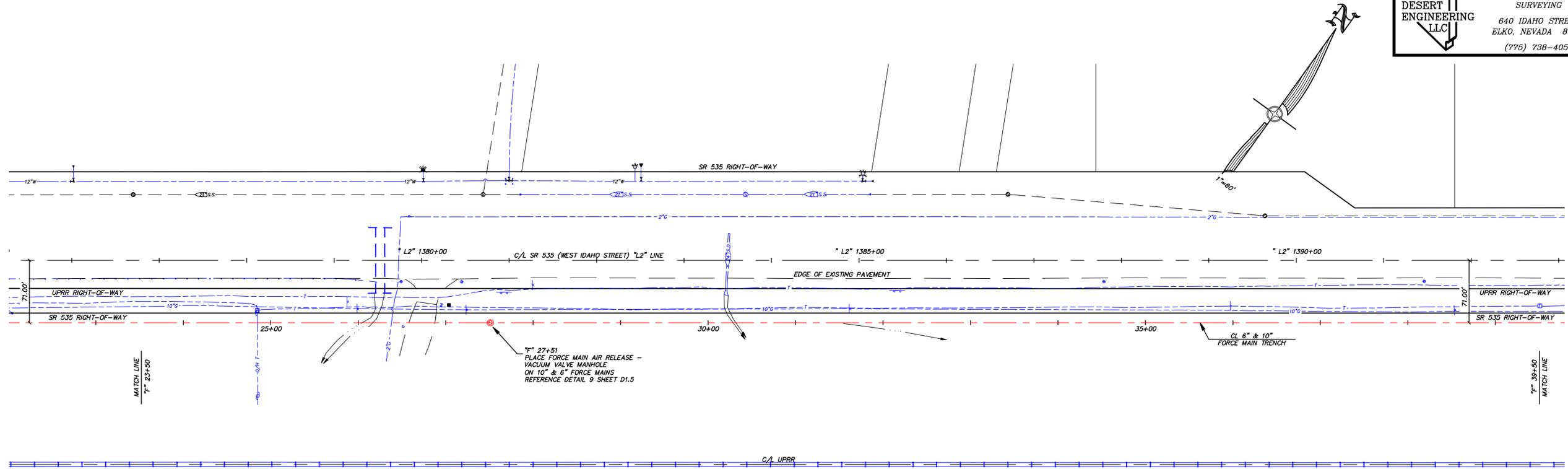
FINAL DESIGN
 DECEMBER, 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
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PP1.0

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 CHECKED BY:
 JOB NO.: 5782
 SHEETS:

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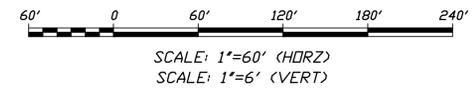


PLAN & PROFILE NOTES:

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SEWER FORCE MAINS

"F" LINE



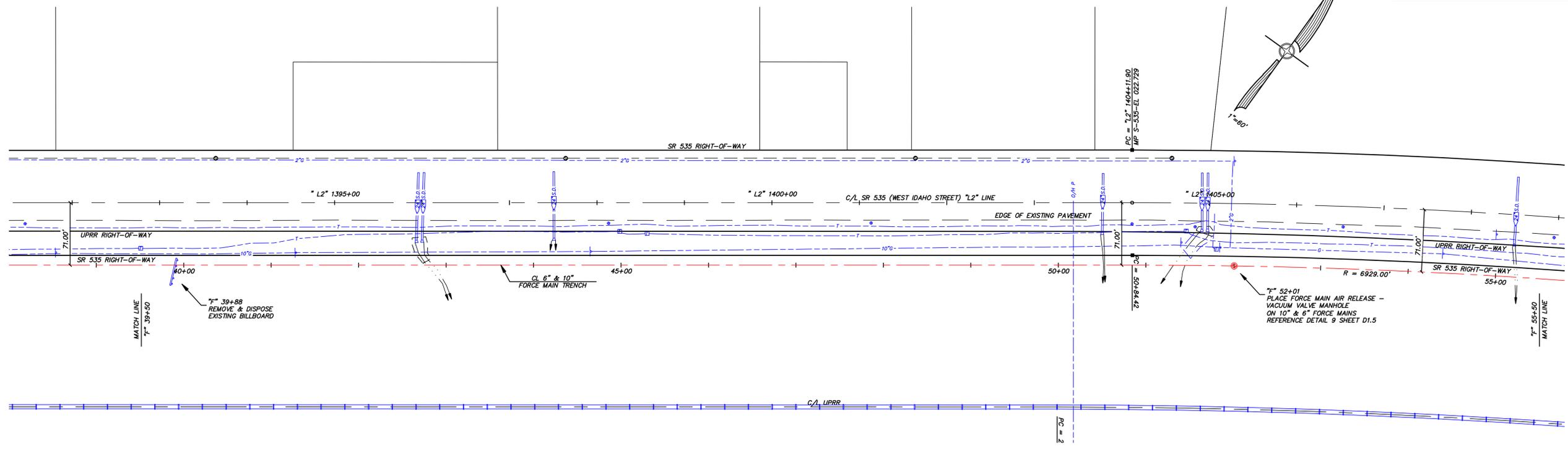
Station	Profile Elevation	Ground Elevation	Notes
23+00	5041.48	5041.64	IE 10" FORCE MAIN & 6" FORCE MAIN
24+00	5041.79	5041.95	
25+00	5042.11	5042.27	
26+00	5042.42	5042.58	
27+00	5042.71	5042.87	"F" 27+51 - GRADE BREAK IE (10" & 6") = 5042.90
28+00	5042.50	5042.10	
29+00	5041.70	5041.30	
30+00	5040.80	5040.50	"F" 30+50 - GRADE BREAK IE (10" & 6") = 5040.50
31+00	5040.42	5040.34	
32+00	5040.28	5040.18	
33+00	5040.10	5040.02	
34+00	5039.94	5039.86	"F" 34+50 - GRADE BREAK IE (10" & 6") = 5039.86
35+00	5039.35	5039.24	
36+00	5038.84	5038.33	"F" 36+00 - GRADE BREAK IE (10" & 6") = 5038.33
37+00	5038.05	5037.91	"F" 37+50 - GRADE BREAK IE (10" & 6") = 5037.91
38+00	5037.59	5037.27	
39+00	5036.62	5036.62	

CITY OF ELKO
 EXIT 298 SANITARY SEWER
 FORCE MAINS - PLAN & PROFILES
 "F" 23+50 TO "F" 39+50
 ELKO COUNTY
 NEVADA

BY: _____
 DESCRIPTION: _____
 REV. DATE: _____
FINAL DESIGN
 DECEMBER, 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
 60'
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY
PP1.1
 DRAWN BY: TCB
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 JOB NO.: 5782
 SHEETS:

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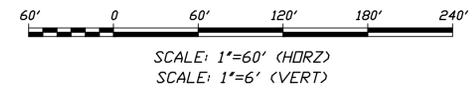


PLAN & PROFILE NOTES:

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SEWER FORCE MAINS

"F" LINE



Station	5062	5056	5050	5044	5038	5032	5026	5020	5014
39+00	5036.94	5036.62	5036.30	5036.04	5035.78	5035.52	5035.26	5035.00	5034.74
40+00	5036.62	5036.30	5035.98	5035.72	5035.46	5035.20	5034.94	5034.68	5034.42
41+00	5036.30	5035.98	5035.66	5035.40	5035.14	5034.88	5034.62	5034.36	5034.10
42+00	5035.98	5035.66	5035.34	5035.08	5034.82	5034.56	5034.30	5034.04	5033.78
43+00	5035.66	5035.34	5035.02	5034.76	5034.50	5034.24	5033.98	5033.72	5033.46
44+00	5035.34	5035.02	5034.70	5034.44	5034.18	5033.92	5033.66	5033.40	5033.14
45+00	5035.02	5034.70	5034.38	5034.12	5033.86	5033.60	5033.34	5033.08	5032.82
46+00	5034.70	5034.38	5034.06	5033.80	5033.54	5033.28	5033.02	5032.76	5032.50
47+00	5034.38	5034.06	5033.74	5033.48	5033.22	5032.96	5032.70	5032.44	5032.18
48+00	5034.06	5033.74	5033.42	5033.16	5032.90	5032.64	5032.38	5032.12	5031.86
49+00	5033.74	5033.42	5033.10	5032.84	5032.58	5032.32	5032.06	5031.80	5031.54
50+00	5033.42	5033.10	5032.78	5032.52	5032.26	5032.00	5031.74	5031.48	5031.22
51+00	5033.10	5032.78	5032.46	5032.20	5031.94	5031.68	5031.42	5031.16	5030.90
52+00	5032.78	5032.46	5032.14	5031.88	5031.62	5031.36	5031.10	5030.84	5030.58
53+00	5032.46	5032.14	5031.82	5031.56	5031.30	5031.04	5030.78	5030.52	5030.26
54+00	5032.14	5031.82	5031.50	5031.24	5030.98	5030.72	5030.46	5030.20	5029.94
55+00	5031.82	5031.50	5031.18	5030.92	5030.66	5030.40	5030.14	5029.88	5029.62

