WATERBURY FILING NO. 1
EL PASO COUNT, CO
CONSTRUCTION SET
FEBRUARY 2023

NOTE:

ALL EXISTING UNDERGROUND AND ABOVE GROUND UTILITY LOCATIONS, INVERTS AND SIZES ARE APPROXIMATE ONLY AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. TIE IN POINTS SHALL BE POTHOLED AND LOCATIONS, INVERTS AND SIZES SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS

1. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF-SITE WATERS, INCLUDING WETLANDS.

2. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.

3. A SEPARATE STORMWATER MANAGEMENT PLAN (SWMP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SWMP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SWMP SHALL BE LOCATED ON SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.

4. ONCE THE ESQCP IS APPROVED AND A "NOTICE TO PROCEED" HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON THE APPROVED GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY STAFF.

5. CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT COULD CONTRIBUTE POLLUTANTS TO STORMWATER. CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, AND DISTURBED LAND AREAS SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF THE DISTURBANCE.

6. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITION UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND FINAL STABILIZATION IS ESTABLISHED. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF CONTROL MEASURES AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CONTROL MEASURES ARE NEEDED TO ENSURE THE CONTINUED EFFECTIVE PERFORMANCE OF THE CONTROL MEASURES. ALL CHANGES TO TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES MUST BE INCORPORATED INTO THE STORMWATER MANAGEMENT PLAN.

7. TEMPORARY STABILIZATION SHALL BE IMPLEMENTED ON DISTURBED AREAS AND STOCKPILES WHERE GROUND DISTURBING CONSTRUCTION ACTIVITY HAS PERMANENTLY CEASED OR TEMPORARILY CEASED FOR LONGER THAN 14 DAYS.

8. FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBING ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS EITHER HAVE A UNIFORM VEGETATIVE COVER WITH INDIVIDUAL PLANT DENSITY OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND BEFORE PERMIT CLOSURE.

9. ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT AFFECT THE DESIGN OR FUNCTION OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.

10. EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME. PRE-EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED WITHIN 50 HORIZONTAL FEET OF A WATERS OF THE STATE UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.

11. COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. IF COMPACTION PREVENTION IS NOT FEASIBLE DUE TO SITE CONSTRAINTS, ALL AREAS DESIGNATED FOR INFILTRATION AND VEGETATION CONTROL MEASURES MUST BE LOOSENED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).

12. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT OFF SITE.

13. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO ENTER STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUTS SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK OR STREAM.

14. DURING DEWATERING OPERATIONS OF UNCONTAMINATED GROUND WATER MAY BE DISCHARGED ON SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.

15. EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.

16. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.

17. WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. CONTROL MEASURES MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.

18. TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.

19. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, SOIL, AND SAND THAT MAY ACCUMULATE IN ROADS, STORM DRAINS AND OTHER DRAINAGE CONVEYANCE SYSTEMS AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.

20. THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.

21. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ONSITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.

22. BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ONSITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.

23. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.

24. OWNER/DEVELOPER AND THEIR AGENTS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE, DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (1041, NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND OTHER LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, LOCAL, OR COUNTY AGENCIES, THE MOST RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.

25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.

26. PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.

27. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.

28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY _____ AND SHALL BE CONSIDERED A PART OF THESE PLANS.

29. AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE (1) ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
WATER QUALITY CONTROL DIVISION
WQCD - PERMITS
4300 CHERRY CREEK DRIVE SOUTH
DENVER, CO 80246-1530
ATTN: PERMITS UNIT

EL PASO COUNTY STANDARD CONSTRUCTION NOTES:

1. ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 & 2 AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).

3. CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
   A. EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
   B. CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 & 2
   C. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
   D. CDOT M & S STANDARDS.

4. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER-THE-FACE WILL BE ENTIERELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.

5. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.

6. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (PCD) INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.

7. IT IS THE CONTRACTORS RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.

8. CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.

9. ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.

10. CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.

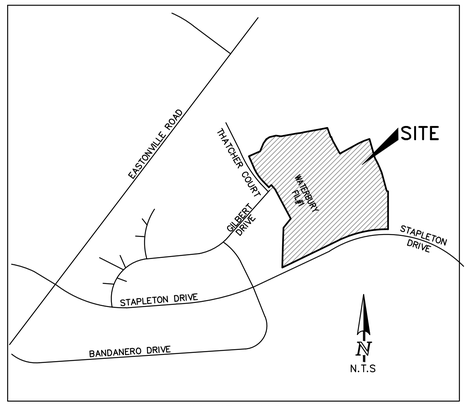
11. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.

12. SIGHT VISIBILITY TRIANGLES AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.

13. SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY PUBLIC WORK DEPARTMENT AND MUTCD CRITERIA.

14. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY PWD, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.

15. THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE DISTURBANCE, GRADING OR CONSTRUCTION.



VICINITY MAP

SHEET INDEX

GENERAL NOTES

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE SITE. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NON-EXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES.
2. THE CONTRACTOR WILL TAKE THE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES, BUILDINGS, FENCES, AND ROADWAYS FROM DAMAGE DUE TO THIS OPERATION. ANY DAMAGE TO THE ABOVE WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AND ANY SERVICE DISRUPTION WILL BE SETTLED BY THE CONTRACTOR.
3. BULK GRADING SHALL BE COMPLETED TO A SUBGRADE TOLERANCE OF PLUS OR MINUS 0.2'.
4. CONTRACTOR TO OBTAIN COPIES OF THE SOILS REPORT FROM THE GEOTECHNICAL ENGINEER AND TO BE KEPT ONSITE DURING ALL EARTHWORK OPERATIONS.
5. MAXIMUM CUT/FILL SLOPES SHALL NOT EXCEED 3:1, UNLESS OTHERWISE NOTED.
6. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED IN A MANNER THAT WILL PROTECT PROPERTIES AND PUBLIC FACILITIES FROM THE ADVERSE EFFECTS OF EROSION AND SEDIMENTATION AS A RESULT OF CONSTRUCTION AND EARTHWORK ACTIVITIES WITHIN THE PROJECT SITE.
7. EROSION CONTROL DEVICES SHOULD BE CHECKED AFTER EVERY STORM. REPAIRS OR REPLACEMENT SHOULD BE MADE AS NECESSARY TO MAINTAIN PROPER PROTECTION.
8. ADDITIONAL EROSION CONTROL STRUCTURES MAY BE REQUIRED AT THE TIME OF CONSTRUCTION
9. ALL STATIONING CENTERLINE UNLESS OTHERWISE NOTED. ALL ELEVATIONS ARE FLOWLINE UNLESS OTHERWISE NOTED.
10. ALL DISTURBED PAVEMENT EDGES SHALL BE CUT TO NEAT LINES. REPAIR SHALL CONFORM TO THE EPC ECM APPENDIX K - 1.2.C
11. ALL INTERSECTION ACCESS TO BE CONSTRUCTED WITH A 25 FOOT SIGHT VISIBILITY TRIANGLES EXCEPT STAPLETON DRIVE WHICH IS AN ARTERIAL AND A 50 FOOT SIGH VISIBILITY TRIANGLE IS REQUIRED AND THERE SHALL BE NO OBSTRUCTIONS GREATER THAN 18" IN THIS AREA.
12. ALL CULVERT AND STORM DRAIN PIPES SHALL BE SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE (HDPE) OR REINFORCED CONCRETE PIPE (RCP). ALL CULVERTS SHALL BE PLACED WITH FLARED END SECTIONS. ADEQUACY OF MATERIAL THICKNESS FOR ANY CSP INSTALLED SHALL BE VERIFIED BY OWNER'S GEOTECHNICAL ENGINEER TO SUPPORT MINIMUM 50 YEAR DESIGN LIFE. CULVERTS MUST CONFORM TO EPC ECM SECTIONS 3.32 - CULVERTS.
13. TYPE L RIPRAP W/ MIRAFI FW 700 OR EQUAL IS REQUIRED UNDER ALL RIP RAP PADS.
14. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN COMPLIANCE WITH AND ALL APPLICABLE EL PASO COUNTY STANDARDS AND WITH 4WAY RANCH METRO DISTRICT CONSULTING ENGINEER APPROVAL.
15. ALL POTABLE WATER MATINS SHALL BE AWWA C9000-DR14 PVC WITH PUSH ON SINGLE GASKET TYPE JOINTS AND SHALL MEET THE REQUIREMENTS OF ANSI/NSF 61
16. ALL WATER MAIN FITINGS SHALL BE CAST IRON AND FURNISHED WITH MECHANICAL JOINT ENDS. ALL FITTINGS SHALL HAVE A PRESSURE RATING OF 250 PSI AND SHALL MEET THE REQUIREMENTS OF ANSI/NSF 61.
17. MAXIMUM DEFLECTION OF 8' & 12" PVC WATER MAIN JOINTS IS 4 DEGREES. CORRESPONDING MINIMUM CURVE RADIUS IS 286'. ADDITIONAL 11.25 DEGREE OR 22.5 DEGREE BENDS MAY BE REQUIRED FOR PROPER ALIGNMENT.
18. CONTRACTOR IS RESPONSIBLE FOR PROVIDING DETAILED AS-BUILTS OF ALL WATER MAIN, STORM SEWER, AND SANITARY SEWER MAIN INSTALLATIONS, INCLUDING ACCURATE DISTANCES OF MAIN LINES, VALVES, FITTINGS, MANHOLES AND LOCATIONS OF WATER AND SEWER SERVICES.
19. SANITARY SEWER PIPE AND FITTING: PVC 4"-8" STM D3034, TYPE PSM, SDR 35 PUSH ON JOINTS AND MOLDED RUBBER GASKETS MAXIMUM HORIZONTAL DEFLECTION, AFTER INSTALLLATION AND BACK FILLING SHALL NOT EXCEED 3% OF THE PIPE DIAMETER. MINIMUM CURVE RADIUS IS 100' FOR 8"VC SANITARY SEWER MAIN.

SIGNING AND STRIPING NOTES

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN COMPLIANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED BY A METHOD THAT DOES NOT MATERIALLY DAMAGE THE PAVEMENT. THE PAVEMENT MARKINGS SHALL BE REMOVED TO THE EXTENT THAT THEY WILL NOT BE VISIBLE UNDER DAY OR NIGHT CONDITIONS. AT NO TIME WILL IT BE ACCEPTABLE TO PAINT OVER EXISTING PAVEMENT MARKINGS.
3. ANY DEVIATION FROM THE STRIPING AND SIGNING PLAN SHALL BE APPROVED BY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT.
4. ALL SIGNS SHOWN ON THE SIGNING AND STRIPING PLAN SHALL BE NEW SIGNS. EXISTING SIGNS MAY REMAIN OR BE REUSED IF THEY MEET CURRENT EL PASO COUNTY AND MUTCD STANDARDS.
5. STREET NAME AND REGULATORY STOP SIGNS SHALL BE ON THE SAME POST AT INTERSECTIONS.
6. ALL REMOVED SIGNS SHALL BE DISPOSED OF IN A PROPER MANNER BY THE CONTRACTOR
7. ALL STREET NAME SIGNS SHALL HAVE "D" SERIES LETTERS, WITH LOCAL ROADWAY SIGNS BEING 4" UPPER-LOWER CASE LETTERING ON 8" BLANK AND NON-LOCAL ROADWAY SIGNS BEING 6" LETTERING, UPPER-LOWER CASE ON 12" BLANK, WITH A WHITE BORDER THAT IS NOT RECESSED. MULTI-LANE ROADWAYS WITH SPEED LIMITS OF 40 MPH OR HIGHER SHALL HAVE 8" UPPER-LOWER CASE LETTERING ON 18" BLANK WITH A WHITE BORDER THAT IS NOT RECESSED. THE WIDTH OF THE NON-RECESSED WHITE BORDERS SHALL MATCH PAGE 255 OF THE 2012 MUTCD "STANDARD HIGHWAY SIGNS"
8. ALL TRAFFIC SIGNS SHALL HAVE A MINIMUM HIGH INTENSITY PRISMATIC GRADE SHEETING.
9. ALL LOCAL RESIDENTIAL STREET SIGNS SHALL BE MOUNTED ON A 1.75" X 1.75" SQUARE TUBE SIGN POST AND STUB POST BASE. FOR OTHER APPLICATIONS, REFER TO THE CDOT STANDARD S-614-8 REGARDING USE OF THE P2 TUBULAR STEEL POST SLIPBASE DESIGN.
10. ALL SIGNS SHALL BE SINGLE SHEET ALUMINUM WITH 0.100" MINIMUM THICKNESS.
11. ALL LIMIT LINES/STOP LINES, CROSSWALK LINES, PAVEMENT LEGENDS, AND ARROWS SHALL BE A MINIMUM 125 MIL THICKNESS PREFORMED THERMOPLASTIC PAVEMENT MARKINGS WITH TAPERED LEADING EDGES PER CDOT STANDARD S-627-1. WORD AND SYMBOL MARKINGS SHALL BE THE NARROW TYPE. STOP BARS SHALL BE 24" IN WIDTH. CROSSWALKS LINES SHALL BE 12" WIDE AND 8' LONG PER CDOT S-627-1.
12. ALL LONGITUDINAL LINES SHALL BE A MINIMUM 15MIL THICKNESS EPOXY PAINT. ALL NON-LOCAL RESIDENTIAL ROADWAYS SHALL INCLUDE BOTH RIGHT AND LEFT EDGE LINE STRIPING AND ANY ADDITIONAL STRIPING AS REQUIRED BY CDOT S-627-1.
13. THE CONTRACTOR SHALL NOTIFY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (719) 520-6819 PRIOR TO AND UPON COMPLETION OF SIGNING AND STRIPING.
14. THE CONTRACTOR SHALL OBTAIN A WORK IN THE RIGHT OF WAY PERMIT FROM THE EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS (DPW) PRIOR TO ANY SIGNAGE OR STRIPING WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY.

TRAFFIC CONTROL NOTE

THE CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL DEVICES AND MONITORING NECESSARY TO SAFELY COMPLETE THE WORK SHOWN IN THESE CONSTRUCTION DOCUMENTS IN CONFORMANCE WITH M.U.T.C.D. GUIDELINES. THE CONTRACTOR SHALL COMPLETE ALL NECESSARY WORK FOR PLAN REVIEW, PERMITS AND PROCESSING. TRAFFIC CONTROL WILL NOT BE PAID SEPARATELY BUT IS INCLUDED IN THE COST OF THE PROJECT.

CONTACT INFORMATION:

OWNER:	4-WAY RANCH JOINT VENTURE P.O. BOX 50223 COLORADO SPRINGS, CO 80949 PETER MARTZ (719) 447-8773
CIVIL ENGINEER:	TERRA NOVA ENGINEERING, INC. 721 S. 23RD STREET COLORADO SPRINGS, COLORADO 80904 QUENTIN ARMIJO, P.E., (719) 635-6422
ENGINEERING DIVISION	EL PASO COUNTY DEVELOPMENT SERVICES 2880 INTERNATIONAL CIRCLE COLORADO SPRINGS, COLORADO 80910 JEFF RICE P.E. (719) 520-6300
METRO DISTRICT	CHEROKEE METROPOLITAN 6250 PALMER PARK COLORADO SPRINGS, CO 80915 JEFF MUNGER (719)-597-5080
GAS DEPARTMENT	BLACK HILLS ENERGY 7060 ALEGRE ST. FOUNTAIN, CO 80817 GEORGE PETERSON (719) 393-6625
ELECTRIC DEPARTMENT	MOUNTAIN VIEW ELECTRIC ASSOCIATION 11140 E. WOODMEN ROAD FALCON, COLORADO 80831 DARYL EDWARDS (719) 495-2283
FIRE DEPARTMENT	STATION 3 / HEADQUARTERS 7030 OLD MERIDIAN ROAD PEYTON, COLORADO 80831 (719) 495-4050
TELEPHONE COMPANY	A.T.&T. LOCATORS (719) 635-3674 CENTURY LINK LOCATORS 811

BENCHMARKS

1. THE TOP OF A 1-1/2" ALUMINUM SURVEYORS CAP STAMPED JR LTD PLS 31161, AT THE MOST EASTERLY CORNER OF LOT 36 AS PLATED IN 4-WAY RANCH FILING NO. 1 RECORDED UNDER RECEPTION NO. 206712416 RECORDS OF EL PASO COUNTY, COLORADO ELEV= 6931.92

2. THE TOP OF A 1-1/2" ALUMINUM SURVEYORS CAP STAMPED JR LTD PLS 82820, ATTHE MOST NORTHERLY CORNER OF LOT 42 AS PLATED IN 4-WAY RANCH FILING NO. 1 RECORDED UNDER RECEPTION NO. 206712416 RECORDS OF EL PASO COUNTY, COLORADO ELEV= 6973.99

BASIS OF BEARING

THE NORTH LINE OF SECTION 28, TOWNSHIP 12 SOUTH, RANGE 64 WEST OF THE SIXTH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO BEINGMONUMNETED AT EACH END BY A 3-1/4" ALUMINUM SURVEYOR'S CAP STAMPED "PSINC LS 30087 AND ASSUMED TO BEAR S89°47'04"E A DISTANCE OF 5,285.07 FE

EROSION CONTROL LEGEND

KEY	TITLE	SYMBOL	IMPLEMENATION PHASE
SF	SILT FENCE	— SF —	FINAL
CF	CONSTRUCTION FENCE	— —CF— —	FINAL
CIP	CULVERT INLET PROTECTION		FINAL
IP	INLET PROTECTION		FINAL
SBB	STRAW BALE BARRIER		FINAL
SP	STOCKPILE PROTECTION	▭	FINAL
VTC	VEHICLE TRACKING CONTROL	▩	FINAL
CWA	CONCRETE WASHOUT AREA	▭	FINAL
SSA	STABILIZED STAGING AREA	▨	FINAL
TSM	TEMPORARY SEEDING AND MULCHING	▭	FINAL

GRADING LEGEND

8' EXISTING CONTOUR	6810
1' EXISTING CONTOUR	6802
5' PROPED CONTOUR	6810
1' PROPED CONTOUR	6802
LIMITS OF DISTURBANCE/ CONSTRUCTION BOUNDARY	— —
SUBDIVISION BOUNDARY	— · —
CUT/FILL LINE	FILL CUT
DIRECTION OF SURFACE FLOW	4.0% →
HIGH POINT	HP✕
LOW POINT	LP✕
A LOT	"A"
B LOT	"B"
WALK OUT LOT MODIFIED	"WO*"
GARDEN LEVEL LOT MODIFIED	"G*"
100-Y FEMA FLOODPLAIN	🟥
100-Y HWL PER HECRAS ANLYSIS	▨
AREAS OF DE-WATERING	▭

WETLANDS LEGEND

EXISTING WETLANDS	🟩
TEMPORARY WETLAND DISTURBANCE	▨
PERMANENT WETLAND DISTURBANCE	▨

100' 0 100' 200'

SCALE: 1"=100'

VEGETATION NOTE:

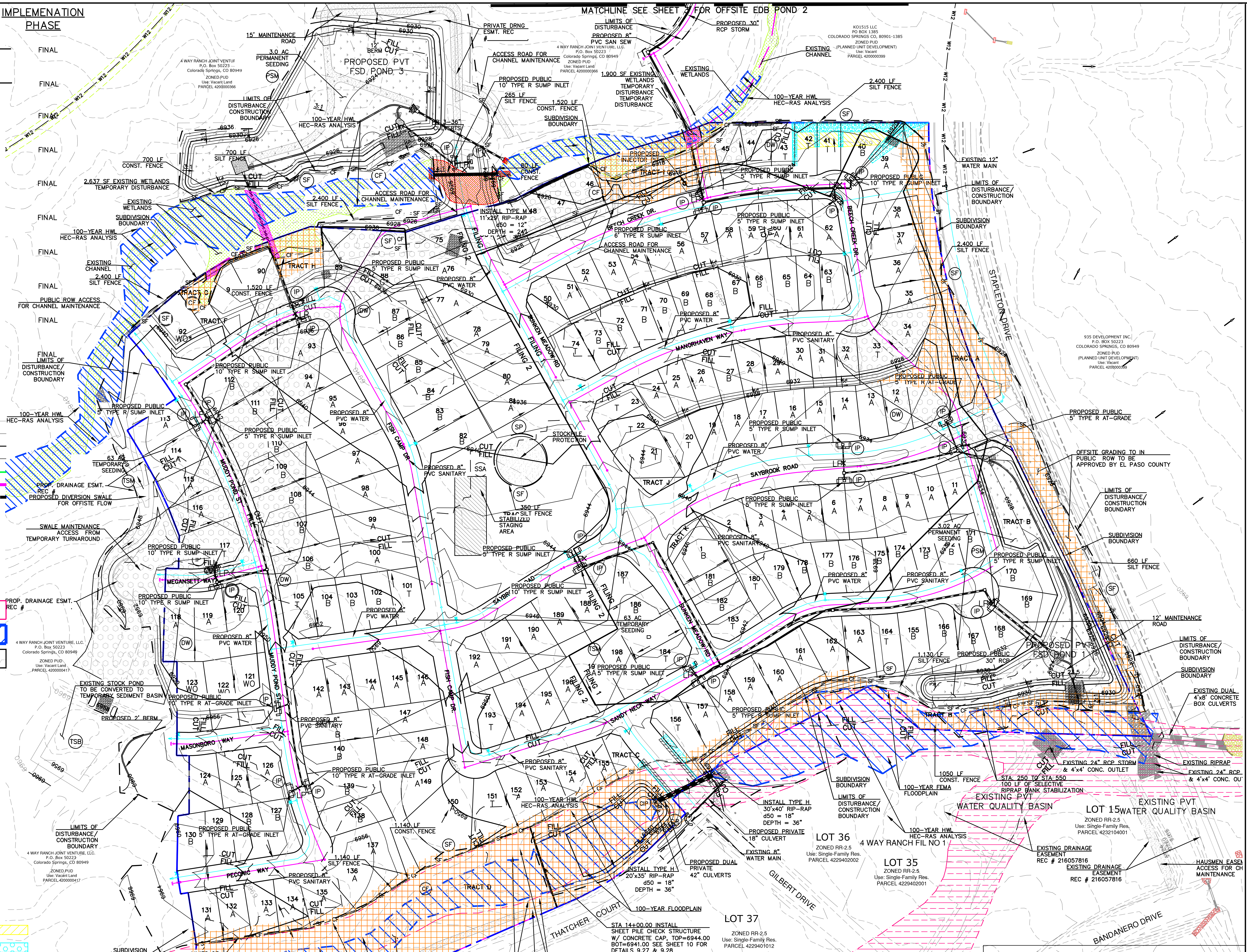
EXISTING VEGETATION CONSISTS OF NATIVE PRAIRIE GRASSES AND SHRUBS WITH FAIR TO GOOD COVERAGE OF 50% TO 70%

NOTES:

NO BATCH PLANTS ARE PROPOSED
ALL CONTROL MEASURES ARE BEING IMPLEMENTED BY THE OWNER/DEVELOPER/CONTRACTOR

RUNOFF REDUCTION LEGEND

UNCONNECTED IMPERVIOUS AREA	🟨
RECEIVING PERVIOUS AREA	🟦
EXCLUDED UNDEVELOPED PERVIOUS AREA PER THE EXCLUSION IN ECM APPENDIX I.7.1.B.7 – SITES WITH LAND DISTURBANCE TO UNDEVELOPED LAND THAT WILL REMAIN UNDEVELOPED	🟧



THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

QUENTIN ARMIJO
COLORADO P.E. NO. 37170

REVISIONS		
NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
4-WAY RANCH JOINT VENTURE
ATTN: PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc.
"Creative Civil Engineering Solutions"

721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnesinc.com

WATERBURY FILING NO. 1

CONSTRUCTION SET
GRADING AND EROSION CONTROL PLAN
FINAL EROSION CONTROL PLAN 1

DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H-SCALE 1" = 100'
V-SCALE N/A
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 2 OF 39

GENERAL NOTES

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE SITE. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NON-EXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES.
2. THE CONTRACTOR WILL TAKE THE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES, BUILDINGS, FENCES, AND ROADWAYS FROM DAMAGE DUE TO THIS OPERATION. ANY DAMAGE TO THE ABOVE WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AND ANY SERVICE DISRUPTION WILL BE SETTLED BY THE CONTRACTOR.
3. BULK GRADING SHALL BE COMPLETED TO A SUBGRADE TOLERANCE OF PLUS OR MINUS 0.2'.
4. CONTRACTOR TO OBTAIN COPIES OF THE SOILS REPORT FROM THE GEOTECHNICAL ENGINEER AND TO BE KEPT ONSITE DURING ALL EARTHWORK OPERATIONS.
5. MAXIMUM CUT/FILL SLOPES SHALL NOT EXCEED 3:1, UNLESS OTHERWISE NOTED.
6. ALL BOTOM OF WALL (BW) CALLOUTS ARE FOR THE BOTTOM OF WALL AT GRADE. THEY DO NOT REPRESENT THE BOTTOM OF THE CONSTRUCTED WALL OR FOOTING, WHICH IS NOT SPECIFIED ON THESE PLANS.

SOIL TYPES

ONSITE SOILS ARE HYDROLOGIC GROUPS "A" (COLUMBINE GRAVELLY SANDY LOAM) AND "B" (STAPLETON SANDY LOAM) (PER NRCS WEB SOIL SURVEY MAP)

AREA OF DISTURBANCE

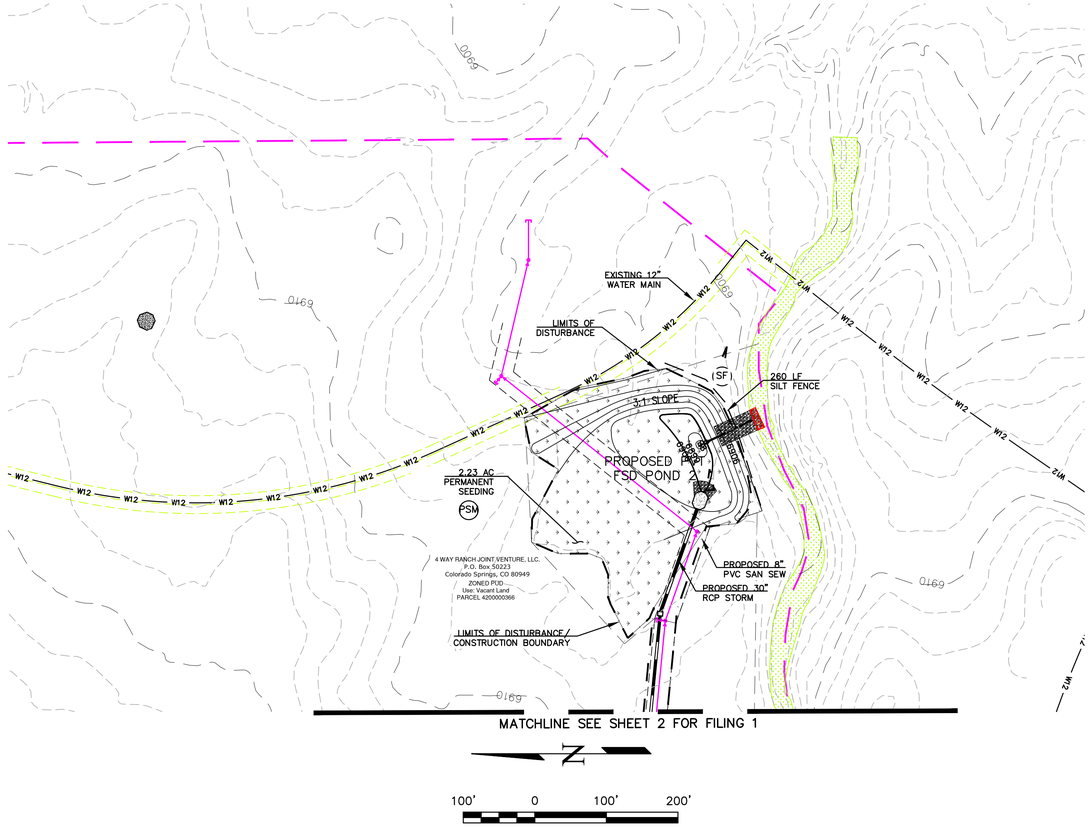
ESTIMATED AREA OF DISTURBANCE = 68.70 ACRES

EARTHWORK VOLUMES

ESTIMATED CUT = 73,990 CY, ESTIMATED FILL = 287,149* CY, NET = 213,159 CY <FILL>
*20% COMPACTION ASSUMED FOR PLACEMENT OF FILL

BLACK SQUIRREL CREEK NOTE:

IF AN UNDERDRAIN SYSTEMS ARE NEEDED FOR HOMES LOCATED WITH HIGH GROUNDWATER WILL NEED TO DISCHARGE INTO A GROUNDWATER RECHARGE FACILITY, NOT A STORM DRAIN SYSTEM.



NOTES:
NO BATCH PLANTS ARE PROPOSED
ALL CONTROL MEASURES ARE BEING IMPLEMENTED BY THE OWNER/DEVELOPER/CONTRACTOR

GRADING LEGEND

8' EXISTING CONTOUR	6810
1' EXISTING CONTOUR	6802
5' PROPED CONTOUR	6810
1' PROPED CONTOUR	6802
LIMITS OF DISTURBANCE/ CONSTRUCTION BOUNDARY	
SUBDIVISION BOUNDARY	
CUT/FILL LINE	FILL CUT
DIRECTION OF SURFACE FLOW	4.0%
HIGH POINT	HPX
LOW POINT	LPX
A LOT	"A"
B LOT	"B"
WALK OUT LOT MODIFIED	"WO*"
GARDEN LEVEL LOT MODIFIED	"G*"
100-Y FEMA FLOODPLAIN	
100-Y HWL PER HECRAS ANLYSIS	
AREAS OF DE-WATERING	

WETLANDS LEGEND

EXISTING WETLANDS	
TEMPORARY WETLAND DISTURBANCE	
PERMANENT WETLAND DISTURBANCE	

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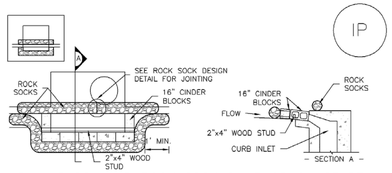
WATERBURY FILING NO. 1

CONSTRUCTION SET
GRADING EROSION & CONTROL PLAN
FINAL EROSION CONTROL PLAN 2

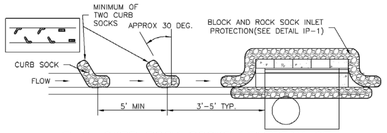
DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H-SCALE NA
V-SCALE N/A
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 3 OF 39



IP–1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. CONCRETE "CINDER" BLOCKS SHALL BE LAID ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB.
3. GRAVEL BAGS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINTED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.



IP–2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL INSTALLATION REQUIREMENTS.
2. PLACEMENT OF THE SOCK SHALL BE APPROXIMATELY 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.
3. SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 5 FEET APART.
4. AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON–GRADE INLETS.

GENERAL INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF INLET PROTECTION.
   –TYPE OF INLET PROTECTION (IP.1, IP.2, IP.3, IP.4, IP.5, IP.6)
2. INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.
3. MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

INLET PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR ¼ OF THE HEIGHT FOR STRAW BALES.
5. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.
6. WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF INLET PROTECTION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY PROPRIETARY INLET PROTECTION METHODS ON THE MARKET. UDFCD NEITHER ENDORSES NOR DISCOURAGES USE OF PROPRIETARY INLET PROTECTION; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

NOTE: SOME MUNICIPALITIES DISCOURAGE OR PROHIBIT THE USE OF STRAW BALES FOR INLET PROTECTION. CHECK WITH LOCAL JURISDICTION TO DETERMINE IF STRAW BALE INLET PROTECTION IS ACCEPTABLE.

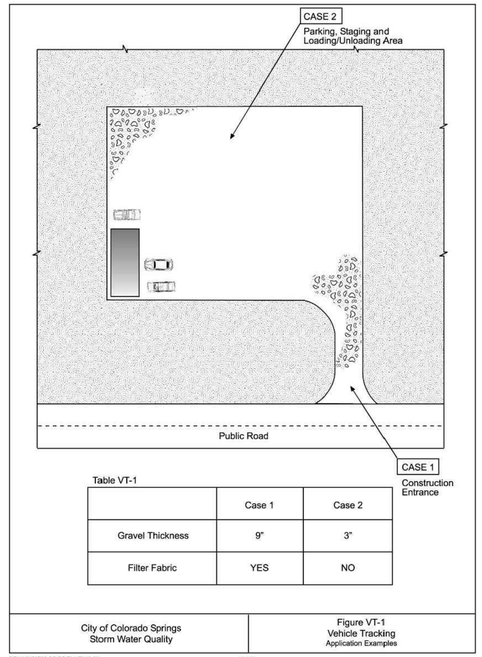


Table VT-1

	Case 1	Case 2
Gravel Thickness	9"	3"
Filter Fabric	YES	NO

City of Colorado Springs
Storm Water Quality

Figure VT-1
Vehicle Tracking
Application Examples

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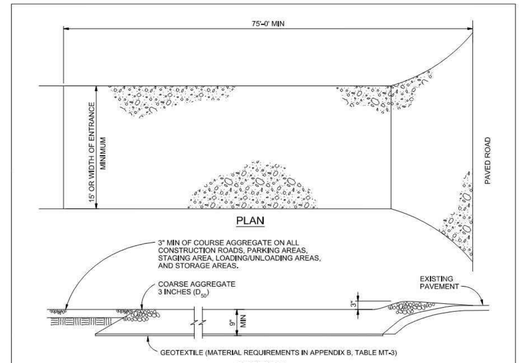


SECTION

VEHICLE TRACKING

NTS

VEHICLE TRACKING NOTES

INSTALLATION REQUIREMENTS

1. ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.
2. CONSTRUCTION ENTRANCES ARE TO BE BUILT WITH AN APRON TO ALLOW FOR TURNING TRAFFIC, BUT SHOULD NOT BE BUILT OVER EXISTING PAVEMENT EXCEPT FOR A SLIGHT OVERLAP.
3. AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.
4. CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.
5. CONSTRUCTION ROADS ARE TO BE BUILT TO CONFORM TO SITE GRADES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.
2. STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.
3. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED DAILY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.
4. STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.
5. OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.

City of Colorado Springs
Stormwater Quality

Figure VT-2
Vehicle Tracking
Application Examples

Table 14-10. Recommended Seed Mix for Transition Areas[1]

Common Name (Variety)	Scientific Name	Growth Season	Growth Form	Seeds/Lb	Lbs PLS/Acre Drilled	Lbs PLS/Acre Broadcast or Hydroseeded
Sheep fescue (Durar)	*Festuca ovina*	Cool	Bunch	680,000	1.3	2.6
Western wheatgrass (Arriba)	*Pascopyrum smithii*	Cool	Sod	110,000	7.9	15.8
Alkali sacaton	*Sporobolus airoides*	Warm	Bunch	1,758,000	0.5	1.0
Slender wheatgrass	*Elymus trachycaulus*	Cool	Bunch	159,000	5.5	11.0
Canadian bluegrass (Ruebens)[1]	*Poa compressa*	Cool	Sod	2,500,000	0.3	0.6
Switchgrass (Pathfinder)	*Panicum virgatum*	Warm	Sod/ Bunch	389,000	1.3	2.6
Annual rye	*Lolium multiflorum*	Cool	Cover crop	227,000	10.0	20.0
				TOTAL	**26.8**	**53.6**
Wildflowers						
Blanket flower	*Faillardia aristata*	---	---	132,000	0.25	0.50
Prairie coneflower	*Ratibida columnaris*	---	---	1,230,000	0.20	0.40
Purple prairie clover	*Petalostemum purpurea*	---	---	210,000	0.20	0.40
Gayfeather	*Liatris punctata*	---	---	138,000	0.06	0.12
Flax	*Linum lewisii*	---	---	293,000	0.20	0.40
Penstemon	*Penstemon strictus*	---	---	592,000	0.20	0.40
Yarrow	*Achillea millefolium*	---	---	2,770,000	0.03	0.06
				TOTAL	**1.14**	**2.28**

[1]For side slopes or between wet and dry areas.
[2]Substitute 1.7 lbs PLS/acre of inland saltgrass (*Distichlis spicata*) in salty soils.

