WATERBURY FILING NO. 1

EL PASO COUNTY, CO

CONSTRUCTION SET

NOVEMBER 2024

NOTE:

ALL EXISTING UNDERGROUND AND ABOVE GROUND UTILITY LOCATIONS, INVERS AND SIZES ARE APPROXIMATE ONLY AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. TIE IN POINTS SHALL BE POTHOLED AND LOCATIONS, INVERS 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 EARH 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 CERIFIED 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 ALERNATIVE 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. EARH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHOREST 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 INFILRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILRATION 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 INFILRATION 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 EARH 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, DIR, TRASH, ROCK, SEDIMENT, SOIL, AND SAND THAT MAY ACCUMULATE IN ROADS, STORM DRAINS AND OTHER DRAINAGE CONVEYANCE SYSTEMS AND STORMWATER APPURENANCES AS A RESUL 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, ARICLE 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 EARHWORK OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARHWORK EQUIPMENT AND WIND.

28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY ENTECH ENGINEERING AND SHALL BE CONSIDERED A PART OF THESE PLANS. SOIL, GEOLOGY, AND GEOLOGIC HAZARD REPORT AND ADDENDUM, WATERBURY, FILINGS 1 AND 2, DATED OCTOBER 18, 2021 AND FEBRUARY 2, 2022, BY ENTECH ENGINEERING

29. AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED STAR 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 DEPARMENT OF PUBLIC HEALH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PAR. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

COLORADO DEPARMENT OF PUBLIC HEALH 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 REPOR, 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 DEPARMENT OF TRANSPORATION (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 DEPARMENT OF PUBLIC WORKS (DPW) INSPECTIONS, PRIOR TO STARING 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 DPW. 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 DPW.

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

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

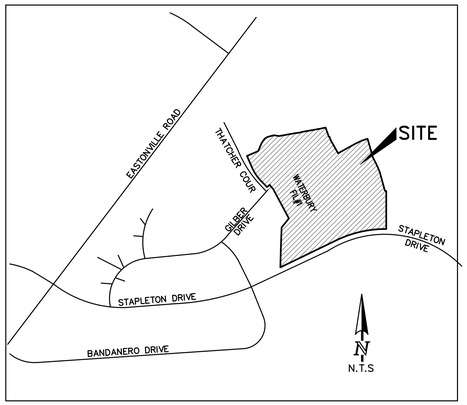
12. SIGHT VISIBILITY TRIANGLES AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.

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

14. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DPW, INCLUDING WORK WITHIN THE RIGHT–OF–WAY AND SPECIAL TRANSPOR PERMITS.

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

SHEET INDEX



VICINITY MAP

GENERAL NOTES

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGRO[illegible]TE. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NON–EXISTENCE OR A DEFIN[illegible] 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 REPOR FROM THE GEOTECHNICAL ENGINEER AND TO BE KEPT ONSITE DURING ALL EARHWORK 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 PROPERIES AND PUBLIC FACILITIES FROM THE ADVERSE EFFECTS OF EROSION AND SEDIMENTATION AS A RESUL OF CONSTRUCTION AND EARHWORK 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 ARERIAL AND A 50 FOOT SIGH VISIBILITY TRIANGLE IS REQUIRED AND THERE SHALL BE NO OBSTRUCTIONS GREATER THAN 18" IN THIS AREA.
12. ALL CULVER AND STORM DRAIN PIPES SHALL BE SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE (HDPE) OR REINFORCED CONCRETE PIPE (RCP). ALL CULVERS SHALL BE PLACED WITH FLARED END SECTIONS. ADEQUACY OF MATERIAL THICKNESS FOR ANY CSP INSTALLED SHALL BE VERIFIED BY OWNER'S GEOTECHNICAL ENGINEER TO SUPPOR MINIMUM 50 YEAR DESIGN LIFE. CULVERS MUST CONFORM TO EPC ECM SECTIONS 3.32 – CULVERS.
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 CONSULING 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 LOCATIONS 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 6" BLANK AND NON–LOCAL ROADWAY SIGNS BEING 6" LETTERING, UPPER–LOWER CASE ON 12" BLANK, WITH A WHITE BORDER THAT IS NOT RECESSED. MULI–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 2E5 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 24" WIDE AND 9' 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 DEPARMENT 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.

Please update sheet numbering for total # sheets with this set

CONTACT INFORMATION:

OWNER:	ACM ALF VIII JV SUB II LLC 4100 E. MISSISSIPPI AVE., STE. 500 DENVER, CO 80246 JASON POCK (303) 984–9800 EXT 107
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 DEPARMENT OF PUBLIC WORKS 2880 INTERNATIONAL CIRCLE COLORADO SPRINGS, COLORADO 80910 JEFF RICE P.E. (719) 520–6300
METRO DISTRICT	4–WAY RANCH METROPOLITAN DISTRICTS 2 614 N TEJON STREET COLORADO SPRINGS, CO 80903 ADAM NOEL (719)–447–1777
GAS DEPARMENT	BLACK HILLS ENERGY 7060 ALEGRE ST. FOUNTAIN, CO 80817 GEORGE PETERSON (719) 393–6625
ELECTRIC DEPARMENT	MOUNTAIN VIEW ELECTRIC ASSOCIATION 11140 E. WOODMEN ROAD FALCON, COLORADO 80831 DARYL EDWARDS (719) 495–2283
FIRE DEPARMENT	FALCON FIRE STATION 3 / HEADQUARERS 7030 OLD MERIDIAN ROAD PEYTON, COLORADO 80831 (719) 495–4050
TELEPHONE COMPANY	A.T.&T. LOCATORS (719) 635–3674 CENTURY LINK LO

EROSION CONTROL LEGEND

KEY	TITLE	SYMBOL	IMPLEMENATION PHASE
SF	SILT FENCE	SF	INITIAL
CF	CONSTRUCTION FENCE	CF	INITIAL
SCL	SEDIMENT CONTROL LOGS	SCL	INITIAL
SP	STOCKPILE PROTECTION		INITIAL
VTC	VEHICLE TRACKING CONTROL		INITIAL
SSA	STABILIZED STAGING AREA		INITIAL
TSB	TEMPORARY SEDIMENT BASIN		INITIAL
DW	DEWATERING		INITIAL

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	CUT FILL
TRIBUTARY AREA TO TSB	
DIRECTION OF SURFACE FLOW	1.5%
HIGH POINT	HPX
LOW POINT	LPX
A LOT	"A"
B LOT	"B"
WALK OUT LOT MODIFIED	"WO"
GARDEN LEVEL LOT MODIFIED	"GL"
100-Y FEMA FLOODPLAIN	
AREAS OF DE-WATERING	

MATCHLINE SEE SHEET 3 FOR OFFSITE EDB POND 2

DEWATERING NOTE:
CONTRACTOR TO DISCHARGE GROUND WATER TO THE PROPOSED TEMPORARY SEDIMENT BASINS PER DETAIL ON SHEET 10

NOTES:
1. NO BATCH PLANTS ARE PROPOSED
2. ALL CONTROL MEASURES ARE BEING IMPLEMENTED BY THE OWNER/DEVELOPER/CONTRACTOR
3. SWALE E-E IS TO BE SEEDED AND MULCHED IN INITIAL PHASE

SCALE: 1"=100'

PROPOSED TSB 1
TRIBUTARY AREA=4.65 AC
(BOTTOM EL=6926)
(TOP EL= 6930)
(4:1 SLOPES/4' DEPTH)
(TOP RISER=6929)
(BOT RISER=6927.25)
(HOLE DIA=21/32")
(# OF HOLES=5)
(SPILLWAY LENGTH=8'

PROPOSED TSB 2
TRIBUTARY AREA=19.08 AC
(73.25'Lx36.5'W)
(BOTTOM EL=6920)
(TOP EL= 6924)
(4:1 SLOPES/4' DEPTH)
(TOP RISER=6923)
(BOT RISER=6921.25)
(HOLE DIA=1-3/16")
(# OF HOLES=5)
(SPILLWAY LENGTH=22'

PROPOSED TSB 3
TRIBUTARY AREA=16.63 AC
(73.25'Lx36.5'W)
(BOTTOM EL=6932)
(TOP EL= 6936)
(4:1 SLOPES/4' DEPTH)
(TOP RISER=6935)
(BOT RISER=6933.25)
(HOLE DIA=1-3/16")
(# OF HOLES=5)
(SPILLWAY LENGTH=22'

PROPOSED TSB 4
TRIBUTARY AREA=7.07 AC
(73.25'Lx36.5'W)
(BOTTOM EL=6930)
(TOP EL= 6934)
(4:1 SLOPES/4' DEPTH)
(TOP RISER=6933)
(BOT RISER=6931.25)
(HOLE DIA=27/32")
(# OF HOLES=5)
(SPILLWAY LENGTH=12'

4 WAY RANCH JOINT VENTURE, LLC.
P.O. Box 50223
Colorado Springs, CO 80949
ZONED PUD
Use: Vacant Land
PARCEL 4200000366

KO1515 LLC
PO BOX 1385
COLORADO SPRINGS CO, 80901-1385
ZONED PUD
(PLANNED UNIT DEVELOPMENT)
Use: Vacant
PARCEL 4200000399

935 DEVELOPMENT INC.
P.O. BOX 50223
COLORADO SPRINGS, CO 80949
ZONED PUD
(PLANNED UNIT DEVELOPMENT)
Use: Vacant
PARCEL 4200000399

4 WAY RANCH JOINT VENTURE, LLC.
P.O. Box 50223
Colorado Springs, CO 80949
ZONED PUD
Use: Vacant Land
PARCEL 4200000417

LOT 15
ZONED RR-2.5
Use: Single-Family Res.
PARCEL 4232104001

LOT 36
ZONED RR-2.5
Use: Single-Family Res.
PARCEL 4229402002

LOT 35
ZONED RR-2.5.
Use: Single-Family Res.
PARCEL 4229402001

LOT 37
ZONED RR-2.5
Use: Single-Family Res.
PARCEL 4229401012

LOT 38
ZONED RR-2.5
Use: Single-Family Res.
PARCEL 4229401013

LOT 39
ZONED RR-2.5
Use: Single-Family Res.
PARCEL 4229401014

4 WAY RANCH FIL NO 1

STAPLETON DRIVE
GILBERT DRIVE
THATCHER COURT
BANDANERO DRIVE

PROPOSED PVT FSD/POND 3
TSB 1
TSB 2
TSB 3
TSB 4
EXISTING STOCK POND TO BE CONVERTED TO TEMPORARY SEDIMENT BASIN
STABILIZED STAGING AREA
STOCKPILE PROTECTION
PROPOSED DIVERSION SWALE SEE DETAIL B-B ON SHEET 3
PROPOSED DIVERSION SWALE SEE DETAIL C-C ON SHEET 3
PROPOSED DIVERSION SWALE SEE DETAIL A-A ON SHEET 3
PROPOSED DIVERSION SWALE SEE DETAIL D-D ON SHEET 3
PROPOSED DIVERSION SWALE SEE DETAIL E-E ON SHEET 3 PERMANENT SEEDING AND MULCHING TO BE INSTALLED IN INITIAL PHASE
SWALE MAINTENANCE ACCESS FROM TEMPORARY TURNAROUND
INSTALL TEMPORARY SLOPE DRAIN SEE DETAIL SHT 10
INSTALL 22'Wx18'L SPILLWAY W/ D50=9" TYPE L RIPRAP BURY DEPTH =18"
5'Wx5'L D50=9" TYPE L RIPRAP
12'Wx16'L SPILLWAY W/ D50=9" TYPE L RIPRAP BURY DEPTH =18"
22'Wx45'L SPILLWAY W/ D50=9" TYPE L RIPRAP BURY DEPTH =18"
22'Wx18'L SPILLWAY W/ D50=9" TYPE L RIPRAP BURY DEPTH =18"
INSTALL TEMPORARY SLOPE DRAIN TYPICAL OF 2
PR 2-36" CULVERTS
PR 2-42" CULVERTS
PR 18" CULVERT
TYPE H RIP-RAP d50 = 18" DEPTH = 36"
EX DROP STRUCTURES
EX DUAL 54" RCP CULVERTS W/ HEADWALL & RIPRAP OUTLET
EX 36" RCP CULVERTS & RIPRAP OUTLET
EXISTING DUAL 4'x8' CONCRETE BOX CULVERTS
EXISTING 24" RCP STORM & 4'x4' CONC. OUTLET
EXISTING RIPRAP
EXISTING 8" WATER MAIN
EXISTING 12" WATER MAIN
OFFSITE GRADING TO IN PUBLIC ROW TO BE APPROVED BY EL PASO COUNTY
100-YEAR FEMA FLOODPLAIN
VTC
SSA
SP
SF
SCL
CF
DW
TSB

700 LF CONST. FENCE
530 LF SILT FENCE
265 LF SILT FENCE
1,520 LF CONST. FENCE
2,400 LF SILT FENCE
821 LF SCL
818 LF SCL
350 LF SILT FENCE
314 LF SCL
660 LF SILT FENCE
1,050 LF SILT FENCE
1,050 LF CONST. FENCE
1,718 LF SCL
1,140 LF CONST. FENCE
1,140 LF SILT FENCE

LIMITS OF DISTURBANCE/ CONSTRUCTION BOUNDARY
SUBDIVISION BOUNDARY
EXISTING CHANNEL
EXISTING WETLANDS
PROP. DRAINAGE ESMT. REC #

NO.	REVISIONS 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:
ACM ALF VIII JV SUB II LLC
ATTN: JASON POCK
100 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions
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OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnesinc.com

WATERBURY FILING NO. 1

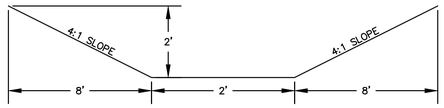
GRADING AND EROSION CONTROL PLAN
INITIAL EROSION CONTROL PLAN 1

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

QUENTIN ARMIJO
COLORADO P.E. NO. 37170

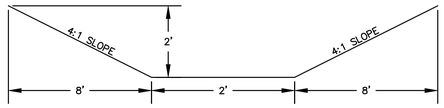
COLORADO LICENSED
QUENTIN N ARMIJO
37170
10/4/24
PROFESSIONAL ENGINEER

DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	1" = 100'
V-SCALE	N/A
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	2 OF 54



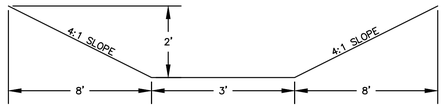
DIVERSION SWALE A–A

SEE PREVIOUS SHEET



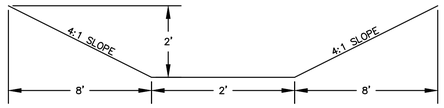
DIVERSION SWALE B–B

SEE PREVIOUS SHEET



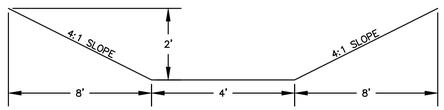
DIVERSION SWALE C–C

SEE PREVIOUS SHEET



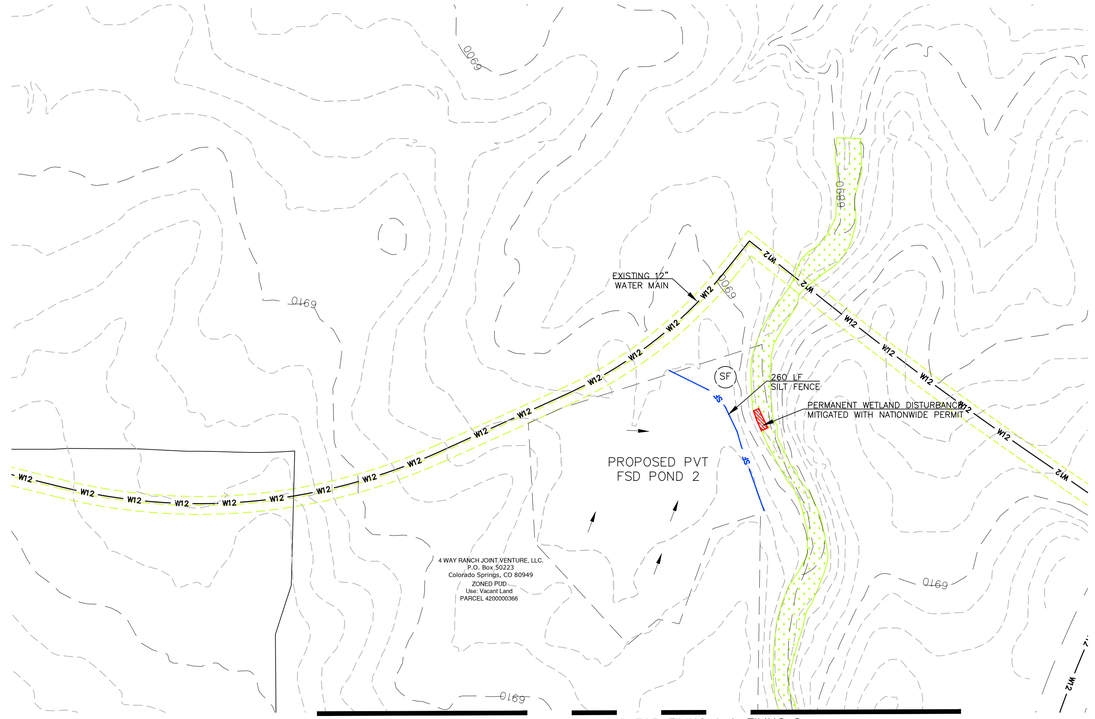
DIVERSION SWALE D–D

SEE PREVIOUS SHEET



DIVERSION SWALE E–E

SEE PREVIOUS SHEET



100' 0 100' 200'

SCALE: 1"=100'

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

GRADING LEGEND

10' EXISTING CONTOUR	6810
2' EXISTING CONTOUR	6802
LIMITS OF DISTURBANCE/ CONSTRUCTION BOUNDARY	
SUBDIVISION BOUNDARY	
TRIBUTARY AREA TO TSB	
PROPOSED DIVERSION SWALE	
DIRECTION OF SURFACE FLOW	
EXISTING WETLANDS	
100–Y FEMA FLOODPLAIN	
AREAS OF DE–WATERING	
PERMANENT WETLAND DISTURBANCE	

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 = 74.33 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.

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

QUENTIN N ARMIJO 37170 2024/10/4 COLORADO LICENSED PROFESSIONAL ENGINEER

QUENTIN ARMIJO
COLORADO P.E. NO. 37170

REVISIONS

NO.	DESCRIPTION	DATE

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PREPARED FOR:
ACM ALF VIII JV SUB II LLC
ATTN: JASON POCK
7200 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303–984–9800

Terra Nova Engineering, Inc.
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719–635–6422
FAX: 719–635–6428
www.tnesinc.com

WATERBURY FILING NO. 1

GRADING EROSION CONTROL PLAN
INITIAL EROSION CONTROL PLAN 2

DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H–SCALE	AS SHOWN
V–SCALE	N/A
JOB NO.	2356.00
DATE ISSUED	12/22/23
SHEET NO.	3 OF 54

EROSION CONTROL LEGEND

KEY	TITLE	SYMBOL	IMPLEMENATION PHASE
SF	SILT FENCE	SF	INITIAL
CF	CONSTRUCTION FENCE	CF	INITIAL
CIP	CULVERT INLET PROTECTION		INTERIM
IP	INLET PROTECTION		INTERIM
SBB	STRAW BALE BARRIER		INTERIM
SP	STOCKPILE PROTECTION		INITIAL
VTC	VEHICLE TRACKING CONTROL		INITIAL
CWA	CONCRETE WASHOUT AREA		INTERIM
SSA	STABILIZED STAGING AREA		INITIAL
TSM	TEMPORARY SEEDING AND MULCHING		INTERIM
DW	DEWATERING		INITIAL
TSB	TEMPORARY SEDIMENT BASIN		INITIAL

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
TRIBUTARY AREA TO TSB	
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	
AREAS OF DE-WATERING	

WETLANDS LEGEND

EXISTING WETLANDS	
PERMANENT WETLAND DISTURBANCE	

100' 0 100' 200'

SCALE: 1"=100'

VEGETATION NOTE:

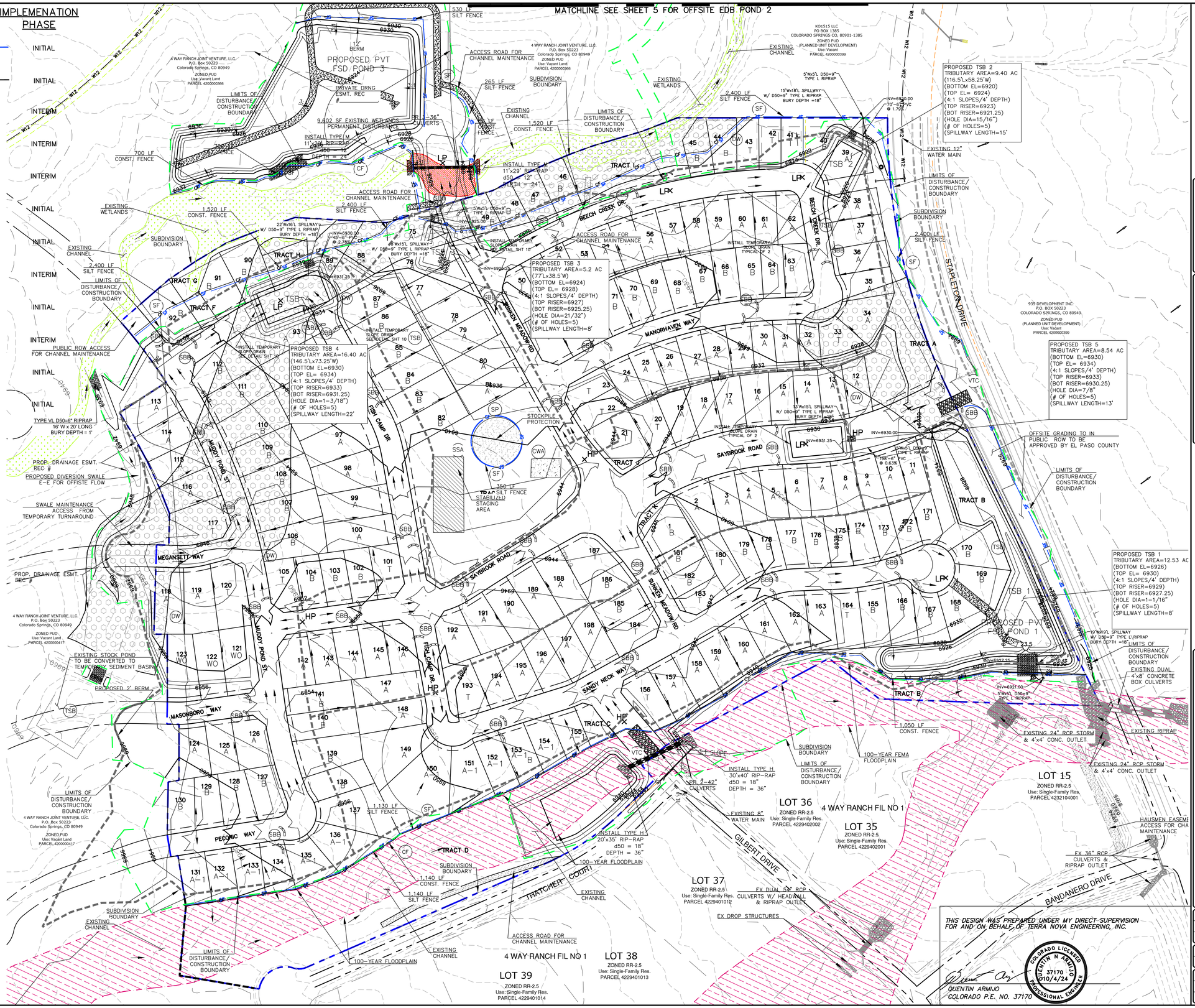
EXISTING VEGETATION CONSISTS OF NATIVE PRAIRIE GRASSES AND SHRUBS WITH FAIR TO GOOD COVERAGE OF 50% TO 70%

NOTES:

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

GENERAL NOTE:

ALL AREAS TO BE VEGETATED WITH PERMANENT SEEDING SHOULD ALSO BE TEMPORARY STABILIZED VIA TRACK ROLLING OR SOME OTHER MEANS.



REVISIONS

NO.	DESCRIPTION	DATE

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ACM ALF VIII JV SUB II LLC
ATTN: JASON POCK
100 E. MISSISSIPPI AVE., STE 50
DENVER, CO 80246
303-984-9800

Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6428
www.tnesinc.com

WATERBURY FILING NO. 1

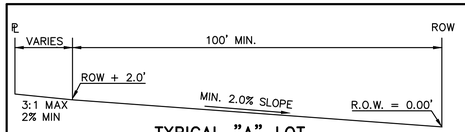
GRADING AND EROSION CONTROL PLAN
INTERIM EROSION CONTROL PLAN 1

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

QUENTIN N ARMIJO
COLORADO LICENSED
37170
PROFESSIONAL ENGINEER
10/4/24

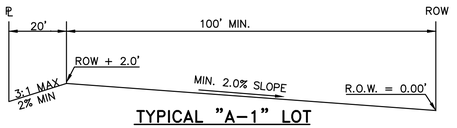
QUENTIN ARMIJO
COLORADO P.E. NO. 37170

DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	1" = 100'
V-SCALE	N/A
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	4 OF 54



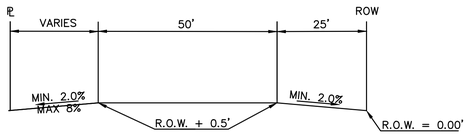
TYPICAL "A" LOT

SEE PREVIOUS SHEET



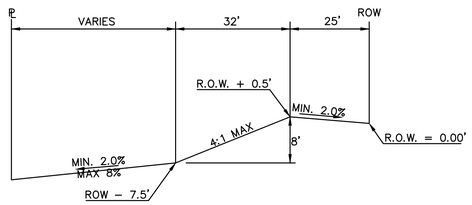
TYPICAL "A-1" LOT

SEE PREVIOUS SHEET



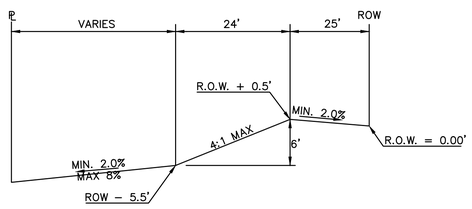
TYPICAL "B" LOT

SEE PREVIOUS SHEET



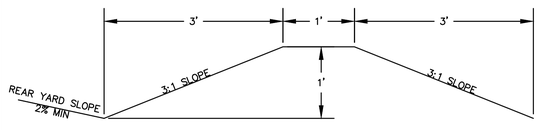
TYPICAL "WALK-OUT" LOT

SEE PREVIOUS SHEET



TYPICAL "GARDEN LEVEL" LOT

SEE PREVIOUS SHEET



REAR YARD BERM LOTS 43–49 & 88–92

SEE PREVIOUS SHEET

NOTES:

NO BATCH PLANTS ARE PROPOSED

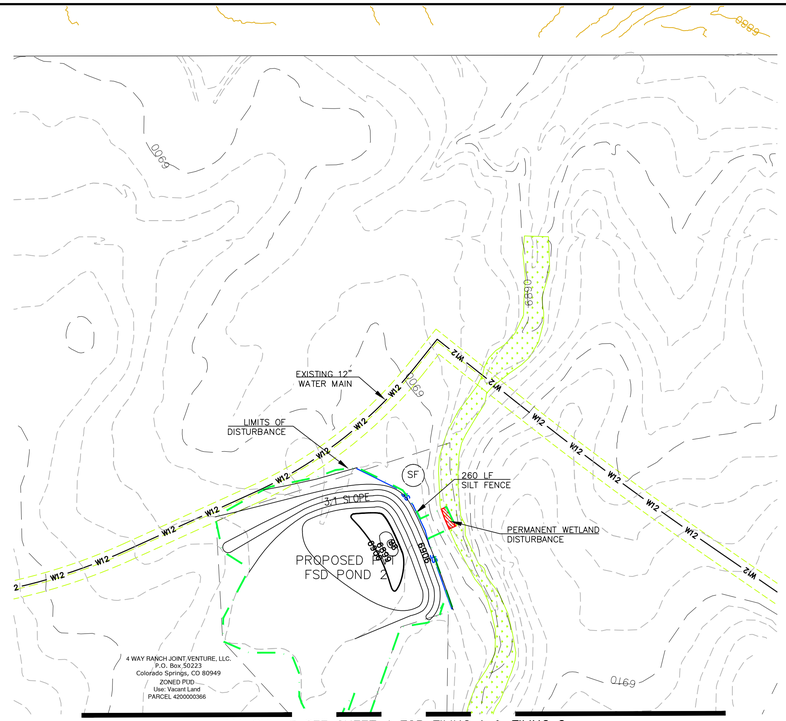
ALL CONTROL MEASURES ARE BEING IMPLEMENTED BY THE OWNER/DEVELOPER/CONTRACTOR

GRADING LEGEND

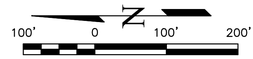
8' EXISTING CONTOUR	6810
1' EXISTING CONTOUR	6802
5' PROPED CONTOUR	6810
1' PROPED CONTOUR	6802
LIMITS OF DISTURBANCE/ CONSTRUCTION BOUNDARY	
SUBDIVISION BOUNDARY	
CUT/FILL LINE	FILL CUT
TRIBUTARY AREA TO TSB	
DIRECTION OF SURFACE FLOW	4.0%
HIGH POINT	HP
LOW POINT	LP
A LOT	"A"
B LOT	"B"
WALK OUT LOT MODIFIED	"WO*"
GARDEN LEVEL LOT MODIFIED	"G*"

WETLANDS LEGEND

EXISTING WETLANDS	
PERMANENT WETLAND DISTURBANCE	



MATCHLINE SEE SHEET 4 FOR FILING 1 & FILING 2



SCALE: 1"=100'

REVISIONS		
NO.	DESCRIPTION	DATE

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

WATERBURY FILING NO. 1

GRADING EROSION & STORMWATER CONTROL PLAN
INTERIM EROSION CONTROL PLAN 2

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

QUENTIN ARMIJO
COLORADO P.E. NO. 37170

COLORADO LICENSED
QUENTIN N ARMIJO
37170
10/4/24
PROFESSIONAL ENGINEER

DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	AS SHOWN
V-SCALE	N/A
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	5 OF 54

EROSION CONTROL LEGEND

KEY	TITLE	SYMBOL	IMPLEMENATION PHASE
SF	SILT FENCE	SF	INITIAL
CF	CONSTRUCTION FENCE	CF	INITIAL
CIP	CULVERT INLET PROTECTION		INTERIM
IP	INLET PROTECTION		INTERIM
SBB	STRAW BALE BARRIER		INTERIM
SP	STOCKPILE PROTECTION		INITIAL
VTC	VEHICLE TRACKING CONTROL		INITIAL
CWA	CONCRETE WASHOUT AREA		INTERIM
SSA	STABILIZED STAGING AREA		INITIAL
TSM	TEMPORARY SEEDING AND MULCHING		FINAL
PSM	PERMANENT SEEDING AND MULCHING		FINAL
DW	DE-WATERING		

Unresolved: Define this shape.

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
TRIBUTARY AREA TO TSB	
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

PERMANENT WETLAND DISTURBANCE

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

100' 0 100' 200'

SCALE: 1"=100'

VEGETATION NOTE:

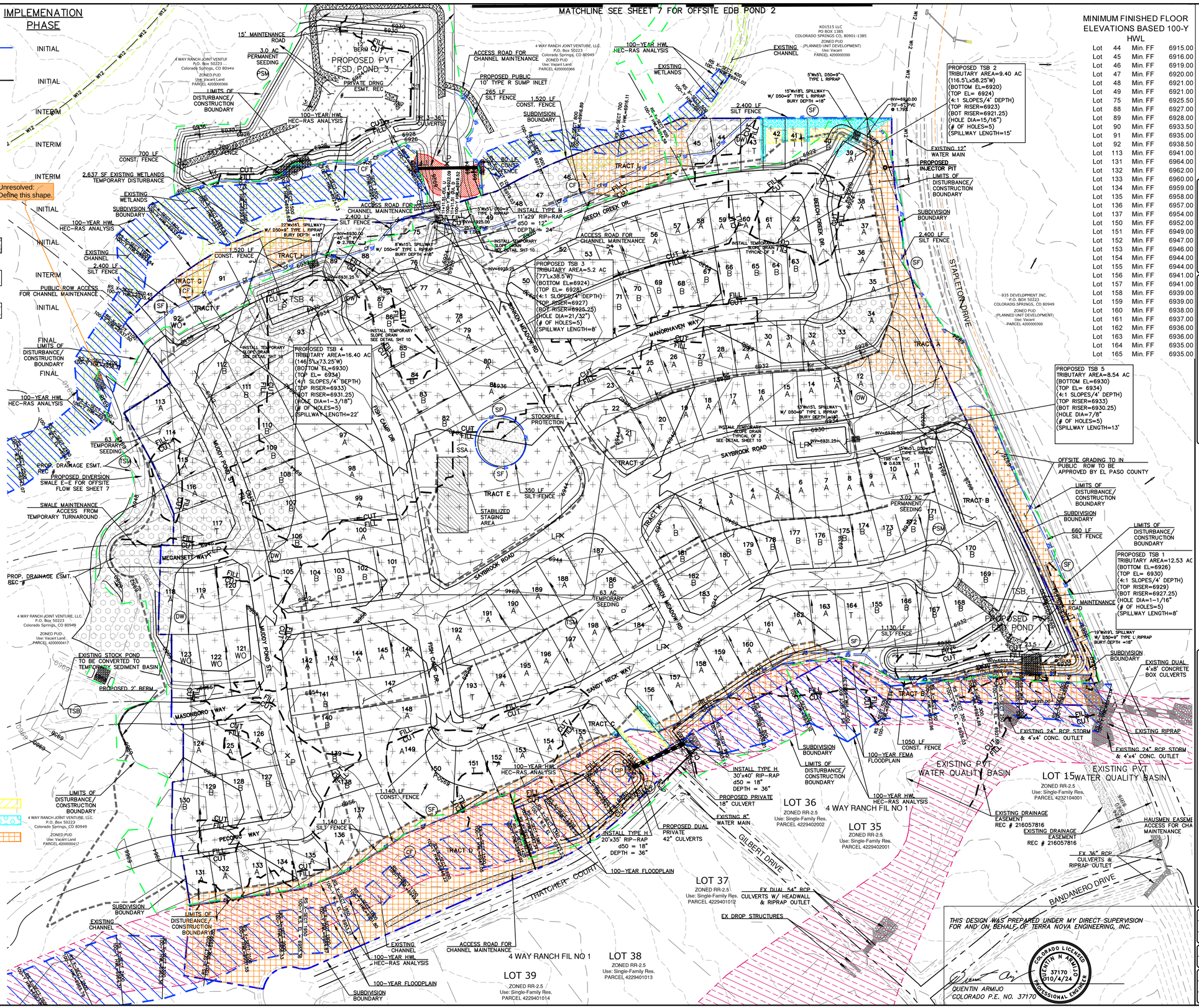
EXISTING VEGETATION CONSISTS OF NATIVE PRAIRIE GRASSES AND SHRUBS WITH FAIR TO GOOD COVERAGE OF 50% TO 70%

GENERAL NOTE:

ALL AREAS TO BE VEGETATED WITH PERMANENT SEEDING SHOULD ALSO BE TEMPORARY STABILIZED VIA TRACK ROLLING OR SOME OTHER MEANS.

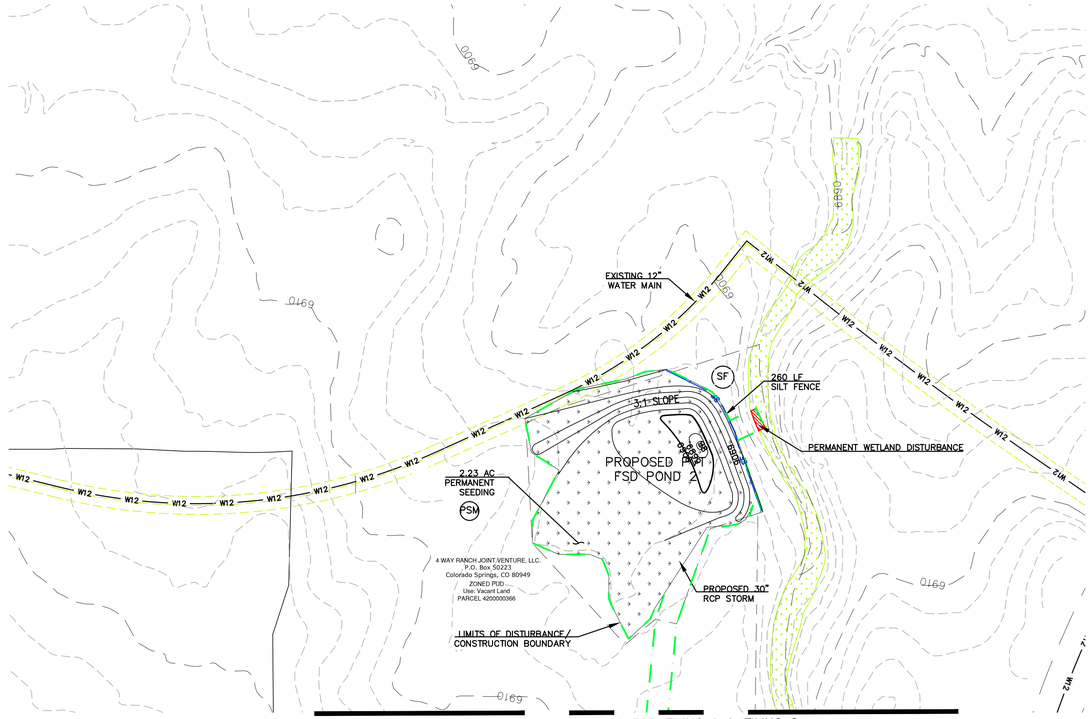
GENERAL NOTE:

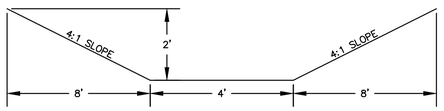
1. NO BATCH PLANTS ARE PROPOSED
2. ALL CONTROL MEASURES ARE BEING IMPLEMENTED BY THE OWNER/DEVELOPER/CONTRACTOR
3. FOR INFORMATION ONLY? FOR PRES-SUBDIVISION SITE GRADING THERE WILL BE NO CURB AND GUTTER AND STORM DRAIN, ONLY SEEDING AND MULCHING.


MATCHLINE SEE SHEET 7 FOR OFFSITE EDB POND 2
PROPOSED PVT FSD. POND 3
PROPOSED PVT FSD. POND 1
PROPOSED TSB 1 TRIBUTARY AREA=12.53 AC (BOTTOM EL=6926) (TOP EL= 6930) (4:1 SLOPES/4' DEPTH) (TOP RISER=6929) (BOT RISER=6927.25) (HOLE DIA=1-1/16" (# OF HOLES=5) (SPILLWAY LENGTH=8'
PROPOSED TSB 2 TRIBUTARY AREA=9.40 AC (116.5'Lx58.25'W) (BOTTOM EL=6920) (TOP EL= 6924) (4:1 SLOPES/4' DEPTH) (TOP RISER=6923) (BOT RISER=6921.25) (HOLE DIA=15/16") (# OF HOLES=5) (SPILLWAY LENGTH=15'
PROPOSED TSB 3 TRIBUTARY AREA=5.2 AC (77'Lx38.5'W) (BOTTOM EL=6924) (TOP EL= 6928) (4:1 SLOPES/4' DEPTH) (TOP RISER=6927) (BOT RISER=6925.25) (HOLE DIA=21/32") (# OF HOLES=5) (SPILLWAY LENGTH=8'
PROPOSED TSB 4 TRIBUTARY AREA=16.40 AC (146'Sx73.25'W) (BOTTOM EL=6930) (TOP EL= 6934) (4:1 SLOPES/4' DEPTH) (TOP RISER=6933) (BOT RISER=6931.25) (HOLE DIA=1-3/18") (# OF HOLES=5) (SPILLWAY LENGTH=22'
PROPOSED TSB 5 TRIBUTARY AREA=8.54 AC (BOTTOM EL=6930) (TOP EL= 6934) (4:1 SLOPES/4' DEPTH) (TOP RISER=6933) (BOT RISER=6930.25) (HOLE DIA=1"/8" (# OF HOLES=5) (SPILLWAY LENGTH=13'
MINIMUM FINISHED FLOOR ELEVATIONS BASED 100-Y HWL
Lot 44 Min. FF 6915.00
Lot 45 Min. FF 6916.00
Lot 46 Min. FF 6919.00
Lot 47 Min. FF 6920.00
Lot 48 Min. FF 6921.00
Lot 49 Min. FF 6921.00
Lot 75 Min. FF 6925.50
Lot 88 Min. FF 6927.00
Lot 89 Min. FF 6928.00
Lot 90 Min. FF 6933.50
Lot 91 Min. FF 6935.00
Lot 92 Min. FF 6938.50
Lot 113 Min. FF 6941.00
Lot 131 Min. FF 6964.00
Lot 132 Min. FF 6962.00
Lot 133 Min. FF 6960.00
Lot 134 Min. FF 6959.00
Lot 135 Min. FF 6958.00
Lot 136 Min. FF 6957.00
Lot 137 Min. FF 6954.00
Lot 150 Min. FF 6952.00
Lot 151 Min. FF 6949.00
Lot 152 Min. FF 6947.00
Lot 153 Min. FF 6946.00
Lot 154 Min. FF 6944.00
Lot 155 Min. FF 6944.00
Lot 156 Min. FF 6941.00
Lot 157 Min. FF 6941.00
Lot 158 Min. FF 6939.00
Lot 159 Min. FF 6939.00
Lot 160 Min. FF 6938.00
Lot 161 Min. FF 6937.00
Lot 162 Min. FF 6936.00
Lot 163 Min. FF 6936.00
Lot 164 Min. FF 6935.00
Lot 165 Min. FF 6935.00
BEECH CREEK DR.
STAPLETON DRIVE
MANORHAVEN WAY
SAYBROOK ROAD
SUNKEN MEADOW RD
MUDDY POND ST.
SANDY NECK WAY
MASONBORO WAY
MEGANSETT WAY
PECONIC WAY
THATCHER COURT
GILBERT DRIVE
BANDANERO DRIVE
TRACT A
TRACT B
TRACT C
TRACT D
TRACT E
TRACT F
TRACT G
TRACT H
LOT 35 ZONED RR-2.5 Use: Single-Family Res. PARCEL 4229402001
LOT 36 ZONED RR-2.5 Use: Single-Family Res. PARCEL 4229402002
LOT 37 ZONED RR-2.5 Use: Single-Family Res. PARCEL 4229401012
LOT 38 ZONED RR-2.5 Use: Single-Family Res. PARCEL 4229401013
LOT 39 ZONED RR-2.5 Use: Single-Family Res. PARCEL 4229401014
LOT 15 ZONED RR-2.5 Use: Single-Family Res. PARCEL 4232104001
4 WAY RANCH JOINT VENTURE, LLC. P.O. Box 50223 Colorado Springs, CO 80949 ZONED PUD Use: Vacant Land PARCEL 4200000366
4 WAY RANCH JOINT VENTURE, LLC. P.O. Box 50223 Colorado Springs, CO 80949 ZONED PUD Use: Vacant Land PARCEL 4200000417
K01515 LLC PO BOX 1385 COLORADO SPRINGS CO, 80901-1385 ZONED PUD (PLANNED UNIT DEVELOPMENT) Use: Vacant PARCEL 4200000399
935 DEVELOPMENT INC. P.O. BOX 50223 COLORADO SPRINGS, CO 80949 ZONED PUD (PLANNED UNIT DEVELOPMENT) Use: Vacant PARCEL 4200000399
EXISTING WETLANDS
EXISTING CHANNEL
EXISTING STOCK POND TO BE CONVERTED TO TEMPORARY SEDIMENT BASIN
PROPOSED 2' BERM
PROPOSED DIVERSION SWALE E-E FOR OFFSITE FLOW SEE SHEET 7
SWALE MAINTENANCE ACCESS FROM TEMPORARY TURNAROUND
PROP. DRAINAGE ESMT. REC #
PROP DRAINAGE ESMT. REC #
PROPOSED PUBLIC 10' TYPE R SUMP INLET
PROPOSED PRIVATE 18" CULVERT
PROPOSED DUAL PRIVATE 42" CULVERTS
EXISTING 8" WATER MAIN
EXISTING 12" WATER MAIN
PROPOSED INJECTOR PIT
EXISTING PVT WATER QUALITY BASIN
EXISTING DUAL 4'x8' CONCRETE BOX CULVERTS
EXISTING RIPRAP
EXISTING 24" RCP STORM & 4'x4' CONC. OUTLET
EXISTING DRAINAGE EASEMENT REC # 216057816
HAUSMEN EASEMENT ACCESS FOR CHANNEL MAINTENANCE
FX 36" RCP CULVERTS & RIPRAP OUTLET
FX DUAL 54" RCP CULVERTS W/ HEADWALL & RIPRAP OUTLET
FX DROP STRUCTURES
OFFSITE GRADING TO IN PUBLIC ROW TO BE APPROVED BY EL PASO COUNTY
4 WAY RANCH FIL NO 1
100-YEAR FLOODPLAIN
100-YEAR FEMA FLOODPLAIN
100-YEAR HWL HEC-RAS ANALYSIS
LIMITS OF DISTURBANCE/ CONSTRUCTION BOUNDARY
SUBDIVISION BOUNDARY
ACCESS ROAD FOR CHANNEL MAINTENANCE
2,400 LF SILT FENCE
1,520 LF CONST. FENCE
1,140 LF CONST. FENCE
1,130 LF SILT FENCE
1050 LF CONST. FENCE
660 LF SILT FENCE
350 LF SILT FENCE
265 LF SILT FENCE
700 LF CONST. FENCE
2,637 SF EXISTING WETLANDS TEMPORARY DISTURBANCE
3.0 AC PERMANENT SEEDING
63 AC TEMPORARY SEEDING
3.02 AC PERMANENT SEEDING
STOCKPILE PROTECTION
STABILIZED STAGING AREA
INSTALL TEMPORARY SLOPE DRAIN SEE DETAIL SHT 10
INSTALL TEMPORARY SLOPE DRAIN TYPICAL OF 2 SEE DETAIL SHEET 10
INSTALL TYPE H 30'x40' RIP-RAP d50 = 18" DEPTH = 36"
INSTALL TYPE H 20'x35' RIP-RAP d50 = 18" DEPTH = 36"
INSTALL TYPE M 11'x29' RIP-RAP d50 = 12" DEPTH = 24"
15' MAINTENANCE ROAD
12' MAINTENANCE ROAD
22'Wx18'L SPILLWAY W/ D50=9" TYPE L RIPRAP BURY DEPTH =18"
15'Wx18'L SPILLWAY W/ D50=9" TYPE L RIPRAP BURY DEPTH =18"
8'Wx15'L SPILLWAY W/ D50=9" TYPE L RIPRAP BURY DEPTH =18"
5'Wx5'L D50=9" TYPE L RIPRAP
19'Wx19'L SPILLWAY W/ D50=9" TYPE L RIPRAP BURY DEPTH =18"
100-YEAR HWL HEC-RAS ANALYSIS
2 - 36" RCP CULVERTS
4 - 36" RCP CULVERTS
2 - 42" RCP CULVERTS
2 - 54" RCP CULVERTS
2 - 60" RCP CULVERTS
2 - 66" RCP CULVERTS
2 - 72" RCP CULVERTS
2 - 78" RCP CULVERTS
2 - 84" RCP CULVERTS
2 - 90" RCP CULVERTS
2 - 96" RCP CULVERTS
2 -

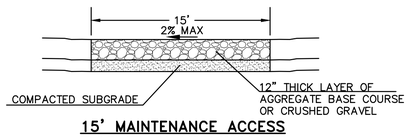
EROSION CONTROL LEGEND

KEY	TITLE	SYMBOL
SF	SILT FENCE	SF
CF	CONSTRUCTION FENCE	CF
CIP	CULVERT INLET PROTECTION	
IP	INLET PROTECTION	
SBB	STRAW BALE BARRIER	
SP	STOCKPILE PROTECTION	
VTC	VEHICLE TRACKING CONTROL	
CWA	CONCRETE WASHOUT AREA	
SSA	STABILIZED STAGING AREA	
TSM	TEMPORARY SEEDING AND MULCHING	
PSM	PERMANENT SEEDING AND MULCHING	
DW	DE-WATERING	





DIVERSION SWALE E-E



15' MAINTENANCE ACCESS ROAD SECTION PHASE 1

SCALE: N.T.S.