CITY OF ELKO
 EXIT 298 SANITARY SEWER FORCE
 FORCE MAINS - PLAN & PROFILES
 "F" 39+50 TO "F" 55+50
 ELKO COUNTY
 NEVADA

REV	DATE	DESCRIPTION	BY

FINAL DESIGN
 DECEMBER, 2019

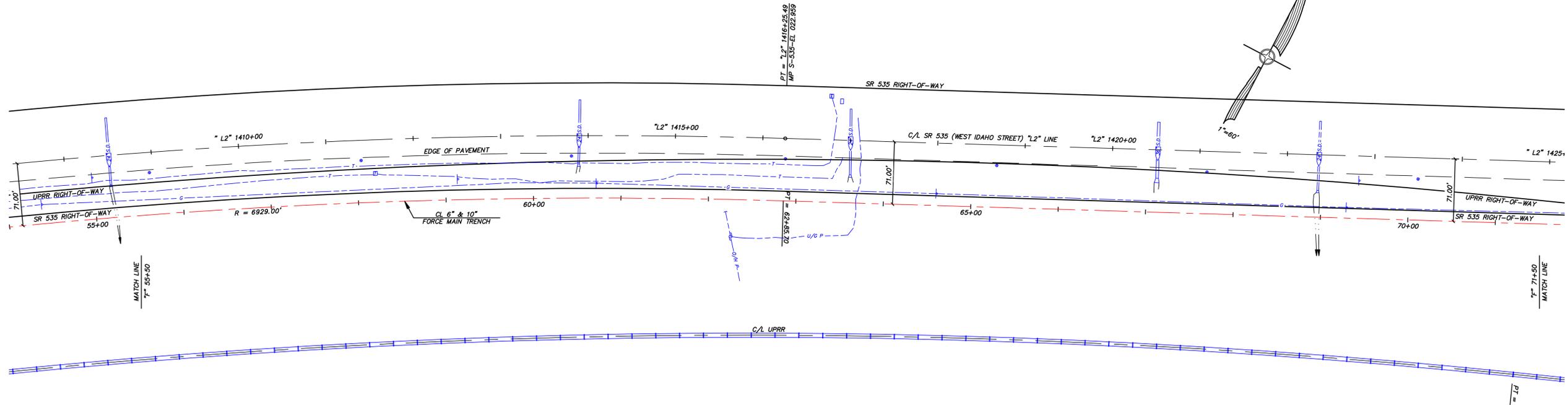
BAR IS 1 INCH ON ORIGINAL DRAWING
 60'

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PP1.2

DRAWN BY: TCB
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 JOB NO.: 5782
 SHEETS:

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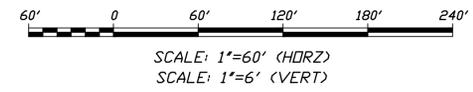


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SEWER FORCE MAINS

"F" LINE



Station	55+00	56+00	57+00	58+00	59+00	60+00	61+00	62+00	63+00	64+00	65+00	66+00	67+00	68+00	69+00	70+00	71+00														
5062	5038.37	5038.32	5038.26	5038.21	5038.15	5038.10	5038.04	5038.99	5038.93	5038.88	5038.82	5038.76	5038.70	5038.64	5038.58	5038.52	5038.46	5038.40													
5056																															
5050																															
5044																															
5038																															
5032																															
5026																															
5020																															
5014																															
5044.4	5044.5	5044.7	5044.8	5044.7	5044.6	5044.7	5044.3	5044.0	5043.7	5043.4	5042.8	5042.6	5042.8	5042.3	5042.0	5041.8	5041.6	5041.4	5041.3	5041.2	5041.0	5040.9	5040.8	5040.9	5040.9	5040.8	5040.9	5040.9	5040.8	5040.9	5040.8

CITY OF ELKO
 EXIT 298 SANITARY SEWER
 FORCE MAINS - PLAN & PROFILES
 "F" 55+50 TO "F" 71+50
 ELKO COUNTY
 NEVADA

REV	DATE	DESCRIPTION	BY

FINAL DESIGN
 DECEMBER, 2019

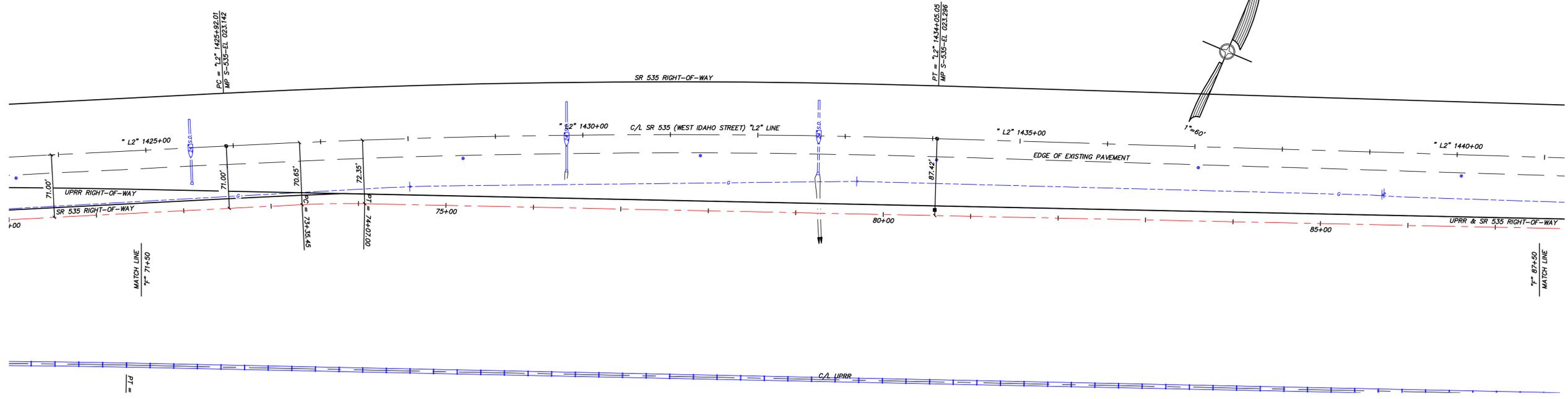
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PP1.3

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 DESIGNED BY: TCB
 CHECKED BY:
 JOB NO.: 5782
 SHEETS:

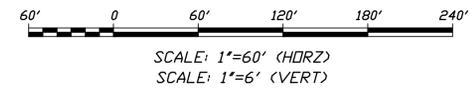
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SEWER FORCE MAINS

"F" LINE



Station	71+00	72+00	73+00	74+00	75+00	76+00	77+00	78+00	79+00	80+00	81+00	82+00	83+00	84+00	85+00	86+00	87+00																		
5062	5035.35	5035.47	5035.47	5035.54	5035.60	5035.65	5035.73	5035.79	5035.86	5035.92	5035.98	5036.05	5036.11	5036.17	5036.24	5036.30	5036.36	5036.43	5036.49	5036.56	5036.62	5036.69	5036.75	5036.81	5036.87	5036.94	5037.00	5037.06	5037.13	5037.19	5037.26	5037.32	5037.39		
5056																																			
5050																																			
5044																																			
5038																																			
5032																																			
5026																																			
5020																																			
5014																																			