SEED MIX FOR POND BOTTOMS

THE CITY OF COLORADO SPRINGS ENGINEERING DEPARTMENT GENERAL SPECIFICATIONS SHOULD BE USED AS A RESOURCE WHEN DEVELOPING TECHNICAL SPECIFICATIONS FOR RE–VEGETATION. GENERAL GUIDELINES AND RECOMMENDATIONS FOR RE–VEGETATION INCLUDE:

1. SEED MIXTURES SHOULD BE SOWN AT THE PROPER TIME OF YEAR FOR THE MIXTURE. GENERALLY, THERE ARE TWO OPTIMAL SEEDING PERIODS DURING THE YEAR. THE FIRST PERIOD IS IN THE SPRING, MARCH TO MAY. THE SECOND PERIOD IS IN LATE SUMMER TO EARLY FALL, AUGUST TO SEPTEMBER.
2. SEED SHOULD BE DRILL–SEEDED, WHENEVER POSSIBLE.
3. BROADCAST SEEDING OR HYDRO–SEEDING MAY BE SUBSTITUTED ON SLOPES STEEPER THAN 3:1 OR ON OTHER AREAS NOT PRACTICAL TO DRILL SEED.
4. SEEDING RATES SHOULD BE DOUBLED FOR BROADCAST SEEDING OR INCREASED BY 50% IF USING A BRILLION DRILL OR HYDRO–SEEDING.
5. BROADCAST SEED SHOULD BE LIGHTLY HAND–RAKED INTO THE SOIL.
6. SEED DEPTH SHOULD BE ¼ TO ½ INCH FOR MOST MIXTURES.
7. SEEDED AREAS SHOULD BE MULCHED, AND THE MULCH SHOULD BE ADEQUATELY SECURED.
8. IF HYDRO–SEEDING IS CONDUCTED, MULCHING SHOULD BE CONDUCTED AS A SEPARATE, SECOND OPERATION.
9. CONTAINERIZED NURSERY STOCK SHOULD BE KEPT IN A LIVE AND HEALTHY CONDITION PRIOR TO INSTALLATION.
10. CONTAINERIZED TREES AND SHRUBS SHOULD BE INSTALLED ACCORDING TO THE PLANTING DETAILS PROVIDE IN THE COLORADO SPRINGS LANDSCAPE CODE AND POLICY MANUAL, UNIT FOUR, APPENDICES FOR TREE AND SHRUB PLANTING DETAILS.
11. LIVE STAKES, POLES AND WILLOW BUNDLES SHOULD BE INSTALLED WHEN DORMANT (LATE WINTER AND EARLY SPRING).
12. IF BEAVER ARE KNOWN TO BE IN THE AREA, BEAVER PROTECTION SHOULD BE PROVIDED FOR TREES AND SHRUBS.

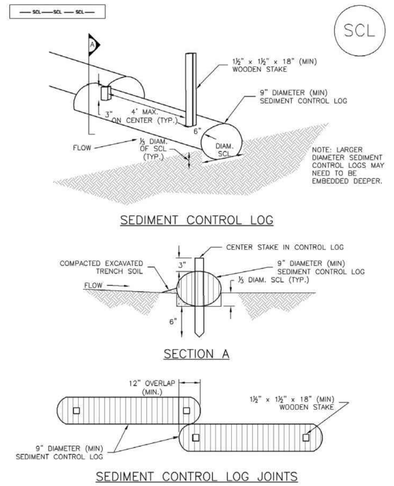
ALLOWABLE PLANT VARIETIES

(SEE DRAINAGE CRITERIA MANUAL, VOLUME 1, CHAPTER 14, TABLE 14–5)

SPECIES

WESTERN WHEATGRASS (PASCOPYRUM SMITHII)
SWITCHGRASS (PANICUM VIRGATUM)
SLENDER WHEATGRASS (ELYMUS TRACHYCAULUS SSP. TRACHYCAULUS
PUBESCENT WHEATGRASS (TRIGIA INTERMEDIA SSP. TRICHOPHORUM)
INDIAN GRASS (ACHNATHERUM HYMENOIDES)
BIG BLUESTEM (POA AMPLA)
BLUE GRAMA (BOUTELOUA GRACILIS)
SWITCHGRASS (PANICUM VIRGATUM)
SIDE–OATS GRAMA (BOUTELOUA CURTIPENDULA)
NEEDLE AND THREAD (HESPEROSTIPA COMATA SSP. COMATA)

***SEED MIX SHOULD BE APPROVED BY THE COUNTY**



SEDIMENT CONTROL LOG

SECTION A

SEDIMENT CONTROL LOG JOINTS

SCL–1. SEDIMENT CONTROL LOG

SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.
2. SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND–DISTURBING ACTIVITIES.
3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
4. SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS OR HIGH VELOCITY DRAINAGE WAYS.
5. IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY ⅓ OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING.
6. THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER.
7. FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED.

SEDIMENT CONTROL LOG MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY ½ OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
5. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, JEFFERSON COUNTY, COLORADO, DOUGLAS COUNTY, COLORADO, AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

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WATERBURY FILING NO. 1

CONSTRUCTION SET
GRADING EROSION & STORMWATER CONTROL PLAN
EROSION CONTROL DETAILS

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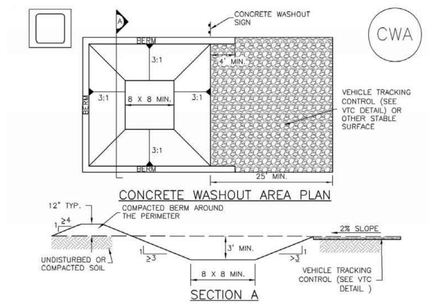
DRAWN BY QNA
CHECKED BY QNA
H–SCALE NA
V–SCALE N/A
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 4 OF 39

Concrete Washout Area (CWA) MM-1



CWA–1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –CWA INSTALLATION LOCATION.

2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.

3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.

4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.

5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.

6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.

7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.

8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

CWA MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.

5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.

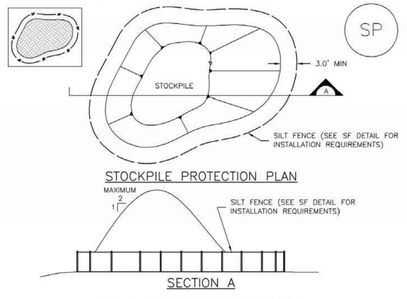
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.

7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD).

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

Stockpile Management (SP) MM-2



SP–1. STOCKPILE PROTECTION

STOCKPILE PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF STOCKPILES.
   –TYPE OF STOCKPILE PROTECTION.

2. INSTALL PERIMETER CONTROLS IN ACCORDANCE WITH THEIR RESPECTIVE DESIGN DETAILS. SILT FENCE IS SHOWN IN THE STOCKPILE PROTECTION DETAILS; HOWEVER, OTHER TYPES OF PERIMETER CONTROLS INCLUDING SEDIMENT CONTROL LOGS OR ROCK SOCKS MAY BE SUITABLE IN SOME CIRCUMSTANCES. CONSIDERATIONS FOR DETERMINING THE APPROPRIATE TYPE OF PERIMETER CONTROL FOR A STOCKPILE INCLUDE WHETHER THE STOCKPILE IS LOCATED ON A PERVIOUS OR IMPERVIOUS SURFACE, THE RELATIVE HEIGHTS OF THE PERIMETER CONTROL AND STOCKPILE, THE ABILITY OF THE PERIMETER CONTROL TO CONTAIN THE STOCKPILE WITHOUT FAILING IN THE EVENT THAT MATERIAL FROM THE STOCKPILE SHIFTS OR SLUMPS AGAINST THE PERIMETER, AND OTHER FACTORS.

3. STABILIZE THE STOCKPILE SURFACE WITH SURFACE ROUGHENING, TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS, OR SOIL BINDERS. SOILS STOCKPILED FOR AN EXTENDED PERIOD (TYPICALLY FOR MORE THAN 60 DAYS) SHOULD BE SEEDED AND MULCHED WITH A TEMPORARY GRASS COVER ONCE THE STOCKPILE IS PLACED (TYPICALLY WITHIN 14 DAYS). USE OF MULCH ONLY OR A SOIL BINDER IS ACCEPTABLE IF THE STOCKPILE WILL BE IN PLACE FOR A MORE LIMITED TIME PERIOD (TYPICALLY 30–60 DAYS).

4. FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS, INCLUDING PERIMETER CONTROL, ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

STOCKPILE PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

STOCKPILE PROTECTION MAINTENANCE NOTES

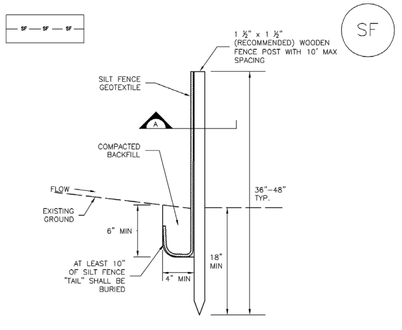
4. IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY.

5. STOCKPILE PERIMETER CONTROLS CAN BE REMOVED ONCE ALL THE MATERIAL FROM THE STOCKPILE HAS BEEN USED.

(DETAILS ADAPTED FROM PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

Silt Fence (SF) SC-1



SF–1. SILT FENCE

SILT FENCE INSTALLATION NOTES

1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2–5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.

2. A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.

3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.

4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.

5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.

6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J–HOOK." THE "J–HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' – 20').

7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".

5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.

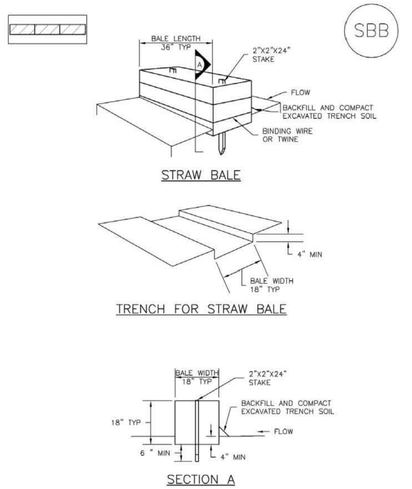
6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.

7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

Straw Bale Barrier (SBB) SC-3



SBB–1. STRAW BALE

STRAW BALE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION(S) OF STRAW BALES.

2. STRAW BALES SHALL CONSIST OF CERTIFIED WEED FREE STRAW OR HAY. LOCAL JURISDICTIONS MAY REQUIRE PROOF THAT BALES ARE WEED FREE.

3. STRAW BALES SHALL CONSIST OF APPROXIMATELY 5 CUBIC FEET OF STRAW OR HAY AND WEIGH NOT LESS THAN 35 POUNDS.

4. WHEN STRAW BALES ARE USED IN SERIES AS A BARRIER, THE END OF EACH BALE SHALL BE TIGHTLY ABUTTING ONE ANOTHER.

5. STRAW BALE DIMENSIONS SHALL BE APPROXIMATELY 36"X18"X18".

6. A UNIFORM ANCHOR TRENCH SHALL BE EXCAVATED TO A DEPTH OF 4". STRAW BALES SHALL BE PLACED SO THAT BINDING TWINE IS ENCOMPASSING THE VERTICAL SIDES OF THE BALE(S). ALL EXCAVATED SOIL SHALL BE PLACED ON THE UPHILL SIDE OF THE STRAW BALE(S) AND COMPACTED.

7. TWO (2) WOODEN STAKES SHALL BE USED TO HOLD EACH BALE IN PLACE. WOODEN STAKES SHALL BE 2"X2"X24". WOODEN STAKES SHALL BE DRIVEN 6" INTO THE GROUND.

STRAW BALE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. STRAW BALES SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, ROTTEN, OR DAMAGED BEYOND REPAIR.

5. SEDIMENT ACCUMULATED UPSTREAM OF STRAW BALE BARRIER SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY ½ OF THE HEIGHT OF THE STRAW BALE BARRIER.

6. STRAW BALES ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

7. WHEN STRAW BALES ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

NO.	REVISIONS DESCRIPTION	DATE

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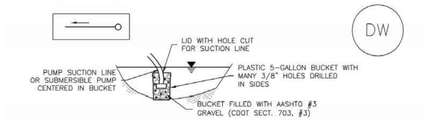
PREPARED FOR:
4–WAY RANCH JOINT VENTURE
ATTN: PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719–491–3150

Terra Nova Engineering, Inc
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719–635–6422
FAX: 719–635–6426
www.tnesinc.com

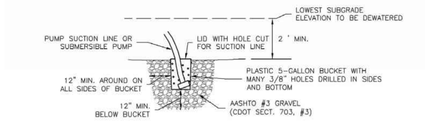
WATERBURY FILING NO. 1

CONSTRUCTION SET
GRADING AND EROSION CONTROL PLAN
EROSION CONTROL DETAILS

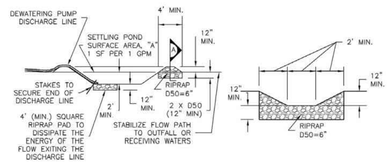
DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H–SCALE NA
V–SCALE N/A
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 5 OF 39



DW-1. DEWATERING POND ALREADY FILLED WITH WATER

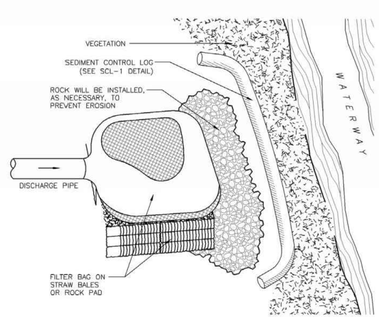


DW-2. DEWATERING SUMP FOR SUBMERSED PUMP



DW-3. SUMP DISCHARGE SETTLING BASIN

SETTLING BASIN SECTION A



DW-4. DEWATERING FILTER BAG

DEWATERING INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION OF DEWATERING EQUIPMENT.
   -TYPE OF DEWATERING OPERATION (DW-1 TO DW-4).

2. THE OWNER OR CONTRACTOR SHALL OBTAIN A CONSTRUCTION DISCHARGE (DEWATERING) PERMIT FROM THE STATE PRIOR TO ANY DEWATERING OPERATIONS DISCHARGING FROM THE SITE. ALL DEWATERING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERMIT.

3. THE OWNER OR OPERATOR SHALL PROVIDE, OPERATE, AND MAINTAIN DEWATERING SYSTEMS OF SUFFICIENT SIZE AND CAPACITY TO PERMIT EXCAVATION AND SUBSEQUENT CONSTRUCTION IN DRY CONDITIONS AND TO LOWER AND MAINTAIN THE GROUNDWATER LEVEL A MINIMUM OF 2-FEET BELOW THE LOWEST POINT OF EXCAVATION AND CONTINUOUSLY MAINTAIN EXCAVATIONS FREE OF WATER UNTIL BACK-FILLED TO FINAL GRADE.

DEWATERING INSTALLATION NOTES

4. DEWATERING OPERATIONS SHALL USE ONE OR MORE OF THE DEWATERING SUMPS SHOWN ABOVE, WELL POINTS, OR OTHER MEANS APPROVED BY THE LOCAL JURISDICTION TO REDUCE THE PUMPING OF SEDIMENT, AND SHALL PROVIDE A TEMPORARY SEDIMENT BASIN OR FILTRATION BMP TO REDUCE SEDIMENT TO ALLOWABLE LEVELS PRIOR TO RELEASE OFF SITE OR TO A RECEIVING WATER. A SEDIMENT BASIN MAY BE USED IN LIEU OF SUMP DISCHARGE SETTLING BASIN SHOWN ABOVE IF A 4-FOOT-SQUARE RIPRAP PAD IS PLACED AT THE DISCHARGE POINT AND THE DISCHARGE END OF THE LINE IS STAKED IN PLACE TO PREVENT MOVEMENT OF THE LINE.

DEWATERING MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

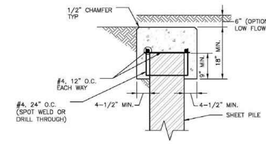
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. DEWATERING BMPs ARE REQUIRED IN ADDITION TO ALL OTHER PERMIT REQUIREMENTS.

5. TEMPORARY SETTLING BASINS SHALL BE REMOVED WHEN NO LONGER NEEDED FOR DEWATERING OPERATIONS. ANY DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

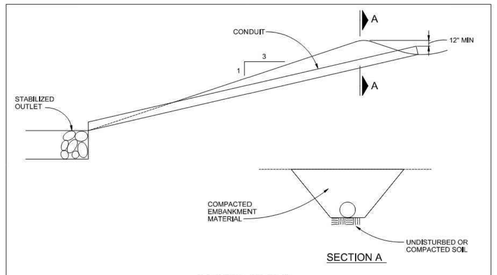
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)



DETAIL CONCRETE SHEET PILE CAP (1)

Figure 9-28. Check structure details (Part 3 of 3)



SECTION A

SLOPE DRAIN
NTS

SLOPE DRAIN NOTES

INSTALLATION REQUIREMENTS

1. THE SLOPE DRAIN IS TO BE DESIGNED TO CONVEY THE PEAK RUNOFF FOR THE 2-YEAR STORM.

2. PIPE MATERIAL MAY INCLUDE CORRUGATED METAL, OR RIGID OR FLEXIBLE PLASTIC.

3. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.

4. EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.

5. SLOPE DRAIN SECTIONS ARE TO BE SECURELY FASTENED TOGETHER AND HAVE WATERTIGHT FITTINGS.

6. THE OUTLET IS TO BE STABILIZED AND, UNLESS THE DRAIN DISCHARGES DIRECTLY TO A SEDIMENT BASIN, A TEMPORARY SURFACE IS TO BE PROVIDED TO CONVEY FLOWS DOWN STREAM.

7. IMMEDIATELY STABILIZE ALL AREAS DISTURBED BY INSTALLATION OR REMOVAL OF THE PIPE SLOPE DRAIN.

MAINTENANCE REQUIREMENTS

1. INLET AND OUTLET POINTS ARE TO BE CHECKED REGULARLY, AND AFTER HEAVY STORMS FOR CLOGGING AND OVERCHARGING. ANY BREAKS IN THE PIPE ARE TO BE PROMPTLY REPAIRED, AND CLOGS REMOVED AS NEEDED.

2. WATER IS NOT TO BYPASS OR UNDERCUT THE INLET OR PIPE. IF THESE PROBLEMS DO EXIST, THE HEADWALL NEEDS TO BE REINFORCED WITH COMPACT EARTH OR SANDBAGS.

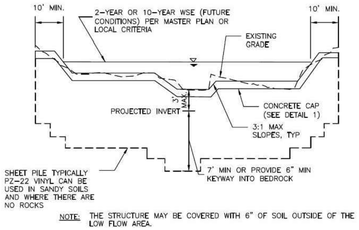
3. THE OUTLET POINT IS TO BE FREE OF EROSION, AND, IF NECESSARY, ADDITIONAL OUTLET PROTECTION SHOULD BE INSTALLED.

4. CONSTRUCTION TRAFFIC IS NOT TO CROSS THE SLOPE DRAIN AND MATERIALS ARE NOT TO BE PLACED ON IT.

5. THE SLOPE DRAIN IS TO REMAIN IN PLACE UNTIL THE SLOPE HAS BEEN COMPLETELY STABILIZED OR UP TO 30 DAYS AFTER PERMANENT SLOPE STABILIZATION.

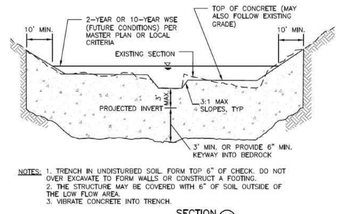
City of Colorado Springs Stormwater Quality	Figure SD-1 Slope Drain Construction Detail and Maintenance Requirements

3-39



NOTE: THE STRUCTURE MAY BE COVERED WITH 6" OF SOIL OUTSIDE OF THE LOW FLOW AREA.

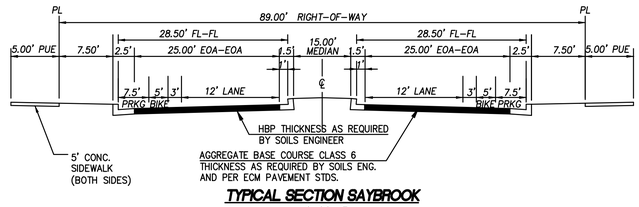
SECTION (A1)
SHEET PILE CHECK



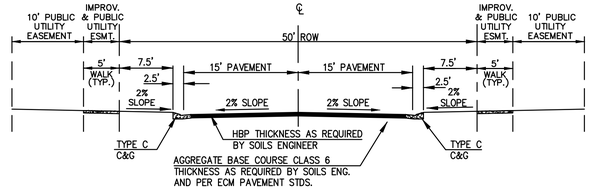
NOTES: 1. TRENCH IN UNDISTURBED SOIL. FORM TOP 6" OF CHECK. DO NOT OVER EXCAVATE TO FORM WALLS OR CONSTRUCT A FOOTING.
2. THE STRUCTURE MAY BE COVERED WITH 6" OF SOIL OUTSIDE OF THE LOW FLOW AREA.
3. VIBRATE CONCRETE INTO TRENCH.

SECTION (A2)
CONCRETE CHECK

Figure 9-27. Check structure details (Part 2 of 3)



TYPICAL SECTION SAYBROOK
NO SCALE



TYPICAL SECTION – 50' ROW 30' MAT
N.T.S.

REVISIONS

NO.	DESCRIPTION	DATE

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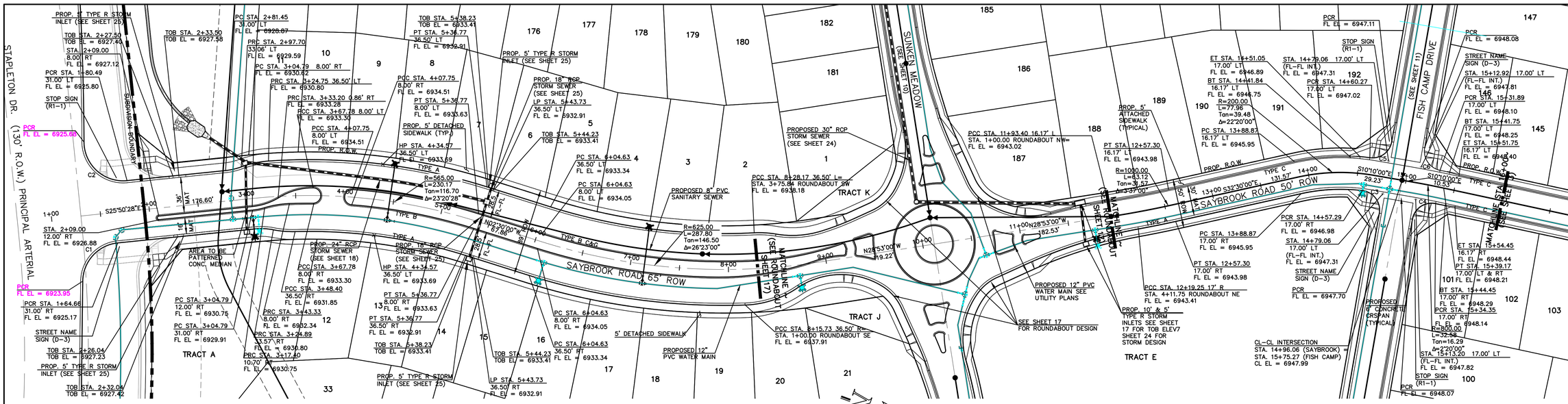
PREPARED FOR:
4-WAY RANCH JOINT VENTURE
ATTN: PETER MARTZ
P.O. BOX 5023
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnesinc.com

WATERBURY FILING NO. 1

CONSTRUCTION SET
GRADING AND EROSION CONTROL PLAN
EROSION CONTROL DETAILS

DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H-SCALE NA
V-SCALE N/A
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 6 OF 39



THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170

REVISIONS

NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING AND SURVEYING, INC. APPROVES THEIR USE ONLY FOR PRELIMINARY PURPOSES AND NOT FOR CONSTRUCTION WITHOUT WRITTEN AUTHORIZATION.

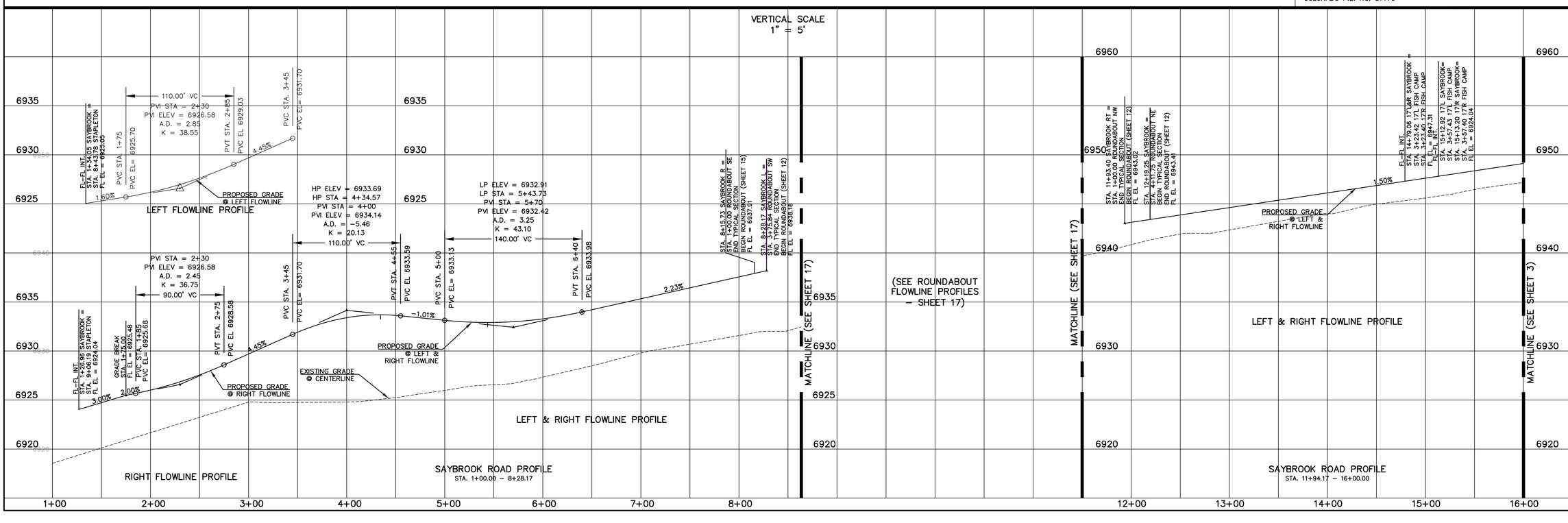
PREPARED FOR:
4-WAY RANCH JOINT VENTURE
PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

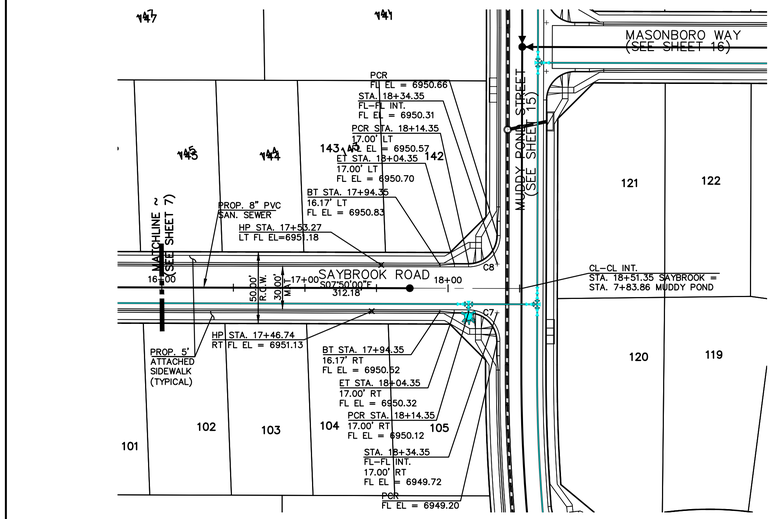
Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnsplnc.com

WATERBURY FILING NO. 1

CONSTRUCTION SET
STREET PLAN AND PROFILE
SAYBROOK ROAD

DESIGNED BY QNA
DRAWN BY QNA
CHECKED BY
H-SCALE 1"=50'
V-SCALE 1"=5'
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 7 OF 39





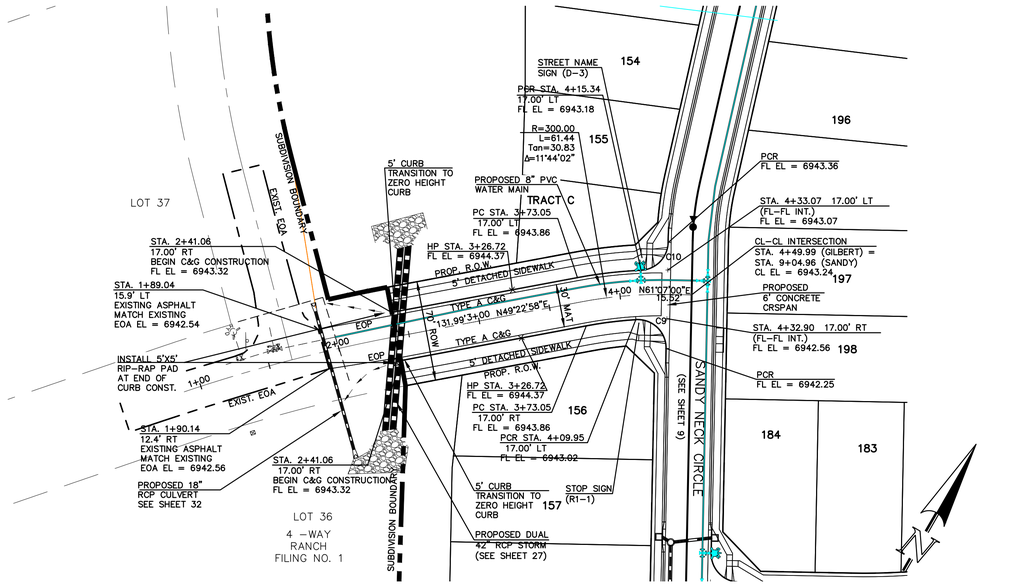
CURB RETURN CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C7	31.42'	20.00'	90°00'00"
C8	31.42'	20.00'	90°00'00"
C9	33.05'	20.00'	94°41'12"
C10	30.14'	20.00'	86°20'39"

50' 25' 0 50' 100'

SCALE: 1" = 50'

SAYBROOK ROAD

STA. 16+00.00 – 18+34.35 – URBAN LOCAL
(DEIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)



GILBERT DRIVE (70' ROW)

STA. 1+90.24 – 4+33.08 – URBAN LOCAL
(DESIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

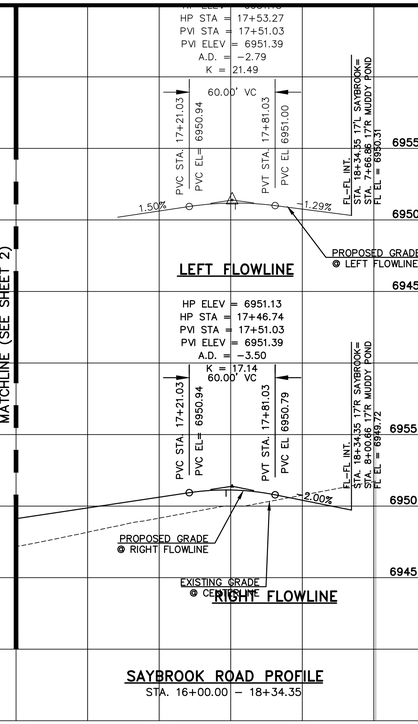
50' 25' 0 50' 100'

POSTED SPEED LIMIT
IS 25 M.P.H.

SCALE: 1" = 50'

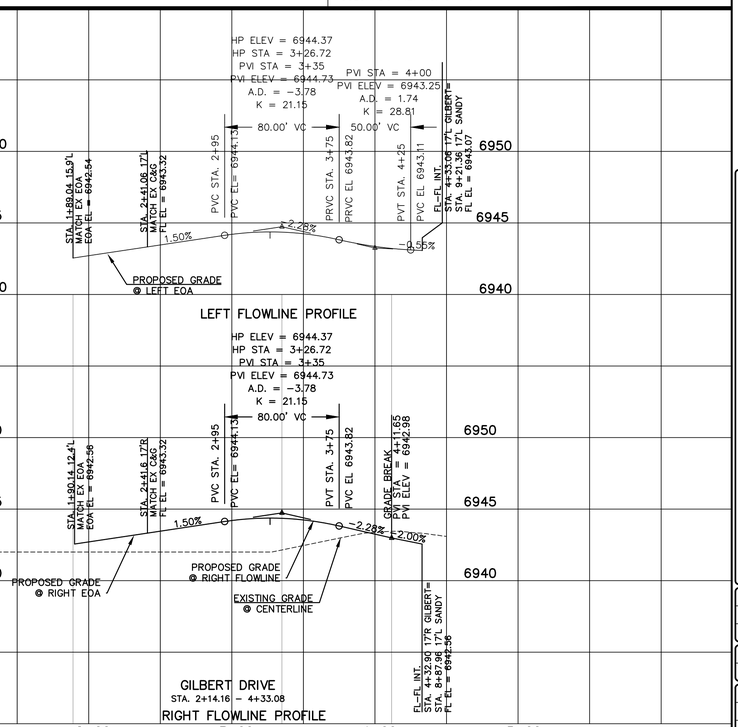
THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170



SAYBROOK ROAD PROFILE

STA. 16+00.00 – 18+34.35



GILBERT DRIVE

STA. 2+14.16 – 4+33.08

RIGHT FLOWLINE PROFILE

DATUM ELEV

NO.	DESCRIPTION	DATE
	REVISIONS	

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING AND SURVEYING, INC. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNED AND IN WRITTEN AUTHORIZATION.

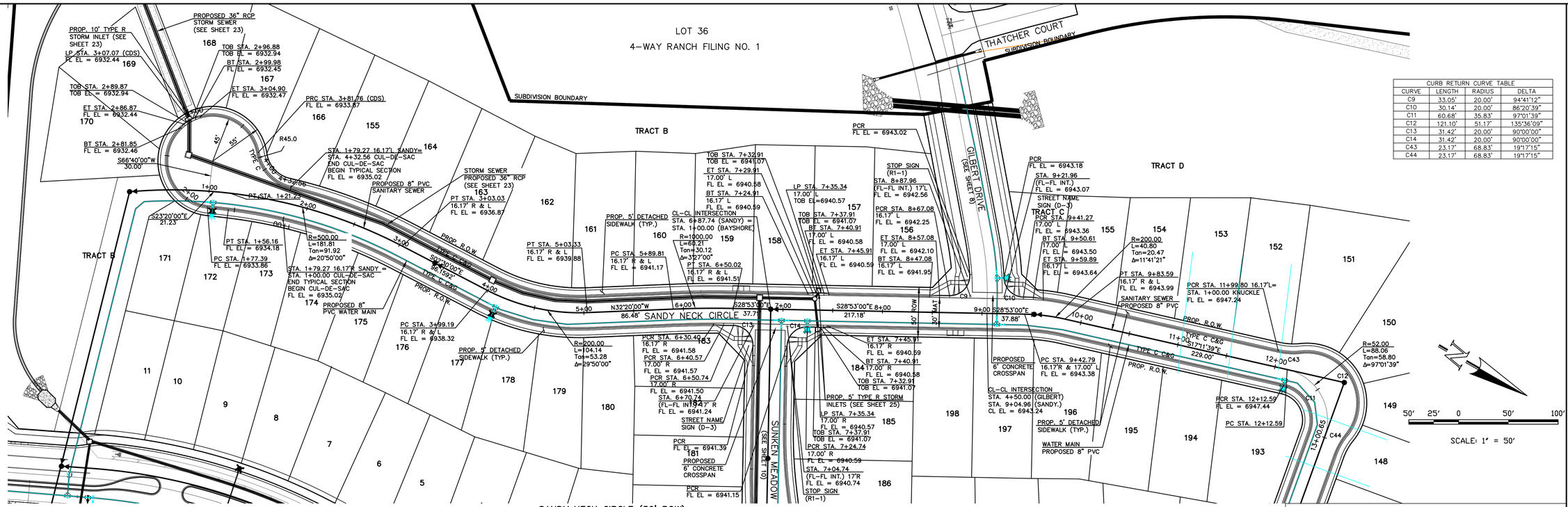
PREPARED FOR:
4-WAY RANCH JOINT VENTURE
PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tneslinc.com

WATERBURY FILING NO. 1

CONSTRUCTION SET
STREET PLAN AND PROFILE
SAYBROOK ROAD CONT'D & GILBERT ROAD

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	8 OF 39

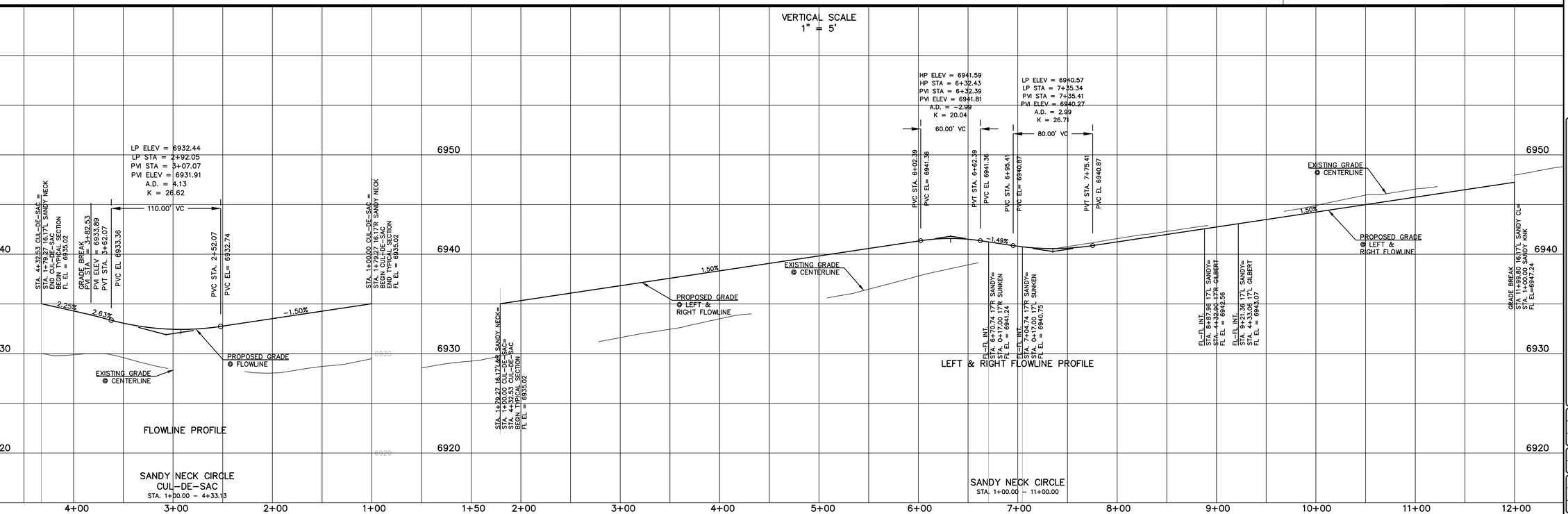


SANDY NECK CIRCLE (50' ROW)
STA. 1+00.00 – 11+00.00 – URBAN LOCAL
(DESIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

POSTED SPEED LIMIT
IS 25 M.P.H.

