OWNER / DEVELOPER

CITY of ELKO
1751 COLLEGE AVENUE
ELKO, NV. 89801
PH:(775) 777-7212

ATTN: DALE JOHNSON
EMAIL: djohnson@elkocitynv.gov

CIVIL IMPROVEMENT PLANS FOR CITY OF ELKO ARPA ERRECART BLVD. CONNECTOR ROAD/WATER LINE EXTENSION PWP-EL-2024-354

ELKO ELKO COUNTY NEVADA

ENGINEER

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY
ELKO, NEVADA 89801
(775) 738 - 8058
WWW.SUMMITNV.COM
NITIN@SUMMITNV.COM

ABBREVIATIONS

A.C.	ASPHALTIC CONCRETE
AGG.	AGGREGATE
B.C.	BEGIN CURVE
B.F.	BOTTOM OF FOOTING
B.V.C.	BEGIN VERTICAL CURVE
B.W.	BACK OF SIDEWALK
C.B.	CATCH BASIN
℄	CENTERLINE
CONC.	CONCRETE
CONST.	CONSTRUCT
CLR	CLEARANCE
C.P.	CONCRETE PIPE
C.R.	CURB RETURN
D.I.	DROP INLET
DET.	DETAIL
E.	ELECTRICAL
ELEV.	ELEVATION
E.C.	END OF CURVE
E.V.C.	END OF VERTICAL CURVE
EXIST.	EXISTING
(e)	EXISTING
E.G.	EXISTING GRADE
F.F.	FINISHED FLOOR
F.F.C.	FRONT FACE OF CURB
F.G.	FINISHED GRADE
F.H.	FIRE HYDRANT
℄	FLOW LINE
FLG.	FLANGE
G	GAS
G.B.	GRADE BREAK
GTV.	GATE VALVE
H.C.	HANDICAPPED
HORIZ.	HORIZONTAL
H.P.	HIGH POINT
INT.	INTERSECTION
I.E.	INVERT ELEVATION
L	LENGTH
L.F.	LINEAL FEET
L.P.	LOW POINT
M.D.D	MAXIMUM DRY DENSITY
LT.	LEFT
L.P.	LOW POINT
M.H.	MANHOLE
P.	PAD ELEVATION
PCC	POINT OF COMPOUND CURV.
PI.	POINT OF INTERSECTION
P.R.C.	POINT OF REVERSE CURVATURE
P.V.C.	POLYVINYL CHLORIDE PIPE
P.O.	PUSH ON
P.U.E.	PUBLIC UTILITY EASEMENT
℄	PROPERTY LINE
Q10	10-YEAR STORM FLOW
Q100	100-YEAR STORM FLOW
(R)	RADIAL
R	RADIUS
REF.	REFERENCE
R.C.P.	REINFORCED CONCRETE PIPE
R.P.	RADIUS POINT
RT.	RIGHT
R/W	RIGHT OF WAY
S	SLOPE
S.G.	SUBGRADE
S.S.	SANITARY SEWER
S.W.	SIDEWALK
STD.	STANDARD
SHT.	SHEET
STA.	STATION
S.D.	STORM DRAIN
T	TANGENT
TELE.	TELEPHONE
T.C.	TOP OF CURB
T.B.	THRUST BLOCK
TOE	TOE OF SLOPE
TOP	TOP OF SLOPE
TYP.	TYPICAL
V.C.	VERTICAL CURVE
V.P.I.	VERT. POINT OF INTERSECTION
W	WATER
△	CURVE DELTA

PROJECT DATA

SITE ADDRESS

SECTIONS 13, 23, and 24
@ SE SIDE OF HUMBOLDT RIVER. ELKO, NV

SITE INFORMATION

SITE AREA
46.0 ACRES - SECTION 13 and 23-24

ZONING

ZONING:ZR
LAND USE: 100 - Vacant - Unknown/Other
LAND USE: 140 - Vacant - Commercial

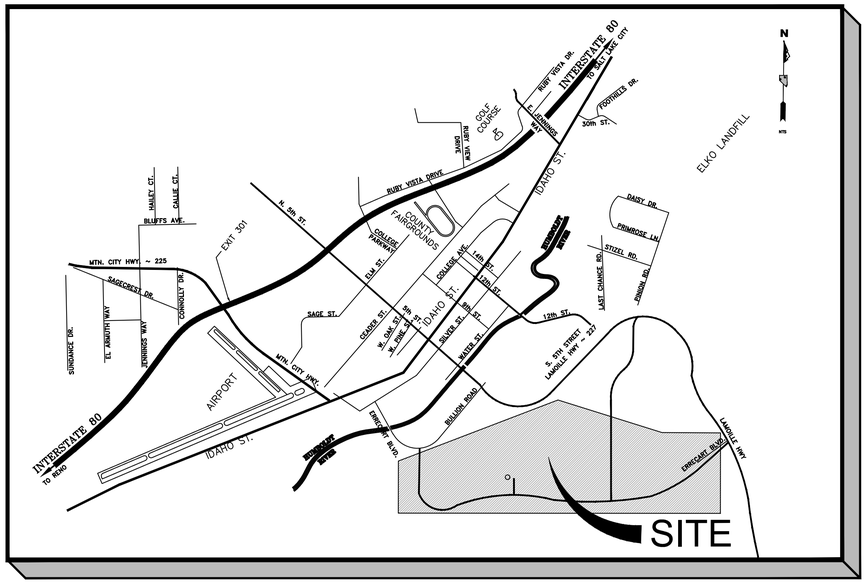
ZONING:ZPC
LAND USE: 100 - Vacant - Unknown/Other
LAND USE: 140 - Vacant - Commercial
LAND USE: 410 - Offices, Professional/Buisiness
LAND USE: 920 - Hospitals

ZONING:ZCT
LAND USE: 150 - Vacant - Industrial

FEMA FLOOD ZONE DESIGNATION

ZONE X UNSHADED AREA MIN. FLOOD HZRD
ZONE AO (DEPTH 1 FEET)
ZONE AE REGULATORY FLOODWAY
PER FIRM PANEL 32007C5609E
SEPTEMBER 4, 2013

ZONE AE
ZONE X UNSHADED AREA MIN. FLOOD HZRD
PER FIRM PANEL 32007C5628E
SEPTEMBER 4, 2013



VICINITY MAP

SHEET INDEX

UTILITIES

ELECTRIC	~ NV ENERGY	(775) 753 - 1828
TELEPHONE	~ FRONTIER COMMUNICATION	(775) 738 - 0212
WATER SERVICE	~ CITY OF ELKO	(775) 777 - 7135
GAS	~ SOUTHWEST GAS CORP	(877) 860 - 6020

SPECIFICATIONS

ALL WORK ON PRIVATE LANDS SHALL CONFORM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" LATEST EDITION. ALL CONSTRUCTION ON NDOT RIGHT-OF-WAY SHALL CONFORM TO 2014 NDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2017 NDOT STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION. IN ADDITION ALL WORK SHALL CONFORM WITH 2011 AASHTO "GREEN BOOK", 2009 MUTCD, 2011 ROADSIDE DESIGN GUIDE AND THE 2010 NDOT ROAD DESIGN GUIDE.

BASIS OF BEARING & ELEVATION

NATIONAL SPATIAL REFERENCE SYSTEM 2007 (NRS2007) EPOCH 2007.00 HOLDING THE CITY OF ELKO BROADCAST LATITUDE, LONGITUDE, AND ELLIPSOID HEIGHT OF N40° 51' 38.57413", W115° 45' 09.58441" AND 5047.334 FEET FOR THE CITY OF ELKO CORS.

COORDINATES ARE PROJECTED USING THE NEVADA STATE PLANE COORDINATE SYSTEM, EAST ZONE, AND SCALED TO GROUND USING A COMBINED GRID-TO-GROUND FACTOR OF 1.000357. OTHOMETRIC ELEVATIONS ABOVE MEAN SEA LEVEL ARE DERIVED USING GEOID 12.

ENGINEER'S STATEMENT

THESE PLANS (SHEETS T-1 OF 49 THROUGH D-14 OF 49) HAVE BEEN PREPARED IN ACCORDANCE WITH ACCEPTED ENGINEERING PROCEDURES AND GUIDELINES, AND ARE IN SUBSTANTIAL COMPLIANCE WITH APPLICABLE STATUTES, COUNTY ORDINANCES, AND CODES. IN THE EVENT OF CONFLICT BETWEEN ANY PORTION OF THESE PLANS AND COUNTY CODES, THE COUNTY CODES SHALL PREVAIL.

BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APPD

CIVIL IMPROVEMENT PLANS FOR ERRECART BLVD. CONNECTOR
TITLE SHEET
ELKO COUNTY NEVADA
ELKO

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: NA
VERT: NA
JOB NO: 3-82787

PROFESSIONAL ENGINEER NITIN BHAKTA Exp. 12-31-24 CIVIL No. 15494 STATE OF NEVADA
04-25-24

SHEET T-1 OF 49

LEGEND

- SD 12" — PROPOSED STORM DRAIN / SANITARY SEWER W/SIZE & DIRECTION INDICATOR
- SD 12" — EXISTING STORM DRAIN/SANITARY SEWER W/SIZE & DIRECTION INDICATOR
- SEWER LATERAL
- AC PAVEMENT AREA
- CONCRETE AREA (4000 PSI)
- TYPE 2 BASE GRAVEL AREA (95% MDD)
- EXISTING AC PAVEMENT
- GRADE BREAK
- 53.96 TC — PROPOSED ELEV. @ FRONT FACE TOP OF CURB
- 52.45 GB — PROPOSED ELEV. @ GRADE BREAK
- 51.27 HP — PROPOSED ELEV. @ HIGH PT.
- 51.86 FL — PROPOSED ELEV. @ FLOW LINE
- 51.25 FG — PROPOSED ELEV. @ FINISHED GRADE
- 4900 — EXISTING CONTOUR LINE
- 4900 — PROPOSED CONTOUR LINE
- ACCESSIBLE RAMP
- DRAINAGE SWALE FLOW LINE
- CUT OR FILL SLOPE
- SD — EXISTING STORM DRAIN
- GAS — EXISTING GAS
- PROPOSED FENCE
- TELE — EXISTING TELEPHONE
- OE — EXISTING ELECTRIC OVERHEAD LINE
- W — EXISTING WATERLINE
- SS — EXISTING SANITARY SEWER
- BACKFLOW PREVENTOR
- CHECK VALVE
- DCVA — CHECK VALVE–DOUBLE
- FLUSH VALVE
- METER–DUAL
- METER–SINGLE
- REDUCER
- SERVICE–DUAL
- SERVICE–SINGLE
- TEE
- ALIGNMENT TANGENT POINTS
- E — EX ELECTRIC VAULT/BOX
- T — EXISTING TEELPHONE PEDESTAL
- EXISTING LIGHT
- EXISTING SIGN
- PROPOSED SIGN
- CO — PROPOSED SS CLEANOUT
- EXISTING FIRE HYDRANT
- CAP W/ THRUST BLOCK
- 11.25° ELBOW
- 22.5° ELBOW
- 45° ELBOW
- 90° ELBOW
- ELECTRIC PULL BOX
- PROPOSED FIRE HYDRANT
- PROPOSED WTR METER VAULT
- EXISTING STREET LIGHT
- TYPE 7 STREET LIGHT
- PROPOSED MONUMENT
- WV — WATER VALVE (HOLLOW IF EXISTING)
- EXISTING GAS VALVE
- EXISTING METER PIT
- SS & SD MANHOLE (HOLLOW IF EXISTING)
- CATCH BASIN (HOLLOW IF EXISTING)
- FIRE SERVICE
- GUY WIRE
- RIPRAP EROSION CONTROL

GENERAL NOTES

1. 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.
2. THE CONTRACTOR SHALL KEEP A REDLINE SET OF AS–BUILTS PLANS ON–SITE AND WORK WITH THE PROJECT ENGINEER AT COMPLETION TO ENSURE ACCURATE AS–BUILT DRAWINGS CAN BE GENERATED AND SUBMITTED TO THE CITY OF ELKO AND THE OWNER BY THE PROJECT ENGINEER.
3. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE SOILS ENGINEER, THE CITY OF ELKO, AND ALL UTILITY COMPANIES 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGE TO THE EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE UTILITY COMPANIES FOR LOCATIONS PRIOR TO CONSTRUCTION. HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICES ALERT AT 1.800.227.2600 AT LEAST 48 HOURS PRIOR TO EXCAVATION.
5. ALL UTILITY TRENCHES SHALL CONFORM TO SIERRA PACIFIC POWER, ZITO MEDIA, FRONTIER COMMUNICATIONS, AND SOUTHWEST GAS SPECIFICATIONS. CONTRACTOR TO COORDINATE INSTALLATION OF ALLUTILITY TRENCHES WITH LOCAL UTILITIES.
6. CONTRACTOR TO OBTAIN AND PAY FOR PERMITS FROM THE CITY OF ELKO PRIOR TO EXCAVATING WITHIN THE CITY RIGHT–OF–WAY.
7. 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.
8. ALL SANITARY SEWER MAINS SHALL BE A MIN. OF 8" SDR 35 PVC (GREEN) PIPE. ALL RESIDENTIAL SANITARY SEWER LATERALS SHALL BE A MIN. 4" SDR 35 PVC PIPE WITH A 2% SLOPE MINIMUM UNLESS OTHERWISE SHOWN.
9. ALL WATER MAINS SHALL BE MIN. OF 8" THICK CLASS 50 OR PRESSURE CLASS 350 DUCTILE IRON PIPE WITH POLYETHYLENE ENCASEMENT WRAPPED IN (8 MIL VISQUEEN) OR DR 18 C900 PIPE UNLESS OTHERWISE SHOWN. ALL 4"/6" FIRE SPRINKLER LINES SHALL BE DIP OR DR 18 C900 PIPE.
10. ALL CONSTRUCTION SHALL CONFORM TO AWWA C–600. MINIMUM COVER OVER THE WATER MAIN SHALL BE 42" WITH TRACE WIRE AND WARNING TAPE.
11. THE CITY OF ELKO UTILITY DEPARTMENT SHALL BE CONTACTED TO PERFORM ALL TAPS ONTO CITY OF ELKO UTILITIES.
12. 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.
13. ALL WATER SERVICE LINES SHALL BE 2" IRON PIPE SIZE (IPS) RATED 200 PSI POLYETHYLENE DR11 UNLESS SHOWN OTHERWISE.
14. 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".
15. BEFORE BEING CERTIFIED BY AN ENGINEER OR ACCEPTED BY THE CITY OF ELKO, PRESSURE TESTING SHALL BE PERFORMED PRIOR TO FLUSHING, DISINFECTION AND SAMPLING, AS WELL AS ALL PROCEDURES TO BE ACCEPTED & APPROVED BY BOTH THE WATER SYSTEM AND THE BSDW.
16. 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) AND INSPECTED BY THE CITY OF ELKO.
17. BEFORE BEING CERTIFIED BY AN ENGINEER OR ACCEPTED BY THE CITY OF ELKO, ACCPTABLE RESULTS OF THE COLIFORM TESTING BE OBTAINED EVERY 1200 FT OF WATER MAIN AND AT EVERY DEAD END. ALL COLIFORM TESTING RESULTS SHALL BE SUBMITTED TO THE BSDW BEFORE AUTHORIZATION WILL BE GIVEN TO PLACE THE CONSTRUCTED PART INTO SERVICE.
18. BEFORE BEING CERTIFIED BY AN ENGINEER OR ACCEPTED BY THE CITY OF ELKO, CONSTRUCTION WORK NEEDS TO BE PERFORMED IN SUBSTANTIAL COMPLIANCE WITH BSDW APPROVED DOCUMENTS.
19. ALL WORK AND OPENINGS ON SITE MUST BE SEALED AT THE END OF EACH WORK DAY.
20. GRADING AROUND BUILDINGS TO BE DONE IN A MANNER AS TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING IN ACCORDANCE WITH CITY OF ELKO REQUIREMENTS.
21. LAND GRADING SHALL BE DONE IN A METHOD TO PREVENT DUST FROM TRAVERSING THE PROPERTY LINE.
22. WATER METERS SHALL BE INSTALLED DURING ANY DEVELOPMENT AND PRIOR TO THE ISSUANCE OF CERTIFICATE OF OCCUPANCY FOR THE BUILDING SHOWN OR SUBSEQUENT DIVISION OF THE PARCELS SHOWN. WATER AND SEWER THROUGHOUT THE DEVELOPMENT WILL BE DEDICATED TO THE CITY OF ELKO UP TO THE WATER METER LOCATIONS. A BLANKET UTILITY EASEMENT SHALL BE GRANTED THROUGHOUT THE PARKING CORRIDOR.
23. ALL EXISTING UTILITY ADJUSTMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
24. ALL EXISTING ASPHALT REMOVAL AND REPLACEMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR
25. THE PRODUCTS AND MATERIALS THAT COME IN CONTACT WITH DRINKING WATER SHALL BE COMPATIBLE WITH DRINKING WATER AND CURRENTLY CERTIFIED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE/NATIONAL SANITATION FOUNDATION (ANSI/NSF) 61 STANDARD OR AND INDEPENDENT LABORATORY APPROVED BY NDEP. IN OTHER WORDS, THESE PRODUCTS SHALL NOT ONLY BE LEAD–FREE, BUT SHALL MEET THE NSF 61 AND NSF 372 STANDARDS.

STORMWATER POLLUTION PREVENTION NOTES

1) THE CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATE IN, THE PUBLIC RIGHTS OF WAYS OF THE CITY OF ELKO AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM WATER SYSTEM.
2) ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES (BMP) MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN THE CITY OF ELKO CONSTRUCTION SITE BEST MANAGEMENT PRACTICES HANDBOOK.
3) TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO STORM WATER GENERAL PERMIT NVS040000.
4) AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS AND ALL BMP's WEEKLY, PRIOR TO A FORECASTED RAIN EVENT AND WITHIN 24 HOURS AFTER ANY ACTUAL RAIN EVENT. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS FROZEN GROUND CONDITIONS OR SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO STORMWATER GENERAL PERMIT SMALL MS4 NVS040000.
5) ACCUMULATED SEDIMENT IN BMP's SHALL BE REMOVED AT REGULAR INTERVALS, WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT, AND PRIOR TO THE NEXT ANTICIPATED STORM EVENT. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 30 PERCENT OR MORE.
6) REFER TO CITY OF ELKO CONSTRUCTION SITE BEST MANAGEMENT PRACTICES HANDBOOK (PUBLISHED BY THE CITY OF ELKO, DATED DEC. 2015) FOR DETAILS OF ALL BMP'S SHOWN ON THIS PLAN.
7) THE BMP'S SHOWN ON THIS PLAN ARE SCHEMATIC ONLY. FINAL BMP SELECTION AND LOCATION SHALL BE DETERMINED BY THE SITE OPERATOR OR THE OWNER'S REPRESENTATIVE.
8) THE CONTRACTOR SHALL SUBMIT TO THE NEVADA DEPARTMENT OF ENVIRONMENTAL PROTECTION (NDEP) FOR STORM WATER DISCHARGE PERMIT. THE CONTRACTOR SHALL SIGN THE NOTICE OF INTENT FOR THE PROPOSED PROJECT.
9) ALL EROSION CONTROL MEASURES SHALL CONFORM TO THE GUIDELINES OUTLINED IN THE CITY OF ELKO CONSTRUCTION SITE BEST MANAGEMENT PRACTICE HANDBOOK 2005 EDITION. A COPY OF THIS MANUAL TO BE ON–SITE AT ALL TIMES.
10) ALL CONSTRUCTION SHALL CONFORM TO THE 2016 EDITION OF THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION." CONTRACTOR TO KEEP A COPY OF THE SPECIFICATION ON THE JOB SITE AT ALL TIMES

SLOPE STABILIZATION

1) ALL DISTURBBED SLOPES 2:1 OR STEEPER SHALL BE RIPRAPPED. RIPRAP SHALL BE RUN OF MINE OR UNSCREENED.
2) ALL SLOPES 3:1 OR LESS SHALL BE PLANTED AS FOLLOWS:
   a. HAND SPREAD ENTIRE SEEDED AREA.
   b. IRRIGATION IS TO MATCH THE AVAILABLE WATER HOLDING CAPACITY OF THE SOIL (AWC) FOR EACH SLOPE TAKING INTO ACCOUNT THE PLANT CONSUMPTIVE USE PLUS A FACTOR FOR IRRIGATION SYSTEM EFFICIENCY.
   c. PROVIDE TEMPORARY IRRIGATION UNTIL VEGETATION IS ESTABLISHED.
3) PROTECT EXISTING AND PROPOSED DRAINAGE INLETS DURING CONSTRUCTION IN ACCORDANCE WITH THE FOLLOWING DETAILS:
   a. STORMDRAIN INLET PROTECTION – (BMP DP–3)
   b. CATCH BASIN FILTERS (BMP– DP–4)
4) MAINTENANCE
   a. EXCLUDE FOOT TRAFFIC AS MUCH AS POSSIBLE DURING PLANT ESTABLISHMENT.
   b. AREAS THAT FAIL TO RESPOND OR BECOME DAMAGED SHOULD BE TREATED AGAIN USING SAME TREATMENT INITIALLY APPLIED
5) RECLAMATION SEED MIX (TOTAL 60 BULK POUNDS PER ACRE):

	SPECIES	BULK POUND PER ACRE
1.	BIG SAGEBRUSH	4.0
2.	RABBITBRUSH	4.0
3.	BITTERBRUSH	4.0
4.	INDIAN RICEGRASS	5.0
5.	GREAT BASIN WILDRYE	5.0
6.	COVER SHEEP FESCUE	10.0
7.	SODAR STREAMBANK WHEATGRASS	9.0
8.	ANNUAL RYEGRASS	15.0
9.	PURPLE SAGE (SALVIA DORII)	1.0
10.	FOUR WING SALTBRUSH	1.0

6) FERTILIZER
   16–16–8 400/ACRE
7) TOPSOIL AND VEGETATIVE STRIPPINGS SHALL BE STOCKPILED FOR REAPPLICATION TO ALL DISTURBED AREAS.
8) PLANTING MIX (A MIXTURE OF THE FOLLOWING COMPONENTS MEASURED BY VOLUME):
   a. 60% NATURAL SOIL
   b. 30% SOIL CONDITIONER / COMPOST
   10% AXIS SOIL CONDITIONER

EROSION CONTROL NOTES

1. ALL PUBLIC RIGHT OF WAYS LOCATED ADJACENT TO THE SITE (E.G. STREETS AND SIDEWALKS) MUST BE CLEANED DAILY OF ALL SEDIMENT OR WASTES THAT ORIGINATE FROM THE SITE.
2. BMPS IN ADDITION TO THOSE INDICATED IN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MAY BE REQUIRED IF THEY DO NOT MEET THE CITY OF ELKO PERFORMANCE STANDARDS.
3. TEMPORARY OR PERMANENT STABILIZATION MUST BE APPLIED NO LATER THAN 14 DAYS TO ALL DISTURBED SOILS, INCLUDING STOCKPILES, WHERE CONSTRUCTION ACTIVITY HAS CEASED.
4. ALL BMPS MUST BE INSPECTED WEEKLY, PRIOR TO FORECASTED RAIN EVENTS, AND WITHIN 24 HOURS AFTER ANY EVENT THAT CREATES RUNOFF AT THE SITE.
5. ACCUMULATED SEDIMENT MUST BE REMOVED FROM BMP'S WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 30 PERCENT OR MORE. SEDIMENT MUST ALSO BE REMOVED WITHIN SEVEN DAYS AFTER A RUNOFF EVENT OR PRIOR TO THE NEXT FORECASTED EVENT, WHICHEVER IS EARLIER.
6. ALL BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE IN ACCORDANCE WITH THE "CITY OF ELKO CONSTRUCTION SITE BEST MANAGEMENT PRACTICES HANDBOOK", DATED DECEMBER 2015, AND AVAILABLE THROUGH THE CITY OF ELKO.
7. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL HAVE IN PLACE ALL NECESSARY BEST MANAGEMENT PRACTICES THAT SHALL BE USED TO MINIMIZE DUST, PREVENT EROSION, AND PREVENT POLLUTION LADEN RUNOFF FROM ENTERING THE ADJACENT STORM DRAIN FACILITIES. THE CONTRACTOR SHALL MAINTAIN, REPAIR, REPLACE, SUBSTITUTE, OR SUPPLEMENT BMP'S AT THE CONSTRUCTION SITE AS CONDITIONS WARRANT DURING CONSTRUCTION. BMP'S MAY INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING BMP'S: (1) SILT FENCING OR STRAW WADDLES AT THE DOWNHILL LIMITS OF GRADING, (2) STABILIZED CONSTRUCTION SITE ENTRY/EXIT, (3) PERMANENT SLOPE RE–VEGETATION ON ALL DISTURBED AREAS, (4) INLET PROTECTION AT EXISTING CATCH BASINS, (5) STOCKPILE MANAGEMENT BMP'S, (6) DUST CONTROL BMP'S, (7) A CONCRETE WASHOUT AREA, AND (8) MEASURES TO PROTECT EXISTING NATIVE VEGETATION.

CONSTRUCTION SPECIFICATIONS

1. THE FIELD SURVEY, POWERLINE POLES, EASEMENTS AND EXISTING TOPOGRAPHY SHOWN ON THESE IMPROVEMENT PLANS HAVE BEEN PROVIDED BY SUMMIT ENGINEERING (PHONE NO. 775–738–8058) OF ELKO, NEVADA FOR THE OWNER, ARCHITECT, AND ENGINEER USE.
2. PROJECT STANDARD SPECIFICATIONS. ALL WORK RELATED TO THESE PROJECT IMPROVEMENTS SHALL BE EXECUTED AND COMPLETED IN ACCORDANCE WITH ALL STATE AND LOCAL STANDARDS REFERENCED ON THE PROJECT PLAN SHEETS AND THE PROJECT WRITTEN WORK SPECIFICATIONS. ALL SITE WORK CONSTRUCTION SHALL COMPLY WITH THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION", SPONSORED AND DISTRIBUTED BY THE REGIONAL TRANSPORTATION COMMISSION OF WASHOE COUNTY AND ADOPTED BY ELKO COUNTY, ELKO COUNTY, NEVADA FOR PUBLIC WORKS CONSTRUCTION. ALL CIVIL WORK SHALL COMPLY WITH THE APPLICABLE SECTIONS OF THESE SPECIFICATIONS UNLESS MODIFIED WITHIN THE WRITTEN CONTRACT WITH THE CONTRACTOR. THESE SPECIFICATIONS SHALL BE HEREAFTER REFERRED TO AS THE PROJECT "STANDARD SPECIFICATIONS". CONSTRUCTION DETAILS SHALL COMPLY WITH THE CONSTRUCTION DETAILS SHOWN IN THESE PLANS. CONSTRUCTION DETAILS NOT SHOWN SHALL BE IN ACCORDANCE WITH THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION, AS ADOPTED AND DISTRIBUTED BY ELKO COUNTY AND THE REGIONAL TRANSPORTATION COMMISSION OF WASHOE COUNTY, NEVADA.
3. CLEARING & GRUBBING AND REMOVAL OF MATERIALS. CLEARING & GRUBBING SHALL CONSIST OF REMOVING ALL BRUSH, GRASS, TOPSOIL MATERIALS AND OTHER NATURAL OR OBJECTIONABLE MATERIAL FROM THE CONSTRUCTION LIMITS PRIOR TO SUBGRADE PREPARATION. CLEARING & GRUBBING SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 300 CLEARING & GRUBBING OF THE REFERENCED STANDARD SPECIFICATIONS.
4. STORMWATER AND EROSION CONTROL. THE CONTRACTOR SHALL MAINTAIN AN EROSION CONTROL PROGRAM ON SITE AT ALL TIMES THAT MEETS, OR EXCEEDS, ELKO COUNTY AND THE STATE OF NEVADA REQUIREMENTS. THIS SHALL INCLUDE THE PLACEMENT OF SILT FENCE AROUND THE PERIMETER OF THE JOBSITE AND THE PLACEMENT OF HAY BALES AND VEHICLE MUD TRACKOUT PREVENTION MEASURES AT INGRESS AND EGRESS LOCATIONS ON THE JOBSITE. THE CONTRACTOR SHALL DESIGNATE A LOCATION ON SITE TO CONSTRUCT A CONCRETE WASHOUT PIT FOR READYMIX CONCRETE CLEANUP. AT THE COMPLETION OF WORK THE CONCRETE CLEANUP PIT SHALL BE REMOVED FROM THE SITE. A CLEAN JOBSITE SHALL BE MAINTAINED BY THE CONTRACTOR. A STORMWATER DISCHARGE PERMIT, FROM THE STATE OF NEVADA AND ELKO COUNTY IS REQUIRED ON ALL CONSTRUCTION WORK SITES THAT EXCEED 1.0 ACRES IN SIZE. THE WORK SITE FOR THIS PROJECT IS APPROXIMATELY 46.00 ACRES±.
5. DUST CONTROL PROGRAM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A DUST CONTROL PROGRAM ON SITE AT TIMES. THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO ENSURE THAT AIRBORN DUST DOES NOT LEAVE THE JOBSITE.
6. UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL UNDERGROUND UTILITIES AT ALL TIMES DURING CONSTRUCTION. THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THE PROJECT DRAWINGS ARE APPROXIMATE AND BASED ON EXISTING RECORDS AND FIELD SURVEYS. THE CONTRACTOR SHALL CALL 1–800–227–2600 "USA CALL BEFORE YOU DIG" FOR UTILITY FIELD LOCATIONS PRIOR TO COMMENCING EXCAVATION ON SITE. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE FOLLOWING UTILITY COMPANIES:
   ELECTRIC POWER .... NV ENERGY
   NATURAL GAS .... SOUTHWEST GAS CORPORATION, WELLS PROPANE
   TELEPHONE .... FRONTIER TELEPHONE COMPANY
   FIBER OPTIC COMMUNICATION LINES .... ANTHEM, CC COMMUNICATION, FRONTIER TELEPHONE AND OTHER OPERATORS
   CABLE TV .... ZITO MEDIA
7. SUBGRADE PREPARATION, EXCAVATION AND FILL. SUBGRADE SOILS SHALL BE PROPERLY PROCESSED BY MOISTURIZING AND COMPACTING THE SUBGRADE SOIL TO A MINIMUM OF 90% MAXIMUM DRY DENSITY IN ACCORDANCE WITH TEST METHOD ASTM D 1557. FILL SOIL SHALL ALSO BE PROPERLY MOISTURIZED AND COMPACTED TO A MINIMUM OF 90% MAXIMUM DRY DENSITY IN ACCORDANCE WITH TEST METHOD ASTM D 1557. EARTHWORK SHALL COMPLY WITH SECTION 302 SUBGRADE PREPARATION, SECTION 303 UNCLASSIFIED EXCAVATION, SECTION 304 UNCLASSIFIED FILL, AND SECTION 305 TRENCH EXCAVATION AND BACKFILL OF THE PROJECT STANDARD SPECIFICATIONS.
8. WATER DISTRIBUTION PIPE, SANITARY SEWER PIPE, AND STORM DRAIN MATERIALS. ALL WATER PIPE, SANITARY SEWER PIPE, AND STORM DRAIN MATERIALS INSTALLED SHALL BE IN ACCORDANCE WITH ELKO COUNTYAND ELKO COUNTY STANDARDS AND SHALL MEET THE REQUIREMENTS OF SECTION 203.00 NON–PRESSURE AND PRESSURE PIPE OF THE REFERENCED PROJECT STANDARD SPECIFICATIONS AS ADOPTED FOR PUBLIC WORKS CONSTRUCTION BY ELKO COUNTY AND ELKO COUNTY, NEVADA. WATER PIPE MATERIALS ARE SHOWN ON PLAN SHEET C–6. INSTALLATION OF BURIED WATER, SANITARY SEWER AND STORM DRAIN PIPE MATERIALS SHALL BE DONE AS SPECIFIED IN SECTION 306 STORM DRAIN, CULVERTS, AND SANITARY SEWER CONSTRUCTION AND SECTION 307 DOMESTIC WATER AND IRRIGATION SYSTEMS OF THE PROJECT STANDARD SPECIFICATIONS. UNDERGROUND WATER AND SEWER PIPING SHALL ALSO COMPLY WITH THE LATEST ADOPTED EDITION OF THE UNIFORM PLUMBING CODE. SANITARY SEWER PIPE SHALL BE SDR–35 GRAVITY SEWER PIPE AND SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE PROJECT PLANS. ABS OR PVC PRESSURE PIPE SHALL BE USED WHERE PROPER SEPARATION BETWEEN POTABLE WATER LINES AND SANITARY SEWER LINES CANNOT BE MAINTAINED. WATER PIPE 4–INCHES IN DIAMETER TO 12–INCHES IN DIAMETER SHALL MEET THE MINIMUM REQUIREMENTS OF STANDARD ANSI/AWWA C900 (DR 18). ALL FITTINGS SHALL BE DUCTILE IRON. PVC WATER PIPE SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD ANSI/AWWA C605 – UNDERGROUND INSTALLATION OF PVC PRESSURE PIPE FOR WATER. WATER SERVICE PIPE SHALL BE POLYETHYLENE WATER SERVICE PIPE , IRON PIPE SIZE (CTS), WITH A MINIMUM WORKING PRESSURE OF 200–PSI. CONSTRUCTION SHALL COMMENCE UPON APPROVAL OF THE CONSTRUCTION PLANS BY ELKO COUNTY.
9. AGGREGATE BASE MATERIAL. AGGREGATE BASE MATERIAL SHALL BE OF THE CLASSIFICATION SHOWN ON THE PLANS AND SHALL BE PLACED TO THE COMPACTED THICKNESSES SHOWN . AGGREGATE BASE SHALL BE MOISTURIZED, SPREAD, AND COMPACTED IN MAXIMUM LIFT THICKNESSES OF 8–INCHES. MINIMUM COMPACTION REQUIREMENTS ARE 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH TEST METHOD ASTM D 1557. ALL AGGREGATE BASE MATERIAL, INCLUDING TYPE 2, CLASS B, AGGREGATE BASE, AND TYPE 1, CLASS A, AGGREGATE BASE SHALL MEET THE MATERIAL REQUIREMENTS SPECIFIED IN SECTION 200 AGGREGATES FOR BASE COURSES OF THE STANDARD SPECIFICATIONS. PLACEMENT OF AGGREGATE BASE MATERIAL SHALL BE AS SPECIFIED IN SECTION 308 AGGREGATE BASE COURSES OF THE PROJECT STANDARD SPECIFICATIONS.
10. CONCRETE CURB & GUTTERS, VALLEY GUTTERS, SIDEWALK AND APPROACH SLABS. AGGREGATES FOR CONCRETE SHALL COMPLY WITH SECTION 200 AGGREGATES OF THE PROJECT STANDARD SPECIFICATIONS. CEMENT AND OTHER ADMIXTURES SHALL COMPLY WITH SECTION 202 CEMENT AND RELATED MATERIALS. ALL CONCRETE SHALL BE AIR ENTRAINED WITH A MINIMUM STRENGTH OF 4,000–PSI AT 28–DAYS. CONCRETE MIX DESIGNS SHALL BE PROVIDED TO THE ENGINEER, ARCHITECT AND OWNER AND SHALL BE CURRENT. MIX DESIGNS SHALL BE AS SPECIFIED IN THE PROJECT STANDARD SPECIFICATIONS FOR THE TYPE OF WORK. CONCRETE SHALL BE PLACED, FINISHED AND CURED IN ACCORDANCE WITH SECTION 311 CONCRETE STRUCTURES AND MASONRY CONSTRUCTION AND SECTION 312 CONCRETE CURBS, GUTTERS, WALKS, DRIVEWAYS, AND ALLEY RETURNS OF THE PROJECT STANDARD SPECIFICATIONS.
11. PLANTMIX BITUMINOUS PAVEMENT, PRIME COATS, SEAL COATS, AND ASPHALTIC MATERIALS. AGGREGATES FOR BITUMINOUS PAVEMENT SHALL BE AS SPECIFIED IN SECTION 200 AGGREGATES OF THE PROJECT STANDARD SPECIFICATIONS. ASPHALT CEMENTS AND BITUMINOUS MATERIALS SHALL MEET THE REQUIREMENTS OF SECTION 201 BITUMINOUS MATERIALS OF THE PROJECT STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A MIX DESIGN FOR APPROVAL PRIOR TO PLACEMENT OF BITUMINOUS PAVING MATERIALS. PLANTMIX BITUMINOUS PAVEMENT AGGREGATE SHALL BE TYPE 2 ON CITY ROADS AND TYPE 3 IN PARKING AREAS, UNLESS OTHERWISE SPECIFIED OR APPROVED. LIQUID ASPHALT AND EMULSIFIED ASPHALT PRIME COAT SHALL BE PLACED IN ACCORDANCE WITH SECTION 315 PRIME COAT OF THE STANDARD SPECIFICATIONS. TACK COAT AND SEAL COAT SHALL BE PLACED IN ACCORDANCE WITH SECTION 316 TACK COAT AND SECTION 317 SEAL COAT. PLANTMIX BITUMINOUS PAVEMENT SHALL BE DELIVERED, PLACED AND COMPACTED WITHIN SPECIFIED TOLERANCES IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN SECTION 320 PLANTMIX BITUMINOUS PAVEMENT OF THE PROJECT STANDARD SPECIFICATIONS.
12. ROCK RIPRAP, EROSION CONTROL ROCK, AND ROCK LANDSCAPING MATERIAL. ROCK RIPRAP SHALL BE AS SHOWN ON THE PROJECT DRAWINGS. RIRAP MATERIAL SHALL BE AS SPECIFIED IN SUBSECTION 200.07 RIPRAP OF THE PROJECT STANDARD SPECIFICATIONS. RIPRAP AND LANDSCAPING ROCK FOR EROSION CONTROL SHALL MEET THE SIZE AND CONSISTENCY REQUIREMENTS SHOWN ON THE PLANS.
13. ALL ELEVATIONS SHOWN ON THE CONSTRUCTION PLANS ARE TO THE FINISH GRADE ELEVATION OF THE MATERIAL COURSES INDICATED ON THE PLAN DRAWINGS. BURIED UTILITY LINE ELEVATIONS SHALL BE NOTED AS EITHER TOP OF PIPE OR INVERT ELEVATION (PIPE FLOWLINE). THE CONTRACTOR SHALL VERIFY UTILITY LINE LOCATIONS AND PROTECT ALL EXISTING AND NEW UTILITY LINES.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AN ADEQUATE SAFETY PROGRAM DURING ALL CONSTRUCTION WORK ON THE PROJECT SITE. MINIMUM SAFETY STANDARDS TO BE MET ON THE JOB SHALL EXCEED THOSE MINIMUM STANDARDS ESTABLISHED BY THE FEDERAL GOVERNMENT (OSHA), THE STATE OF NEVADA AND THE LOCAL GOVERNING AUTHORITY. THE CONTRACTOR SHALL BE AWARE THAT ALL CURRENT MSHA AND SITE SPECIFIC TRAINING AND SAFETY REQUIREMENTS SHALL BE ADHERED TO WHEN WORK IS CONDUCTED ON LOCAL MINING COMPANY PROPERTIES.
15. UPON COMPLETION OF WORK THE CONTRACTOR SHALL FINISH GRADE ALL DISTURBED AREAS AND CLEANUP ALL CONSTRUCTION DEBRIS. THE CONDITION OF THE WORK SITE SHALL BE LEFT IN A CLEAN CONDITION FREE OF ALL CONSTRUCTION DEBRIS. ALL DISTURBED AREAS SHALL BE REGRADED BY THE CONTRACTOR. UPON REGRADING AND CLEANUP ALL DISTURBED AREAS SHALL BE RESEEDED BY HARROWING AND BROADCAST SEEDING, OR BY HYDROSEEDING. THE SEED MIX TO BE APPLIED BY THE CONTRACTOR SHALL INCLUDE: CRESTED WHEAT – 5.0 LBS/ACRE, BIG BLUE GRASS – 0.5 LBS/ACRE, INDIAN RICEGRASS – 1.0 LBS/ACRE, AND BASIN WILDRYE – 4.5 LBS/ACRE FOR A TOTAL MIXED SEED MASS OF 11.0 LBS/ACRE.
16. CONTRACTOR AT ALL TIME SHALL MAINTAIN ON–SITE A SET OF AS–BUILT RED LINES PLANS WHICH ARE TO BE TURNED OVER TO THE ENGINEER OF RECORD FOR SUBMITTAL TO ELKO COUNTY IN ELECTRONIC FORM.

BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT™ ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

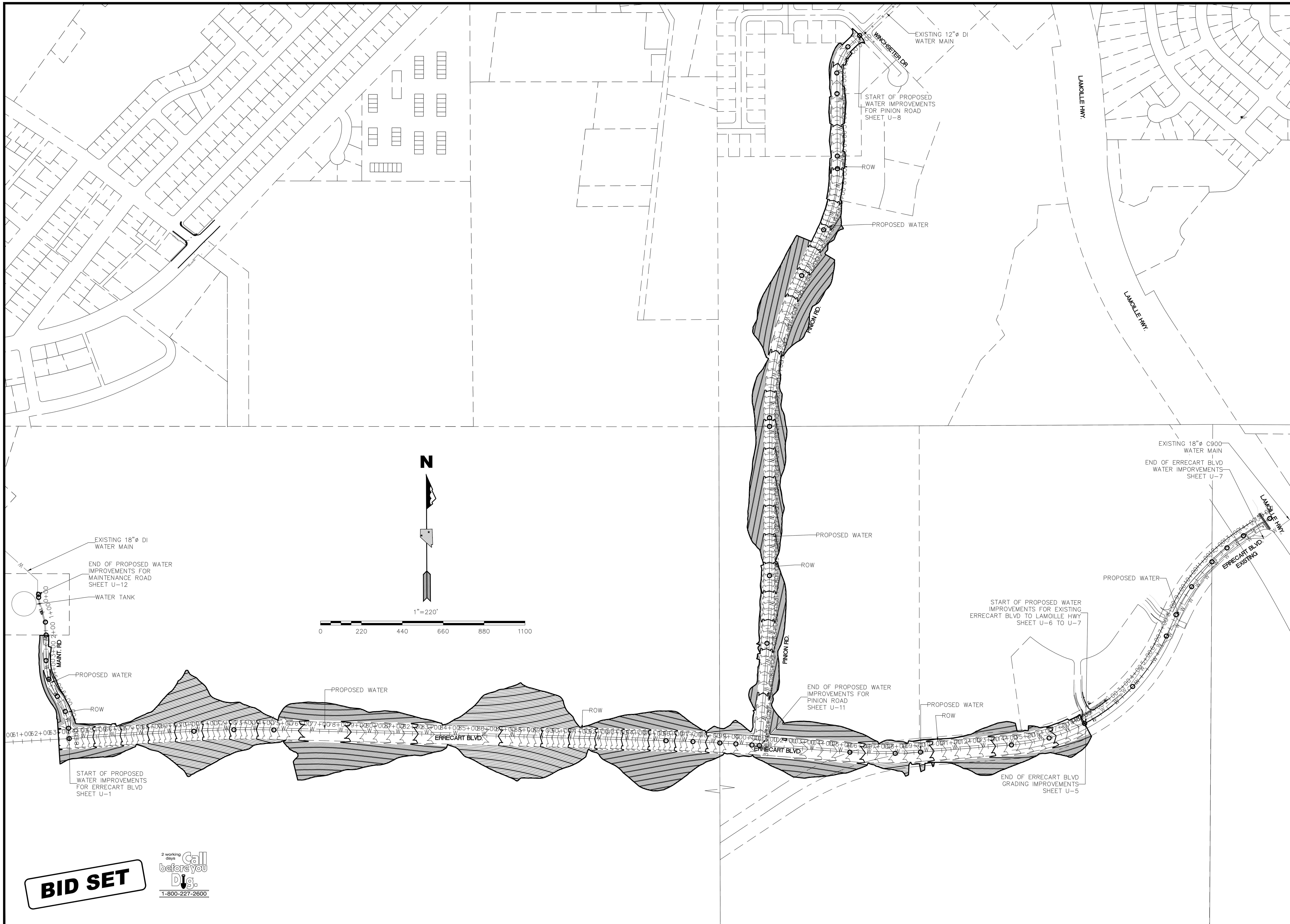
REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
NOTES SHEET
ELKO ELKO COUNTY NEVADA

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: NA
VERT: NA
JOB NO: 3-82787

PROFESSIONAL ENGINEER STATE OF NEVADA — NITIN I. BHAKTA — Exp. 12-31-24 — CIVIL — No. 15494 — 04-25-24

SHEET N-1 OF 49



SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR ERRECART BLVD. CONNECTOR

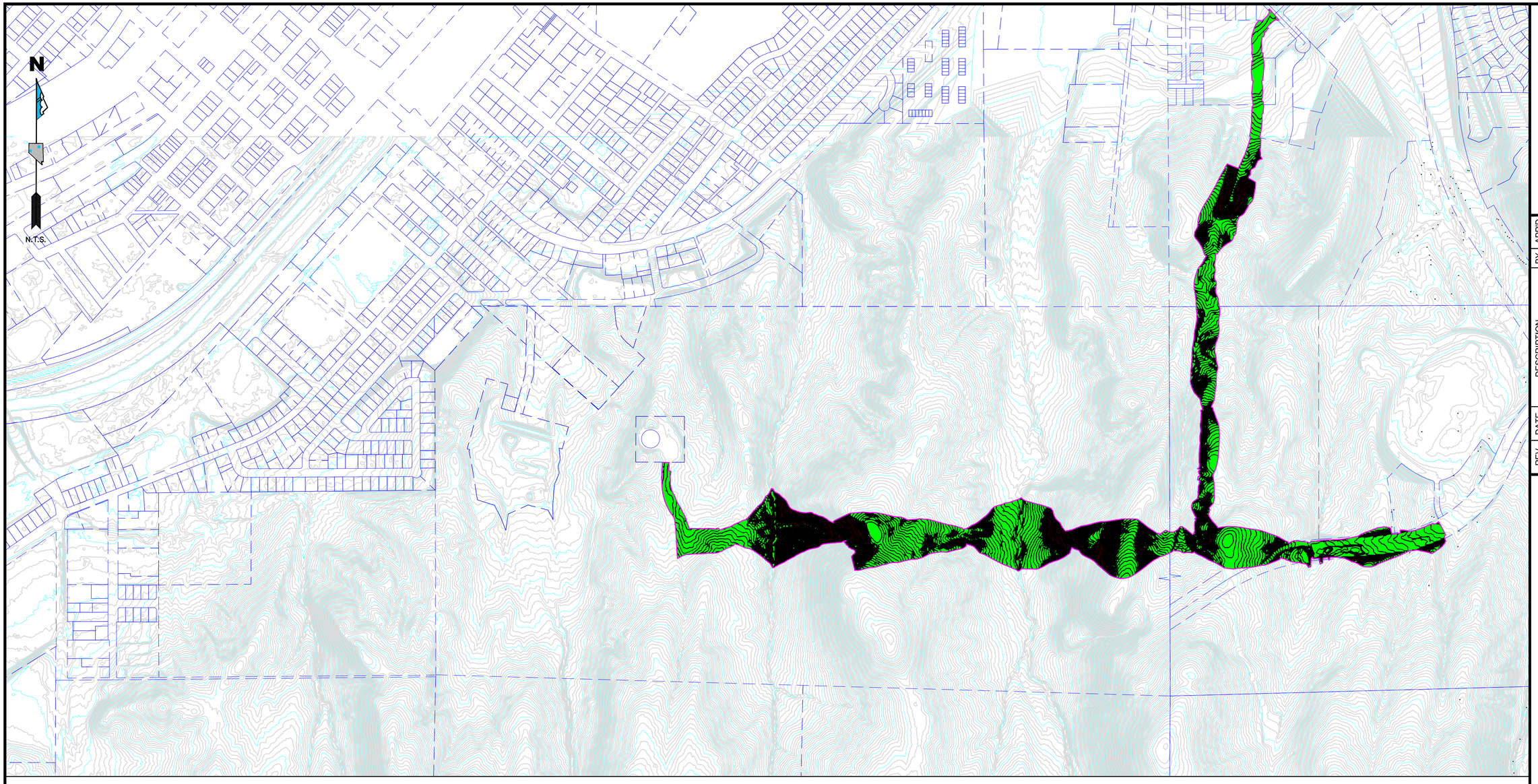
SITE PLAN

ELKO — ELKO COUNTY — NEVADA

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: NA
VERT: NA
JOB NO: 3-82787

PROFESSIONAL ENGINEER STATE OF NEVADA — NITIN BHAKTA — Exp. 12-31-24 — CIVIL — No. 15494 — 04-25-24

SHEET S-1 OF 49



Slopes Table				
Number	Minimum Slope	Maximum Slope	Area	Color
1	0.00%	15.00%	1098834.15	
2	15.00%	30.00%	726017.51	
3	30.00%	100.00%	179010.17	

SLOPE ANALYSIS SUMMARY

TOTAL EXISTING PRE-DEVELOPED 2D AREA (Sq. ft.)	2003861.83
PERCENTAGE OF PROPOSED AREA WITH EXISTING NATURAL SLOPES LESS THAN 15%.	54.84%
PERCENTAGE OF PROPOSED AREA WITH EXISTING NATURAL SLOPE RANGE 15% to 30%.	36.23%
PERCENTAGE OF PROPOSED AREA WITH EXISTING NATURAL SLOPES EXCEEDING 30%.	8.93%

BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

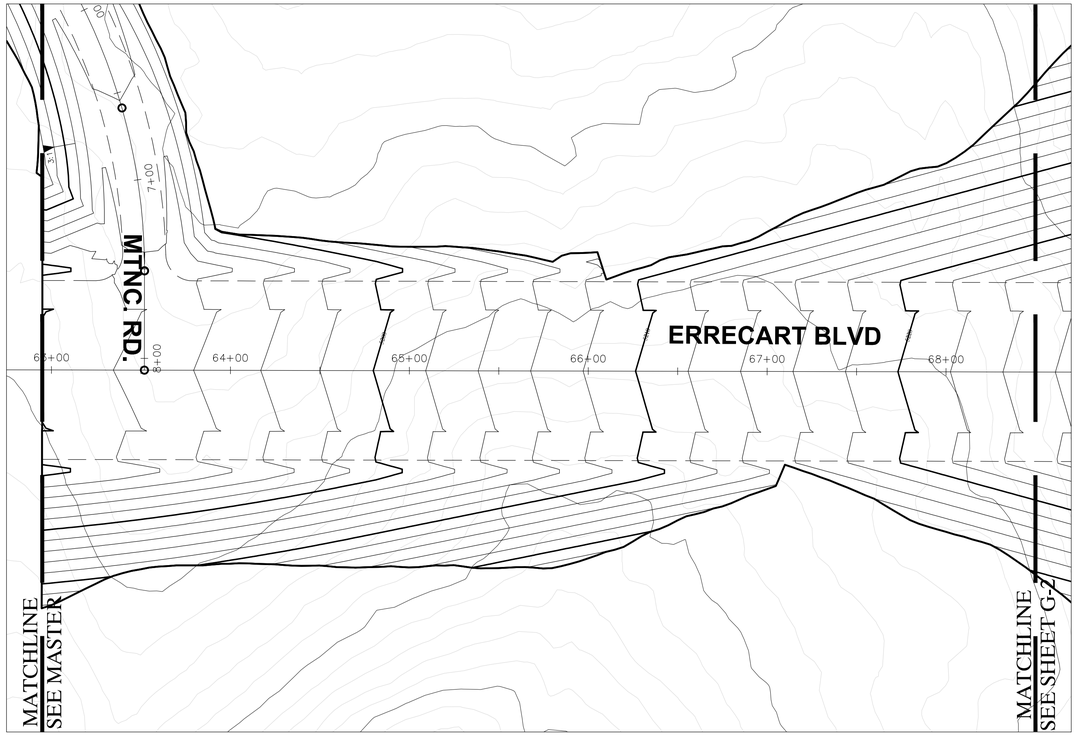
CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
SLOPE ANALYSIS
ELKO COUNTY
NEVADA

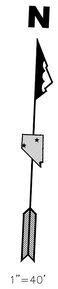
ELKO

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: N.T.S.
VERT: N.T.S.
JOB NO: 3-82787

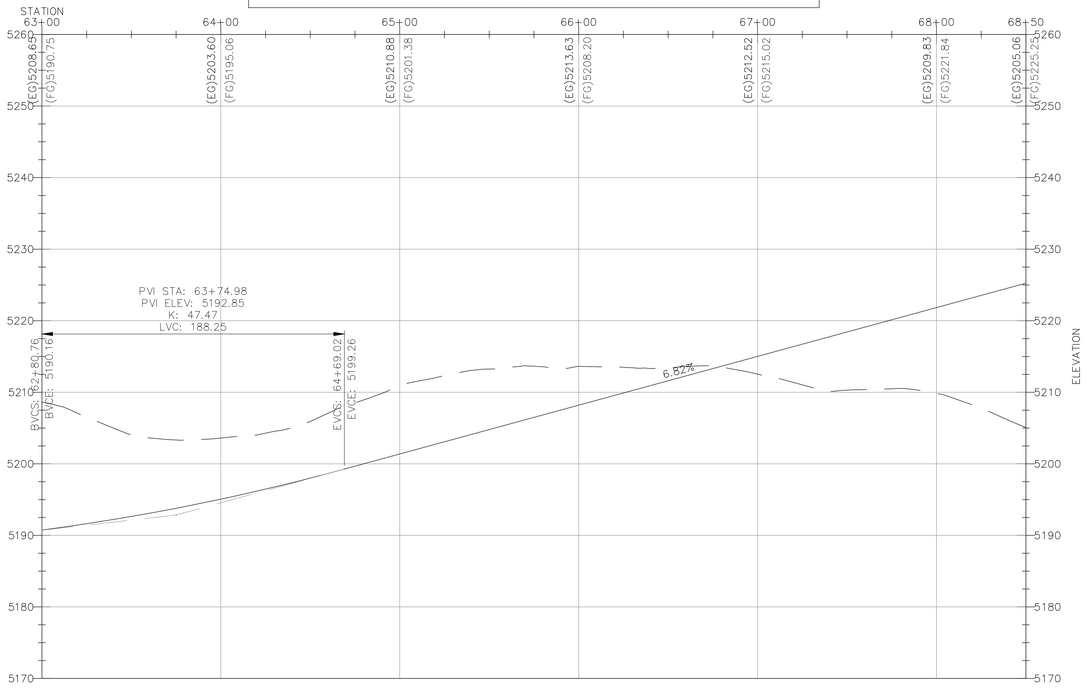
PROFESSIONAL ENGINEER STATE OF NEVADA
NIRAV I. BHAKTA
Exp. 12-31-24
CIVIL
No. 15494
04-25-24

SHEET SA-1 OF 49





ERRECART STA 63+00-68+50



BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
GRADING PLAN
ELKO COUNTY
NEVADA