CITY OF ELKO
 EXIT 298 SANITARY SEWER
 FORCE MAINS - PLAN & PROFILES
 "F" 71+50 TO "F" 87+50
 ELKO COUNTY
 NEVADA

REV	DATE	DESCRIPTION	BY

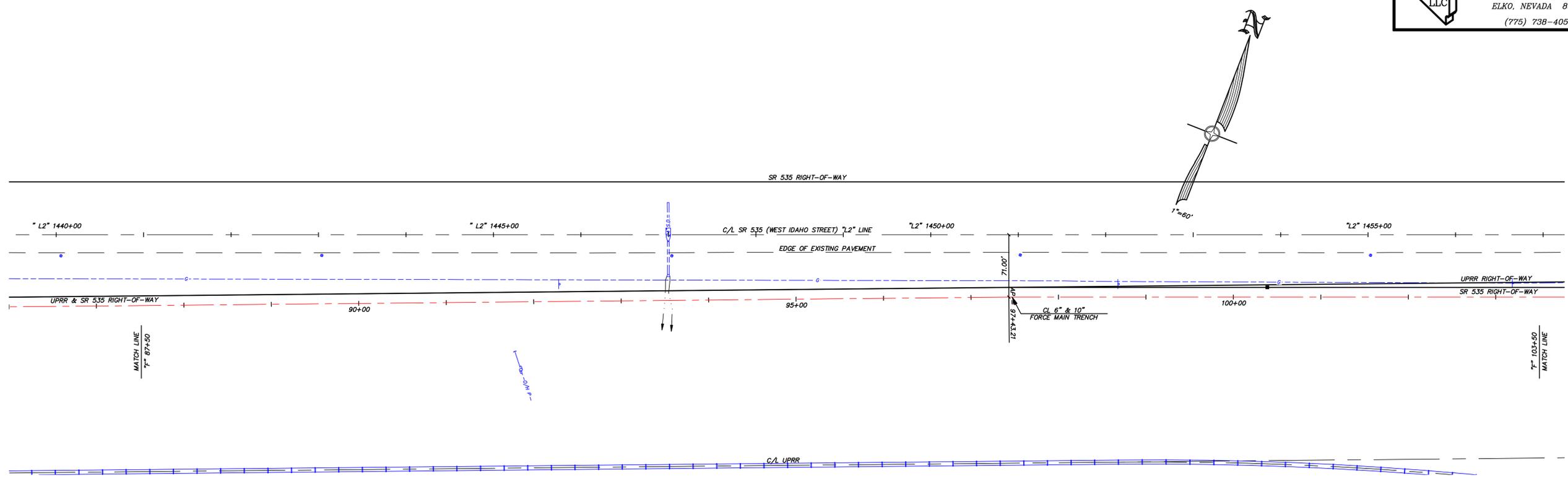
FINAL DESIGN
 DECEMBER, 2019

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PP1.4

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 JOB NO.: 5782
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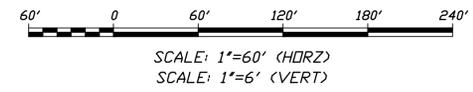


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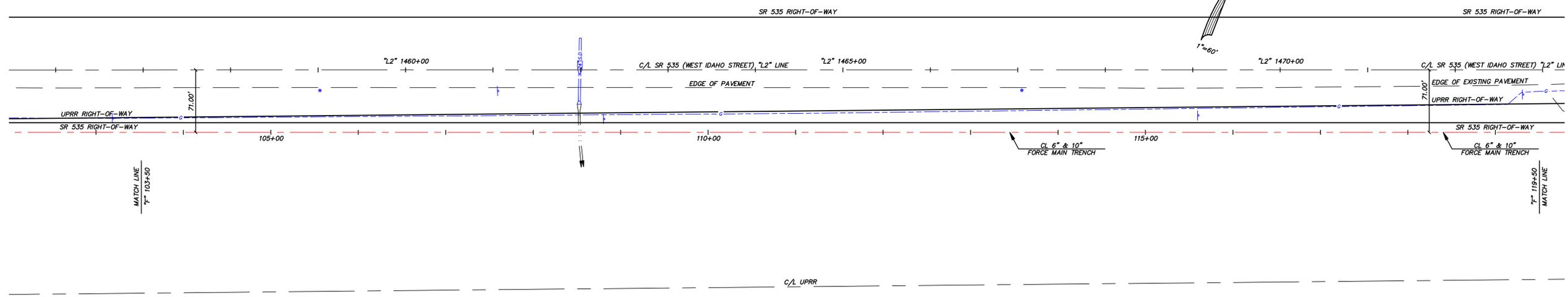
SEWER FORCE MAINS

"F" LINE



Station	Profile Elevation	Profile Description
87+00	5037.32	IE 10" FORCE MAIN & 6" FORCE MAIN
87+50	5037.38	
88+00	5037.45	
89+00	5037.51	
90+00	5037.57	
91+00	5037.64	
92+00	5037.69	
93+00	5037.76	
94+00	5037.83	
95+00	5037.89	
96+00	5037.96	
97+00	5038.02	
98+00	5038.08	
99+00	5038.15	
100+00	5038.21	
101+00	5038.27	
102+00	5038.33	
103+00	5038.39	
103+50	5038.45	
104+00	5038.51	
104+50	5038.57	
105+00	5038.63	
105+50	5038.69	
106+00	5038.75	
106+50	5038.81	
107+00	5038.87	
107+50	5038.93	
108+00	5038.99	
108+50	5039.05	
109+00	5039.11	
109+50	5039.17	
110+00	5039.23	
110+50	5039.29	
111+00	5039.35	
111+50	5039.41	
112+00	5039.47	
112+50	5039.53	
113+00	5039.59	
113+50	5039.65	
114+00	5039.71	
114+50	5039.77	
115+00	5039.83	
115+50	5039.89	
116+00	5039.95	
116+50	5039.99	
117+00	5040.03	
117+50	5040.07	
118+00	5040.11	
118+50	5040.15	
119+00	5040.19	
119+50	5040.23	
120+00	5040.27	
120+50	5040.31	
121+00	5040.35	
121+50	5040.39	
122+00	5040.43	
122+50	5040.47	
123+00	5040.51	
123+50	5040.55	
124+00	5040.59	
124+50	5040.63	
125+00	5040.67	
125+50	5040.71	
126+00	5040.75	
126+50	5040.79	
127+00	5040.83	
127+50	5040.87	
128+00	5040.91	
128+50	5040.95	
129+00	5040.99	
129+50	5041.03	
130+00	5041.07	
130+50	5041.11	
131+00	5041.15	
131+50	5041.19	
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132+50	5041.27	
133+00	5041.31	
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135+50	5041.51	
136+00	5041.55	
136+50	5041.59	
137+00	5041.63	
137+50	5041.67	
138+00	5041.71	
138+50	5041.75	
139+00	5041.79	
139+50	5041.83	
140+00	5041.87	
140+50	5041.91	
141+00	5041.95	
141+50	5041.99	
142+00	5042.03	
142+50	5042.07	
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154+50	5043.03	
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191+00	5045.95	
191+50	5045.99	
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203+50	5046.95	
204+00	5046.99	
204+50	5047.03	
205+00	5047.07	
205+50	5047.11	
206+00	5047.15	
206+50	5047.19	
207+00	5047.23	
207+50	5047.27	
208+00	5047.31	
208+50	5047.35	
209+00	5047.39	
209+50	5047.43	
210+00	5047.47	
210+50	5047.51	
211+00	5047.55	
211+50	5047.59	
212+00	5047.63	
212+50	5047.67	
213+00	5047.71	
213+50	5047.75	
214+00	5047.79	
214+50	5047.83	
215+00	5047.87	
215+50	5047.91	
216+00	5047.95	
216+50	5047.99	
217+00	5048.03	
217+50	5048.07	
218+00	5048.11	
218+50	5048.15	
219+00	5048.19	
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242+50	5050.07	
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246+50	5050.39	
24		

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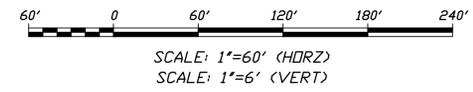


PLAN & PROFILE NOTES:

- LOCATIONS OF EXISTING UNDERGROUND UTILITIES BASED ON UTILITY COMPANY RECORDS AND UTILITY LOCATION MARKINGS PROVIDED BY UTILITY COMPANIES IN RESPONSE TO USA-DIG REQUESTS MADE IN MAY AND JUNE, 2019.
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- QUANTITIES SHOWN ARE FOR INFORMATIONAL PURPOSES. CONTRACTOR TO VERIFY ALL QUANTITIES.
- REFERENCE SHEET PP1.7 FOR LEGEND AND ABBREVIATIONS APPLICABLE TO HIGH DESERT ENGINEERING PLANS.
- REFERENCE DETAIL SHEETS FOR CONSTRUCTION DETAILS AND NOTES.