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170



NO.	REVISIONS DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING AND SURVEYING, INC. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED IN WRITTEN AUTHORIZATION.

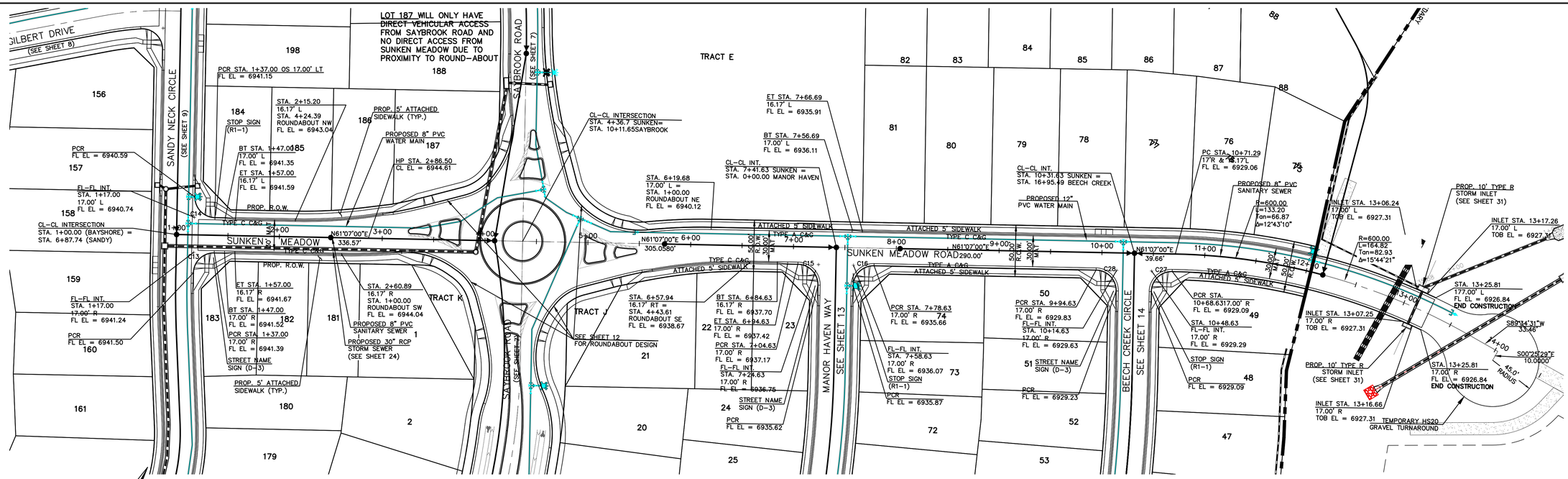
PREPARED FOR:
4-WAY RANCH JOINT VENTURE
PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnsinc.com

WATERBURY FILING NO. 1

CONSTRUCTION SET
STREET PLAN AND PROFILE
SAYBROOK ROAD

DESIGNED BY QNA
DRAWN BY QNA
CHECKED BY
H-SCALE 1"=50'
V-SCALE 1"=5'
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 9 OF 39

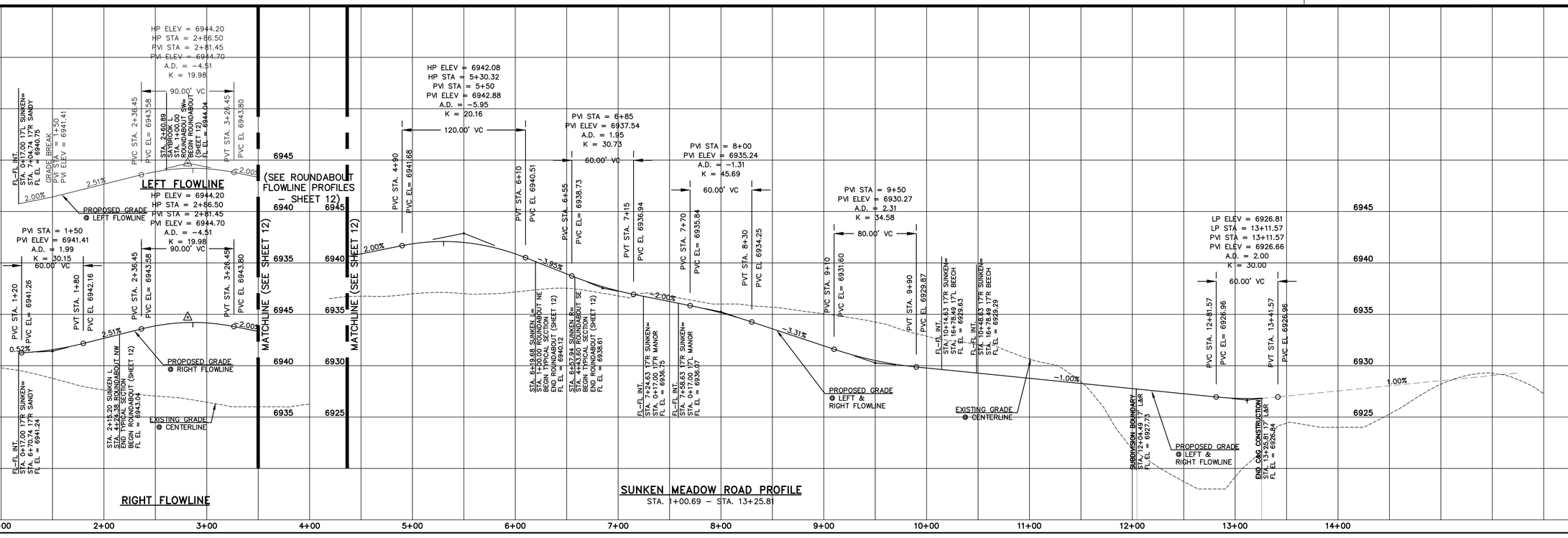


SUNKEN MEADOW ROAD
STA. 1+00.00 – STA. 13+25.81 – URBAN LOCAL
(DESIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

CURB RETURN CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C13	31.42'	20.00'	90°00'00"
C14	31.42'	20.00'	90°00'00"
C15	31.42'	20.00'	90°00'00"
C16	32.51'	20.00'	93°07'57"
C27	31.42'	20.00'	90°00'00"
C28	31.42'	20.00'	90°00'00"

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170



SUNKEN MEADOW ROAD PROFILE
STA. 1+00.69 – STA. 13+25.81

REVISIONS

NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING AND SURVEYING, INC. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED IN WRITTEN AUTHORIZATION.

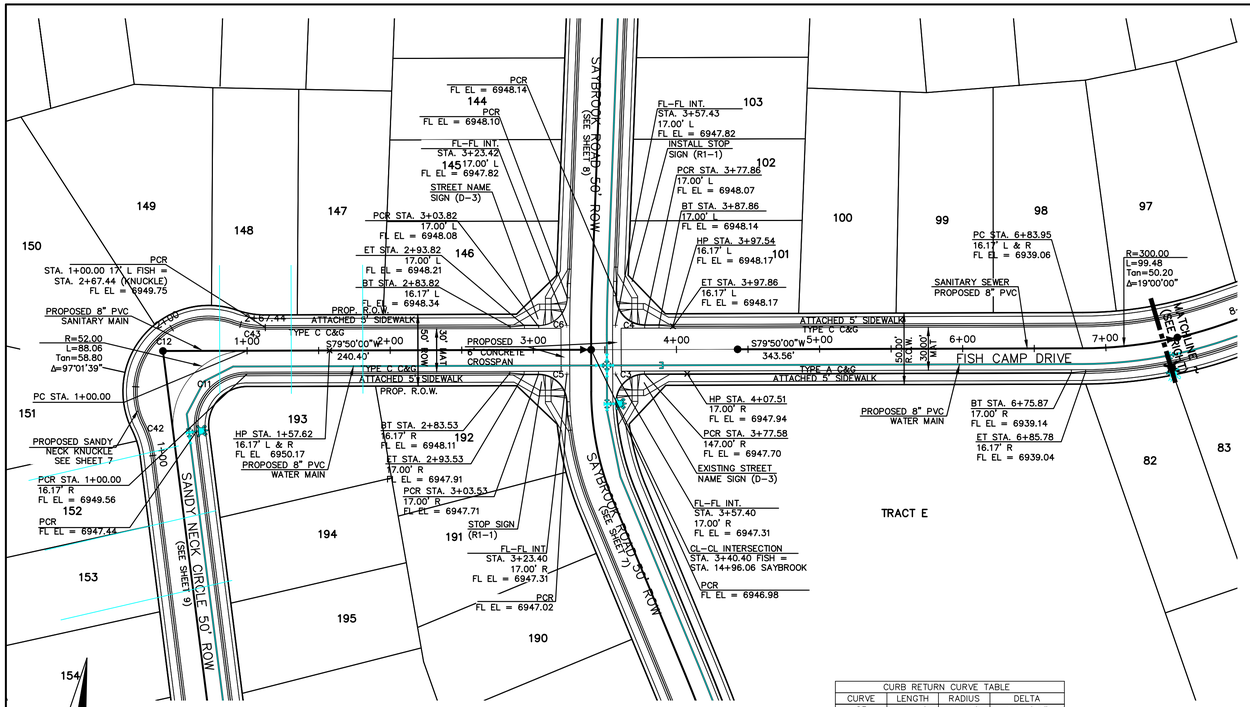
PREPARED FOR:
4-WAY RANCH JOINT VENTURE
PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnsinc.com

WATERBURY FILING NO. 1

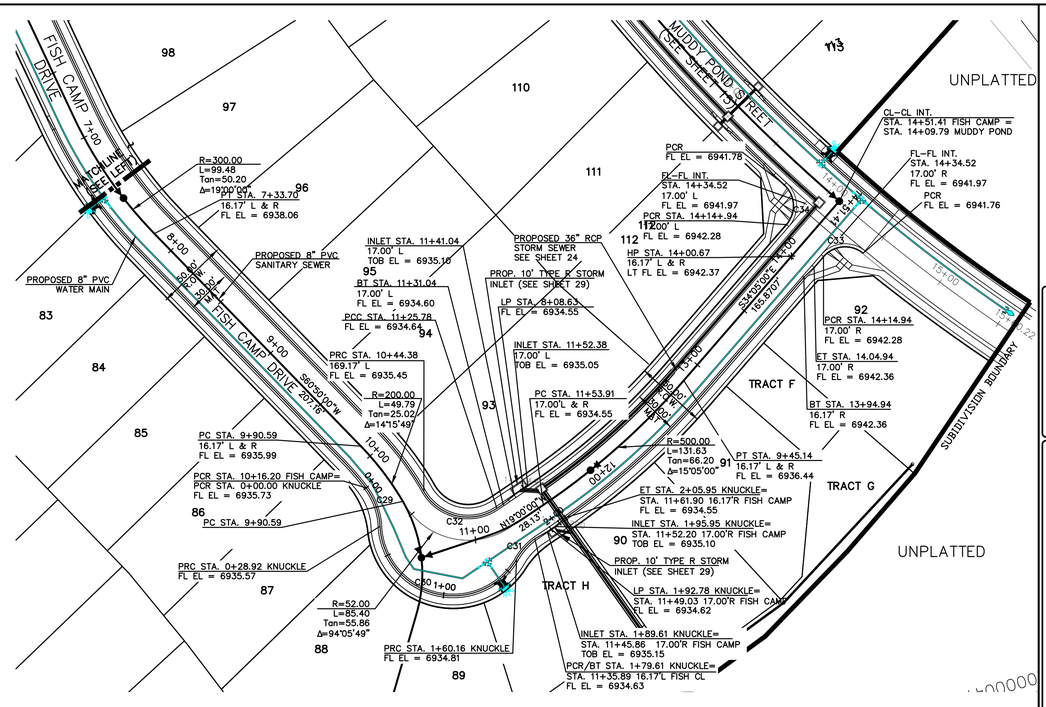
CONSTRUCTION SET
STREET PLAN AND PROFILE
SUNKEN MEADOW ROAD

DESIGNED BY QNA
DRAWN BY QNA
CHECKED BY
H-SCALE 1"=50'
V-SCALE 1"=5'
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 10 OF 39



FISH CAMP DRIVE
STA. 1+00.00– 6+00.00 – URBAN LOCAL
(DESIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

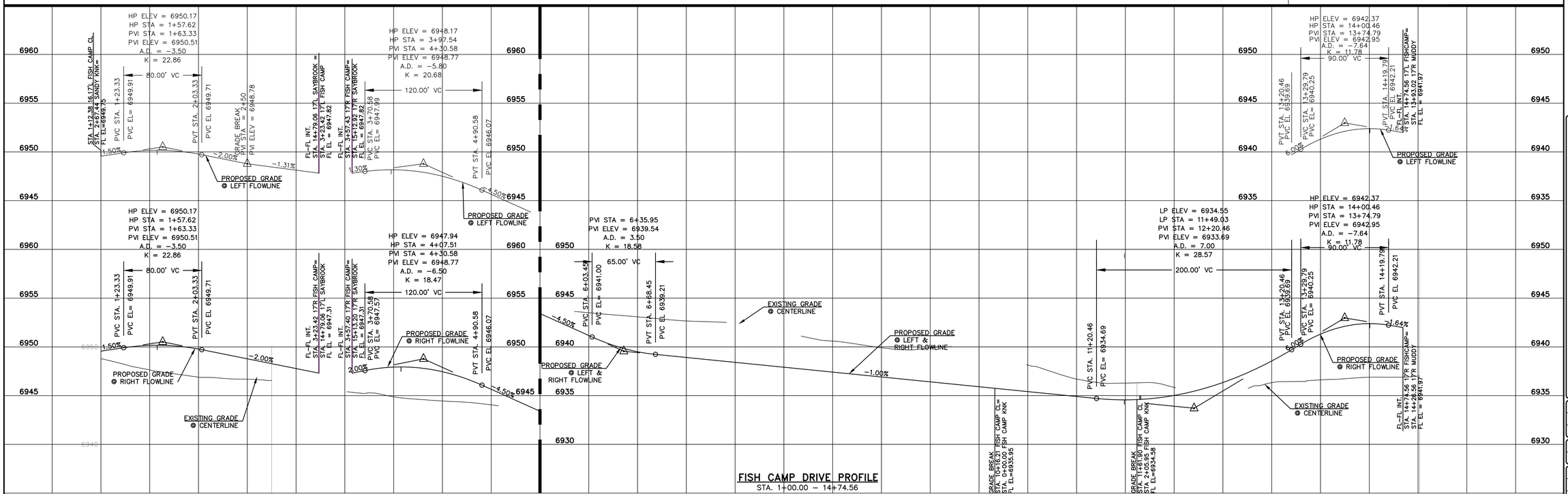
CURB RETURN CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C3	32.37'	20.00'	92°43'54"
C4	32.11'	20.00'	91°59'17"
C5	30.76'	20.00'	88°07'18"
C6	30.78'	20.00'	88°11'16"
C11	60.68'	35.83'	97°01'39"
C12	121.10'	51.17'	135°36'09"
C29	28.92'	48.83'	33°56'21"
C30	131.24'	51.17'	146°57'06"
C31	19.44'	48.83'	22°48'47"
C32	58.84'	35.83'	94°05'49"
C33	30.84'	20.00'	88°21'09"
C34	30.84'	20.00'	88°21'09"
C43	23.17'	68.83'	19°17'15"
C44	23.17'	68.83'	19°17'15"



FISH CAMP DRIVE
STA. 6+00.00 – 14+74.56 – URBAN LOCAL
(DEIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170



FISH CAMP DRIVE PROFILE
STA. 1+00.00 – 14+74.56

REVISIONS

NO.	DESCRIPTION	DATE

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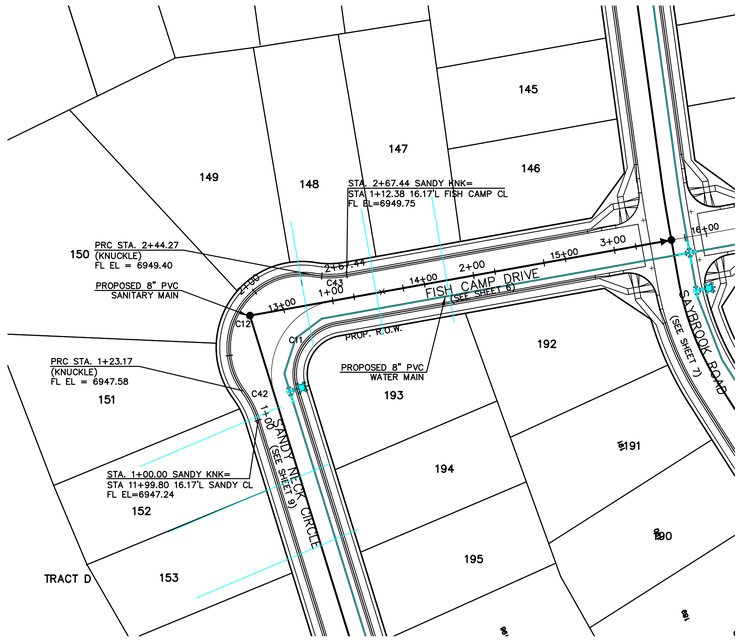
PREPARED FOR:
4-WAY RANCH JOINT VENTURE
PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc. Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnsinc.com

WATERBURY FILING NO. 1

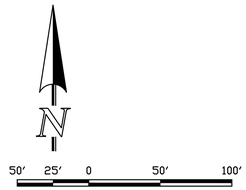
CONSTRUCTION SET
STREET PLAN AND PROFILE
FISH CAMP DRIVE

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	11 OF 39



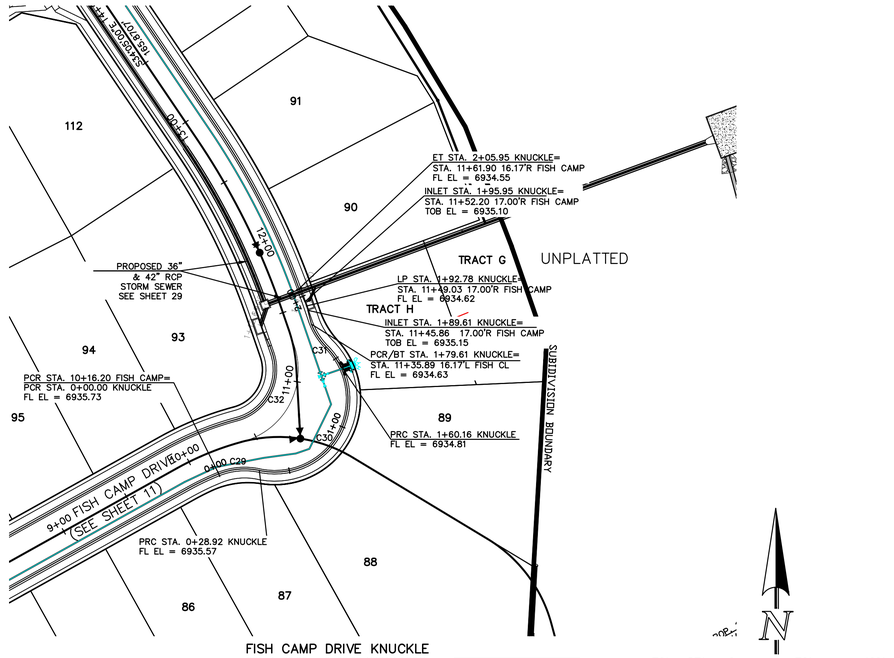
SANDY NECK CIRCLE/FISH CAMP DRIVE KNUCKLE
STA. 1+00.00 – 2+67.44 URBAN LOCAL
(DESIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

POSTED SPEED LIMIT IS 25 M.P.H.



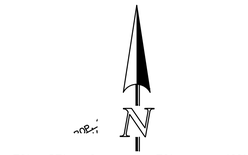
SCALE: 1″ = 50′

CURB RETURN CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C11	60.68'	35.83'	97°01'39"
C12	121.10'	51.17'	135°36'09"
C29	28.92'	48.83'	33°56'21"
C30	131.24'	51.17'	146°57'06"
C31	19.44'	48.83'	22°48'47"
C32	58.84'	35.83'	94°05'49"
C43	23.17'	68.83'	19°17'15"
C44	23.17'	68.83'	19°17'15"



FISH CAMP DRIVE KNUCKLE
STA. 1+00.00 – 2+05.95 URBAN LOCAL
(DESIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

POSTED SPEED LIMIT IS 25 M.P.H.



SCALE: 1″ = 50′

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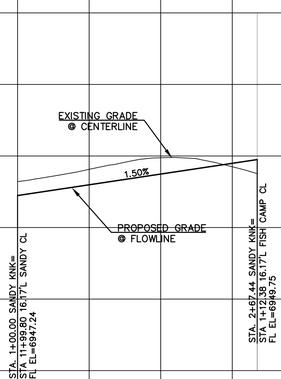
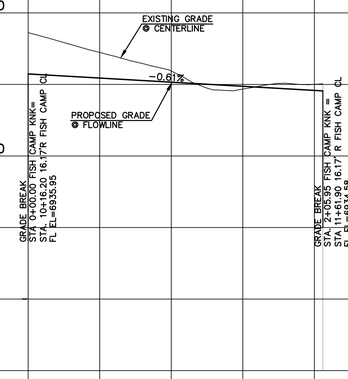
QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170

VERTICAL SCALE
1" = 5'



SANDY NECK CIRCLE/FISH CAMP DRIVE KNUCKLE
STA. 1+00 – 2+67.44



FISH CAMP KNUCKLE
STA. 0+00.00 – 2+05.95

REVISIONS

NO.	DESCRIPTION	DATE

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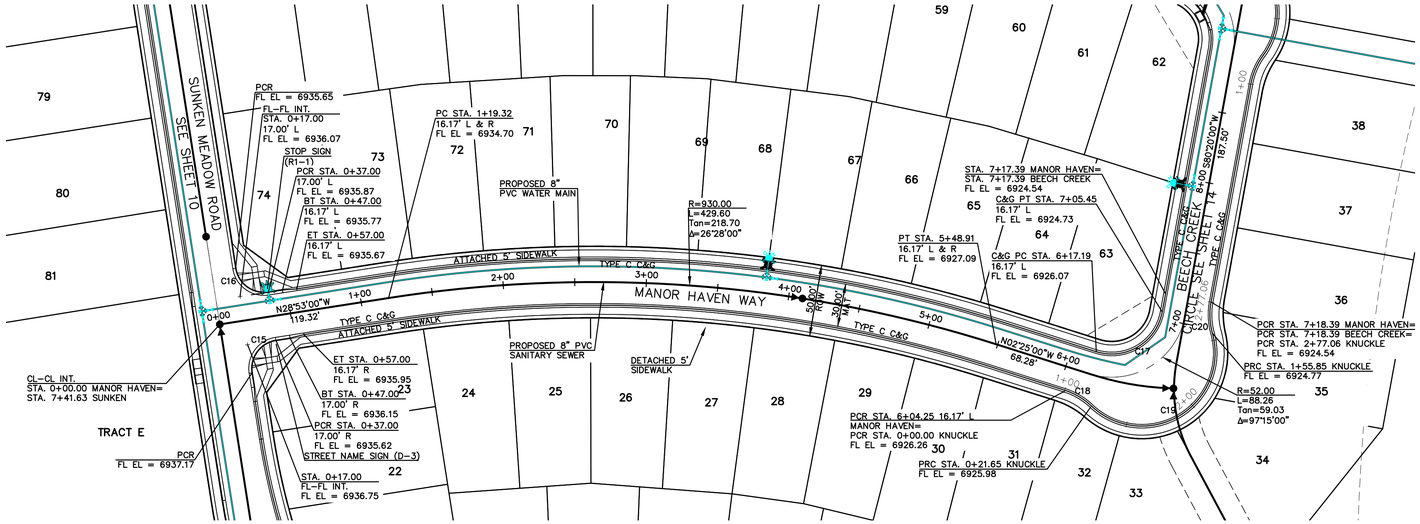
PREPARED FOR:
4-WAY RANCH JOINT VENTURE
PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnesinc.com

WATERBURY FILING NO. 1

CONSTRUCTION SET
STREET PLAN AND PROFILE
SANDY NECK/FISH CAMP KNUCKLE -FISH CAMP KNUCKLE

DESIGNED BY QNA
DRAWN BY QNA
CHECKED BY
H-SCALE 1"=50'
V-SCALE 1"=5'
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 12 OF 39

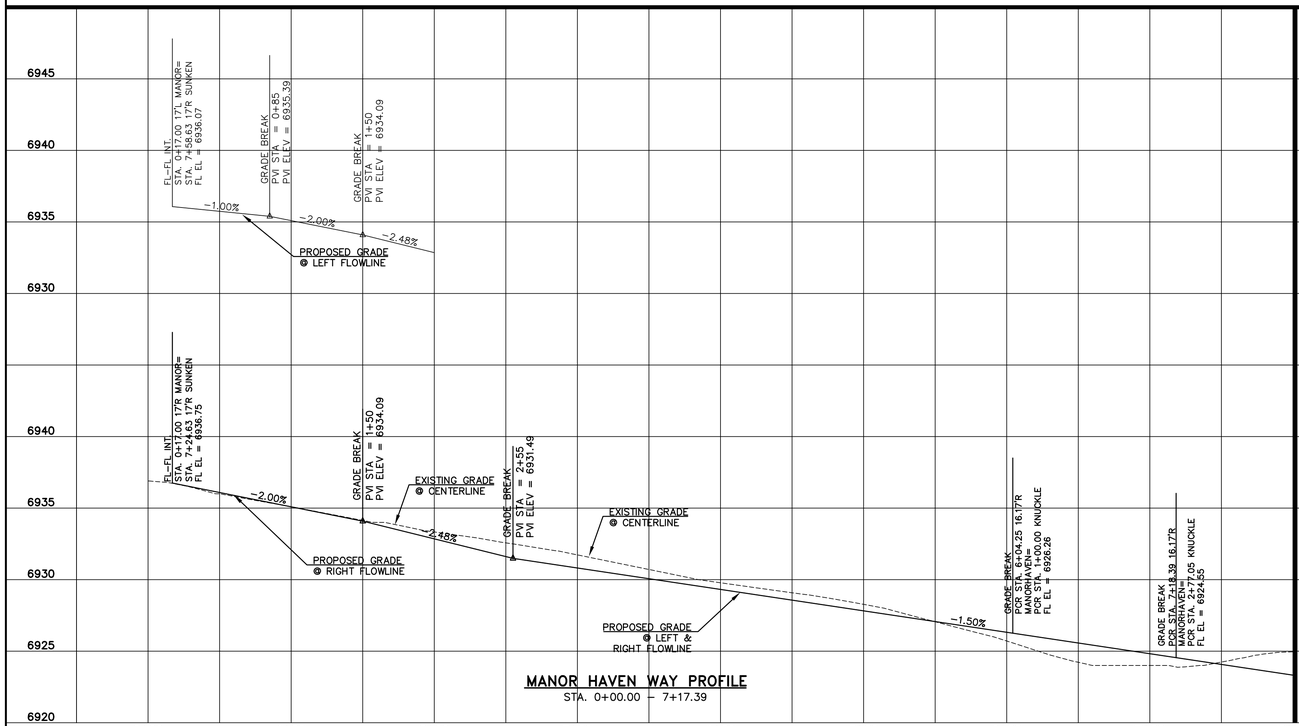


MANOR HAVEN WAY
STA. 0+00.00 – 7+17.39 – URBAN LOCAL
(DESIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

SCALE: 1" = 50'

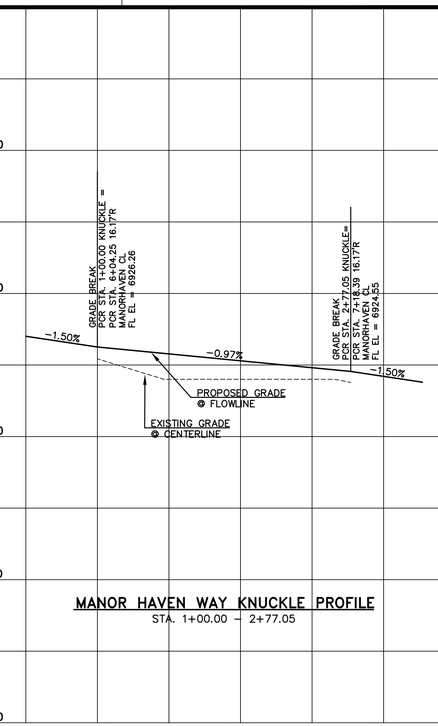
CURB RETURN CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C15	31.42'	20.00'	90°00'00"
C16	32.51'	20.00'	93°07'57"
C17	60.82'	35.83'	97°15'00"
C18	22.02'	48.83'	25°50'31"
C19	133.01'	51.17'	148°56'02"
C20	22.02'	48.83'	25°50'31"

MANOR HAVEN WAY KNUCKLE PLAN
STA. 1+00.00 – 2+77.05 – URBAN LOCAL
(DESIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)



MANOR HAVEN WAY PROFILE
STA. 0+00.00 – 7+17.39

MATCHLINE – SEE SHEET 14
STA. 8+00.00



MANOR HAVEN WAY KNUCKLE PROFILE
STA. 1+00.00 – 2+77.05

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170

REVISIONS

NO.	DESCRIPTION	DATE

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PREPARED FOR:
4-WAY RANCH JOINT VENTURE
PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc. "Creative Civil Engineering Solutions"
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnesinc.com

WATERBURY FILING NO. 1

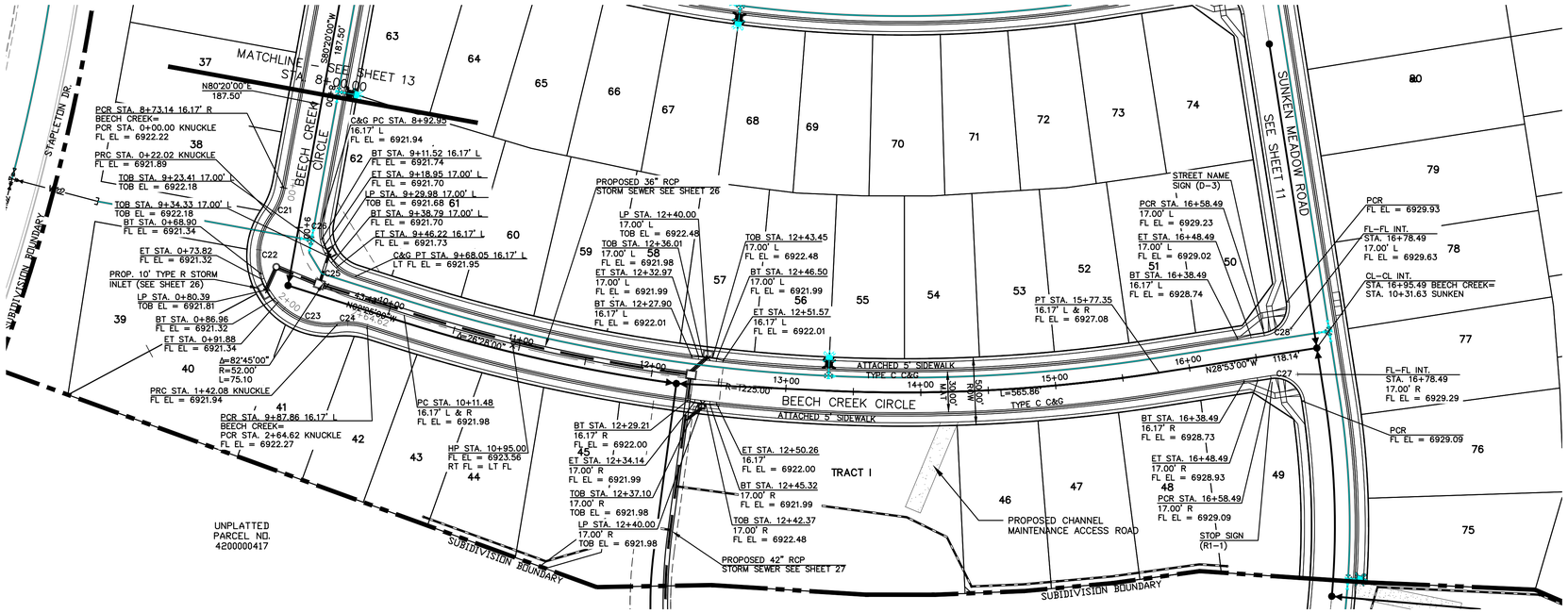
CONSTRUCTION SET
STREET PLAN AND PROFILE
MANOR HAVEN WAY

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	13 OF 39

BEECH CREEK KNUCKLE PLAN

STA. 1+00.00 – 2+77.05 – URBAN LOCAL
(DESIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

CURB RETURN CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C21	22.02'	48.83'	25°50'31"
C22	45.94'	51.17'	51°26'26"
C23	49.27'	51.17'	55°10'01"
C24	22.02'	48.83'	25°50'31"
C25	15.04'	35.83'	24°03'23"
C26	12.80'	35.83'	20°27'48"
C27	31.42'	20.00'	90°00'00"
C28	31.42'	20.00'	90°00'00"



BEECH CREEK CIRCLE

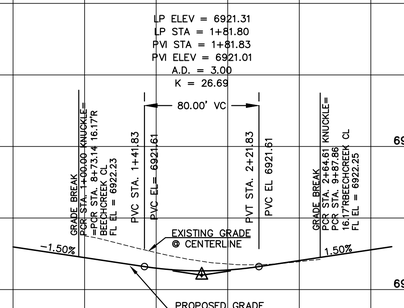
STA. 8+00.00 – 16+95.49 – URBAN LOCAL
(DESIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

50 25 0 50 100

SCALE: 1" = 50'

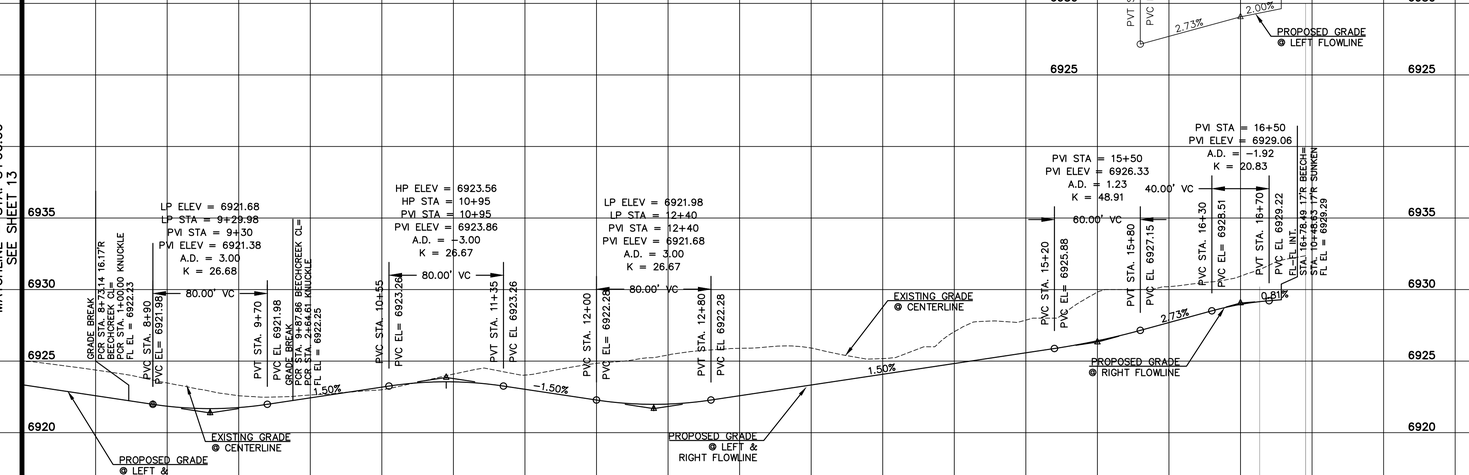
THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170



BEECH CREEK KNUCKLE PROFILE

STA. 1+00.00 – 2+64.11



BEECH CREEK CIRCLE PROFILE

STA. 8+00.00 – 16+95.49

0+00 1+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00

REVISIONS		
NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING AND SURVEYING, INC. APPROVES THEIR USE ONLY FOR THE SPECIFIED PURPOSES DESIGNATED AND WRITTEN AUTHORIZATION.