MINIMUM FINISHED FLOOR ELEVATIONS BASED 100-Y HWL

Lot	44	Min. FF	6915.00
Lot	45	Min. FF	6916.00
Lot	46	Min. FF	6919.00
Lot	47	Min. FF	6920.00
Lot	48	Min. FF	6921.00
Lot	49	Min. FF	6921.00
Lot	75	Min. FF	6925.50
Lot	88	Min. FF	6927.00
Lot	89	Min. FF	6928.00
Lot	90	Min. FF	6933.50
Lot	91	Min. FF	6935.00
Lot	92	Min. FF	6938.50
Lot	113	Min. FF	6941.00
Lot	131	Min. FF	6964.00
Lot	132	Min. FF	6962.00
Lot	133	Min. FF	6960.00
Lot	134	Min. FF	6959.00
Lot	135	Min. FF	6958.00
Lot	136	Min. FF	6957.00
Lot	137	Min. FF	6954.00
Lot	150	Min. FF	6952.00
Lot	151	Min. FF	6949.00
Lot	152	Min. FF	6947.00
Lot	153	Min. FF	6946.00
Lot	154	Min. FF	6944.00
Lot	155	Min. FF	6944.00
Lot	156	Min. FF	6941.00
Lot	157	Min. FF	6941.00
Lot	158	Min. FF	6939.00
Lot	159	Min. FF	6939.00
Lot	160	Min. FF	6938.00
Lot	161	Min. FF	6937.00
Lot	162	Min. FF	6936.00
Lot	163	Min. FF	6936.00
Lot	164	Min. FF	6935.00
Lot	165	Min. FF	6935.00

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
TRIBUTARY AREA TO TSB	
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	
PERMANENT WETLAND DISTURBANCE	

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

QUENTIN ARMIJO
COLORADO P.E. NO. 37170

COLORADO LICENSED QUENTIN N ARMIJO 37170 10/4/24 PROFESSIONAL ENGINEER

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.

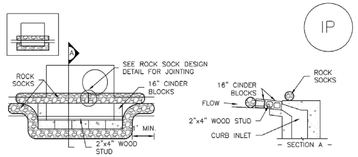
PREPARED FOR:
ACM ALF VIII JV SUB II LLC
ATTN: JASON POCK
2000 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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

GRADING EROSION & CONTROL PLAN
FINAL EROSION CONTROL PLAN 2

DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	AS SHOWN
V-SCALE	N/A
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	7 OF 54



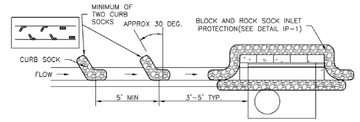
IP–1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

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.

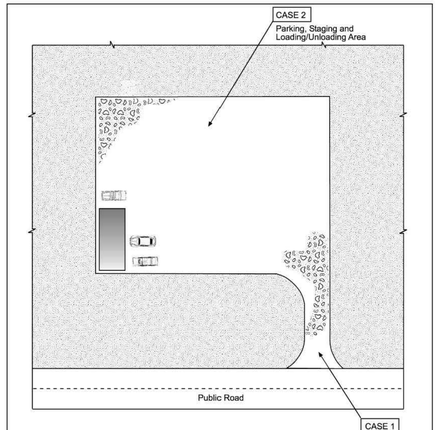


Table VT-1

	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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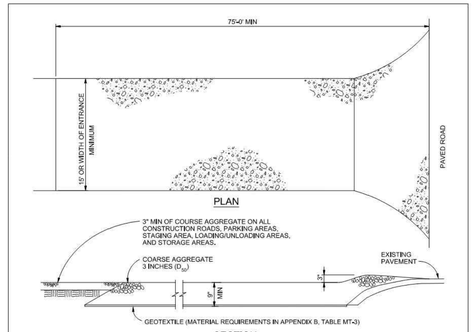


SECTION

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.

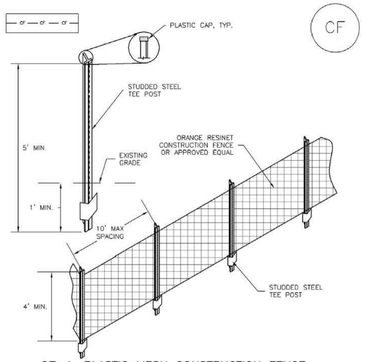
City of Colorado Sprlngs
Stormwater Quality

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	*Spolobolus 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.



CF–1. PLASTIC MESH CONSTRUCTION FENCE

CONSTRUCTION FENCE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
–LOCATION OF CONSTRUCTION FENCE.

2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR–GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.

4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.

5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

CONSTRUCTION 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.

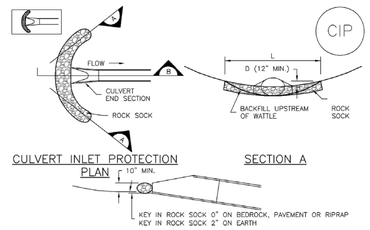
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

5. WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY 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.

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



CULVERT INLET PROTECTION PLAN

SECTION A

SECTION B

CIP–1. CULVERT INLET PROTECTION

CULVERT INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
–LOCATION OF CULVERT INLET PROTECTION.

2. SEE ROCK SOCK DESIGN DETAIL FOR ROCK GRADATION REQUIREMENTS AND JOINTING DETAIL.

CULVERT 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 THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS ½ THE HEIGHT OF THE ROCK SOCK.

5. CULVERT INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM 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.

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

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

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.

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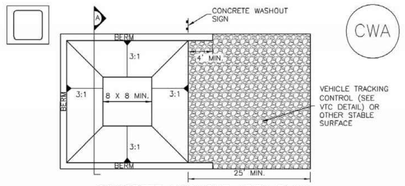
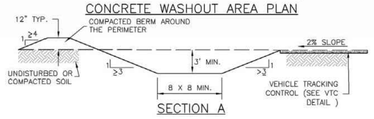
WATERBURY FILING NO. 1

GRADING EROSION & STORMWATER CONTROL PLAN
EROSION CONTROL DETAILS

DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H–SCALE NA
V–SCALE N/A
JOB NO. 2356.00
DATE ISSUED 12/22/23
SHEET NO. 8 OF 54



CONCRETE WASHOUT AREA PLAN



SECTION A

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'.

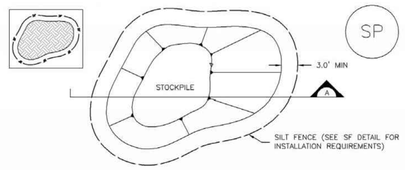
5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.

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

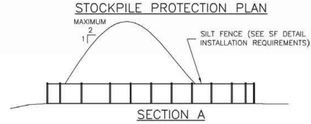
7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(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 PROTECTION PLAN



SECTION A

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)

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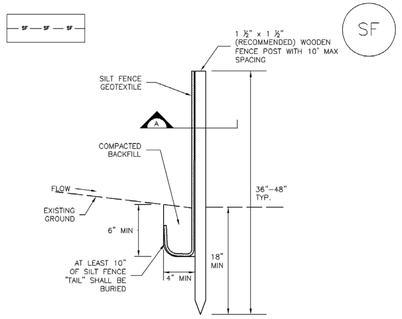
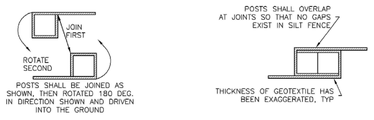


SILT FENCE



SECTION A

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)

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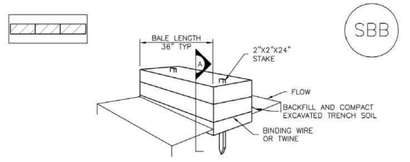
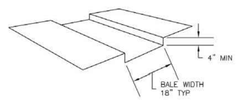
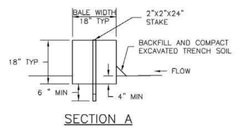


STRAW BALE



TRENCH FOR STRAW BALE



SECTION A

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.

REVISIONS		
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WATERBURY FILING NO. 1

GRADING AND EROSION CONTROL PLAN
EROSION CONTROL DETAILS

DESIGNED BY DLF
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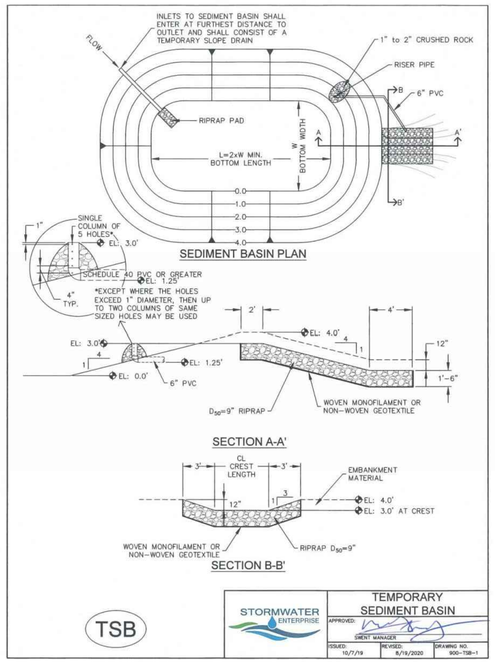


TABLE SB-1, SIZING INFORMATION FOR STANDARD SEDIMENT BASIN			
UPSTREAM DRAINAGE AREA (ROUNDED TO NEAREST ACRE), (AC)	BASIN BOTTOM WIDTH (W), (FT)	SPILLWAY CREST LENGTH (CL), (FT)	HOLE DIAMETER (HD), (IN)
1	12½	2	3/16
2	21	3	13/64
3	28	5	1/4
4	33½	6	9/64
5	38½	8	5/32
6	43	9	11/64
7	47¼	11	3/16
8	51	12	13/64
9	55	13	7/32
10	58¼	15	15/64
11	61	16	1/4
12	64	18	17/64
13	67½	19	9/32
14	70½	21	19/64
15	73¼	22	5/16

INSTALLATION NOTES

1. FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.
2. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE GREATER THAN 3 INCHES, AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT PASSING THE No. 200 SIEVE.
3. EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-698.
4. PIPE SCHEDULE 40 OR GREATER SHALL BE USED.
5. THE DETAILS SHOWN ON THESE SHEETS PERTAIN TO STANDARD SEDIMENT BASIN(S) FOR DRAINAGE AREAS LESS THAN 15 ACRES. SEE CONSTRUCTION DRAWINGS FOR EMBANKMENT, STORAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES. DESIGN CALCULATIONS MUST BE APPROVED PRIOR TO IMPLEMENTATION.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. SEDIMENT ACCUMULATED IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN CONTROL MEASURE EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (I.E. TWO FEET BELOW SPILLWAY CREST).
3. SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED.
4. PERMANENTLY STABILIZE AREA AFTER SEDIMENT BASIN REMOVAL.

TSB

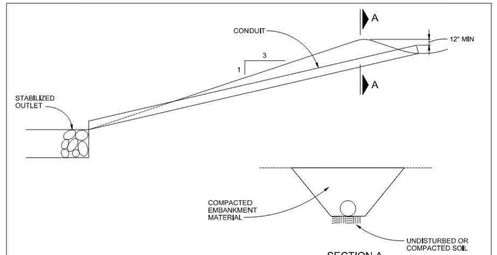
STORMWATER ENTERPRISE

TEMPORARY SEDIMENT BASIN

APPROVED:

CHIEF ENGINEER

ISSUED: 10/7/19 | REVISED: 8/19/2020 | DRAWING NO. 900-TSB-2



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.

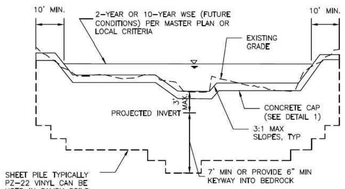
MAINTENANCE REQUIREMENTS

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

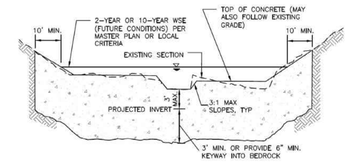
Figure SD-1
Slope Drain
Construction Detail and Maintenance Requirements

3-39



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

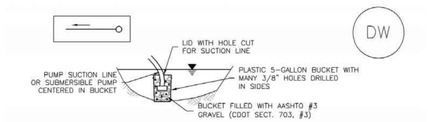
SECTION (A1)
SHEET PILE CHECK



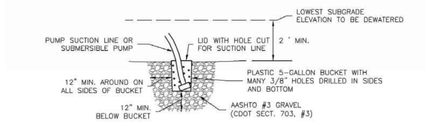
NOTES: 1. TRENCH IN UNDISTURBED SOIL. FORM TOP 6" OF CHECK. DO NOT OVER EXCAVATE TO FORM WALLS OR CONSTRUCT A FOOTING.
2. THE STRUCTURE MAY BE COVERED WITH 6" OF SOIL OUTSIDE OF THE LOW FLOW AREA.
3. VIBRATE CONCRETE INTO TRENCH.

SECTION (A2)
CONCRETE CHECK

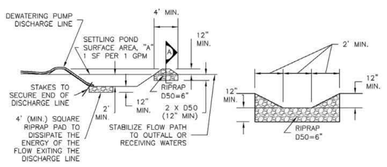
Figure 9-27. Check structure details (Part 2 of 3)



DW-1. DEWATERING POND ALREADY FILLED WITH WATER

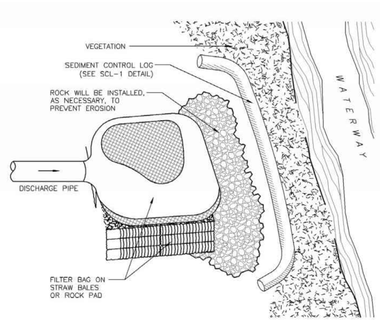


DW-2. DEWATERING SUMP FOR SUBMERSED PUMP



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

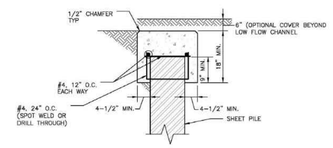
4. DEWATERING OPERATIONS SHALL USE ONE OR MORE OF THE DEWATERING SUMPS SHOWN ABOVE, WELL POINTS, OR OTHER MEANS APPROVED BY THE LOCAL JURISDICTION TO REDUCE THE PUMPING OF SEDIMENT, AND SHALL PROVIDE A TEMPORARY SEDIMENT BASIN OR FILTRATION BMP TO REDUCE SEDIMENT TO ALLOWABLE LEVELS PRIOR TO RELEASE 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 (1)
CONCRETE SHEET PILE CAP

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

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:
ACM ALF VIII JV SUB II LLC
ATTN: JASON POCK
700 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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.tneainc.com

WATERBURY FILING NO 1

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. 2356.00
DATE ISSUED 12/22/2
SHEET NO. 10 OF 52

..\..\..\..\shared\Standards\El Paso County\Engineering standards\C-G.jpg

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..\..\..\..\shared\Standards\El Paso County\Engineering standards\PED RAMP MID BLOCK.jpg

..\..\..\..\shared\Standards\El Paso County\Engineering standards\TRUNCATED DOME.jpg

design details fell off

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..\..\..\..\shared\Standards\El Paso County\Engineering standards\X-PAN.jpg

..\..\..\..\shared\Standards\El Paso County\Engineering standards\PATTERN CONC.jpg

PHASING
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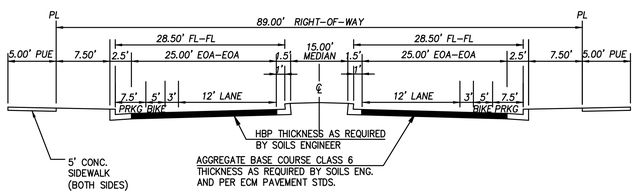

MODIFIED COLLECTOR SECTION
SAYBROOK ROAD
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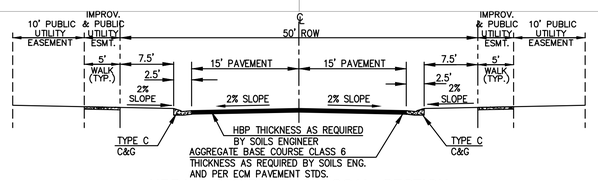
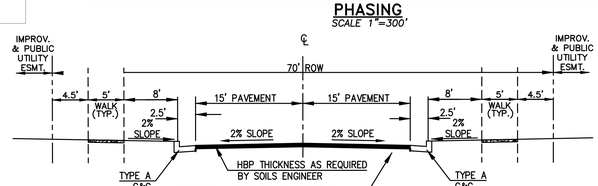
POSTED SPEED 30 MPH
NO SCALE



URBAN RESIDENTIAL LOCAL SECTION
SAYBROOOK RD., SANDY NECK CIR., SUNKEN MEADOW RD.,
FISH CAMP DR., MANOR HAVEN WAY, BEECH CIRCLE DR.,
MUDDY POND ST., MASONBORO WAY, MEGANSETT WAY
DESIGN SPEED 25 MPH
POSTED SPEED 25 MPH
NO SCALE



MODIFIED URBAN RESIDENTIAL LOCAL SECTION
GILBER RD.
DESIGN SPEED 25 MPH
POSTED SPEED 25 MPH
NO SCALE

REVISIONS

NO.	DESCRIPTION	DATE

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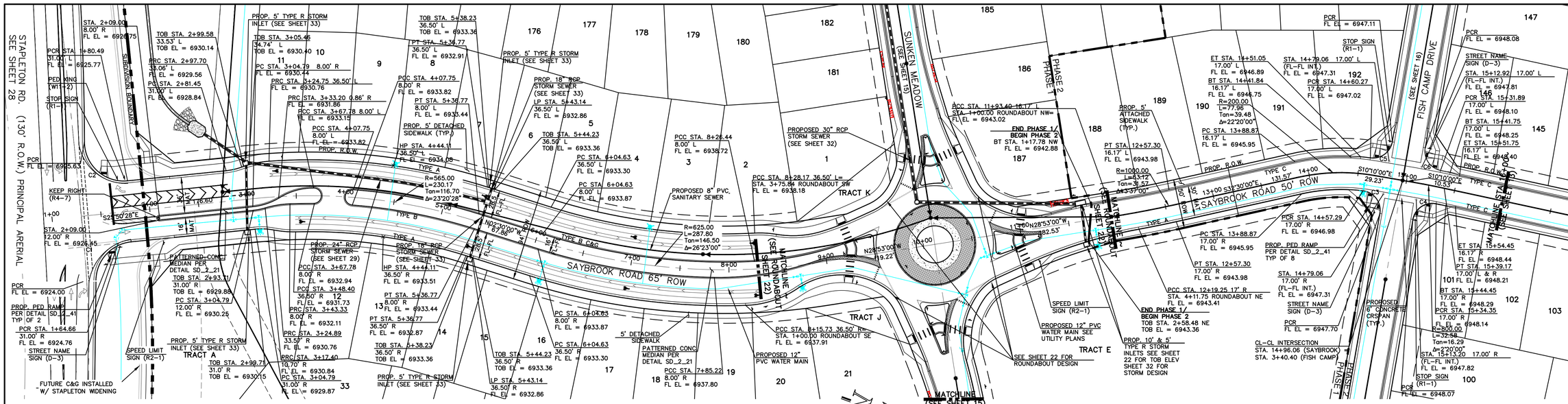
PREPARED FOR:
ACM ALF VIII JV SUB II LLC
ATTN: JASON POCK
7200 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

Terra Nova Engineering, Inc. "Creative Civil Engineering Solutions"
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6428
www.tneinc.com

WATERBURY FILING NO. 1

CONSTRUCTION SET
STREET DETAILS

DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H-SCALE NA
V-SCALE N/A
JOB NO. 2356.00
DATE ISSUED 12/22/24
SHEET NO. 11 OF 54



CURB RETURN CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C1	58.27'	40.00'	83°28'17"
C2	66.73'	40.00'	95°35'02"
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"

SAYBROOK ROAD PHASE 1

STA. 1+00.00 – 8+28.17– RES. COLLECTOR
(DESIGN SPEED 35 MPH)

POSTED SPEED LIMIT IS 30 M.P.H.

SEE APPROVED DEVIATION REQUESTS FOR LEFT AND RIGHT TURN LANES, MEDIAN WITHIN SAYBROOK ROAD AND POSTED SPEED LIMIT REDUCTION.

SAYBROOK ROAD PHASE 2

STA. 11+94.17 – 16+00.00 – LOCAL
(DESIGN SPEED 25 MPH)

POSTED SPEED LIMIT IS 25 M.P.H.

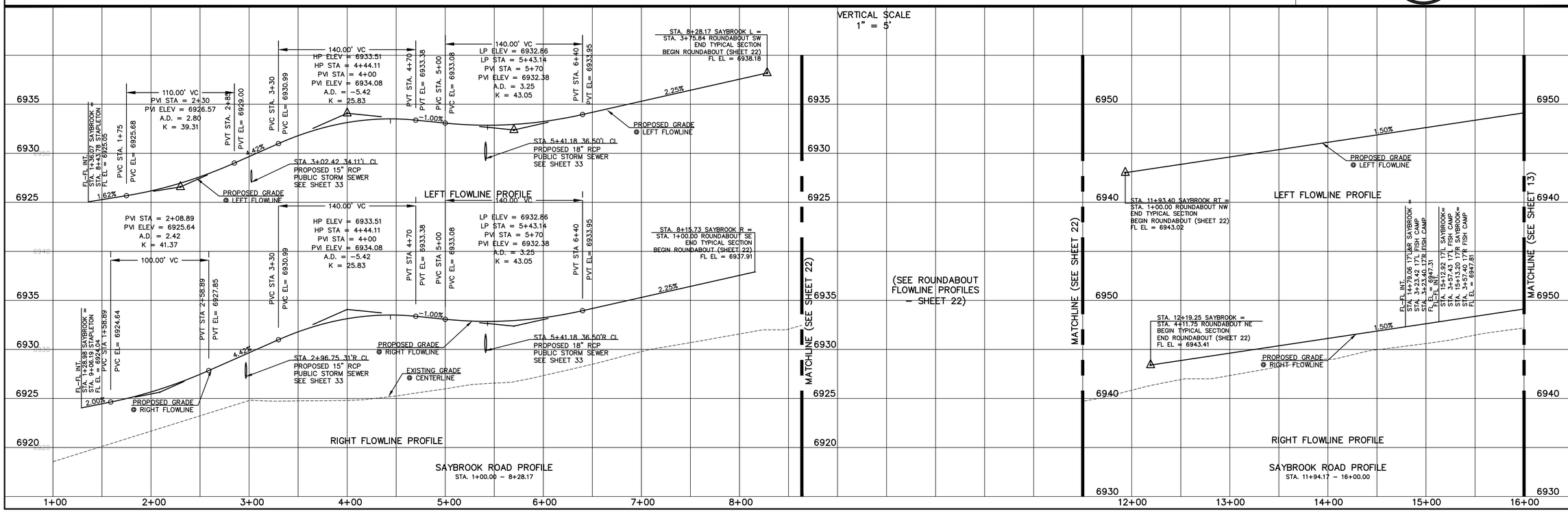
50' 25' 0 50' 100'

SCALE: 1" = 50'

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

COLORADO LICENSED QUENTIN N ARMIJO 37170 PROFESSIONAL ENGINEER 10/13/24

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



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

REVISIONS

NO.	DESCRIPTION	DATE

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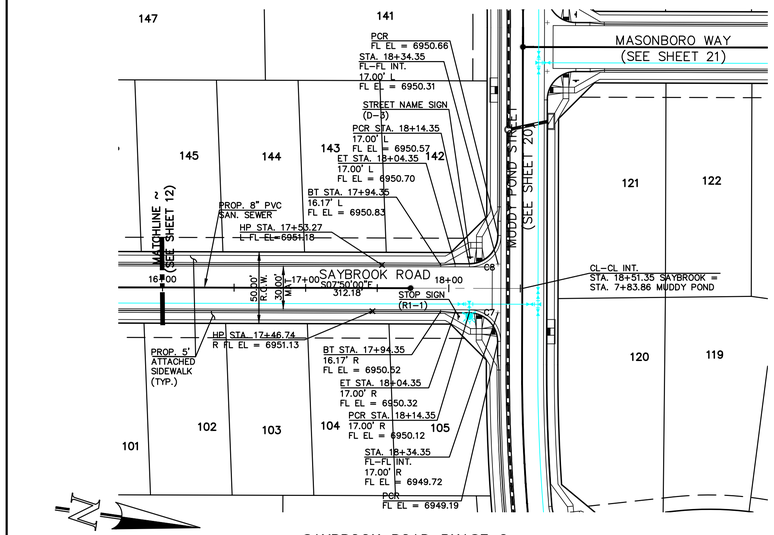
PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
200 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

WATERBURY FILING NO. 1

CONSTRUCTION SET
STREET PLAN AND PROFILE
SAYBROOK ROAD

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	JS
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	12 OF 54



SAYBROOK ROAD PHASE 2

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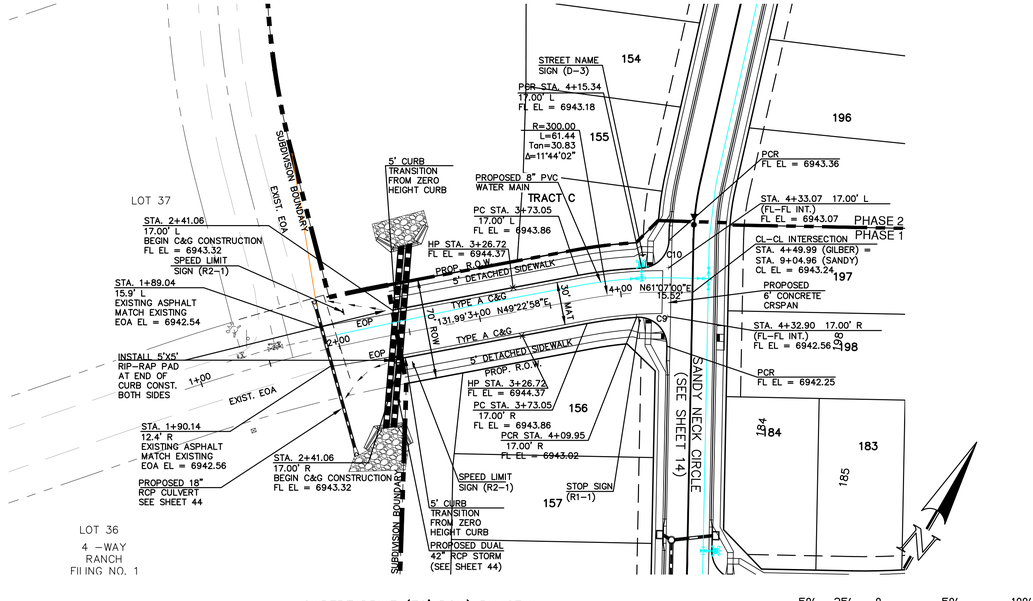
(DEIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

50′ 25′ 0 50′ 100′

SCALE: 1″ = 50′

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"



GILBERT DRIVE (70' ROW) PHASE 1

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.

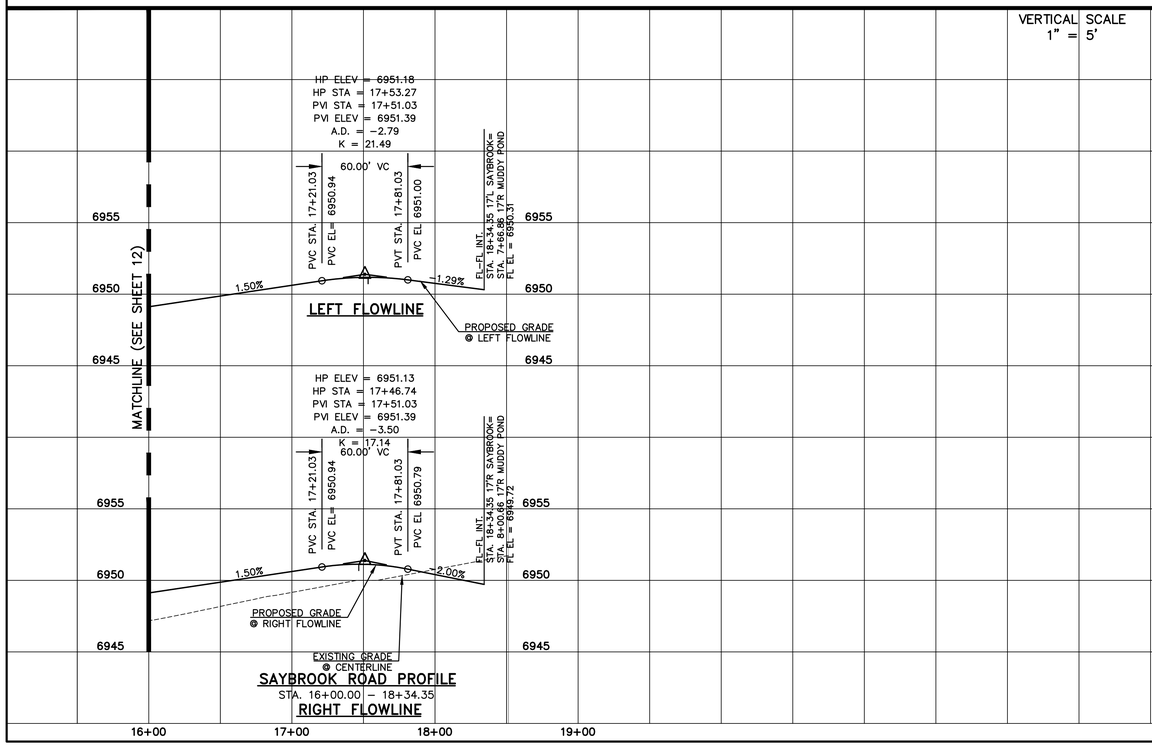
SCALE: 1″ = 50′

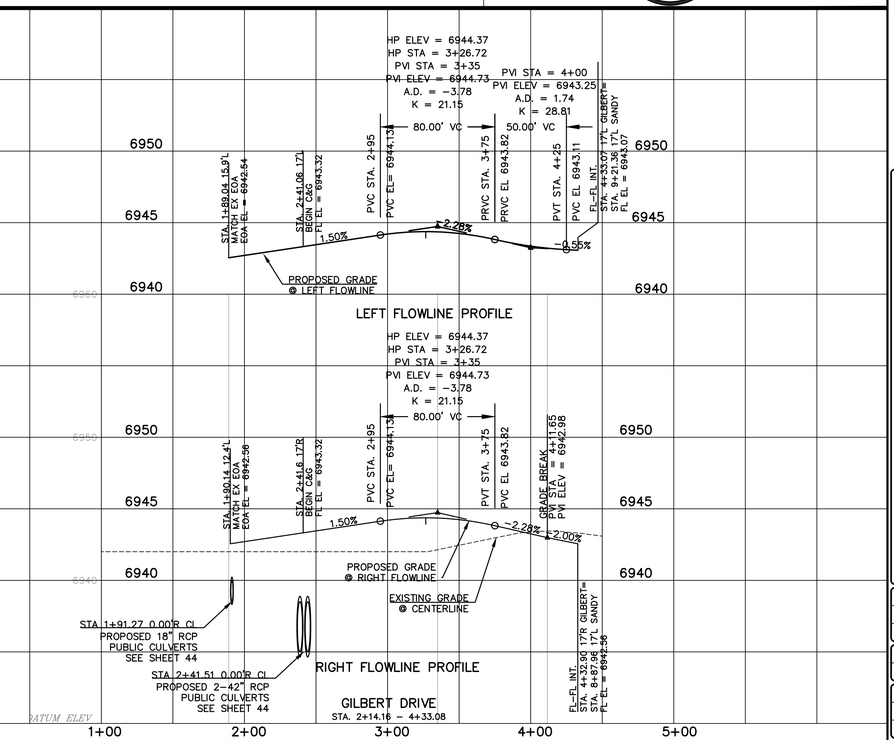
THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

COLORADO LICENSED
QUENTIN N ARMIJO
37170
PROFESSIONAL ENGINEER
10/13/24

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

VERTICAL SCALE
1″ = 5′





REVISIONS

NO.	DESCRIPTION	DATE

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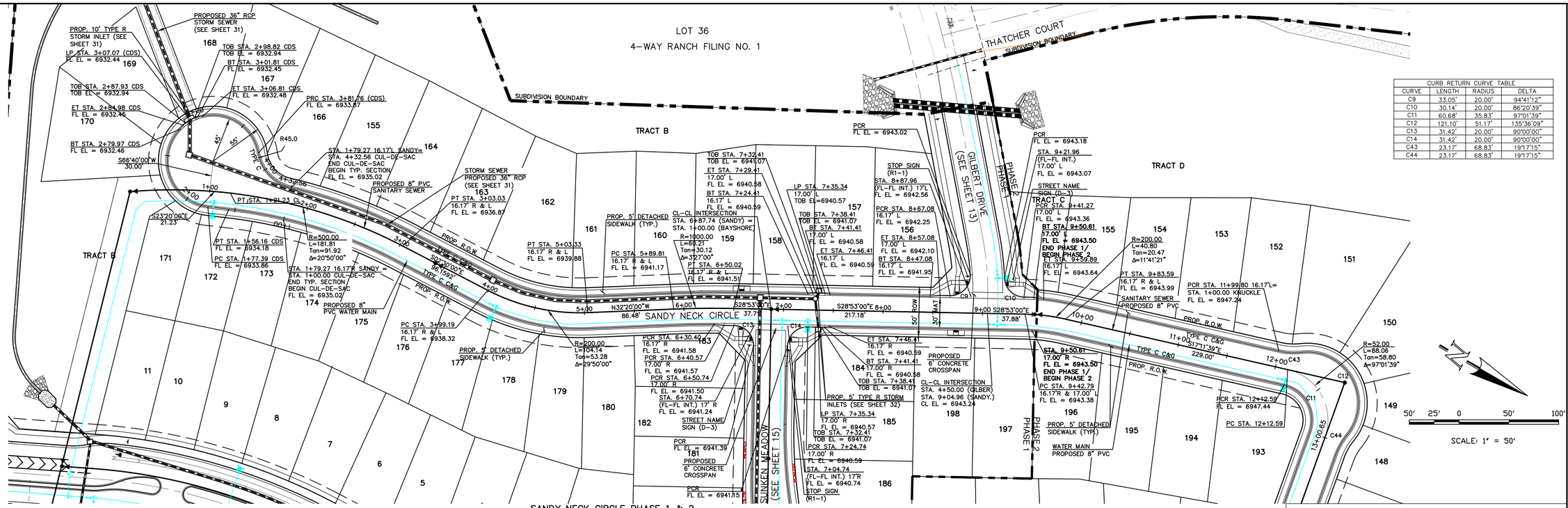
ACM ALF VIII JV SUB II LLC
JASON POCK
8000 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

Terra Nova Engineering, Inc. Surveying
Traffic Civil Engineering
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 CONT'D & GILBERT DRIVE

DESIGNED BY QNA
DRAWN BY QNA
CHECKED BY JS
H-SCALE 1"=50'
V-SCALE 1"=5'
JOB NO. 2356.00
DATE ISSUED 12/22/24
SHEET NO. 13 OF54



CURB RETURN CURVE TABLE			
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C11	60.68'	35.83'	97°01'39"
C12	121.10'	51.17'	135°36'09"
C13	31.42'	20.00'	90°00'00"
C14	31.42'	20.00'	90°00'00"
C43	23.17'	68.83'	19°17'15"
C44	23.17'	68.83'	19°17'15"

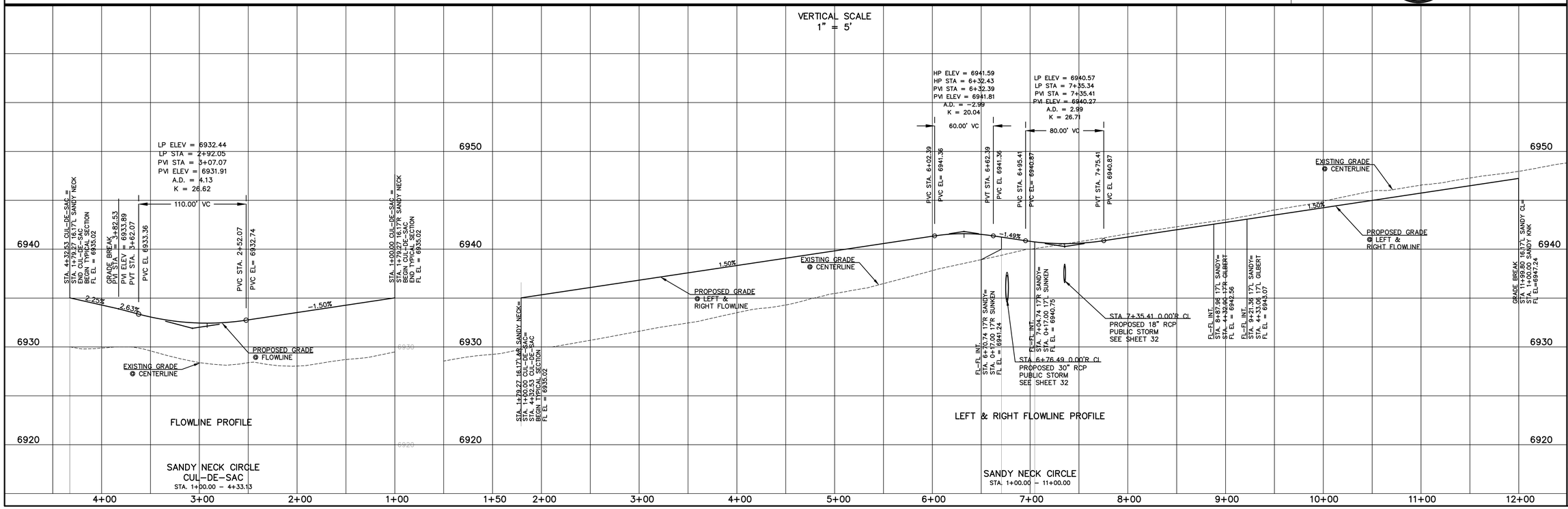
SANDY NECK CIRCLE PHASE 1 & 2
STA. 1+00.00 – 11+00.00 – URBAN LOCAL
(DESIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

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

COLORADO LICENSED QUENTIN N ARMIJO 37170 PROFESSIONAL ENGINEER 10/13/24



REVISIONS

NO.	DESCRIPTION	DATE

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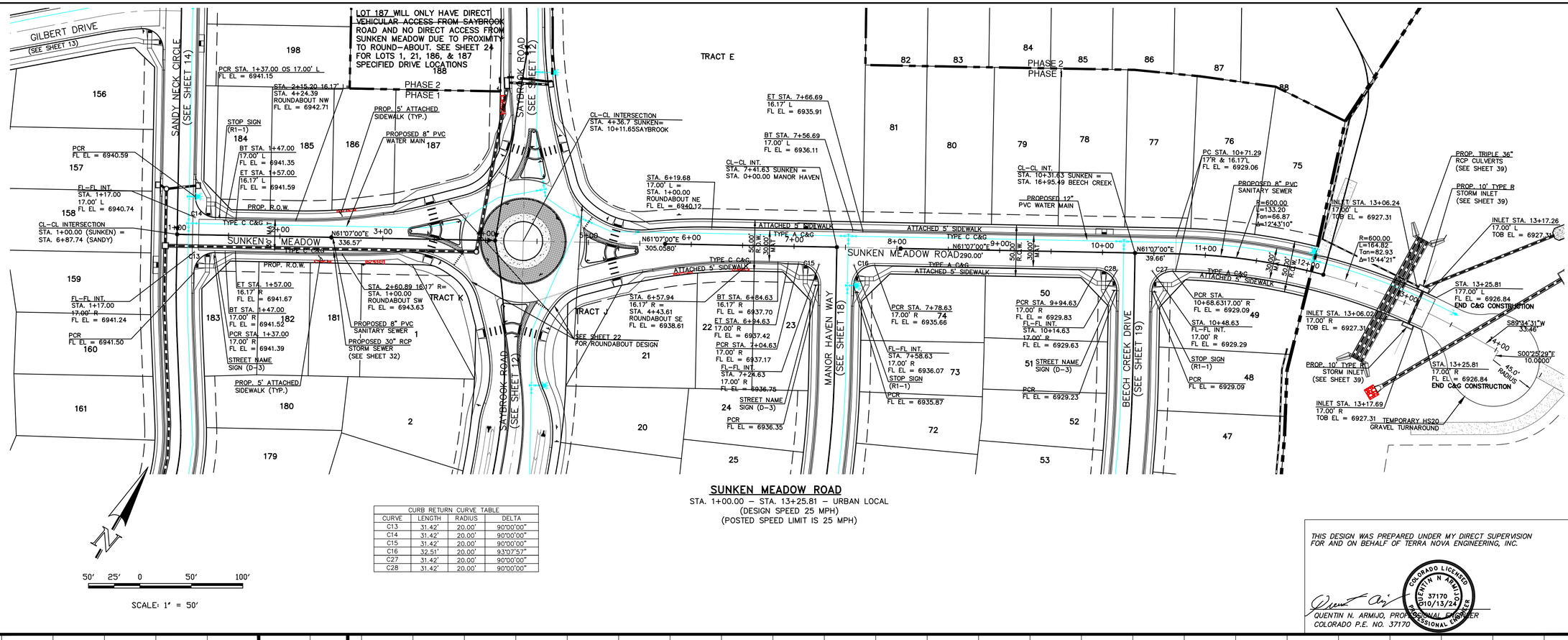
PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
700 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

Terra Nova Engineering, Inc. Surveying
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
STREET PLAN AND PROFILE
SANDY NECK CIR.