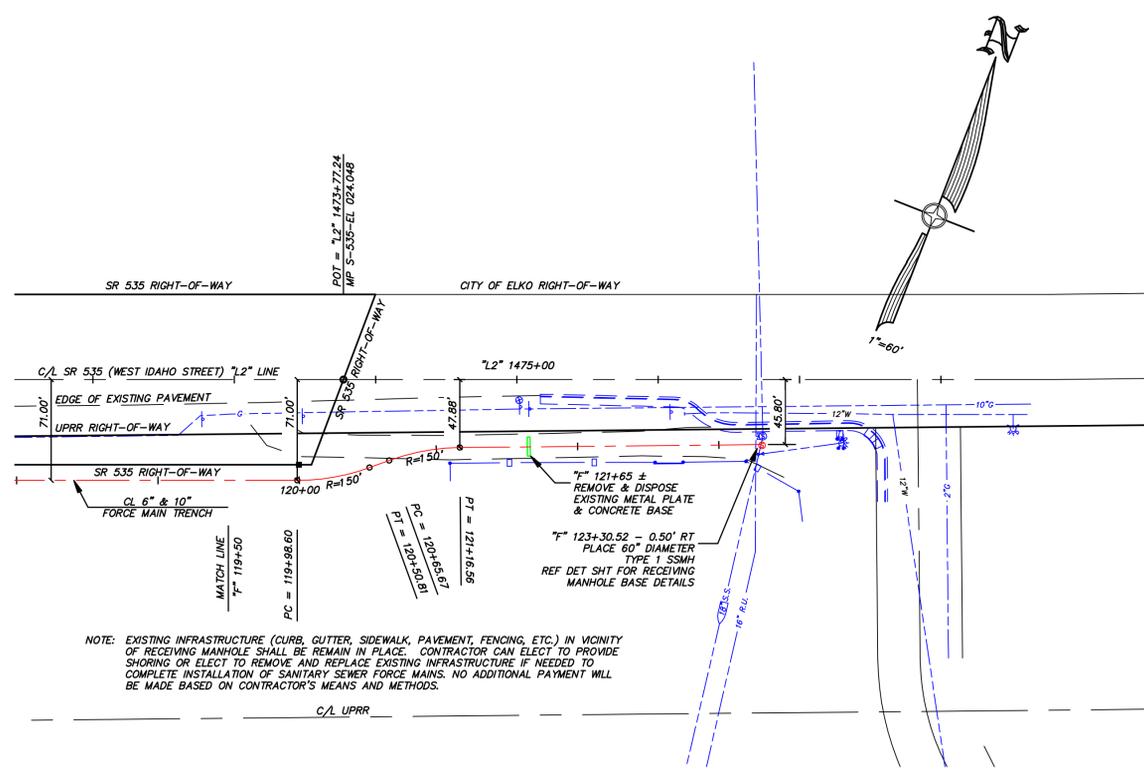
SEWER FORCE MAINS

"F" LINE



Station	Profile Elevation (ft)	Description
103+00	5040.49	IE 10" FORCE MAIN & 6" FORCE MAIN
104+00	5040.61	
104+00	5040.73	
105+00	5040.85	
105+00	5040.98	
106+00	5041.10	
106+00	5041.22	
107+00	5041.35	
107+00	5041.47	
108+00	5041.59	
108+00	5041.72	
109+00	5041.84	
109+00	5041.96	
110+00	5042.09	F" 109+50 - GRADE BREAK IE (10" & 6") = 5042.09
110+00	5042.34	
111+00	5042.59	
111+00	5042.84	
112+00	5043.09	
112+00	5043.34	
113+00	5043.59	F" 112+50 - GRADE BREAK IE (10" & 6") = 5043.59
114+00	5043.84	
114+00	5044.09	
115+00	5044.34	
115+00	5044.59	F" 115+00 - GRADE BREAK IE (10" & 6") = 5044.52
116+00	5044.84	
116+00	5045.09	
117+00	5045.34	
117+00	5045.59	
118+00	5045.84	
118+00	5046.09	
119+00	5046.34	F" 119+50 - GRADE BREAK IE (10" & 6") = 5046.91
119+00	5046.59	
119+00	5046.84	
119+00	5047.09	
119+00	5047.34	
119+00	5047.59	
119+00	5047.84	
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SEWER FORCE MAINS

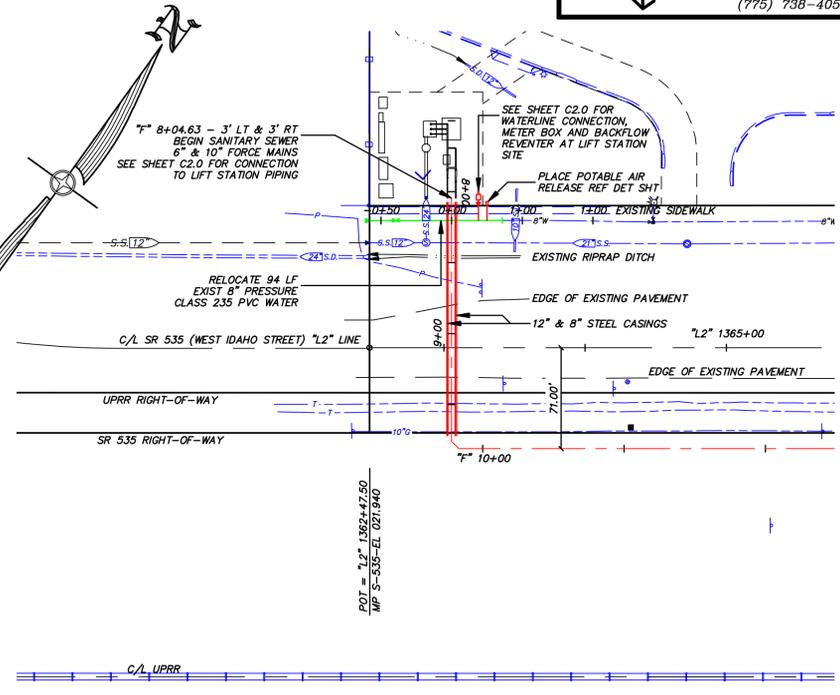
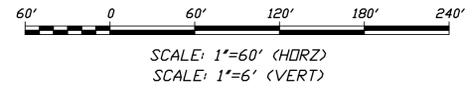
"F" LINE

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- AN EXISTING ABANDONED 6" GAS MAIN (LOCATION UNKNOWN) LIES NORTHWEST OF THE EXISTING 10" GAS MAIN.
- CONTRACTOR MAY ELECT TO BORE WATER SERVICE LINE AND POTABLE AIR RELEASE LINE UNDER SIDEWALK, OR REMOVE A PORTION OF THE SIDEWALK AND EXCAVATE TRENCHES FOR THESE LINES. IF SIDEWALK IS REMOVED, IT SHALL BE REPLACED IN ACCORDANCE WITH CITY OF ELKO REQUIREMENTS.
- QUANTITIES SHOWN ARE FOR INFORMATIONAL PURPOSES. CONTRACTOR TO VERIFY ALL QUANTITIES.
- SEE BELOW FOR LEGEND AND ABBREVIATIONS APPLICABLE TO HIGH DESERT ENGINEERING PLANS.
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ABBREVIATIONS:

AP ANGLE POINT	PSF POUNDS PER SQUARE INCH
DET DETAIL	PT POINT OF TANGENCY
E ELECTRICAL	PVC POLYVINYL CHLORIDE
EG EXISTING GRADE	REF REFERENCE
HDPE HIGH DENSITY POLYETHYLENE	SCH SCHEDULE
IE INVERT ELEVATION	SHT SHEET
L LENGTH	SS STAINLESS STEEL
MJ MECHANICAL JOINT	TA TOP OF ASPHALT
MON MONUMENT	TAN TANGENT
PC POINT OF CURVATURE	T TELEPHONE PEDESTAL
PCC POINT OF COMPOUND CURVE	TV TELEVISION
POC POINT ON CURVE	VPI VERTICAL POINT OF INTERSECTION
POT POINT ON TANGENT	



WATER MAIN

"W" LINE

Station	119+00	120+00	121+00	122+00	123+00	124+00	Station
5080	5048.98	5049.41	5050.03	5050.65	5051.27	5051.89	5080
5074							5074
5068							5068
5062							5062
5056							5056
5050							5050
5044							5044
5038							5038
5032							5032
5026	5044.7	5044.8	5045.2	5045.6	5046.5	5046.9	5026

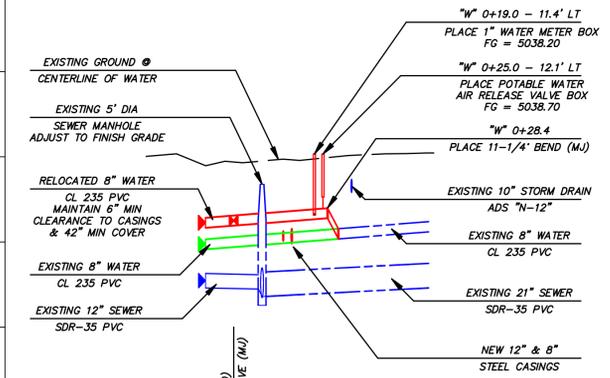
LEGEND:

- - - S.S.C.B. - EXISTING SANITARY SEWER MAIN W/ SIZE & DIRECTION
- - - R.U. - EXISTING SANITARY SEWER RE-USE MAIN W/ SIZE
- - - - - EXISTING SANITARY SEWER MANHOLE
- - PROPOSED SANITARY SEWER MANHOLE
- - - S.D. (24) - EXISTING STORM SEWER MAIN W/ SIZE & DIRECTION
- - - - - EXISTING STORM SEWER MANHOLE
- ⊗ - EXISTING FIRE HYDRANT
- ⊕ - EXISTING WATER VALVE
- - - 8"W - EXISTING WATER LINE W/ SIZE
- ⊕ - PROPOSED WATER VALVE
- - - 8"W - PROPOSED WATER MAIN W/ SIZE
- - - 2"W - PROPOSED WATER SERVICE METER & LATERAL
- - - O/H P - EXISTING OVERHEAD POWER LINE
- - - P - EXISTING UNDERGROUND POWER LINE
- - EXISTING ELECTRICAL BOX
- - - O/H T - EXISTING OVERHEAD TELEPHONE LINE
- - EXISTING TELEPHONE PEDESTAL
- - - G - EXISTING GAS MAIN OR SERVICE LINE
- ⊗ - EXISTING DELINEATOR
- - CALCULATED POINT
- - FOUND MONUMENT
- x - SPOT ELEVATION

RE-USE SEWER NOTES:

- CONTRACTOR TO VERIFY SIZE, TYPE & LOCATION OF EXISTING SANITARY SEWER RE-USE LINE.
- EXISTING SANITARY SEWER REUSE LINE CAN BE TAKEN OUT OF SERVICE BY THE CITY OF ELKO.

Station	100' RT (-1+00)	50' RT (-0+50)	"F" 8+20.3 "W" 0+00	50' LT 0+50	100' LT 1+00	Station
5062	5038.1	5037.5	5037.7	5038.1	5038.3	5062
5056						5056
5050						5050
5044						5044
5038						5038
5032						5032
5026						5026
5020						5020
5014						5014
5008						5008



CITY OF ELKO
 EXIT 298 SANITARY SEWER
 FORCE MAINS - PLAN & PROFILES
 "F" 119+50 TO "F" END & WATER
 ELKO COUNTY
 NEVADA

BY: [Signature]

DESCRIPTION: [Blank]

REV. DATE: [Blank]

FINAL DESIGN

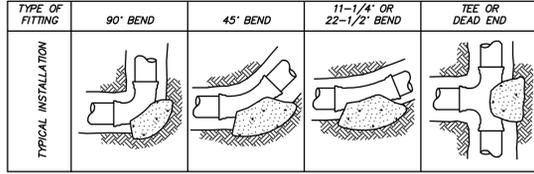
MARCH, 2020

BAR IS 1 INCH ON ORIGINAL DRAWING
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

PP1.7

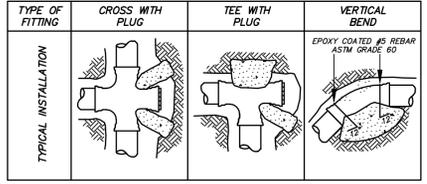
DRAWN BY: TCB
 DESIGNED BY: TCB
 CHECKED BY:
 JOB NO.: 5782
 SHEETS: \

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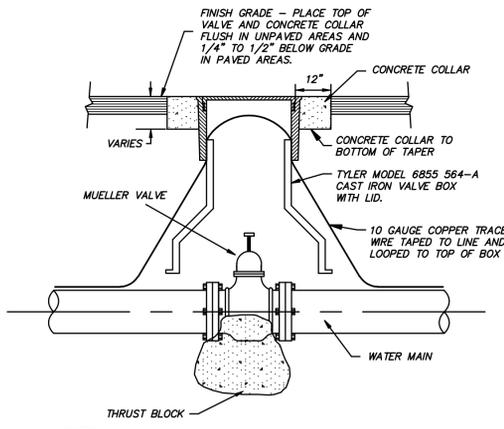
THRUST BLOCK BEARING AREA (SQ. FT.)

TYPE OF FITTING	90° BEND	45° BEND	11-1/4" OR 22-1/2" BEND	TEE OR DEAD END	TEE WITH FLUG	CROSS WITH FLUG
4"	2	1	1	2	2	2
6"	4	4	2	4	4	4
8"	7	4	2	5	7	7
10"	12	6	3	8	12	12
12"	16	10	5	12	16	16
14"	20	12	6	14	20	20
16"	27	15	8	18	27	27
18"	45	25	13	32	45	45
24"	65	35	18	46	65	65



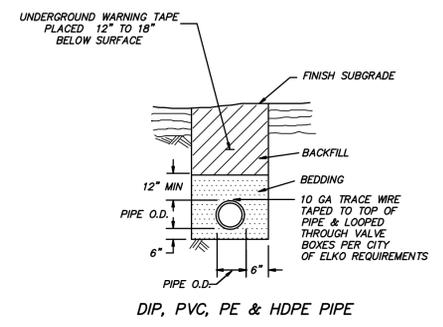
- NOTES:
- CONCRETE FOR THRUST BLOCKS SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI OR GREATER.
 - AREAS GIVEN ARE FOR CLASS 150 PIPE AT A TEST PRESSURE OF 150 PSI, WITH 2000 PSF BEARING CAPACITY. INSTALLATIONS USING DIFFERENT PIPE, TEST PRESSURES, AND/OR SOIL TYPES SHOULD ADJUST AREAS ACCORDINGLY, SUBJECT TO THE APPROVAL OF THE ENGINEER.
 - THRUST BLOCKS ARE TO BE POURED AGAINST UNDISTURBED SOIL.
 - JOINTS AND FACES OF PLUGS TO BE KEPT CLEAR OF CONCRETE.
 - BOLTS ON SADDLE TEES ARE EXEMPT FROM THRUST BLOCK REQUIREMENTS IF STATED IN MANUFACTURER'S TABULATED DATA.

THRUST BLOCK BEARING AREAS 1
DT.4



- NOTES:
- CONCRETE SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, UNLESS OTHERWISE SPECIFIED.
 - CONCRETE COLLAR REQUIRED WHEN VALVE IS NOT LOCATED IN CONCRETE OR BITUMINOUS SURFACE.