PREPARED FOR:
4–WAY RANCH JOINT VENTURE
PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719–491–3150

Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719–635–6422
FAX: 719–635–6426
www.tnsinc.com

WATERBURY FILING NO. 1

CONSTRUCTION SET
STREET PLAN AND PROFILE
BEECH CREEK CIRCLE

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H–SCALE	1"=50'
V–SCALE	1"=5'
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	14 OF 39

CURB RETURN CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C6	30.78'	20.00'	88°11'16"
C7	31.42'	20.00'	90°00'00"
C33	30.84'	20.00'	88°21'09"
C34	30.84'	20.00'	88°21'09"
C35	32.03'	20.00'	91°44'53"
C36	32.03'	20.00'	91°44'53"
C37	31.42'	20.00'	90°00'00"
C38	30.92'	20.00'	88°34'27"
C39	21.53'	68.83'	17°55'21"
C40	122.31'	51.17'	136°57'24"
C41	20.94'	68.83'	17°25'53"
C42	63.88'	35.83'	102°09'18"

UNPLATTED

TEMPORARY HS20 GRAVEL TURNAROUND

SUBDIVISION BOUNDARY

BEGIN CONSTRUCTION
STA. 0+47.59
16.17' L & R
FL EL = 6961.71

PC STA. 0+50.81
16.17' L & R
FL EL = 6961.64

R=500.00
L=3.21
Tan=1.61
Δ=0°22'06"

TRACT D

MUDDY POND STREET

ATTACHED 5' SIDEWALK

TYPE A C&G

MASONBORO WAY

SEE SHEET 16

MEGANSETT WAY

SEE SHEET 14

SAYBROOK ROAD

SEE SHEET 8

FISH CAMP DRIVE

SEE SHEET 14

TRACT F

TRACT G

PROP. 5' TYPE R STORM INLET (SHEET 30)

PROP. 10' TYPE R STORM INLET (SHEET 28)

PROP. 5' TYPE R STORM INLET (SHEET 29)

PROP. 10' TYPE R STORM INLET (SHEET 30)

PROP. 5' TYPE R STORM INLET (SHEET 29)

PROPOSED 36" RCP STORM SEWER SEE SHEET 30

PROPOSED 6' CONC. CRSPAN

C&G PC STA. 2+98.76
16.17' L
FL EL = 6956.06

PRC STA. 3+91.48
16.17' L
FL EL = 6953.97

BT STA. 4+01.30
16.17' L
FL EL = 6953.75

ET STA. 4+11.12
17.00' L
FL EL = 6953.53

PC STA. 2+98.76

PCR STA. 2+90.69 16.17' R
MUDDY=
PCR STA. 0+00.00 KNUCKLE
FL EL = 6956.18

PRC STA. 1+20.94 KNUCKLE
FL EL = 6955.87

R=52.00
L=92.71
Tan=64.39
Δ=102°09'18"

PRC STA. 2+43.25 KNUCKLE
FL EL = 6954.02

PCR STA. 4+00.25 16.17' R
MUDDY=
PCR STA. 2+64.78 KNUCKLE
FL EL = 6953.70

R=910.00
L=210.13
Tan=105.53
Δ=13°13'48"

PCR FL EL = 6953.38

FL-FL INT.
STA. 5+98.13
17.00' L
FL EL = 6953.27

PCR STA. 5+78.96
17.00' L
FL EL = 6953.47

TOB STA. 4+90.40
17.00' L
TOB EL = 6952.97

BT STA. 4+75.89
16.17' R
FL EL = 6952.49

ET STA. 4+79.06
17.00' R
FL EL = 6952.48

TOB STA. 4+83.02
17.00' R
TOB EL = 6952.97

LP STA. 4+85.0
17.00' L & R
FL EL = 6952.47

TOB STA. 4+92.54
17.00' R
TOB EL = 6952.97

HP STA. 5+76.39
17' L & 16.17' R
FL EL = 6953.47

PT STA. 6+01.61
17' L 16.17' R
FL EL = 6953.21

CL-CL INT.
STA. 6+15.04 MUDDY POND=
STA. 0+00.00 MASONBORO

ET STA. 4+99.67
17.00' R
FL EL = 6952.49

BT STA. 4+95.59
16.17' R
FL EL = 6952.48

PROP. 10' TYPE R STORM INLET (SHEET 30)

N82°10'00"E
13.44'

PCR FL EL = 6953.08

FL-FL INT.
STA. 6+32.04
17.00' L
FL EL = 6952.67

PCR STA. 6+52.04
17.00' L
FL EL = 6952.32

TOB STA. 6+60.37
17.00' L
TOB EL = 6952.68

TOB STA. 6+73.71
17.00' L
TOB EL = 6952.44

N82°10'00"E 7+00 168.82'

BT STA. 7+26.86
16.17' R
FL EL = 6951.01

ET STA. 7+36.86
17.00' R
FL EL = 6950.84

PCR STA. 7+46.86
17.00' R
FL EL = 6950.66

FL-FL INT.
STA. 7+66.86
17.00' R
FL EL = 6950.31

PCR FL EL = 6950.57

PCR FL EL = 6946.56

FL-FL INT.
STA. 9+58.40
17.00' L
FL EL = 6946.96

CL-CL INT.
STA. 7+83.86 MUDDY POND=
STA. 18+51.35 SAYBROOK

N82°10'00"E
53.24'

PCR STA. 9+37.50
17.00' L
FL EL = 6947.33

PC STA. 8+37.10
17' L & 16.17' R
FL EL = 6949.09

ET STA. 8+40.81
16.17' R
FL EL = 6949.02

BT STA. 8+30.86
17.00' R
FL EL = 6949.19

PCR STA. 8+20.86
17.00' R
FL EL = 6949.37

FL-FL INT.
STA. 8+00.86
17.00' R
FL EL = 6949.72

PCR FL EL = 6950.12

PCR FL EL = 6946.05

FL-FL INT.
STA. 9+92.87
17.00' L
FL EL = 6946.36

PCR STA. 10+13.77
17.00' L
FL EL = 6945.99

BT STA. 10+23.91
17.00' L
FL EL = 6945.82

ET STA. 10+34.05
16.17' L
FL EL = 6945.64

Δ=06°21'00"
R=1250.00'
L=138.54'

CL-CL INT.
STA. 9+75.64 MUDDY POND=
STA. 0+00.00 MEGANSETT

Δ=19°54'00"
R=1250.00'
L=434.15'

LP STA. 13+13.84
17.00' L & R
FL EL = 6941.48

HP STA. 14+10.00
16.17' L & 17' R
FL EL = 6942.02

TOB STA. 13+52.52
17.00' L
TOB EL = 6941.48

BT STA. 13+18.48
17.0' R
FL EL = 6941.00

ET STA. 13+22.43
16.17' R
FL EL = 6941.03

TOB STA. 13+10.25
17.00' L
TOB EL = 6941.48

ET STA. 13+07.29
17.0' R
FL EL = 6940.99

BT STA. 13+03.35
16.17' R
FL EL = 6941.01

CL-CL INT.
STA. 14+09.79 MUDDY POND=
STA. 14+51.41 FISH CAMP

END C&G CONSTRUCTION
STA. 14+45.73
16.17' L
FL EL = 6941.78

Δ=07°12'33"
R=1250.00'
L=157.28'

INSTALL 2-TYPE 3 BARRICADES

END C&G CONSTRUCTION
PCR STA. 14+45.73
17.00' R
FL EL = 6941.76

FL-FL INT.
STA. 14+26.56
17.00' R
FL EL = 6942.05

PCR
FL EL = 6942.28

FL-FL INT.
STA. 13+93.02
17.00' R
FL EL = 6942.06

PCR
FL EL = 6942.28

PCR STA. 13+73.85
17.00' R
FL EL = 6941.78

BT STA. 13+54.09
16.17' R
FL EL = 6941.48

ET STA. 13+63.97
17.0' R
FL EL = 6941.63

ET STA. 13+22.43
16.17' R
FL EL = 6941.03

BT STA. 13+18.48
17.0' R
FL EL = 6941.00

TOB STA. 13+52.52
17.00' L
TOB EL = 6941.48

PROP. 5' TYPE R STORM INLET (SHEET 29)

BT STA. 13+03.35
16.17' R
FL EL = 6941.01

ET STA. 13+07.29
17.0' R
FL EL = 6940.99

TOB STA. 13+10.25
17.00' L
TOB EL = 6941.48

C&G PCR STA. 14+45.73
16.17' L
FL EL = 6941.78

PCR STA. 14+26.56
16.17' L
FL EL = 6942.05

PCR STA. 14+06.39
16.17' L
FL EL = 6942.28

PCR STA. 13+86.22
16.17' L
FL EL = 6942.06

PCR STA. 13+66.05
16.17' L
FL EL = 6941.78

PCR STA. 13+45.88
16.17' L
FL EL = 6941.63

PCR STA. 13+25.71
16.17' L
FL EL = 6941.03

PCR STA. 13+05.54
16.17' L
FL EL = 6941.00

PCR STA. 12+85.37
16.17' L
FL EL = 6941.48

PCR STA. 12+65.20
16.17' L
FL EL = 6941.69

PCR STA. 12+45.03
16.17' L
FL EL = 6941.72

PCR STA. 12+24.86
16.17' L
FL EL = 6941.72

PCR STA. 12+04.69
16.17' L
FL EL = 6941.72

PCR STA. 11+84.52
16.17' L
FL EL = 6941.72

PCR STA. 11+64.35
16.17' L
FL EL = 6941.72

PCR STA. 11+44.18
16.17' L
FL EL = 6941.72

PCR STA. 11+24.01
16.17' L
FL EL = 6941.72

PCR STA. 11+03.84
16.17' L
FL EL = 6941.72

PCR STA. 10+83.67
16.17' L
FL EL = 6941.72

PCR STA. 10+63.50
16.17' L
FL EL = 6941.72

PCR STA. 10+43.33
16.17' L
FL EL = 6941.72

PCR STA. 10+23.16
16.17' L
FL EL = 6941.72

PCR STA. 10+02.99
16.17' L
FL EL = 6941.72

PCR STA. 9+82.82
16.17' L
FL EL = 6941.72

PCR STA. 9+62.65
16.17' L
FL EL = 6941.72

PCR STA. 9+42.48
16.17' L
FL EL = 6941.72

PCR STA. 9+22.31
16.17' L
FL EL = 6941.72

PCR STA. 9+02.14
16.17' L
FL EL = 6941.72

PCR STA. 8+81.97
16.17' L
FL EL = 6941.72

PCR STA. 8+61.80
16.17' L
FL EL = 6941.72

PCR STA. 8+41.63
16.17' L
FL EL = 6941.72

PCR STA. 8+21.46
16.17' L
FL EL = 6941.72

PCR STA. 8+01.29
16.17' L
FL EL = 6941.72

PCR STA. 7+81.12
16.17' L
FL EL = 6941.72

PCR STA. 7+60.95
16.17' L
FL EL = 6941.72

PCR STA. 7+40.78
16.17' L
FL EL = 6941.72

PCR STA. 7+20.61
16.17' L
FL EL = 6941.72

PCR STA. 7+00.44
16.17' L
FL EL = 6941.72

PCR STA. 6+80.27
16.17' L
FL EL = 6941.72

PCR STA. 6+60.10
16.17' L
FL EL = 6941.72

PCR STA. 6+39.93
16.17' L
FL EL = 6941.72

PCR STA. 6+19.76
16.17' L
FL EL = 6941.72

PCR STA. 5+99.59
16.17' L
FL EL = 6941.72

PCR STA. 5+79.42
16.17' L
FL EL = 6941.72

PCR STA. 5+59.25
16.17' L
FL EL = 6941.72

PCR STA. 5+39.08
16.17' L
FL EL = 6941.72

PCR STA. 5+18.91
16.17' L
FL EL = 6941.72

PCR STA. 4+98.74
16.17' L
FL EL = 6941.72

PCR STA. 4+78.57
16.17' L
FL EL = 6941.72

PCR STA. 4+58.40
16.17' L
FL EL = 6941.72

PCR STA. 4+38.23
16.17' L
FL EL = 6941.72

PCR STA. 4+18.06
16.17' L
FL EL = 6941.72

PCR STA. 3+97.89
16.17' L
FL EL = 6941.72

PCR STA. 3+77.72
16.17' L
FL EL = 6941.72

PCR STA. 3+57.55
16.17' L
FL EL = 6941.72

PCR STA. 3+37.38
16.17' L
FL EL = 6941.72

PCR STA. 3+17.21
16.17' L
FL EL = 6941.72

PCR STA. 2+97.04
16.17' L
FL EL = 6941.72

PCR STA. 2+76.87
16.17' L
FL EL = 6941.72

PCR STA. 2+56.70
16.17' L
FL EL = 6941.72

PCR STA. 2+36.53
16.17' L
FL EL = 6941.72

PCR STA. 2+16.36
16.17' L
FL EL = 6941.72

PCR STA. 1+96.19
16.17' L
FL EL = 6941.72

PCR STA. 1+76.02
16.17' L
FL EL = 6941.72

PCR STA. 1+55.85
16.17' L
FL EL = 6941.72

PCR STA. 1+35.68
16.17' L
FL EL = 6941.72

PCR STA. 1+15.51
16.17' L
FL EL = 6941.72

PCR STA. 0+95.34
16.17' L
FL EL = 6941.72

PCR STA. 0+75.17
16.17' L
FL EL = 6941.72

PCR STA. 0+55.00
16.17' L
FL EL = 6941.72

PCR STA. 0+34.83
16.17' L
FL EL = 6941.72

PCR STA. 0+14.66
16.17' L
FL EL = 6941.72

PCR STA. 0+00.00 KNUCKLE
FL EL = 6956.18

PCR STA. 0+20.17
16.17' L
FL EL = 6956.18

PCR STA. 0+40.34
16.17' L
FL EL = 6956.18

PCR STA. 0+60.51
16.17' L
FL EL = 6956.18

PCR STA. 0+80.68
16.17' L
FL EL = 6956.18

PCR STA. 1+00.85
16.17' L
FL EL = 6956.18

PCR STA. 1+21.02
16.17' L
FL EL = 6956.18

PCR STA. 1+41.19
16.17' L
FL EL = 6956.18

PCR STA. 1+61.36
16.17' L
FL EL = 6956.18

PCR STA. 1+81.53
16.17' L
FL EL = 6956.18

PCR STA. 2+01.70
16.17' L
FL EL = 6956.18

PCR STA. 2+21.87
16.17' L
FL EL = 6956.18

PCR STA. 2+42.04
16.17' L
FL EL = 6956.18

PCR STA. 2+62.21
16.17' L
FL EL = 6956.18

PCR STA. 2+82.38
16.17' L
FL EL = 6956.18

PCR STA. 3+02.55
16.17' L
FL EL = 6956.18

PCR STA. 3+22.72
16.17' L
FL EL = 6956.18

PCR STA. 3+42.89
16.17' L
FL EL = 6956.18

PCR STA. 3+63.06
16.17' L
FL EL = 6956.18

PCR STA. 3+83.23
16.17' L
FL EL = 6956.18

PCR STA. 4+03.40
16.17' L
FL EL = 6956.18

PCR STA. 4+23.57
16.17' L
FL EL = 6956.18

PCR STA. 4+43.74
16.17' L
FL EL = 6956.18

PCR STA. 4+63.91
16.17' L
FL EL = 6956.18

PCR STA. 4+84.08
16.17' L
FL EL = 6956.18

PCR STA. 5+04.25
16.17' L
FL EL = 6956.18

PCR STA. 5+24.42
16.17' L
FL EL = 6956.18

PCR STA. 5+44.59
16.17' L
FL EL = 6956.18

PCR STA. 5+64.76
16.17' L
FL EL = 6956.18

PCR STA. 5+84.93
16.17' L
FL EL = 6956.18

PCR STA. 6+05.10
16.17' L
FL EL = 6956.18

PCR STA. 6+25.27
16.17' L
FL EL = 6956.18

PCR STA. 6+45.44
16.17' L
FL EL = 6956.18

PCR STA. 6+65.61
16.17' L
FL EL = 6956.18

PCR STA. 6+85.78
16.17' L
FL EL = 6956.18

PCR STA. 7+05.95
16.17' L
FL EL = 6956.18

PCR STA. 7+26.12
16.17' L
FL EL = 6956.18

PCR STA. 7+46.29
16.17' L
FL EL = 6956.18

PCR STA. 7+66.46
16.17' L
FL EL = 6956.18

PCR STA. 7+86.63
16.17' L
FL EL = 6956.18

PCR STA. 8+06.80
16.17' L
FL EL = 6956.18

PCR STA. 8+26.97
16.17' L
FL EL = 6956.18

PCR STA. 8+47.14
16.17' L
FL EL = 6956.18

PCR STA. 8+67.31
16.17' L
FL EL = 6956.18

PCR STA. 8+87.48
16.17' L
FL EL = 6956.18

PCR STA. 9+07.65
16.17' L
FL EL = 6956.18

PCR STA. 9+27.82
16.17' L
FL EL = 6956.18

PCR STA. 9+47.99
16.17' L
FL EL = 6956.18

PCR STA. 9+68.16
16.17' L
FL EL = 6956.18

PCR STA. 9+88.33
16.17' L
FL EL = 6956.18

PCR STA. 10+08.50
16.17' L
FL EL = 6956.18

PCR STA. 10+28.67
16.17' L
FL EL = 6956.18

PCR STA. 10+48.84
16.17' L
FL EL = 6956.18

PCR STA. 10+69.01
16.17' L
FL EL = 6956.18

PCR STA. 10+89.18
16.17' L
FL EL = 6956.18

PCR STA. 11+09.35
16.17' L
FL EL = 6956.18

PCR STA. 11+29.52
16.17' L
FL EL = 6956.18

PCR STA. 11+49.69
16.17' L
FL EL = 6956.18

PCR STA. 11+69.86
16.17' L
FL EL = 6956.18

PCR STA. 11+90.03
16.17' L
FL EL = 6956.18

PCR STA. 12+10.20
16.17' L
FL EL = 6956.18

PCR STA. 12+30.37
16.17' L
FL EL = 6956.18

PCR STA. 12+50.54
16.17' L
FL EL = 6956.18

PCR STA. 12+70.71
16.17' L
FL EL = 6956.18

PCR STA. 12+90.88
16.17' L
FL EL = 6956.18

PCR STA. 13+11.05
16.17' L
FL EL = 6956.18

PCR STA. 13+31.22
16.17' L
FL EL = 6956.18

PCR STA. 13+51.39
16.17' L
FL EL = 6956.18

PCR STA. 13+71.56
16.17' L
FL EL = 6956.18

PCR STA. 13+91.73
16.17' L
FL EL = 6956.18

PCR STA. 14+11.90
16.17' L
FL EL = 6956.18

PCR STA. 14+32.07
16.17' L
FL EL = 6956.18

PCR STA. 14+52.24
16.17' L
FL EL = 6956.18

PCR STA. 14+72.41
16.17' L
FL EL = 6956.18

PCR STA. 14+92.58
16.17' L
FL EL = 6956.18

PCR STA. 15+12.75
16.17' L
FL EL = 6956.18

PCR STA. 15+32.92
16.17' L
FL EL = 6956.18

PCR STA. 15+53.09
16.17' L
FL EL = 6956.18

PCR STA. 15+73.26
16.17' L
FL EL = 6956.18

PCR STA. 15+93.43
16.17' L
FL EL = 6956.18

PCR STA. 16+13.60
16.17' L
FL EL = 6956.18

PCR STA. 16+33.77
16.17' L
FL EL = 6956.18

PCR STA. 16+53.94
16.17' L
FL EL = 6956.18

PCR STA. 16+74.11
16.17' L
FL EL = 6956.18

PCR STA. 16+94.28
16.17' L
FL EL = 6956.18

PCR STA. 17+14.45
16.17' L
FL EL = 6956.18

PCR STA. 17+34.62
16.17' L
FL EL = 6956.18

PCR STA. 17+54.79
16.17' L
FL EL = 6956.18

PCR STA. 17+74.96
16.17' L
FL EL = 6956.18

PCR STA. 17+95.13
16.17' L
FL EL = 6956.18

PCR STA. 18+15.30
16.17' L
FL EL = 6956.18

PCR STA. 18+35.47
16.17' L
FL EL = 6956.18

PCR STA. 18+55.64
16.17' L
FL EL = 6956.18

PCR STA. 18+75.81
16.17' L
FL EL = 6956.18

PCR STA. 18+95.98
16.17' L
FL EL = 6956.18

PCR STA. 19+16.15
16.17' L
FL EL = 6956.18

PCR STA. 19+36.32
16.17' L
FL EL = 6956.18

PCR STA. 19+56.49
16.17' L
FL EL = 6956.18

PCR STA. 19+76.66
16.17' L
FL EL = 6956.18

PCR STA. 19+96.83
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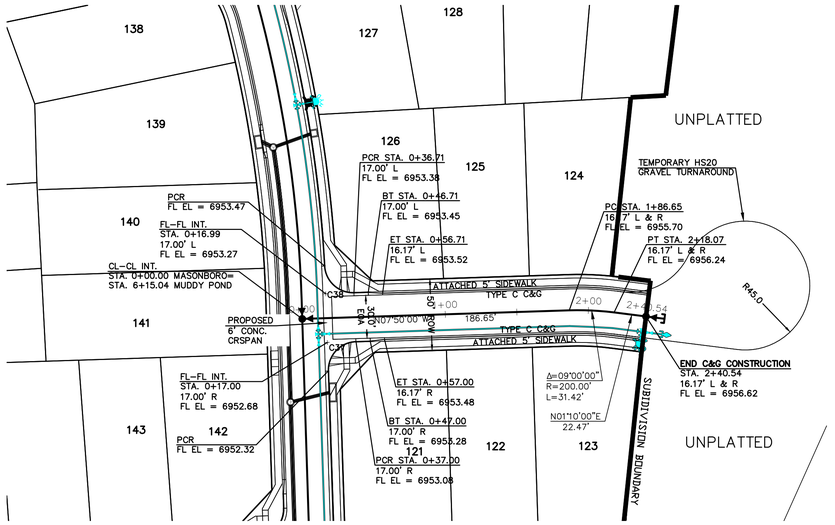
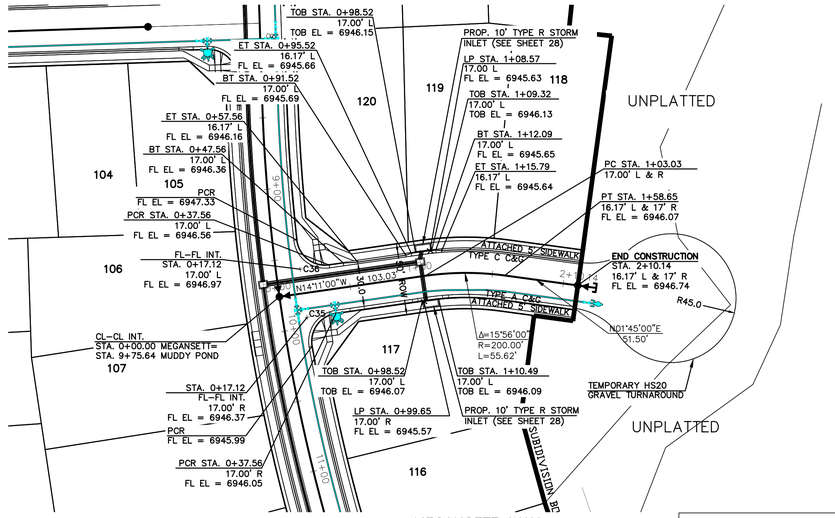
PCR STA. 70



CURB RETURN CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C35	32.03'	20.00'	91°44'53"
C36	32.03'	20.00'	91°44'53"
C37	31.42'	20.00'	90°00'00"
C38	30.92'	20.00'	88°34'27"

MASONBORO WAY

STA. 0+00.00 – 2+40.54 – URBAN LOCAL
(DEIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

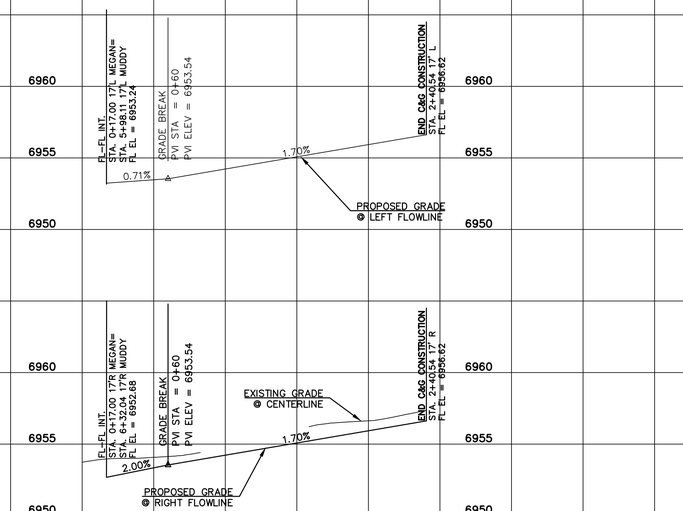


MEGANSETT WAY

STA. 0+00.00 – 2+10.14 – URBAN LOCAL
(DEIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

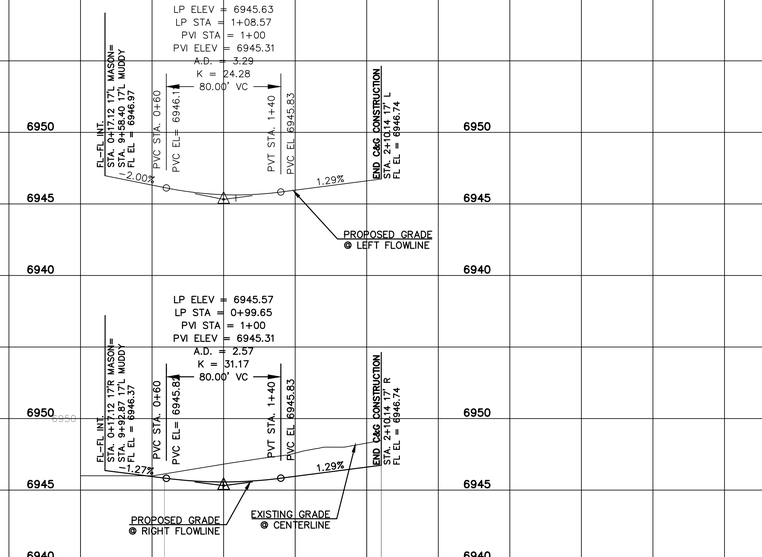
THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170



MASONBORO WAY PROFILE

STA. 0+00.00 – 2+40.54



MEGANSETT WAY PROFILE

STA. 0+00.00 – 2+10.14

REVISIONS		
NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING AND SURVEYING, INC. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED IN WRITTEN AUTHORIZATION.

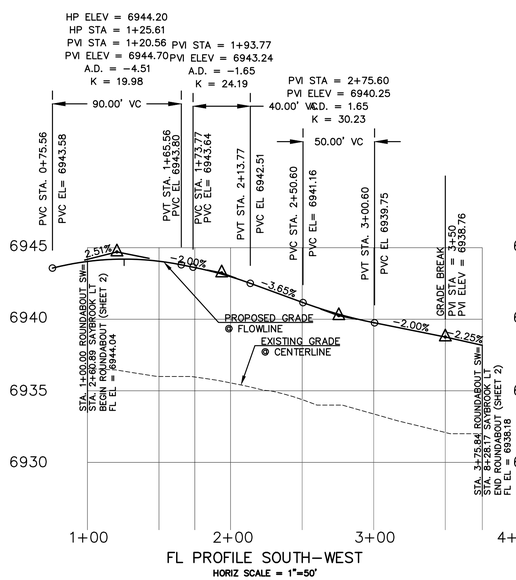
PREPARED FOR:
4-WAY RANCH JOINT VENTURE
PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc. "Creative Civil Engineering Solutions"
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnesinc.com

WATERBURY FILING NO. 1

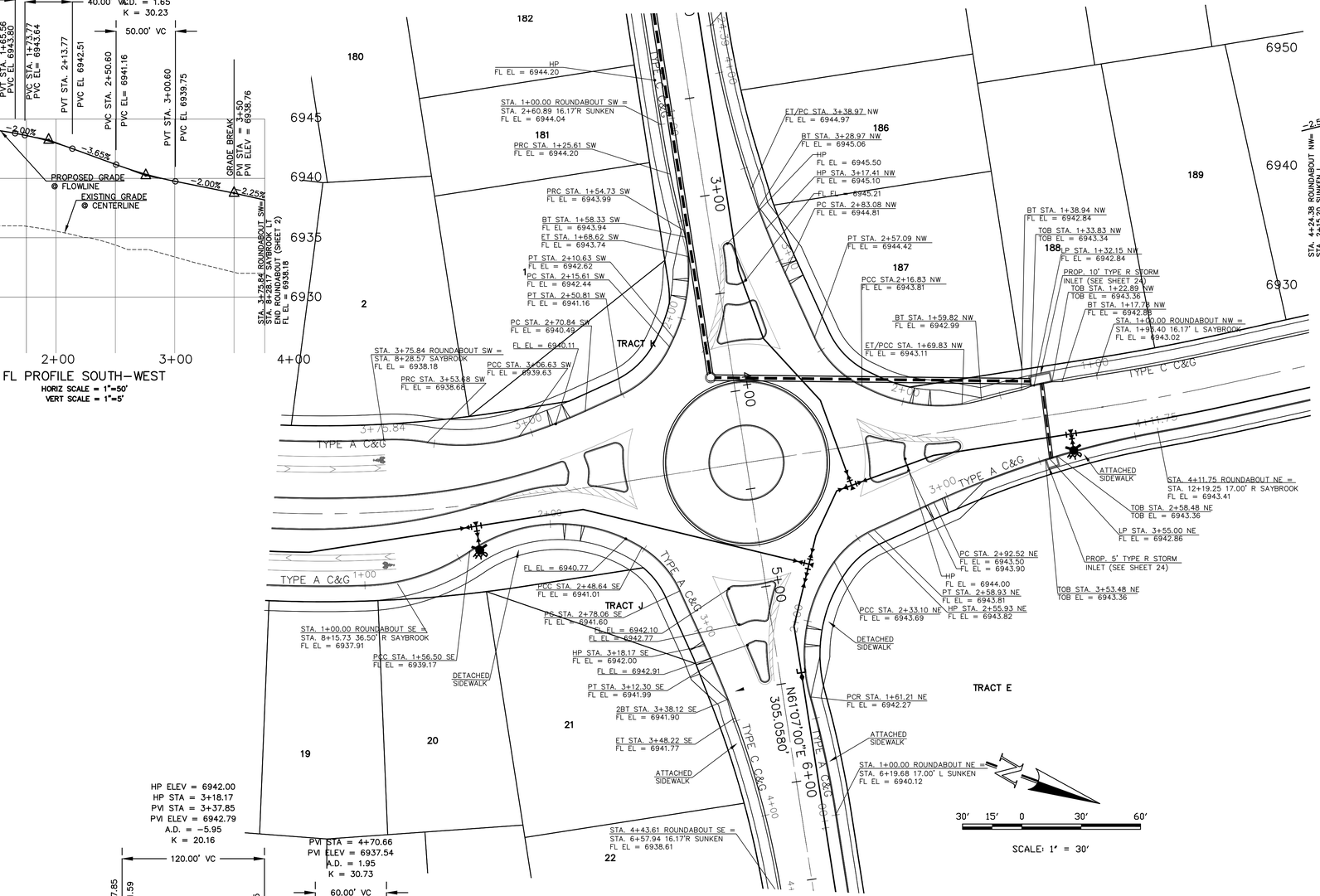
CONSTRUCTION SET
STREET PLAN AND PROFILE
MANOR HAVEN WAY

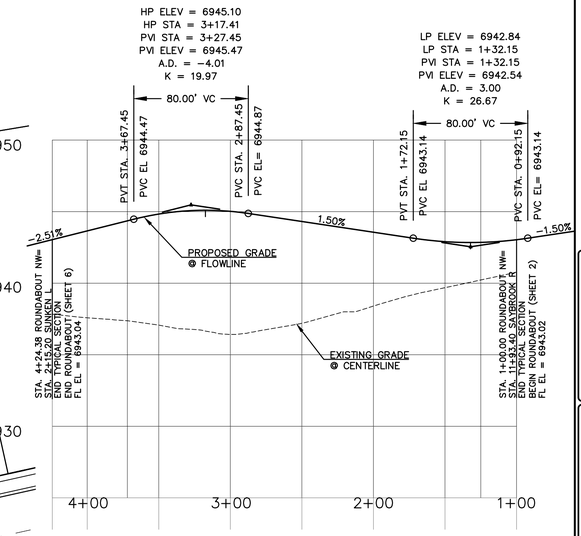
DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	16 OF 39



FL PROFILE SOUTH–WEST

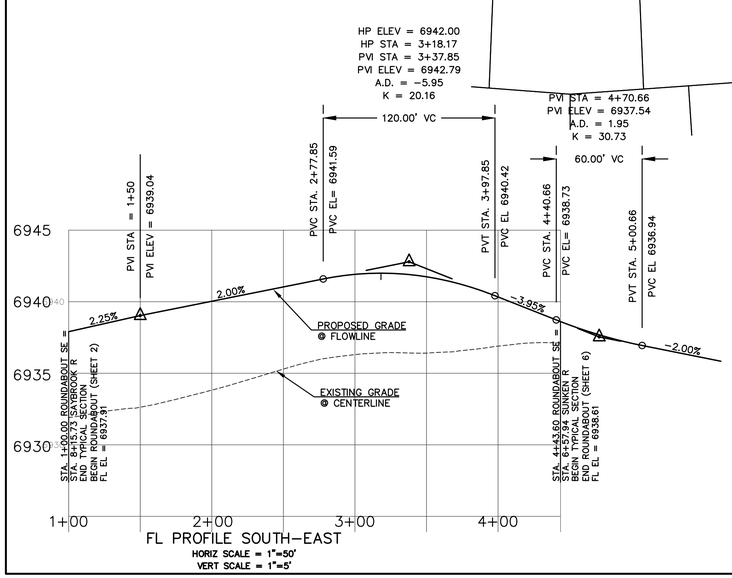
HORIZ SCALE = 1"=50'
VERT SCALE = 1"=5'





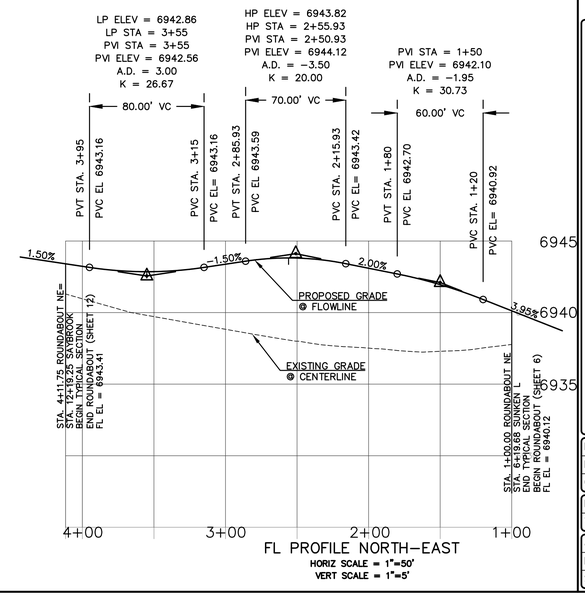
FL PROFILE NORTH–WEST

HORIZ SCALE = 1"=50'
VERT SCALE = 1"=5'



FL PROFILE SOUTH–EAST

HORIZ SCALE = 1"=50'
VERT SCALE = 1"=5'



FL PROFILE NORTH–EAST

HORIZ SCALE = 1"=50'
VERT SCALE = 1"=5'

SCALE: 1" = 30'

30' 15' 0 30' 60'

REVISIONS

NO.	DESCRIPTION	DATE

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PREPARED FOR:
4–WAY RANCH JOINT VENTURE
ATTN: PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719–491–3150

Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719–635–6422
FAX: 719–635–6426
www.tnesinc.com

WATERBURY FILING NO. 1

CONSTRUCTION SET
ROUNDABOUT DETAILED GRADING

DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA

H–SCALE NA
V–SCALE N/A

JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 17 OF 39

REVISIONS		
NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
4-WAY RANCH JOINT VENTURE
ATTN: PETER MARTZ
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COLORADO SPRINGS, CO 80949
719-491-3150

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721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
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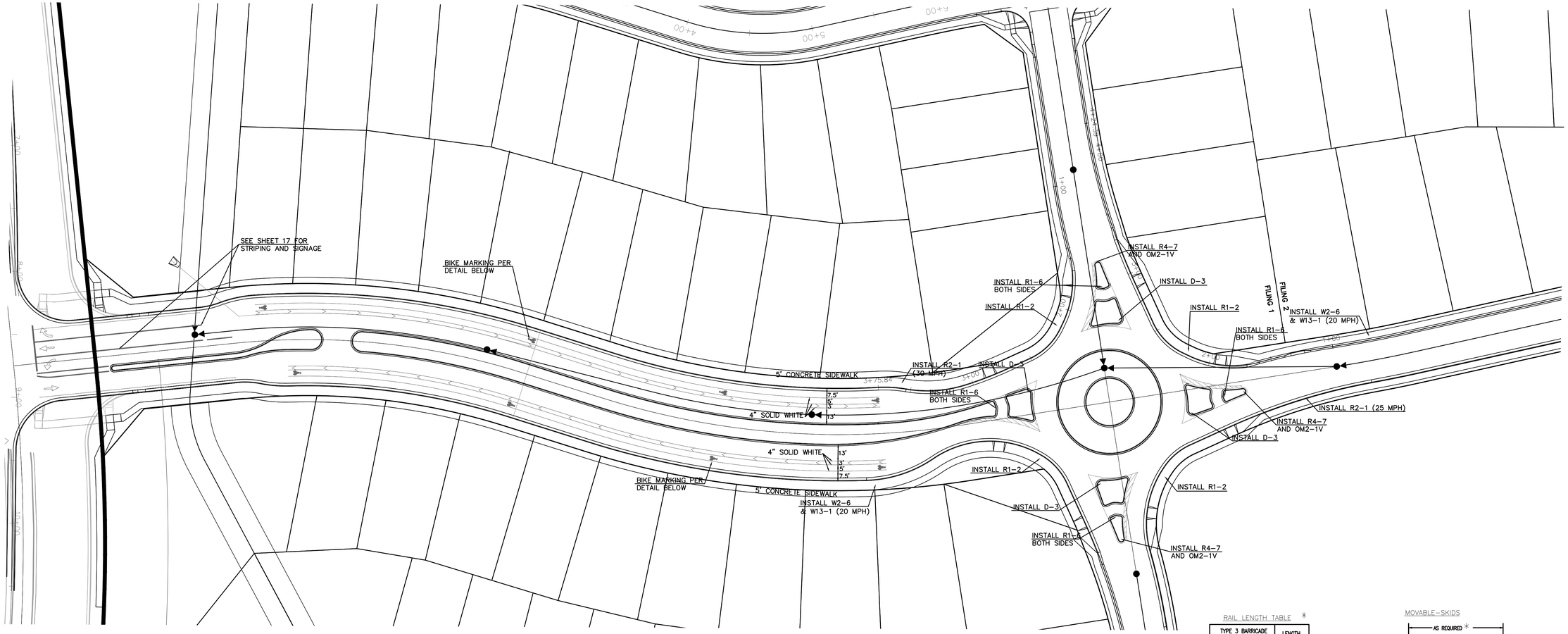
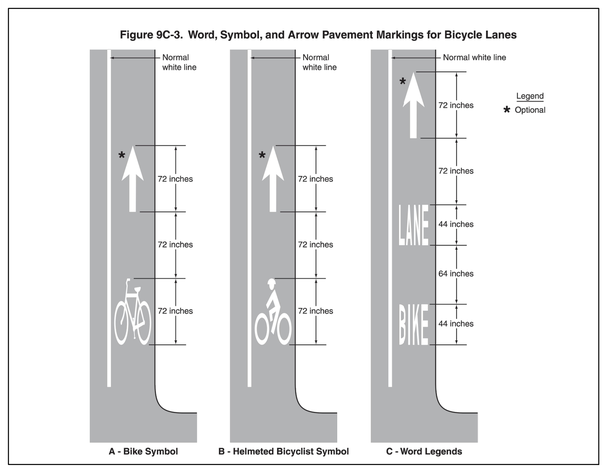
WATERBURY FILING NO. 1

CONSTRUCTION SET
ROUNDABOUT DETAILED GRADING

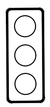
DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	NA
V-SCALE	N/A
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	18 OF 39





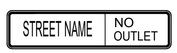
YIELD (R1-2)

MEDIAN (R4-7)



OBJECT MARKER (OM2-1V)

PED (R1-6)



STREET NAME (D-3)

SPEED LIMIT (R2-1)

ROUNDABOUT (W2-6) (13-1 (20))

PED (W11-2)

NOTE:
ALL INTERNAL SIGNS SHALL BE 4" FONT LETTER SIZE.