DESIGNED BY QNA
DRAWN BY QNA
CHECKED BY JS
H-SCALE 1"=50'
V-SCALE 1"=5'
JOB NO. 2356.00
DATE ISSUED 12/22/24
SHEET NO. 14 OF54

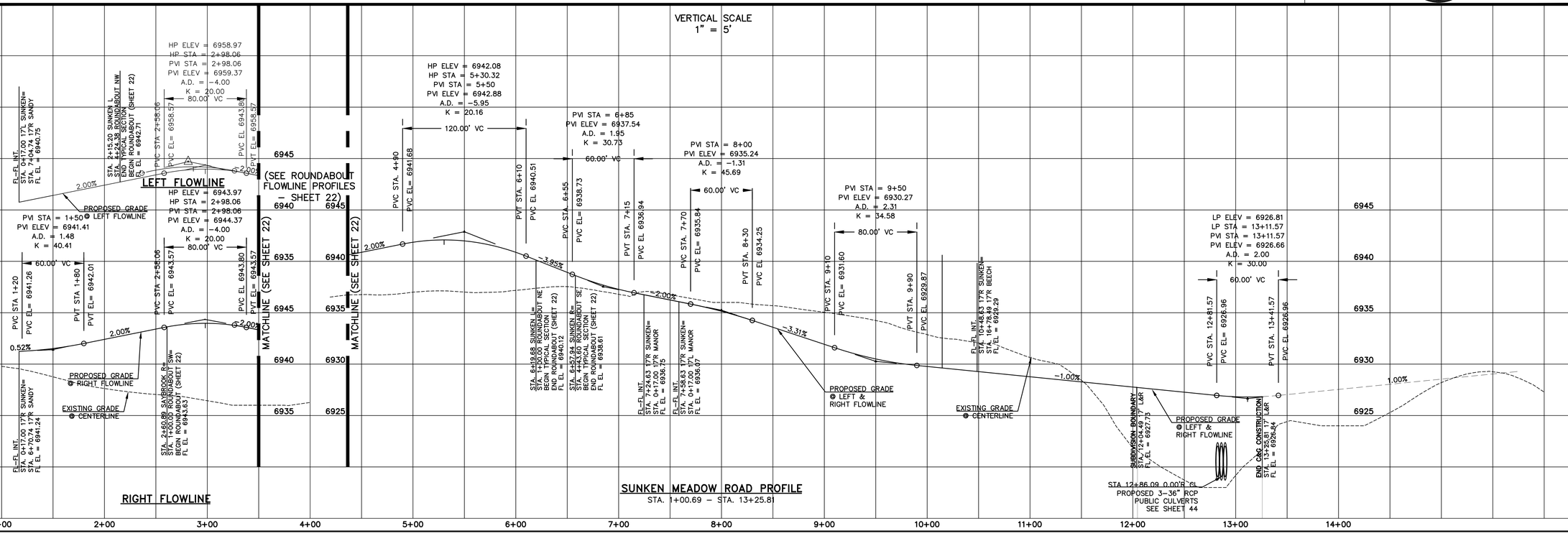


CURB RETURN CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C13	31.42'	20.00'	90°00'00"
C14	31.42'	20.00'	90°00'00"
C15	31.42'	20.00'	90°00'00"
C16	32.51'	20.00'	93°07'57"
C27	31.42'	20.00'	90°00'00"
C28	31.42'	20.00'	90°00'00"

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

COLORADO LICENSED QUENTIN N ARMIJO 37170 PROFESSIONAL ENGINEER 10/13/24

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



PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
P.O. BOX 50223
DENVER, CO 80246
303-984-9800

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

REVISIONS

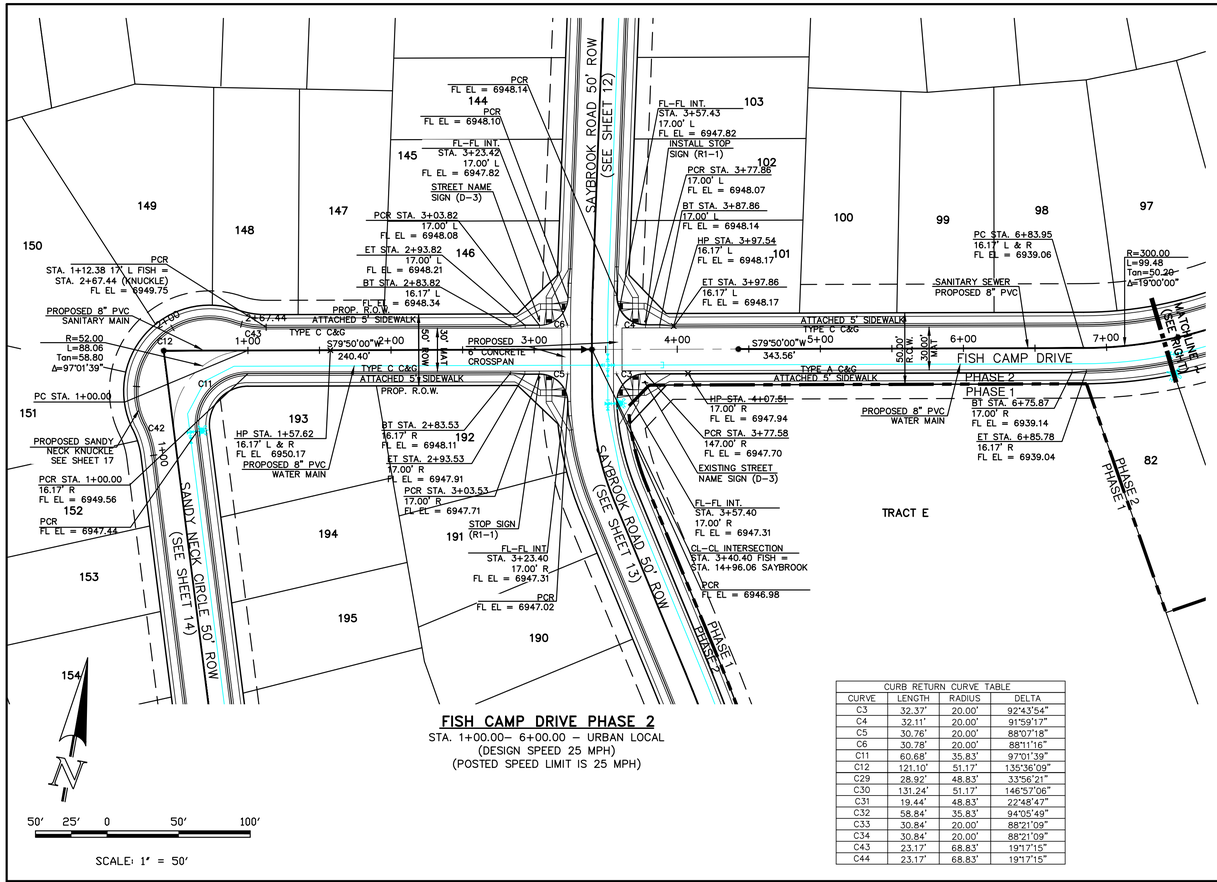
NO.	DESCRIPTION	DATE

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.

WATERBURY FILING NO. 1

CONSTRUCTION SET
STREET PLAN AND PROFILE
SUNKEN MEADOW ROAD

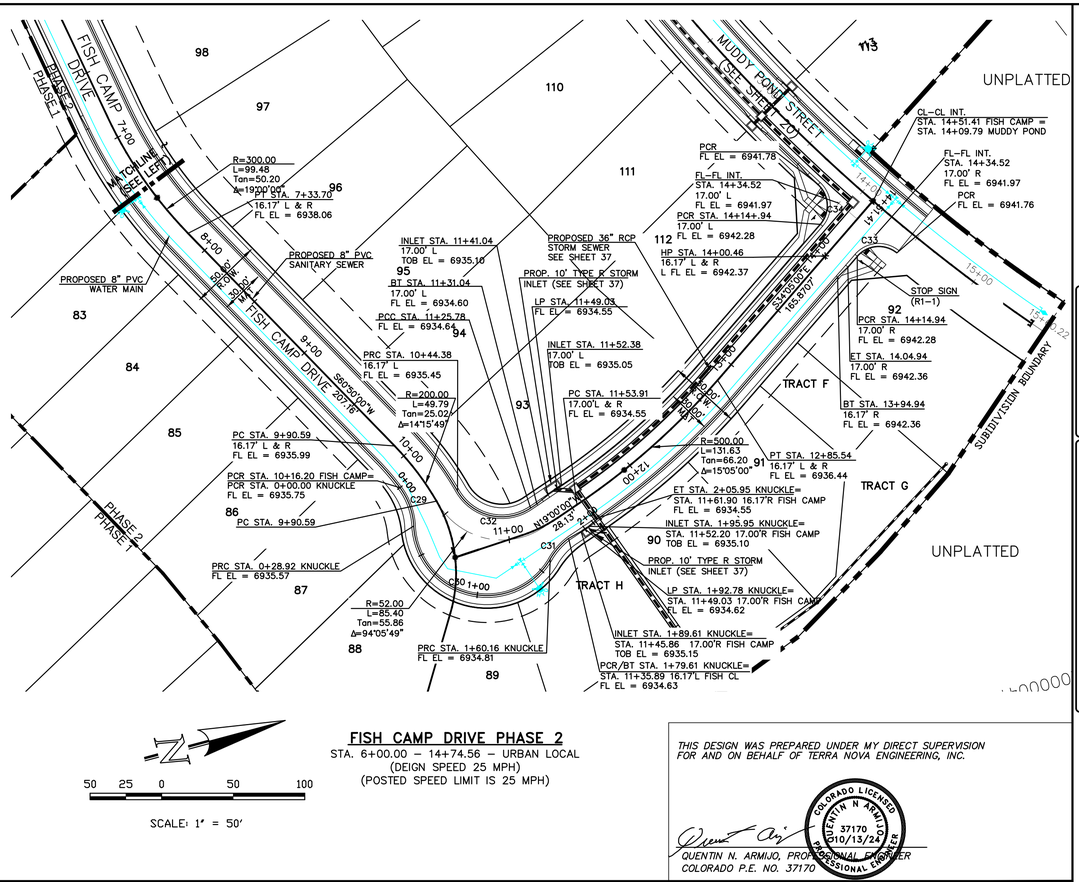
DESIGNED BY QNA
DRAWN BY QNA
CHECKED BY JS
H-SCALE 1"=50'
V-SCALE 1"=5'
JOB NO. 2356.00
DATE ISSUED 12/22/23
SHEET NO. 15 OF 54



FISH CAMP DRIVE PHASE 2

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 PHASE 2

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

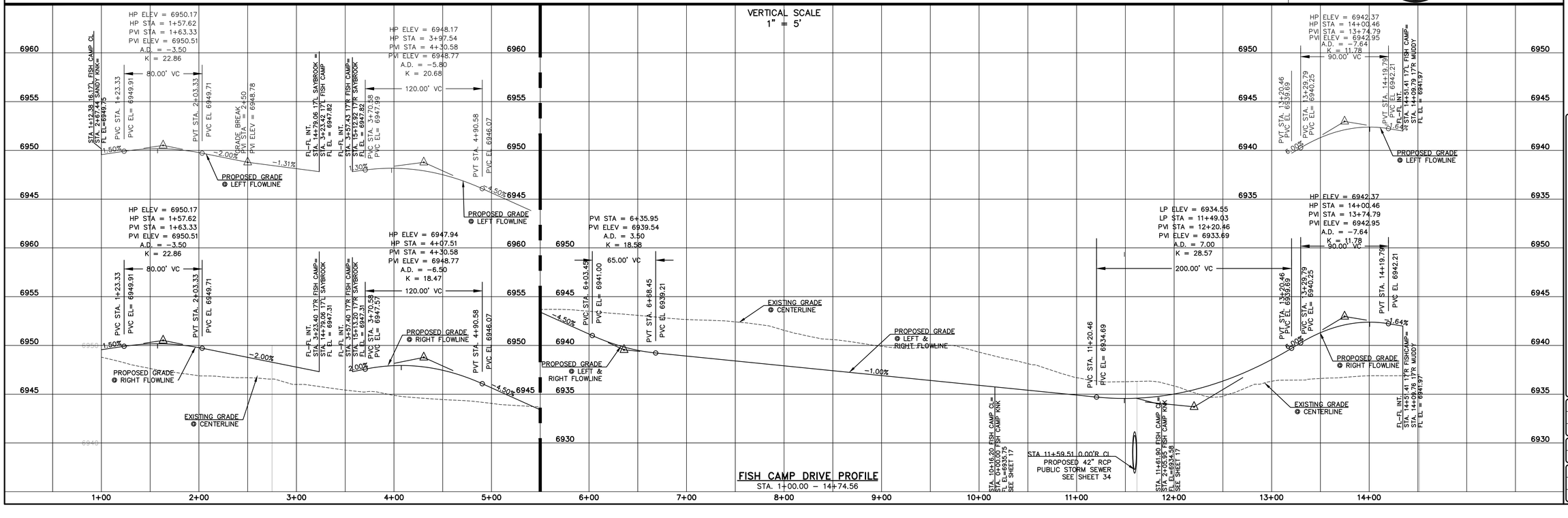
COLORADO LICENSED QUENTIN N ARMIJO 37170 PROFESSIONAL ENGINEER 10/13/24

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 FOR WRITTEN AUTHORIZATION.

PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
5600 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

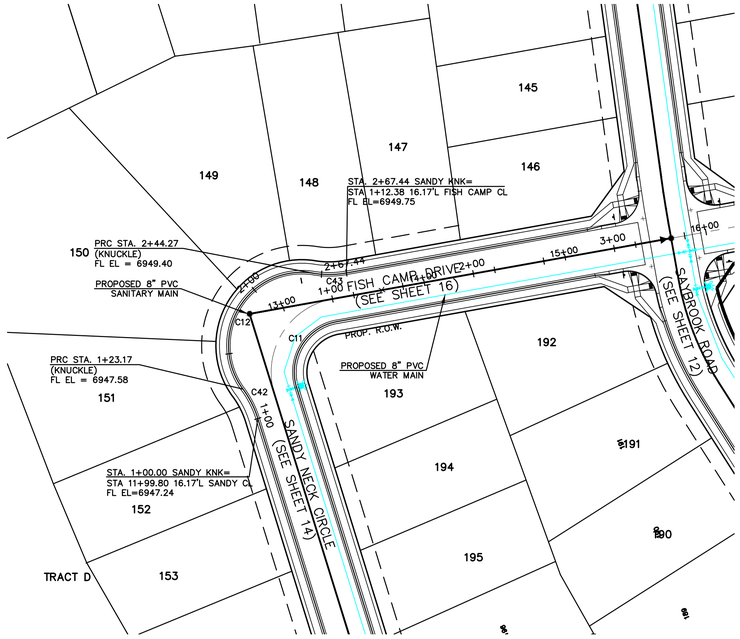
Terra Nova Engineering, Inc. Creative Civil Engineering Solutions
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tneinc.com



WATERBURY FILING NO. 1

CONSTRUCTION SET
STREET PLAN AND PROFILE
FISH CAMP DRIVE

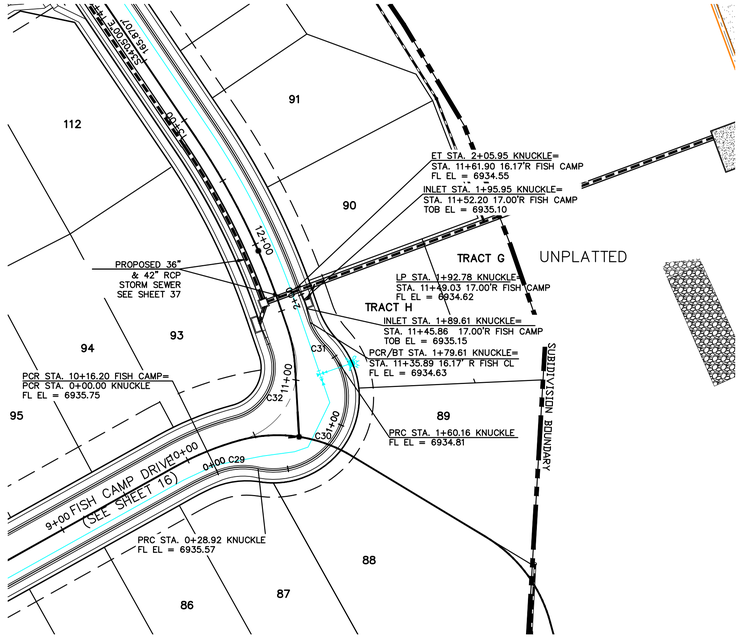
DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	JS
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	16 OF 54



SANDY NECK CIRCLE/FISH CAMP DRIVE
KNUCKLE PHASE 2
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.

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 PHASE 2
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.

50′ 25′ 0 50′ 100′

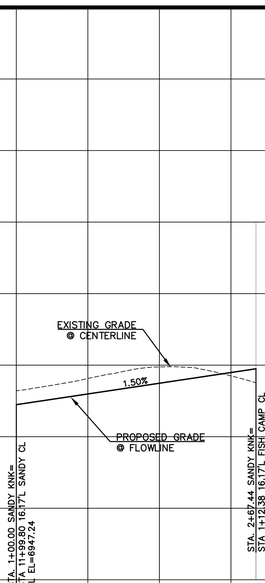
SCALE: 1″ = 50′

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

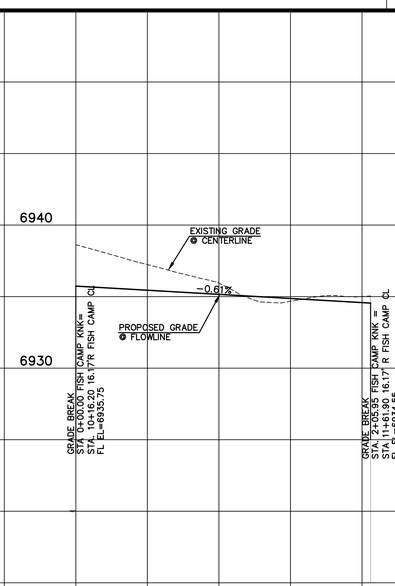
COLORADO LICENSED
QUENTIN N ARMIJO
37170
10/13/24
PROFESSIONAL ENGINEER

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

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES TERRA NOVA ENGINEERING AND SURVEYING, INC. ASSUMES NO RESPONSIBILITY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

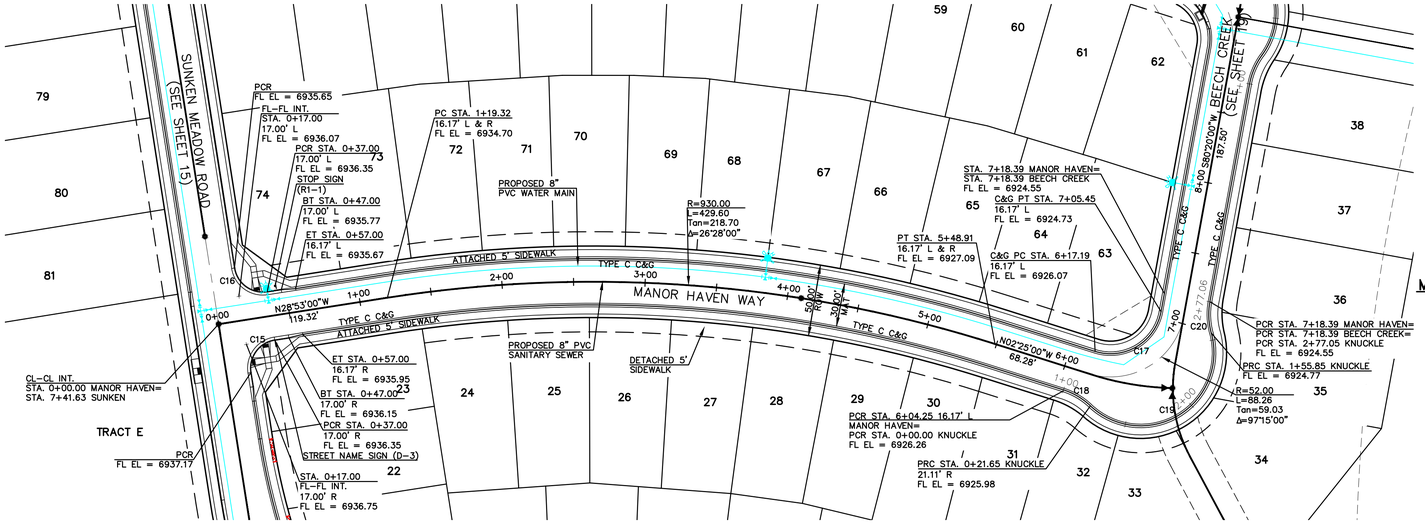
PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
5000 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-948-9800

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	JS
H-SCALE	1″=50′
V-SCALE	1″=5′
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	17 OF 54



MANOR HAVEN WAY PHASE 2

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

MANOR HAVEN WAY KNUCKLE PHASE 2

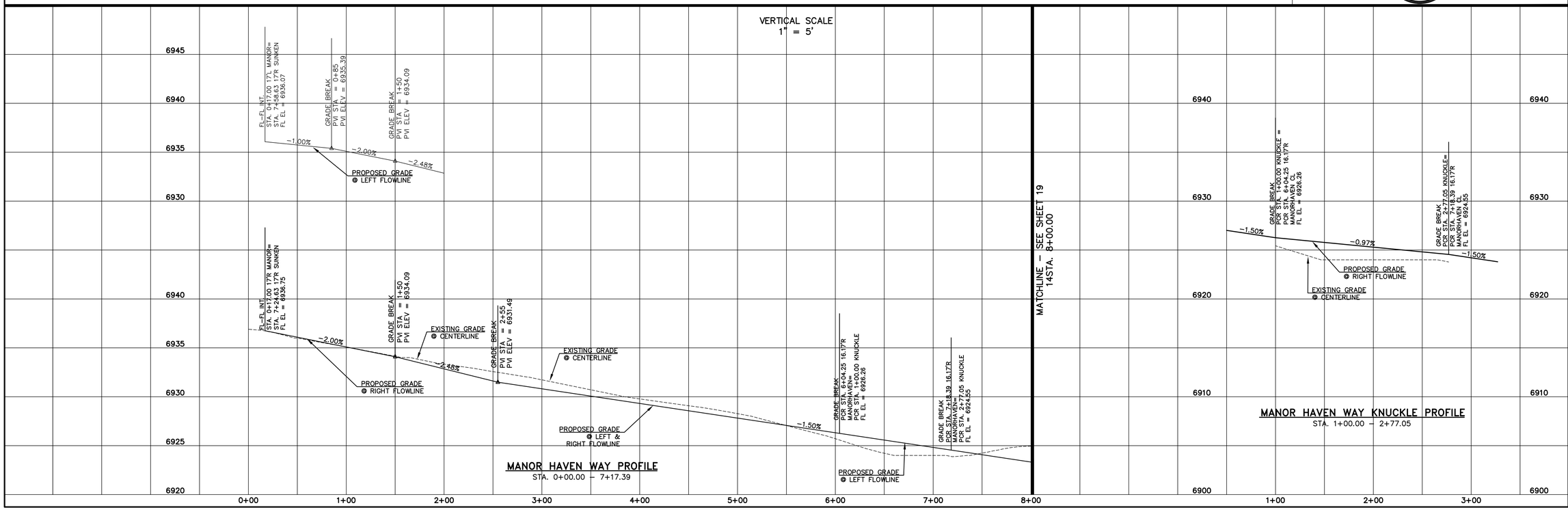
STA. 1+00.00 – 2+77.05 – URBAN LOCAL
(DESIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

CURB RETURN CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
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"

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

COLORADO LICENSED QUENTIN N ARMIJO 37170 PROFESSIONAL ENGINEER 10/13/24

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



MANOR HAVEN WAY PROFILE

STA. 0+00.00 – 7+17.39

MANOR HAVEN WAY KNUCKLE PROFILE

STA. 1+00.00 – 2+77.05

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 BY WRITTEN AUTHORIZATION.

PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
4100 E. MISSISSIPPI AVE., STE 500
246949
303-948-9800

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

WATERBURY FILING NO. 1

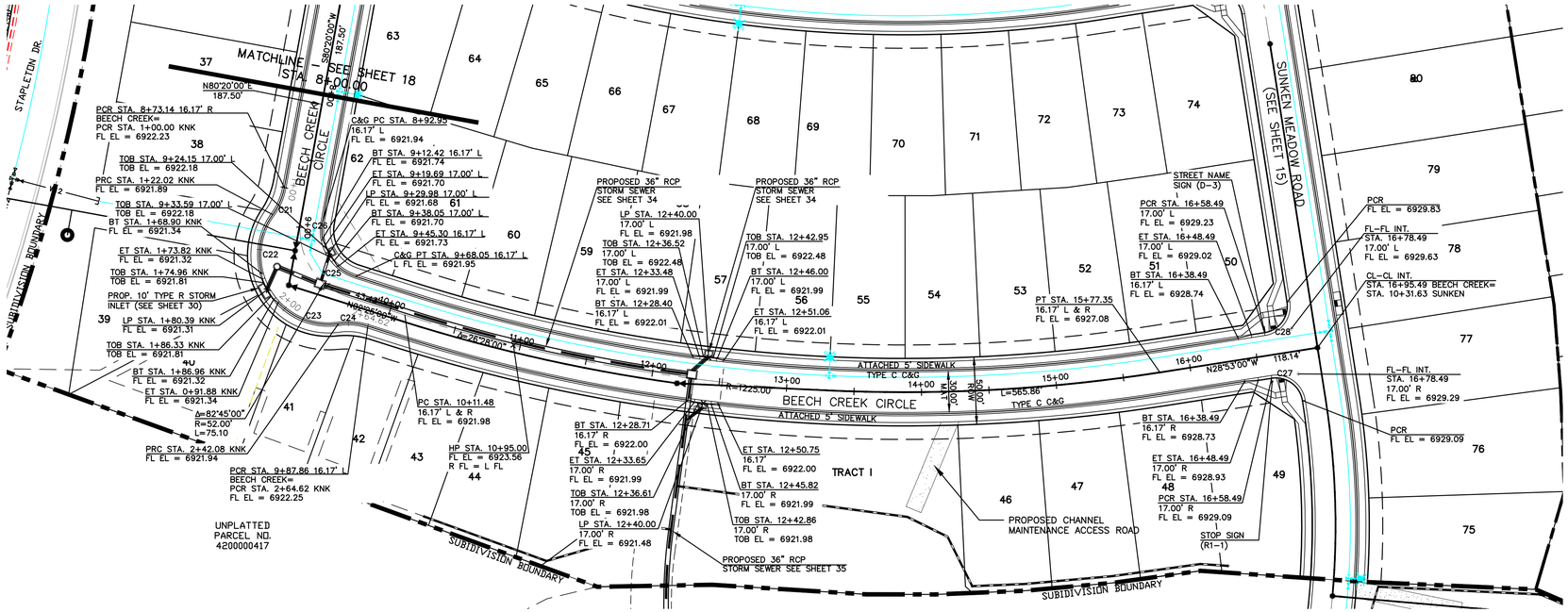
CONSTRUCTION SET
STREET PLAN AND PROFILE
MANOR HAVEN WAY

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	JS
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	18 OF54

BEECH CREEK KNUCKLE PHASE 2

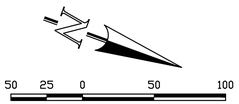
STA. 1+00.00 – 2+77.05 – URBAN LOCAL
(DESIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

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 PHASE 2

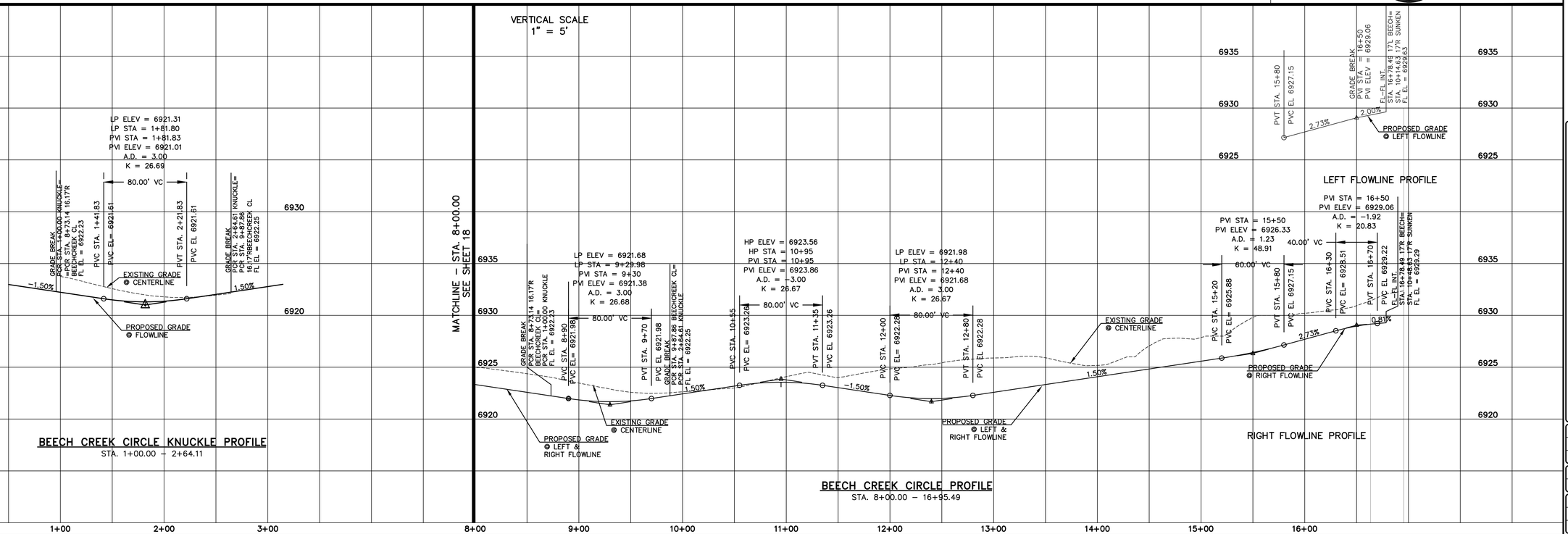
STA. 8+00.00 – 16+95.49 – URBAN LOCAL
(DESIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)



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

COLORADO LICENSED
QUENTIN N ARMIJO
37170
10/13/24
PROFESSIONAL ENGINEER



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 SPECIFICALLY WRITTEN AUTHORIZATION.

PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
4100 E. MISSISSIPPI
DENVER, CO 80246
303-984-9800

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

WATERBURY FILING NO. 1

CONSTRUCTION SET
STREET PLAN AND PROFILE
BEECH CREEK CIRCLE

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	JS
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	19 OF54

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

SUBDIVISION BOUNDARY

TEMPORARY HS20 GRAVEL TURNAROUND

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

TRACT G

TRACT F

MUDDY POND STREET

MASONBORO WAY (SEE SHEET 21)

MEGANSETT WAY (SEE SHEET 21)

SAYBROOK WAY (SEE SHEET 13)

FISH CAMP DRIVE (SEE SHEET 34)

ATTACHED 5' SIDEWALK TYPE A C&G

ATTACHED 5' SIDEWALK TYPE C C&G

PROP. 5' TYPE R STORM INLET (SEE SHEET 38)

PROP. 10' TYPE R STORM INLET (SEE SHEET 36)

PROP. 10' TYPE R STORM INLET (SEE SHEET 38)

PROPOSED 36" RCP STORM SEWER SEE SHEET 38

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

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

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

END C&G CONSTRUCTION PCR STA. 14+45.73 17.00' R FL EL = 6941.78

INSTALL 2-TYPE 3 BARRICADES

114.50 LF OF ROADWAY TO BE BUILT WITH NEXT FILING EXTENTION OWNER TO POST FINANCIAL ASSURANCE FOR IMPROVEMENTS

STA. 15+60.23 FL EL = 6940.07 RT EL = L/F CONSTRUCTION LIMIT

PROPOSED 6" CONC. CRSPAN

PROPOSED 10' TYPE R STORM INLET (SEE SHEET 36)

PROPOSED 18" RCP PUBLIC STORM SEWER SEE SHEET 32

PROPOSED 18" RCP PUBLIC STORM SEWER SEE SHEET 36

PROPOSED 30" RCP PUBLIC STORM SEWER SEE SHEET 36

PROPOSED 18" RCP PUBLIC STORM SEWER SEE SHEET 34

TEMPORARY HS20 GRAVEL TURNAROUND

R45.0

MUDDY POND STREET PHASE 2

STA. 0+00.00 – 15+67.06 – URBAN LOCAL
(DEIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

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

37170 10/13/24

VERTICAL SCALE
1" = 5'

MUDDY POND STREET KNUCKLE PROFILE

STA. 0+00.00 – 1+64.82

MUDDY POND STREET PROFILE

STA. 0+33.02 – 15+67.06

LP ELEV = 6952.45
LP STA = 4+85.01
PVI STA = 4+80
PVI ELEV = 6951.88
A.D. = 4.17
K = 26.52
110.50' VC

HP ELEV = 6953.36
HP STA = 5+76.39
PVI STA = 5+75
PVI ELEV = 6953.68
A.D. = -3.64
K = 19.21
70.00' VC

LP ELEV = 6941.22
LP STA = 13+13.84
PVI STA = 13+10
PVI ELEV = 6940.82
A.D. = 3.25
K = 30.77
100.00' VC

HP ELEV = 6942.02
HP STA = 14+10
PVI STA = 14+10
PVI ELEV = 6942.32
A.D. = -3.00
K = 26.67
80.00' VC

-2.27% +1.89% -1.75% -1.51% -1.50%

PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
5000 E. MISSISSIPPI AVE., STE. 500
DENVER, CO 80246
303-984-9800

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

REVISIONS

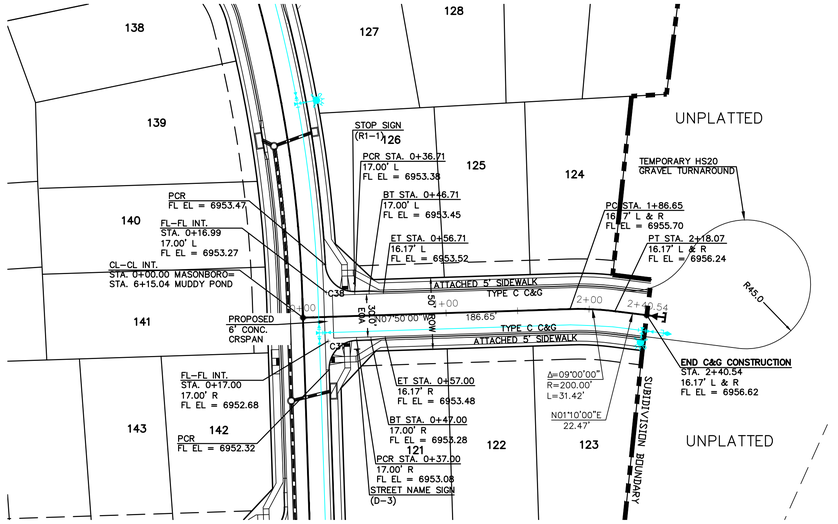
NO.	DESCRIPTION	DATE

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.

WATERBURY FILING NO. 1

CONSTRUCTION SET
STREET PLAN AND PROFILE
MUDDY POND ST.

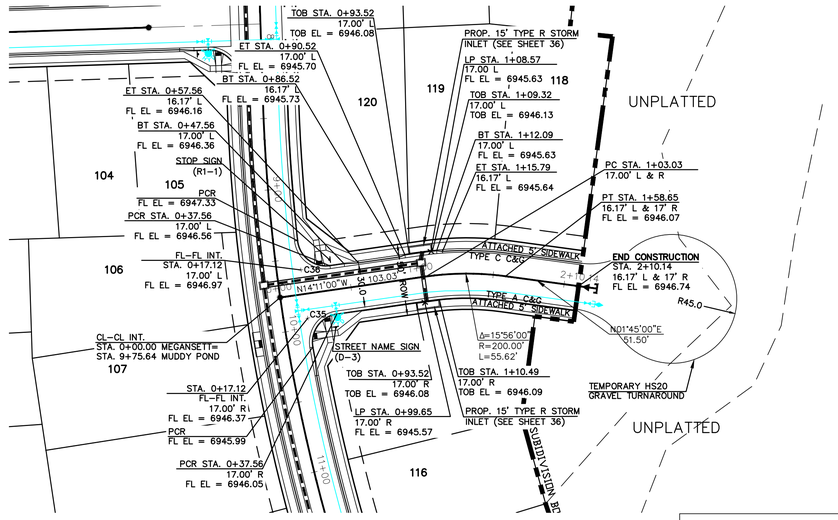
DESIGNED BY QNA
DRAWN BY QNA
CHECKED BY JS
H-SCALE 1"=50'
V-SCALE 1"=5'
JOB NO. 2356.00
DATE ISSUED 12/22/23
SHEET NO. 20 OF 54



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

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"

SCALE: 1" = 50'



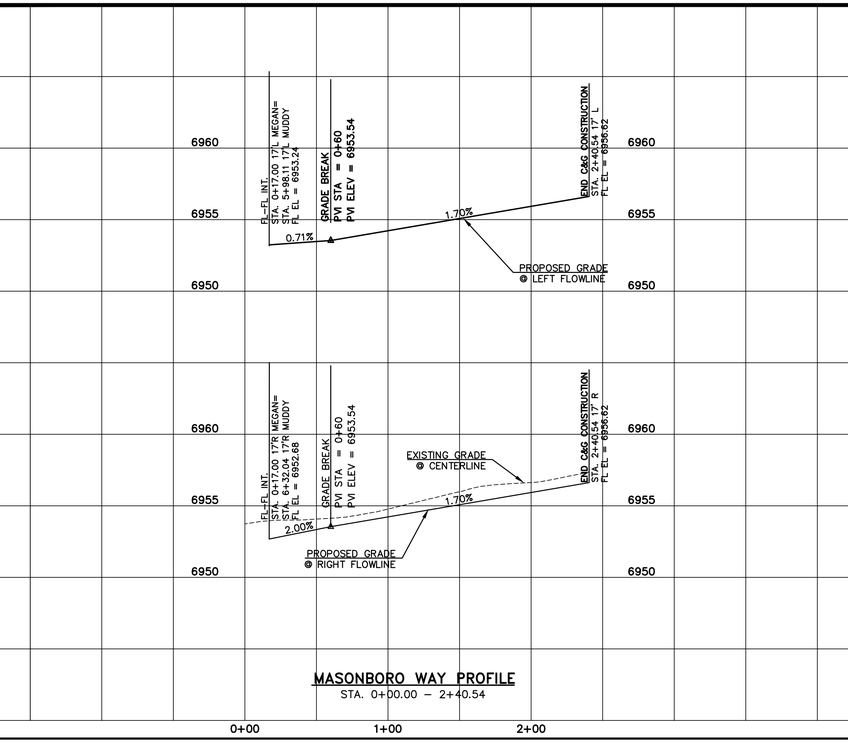
MEGANSETT WAY PHASE 2
STA. 0+00.00 – 2+10.14 – URBAN LOCAL
(DEIGN SPEED 25 MPH)
(POSTED SPEED LIMIT IS 25 MPH)

SCALE: 1" = 50'

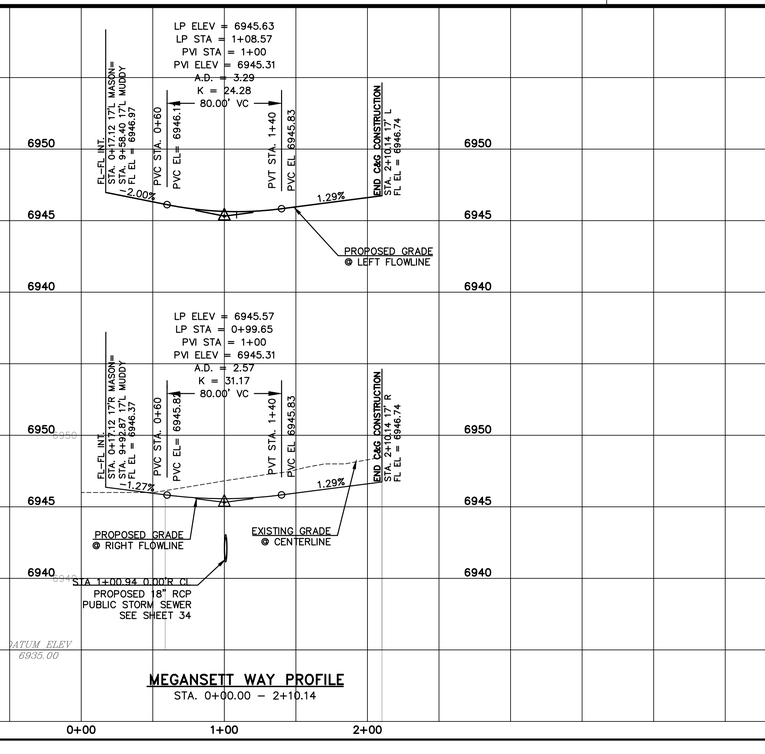
THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

COLORADO LICENSED
QUENTIN N ARMIJO
37170
10/13/24
PROFESSIONAL ENGINEER

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 BY WRITTEN AUTHORIZATION.