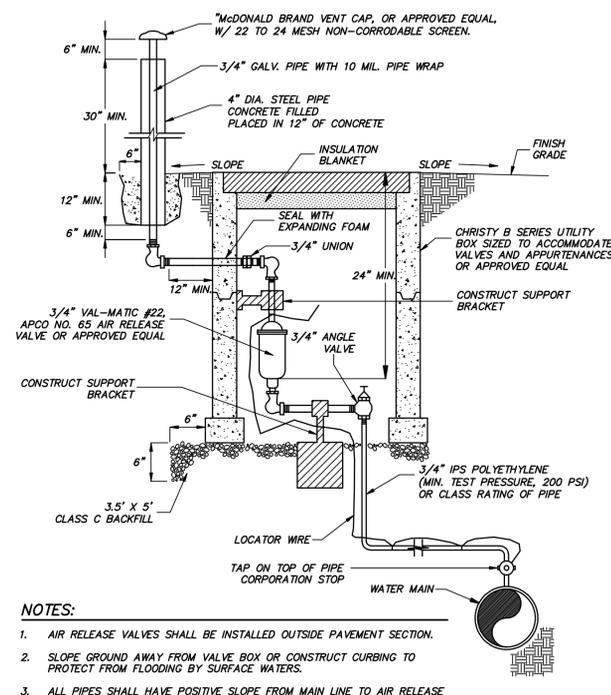
VALVE DETAIL 2
DT.4



WATER MAIN TRENCH EXCAVATION AND BACKFILL NOTES:

- WATER DENSIFIED BACKFILL AND TUNNELING SHALL NOT BE ALLOWED.
- BACKFILL SHALL MEET THE REQUIREMENTS FOR CLASS "E" BACKFILL WITH NO ROCKS OVER 4", COMPACTED IN 6" (MAX) LIFTS TO 90% (MIN) OF MAXIMUM COMPACTION (ASTM D-1557).
- BEDDING MATERIAL FOR DUCTILE IRON PIPE SHALL BE CLASS "C", AND SHALL BE CLASS "A" FOR ALL OTHER PIPE.
- BEDDING MATERIAL SHALL BE COMPACTED TO 90% (MIN) OF MAXIMUM COMPACTION (ASTM D-1557).
- FOR TRENCHES IN ROADWAY SECTION, SEE TRENCH PATCH DETAILS.
- ALL TRENCHES EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. AND M.U.T.C.D. REQUIREMENTS.
- UNDERGROUND WARNING TAPE SHALL BE METALLIC AND APPROPRIATELY LABELED AND COLORED.
- THE CONTRACTOR SHALL NOT HAVE AN OPEN OR UNATTENDED TRENCH AT ANY TIME.

WATER MAIN TRENCH EXCAVATION AND BACKFILL 3
DT.4



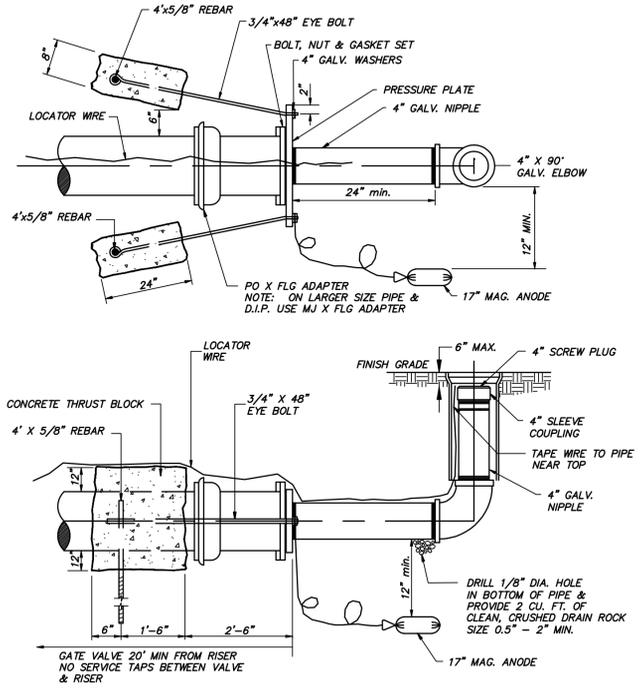
NOTES:

- AIR RELEASE VALVES SHALL BE INSTALLED OUTSIDE PAVEMENT SECTION.
- SLOPE GROUND AWAY FROM VALVE BOX OR CONSTRUCT CURBING TO PROTECT FROM FLOODING BY SURFACE WATERS.
- ALL PIPES SHALL HAVE POSITIVE SLOPE FROM MAIN LINE TO AIR RELEASE VALVE.
- PROVIDE 4" INSULATION BLANKET IN TOP OF BOX.

POTABLE WATER AIR RELEASE VALVE 4
DT.4

- CONTRACTOR SHALL PROVIDE SUBMITTALS FOR ALL WATER SYSTEM AND SEWER SYSTEM COMPONENTS.
- 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.
- 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". TWO SETS OF CONSECUTIVE SAMPLES ARE REQUIRED AT LEAST 24 HOURS APART FROM EVERY 1200 FEET OF MAIN.
- 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 NAC 445A.67145 (7).
- 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.
- 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.
- ALL CONNECTIONS TO THE EXISTING WATER MAINS WILL BE DONE BY THE CITY OF ELKO. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH THE CITY OF ELKO.
- THE CITY OF ELKO UTILITY DEPARTMENT SHALL BE CONTACTED TO PERFORM ALL TAPS ONTO CITY OF ELKO UTILITIES.
- ALL WATER MAINS, HYDRANTS, WATER AND SEWER SERVICE CONNECTIONS REQUIRE CITY OF ELKO INSPECTIONS PRIOR TO BACKFILLING.
- ALL CONSTRUCTION TO BE AWWA C-600 OR AWWA C-605 COMPLIANT AS APPROPRIATE.
- MINIMUM COVER OVER WATER MAINS SHALL BE 42".
- ALL WATER MAINS SHALL BE INSTALLED WITH LOCATOR WIRE AND MARKING TAPE.
- ALL WATER MAINS SHALL BE PRESSURE CLASS 235 PVC (AWWA C-900).
- DUCTILE IRON PIPE AND ALL DUCTILE IRON FITTINGS TO BE DOUBLE WRAPPED WITH 8 MIL POLYETHYLENE.
- RESTRAINED JOINTS, IF REQUIRED, SHALL CONSIST OF MJ FITTINGS WITH ROMAC GRIP RINGS, OR APPROVED EQUAL.
- THRUST BLOCKING IS REQUIRED FOR ALL WATER MAINS (4" & LARGER) AT ALL BENDS, TEES, CROSSES, VALVES AND HYDRANTS. REFERENCE DETAIL SHEET.
- ALL WATER SERVICE LINES SHALL BE IRON PIPE SIZE (IPS) RATED 200 PSI POLYETHYLENE (AWWA C-901), UNLESS OTHERWISE SHOWN.
- ALL WATER SYSTEM MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH APPLICABLE AWWA STANDARDS AND ALL MATERIALS IN CONTACT WITH POTABLE WATER MUST BE NSF/ANSI 61 LISTED AS COMPATIBLE WITH DRINKING WATER AND THIRD PARTY CERTIFIED AS LEAD FREE. IN ADDITION, ALL MATERIALS SPECIFIED FOR THE WATER SYSTEM SHALL MEET THE REQUIREMENTS OF NAC 445A.69085 "LEAD FREE" AND NAC 445A.6725 "DISTRIBUTION SYSTEM MATERIALS".
- SANITARY SEWER MAINS FORCE MAINS SHALL BE 6" & 10" IRON PIPE SIZE DR 21 (100 PSI) HIGH DENSITY POLYETHYLENE.
- ALL CONNECTIONS TO THE EXISTING SANITARY SEWER MAINS WILL BE DONE BY THE CONTRACTOR, UNDER SUPERVISION OF THE CITY OF ELKO. CONTRACTOR TO COORDINATE WITH THE CITY OF ELKO FOR THIS WORK.
- ALL OPENINGS IN UNFINISHED PIPING OR APPURTENANCES MUST BE SEALED AT THE END OF EACH WORKING DAY IN SUCH A MANNER AS TO PREVENT THE ENTRY OF BIRDS AND OTHER ANIMALS, DIRT, TRENCH WATER AND OTHER SOURCES OF POLLUTION OR CONTAMINATION.