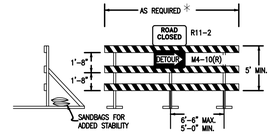
RAIL LENGTH TABLE *

TYPE 3 BARRICADE		LENGTH
FIXED	MOVABLE	
F - A	M - A	8'- 14'
F - B	M - B	15'- 24'
F - C	M - C	25'- 35'
F - D	M - D	> 35'

NOTES

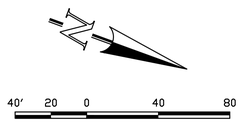
1. TYPE 3 BARRICADES HAVE 3 RETLECTORIZED RAIL FACES IF FACING TRAFFIC IN ONE DIRECTION AND 6 IF FACING TRAFFIC IN TWO DIRECTIONS.
2. THE PORTION OF THE POST ABOVE THE GROUND LINE SHALL BE PAINTED IN ACCORDANCE WITH THE APPROPRIATE GENERAL NOTE.
3. DETACHABLE EXTENSION WING RAILS FOR BYPASSING OF CONSTRUCTION EQUIPMENT ARE PERMITTED, WHEN NECESSARY, ON FIXED OR MOVABLE TYPE 3 BARRICADES. THE LENGTH SHALL BE ADEQUATE TO CLOSE THE BORROW PIT AND/OR SHOULDER AS REQUIRED.

MOVABLE-SKIDS



MOVABLE-HINGED

TYPICAL TYPE 3 BARRICADES



48 HOURS BEFORE YOU DIG,

REVISIONS		
NO.	DESCRIPTION	DATE

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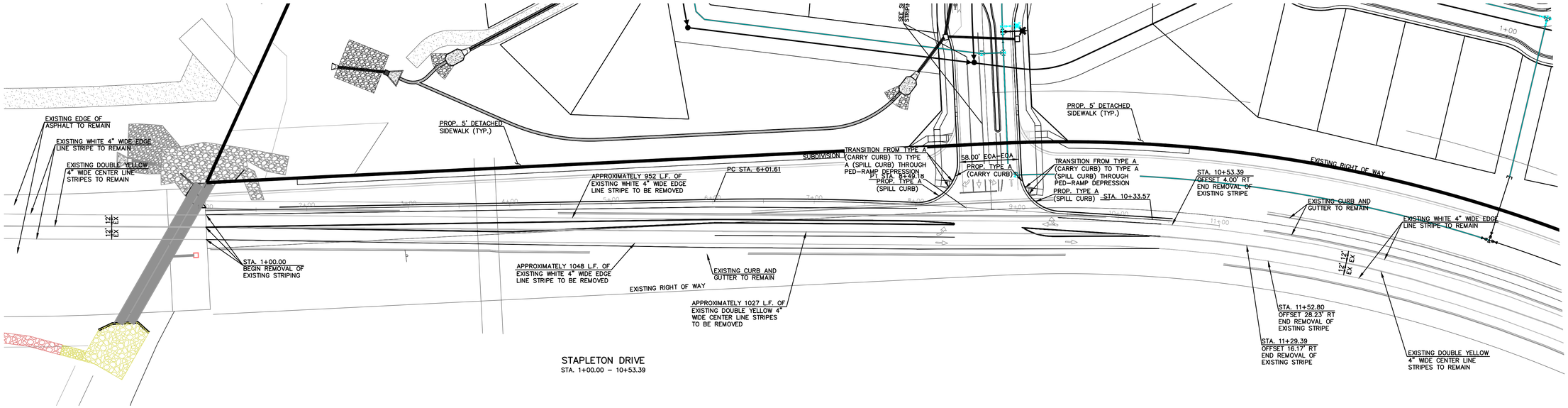
PREPARED FOR:
4-WAY RANCH JOINT VENTURE
ATTN: PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnesinc.com

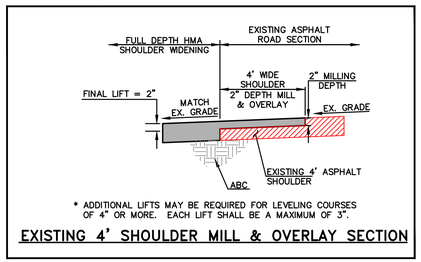
WATERBURY FILING NO. 1

CONSTRUCTION SET
SIGNING & STRIPING
SAYBROOK & ROUNDABOUT

DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	NA
V-SCALE	N/A
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	19 OF 39



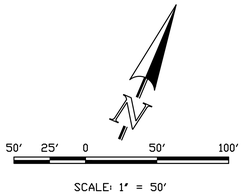
STAPLETON DRIVE
STA. 1+00.00 – 10+53.39



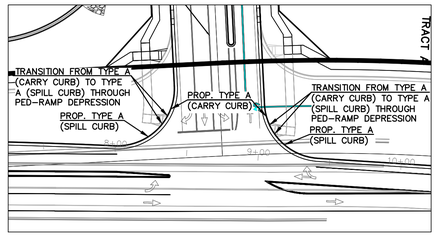
* ADDITIONAL LIFTS MAY BE REQUIRED FOR LEVELING COURSES OF 4" OR MORE. EACH LIFT SHALL BE A MAXIMUM OF 3".

EXISTING 4' SHOULDER MILL & OVERLAY SECTION

DESIGN SPEED IS 50 M.P.H.



SCALE: 1" = 50'



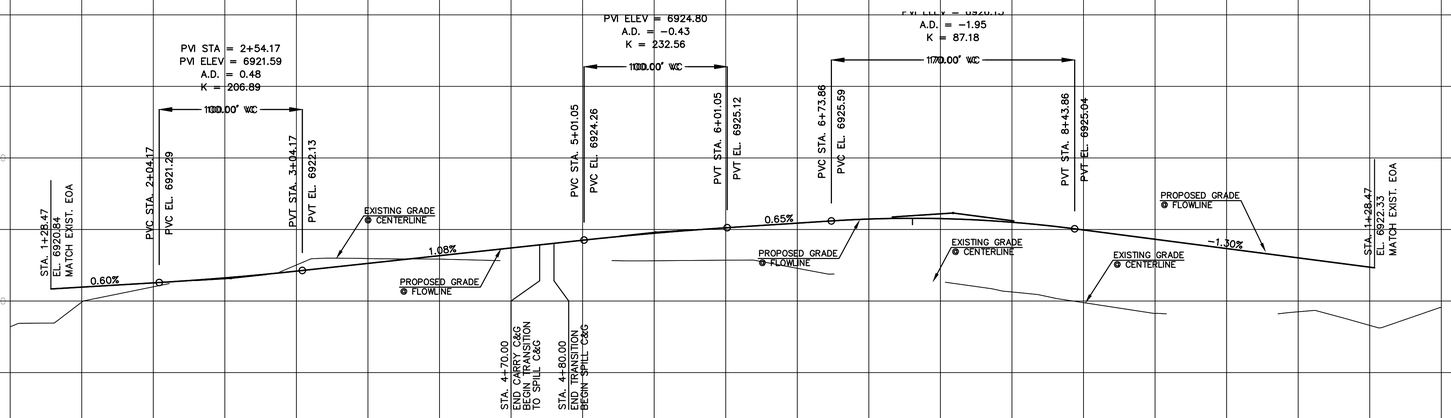
STAPLETON DRIVE/SAYBOOK ROAD
CURB TRANSITION DETAIL

CURB FL CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA ANGLE
1	66.73	40.00	95°35'02"
2	58.27	40.00	83°28'17"

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170

VERTICAL SCALE
1" = 5'



STAPLETON DRIVE
STA. 1+00.00 – 10+53.39

REVISIONS		
NO.	DESCRIPTION	DATE

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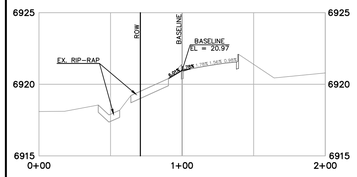
PREPARED FOR:
4-WAY RANCH JOINT VENTURE
PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc.
Proactive Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnsinc.com

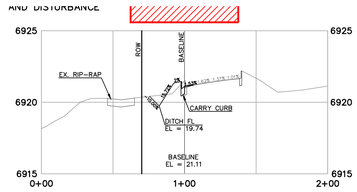
WATERBURY FILING NO. 1

CONSTRUCTION SET
STREET PLAN AND PROFILE
STAPLETON ROAD

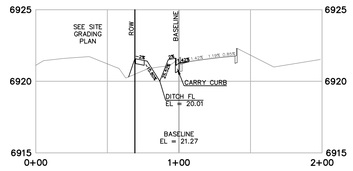
DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	20 OF 39



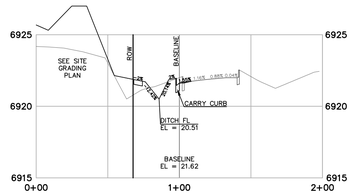
STAPLETON DRIVE
SECTION 1+50.00
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



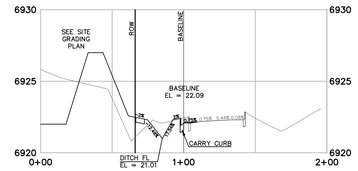
STAPLETON DRIVE
SECTION 1+73.24
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



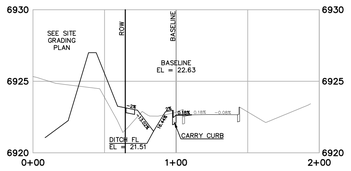
STAPLETON DRIVE
SECTION 2+00.00
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



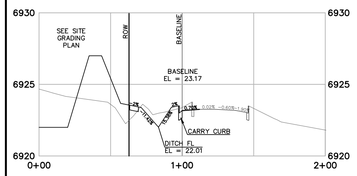
STAPLETON DRIVE
SECTION 2+50.00
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



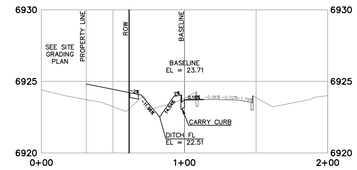
STAPLETON DRIVE
SECTION 3+00.00
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



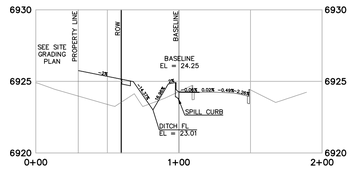
STAPLETON DRIVE
SECTION 3+50.00
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



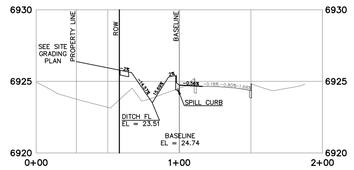
STAPLETON DRIVE
SECTION 4+00.00
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



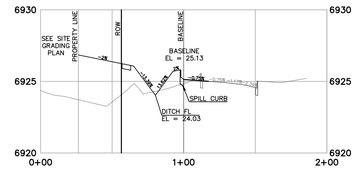
STAPLETON DRIVE
SECTION 4+50.00
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



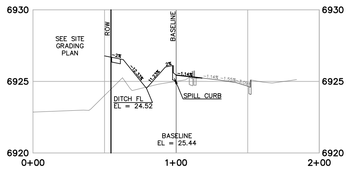
STAPLETON DRIVE
SECTION 5+00.00
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



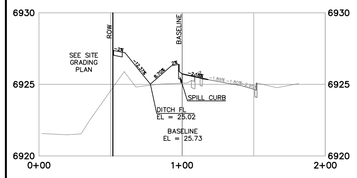
STAPLETON DRIVE
SECTION 5+50.00
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



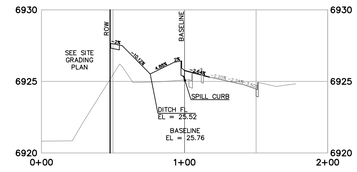
STAPLETON DRIVE
SECTION 6+01.61
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



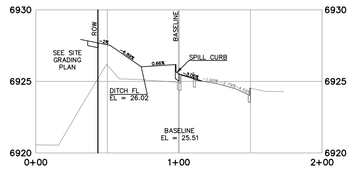
STAPLETON DRIVE
SECTION 6+50.00
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



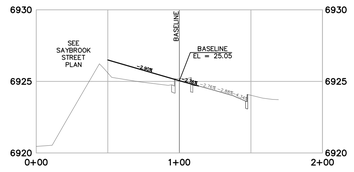
STAPLETON DRIVE
SECTION 7+00.00
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



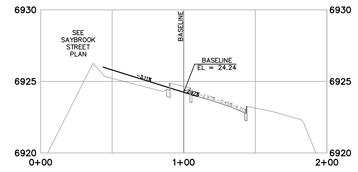
STAPLETON DRIVE
SECTION 7+50.00
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



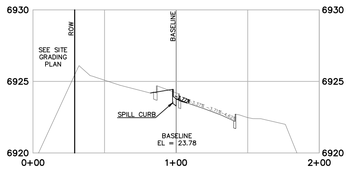
STAPLETON DRIVE
SECTION 7+99.45
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



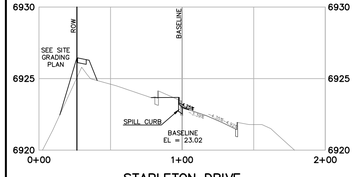
STAPLETON DRIVE
SECTION 8+43.78
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



STAPLETON DRIVE
SECTION 9+06.19
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



STAPLETON DRIVE
SECTION 9+41.64
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'



STAPLETON DRIVE
SECTION 10+00.00
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'

STAPLETON DRIVE
SECTION 10+53.39
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1"=5'

REVISIONS

NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

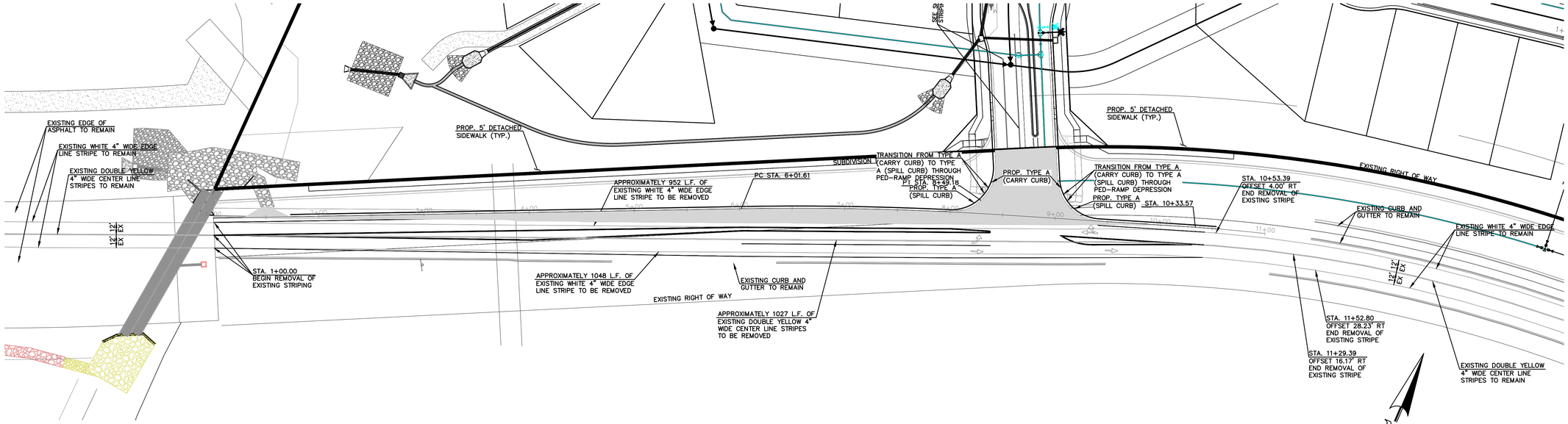
PREPARED FOR:
4-WAY RANCH JOINT VENTURE
ATTN: PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc.
Sensitive Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnesinc.com

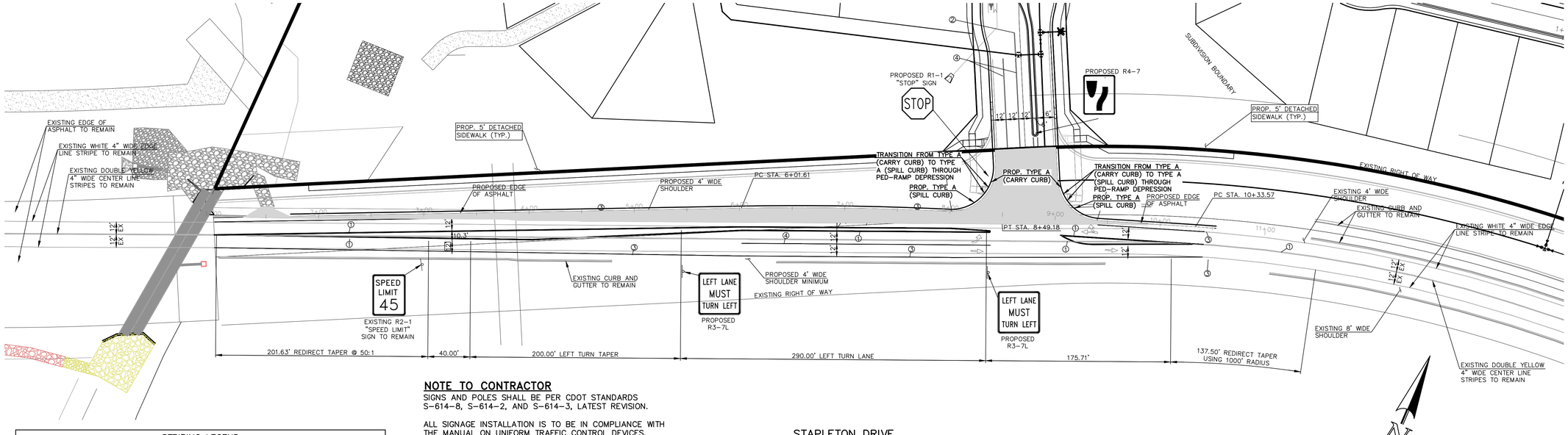
WATERBURY FILING NO. 1

CONSTRUCTION SET
STAPLETON DRIVE
CROSS SECTIONS

DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H-SCALE NA
V-SCALE N/A
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 21 OF 39



STAPLETON DRIVE
STRIPING REMOVAL PLAN



STAPLETON DRIVE
SIGNAGE AND STRIPING PLAN

DESIGN SPEED IS 50 M.P.H.

STRIPING LEGEND		
STRIPE #	PAVEMENT MARKINGS	MARKING DESCRIPTION
1	CENTER LINES (EPOXY)	DOUBLE SOLID YELLOW, 4" WIDE-SPACED 3" APART
2	LANE LINES (EPOXY)	BROKEN WHITE, 4" WIDE-10' SEGMENTS WITH 30' GAPS
3	EDGE LINES (EPOXY)	SOLID WHITE, 4" WIDE
4	CHANNELIZING LINES (EPOXY)	SOLID WHITE, 8" WIDE
5	STOP LINES (THERMO PLASTIC)	SOLID WHITE, 24" WIDE

*NOTE: ALL STRIPING INSTALLATION SHALL BE PER COLORADO DEPARTMENT OF TRANSPORTATION "M&S STANDARDS" STANDARD PLAN NO. S-627-1

NOTE TO CONTRACTOR
SIGNS AND POLES SHALL BE PER CDOT STANDARDS S-614-8, S-614-2, AND S-614-3, LATEST REVISION.

ALL SIGNAGE INSTALLATION IS TO BE IN COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

ALL 4", 8" SOLID OR SKIP PAVEMENT MARKING ARE TO BE EPOXY.

STOP BARS ARE TO BE 90 MIL PREFORMED THERMOPLASTIC PAVEMENT MARKING TYPE B. (INLAYED)

REVISIONS

NO.	DESCRIPTION	DATE

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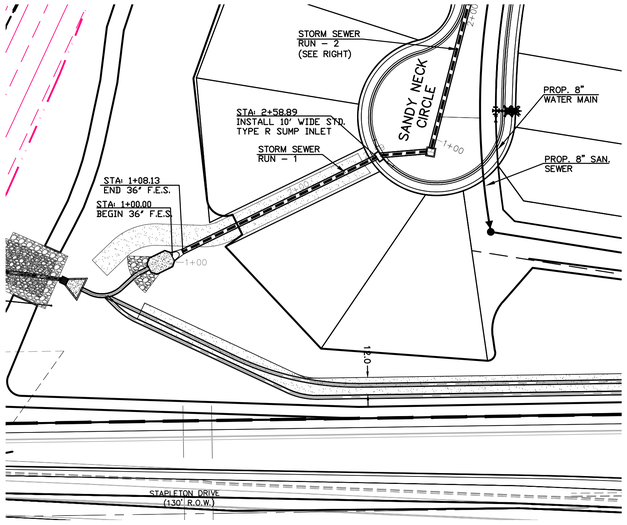
PREPARED FOR:
4-WAY RANCH JOINT VENTURE
ATTN: PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc. "Creative Civil Engineering Solutions"
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnesinc.com

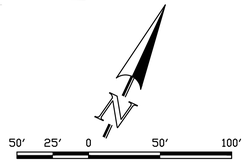
WATERBURY FILING NO. 1

SIGNING AND SRIPING
STAPLETON DRIVE

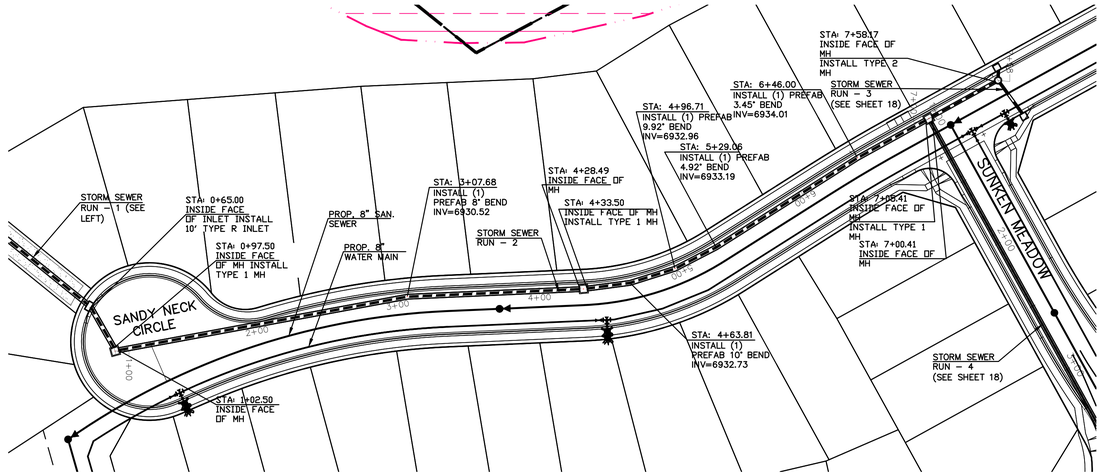
DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H-SCALE NA
V-SCALE N/A
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 22 OF 39



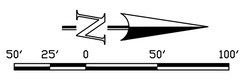
STORM SEWER RUN–1 (PIPE RUN 7)
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.



SCALE: 1" = 50'



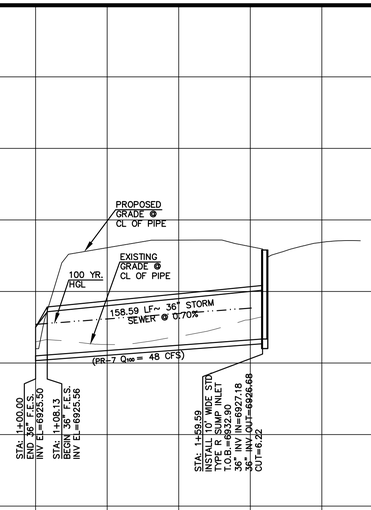
STORM SEWER RUN–2 (PIPE RUN 5–6)
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.



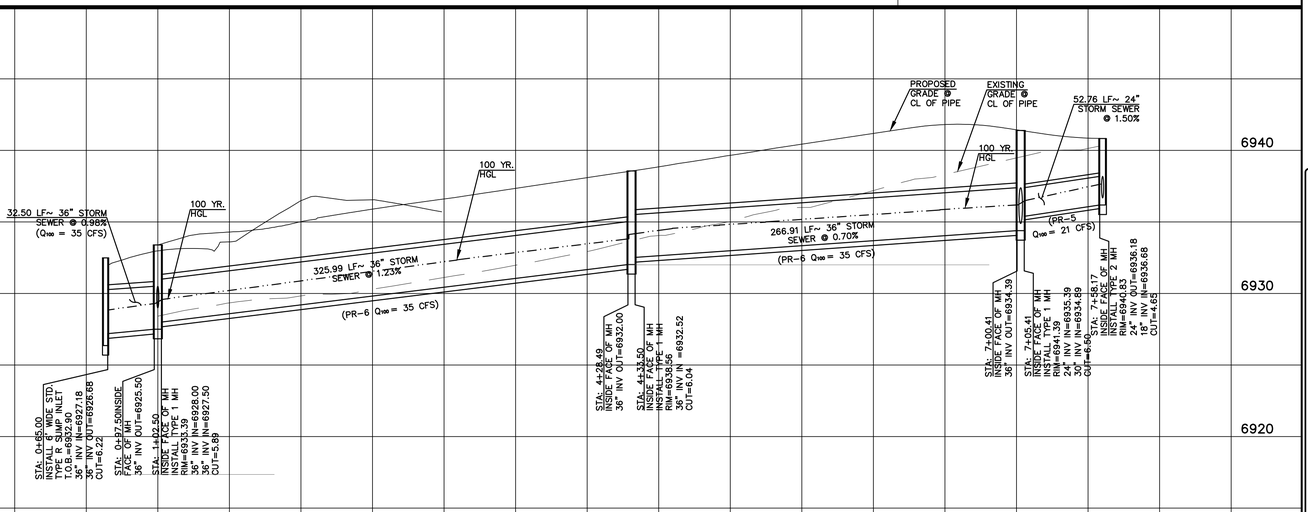
SCALE: 1" = 50'

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170



STORM SEWER RUN–1 (PIPE RUN 7)
PROPOSED PUBLIC RCP STORM SEWER



STORM SEWER RUN–2 (PIPE RUN 5–6)
PROPOSED PUBLIC RCP STORM SEWER

1+00 2+00 3+00 0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00

REVISIONS

NO.	DESCRIPTION	DATE

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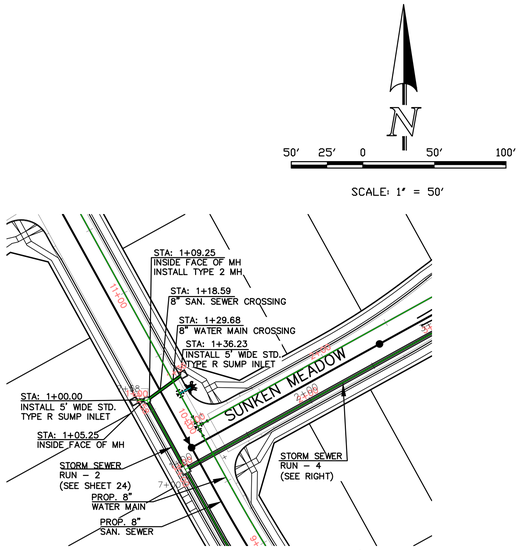
PREPARED FOR:
4–WAY RANCH JOINT VENTURE
PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719–491–3150

Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719–635–6422
FAX: 719–635–6426
www.tnsinc.com

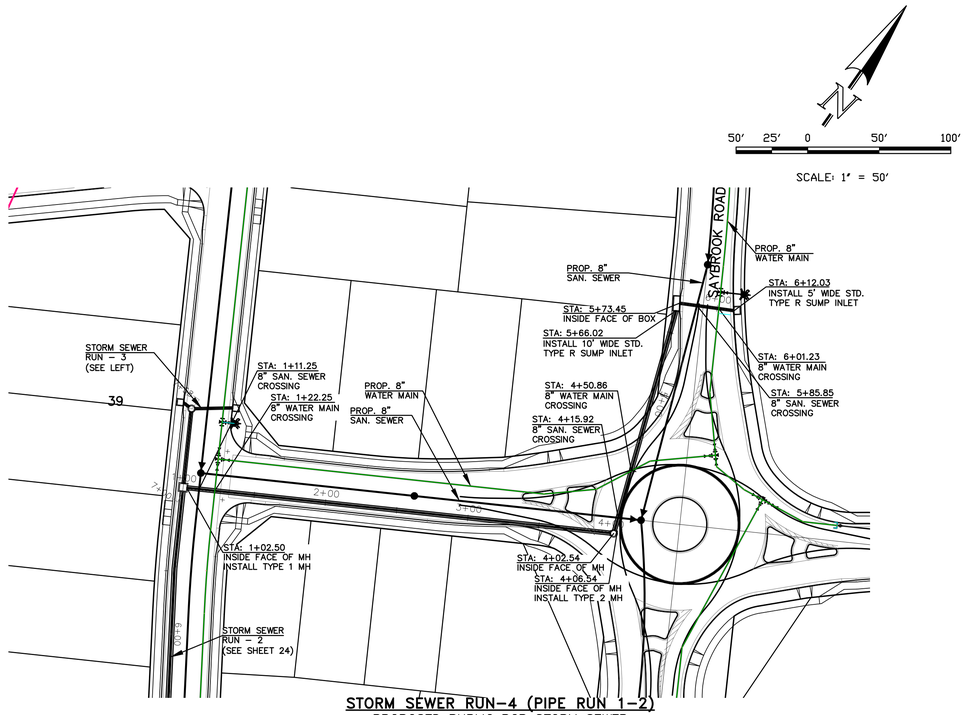
WATERBURY FILING NO. 1

CONSTRUCTION SET
STORM SEWER PLAN AND PROFILE
STORM RUNS 1 & 2

DESIGNED BY QNA
DRAWN BY QNA
CHECKED BY
H–SCALE 1"=50'
V–SCALE 1"=5'
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 23 OF 39



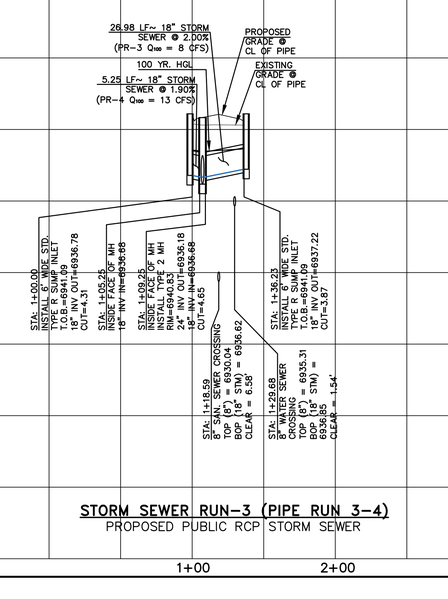
STORM SEWER RUN-3 (PIPE RUN 3-4)
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.