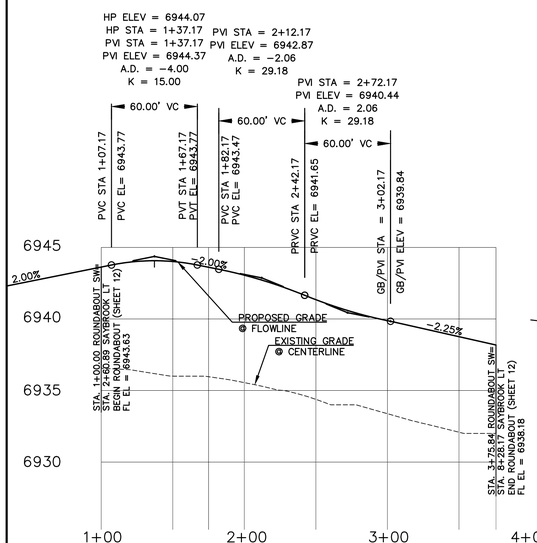
PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
7500 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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

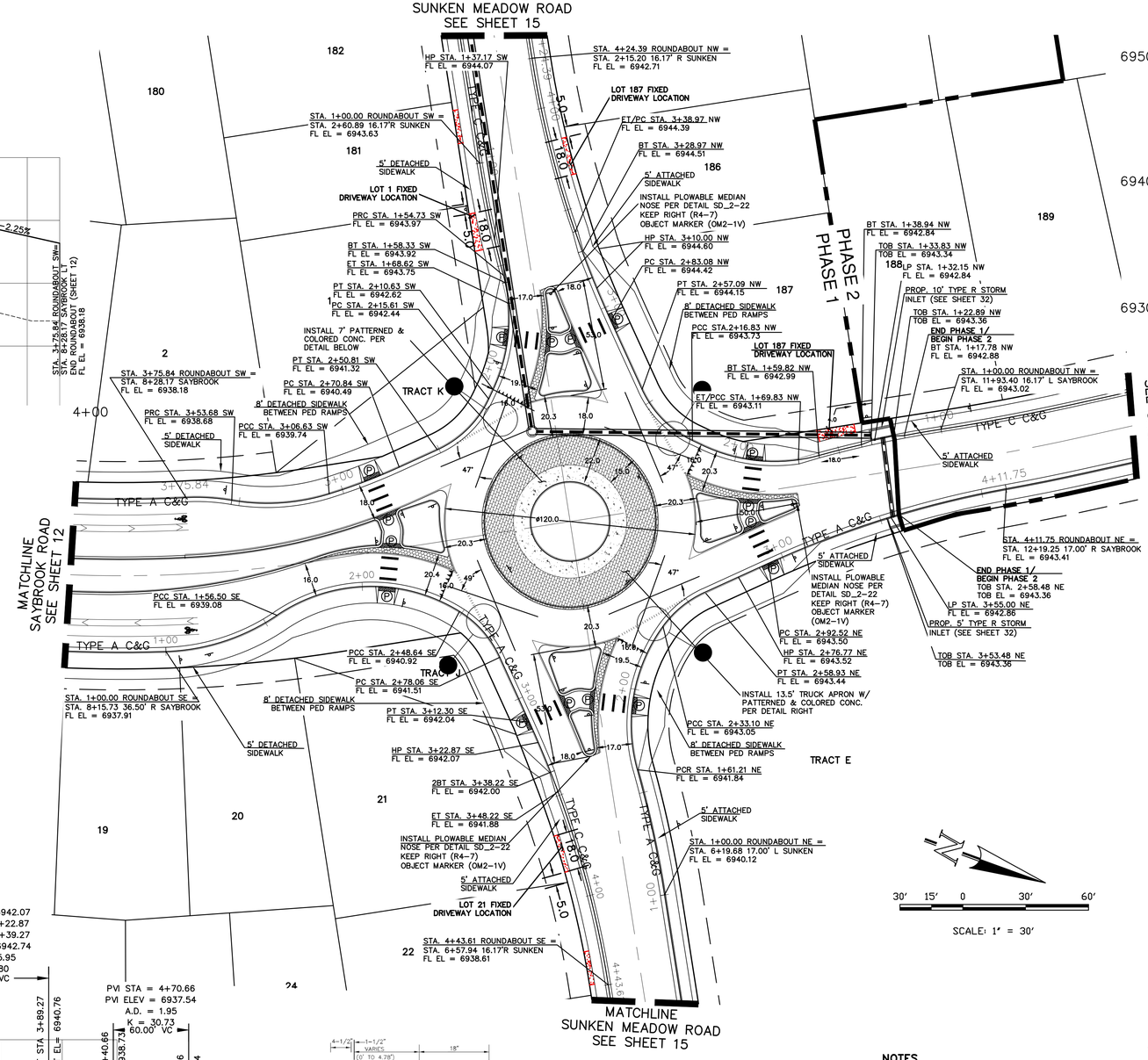
CONSTRUCTION SET
STREET PLAN AND PROFILE
MASONBORO WAY & MEGANSETT WAY

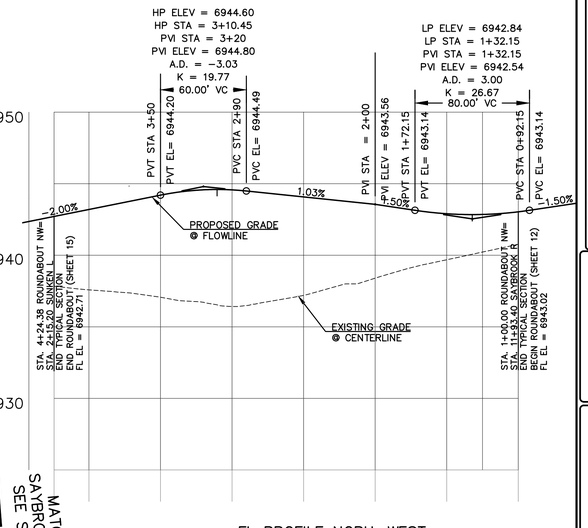
DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	JS
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/23
SHEET NO.	21 OF 54



FL PROFILE SOUTH−WEST

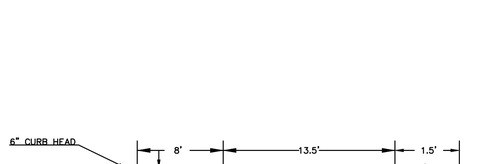
HORIZ SCALE = 1"=50'
VER SCALE = 1"=5'





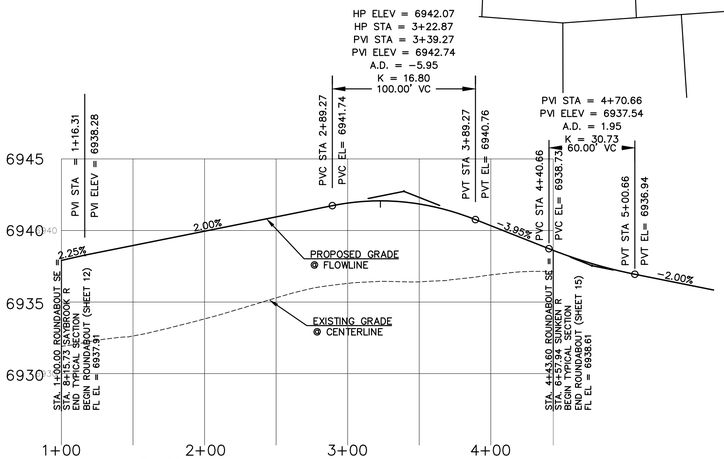
FL PROFILE NORH−WEST

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



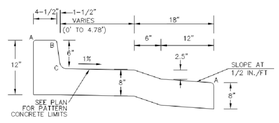
TRUCK APRON DETAIL
N.T.S.

SCALE: 1" = 30'

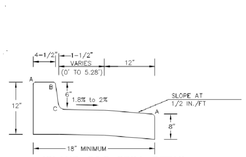


FL PROFILE SOUTH−EAST

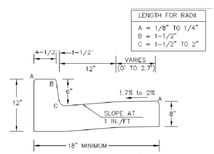
HORIZ SCALE = 1"=50'
VER SCALE = 1"=5'



RAISED CONCRETE PLATFORM
N.T.S.



ISLAND C&G SPILL DETAIL
N.T.S.



ISLAND C&G CATCH DETAIL
N.T.S.

NOTES

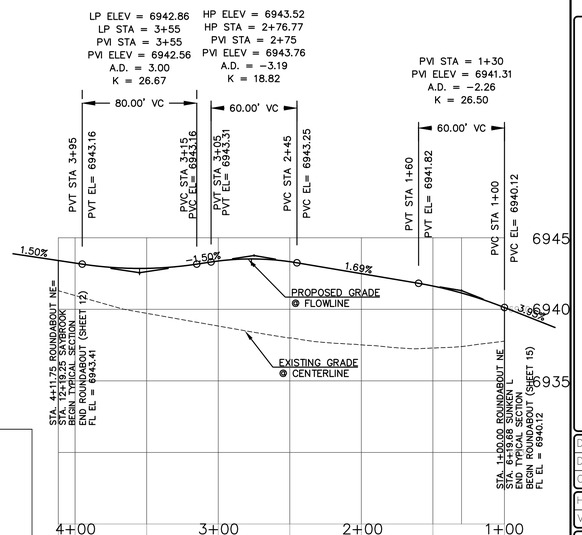
Ⓟ 1. DENOTES PEDESTRIAN RAMP

2. DENOTES RAISED CONCRETE PLATFORM SEE DETAIL TO LEFT

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

QUENTIN ARMIJO
COLORADO P.E. NO. 37170

COLORADO LICENSED QUENTIN N ARMIJO 37170 PROFESSIONAL ENGINEER 10/13/24



FL PROFILE NORH−EAST

HORIZ SCALE = 1"=50'
VER 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:
ACM ALF VIII JV SUB II LLC
ATTN: JASON POCK
8000 E. MISSISSIPPI AVE., STE 500
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303−984−9800

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.tneiinc.com

WATERBURY FILING NO. 1

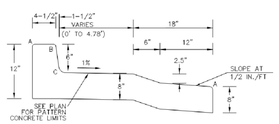
CONSTRUCTION SET
ROUNDABOUT DETAILED GRADING

DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H−SCALE AS SHOWN
V−SCALE AS SHOWN
JOB NO. 2356.00
DATE ISSUED 12/22/24
SHEET NO. 22 OF 54

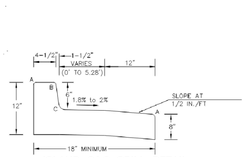
ROUNDABOUT ISLAND CURVE TABLE				
CURVE	LENGTH	RADIUS	DELTA	TYPE C&G
C1	28.99'	97.00'	17°07'24"	SPILL
C2	91.94'	301.90'	17°26'57"	SPILL
C3	3.10'	2.00'	88°40'34"	SPILL
C4	0.93'	2.00'	26°37'49"	CARRY
C5	2.87'	2.00'	82°16'43"	SPILL
C6	5.58'	12.00'	26°37'49"	SPILL
C7	3.13'	2.00'	89°35'44"	SPILL
C8	16.28'	97.00'	9°36'56"	SPILL
C9	4.22'	2.00'	120°52'49"	CARRY
C10	18.69'	64.00'	16°44'06"	SPILL
C11	7.68'	4.00'	109°57'33"	SPILL
C12	3.23'	2.00'	92°32'44"	SPILL
C13	7.35'	2.50'	168°26'54"	SPILL
C14	16.00'	97.00'	9°26'59"	SPILL
C15	2.89'	2.00'	82°54'05"	SPILL
C16	1.08'	2.00'	30°50'43"	SPILL
C17	3.11'	2.00'	89°12'04"	SPILL
C18	16.99'	500.00'	1°56'47"	SPILL
C19	6.46'	12.00'	30°50'43"	CARRY
C20	3.11'	2.00'	88°58'41"	CARRY
C21	16.45'	97.00'	9°43'01"	SPILL
C22	4.28'	2.00'	122°37'40"	SPILL
C23	18.43'	64.00'	16°29'57"	SPILL
C24	7.72'	4.00'	110°36'47"	CARRY
C25	3.31'	2.00'	94°50'33"	CARRY
C26	7.28'	2.50'	166°54'50"	SPILL
C27	13.23'	97.00'	7°48'45"	SPILL
C28	2.86'	2.00'	81°56'28"	CARRY
C29	1.10'	2.00'	31°27'17"	CARRY
C30	3.11'	2.00'	89°07'39"	CARRY
C31	14.18'	500.00'	1°37'28"	SPILL
C32	6.59'	12.00'	31°27'17"	SPILL
C33	3.14'	2.00'	89°55'48"	SPILL
C34	16.12'	97.00'	9°31'15"	SPILL
C35	4.22'	2.00'	120°56'17"	SPILL
C36	17.27'	64.00'	15°27'31"	SPILL
C37	7.71'	4.00'	110°22'54"	SPILL
C38	3.32'	2.00'	95°11'04"	SPILL
C39	7.35'	2.50'	168°26'54"	CARRY
C40	16.00'	97.00'	9°26'59"	SPILL
C41	2.89'	2.00'	82°54'05"	SPILL
C42	1.08'	2.00'	30°50'43"	SPILL
C43	3.11'	2.00'	89°12'04"	CARRY
C44	16.99'	500.00'	1°56'47"	CARRY
C45	6.46'	12.00'	30°50'43"	CARRY
C46	3.11'	2.00'	88°58'41"	CARRY
C47	16.45'	97.00'	9°43'01"	SPILL
C48	4.28'	2.00'	122°37'40"	SPILL
C49	18.43'	64.00'	16°29'57"	SPILL
C50	7.72'	4.00'	110°36'47"	SPILL
C51	3.31'	2.00'	94°50'33"	CARRY

ROUNDABOUT ISLAND LINE TABLE			
LINE	LENGTH	BEARING	TYPE C&G
L1	3.92	S48°49'28"W	CARRY
L2	4.47	S75°27'16"W	CARRY
L3	3.57	N75°27'16"E	SPILL
L4	13.96	S38°37'48"E	SPILL
L5	3.79	N48°49'28"E	SPILL
L6	3.46	S13°23'02"E	SPILL
L7	2.80	S44°13'45"E	SPILL
L8	2.72	N13°23'02"W	CARRY
L9	14.08	N50°36'49"E	SPILL
L10	2.60	N44°13'45"W	CARRY
L11	3.19	S76°55'44"W	CARRY
L12	2.34	S45°28'28"W	CARRY
L13	2.21	S76°55'44"W	SPILL
L14	13.90	N39°20'28"W	SPILL
L15	2.09	S45°28'28"W	SPILL
L16	3.46	N13°23'02"W	SPILL
L17	2.80	N44°13'45"W	SPILL
L18	2.72	S13°23'02"E	CARRY
L19	14.08	S50°36'49"W	CARRY
L20	2.60	S44°13'45"E	CARRY

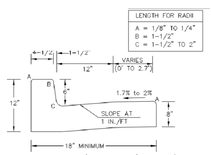
NOTE
LINE AND CURVE TABLES REFER TO THE FLOWLINE OF THE C&G



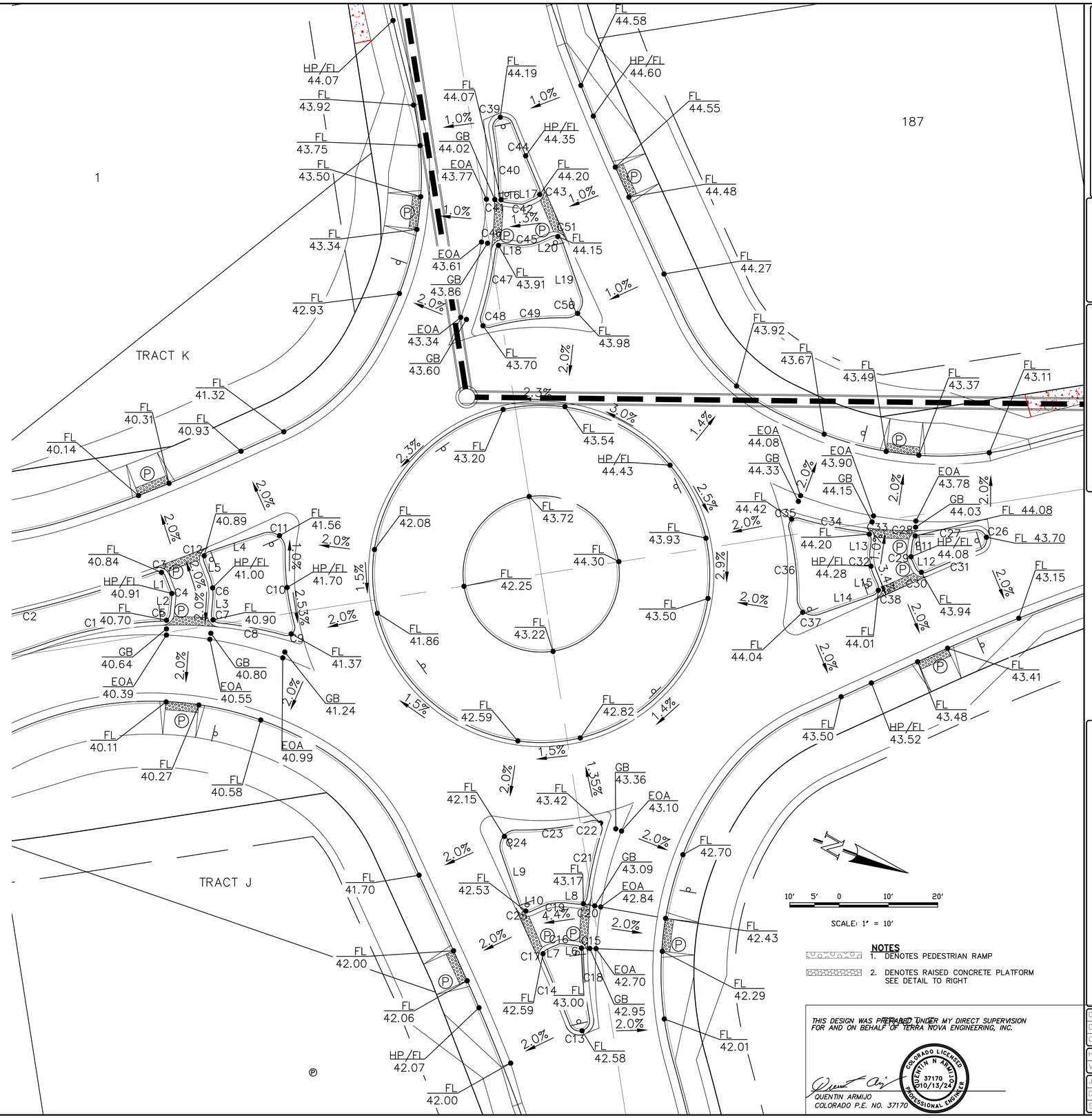
RAISED CONCRETE PLATFORM
N.T.S.



ISLAND C&G SPILL DETAIL
N.T.S.



ISLAND C&G CATCH DETAIL
N.T.S.



NOTES
1. DENOTES PEDESTRIAN RAMP
2. DENOTES RAISED CONCRETE PLATFORM SEE DETAIL TO RIGHT

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

QUENTIN ARMIJO
COLORADO P.E. NO. 37170

COLORADO LICENSED QUENTIN N ARMIJO 37170 10/13/24 PROFESSIONAL ENGINEER

REVISIONS		
NO.	DESCRIPTION	DATE

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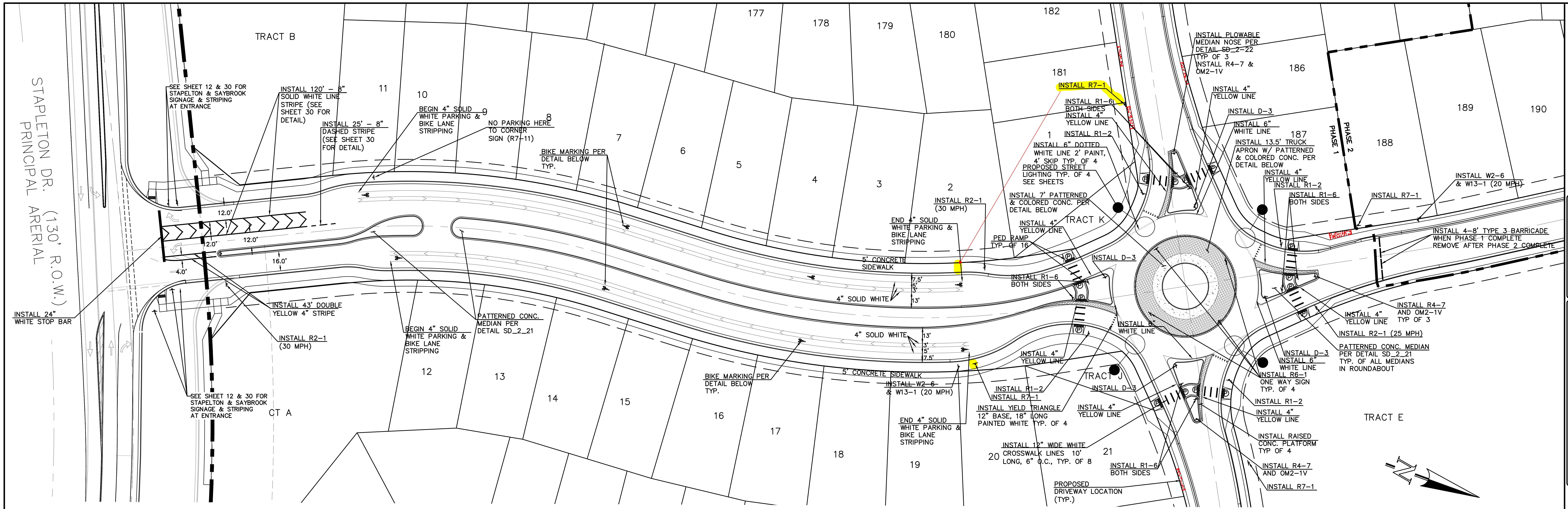
PREPARED FOR:
ACM ALF VIII JV SUB II LLC
ATTN: JASON POCK
5000 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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
ROUNDABOUT DETAILED GRADING

DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	AS SHOWN
V-SCALE	N/A
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	23 OF 54



SAYBROOK AND ROUNDABOUT SIGNING & STRIPING

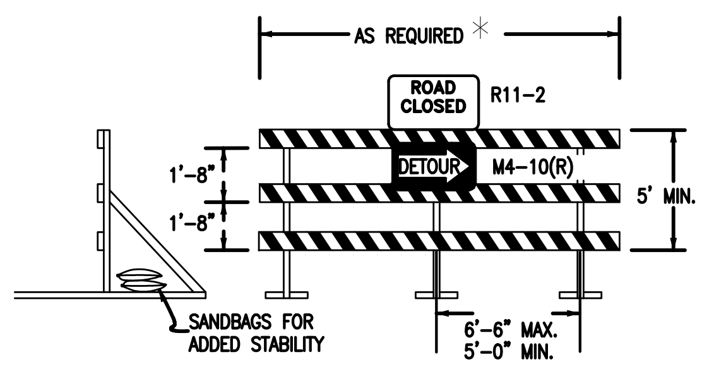
40' 20 0 40 80

SCALE: 1" = 40'

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'

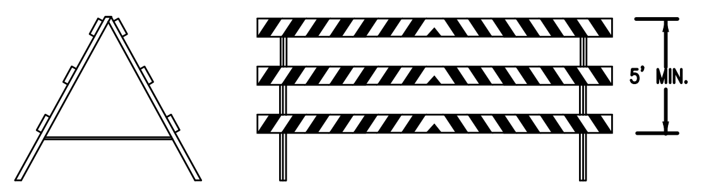
MOVABLE–SKIDS



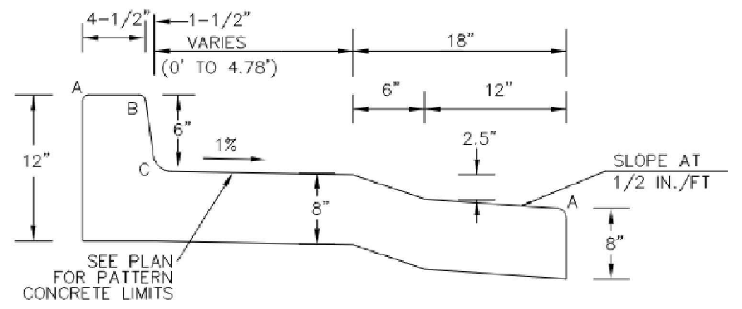
BARRICADE NOTES

1. TYPE 3 BARRICADES HAVE 3 REFLECTORIZED RAIL FACES IF FACING TRAFFIC IN ONE DIRECTION AND 6 IF FACING TRAFFIC IN TWO DIRECTIONS.
2. THE PORION 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–HINGED



TYP. TYPE 3 BARRICADES



RAISED CONCRETE PLATFORM
N.T.S.

NOTES

Ⓟ 1. DENOTES PEDESTRIAN RAMP

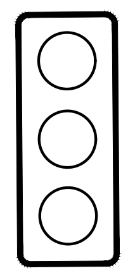
▨ 2. DENOTES RAISED CONCRETE PLATFORM SEE DETAIL TO LEFT

░ 3. DENOTES A PROPOSED DRIVEWAY LOCATION

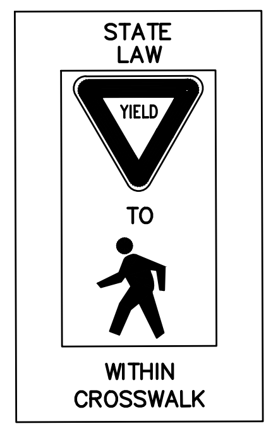
Missing or invalid reference
File: N:\jobs\1715.00\PDFs\BIKE MARKINGS 1.pdf
Sheet: 1

YIELD (R1–2)
36"x36"x36"

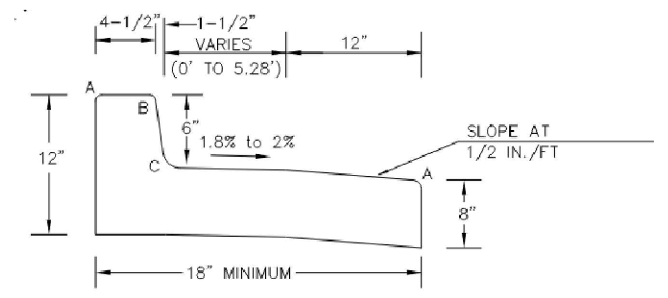
MEDIAN (R4–7)



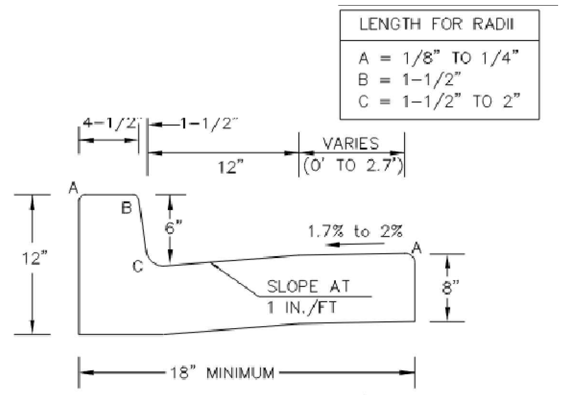
OBJECT MARKER (OM2–1V)



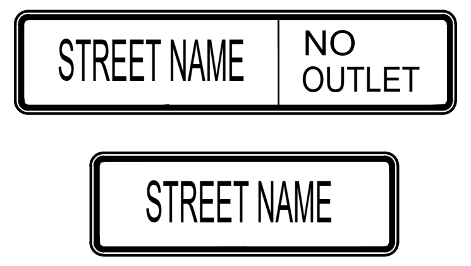
PED (R1–6)



ISLAND C&G SPILL DETAIL
N.T.S.



ISLAND C&G CATCH DETAIL
N.T.S.



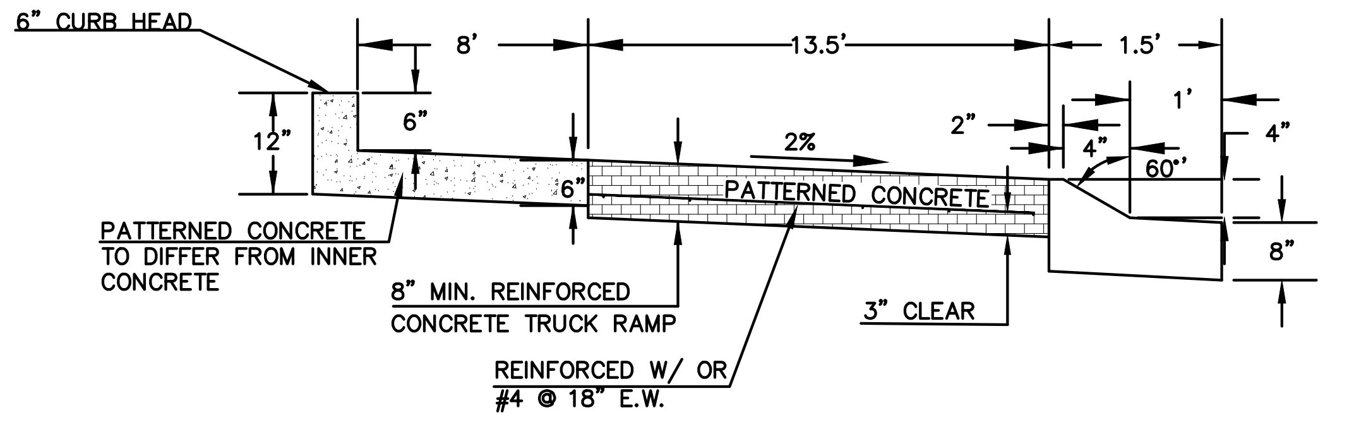
STREET NAME (D–3)

SPEED LIMIT (R2–1)

ONE WAY (R6–1)

PED (W11–2)

NO PARKING (R7–1)



TRUCK APRON DETAIL
N.T.S.

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

STAPELTON ROAD INTERSECTION SIGNS SHALL BE 6" FONT LETTER SIZE

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

QUENTIN ARMIJO
COLORADO P.E. NO. 37170

QUENTIN N ARMIJO 37170 10/13/24

NO.	DESCRIPTION	DATE

REVISIONS

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PREPARED FOR:
ACM ALF VIII JV SUB II LLC
ATTN: JASON POCK
4100 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303–984–9800

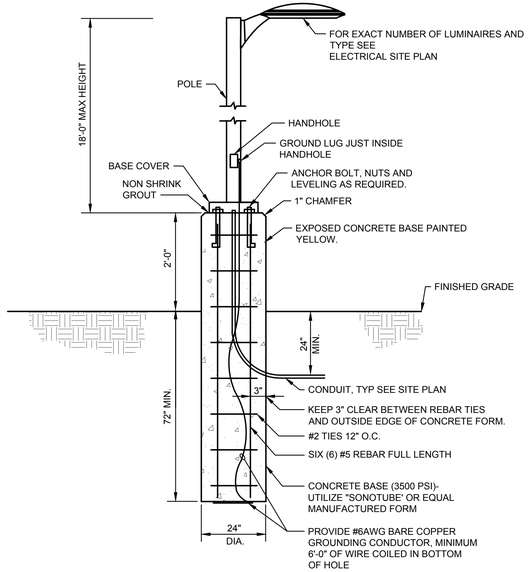
Terra Nova Engineering, Inc.
"Creative Civil Engineering Solutions"

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

WATERBURY FILING NO. 1

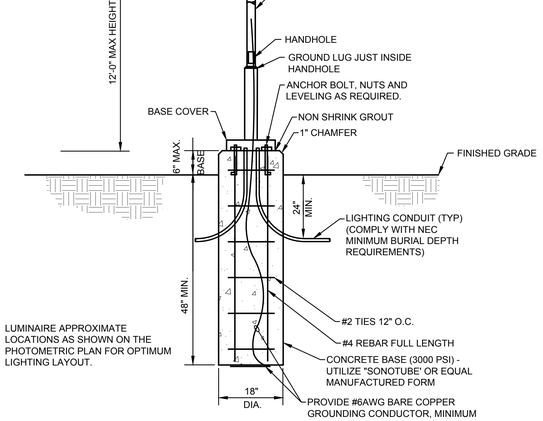
CONSTRUCTION SET
SIGNING & STRIPING
SAYBROOK & ROUNDABOUT

DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H–SCALE AS SHOWN
V–SCALE N/A
JOB NO. 2356.00
DATE ISSUED 12/22/24
SHEET NO. 24 OF 54



1 LIGHT POLE DETAIL - P3, P4

NOT TO SCALE



LUMINAIRE APPROXIMATE LOCATIONS AS SHOWN ON THE PHOTOMETRIC PLAN FOR OPTIMUM LIGHTING LAYOUT.

2 LIGHT POLE DETAIL - P5

NOT TO SCALE

WATERBURY SITE LIGHTING FIXTURE SCHEDULE

	LUMINAIRE							LAMPS			
ID	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	DISTRIBUTION	VOLTAGE	DIMMING	MOUNTING	QTY.	TYPE	WATTS	LUMENS	COLOR TEMP/CRI
P3	KIM LIGHTING	UR20-56L-75-4K7-3-UNV-A34-BLT-7PR-TL-CLR POLE: RSS-H-18-40-B-1-K2-BLT	20"DIAX3.6"H ROUND OUTDOOR LED AREA FIXTURE. TYPE 3 DISTRIBUTION, 0-10V DRIVER, SUITABLE FOR -40 DEG. C TO 40 DEG. C, STANDARD CLEAR LENS AND PHOTOCELL 7-PIN TWIST LOCK CONTROLS, IP66 RATED AND WET LOCATIONS LISTED, 5 YEAR WARRANTY.	TYPE 3	120-277V	0-10V	POLE 18'-0"	19	LED	76	9,633	4000K/70CRI
P4	KIM LIGHTING	UR20-56L-75-4K7-4W-UNV-A34-BLT-7PR-TL-CLR POLE: RSS-H-18-40-B-1-K2-BLT	SAME AS TYPE P1 BUT TYPE 4 WIDE DISTRIBUTION.	TYPE 4 WIDE	120-277V	0-10V	POLE 18'-0"	10	LED	76	9,862	4000K/70CRI
P5	KIM LIGHTING	UR20-56L-75-4K7-5W-UNV-PT34-BLT-7PR-TL-CLR POLE: RSS-H-12-40-B-TC-K2-BLT	SAME AS TYPE P1 BUT POST TOP VERSION AND TYPE 5 ROUND WIDE DISTRIBUTION.	TYPE 5 WIDE	120-277V	0-10V	POLE 12'-0"	10	LED	76	10,269	4000K/70CRI

NORTH

ELECTRICAL SITE DEVELOPMENT PLAN

SCALE: 1" = 100'-0"

GENERAL NOTES

A. FIXTURES SIZES SHOWN ARE DIAGRAMMATICAL AND ARE LOCATED TO STAY OUTSIDE MVEA EASEMENTS.

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:
WATERBURY SITE DEVEOPMENT
STAPLETON ROAD AND
EASTONVILLE ROAD
FALCON

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

ELECTRICAL SITE DEVELOPMENT PLAN

COLORADO LICENSED
TIMOTHY P. PLANT
31074
10/4/2024
PROFESSIONAL ENGINEER

DESIGNED BY	CAO
DRAWN BY	PJN/CAO
CHECKED BY	MPP
H-SCALE	AS NOTED
V-SCALE	AS NOTED
JOB NO.	24086
DATE ISSUED	10/04/24
SHEET NO.	25 OF 54

PLANT
ENGINEERING CONSULTANTS
320 WEST FILLMORE STREET COLORADO SPRINGS CO 80907
719 473 7077 www.planteci.com

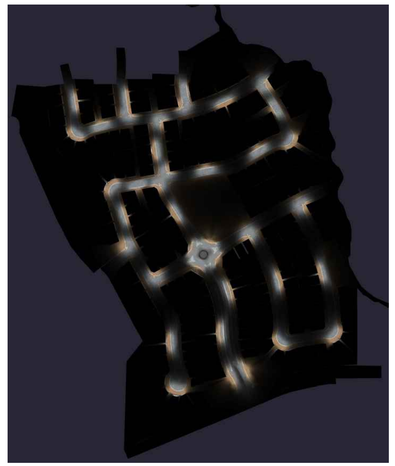
GENERAL NOTES

A. CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO ANY EXCAVATION. NOT ALL EXISTING CONDITIONS ARE SHOWN FOR CLARITY.

B. CONTRACTOR SHALL PROVIDE ALL REQUIRED CUTTING, TRENCHING, BACKFILLING, AND RESTORATION.

C. THESE PHOTOMETRIC CALCULATIONS ARE BASED ON MANUFACTURER'S IES FILES AND 0.95 LIGHT DEPRECIATION FACTOR.

D. ACTUAL ILLUMINANCE LEVELS MAY DIFFER FROM THE FOOT CANDLE LEVELS SHOWN DUE TO VARIABLE FIELD CONDITIONS, SUCH AS NEARBY EXISTING LUMINAIRES, LUMINAIRE DIRT DEPRECIATION, LANDSCAPING, AND FUTURE DEVELOPMENTS.



1 WATERBURY SITE DEVELOPMENT RENDERING - TOP VIEW

SCALE: NO SCALE

Calculation Summary							
Label	**CalcType**	**Units**	**Avg**	**Max**	**Min**	**Avg/Min**	**Max/Min**
10' Property Line	**Illuminance**	**Fc**	**0.00**	**0.0**	**0.0**	**N.A.**	**N.A.**
Property Line	**Illuminance**	**Fc**	**0.00**	**0.1**	**0.0**	**N.A.**	**N.A.**
Site	**Illuminance**	**Fc**	**0.20**	**4.3**	**0.0**	**N.A.**	**N.A.**

DEVELOPMENTAL SITE PHOTOMETRIC PLAN

SCALE: 1" = 100'-0"

REVISIONS NO.	DESCRIPTION	DATE

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PREPARED FOR:
WATERBURY SITE DEVEOPMENT
STAPLETON ROAD AND
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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.tnsolinc.com

DEVELOPMENTAL SITE PHOTOMETRIC PLAN

COLORADO LICENSED
KENTON ELL PLANT
31074
10/4/2024
PROFESSIONAL ENGINEER

DESIGNED BY	CAO
DRAWN BY	PJN/CAO
CHECKED BY	MPP
H-SCALE	AS NOTED
V-SCALE	AS NOTED
JOB NO.	24086
DATE ISSUED	10/04/24
SHEET NO.	26 OF 54

PLANT
ENGINEERING CONSULTANTS
320 WEST FILLMORE STREET COLORADO SPRINGS CO 80907
719 473 7077 www.planteci.com

KIM LIGHTING

UR20-Arm Mount

ARCHITECTURAL AREA/SITE

DATE: | LOCATION:

TYPE: | PROJECT:

CATALOG #:

P3,P4

Ouro

FEATURES

- 20" size in post top, pole and wall mount
- High performance optics up to 17,000 delivered lumens
- Elegant form factor
- Diffusion lens option
- UL/cUL listed for wet locations, IP66 and 4G/1.5G vibration rated

3000K and warmer CCTs only

CONTROL TECHNOLOGY

NX WIRELESS | LIGHTGRID®

SPECIFICATIONS

CONSTRUCTION

- Low copper aluminum alloy die-casting is designed as one-piece with internal cooling fins.
- Solid, cast aluminum wall creates a thermal barrier between the optical and electrical compartments.
- Molded silicone gasket throughout insures the sealing between the two compartments and provides ingress protection.
- Housing is designed with integral LED heat sink utilized for thermal transfer and for securing the location of each LED module.
- All external fasteners are stainless steel.
- One-piece low copper aluminum alloy die-cast lens frame is secured to housing with 6 screws.

OPTICS

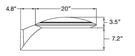
- LEDs mount to a metal printed circuit board assembly (MCPCB).
- Optical lenses are clear injection molded PMMA acrylic.
- Optional Backlight Control on each LED module to completely control unwanted backlight.

LENS

- Standard lens (CLR) IK08
- Clear Polycarbonate Lens (CP) IK10

INSTALLATION

- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.



	Weight	EPA
UR20	32 lbs / 14.5 kg	0.372 ft.²

ELECTRICAL

- Universal voltage, 120 through 277V with a ±10% tolerance. Driver is Underwriters Laboratories listed.
- High voltage configurations, 347/480. Driver has a 0-10V dimming interface for multi-level illumination options. Driver is Underwriters Laboratories listed.
- "Thermal Shield", secondary side, thermistor provides protection for the sustainable life of LED module and electronic components
- Drivers shall have greater than a 0.9 power factor, less than 20% harmonic distortion, and be suitable for operation in -40°C to 40°C ambient environments.
- Luminaire shall be capable of operating at 100% brightness in a 40°C environment. Both driver and optical array have integral thermal protection that will dim the luminaire upon detection of temperatures in excess of 85°C.
- Surge protection: 10,000k in parallel, 20,000k in series
- Wiring: No. 18AWM rated 105°C, wet rating.

CONTROLS

7PR

- Fully gasketed and wired 7-pin receptacle option. Easy access location above the electrical compartment. 7-pin construction allows for a user-defined interface and provides a controlled definition of operational performance. ANSI twist-lock control module by-others.

Standard customer operation modes:

- Traditional on/off photoelectric control.
- 5-pin wireless photoelectric control for added dimming feature.
- 7-pin wireless photoelectric control for dimming and additional I/O connections for customer use.