UTILITY NOTES: 5
DT.4



TEMPORARY FLUSH VALVE ASSEMBLY 6
DT.4

CITY OF ELKO
 EXIT 298 SANITARY SEWER
 FORCE MAINS
 WATER DETAILS & UTILITY NOTES
 ELKO COUNTY
 NEVADA

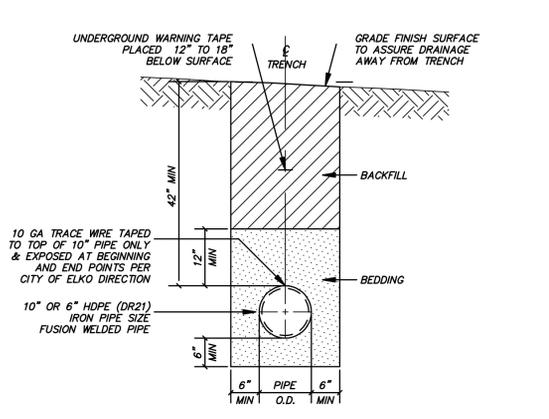
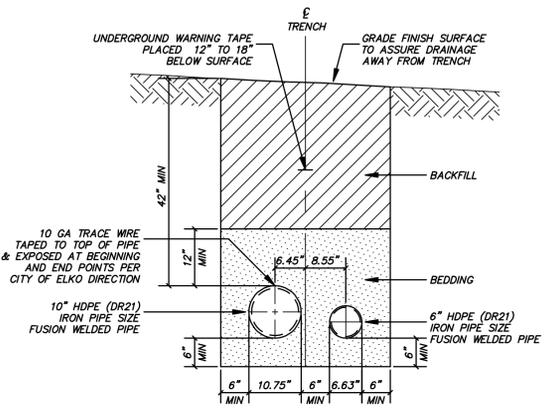
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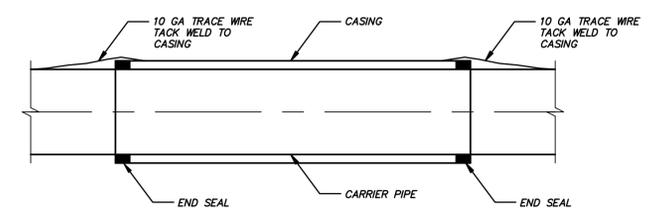
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 DESIGNED BY: TCB
 CHECKED BY:
 JOB NO.: 5782
 SHEETS:

FINAL DESIGN
 DECEMBER, 2019

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- FORCE MAIN TRENCH EXCAVATION AND BACKFILL NOTES:**
1. WATER DENSIFIED BACKFILL AND TUNNELING SHALL NOT BE ALLOWED.
 2. BACKFILL IN STRUCTURAL AREAS SHALL MEET THE REQUIREMENTS FOR CLASS "E" BACKFILL WITH NO ROCKS OVER 4", COMPACTED IN 6" (MAX) LIFTS TO 90% (MIN) OF MAXIMUM COMPACTION (ASTM D-1557).
 3. BACKFILL IN NON-STRUCTURAL AREAS SHALL CONSIST OF NATIVE MATERIALS COMPACTED IN 6" (MAX) LIFTS TO 90% (MIN) OF MAXIMUM COMPACTION (ASTM D-1557), PROVIDED THE NATIVE MATERIALS MEET THE REQUIREMENTS OF THE PROJECT GEOTECHNICAL REPORT.
 4. BEDDING MATERIAL FOR HDPE PIPE UNDER NORMAL CONDITIONS SHALL BE CLASS "A" BACKFILL AS SPECIFIED IN THE STANDARD SPECIFICATIONS.
 5. CLASS "A" BACKFILL MATERIAL SHALL BE COMPACTED TO 90% (MIN) OF MAXIMUM COMPACTION (ASTM D-1557).
 6. BEDDING MATERIAL FOR HDPE PIPE LOCATED BELOW THE WATER TABLE SHALL BE CLASS "C" BACKFILL AS SPECIFIED IN THE STANDARD SPECIFICATIONS, AND SHALL BE EXTENDED TO AN ELEVATION AT LEAST ONE (1) FOOT ABOVE GROUNDWATER ELEVATION. CLASS "C" BACKFILL SHALL BE WRAPPED IN MORFIN 180N NONEVENT GEOMETRIES, OR APPROVED EQUAL.
 7. CLASS "C" BACKFILL MATERIAL SHALL BE COMPACTED WITH A VIBRANT PLATE TO THE SATISFACTION OF THE GEOGRAPHICAL ENGINEER.
 8. FOR TRENCHES IN ROADWAY SECTION, SEE TRENCH PATCH DETAILS.
 9. ALL TRENCHES EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. AND M.U.T.C.D. REQUIREMENTS.
 10. UNDERGROUND WARNING TAPE SHALL BE METALLIC AND APPROPRIATELY LABELED AND COLORED.
 11. THE CONTRACTOR SHALL NOT HAVE AN OPEN OR UNATTENDED TRENCH AT ANY TIME.



- NOTES:**
1. STEEL CASING JOINTS TO BE WELDED IN A MANNER TO INSURE NO WELD BEADS ARE CREATED ON INSIDE OF CASING PIPE.
 2. INSIDE OF CASING TO BE CLEANED OF ALL DEBRIS PRIOR TO INSERTING HDPE PIPE INTO STEEL CASING.
 3. HDPE BUTT FUSION WELD BEADS TO BE REMOVED FROM OUTSIDE OF HDPE PIPE PRIOR TO INSERTING HDPE PIPE INTO STEEL CASING.
 4. ENDS OF CASINGS TO BE SEALED USING AVANT AV-219 OAKUM AND AV-202 MULTIFARIOSUS APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, OR APPROVED EQUAL. CONTACT AVANT INTERNATIONAL AT WWW.AVANTROUT.COM: (281) 486-5600

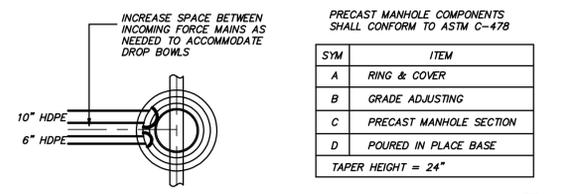
TRENCH DETAIL - DUAL FORCE MAINS (DT.5)

TRENCH DETAIL - SINGLE FORCE MAIN (DT.5)

FORCE MAIN TRENCH EXCAVATION AND BACKFILL NOTES: (DT.5)

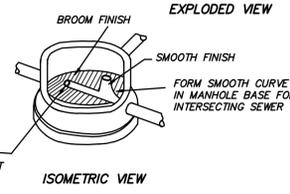
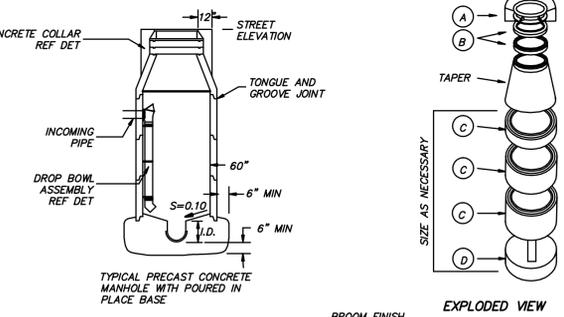
INSTALLATION THROUGH CASINGS (DT.5)