ELKO

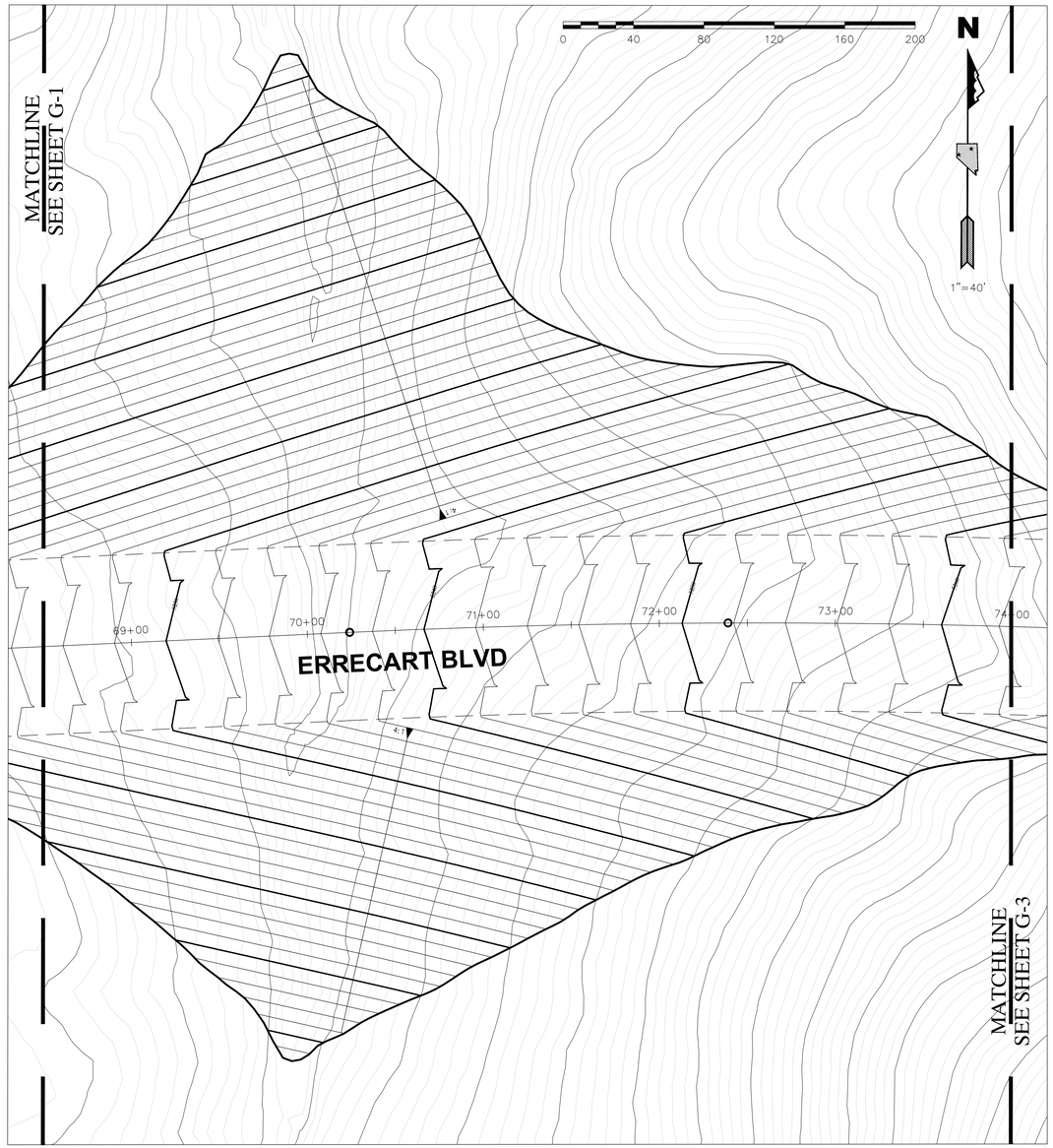
DESIGNED BY: NIB
CHECKED BY: NIB

SCALE
HORIZ: 1"=40'
VERT: 1"=10'

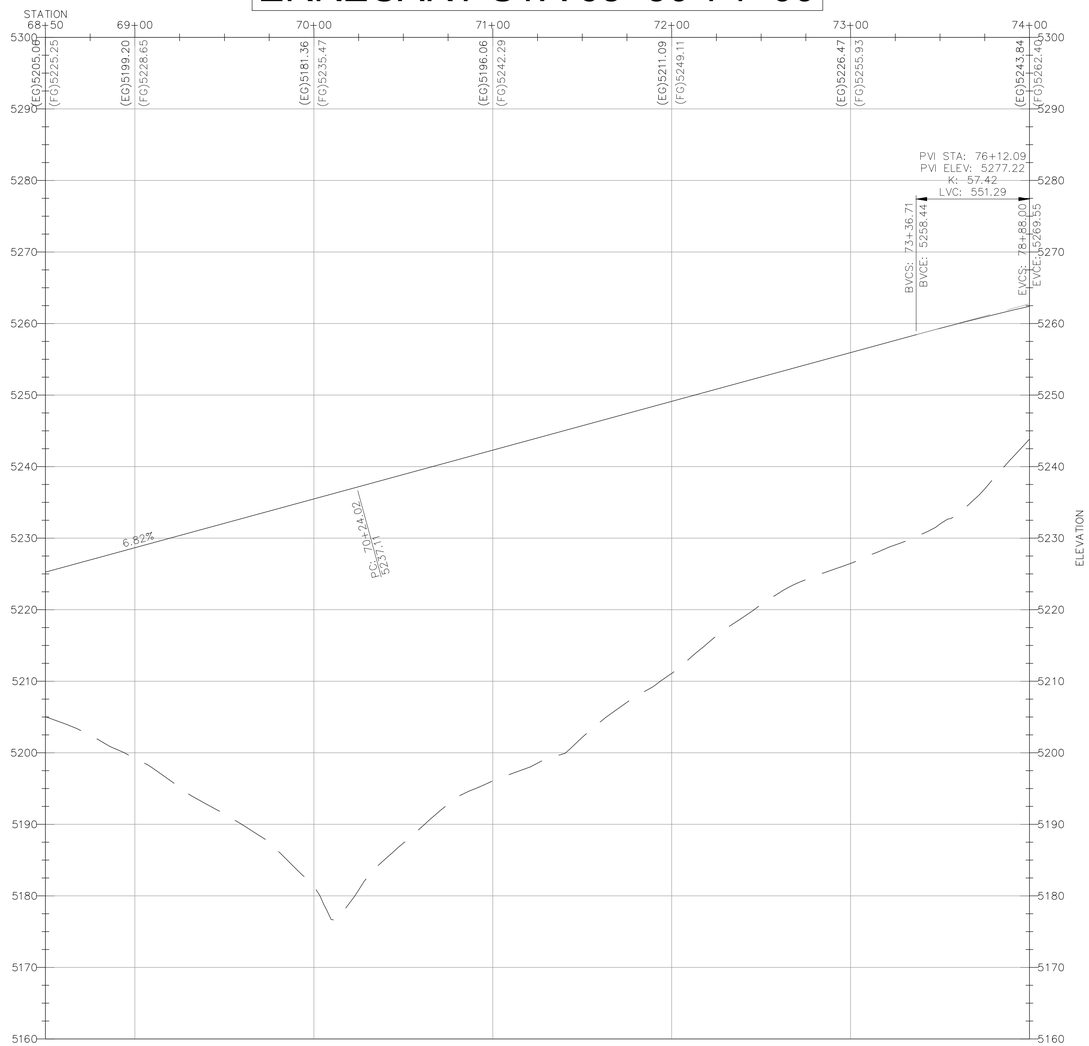
JOB NO: 3-82787

PROFESSIONAL ENGINEER
NITIN BHAKTA
Exp. 12-31-24
CIVIL
No. 15494
STATE OF NEVADA
04-25-24

SHEET G-1 OF 49



ERRECART STA 68+50-74+00



BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APPD

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
GRADING PLAN
ELKO COUNTY
NEVADA
ELKO

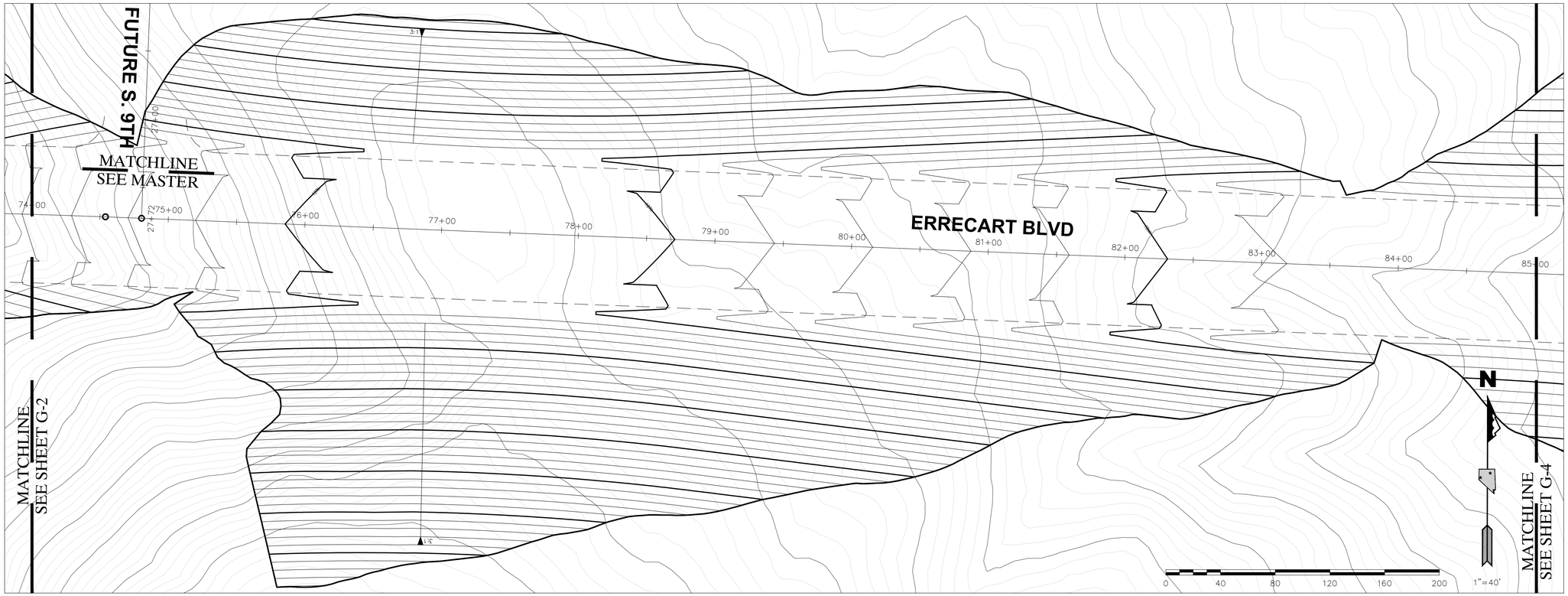
DESIGNED BY: NIB
CHECKED BY: NIB

SCALE
HORIZ: 1"=40'
VERT: 1"=10'

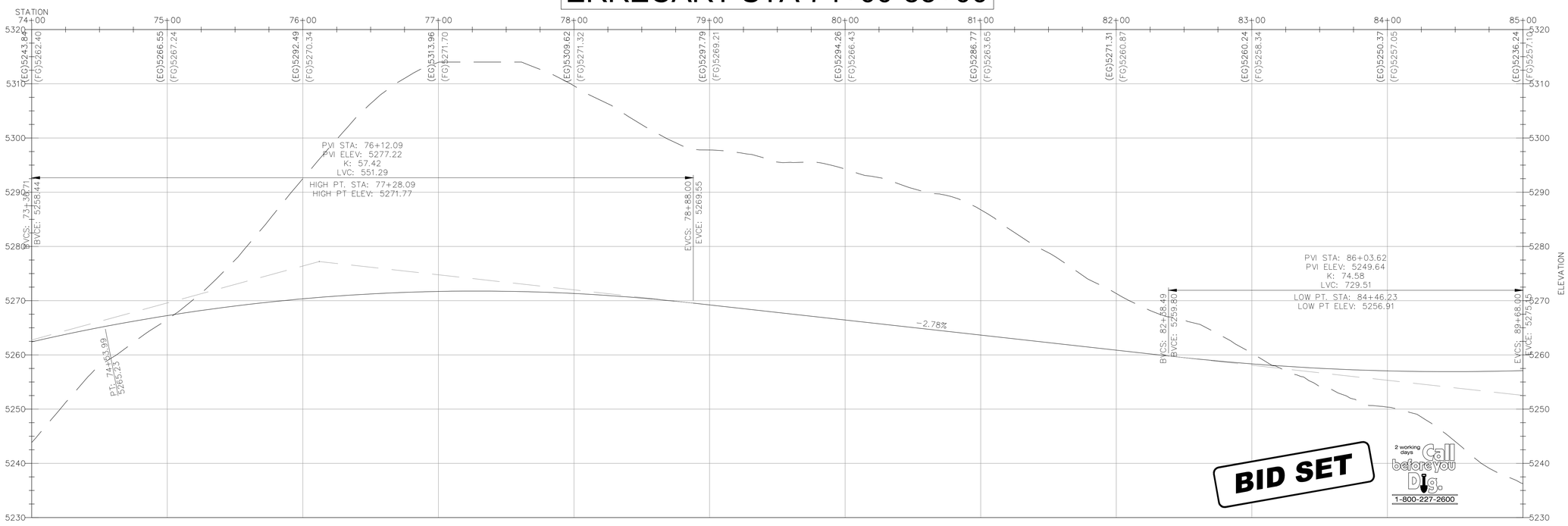
JOB NO: 3-82787

PROFESSIONAL ENGINEER
STATE OF NEVADA
No. 15494
BHAKTA
Exp. 12-31-24
CIVIL
04-25-24

SHEET G-2 OF 49



ERRECART STA 74+00-85+00



BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

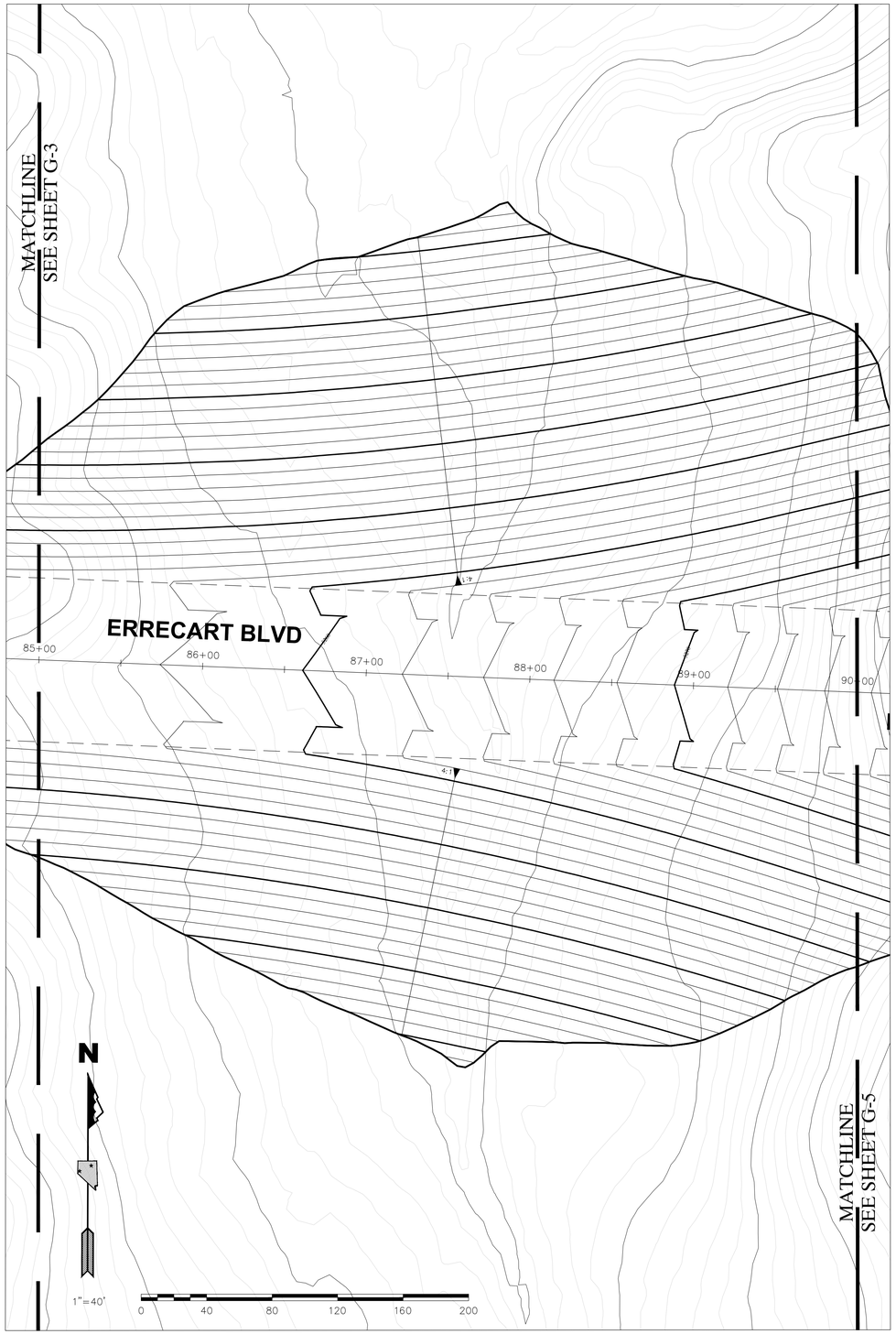
REV.	DATE	DESCRIPTION	BY	APPD

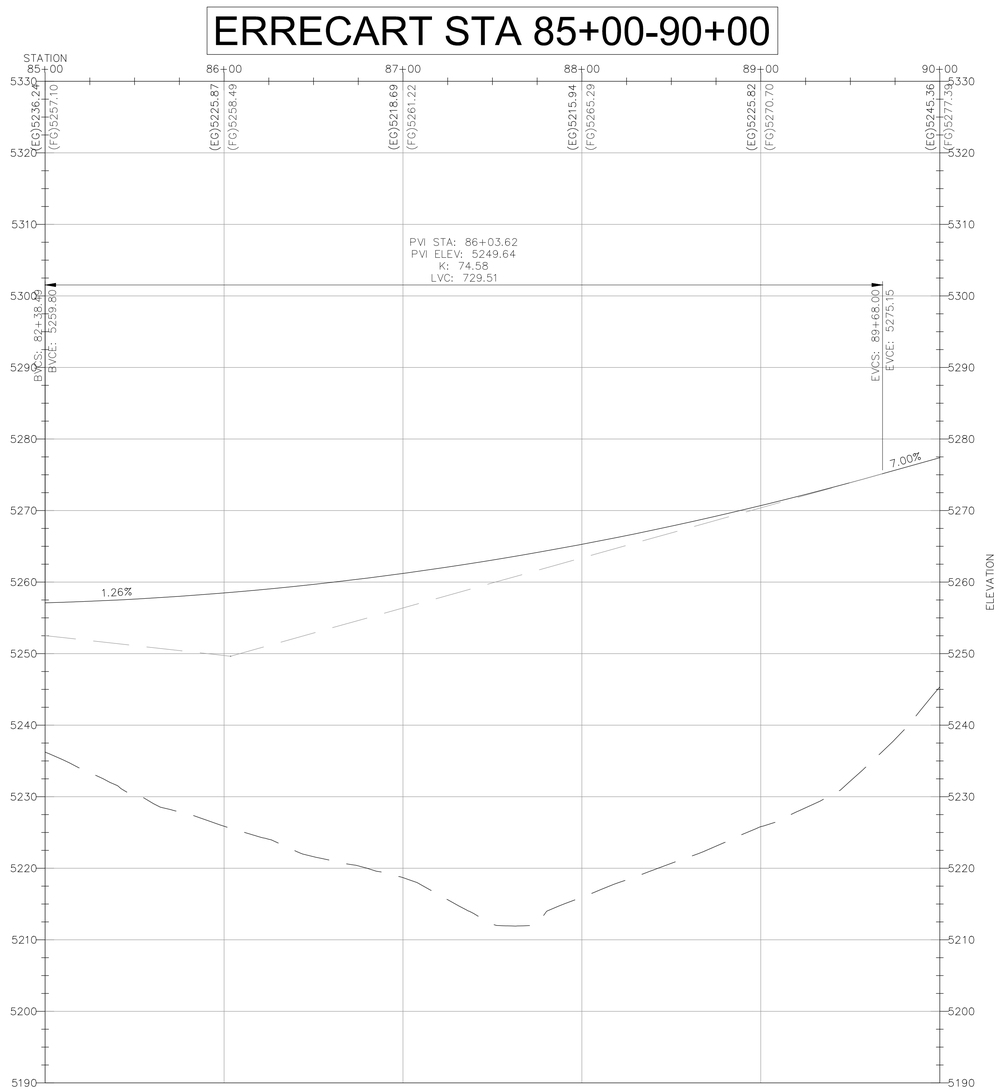
CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
GRADING PLAN
ELKO COUNTY
NEVADA
ELKO

DESIGNED BY:	NIB
CHECKED BY:	NIB
SCALE	
HORIZ:	1"=40'
VERT:	1"=10'
JOB NO:	3-82787

PROFESSIONAL ENGINEER — SUMIT BHAKTA — Exp. 12-31-24 — CIVIL — No. 15494 — STATE OF NEVADA
04-25-24

SHEET G-3 OF 49





BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APPD

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
GRADING PLAN
ELKO COUNTY
NEVADA
ELKO

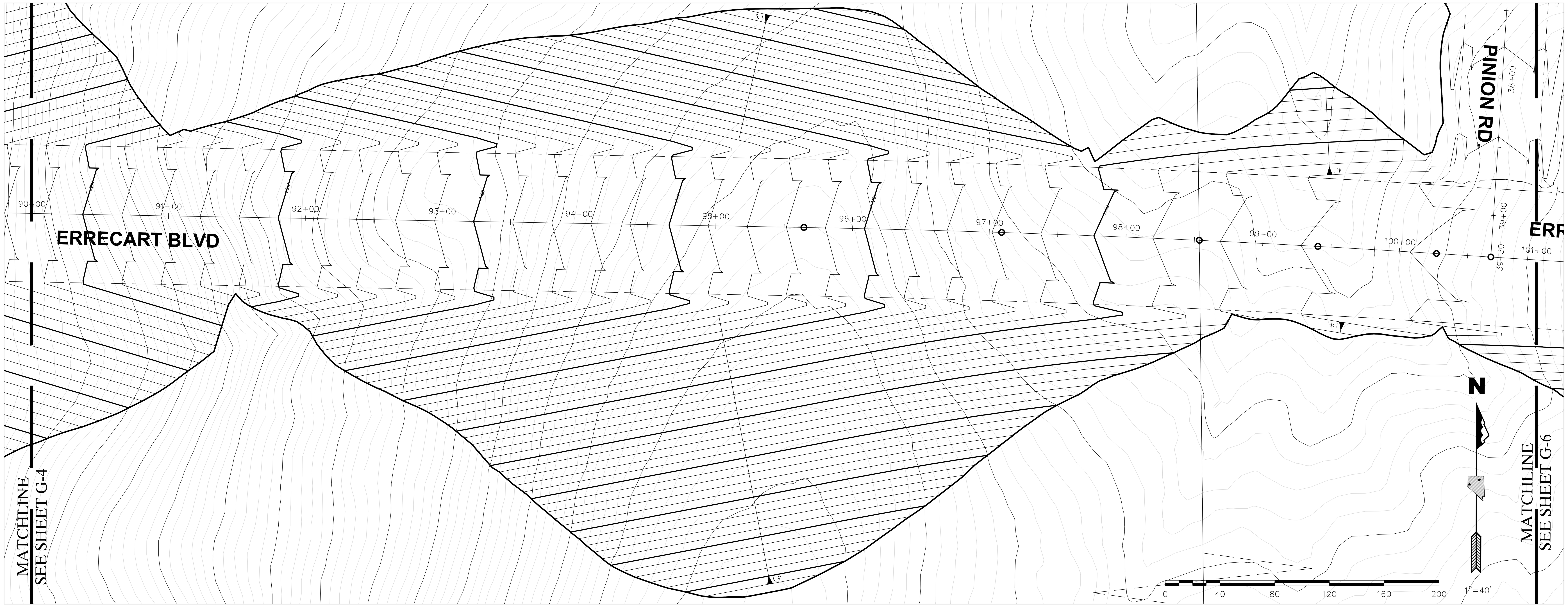
DESIGNED BY: NIB
CHECKED BY: NIB

SCALE
HORIZ: 1"=40'
VERT: 1"=10'

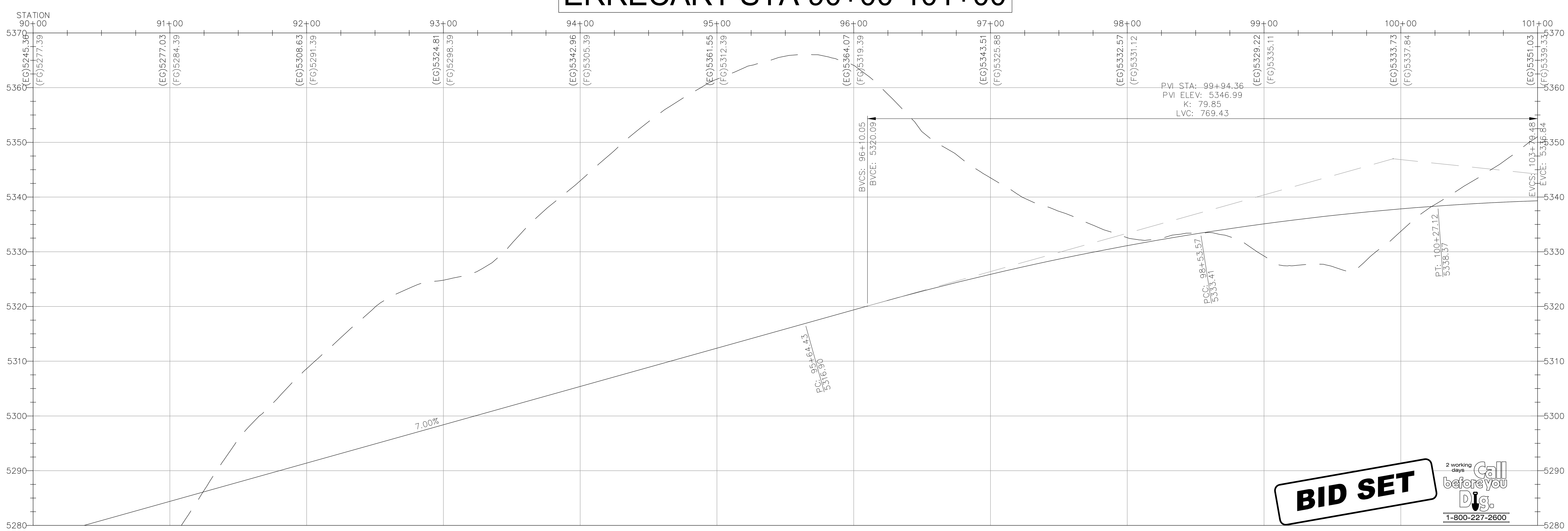
JOB NO: 3-82787

PROFESSIONAL ENGINEER
NIRAJ BHAKTA
Exp. 12-31-24
CIVIL
No. 15494
STATE OF NEVADA
04-25-24

SHEET G-4 OF 49



ERRECART STA 90+00-101+00



BID SET

2 working days
Call before you Dig
1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
GRADING PLAN
ELKO, ELKO COUNTY, NEVADA

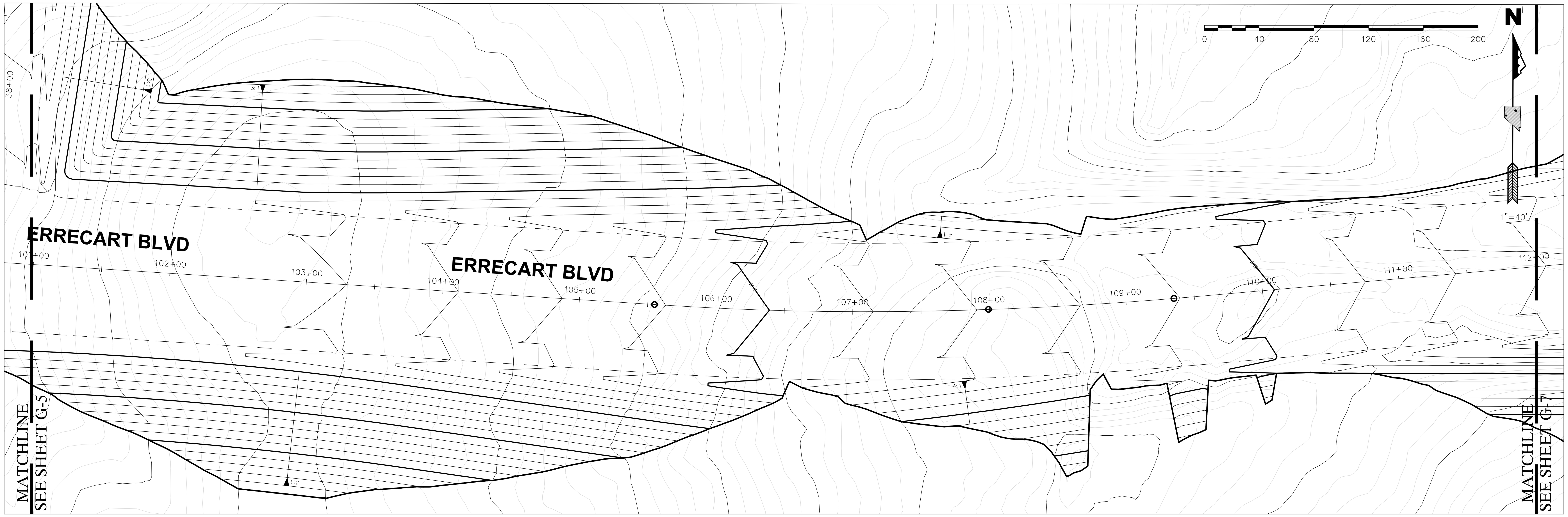
DESIGNED BY: NIB
CHECKED BY: NIB

SCALE
HORIZ: 1"=40'
VERT: 1"=10'

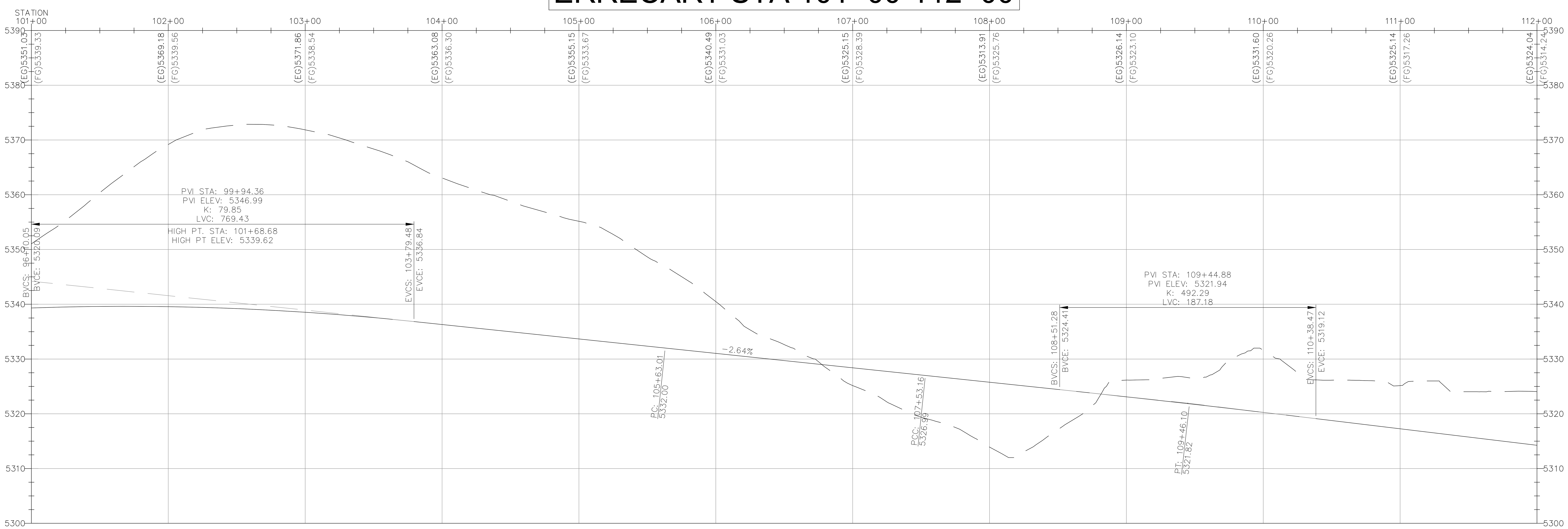
JOB NO: 3-82787

PROFESSIONAL ENGINEER, STATE OF NEVADA
NITIN I. BHAKTA
Exp. 12-31-24
CIVIL
No. 15494
04-25-24

SHEET
G-5 OF 49



ERRECART STA 101+00-112+00



BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
GRADING PLAN
ELKO — ELKO COUNTY — NEVADA

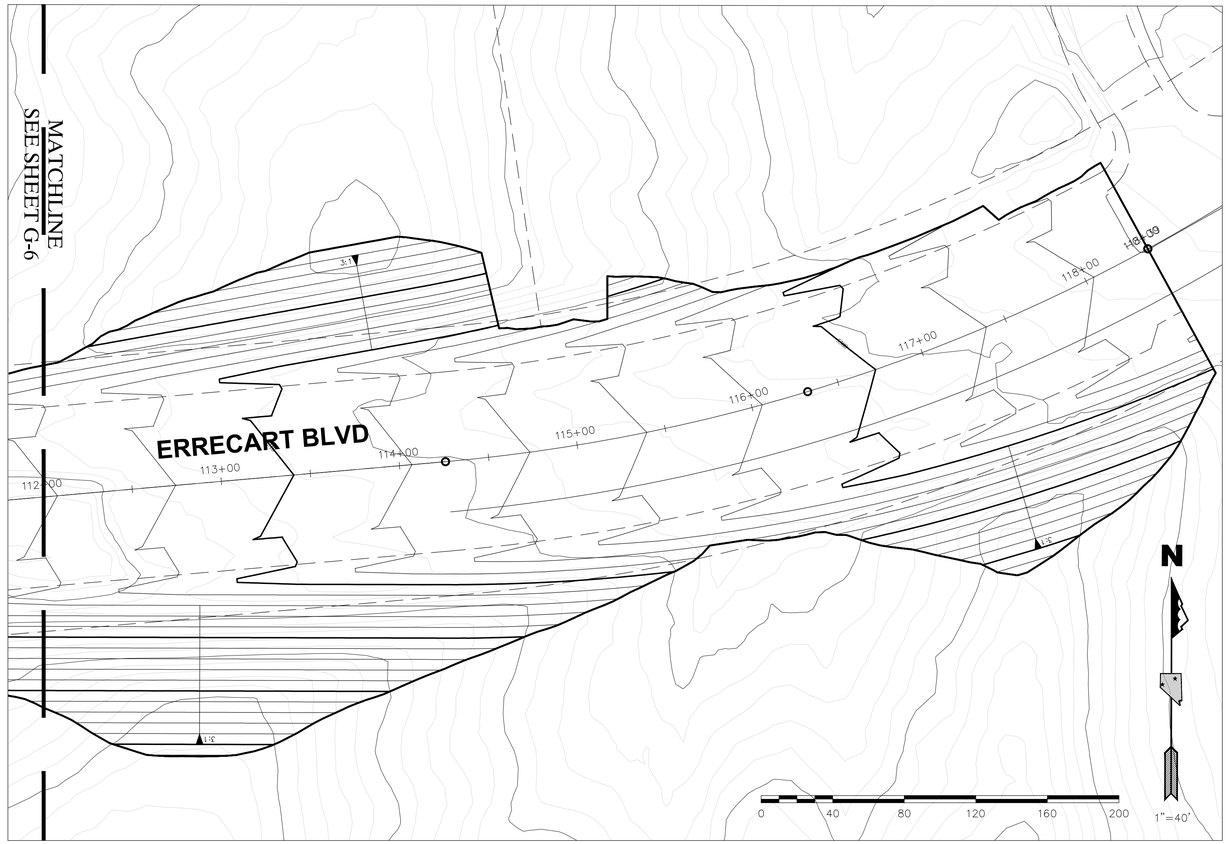
DESIGNED BY: NIB
CHECKED BY: NIB

SCALE
HORIZ: 1"=40'
VERT: 1"=10'

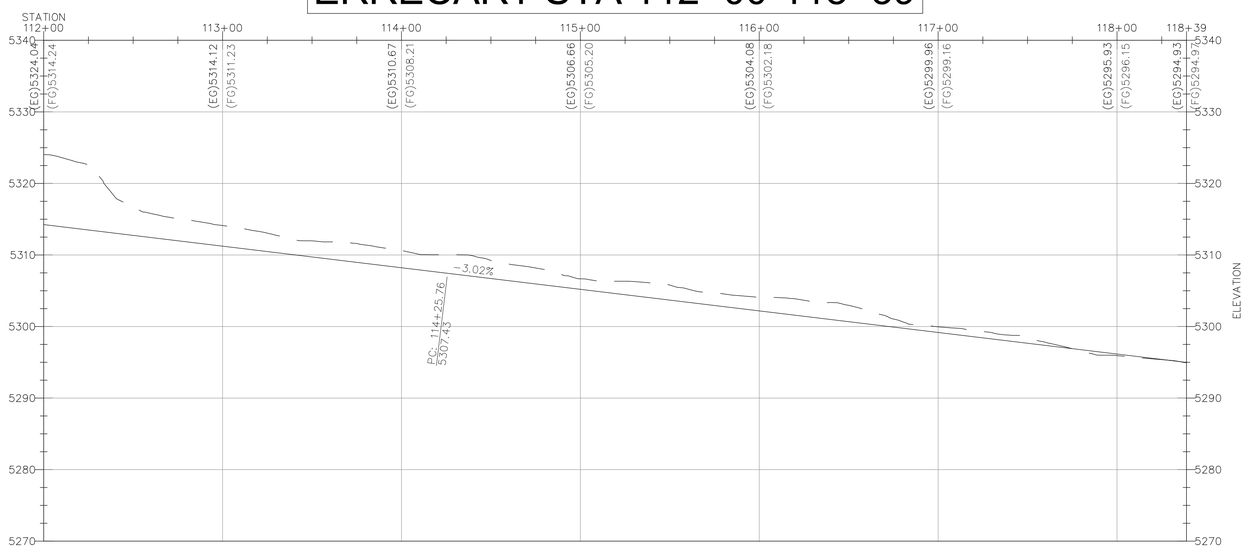
JOB NO: 3-82787

PROFESSIONAL ENGINEER — STATE OF NEVADA — NITIN I. BHAKTA — Exp. 12-31-24 — CIVIL — No. 15494 — 04-23-24

SHEET G-6 OF 49



ERRECART STA 112+00-118+39



BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

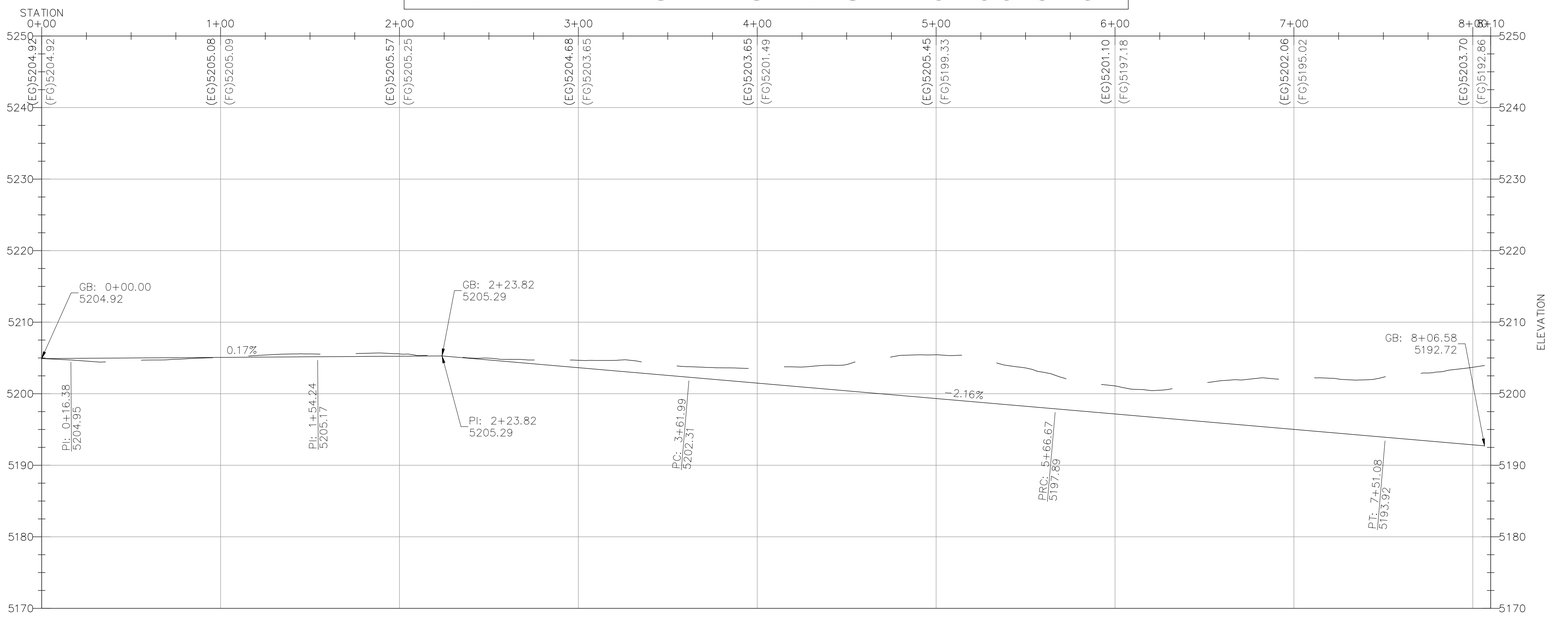
REV.	DATE	DESCRIPTION	BY	APPD

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
GRADING PLAN
ELKO COUNTY
NEVADA
ELKO

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: 1"=40'
VERT: 1"=10'
JOB NO: 3-82787

SHEET G-7 OF 49

MAINTENANCE ROAD STA 0+00-8+07



BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APPD

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
GRADING PLAN
ELKO COUNTY
NEVADA

ELKO

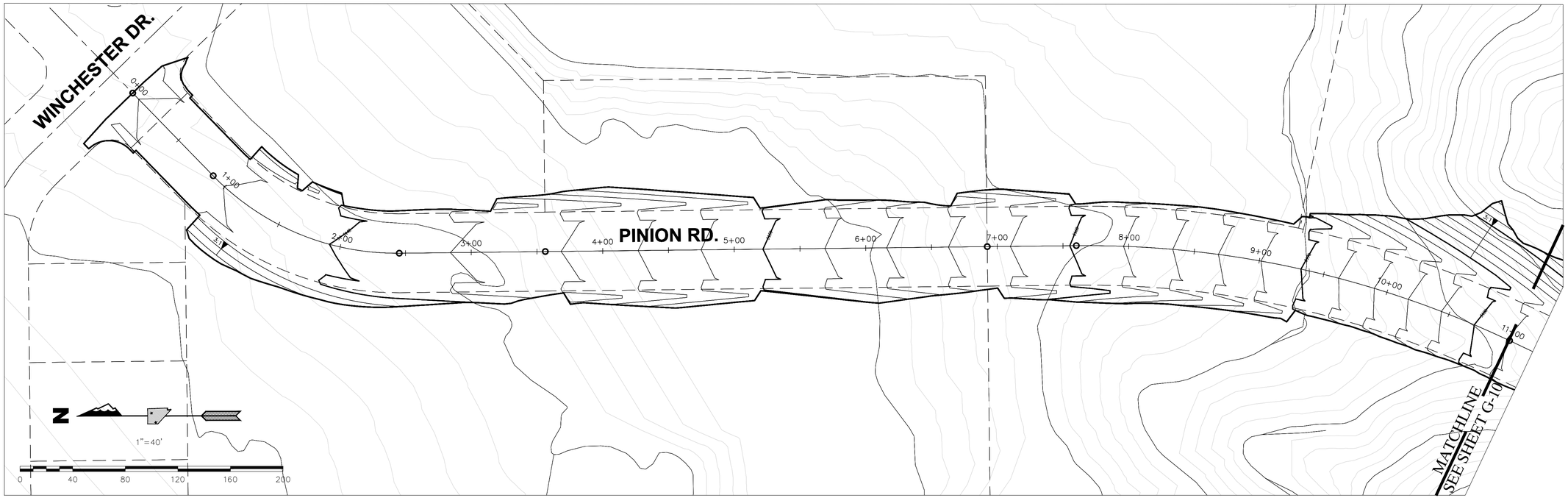
DESIGNED BY: NIB
CHECKED BY: NIB

SCALE
HORIZ: 1"=40'
VERT: 1"=10'

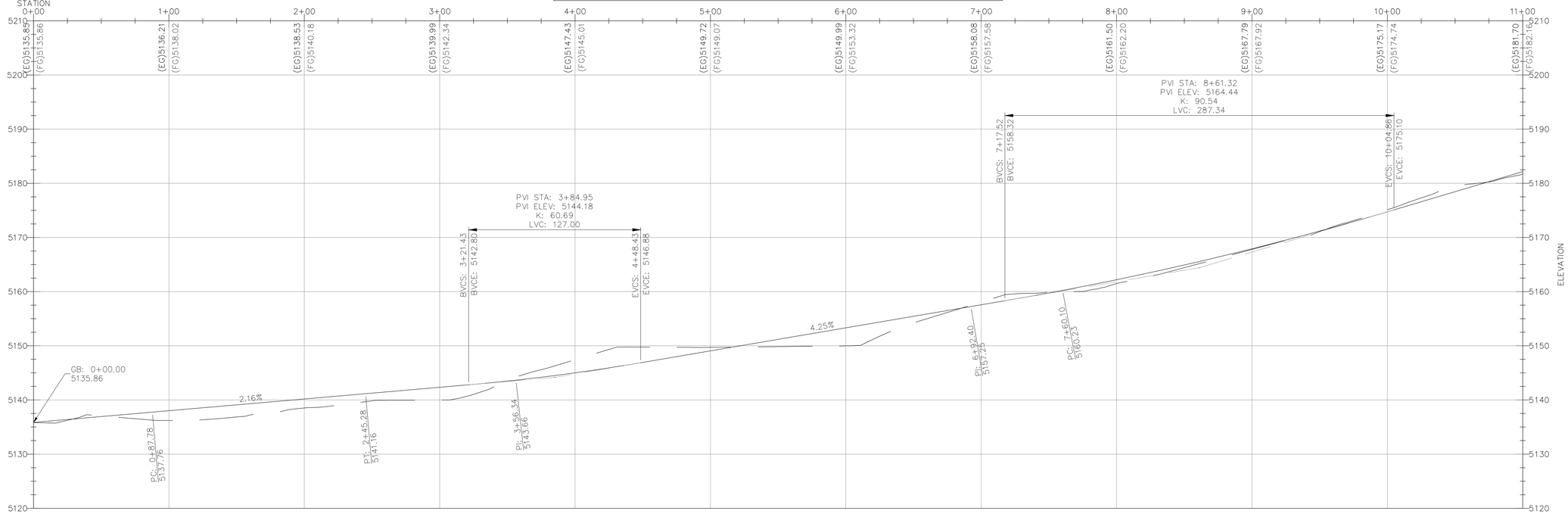
JOB NO: 3-82787

PROFESSIONAL ENGINEER — STATE OF NEVADA — No. 15494 — CIVIL — Exp. 12-31-24 — BHAKTA — 04-25-24

SHEET G-8 OF 49



PINION ROAD STA 0+00-11+00



BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
GRADING PLAN
ELKO COUNTY
NEVADA
ELKO

DESIGNED BY: NIB
CHECKED BY: NIB

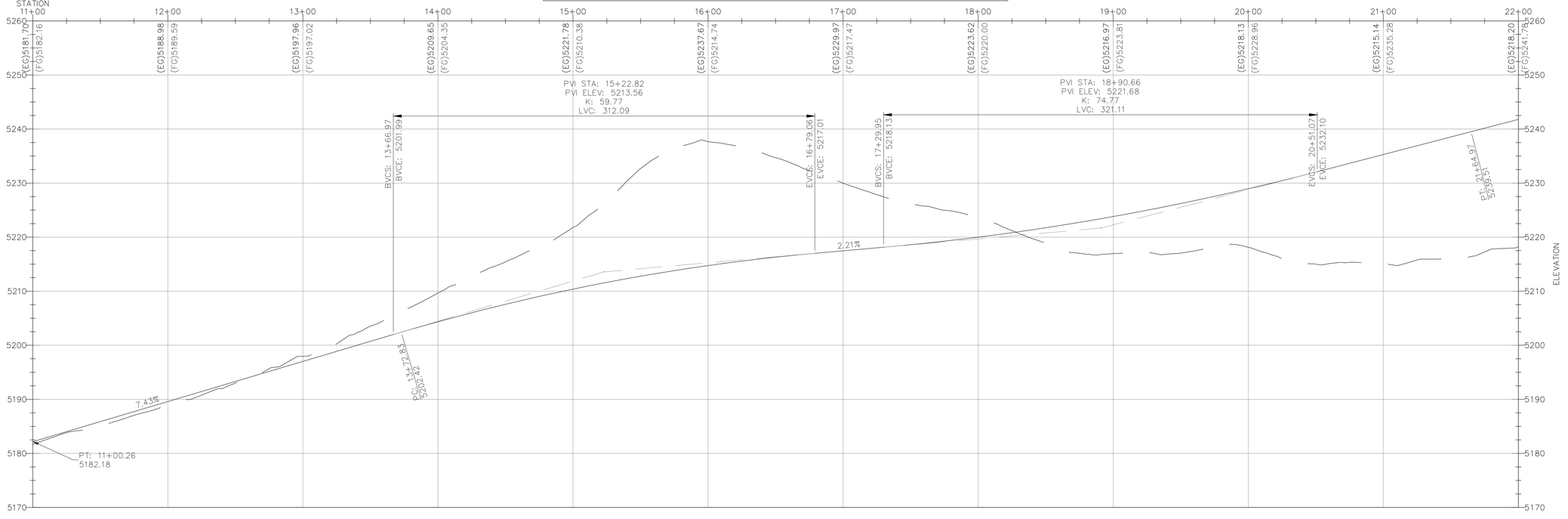
SCALE
HORIZ: 1"=40'
VERT: 1"=10'

JOB NO: 3-82787

PROFESSIONAL ENGINEER STATE OF NEVADA No. 15494 SURINDER BHAKTA Exp. 12-31-24 CIVIL 04-25-24

SHEET G-9 OF 49

PINION ROAD STA 11+00-22+00



BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
GRADING PLAN
ELKO COUNTY
NEVADA

ELKO

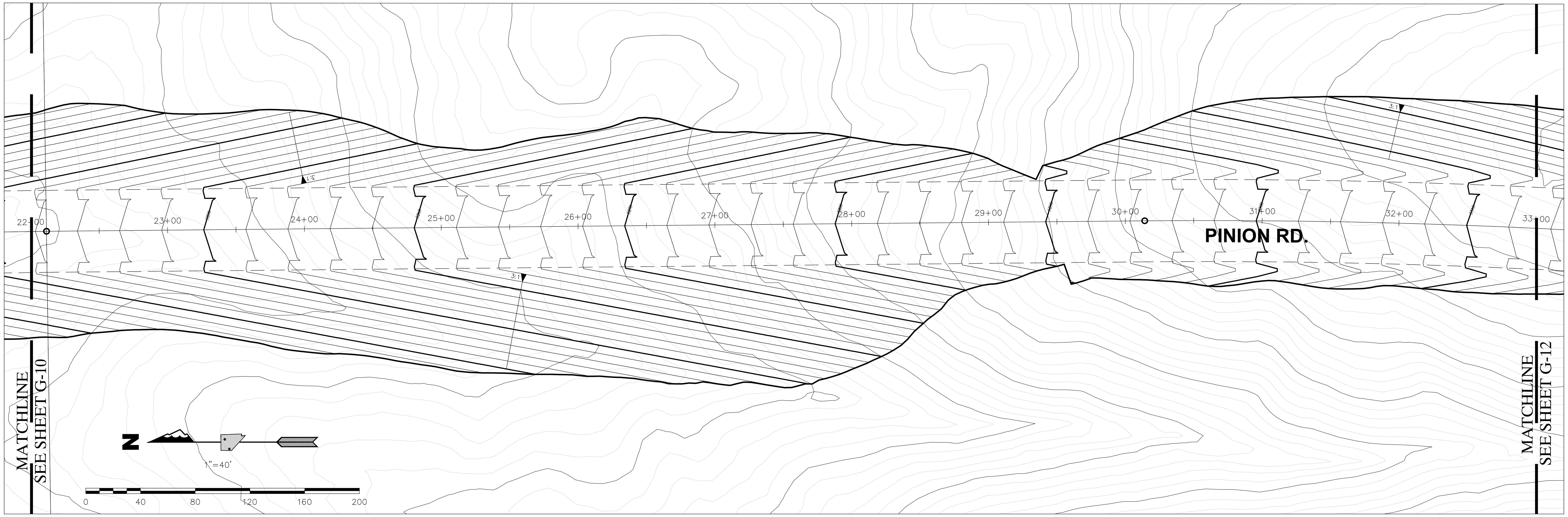
DESIGNED BY: NIB
CHECKED BY: NIB

SCALE
HORIZ: 1"=40'
VERT: 1"=10'