[1] Clear Polycarbonate Lens (CP) IK10, Standard lens (CLR) IK08, Consult factory for details

(Specifications continued on page 5)

KIM LIGHTING

UR20-Arm Mount

ARCHITECTURAL AREA/SITE

DATE: | LOCATION:

TYPE: | PROJECT:

CATALOG #:

P3,P4

ORDERING GUIDE

Example: UR20-24L-25-3K8-3-L-UNV-ASQ-BLT-7PR-BC

CATALOG #

HOUSING

UR20

Model		LED Engine		CCT/CRI		Distribution		Rotation		Voltage	
UR20	Ouro	**No Lens or Clear Lens**		**AM** [1,4]	Amber, 595nm	**No Lens or Clear Lens**		**(Blank)**	Blank for no rotation	**UNV**	120-277V
		24L-25	3,000 lm	**27K8**	2700K, 80 CRI	**FR**	Type 1/Front Row			**347**	347V
		24L-65	7,000 lm	**3K7**	3000K, 70 CRI	**2**	Type II	**L** [1]	Optic rotation left	**480**	480V
		56L-75	10,000 lm	**3K8**	3000K, 80 CRI	**3**	Type III	**R** [1]	Optic rotation right		
		56L-110	15,000 lm	**35K8**	3500K, 80 CRI	**4**	Type IV				
		56L-140	17,000 lm	**3K9**	3000K, 90 CRI	**4W**	Type IV Wide				
		HDL - High Diffusion Lens		**4K7**	4000K, 70 CRI	**SQM** [2]	Type V Square Medium				
		28L-30	3,000 lm	**4K8**	4000K, 80 CRI	**SQN** [2]	Type V Square Narrow				
		28L-70	7,000 lm	**5K7**	5000K, 70 CRI	**5R** [2]	Type V Rectangular				
		68L-80	9,000 lm	Consult factory for other CCTs and CRIs		**5W** [2]	Type V Wide (Round)				
		68L-115	13,000 lm			**HDL - High Diffusion Lens**					
		68L-150	15,000 lm			**3**	Type III/Asymmetric				
						5W	Type V/Symmetric				

Mounting		Fixture Finish		Control Options		Options		Control Accessories	
ASQ	Arm Square pole	**BLS**	Black Gloss Smooth	**7PR-TL**	7 pin PCR with twist lock photocontrol	**BC** [9]	Back-light Control	**WIR-RME-L**	LightGRID™ External Fixture Module
A34	Arm mt 3.3-4.2" OD pole	**BLT**	Black Matte Textured	**7PR-SC**	7 pin PCR with shorting cap	**SF**	Single Fuse	**SCH-R**	Occ. Sensor for Round Pole (up to 30' MH)
A46	Arm mt 4.5-6.0" OD pole	**DBS**	Dark Bronze Gloss Smooth	**7PR**	7 pin PCR, wireless control enabled	**DF**	Double Fuse		
MAF	Horizontal Slip Fitter 2 3/8" OD arm	**DBT**	Dark Bronze Matte Textured	**AD-01** [2]	AstroDIM: 50% output at midnight	**TB**	Terminal Block	**SCH-S**	Occ. Sensor for Square Pole (up to 30' MH)
SVSF	Square Vertical Slipfitter for 2"Tenon (2-3/8"OD)	**GTT**	Graphite Matte Textured	**AD-02** [2]	AstroDIM: 50% output midnight to 4 AM	**CLR** [5,6,13]	Clear Lens	**NXOFM-1R1D-UNV**	NX 7-Pin Twist-Lock® with NX Networked Wireless Radio, Integral Automatic Dimming Photocell, Integral Single Pole Relay with Dimming, and Bluetooth Programming
VSF	Round Vertical Slipfitter for 2"Tenon (2-3/8"OD)	**LGS**	Light Grey Gloss Smooth	**AD-03** [2]	AstroDIM: 50% output 10PM	**TPL**	Tamper proof latch		
WB	Wall Bracket	**LGT**	Light Grey Matte Textured	**AD-04** [2]	AstroDIM: 50% output 10PM to 4AM	**CP** [5,6,12]	Clear Polycarbonate Lens		
		PSS	Platinum Silver Gloss Smooth	**NXW** [7]	NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor				
		VGT	Verde Green Matte Textured	**WSP-40F-1** [3,5]	Dimming Occ. Sensor for up to 40' MH, 120/277/347V				
		WHS	White Gloss Smooth	**WSP-40F-2** [3,5]	Dimming Occ. Sensor for up to 40' MH, 208/240V				
		WHT	White Matte Textured	**WSP-40F-3** [3,5]	Dimming Occ. Sensor for up to 40' MH, 480V				
		Color Option		**NXWS16F** [2,5]	NX Networked Wireless Enabled Integral NXSMP2-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming				
		CC [7]	Custom Color	**NXWS40F** [2,5]	NX Networked Wireless Enabled Integral NXSMP2-HMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming				

1 Not available with 5QM, 5QN, and 5W distributions.
2 Not available with other sensor or wireless control options
3 24L and 56L only
4 Not available with HDL option
5 Consult factory for custom color, marine and corrosive finish options.
6 Turtle Friendly.
7 Reasse see Delivered Lumens chart on Page 5 for lumen
8 Not available with 24L-65 and the 56L-140 configuration of the LED Engine
9 Not available with 347V and 480V.
10 KO8 rated. Consult factory for details
11 IK10 rated. Consult factory for details
12 Pole requires 2-3/8" x 4" Long tenon
13 Order one for each pair of fixtures per pole.

KIM LIGHTING

UR20 - Post Top

ARCHITECTURAL AREA/SITE

DATE: | LOCATION:

TYPE: | PROJECT:

CATALOG #:

P5

Ouro

FEATURES

- 20" size in single/dual arm post top, pole and wall mount
- High performance optics up to 16,874 delivered lumens
- Elegant form factor
- Diffusion lens option
- UL/cUL listed for wet locations, IP66 and 4G/1.5G vibration rated

3000K and warmer CCTs only

CONTROL TECHNOLOGY

NX WIRELESS | LIGHTGRID®

SPECIFICATIONS

CONSTRUCTION

- Low copper aluminum alloy die-casting is designed as one-piece.
- Molded silicone gasket throughout insures the sealing between the two compartments and provides ingress protection.
- All external fasteners are stainless steel.
- Cover is secured to Lens frame by the latch and hinge.

OPTICS

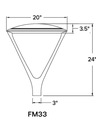
- LEDs mount to a metal printed circuit board assembly (MCPCB).
- Optical lenses are clear injection molded PMMA acrylic.
- Optional Backlight Control on each LED module to completely control unwanted backlight.
- Optional fixture finish optical surfaces will not exceed BUG ratings of the standard white finish.

LENS

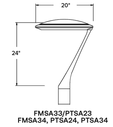
- Standard lens (CLR) IK08
- Clear Polycarbonate Lens (CP) IK10

INSTALLATION

- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.



FM33



FMSA33/PTSA23
FMSA34, PTSA24, PTSA34

	Weight	EPA
UR20	35 lbs / 15.8 kg	0.512 ft.²

ELECTRICAL

- Universal voltage, 120 through 277V with a ±10% tolerance. Driver is Underwriters Laboratories listed.
- High voltage configurations, 347/480. Driver has a 0-10V dimming interface for multi-level illumination options. Driver is Underwriters Laboratories listed.
- "Thermal Shield", secondary side, thermistor provides protection for the sustainable life of LED module and electronic components
- Drivers shall have greater than a 0.9 power factor, less than 20% harmonic distortion, and be suitable for operation in -40°C to 40°C ambient environments.
- Luminaire shall be capable of operating at 100% brightness in a 40°C environment. Both driver and optical array have integral thermal protection that will dim the luminaire upon detection of temperatures in excess of 85°C.
- Surge protection: 10,000k in parallel, 20,000k in series
- Wiring: No. 18AWM rated 105°C, wet rating.

CONTROLS

7PR

- Fully gasketed and wired 7-pin receptacle option. Easy access location above the electrical compartment. 7-pin construction allows for a user-defined interface and provides a controlled definition of operational performance. ANSI twist-lock control module by-others.

Standard customer operation modes:

- Traditional on/off photoelectric control.
- 5-pin wireless photoelectric control for added dimming feature.
- 7-pin wireless photoelectric control for dimming and additional I/O connections for customer use.

(Specifications continued on page 5)

KIM LIGHTING

UR20 - Post Top

ARCHITECTURAL AREA/SITE

DATE: | LOCATION:

TYPE: | PROJECT:

CATALOG #:

P5

ORDERING GUIDE

Example: UR20-24L-25-3K8-3-L-UNV-FMSA33-BLT-7PR-BC

CATALOG #

HOUSING

UR20

Model		LED Engine		CCT/CRI		Distribution		Rotation		Voltage	
UR20	Ouro	**No Lens or Clear Lens**		**AM** [1,4]	Amber, 595nm	**No Lens or Clear Lens**		**(Blank)**	Blank for no rotation	**UNV**	120-277V
		24L-25	3,000 lm	**27K8**	2700K, 80 CRI	**FR**	Type 1/Front Row			**347**	347V
		24L-65	7,000 lm	**3K7**	3000K, 70 CRI	**2**	Type II	**L** [1]	Optic rotation left	**480**	480V
		56L-75	10,000 lm	**3K8**	3000K, 80 CRI	**3**	Type III	**R** [1]	Optic rotation right	**Consult factory**	
		56L-110	15,000 lm	**35K8**	3500K, 80 CRI	**4**	Type IV				
		56L-140	17,000 lm	**3K9**	3000K, 90 CRI	**4W**	Type IV Wide				
		HDL - High Diffusion Lens		**4K7**	4000K, 70 CRI	**SQM** [2]	Type V Square Medium				
		28L-30	3,000 lm	**4K8**	4000K, 80 CRI	**SQN** [2]	Type V Square Narrow				
		28L-70	7,000 lm	**5K7**	5000K, 70 CRI	**5R** [2]	Type V Rectangular				
		68L-80	9,000 lm	Consult factory for other CCTs and CRIs		**5W** [2]	Type V Wide (Round)				
		68L-115	13,000 lm			**HDL - High Diffusion Lens**					
		68L-150	15,000 lm			**3**	Type III/Asymmetric				
						5W	Type V/Symmetric				

Mounting		Fixture Finish		Control Options		Options		Control Accessories	
FM33	Flush mt 3.0" OD pole, 3" fixture base	**BLS**	Black Gloss Smooth	**7PR-TL**	7 pin PCR with twist lock photocontrol	**BC** [9]	Back-light Control	**WIR-RME-L**	LightGRID™ External Fixture Module
FM44	Flush mt 3.6" to 4.0" OD pole, 4" fixture base	**BLT**	Black Matte Textured	**7PR-SC**	7 pin PCR with shorting cap	**SF**	Single Fuse	**SCH-R**	Occ. Sensor for Round Pole (up to 30' MH)
PT23	3" Post Top mount for 2 3/8" OD x 4" Long Tenon Tenon	**DBS**	Dark Bronze Gloss Smooth	**7PR**	7 pin PCR, wireless control enabled	**DF**	Double Fuse		
PT24	4" Post Top mount for 2 3/8" OD T x 4" Long Tenon	**DBT**	Dark Bronze Matte Textured	**AD-01** [2]	AstroDIM: 50% output at midnight	**CLR** [5,6,13]	Clear Lens	**SCH-S**	Occ. Sensor for Square Pole (up to 30' MH)
PT34	4" Post Top mount for 2 7/8" OD x 4" Long Tenon Tenon	**GTT**	Graphite Matte Textured	**AD-02** [2]	AstroDIM: 50% output midnight to 4 AM	**TPL**	Tamper proof latch		
FMSA33	Solo Arm Post Top Flush Mount 3.0" OD Pole, 3" fixture base	**LGS**	Light Grey Gloss Smooth	**AD-03** [2]	AstroDIM: 50% output 10PM	**CP** [5,6,7]	Clear Polycarbonate Lens	**NXOFM-1R1D-UNV**	NX 7-Pin Twist-Lock® with NX Networked Wireless Radio, Integral Automatic Dimming Photocell, Integral Single Pole Relay with Dimming, and Bluetooth Programming
FMSA44	Solo Arm Post Top Flush Mount 3.6" to 4.0" OD Pole, 4" fixture base	**LGT**	Light Grey Matte Textured	**AD-04** [2]	AstroDIM: 50% output 10PM to 4AM	**WBFM3**	Wall Bracket Arm for FM33 or FMSA33		
PTSA23	3" Solo Arm Post Top Mount for 2-3/8" OD x 4" Long Tenon	**PSS**	Platinum Silver Gloss Smooth	**NXW** [7]	NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor	**WBFM4**	Wall Bracket Arm for FM44 or FMSA44		
PTSA24	4" Solo Arm Post Top Mount for 2-3/8" OD x 4" Long Tenon	**VGT**	Verde Green Matte Textured	**WSP-40F-1** [3,8]	Dimming Occ. Sensor for up to 40' MH, 120/277/347V	**TAFM3** [10,13]	Twin Arm mount for FM33 or FMSA33		
PTSA34	4" Solo Arm Post Top Mount for 2-7/8" OD x 4" Long Tenon	**WHS**	White Gloss Smooth	**WSP-40F-2** [3,8]	Dimming Occ. Sensor for up to 40' MH, 208/240V	**TAFM4** [10,13]	Twin Arm mount for FM44 or FMSA44		
		WHT	White Matte Textured	**WSP-40F-3** [3,8]	Dimming Occ. Sensor for up to 40' MH, 480V				
		Color Option		**NXWS16F** [4,7,9]	NX Networked Wireless Enabled Integral NXSMP2-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming				
		CC [7]	Custom Color	**NXWS40F** [4,7,9]	NX Networked Wireless Enabled Integral NXSMP2-HMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming				

1 Turtle Friendly.
2 Not available with 24L-65 and the 56L-140 configuration of the LED Engine
3 Not available with BC option
4 Not available with 5QM, 5QN, and 5W distributions.
5 Consult factory for custom color, marine and corrosive finish options.
6 Not available with other sensor or wireless control options.
7 Not available with Solo Arm Post Top (FMSA/PTSA)
8 24L and 56L only
9 Not available with HDL option.
10 KO8 rated. Consult factory for details
11 IK10 rated. Consult factory for details
12 Pole requires 2-3/8" x 4" Long tenon
13 Order one for each pair of fixtures per pole.

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:

WATERBURY SITE DEVELOPMENT

STAPLETON ROAD AND EASTONVILLE ROAD

FALCON

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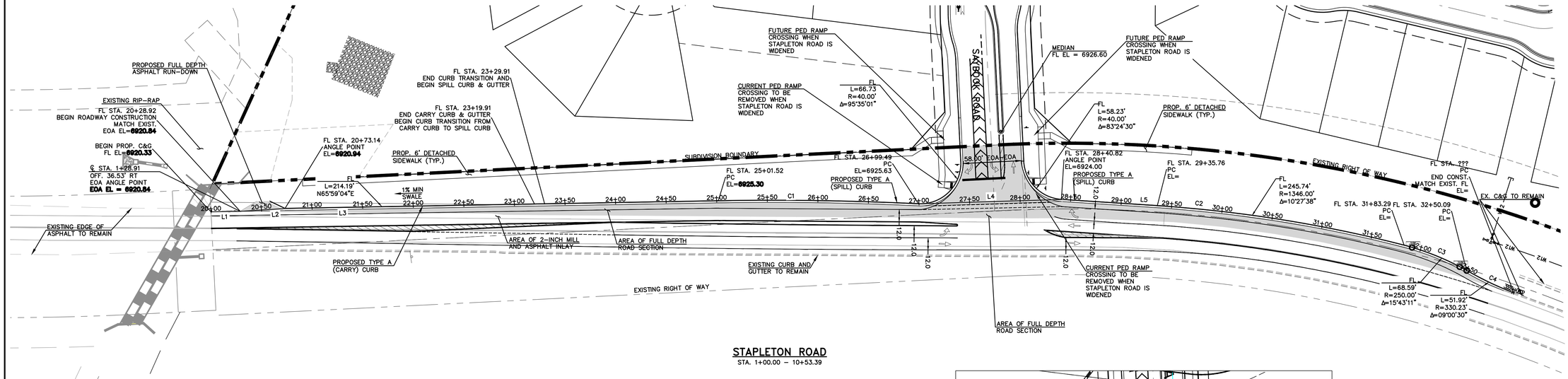
www.tnsinc.com

CUT SHEETS

COLORADO LICENSED
TIMOTHY P. PLANT
31074
10/4/2024
PROFESSIONAL ENGINEER

PLANT
ENGINEERING CONSULTANTS
320 WEST FILLMORE STREET COLORADO SPRINGS CO 80907
719 473 7077 www.planteci.com

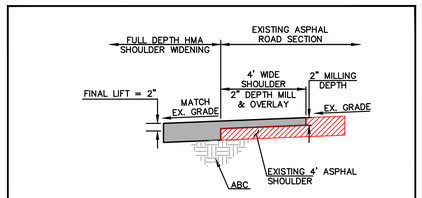
DESIGNED BY	CAO
DRAWN BY	PJN/CAO
CHECKED BY	MPP
H-SCALE	AS NOTED
V-SCALE	AS NOTED
JOB NO.	24086
DATE ISSUED	10/04/24
SHEET NO.	27 OF 54



STAPLETON ROAD
STA. 1+00.00 – 10+53.39

FLOWLINE LINE TABLE		
LINE	LENGTH (LF)	BEARING
L1	28.92	N65°59'04"E
L2	44.22	N63°23'32"E
L3	214.19	N65°59'04"E
L4	141.33	N65°14'44"E
L5	94.94	N70°45'02"E

FLOWLINE CURVE TABLE			
CURVE	LENGTH (LF)	RADIUS (LF)	Δ
C1	197.97	3018	03°45'30"
C2	245.74	1346	10°27'38"
C3	68.59	250	15°43'11"
C4	51.92	330.23	09°00'30"



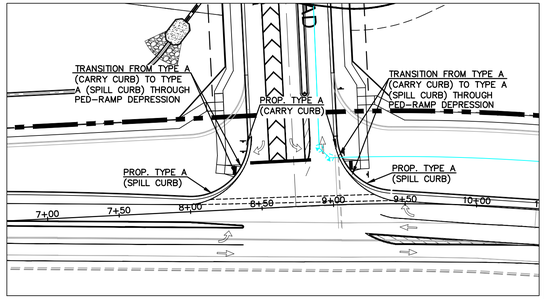
* ADDITIONAL LIFTS MAY BE REQUIRED FOR LEVELING COURSES OF 4" OR MORE. EACH LIFT SHALL BE A MAXIMUM OF 3".

EXISTING 4' SHOULDER MILL & OVERLAY SECTION

DESIGN SPEED IS 50 M.P.H.

50' 25' 0 50' 100'

SCALE: 1" = 50'

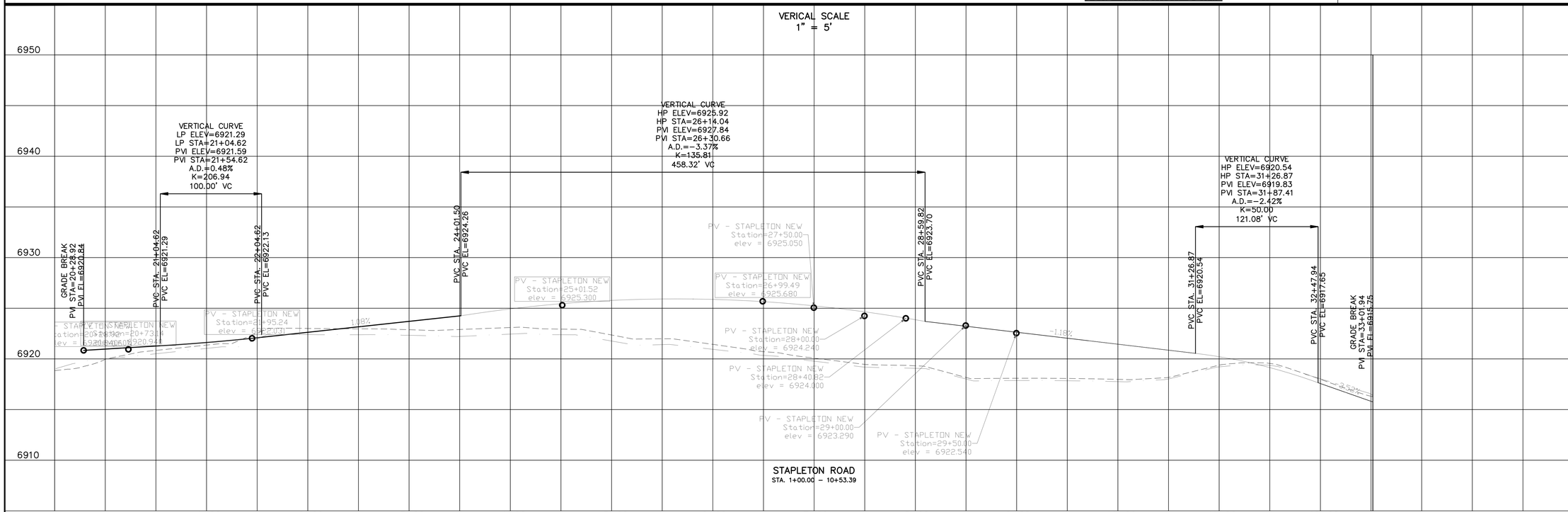


STAPLETON ROAD/SAYBOOK ROAD CURB TRANSITION DETAIL

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

VERICAL SCALE
1" = 5'



STAPLETON ROAD
STA. 1+00.00 – 10+53.39

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:
ACM ALF VIII JV SUB II LLC
JASON POCK
5600 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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
STAPLETON ROAD

DESIGNED BY QNA
DRAWN BY QNA
CHECKED BY JS
H-SCALE 1"=50'
V-SCALE 1"=5'
JOB NO. 2356.00
DATE ISSUED 12/22/22
SHEET NO. 28 OF54

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

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

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

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

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

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

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

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

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

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

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

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

Images missing

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

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

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

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

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

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

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

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

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

QUENTIN N ARMIJO 37170 10/13/24 COLORADO LICENSED PROFESSIONAL ENGINEER

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.

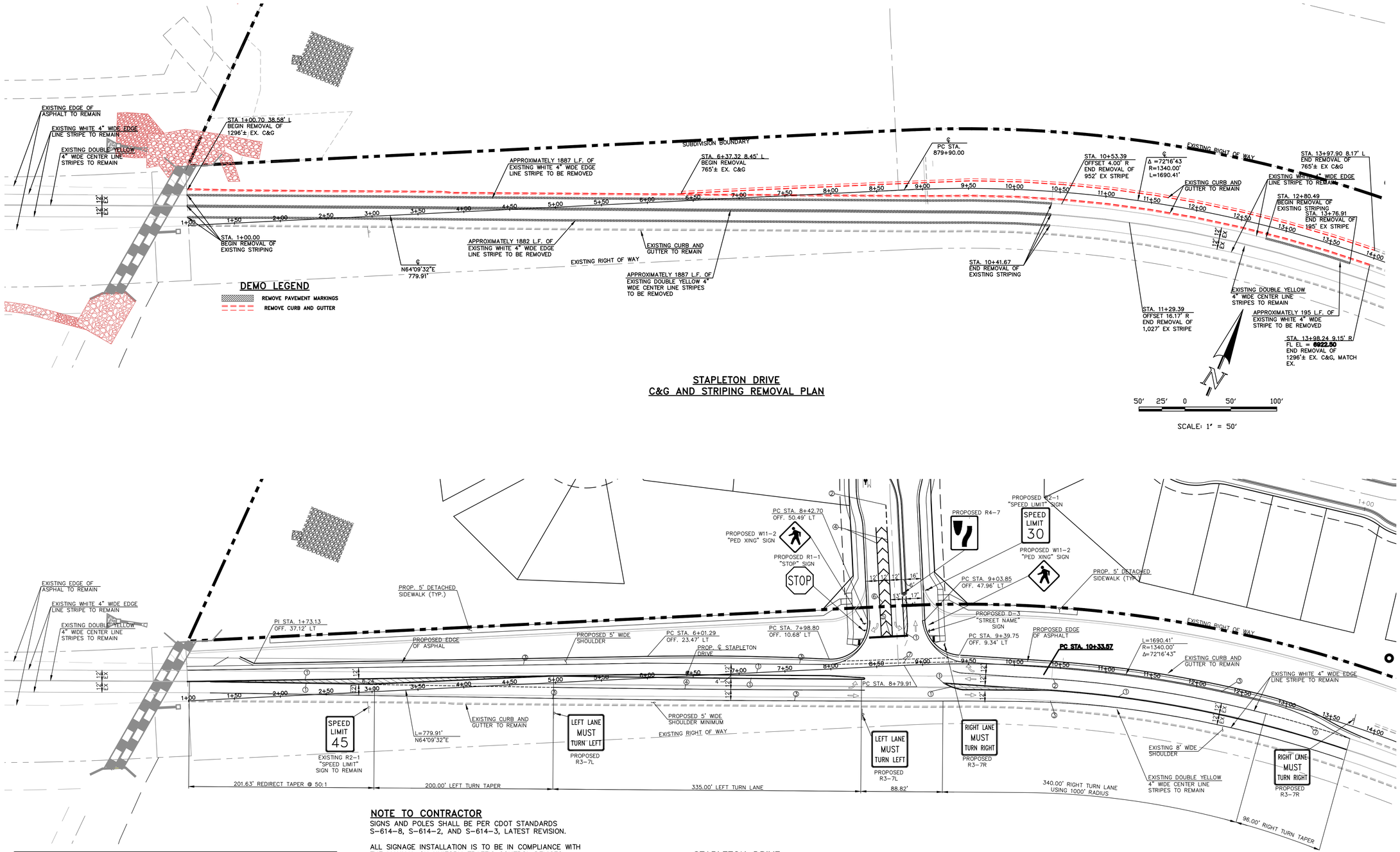
PREPARED FOR:
ACM ALF VIII JV SUB II LLC
ATTN: JASON POCK
7000 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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
STAPLETON DRIVE
CROSS SECTIONS

DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H-SCALE NA
V-SCALE N/A
JOB NO. 2356.00
DATE ISSUED 12/22/24
SHEET NO. 29 OF 54



STAPLETON DRIVE
C&G AND 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
6	CHEVRON LINES (THERMO PLASTIC)	SOLID WHITE, 8" WIDE, 8' C-C, 45° ANGLE
7	SKIP CHANNELIZING LINES (EPOXY)	SOLID WHITE, 4" WIDE, 2'-4' SKIP

*NOTE: ALL STRIPING INSTALLATION SHALL BE PER COLORADO DEPARMENT OF TRANSPORATION "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)

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 ARMIJO
COLORADO P.E. NO. 37170

COLORADO LICENSED QUENTIN N ARMIJO 37170 10/13/22 PROFESSIONAL ENGINEER

REVISIONS

NO.	DESCRIPTION	DATE

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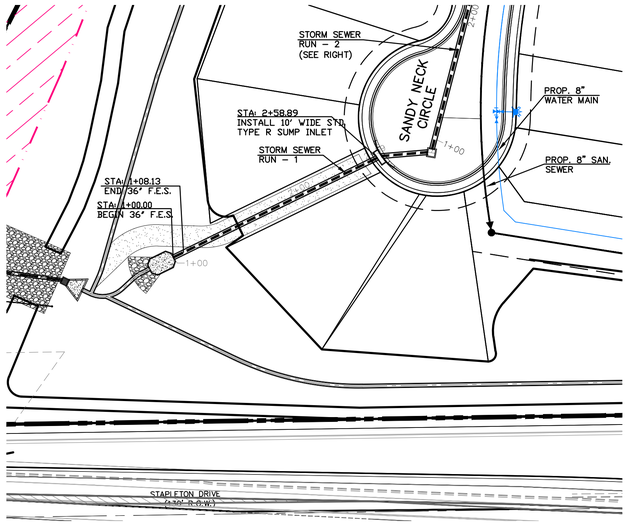
DENVER, CO 80246
303-984-9800

Terra Nova Engineering, Inc. Surveying
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

SIGNING & STRIPING C&G AND STRIPING REMOVAL STAPLETON DRIVE

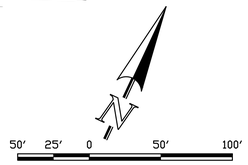
DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H-SCALE AS SHOWN
V-SCALE N/A
JOB NO. 2356.00
DATE ISSUED 12/22/22
SHEET NO. 30 OF 54



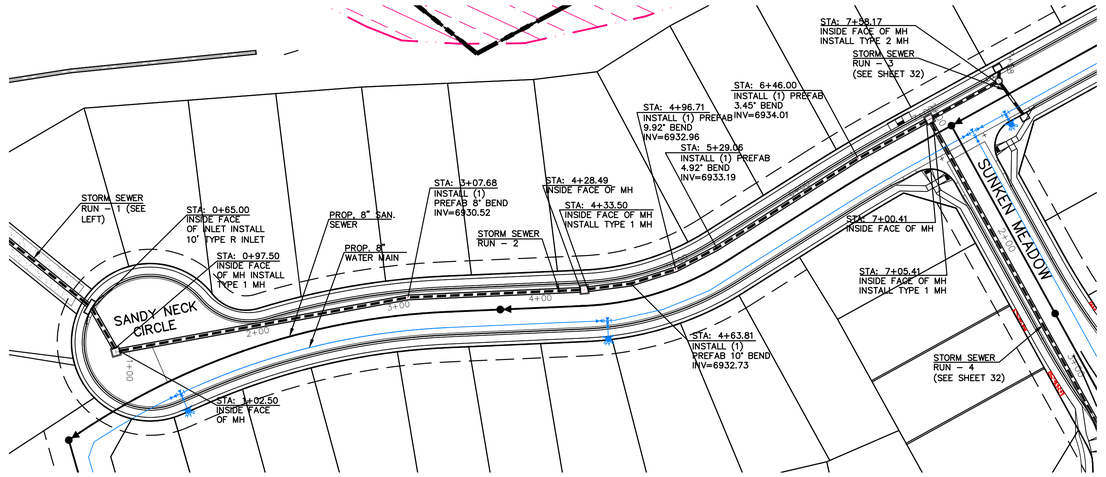
STORM SEWER RUN–1 (PIPE RUN 7) PHASE 1

PROPOSED PUBLIC RCP STORM SEWER

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



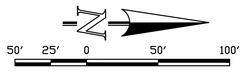
SCALE: 1" = 50'



STORM SEWER RUN–2 (PIPE RUN 5–6) PHASE 1

PROPOSED PUBLIC RCP STORM SEWER

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

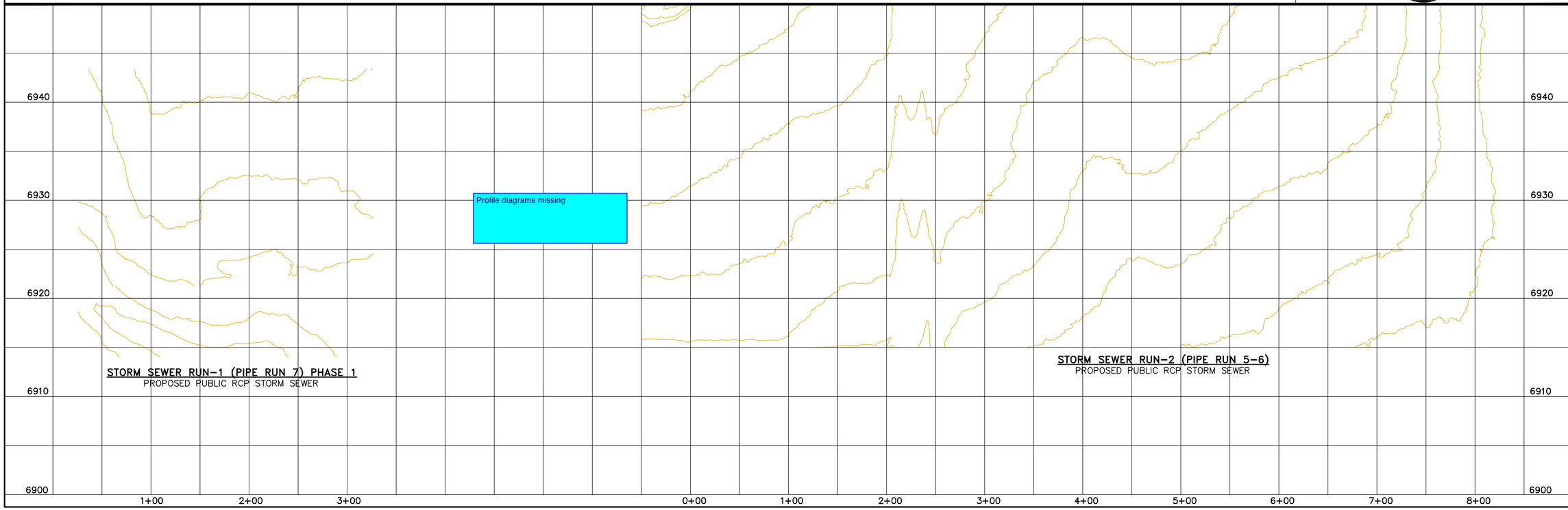


SCALE: 1" = 50'

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

COLORADO LICENSED
QUENTIN N ARMIJO
37170
10/13/24
PROFESSIONAL ENGINEER

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



STORM SEWER RUN–1 (PIPE RUN 7) PHASE 1

PROPOSED PUBLIC RCP STORM SEWER

STORM SEWER RUN–2 (PIPE RUN 5–6)

PROPOSED PUBLIC RCP STORM SEWER

REVISIONS

NO.	DESCRIPTION	DATE

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PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
5000 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

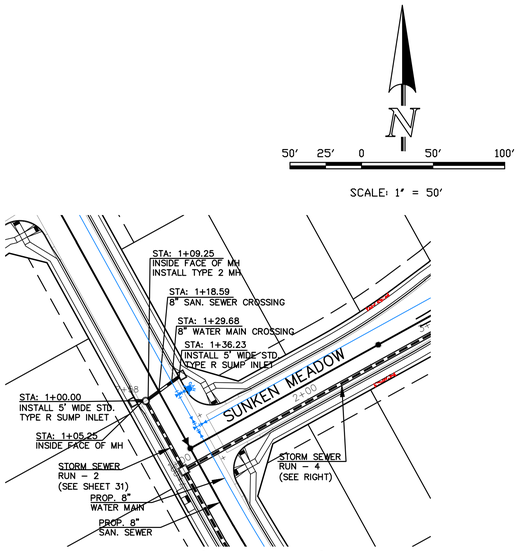
Terra Nova Engineering, Inc.
Creative Civil Engineering Solutions

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

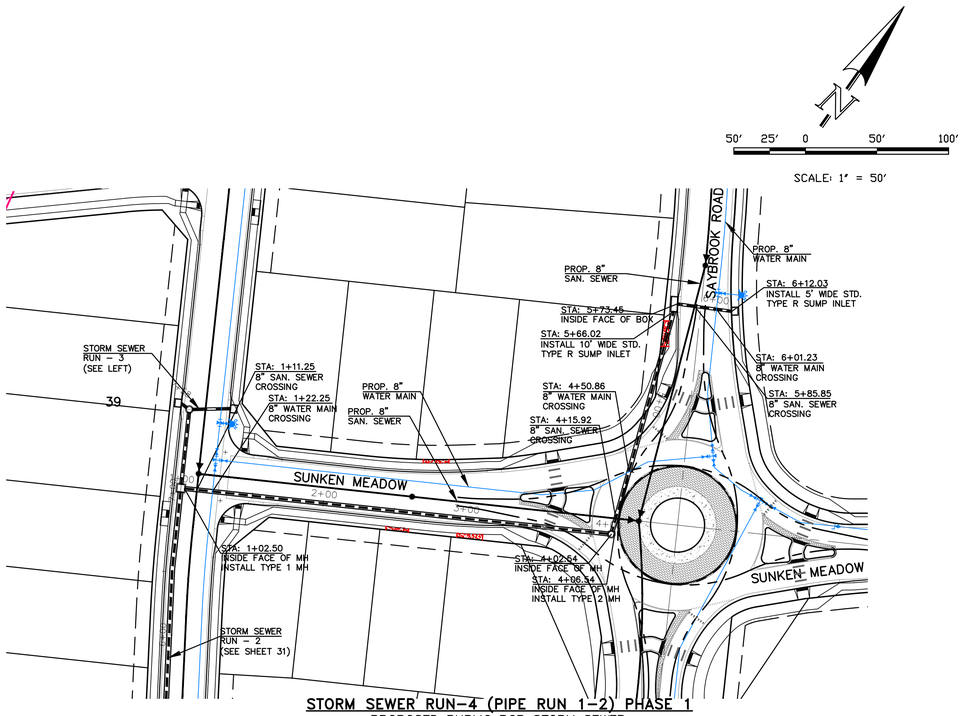
WATERBURY FILING NO. 1

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

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	JS
H–SCALE	1"=50'
V–SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	31 OF 54



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



STORM SEWER RUN-4 (PIPE RUN 1-2) PHASE 1
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.

COLORADO LICENSED QUENTIN N ARMIJO 37170 10/13/24 PROFESSIONAL ENGINEER

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

REVISIONS

NO.	DESCRIPTION	DATE

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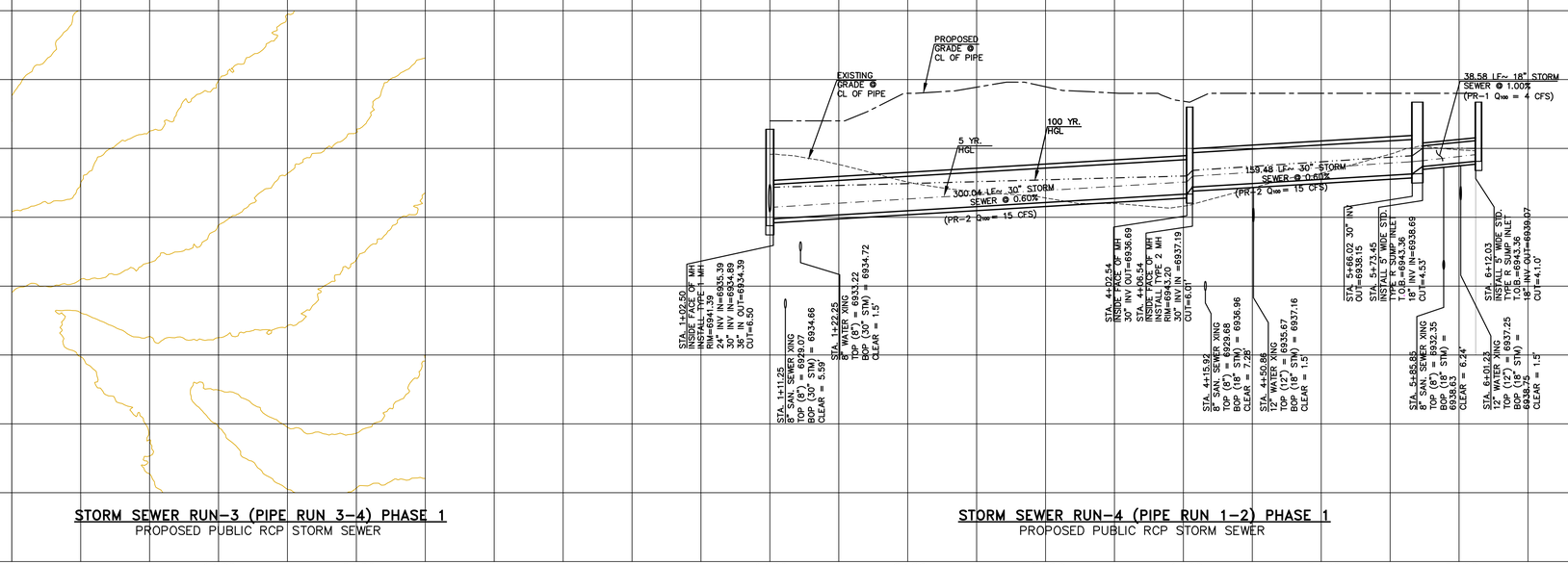
PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
500 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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

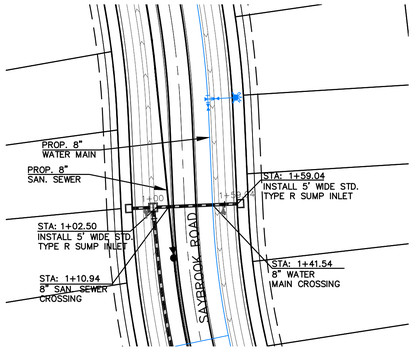
CONSTRUCTION SET
STORM SEWER PLAN AND PROFILE
STORM RUNS 3 & 4

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	JS
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	32 OF 54



STORM SEWER RUN-3 (PIPE RUN 3-4) PHASE 1
PROPOSED PUBLIC RCP STORM SEWER

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

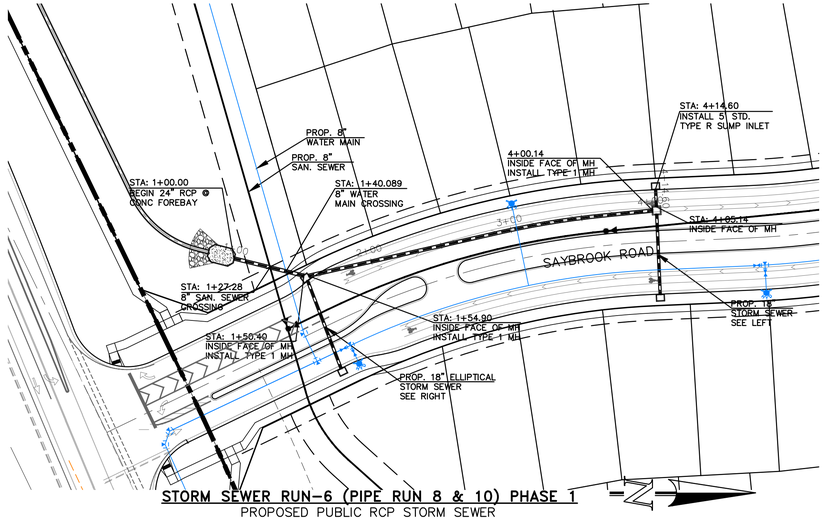


STORM SEWER RUN-5 (PIPE RUN 9) PHASE 1

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

50' 25' 0 50' 100'

SCALE: 1" = 50'

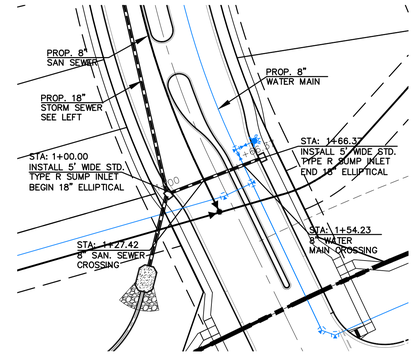


STORM SEWER RUN-6 (PIPE RUN 8 & 10) PHASE 1

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

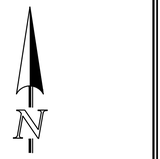
50' 25' 0 50' 100'

SCALE: 1" = 50'



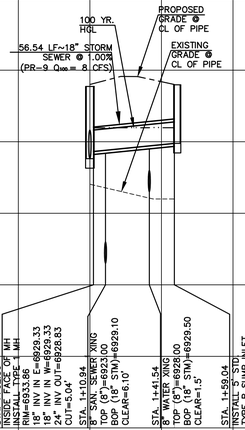
STORM SEWER LATERAL-11 (PIPE RUN 10A) PHASE 1

PROPOSED PUBLIC 18" ELLIPTICAL RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.