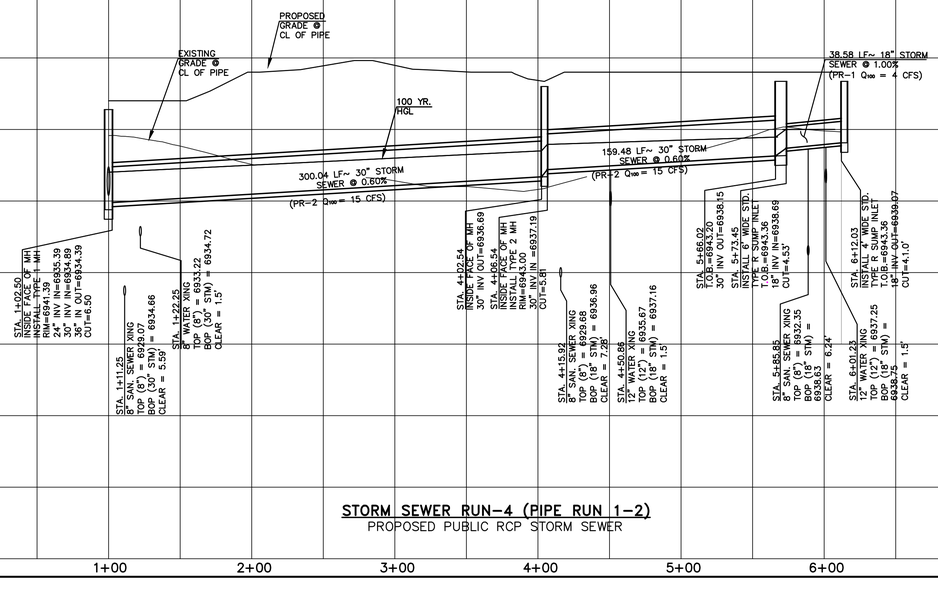
STORM SEWER RUN-4 (PIPE RUN 1-2)
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170



STORM SEWER RUN-3 (PIPE RUN 3-4)
PROPOSED PUBLIC RCP STORM SEWER



STORM SEWER RUN-4 (PIPE RUN 1-2)
PROPOSED PUBLIC RCP STORM SEWER

REVISIONS

NO.	DESCRIPTION	DATE

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PREPARED FOR:
4-WAY RANCH JOINT VENTURE
PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

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Creative Civil Engineering Solutions
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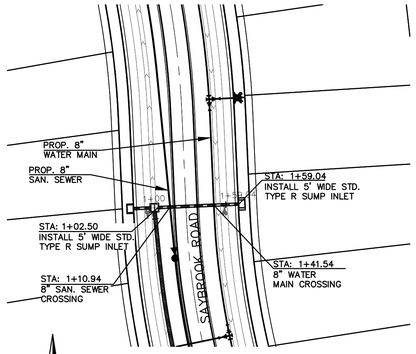
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tneiinc.com

WATERBURY FILING NO. 1

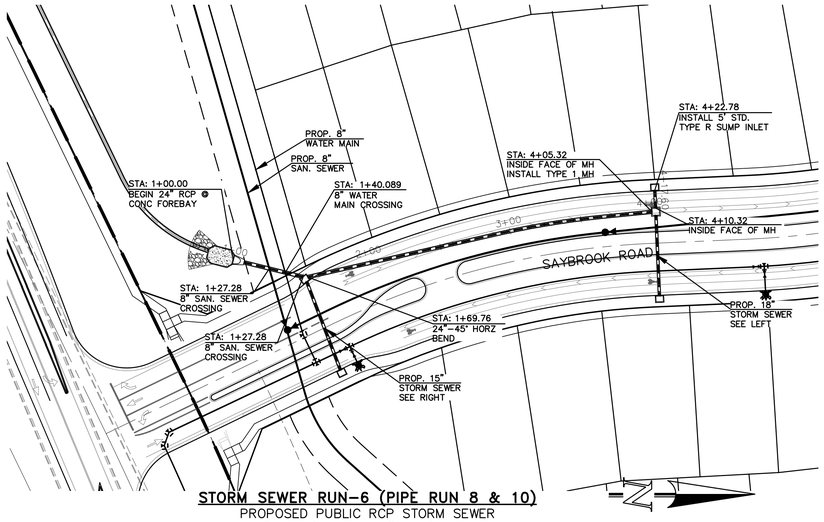
CONSTRUCTION SET
STORM SEWER PLAN AND PROFILE
STORM RUNS 3 & 4

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	24 OF 37



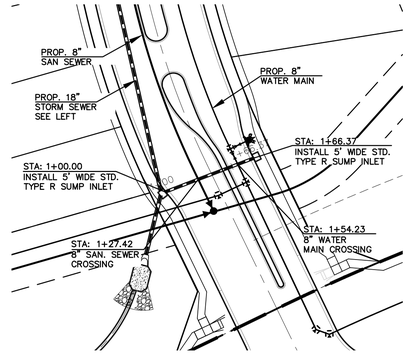
STORM SEWER RUN-5 (PIPE RUN 9)
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

50' 25' 0 50' 100'
SCALE: 1" = 50'



STORM SEWER RUN-6 (PIPE RUN 8 & 10)
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

50' 25' 0 50' 100'
SCALE: 1" = 50'



STORM SEWER LATERAL-11 (PIPE RUN 10A)
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

50' 25' 0 50' 100'
SCALE: 1" = 50'

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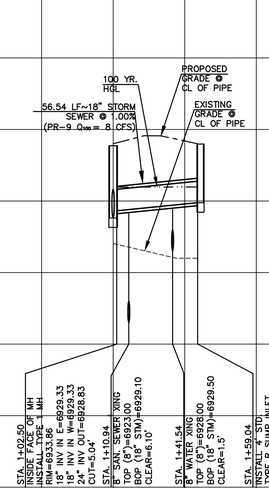
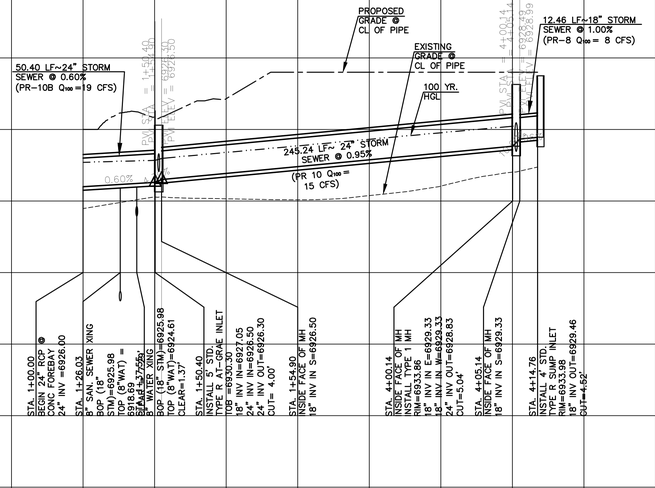
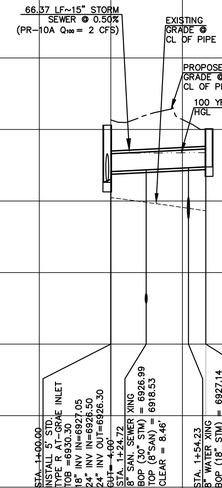
QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170



STORM SEWER RUN-5 (PIPE RUN 9)
PROPOSED PUBLIC RCP STORM SEWER



STORM SEWER RUN-6 (PIPE RUN 8 & 10)
PROPOSED PUBLIC RCP STORM SEWER



STORM SEWER LATERAL-11 (PIPE RUN 10A)
PROPOSED PUBLIC RCP STORM SEWER

6950 6940 6930 6920 6910
1+00 2+00 1+00 2+00 3+00 4+00 5+00 6+00 1+00 2+00

REVISIONS

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PREPARED FOR:
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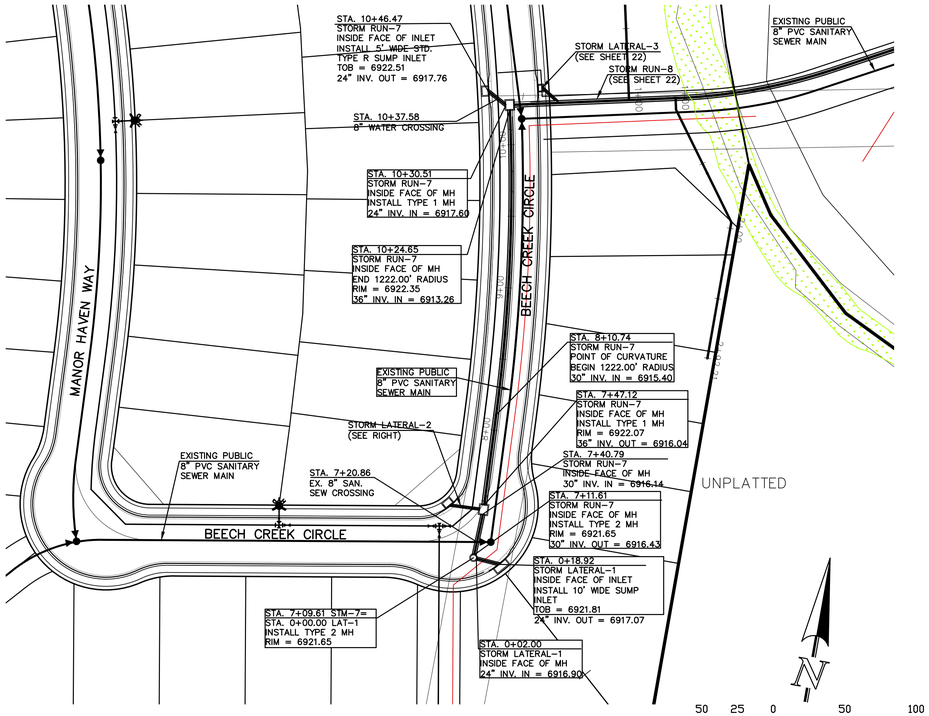
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tneslinc.com

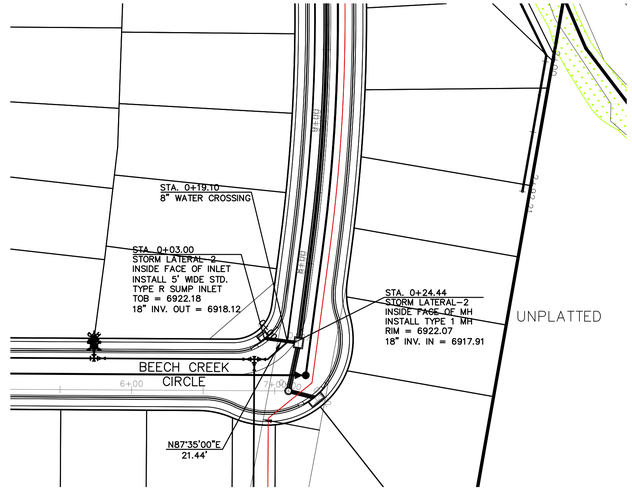
WATERBURY FILING NO. 1

CONSTRUCTION SET
STORM SEWER PLAN AND PROFILE
STORM RUNS 5, 8 & 10

DESIGNED BY QNA
DRAWN BY QNA
CHECKED BY
H-SCALE 1"=50'
V-SCALE 1"=5'
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 25 OF 37



STORM SEWER RUN-7, LATERAL-1 (PIPE RUN 11, 13 & 14)
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.



STORM SEWER LATERAL-2 (PIPE RUN 12)
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

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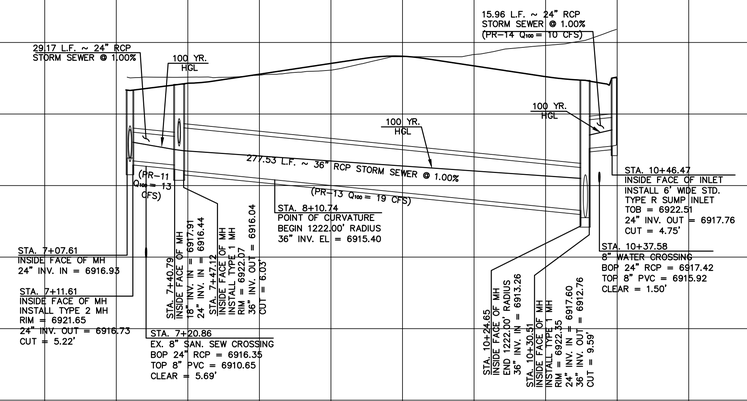
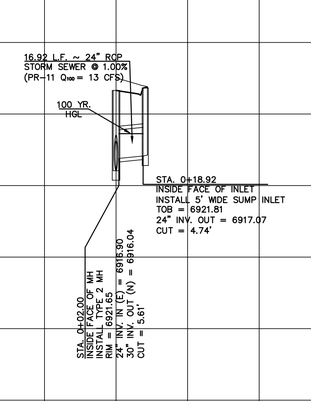
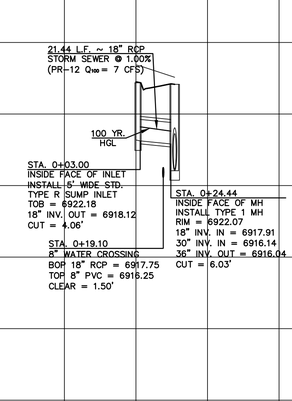
QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170



STORM SEWER RUN-7 LATERAL-1 (PIPE RUN 13 & 14)
PROPOSED PUBLIC RCP STORM SEWER



STORM SEWER LATERAL-1 (PIPE RUN 11)
PROPOSED PUBLIC RCP STORM SEWER



STORM SEWER LATERAL-2 (PIPE RUN 12)
PROPOSED PUBLIC RCP STORM SEWER

6940 6930 6920 6910 6900

7+00 8+00 9+00 10+00 0+00 0+50 0+00 0+50

REVISIONS

NO.	DESCRIPTION	DATE

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PREPARED FOR:
4-WAY RANCH JOINT VENTURE
PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

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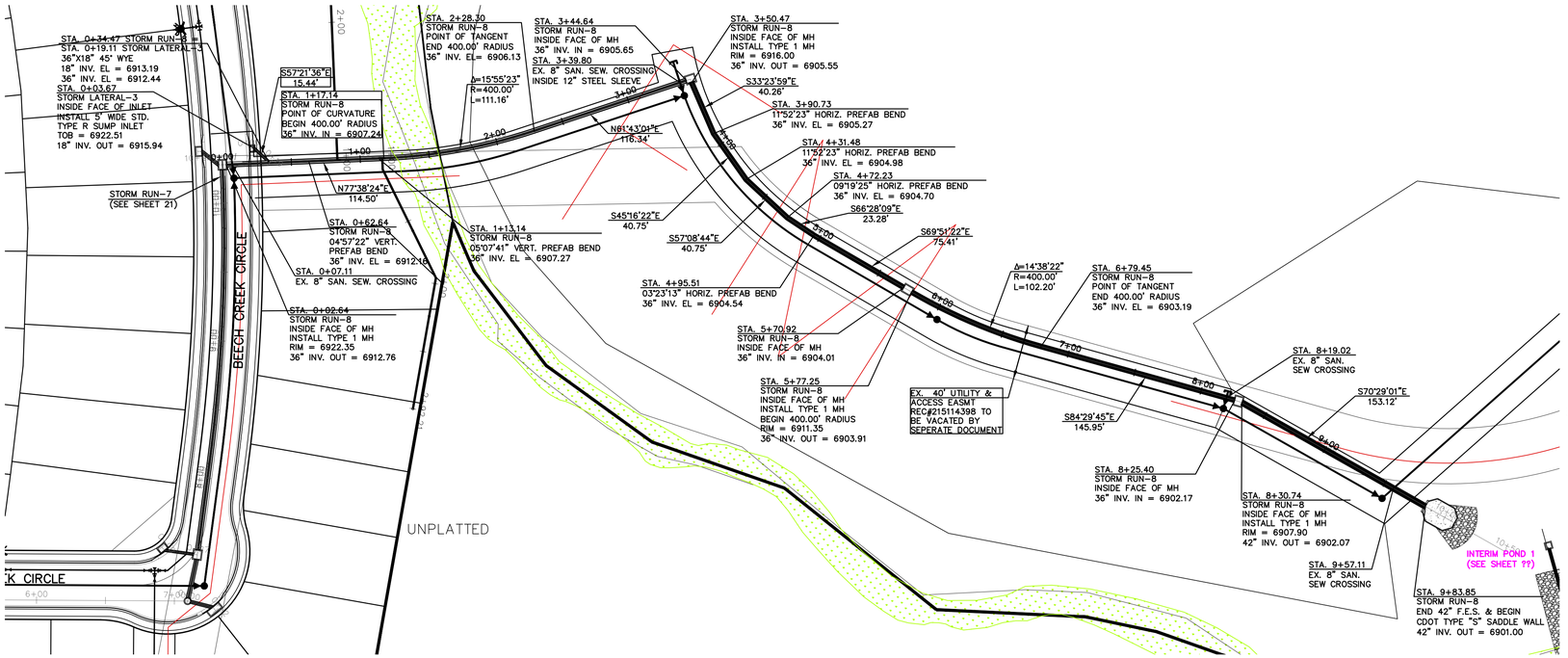
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnsinc.com

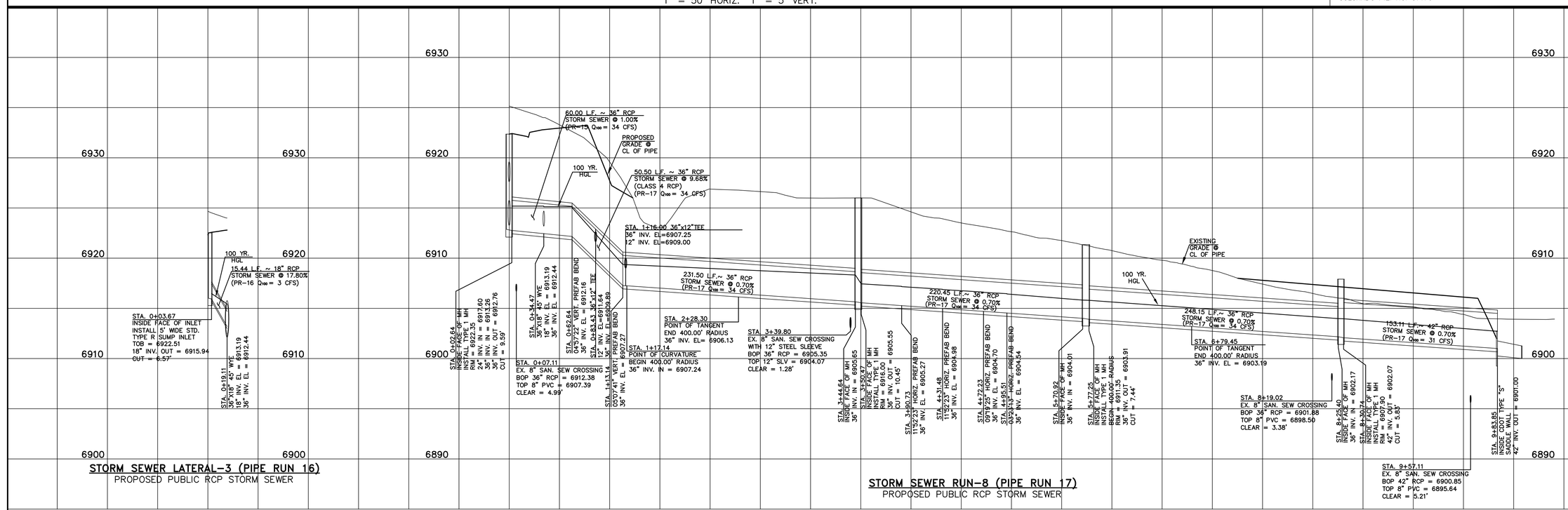
WATERBURY FILING NO. 1

CONSTRUCTION SET
STORM SEWER PLAN AND PROFILE
STORM RUN-7 & LATERALS 1-2

DESIGNED BY QNA
DRAWN BY QNA
CHECKED BY
H-SCALE 1"=50'
V-SCALE 1"=5'
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 26 OF 37



STORM SEWER LATERAL-3 & RUN-8 (PIPE RUN 16 & 17)
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.



STORM SEWER LATERAL-3 (PIPE RUN 16)
PROPOSED PUBLIC RCP STORM SEWER

STORM SEWER RUN-8 (PIPE RUN 17)
PROPOSED PUBLIC RCP STORM SEWER

REVISIONS

NO.	DESCRIPTION	DATE

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PREPARED FOR:
4-WAY RANCH JOINT VENTURE
PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

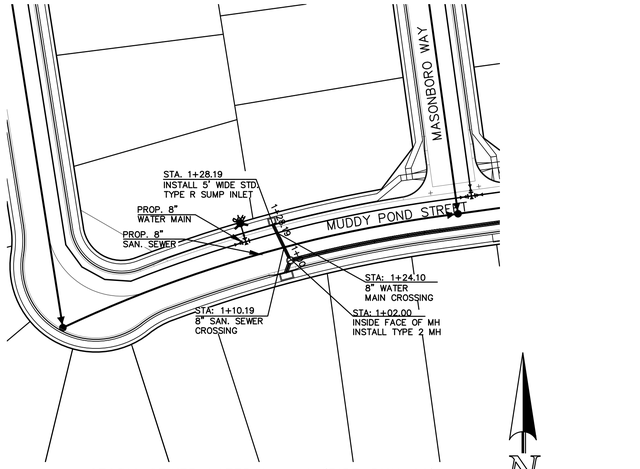
QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170

Terra Nova Engineering, Inc.
Trailblaze Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnsinc.com

WATERBURY FILING NO. 1

CONSTRUCTION SET
STORM SEWER PLAN AND PROFILE
LATERAL 3 & STORM RUN-8

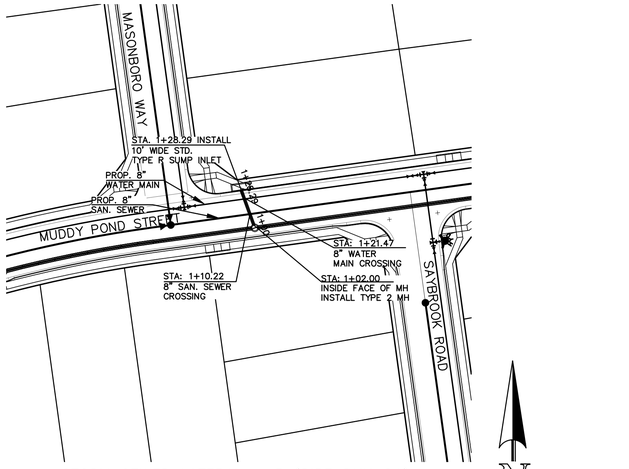
DESIGNED BY QNA
DRAWN BY QNA
CHECKED BY
H-SCALE 1"=50'
V-SCALE 1"=5'
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 27 OF 37



STORM SEWER LATERAL – 4 (PIPE RUN 19)
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

50 25 0 50 100

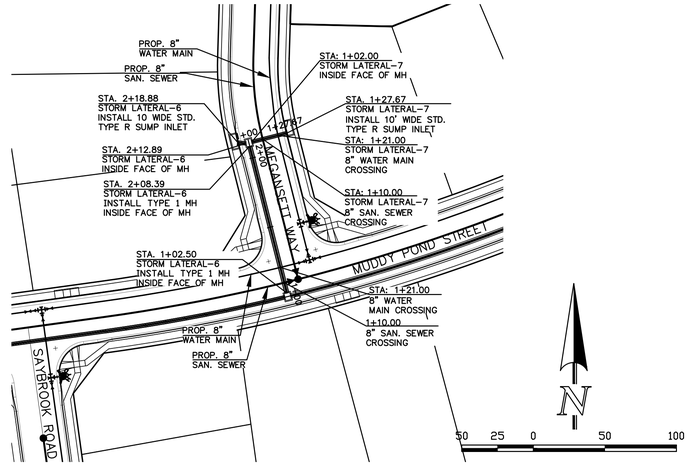
SCALE: 1" = 50'



STORM SEWER LATERAL – 5 (PIPE RUN 21)
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

50 25 0 50 100

SCALE: 1" = 50'



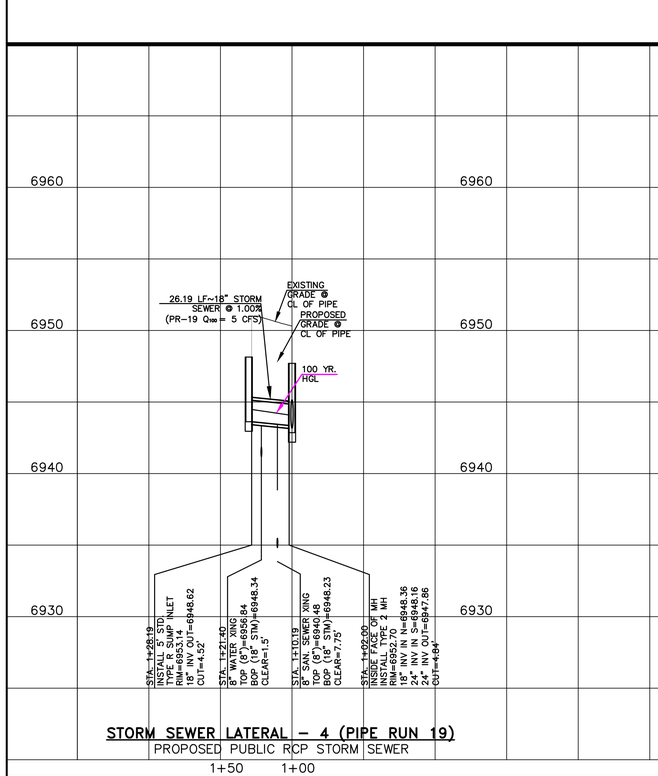
STORM SEWER LATERAL–6 & 7 (PIPE RUN 23, 24 & 25)
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

50 25 0 50 100

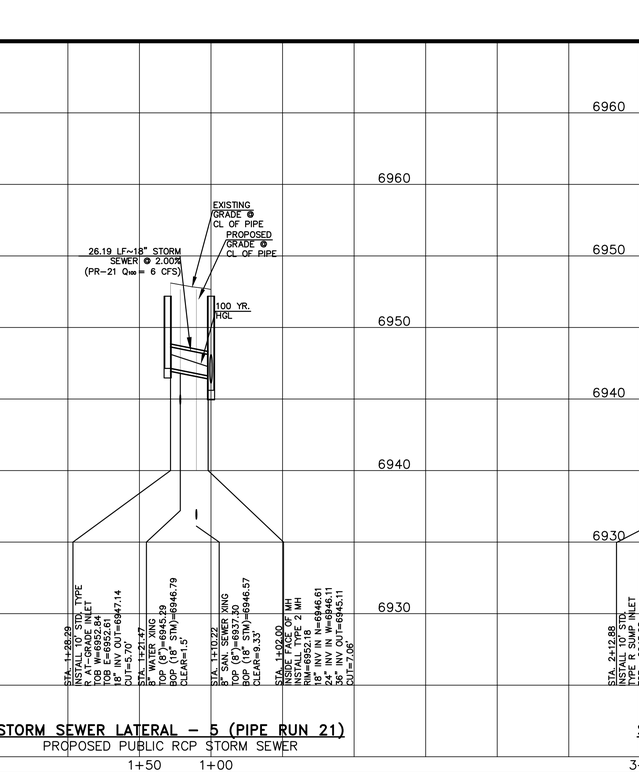
SCALE: 1" = 50'

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

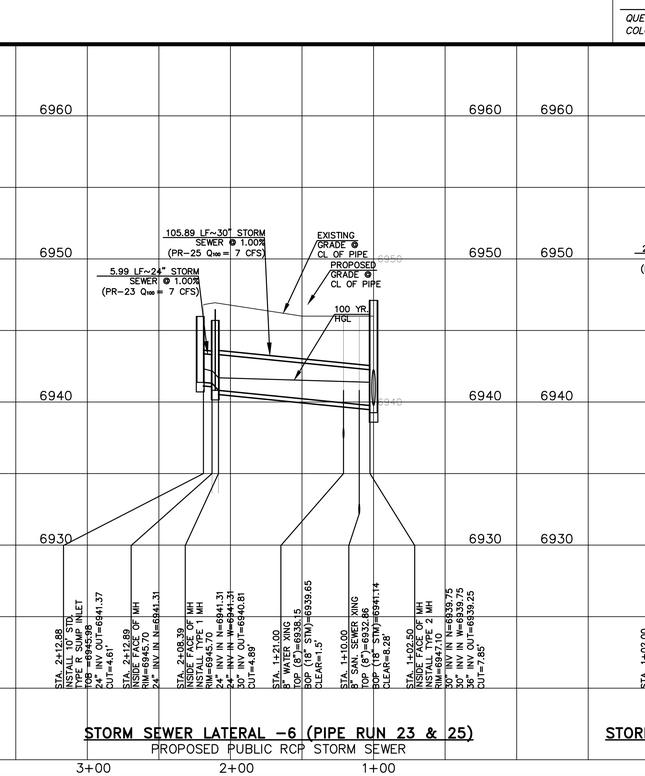
QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170



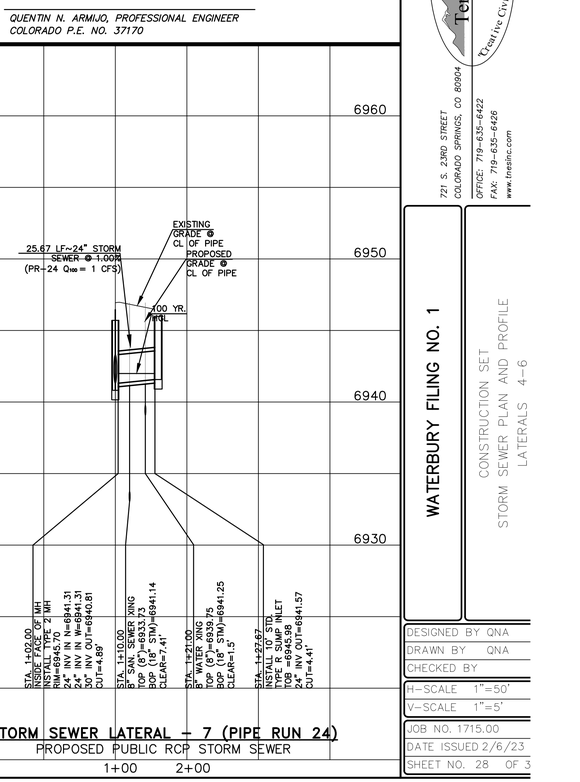
STORM SEWER LATERAL – 4 (PIPE RUN 19)
PROPOSED PUBLIC RCP STORM SEWER



STORM SEWER LATERAL – 5 (PIPE RUN 21)
PROPOSED PUBLIC RCP STORM SEWER



STORM SEWER LATERAL –6 (PIPE RUN 23 & 25)
PROPOSED PUBLIC RCP STORM SEWER



STORM SEWER LATERAL – 7 (PIPE RUN 24)
PROPOSED PUBLIC RCP STORM SEWER

REVISIONS		
NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING AND SURVEYING, INC. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNED BY WRITTEN AUTHORIZATION.

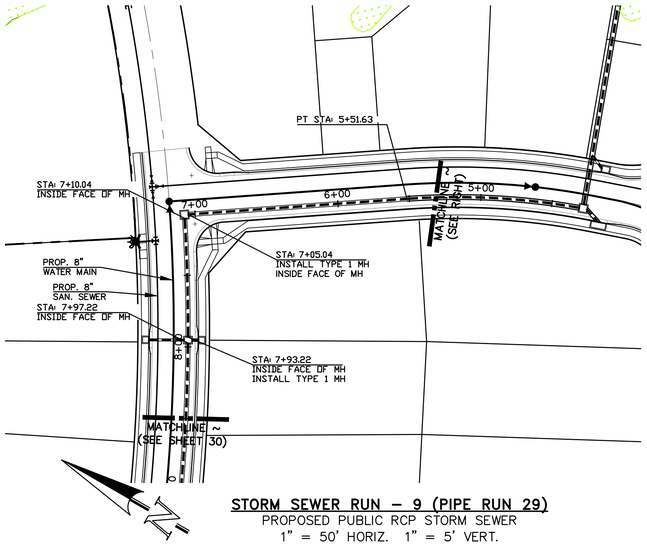
PREPARED FOR:
4-WAY RANCH JOINT VENTURE
PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc. "Creative Civil Engineering Solutions"
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tneinc.com

WATERBURY FILING NO. 1

CONSTRUCTION SET
STORM SEWER PLAN AND PROFILE
LATERALS 4-6

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	28 OF 31

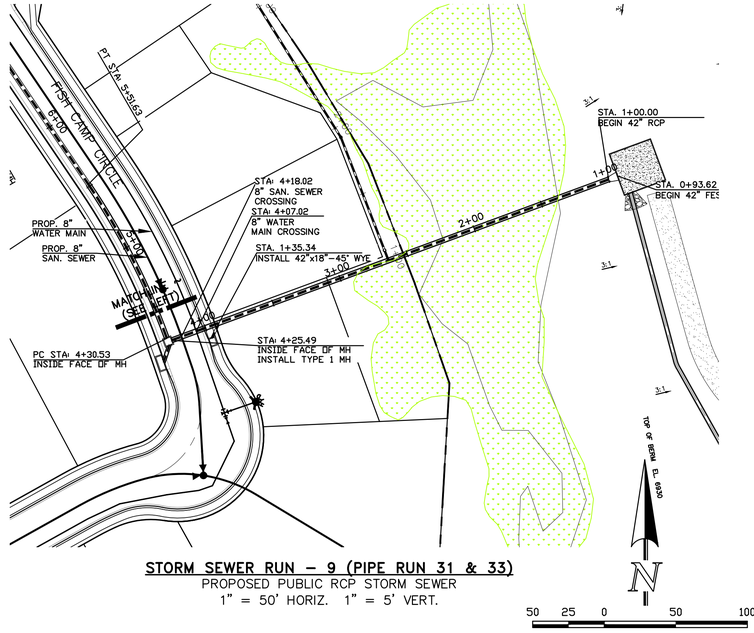


STORM SEWER RUN – 9 (PIPE RUN 29)

PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

50 25 0 50 100

SCALE: 1" = 50'

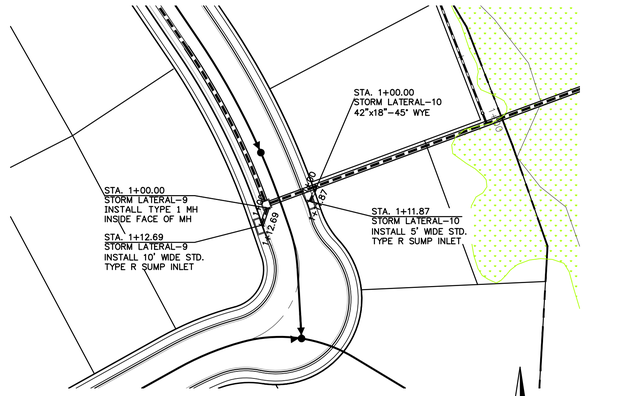


STORM SEWER RUN – 9 (PIPE RUN 31 & 33)

PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

50 25 0 50 100

SCALE: 1" = 50'



STORM SEWER LATERAL – 9 & 10 (PIPE RUN 30 & 32)

PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

50 25 0 50 100

SCALE: 1" = 50'

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170

REVISIONS

NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING AND SURVEYING, INC. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNED AND WRITTEN AUTHORIZATION.

PREPARED FOR:
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PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

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Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnesinc.com

STORM SEWER RUN – 9 (PIPE RUN 29, 31 & 33)

PROPOSED PUBLIC RCP STORM SEWER

STORM SEWER LATERAL – 10 (PIPE RUN 32)

PROPOSED PUBLIC RCP STORM SEWER

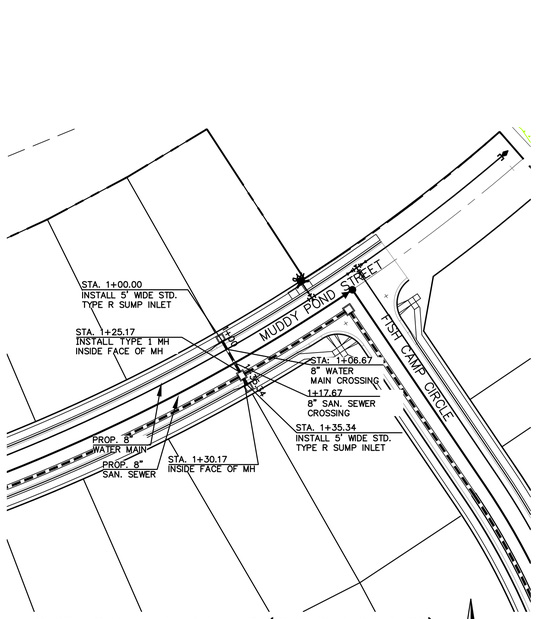
STORM SEWER LATERAL – 9 (PIPE RUN 30)

PROPOSED PUBLIC RCP STORM SEWER

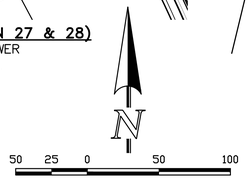
WATERBURY FILING NO. 1

CONSTRUCTION SET
STORM SEWER PLAN AND PROFILE
RUNS 9 & 10 AND LATERAL 9 & 10

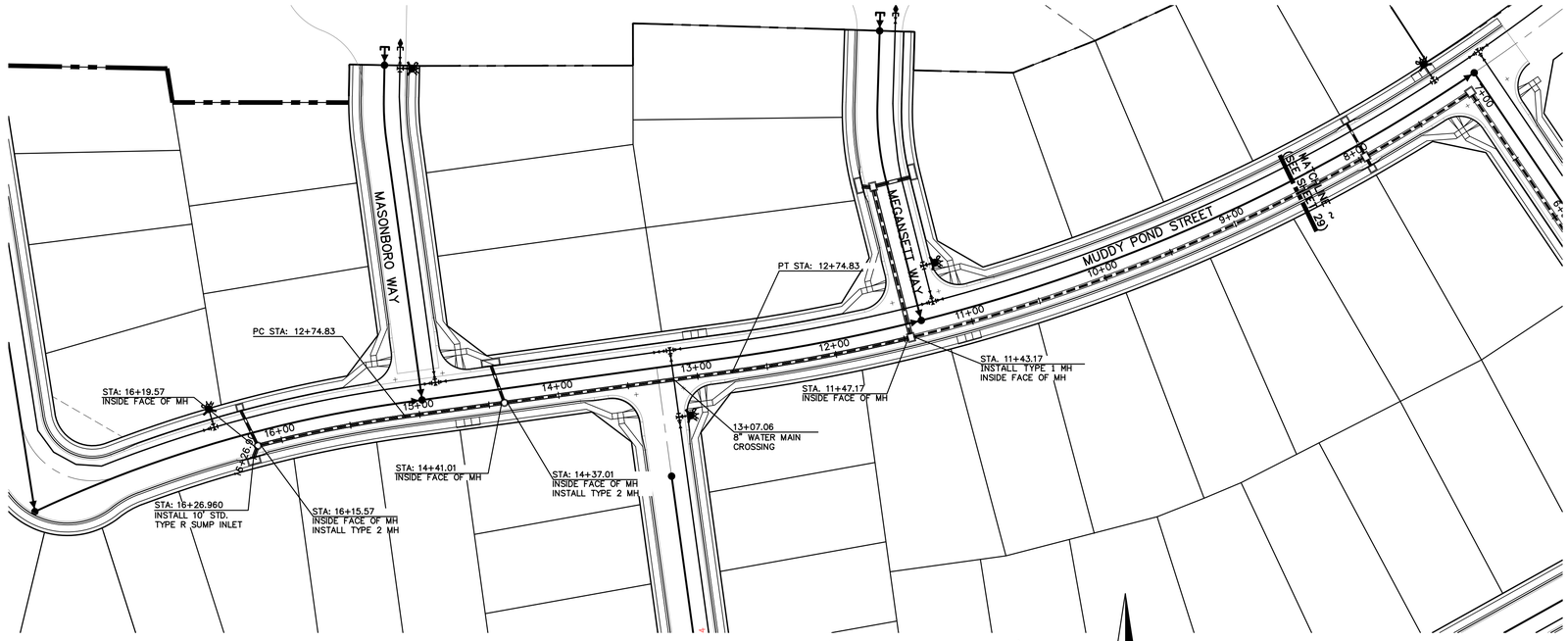
DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	29 OF 37



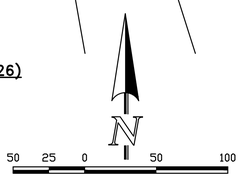
STORM SEWER LATERAL – 8 (PIPE RUN 27 & 28)
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.