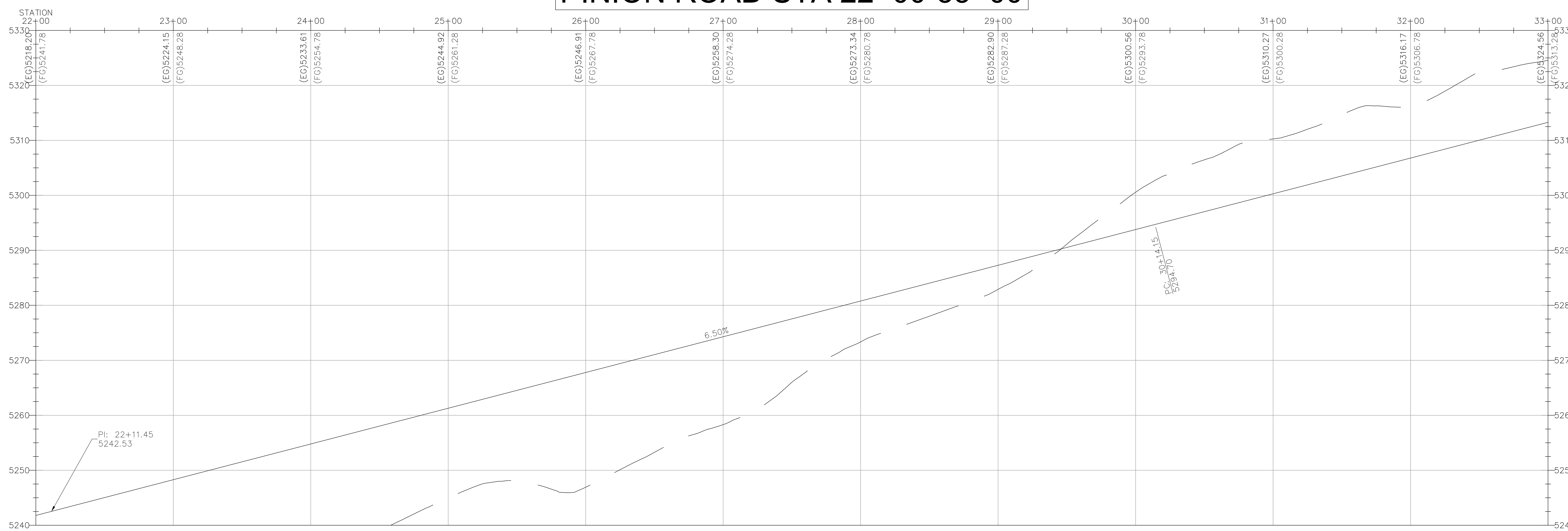
JOB NO: 3-82787

PROFESSIONAL ENGINEER — NITIN BHAKTA — Exp. 12-31-24 — CIVIL — No. 15434 — STATE OF NEVADA — 04-25-24

SHEET G-10 OF 49



PINION ROAD STA 22+00-33+00



BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

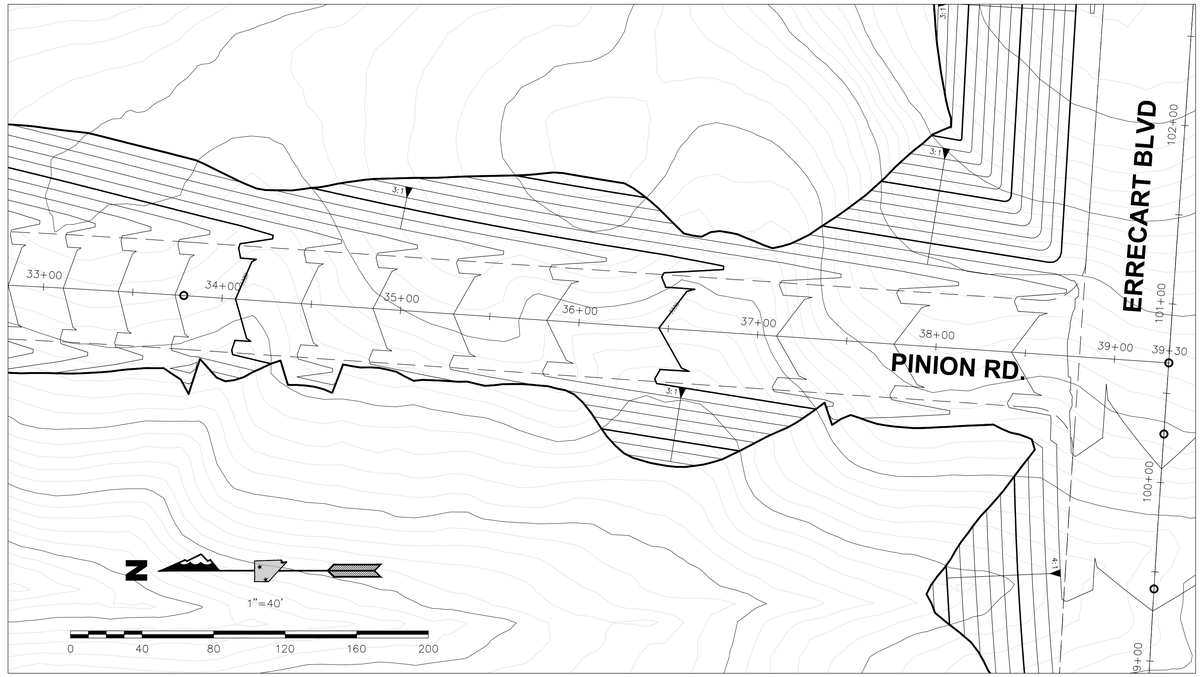
REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
GRADING PLAN
ELKO
ELKO COUNTY
NEVADA

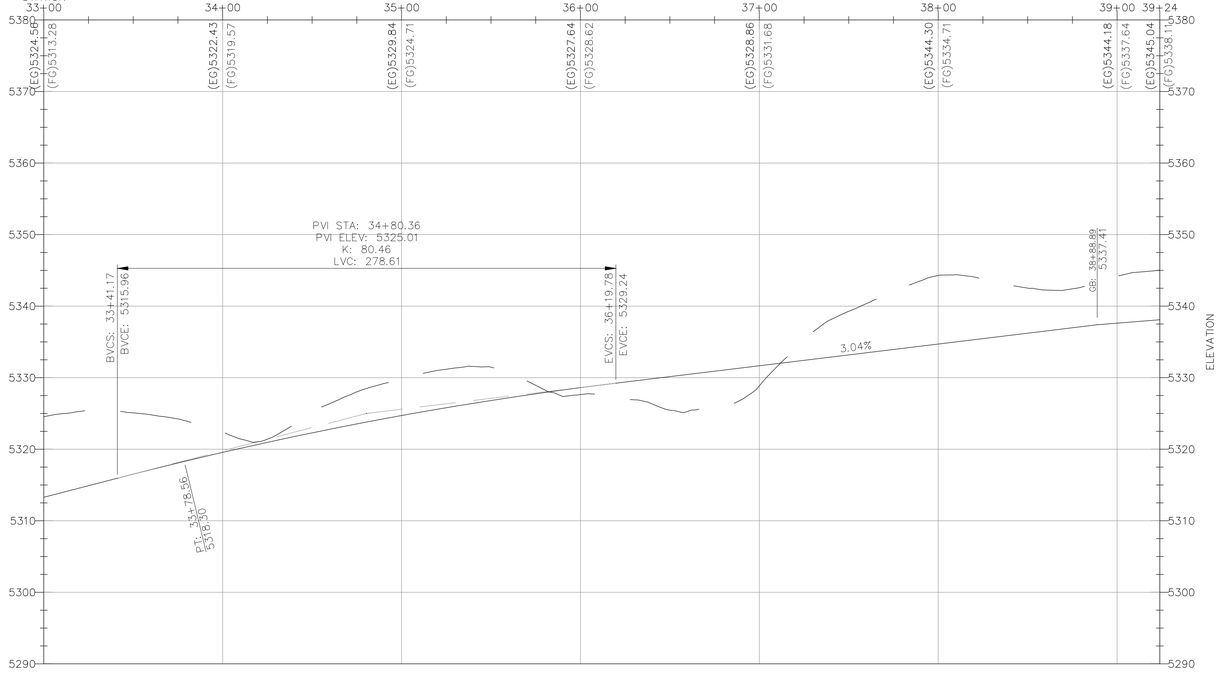
DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: 1"=40'
VERT: 1"=10'
JOB NO: 3-82787

PROFESSIONAL ENGINEER STATE OF NEVADA
NITIN I. BHAKTA
Exp. 12-31-24
CIVIL
No. 15494
04-23-24

SHEET G-11 OF 49



PINION ROAD STA 33+00-39+30



BID SET

2 working days Call before you Dig 1-800-227-2600

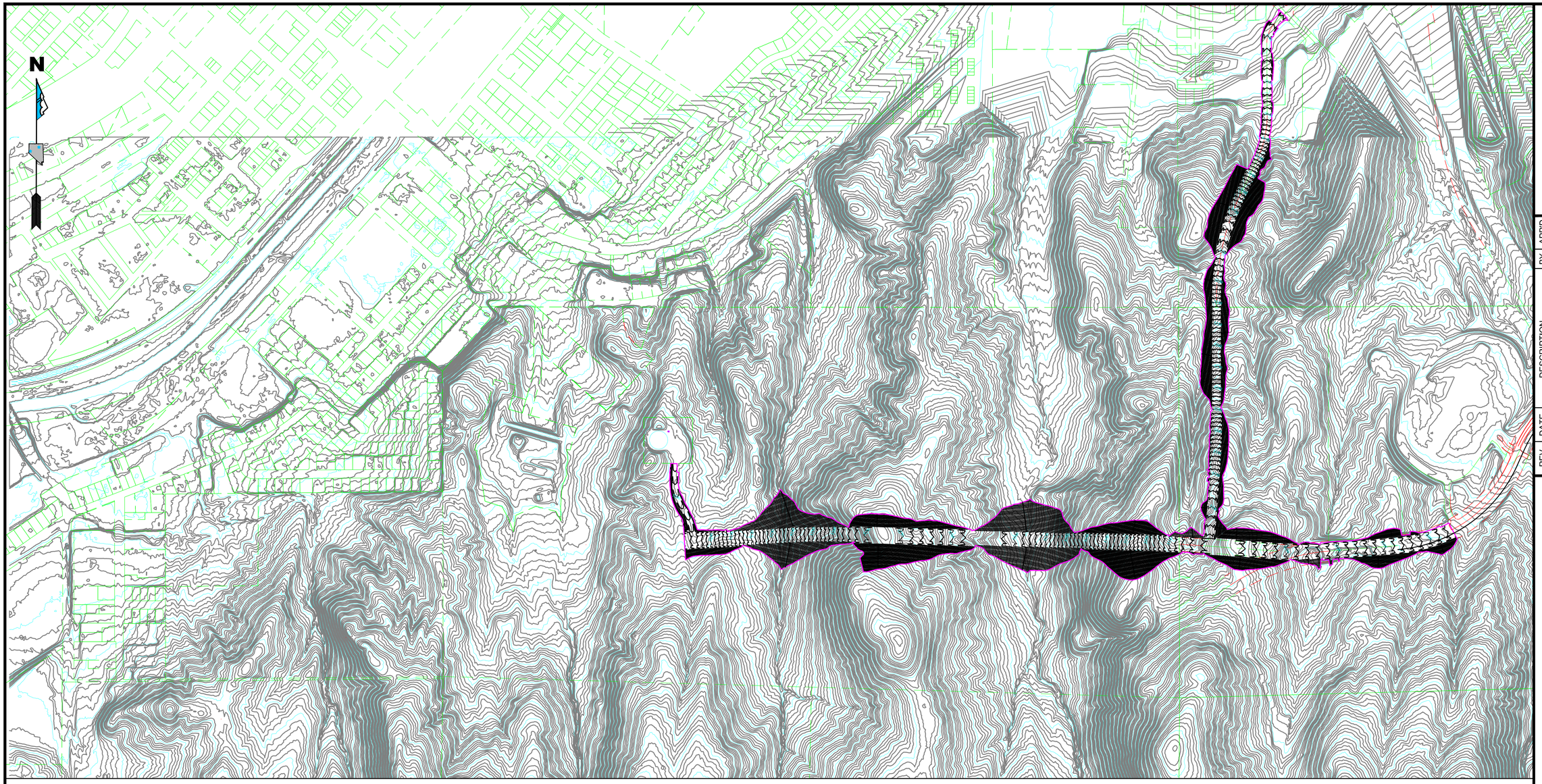
SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
GRADING PLAN
ELKO COUNTY
NEVADA
ELKO

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: 1"=40'
VERT: 1"=10'
JOB NO: 3-82787

SHEET G-12 OF 49



Cut/Fill Summary

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
EARTHWORK VOLUME	**1.000**	**1.000**	2001523.22 Sq. Ft.	571008.39 Cu. Yd.	512279.51 Cu. Yd.	58728.88 Cu. Yd.<Cut>
Totals			2001523.22 Sq. Ft.	571008.39 Cu. Yd.	512279.51 Cu. Yd.	58728.88 Cu. Yd.<Cut>

Cut

Fill

BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
VOLUME PLAN
ELKO COUNTY
NEVADA
ELKO

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: NA
VERT: NA
JOB NO: 3-82787

PROFESSIONAL ENGINEER — STATE OF NEVADA — No. 15494 — CIVIL — Exp. 12-31-24 — BHAKTA — 04-25-24

SHEET V-1 OF 49

OWNER / DEVELOPER

CITY of ELKO
1751 COLLEGE AVENUE
ELKO, NV. 89801
PH:(775) 777-7212

ATTN: DALE JOHNSON
EMAIL: djohnson@elkocitynv.gov

EROSION CONTROL NOTES

CLEARED AREA: 46.0 AC

ELKO ELKO COUNTY NEVADA

ENGINEER

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY
ELKO, NEVADA 89801
(775) 738 - 8058
WWW.SUMMITNV.COM
NITIN@SUMMITNV.COM

LEGEND

- STORM DRAIN INLET PROTECTION (DP-3 AND DP-4)
- GRAVEL OR SAND BAG BARRIERS (BMP SC-3)
- CWM — HANDLING AND DISPOSAL OF CONCRETE AND CEMENT (BMP GM-9)
- SWM — SOLID AND DEMOLITION WASTE MANAGEMENT (BMP GM-3)
- CONSTRUCTION SITE ENTRANCE & EXIT (BMP SC-8)
- RIPRAP MECHANICAL STABILIZATION (BMP EC-7)
- FIBER ROLLS (BMP SC-1), SILT FENCE (BMP SC-5), SYNTHETIC SEDIMENT CONTROL ROLLS (BMP SC-11)
- STREET SWEEPING (BMP GM-5)
- STORM DRAIN OUTLET PROTECTION (BMP DP-2)
- RVG — REVEGETATION (BMP EC-8)
- AC PAVEMENT AREA
- TYPE 2 BASE GRAVEL 95% MDD
- 4900 — EXISTING CONTOUR LINE
- 4900 — PROPOSED CONTOUR LINE
- (BMP SC-4) — BMP'S OUTLINED IN THE CITY OF ELKO CONSTRUCTION SITE BEST MANAGEMENT PRACTICE (BMP) HANDBOOK 2015 EDITION
- SM / SM — STOCKPILE MANAGEMENT (BMP GM-2)
- SS — SAN/SEPTIC WASTE MANAGEMENT (BMP GM-14)

GENERAL CONTROL NOTES

1. STANDARD NOTE NO. 1: THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATE IN, THE PUBLIC RIGHTS OF WAYS OF THE CITY OF ELKO AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM DRAIN SYSTEM.
2. STANDARD NOTE NO. 2: ADDITIONAL CONSTRUCTION SITE DISCHARGE MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN ELKO COUNTY ORDINANCE NO. 1223 AND THE MOST CURRENT EDITION OF THE "TRUCKEE MEADOWS CONSTRUCTION SITE BEST MANAGEMENT PRACTICES HANDBOOK.
3. STANDARD NOTE NO. 3: TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO STORMWATER GENERAL PERMIT NVR100000, SECTION 3.1.2.
4. STANDARD NOTE NO. 4: AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS AND ALL BMP'S WEEKLY, PRIOR TO A FORECASTED RAIN EVENT AND WITHIN 24 HOURS AFTER ANY ACTUAL RAIN EVENT. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORM WATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS FROZEN GROUND CONDITIONS OR SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO STORM WATER GENERAL PERMIT NVR100000, SECTION 5.2.2.
5. STANDARD NOTE NO. 5: ACCUMULATED SEDIMENT IN BMP's SHALL BE REMOVED AND PROPERLY DISPOSED OF AT REGULAR INTERVALS, WITHIN SEVEN DAYS AFTER A STORM WATER RUNOFF EVENT, AND PRIOR TO THE NEXT ANTICIPATED STORM EVENT. SEDIMENT MUST BE REMOVED WHEN BMP CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.
6. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL HAVE IN PLACE ALL NECESSARY BEST MANAGEMENT PRACTICES THAT SHALL BE USED TO MINIMIZE DUST, PREVENT EROSION AND PREVENT POLLUTION LADEN RUNOFF FROM ENTERING THE ADJACENT STORM DRAIN FACILITIES. BMP'S MAY INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING: (1) SILT FENCING OR STRAW WADDLES AT THE DOWNHILL LIMITS OF GRADING, (2) STABILIZED CONSTRUCTION SITE ENTRY/EXIT, (3) PERMANENT SLOPE REVEGETATION ON ALL DISTURBED AREAS, (4) INLET PROTECTION AT EXISTING CATCH BASINS, (5) STOCKPILE MANAGEMENT BMP'S, (6) DUST CONTROL BMP'S, (7) A CONCRETE WASHOUT AREA, AND (8) MEASURES TO PROTECT EXISTING NATIVE VEGETATION. THE CONTRACTOR SHALL MAINTAIN, REPAIR, REPLACE, SUBSTITUTE OR SUPPLEMENT BMP'S AT THE CONSTRUCTION SITE AS CONDITIONS WARRANT DURING CONSTRUCTION.

CONSTRUCTION SEQUENCE:

1. OBTAIN LAND DISTURBANCE PERMITTING FOR ELKO COUNTY.
2. FLAG THE CLEARING LIMITS.
3. HOLD PRE-CONSTRUCTION CONFERENCE AT LEAST ONE WEEK PRIOR TO STARTING CONSTRUCTION, NOTIFY ELKO COUNTY AT (775) 777-7212 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION BEGINNING. CONTRACTOR TO CLOSELY COORDINATE WITH ELKO COUNTY EROSION CONTROL INSPECTOR THROUGHOUT COURSE OF PROJECT.
4. INSTALL TEMPORARY CONSTRUCTION ENTRANCE(S) AND TEMPORARY SILT FENCE. CLEAR AND DISTURB ONLY AS NECESSARY TO INSTALL THESE MEASURES.
5. COMPLETE REMAINING CLEARING AND GRUBBING OF SITE. (OR PORTION OF PHASED CONSTRUCTION PER DIRECTION OF CITY.)
6. INSTALL TEMPORARY BYPASS CHANNEL AND TEMPORARY PUMP AROUND AS NEEDED.
7. INSTALL PERMANENT STORM DRAINAGE AND REMOVE TEMPORARY BYPASS CHANNELS AND PUMPS ONCE PERMANENT CONVEYANCE IN PLACE.
8. COMPLETE FINE GRADING AND INSTALL ROADSIDE SWALES PER PLANS. INSTALL SILT BAGS BAGS AS NEEDED.
9. MAINTAIN SEDIMENTATION AND EROSION CONTROL MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
10. REQUEST FINAL APPROVAL OF GROUND COVER BY EROSION CONTROL INSPECTOR.
11. ONCE THE SITE IS FULLY STABILIZED. REMOVE ALL TEMPORARY MEASURES AND IMMEDIATELY REPAIR, DRESS-OUT, AND SEED & MULCH THESE AREAS.
12. ALL PERMANENT EROSION CONTROL DEVICES SHOULD BE INSTALLED NOW.

SELF INSPECTION NOTES

ALL SITES RECEIVING A LAND DISTURBING PERMIT FROM THE COUNTY MUST BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PERSON(S) OR AGENT THEREOF, AT A MINIMUM OF ONCE A WEEK AND WITHIN 24 HOURS OF ANY RAINFALL OF ONE HALF INCH OR GREATER. COPIES OF ALL SELF INSPECTION REPORTS MUST BE PROVIDED TO THE COUNTY EROSION AND SEDIMENTATION CONTROL OFFICE WITHIN 15 DAYS OF THE INSPECTION. SELF INSPECTION REPORTS MAY BE SUBMITTED IN PAPER OR ELECTRONIC FORM. SELF INSPECTION MUST BE PERFORMED UNTIL A CERTIFICATE OF COMPLETION HAS BEEN ISSUED BY THE COUNTY.

GROUND STABILIZATION

SITE AREA	STABILIZATION	STABILIZATION TIME
DESCRIPTION	TIME FRAME	FRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED
SLOPES FLATTER THAN 3:1	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETERS)

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE.

BID SET

2 working days Call before you Dig 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
EROSION CONTROL
ELKO COUNTY NEVADA
ELKO

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: NA
VERT: NA
JOB NO: 3-82787

PROFESSIONAL ENGINEER NITIN BHAKTA Exp. 12-31-24 CIVIL No. 15494 STATE OF NEVADA 04-25-24

SHEET EC-1 OF 49

ERRECART STA 63+00-78+00

FIBER ROLLS (BMP SC-1)
SILT FENCE (BMP SC-5)
SYNTHETIC SEDIMENT
CONTROL ROLLS (BMP SC-11)

Station=70+03.55
Offset=-315.416
CONSTRUCT SD
OUTLET PROTECTION
BMP DP-2

FIBER ROLLS (BMP SC-1)
SILT FENCE (BMP SC-5)
SYNTHETIC SEDIMENT
CONTROL ROLLS (BMP SC-11)

Station=66+21.39
Offset=-86.204
PORTABLE TOILET LOCATION
TO ACCOMODATE WORKERS
BMP GM-14

SS

MTNC. RD.

ERRECART BLVD

63+00 64+00 65+00 66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00 74+00 75+00 76+00 77+00 78+00

100' R/W

Station=66+66.58
Offset=133.907
DESIGNATED AREAS FOR STOCKPILED
SOILS, AGGREGATES, ETC.
BMP GM-2

SM SM SM SM SM SM

Station=63+50.54
Offset=111.215
PERMANENT RIPRAP
BMP EC-7

Station=69+74.99
Offset=230.166
CONSTRUCT SD
OUTLET PROTECTION
BMP DP-2

MATCHLINE
SEE MASTER

MATCHLINE
THIS SHEET

FUTURE S. 9TH

MATCHLINE
SEE MASTER

0 50 100 150 200 250 N

1"=50'

MATCHLINE
THIS SHEET

FIBER ROLLS (BMP SC-1)
SILT FENCE (BMP SC-5)
SYNTHETIC SEDIMENT
CONTROL ROLLS (BMP SC-11)

Station=87+78.31
Offset=-280.921
CONSTRUCT SD
OUTLET PROTECTION
BMP DP-2

0 50 100 150 200 250 N

1"=50'

MATCHLINE
SEE SHEET EC-3

FIBER ROLLS (BMP SC-1)
SILT FENCE (BMP SC-5)
SYNTHETIC SEDIMENT
CONTROL ROLLS (BMP SC-11)

ERRECART BLVD

78+00 79+00 80+00 81+00 82+00 83+00 84+00 85+00 86+00 87+00 88+00 89+00 90+00 91+00 92+00 93+00

100' R/W

FIBER ROLLS (BMP SC-1)
SILT FENCE (BMP SC-5)
SYNTHETIC SEDIMENT
CONTROL ROLLS (BMP SC-11)

Station=87+61.80
Offset=228.932
CONSTRUCT SD
OUTLET PROTECTION

ERRECART STA 78+00-93+00

BID SET

2 working days Call before you Dig 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APPD

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
EROSION CONTROL
ELKO COUNTY
NEVADA

ELKO

DESIGNED BY: NIB
CHECKED BY: NIB

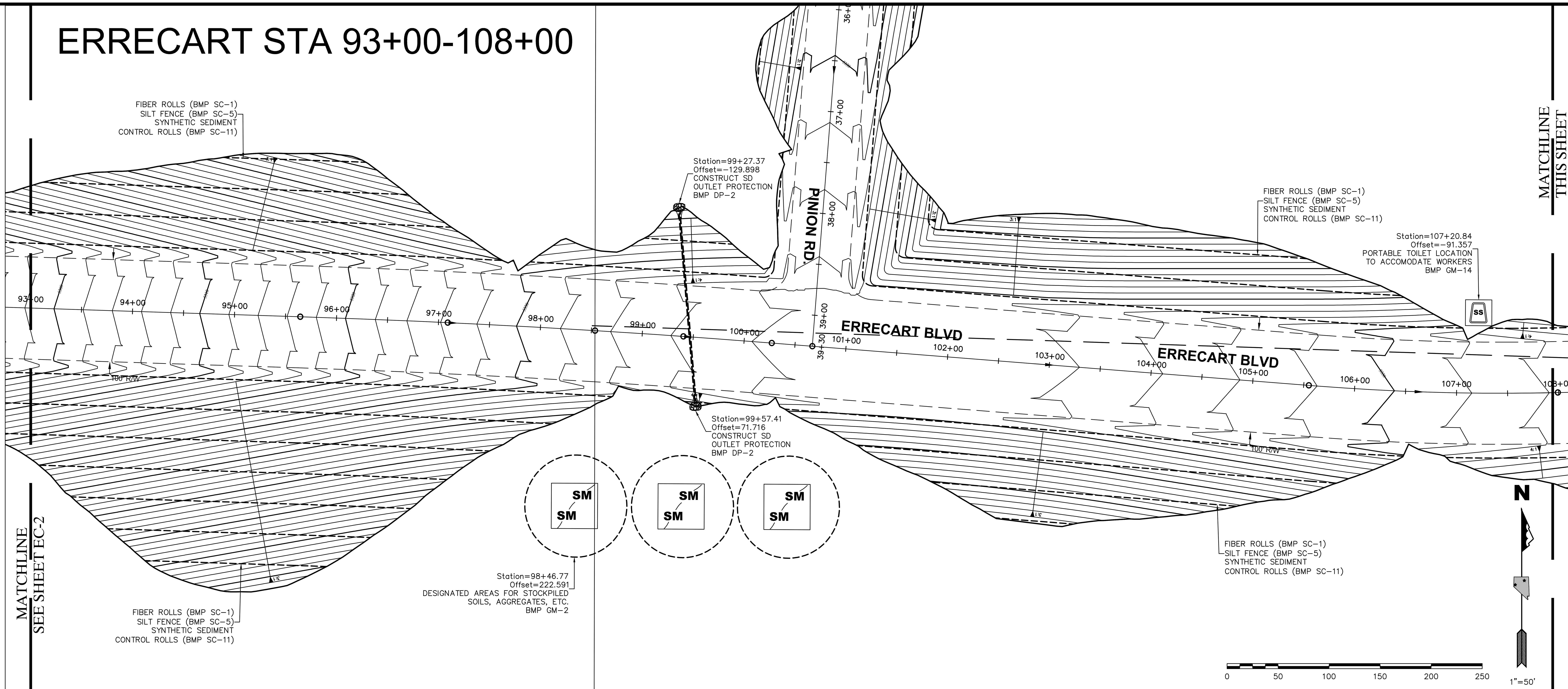
SCALE
HORIZ: 1"=50'
VERT: NA

JOB NO: 3-82787

PROFESSIONAL ENGINEER
STATE OF NEVADA
NITIN BHAKTA
Exp. 12-31-24
CIVIL
No. 15494
04-25-24

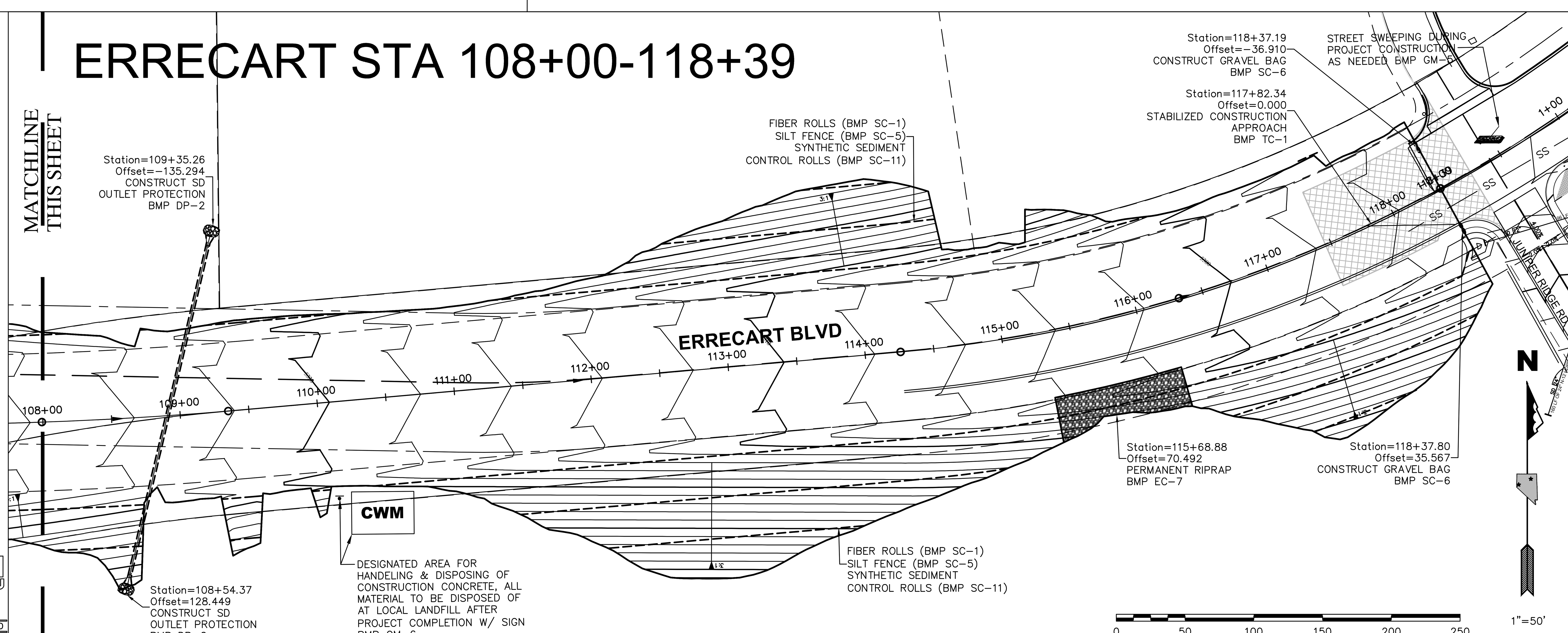
SHEET EC-2 OF 49

ERRECART STA 93+00-108+00



FIBER ROLLS (BMP SC-1)
SILT FENCE (BMP SC-5)
SYNTHETIC SEDIMENT CONTROL ROLLS (BMP SC-11)
Station=99+27.37
Offset=-129.898
CONSTRUCT SD OUTLET PROTECTION
BMP DP-2
PINION RD
MATCHLINE THIS SHEET
Station=107+20.84
Offset=-91.357
PORTABLE TOILET LOCATION TO ACCOMODATE WORKERS
BMP GM-14
SS
ERRECART BLVD
93+00
94+00
95+00
96+00
97+00
98+00
99+00
100+00
101+00
102+00
103+00
104+00
105+00
106+00
107+00
108+00
36+00
37+00
38+00
39+00
39+30
100' R/W
Station=99+57.41
Offset=71.716
CONSTRUCT SD OUTLET PROTECTION
BMP DP-2
SM
Station=98+46.77
Offset=222.591
DESIGNATED AREAS FOR STOCKPILED SOILS, AGGREGATES, ETC.
BMP GM-2
MATCHLINE SEE SHEET EC-2
N
0
50
100
150
200
250
1"=50'

ERRECART STA 108+00-118+39



MATCHLINE THIS SHEET
Station=109+35.26
Offset=-135.294
CONSTRUCT SD OUTLET PROTECTION
BMP DP-2
FIBER ROLLS (BMP SC-1)
SILT FENCE (BMP SC-5)
SYNTHETIC SEDIMENT CONTROL ROLLS (BMP SC-11)
Station=118+37.19
Offset=-36.910
CONSTRUCT GRAVEL BAG
BMP SC-6
Station=117+82.34
Offset=0.000
STABILIZED CONSTRUCTION APPROACH
BMP TC-1
STREET SWEEPING DURING PROJECT CONSTRUCTION AS NEEDED BMP GM-6
ERRECART BLVD
108+00
109+00
110+00
111+00
112+00
113+00
114+00
115+00
116+00
117+00
118+00
118+39
1+00
SS
JUNIPER RIDGE RD
CWM
Station=108+54.37
Offset=128.449
CONSTRUCT SD OUTLET PROTECTION
BMP DP-2
DESIGNATED AREA FOR HANDELING & DISPOSING OF CONSTRUCTION CONCRETE, ALL MATERIAL TO BE DISPOSED OF AT LOCAL LANDFILL AFTER PROJECT COMPLETION W/ SIGN
BMP GM-6
Station=115+68.88
Offset=70.492
PERMANENT RIPRAP
BMP EC-7
Station=118+37.80
Offset=35.567
CONSTRUCT GRAVEL BAG
BMP SC-6
N
0
50
100
150
200
250
1"=50'

BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR ERRECART BLVD. CONNECTOR

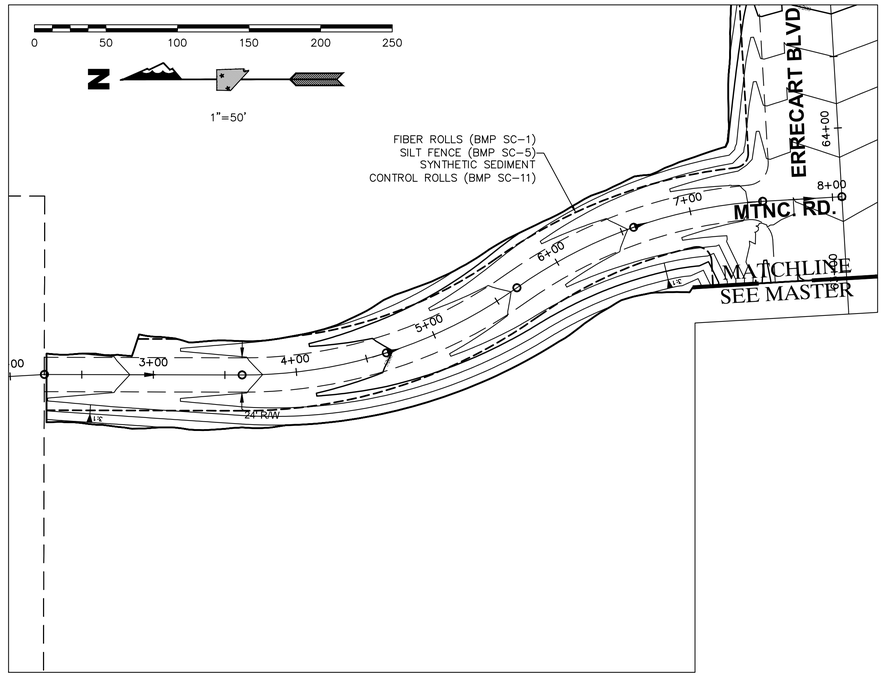
EROSION CONTROL

ELKO COUNTY — ELKO — NEVADA

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: 1"=50'
VERT: NA
JOB NO: 3-82787

PROFESSIONAL ENGINEER — STATE OF NEVADA — NITIN BHAKTA — Exp. 12-31-24 — CIVIL — No. 15494 — 04-25-24

SHEET EC-3 OF 49



MAINTENANCE ROAD STA 2+23-8+07

BID SET

2 working days Call before you Dig. 1-800-227-2600

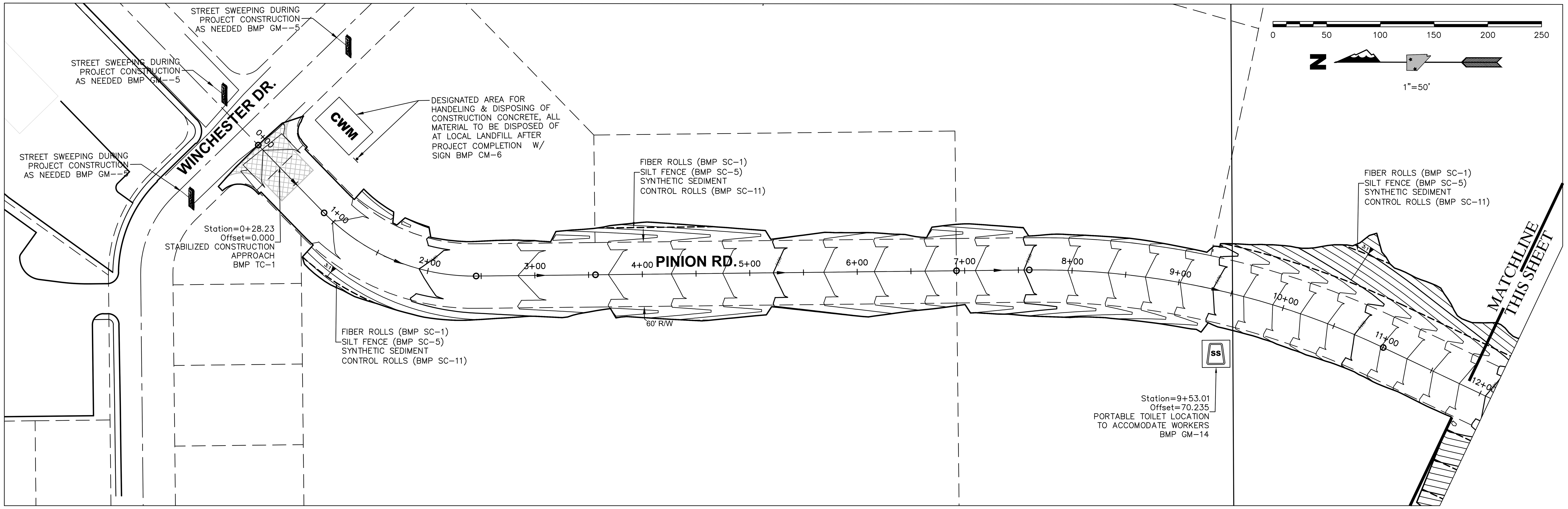
SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
EROSION CONTROL
ELKO COUNTY
NEVADA
ELKO

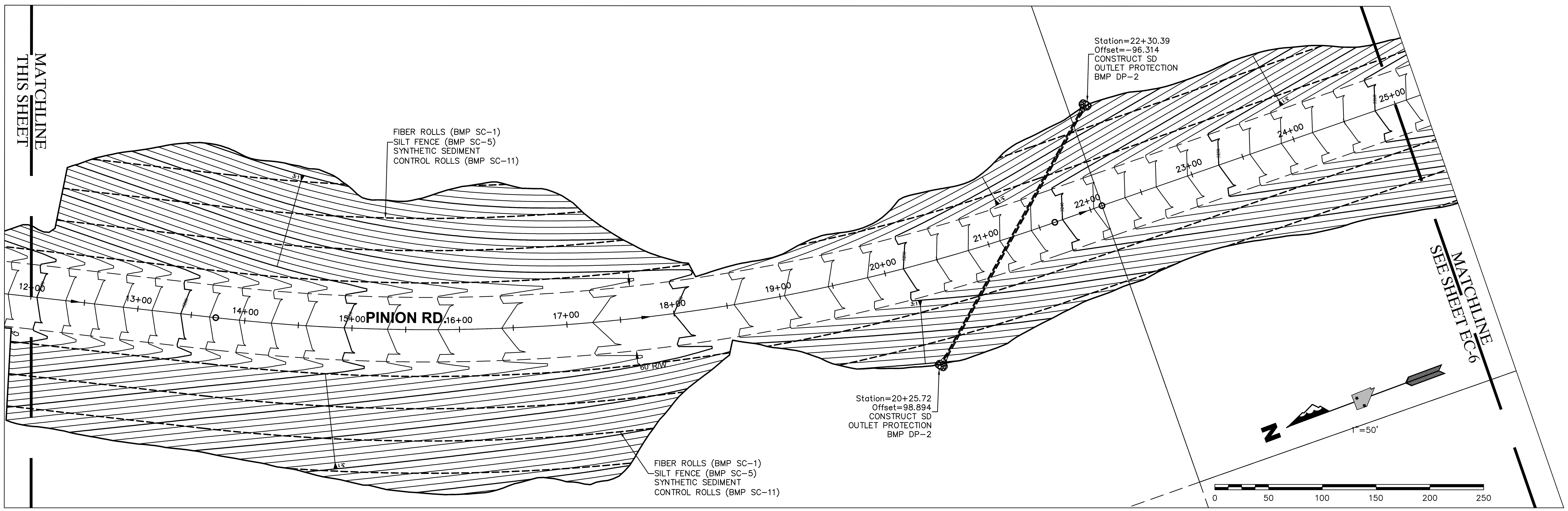
DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: 1"=50'
VERT: NA
JOB NO: 3-82787

SHEET EC-4 OF 49



PINION STA 0+00-12+00

PINION STA 12+00-25+00



BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR ERRECART BLVD. CONNECTOR

EROSION CONTROL

ELKO — ELKO COUNTY — NEVADA

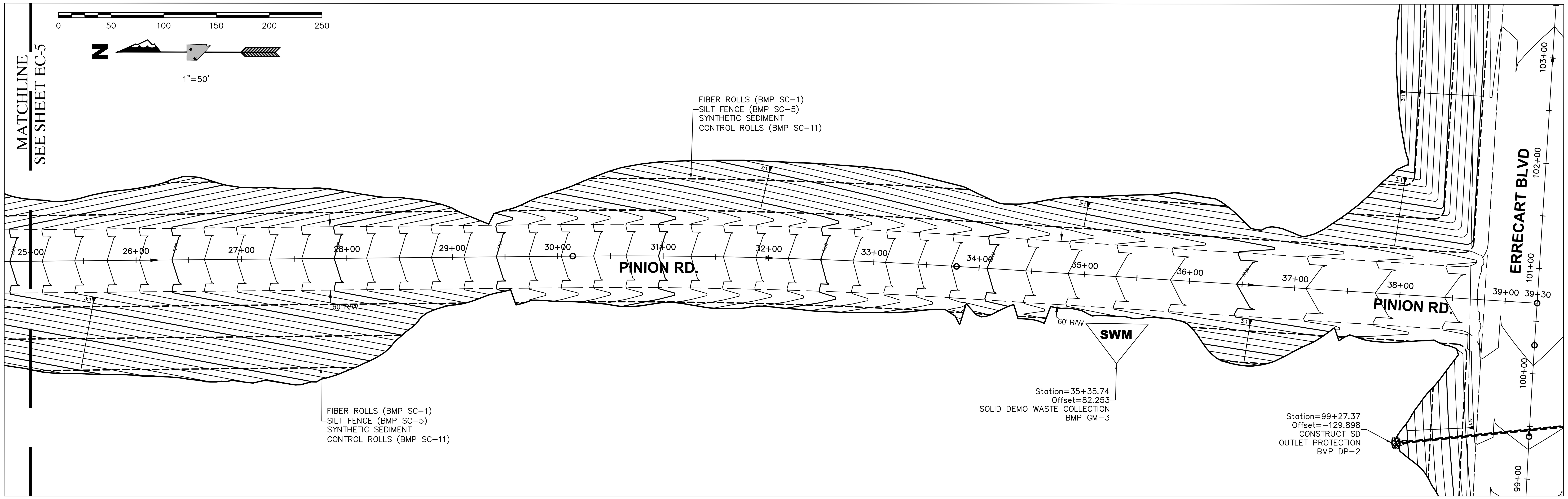
DESIGNED BY: NIB
CHECKED BY: NIB

SCALE
HORIZ: 1"=50'
VERT: NA

JOB NO: 3-82787

PROFESSIONAL ENGINEER — STATE OF NEVADA — NITIN BHAKTA — Exp. 12-31-24 — CIVIL — No. 15494 — 04-23-24

SHEET EC-5 OF 49



PINION STA 25+00-39+30

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
EROSION CONTROL
ELKO COUNTY
ELKO NEVADA

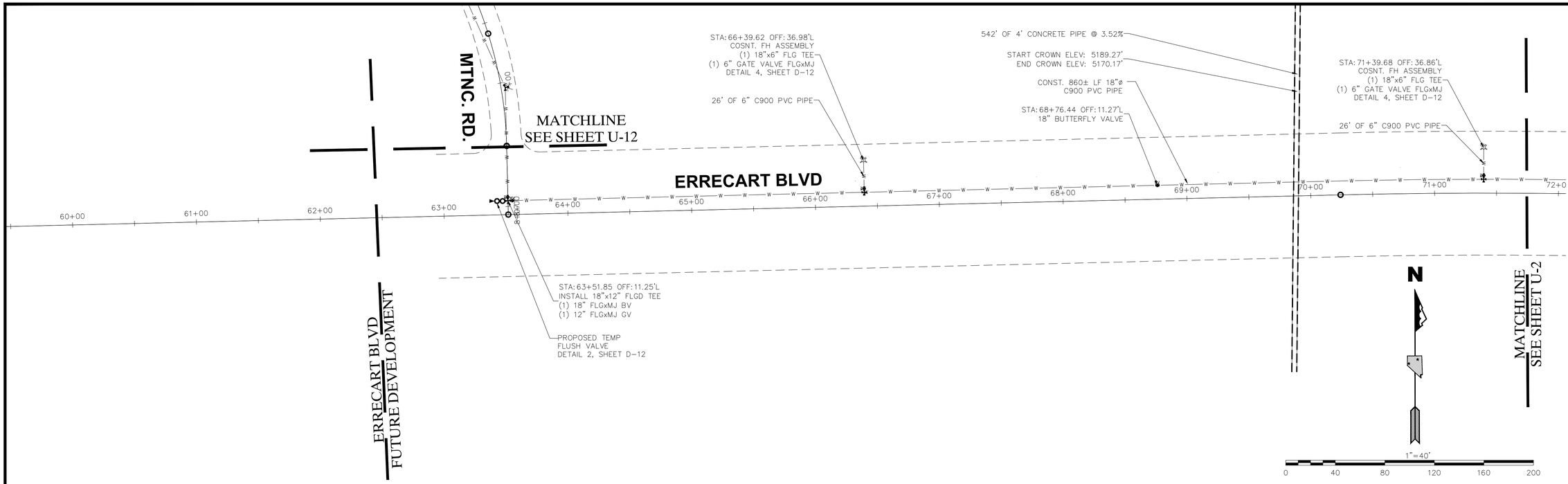
DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: 1"=50'
VERT: NA
JOB NO: 3-82787

PROFESSIONAL ENGINEER STATE OF NEVADA — NITIN BHAKTA, Exp. 12-31-24, CIVIL No. 15494, 04-25-24

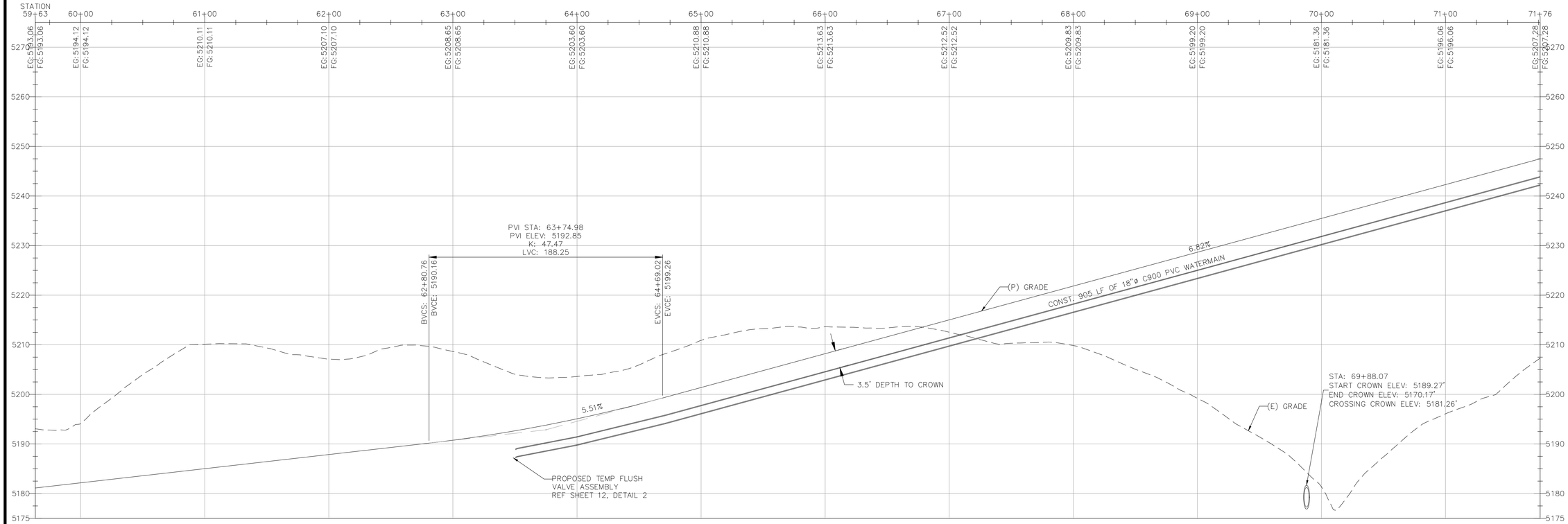
SHEET EC-6 OF 49

BID SET

2 working days Call before you Dig. 1-800-227-2600



ERRECART STA 63+00.00' TO 71+76.34'



2 working days Call before you Dig. 1-800-227-2600

BID SET

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APPD

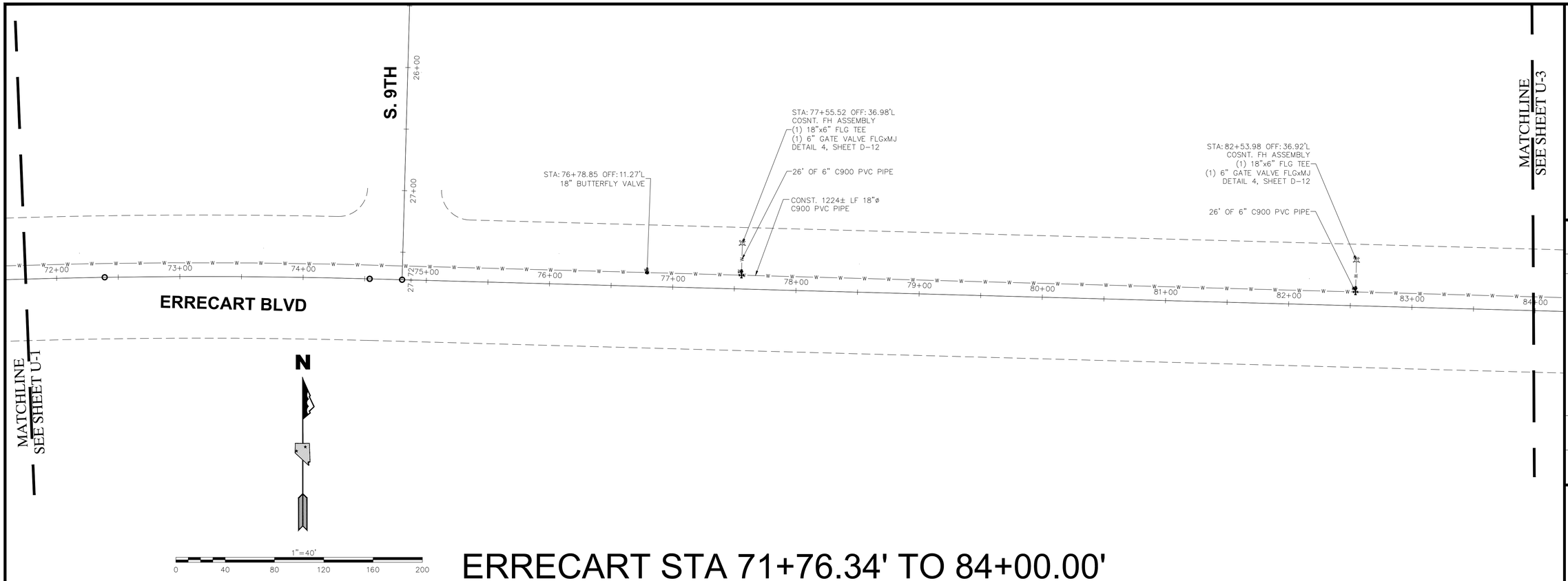
CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
UTILITY PLAN & PROFILE
ELKO COUNTY NEVADA

ELKO

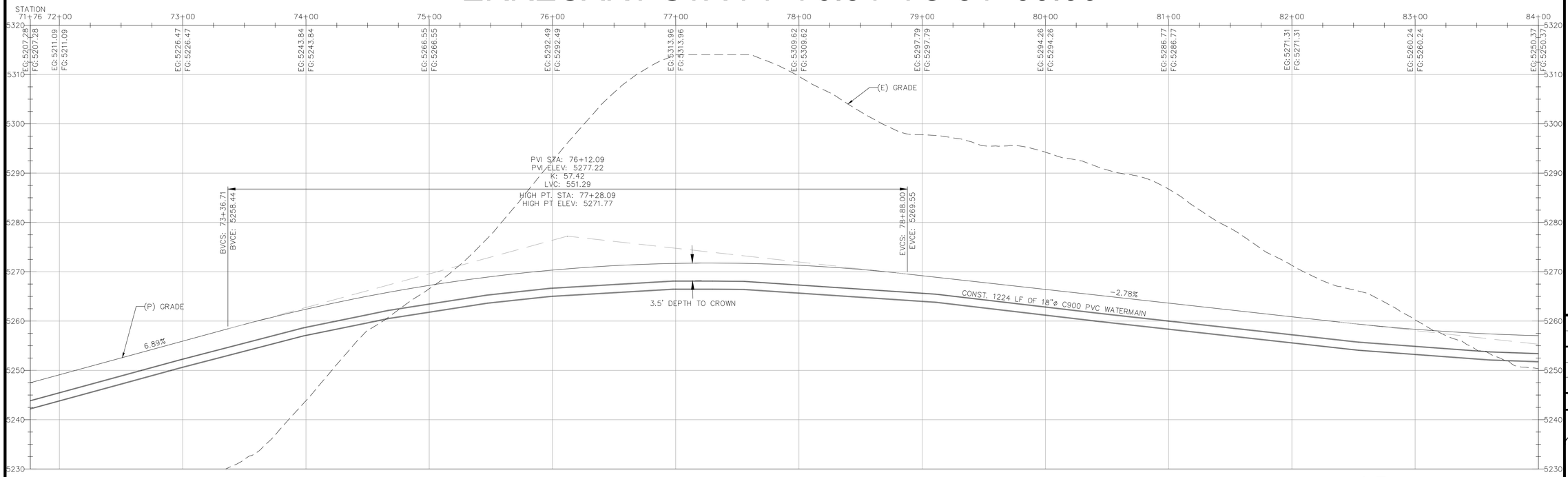
DESIGNED BY: NIB	
CHECKED BY: NIB	
SCALE	
HORIZ: 1"=40'	
VERT: 1"=10'	
JOB NO: 3-82787	

PROFESSIONAL ENGINEER
SUMIT BHAKTA
Exp. 12-31-24
CIVIL
No. 15494
STATE OF NEVADA
04-25-24

SHEET U-1 OF 49



ERRECART STA 71+76.34' TO 84+00.00'



2 working days Call before you Dig. 1-800-227-2600

BID SET

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APPD

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
UTILITY PLAN & PROFILE
ELKO COUNTY
NEVADA
ELKO

DESIGNED BY:	NIB
CHECKED BY:	NIB
SCALE	
HORIZ:	1"=40'
VERT:	1"=10'
JOB NO:	3-82787

PROFESSIONAL ENGINEER
NIRAJ
BHAKTA
Exp. 12-31-24
CIVIL
No. 15494
STATE OF NEVADA
04-25-24

SHEET U-2 OF 49

STA: 84+79.70 OFF: 11.27'L
18" BUTTERFLY VALVE

STA: 87+54.39 OFF: 37.09'L
COSNT. FH ASSEMBLY
(1) 18"x6" FLG TEE
(1) 6" GATE VALVE FLGxMJ
DETAIL 4, SHEET D-12

26' OF 6" C900 PVC PIPE

CONST. 1225± LF 18"ø
C900 PVC PIPE

STA: 92+54.65 OFF: 37.16'L
COSNT. FH ASSEMBLY
(1) 18"x6" FLG TEE
(1) 6" GATE VALVE FLGxMJ
DETAIL 4, SHEET D-12

26' OF 6" C900 PVC PIPE

STA: 92+80.56 OFF: 11.27'L
18" BUTTERFLY VALVE

START CROWN ELEV: 5220.99'
END CROWN ELEV: 5209.19'

512' OF 5' CONCRETE PIPE @ 2.31%

ERRECART BLVD

MATCHLINE
SEE SHEET U-2

MATCHLINE
SEE SHEET U-4

N

1"=40'
0 40 80 120 160 200

ERRECART STA 84+00.00 TO 96+41.47

STATION
84+00 85+00 86+00 87+00 88+00 89+00 90+00 91+00 92+00 93+00 94+00 95+00 96+00 96+24

EG: 5250.37 FG: 5250.37
EG: 5236.24 FG: 5236.24
EG: 5225.87 FG: 5225.87
EG: 5218.69 FG: 5218.69
EG: 5215.94 FG: 5215.94
EG: 5225.82 FG: 5225.82
EG: 5245.36 FG: 5245.36
EG: 5277.03 FG: 5277.03
EG: 5308.63 FG: 5308.63
EG: 5324.81 FG: 5324.81
EG: 5342.96 FG: 5342.96
EG: 5361.55 FG: 5361.55
EG: 5364.07 FG: 5364.07
EG: 5359.00 FG: 5359.00

5350 5340 5330 5320 5310 5300 5290 5280 5270 5260 5250 5240 5230 5220 5210 5207

PVI STA: 86+03.62
PVI ELEV: 5249.64
K: 74.58
LVC: 729.51
LOW PT. STA: 84+46.23
LOW PT ELEV: 5256.91

BVCS: 82+38.49
BVCE: 5259.80

EVCS: 89+68.00
EVCE: 5275.15

(E) GRADE

7.00%

3.5' DEPTH TO CROWN

CONST. 1225 LF OF 18"ø C900 PVC WATERMAIN

(P) GRADE

2.07%

STA: 87+69.70
START CROWN ELEV: 5220.99'
END CROWN ELEV: 5209.19'
CROSSING CROWN ELEV: 5215.64'