!!! ACCESS OPENING FOR THE RECEIVING MAHOLE !!! SHALL BE A MINIMUM OF 36" DIAMETER



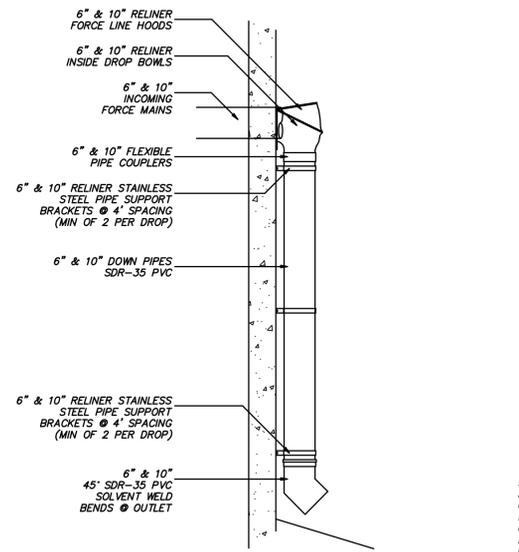
SYM	ITEM
A	RING & COVER
B	GRADE ADJUSTING
C	PRECAST MANHOLE SECTION
D	POURED IN PLACE BASE

TAPER HEIGHT = 24"



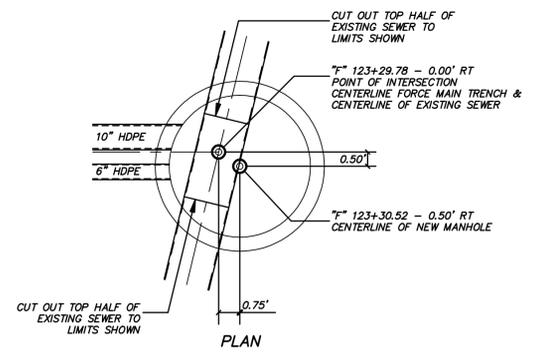
- NOTES:**
1. ALL MANHOLES SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
 2. MANHOLE COVERS SHALL BE IDENTIFIED AS STORM DRAIN, WATER OR SEWER CLEARLY DISPLAYED ON THE COVER.
 3. PRECAST MANHOLE SECTIONS, OTHER THAN GRADE RINGS, SHALL BE JOINED WITH FLEXIBLE PLASTIC GASKET MATERIAL SUCH AS "RAM-NEK" OR EQUAL AS PER MANUFACTURER'S RECOMMENDATIONS.
 4. 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 & GRADE
 B. 21" THROUGH 27" PIPE AT ANGLE POINTS & CHANGES IN GRADE OR PIPE SIZE
 5. EXCAVATABLE SLURRY BACKFILL MAY BE USED AS STRUCTURAL BACKFILL FOR MANHOLES AND MUST MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
 6. THE TOTAL HEIGHT OF MANHOLE GRADE RINGS SHALL NOT EXCEED 12 INCHES.
 7. PIPE SECTION LENGTHS ARRANGED TO FIT DEPTH.
 8. PRECAST BASE MAY BE USED IF APPROVED BY GOVERNING AGENCY. PRECAST BASE NOT ALLOWED FOR RECEIVING MANHOLE.
 9. ECCENTRIC OR CONCENTRIC CONE MAY BE USED.

TYPE 1 MANHOLE (DT.5)



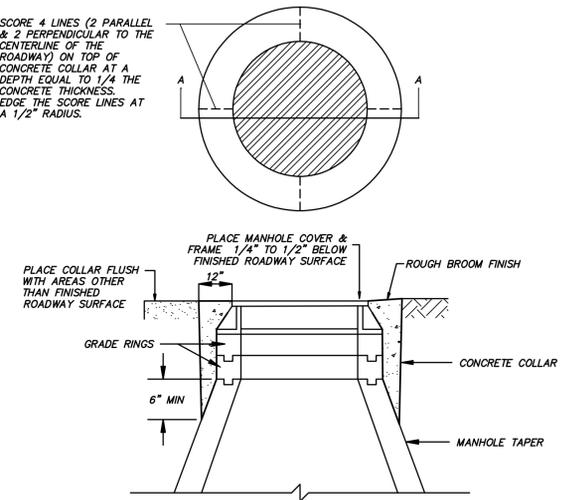
- NOTES:**
1. DROP BOWL COMPONENTS SHALL BE AS MANUFACTURED BY RELINER / DURAN, INC., 53 MT. ARCHER ROAD, LYME, CT, 06371, OR APPROVED EQUAL.
 2. FORCE LINE HOODS TO BE MOUNTED WITH ELECTRICAL ZIP TIES IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS.

DROP BOWL ASSEMBLY DETAIL (DT.5)



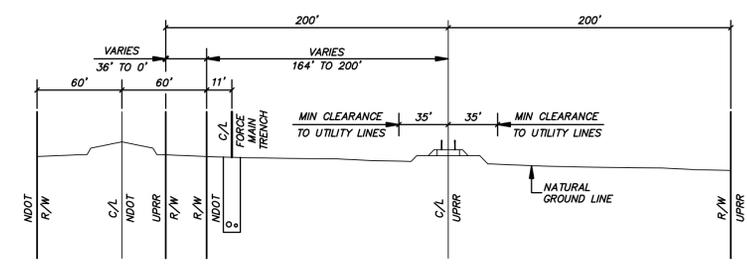
RECEIVING MANHOLE BASE DETAIL (DT.5)

SCORE 4 LINES (2 PARALLEL & 2 PERPENDICULAR TO THE CENTERLINE OF THE ROADWAY) ON TOP OF CONCRETE COLLAR AT A DEPTH EQUAL TO 1/4 THE CONCRETE THICKNESS. EDGE THE SCORE LINES AT A 1/2" RADIUS.

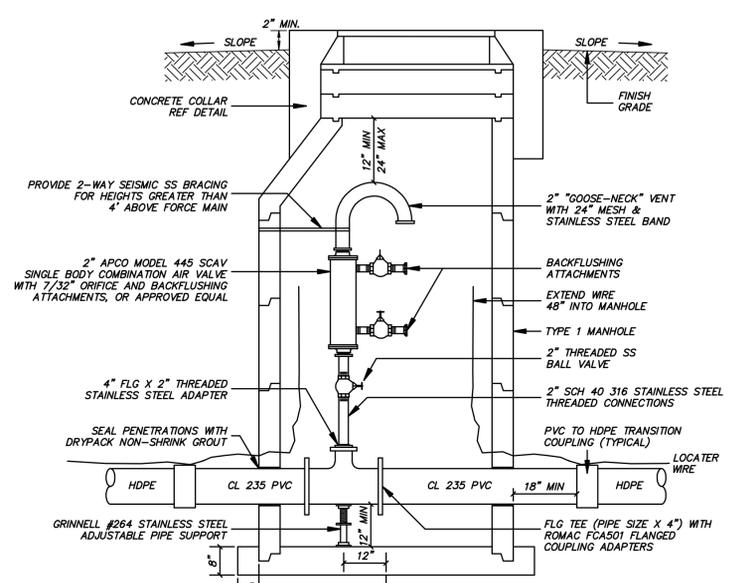


- NOTES:**
1. CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 337.10 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
 2. MANHOLE COLLAR SHALL BE SET 1/4" TO 1/2" BELOW FINISHED CONCRETE OR BITUMINOUS SURFACE. MANHOLE COLLARS IN ALL OTHER AREAS SHALL BE SET FLUSH WITH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

MANHOLE COLLAR DETAIL (DT.5)



PARALLEL ENCROACHMENTS FOR UTILITY LINES DETAIL (DT.5)



- NOTES:**
1. MANHOLE TO BE 5' DIAMETER.
 2. AIR RELEASE VALVES FOR BOTH THE 6" AND THE 10" FORCE MAIN SHALL BE INSTALLED IN THE SAME MANHOLE.
 3. CONTRACTOR TO PROVIDE SUBMITTALS ON ALL COMPONENTS.
 4. MARK LOCATION OF MANHOLE WITH CARSONITE MARKER.
 5. CONTRACTOR TO INSTALL STAINLESS STEEL FITTINGS WITH ANTI-GALLING LUBRICANT.

FORCE MAIN AIR RELEASE / VACUUM VALVE MANHOLE (DT.5)

CITY OF ELKO
 ELKO COUNTY
 NEVADA
 EXIT 298 SANITARY SEWER
 FORCE MAIN
 FORCE MAIN DETAILS

REV	DATE	DESCRIPTION	BY

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 JOB NO.: 5782
 SHEETS:

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