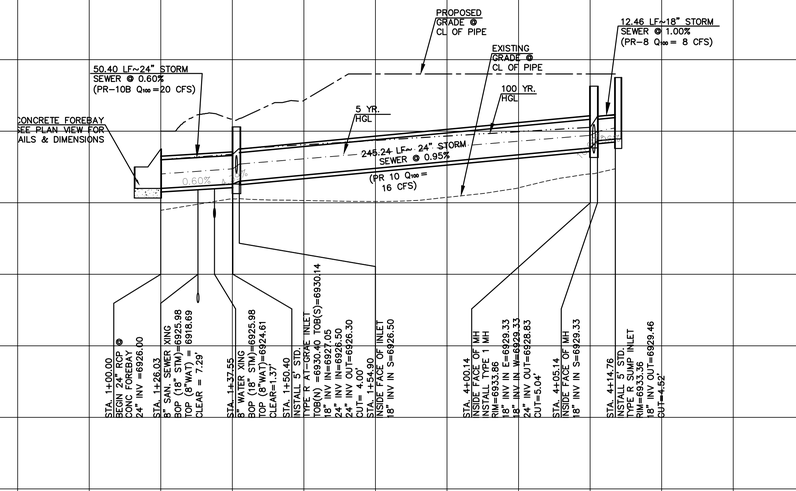
50' 25' 0 50' 100'

SCALE: 1" = 50'



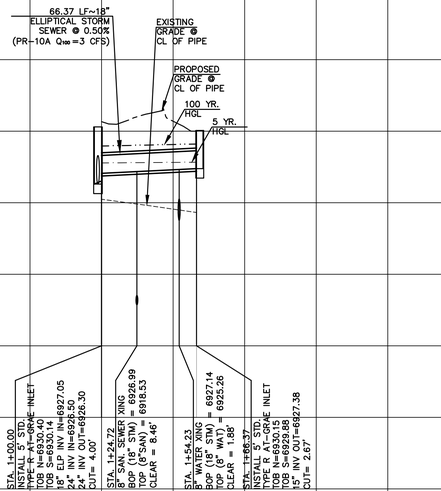
STORM SEWER RUN-5 (PIPE RUN 9) PHASE 1

PROPOSED PUBLIC RCP STORM SEWER



STORM SEWER RUN-6 (PIPE RUN 8 & 10) PHASE 1

PROPOSED PUBLIC RCP STORM SEWER



STORM SEWER LATERAL-11 (PIPE RUN 10A) PHASE 1

PROPOSED PUBLIC RCP STORM SEWER

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

COLORADO LICENSED QUENTIN N ARMIJO 37170 PROFESSIONAL ENGINEER 10/13/24

REVISIONS

NO.	DESCRIPTION	DATE

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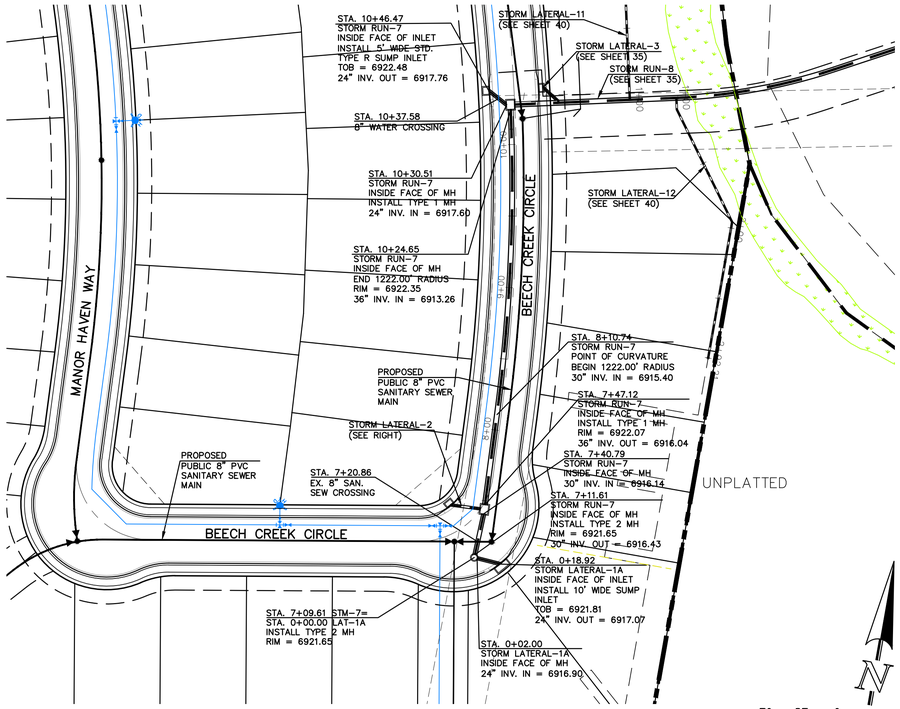
JASON POCK
5600 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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

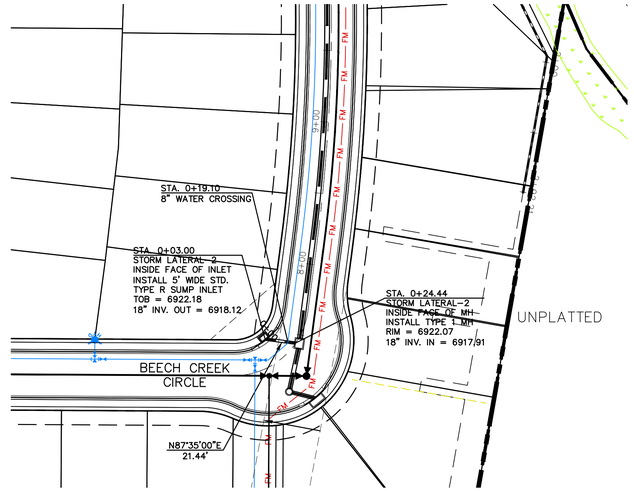
WATERBURY FILING NO. 1

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

DESIGNED BY QNA
DRAWN BY QNA
CHECKED BY JS
H-SCALE 1"=50'
V-SCALE 1"=5'
JOB NO. 2356.00
DATE ISSUED 12/22/24
SHEET NO. 33 OF 54



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

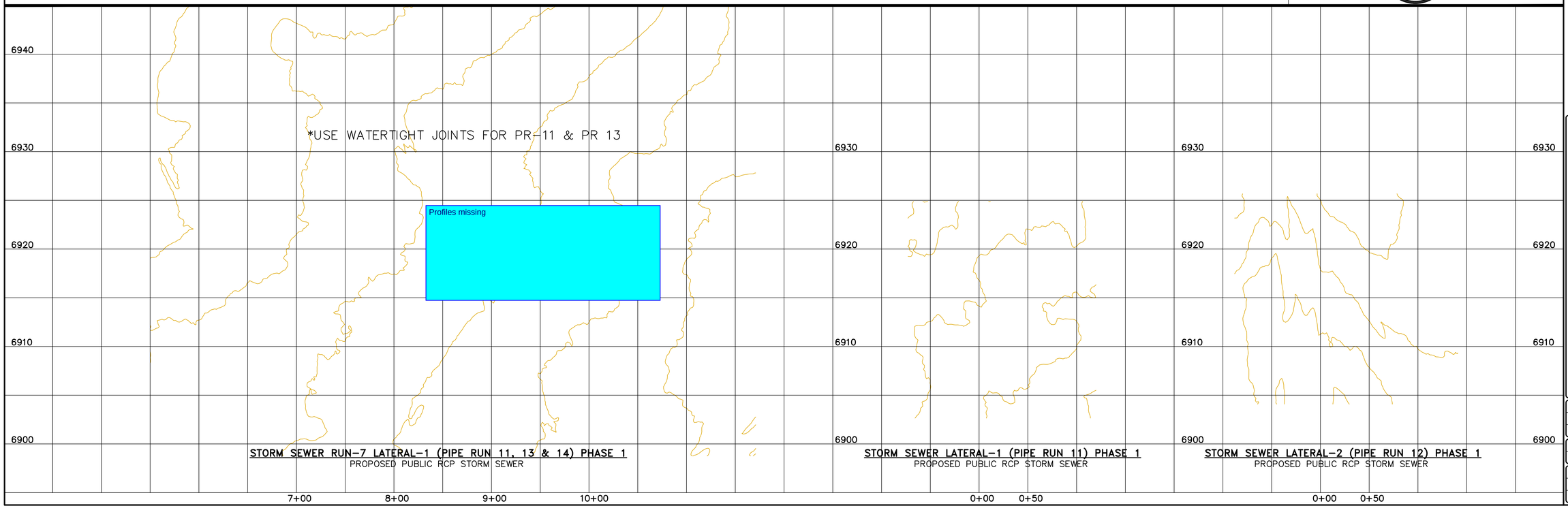


STORM SEWER LATERAL-2 (PIPE RUN 12) PHASE 1
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

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

COLORADO LICENSED
QUENTIN N ARMIJO
37170
10/13/24
PROFESSIONAL ENGINEER

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



STORM SEWER RUN-7 LATERAL-1 (PIPE RUN 11, 13 & 14) PHASE 1
PROPOSED PUBLIC RCP STORM SEWER

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

STORM SEWER LATERAL-2 (PIPE RUN 12) PHASE 1
PROPOSED PUBLIC RCP STORM SEWER

REVISIONS

NO.	DESCRIPTION	DATE

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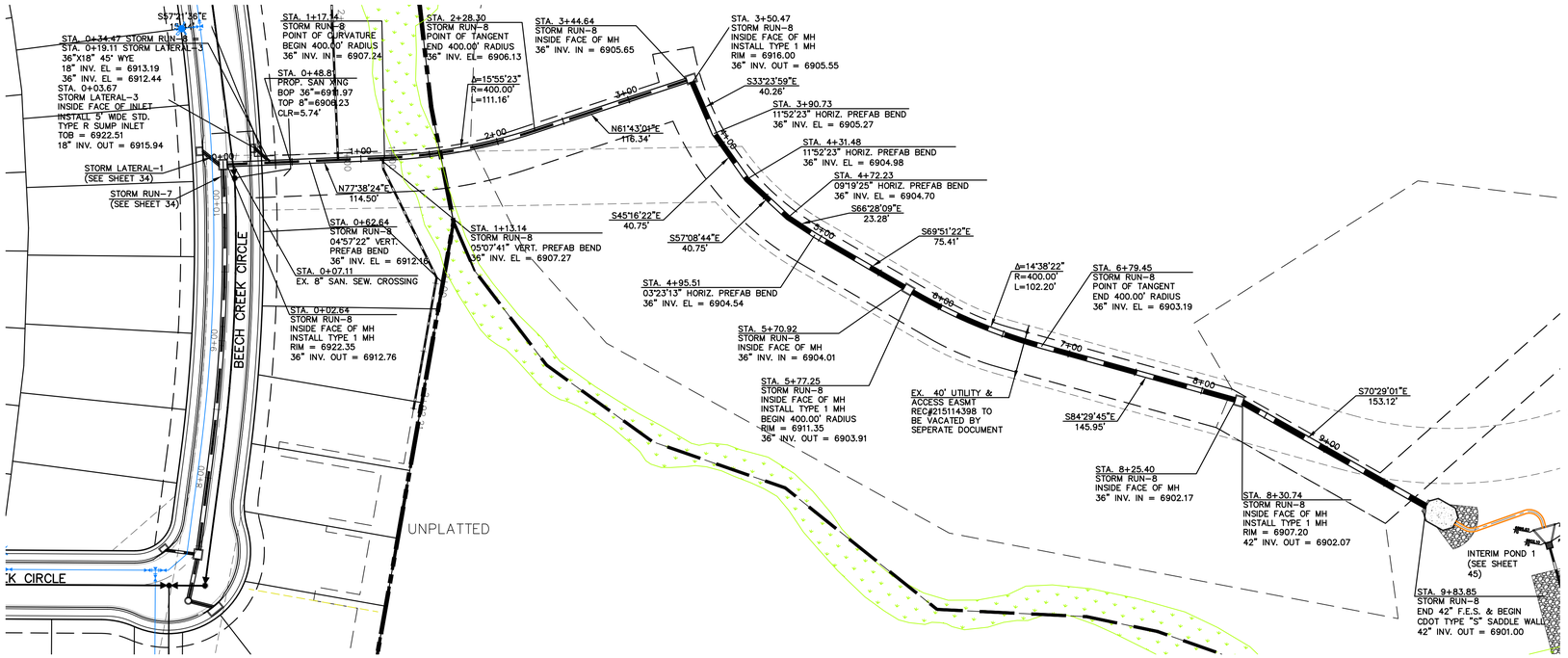
PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
200 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

Terra Nova Engineering, Inc. Surveying
"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
STORM RUN-7 & LATERALS 1-2

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	JS
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	34 OF54



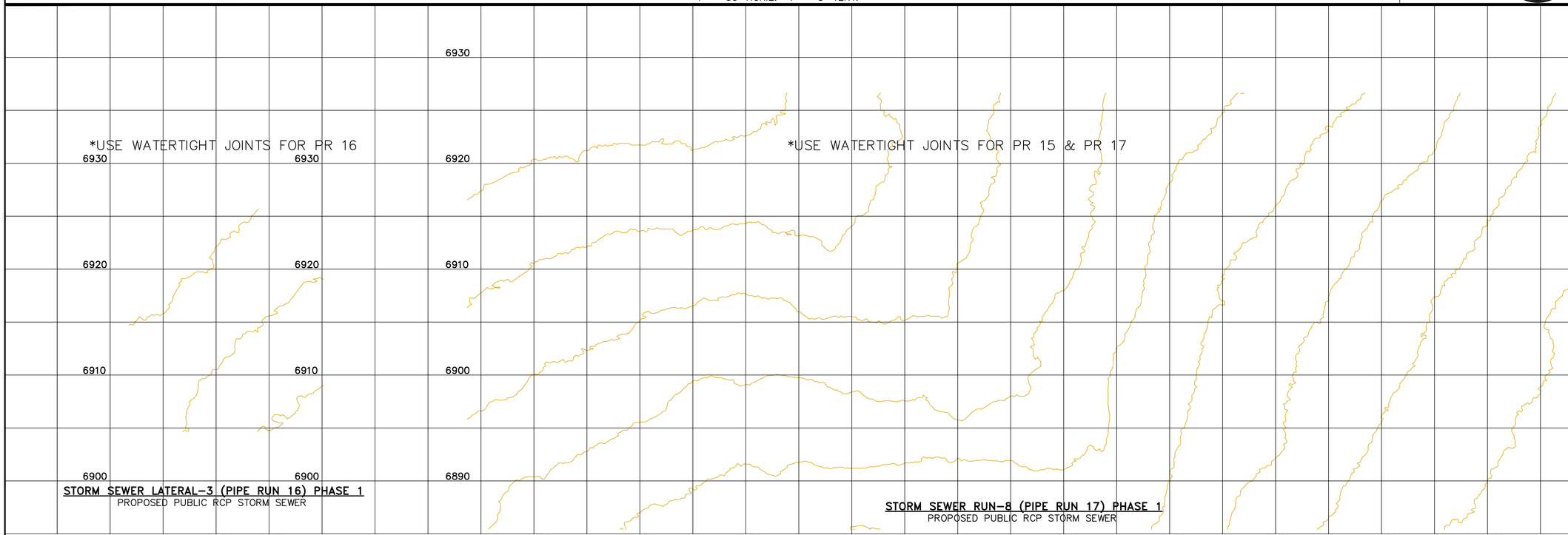
STORM SEWER LATERAL-3 & RUN-8 (PIPE RUN 16 & 17) PHASE 1
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

*C-WALL RCP ADDS AN ADDITIONAL ¾ INCH TO THE WALL THICKNESS. CONTACT MANUFACTURER FOR INFORMATION.

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

COLORADO LICENSED QUENTIN N ARMIJO 37170 PROFESSIONAL ENGINEER 10/13/24



STORM SEWER LATERAL-3 (PIPE RUN 16) PHASE 1
PROPOSED PUBLIC RCP STORM SEWER

STORM SEWER RUN-8 (PIPE RUN 17) PHASE 1
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 ISSUANCE IN WRITTEN AUTHORIZATION.

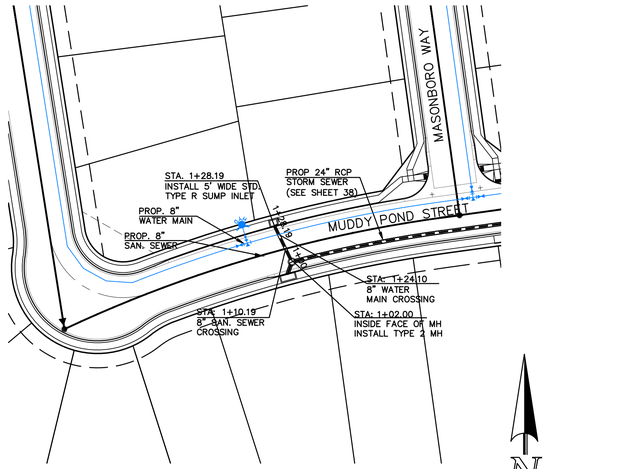
PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
600 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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.tneainc.com

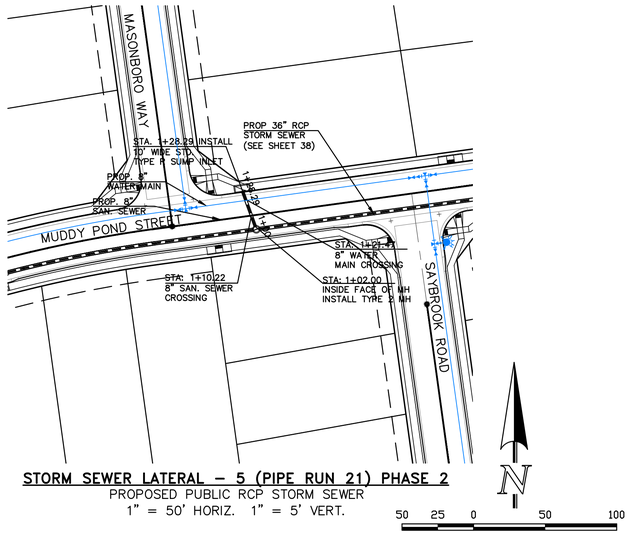
WATERBURY FILING NO. 1

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

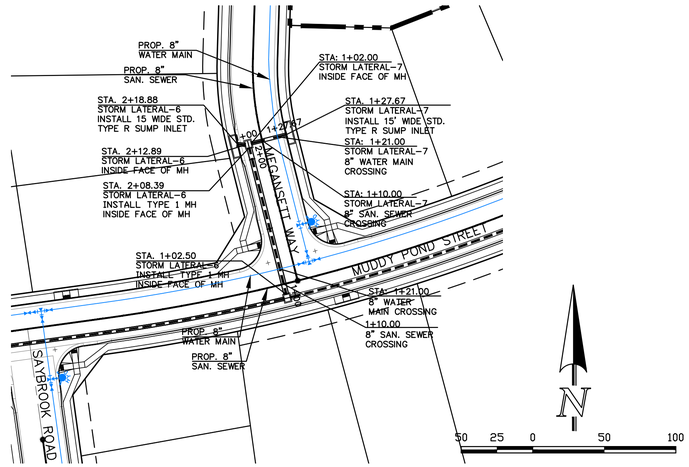
DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	JS
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	35 OF 54



STORM SEWER LATERAL – 4 (PIPE RUN 19) PHASE 2
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.



STORM SEWER LATERAL – 5 (PIPE RUN 21) PHASE 2
PROPOSED PUBLIC RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.



STORM SEWER LATERAL–6 & 7 (PIPE RUN 23, 24 & 25) PHASE 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

COLORADO LICENSED — QUENTIN N ARMIJO — 37170 — 10/13/24 — PROFESSIONAL ENGINEER

REVISIONS

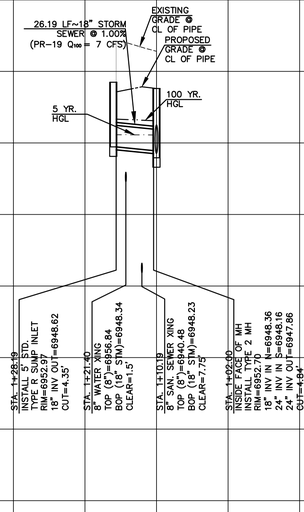
NO.	DESCRIPTION	DATE

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

PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
5000 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

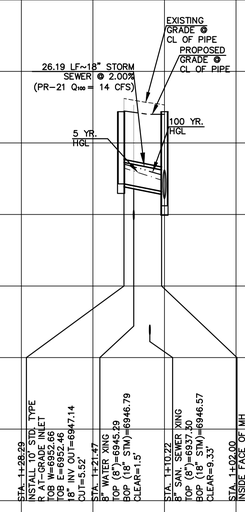
Terra Nova Engineering, Inc. "Creative Civil Engineering Solutions"
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnesinc.com

*USE WATERTIGHT JOINTS FOR PR 19



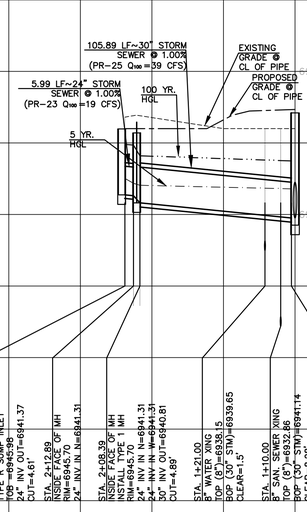
STORM SEWER LATERAL – 4 (PIPE RUN 19) PHASE 2
PROPOSED PUBLIC RCP STORM SEWER
1+50 1+00

*USE WATERTIGHT JOINTS FOR PR 21



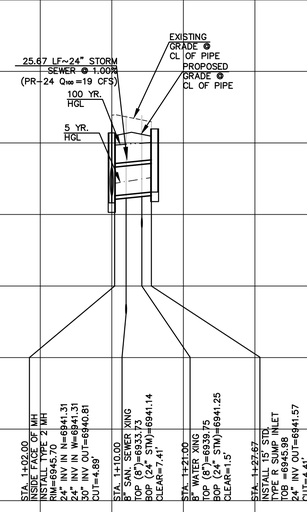
STORM SEWER LATERAL – 5 (PIPE RUN 21) PHASE 2
PROPOSED PUBLIC RCP STORM SEWER
1+50 1+00

*USE WATERTIGHT JOINTS FOR PR 23 & PR 25



STORM SEWER LATERAL –6 (PIPE RUN 23 & 25) PHASE 2
PROPOSED PUBLIC RCP STORM SEWER
3+00 2+00 1+00

*USE WATERTIGHT JOINTS FOR PR 24

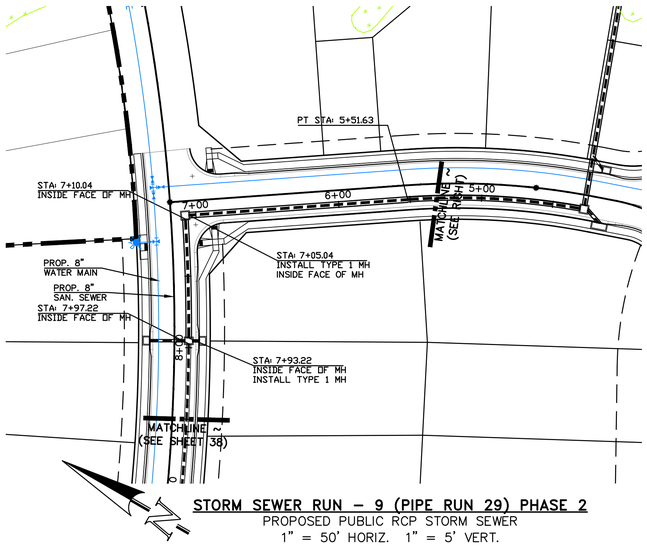


STORM SEWER LATERAL – 7 (PIPE RUN 24) PHASE 2
PROPOSED PUBLIC RCP STORM SEWER
1+00 2+00

WATERBURY FILING NO. 1

CONSTRUCTION SET
STORM SEWER PLAN AND PROFILE
LATERALS 4-6

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	JS
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	36 OF54

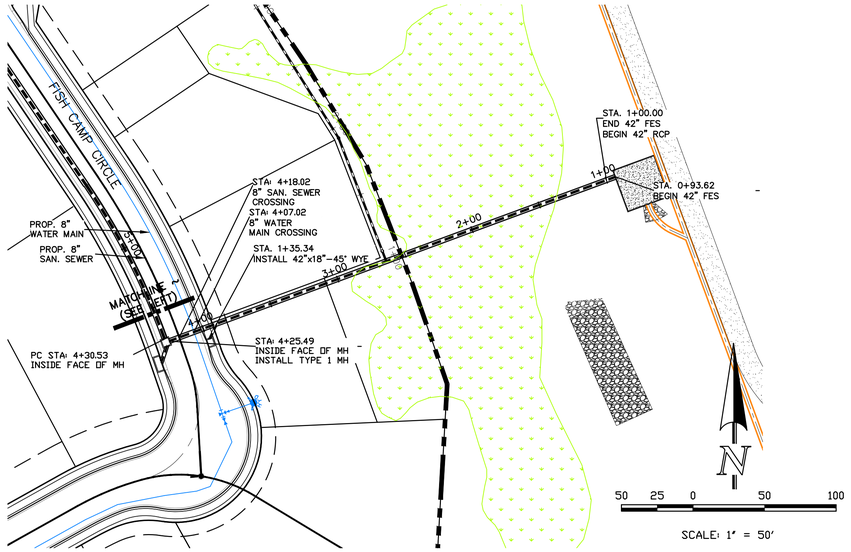


STORM SEWER RUN – 9 (PIPE RUN 29) PHASE 2

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

50 25 0 50 100

SCALE: 1" = 50'

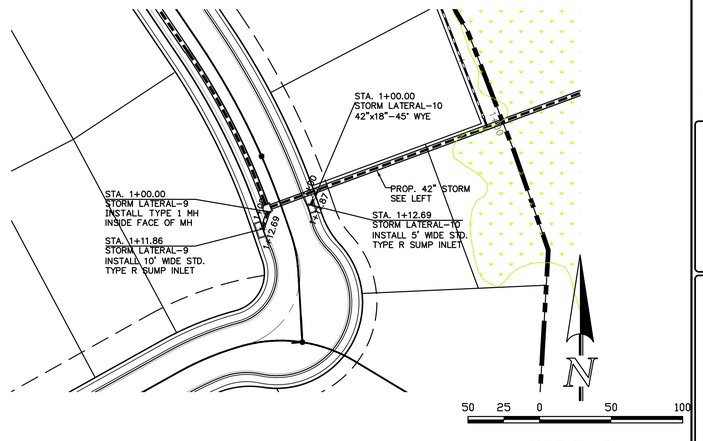


50 25 0 50 100

SCALE: 1" = 50'

STORM SEWER RUN – 9 (PIPE RUN 31 & 33) PHASE 2

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) PHASE 2

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

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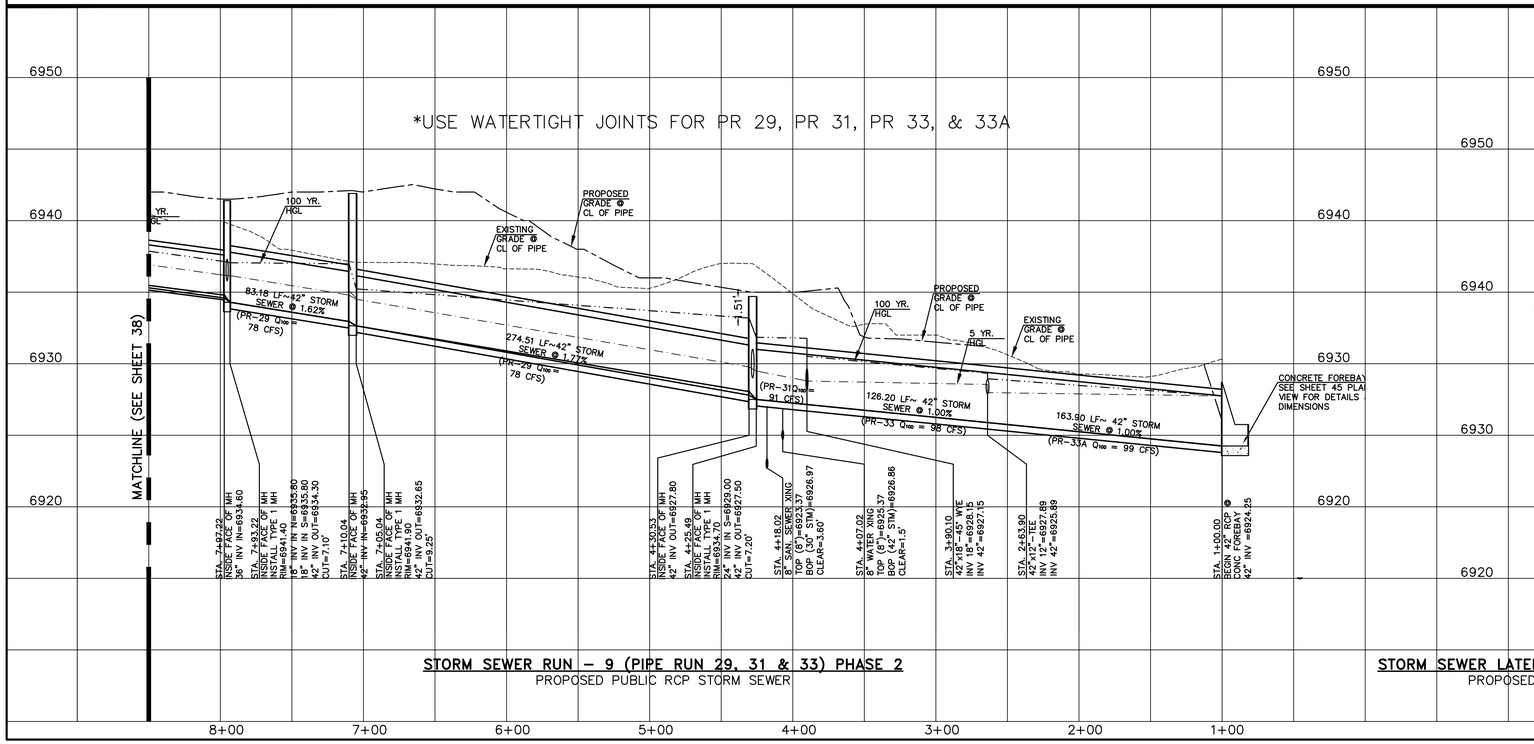
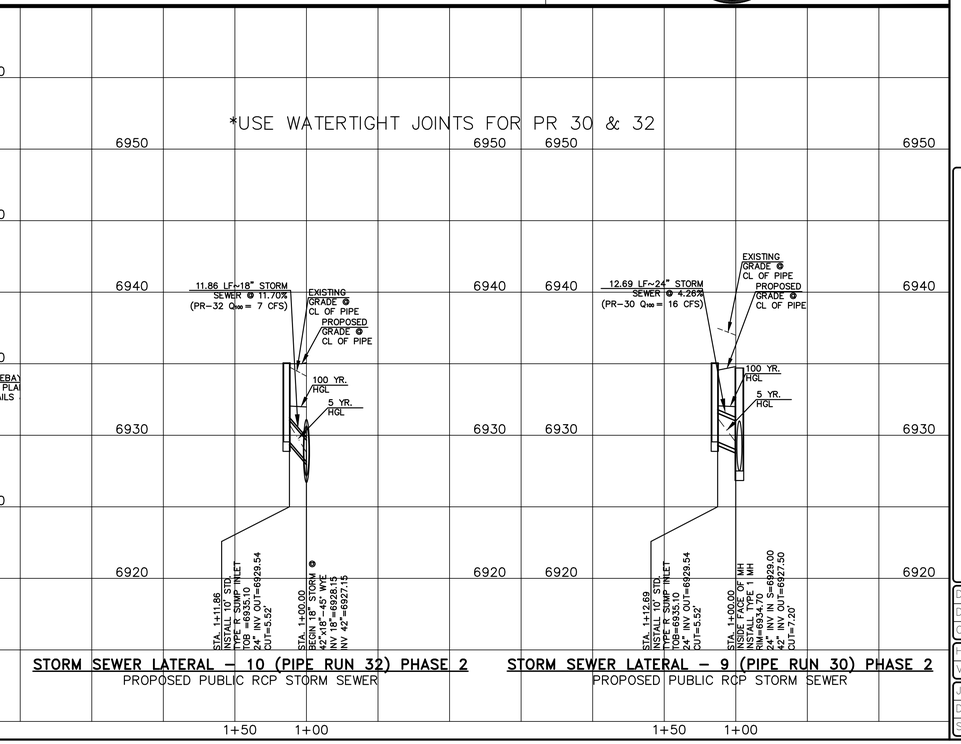
QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170

COLORADO LICENSED QUENTIN N ARMIJO 37170 PROFESSIONAL ENGINEER 10/13/24



STORM SEWER RUN – 9 (PIPE RUN 29, 31 & 33) PHASE 2

PROPOSED PUBLIC RCP STORM SEWER



STORM SEWER LATERAL – 10 (PIPE RUN 32) PHASE 2

PROPOSED PUBLIC RCP STORM SEWER

STORM SEWER LATERAL – 9 (PIPE RUN 30) PHASE 2

PROPOSED PUBLIC RCP STORM SEWER

REVISIONS

NO.	DESCRIPTION	DATE

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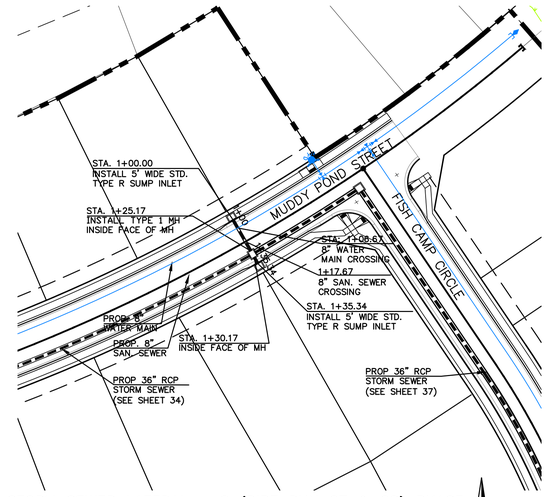
ACM ALF VIII JV SUB II LLC
JASON POCK
700 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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

WATERBURY FILING NO. 1

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

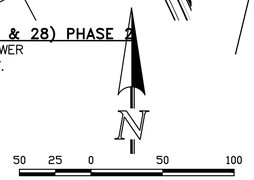
DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	JS
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	37 OF54

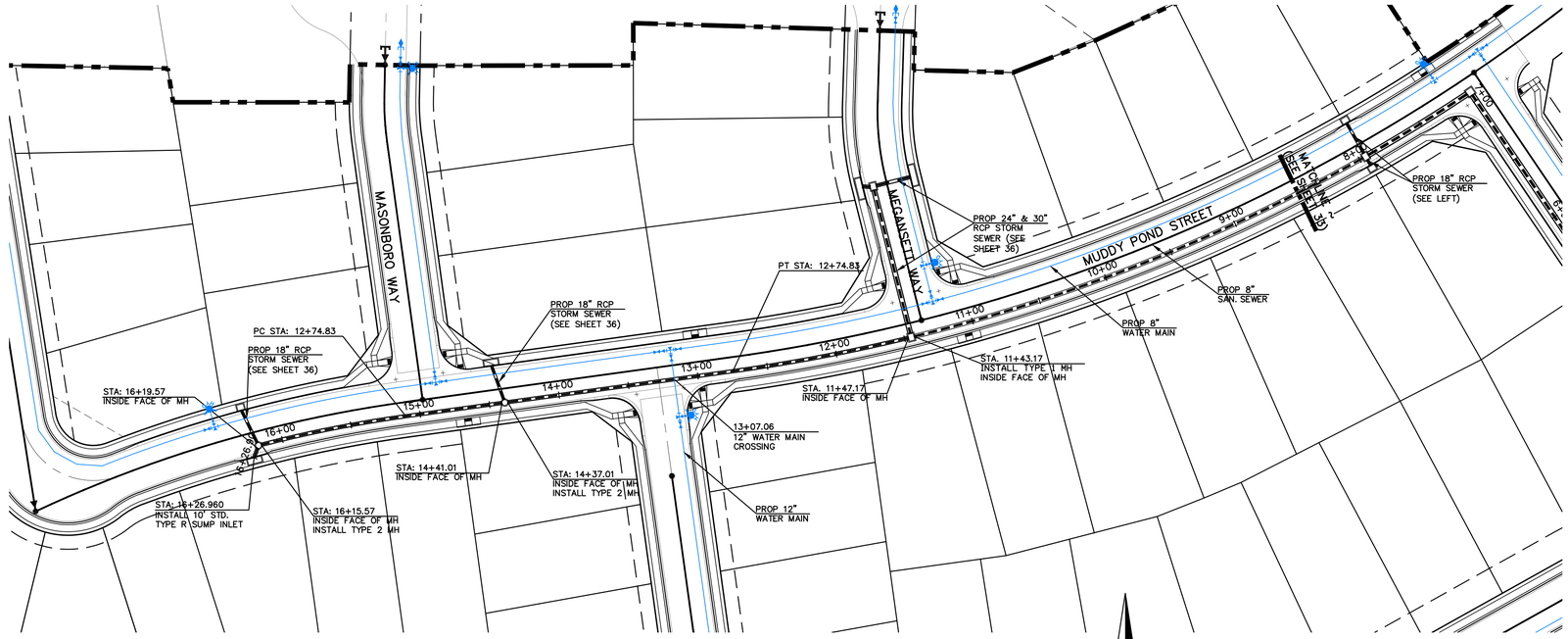


STORM SEWER LATERAL – 8 (PIPE RUN 27 & 28) PHASE 2

PROPOSED PUBLIC RCP STORM SEWER

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

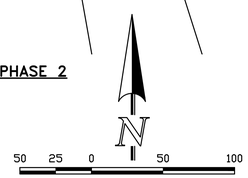




STORM SEWER RUN – 9 (PIPE RUN 20, 22 & 26) PHASE 2

PROPOSED PUBLIC RCP STORM SEWER

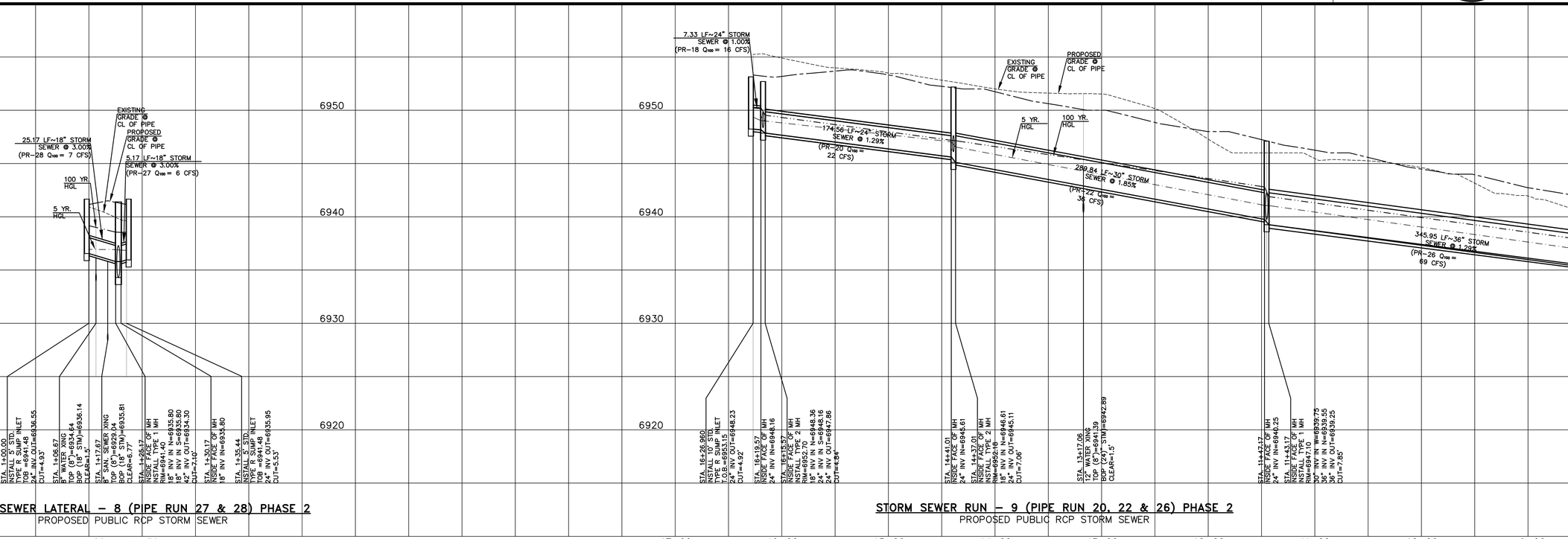
1" = 50' HORIZ. 1" = 5' VERT.



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

COLORADO LICENSED QUENTIN N ARMIJO 37170 10/13/24 PROFESSIONAL ENGINEER

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



STORM SEWER LATERAL – 8 (PIPE RUN 27 & 28) PHASE 2

PROPOSED PUBLIC RCP STORM SEWER

STORM SEWER RUN – 9 (PIPE RUN 20, 22 & 26) PHASE 2

PROPOSED PUBLIC RCP STORM SEWER

REVISIONS

NO.	DESCRIPTION	DATE

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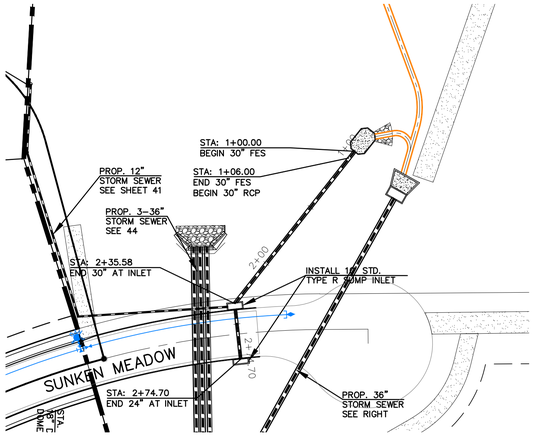
ACM ALF VIII JV SUB II LLC
JASON POCK
100 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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

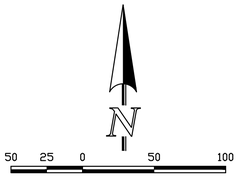
CONSTRUCTION SET
STORM SEWER RUN 9 & LATERAL 8

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	JS
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	38 OF 54

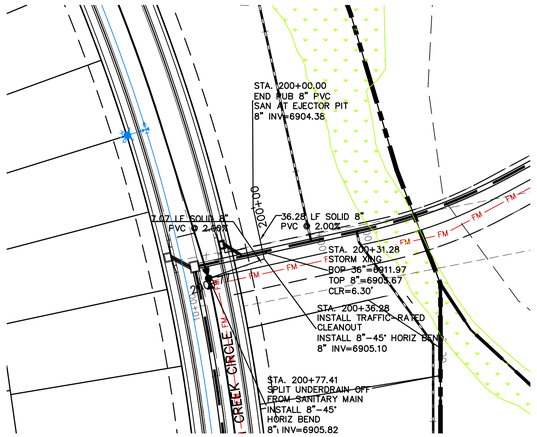


STORM SEWER LATERAL – 10 (PIPE RUN 34) PHASE 1

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

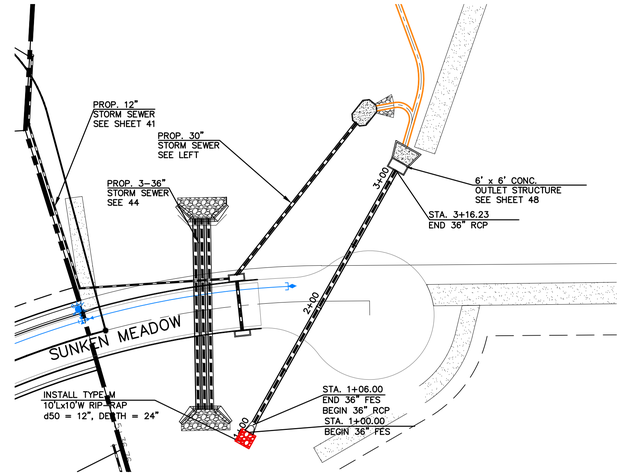


SCALE: 1" = 50'



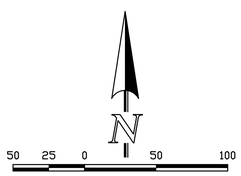
SANITARY SEWER UNDERDRAIN OUTFALL TO EJECTOR PIT – PHASE 1

PROPOSED PUBLIC 8" PVC
1" = 50' HORIZ. 1" = 5' VERT.