2 working days Call before you Dig. 1-800-227-2600

BID SET

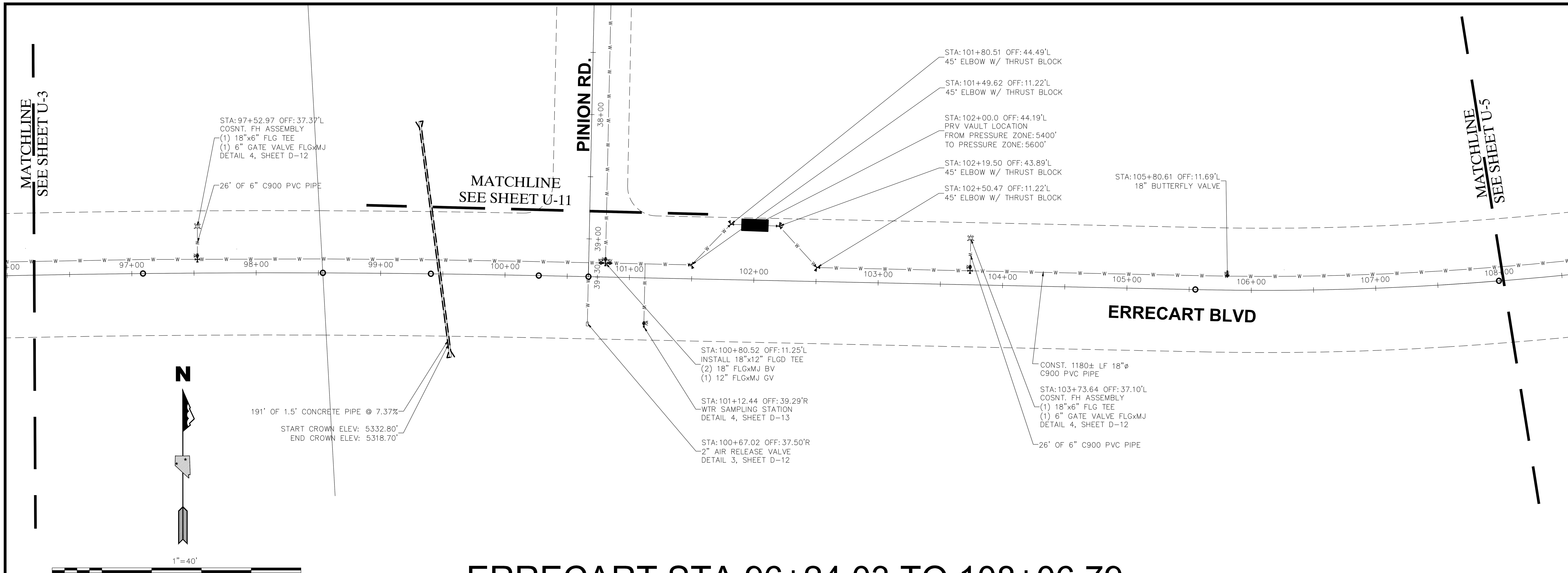
SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APPD

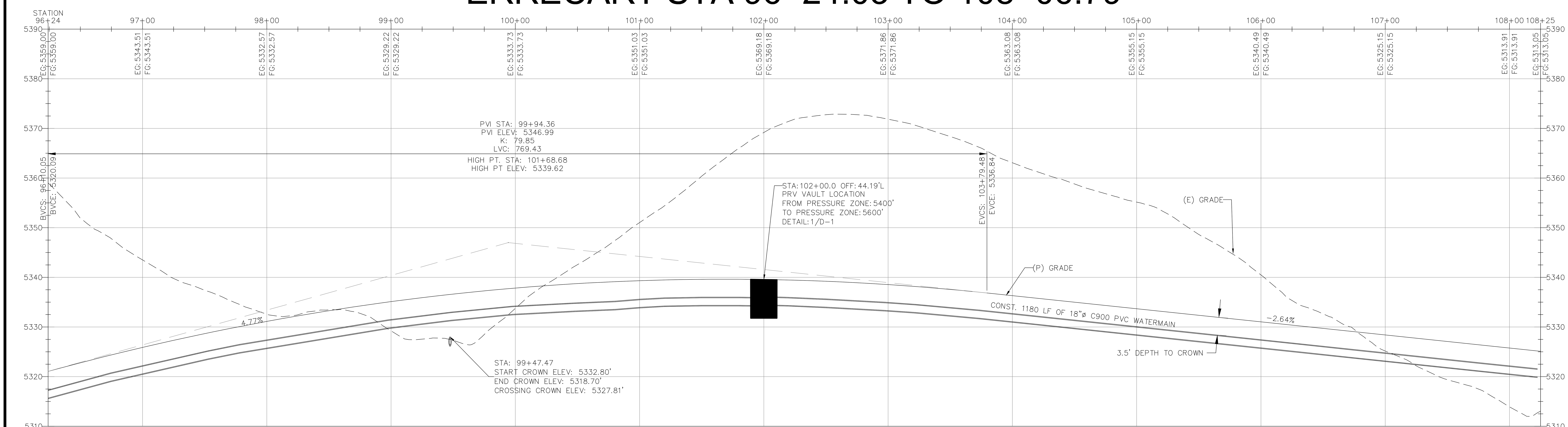
CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
UTILITY PLAN & PROFILE
ELKO COUNTY NEVADA
ELKO

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: 1"=40'
VERT: 1"=10'
JOB NO: 3-82787

SHEET U-3 OF 49



ERRECART STA 96+24.03 TO 108+06.79



2 working days Call before you Dig. 1-800-227-2600

BID SET

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

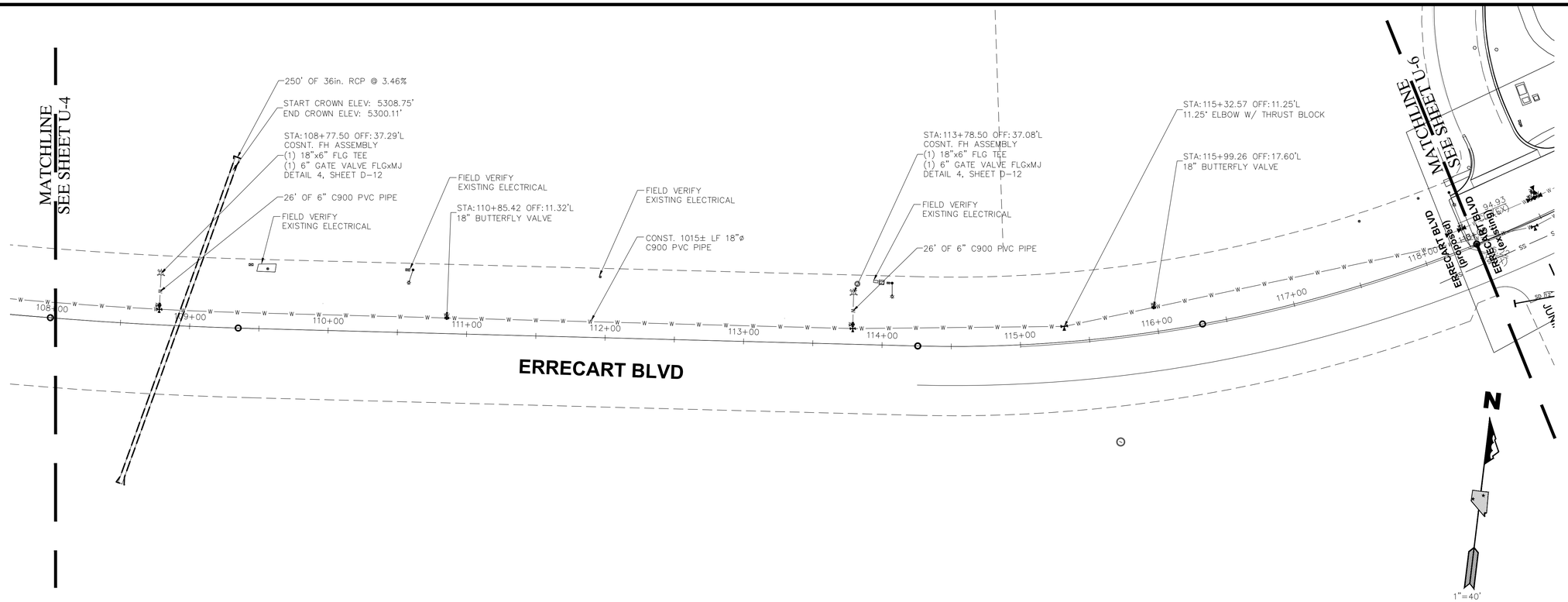
REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
UTILITY PLAN & PROFILE
ELKO — ELKO COUNTY — NEVADA

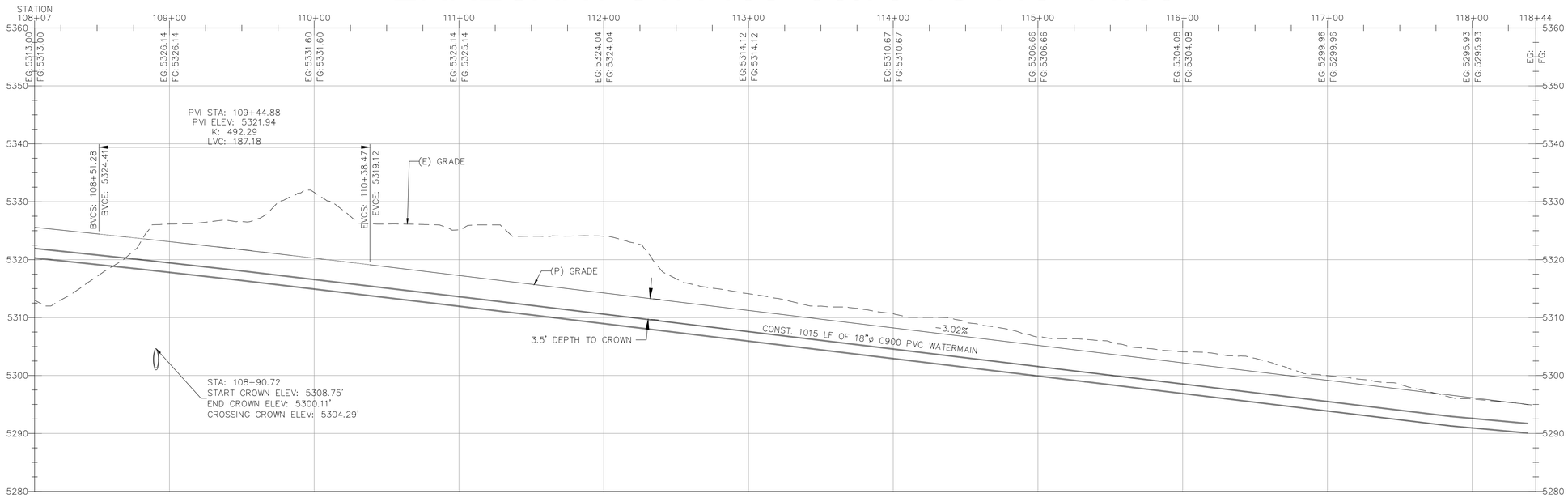
DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: 1"=40'
VERT: 1"=10'
JOB NO: 3-82787

PROFESSIONAL ENGINEER — STATE OF NEVADA — NITIN BHAKTA — Exp. 12-31-24 — CIVIL — No. 15494 — 04-25-24

SHEET U-4 OF 49



ERRECART STA 108+06.79 TO 118+44.00



2 working days Call before you Dig. 1-800-227-2600

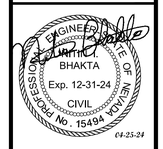
BID SET

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

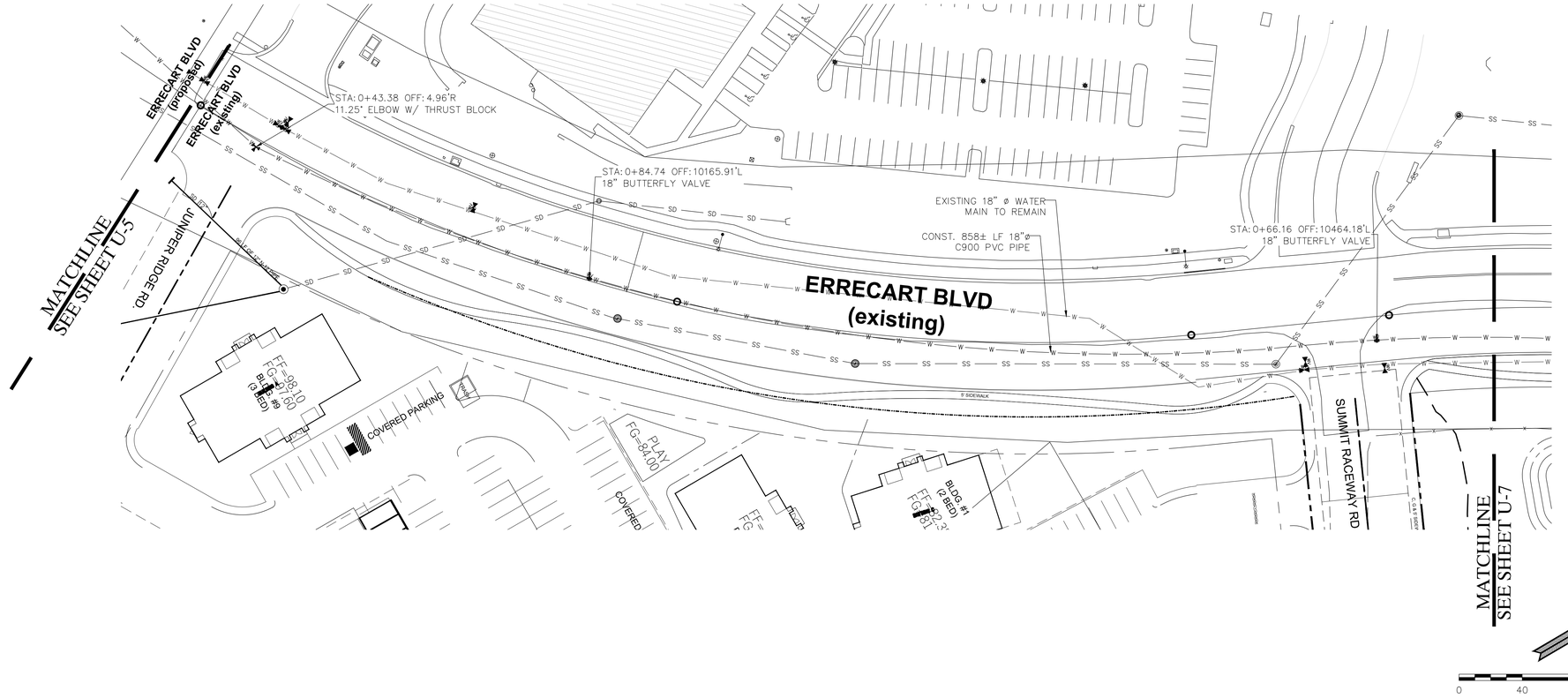
REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
UTILITY PLAN & PROFILE
ELKO COUNTY NEVADA
ELKO

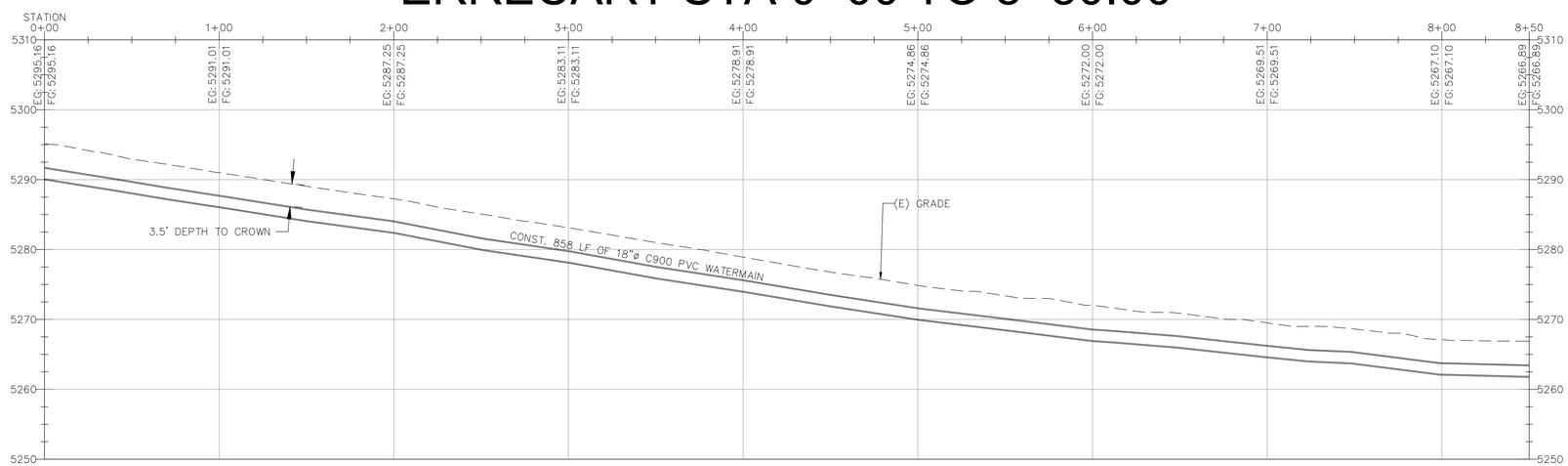
DESIGNED BY: NIB	
CHECKED BY: NIB	
SCALE	
HORIZ:	1"=40'
VERT:	1"=10'
JOB NO: 3-82787	



SHEET U-5 OF 49



ERRECART STA 0+00 TO 8+50.00



2 working days Call before you Dig. 1-800-227-2600

BID SET

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APPD

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
UTILITY PLAN & PROFILE
ELKO COUNTY
NEVADA
ELKO

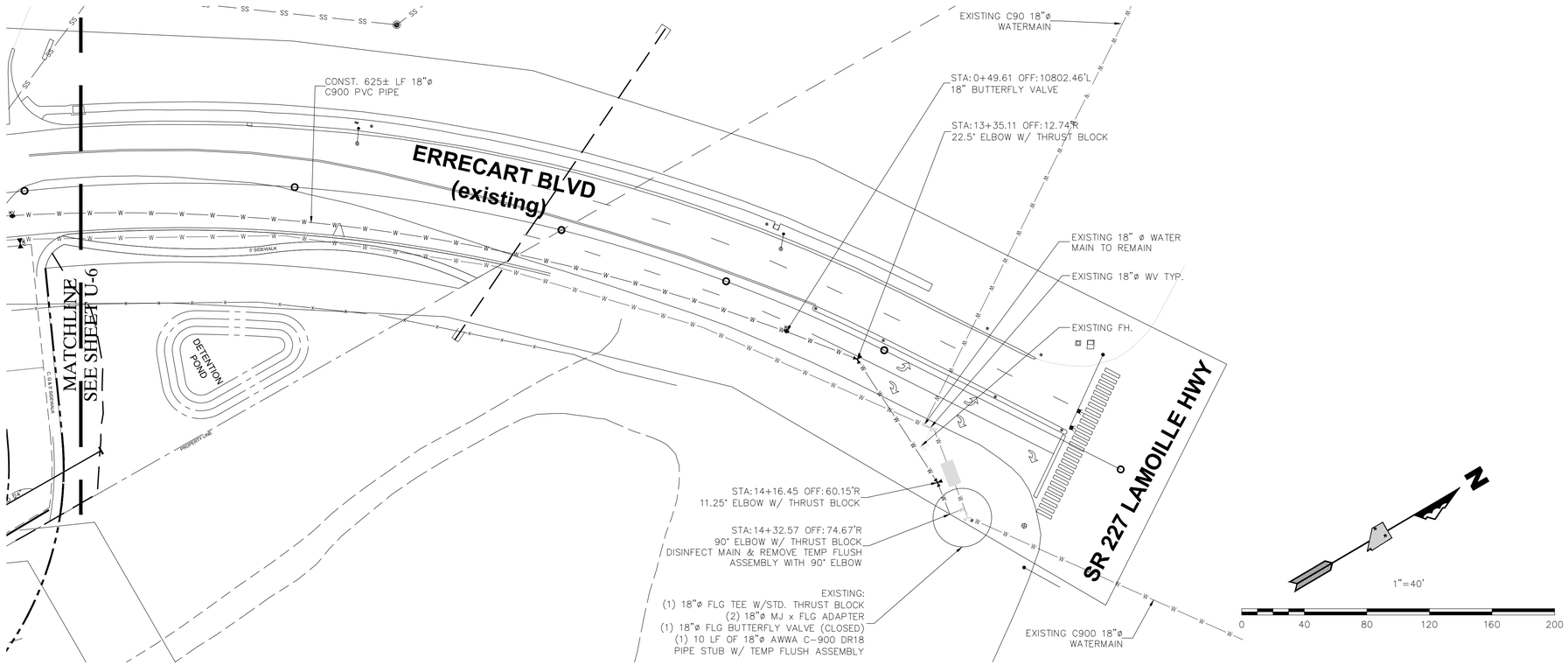
DESIGNED BY: NIB
CHECKED BY: NIB

SCALE
HORIZ: 1"=40'
VERT: 1"=10'

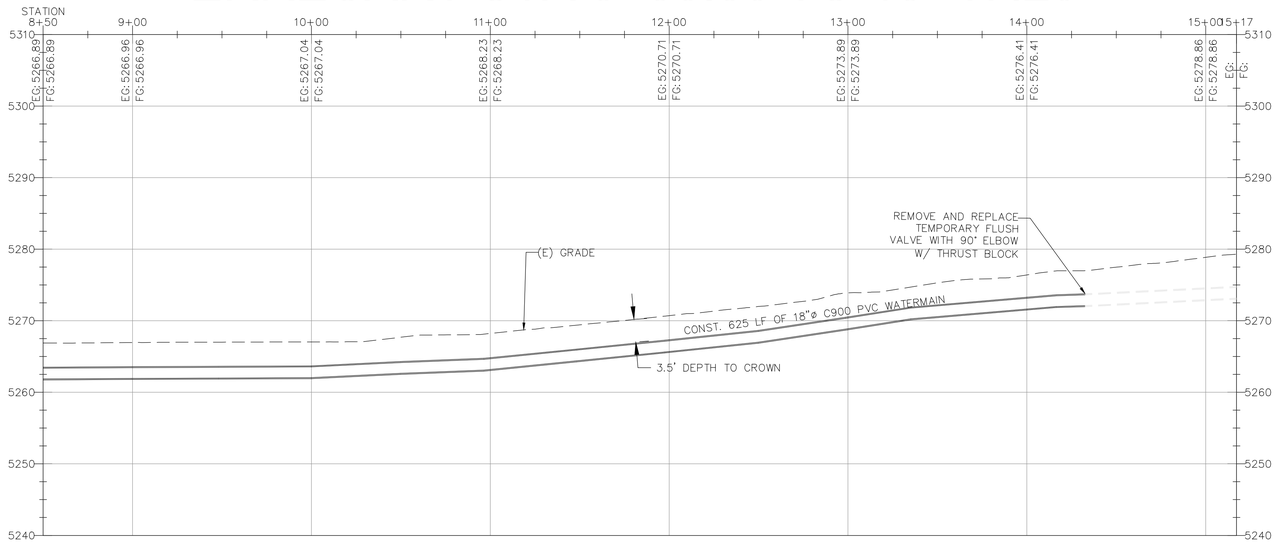
JOB NO: 3-82787

PROFESSIONAL ENGINEER — STATE OF NEVADA — No. 15494 — BHAKTA — Exp. 12-31-24 — CIVIL — 04-25-24

SHEET U-6 OF 49



ERRECART STA 8+50.00 TO 15+17.20'



Call before you Dig. 1-800-227-2600

BID SET

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APPD

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
UTILITY PLAN & PROFILE
ELKO COUNTY
NEVADA

ELKO

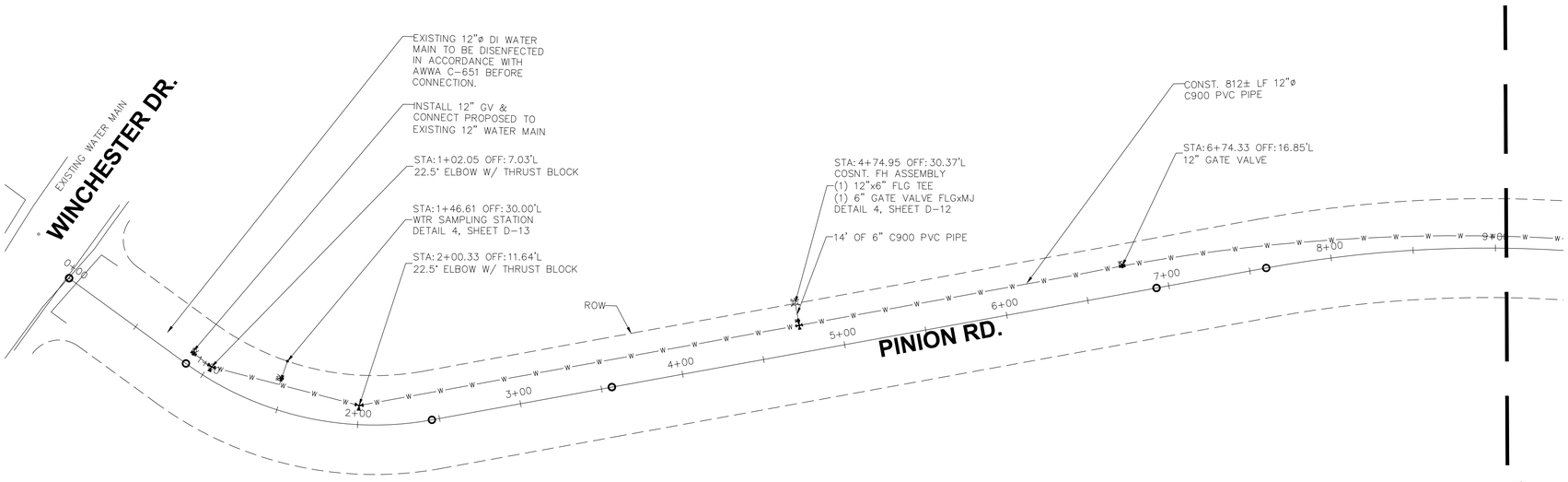
DESIGNED BY: NIB
CHECKED BY: NIB

SCALE	
HORIZ:	1"=40'
VERT:	1"=10'

JOB NO: 3-82787

PROFESSIONAL ENGINEER — NIRAJ BHAKTA — Exp. 12-31-24 — CIVIL — No. 15494 — STATE OF NEVADA
04-25-24

SHEET U-7 OF 49



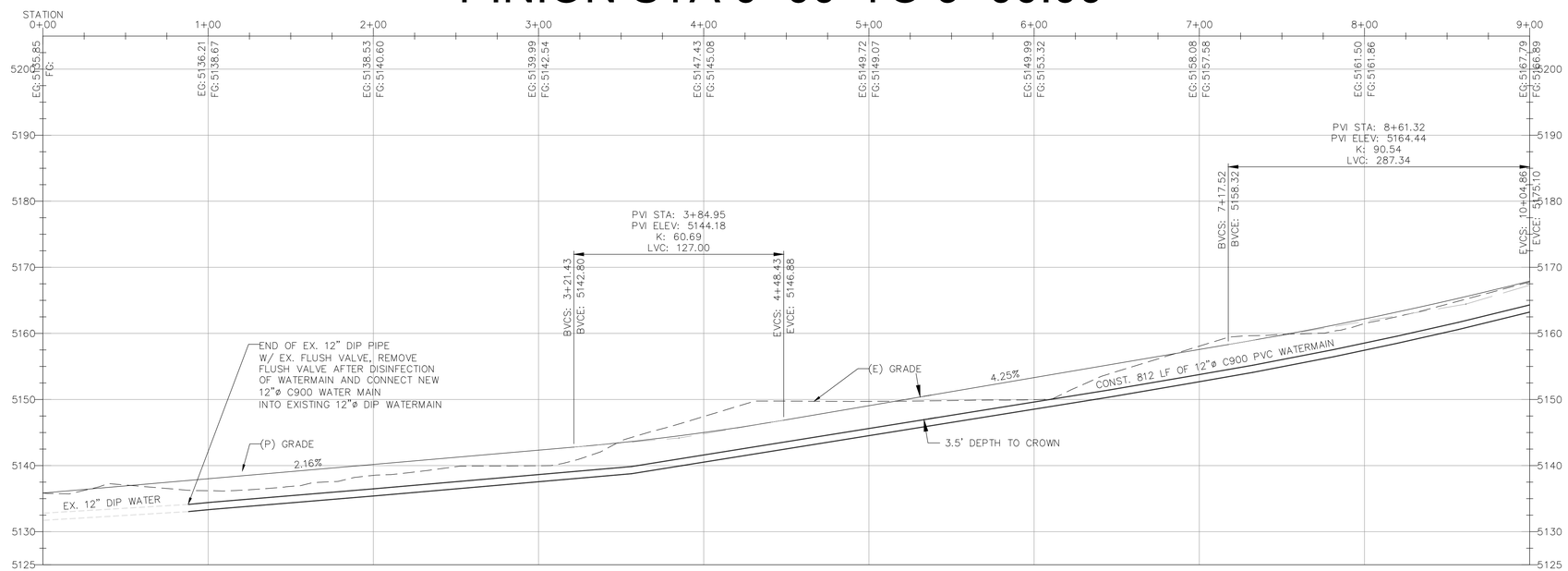
MATCHLINE SEE SHEET U-8

N

1"=40'

0 40 80 120 160 200

PINION STA 0+00' TO 9+00.00'



2 working days Call before you Dig. 1-800-227-2600

BID SET

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APPD

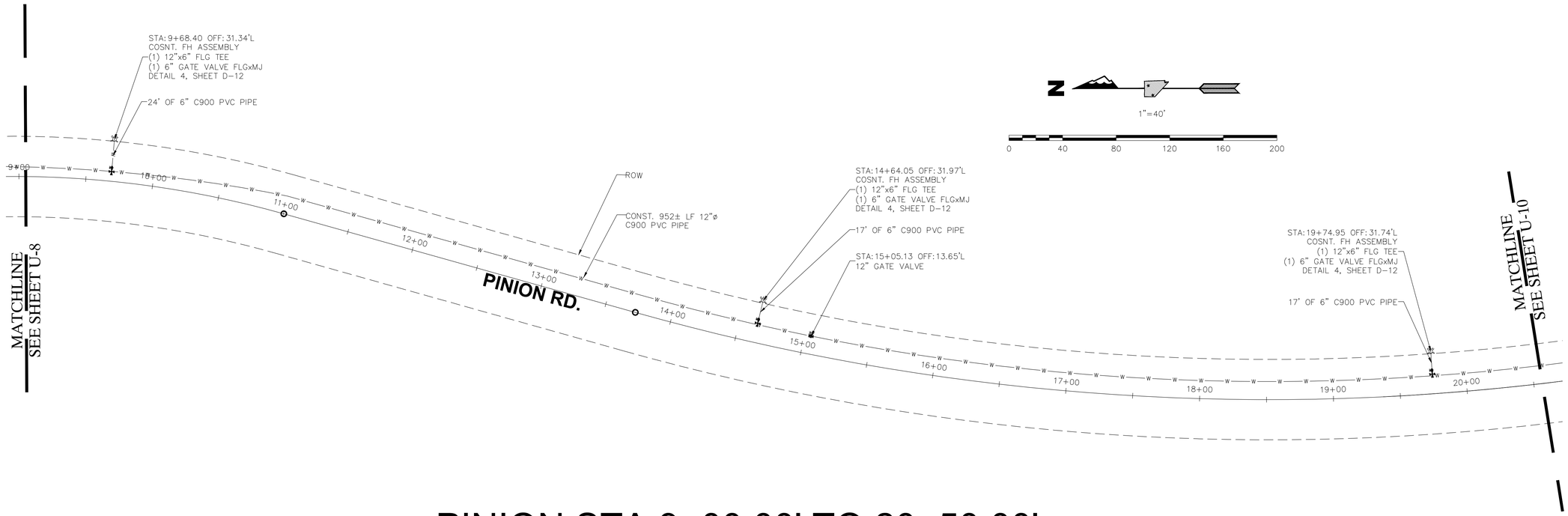
CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
UTILITY PLAN & PROFILE
ELKO COUNTY NEVADA

ELKO

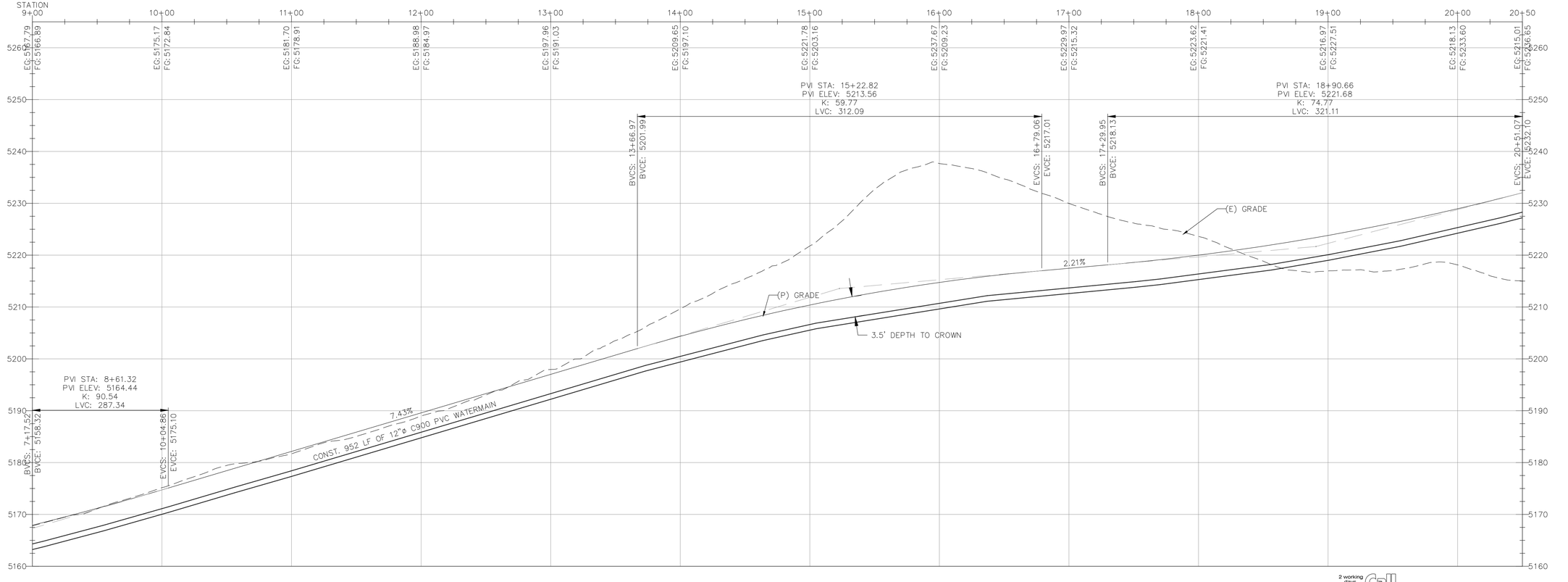
DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: 1"=40'
VERT: 1"=10'
JOB NO: 3-82787

PROFESSIONAL ENGINEER — STATE OF NEVADA — No. 15494 — Exp. 12-31-24 — CIVIL — BHAKTA — 04-25-24

SHEET U-8 OF 49



PINION STA 9+00.00' TO 20+50.00'



2 working days Call before you Dig. 1-800-227-2600

BID SET

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APPD

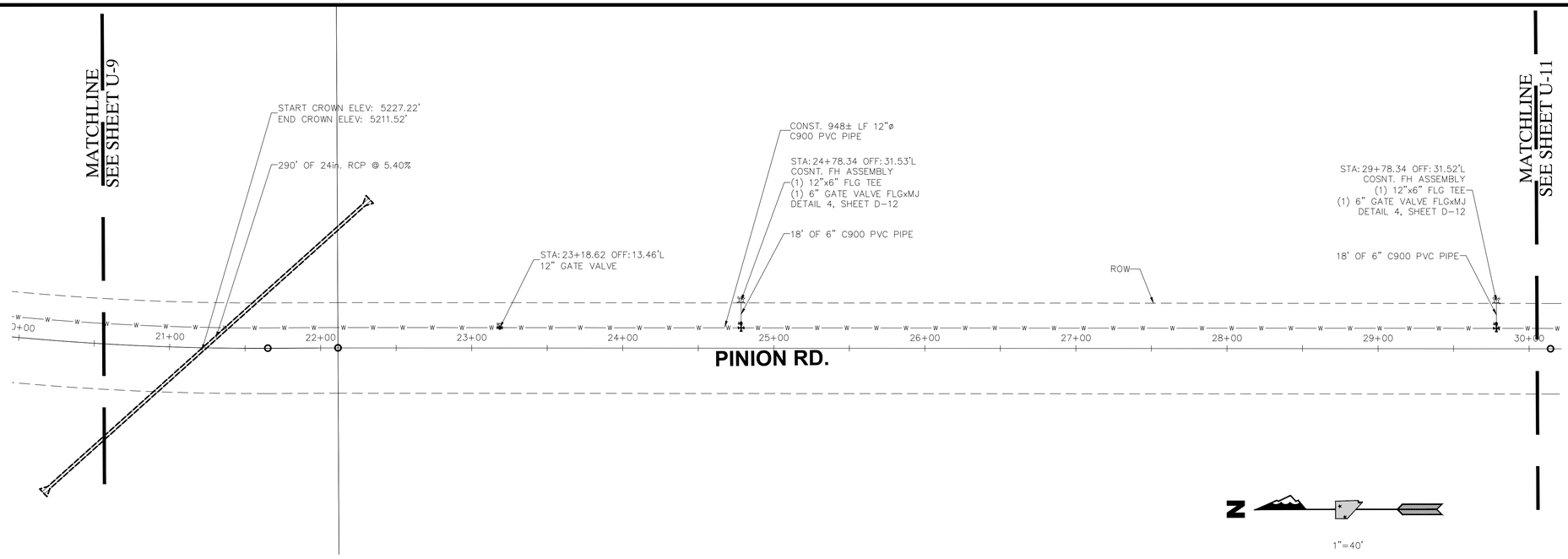
CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
UTILITY PLAN & PROFILE
ELKO COUNTY NEVADA

ELKO

DESIGNED BY:	NIB
CHECKED BY:	NIB
SCALE	
HORIZ:	1"=40'
VERT:	1"=10'
JOB NO:	3-82787

PROFESSIONAL ENGINEER — NIRAJ BHAKTA — Exp. 12-31-24 — CIVIL No. 15494 — STATE OF NEVADA
04-25-24

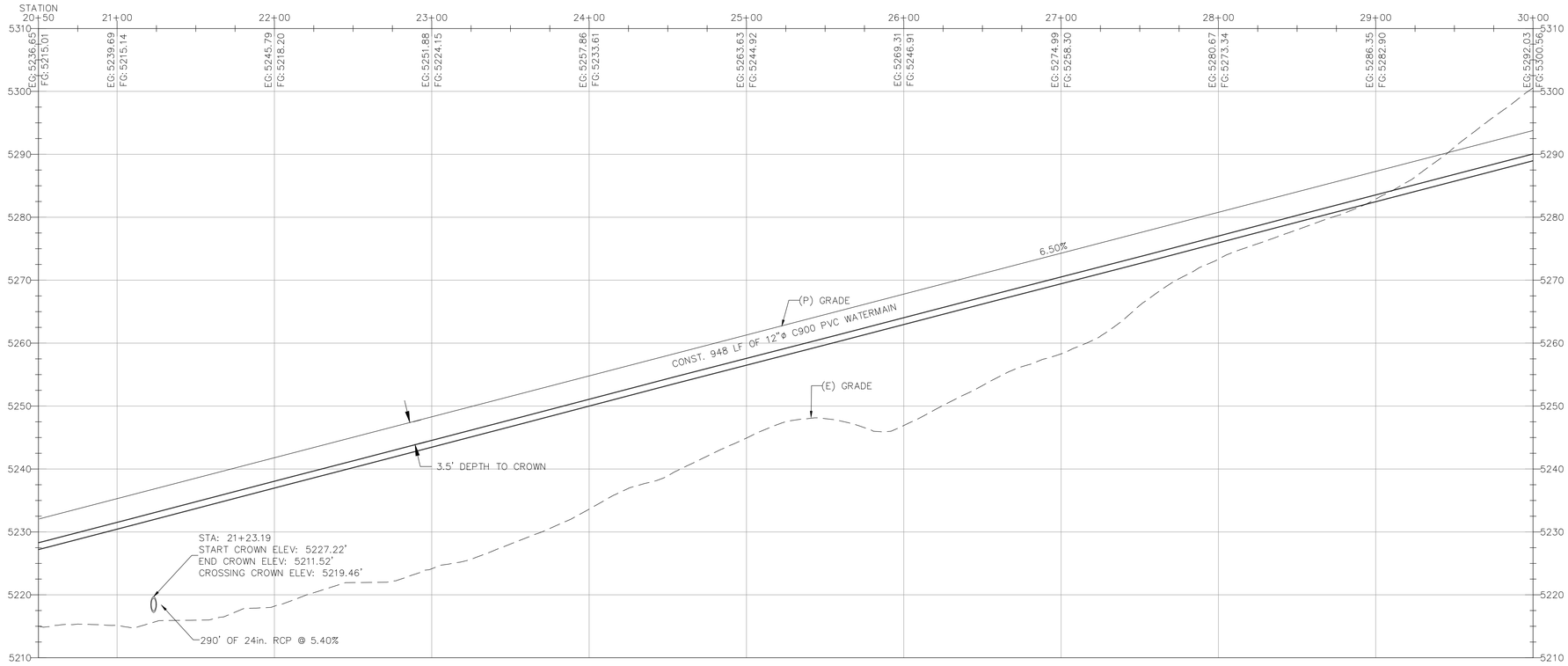
SHEET U-9 OF 49



1"=40'

0 40 80 120 160 200

PINION STA 20+50.00 TO 30+00.00'



2 working days Call before you Dig. 1-800-227-2600

BID SET

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

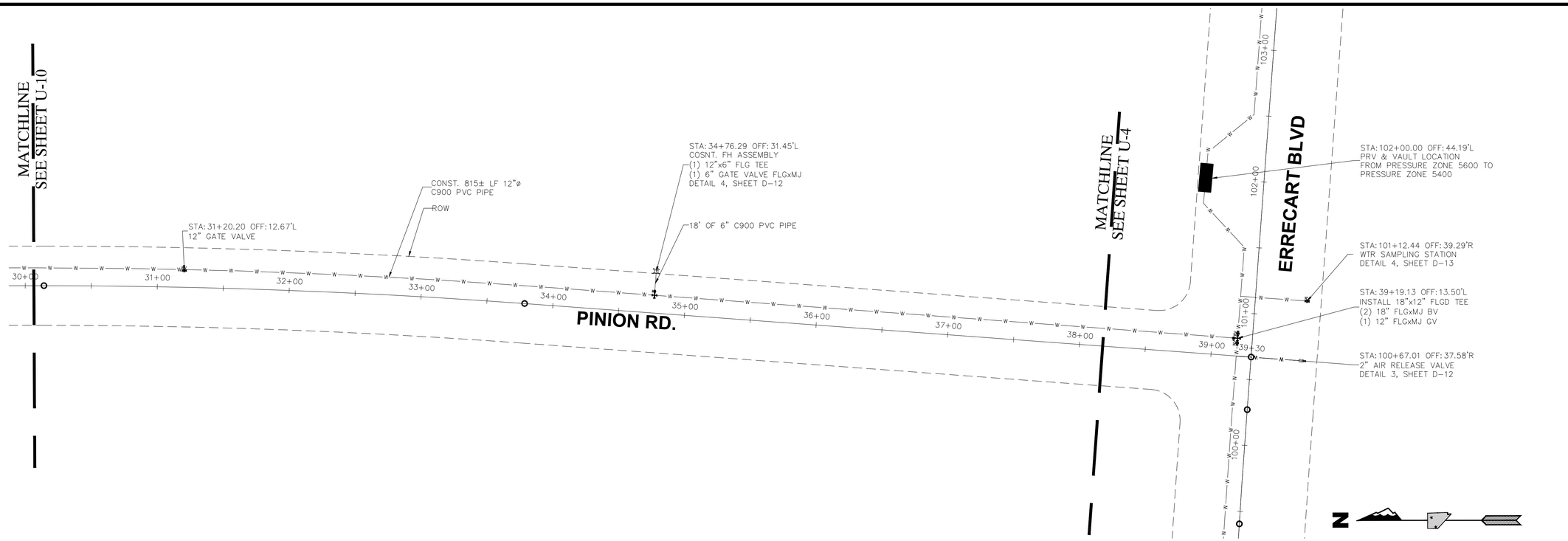
REV.	DATE	DESCRIPTION	BY	APPD

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
UTILITY PLAN & PROFILE
ELKO COUNTY
NEVADA
ELKO

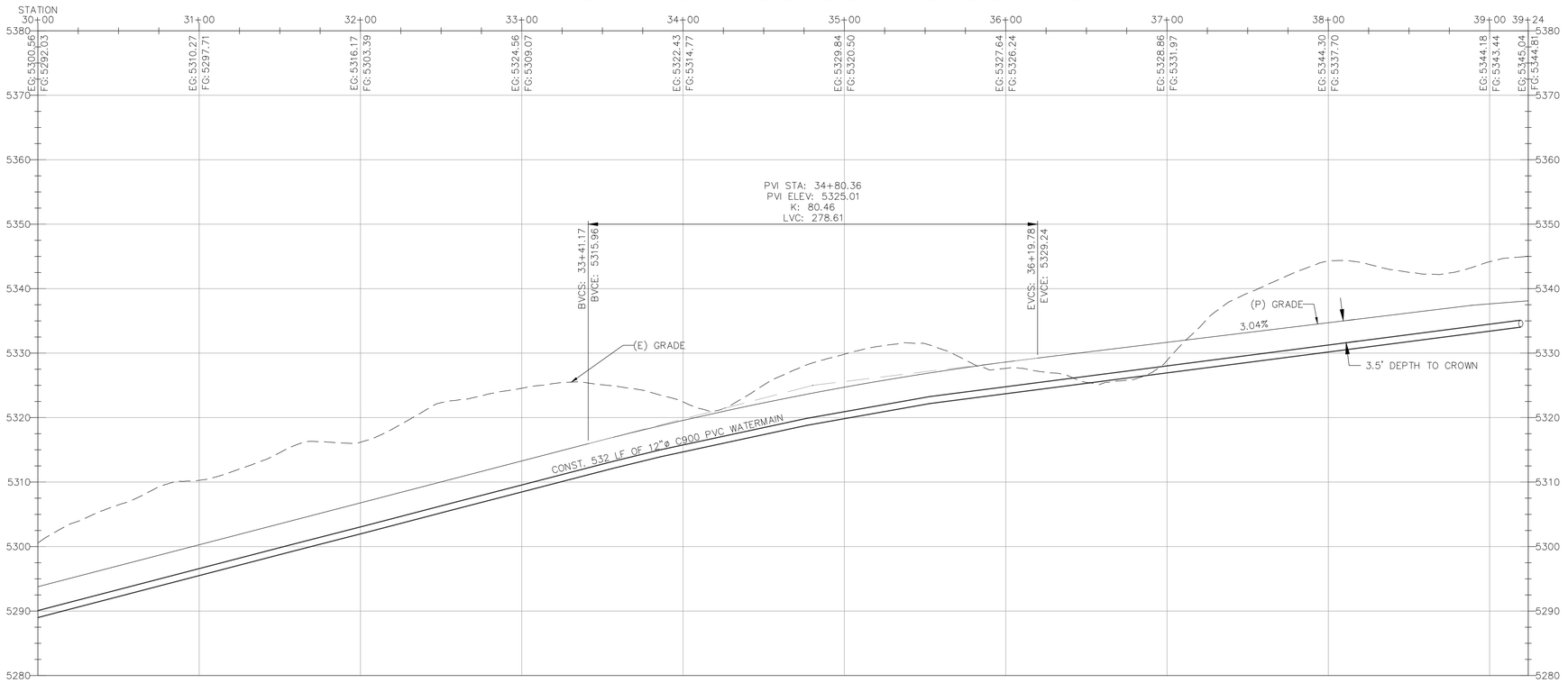
DESIGNED BY:	NIB
CHECKED BY:	NIB
SCALE	
HORIZ:	1"=40'
VERT:	1"=10'
JOB NO:	3-82787

PROFESSIONAL ENGINEER
STATE OF NEVADA
UTTAM BHAKTA
Exp. 12-31-24
CIVIL
No. 15494
04-25-24

SHEET U-10 OF 49



PINION STA 30+00.00' TO 39+23.89'



2 working days Call before you DIG. 1-800-227-2600

BID SET

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APPD

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
UTILITY PLAN & PROFILE
ELKO COUNTY
NEVADA

ELKO

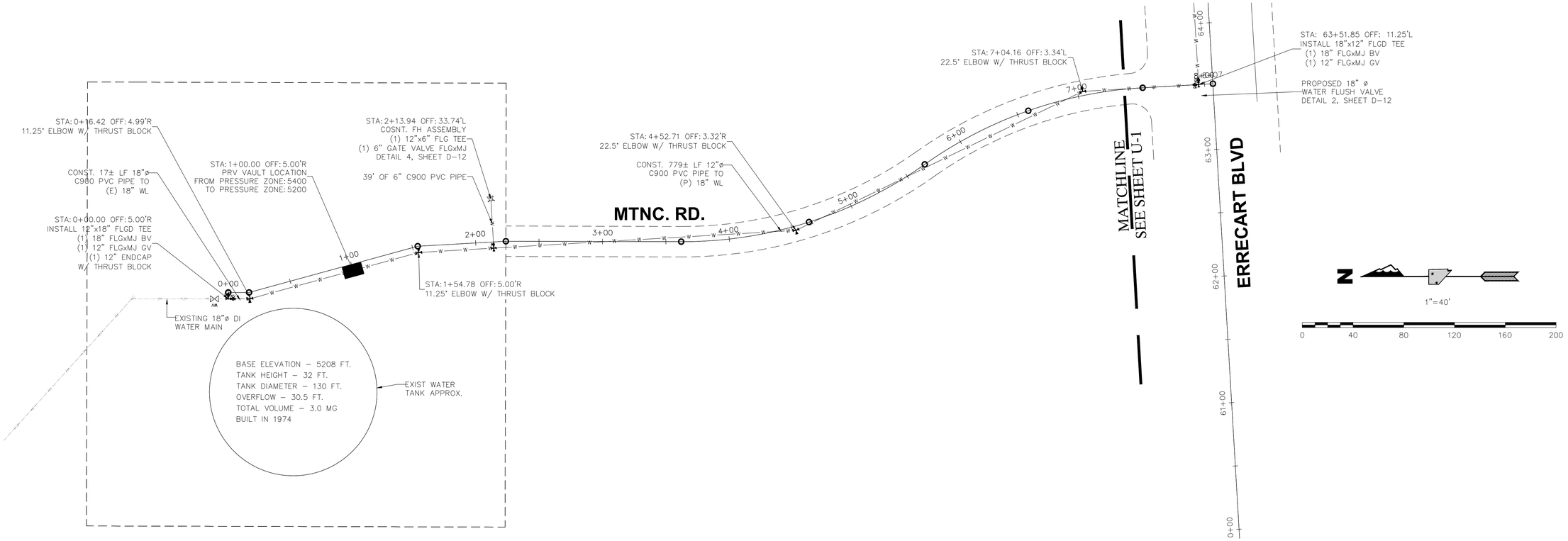
DESIGNED BY: NIB
CHECKED BY: NIB

SCALE
HORIZ: 1"=40'
VERT: 1"=10'

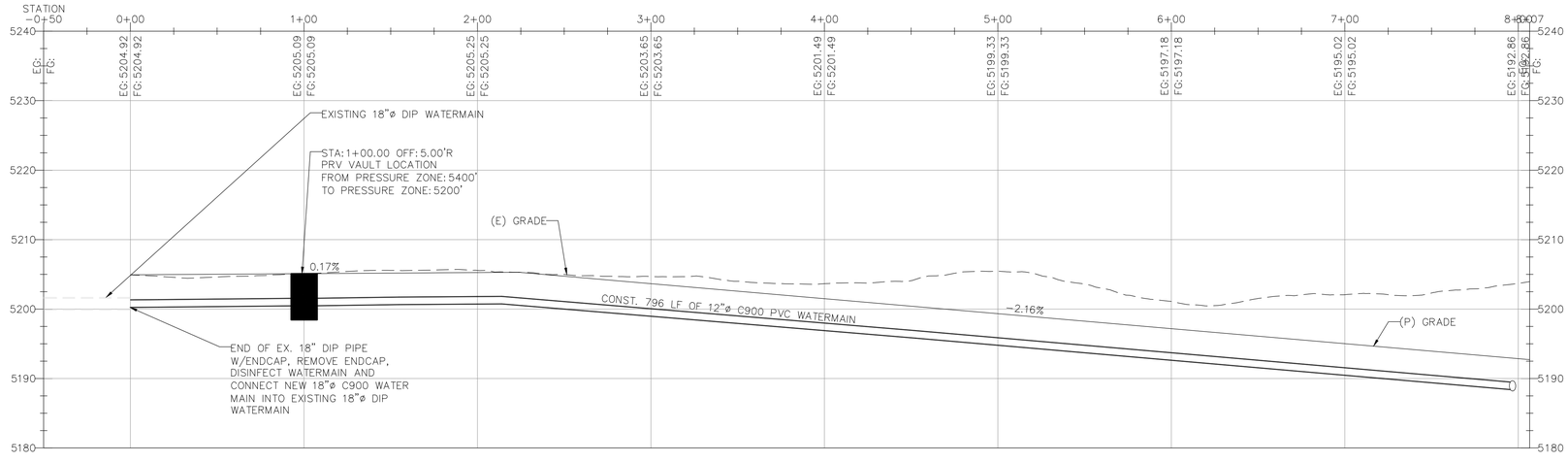
JOB NO: 3-82787

PROFESSIONAL ENGINEER — NUTAN BHAKTA — Exp. 12-31-24 — CIVIL — No. 15494 — STATE OF NEVADA — 04-25-24

SHEET U-11 OF 49



MAINTENENCE ROAD 0+00' TO 8+21.60'



2 working days Call before you Dig. 1-800-227-2600

BID SET

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

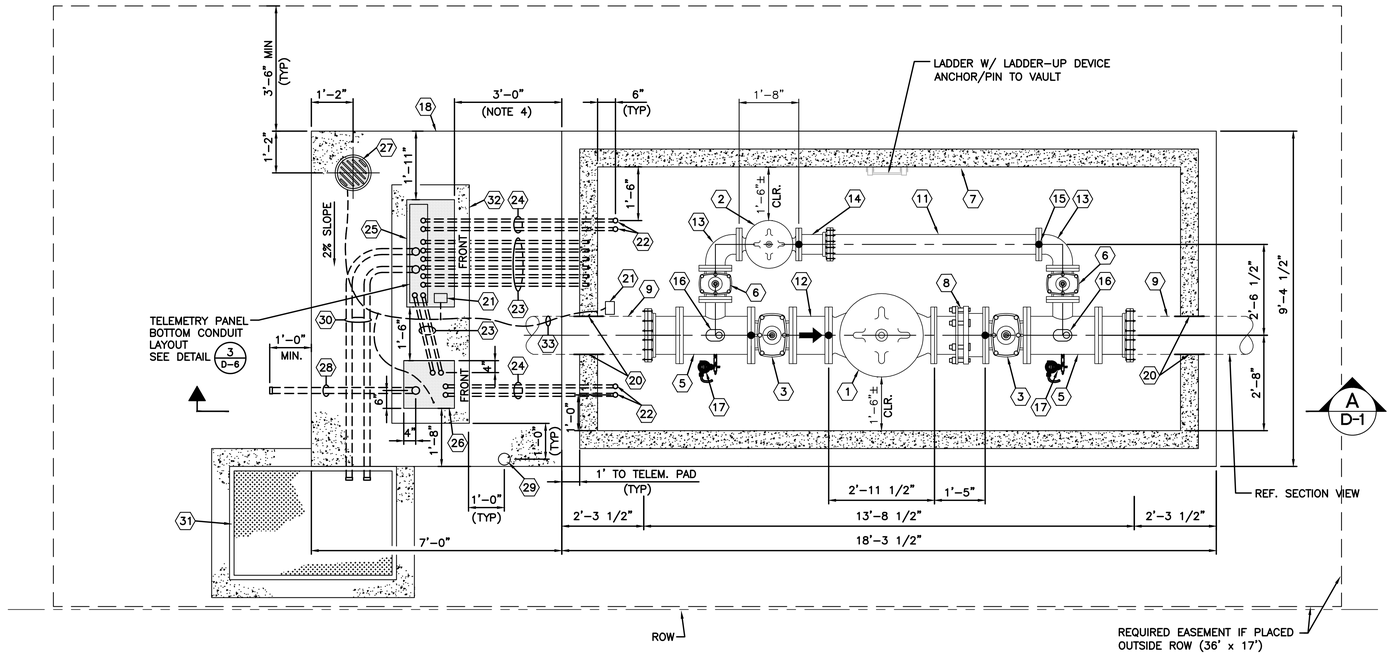
REV.	DATE	DESCRIPTION	BY	APPD

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
UTILITY PLAN & PROFILE
ELKO COUNTY
NEVADA
ELKO

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: 1"=40'
VERT: 1"=10'
JOB NO: 3-82787

PROFESSIONAL ENGINEER — NUNTIA BHAKTA — Exp. 12-31-24 — CIVIL No. 15494 — STATE OF NEVADA
04-25-24

SHEET U-12 OF 49



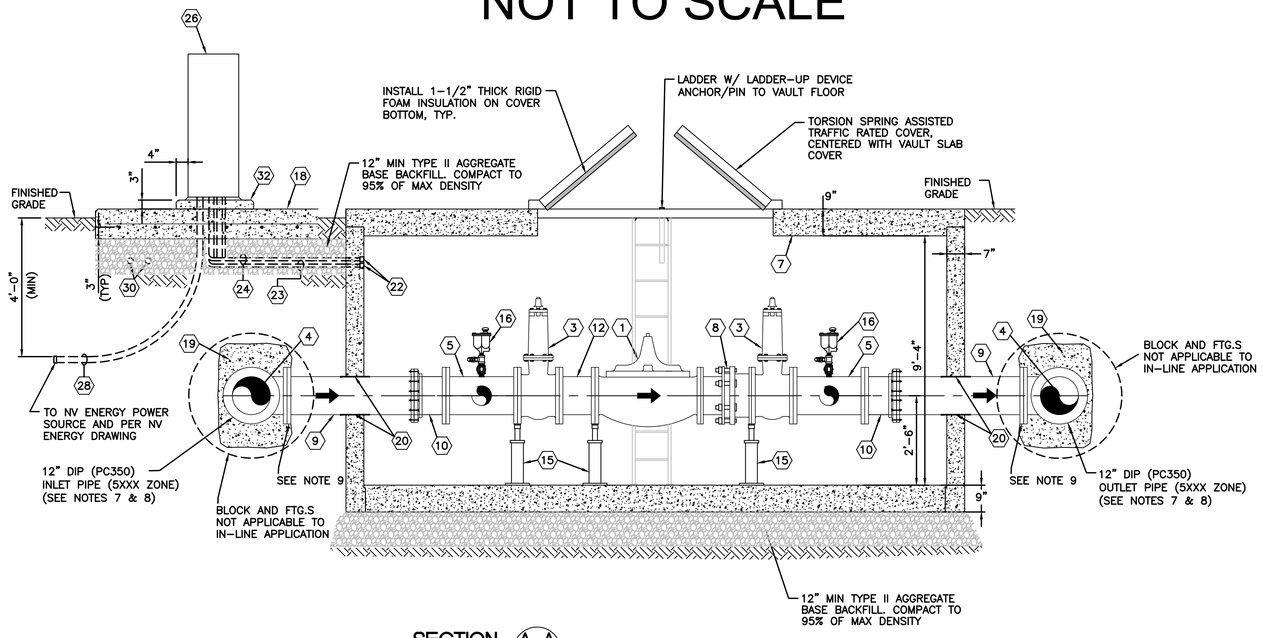
NOTE:

ASSEMBLY SHOWN WITH APPROX REQUIRED EASEMENT. MAY BE BUILT AND RECONFIGURED TO WORK WITHIN EXISTING ROW AT DISCRETION OF ELKO CITY ENGINEER. ACTUAL DIMENSIONS TO VARY WITH VALVE SIZING NEEDS.