SCALE: 1" = 50'



STORM SEWER RUN – 9 (PIPE RUN 20, 22 & 26)
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.



SCALE: 1" = 50'

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QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170

REVISIONS

NO.	DESCRIPTION	DATE

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PREPARED FOR:
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P.O. BOX 50223
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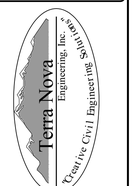
719-491-3150



721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
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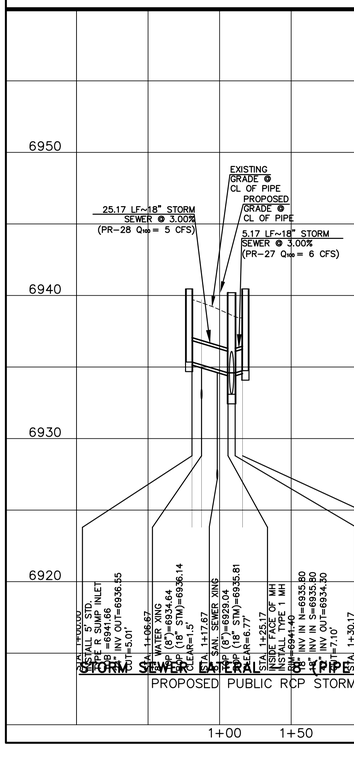
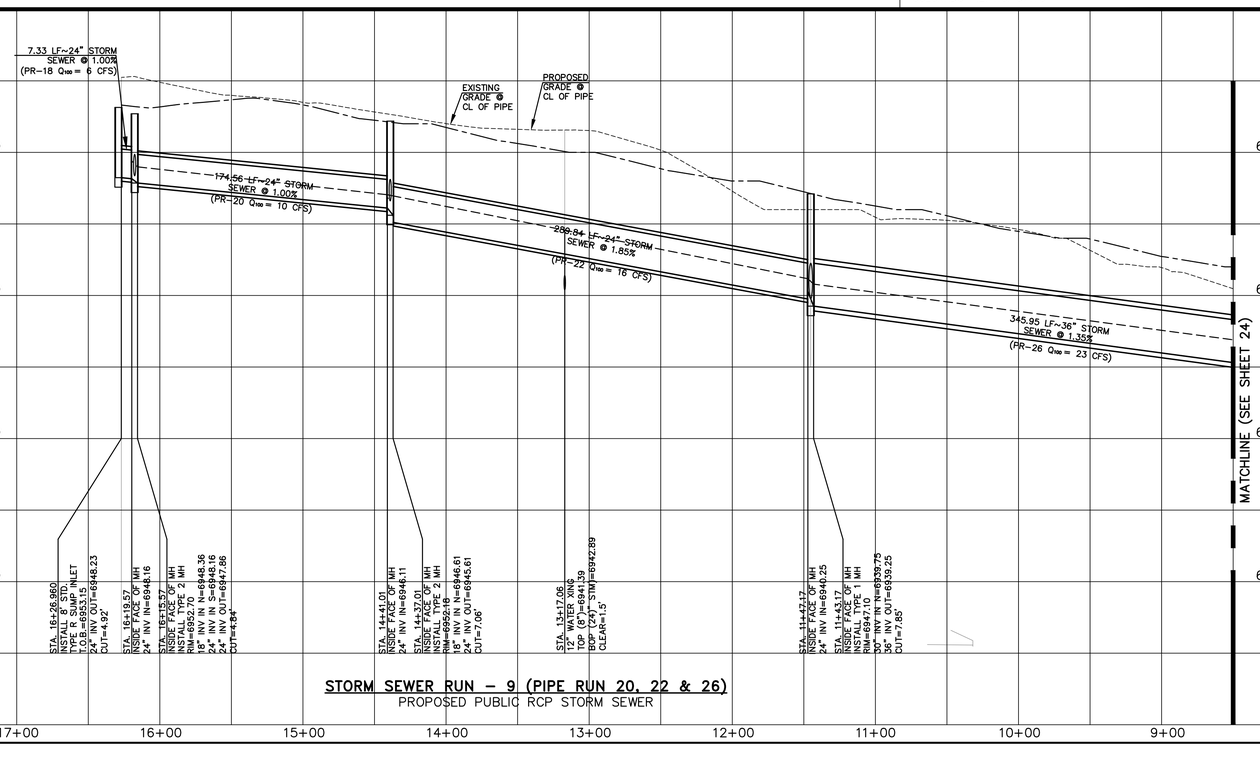


STORM SEWER LATERAL – 8 (PIPE RUN 27 & 28)
PROPOSED PUBLIC RCP STORM SEWER

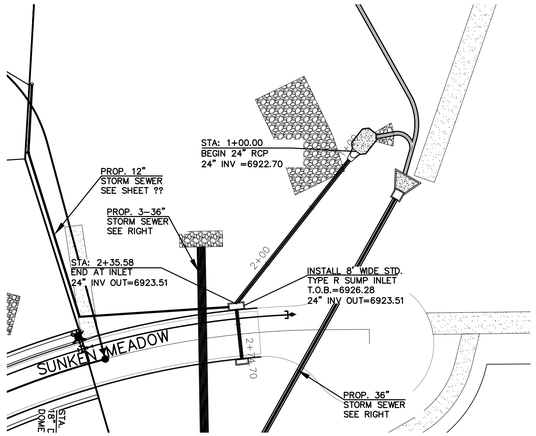


STORM SEWER RUN – 9 (PIPE RUN 20, 22 & 26)
PROPOSED PUBLIC RCP STORM SEWER

WATERBURY FILING NO. 1

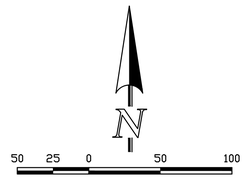
CONSTRUCTION SET
STORM SEWER RUN 9 & LATERAL 8

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	30 OF 37

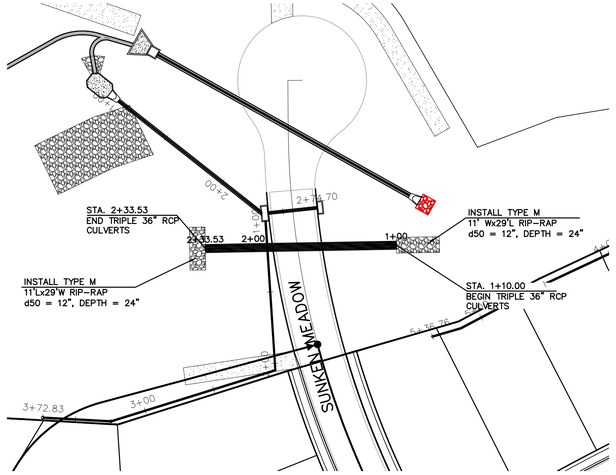


STORM SEWER LATERAL – 10 (PIPE RUN 34)

PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

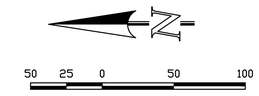


SCALE: 1" = 50'

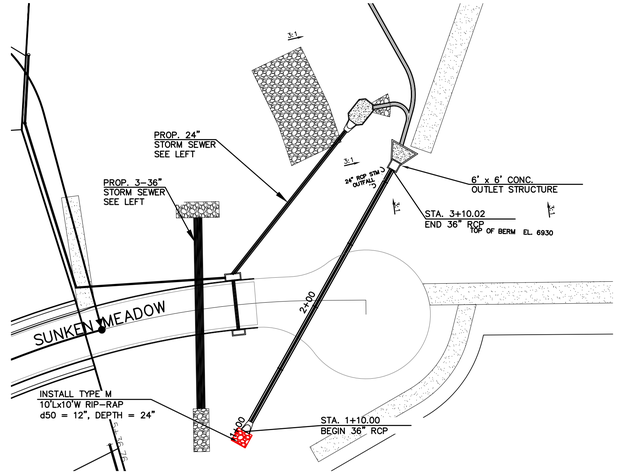


STORM SEWER RUN – 11 (PIPE RUN 36)

PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

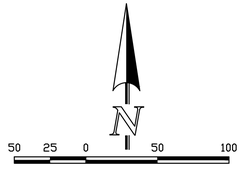


SCALE: 1" = 50'



STORM SEWER RUN – 12 (PIPE RUN 35)

PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.



SCALE: 1" = 50'

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QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170

REVISIONS

NO.	DESCRIPTION	DATE

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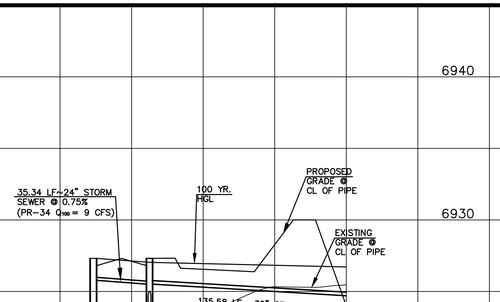
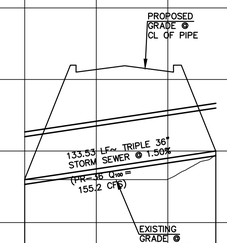


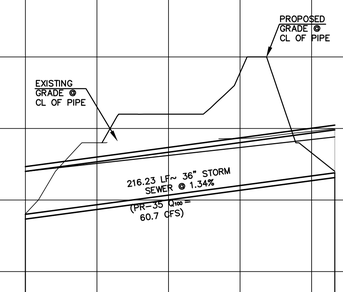
STORM SEWER LATERAL – 10 (PIPE RUN 34)

PROPOSED PUBLIC RCP STORM SEWER



STORM SEWER RUN – 11 (PIPE RUN 36)

PROPOSED PUBLIC RCP STORM SEWER



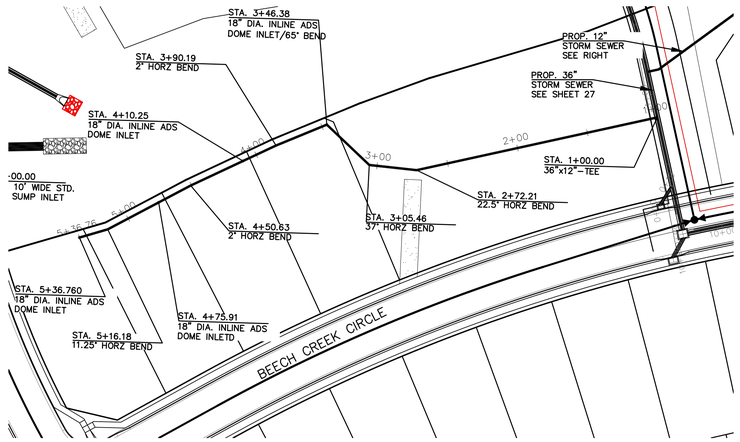
STORM SEWER RUN – 12 (PIPE RUN 35)

PROPOSED PUBLIC RCP STORM SEWER

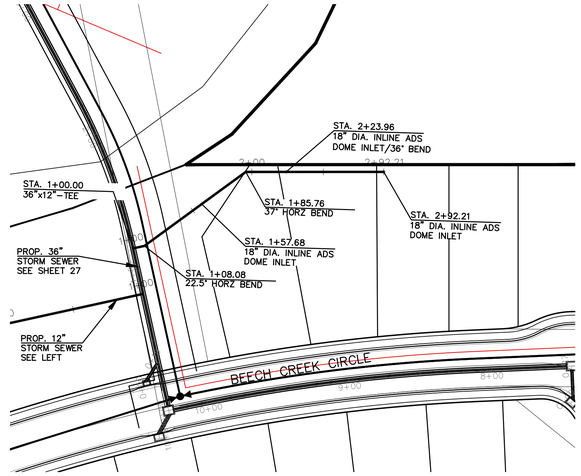
WATERBURY FILING NO. 1

CONSTRUCTION SET
STORM SEWER RUN 10, 11 & 12

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	31 OF 37



STORM SEWER LATERAL-11 (PIPE RUN 39)
PROPOSED PRIVATE HDPE STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.



STORM SEWER LATERAL-12 (PIPE RUN 40)
PROPOSED PRIVATE HDPE STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

50 25 0 50 100
SCALE: 1" = 50'

50 25 0 50 100
SCALE: 1" = 50'

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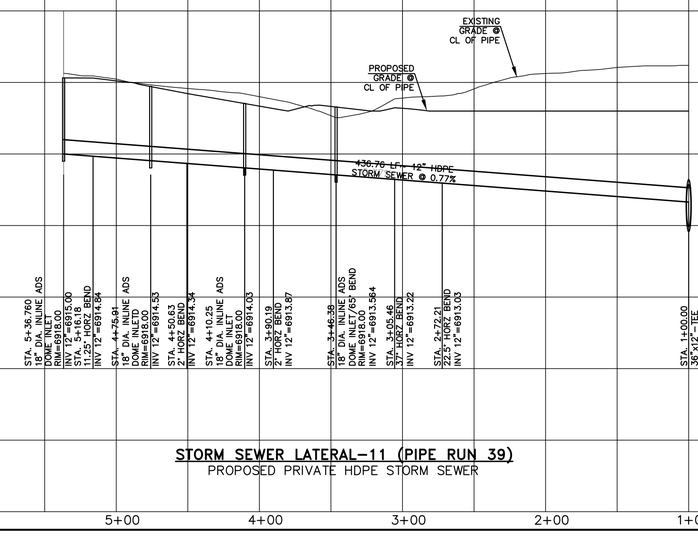
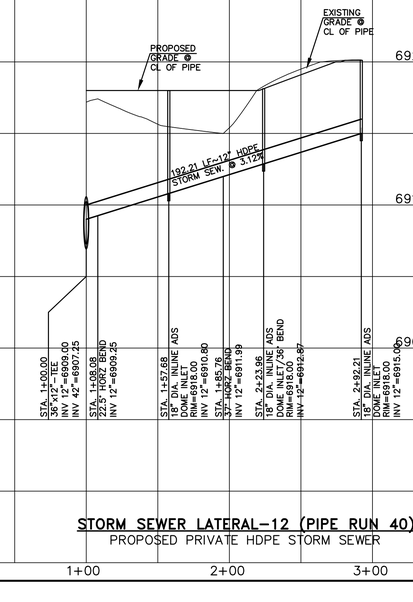
QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170



STORM SEWER LATERAL-11 (PIPE RUN 39)
PROPOSED PRIVATE HDPE STORM SEWER



STORM SEWER LATERAL-12 (PIPE RUN 40)
PROPOSED PRIVATE HDPE STORM SEWER

REVISIONS

NO.	DESCRIPTION	DATE

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PREPARED FOR:
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719-491-3150

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Creative Civil Engineering Solutions
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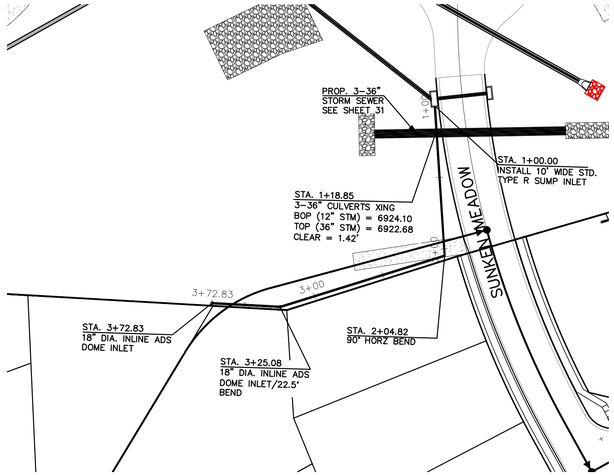
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tneiinc.com

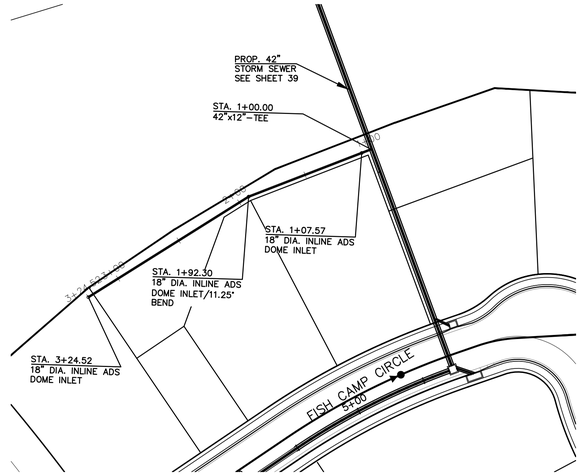
WATERBURY FILING NO. 1

CONSTRUCTION SET
STORM SEWER LATERAL 13, 14

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	33 OF 39

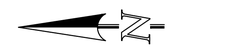


STORM SEWER LATERAL-13
PROPOSED PRIVATE HDPE STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.



STORM SEWER LATERAL-14 (PIPE RUN 37)
PROPOSED PRIVATE HDPE STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

SCALE: 1" = 50'



SCALE: 1" = 50'

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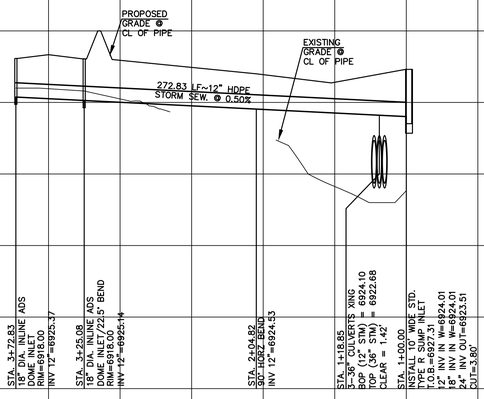
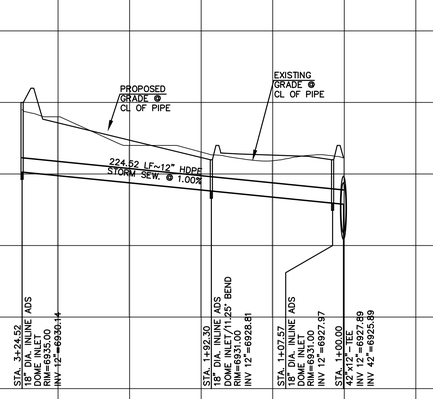
QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170



STORM SEWER LATERAL-13 (PIPE RUN 38)
PROPOSED PRIVATE HDPE STORM SEWER



STORM SEWER LATERAL-14 (PIPE RUN 37)
PROPOSED PRIVATE HDPE STORM SEWER

REVISIONS

NO.	DESCRIPTION	DATE

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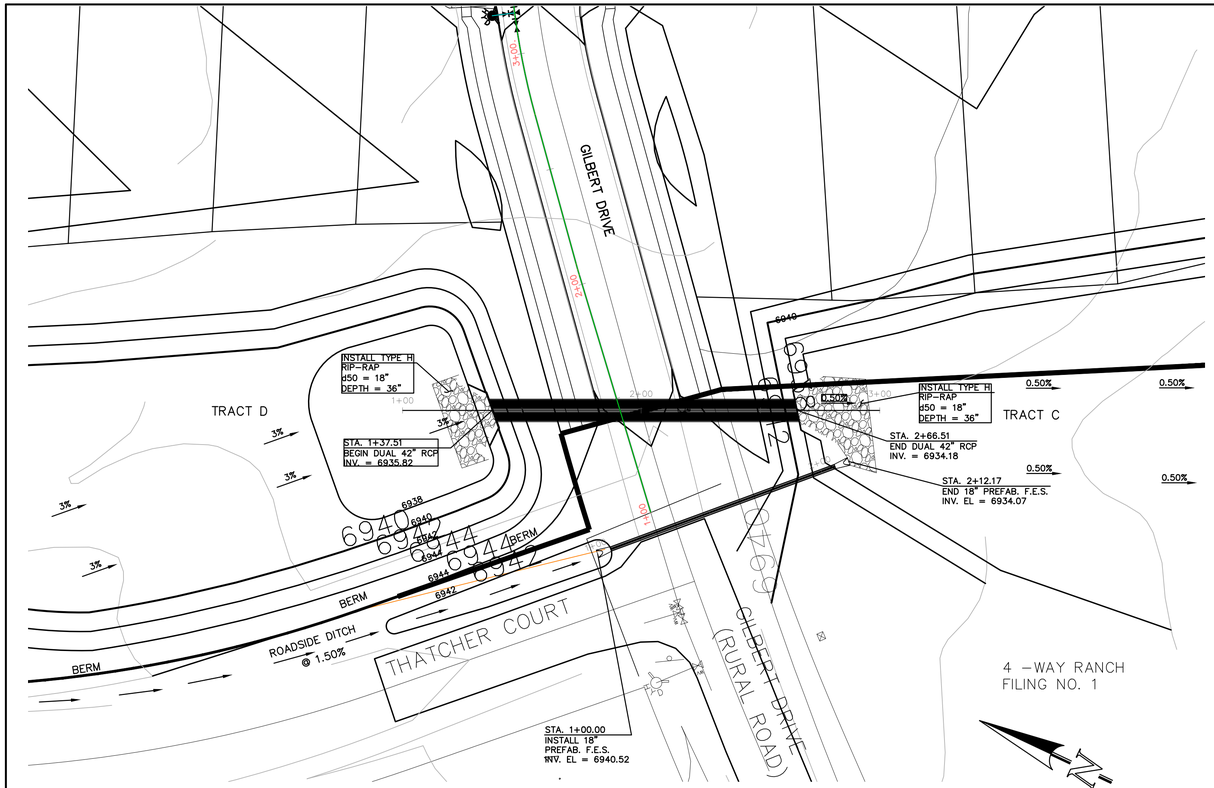
www.tneinc.com

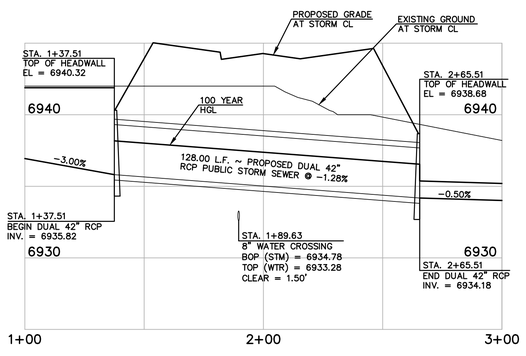
WATERBURY FILING NO. 1

CONSTRUCTION SET
STORM SEWER LATERAL 11, 12

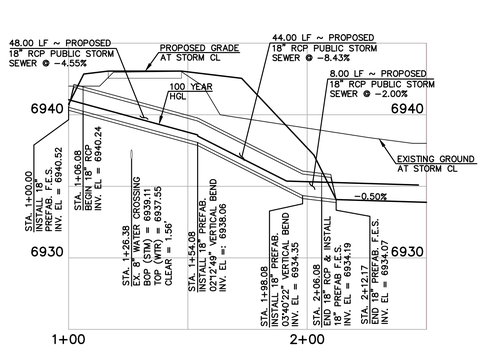
DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	32 OF 3



DUAL 42" RCP STORM SEWER CROSSING
& 18" RCP SIDE DITCH CULVERT CROSSING



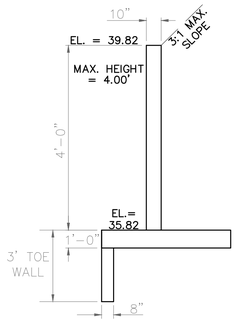
DUAL 42" RCP STORM SEWER CROSSING
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'



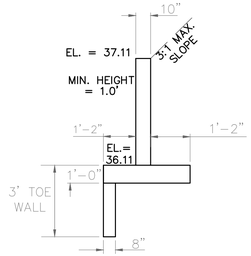
18" RCP STORM SEWER CROSSING
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'

NORTHWEST HEADWALL/WINGWALLS

PER CDOT M-601-20
SEE CDOT M-601-20 FOR DESIGN REQUIREMENTS
INV. IN EL = 6935.82
EL AT TOP OF HEADWALL = 6940.32
EL AT TOP OF WINGWALL NW1 = 6939.82
EL AT TOP OF WINGWALL NW2 = 6937.11
EL AT TOP OF NW1 FOOTING = 6935.82
EL AT TOP OF NW2 FOOTING = 6936.11



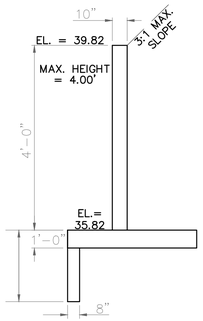
NORTHWEST WINGWALL TOP
N.T.S.
(WALL NW1)



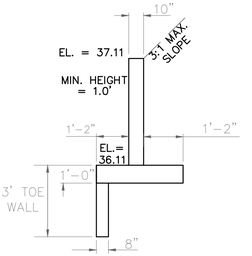
NORTHWEST WINGWALL BOTTOM
N.T.S.
(WALL NW2)

NORTHEAST HEADWALL/WINGWALLS

PER CDOT M-601-20
SEE CDOT M-601-20 FOR DESIGN REQUIREMENTS
INV. IN EL = 6935.82
EL AT TOP OF HEADWALL = 6940.32
EL AT TOP OF WINGWALL NE1 = 6939.82
EL AT TOP OF WINGWALL NE2 = 6937.11
EL AT TOP OF NE1 FOOTING = 6935.82
EL AT TOP OF NE2 FOOTING = 6936.11



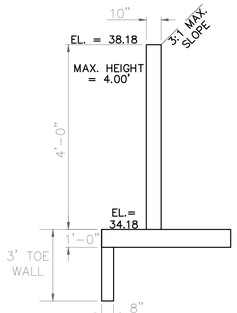
NORTHEAST WINGWALL TOP
N.T.S.
(WALL NE1)



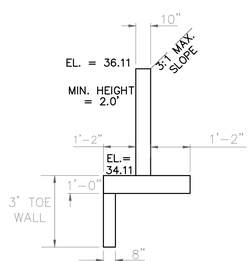
NORTHEAST WINGWALL BOTTOM
N.T.S.
(WALL NE2)

SOUTHWEST HEADWALL/WINGWALLS

PER CDOT M-601-20
SEE CDOT M-601-20 FOR DESIGN REQUIREMENTS
INV. OUT EL = 6934.18
EL AT TOP OF HEADWALL = 6938.68
EL AT TOP OF WINGWALL SW1 = 6938.18
EL AT TOP OF WINGWALL SW2 = 6936.11
EL AT TOP OF SW1 FOOTING = 6934.18
EL AT TOP OF SW2 FOOTING = 6934.11



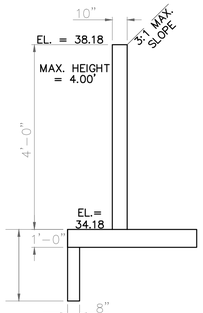
SOUTHWEST WINGWALL TOP
N.T.S.
(WALL SW1)



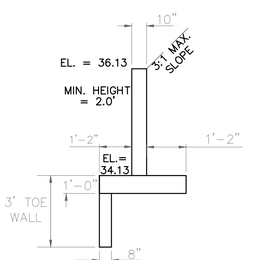
SOUTHWEST WINGWALL BOTTOM
N.T.S.
(WALL SW2)

SOUTHEAST HEADWALL/WINGWALLS

PER CDOT M-601-20
SEE CDOT M-601-20 FOR DESIGN REQUIREMENTS
INV. OUT EL = 6934.18
EL AT TOP OF HEADWALL = 6938.68
EL AT TOP OF WINGWALL SE1 = 6938.18
EL AT TOP OF WINGWALL SE2 = 6936.13
EL AT TOP OF SE1 FOOTING = 6934.18
EL AT TOP OF SE2 FOOTING = 6934.13



SOUTHEAST WINGWALL TOP
N.T.S.
(WALL SE1)



SOUTHEAST WINGWALL BOTTOM
N.T.S.
(WALL SE2)

REVISIONS		
NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

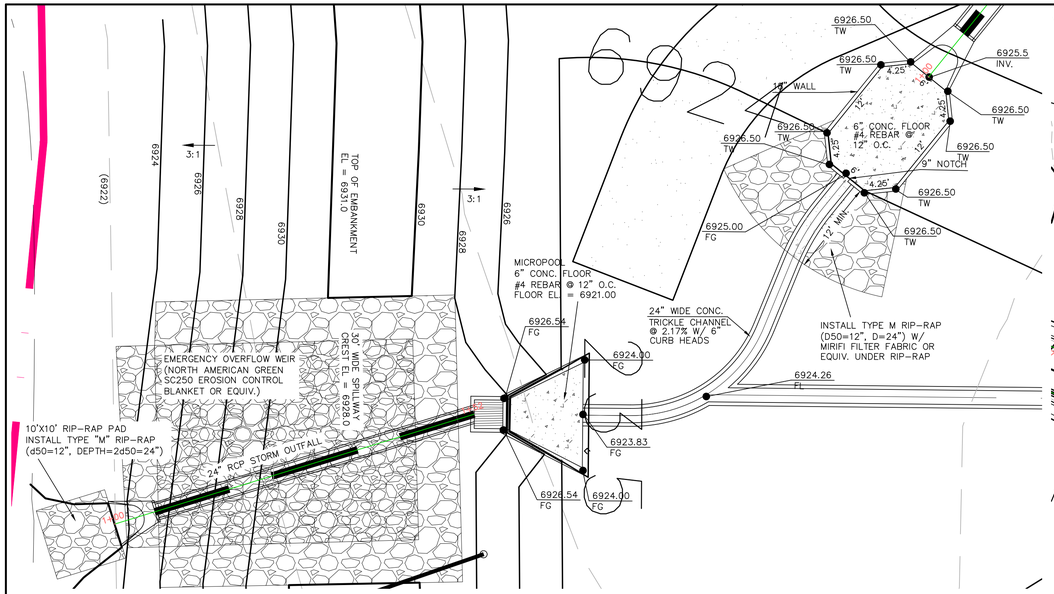
PREPARED FOR:
4-WAY RANCH JOINT VENTURE
ATTN: PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc.
Creative Civil Engineering
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnesinc.com

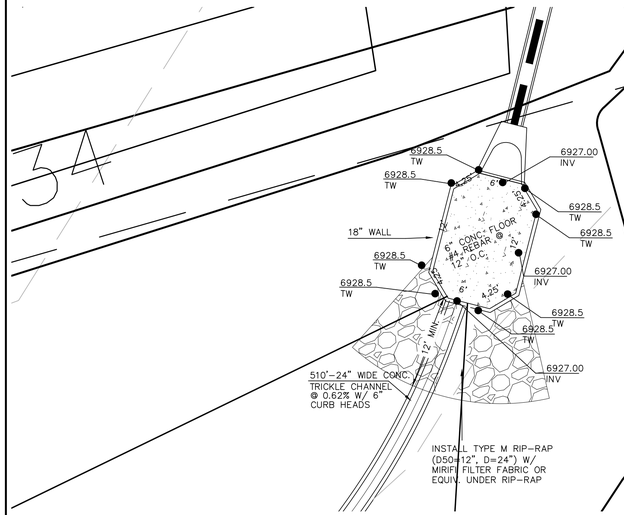
WATERBURY FILING NO. 1

CONSTRUCTION SET
STORM SEWER PLAN AND PROFILE
GILBERT DRIVE CROSSING CULVERTS

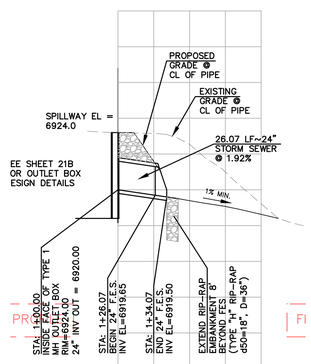
DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H-SCALE NA
V-SCALE N/A
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 34 OF 39



WEST CONCRETE FOREBAY/MICROPOOL DETAILS

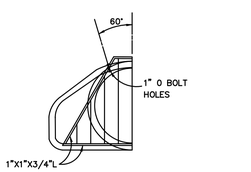


EAST CONCRETE FOREBAY DETAILS



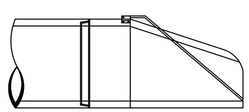
24" RCP POND OUTFALL

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



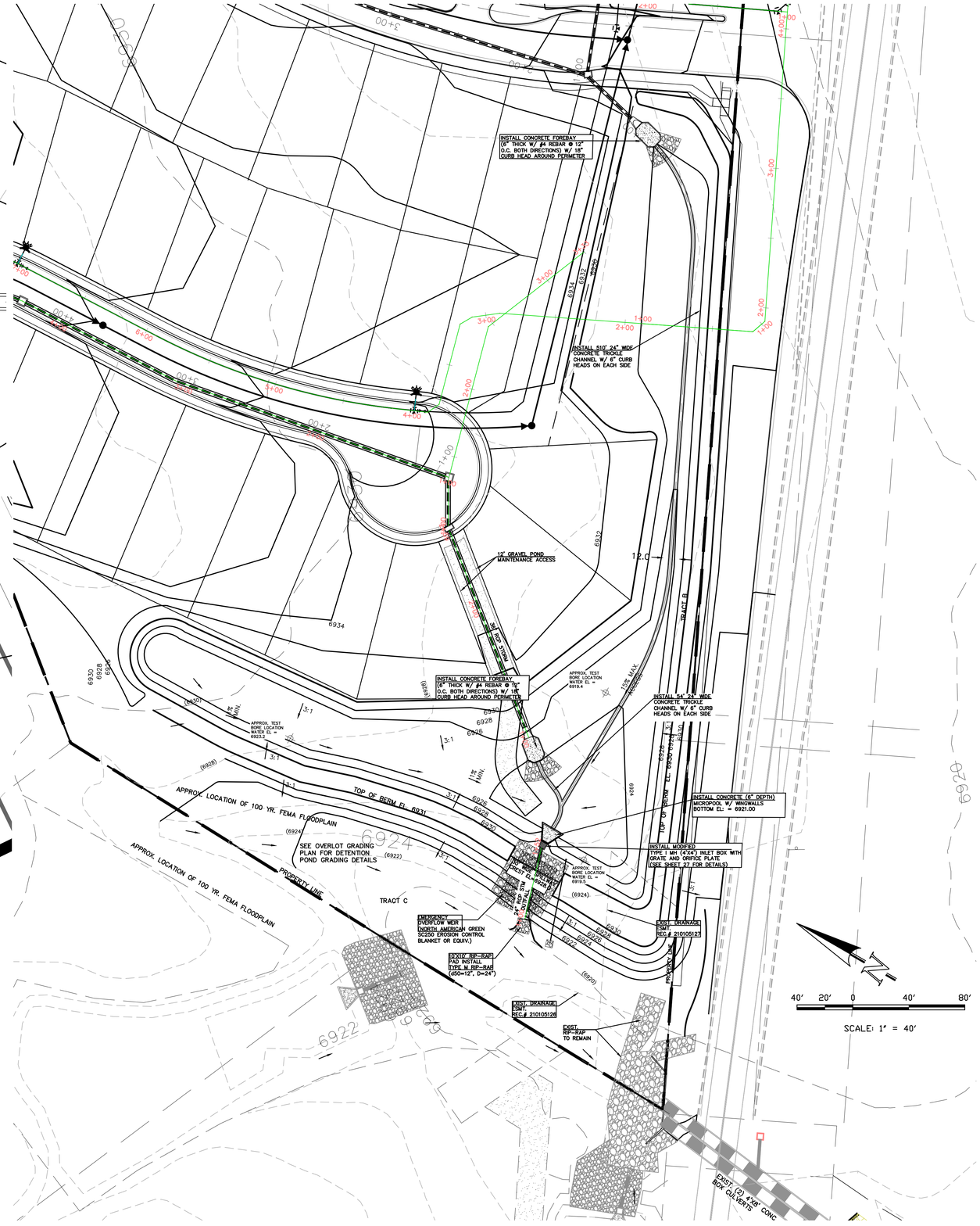
FLARED END SECTION

SCALE: N.T.S.



TRASH RACK DETAIL: F.E.S. DETAIL

SCALE: N.T.S.