STORM SEWER RUN – 12 (PIPE RUN 35) PHASE 1

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

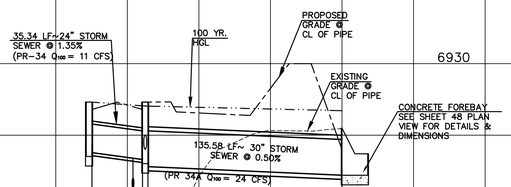


SCALE: 1" = 50'

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

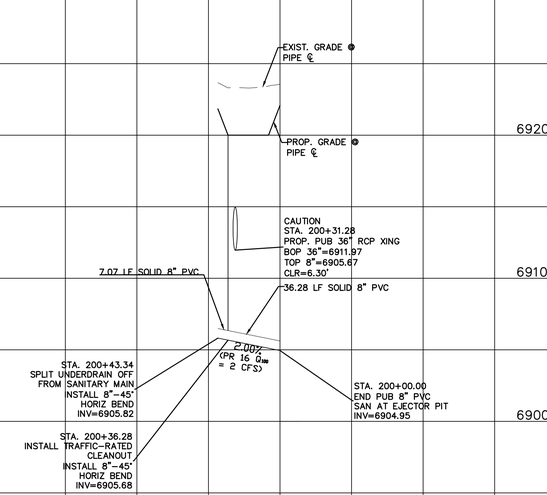
COLORADO LICENSED
QUENTIN N ARMIJO
37170
10/13/24
PROFESSIONAL ENGINEER

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



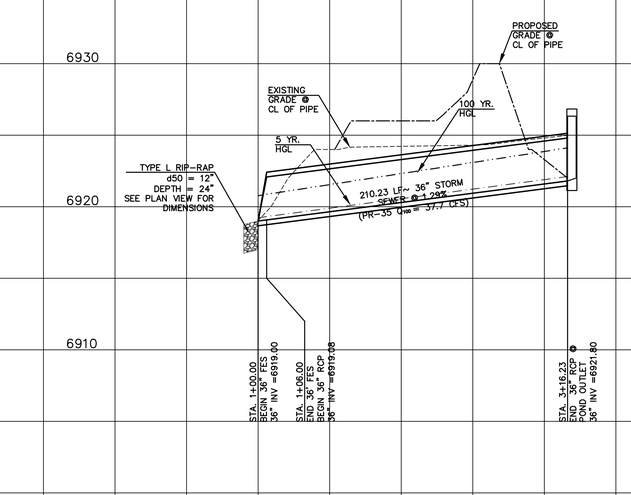
STORM SEWER RUN – 10 (PIPE RUN 34) PHASE 1

PROPOSED PUBLIC RCP STORM SEWER



SANITARY SEWER UNDERDRAIN OUTFALL TO EJECTOR PIT – PHASE 1

PROPOSED PUBLIC 8" PVC



STORM SEWER RUN – 12 (PIPE RUN 35) PHASE 1

PROPOSED PRIVATE RCP STORM SEWER

REVISIONS

NO.	DESCRIPTION	DATE

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PREPARED FOR:
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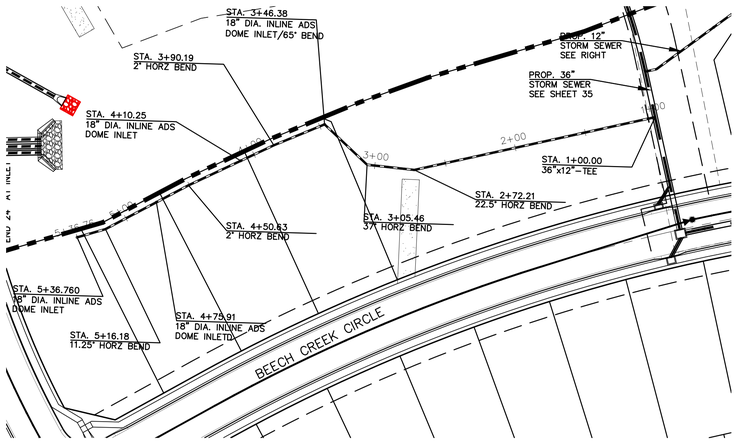
JASON POCK
1700 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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 RUN 10, 11 & 12

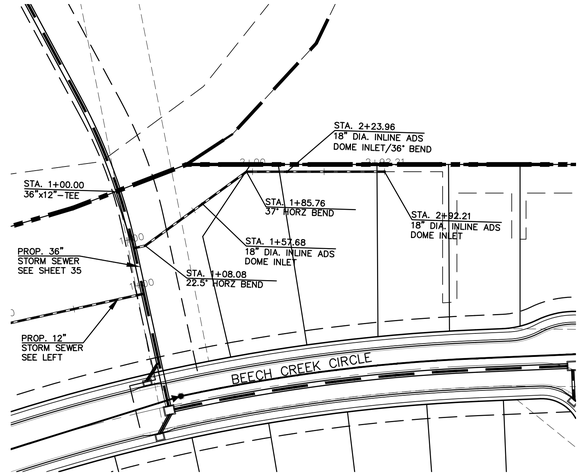
DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	JS
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	39 OF54



STORM SEWER LATERAL-12 (PIPE RUN 39) PHASE 1

PROPOSED PRIVATE 12" HDPE STORM SEWER

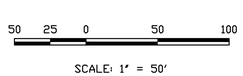
1" = 50' HORIZ. 1" = 5' VERT.



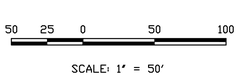
STORM SEWER LATERAL-13 (PIPE RUN 40) PHASE 1

PROPOSED PRIVATE 12" HDPE STORM SEWER

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



SCALE: 1" = 50'

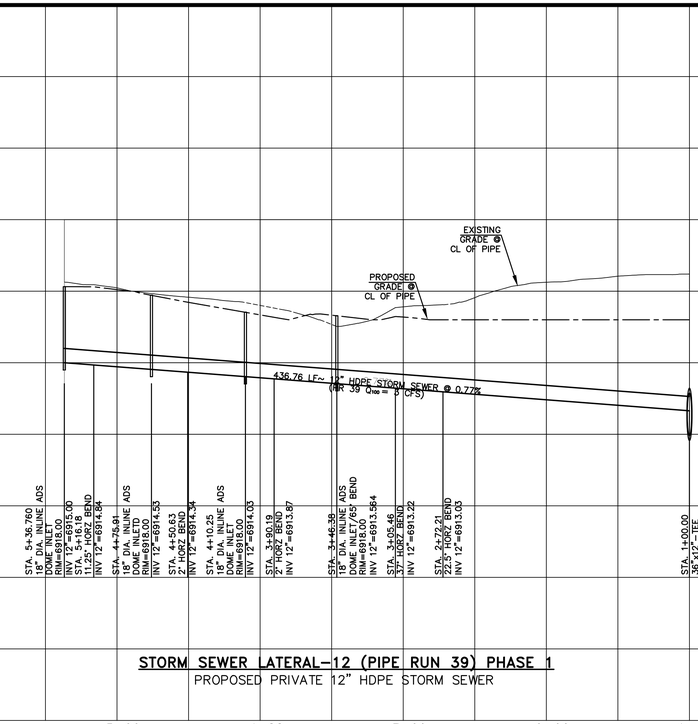


SCALE: 1" = 50'

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

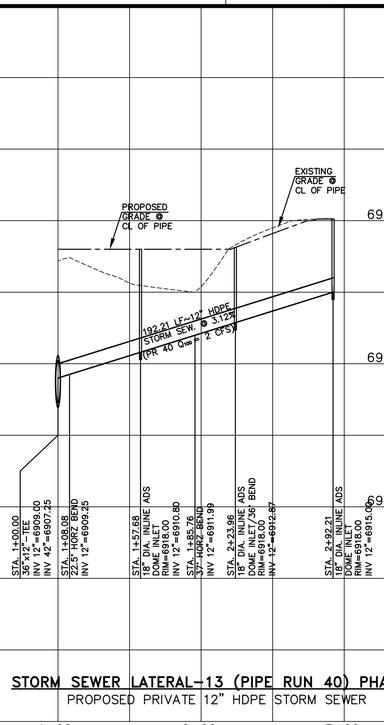
QUENTIN N. ARMIJO, PROFESSIONAL ENGINEER
COLORADO P.E. NO. 37170

COLORADO LICENSED QUENTIN N ARMIJO 37170 PROFESSIONAL ENGINEER 10/13/24



STORM SEWER LATERAL-12 (PIPE RUN 39) PHASE 1

PROPOSED PRIVATE 12" HDPE STORM SEWER



STORM SEWER LATERAL-13 (PIPE RUN 40) PHASE 1

PROPOSED PRIVATE 12" HDPE 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 DESIGNATED PURPOSES AND ONLY BY WRITTEN AUTHORIZATION.

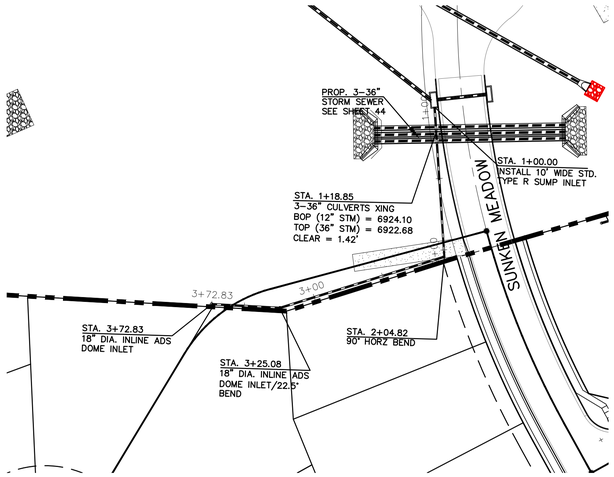
PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
5600 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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.tneainc.com

WATERBURY FILING NO. 1

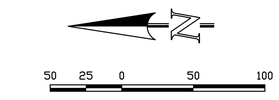
CONSTRUCTION SET
STORM SEWER LATERAL 13, 14

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	JS
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	40 OF54

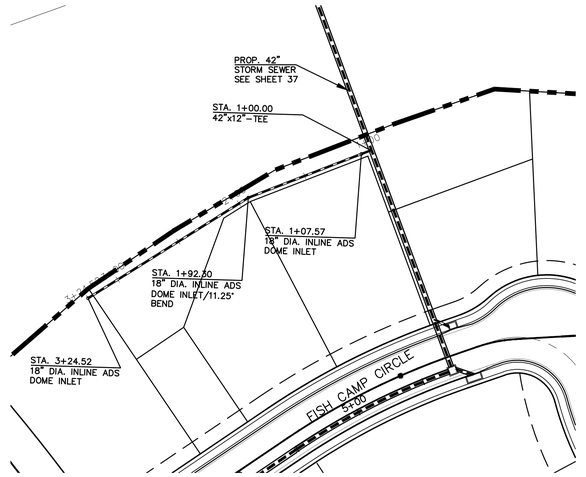


STORM SEWER LATERAL-14 PIPE RUN 38 PHASE 2

PROPOSED PRIVATE 12" HDPE STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

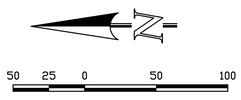


SCALE: 1" = 50'



STORM SEWER LATERAL-15 (PIPE RUN 37) PHASE 2

PROPOSED PRIVATE 12" HDPE STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

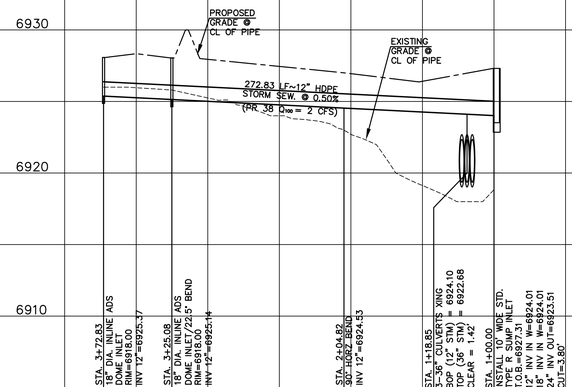


SCALE: 1" = 50'

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

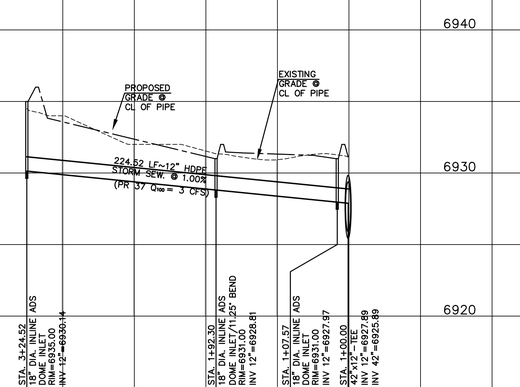
COLORADO LICENSED QUENTIN N ARMIJO 37170 PROFESSIONAL ENGINEER 10/13/24

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



STORM SEWER LATERAL-14 (PIPE RUN 38) PHASE 2

PROPOSED PRIVATE 12" HDPE STORM SEWER



STORM SEWER LATERAL-15 (PIPE RUN 37) PHASE 2

PROPOSED PRIVATE 12" HDPE 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 FOR CONSTRUCTION PURPOSES ONLY AND ONLY AS DESIGNATED BY WRITTEN AUTHORIZATION.

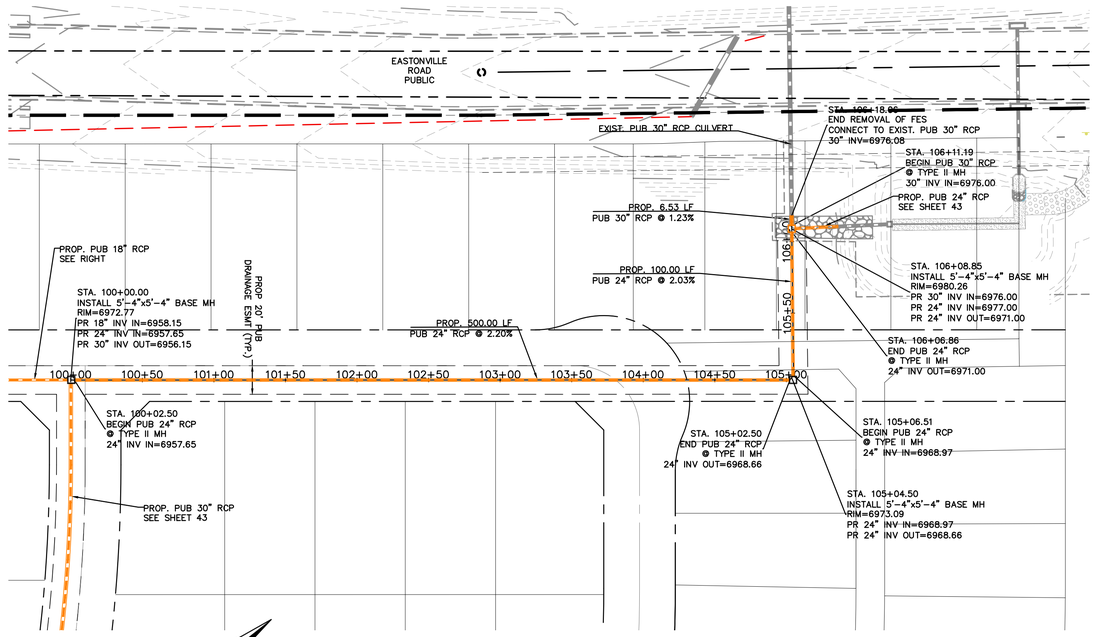
PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
5000 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

Terra Nova Engineering, Inc. Surveying
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 LATERAL 11, 12

DESIGNED BY	QNA
DRAWN BY	QNA
CHECKED BY	JS
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	41 OF 54

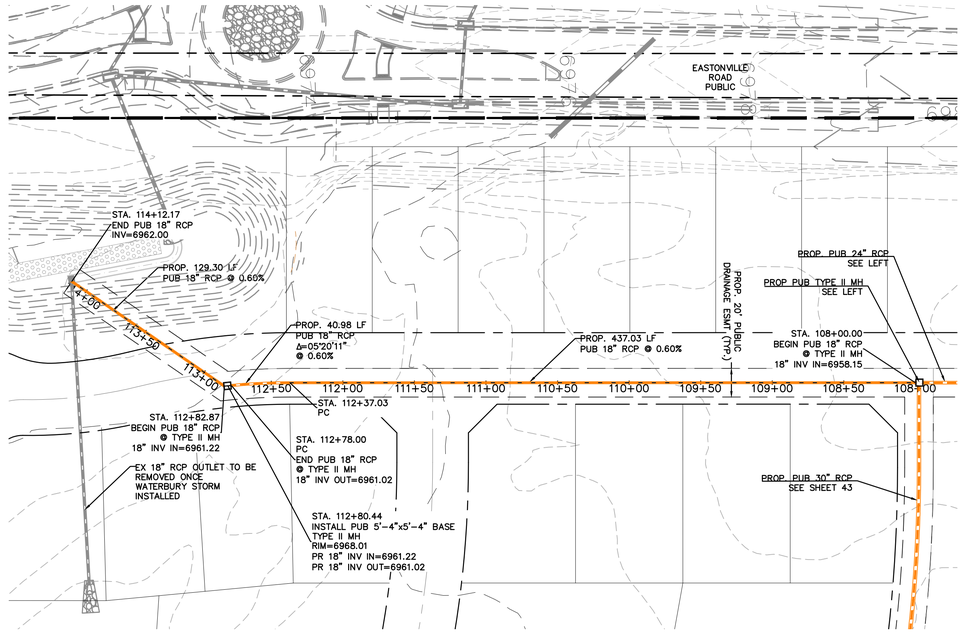


STORM SEWER RUN-16 (PIPE RUN 41 & 43) PHASE 1

PROPOSED PUBLIC 24" RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

50 25 0 50 100

SCALE: 1" = 50'



STORM SEWER RUN-17 (PIPE RUN 44) PHASE 1

PROPOSED PRIVATE 18" 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.

COLORADO LICENSED
QUENTIN N ARMIJO
37170
10/13/24
PROFESSIONAL ENGINEER

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 PURPOSE HEREIN DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
5000 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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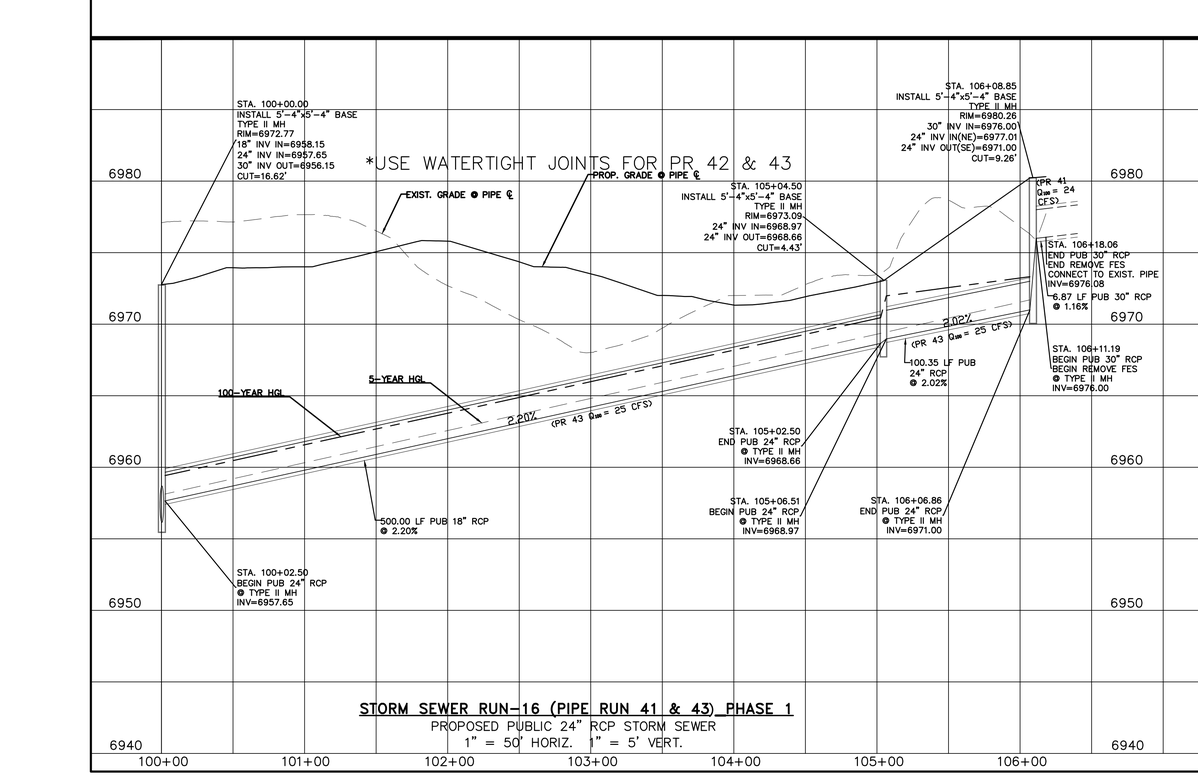
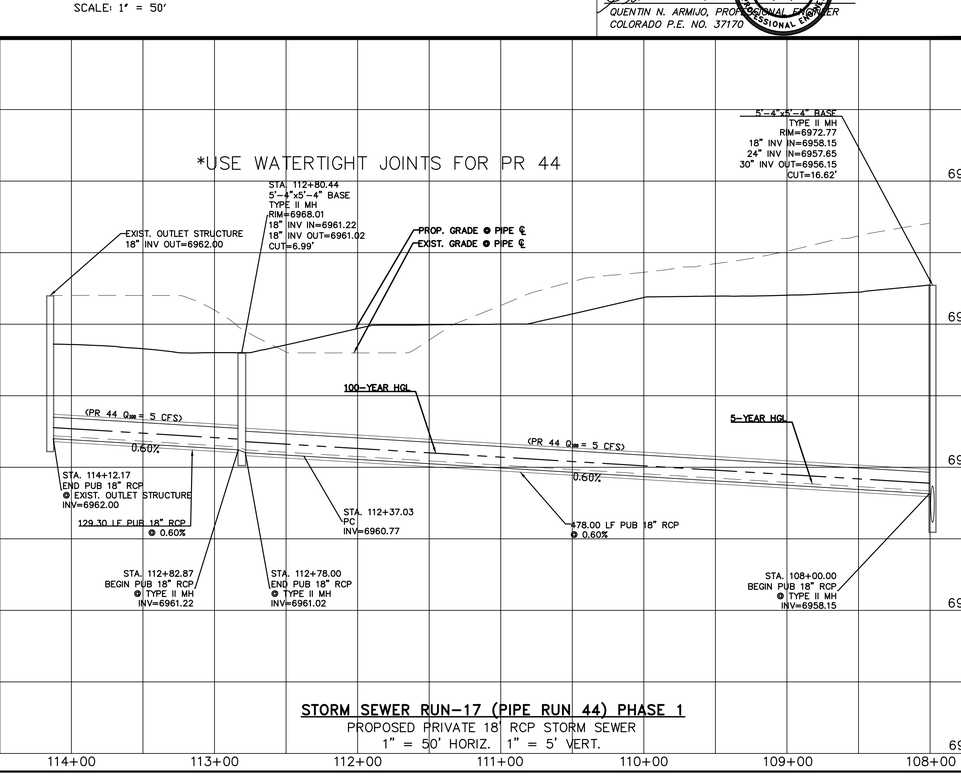


STORM SEWER RUN-16 (PIPE RUN 41 & 43) PHASE 1

PROPOSED PUBLIC 24" RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.



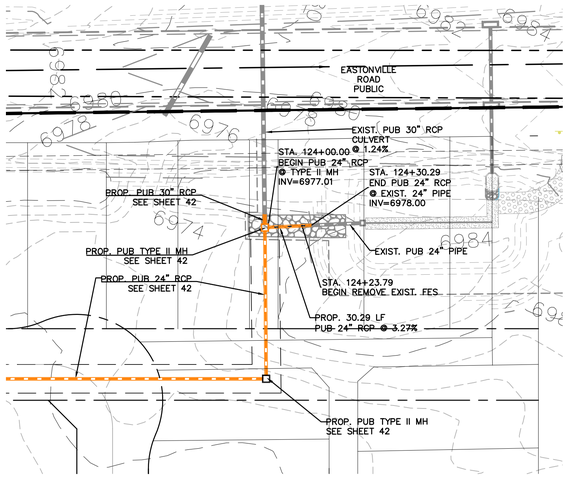
STORM SEWER RUN-17 (PIPE RUN 44) PHASE 1

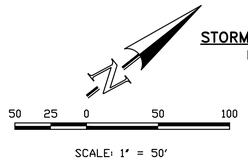
PROPOSED PRIVATE 18" RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

WATERBURY FILING NO. 1

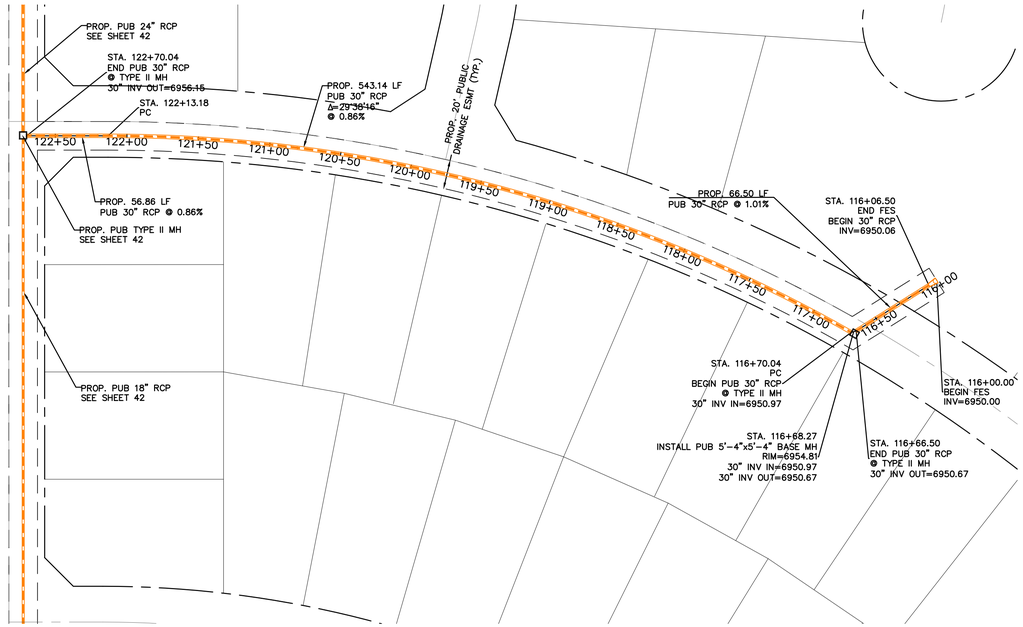
CONSTRUCTION SET
STORM SEWER RUNS 16 & 17

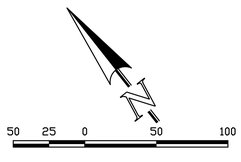
DESIGNED BY	QNA
DRAWN BY	JS
CHECKED BY	JS
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	42 OF 54





STORM SEWER RUN-15 (PIPE RUN 42) PHASE 1
PROPOSED PUBLIC 18" RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.



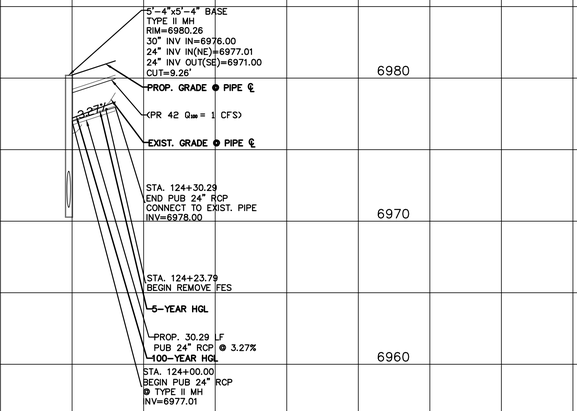


STORM SEWER RUN-18 (PIPE RUN 45) PHASE 1
PROPOSED PUBLIC 30" RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

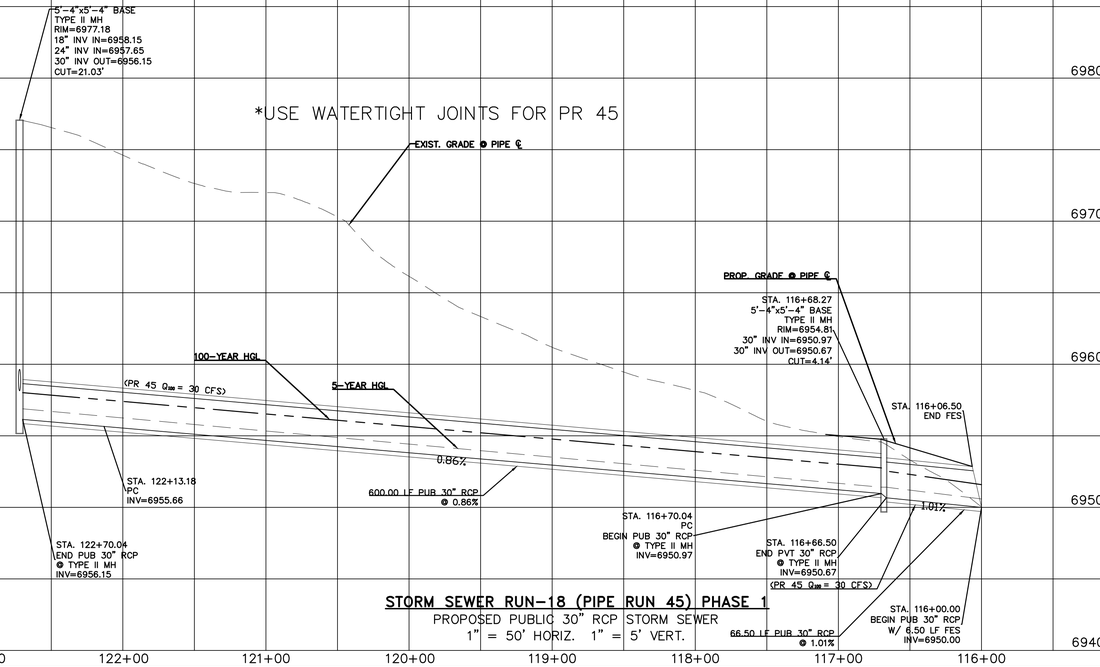
THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

COLORADO LICENSED QUENTIN N ARMIJO 37170 10/13/24 PROFESSIONAL ENGINEER

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



STORM SEWER RUN-15 (PIPE RUN 42) PHASE 1
PROPOSED PUBLIC 18" RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.



STORM SEWER RUN-18 (PIPE RUN 45) PHASE 1
PROPOSED PUBLIC 30" RCP STORM SEWER
1" = 50' HORIZ. 1" = 5' VERT.

REVISIONS

NO.	DESCRIPTION	DATE

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PREPARED FOR:
ACM ALF VIII JV SUB II LLC
JASON POCK
5000 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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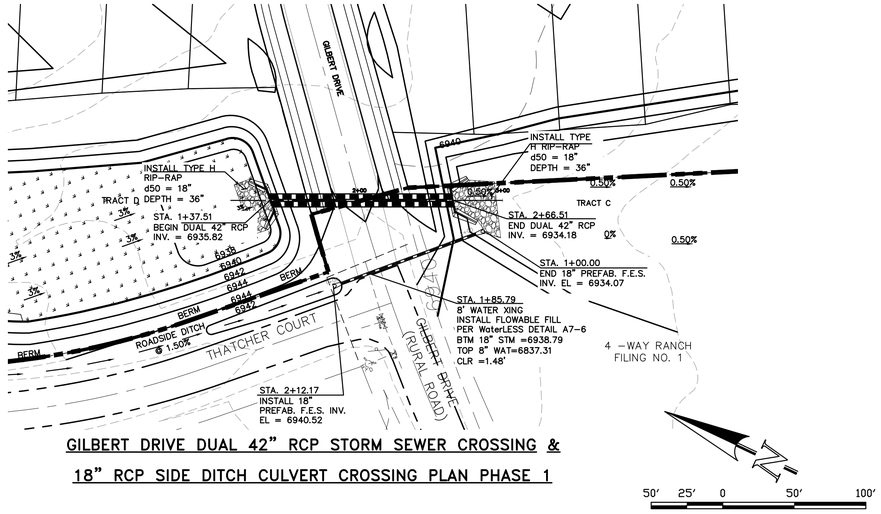
721 S. 23RD STREET
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tnesinc.com

WATERBURY FILING NO. 1

CONSTRUCTION SET
STORM SEWER RUNS 15 & 18

DESIGNED BY	QNA
DRAWN BY	JS
CHECKED BY	JS
H-SCALE	1"=50'
V-SCALE	1"=5'
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	43 OF 54



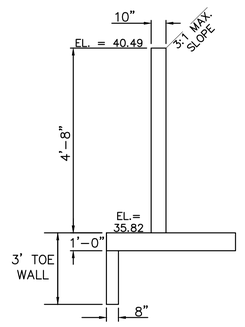
GILBERT DRIVE DUAL 42" RCP STORM SEWER CROSSING & 18" RCP SIDE DITCH CULVERT CROSSING PLAN PHASE 1

50' 25' 0 50' 100'

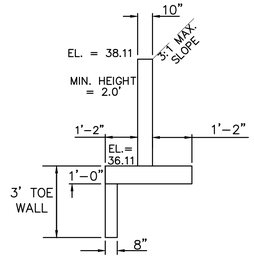
SCALE: 1" = 50'

DUAL 42" NORTH 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 = 6940.99
EL AT TOP OF WINGWALL NW1 & NE1= 6940.49
EL AT TOP OF WINGWALL NW2 & NE2 = 6938.11
EL AT TOP OF NW1 & NE1 FOOTING = 6935.82
EL AT TOP OF NW2& NE2 FOOTING = 6936.11



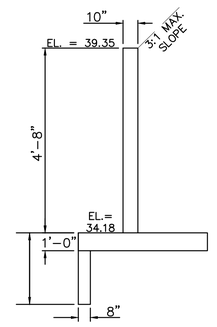
NW & NE WINGWALL 1
TOP
N.T.S.
(WALL NW1 & NE1)



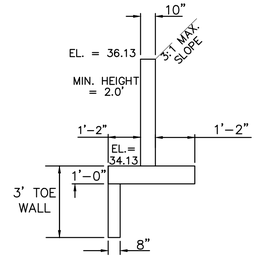
NW & NE WINGWALL 2
BOTTOM
N.T.S.
(WALL NW2 & NE2)

DUAL 42" SOUTH HEADWALL/WINGWALLS

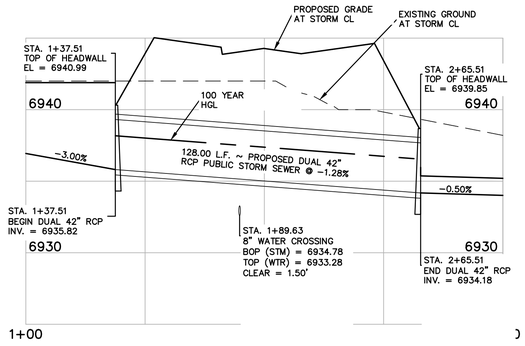
PER CDOT M-601-20
SEE CDOT M-601-20 FOR DESIGN REQUIREMENTS
INV. OUT EL = 6934.18
EL AT TOP OF HEADWALL = 6939.85
EL AT TOP OF WINGWALL SE1 = 6939.35
EL AT TOP OF WINGWALL SE2 = 6936.13
EL AT TOP OF SE1 FOOTING = 6934.18
EL AT TOP OF SE2 FOOTING = 6934.13



SE & SW WINGWALL 1
TOP
N.T.S.
(WALL SE1 & SW1)

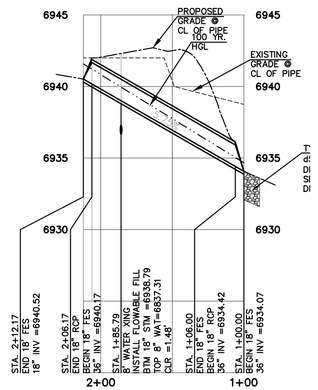


SE & SW WINGWALL 2
BOTTOM
N.T.S.
(WALL SE2 & SW2)



DUAL 42" RCP STORM SEWER CULVERT PROFILE PHASE 1

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'

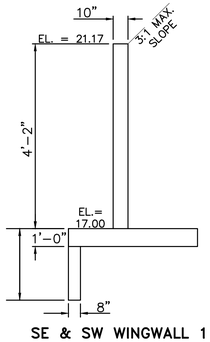


18" RCP STORM SEWER CULVERT PROFILE PHASE 1

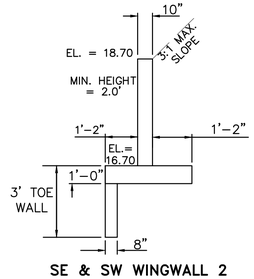
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

TRIPLE 36" SOUTH HEADWALL/WINGWALLS

PER CDOT M-601-20
SEE CDOT M-601-20 FOR DESIGN REQUIREMENTS
INV. OUT EL = 6917.00
EL AT TOP OF HEADWALL = 6921.67
EL AT TOP OF WINGWALL SE1 & SW1 = 6921.17
EL AT TOP OF WINGWALL SE2 & SW2 = 6918.70
EL AT TOP OF SE1 & SW1 FOOTING = 6917.00
EL AT TOP OF SE2 & SW2 FOOTING = 6916.70



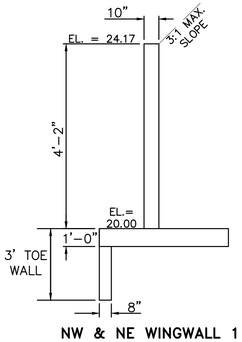
SE & SW WINGWALL 1
TOP
N.T.S.
(WALL SE1 & SW1)



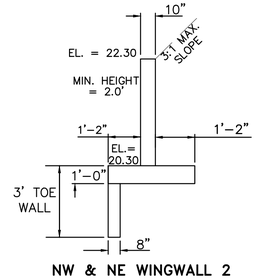
SE & SW WINGWALL 2
BOTTOM
N.T.S.
(WALL SE2 & SW2)

TRIPLE 36" NORTH HEADWALL/WINGWALLS

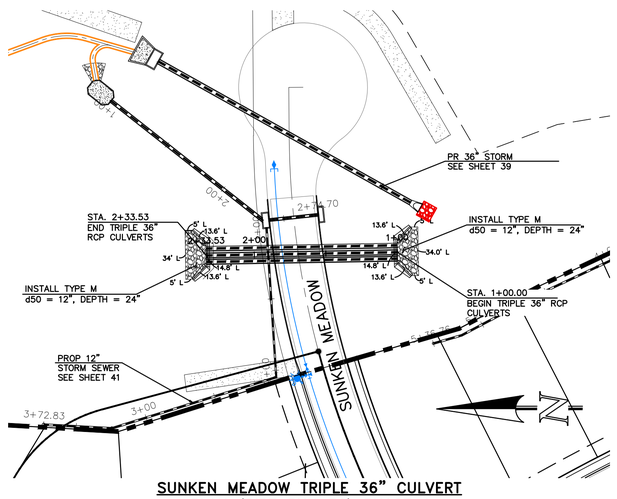
PER CDOT M-601-20
SEE CDOT M-601-20 FOR DESIGN REQUIREMENTS
INV. IN EL = 6920.00
EL AT TOP OF HEADWALL = 6924.67
EL AT TOP OF WINGWALL NW1 & NE1= 6924.17
EL AT TOP OF WINGWALL NW2 & NE2 = 6922.30
EL AT TOP OF NW1 & NE1 FOOTING = 6920.00
EL AT TOP OF NW2& NE2 FOOTING = 6920.30



NW & NE WINGWALL 1
TOP
N.T.S.
(WALL NW1 & NE1)

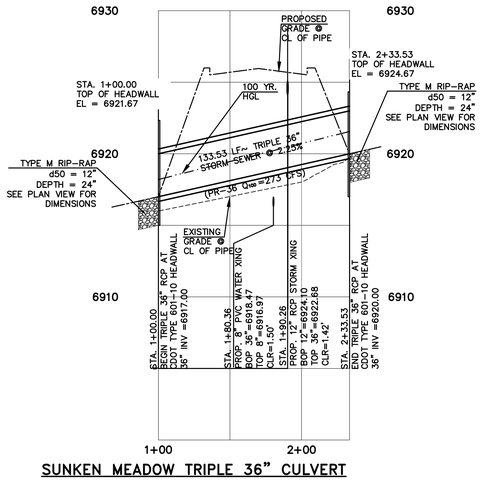


NW & NE WINGWALL 2
BOTTOM
N.T.S.
(WALL NW2 & NE2)



SUNKEN MEADOW TRIPLE 36" CULVERT PLAN (PIPE RUN 36) PHASE 1

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



SUNKEN MEADOW TRIPLE 36" CULVERT PROFILE (PIPE RUN 36) PHASE 1

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

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

COLORADO LICENSED QUENTIN N ARMIJO 37170 10/13/22 PROFESSIONAL ENGINEER

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.

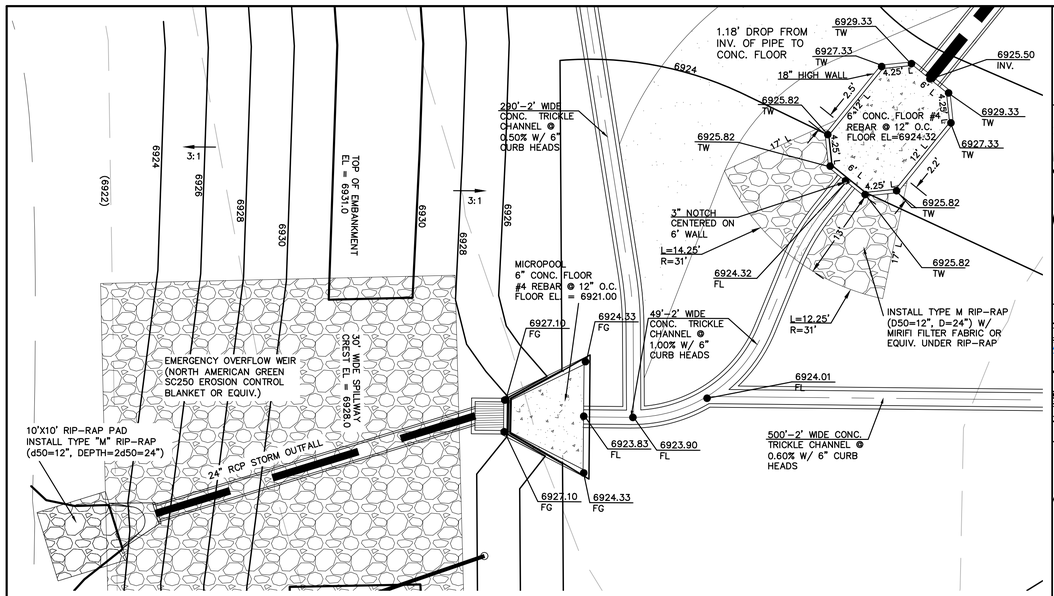
PREPARED FOR:
ACM ALF VIII JV SUB II LLC
ATTN: JASON POCK
8400 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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

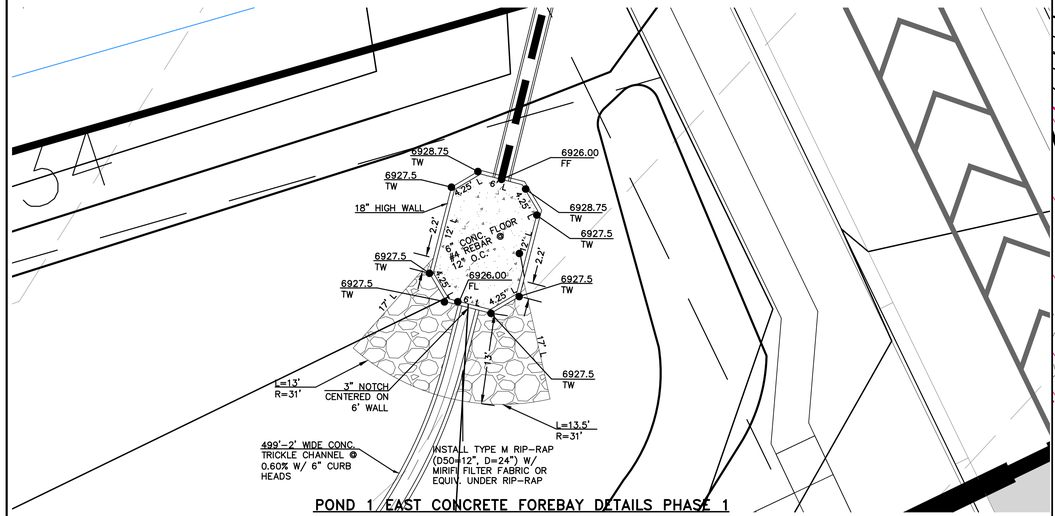
WATERBURY FILING NO. 1

CONSTRUCTION SET
STORM SEWER PLAN AND PROFILE
GILBERT DRIVE CROSSING CULVERTS

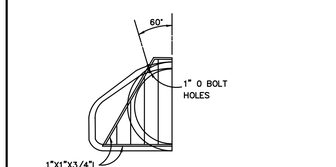
DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	AS SHOWN
V-SCALE	AS SHOWN
JOB NO.	2356.00
DATE ISSUED	12/22/22
SHEET NO.	44 OF 54



POND 1 WEST CONCRETE FOREBAY/MICROPOOL DETAILS PHASE 1

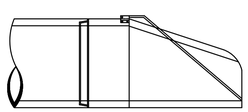


POND 1 EAST CONCRETE FOREBAY DETAILS PHASE 1



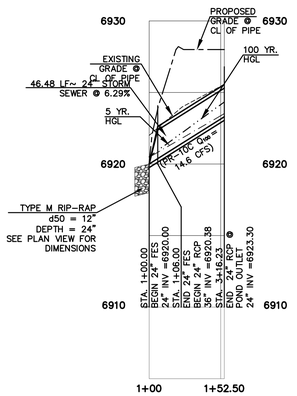
POND 1 FLARED END SECTION PHASE 1

SCALE: N.T.S.