NOTES:

1. PRESSURE REDUCING VALVE SETTINGS:
   12" PRV = XX PSI
   6" PRV = XX PSI
2. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY AND ALL DAMAGED OR DISTURBED EXISTING LANDSCAPING, IN AND ADJACENT TO PROJECT SITE, DURING CONSTRUCTION OPERATIONS.
3. PRESSURE REDUCING ASSEMBLY AND ABOVE GROUND PIPING TO BE PAINTED WHITE PER SPECS.
4. 3'-0" MIN CLEARANCE IN FRONT & BEHIND POWER SERVICE PEDESTAL.
5. TELEMETRY ENCLOSURE TO FACE NORTH OR EAST WITH 3.5' MIN CLEARANCE IN FRONT OF ENCLOSURE.
6. PRV TO INCLUDE POSITION INDICATOR AND CLA-VAL X-144D INSERTION FLOW METERS.
7. INSULATING FLANGE KITS TO BE INSTALLED AT PRV LATERAL CONNECTIONS TO MAIN. PRV LATERALS TO BE FULLY BONDED, INCLUDING PENETRATING SPOOLS.
8. TWO (2) ANODES TO BE INSTALLED ON EACH PRV LATERAL (TOTAL OF 4 ANODES), SEE 3/D-4
9. FLG. REDUCERS TO BE INSTALLED IN HORIZONTAL ORIENTATION AT BOTTOM OF SPOOL IF OVERSIZED LATERALS ARE INSTALLED.
10. POWER SERVICE AVAILABILITY TO BE WITHIN 100' OF NEW PRV INSTALLATION.
11. 3/4" CHAMFER REQUIRED ON ALL EXPOSED EDGES OF CONCRETE PADS (BOTTOM OF PAD EXEMPT).

NOT TO SCALE



SECTION A-A D-1

MATERIAL LIST

1. 12" PRESSURE REDUCING VALVE (SEE NOTE 6)
2. 6" PRESSURE REDUCING VALVE (SEE NOTE 6)
3. 12" FLG GATE VALVE (NRS)
4. 12" – 90° FLANGED BEND
5. 12" x 6" FLANGED TEE W/ 2" NPT (TOP) AND 3/4" NPT (SIDE), SEE 1/D-6
6. 6" FLG GATE VALVE (NRS)
7. APPROVED JENSEN PRECAST BUILT SPECIFIC VAULT (CONTRACTOR TO SUBMIT SHOP DRAWINGS)
8. 12" FLG DISMANTLING JOINT (RESTRAINED), ROMAC DJ405 FULLY TELESCOPING WITH NO INTERNAL STOPS
9. 12" FLG x PE DUCTILE IRON PIPE, PC350 (CUT TO FIT)
10. 12" RESTRAINED FLANGE COUPLING ADAPTER W/ INSULATING FLANGE KIT
11. 6" FLG x PE DUCTILE IRON PIPE, PC350 (CUT TO FIT)
12. 12" FLG x FLG DUCTILE IRON PIPE, PC350 (1'-0")
13. 6" – 90° FLANGED BEND
14. 6" RESTRAINED FLANGE COUPLING ADAPTER
15. ADJUSTABLE PIPE SUPPORT
16. 1" COMBINATION AIR VALVE ASSEMBLY, SEE 2/D-4
17. PRESSURE TRANSMITTER ASSEMBLY, SEE 1/D-6
18. 10" THICK CONCRETE PAD (4,500 PSI) REINFORCED W/#4 BARS @ 12"O.C.
19. CONCRETE THRUST BLOCK, SEE 6/D-4
20. LINK-SEAL OR APPROVED JENSEN PRECAST PROVISIONS
21. BOLT EQUIPMENT GROUNDING PLATE TO SLAB, SEE 2/D-5
22. 1" CONDUIT STUBS, SEE 2/D-6
23. 1" PVC CONDUITS W/PVC COATED RGS ELBOWS (12" RADIUS), SEE 4/D-6
24. 1" PVC CONDUITS W/PVC COATED RGS ELBOWS AND PULL WIRE (12" RADIUS)(SPARES), SEE 4/D-6
25. TELEMETRY ENCLOSURE WITH SUNSHIELD (48"H x 36"W x 18"D), SEE 4/D-6
26. POWER SERVICE PEDESTAL (ELKO WATER PROPERTY) (48"H x 16"W x 17"D), SEE 4/D-6
27. GROUNDWELL SYSTEM, SEE 3/D-5
28. POWER SERVICE CONDUIT (3" MIN.) PER NV ENERGY REQUIREMENTS
29. VEHICULAR PROTECTION BOLLARD. BOLLARDS TO BE SPACED AT 5'-0" AS REQUIRED. REMOVABLE VEHICULAR BOLLARDS TO BE INSTALLED WHEN INSTALLED DIRECTLY IN FRONT OF ENCLOSURE, SEE 1/D-4 AND 4/D-4
30. 2" PVC CONDUITS FOR FIBER OPTIC, ROUTE TO PULLBOX
31. CENTURYLINK 200 BOX W/ H20-44 HINGED ALUMINUM TORSION ASSIST LIDS WITH 180° LAYBACK CAPABILITY, LID LABELED WITH "ELKO WATER FIBER" WITH 6" MIN. COLLAR
32. RAISED CONCRETE PAD FOR TELEMETRY AND POWER ENCLOSURES (26" x 80" MIN)
33. #2 CU THW. GROUND WIRE. USE EXOTHERMIC (CADWELD) CONNECTION TO ATTACH TO EQUIPMENT PAD REBAR, AND #4/0 GROUNDWELL WIRE. 12" OF EXCESS GROUND WIRE TO BE LEFT INSIDE POWER PEDESTAL.

12" x 6" PRV ASSEMBLY WITH POWER AND TELEMETRY 1/D-1

BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APPD

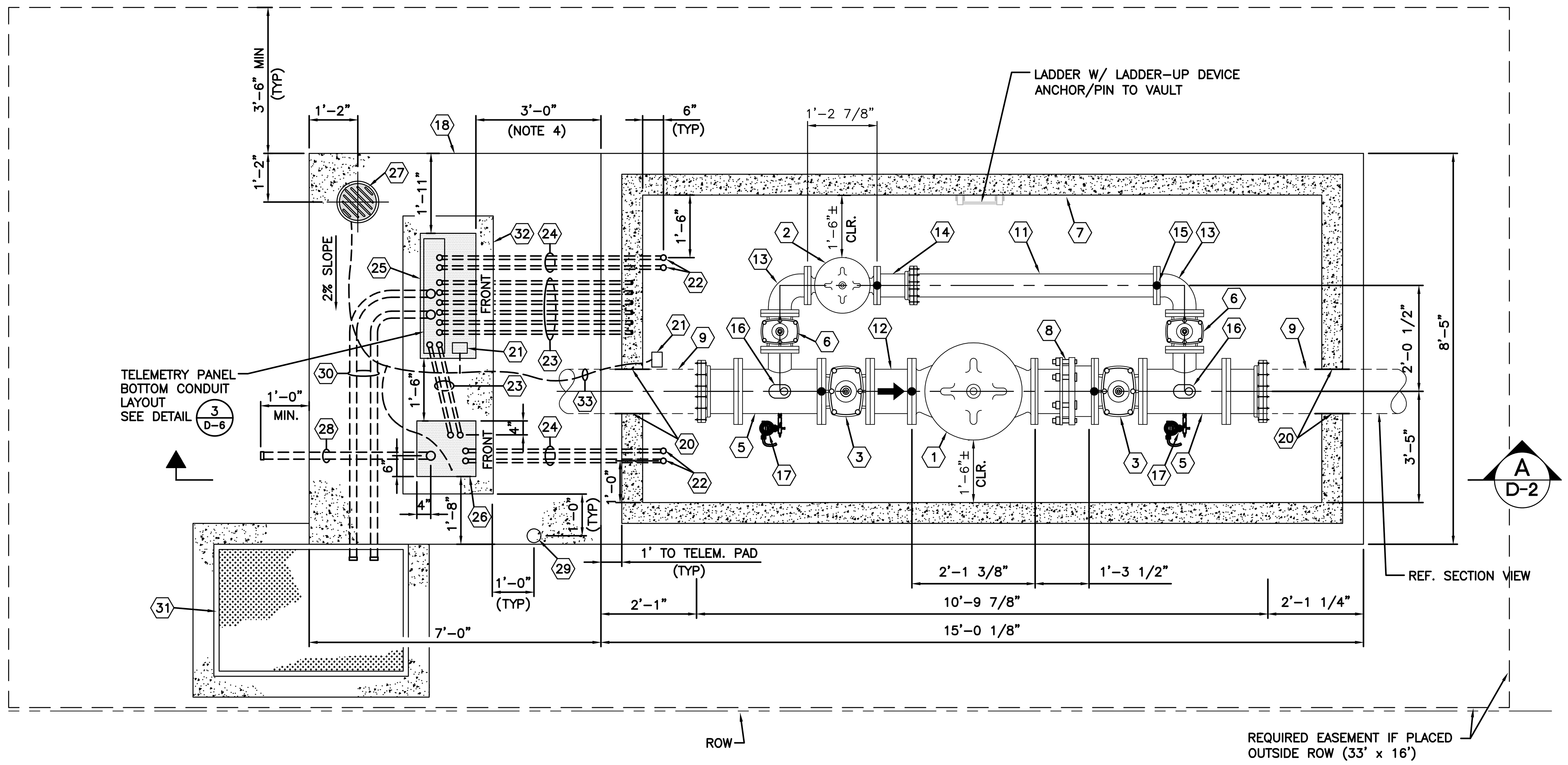
CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
12X6 PRV ASSEMBLY
ELKO COUNTY NEVADA

ELKO

DESIGNED BY:	NIB
CHECKED BY:	NIB
SCALE	
HORIZ:	NA
VERT:	NA
JOB NO:	3-82787

PROFESSIONAL ENGINEER — NIRAJ I. BHAKTA — Exp. 12-31-24 — CIVIL — No. 15494 — STATE OF NEVADA — 04-25-24

SHEET D-1 OF 49



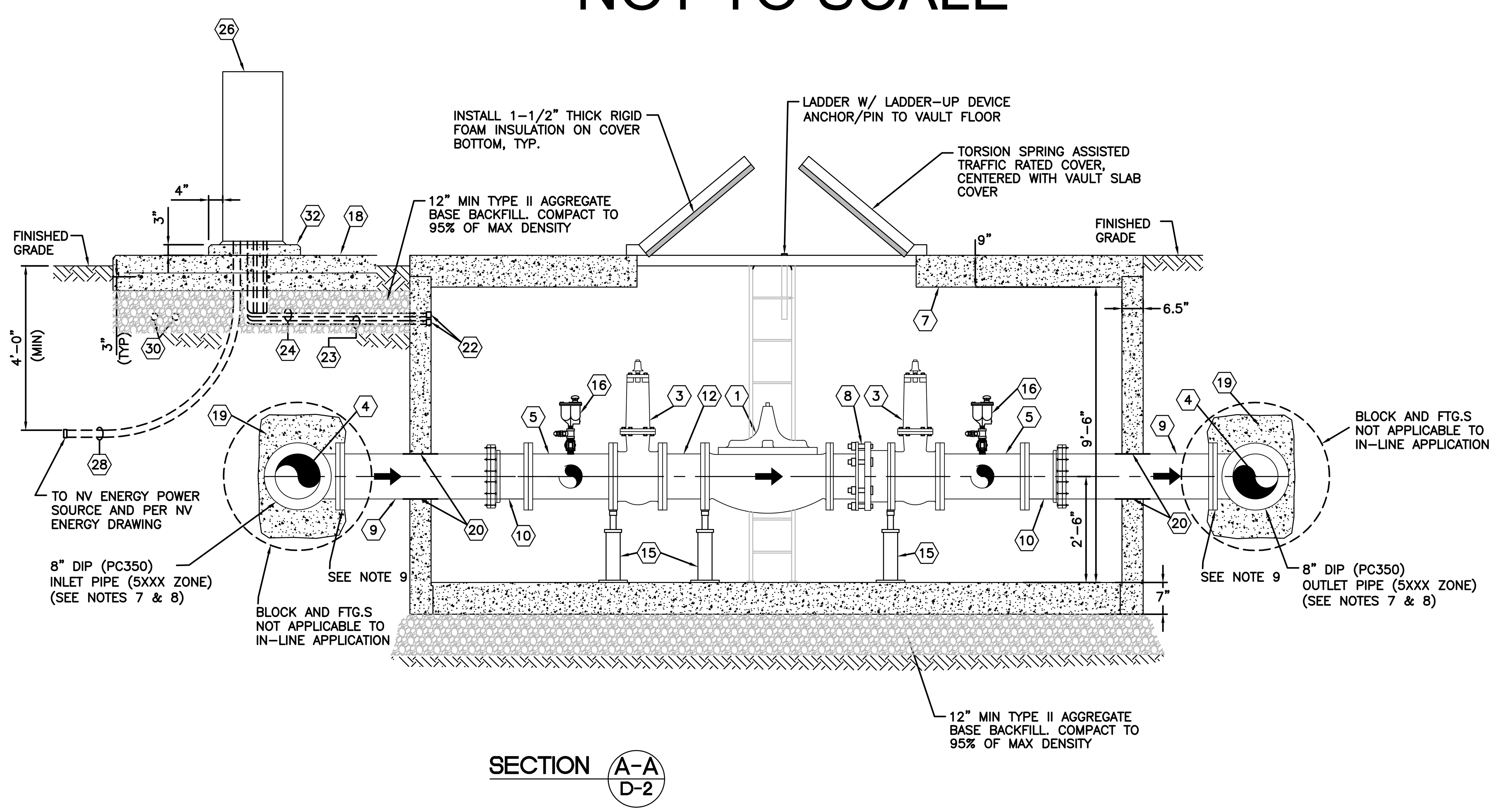
NOT TO SCALE

NOTE:

ASSEMBLY SHOWN WITH APPROX REQUIRED EASEMENT. MAY BE BUILT AND RECONFIGURED TO WORK WITHIN EXISTING ROW AT DISCRETION OF ELKO CITY ENGINEER. ACTUAL DIMENSIONS TO VARY WITH VALVE SIZING NEEDS.

NOTES:

1. PRESSURE REDUCING VALVE SETTINGS:
   8" PRV = XX PSI
   4" PRV = XX PSI
2. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY AND ALL DAMAGED OR DISTURBED EXISTING LANDSCAPING, IN AND ADJACENT TO PROJECT SITE, DURING CONSTRUCTION OPERATIONS.
3. PRESSURE REDUCING ASSEMBLY AND ABOVE GROUND PIPING TO BE PAINTED WHITE PER SPECS.
4. 3'-0" MIN CLEARANCE IN FRONT & BEHIND POWER SERVICE PEDESTAL.
5. TELEMETRY ENCLOSURE TO FACE NORTH OR EAST WITH 3.5' MIN CLEARANCE IN FRONT OF ENCLOSURE.
6. PRV TO INCLUDE POSITION INDICATOR AND CLA-VAL X-144D INSERTION FLOW METERS.
7. INSULATING FLANGE KITS TO BE INSTALLED AT PRV LATERAL CONNECTIONS TO MAIN. PRV LATERALS TO BE FULLY BONDED, INCLUDING RISERS.
8. TWO (2) ANODES TO BE INSTALLED ON EACH PRV LATERAL (TOTAL OF 4 ANODES), SEE 3/D-4
9. FLANGED REDUCERS TO BE INSTALLED IN VERTICAL ORIENTATION AT BOTTOM OF RISERS IF OVERSIZED LATERALS ARE INSTALLED.
10. 3/4" CHAMFER REQUIRED ON ALL EXPOSED EDGES OF CONCRETE PADS (BOTTOM OF PAD EXEMPT).



SECTION A-A / D-2

MATERIAL LIST

1. 8" PRESSURE REDUCING VALVE (SEE NOTE 6)
2. 4" PRESSURE REDUCING VALVE (SEE NOTE 6)
3. 8" FLG GATE VALVE (NRS)
4. 8" – 90° FLANGED BEND
5. 8" x 4" FLANGED TEE W/ 2" NPT (TOP) AND 3/4" NPT (SIDE), SEE 1/D-6
6. 4" FLG GATE VALVE (NRS)
7. APPROVED JENSEN PRECAST BUILT SPECIFIC VAULT (CONTRACTOR TO SUBMIT SHOP DRAWINGS)
8. 8" FLG DISMANTLING JOINT (RESTRAINED), ROMAC DJ405 FULLY TELESCOPING WITH NO INTERNAL STOPS
9. 8" FLG x PE DUCTILE IRON PIPE, PC350 (CUT TO FIT)
10. 8" RESTRAINED FLANGE COUPLING ADAPTER W/ INSULATING FLANGE KIT
11. 4" FLG x PE DUCTILE IRON PIPE, PC350 (CUT TO FIT)
12. 8" FLG x FLG DUCTILE IRON PIPE, PC350 (1'-0")
13. 4" – 90° FLANGED BEND
14. 4" RESTRAINED FLANGE COUPLING ADAPTER
15. ADJUSTABLE PIPE SUPPORT
16. 1" COMBINATION AIR VALVE ASSEMBLY, SEE 2/D-4
17. PRESSURE TRANSMITTER ASSEMBLY, SEE 1/D-6
18. 10" THICK CONCRETE PAD (4,500 PSI) REINFORCED W/#4 BARS @ 12"O.C.
19. CONCRETE THRUST BLOCK, SEE 6/D-4
20. LINK-SEAL OR APPROVED JENSEN PRECAST PROVISIONS
21. BOLT EQUIPMENT GROUNDING PLATE TO SLAB, SEE 2/D-5
22. 1" CONDUIT RISER, SEE 2/D-6
23. 1" PVC CONDUITS W/PVC COATED RGS ELBOWS (12" RADIUS), SEE 4/D-6
24. 1" PVC CONDUITS W/PVC COATED RGS ELBOWS AND PULL WIRE (12" RADIUS)(SPARES), SEE 4/D-6
25. TELEMETRY ENCLOSURE WITH SUNSHIELD (48"H x 36"W x 18"D), SEE 4/D-6
26. POWER SERVICE PEDESTAL (ELKO WATER PROPERTY) (48"H x 16"W x 17"D), SEE 4/D-6
27. GROUNDWELL SYSTEM, SEE 3/D-5
28. POWER SERVICE CONDUIT (3" MIN.) PER NV ENERGY REQUIREMENTS
29. VEHICULAR PROTECTION BOLLARD. BOLLARDS TO BE SPACED AT 5'-0" AS REQUIRED. REMOVABLE VEHICULAR BOLLARDS TO BE INSTALLED WHEN INSTALLED DIRECTLY IN FRONT OF ENCLOSURE, SEE 1/D-4 AND 4/D-4
30. 2" PVC CONDUITS FOR FIBER OPTIC, ROUTE TO PULLBOX
31. CENTURYLINK 200 BOX W/ H20-44 HINGED ALUMINUM TORSION ASSIST LIDS WITH 180° LAYBACK CAPABILITY, LID LABELED WITH "ELKO WATER FIBER" WITH 6" MIN. COLLAR
32. RAISED CONCRETE PAD FOR TELEMETRY AND POWER ENCLOSURES (26" x 80" MIN)
33. #2 CU THW. GROUND WIRE. USE EXOTHERMIC (CADWELD) CONNECTION TO ATTACH TO EQUIPMENT PAD REBAR, AND #4/0 GROUNDWELL WIRE. 12" OF EXCESS GROUND WIRE TO BE LEFT INSIDE POWER PEDESTAL.

8" x 4" PRV ASSEMBLY WITH POWER AND TELEMETRY 1/D-2

BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

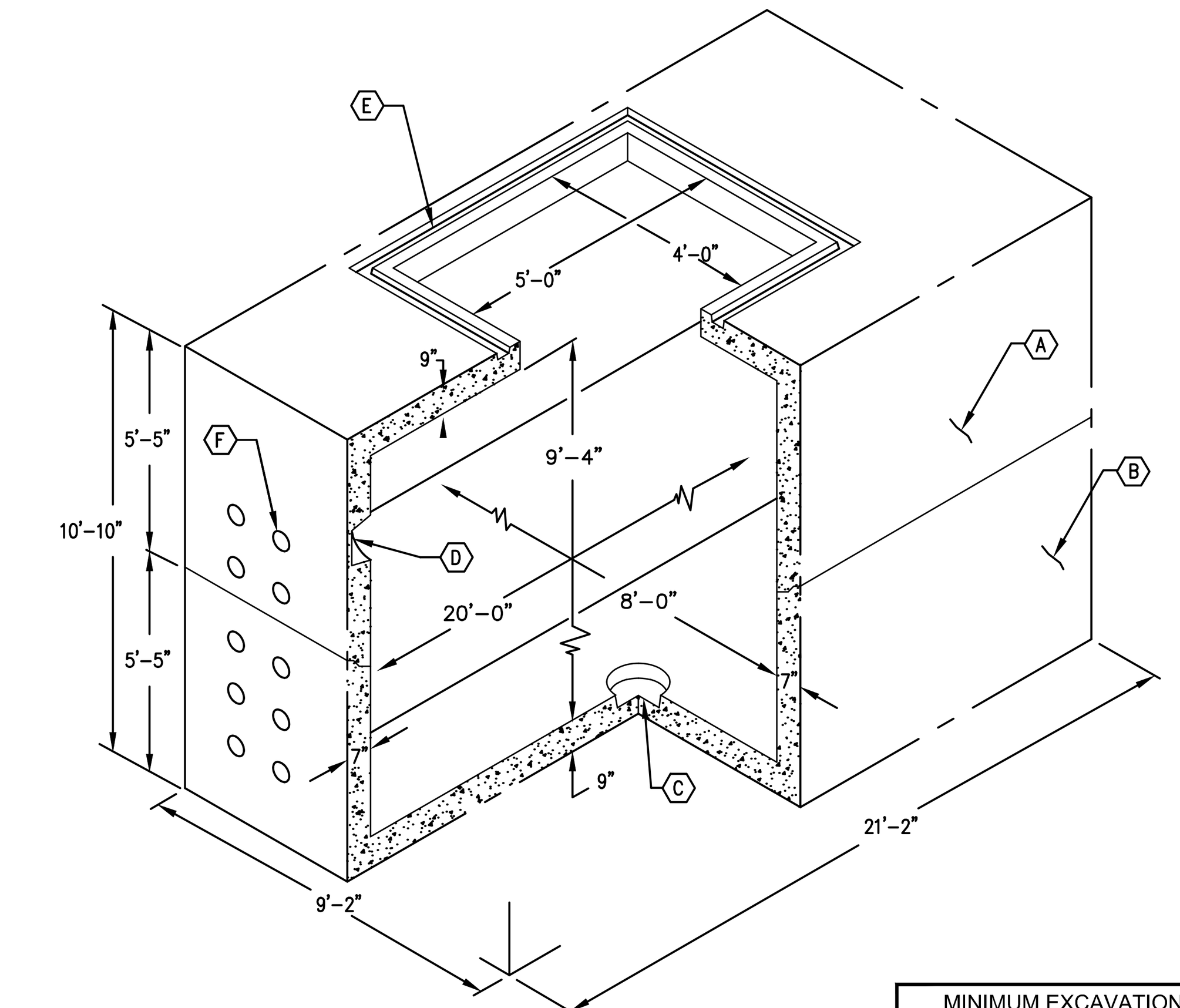
REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR ERRECART BLVD. CONNECTOR
8X4 PRV ASSEMBLY
ELKO — ELKO COUNTY — NEVADA

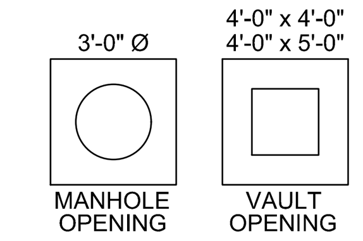
DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: NA
VERT: NA
JOB NO: 3-82787

PROFESSIONAL ENGINEER STATE OF NEVADA — NITIN BHAKTA — Exp. 12-31-24 — CIVIL — No. 15494 — 04-25-24

SHEET D-2 OF 49



MINIMUM EXCAVATION SIZE:
10'-0" x 22'-0" x DEPTH REQUIRED.



■ ILLUSTRATION IS TYPICAL ONLY OF GENERAL SERIES CONFIGURATION: FOR SPECIFIC CONFIGURATION, CALL JENSEN PRECAST.

(A) TOP SECTION WT.= 45,000 Lbs.
(B) BOTTOM SECTION WT.= 46,000 Lbs.
(C) SUMP - VARIOUS SIZES AVAILABLE
(D) VENT KNOCKOUTS
(E) FOR COVERS: SEE COVER AND NECKING SECTION.
(F) TERMINATORS - VARIOUS SIZES AVALIABLE

■ DESIGN FOR H-20-44 BRIDGE LOADING.

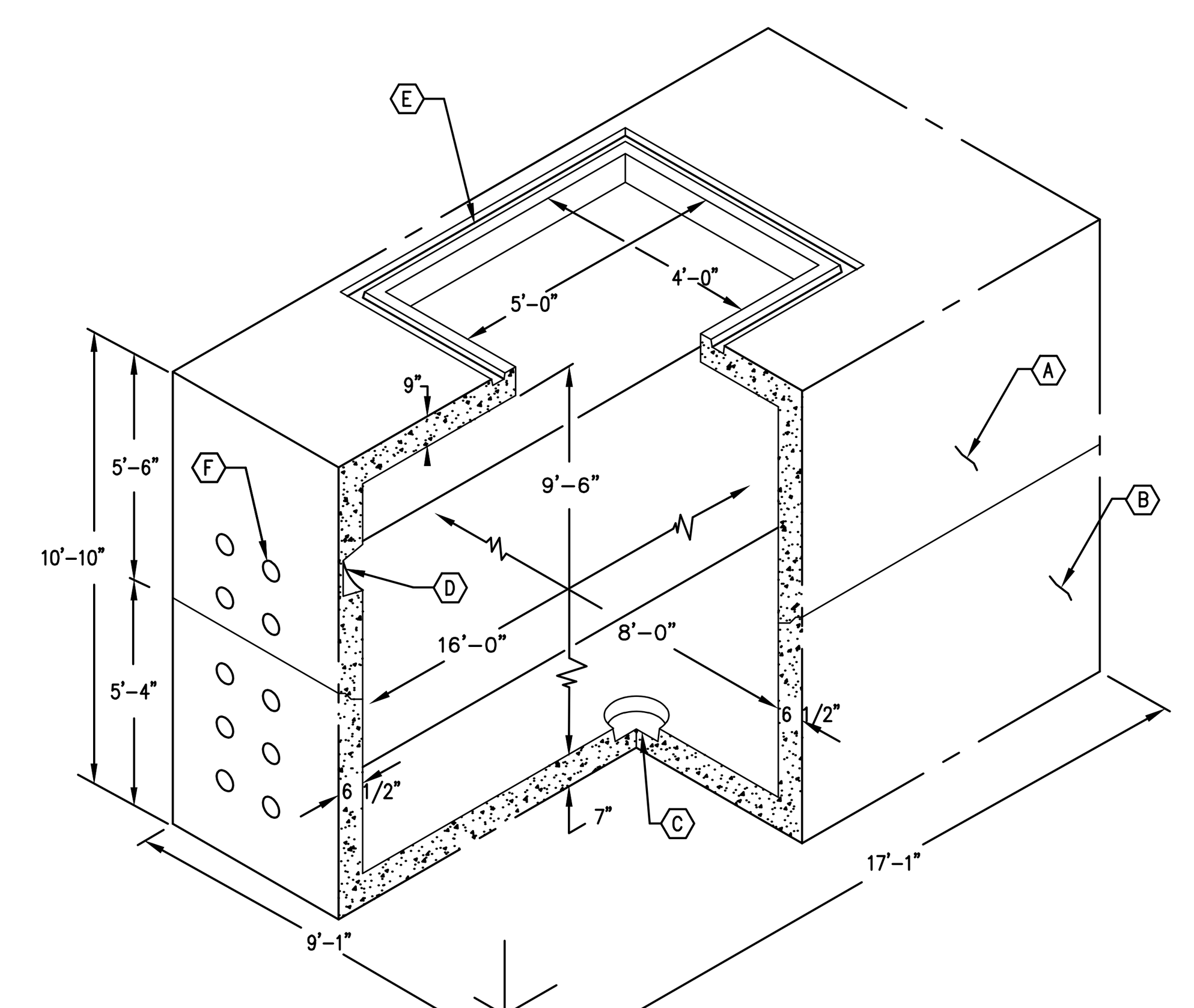
■ ASSEMBLY TO BE PLACED ON A 6" BASE OF CRUSHER RUN FOR EASE OF INSTALLATION AND EVEN LOAD DISTRIBUTION.

8'-0" x 20'-0" x 9'-4"
MANHOLE / VAULT
* **WITH LADDER ACCESS**

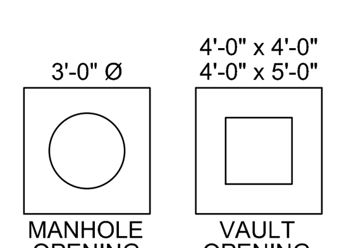
11-15-00

JENSEN PRECAST®

820 SERIES



MINIMUM EXCAVATION SIZE:
10'-0" x 18'-0" x DEPTH REQUIRED.



■ ILLUSTRATION IS TYPICAL ONLY OF GENERAL SERIES CONFIGURATION: FOR SPECIFIC CONFIGURATION, CALL JENSEN PRECAST.

(A) TOP SECTION WT.= 35,500 Lbs.
(B) BOTTOM SECTION WT.= 36,600 Lbs.
(C) SUMP - VARIOUS SIZES AVAILABLE
(D) VENT KNOCKOUTS
(E) FOR COVERS: SEE COVER AND NECKING SECTION.
(F) TERMINATORS - VARIOUS SIZES AVALIABLE

■ DESIGN FOR H-20-44 BRIDGE LOADING.

■ ASSEMBLY TO BE PLACED ON A 6" BASE OF CRUSHER RUN FOR EASE OF INSTALLATION AND EVEN LOAD DISTRIBUTION.

8'-0" x 16'-0" x 9'-6"
MANHOLE / VAULT
* **WITH LADDER ACCESS**

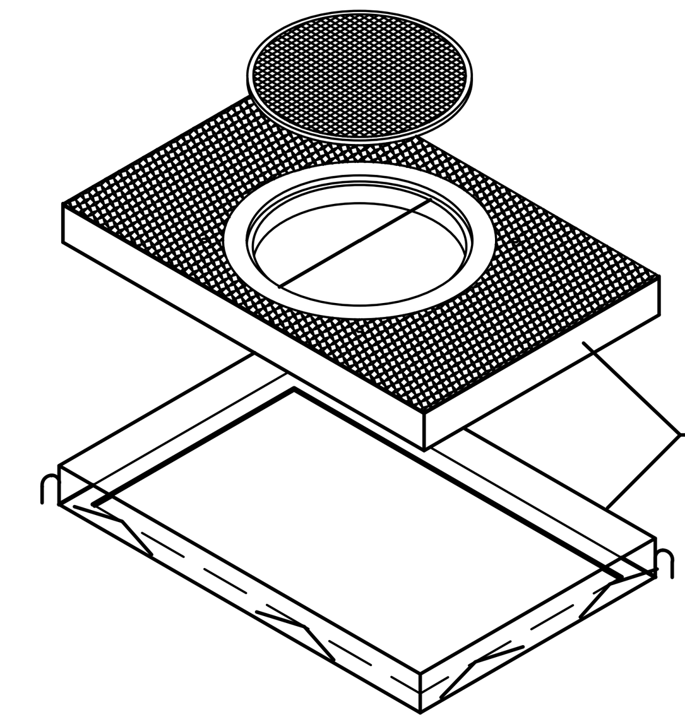
11-15-00

JENSEN PRECAST®

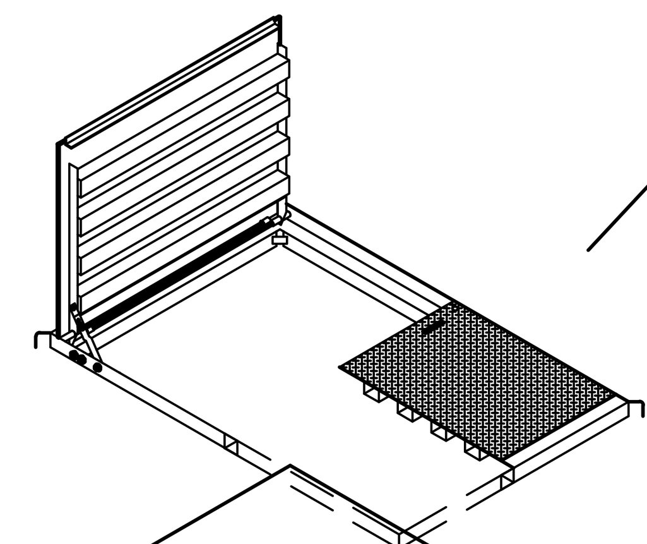
816 SERIES

687 BLANK
4878 ACCESS OPENING

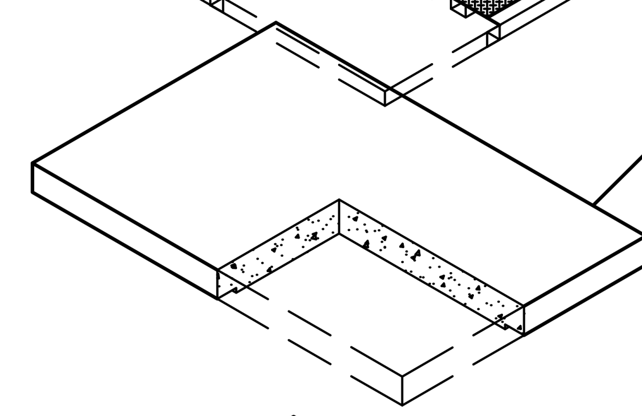
6'-0" X 8'-0" X 7'-0" I.D.
(NOMINAL DIMENSIONS)



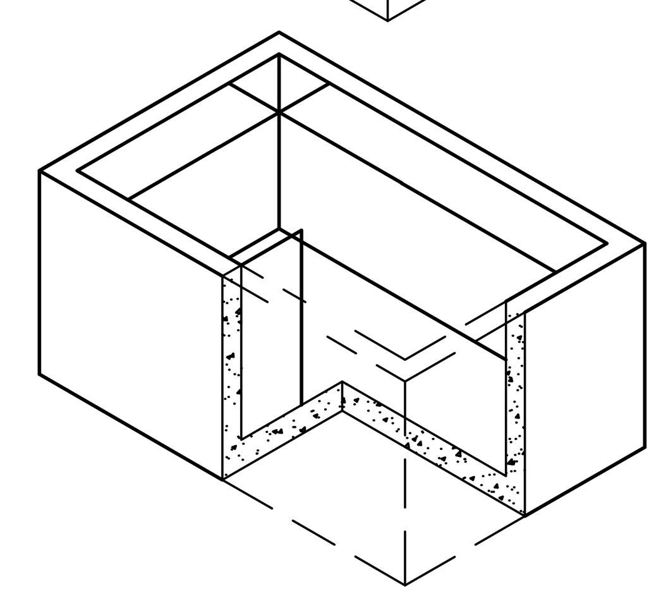
H-20 TRAFFIC RATED EQUIPMENT ACCESS COVER. CAST IRON RING AND COVER CAST INTO DROP IN SLAB WITH FRAME.



TORSION SPRING ASSISTED ACCESS COVER INCIDENTAL H-20 TRAFFIC OR PEDESTRIAN LOADING. GALVANIZED STEEL OR PAINT FINISH. ALUMINUM ACCESS COVERS AVAILABLE WITH CHANNEL OR ANGLE FRAMES.



COVER SLAB
VARIOUS ACCESS OPENINGS AVAILABLE.



TYPICAL APPLICATIONS INCLUDE: BACKFLOW, METER, FIRE PROTECTION, OR VALVE VAULTS.

SIZES RANGE FROM 3'x5' TO 8'x8'. LARGER SIZES ARE AVAILABLE. CONTACT JENSEN PRECAST FOR MORE INFORMATION.

MODEL	'A'	'B'	'C'
3660-U	3'	5'	3'
4878-U	4'	6'-6"	3'
557-U	4'-1"	6'-7"	5'-1"
577-U	4'-1"	6'-7"	6'-7"
4686-U	4'-6"	8'-6"	6'-6"
687-U	6'	8'	7'
66-U	6'	6'	VARIES
68-U	6'	8'	VARIES
88-U	8'	8'	VARIES

FOR COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT JENSEN PRECAST.

JENSEN PRECAST

** PRODUCTS SHOWN DO NOT REPRESENT EXACT PROJECT FITMENT. CONTRACTOR TO ORDER FOR SPECIFIC NEEDS AND GET ENGINEER APPROVAL OF SHOP DRAWINGS PRIOR TO PRODUCTION.

BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION™
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

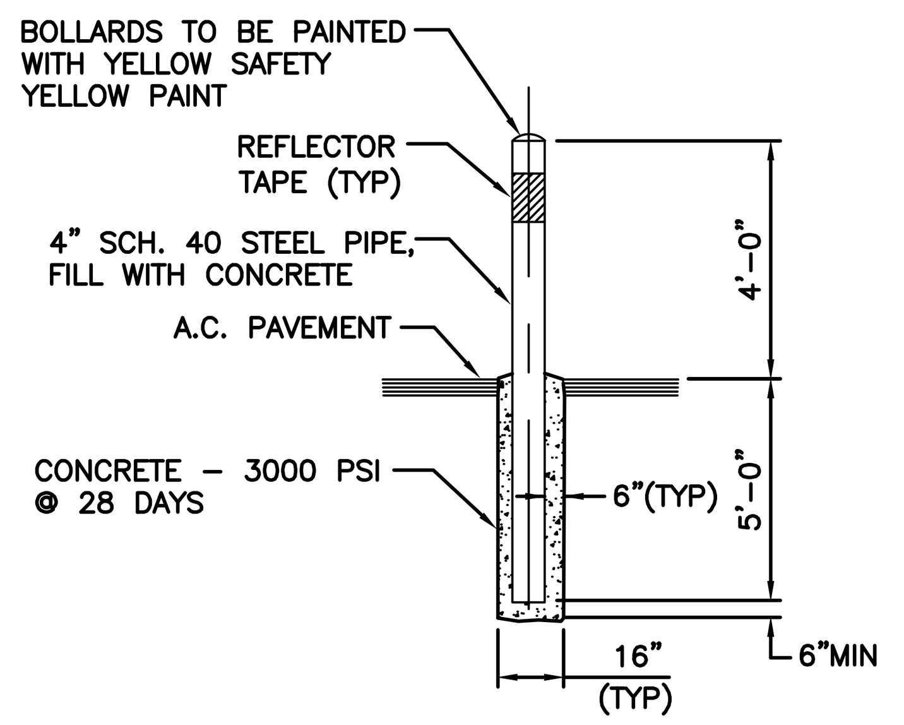
REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
PRV VAULT DETAILS
ELKO — ELKO COUNTY — NEVADA

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: NA
VERT: NA
JOB NO: 3-82787

PROFESSIONAL ENGINEER — STATE OF NEVADA — NITIN I. BHAKTA — Exp. 12-31-24 — CIVIL — No. 15494 — 04-25-24

SHEET D-3 OF 49

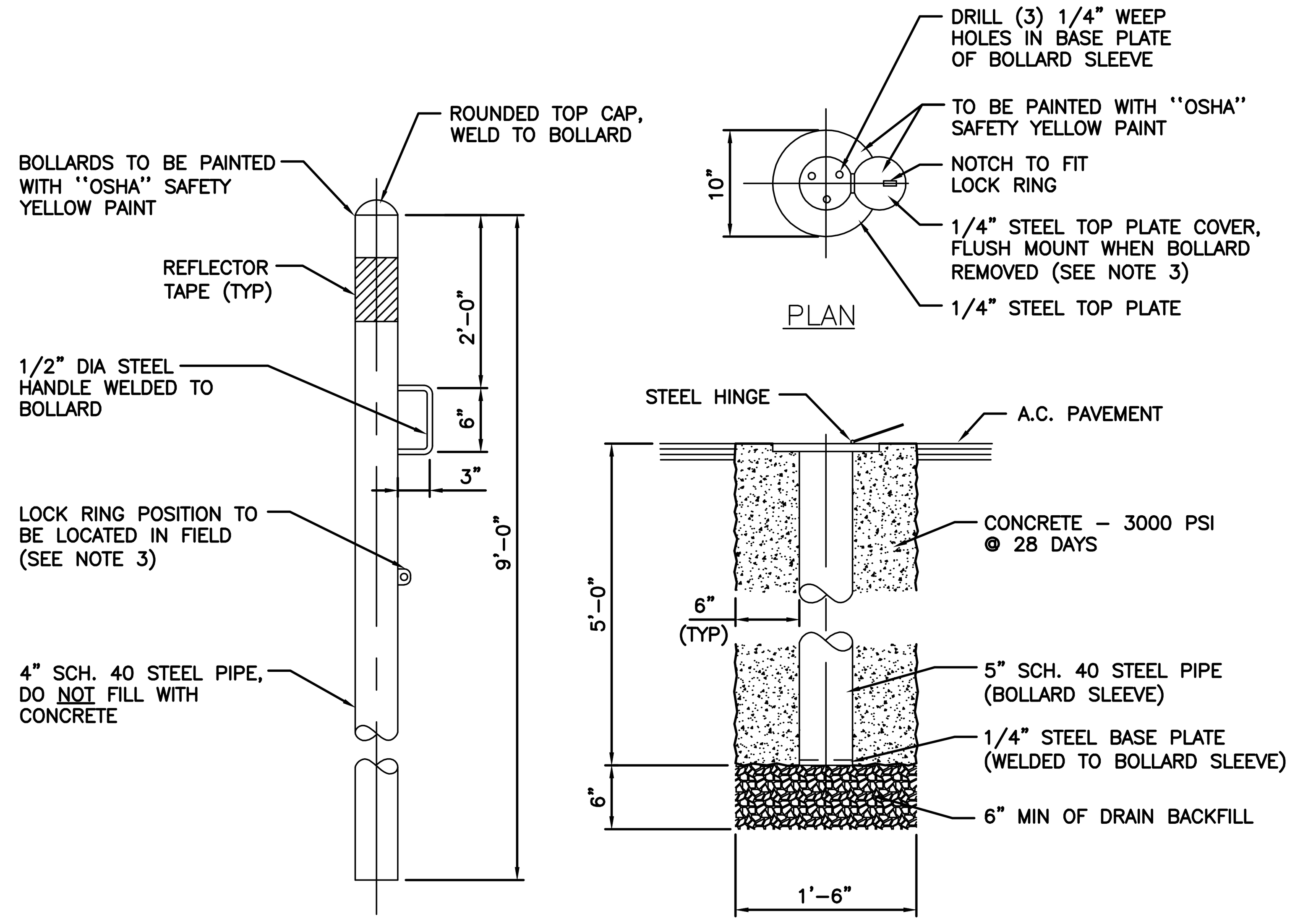


NOTES:

1. BOLLARDS ON SIDE NOT ACCESSIBLE TO VEHICLES MAY BE OMITTED BY ENGINEER.
2. PLACE 6" WIDE, YELLOW CLASS 4 REFLECTIVE TAPE (PER STANDARD SPECIFICATIONS, SECTION 716), 4" DOWN FROM TOP, FOR FULL DIAMETER ON ALL BOLLARDS.
3. CONTRACTOR TO ASSURE THAT BOLLARDS ARE PLACED TO ALLOW FULL ACCESS TO THE PROTECTED FACILITY.

VEHICULAR PROTECTION BOLLARD (1 / D-4)

NOT TO SCALE

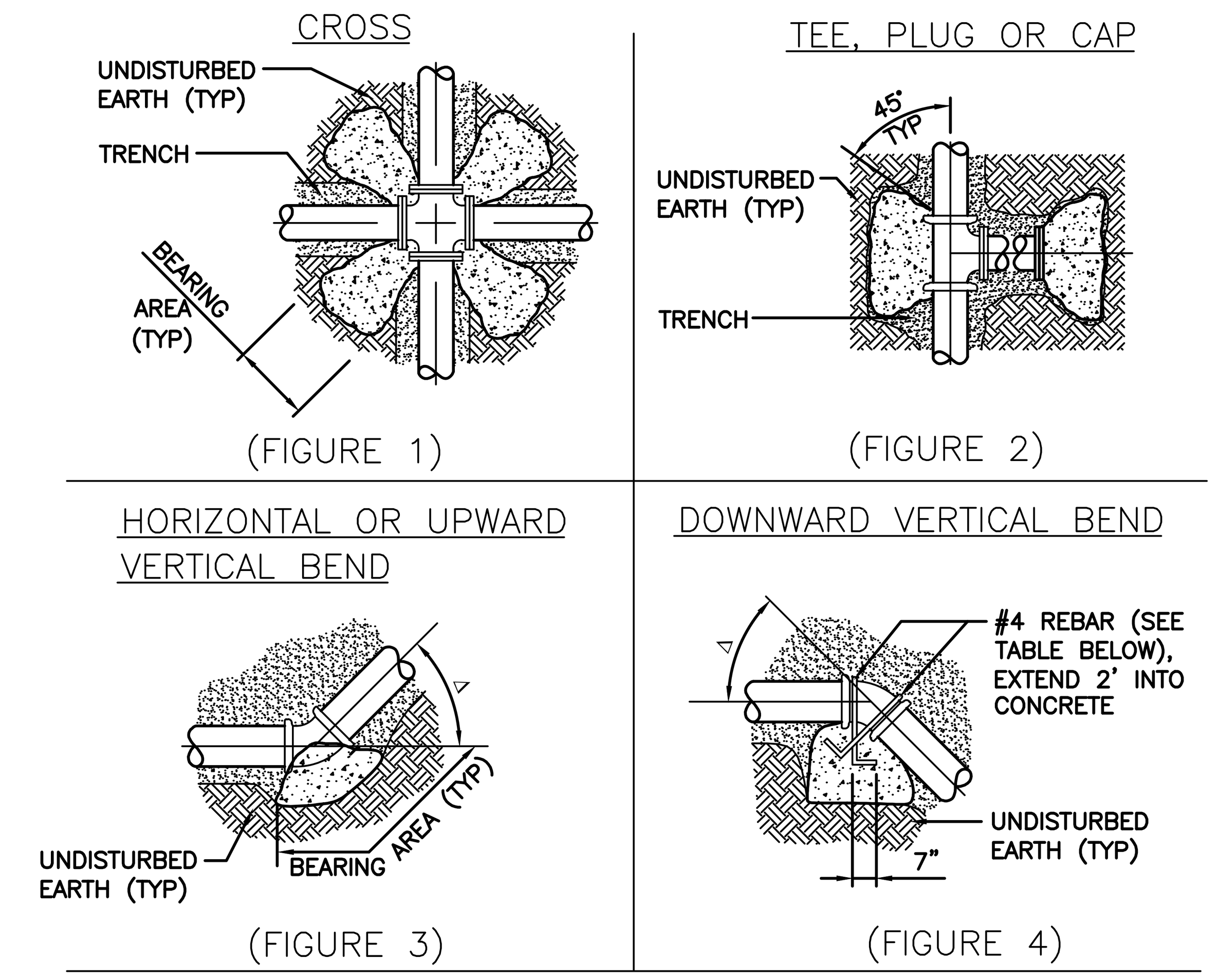


NOTES:

1. PLACE 6" WIDE, YELLOW CLASS 4 REFLECTIVE TAPE (PER STANDARD SPECIFICATIONS, SECTION 716), 4" DOWN FROM TOP, FOR FULL DIAMETER ON ALL BOLLARDS.
2. CONTRACTOR TO ASSURE THAT BOLLARDS ARE PLACED TO ALLOW FULL ACCESS TO THE PROTECTED FACILITY.
3. INSTALL ELKO WATER PROVIDED LOCK AFTER INSTALLATION IS COMPLETE
4. CONTRACTOR TO SUBMIT SHOP DRAWING ON BOLLARD ASSEMBLY

REMOVABLE VEHICULAR PROTECTION BOLLARD (4 / D-4)

NOT TO SCALE



NOTE:

COAT AND WRAP ALL METAL SURFACES IN ACCORDANCE WITH LVVWD SPEC SECTION, PROTECTIVE COATINGS. ALL CONCRETE SHALL BE 3000 PSI MINIMUM, 28 DAYS COMPRESSIVE STRENGTH. CONCRETE IS TO BE PLACED AGAINST UNDISTURBED EARTH. TABLE BELOW DENOTES MINIMUM BEARING AREA OR VOLUME OF THRUST BLOCK. SPECIAL DESIGN CALCULATIONS ARE TO BE SUBMITTED TO LVVWD FOR APPROVAL IF ALLOWABLE SOIL BEARING CAPACITY IS LESS THAN 3000 PSF. ALL VERTICAL SURFACES NOT BEARING AGAINST UNDISTURBED EARTH SHALL BE FORMED.