DETENTION FACILITY 1

REVISIONS

NO.	DESCRIPTION	DATE

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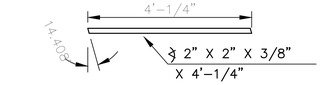
PREPARED FOR:
4-WAY RANCH JOINT VENTURE
ATTN: PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

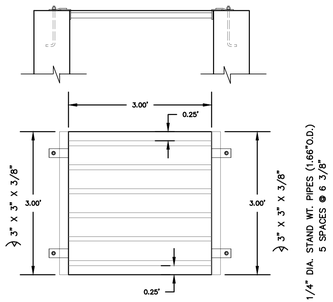
Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnsinc.com

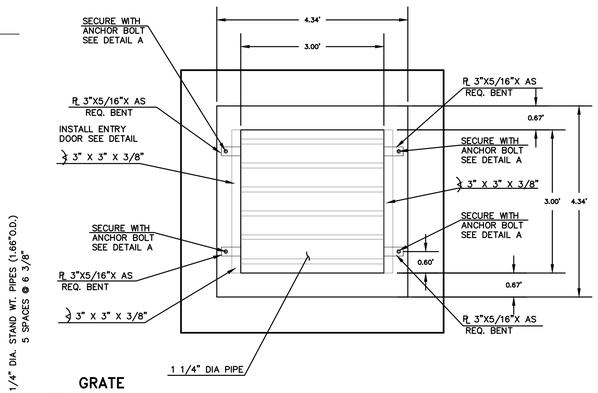
WATERBURY FILING NO. 1

CONSTRUCTION SET
POND 1 DETAILS

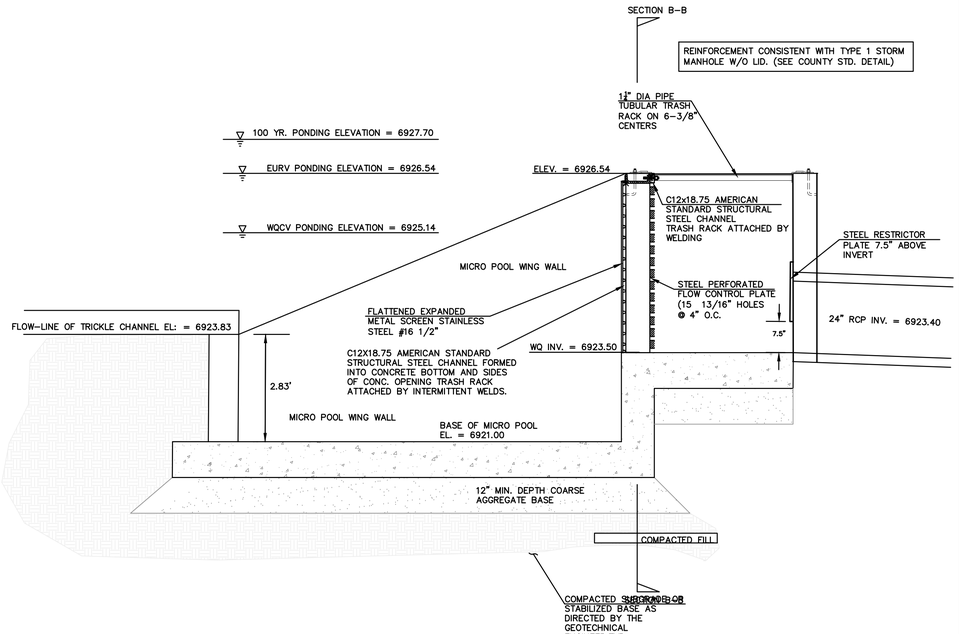
DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	NA
V-SCALE	N/A
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	35 OF 39



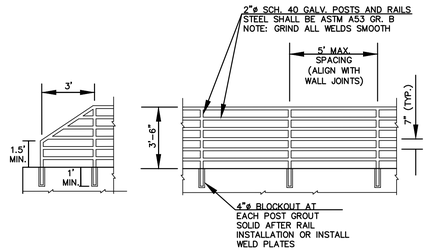




GRATE CONSTRUCTION
ALL WELDED CONSTRUCTION
SCALE: 1"=2'

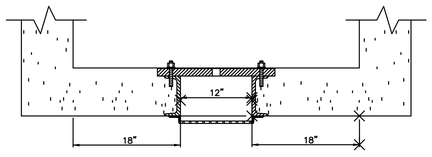


OUTLET STRUCTURE MODIFIED TYPE 1 MH
SCALE: 1"=2'



NOTES:

1. WELD PLATES MAY BE SUBSTITUTED FOR PIPE EMBEDDMENT.
2. CONTRACTOR SHALL SUBMIT HANDRAIL SHOP DRAWINGS TO ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION
3. DESIGN CRITERIA SHALL BE IN ACCORDANCE WITH AASHTO STANDARDS.
4. HANDRAIL DESIGN SHALL BE COMPATIBLE WITH THE DESIGN OF THE WINGWALLS AND HEADWALLS.
5. RAILING POSTS SHALL BE SET TO NORMAL TO GRADE. RAILS SHALL RUN PARALLEL TO THE SLOPES OF TOPS OF THE WALLS.
6. ALL RAILS SHALL HAVE EXPANSION JOINTS SPACED AT 40'-0 MAX. JOINT ENDS SHALL BE FREE OF ANY SHARP EDGES OR CORNERS.



SECTION B-B
SCALE: 1"=1'

1.

STEEL FABRICATION NOTES:

2. FABRICATED STEEL STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AISC AND AWS SPECIFICATIONS.
3. THE OUTLET STRUCTURE BARGRATE IS DESIGNED FOR A VERTICAL LOAD OF 300 LBS./SQ. FT.

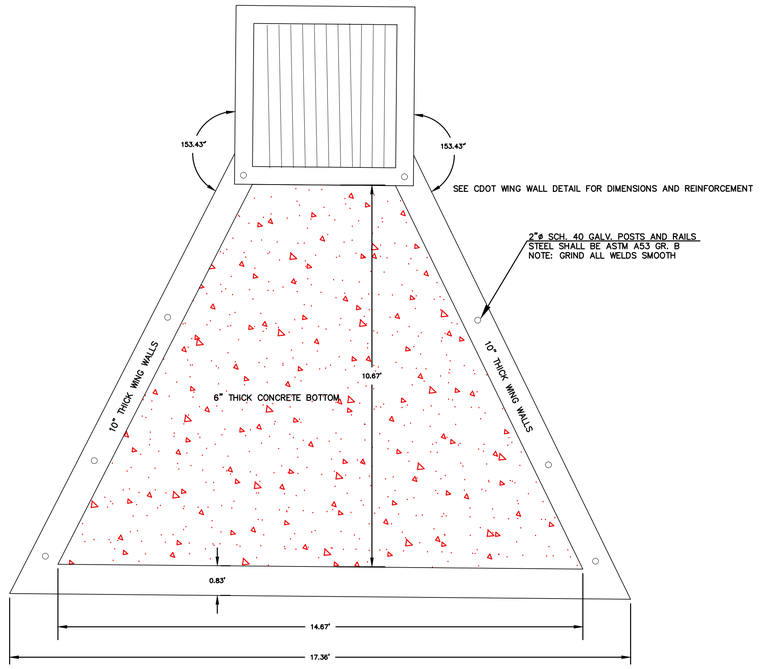
ALL STRUCTURAL STEEL SHAPES TO INCLUDE: ANGLE, PLATE, AND BAR SHALL MEET ASTM A36 SPECIFICATIONS, FY = 36 KSI MINIMUM. STRUCTURAL TUBING SHALL MEET ASTM A500 GRADE B SPECIFICATIONS, FY = 46 KSI MINIMUM. STEEL PIPE SHALL BE STANDARD WEIGHT PIPE ASTM A53 GRADE B, FY = 35 KSI MINIMUM.

WELDS NOT INDICATED SHALL BE 1/8" MINIMUM FILLET OR GROOVE, CONTINUOUS SO FAR AS POSSIBLE, CONSIDER VANDALISM LOADS, WELD ACCORDINGLY AT CRITICAL LOCATIONS.

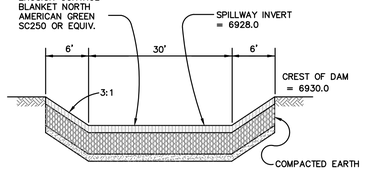
5.

6. PRIOR TO PAINTING REMOVE ALL OIL, SCALE, AND SLAG, GRIND OFF BURRS AND SHARP EDGES.

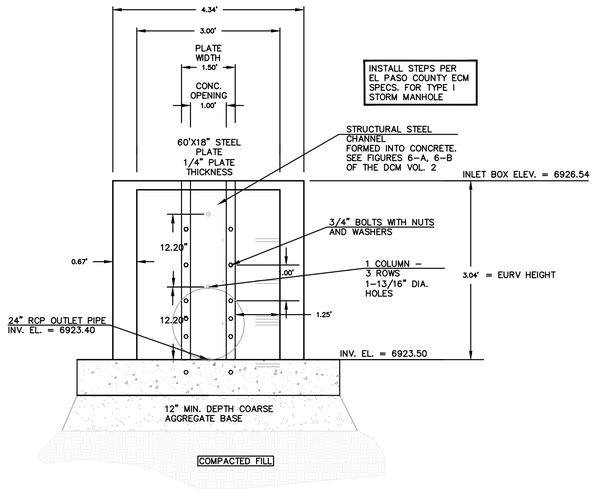
PAINT WITH ONE SHOP COAT OF ZINC RICH PRIMER AND TWO COATS OF ALUMINUM PAINT, AASHTO M-69



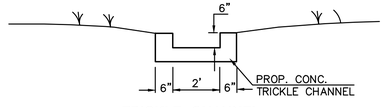
CONCRETE MICROPOOL
SCALE: 1"=2'



EMERGENCY SPILLWAY CROSS SECTION
SCALE: N.T.S.



OUTLET STRUCTURE MODIFIED TYPE 1 MH
SCALE: 1"=2'



TRICKLE CHANNEL TYPICAL SECTION
N.T.S.

REVISIONS

NO.	DESCRIPTION	DATE

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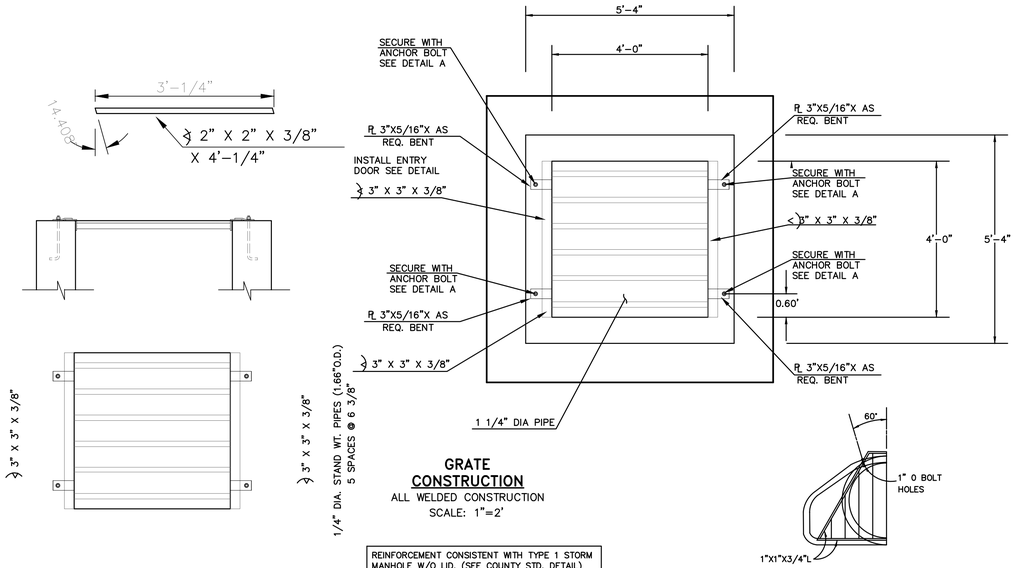
PREPARED FOR:
4-WAY RANCH JOINT VENTURE
ATTN: PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnsinc.com

WATERBURY FILING NO. 1

CONSTRUCTION SET
POND 1 DETAILS

DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	NA
V-SCALE	N/A
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	36 OF 39



GRATE CONSTRUCTION

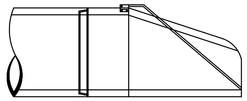
ALL WELDED CONSTRUCTION

SCALE: 1"=2'

REINFORCEMENT CONSISTENT WITH TYPE 1 STORM MANHOLE W/O LID. (SEE COUNTY STD. DETAIL)

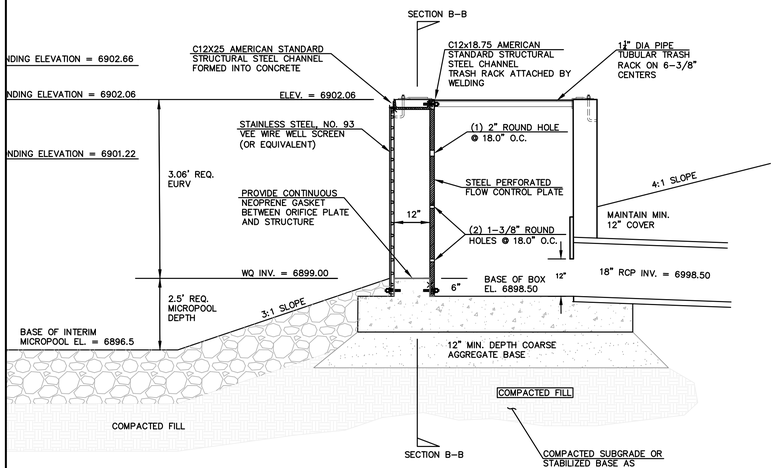
FLARED END SECTION

SCALE: N.T.S.



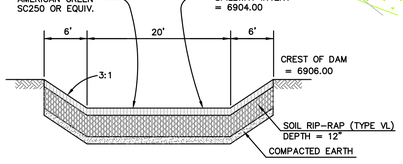
TRASH RACK DETAIL: F.E.S. DETAIL

SCALE: N.T.S.



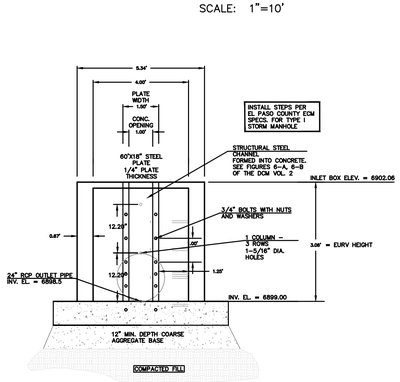
CONCRETE OUTLET BOX DETAILS

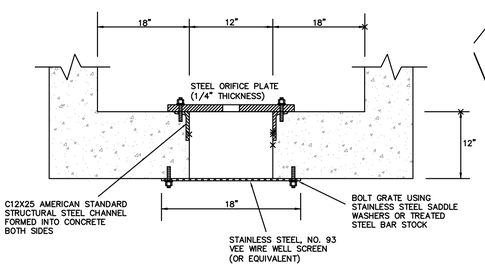
SCALE: 1"=10'

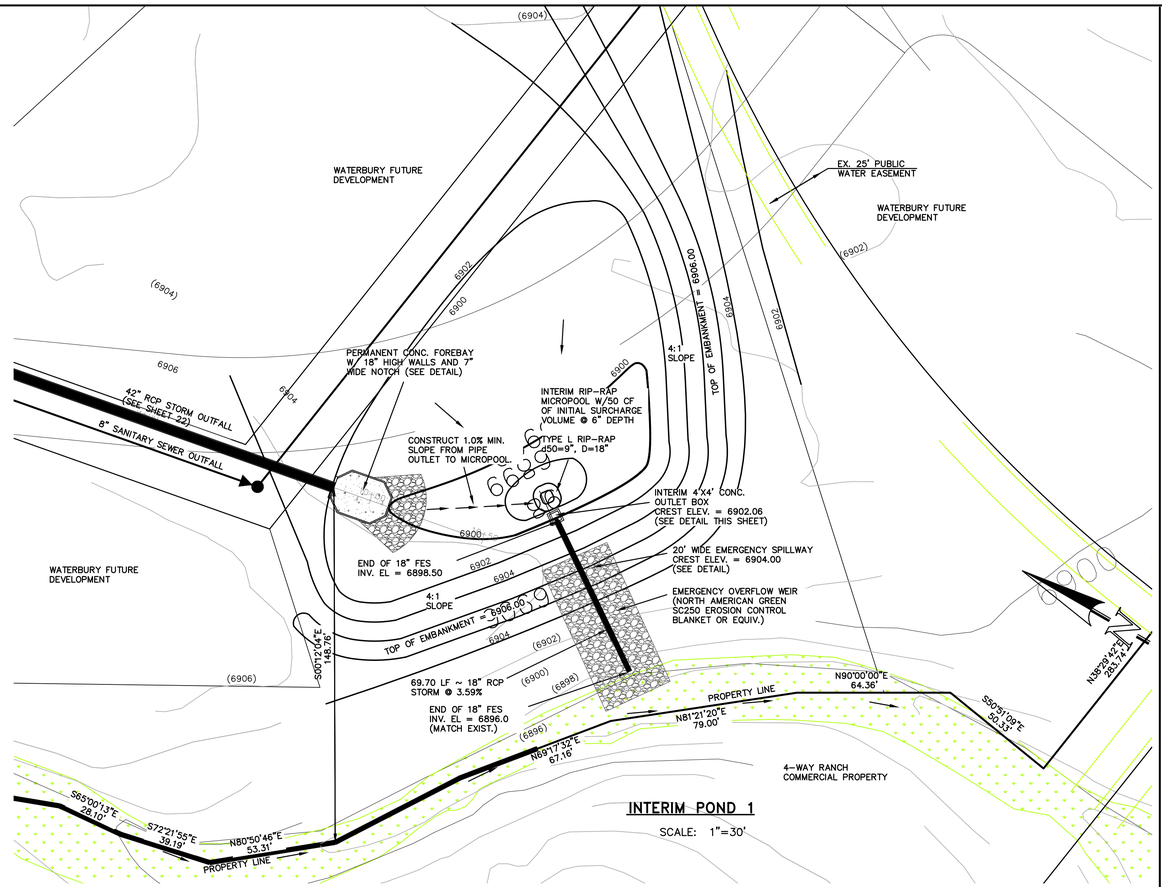


EMERGENCY SPILLWAY CROSS SECTION

SCALE: N.T.S.

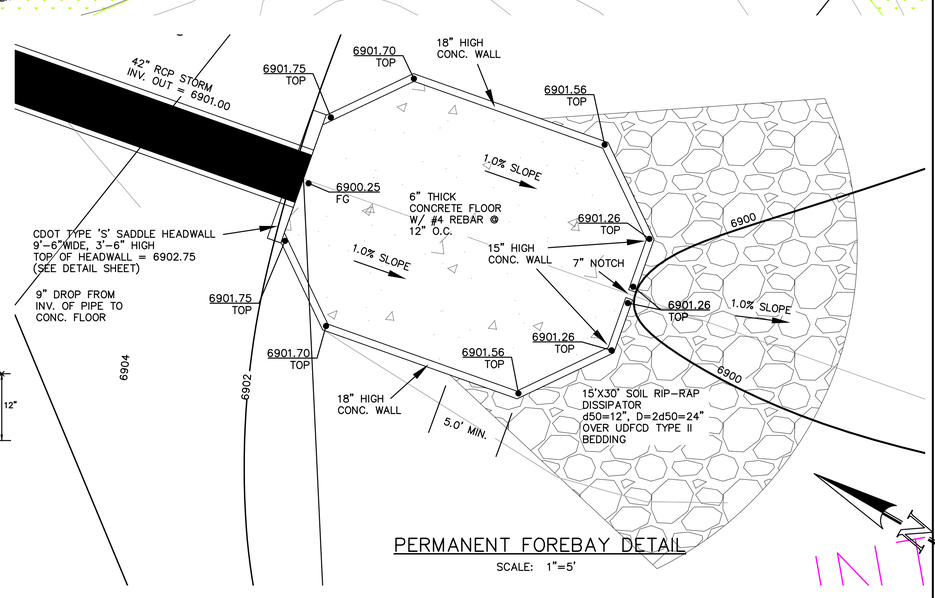






INTERIM POND 1

SCALE: 1"=30'



PERMANENT FOREBAY DETAIL

SCALE: 1"=5'

REVISIONS

NO.	DESCRIPTION	DATE

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PREPARED FOR:
4-WAY RANCH JOINT VENTURE
ATTN: PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc.
"Creative Civil Engineering"
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnesinc.com

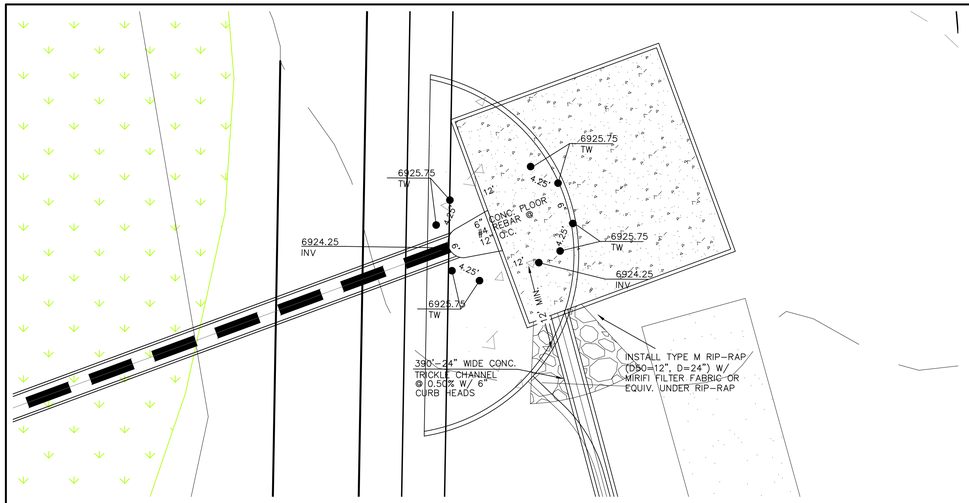
WATERBURY FILING NO. 1

CONSTRUCTION SET
POND 2 DETAILS

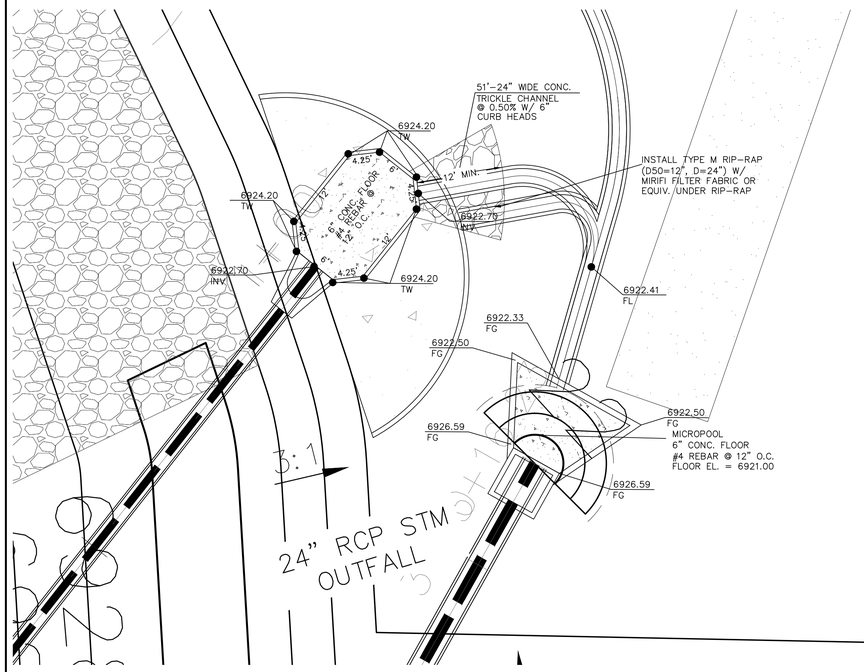
DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA

H-SCALE NA
V-SCALE N/A

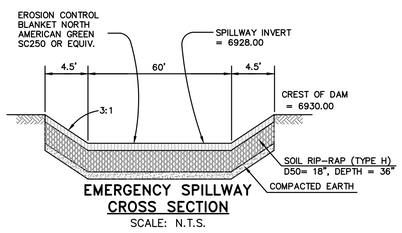
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 37 OF 39



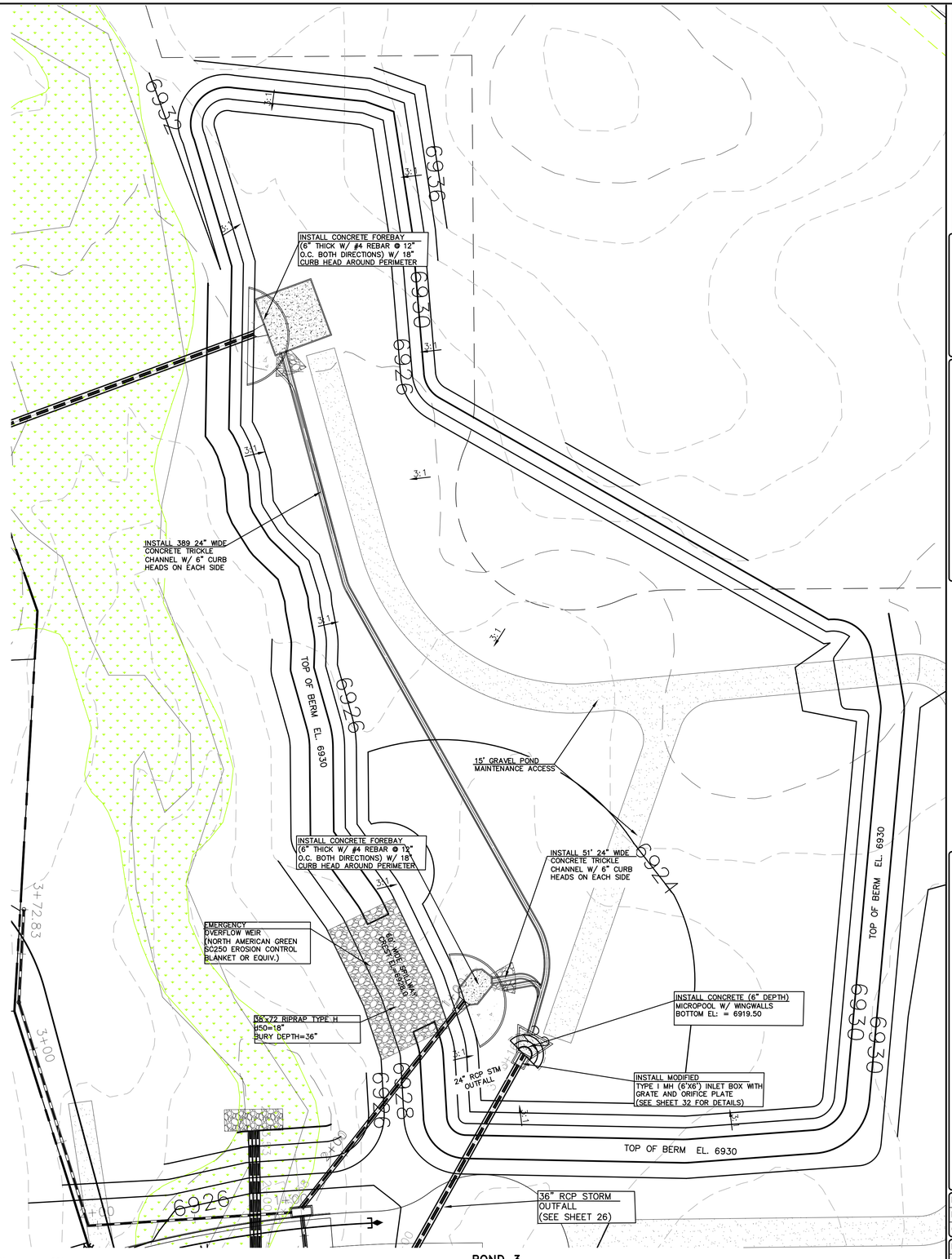
NORTH CONCRETE FOREBAY
SCALE: 1"=10'



EAST CONCRETE FOREBAY/MICROPOOL DETAILS
SCALE: 1"=10'



EMERGENCY SPILLWAY CROSS SECTION
SCALE: N.T.S.



POND 3
SCALE: 1"=30'

N

30' 15' 0 30' 60'

SCALE: 1" = 30'

REVISIONS		
NO.	DESCRIPTION	DATE

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PREPARED FOR:
4-WAY RANCH JOINT VENTURE
ATTN: PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc.
Sustainable Civil Engineering
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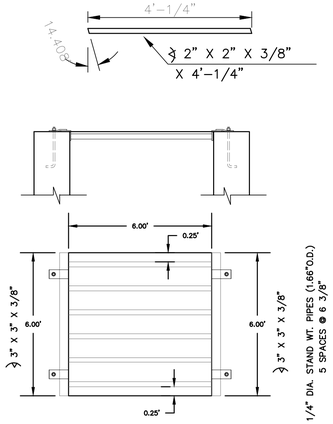
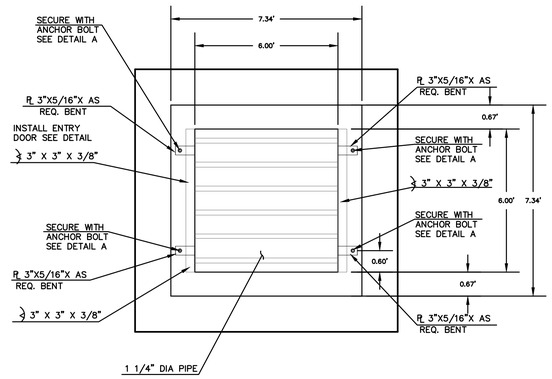
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnesinc.com

WATERBURY FILING NO. 1

CONSTRUCTION SET
POND 3 DETAILS

DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	NA
V-SCALE	N/A
JOB NO.	1715.00
DATE ISSUED	2/6/23
SHEET NO.	38 OF 39

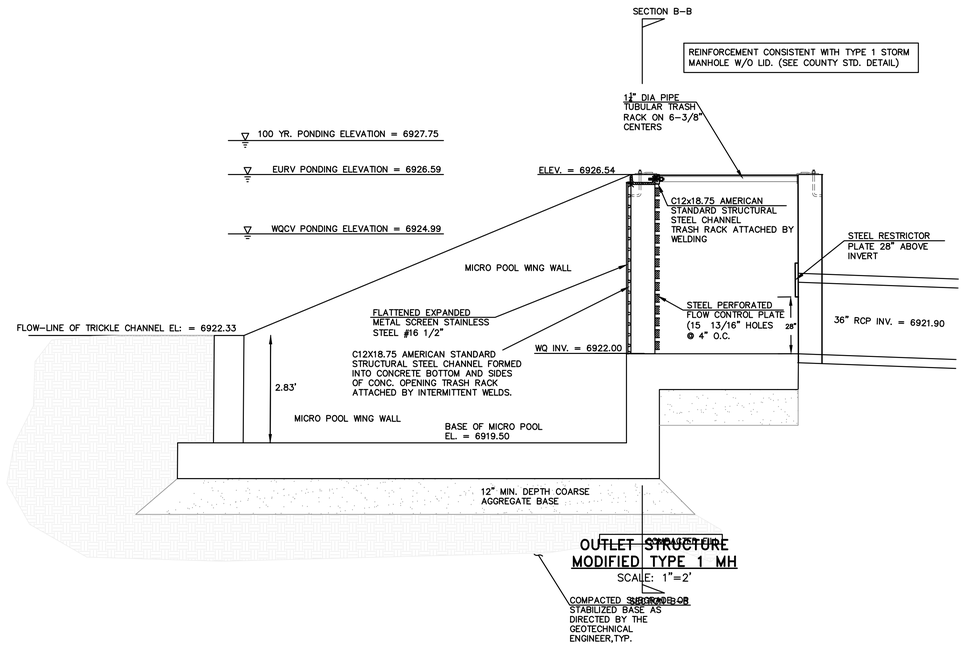




GRATE CONSTRUCTION

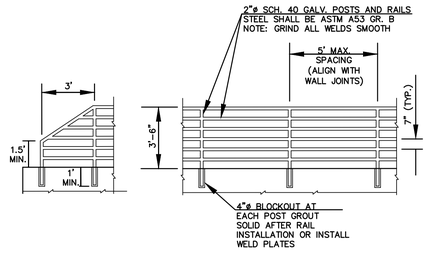
ALL WELDED CONSTRUCTION

SCALE: 1"=2'



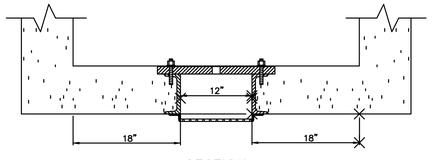
OUTLET STRUCTURE MODIFIED TYPE 1 MH

SCALE: 1"=2'



NOTES:

1. WELD PLATES MAY BE SUBSTITUTED FOR PIPE EMBEDDMENT.
2. CONTRACTOR SHALL SUBMIT HANDRAIL SHOP DRAWINGS TO ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION
3. DESIGN CRITERIA SHALL BE IN ACCORDANCE WITH AASHTO STANDARDS.
4. HANDRAIL DESIGN SHALL BE COMPATIBLE WITH THE DESIGN OF THE WINGWALLS AND HEADWALLS.
5. RAILING POSTS SHALL BE SET TO NORMAL TO GRADE. RAILS SHALL RUN PARALLEL TO THE SLOPES OF TOPS OF THE WALLS.
6. ALL RAILS SHALL HAVE EXPANSION JOINTS SPACED AT 40'-0 MAX. JOINT ENDS SHALL BE FREE OF ANY SHARP EDGES OR CORNERS.



SECTION B-B

SCALE: 1"=1'

1.

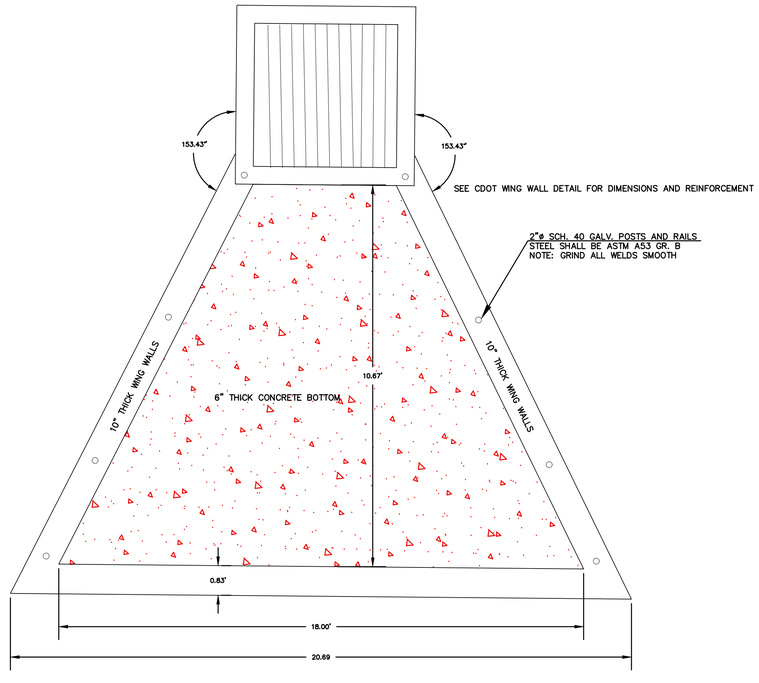
STEEL FABRICATION NOTES:

2. FABRICATED STEEL STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AISC AND AWS SPECIFICATIONS.
3. THE OUTLET STRUCTURE BARGRATE IS DESIGNED FOR A VERTICAL LOAD OF 300 LBS./SQ. FT.

ALL STRUCTURAL STEEL SHAPES TO INCLUDE: ANGLE, PLATE, AND BAR SHALL MEET ASTM A36 SPECIFICATIONS, FY = 36 KSI MINIMUM. STRUCTURAL TUBING SHALL MEET ASTM A500 GRADE B SPECIFICATIONS, FY = 46 KSI MINIMUM. STEEL PIPE SHALL BE STANDARD WEIGHT PIPE ASTM A53 GRADE B, FY = 35 KSI MINIMUM.

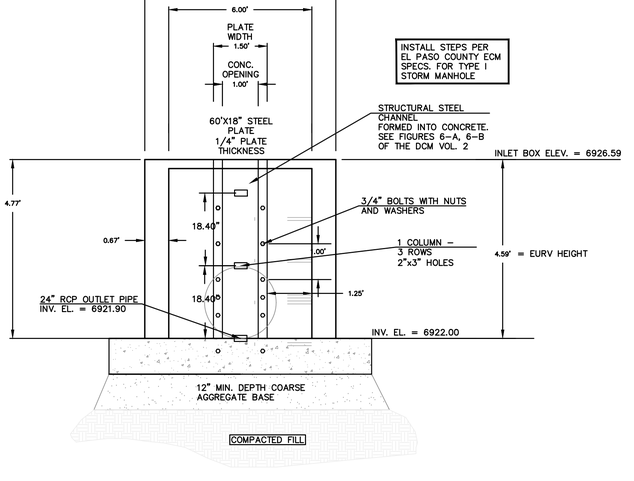
WELDS NOT INDICATED SHALL BE 1/8" MINIMUM FILLET OR GROOVE, CONTINUOUS SO FAR AS POSSIBLE, CONSIDER VANDALISM LOADS, WELD ACCORDINGLY AT CRITICAL LOCATIONS.

6. PRIOR TO PAINTING REMOVE ALL OIL, SCALE, AND SLAG, GRIND OFF BURRS AND SHARP EDGES.



CONCRETE MICROPOOL

SCALE: 1"=2'



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SCALE: 1"=2'

REVISIONS

NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
4-WAY RANCH JOINT VENTURE
ATTN: PETER MARTZ
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
719-491-3150

Terra Nova Engineering, Inc. Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnesinc.com

WATERBURY FILING NO. 1

CONSTRUCTION SET
POND 3 DETAILS

DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H-SCALE NA
V-SCALE N/A
JOB NO. 1715.00
DATE ISSUED 2/6/23
SHEET NO. 39 OF 39