	BEARING AREA IN SQ FT						CONC/CU YDS		
PIPE ID	FIGURE	FIGURE	FIGURE 3, △				FIGURE 4, △		
	1	2	90°	45°	22½°	11¼°	45°	22½°	11¼°
4"	2	2	2	2	1	1	1.0	0.5	0.5
6"	2	3	4	2	1	1	1.5	1.0	0.5
8"	3	5	7	4	2	1	3.0	1.5	1.0
10"	4	8	11	6	3	2	4.0	2.5	1.5
12"	6	11	15	8	4	2	6.0	3.0	1.5
16"	10	20	28	15	8	4	10.5 *	6.0	3.0
18"	13	25	35	19	10	5	13.5 *	7.5	3.5
20"	16	31	44	24	12	6	16.0 **	9.0	4.5
24"	22	44	63	34	17	9	23.5 **	12.5 *	6.5

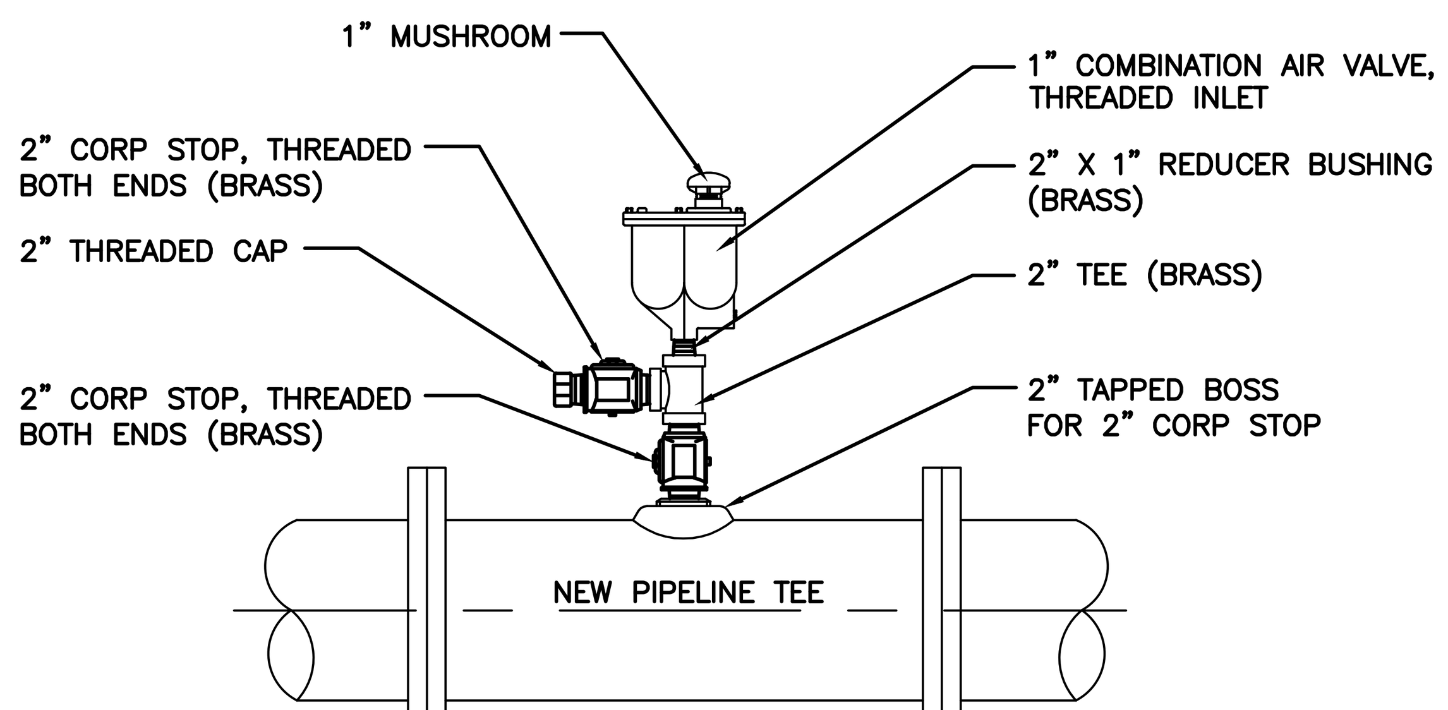
* #5 REBAR ** #6 REBAR

NOTE:

USE OF THRUST BLOCKS FOR PIPE DIAMETERS GREATER THAN 12" REQUIRES PRIOR DISTRICT APPROVAL AND WILL BE EVALUATED ON A CASE BY CASE BASIS.

THRUST BLOCK INSTALLATION (6 / D-4)

NOT TO SCALE

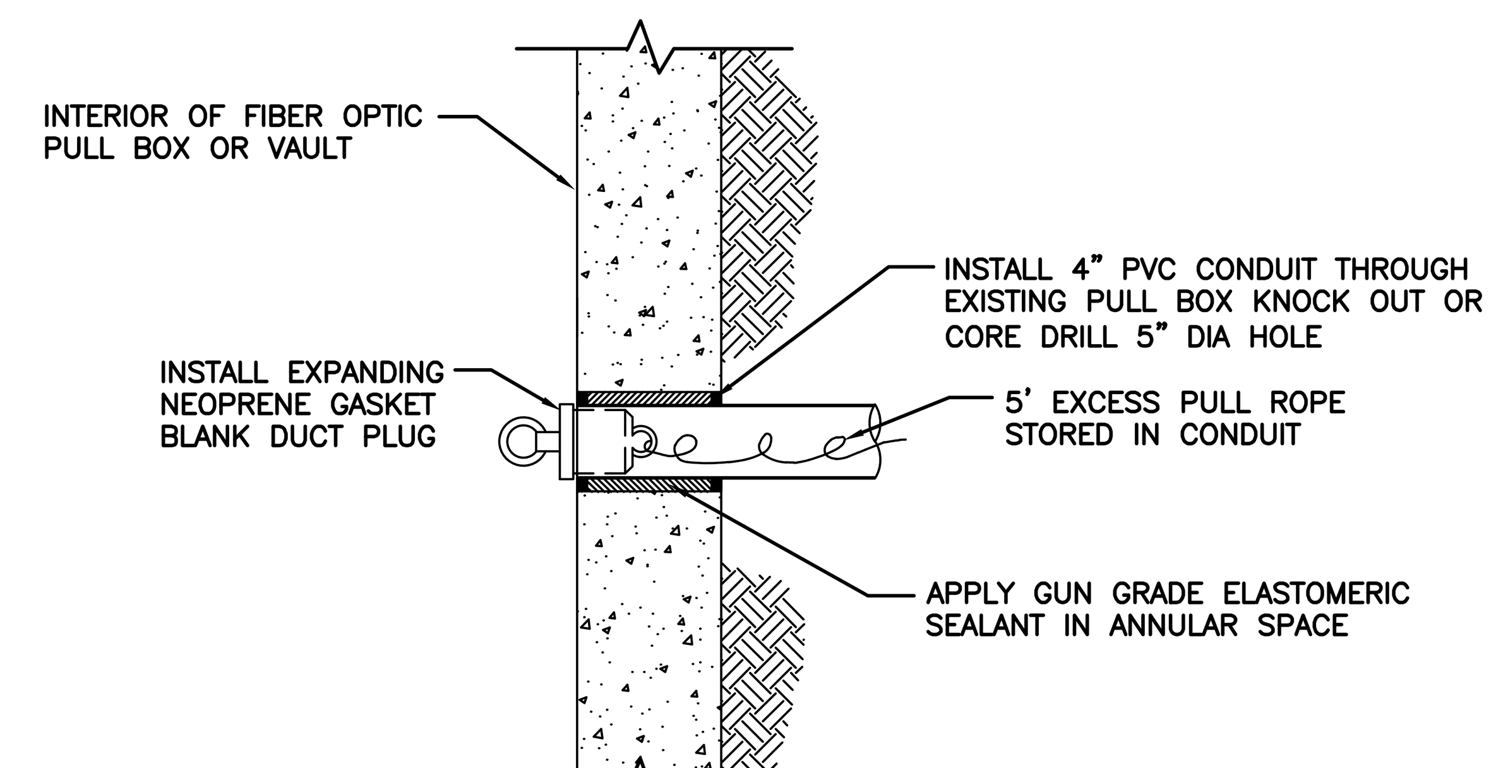


NOTE:

ALL THREADS TO BE WRAPPED WITH TEFLON TAPE AS REQUIRED FOR INSTALLATION (TYP).

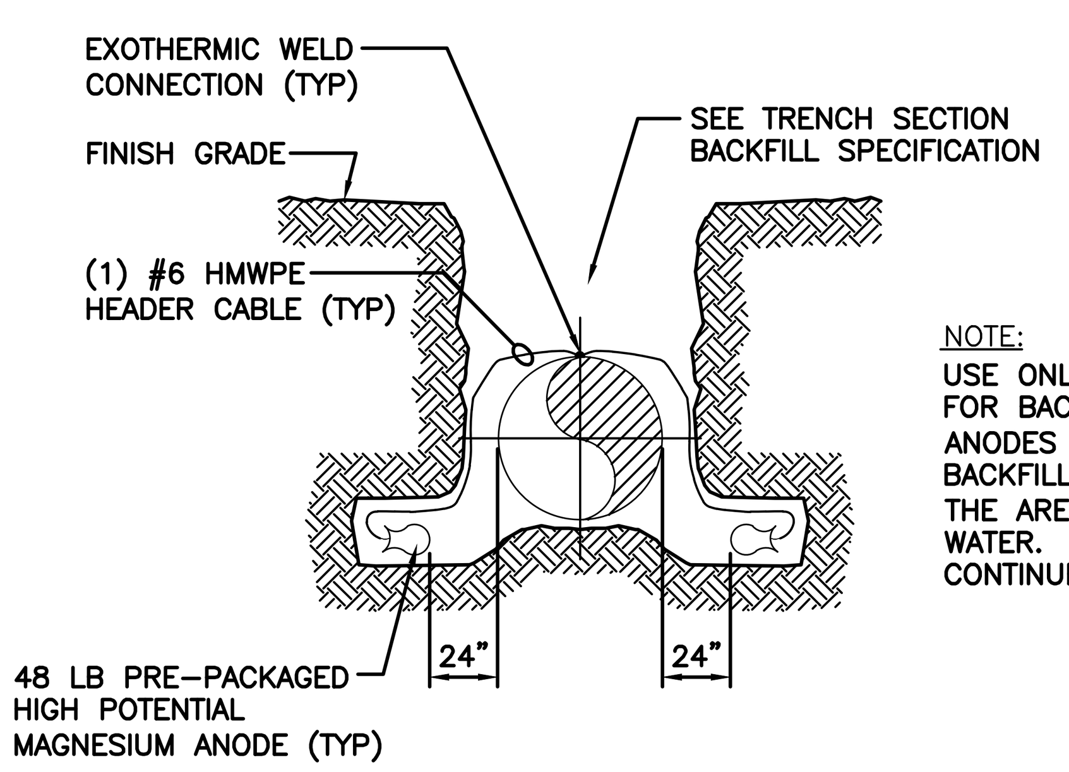
1" COMBINATION AIR VALVE ASSEMBLY (2 / D-4)

NOT TO SCALE



CONDUIT PENETRATION FOR VAULT STRUCTURES (5 / D-4)

NOT TO SCALE



NOTE:

USE ONLY NATIVE SOIL FREE OF ROCKS AND CLODS FOR BACKFILL AROUND ANODES. PRE-PACKAGED ANODES SHALL HAVE 6" LIFT OF COMPACTED NATIVE BACKFILL. AFTER BACKFILL IS IN PLACE, SATURATE THE AREA WITH TEN (10) GALLONS MINIMUM OF WATER. AFTER ALL WATER HAS BEEN ABSORBED CONTINUE BACKFILLING.

PRE-PACKAGED ANODE INSTALLATION DIRECTLY ON PIPELINE (3 / D-4)

NOT TO SCALE

BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR ERRECART BLVD. CONNECTOR

PRV CIVIL DETAILS

ELKO COUNTY

ELKO NEVADA

DESIGNED BY: NIB

CHECKED BY: NIB

SCALE

HORIZ: NA

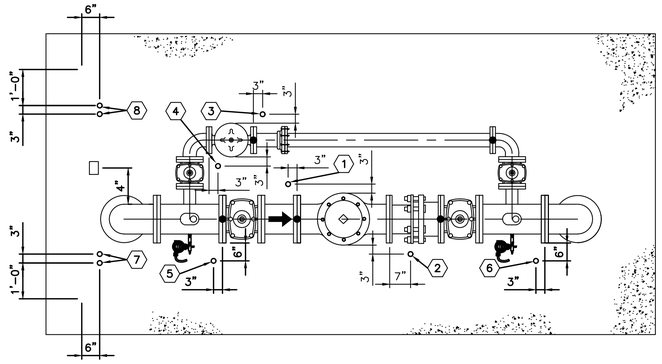
VERT: NA

JOB NO: 3-82787

PROFESSIONAL ENGINEER STATE OF NEVADA NITIN BHAKTA Exp. 12-31-24 CIVIL No. 15494 04-25-24

SHEET D-4 OF 49

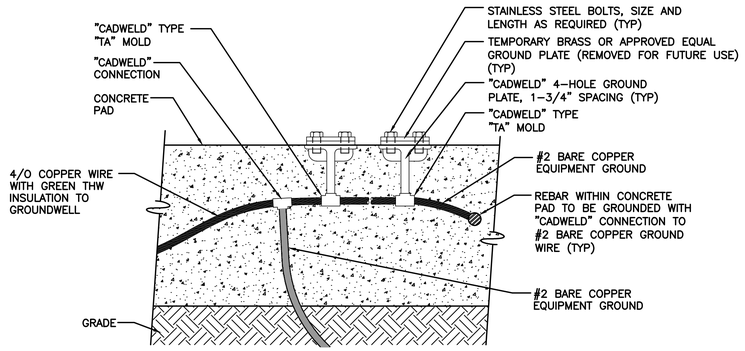
DESIGNER NOTE:
PRV ASSEMBLY SHOWN IS AN EXAMPLE ONLY. SIZE OF ACTUAL ASSEMBLY/ PRV VAULT WILL NEED TO BE DRAWN TO SCALE BASED ON PROJECT REQUIREMENTS. DIMENSIONS TO CONDUIT LOCATIONS AND TO PRV ENCLOSURE FROM ASSEMBLY WILL VARY WITH A COMPLETED ELECTRICAL DESIGN.



1 DIFFERENTIAL PRESSURE/POSITION TRANSMITTER (MAIN PRV)	5 PRESSURE TRANSMITTER (UPSTREAM)
2 VALVE ENABLE/DISABLE SOLENOID (MAIN PRV)	6 PRESSURE TRANSMITTER (DOWNSTREAM)
3 DIFFERENTIAL PRESSURE/POSITION TRANSMITTER (BYPASS PRV)	7 SPARES (FROM ELECTRICAL SERVICE PEDESTAL)
4 VALVE ENABLE/DISABLE SOLENOID (BYPASS PRV)	8 SPARES (FROM TELEMETRY ENCLOSURE)

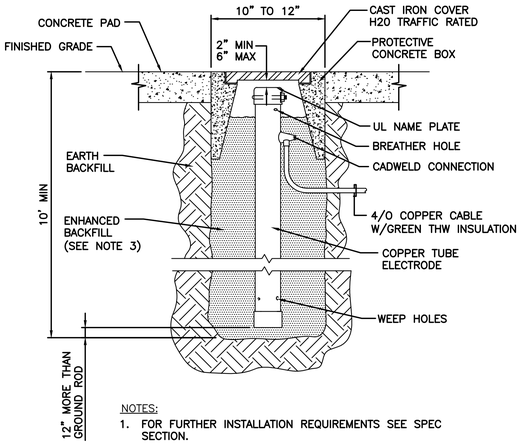
NOTE:
ALL DIMENSIONS SHOWN ARE APPROXIMATE ONLY. CONTRACTOR TO ESTABLISH CONDUIT RISER LOCATIONS AFTER PRV AND PIPING IS COMPLETELY INSTALLED, TERMINAL BOXES LOCATED AND THE INSULATED ENCLOSURE SIZE VERIFIED TO INSURE CORRECT RISER POSITIONING PRIOR TO POURING PRV CONCRETE PAD AND INSULTATED ENCLOSURE INSTALLATION (TYP).

PRV COMPONENT LAYOUT
NOT TO SCALE — 1 / D-5



NOTES:
1. ALL GROUND PLATES ARE TO BE FLUSH WITH SURFACE PENETRATED SO AS TO NOT CAUSE A TRIPPING HAZARD. IF FOR ANY REASON THE GROUND PLATE IS NOT INSTALLED FLUSH THE CONTRACTOR SHALL BE REQUIRED AT HIS EXPENSE TO: JACK-HAMMER AND REPOUR CONCRETE; REMOVE AND REINSTALL MASONRY; PAINT; GROUT; RELOCATE EQUIPMENT; PROVIDE TEMPORARY FACILITIES.
2. CONTRACTOR TO SUBMIT GROUNDING ROUTE PLAN AND DETAIL PER ELKO SPEC SECTION FOR APPROVAL.
3. ALL UNDERGROUND GROUNDING CONNECTORS AND TAPS TO USE EXOTHERMIC CONNECTIONS. THIS INCLUDES BUT IS NOT LIMITED TO CONNECTIONS IN CONCRETE, PULL BOXES, BELOW GRADE, WHERE INDICATED ON DRAWINGS, OR WHERE REQUIRED BY ENGINEER.
4. BARE COPPER WIRE WHEN ENCASED IN CONCRETE, GREEN THW INSULATION FOR ALL OTHER LOCATIONS.

EQUIPMENT GROUNDING PLATE DETAIL - FUTURE USE
NOT TO SCALE — 2 / D-5



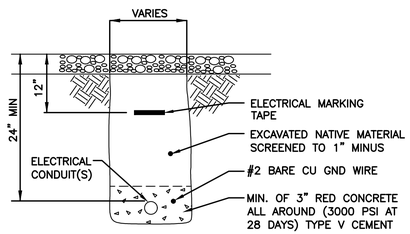
NOTES:
1. FOR FURTHER INSTALLATION REQUIREMENTS SEE SPEC SECTION.
2. "CADWELD" THE GROUNDING GRID TO THE GROUNDWELL 4/0 COPPER CABLE.
3. NATURAL VOLCANIC, NON-CORROSIVE SPECIAL FORM OF BENTONITE CLAY GROUT BACKFILL MATERIAL THAT CONTAINS NO CARBON FILLERS. XIT #BNC OR OWNER APPROVED EQUAL.

GROUNDWELL SYSTEM
NOT TO SCALE — 3 / D-5

PRV NO. XXX SERVICE PEDESTAL SCHEDULE

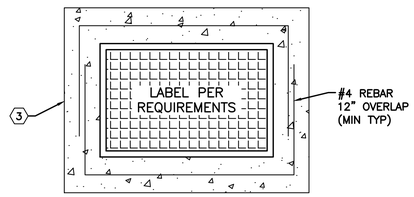
PANEL NO. P1 MAINS 125 MAIN BKR 125 SURFACE ☐ FLUSH ☐ INDOOR ☐ OUTDOOR ☒
VOLTS 120/240 PHASE 1 WIRE 3 GROUND SOLID CU NEUTRAL FULL S/N
MIN KAIC 10 RMS SYM DOOR: HINGED ☐ DOOR-IN-DOOR ☐ LATCH/LOCK ☐ SVC ENT ☒
BUS: ALUM. ☐ COPPER ☒ BREAKERS: SLIP-ON ☐ BOLT-ON ☒ SITE LOCATION PRV 239

DESCRIPTION	WATTS L1	WATTS L2	BKR	POLE		POLE	BKR	WATTS L1	WATTS L2	DESCRIPTION
PLC	500		1/20	1		2	1/20			SPARE
AUX RECEPTACLE		180	1/20	3		4				SPACE
SPACE				5		6				SPACE
SPACE				7		8				SPACE
SPACE				9		10				SPACE
SPACE				11		12				SPACE
PHASE SUB-TOTAL	500	180								
PHASE TOTAL	500	180								
PHASE AMPS	4.2	1.5						5.2	1.5	PHASE AMPS (NEC)
TOTAL 680 VA (2.8A AVG)								NEC TOTAL (125% CONT LDS)		805 VA (3.4A AVG)

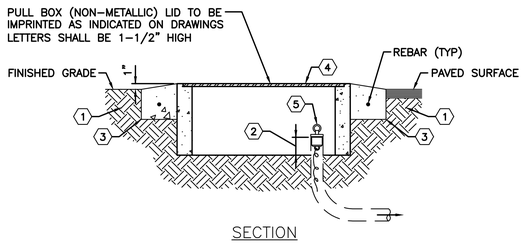


NOTES:
1. ALL CONDUITS ARE NOT TO BE PAINTED (TYP).
2. FOR ADDITIONAL REQUIREMENTS SEE NPC ESR DETAIL RT-7.
3. NOT FOR FUTURE NVE SERVICE (3") CONDUIT.

TRENCH BACKFILL - ELECTRICAL CONDUIT
NOT TO SCALE — 4 / D-5



PLAN



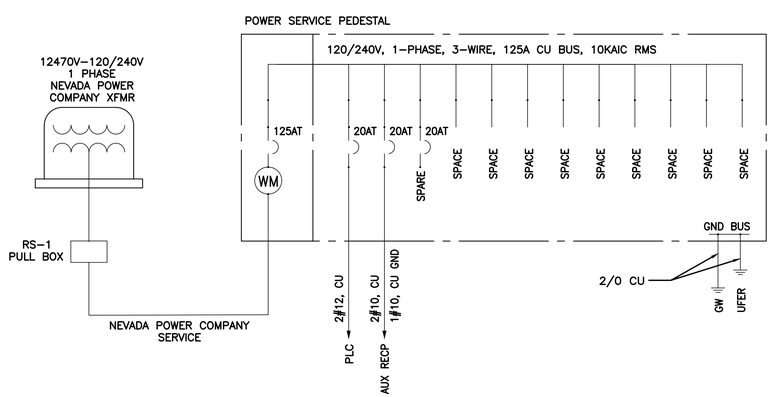
SECTION

NOTES:
1. EXCAVATE AND BACKFILL (12" MIN) AROUND ALL SIDES AND BOTTOM OF PULLBOX PER SPECS. MINIMUM 12" BACKFILL (3/4" MINUS) BELOW BOTTOM OF PULLBOX.
2. CONDUIT TO EXTEND UP INTO PULLBOX 3" (MIN), 6" (MAX).
3. 6" x 6" CONCRETE COLLAR ALL AROUND PULLBOX, SLOPING 1" EITHER TO PAVED SURFACE OR TO GRADE. INCLUDE #4 REBAR AS INDICATED IN DETAIL.
4. POLYMER/CONCRETE NON-METALLIC LID FOR LIGHT DUTY, TIER5, AND TIER 8 LOAD REQUIREMENTS/LOCATIONS. LABEL PULLBOX LID WITH SERVICE NAME AND PULLBOX NUMBER IN ACCORDANCE WITH SPECIFICATION AND THE DRAWINGS.
5. INSTALL DUCT PLUGS AND PULL TAPE IN ALL EMPTY CONDUITS.

PULLBOX WITH NON-METALLIC LID AND CONDUIT SWEEPS
NOT TO SCALE — 5 / D-5

PRV NO. XXX - PANELBOARD SCHEDULE
NOT TO SCALE — 6 / D-5

EXAMPLE ONLY



ONE-LINE DIAGRAM
NOT TO SCALE — 7 / D-5

BID SET

2 working days Call before you Dig 1-800-227-2600

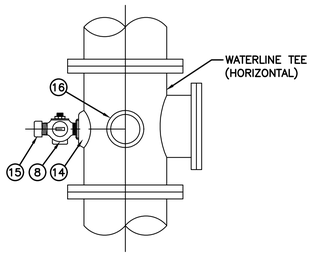
SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APPD

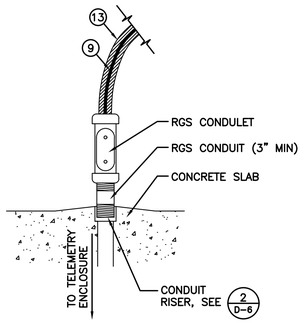
CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
PRV ELECTRICAL DETAILS
ELKO COUNTY NEVADA
ELKO

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: NA
VERT: NA
JOB NO: 3-82787

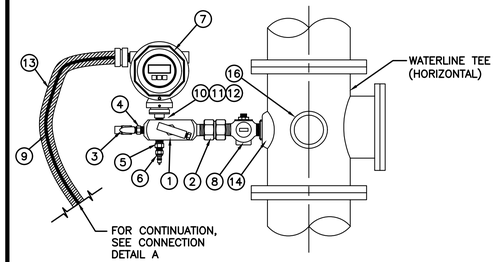
SHEET D-5 OF 49



FUTURE PRESSURE TRANSMITTER ASSEMBLY INSTALLATION



FLOOR/WALL MOUNT CONNECTION DETAIL A



FLOOR MOUNT ASSEMBLY ABOVE GRADE INSTALLATION

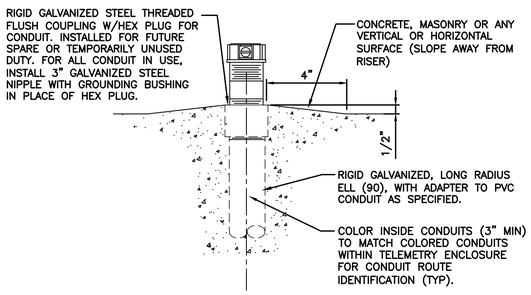
ITEM	DESCRIPTION
1	GAUGE/INSTRUMENTATION VALVE (ANDERSON GREENWOOD M5VDS44, PARKER V-517SDT, SWAGELOK SS-5PDGM8-F8, OR APPROVED EQUAL)
2	3/4" X 1/2" HEX REDUCING COUPLING (SWAGELOK SS-12-HRCG-8)
3	1/4" MALE NPT X 1/4" FEMALE NPT PLUG VALVE (PARKER PV608-4, OR APPROVED EQUAL). INSTALL VALVE IN END PORT
4	1/2" X 1/4" HEX REDUCING BUSHING (SWAGELOK SS-8-RB-4)
5	1/2" X 1/4" HEX REDUCING NIPPLE (SWAGELOK SS-8-HRN-4)
6	1/4" MALE QUICK DISCONNECT (PARKER SSH2-63Y, OR APPROVED EQUAL)
7	BELOW GRADE INSTALLATIONS: APPROVED SUBMERSIBLE DIRECT PRESSURE SENSING PRESSURE TRANSMITTER, 150 PSIG ABOVE GRADE INSTALLATIONS: APPROVED DIRECT PRESSURE SENSING PRESSURE TRANSMITTER, 150 PSIG (ENDRESS+HAUSER PMC-71) (PMC71-SBT1P6RAAAA) SPACE CONSTRAINTS MAY DICTATE WHICH ASSEMBLY TO UTILIZE. (SEE NOTE 1 FOR PRESSURE TRANSMITTER ORIENTATION)
8	3/4" BRASS CORPORATION STOP, IRON PIPE THD
9	TRANSMITTER CABLE
10	STAINLESS STEEL UNION SWAGELOCK, PARKER, OR APPROVED EQUAL
11	STAINLESS STEEL REDUCING BUSHING
12	STAINLESS STEEL NIPPLE
13	LIQUIDTIGHT METAL FLEXIBLE CONDUIT (SEE NOTE 7)
14	3/4" TAPPED BOSS ON DIP
15	3/4" THREADED CAP
–	1/2" TEFLON TAPE
16	2" THREADED BOSS FOR 2" CORPORATION STOP

NOTES:

1. THE PRESSURE TRANSMITTER SHALL BE INSTALLED PARALLEL TO THE PIPE DIRECTION (HORIZONTAL, 3-O'CLOCK OR 9-O'CLOCK POSITION) UNLESS DIRECTED OTHERWISE.
2. THE GAUGE/INSTRUMENTATION VALVE HAS 1 MALE 1/2" NPT AND 3 FEMALE 1/2" NPT PORTS.
3. ALL PARTS AND FITTINGS, EXCEPT CORPORATION STOP SHALL BE 316 SSTL.
4. THE PRESSURE TRANSMITTER CABLE SHALL BE CONTINUOUS FROM THE INSTRUMENT TO THE TELEMETRY ENCLOSURE. SPLICES ARE NOT ACCEPTABLE.
5. EACH PRESSURE TRANSMITTER SHALL BE SUPPLIED WITH THE REQUIRED CABLE LENGTH PLUS AN ADDITIONAL FIVE FEET TO PROVIDE FLEXIBILITY IN INSTALLATION. THE LENGTH REQUIRED FOR EACH CABLE SHALL BE DETERMINED IN THE FIELD TO ALLOW FOR VARIOUS SITE CONDITIONS AFFECTING THE FINAL TIE-IN. EACH PRESSURE TRANSMITTER CABLE LENGTH SHALL BE VERIFIED BY THE CONTRACTOR BEFORE PURCHASING THE UNIT.
6. REFER TO SPECIFICATIONS FOR CONDUIT MATERIAL AND INSTALLATION REQUIREMENTS.
7. LIQUIDTIGHT METAL FLEXIBLE CONDUIT ONLY REQUIRED ON ABOVE GRADE INSTALLATIONS.

PRESSURE TRANSMITTER ASSEMBLY AND CONNECTION DETAIL 1 D-6

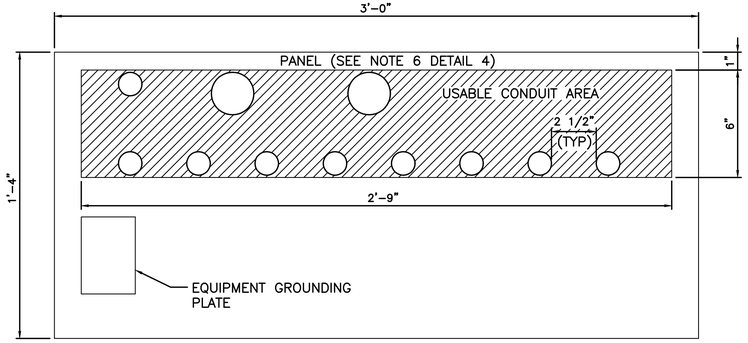
NOT TO SCALE



ALL HEX PLUGS ARE TO BE FLUSH WITH SURFACE PENETRATED. SPARE CONDUITS (OR TEMPORARILY UNUSED CONDUITS) SHALL BE THREADED WITH A HEX FLUSH PLUG INSTALLED SO AS TO NOT CAUSE A TRIP HAZARD OR ALLOW THE INFILTRATION OF CONTAMINANTS INTO THE CONDUIT. IF FOR ANY REASON THE CONDUIT IS NOT FLUSH WITH THE SURFACE PENETRATED THE CONTRACTOR SHALL EITHER CUT OFF OR EXTEND THE CONDUIT TO FULFILL THE FINISHED FLUSH REQUIREMENT. AS A MINIMUM, TO CORRECT ANY FLUSH PLUG CONDUIT INSTALLATIONS THE CONTRACTOR MAY BE REQUIRED AT HIS EXPENSE TO: JACK-HAMMER AND REPOUR CONCRETE; REMOVE AND REINSTALL MASONRY; REFINISH GYPSUM; PAINT; GROUT; RELOCATE EQUIPMENT; PROVIDE TEMPORARY FACILITIES; REROUTE CONDUITS.

CONDUIT RISER 2 D-6

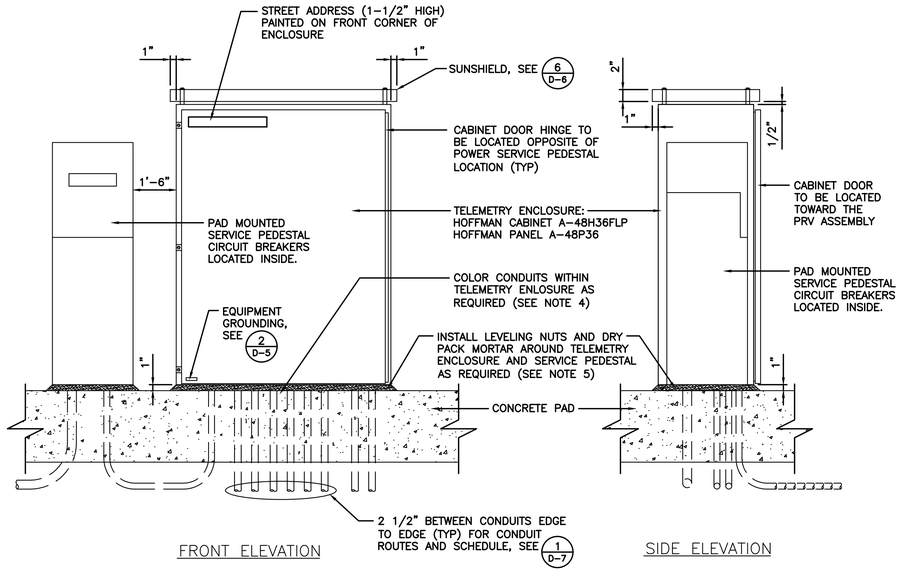
NOT TO SCALE



NOTE:
ELKO WATER DEPT. TO INSTALL VENTILATION FAN.

TELEMETRY PANEL BOTTOM CONDUIT LAYOUT 3 D-6

NOT TO SCALE



FRONT ELEVATION

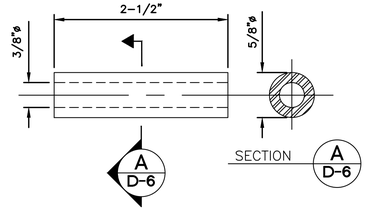
SIDE ELEVATION

NOTES:

1. MAKE ALL CONDUIT PENETRATIONS INTO THE BOTTOM OF THE RTU ENCLOSURE.
2. INSTRUMENTATION WIRING SHALL NOT BE RUN IN THE SAME CONDUIT AS 120VAC CONTROL WIRING.
3. THE RTU ENCLOSURE EXTERIOR FINISH SHALL BE POLYESTER URETHANE (POWDER COAT) WHITE.
4. ALL CONDUITS WITHIN TELEMETRY ENCLOSURE SHALL HAVE DIFFERENT COLORS PAINTED (3" MIN, BOTH INSIDE AND OUTSIDE). COLORS USED SHALL MATCH COLORS PAINTED INSIDE CONDUITS AT CONDUIT RISERS IN CONCRETE SLAB FOR CONDUIT ROUTE IDENTIFICATION (TYP).
5. DRILL SIX (6) 9/16" HOLES THROUGH ENCLOSURE/PEDESTAL AND INTO CONCRETE PAD. INSTALL ADHESIVE CARTRIDGES, 1/2" x 6" STAINLESS STEEL THREADED ANCHOR RODS WITH TWO (2) STAINLESS STEEL WASHERS AND LEVELING NUTS. INSTALL DRY PACK MORTAR IN ANNULAR SPACE AROUND ENCLOSURE/PEDESTAL AFTER ANCHOR RODS AND LEVELING NUTS ARE INSTALLED.
6. CONTRACTOR SHALL SUPPLY IDENTIFIED BACK PANEL AND DELIVER TO DISTRICT. DISTRICT WILL BUILD OUT BACK PANEL AND PROVIDE BACK TO THE CONTRACTOR FOR INSTALLATION IN TELEMETRY CABINET. ALLOW TWO WEEKS FOR PANEL BUILD OUT.

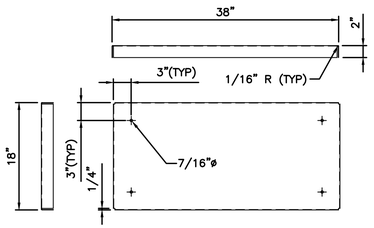
PRV/FLOW STATION ENCLOSURE 4 D-6

NOT TO SCALE



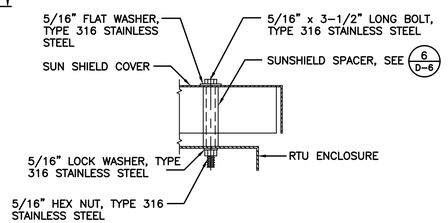
ENCLOSURE SUNSHIELD MOUNTING SPACERS 6 D-6

NOT TO SCALE



NOTES:

1. MATERIAL: 16 GA. ELECTROPLATED COLD-ROLLED STEEL SHEET.
2. ALL SHARP EDGES SHALL BE DEBURRED.
3. FINISH: POLYESTER URETHANE (POWDER COAT) WHITE APPLIED BY THE SUNSHIELD MANUFACTURER.



PRV/FLOW STATION ENCLOSURE SUNSHIELD 5 D-6

NOT TO SCALE

GENERAL FABRICATION NOTES:

1. ALL STEEL SHAPES, PLATES AND BARS USED FOR THESE FABRICATIONS SHALL CONFORM TO THE "SPECIFICATION FOR STRUCTURAL STEEL" ASTM A-36 OR THE "SPECIFICATIONS FOR COLD-FORMED WELDED AND SEAMLESS CARBON STEEL STRUCTURAL TUBING IN ROUNDS AND SHAPES" ASTM A-501.
2. ALL WELDING SHALL BE BY THE SHIELDED ARC METHOD AND SHALL CONFORM TO THE AWS D1.1 "STRUCTURAL WELDING CODE".
3. ALL STEEL SHAPES, PLATES, BARS AND FABRICATED ASSEMBLIES SHALL BE GALVANIZED IN ACCORDANCE WITH THE "SPECIFICATION FOR ZINC (HOT-GALVANIZED) COATINGS ON PRODUCTS FABRICATED FROM ROLLED, PRESSED AND FORGED STEEL SHAPES, PLATES BARS AND STRIP" ASTM A-123, OR BY THE APPLICATION OF AN ORGANIC ZINC RICH COATING. THE ORGANIC ZINC RICH COATINGS SHALL BE "GALVANOX", "GALVOWELD", OR APPROVED EQUAL.
4. ALL BURRS SHALL BE REMOVED FROM CUT OR DRILLED STEEL SHAPES, TUBES, PLATES AND BARS.
5. ALL BOLT HOLES SHALL BE DRILLED, NOT FLAME CUT, THROUGH ALL STEEL FABRICATED PLATES. HOLES IN MATING PLATES SHALL BE MATCH DRILLED.
6. ALL THREADED NUTS AND BOLTS SHALL CONFORM TO ASTM A-307, GRADE "B" AND SHALL BE ZINC PLATED IN ACCORDANCE WITH ASTM B-633.
7. FINISH ENTIRE ASSEMBLY W/POLYESTER POWDER COAT WHITE.
8. ALL SUNSHIELD SPACERS SHALL BE ALUMINUM TUBING (6061 OR SIMILAR).

BID SET

2 working days Call before you Dig 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

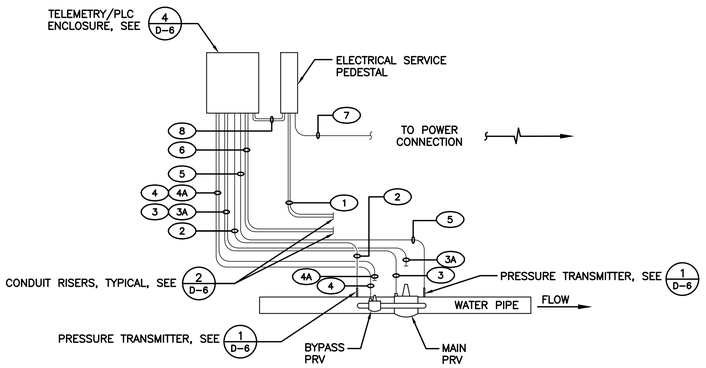
REV.	DATE	DESCRIPTION	BY	APPD

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
PRV INSTRUMENTATION DETAILS I
ELKO COUNTY
NEVADA
ELKO

DESIGNED BY:	NIB
CHECKED BY:	NIB
SCALE	
HORIZ:	NA
VERT:	NA
JOB NO:	3-82787

PROFESSIONAL ENGINEER STATE OF NEVADA BHAKTA Exp. 12-31-24 CIVIL No. 15494
04-25-24

SHEET D-6 OF 49



TYPICAL CONDUIT, WIRE & CABLE SCHEDULE

LINE NO.	CONDUIT SIZE	CONDUCTORS	FROM	TO	ROUTE	REMARKS
1	(2) – 1"	PULL CORD	ELECTRICAL SERVICE PEDESTAL	PRV ENCLOSURE	BELOW GRADE (PVC AND PVC COATED RGS) ABOVE GRADE (LIQUIDTIGHT)	SPARES
2	1"	#18 TSP	TELEMETRY/PLC ENCLOSURE	PRESSURE TRANSMITTER (UPSTREAM)	BELOW GRADE (PVC AND PVC COATED RGS) ABOVE GRADE (LIQUIDTIGHT)	UPSTREAM PRESSURE – 4–20 MA
3	1"	1"C – #18 TSP	TELEMETRY/PLC ENCLOSURE	8" PRV (MAIN)	BELOW GRADE (PVC AND PVC COATED RGS) ABOVE GRADE (LIQUIDTIGHT)	FLOW SIGNAL – 4–20 MA (MAIN)
3A	1"	PULL CORD	TELEMETRY/PLC ENCLOSURE	8" PRV (MAIN)	BELOW GRADE (PVC AND PVC COATED RGS) ABOVE GRADE (LIQUIDTIGHT)	CONDUIT RISER ONLY. [FUTURE] FLOW CONTROL SOLENOID (OPEN/CLOSE)
4	1"	1"C – #18 TSP	TELEMETRY/PLC ENCLOSURE	4" PRV (BYPASS)	BELOW GRADE (PVC AND PVC COATED RGS) ABOVE GRADE (LIQUIDTIGHT)	FLOW SIGNAL – 4–20 MA (BYPASS)
4A	1"	PULL CORD	TELEMETRY/PLC ENCLOSURE	4" PRV (BYPASS)	BELOW GRADE (PVC AND PVC COATED RGS) ABOVE GRADE (LIQUIDTIGHT)	CONDUIT RISER ONLY. [FUTURE] FLOW CONTROL SOLENOID (OPEN/CLOSE)
5	1"	#18 TSP	TELEMETRY/PLC ENCLOSURE	PRESSURE TRANSMITTER (DOWNSTREAM)	BELOW GRADE (PVC AND PVC COATED RGS) ABOVE GRADE (LIQUIDTIGHT)	DOWN STREAM PRESSURE – 4–20 MA
6	(2) – 1"	PULL CORD	TELEMETRY/PLC ENCLOSURE	PRV ENCLOSURE	BELOW GRADE (PVC AND PVC COATED RGS) ABOVE GRADE (LIQUIDTIGHT)	SPARES
7	3"	NVE SERVICE CABLE	ELECTRIC SERVICE EPEDESTAL	POWER CONNECTION	UNDERGROUND	PER NV ENERGY SERVICE REQUIREMENTS
8	(2) – 1"	1"C – (2)#12, #12 GND (2)#10, #10 GND 1"C – SPARE W/PULL CORD	ELECTRICAL SERVICE PEDESTAL	TELEMETRY/PLC ENCLOSURE	BELOW GRADE (PVC AND PVC COATED RGS)	(1) PLC POWER, ENCLOSURE GFCI RECEPTACLE (1) SPARE

PRV - CONDUIT LAYOUT DIAGRAM 1 D-7

NOT TO SCALE

BID SET

2 working days Call before you Dig 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
PRV INSTRUMENTATION DETAILS II
ELKO COUNTY NEVADA

ELKO

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: NA
VERT: NA
JOB NO: 3-82787

PROFESSIONAL ENGINEER STATE OF NEVADA NIRAV C. BHAKTA Exp. 12-31-24 CIVIL Cert. No. 15494 04-25-24

SHEET D-7 OF 49

NOTES

COAT ALL DUCTILE IRON PIPE AND FITTINGS PER SPECIFICATIONS BELOW.

1.1 REFERENCES

A. ASTM INTERNATIONAL:
1. ASTM D4060 – STANDARD TEST METHOD FOR ABRASION RESISTANCE OF ORGANIC COATINGS BY THE TABER ABRASER.
2. ASTM D4263 – STANDARD TEST METHOD FOR INDICATING MOISTURE IN CONCRETE BY THE PLASTIC SHEET METHOD.
3. ASTM D4541 – STANDARD TEST METHOD FOR PULL–OFF STRENGTH OF COATINGS USING PORTABLE ADHESION TESTERS.
4. ASTM F1869 – STANDARD TEST METHOD FOR MEASURING MOISTURE VAPOR EMISSION RATE OF CONCRETE SUBFLOOR USING ANHYDROUS CALCIUM CHLORIDE.

B. AMERICAN WATER WORKS ASSOCIATION STANDARDS:
1. AWWA C110 – DUCTILE–IRON AND GRAY–IRON FITTINGS.
2. AWWA C116 – PROTECTIVE FUSION–BONDED EPOXY COATINGS FOR THE INTERIOR AND EXTERIOR SURFACES OF DUCTILE–IRON AND GRAY–IRON FITTINGS FOR WATER SUPPLY SERVICE.
3. AWWA C213 – FUSION–BONDED EPOXY COATING FOR THE INTERIOR AND EXTERIOR OF STEEL WATER PIPELINES.
4. AWWA C222 – POLYURETHANE COATINGS FOR THE INTERIOR AND EXTERIOR OF STEEL WATER PIPE AND FITTINGS.

C. SOCIETY FOR PROTECTIVE COATINGS STANDARDS:
1. SSPC–PA2 – PAINT APPLICATION SPECIFICATION NO. 2, MEASUREMENT OF DRY COATING THICKNESS WITH MAGNETIC GAGES.
2. SSPC–SP1 – SOLVENT CLEANING.
3. SSPC–SP2 – HAND TOOL CLEANING.
4. SSPC–SP3 – POWER TOOL CLEANING.
5. SSPC–SP5 – WHITE METAL BLAST CLEANING.
6. SSPC–SP6 – COMMERCIAL BLAST CLEANING.
7. SSPC–SP7 – BRUSH–OFF BLAST CLEANING.
8. SSPC–SP10 – NEAR–WHITE BLAST CLEANING.
9. SSPC–SP13 – SURFACE PREPARATION OF CONCRETE.

1.2 COATING MATERIALS

A. TYPE 11 – MULTI–USE EPOXY:
1. CURE: AMINE OR POLYAMIDE.
2. MINIMUM VOLUME SOLIDS: 70 PERCENT.
3. MAXIMUM VOC CONTENT: 2.4 LBS PER GALLON.
4. MINIMUM ADHESION TO STEEL, ASTM D4541: 500 PSI.
5. ABRASION RESISTANCE, ASTM D4060 (CS17, 1KG, 1000 CYCLES): 102 MG MAXIMUM LOSS.
6. MANUFACTURER:
   a. TENNECO COMPANY INC., SERIES 141 EPOXOLINE.
   b. PGG INDUSTRIES, AMERLOCK 2.
   c. ICI DEVOE, BAR–RUST 233H.
   d. CARBOLINE COMPANY, CARBOGUARD 890, CARBOGUARD 891.
   e. LVVWD APPROVED EQUAL.

B. TYPE 15 – FUSION BONDED EPOXY:
1. FACTORY APPLIED SINGLE COMPONENT POWDERED EPOXY.
2. IMMERSION SERVICE: NSF STANDARD 61.
3. IN ACCORDANCE WITH AWWA C116 AND C213.
4. VOLUME SOLIDS: 100 PERCENT.
5. VOC CONTENT: 0.0 LBS PER GALLON.
6. MINIMUM ADHESION TO STEEL AND IRON, ASTM D4541: 2500 PSI
7. ABRASION RESISTANCE, ASTM D4060 (CS17, 1KG, 5000 CYCLES): 100 MG MAXIMUM LOSS.
8. LIQUID EPOXY: FOR FIELD REPAIR OF DAMAGED COATING, 100 PERCENT SOLIDS EPOXY RECOMMENDED BY THE POWDER EPOXY MANUFACTURER. APPLY THREE COATS MINIMUM TO PROVIDE DFT OF 15 MILS.
9. MANUFACTURER:
   a. 3M SCOTCHKOTE 134 AND 206N FUSION–BONDED EPOXY.
   b. LVVWD APPROVED EQUAL.

C. TYPE 20 – ALIPHATIC POLYURETHANE:
1. IN ACCORDANCE WITH AWWA C222.
2. MINIMUM VOLUME SOLIDS: 66 PERCENT.
3. MAXIMUM VOC CONTENT: 2.5 LBS PER GALLON.
4. MINIMUM ADHESION TO STEEL, ASTM D4541: 1500 PSI.
5. ABRASION RESISTANCE, ASTM D4060 (CS17, 1KG, 1000 CYCLES): 102 MG MAXIMUM LOSS.
6. MANUFACTURER:
   a. PPG INDUSTRIES, AMERSHIELD.
   b. TNEMEC COMPANY INC., SERIES 1074, ENDURA–SHIELD II.
   c. ICI DEVOE, DEVTHANE 379.
   d. CARBOLINE COMPANY, CARBOTHANE 134 HG.
   e. LVVWD APPROVED EQUAL.

1.3 PREPARATION FOR COATING

A. GENERAL: ALL SURFACES TO RECEIVE PROTECTIVE COATINGS SHALL BE CLEANED AS INDICATED PRIOR TO APPLICATION OF COATINGS. THE CONTRACTOR SHALL EXAMINE ALL SURFACES TO BE COATED, AND SHALL CORRECT ALL SURFACE DEFECTS BEFORE APPLICATION OF ANY COATING MATERIAL. ALL MARRED OR ABRADED SPOTS ON SHOP–PRIMED AND ON FACTORY–FINISHED SURFACES SHALL RECEIVE TOUCH–UP RESTORATION PRIOR TO ANY COATING APPLICATION. SURFACES TO BE COATED SHALL BE DRY AND FREE OF VISIBLE DUST.

B. CARE SHALL BE EXERCISED NOT TO DAMAGE ADJACENT WORK DURING BLAST CLEANING OPERATIONS. SPRAY PAINTING SHALL BE CONDUCTED UNDER CAREFULLY CONTROLLED CONDITIONS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR AND SHALL PROMPTLY REPAIR ANY AND ALL DAMAGE TO ADJACENT WORK OR ADJOINING PROPERTY OCCURRING FROM BLAST CLEANING OR COATING OPERATIONS.

C. PROTECTION OF PAINTED SURFACES: CLEANING AND COATING SHALL BE COORDINATED SO THAT DUST AND OTHER CONTAMINANTS FROM THE CLEANING PROCESS WILL NOT FALL ON WET, TACKY–COATED SURFACES.

1.4 PROTECTION OF SURFACES NOT SCHEDULED TO BE COATED

A. PROTECT SURROUNDING AREAS AND SURFACES NOT SCHEDULED TO BE COATED FROM DAMAGE DURING SURFACE PREPARATION, CLEANING, AND APPLICATION OF COATINGS.

B. PROTECT NUTS AND THREADED PORTION OF ALL BOLTS FROM DAMAGE AND COATING DURING SURFACE PREPARATION AND APPLICATION OF COATINGS TO ADJACENT SURFACES.

C. UNLESS DIRECTED OTHERWISE, DO NOT APPLY ANY COATINGS TO STAINLESS STEEL. UNLESS DIRECTED OTHERWISE, AND EXCEPT FOR FIELD REPAIR OF DAMAGED COATING, DO NOT APPLY COATINGS TO SURFACES THAT ARE FACTORY COATED WITH FUSION–BONDED EPOXY.

D. ALL MACHINED SURFACES, COUPLINGS, SHAFTS, BEARINGS, NAMEPLATES ON MACHINERY, AND OTHER SURFACES NOT TO BE PAINTED SHALL BE REMOVED, MASKED OR OTHERWISE PROTECTED. DROP CLOTHS SHALL BE PROVIDED TO PREVENT COATING MATERIALS FROM FALLING ON OR MARRING ADJACENT SURFACES. THE WORKING PARTS OF ALL MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE PROTECTED FROM DAMAGE DURING SURFACE PREPARATION AND COATING OPERATIONS. IMMEDIATELY REMOVE COATINGS THAT FALL ON SURROUNDING AREAS AND SURFACES NOT SCHEDULED TO BE COATED.

1.5 SURFACE PREPARATION STANDARDS

A. THE FOLLOWING REFERENCED SURFACE PREPARATION SPECIFICATIONS OF THE SOCIETY OF PROTECTIVE COATINGS SHALL FORM A PART OF THIS SPECIFICATION:
1. SOLVENT CLEANING (SSPC–SP1): REMOVAL OF OIL, GREASE, SOIL, SALTS, AND OTHER SOLUBLE CONTAMINANTS BY CLEANING WITH SOLVENT, VAPOR, ALKALI, EMULSION, OR STEAM.
2. HAND TOOL CLEANING (SSPC–SP2): REMOVAL OF LOOSE RUST, LOOSE MILL SCALE, LOOSE PAINT, AND OTHER LOOSE DETRIMENTAL FOREIGN MATTER, BY HAND CHIPPING, SCRAPING, SANDING, AND WIRE BRUSHING.
3. POWER TOOL CLEANING (SSPC–SP3): REMOVAL OF LOOSE RUST, LOOSE MILL SCALE, LOOSE PAINT, AND OTHER LOOSE DETRIMENTAL FOREIGN MATTER, BY POWER TOOL CHIPPING, DESCALING, SANDING, WIRE BRUSHING, AND GRINDING.
4. WHITE METAL BLAST CLEANING (SSPC–SP5): REMOVAL OF ALL VISIBLE RUST, OIL, GREASE, SOIL, DUST, MILL SCALE, PAINT, OXIDES, CORROSION PRODUCTS AND FOREIGN MATTER BY BLAST CLEANING.
5. COMMERCIAL BLAST CLEANING (SSPC SP6): REMOVAL OF ALL VISIBLE OIL, GREASE, SOIL, DUST, MILL SCALE, RUST, PAINT, OXIDES, CORROSION PRODUCTS, AND OTHER FOREIGN MATTER, EXCEPT THAT STAINING SHALL BE LIMITED TO NO MORE THAN 33 PERCENT OF EACH SQUARE INCH OF SURFACE AREA.
6. BRUSH–OFF BLAST CLEANING (SSPC–SP7): REMOVAL OF ALL VISIBLE OIL, GREASE, SOIL, DUST, LOOSE MILL SCALE, LOOSE RUST, AND LOOSE PAINT.
7. NEAR–WHITE BLAST CLEANING (SSPC–SP10): REMOVAL OF ALL VISIBLE OIL, GREASE, SOIL, DUST, MILL SCALE, RUST, PAINT, OXIDES, CORROSION PRODUCTS, AND OTHER FOREIGN MATTER, EXCEPT THAT STAINING SHALL BE LIMITED TO NO MORE THAN 5 PERCENT OF EACH SQUARE INCH OF SURFACE AREA.
8. SURFACE PREPARATION OF CONCRETE (SSPC–SP13): STANDARD GIVES REQUIREMENTS FOR SURFACE PREPARATION OF CONCRETE BY MECHANICAL, CHEMICAL, OR THERMAL METHODS PRIOR TO THE APPLICATION OF BONDED PROTECTIVE OR LINING SYSTEMS.
9. MARGINALLY PREPARED SURFACES (MAINTENANCE): REMOVE VISIBLE OIL, GREASE, DIRT, DUST, MILL SCALE, RUST, PAINT, OXIDES, CORROSION PRODUCTS, AND OTHER FOREIGN MATTER IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

1.6 SURFACE PREPARATION OF DUCTILE OR CAST IRON

A. PREPARE DUCTILE OR CAST IRON SURFACES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. ENSURE SURFACES ARE CLEAN, DRY, AND FREE OF OIL, GREASE, DIRT, DUST, AND OTHER CONTAMINANTS IN ACCORDANCE WITH SSPC–SP1.

1.7 INSPECTION

A. SURFACE TEMPERATURE: MEASURE TEMPERATURE OF SURFACE TO BE COATED, WITH INSTRUMENTS APPROVED BY ENGINEER, WHICH IS ACCURATE TO WITHIN 1 DEGREE F. THROUGH THE RANGE BEING TESTED.

B. HUMIDITY/DEW POINT: FOR HUMIDITY, DEW POINT AND TEMPERATURE DETERMINATION PROVIDE A SLING PSYCHROMETER, WITH U.S. DEPARTMENT OF COMMERCE WEATHER BUREAU PSYCHOMETRIC TABLES OR EQUIVALENT.

C. DRY FILM THICKNESS:
1. PROVIDE A DRY FILM GAUGE AND CALIBRATION BLOCKS FOR PAINT THICKNESS TESTING WITH AN ACCURACY OF PLUS/MINUS 0.25–MILS.
2. INSTRUMENTS AND METHODS IN ACCORDANCE WITH SSPC–PA2.

D. HOLIDAY TESTING:
1. PERFORM TEST WITH SPONGE/LOW VOLTAGE HOLIDAY DETECTOR FOR COATINGS ON EXPOSED FERROUS METAL.
2. DO NOT EXCEED THE VOLTAGE ON HOLIDAY DETECTORS RECOMMENDED BY THE MANUFACTURER OF THE COATING SYSTEM.
3. FOR COATINGS BETWEEN 10 MILS AND 20 MILS DFT, ADD A NON–SUDSING TYPE WETTING AGENT TO THE WATER BEFORE WETTING THE DETECTOR SPONGE ON HOLIDAY DETECTOR.
4. ON COATINGS GREATER THAN 20 MILS DFT, USE A HIGH VOLTAGE HOLIDAY DETECTOR.
5. FOR LOCATIONS WHERE HOLIDAYS ARE FOUND, PREPARE SURFACE TO BE COATED AND APPLY COATING FOLLOWING THE APPROPRIATE SECTIONS ABOVE.
6. IF MORE THAN 25 PERCENT (TO THE LIMITS OF THE SANDED EDGES) OF THE AREA COVERED BY THE COATING REQUIRES REPAIR, BLAST CLEAN THE ENTIRE SECTION AFFECTED AND APPLY COATING ACCORDING TO THE APPROPRIATE SECTION ABOVE.
7. NO PINHOLES OR OTHER IRREGULARITIES WILL BE PERMITTED IN THE FINAL COATING.

TABLE A

	ITEM	SURFACE PREPARATION	PRIME COAT	FINISH COAT	TESTING	SYSTEM
FM–6	FERROUS SURFACES IN VAULTS OR ENCLOSURES	COMMERCIAL BLAST CLEANING SSPC–SP6		FACTORY APPLIED TYPE 15 FUSION BONDED EPOXY DFT: 12.0 TO 16.0 MILS UNLESS OTHERWISE SPEC.	DFT, SURFACE TEMP, HUMIDITY AND DEW POINT, HOLIDAY	FUSION BONDED EPOXY
			TYPE 11 – MULTI–USE EPOXY DFT: 4.0 TO 8.0 MILS	TYPE 20 – ALIPHATIC POLYURETHANE DFT: 5.0 MILS		EPOXY/ POLYURETHANE

GROUNDING AND BONDING PER SPECIFICATION BELOW.

1.1 SUMMARY

A. POWER SYSTEM GROUNDING.

B. INSTRUMENTATION SYSTEM GROUNDING.

C. ELECTRICAL EQUIPMENT AND RACEWAY GROUNDING AND BONDING.

1.2 SYSTEM DESCRIPTION

A. GROUND EACH SEPARATELY DERIVED ELECTRIC SYSTEM TO THE MAIN GROUNDING LOOP WITH SEPARATE GROUNDING CONDUCTOR WITH SIZE AS SHOWN ON THE DRAWINGS.

B. PROVIDE AN ISOLATED INSTRUMENTATION/CONTROL SYSTEM–GROUNDING CONDUCTOR FROM MAIN GROUNDING LOOP.

C. BOND TOGETHER: NEUTRAL TO GROUND WHERE ELECTRICAL POWER SOURCE IS DERIVED (TRANSFORMER SECONDARY), ENCLOSURES, EXPOSED NON–CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT, METAL RACEWAY SYSTEMS, CABLE TRAYS, GROUNDING CONDUCTOR IN RACEWAYS AND CABLES, RECEPTACLE GROUND CONNECTORS, AND BUILDING PERIMETER GROUND LOOP.

1.3 SUBMITTALS

A. INDICATE LAYOUT OF GROUND RING, LOCATION OF SYSTEM GROUNDING ELECTRODE CONNECTIONS AND ROUTING OF GROUNDING ELECTRODE CONDUCTOR.

B. SUBMIT RESULTS OF THE GROUND SYSTEM RESISTANCE TESTS.

PART 2 –PRODUCTS

2.1 MANUFACTURERS

A. LYNCOLE XIT GROUNDING.

B. SUPERIOR GROUNDING SYSTEMS.

C. LIGHTNING ELIMINATORS & CONSULTANTS.

D. OWNER APPROVED EQUAL.

2.2 MATERIALS

A. ENHANCED GROUNDING ELECTRODES:
1. CONSIST OF 2–INCH NOMINAL DIAMETER HOLLOW COPPER TUBE:

A. PERMANENTLY CAP TUBE ON TOP AND BOTTOM.

B. PROVIDE AIR BREATHER HOLES IN TOP OF TUBE AND PROVIDE DRAINAGE HOLES IN BOTTOM OF TUBE FOR ELECTROLYTE DRAINAGE INTO SURROUNDING SOIL.
2. FILLED AT FACTORY WITH NON–HAZARDOUS CALSOLYTE–TYPE SUBSTANCE TO ENHANCE GROUNDING PERFORMANCE.
3. MINIMUM OF 10 FEET LONG FOR BOTH A STRAIGHT (VERTICAL) OR WHEN APPROVED BY OWNER, L–SHAPED (HORIZONTAL) INSTALLATION.
4. STRANDED NO. 4/0 AWG GROUND WIRE: CADWELDED TO SIDE OF ROD FOR ELECTRODE CONDUCTOR CONNECTION.
5. PROVIDE CLAMPING U_BOLT WITH PRESSURE PLATE ON TOP END OF TUBE FOR TESTING AND TEMPORARY CONNECTIONS. REMOVE U–BOLT AND CADWELD ONCE TESTING IS COMPLETE AND APPROVED BY THE OWNER.
6. PROVIDE SELF–CONTAINED GROUND ROD(S) USING NON–HAZARDOUS CHEMICALLY ENHANCED GROUNDING UNLESS OTHERWISE INDICATED ON DRAWINGS.
7. OPERATE BY HYGROSCOPICALLY EXTRACTING MOISTURE FROM AIR TO ACTIVATE ELECTROLYTIC CHEMICALS.
8. ENHANCED GROUNDING ELECTRODE SYSTEM:

A. UL LISTED.

B. 100 PERCENT SELF–ACTIVATING/SEALED AND MAINTENANCE FREE, REQUIRING NO CHEMICAL OR WATER SOLUTIONS TO BE ADDED.
9. BACKFILL MATERIAL:

A. NATURAL VOLCANIC, NON–CORROSIVE SPECIAL FORM OF BENTONITE CLAY GROUT BACKFILL MATERIAL THAT CONTAINS NO CARBON FILLERS. XIT #BNC OR OWNER APPROVED EQUAL.

B. ABSORB APPROXIMATELY 14 GALLONS OF WATER PER 50 POUND BAG FOR OPTIMAL 30 PERCENT SOLIDS DENSITY.

C. PH VALUE 8_10 WITH MAXIMUM RESISTIVITY OF 3 OHMS PER METER AT 30 PERCENT SOLIDS DENSITY.

B. GROUNDING WELLS: FLARED CONCRETE PIPE SECTION WITH CAST OR IRON COVERS AS AVAILABLE FROM: ENHANCED ELECTRODE MANUFACTURER; JENSEN PRECAST, OWNER APPROVED EQUAL OR IN ACCORDANCE WITH DRAWINGS.

C. GROUNDING GRID CONDUCTOR: STRANDED COPPER CONDUCTOR WITH GREEN THW INSULATION OF SIZE SHOWN ON DRAWINGS.

D. GROUNDING CONDUCTOR LOCATED IN BUILDING FOUNDATION, EQUIPMENT FOUNDATIONS, AND DUCT BANK CONCRETE: BARE STRANDED COPPER CONDUCTOR OF SIZE SHOWN ON DRAWINGS.

E. SUPPLEMENTAL GROUNDING ELECTRODES:
1. FOR GROUNDING ELECTRODES IN MANHOLES, PULLBOXES AND SUPPLEMENTAL INSTALLATIONS, USE 3/4 INCH X 10 FEET – 0 INCHES COPPER–CLAD STEEL GROUND ROD AS INDICATED ON DRAWINGS.
2. FOR CONNECTIONS THAT ARE NOT BURIED OR PLACED IN CONCRETE, PROVIDE CABLE–TO–ROD GROUND CONNECTOR AS MANUFACTURED BY BURNDY, TYPE "GAR," TYPE "GD," OR TYPE "GKP–W" – DEPENDING ON APPLICATION.
3. FOR INSTALLATIONS OTHER THAN MANHOLES AND PULLBOXES, PROVIDE GROUNDWELL AS DESCRIBED ABOVE AND INSTALL IN ACCORDANCE WITH THE DRAWINGS.

F. MECHANICAL CONNECTORS:
1. HIGH COPPER ALLOY AND SUFFICIENTLY RIGID TO RESIST DEFORMATION WHEN TORQUED TO MANUFACTURERS SPECIFICATIONS.
2. FLUSH MOUNTED GROUNDING PADS: TWO–HOLE LUGS WITH EXOTHERMIC CONNECTION TO EQUIPMENT GROUND WIRE.

PART 3 –EXECUTION

3.1 INSTALLATION

A. PROVIDE UNINSULATED TAPS FROM MAIN GROUNDING LOOP(S) FOR GROUNDING EACH PIECE OF POWER DISTRIBUTION, CONTROL, AND TELEMETRY EQUIPMENT IN QUANTITY AND SIZE SHOWN ON DRAWINGS OR SPECIFIED, WHICHEVER IS GREATER.
1. UNLESS OTHERWISE DETAILED, MAKE TAPS FROM MAIN LOOP(S) WITH EXOTHERMIC WELDS.
2. TERMINATE AT FLUSH MOUNTED GROUNDING PADS AS DETAILED ON DRAWINGS.

B. PROVIDE SEPARATE, INSULATED EQUIPMENT GROUNDING CONDUCTOR IN FEEDER AND BRANCH CIRCUIT RACEWAYS OR CABLE ASSEMBLIES. TERMINATE EACH END ON GROUNDING LUG, BUS, AND BUSHING. IN ADDITION, FOR GROUNDING ROTATING EQUIPMENT SKIDS, MOTOR FRAMES, TRANSFORMER CASES, ELECTRICAL GEAR ENCLOSURES, AND INDOOR/OUTDOOR ELECTRICAL EQUIPMENT ENCLOSURES, PROVIDE INDIVIDUAL FLUSH GROUNDING PADS FOR CONNECTION TO THE FACILITY GROUND LOOP. PROVIDE COMPRESSION TYPE CONNECTORS AND 600 VOLT GREEN THW STRANDED COPPER (#2 AWG OR AS INDICATED ON THE DRAWINGS) TO CONNECT EQUIPMENT TO GROUNDING PADS.

A. CONNECT GROUNDING ELECTRODE CONDUCTORS TO NEAREST GROUNDING WELL USING AN EXOTHERMIC CONNECTION TO THE INTERCONNECTING LOOP BETWEEN GROUNDING WELLS.

B. SUPPLEMENTARY GROUNDING ELECTRODE: USE EFFECTIVELY GROUNDED REINFORCING BAR WITHIN BUILDING FOUNDATION.

C. USE MINIMUM #6 AWG COPPER CONDUCTOR FOR TELEMETRY COMMUNICATIONS SERVICE GROUNDING CONDUCTOR. LEAVE 10 FEET SLACK CONDUCTOR WITHIN TERMINAL CABINET.

D. DO NOT EXTEND BARE OR INSULATED GROUNDING CONDUCTOR UP THROUGH FINISHED CONCRETE FLOOR OR THROUGH FOUNDATIONS AND WALLS WITHOUT A FLUSH CONNECTOR.

E. GROUNDING AND GROUNDED CONDUCTORS TO BE IDENTIFIED AT ALL VISIBLE POINTS.

3.2 FIELD QUALITY CONTROL

A. INSPECT GROUNDING AND BONDING SYSTEM CONDUCTORS AND CONNECTIONS FOR TIGHTNESS AND PROPER INSTALLATION.

B. GROUND SYSTEM MEASUREMENTS AND TESTING:
1. GROUND SYSTEM MEASUREMENT EQUIPMENT: THE GROUNDING SYSTEM COMPONENTS AND SOIL RESISTIVITY MEASUREMENTS SHALL BE BY EQUIPMENT SPECIFICALLY DESIGNED FOR THAT PURPOSE. THE GROUNDING SYSTEM MEASUREMENTS SHALL BE BY AEMC 4500 DIGITAL STORAGE METER OR EQUIVALENT. AT NO TIME SHALL ANY GROUND SYSTEM MEASUREMENT BE GREATER THAN 2 OHMS. THE MEASUREMENTS WILL BE TAKEN AT ALL GROUND TEST WELLS AND AT EACH MAJOR EQUIPMENT POINT (I.E., TRANSFORMER, MCC, SWITCHGEAR LINE–UP).
2. CONTINUITY MEASUREMENTS: ASSEMBLE AND MEASURE THE SITE GROUND GRID FOR CONTINUITY BEFORE EACH GROUND CONDUCTOR IS ATTACHED. EACH GROUND CONDUCTOR THAT ATTACHES TO THE GRID SHALL BE TESTED FOR CONTINUITY BEFORE AND AFTER THE GRID CONNECTION WITH THE VALUES RECORDED FOR APPROVAL BY THE OWNER. AS A MINIMUM, THE FOLLOWING GROUND GRID CONDUCTORS SHALL BE TESTED: PUMP SKIDS; MOTORS; MCCS; SWITCHGEAR; TRANSFORMERS; HVAC EQUIPMENT; ANTENNA POLES; ENCLOSURES; STRUCTURAL STEEL; BRIDGE CRANE; TRANSFER EQUIPMENT; GENERATOR EQUIPMENT; UPS.
3. SOIL RESISTIVITY MEASUREMENTS: MEASURE SITE SOIL RESISTIVITY WITH 4–POINT FALL–OF–POTENTIAL METHOD. THE LENGTH AND SPACING OF THE TEST RODS SHALL BE DEPENDENT ON THE LENGTH AND DIAMETER OF THE GROUNDWELL ROD AND SHALL BE AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER. THE 4–POINT MEASUREMENT TEST SHALL BE SET PERFORMED AT FOUR LOCATIONS AT THE SITE TO ENSURE AN ACCURATE MEASUREMENT.
4. GROUNDWELL RESISTANCE TESTING: INSTALL AND TEST THE GROUNDWELLS BEFORE ATTACHING THE GROUND GRID CONDUCTOR. DE–ENERGIZE THE ELECTRICAL SYSTEM PRIOR TO DETACHING THE GROUND GRID CONDUCTOR IN THE EVENT THE GROUNDWELLS RESISTIVITY TESTS WERE NOT CONDUCTED BEFORE THE GROUNDWELL WAS CONNECTED TO GROUND GRID. DO NOT DETACH THE GRID CONDUCTOR IF THE ELECTRICAL SYSTEM IS ENERGIZED. THE GROUNDWELLS SHALL BE TESTED BY THE 3–POINT, 62 PERCENT METHOD WHERE THE SPACING OF THE POTENTIAL AND CURRENT ELECTRODES ARE DEPENDENT ON THE LENGTH AND DIAMETER OF THE GROUNDWELL ROD AND SHALL BE AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER. THE ELECTRODE TEST POINTS SHALL BE NUMEROUS ENOUGH SO AS TO DEVELOP A VALID 62 PERCENT GRAPH WITH THE EFFECTIVE RESISTANCE AREAS BOTH OVERLAPPING AND SEPARATING.

C. USE OR FABRICATE TEMPLATES OR FRAMES AND RECOMMENDED BOLTS TO HOLD GROUNDING PLATES FLUSH TO CONCRETE FLOOR AND PAD ELEVATIONS DURING POUR AND FINISHING OPERATIONS.

BID SET

2 working days Call before you Dig 1–800–227–2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APPD

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
PRV GENERAL NOTES I
ELKO COUNTY
NEVADA
ELKO

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: NA
VERT: NA
JOB NO: 3-82787

PROFESSIONAL ENGINEER – STATE OF NEVADA – BHAKTA – Exp. 12-31-24 – CIVIL – No. 15494 – 04-25-24

SHEET D-8 OF 49

CONDUCTORS AND CABLES PER SPECIFICATION BELOW

1.1 REFERENCES

A. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION STANDARDS:
1. NEMA WC 57 – STANDARD FOR CONTROL, THERMOCOUPLE EXTENSION AND INSTRUMENTATION CABLE.
2. NEMA WC 70 – NON–SHIELDED POWER CABLES RATED 2000V OR LESS.

B. NATIONAL ELECTRIC CODE (NEC), MOST RECENT EDITION APPROVED BY AUTHORITY HAVING JURISDICTION.

C. UNDERWRITERS LABORATORIES (UL), INC. STANDARDS:
1. UL 1277 – ELECTRICAL POWER AND CONTROL TRAY CABLES WITH OPTIONAL OPTICAL–FIBER MEMBERS.

D. TELECOMMUNICATIONS INDUSTRY ASSOCIATION/ELECTRONICS INDUSTRY ASSOCIATION STANDARDS:
1. TIA/EIA–568–B.2–1: TRANSMISSION PERFORMANCE SPECIFICATIONS FOR 4–PAIR 100 OHM CATEGORY 6 CABLING.

E. IEEE STANDARDS:
1. IEEE 400.2–2013–IEEE GUIDE FOR FIELD TESTING OF SHIELDED POWER CABLE SYSTEMS USING VERY LOW FREQUENCY (VLF) (LESS THAN 1 HZ)
2. IEEE 802 – STANDARD FOR LOCAL AND METROPOLITAN NETWORKS.

1.2 SUBMITTALS

A. PROVIDE SUBMITTALS FOR CONDUCTORS AND CABLES FROM THE ORIGINAL MANUFACTURER, NO EXCEPTIONS. CONDUCTORS AND CABLES LABELED WITH OTHER THAN THE ORIGINAL MANUFACTURER NAME IS PROHIBITED.

1.3 DELIVERY, STORAGE AND HANDLING

A. CONDUCTORS:
1. NEW AND MANUFACTURED WITHIN 12 MONTHS OF DATE OF DELIVERY TO SITE.
2. CONTINUOUSLY STORE WITHIN ENVIRONMENT RECOMMENDED BY ORIGINAL MANUFACTURE, PROTECTED FROM EXPOSURE TO SUNLIGHT, HEAT AND WEATHER.
3. DELIVER CONDUCTORS TO SITE ON THEIR ORIGINAL REELS OR IN THEIR UNBROKEN PACKAGES.
4. CLEARLY AND PLAINLY MARK AND TAG CONDUCTOR PACKAGES OR REELS WITH UL LABEL, AWG SIZE, VOLTAGE RATING, INSULATION TYPE, TYPE OF STRANDING, MANUFACTURER'S NAME, TRADE NAME AND DATE OF MANUFACTURE.

PART 2 –PRODUCTS

2.1 REMOTE CONTROL AND SIGNAL CABLE PRODUCTS

A. REMOTE SIGNAL CIRCUITS:
1. 600–VOLT INSULATION
2. RATED 90 DEGREES C DRY AND 75 DEGREES C WET
3. INDIVIDUALLY SHIELDED TWISTED PAIRS WITH STRANDED AND COATED DRAIN WIRE
4. COVERED WITH OVERALL ALUMINUM/POLYESTER SHIELD AND PVC JACKET.
5. CONDUCTORS: SOFT ANNEALED #18 AWG STRANDED COPPER, OR AS SHOWN ON DRAWINGS.
6. PROVIDE SHIELDING WITH 100 PERCENT COVERAGE AND AT LEAST 25 PERCENT SHIELD OVERLAP.

B. REMOTE CONTROL CIRCUITS:
1. MULTI–CONDUCTOR CABLE WITH 600–VOLT PVC INSULATED COPPER CONDUCTORS WITHIN AN OVERALL THERMOPLASTIC JACKET CONTINUOUSLY MARKED "TYPE TC–ER." DIFFERENTIATE INDIVIDUAL CONDUCTORS BY COLOR AND TRACER IN MULTI–CONDUCTOR ASSEMBLIES.
2. CONDUCTORS: #14 AWG MINIMUM, STRANDED COPPER, OR AS SHOWN ON THE DRAWINGS.
3. CONTROL CABLE TO INCLUDE A GREEN INSULATED GROUNDING CONDUCTOR.
4. CABLE ASSEMBLY: 75 DEGREES C CONTINUOUS RATED, WITH INDIVIDUAL CONDUCTORS IN THE QUANTITY SPECIFIED ON THE DRAWINGS OR AS REQUIRED FOR THE INSTALLATION WITH TWO CONDUCTORS OR 20 PERCENT SPARES, WHICHEVER IS GREATER..

C. COMPONENT MANUFACTURER'S SPECIAL CABLE: PROVIDE SPECIALIZED CABLE FOR THE INTERCONNECTION OF MANUFACTURED ASSEMBLIES OR COMPONENT SYSTEMS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER. MORE STRINGENT REQUIREMENTS WILL APPLY AS NECESSITATED BY THE NEC, SIGNAL INTEGRITY AND MECHANICAL PROTECTION.

2.2 POWER CONDUCTOR AND CABLE PRODUCTS

A. GENERAL POWER CONDUCTOR REQUIREMENTS:
1. INDIVIDUAL POWER CONDUCTORS:
a. STRANDED COPPER
b. INSULATION RATED 600–VOLT, TYPES THWN, THW, XHHW–2, OR THWN–2.
2. COLOR–CODE ENTIRE LENGTH OF CONDUCTORS SMALLER THAN #6 AWG BY ITS INSULATION. IDENTIFY CONDUCTORS #6 AWG AND LARGER WITH MULTIPLE RINGS OR LAPPING OF COLORED TAPE AT EACH BOX, TERMINAL OR PIECE OF EQUIPMENT AT 1 FOOT INCREMENTS.
3. PROVIDE COLOR CODING AS FOLLOWS:
a. NEUTRAL: WHITE OR GRAY
b. GROUNDING CONDUCTOR: GREEN.
c. ISOLATED GROUND CONDUCTOR: GREEN WITH ORANGE TRACER.
d. UNGROUNDED CONDUCTORS:
1) 208Y/120V 3_PHASE: BLACK, RED, BLUE WITH WHITE NEUTRAL.
2) 120/240V 1_PHASE: BLACK, RED WITH WHITE NEUTRAL.

B. MANUFACTURERS:
1. OKONITE, OKOSEAL–N.
2. BELDEN.
3. GENERAL CABLE.
4. SOUTHWIRE.
5. CERROWIRE.
6. OWNER APPROVED EQUAL.

C. PROVIDE 600V POWER CONDUCTORS AND CABLES FROM THE SAME MANUFACTURER.

2.3 WIRE MANAGEMENT PRODUCTS

A. CABLE TIES, CABLE TIE MOUNTS AND ANCHOR BASE: SPIRAL WIRE WRAP FOR HINGED DOOR APPLICATIONS.

2.4 WIRE CONNECTIONS

A. PROVIDE CONNECTORS FOR SPLICES AND TERMINAL CONNECTIONS OF COPPER CONDUCTORS:
1. PROVIDE CONNECTOR TO FIT THE CONNECTED CONDUCTOR TO WHICH CONNECTED.
2. PROVIDE ASSEMBLY WITH JOINT CONTACT SURFACES NOT LESS THAN 50 PERCENT.
3. WHEN APPROVED BY THE OWNER, WIRING INSTALLATIONS FOR BRANCH CIRCUITS SMALLER THAN #8 AWG MAY BE JOINED USING SPRING STEEL INSULATED WIRE NUT TYPE SIZED FOR THE CONDUCTORS. ABOVE GROUND ONLY.
4. SPLIT–BOLT CONNECTORS ARE NOT ALLOWED.
5. TERMINATE STRANDED CONDUCTORS BY MECHANICAL PRESSURE PLATE AT TERMINALS OR BY A FERULE CRIMP CONNECTOR IF A PRESSURE PLATE IS NOT USED.

C. COMPRESSION CONNECTORS FOR #8 AWG AND LARGER:
1. LONG BARREL COPPER LUGS FOR TERMINAL CONNECTIONS WITH COPPER PLATED STEEL BOLTS. 1–HOLE OR 2–HOLE MATCHED FOR THE APPLICATION OR EQUIPMENT.
2. PROVIDE HYDRAULIC CRIMPING TOOL, WITH PROPER DIE RATED FOR LUG BEING COMPRESSED, TO MAKE TIGHT AND NEAT COMPRESSION CONNECTIONS.
3. MANUFACTURERS OF CONNECTORS AND CRIMPING TOOLS:
b. BURNDY.
c. THOMAS AND BETTS.
d. OWNER APPROVED EQUAL.

2.5 ELECTRICAL TAPE

A. GENERAL 600V WIRING:
1. PLASTIC 0.007 INCHES THICK AND RESISTANT TO ABRASION, ALKALIES, ACIDS, CORROSION, MOISTURE, AND LOW AND HIGH TEMPERATURES. COLOR COORDINATE IN ACCORDANCE WITH THE DRAWINGS AND SPECS.
2. APPROVED PRODUCTS:
a. SCOTCH SUPER 33+ VINYL ELECTRICAL TAPE.
b. DEVISER 2307, 2207 (COLOR).
c. OWNER APPROVAL EQUAL.

PART 3 –EXECUTION

3.1 INSTALLATION

A. GENERAL WIRING METHODS:
1. USE WIRE NO SMALLER THAN #12 AWG FOR POWER AND LIGHTING CIRCUITS AND NOT SMALLER THAN #14 AWG FOR CONTROL WIRING.
2. USE #10 AWG CONDUCTOR FOR 20–AMPERE, 120–VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 75 FEET, AND FOR 20–AMPERE, 277–VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 200 FEET.
3. NETWORK CABLE MAXIMUM INSTALLED LENGTH: 100 METERS.
4. PLACE EQUAL NUMBER OF CONDUCTORS FOR EACH PHASE OF CIRCUIT IN SAME RACEWAY OR CABLE WHEN WORKING WITH PARALLEL CONDUCTORS.
5. SPLICES ARE NOT PERMITTED WITHOUT PRIOR APPROVAL OF OWNER.
6. NEATLY TRAIN AND TIE WIRING INSIDE BOXES, EQUIPMENT AND PANELBOARDS. USE CABLE TIES AS NEEDED.
7. PROVIDE EQUAL CONDUCTOR LENGTHS FOR PARALLEL CIRCUITS.
8. GROUP COMMON CONDUCTOR TYPES TOGETHER WHERE INSTALLED IN CABLE TRAYS.
9. DO NOT CHANGE, GROUP OR COMBINE CIRCUITS OTHER THAN INDICATED ON THE DRAWINGS.
10. DO NOT USE TAPE TO BUNDLE WIRES FOR PULLING INTO CONDUITS, OR FOR TRAINING WIRES IN PANELS, GUTTERS, OR WIREWAYS.
11. NEATLY TRAIN AND TIE ALL WIRING AND CABLES IN CABLE TRAYS.
12. WHEN SIZING CONDUIT, USE TYPE THW INSULATION.
13. FOR RTD CONDUCTORS, MAINTAIN MANUFACTURES RECOMMENDED SPACING FROM SOURCES OF EMF AND RF INTERFERENCE AND POWER CONDUCTORS.
14. IDENTIFY ALL WIRING IN ACCORDANCE WITH SECTION 26 05 53.
15. CONDUCTOR PHASING:
a. CONNECT CABLES TO MAINTAIN PHASE RELATIONSHIP THROUGHOUT SYSTEM.
b. MATCH EACH PHASE WITH BUS ARRANGEMENTS IN EQUIPMENT TO WHICH THE CABLES ARE CONNECTED. PHASE A CABLE TO PHASE A BUS, ETC.

B. WIRING INSTALLATION IN RACEWAYS:
1. PULL CONDUCTORS INTO A RACEWAY AT THE SAME TIME. USE UL LISTED WIRE–PULLING LUBRICANT FOR PULLING ALL WIRES.
2. INSTALL WIRE IN RACEWAY AFTER INTERIOR OF BUILDING HAS BEEN PHYSICALLY PROTECTED FROM THE WEATHER AND MECHANICAL WORK LIKELY TO INJURE CONDUCTORS HAS BEEN COMPLETED.
3. THOROUGHLY CLEAN ALL INTERIOR AND EXTERIOR AREAS OF EQUIPMENT AND BOXES, CABLES AND CONDUCTORS OF PULLING COMPOUND WHEN USED.
4. COMPLETELY AND THOROUGHLY SWAB RACEWAY SYSTEM BEFORE INSTALLING CONDUCTORS.

C. WIRING CONNECTIONS AND TERMINATIONS, LESS THAN 1000V:
1. MAKE NO SPLICES UNLESS APPROVED BY THE OWNER.
2. TAPED INSULATION FOR CONNECTIONS IS PROHIBITED.
3. THOROUGHLY CLEAN WIRES BEFORE INSTALLING LUGS AND CONNECTORS.
4. MAKE SPLICES, TAPS, AND TERMINATIONS TO CARRY FULL AMPACITY OF CONDUCTORS WITHOUT PERCEPTIBLE TEMPERATURE RISE.
5. USE SOLDERLESS PRESSURE CONNECTORS WITH COLD SHRINK SPLICE KIT BY 3M SERIES 8420 OR OWNER APPROVED EQUAL FOR COPPER WIRE SPLICES AND TAPS UP TO 1KV, #10 AWG AND LARGER.
6. DIRECT BURIAL SPLICES ARE NOT ACCEPTABLE.
7. CONTROL AND INSTRUMENTATION WIRING CONNECTIONS: USE TERMINAL BLOCKS AND BE DIN RAIL MOUNTED INCLUDING ALL ACCESSORIES, END CAPS, BARRIERS, LABELS, AND BE OF THE MECHANICAL PRESSURE TYPE.

3.2 FIELD QUALITY CONTROL

A. LOW–VOLTAGE INSULATION RESISTANCE TESTING:
1. PERFORM INSULATION RESISTANCE TEST USING A DIRECT READING MEGGER HAVING A MINIMUM VOLTAGE CAPABILITY OF 1,000 VOLTS DC ON ALL CIRCUIT CONDUCTORS.
2. FOR POWER CIRCUIT CONDUCTORS, PERFORM INSULATION–RESISTANCE TEST ON EACH CONDUCTOR WITH RESPECT TO GROUND AND ADJACENT CONDUCTORS. TEST DURATION: ONE MINUTE.
3. REPLACE ALL CONDUCTORS WITH READINGS LESS THAN 100 MEGAOHMS.
4. TEST EACH INDIVIDUAL LENGTH OF CIRCUIT PRIOR TO MAKING CONNECTIONS. TEST EACH PHASE CABLE SEPARATELY.
5. TESTING TO BE COMPLETE, INCLUDING TESTING ON REPLACED CABLE, AND ACCEPTED PRIOR TO BEING PLACED IN SERVICE.

B. INSPECT WIRE AND CABLE FOR PHYSICAL DAMAGE AND PROPER CONNECTIONS.

C. TORQUE TEST CONDUCTOR CONNECTIONS AND TERMINATIONS TO MANUFACTURERS RECOMMENDED VALUES IN ACCORDANCE WITH NEC REQUIREMENTS, IN PRESENCE OF OWNER.

D. PERFORM CONTINUITY TEST ON POWER AND EQUIPMENT BRANCH CIRCUIT CONDUCTORS. VERIFY PROPER PHASING CONNECTIONS. TEST CONDUCTOR FOR SHORTS TO GROUND AND RESISTANCES THAT ARE BELOW MANUFACTURER'S PUBLISHED VALUES.

E. WIRE AND CABLE INSTALLATION SCHEDULE:
1. EXPOSED INTERIOR LOCATIONS:
a. CONDUCTORS IN RIGID GALVANIZED RACEWAYS.
b. CABLE IN GALVANIZED RACEWAYS AND IN CABLE TRAY.
2. WET OR DAMP INTERIOR LOCATIONS: CABLE/CONDUCTORS IN PVC COATED RIGID STEEL RACEWAYS.
3. EXTERIOR LOCATIONS: CABLE/CONDUCTORS IN RIGID GALVANIZED RACEWAYS.
4. UNDERGROUND LOCATIONS: REFER TO CONDUITS, CABLE TRAYS, BOXES, MANHOLES, AND PULLBOXES

AUTOMATIC CONTROL VALVES PER SPECIFICATION BELOW

1.1 SUMMARY

A. PROVIDE VALVES IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS:
1. VALVES AND COMPONENT PARTS: EQUAL OR EXCEED SPECIFIED REQUIREMENTS.
2. MANUFACTURE: NORMALLY ENGAGED IN MANUFACTURE OF SUCH VALVES.
3. VALVES FURNISHED FOR WORK: NEW AND CURRENTLY UNDER MANUFACTURE.
4. VALVES DISCONTINUED BY MANUFACTURER AS OF BID OPENING DATE: NOT ACCEPTABLE.
5. FACTORY SET OPENING/CLOSING PRESSURES AS SHOWN ON DRAWINGS.
6. PROVIDE WITH GAGE CONNECTION POINTS AT INLET, OUTLET AND DOME FOR TROUBLESHOOTING PURPOSES.
7. COATINGS IN ACCORDANCE WITH.

B. VALVES: DESIGNED FOR WATER WORKING PRESSURE OF 150 PSI, UNLESS OTHERWISE SHOWN ON DRAWINGS OR SPECIFIED.

1.2 SECTION INCLUDES

A. PRESSURE REDUCING VALVE.

1.3 REFERENCES

A. ASTM STANDARDS:
1. ASTM A48 – STANDARD SPECIFICATION FOR GRAY IRON CASTINGS.
2. ASTM A240 – STANDARD SPECIFICATION FOR HEAT–RESISTING CHROMIUM AND CHROMIUM–NICKEL STAINLESS STEEL PLATE, SHEET, AND STRIP FOR PRESSURE VESSELS.
3. ASTM A536 _ SPECIFICATION FOR DUCTILE IRON CASTINGS.
4. ASTM B62 _ SPECIFICATION FOR COMPOSITION BRONZE OR OUNCE METAL CASTINGS.

B. AMERICAN WATER WORKS ASSOCIATION STANDARDS:
1. AWWA C550 _ PROTECTIVE EPOXY INTERIOR COATINGS FOR VALVES AND HYDRANTS.

1.4 SUBMITTALS

A. SHOP DRAWINGS

B. COMPLETE CAVITATION STUDY FOR EACH VALVE APPLICATION, TO INCLUDE FOLLOWING:
1. FLOW RATE.
2. INLET AND OUTLET PRESSURES.
3. PERCENTAGE OPEN.
4. SEAT VELOCITY.
5. PIPELINE VELOCITY.
6. VALVE LIFT.

1.5 QUALITY ASSURANCE

A. SUPPLY TO ENGINEER RECORDS OF TESTS PERFORMED ON VALVES OR COMPONENT PARTS THEREOF THAT ARE REQUIRED BY AWWA VALVE STANDARD SPECIFIED IN THESE SPECIFICATIONS IF REQUESTED BY ENGINEER WITHIN 1 YEAR PERIOD AFTER ACCEPTANCE OF WORK.

B. PROVIDE TO ENGINEER, WHEN REQUESTED BY ENGINEER, AFFIDAVIT OF COMPLIANCE WITH SPECIFIED AWWA VALVE STANDARD OR SECTION 1.4 OF AWWA C550 FOR EACH LOT OF VALVE SIZE FURNISHED FOR WORK.

C. INSTALL AND TEST VALVES FURNISHED IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS.

D. TEST EACH VALVE BODY UNDER TEST PRESSURE EQUAL TO TWICE ITS DESIGN WATER–WORKING PRESSURE, UNLESS OTHERWISE SPECIFIED.

E. PROVIDE INTERIOR BRONZE PARTS OF VALVES, EXCEPT VALVE STEMS, IN ACCORDANCE WITH ASTM B62, UNLESS OTHERWISE SPECIFIED.

1.6 WARRANTY

A. PROVIDE MINIMUM 3 YEAR MANUFACTURER WARRANTY.

PART 2 –PRODUCTS

2.1 PRESSURE REDUCING VALVE

A. HYDRAULICALLY OPERATED.

B. PILOT–CONTROLLED:
1. DIRECT ACTING.
2. ADJUSTABLE.
3. SPRING LOADED.
4. NORMALLY OPEN.

C. FLANGED DIAPHRAGM VALVE DESIGNED TO PERMIT FLOW WHEN CONTROLLED PRESSURE IS LESS THAN SPRING SETTING.

D. DIAPHRAGM TYPE GLOBE VALVE.

E. SINGLE REMOVABLE STAINLESS STEEL ONE–PIECE SEAT: CAPABLE OF BEING COMPLETELY SERVICED AND REPAIRED WHILE INSTALLED.

F. CLASS 150: PRESSURE RATING 250 PSI.

G. COMPONENTS:
1. BODY AND COVER:
a. MANUFACTURED OF DUCTILE IRON IN ACCORDANCE OF ASTM A536.
b. LABEL: RAISED LETTERS ON THE CASE FOR MANUFACTURER VALVE SIZE, MODEL NUMBER, AND ARROWS INDICATING THE DIRECTION OF FLOW.
2. INTERNAL METALLIC PARTS: ASTM A240 TYPE 303 STAINLESS STEEL.
3. CONTROL TUBE AND FITTINGS: ASTM A240 TYPE 304 OR 316 STAINLESS STEEL.
4. PILOT VALVE DISC RETAINER ASSEMBLY: ASTM A240 TYPE 304 OR 316 STAINLESS STEEL.
5. CASING BOLTS AND NUTS: CADMIUM–PLATED STEEL OR ASTM A240 TYPE 304 OR 316 STAINLESS STEEL.
6. AVAILABLE SPRING RANGES: 0 TO 600 PSI.
7. VALVE POSITION INDICATOR, WITH BRASS INDICATOR ROD AND HOUSING.
H. PROVIDE PILOT SYSTEM WITH FOLLOWING:
1. ALL PILOT SYSTEM TUBING TO BE STAINLESS STEEL.
2. Y? BODY STRAINER WITH STAINLESS STEEL SCREEN.
3. BALL VALVE AT VALVE INLET, COVER AND OUTLET.
4. FIXED ORIFICE RESTRICTION FITTING.
5. OPENING SPEED CONTROL ON ALL CONTROL VALVES.
6. CLOSING SPEED CONTROL ON ALL CONTROL VALVES 3 INCH AND SMALLER.

I. COATING: FUSION BONDED EPOXY, NOMINAL DFT 12 MILS, IN ACCORDANCE WITH SECTION 09 96 00.

J. MANUFACTURED BY:
1. CLA–VAL COMPANY.
2. OWNER APPROVED EQUAL.

2.2 FLOW METERING SYSTEM

A. PROVIDE MICROPROCESSOR–BASED, PIEZO–RESISTIVE SENSOR IN ACCORDANCE WITH THE DRAWINGS. PROVIDE FLOW MEASUREMENTS PROGRAMMED TO MEET INSTALLATION REQUIREMENTS:
1. LOOP POWERED,10 TO 28 VDC (24 VDC NOMINAL).
2. TWO–WIRE, 4–20 MA DC PROPORTIONAL OUTPUT SIGNAL.
3. FACTORY SETTINGS MUST BE FIELD ADJUSTABLE WITHOUT REMOVAL OF THE METER OR VALVE. COMPUTER PROGRAMMABLE FOR CONTROL VALVE TYPE AND SIZE.

B. SENSOR:
1. PIEZO–RESISTIVE, ONE COMPONENT, NO MOVING PARTS.
2. INSERTION DEPTH PROVIDED BY MANUFACTURER, BASED ON CONTROL VALVE SIZE.

C. VELOCITY MEASUREMENT:
1. METHOD: VORTEX SHEDDING.
2. MINIMUM RANGE: 1 FOOT PER SECOND.
3. MAXIMUM RANGE: 20 FEET PER SECOND.
4. ACCURACY: LINEARITY AND REPEATABILITY PLUS/MINUS 2 PERCENT OF READING OF FULL SCALE.

D. MATERIALS:
1. SENSOR: PLASTIC WITH TEFLON COATED STAINLESS STEEL MEASUREMENT CYLINDER.
2. STEM: STAINLESS STEEL.
3. COMPRESSION FITTING: 304 STAINLESS STEEL.
4. O–RINGS: BUNA N.

E. MOUNTING OPTIONS:
1. INSTALL DIRECTLY INTO THE INLET TAPPING PORT OF THE CONTROL VALVE.

F. MANUFACTURER:
1. CLA–VAL MODEL X144.

PART 3 –EXECUTION

3.1 INSTALLATION

A. INSTALL VALVES AS SHOWN ON DRAWINGS AND IN ACCORDANCE WITH MANUFACTURERS' AND OWNER'S REQUIREMENTS.

BID SET

2 working days Call before you Dig 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
PRV GENERAL NOTES II
ELKO COUNTY NEVADA
ELKO

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: NA
VERT: NA
JOB NO: 3-82787

PROFESSIONAL ENGINEER STATE OF NEVADA BHAKTA Exp. 12-31-24 CIVIL No. 15494
04-25-24

SHEET D-9 OF 49

CONDUITS, CABLE TRAYS, BOXES, MANHOLES, AND PULLBOXES PER SPECIFICATIONS BELOW

1.1 SUMMARY

A. CONDUIT:
1. RIGID GALVANIZED STEEL CONDUIT, FITTINGS, AND COATINGS.
2. LIQUID–TIGHT FLEXIBLE METAL CONDUIT AND FITTINGS.
3. RIGID PVC CONDUIT.
4. CONDUIT SUPPORTS.

C. BOXES, WIREWAYS, GUTTERS, JUNCTION BOXES, AND PULLBOXES:
2. DEVICE BOXES.
3. CONDUIT FITTINGS.

1.2 REFERENCES

A. AMERICAN NATIONAL STANDARDS INSTITUTE STANDARDS:
1. ANSI C80.1 _ ELECTRICAL RIGID STEEL CONDUIT.
2. ANSI C80.3 – ELECTRICAL METALLIC TUBING, ZINC–COATED.
3. ANSI C80.4 – FITTINGS FOR RIGID METAL CONDUIT AND ELECTRICAL METAL TUBING.
4. ANSI/NEMA FB 1 _ FITTINGS, CAST METAL BOXES AND CONDUIT BODIES FOR CONDUIT, ELECTRICAL METALLIC TUBING AND CABLE.
5. ANSI/NEMA OS 1 – SHEET–STEEL OUTLET BOXES, DEVICE BOXES, COVERS, AND BOX SUPPORTS.

B. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)STANDARDS:
1. NEMA FB 1 _ FITTINGS, CAST METAL BOXES AND CONDUIT BODIES FOR CONDUIT, ELECTRICAL METALLIC TUBING AND CABLE.
2. NEMA RN 1 – PVC EXTERNALLY–COATED GALVANIZED RIGID STEEL CONDUIT AND INTERMEDIATE METAL CONDUIT.
3. NEMA TC2 – ELECTRICAL POLYVINYL CHLORIDE TUBING AND CONDUIT.
4. NEMA TC3 – PVC FITTINGS FOR USE WITH RIGID PVC CONDUIT AND TUBING.

C. NATIONAL ELECTRICAL CODE (NEC).

D. UNDERWRITERS LABORATORIES, INC. STANDARDS:
1. UL 797 – ELECTRICAL METALLIC TUBING – STEEL.
2. UL 870 – WIREWAYS, AUXILIARY GUTTERS, AND ASSOCIATED FITTINGS.

1.3 DEFINITIONS

A. DUCTBANK: ONE OR MORE DUCTS (CONDUITS) IN A SINGLE TRENCH. DEPENDING ON THE WIRING SYSTEM AND SOIL CONDITIONS, A DUCT BANK MAY BE PLACED IN A TRENCH AND COVERED WITH NATIVE MATERIAL OR ENCASED IN CONCRETE. ALSO KNOWN AS CONDUIT BANK.

B. BOXES:
1. DEVICE BOXES: SINGLE TO MULTI–GANG FOR MOUNTING UTILIZATION DEVICES SUCH AS:
a. OUTLETS/RECEPTACLES,
b. SWITCHES,
c. FIRE STROBES/HORNS,
d. THERMOSTATS,
e. INSTRUMENTS, ETC.
2. JUNCTION BOXES AND ABOVE GRADE PULLBOXES: SUFFICIENTLY SIZED BOX TO PROVIDE FREE SPACE FOR ALL ENCLOSED CONDUCTORS AND APPURTENANCES FOR THE APPLICATION AND IN ACCORDANCE WITH THE NEC AND DRAWINGS.
3. BELOW GRADE PULLBOXES ARE IN ACCORDANCE WITH. BELOW GRADE PULLBOXES ALSO KNOWN AS HANDHOLES AND/OR MANHOLES.

PART 2 –PRODUCTS

2.1 CONDUIT

A. RGS CONDUIT AND FITTINGS:
1. ANSI C80.1.
2. PVC EXTERNALLY COATED CONDUIT:
a. NEMA RN 1.
b. RIGID STEEL CONDUIT WITH EXTERNAL 40 MIL PVC COATING AND INTERNAL, 2 MIL, CHEMICALLY CURED URETHANE COATING.
c. EXTEND THE PVC COATING EQUAL TO THE OD OF THE CONDUIT 1_1/2 INCHES FROM THE END OF CONDUIT FITTINGS.
d. PVC EXTERNALLY COATED CONDUIT FITTINGS:
1) KORKAP ST STYLE KNOCKOUT HUBS FOR CONDUIT TERMINATION ON SHEET METAL ENCLOSURES OR WHEN APPLICABLE.
2) ALL OTHER FITTINGS, STRAPS, UNIONS, AND CONDULETS AVAILABLE TO MATCH STANDARD RIGID CONDUIT REQUIREMENTS AS MANUFACTURED BY KORKAP, ROBROY OR OWNER APPROVED EQUAL.
3. FITTINGS AND CONDUIT BODIES: ANSI/NEMA FB 1; THREADED TYPE, FORM 7 CONDULETS. AS MANUFACTURED BY COOPER OR CROUSE–HINDS.
a. TYPE FORM 7 FERALOY IRON ALLOY BODY NO. LB27.
b. SIMILAR TO FORM 7 GASKET NO. GASK572 WITH SHEET STEEL WEDGENUT NO. 270.
c. SIMILAR TO FERALOY IRON ALLOY NO. 270F.
4. CONDUIT: RGS (ZINC–COATED).
5. INTERMEDIATE METAL CONDUIT IS PROHIBITED.

B. LIQUID–TIGHT METAL FLEXIBLE CONDUIT AND FITTINGS:
1. CONDUIT: FORM LIQUID TIGHT FLEXIBLE STEEL CONDUIT FROM SPIRALLY WOUND GALVANIZED STEEL STRIP SECURELY INTERLOCKED AND JACKETED WITH LIQUID TIGHT PLASTIC COVER.
2. FITTINGS AND CONDUIT BODIES: ANSI/NEMA FB 1:
a. FITTINGS FOR LIQUID TIGHT FLEXIBLE CONDUIT: ZINC–PLATED MALLEABLE IRON BODY AND GLAND NUT THREADED TO ENGAGE CONDUIT SPIRAL, SEALING GASKET AND RING SEALS AND HAVE AN INSULATED THROAT.
b. FOR 45 AND 90 DEGREE FITTINGS AND COMBINATION FITTINGS, USE WHERE APPLICABLE.
c. USE STEEL FOR 1/2 INCH THROUGH 2 INCH FITTINGS. USE MALLEABLE IRON FOR 2–1/2 INCH THROUGH 4_INCH FITTINGS. LOCKNUTS TO MATCH.
d. PLASTIC FITTINGS ARE PROHIBITED.
e. MANUFACTURED BY:
1) O–Z/GEDNEY CO. TYPE 4Q MALLEABLE IRON NO. STB–125 FOR 1_1/4 INCH.
2) APPLETON STEEL OR MALLEABLE IRON TYPE NO. STB–125 FOR 1_1/4 INCH.
3) OWNER APPROVED EQUAL.

C. RIGID PVC CONDUIT:
1. CONDUIT: NEMA TC 2 AND UL LISTED, SCHEDULE 40 PVC.
2. FITTINGS AND CONDUIT BODIES: NEMA TC 3. PVC SOLVENT WELD TYPE.
3. NON–METALLIC BOXES:
a. FD STYLE WITH MATCHING COVERS, FOUR SCREW ATTACHMENT.

D. CONDUIT SUPPORTS:
1. CONDUIT CLAMPS AND SUPPORTS:
a. STEEL OR MALLEABLE IRON SUPPORTED OR AFFIXED BY METALLIC EXPANSION ANCHORS OR TOGGLE BOLTS.
b. SHOT PIN TYPE ANCHORING IS PROHIBITED.
2. CORROSIVE ENVIRONMENTS: USE REINFORCED FIBERGLASS RESIN SUPPORTS AND CLAMPS.

2.2 BOXES, WIREWAYS, GUTTERS, JUNCTION BOXES, AND PULLBOXES

A. DEVICE BOXES:
1. SHEET METAL DEVICE BOXES:
a. ANSI/NEMA OS 1, GALVANIZED STEEL.
b. CONCRETE CEILING BOXES: CONCRETE TYPE FOR CEILING MOUNTED LIGHTING FIXTURES.
c. RECEPTACLE AND LIGHT SWITCH BOXES: INTERIOR, FLUSH, DRY LOCATIONS.
2. CAST DEVICE BOXES:
a. NEMA FB 1, TYPE FD, MALLEABLE–IRON.
b. PROVIDE GASKETED COVER BY BOX MANUFACTURER.
1) CAST BOXES: THREADED HUBS AND SUFFICIENT INTERIOR SPACE FOR ALL CONDUCTORS TO BE ENCLOSED. MULTI–GANG AND HUB OPTIONS AS REQUIRED.
c. CAST BOXES MANUFACTURES:
1) CROUSE–HINDS NO. FD2 FOR SINGLE GANG WITH A 3/4 INCH HUB.
2) APPLETON NO. FD–1–75L FOR SINGLE GANG WITH A 3/4 INCH HUB.
3) O–Z/GEDNEY CO. NO. FD–1–75 FOR SINGLE GANG WITH A 3/4 INCH HUB.
4) OWNER APPROVED EQUAL.
d. FOR ABOVE GRADE OUTDOOR LOCATIONS, FINISH WITH ZINC ELECTROPLATE COVERED WITH ALUMINUM CELLULOSE LACQUER FOR WET OR DAMP LOCATIONS.
e. INDOOR DAMP OR BELOW GRADE LOCATIONS WHERE PVC COATED CONDUIT IS REQUIRED:
1) PVC COAT FITTINGS, DEVICE BOXES, COVERS, CONDUIT BODIES AND SUPPORTS: PVC COATED TO THE SAME SPECIFICATIONS AS THE CONDUIT.
2) ASSOCIATED MOUNTING HARDWARE: STAINLESS STEEL.
f. PVC COATING: BONDED TO THE SURFACES OF CAST DEVICE BODIES, BOXES, FITTINGS AND SUPPORTS.
g. PVC COATING MANUFACTURERS:
1) OCCIDENTAL COATING.
2) KOR–KAP.
3) ROBROY.
4) OWNER APPROVED EQUAL.

B. WIREWAYS, GUTTERS, JUNCTION BOXES, AND PULLBOXES LARGER THAN A 4–GANG DEVICE BOX OR LARGER THAN 100 CUBIC INCHES:
1. IN ACCORDANCE WITH UL 870: 16 GAGE STEEL MINIMUM.
2. COVERS: HINGED WITH HASPS, END CAPS, SCREW COVER, USE KEYED TYPED LOCK ONLY IN ACCORDANCE WITH THE DRAWINGS.
3. AFFIX NAMEPLATES IN ACCORDANCE WITH APPLICABLE STANDARDS.
4. PROVIDE BACK PANELS AND TERMINALS AS REQUIRED.
5. WIREWAYS: PROVIDE GUTTERS AND JUNCTION BOXES FOR USE IN EXPOSED DRY LOCATIONS AS A PREFABRICATED CHANNEL SHAPED SHEET METAL TROUGH WITH HINGED OR REMOVABLE COVERS.
6. OUTDOOR AND WET LOCATIONS: NEMA 3R OR 4X OR IN ACCORDANCE WITH DRAWINGS.

C. CONDUIT FITTINGS:
1. LIQUID TIGHT CONDUIT FITTINGS: DURA–PLATE TYPE FINISH.
2. MANUFACTURED BY:
a. THOMAS AND BETTS, SERIES 5300.
b. APPLETON, TYPE STB.
c. OWNER APPROVED EQUAL.
3. PROVIDE TWO–PIECE FLAME–RESISTANT INSULATED–THROAT CONDUIT HEX–HUB ASSEMBLY TO PROVIDE NEAR FLUSH FITTING OPENING IN ENCLOSURES. BODY: CAST MALLEABLE–IRON OR FERALOY WITH INSULATED THROAT. HUBS WITH LOCK NUT FITTINGS ARE PROHIBITED UNLESS OTHERWISE APPROVED BY OWNER.
a. APPLETON, MODEL CF2 HUB.
b. CROUSE–HINDS, "HUB" SERIES.
c. O–Z/GEDNEY CO. SPACE MAKER HUBS, TYPE CH OR CHT.
d. OWNER APPROVED EQUAL.
4. PROVIDE MALLEABLE INSULATED BUSHINGS WITH GROUNDING TERMINALS ON THE ENDS OF THREADED STEEL CONDUITS AND NIPPLES.
a. MALLEABLE IRON GROUNDING BUSHINGS: SMOOTH AND WELL–ROUNDED SURFACES TO PROTECT THE CONDUCTORS FROM INSULATION DAMAGE.
b. BUSHING MANUFACTURERS:
1) COOPER/CROUSE–HINDS, TYPE HGLL–C.
2) APPLETON, TYPE GIB.
3) O–Z/GEDNEY CO., TYPE BLG AND HBLG.
4) OWNER APPROVED EQUAL.
5. SEALING FITTINGS EQUAL TO APPLETON EYS WILL BE REQUIRED FOR ALL CONDUITS ENTERING OR LEAVING THE DISINFECTION ROOM. DO NOT POUR IN PLACE SEALING COMPOUND UNTIL THE ELECTRICAL INSTALLATION HAS BEEN ACCEPTED.
6. LONG RADIUS BENDS ARE NOT PERMITTED BY SPACE LIMITATIONS. USE MALLEABLE IRON CONDUIT BODIES, FORM 7, WITH CAST GRAY IRON MALLEABLE OR STEEL COVERS, SCREWS, AND GASKETS SUITABLE FOR THE APPLICATION.
a. MANUFACTURERS:
1) CROUSE–HINDS, FORM 7.
2) APPLETON, FM 7.
3) O–Z/GEDNEY CO., FORM 7.
4) OWNER APPROVED EQUAL.
7. IN DAMP AREAS AND IN OUTDOOR LOCATIONS, JUNCTION AND PULL BOXES LOCATED IN EXPOSED CONDUIT RUNS: MALLEABLE IRON WITH SCREW COVERS AND THREADED HUBS IN THE CONFIGURATION REQUIRED BY THE APPLICATION WHEN LESS THAN 4 SQUARE INCHES, OTHERWISE USE SUITABLY SIZED NEC ENCLOSURE LISTED FOR THE APPLICATION
a. MANUFACTURERS:
1) CROUSE–HINDS.
2) APPLETON.
3) O–Z/GEDNEY CO.
4) OWNER APPROVED EQUAL.
8. CONDUIT UNIONS:
a. SOLELY UTILIZED TO JOIN FIXED SECTIONS OF RGS CONDUIT.
b. THREE PIECE TYPE WITH CONDUIT ALIGNMENT MATING SURFACE.
c. MALLEABLE IRON OR STEEL WITH ZINC ELECTROPLATING.
d. SIZES:
1) USE STEEL TYPE FOR 3/4 AND 1–INCH SIZES.
2) USE MALLEABLE IRON TYPE FOR LARGER THAN 1 INCH SIZES. STEEL SUBSTITUTIONS FOR ABOVE 1–INCH AS APPROVED BY OWNER FOR CLEARANCE ACCOMMODATIONS.
e. APPROVED MANUFACTURERS:
1) CROUSE HINDS, TYPE UNY, UNF.
2) APPLETON, TYPE EC.
3) O–Z/GEDNEY CO., TYPE UNY, UNF.
4) OWNER APPROVED EQUAL.
9. MECHANICAL BLANK DUCT PLUG:
1) HIGH IMPACT PLASTIC WITH NEOPRENE GASKETS.
2) EXPANDABLE GASKET BETWEEN FRONT AND BACK PRESSURE PLATES.
3) SIZED FOR CONDUIT.
4) CORROSION PROOF LONG TERM SEAL.
5) WATER–TIGHT AND GAS–TIGHT.
6) EQUIPPED WITH A ROPE TIE LOOP FOR SECURING PULL ROPE/TAP TO THE BACK (CONDUIT SIDE) COMPRESSION PLATE.
7) LOOP NUT ON THE FRONT (VAULT/PULLBOX SIDE).
8) REMOVABLE AND REUSABLE.
9) TAPERED STYLE BLANK PLUGS ARE NOT ACCEPTABLE.

PART 3 –EXECUTION

3.1 CONDUIT

A. CONDUIT SIZING, ARRANGEMENT, AND SUPPORT:
1. SIZE CONDUIT FOR TYPE THW CONDUCTORS. MINIMUM ABOVE GROUND CONDUIT SIZE: 3/4 INCH OR AS INDICATED ON THE DRAWINGS.
2. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND PRESENT A NEAT APPEARANCE. ORGANIZE CONDUIT RUNS TO AVOID UNNECESSARY CROSSINGS. ALIGN MULTIPLE CONDUIT ENTRIES INTO ENCLOSURES AND EQUIPMENT ON COMMON CENTERLINES, PARALLEL AND PERPENDICULAR TO ENTRY PANELS.
3. ROUTE EXPOSED CONDUIT PARALLEL AND PERPENDICULAR TO WALLS AND ADJACENT PIPING. ARRANGE AND ADJUST UNDERGROUND CONDUIT TO MINIMIZE CONFLICTS WITH UNDERGROUND INTERFERENCE AND TO ALLOW INSTALLATION OF STANDARD ELBOW RADII WHEREVER POSSIBLE. MINIMUM UNDERGROUND CONDUIT SIZE: 1–INCH.
4. MAINTAIN MINIMUM 6 INCH CLEARANCE BETWEEN CONDUIT AND PIPING.
5. ARRANGE CONDUIT SUPPORTS TO PREVENT DISTORTION OF CONDUIT ALIGNMENT BY WIRE PULLING OPERATIONS AND SPACE SUPPORTS AT DISTANCES NO GREATER THAN ALLOWED BY NEC.
6. FASTEN CONDUIT USING GALVANIZED STRUT OR CHANNEL STRAPS, MALLEABLE CLAMPS WITH CLAMP BACKS, LAY–IN ADJUSTABLE HANGERS, CLEVIS HANGERS OR BOLTED SPLIT STAMPED GALVANIZED HANGERS. INSTALL STRUT OR CHANNEL SUPPORTS IN ACCORDANCE WITH.
a. SUPPORT UP TO TWO EXPOSED PARALLEL CONDUITS BY CLAMP BACK STRAPS.
b. FOR MORE THAN TWO CONDUITS, OR LARGER THAN 1–1/2 INCH CONDUITS, SUPPORT BY CHANNEL SUPPORTS BY MEANS OF TWO–PIECE, BOLTED PIPE CLAMPS FOR EACH RACEWAY INSTALLED.
7. IN CORROSIVE ENVIRONMENTS, USE FIBERGLASS REINFORCED OR NON–METALLIC RESIN SUPPORTS AND STAINLESS STEEL EXPANSION ANCHORS.
8. GROUP CONDUIT IN PARALLEL RUNS WHERE PRACTICAL:
a. USE CONDUIT RACK CONSTRUCTED OF STEEL CHANNEL WITH CONDUIT STRAPS OR CLAMPS.
b. MULTIPLE PARALLEL HORIZONTAL CONDUIT ROUTES CAN BE SUPPORTED FROM FRAMING CHANNEL IN A "TRAPEZE" CONFIGURATION USING SUITABLE SIZED SPANS, RODS, ANCHORS, AND FITTINGS CARRY THE COMBINED INSTALLED LOAD.
c. VERTICAL CONDUITS THAT PENETRATE SLABS: SUPPORT BY CHANNEL ASSEMBLY SUITABLY ANCHORED AND PAINTED AS APPROVED BY OWNER OR IN ACCORDANCE WITH DRAWINGS.
d. PROVIDE SPACE FOR 25 PERCENT ADDITIONAL CONDUIT OR AS INDICATED ON DRAWINGS.
9. DO NOT FASTEN CONDUIT WITH WIRE OR PERFORATED PIPE STRAPS. REMOVE WIRE USED FOR TEMPORARY CONDUIT SUPPORT DURING CONSTRUCTION, BEFORE CONDUCTORS ARE PULLED.
10. SUPPORT RIGID METAL CONDUIT AT MAXIMUM OF 10 FEET ON CENTER AND NO MORE THAN 3 FEET FROM ANY BOX, ENCLOSURE, OR CABINET.

B. CONDUIT INSTALLATION:
1. CUT CONDUIT SQUARE USING SAW OR PIPE CUTTER; DE–BURR AND REAM CUT ENDS.
a. TERMINATIONS, CONNECTIONS, AND THREADS ON RIGID CONDUIT: STANDARD CONDUIT THREAD.
b. INSTALL CONDUIT SUCH THAT LAST EXPOSED METAL THREAD IS TIGHTLY ENGAGED BY FITTING OR COUPLING USED.
c. GROUND ALL METAL RACEWAY COMPONENTS IN ACCORDANCE WITH APPLICABLE STANDARDS.
2. USE CONDUIT HUBS FOR FASTENING CONDUIT TO SHEET METAL BOXES IN ALL LOCATIONS UNLESS OTHERWISE SPECIFIED.
a. WHERE MULTIPLE THREADED CONDUIT HUBS ARE FURNISHED INTEGRAL TO THE CAST BOX OR ENCLOSURE, INSTALL CONDUIT UNIONS TO FACILITATE INSTALLATION/REMOVAL OF CONDUIT.
3. INSTALL NO MORE THAN EQUIVALENT OF THREE 90–DEGREE BENDS BETWEEN PULLING POINTS OR BOXES.
4. USE CONDUIT BODIES TO MAKE SHARP CHANGES IN DIRECTION, AS AROUND BEAMS.
5. USE HYDRAULIC ONE–SHOT CONDUIT BENDER OR LONG RADIUS FACTORY ELBOWS FOR BENDS IN CONDUIT LARGER THAN 2–INCH SIZE.
6. AVOID MOISTURE TRAPS WHERE POSSIBLE; WHERE UNAVOIDABLE, PROVIDE JUNCTION BOX WITH DRAIN FITTING AT CONDUIT LOW POINT.
7. USE SUITABLE CONDUIT CAPS TO PROTECT INSTALLED CONDUIT AGAINST ENTRANCE OF DIRT AND MOISTURE.
8. PROVIDE 3/16 INCH POLYPROPYLENE PULL ROPE IN EMPTY CONDUIT, EXCEPT SLEEVES AND NIPPLES.
9. INSTALL EXPANSION–DEFLECTION JOINTS WHERE CONDUIT CROSSES BUILDING EXPANSION OR SEISMIC JOINTS.
10. WHERE CONDUIT PENETRATES WALLS AND FLOORS, SEAL OPENING AROUND CONDUIT WITH UL_LISTED FOAMED SILICONE ELASTOMER COMPOUND.
11. PROVIDE THERMAL EXPANSION JOINTS FOR EXPOSED PVC CONDUIT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
12. USE PVC–COATED RIGID STEEL FACTORY ELBOWS FOR BENDS GREATER THAN 10 DEGREES IN PLASTIC CONDUIT RUNS.
13. PROVIDE PVC TO RGS TRANSITION FITTINGS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
14. WIPE PLASTIC CONDUIT CLEAN AND DRY BEFORE JOINING.
a. APPLY FULL EVEN COAT OF JOINING CEMENT OR PORTLAND CEMENT TO ENTIRE AREA THAT WILL BE INSERTED INTO FITTING.
b. LET JOINT CURE FOR 20 MINUTES MINIMUM.
c. INSTALL MINIMUM 1–FOOT LIQUID–TIGHT FLEX AT POINT OF CONNECTION WITH MOTORS, FIELD INSTRUMENTS, OR VIBRATING EQUIPMENT. FOR LIQUID–TIGHT FLEX CONDUIT, PROVIDE MAXIMUM OF 3 FEET RUN LENGTH UNLESS OTHERWISE APPROVED BY OWNER.
d. TOOLS:
1) USE SPECIALLY INSULATED WRENCH FOR TIGHTENING PVC–COATED CONDUIT AND FITTINGS. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS TO PROTECT SPECIAL FINISHES, CORROSION RESISTANT COATINGS AND MATERIALS OF CONSTRUCTION.
2) USE ONLY APPROPRIATE METHODS AND MEANS FOR RACEWAY ASSEMBLIES TO AVOID DAMAGE TO ALL RACEWAYS AND FITTINGS.
e. INSTALL TYPE EYS CONDUIT SEALS ON ALL CONDUIT PASSING THROUGH OR ENTERING THE DISINFECTION ROOM. DO NOT POUR SEALS UNTIL WIRING HAS BEEN INSPECTED AND ACCEPTED BY OWNER.
f. INSTALL ALL CONDUIT PENETRATIONS FLUSH WITH FINISH FLOOR/SURFACE AND FLUSH WITH TOP OF EQUIPMENT PAD/HOUSEKEEPING PAD OR CURBING AND IN ACCORDANCE WITH DRAWINGS.

D. CONDUIT INSTALLATION SCHEDULE:
1. UNDERGROUND INSTALLATIONS MORE THAN 5 FEET FROM FOUNDATION WALL: SCHEDULE 40 PVC CONDUIT.
2. UNDERGROUND INSTALLATIONS BENEATH AND EXTENDING 5 FEET EACH SIDE OF FOUNDATION WALL: PVC COATED RIGID GALVANIZED STEEL CONDUIT.
3. INSTALLATIONS UNDER CONCRETE SLAB: PVC CONDUIT, IN TRENCH WITH TYPE II BACKFILL, WITH MINIMUM 12 INCHES OF COVER BELOW SLAB AND IN ACCORDANCE WITH APPLICABLE STANDARDS AND DRAWINGS.
4. IN SLAB ON GRADE OR ABOVE GRADE: RIGID GALVANIZED STEEL CONDUIT.
5. EXPOSED OUTDOOR LOCATIONS: RIGID GALVANIZED STEEL CONDUIT.
6. WET INTERIOR LOCATIONS: PVC CONDUIT.
7. DISINFECTION ROOM: PVC CONDUIT.
8. CONCEALED DRY INTERIOR LOCATIONS: PVC CONDUIT [, OR EMT CONDUIT WHEN APPROVED BY OWNER].
9. EXPOSED DRY INTERIOR LOCATIONS: RIGID GALVANIZED STEEL CONDUIT [, OR EMT CONDUIT WHEN APPROVED BY OWNER].

3.2 BOXES

A. EXAMINATION:
1. VERIFY FIELD MEASUREMENTS AS SHOWN ON DRAWINGS.
2. VERIFY LOCATIONS OF JUNCTION BOXES AND OUTLETS SO THAT INTERFERENCES WITH OTHER EQUIPMENT ARE AVOIDED.
3. ELECTRICAL BOXES ARE SHOWN ON DRAWINGS IN APPROXIMATE LOCATIONS UNLESS DIMENSIONED. INSTALL AT LOCATION REQUIRED FOR BOX TO SERVE INTENDED PURPOSE.

B. INSTALLATION:
1. INSTALL ELECTRICAL BOXES AS SHOWN ON DRAWINGS, AND AS REQUIRED FOR SPLICES, TAPS, WIRE PULLING, EQUIPMENT CONNECTIONS, AND COMPLIANCE WITH REGULATORY REQUIREMENTS.
2. INSTALL ELECTRICAL BOXES TO MAINTAIN HEADROOM AND TO PRESENT NEAT MECHANICAL APPEARANCE.
3. ALIGN ADJACENT WALL–MOUNTED OUTLET BOXES FOR SWITCHES, THERMOSTATS AND SIMILAR DEVICES WITH EACH OTHER.
4. SUPPORT BOXES INDEPENDENTLY OF CONDUIT.
5. USE CAST MULTI–GANG BOX WHERE MORE THAN ONE DEVICE IS MOUNTED TOGETHER.
6. USE CAST OUTLET BOX IN INTERIOR AND EXTERIOR LOCATIONS UNLESS OTHERWISE SPECIFIED AND USE WEATHERPROOF COVERS.
7. UTILIZE INTEGRAL FLANGES AND MOUNTING BRACKETS TO ATTACH BOXES TO ALL SURFACES.
8. INSTALL SURFACE MOUNT CABINETS IN ACCORDANCE WITH
9. WIREWAYS, GUTTERS, AND JUNCTION BOXES LARGER THAN 100 CUBIC INCHES:
a. INSTALLED SUCH THAT HINGED SIDE NOT ON TOP.
b. CONDUITS ENTER ENCLOSURE THROUGH KNOCKOUTS OR HUBS.
c. STRAIGHT SECTION NOT TO EXCEED 5 FEET IN LENGTH.
d. WHERE SEVERAL FEEDERS AND/OR BRANCH CIRCUITS PASS THROUGH A COMMON PULLBOX AND LAND ON TERMINAL BLOCKS OR DISTRIBUTION POWER BLOCKS THEY MUST BE IDENTIFIED TO INDICATE THE ELECTRIC CHARACTERISTICS, CIRCUIT NUMBER AND PANEL DESIGNATION IN ACCORDANCE WITH SECTION 26 05 53.
e. FOR CONDUCTORS INSTALLED THROUGH BOXES AND GUTTERS, PROVIDE A MINIMUM OF 4 INCHES OF SLACK OR AS APPROVED BY OWNER.

3.3 MANHOLES AND PULLBOXES

A. INSTALLATION OF MANHOLE ACCESSORIES:
1. INSTALL DRAINS IN MANHOLES. CONNECT TO DRAINAGE SYSTEM, OR DRAIN THROUGH 4INCH PIPE TERMINATING IN 1/3 CUBIC YARD CRUSHED GRAVEL BED IN ACCORDANCE WITH APPLICABLE STANDARDS.
2. INSTALL GROUND ROD WITH TOP PROTRUDING FOUR INCHES ABOVE MANHOLE FLOOR OR OUTSIDE MANHOLE AS IN ACCORDANCE WITH DRAWINGS.
3. INSTALL CABLE SUPPORTS AT THREE FOOT INTERVALS. FASTEN WITH GALVANIZED BOLTS FABRICATED OF FIBERGLASS OR GALVANIZED STEEL.
4. ASSEMBLE SECTIONS WITH WATERPROOF MASTIC AND HAND PACK GROUT ON MANHOLE AND PULLBOXES WHEN LADDER RINGS OR COLLARS ARE INSTALLED FOR A SMOOTH SEALED FINISH.
5. AFTER ALL INSTALLATIONS ARE FINAL, CLEAN SUBSTRUCTURES THOROUGHLY OF ALL ROCKS, DIRT, AND DEBRIS AND PULLING LUBRICANT.
6. PERMANENTLY LABEL LIDS IN REGARDS TO ELECTRICAL INSTALLATION SUCH AS: HIGH VOLTAGE, MEDIUM VOLTAGE, ELECTRICAL CONTROLS, IRRIGATION, MIXED VOLTAGES OR IN ACCORDANCE WITH DRAWINGS. ANCHOR A BRASS TAG, 2X4 INCHES MINIMUM, WITH 3/4 INCH RAISED LETTERING AND USE PULLBOX SCHEDULE OR LOCATIONS THROUGHOUT TO LABEL AS PB1, JB1, MH1, AND IN ACCORDANCE WITH DRAWINGS.
7. PROVIDE SUITABLE GROUNDING CONNECTIONS FOR GROUND GRID CONTINUITY THROUGH PULLBOXES AND MANHOLES.
8. IDENTIFY ALL WIRING ACCORDING TO POINT OF ORIGIN AND DESTINATION ACCORDINGLY AT POINTS OF ENTRY AND EXIT INCLUDING CIRCUIT/CONTROL NUMBERS OF SERVICE/PANEL NAME IN ACCORDANCE WITH APPLICABLE STANDARDS.
9. ATTACH CABLE RACKS TO INSERTS AFTER MANHOLE INSTALLATION IS COMPLETE.
10. GROUT AROUND CONDUITS FOR SMOOTH BOX ENTRY WHEN PRECAST BOX WALL IS NOT SEALED DUE TO UNSLEEVED PENETRATIONS.

B. INSTALLATION OF CONDUIT:
1. INSTALL CONDUIT PENETRATIONS WITH END BELLS FLUSH WITH INSIDE WALL.
2. PLACE CONDUIT PENETRATIONS THROUGH MANHOLE WALLS PERPENDICULAR TO WALL.
3. SEAL EMPTY CONDUITS USING MECHANICAL DUCT PLUG TO PREVENT ENTRY OF FOREIGN MATERIAL OR WATER.

BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

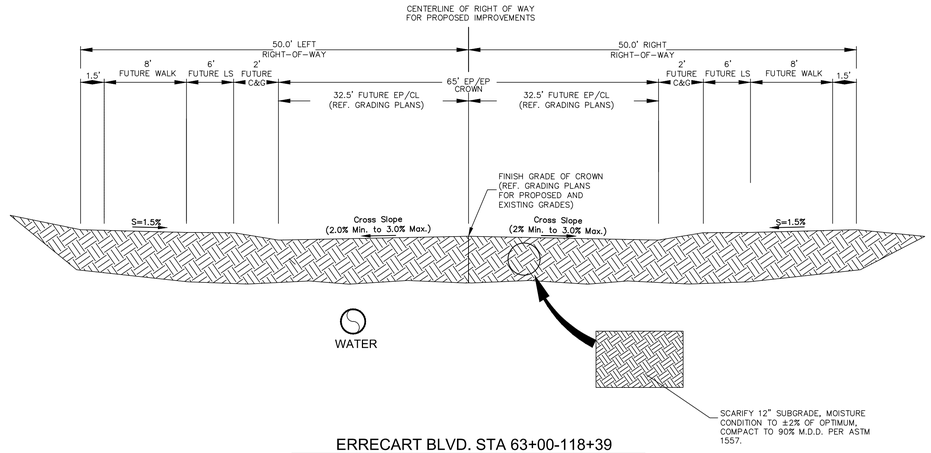
REV.	DATE	DESCRIPTION	BY	APP'D

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
PRV GENERAL NOTES III
ELKO COUNTY
NEVADA
ELKO

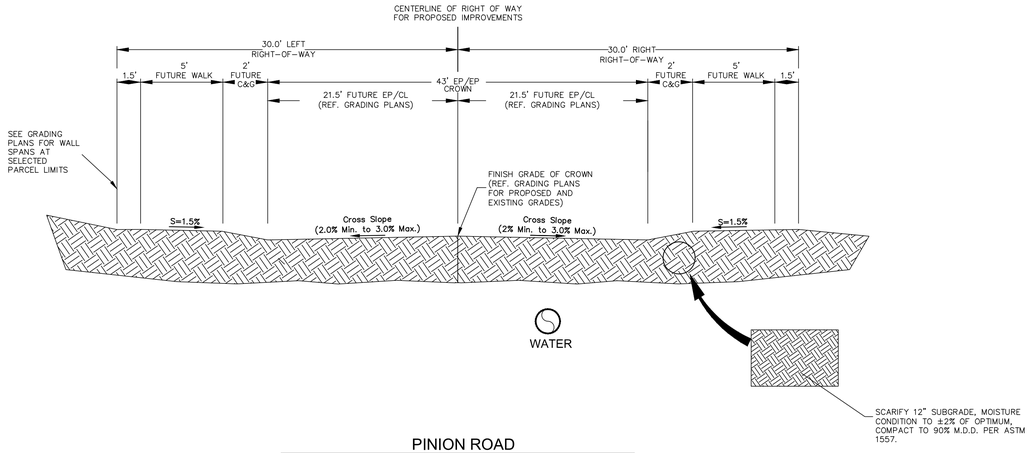
DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: NA
VERT: NA
JOB NO: 3-82787

PROFESSIONAL ENGINEER STATE OF NEVADA PRAVIN C. BHAKTA Exp. 12-31-24 CIVIL Cert. No. 15494 04-25-24

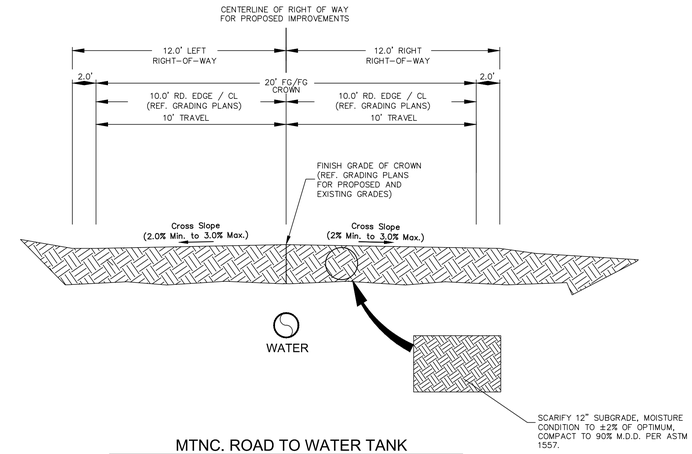
SHEET D-10 OF 49



ERRECART BLVD. STA 63+00-118+39
TYPICAL STRUCTURAL SECTION



PINION ROAD
TYPICAL STRUCTURAL SECTION



MTNC. ROAD TO WATER TANK
TYPICAL STRUCTURAL SECTION

NOT TO SCALE

BID SET

2 working days Call before you Dig 1-800-227-2600

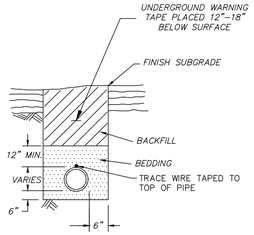
SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
TYPICAL SECTION DETAILS
ELKO COUNTY NEVADA
ELKO

DESIGNED BY:	NIB
CHECKED BY:	NIB
SCALE	
HORIZ:	NA
VERT:	NA
JOB NO:	3-82787

PROFESSIONAL ENGINEER STATE OF NEVADA
No. 15494
NIRAV R. BHAKTA
Exp. 12-31-24
CIVIL
04-25-24

SHEET D-11 OF 49

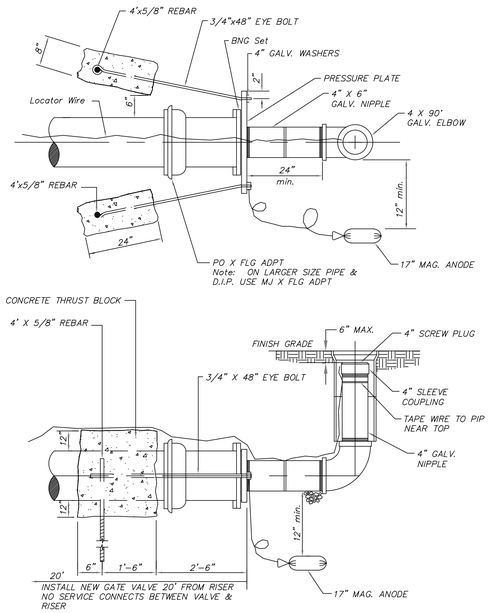


DUCTILE IRON PIPE, PVC, PE & HDPE PIPE

NOTES:

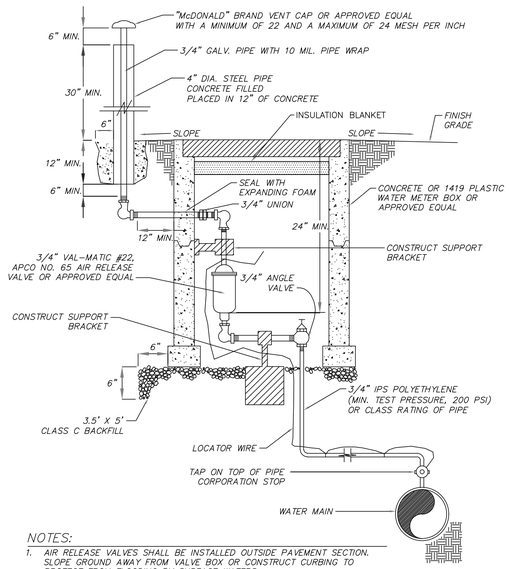
1. WATER DENSIFIED BACKFILL AND TUNNELING SHALL NOT BE ALLOWED.
2. BACKFILL SHALL MEET THE REQUIREMENTS FOR CLASS "E" BACKFILL WITH NO ROCKS SIZED OVER 4", COMPACTED IN 6" (MAX.) LIFTS TO 90% (MIN.) RELATIVE COMPACTION.
3. BEDDING MATERIAL FOR THE FOLLOWING PIPE SHALL MEET THE REQUIREMENTS OF SECTION 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.

1 D-12 TRENCH DETAIL
NOT TO SCALE



2 D-12 TEMPORARY FLUSH ASSEMBLY
NOT TO SCALE

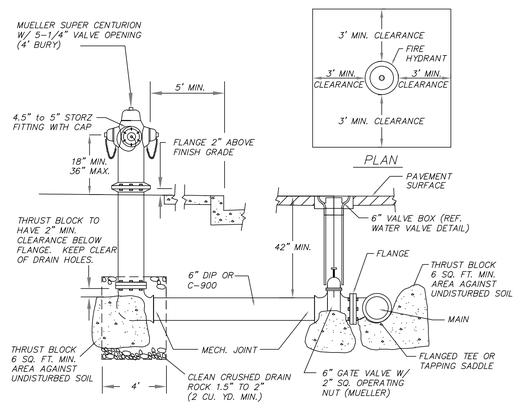
*REF. UTILITY PLANS FOR ACTUAL VALVE SIZE



NOTES:

1. 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.
2. ALL PIPES SHALL HAVE POSITIVE SLOPE FROM MAIN LINE TO AIR RELEASE VALVE.

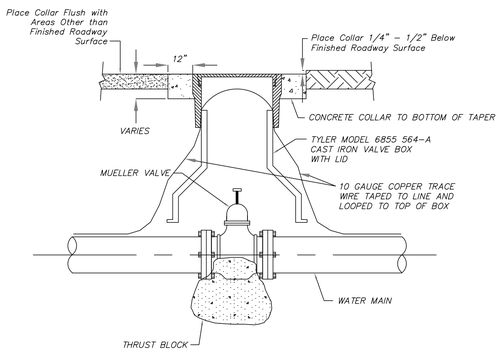
3 D-12 AIR RELEASE VALVE
NOT TO SCALE



NOTES:

1. HYDRANTS SHALL BE ENAMELED RED.
2. ALL HYDRANTS SHALL HAVE (2) 2.5" PUMPER OUTLETS (MALE THREAD WITH CAP & CHAIN) AND (1) 4.5" STEAMER PUMPER OUTLET WITH 4.5" – 5" STORZ FEMALE CONNECT WITH CAP & CHAIN. ALL THREADS SHALL BE SPECIFIED FOR AMERICAN NATIONAL HOSE COUPLING.
3. OPERATING NUT SHALL BE 1.5" PENTAGON.
4. INSPECTION BY A CITY OF ELKO FIRE OR PUBLIC WORKS REPRESENTATIVE IS REQUIRED PRIOR TO BACKFILLING.
5. FOR FINAL ACCEPTANCE, A FLOW, FLUSH, & HYDROSTATIC TEST SHALL BE WITNESSED BY CITY OF ELKO FIRE DEPT./UTILITY DIRECTOR OR PUBLIC WORKS REPRESENTATIVE, PER FORM 13-97, "MATERIALS & TEST CERTIFICATE FOR UNDERGROUND PIPING".
6. ALL HYDRANT SHALL INCLUDE APPROVED TRAFFIC PROTECTION, 3' MINIMUM CLEARANCES, AND POSITIVE DRAINAGE AWAY FROM THE HYDRANT.

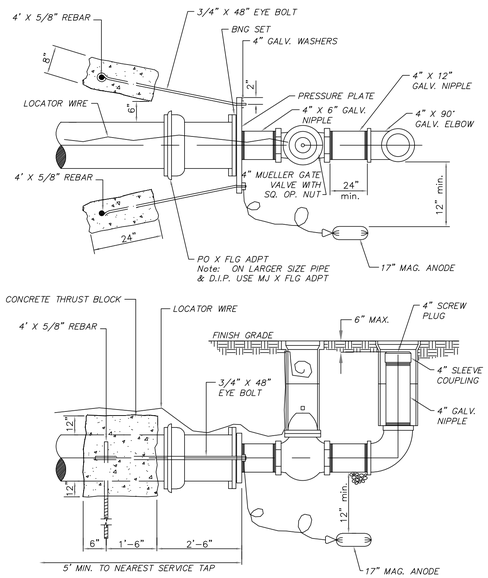
4 D-12 FIRE HYDRANT
NOT TO SCALE



NOTES:

1. CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 337.10 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, UNLESS OTHERWISE SPECIFIED.
2. VALVE COLLAR SHALL BE SET ¼" TO ½" BELOW FINISHED CONCRETE OR BITUMINOUS SURFACE. VALVE COLLARS IN ALL OTHER AREAS SHALL BE SET FLUSH WITH FINISHED GRADE, UNLESS OTHERWISE SPECIFIED.
3. CONCRETE COLLAR REQUIRED WHEN VALVE IS NOT LOCATED IN CONCRETE OR BITUMINOUS SURFACE.

5 D-12 VALVE DETAIL
NOT TO SCALE



6 D-12 PERMANENT FLUSH ASSEMBLY
NOT TO SCALE

BID SET

2 working days Call before you Dig. 1-800-227-2600

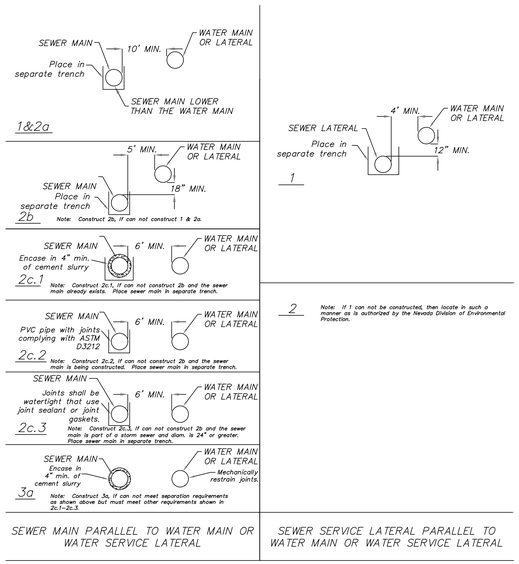
SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

CIVIL IMPROVEMENT PLANS FOR ERRECART BLVD. CONNECTOR
STANDARD DETAILS
ELKO COUNTY NEVADA
ELKO

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: NA
VERT: NA
JOB NO: 3-82787

PROFESSIONAL ENGINEER STATE OF NEVADA No. 15494 ARUN C. BHAKTA Exp. 12-31-24 CIVIL
04-25-24

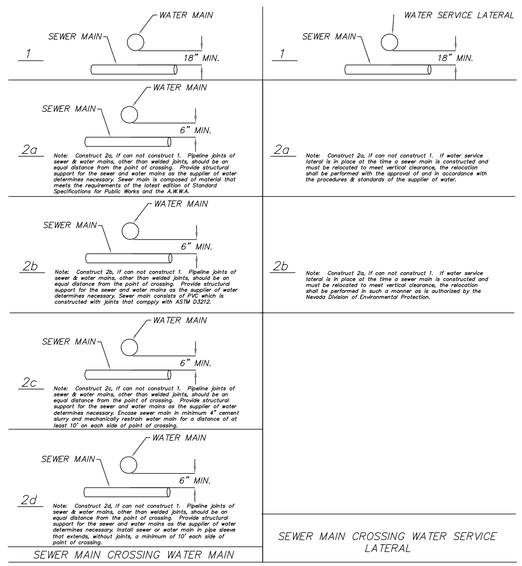
SHEET D-12 OF 49



NOTES:

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

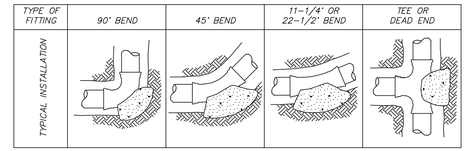
1 D-13 SEWER-WATER SEPARATION
NOT TO SCALE



NOTES:

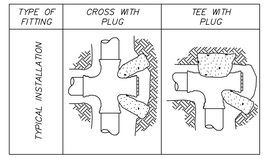
1. SEWER MAIN CROSSING WATER MAIN OR WATER SERVICE LATERAL SHALL MEET THE REQUIREMENTS OF NAC 445A.67165 & NAC 445A.6717.

2 D-13 SEWER-WATER CROSSING
NOT TO SCALE



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 PLUG	CROSS WITH PLUG
SIZE OF PIPE	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

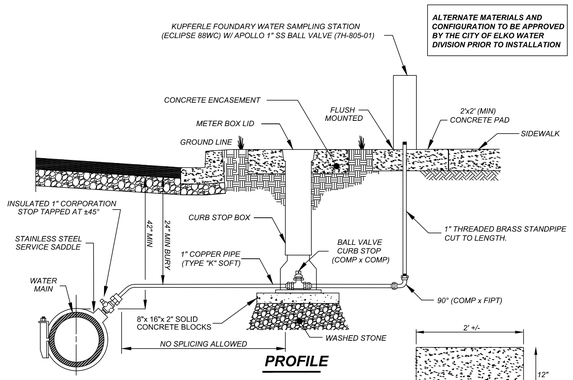


NOTES:

1. CONCRETE FOR THRUST BLOCKS SHALL HAVE A 28 DAY STRENGTH OF 3000 PSI OR GREATER.
2. AREAS GIVEN ARE FOR CLASS 150 PIPE AT A TEST PRESSURE OF 150 PSI, WITH 2000 PSF BEARING CAPACITY. INSTALLATIONS USING DIFFERENT PIPE, TEST PROCEDURES, AND/OR SOIL TYPES SHOULD ADJUST AREAS ACCORDINGLY, SUBJECT TO THE APPROVAL OF THE ENGINEER.
3. THRUST BLOCKS ARE TO BE POURED AGAINST UNDISTURBED SOIL.
4. JOINTS AND FACES OF PLUGS TO BE KEPT CLEAR OF CONCRETE.
5. BOLT ON SADDLE TEES ARE EXEMPT FROM THRUST BLOCK REQUIREMENTS IF STATED IN MANUFACTURER'S TABULATED DATA.

3 D-13 THRUST BLOCK BEARING AREAS
NOT TO SCALE

ALTERNATE MATERIALS AND CONFIGURATION TO BE APPROVED BY THE CITY OF ELKO WATER DIVISION PRIOR TO INSTALLATION



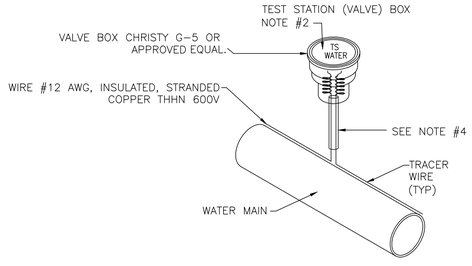
APPROVED FITTINGS	
DESCRIPTION	MUELLER
90° BEND (COMP x FIPT)	H-15533
90° BEND (COMP x COMP)	H-15526
BALL VALVE (COMP x COMP)	B-25155
INSULATED CORPORATION STOP (MIP x COMP)	N-35028**
STAINLESS STEEL SERVICE SADDLE (SMITH-BLAIR #372, FORD #300, JCM #602)	

** SHALL BE INSULATED FITTINGS BY MUELLER OR JONES

NOTES

1. WATER SAMPLING STATIONS SHALL BE INSTALLED DURING THE CONSTRUCTION OF NEW WATER MAINS AS DIRECTED BY A CITY WATER DIVISION REPRESENTATIVE, AND AT OTHER SPECIFIED LOCATIONS AS REQUIRED.
2. ALL BURIED SECTIONS OF COPPER AND BRASS PIPE SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE (BLUE IN COLOR). COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K" SOFT, BLUE IN COLOR).
3. METER BOX AND SERVICE LINE SHALL BE INSTALLED 5-FT (MIN) FROM DRIVEWAY APPROACHES AND OTHER VEHICULAR ACCESS WAYS.
4. REQUIREMENTS. HOT TAP SHALL BE 36" (MIN) FROM ANY OTHER TAP, BELL, FITTING, OR OTHER SERVICE.
5. WATER SAMPLING STATIONS SHALL NOT BE INSTALLED OFF EXISTING SERVICE LATERALS UNLESS OTHERWISE APPROVED BY A CITY WATER DIVISION REPRESENTATIVE.
6. METER BOXES SHALL BE PLACED A MINIMUM OF 3' FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10' OR LARGE SHRUBS WITHIN 5' OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.

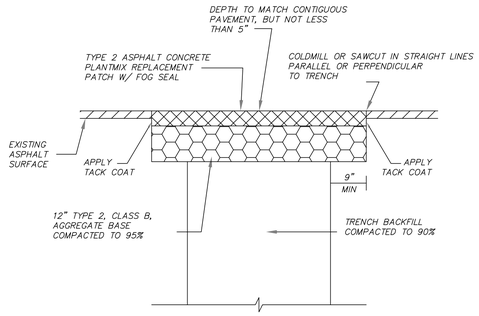
4 D-13 WATER SAMPLING STATION
NOT TO SCALE



NOTES:

1. TEST STATIONS SHALL BE A MAXIMUM OF 500 FEET APART
2. TEST STATION BOX COVER SHALL BE MARKED "TS WATER" OR SIMILAR
3. TEST WIRE TO BE LONG ENOUGH TO EXTEND 4 FEET ABOVE GROUND LEVEL AND SHALL TERMINATE IN TEST STATION BOX
4. USE 3/4" PVC OR PE PIPE AS A WIRE CONDUCTOR PIPE. PLACE APPROXIMATELY 6-INCHES ABOVE CARRIER PIPE AND INTO TEST STATION BOX

5 D-13 TEST STATION DETAIL
NOT TO SCALE



NOTES:

1. IF COLDMILL OR SAWCUT IS WITHIN 24" OF EDGE OF PLANTMIX PAVING, REMOVE EXISTING PAVEMENT TO THAT EDGE AND REPLACE ENTIRE SECTION.
2. USE AC-20 ASPHALT CEMENT IN ALL LIFTS OF TYPE 2 PLANTMIX BITUMINOUS SURFACES.
3. APPLY A SEAL COAT USING SS-1 EMULSIFIED ASPHALT (MIXED WITH AN EQUAL AMOUNT OF WATER). APPLY AT A RATE OF 0.10 GPSY AND APPLY SAND BLOTTER AS NECESSARY.
4. FOR MULTIPLE PLANTMIX BITUMINOUS COURSES, TACK COAT SHALL BE APPLIED BETWEEN EACH PLANTMIX BITUMINOUS COURSE.

6 D-13 PAVEMENT PATCH
NOT TO SCALE

BID SET

2 working days Call before you Dig. 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

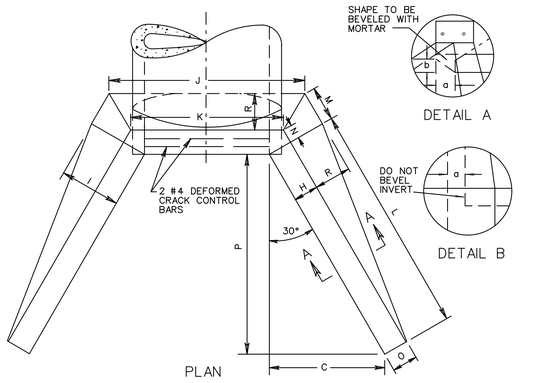
CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
STANDARD DETAILS
ELKO COUNTY
NEVADA
ELKO

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: NA
VERT: NA
JOB NO: 3-82787

PROFESSIONAL ENGINEER STATE OF NEVADA NITIN BHAKTA Exp. 12-31-24 CIVIL No. 15434
04-25-24

SHEET D-13 OF 49

EW-2



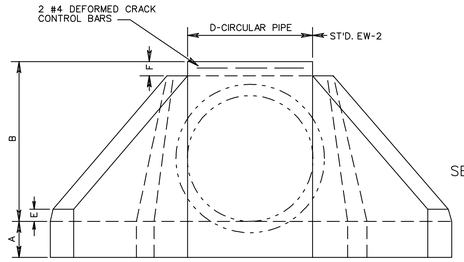
PLAN

DETAIL A

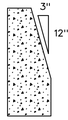
DETAIL B

NOTES:

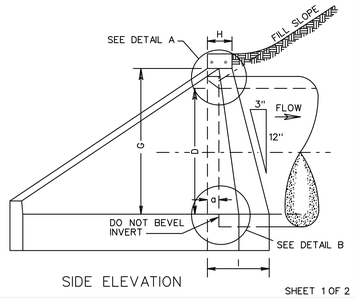
1. FOR TABLE OF DIMENSIONS AND VOLUMES FOR CIRCULAR PIPES (STANDARD EW-2) SEE SHEET 2 OF 2.
2. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
3. ON SHALLOW FILLS, WHERE ENDWALLS ARE 1' OR LESS BELOW SHOULDER LINE, THE TOP OF THE ENDWALL SHALL BE CONSTRUCTED PARALLEL TO THE GRADE OF ROAD.
4. ALL CAST IN PLACE CONCRETE TO BE 4000 psi.
5. IN NO CASE SHALL TOP OF ENDWALL PROJECT ABOVE FILL SLOPE, DITCH SLOPE, OR SHOULDER.
6. THIS STANDARD TO BE USED WITH STRAIGHT CROSSINGS AND SKEW ANGLES TO 15°.
7. COST OF BARS FOR CRACK CONTROL TO BE INCLUDED IN PRICE PER BID PER CUBIC YARD CONCRETE.
8. HEADWALL TO BE BEVELED IN ALL AREAS EXCEPT WHERE A CONFLICT WITH INVERT AND WINGWALLS OCCUR.
9. BEVEL EDGE IS REQUIRED ON THE HEADWALL AT THE INLET END OF THE CULVERT (WHERE THE FLOW ENTERS THE CULVERT). HEADWALL AT THE OUTLET END OF THE CULVERT MAY BE EITHER SQUARE EDGE OR BEVEL EDGE.
10. ¾" CHAMFER MAY BE PROVIDED ON ALL EDGES AT MANUFACTURER'S OPTION.



END ELEVATION



SECTION A-A



SIDE ELEVATION

SHEET 1 OF 2

SPECIFICATION REFERENCE

STANDARD ENDWALL FOR PIPE CULVERTS 42"-96" CIRCULAR

TABLE OF DIMENSIONS AND CONCRETE VOLUMES PER ENDWALL FOR 42" - 96" CIRCULAR PIPE CULVERTS

EW-2

DIAMETER OF PIPE CULVERTS

	DIMENSION	42"	48"	54"	60"	66"	72"	78"	84"	90"	96"	DIMENSION
FOR 1 ½:1 FILL SLOPE	A	1'-6"	1'-6"	1'-6"	1'-6"	1'-6"	1'-6"	1'-6"	1'-6"	1'-6"	1'-6"	A
	B	4'-9½"	5'-4"	5'-10½"	6'-5"	6'-11½"	7'-6"	8-0½"	8'-7"	9'-2¼"	9'-9¾"	B
	C	3'-3¾"	3'-9"	4'-2¼"	4'-7"	5'-0⅝"	5'-5¾"	5'-11"	6'-4¼"	6'-9⅜"	7'-2⅝"	C
	D	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	D
	E	0'-6"	0'-6"	0'-6"	0'-6"	0'-6"	0'-6"	0'-6"	0'-6"	0'-6"	0'-6"	E
	F	0'-5½"	0'-6"	0'-6½"	0'-7"	0'-7½"	0'-8"	0'-8½"	0'-9"	0'-9½"	0'-10"	F
	G	4'-4"	4'-10"	5'-4"	5'-10"	6'-4"	6'-10"	7'-4"	7'-10"	8'-4"	8'-10"	G
	H	0'-10"	0'-10"	0'-11"	1'-0"	1'-1"	1'-2"	1'-3"	1'-4"	1'-5"	1'-6"	H
	I	1'-11"	2'-0½"	2'-3"	2'-5½"	2'-8"	2'-10½"	3'-1"	3'-3½"	3'-6"	3'-8½"	I
	J	5'-8½"	6'-4¼"	7'-1¼"	7'-10"	8'-7"	9'-4"	10'-0¾"	10'-9⅝"	11'-7"	12'-4⅛"	J
	K	4'-5½"	4'-11½"	5'-6¾"	6'-1⅞"	6'-9"	7'-4⅛"	7'-11¼"	8'-6½"	9'-2"	9'-9⅛"	K
	L	6'-7⅝"	7'-6"	8'-4½"	9'-2⅞"	10'-1¼"	10'-11⅝"	11'-10"	12'-8⅜"	13'-6⅞"	14'-5¼"	L
	M	1'-1¼"	1'-2⅛"	1'-3⅝"	1'-5"	1'-6½"	1'-8"	1'-9⅜"	1'-10¾"	2'-0⅜"	2'-2"	M
	N	0'-5¾"	0'-5¾"	0'-6¾"	0'-6⅞"	0'-7½"	0'-8⅛"	0'-8⅝"	0'-9¼"	0'-10"	0'-10½"	N
	O	0'-11½"	0'-11½"	1'-0½"	1'-1½"	1'-2½"	1'-3½"	1'-4½"	1'-5½"	1'-6½"	1'-7½"	O
	P	5'-9"	6'-6"	7'-3"	8'-0"	8'-9"	9'-6"	10'-3"	11'-0"	11'-9"	12'-6"	P
	R	1'-1"	1'-2½"	1'-4"	1'-5½"	1'-7"	1'-8½"	1'-10"	1'-11½"	2'-1"	2'-2½"	R
CUBIC YARDS CONCRETE	CONC. PIPE	3.558	4.373	5.635	7.089	8.776	10.702	12.861	15.303	18.195	21.285	CONC. PIPE
	C.M. PIPE	3.791	4.680	6.054	7.642	9.490	11.605	13.984	16.678	19.724	23.107	C.M. PIPE
FOR 2 :1 FILL SLOPE	C	4'-4"	4'-10⅞"	5'-5¾"	6'-0¾"	6'-7⅝"	7'-2⅝"	7'-9½"	8'-4½"	8'-11⅜"	9'-6¼"	C
	F	0'-6½"	0'-7"	0'-7½"	0'-8"	0'-8½"	0'-9"	0'-9½"	0'-10"	0'-10½"	0'-11"	F
	G	4'-3"	4'-9"	5'-3"	5'-9"	6'-3"	6'-9"	7'-3"	7'-9"	8'-3"	8'-9"	G
	I	1'-10¾"	2'-0¼"	2'-2¾"	2'-5¼"	2'-7¾"	2'-10¼"	3'-0¾"	3'-3¼"	3'-5¾"	3'-8¼"	I
	J	5'-8¼"	6'-4"	7'-1"	7'-9¾"	8'-6¾"	9'-3½"	10'-0½"	10'-9⅛"	11'-6⅜"	12'-3½"	J
	L	8'-8"	9'-9¾"	10'-11⅝"	12'-1½"	13'-3⅜"	14'-5¼"	15'-7"	16'-9"	17'-10¾"	19'-0⅝"	L
	M	1'-1⅛"	1'-2"	1'-3½"	1'-4⅞"	1'-6⅜"	1'-7¾"	1'-9¼"	1'-10⅝"	2'-0¼"	2'-1⅞"	M
	P	7'-6"	8'-6"	9'-6"	10'-6"	11'-6"	12'-6"	13'-6"	14'-6"	15'-6"	16'-6"	P
	R	1'-0¾"	1'-2¼"	1'-3¾"	1'-5¼"	1'-6¾"	1'-8¼"	1'-9¾"	1'-11¼"	2'-0¾"	2'-2¼"	R
CUBIC YARDS CONCRETE	CONC. PIPE	4.238	5.230	6.761	8.538	10.602	12.958	15.612	18.623	22.104	25.898	CONC. PIPE
	C.M. PIPE	4.469	5.536	7.177	9.088	11.312	13.856	16.730	19.993	23.618	27.704	C.M. PIPE
FOR 1 ½:1 AND 2:1 FILL SLOPES	a	0'-4½"	0'-5"	0'-5¾"	0'-6¼"	0'-7"	0'-7½"	0'-8¼"	0'-8¾"	0'-9½"	0'-10"	a
	b	0'-3½"	0'-4"	0'-4½"	0'-5"	0'-5½"	0'-6"	0'-6½"	0'-7"	0'-7½"	0'-8"	b

FOR ALL DIMENSIONS NOT SHOWN SEE VALUES LISTED ABOVE FOR 1 ½:1 FILL SLOPE

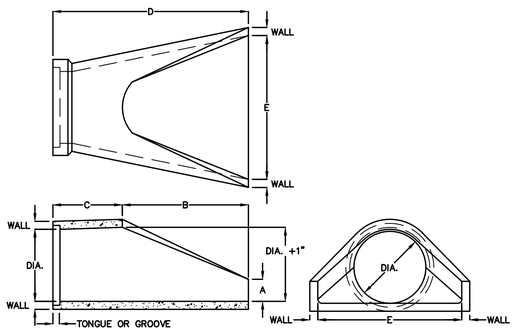
SHEET 2 OF 2

SPECIFICATION REFERENCE

STANDARD ENDWALL FOR PIPE CULVERTS 42"-96" CIRCULAR PIPES

REINFORCED CONCRETE PIPE FLARED END SECTIONS

15" TO 42" I.D.



DIA.	WALL	TONGUE OR GROOVE	WEIGHT	A	B	C	D	E	DIA. +1
15"	2 1/4"	2"	970	6"	27"	46"	73"	30"	16"
18"	2 1/2"	2 1/2"	1340	9"	27"	46"	73"	36"	19"
24"	3"	2 1/2"	1820	9 1/2"	43 1/2"	30"	73 1/2"	48"	25"
30"	3 1/2"	3"	2400	12"	54"	19 3/4"	73 3/4"	60"	31"
36"	4"	3 1/2"	5500	15"	63"	34 3/4"	97 3/4"	72"	37"
42"	4 1/2"	4"	6300	21 1/2	67"	41 1/2"	103 1/2"	76"	43"

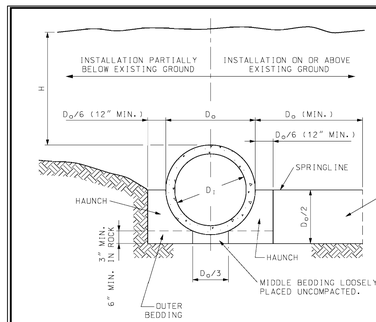
MANUFACTURED IN ACCORDANCE WITH APPLICABLE PORTIONS OF ASTM C-76, ASTM C-443, AASHTO M-170, AASHTO M-198 AND ARIZONA DOT.

FOR COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT JENSEN PRECAST.

Jensen Precast reserves the right to make changes to product design and/or dimensions without notice. Please contact Jensen Precast whenever necessary for confirmation or advice on product design.

JENSEN PRECAST

3/1/2023
82787 ERRECART_ALT2_4OR1.DWG
©2023



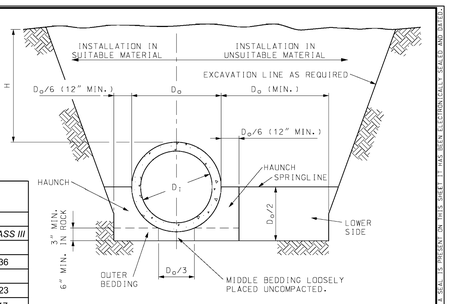
EMBANKMENT INSTALLATIONS

CONSTRUCTION SEQUENCE
1. PLACE BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE SPRINGLINE.
5. COMPLETE BACKFILL ACCORDING TO SPECIFICATIONS.

MAXIMUM DIAMETER AND MAXIMUM FILL HEIGHT

INSTALLATION TYPE	CLASS OF PIPE				
	CLASS IV	CLASS IV	CLASS III	CLASS III	CLASS III
	MAXIMUM DIAMETER (INCHES)				
	36/42	72	72	42	36
	MAXIMUM FILL HEIGHT IN (FEET)				
TYPE 1	34	33	22	23	23
TYPE 2	26	25	17	17	17
TYPE 3	20	20	13	13	13
TYPE 4	14	14	9	9	9

IF FILL HEIGHT EXCEEDS 52 FEET AND PIPE DIAMETER IS 42 INCHES OR LESS A SPECIAL PIPE DESIGN AND PROCEDURE SHALL BE REQUIRED. IF FILL EXCEEDS 51 FEET AND PIPE DIAMETER IS GREATER THAN 42 INCHES A SPECIAL DESIGN PIPE IS NOT ALLOWED.



TRENCH INSTALLATION

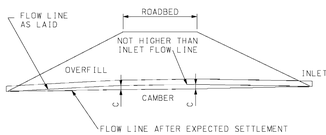
- LEGEND -

D_1 = NORMAL INSIDE DIAMETER OF PIPE.
D_o = OUTSIDE DIAMETER OF PIPE.
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
▨ = UNDISTURBED SOIL

GENERAL NOTES:

MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE BETWEEN PIPES OF ½ D_o OR 12", WHICHEVER IS GREATER, BUT NOT TO EXCEED 36".

CLASS I AND CLASS II REINFORCED CONCRETE PIPE SHALL ONLY BE USED FOR SEWERS IN TRENCHES OUTSIDE ROADBED AND STREET LIMITS.



NOTE:
ON YIELDING SOIL, PIPE CULVERTS SHALL BE PLACED ON A CAMBERED FLOW LINE. THE AMOUNT OF CAMBER WILL VARY WITH SOIL CONDITION AND SHALL BE SPECIFIED ON THE DESIGN PLANS.

TYPICAL CAMBERED FLOW LINE

BEDDING AND COMPACTION REQUIREMENTS

INSTALLATION TYPE	BEDDING THICKNESS	COMPACTION REQUIREMENTS (MIN. STANDARD PROCTOR %)					
		HAUNCH AND OUTER BEDDING			LOWER SIDE BEDDING		
		CATEGORY 1 SOIL (A)	CATEGORY 2 SOIL (B)	CATEGORY 3 SOIL (C)	CATEGORY 1 SOIL (A)	CATEGORY 2 SOIL (B)	CATEGORY 3 SOIL (C)
1	$D_o/24$ MINIMUM, NOT LESS THAN 3". IF ROCK FOUNDATION, USE $D_o/12$ MIMIMUM, NOT LESS THAN 6".	95	N/A	N/A	90	95	100
2	$D_o/24$ MINIMUM, NOT LESS THAN 3". IF ROCK FOUNDATION, USE $D_o/12$ MIMIMUM, NOT LESS THAN 6".	90	95	N/A	85	90	95
3	$D_o/24$ MINIMUM, NOT LESS THAN 3". IF ROCK FOUNDATION, USE $D_o/12$ MIMIMUM, NOT LESS THAN 6".	85	90	95	85	90	95
4	$D_o/24$ MINIMUM, NOT LESS THAN 3". IF ROCK FOUNDATION, USE $D_o/12$ MIMIMUM, NOT LESS THAN 6".	NO COMPACTION REQUIRED	NO COMPACTION REQUIRED	85	NO COMPACTION REQUIRED	NO COMPACTION REQUIRED	85

(A) GRAVELLY SAND
(B) SANDY-SILT
(C) SILTY CLAY

BID SET

2 working days Call before you Dig 1-800-227-2600

SUMMIT ENGINEERING CORPORATION
1150 LAMOILLE HIGHWAY, ELKO, NV. 89801
PHONE:(775) 738-8058 FAX:(775) 747-8559

CIVIL IMPROVEMENT PLANS FOR
ERRECART BLVD. CONNECTOR
RCP DETAILS
ELKO COUNTY
NEVADA
ELKO

DESIGNED BY: NIB
CHECKED BY: NIB
SCALE
HORIZ: NA
VERT: NA
JOB NO: 3-82787

PROFESSIONAL ENGINEER — STATE OF NEVADA — BHAKTA — Exp. 12-31-24 — CIVIL — No. 15494 — 04-25-24

SHEET D-14 OF 49