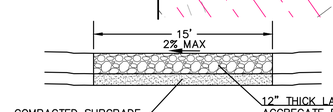
POND 1 TRASH RACK PHASE 1 F.E.S. DETAIL

SCALE: N.T.S.



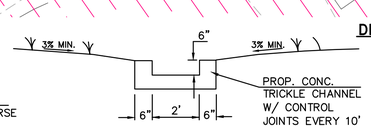
24" RCP POND 1 OUTFALL PROFILE PHASE 1

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



15' MAINTENANCE ACCESS ROAD SECTION PHASE 1

NOT TO SCALE



TRICKLE CHANNEL PHASE 1 TYPICAL SECTION

N.T.S.

DETENTION POND 1 PHASE 1

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

QUENTIN ARMIJO
COLORADO P.E. NO. 37170

COLORADO LICENSED QUENTIN N ARMIJO 37170 2/10/13/24 PROFESSIONAL ENGINEER

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.

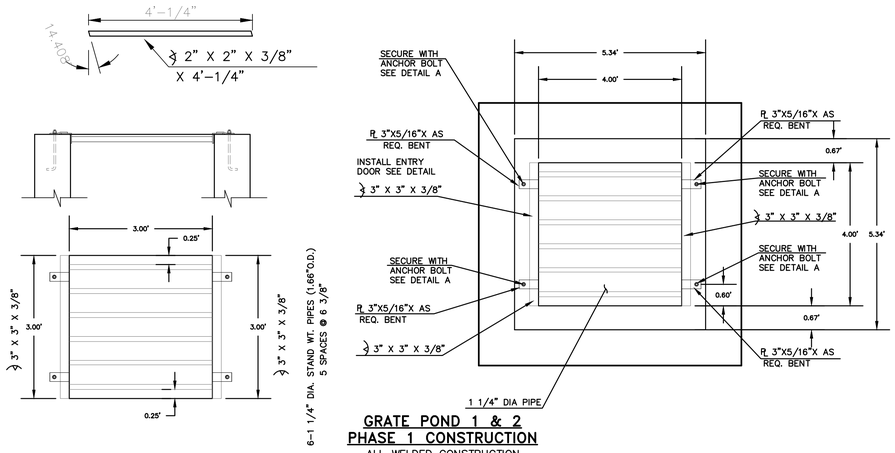
PREPARED FOR:
ACM ALF VIII JV SUB II LLC
ATTN: JASON POCK
7000 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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

WATERBURY FILING NO. 1

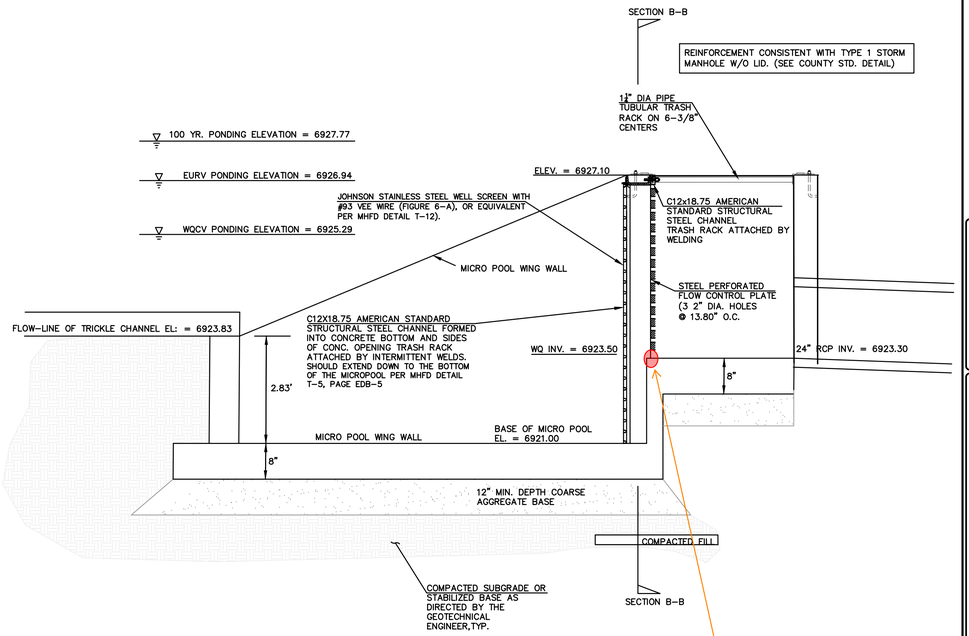
CONSTRUCTION SET
POND 1 DETAILS

DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	AS SHOWN
V-SCALE	AS SHOWN
JOB NO.	2356.00
DATE ISSUED	12/22/23
SHEET NO.	45 OF 54



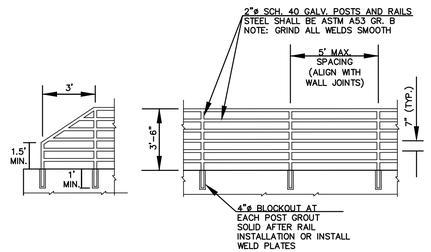
GRATE POND 1 & 2
PHASE 1 CONSTRUCTION

ALL WELDED CONSTRUCTION
SCALE: N.T.S.



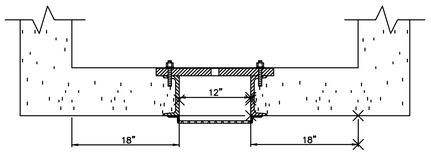
POND 1 OUTLET STRUCTURE PHASE 1
MODIFIED TYPE 1 MH

SCALE: N.T.S.



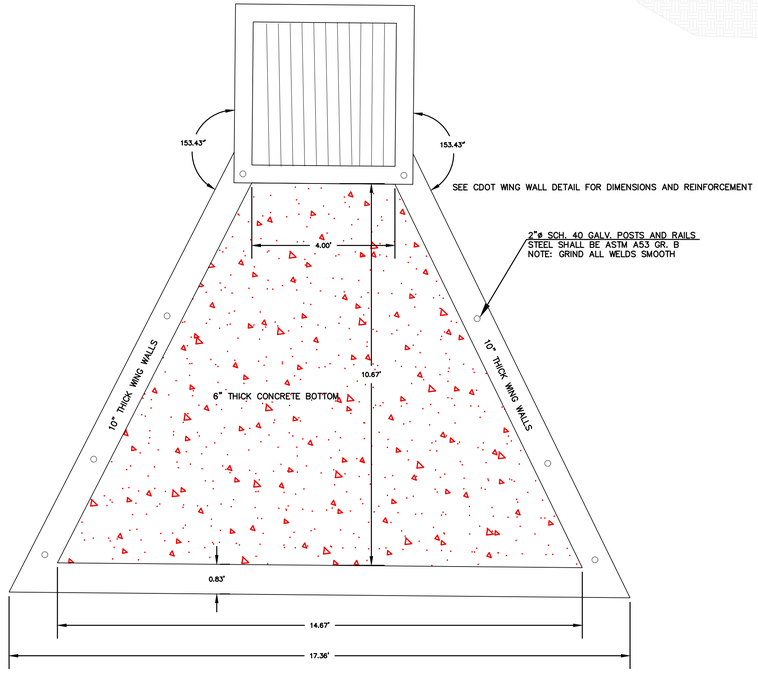
NOTES:

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.



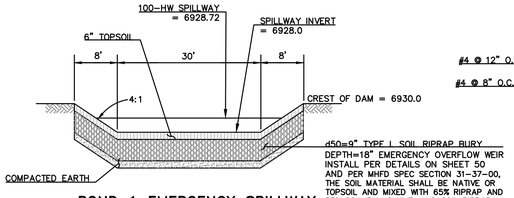
SECTION B-B

SCALE: N.T.S.



POND 1 & 2 CONCRETE MICROPOOL PHASE 1

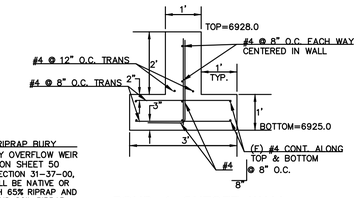
SCALE: N.T.S.



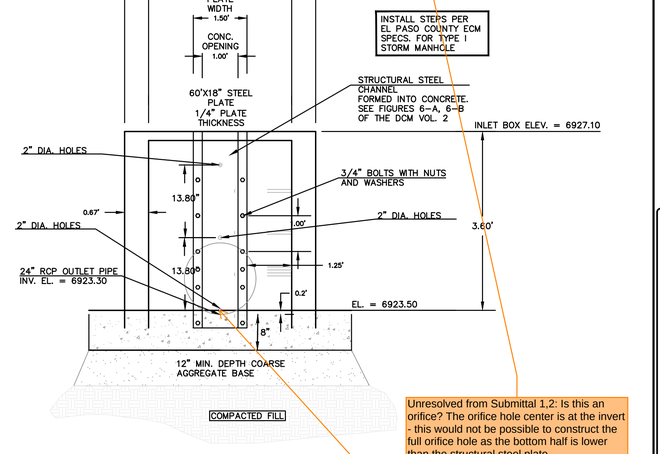
DEPTH=18" EMERGENCY OVERFLOW WEIR INSTALL PER DETAILS ON SHEET 50 AND PER MHFD SPEC SECTION 31-37-00, THE SOIL MATERIAL SHALL BE NATIVE OR TOPSOIL AND MIXED WITH 65% RIPRAP AND 35% SOIL BY VOLUME. AND SOIL RIPRAP SHALL CONSIST OF UNIFORM MIXTURE OF SOIL AND RIPRAP WITHOUT VOIDS.

POND 1 EMERGENCY SPILLWAY CROSS SECTION PHASE 1

SCALE: N.T.S.



POND 1 CUTOFF WALL CROSS SECTION PHASE 1



Unresolved from Submittal 1.2: Is this an orifice? The orifice hole center is at the invert - this would not be possible to construct the full orifice hole as the bottom half is lower than the structural steel plate.

Update from Submittal 3: This design appears unconstructable. With tow the plate is shown, the orifice hole would only be half drilled. The bottom half of the lowest orifice is within the concrete of the outlet structure. the plate will need a watertight seal and this design as shown appears to be impossible. I drew the orifice hole where it appears to be located within the concrete.

POND 1 OUTLET STRUCTURE PHASE 1
MODIFIED TYPE 1 MH

SCALE: N.T.S.

STEEL FABRICATION NOTES:

1. FABRICATED STEEL STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AISC AND AWS SPECIFICATIONS.
2. THE OUTLET STRUCTURE BARGRATE IS DESIGNED FOR A VERTICAL LOAD OF 300 LBS./SQ. FT.
3. 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.
4. 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. PRIOR TO PAINTING REMOVE ALL OIL, SCALE, AND SLAG, GRIND OFF BURRS AND SHARP EDGES.
6. PAINT WITH ONE SHOP COAT OF ZINC RICH PRIMER AND TWO COATS OF ALUMINUM PAINT, AASHTO M-69

WARNING
THIS AREA IS A STORMWATER FACILITY AND IS SUBJECT TO PERIODIC FLOODING

WARNING SIGN

PET WASTE MUST BE PICKED UP

PET WASTE SIGN

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

QUENTIN ARMIJO
COLORADO P.E. NO. 37170

COLORADO LICENSED QUENTIN N ARMIJO 37170 10/13/24 PROFESSIONAL ENGINEER

REVISIONS

NO.	DESCRIPTION	DATE

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303-984-9800

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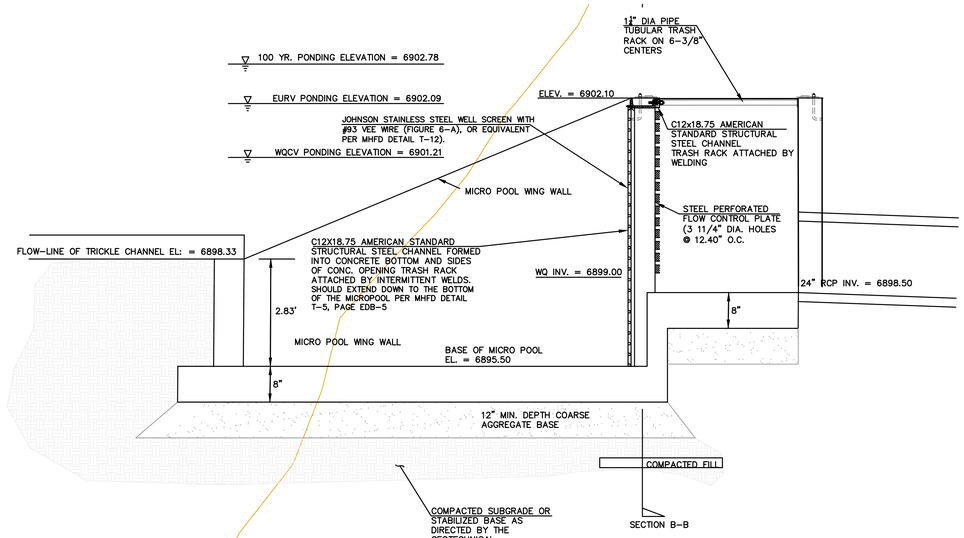
COLORADO SPRINGS, CO 80904
OFFICE: 719-635-6422
FAX: 719-635-6426
www.tneinc.com

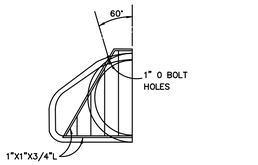
WATERBURY FILING NO. 1

CONSTRUCTION SET
POND 1 DETAILS

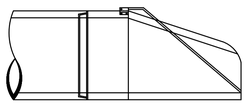
DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	NA
V-SCALE	N/A
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	46 OF 54



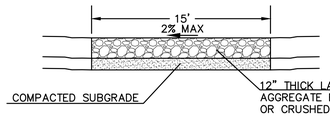
POND 2 CONCRETE OUTLET BOX DETAILS PHASE 1
SCALE: N.T.S.



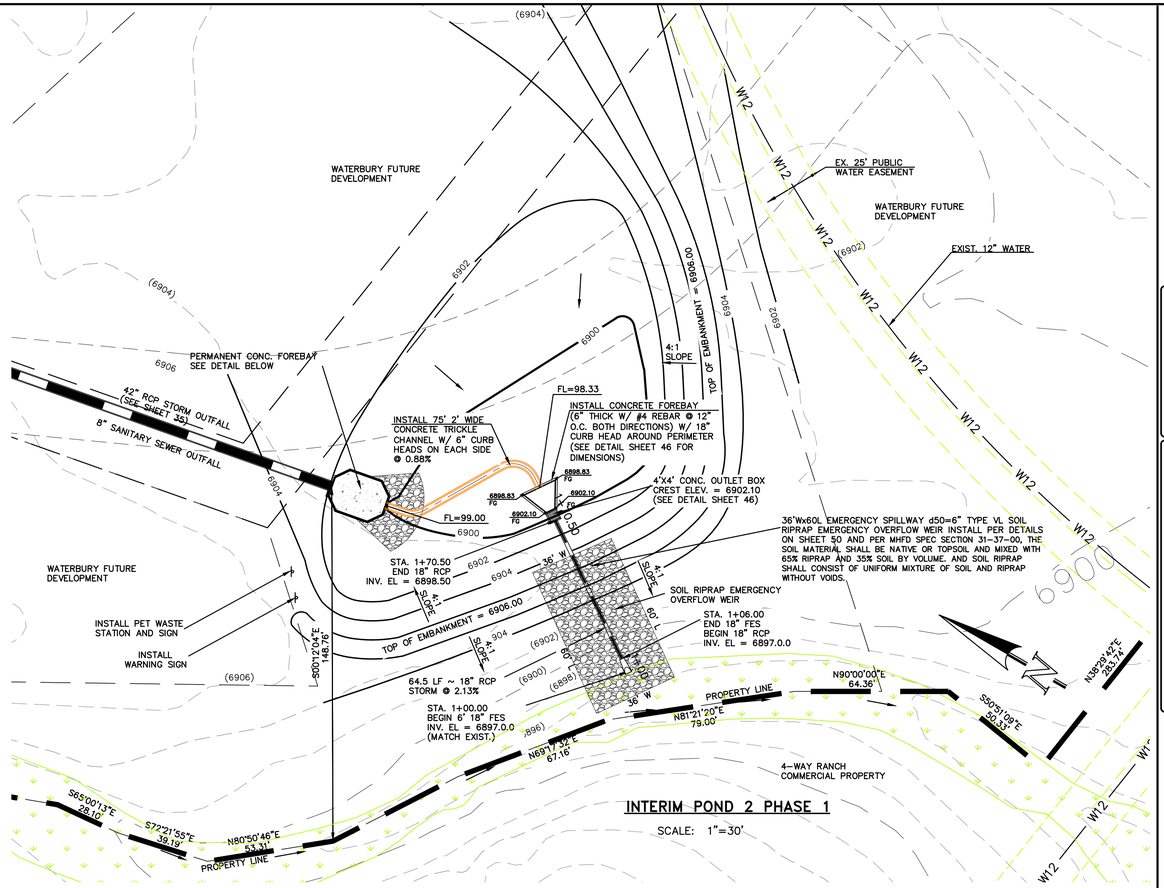
POND 2 FLARED END SECTION
SCALE: N.T.S.



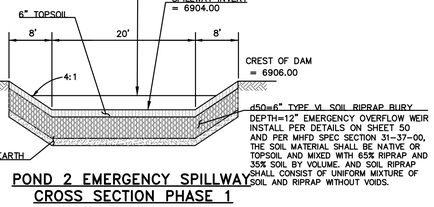
POND 2 TRASH RACK DETAIL: F.E.S. DETAIL
SCALE: N.T.S.



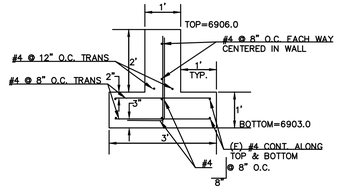
15' MAINTENANCE ACCESS ROAD SECTION PHASE 1
NOT TO SCALE



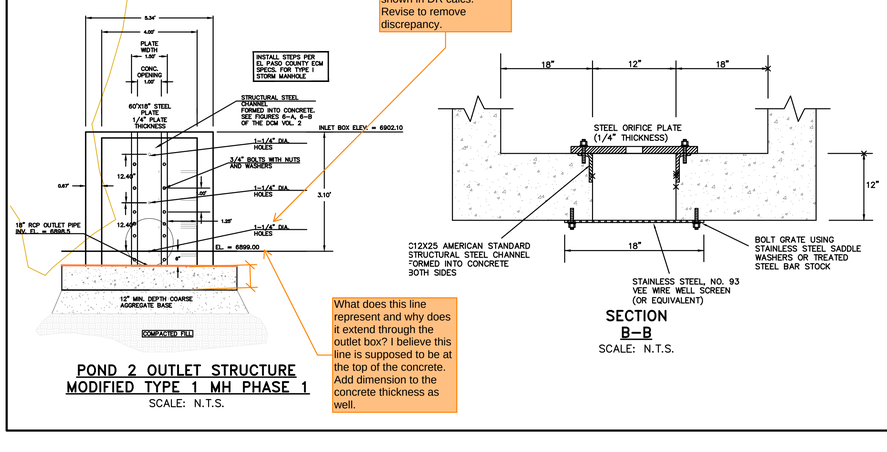
INTERIM POND 2 PHASE 1
SCALE: 1"=30'



POND 2 EMERGENCY SPILLWAY CROSS SECTION PHASE 1
SCALE: N.T.S.

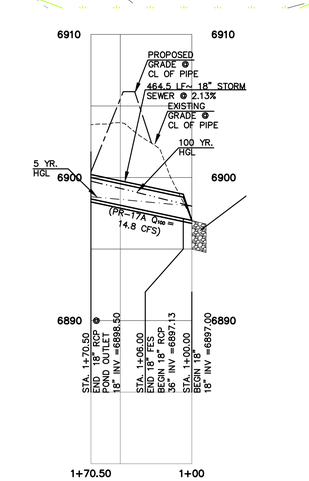


POND 2 CUTOFF WALL CROSS SECTION PHASE 1

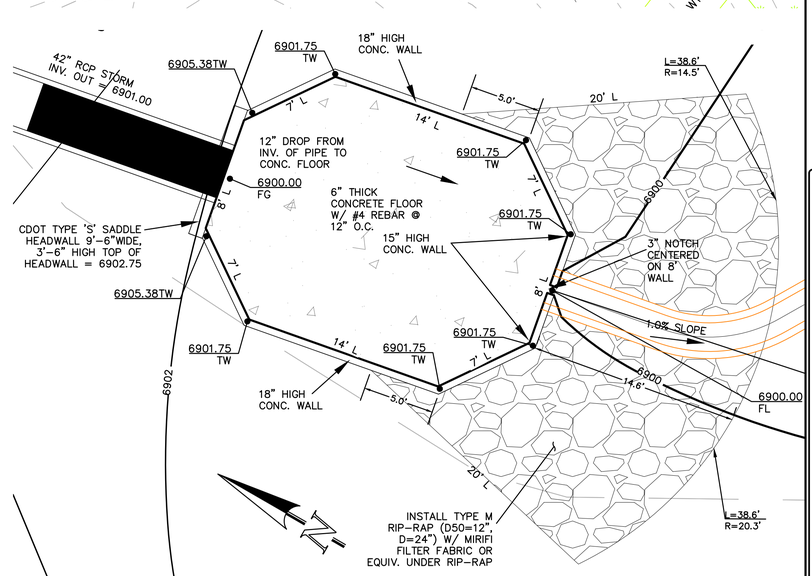


POND 2 OUTLET STRUCTURE MODIFIED TYPE 1 MH PHASE 1
SCALE: N.T.S.

SECTION B-B
SCALE: N.T.S.



24" RCP POND 2 OUTFALL PROFILE
PRIVATE
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



POND 2 PERMANENT FOREBAY DETAIL PHASE 1
SCALE: 1"=5'

WARNING SIGN	PET WASTE SIGN
WARNING THIS AREA IS A STORMWATER FACILITY AND IS SUBJECT TO PERIODIC FLOODING	PET WASTE MUST BE PICKED UP

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

QUENTIN ARMIJO
COLORADO P.E. NO. 37170

COLORADO LICENSED QUENTIN N ARMIJO 37170 10/13/22 PROFESSIONAL ENGINEER

REVISIONS

NO.	DESCRIPTION	DATE

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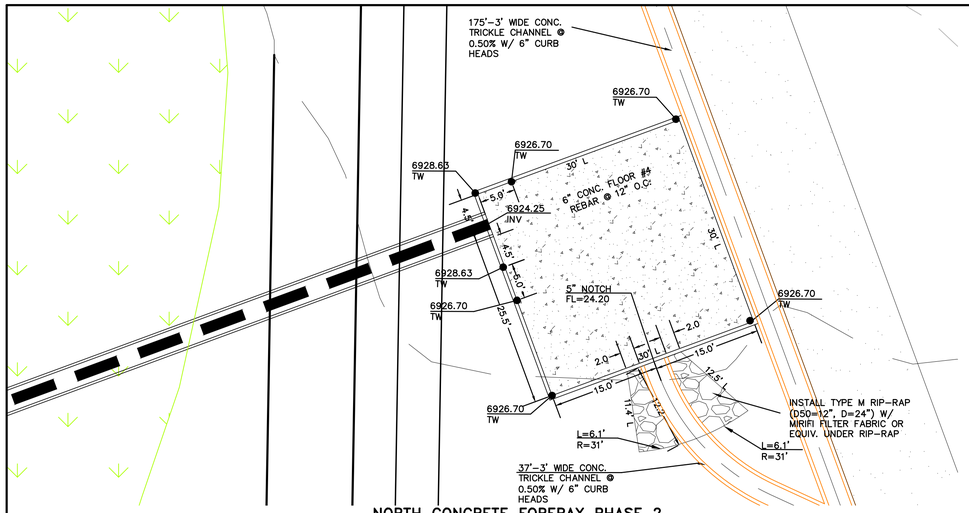
ACM ALF VIII JV SUB II LLC
ATTN: JASON POCK
100 E. MISSISSIPPI AVE., STE 500
DENVER, CO 80246
303-984-9800

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

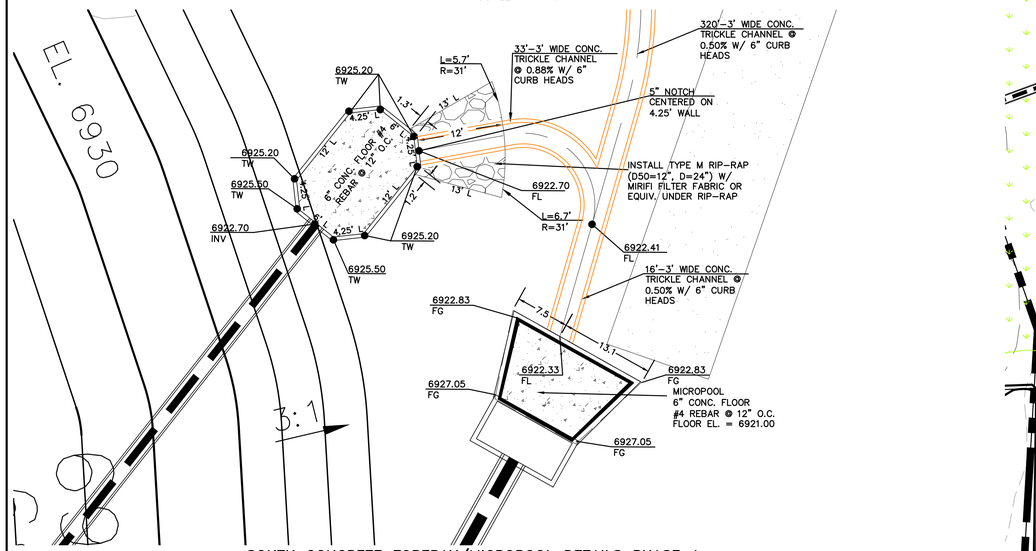
WATERBURY FILING NO. 1

CONSTRUCTION SET
POND 2 DETAILS

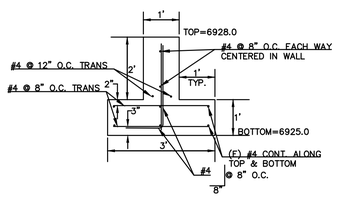
DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	AS SHOWN
V-SCALE	AS SHOWN
JOB NO.	2356.00
DATE ISSUED	12/22/22
SHEET NO.	47 OF 54



NORTH CONCRETE FOREBAY PHASE 2
SCALE: 1"=10'



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



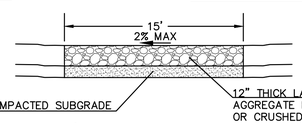
POND 3 CUTOFF WALL CROSS SECTION PHASE 1

WARNING
THIS AREA IS A STORMWATER FACILITY AND IS SUBJECT TO PERIODIC FLOODING

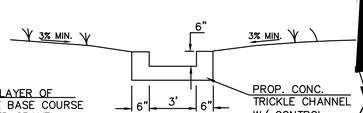
WARNING SIGN

PET WASTE MUST BE PICKED UP

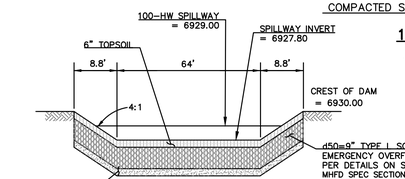
PET WASTE SIGN



15' MAINTENANCE ACCESS ROAD SECTION PHASE 1
SCALE: N.T.S.



TRICKLE CHANNEL PHASE 1 TYPICAL SECTION
N.T.S.



EMERGENCY SPILLWAY CROSS SECTION PHASE 1
SCALE: N.T.S.

EMERGENCY OVERFLOW WEIR INSTALL PER DETAILS ON SHEET 50 AND PER MHFD SPEC SECTION 31-37-00, THE SOIL MATERIAL SHALL BE NATIVE OR TOPSOIL AND MIXED WITH 65% RIPRAP AND 35% SOIL BY VOLUME, AND SOIL RIPRAP SHALL CONSIST OF UNIFORM MIXTURE OF SOIL AND RIPRAP WITHOUT VOIDS.

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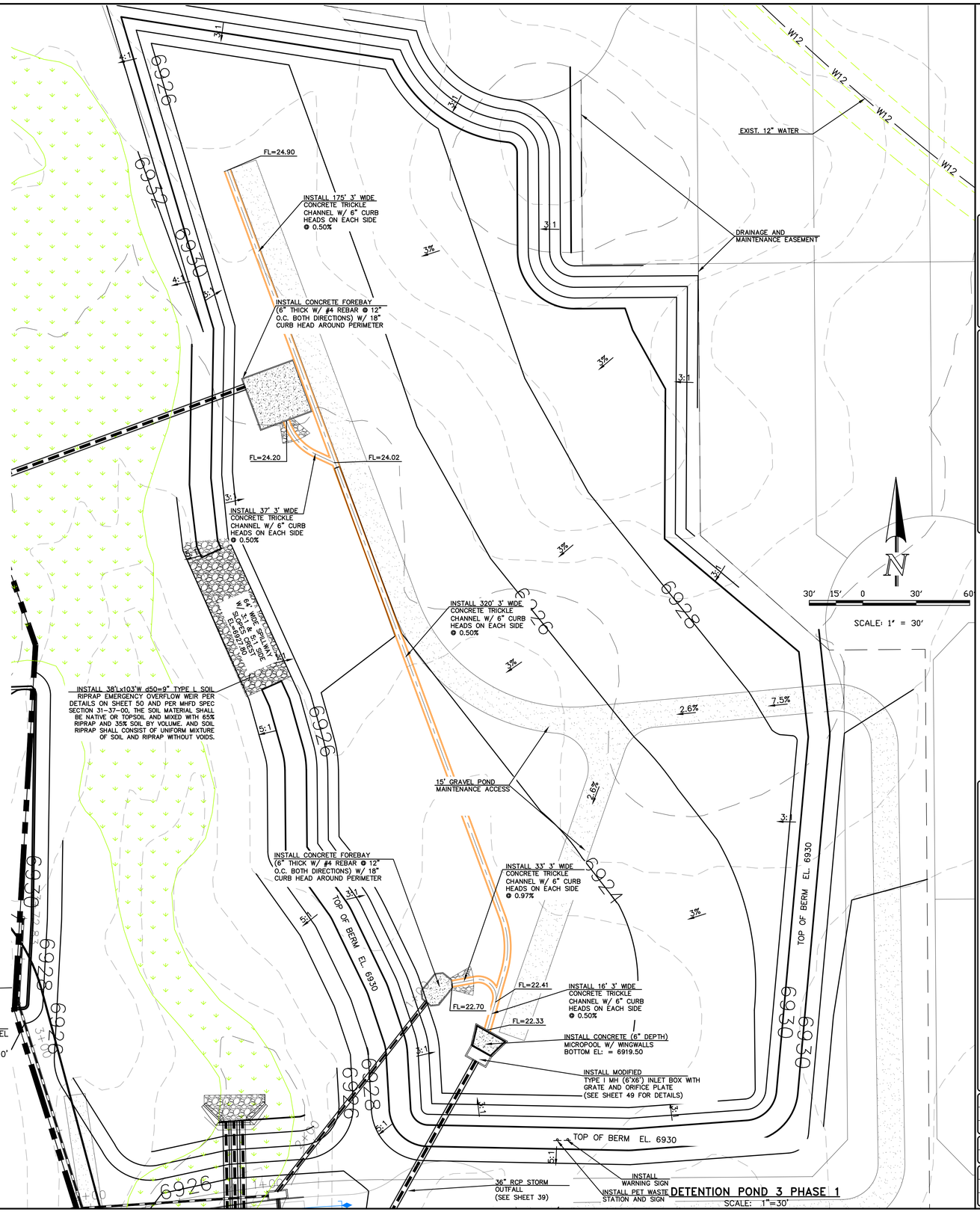
COLORADO LICENSED QUENTIN N ARMIJO 37170 10/13/22 PROFESSIONAL ENGINEER

QUENTIN ARMIJO
COLORADO P.E. NO. 37170



DETENTION POND 3 PHASE 1
SCALE: 1"=30'

REVISIONS		
NO.	DESCRIPTION	DATE

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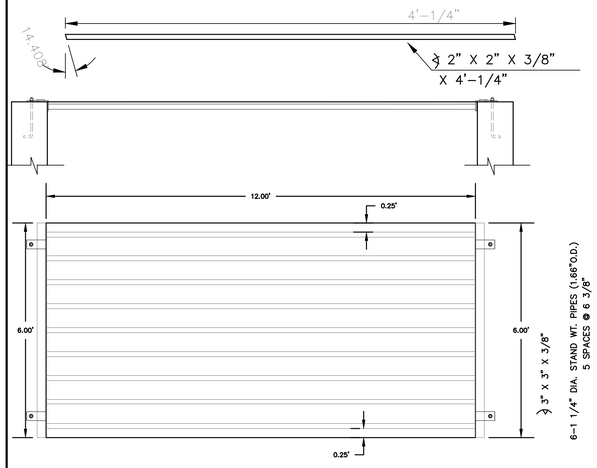
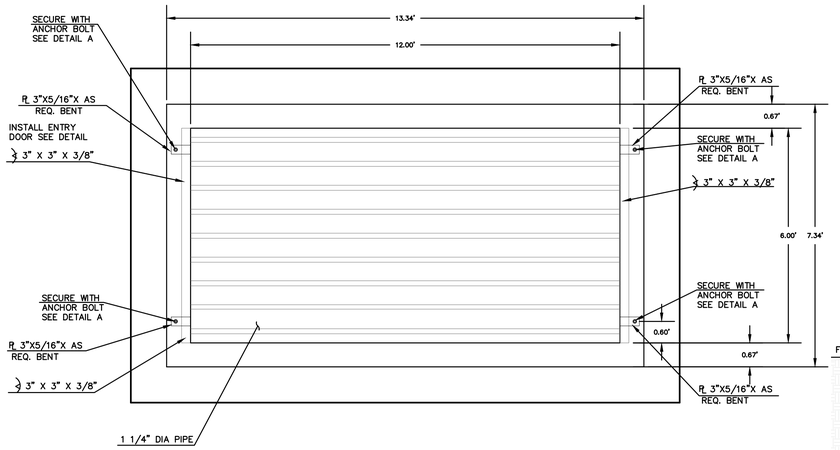
WATERBURY FILING NO. 1

CONSTRUCTION SET
POND 3 DETAILS

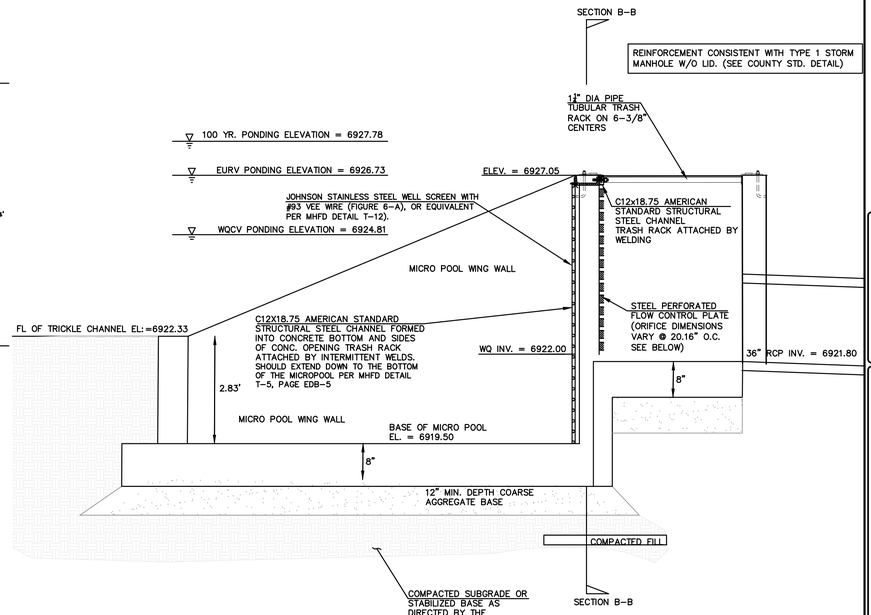
DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	AS SHOWN
V-SCALE	N/A
JOB NO.	2356.00
DATE ISSUED	12/22/22
SHEET NO.	48 OF 54





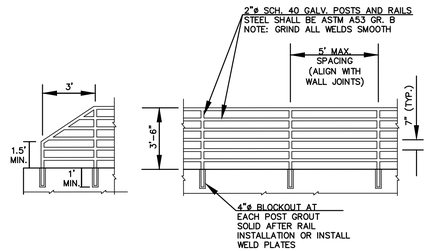
POND 3 GRATE PHASE 1 CONSTRUCTION

ALL WELDED CONSTRUCTION
SCALE: N.T.S.



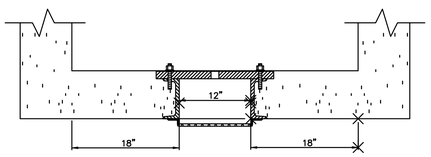
POND 3 OUTLET STRUCTURE MODIFIED TYPE 1 MH PHASE 1

SCALE: N.T.S.



NOTES:

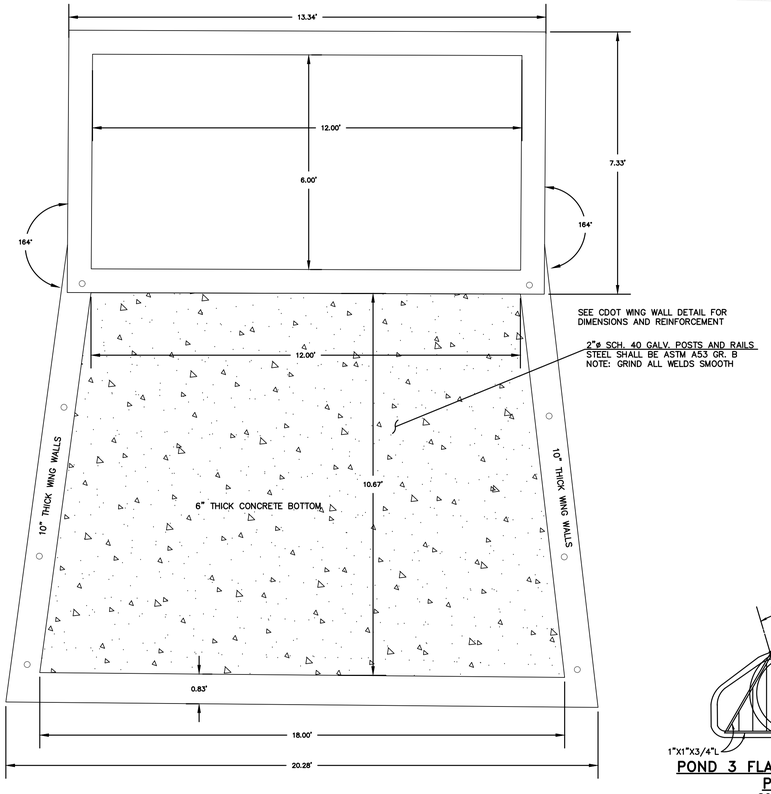
1. WELD PLATES MAY BE SUBSTITUTED FOR PIPE EMBEDDMENT.
2. CONTRACTOR SHALL SUBMIT HANDRAIL SHOP DRAWINGS TO ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION
3. DESIGN CRITERIA SHALL BE IN ACCORDANCE WITH AASHTO STANDARDS.
4. HANDRAIL DESIGN SHALL BE COMPATIBLE WITH THE DESIGN OF THE WINGWALLS AND 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'

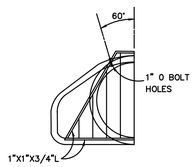
STEEL FABRICATION NOTES:

1. FABRICATED STEEL STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AISC AND AWS SPECIFICATIONS.
2. THE OUTLET STRUCTURE BARGRATE IS DESIGNED FOR A VERTICAL LOAD OF 300 LBS./SQ. FT.
3. 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.
4. 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. PRIOR TO PAINTING REMOVE ALL OIL, SCALE, AND SLAG, GRIND OFF BURRS AND SHARP EDGES.



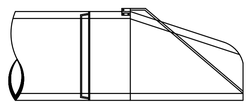
POND 3 CONCRETE MICROPOOL PHASE 1

SCALE: N.T.S.



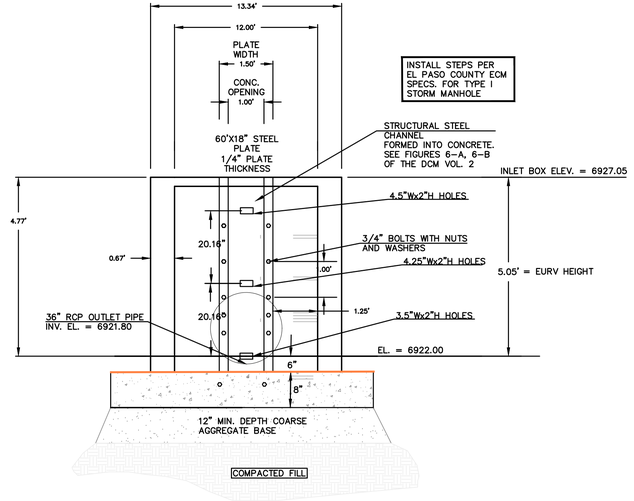
POND 3 FLARED END SECTION PHASE 1

SCALE: N.T.S.



POND 3 TRASH RACK PHASE 1 F.E.S. DETAIL

SCALE: N.T.S.



POND 3 OUTLET STRUCTURE MODIFIED TYPE 1 MH PHASE 1

SCALE: N.T.S.

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

QUENTIN ARMIJO
COLORADO P.E. NO. 37170

COLORADO LICENSED QUENTIN N ARMIJO 37170 10/13/24 PROFESSIONAL ENGINEER

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

CONSTRUCTION SET
POND 3 DETAILS

DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	AS SHOWN
V-SCALE	N/A
JOB NO.	2356.00
DATE ISSUED	12/22/23
SHEET NO.	49 OF 54

Riprap Materials

STEP 1 (Materials):

- Riprap should be crushed, angular granite.
- Verify that riprap meets requirements for color, size and gradation. Confirm size and gradations by checking delivery tickets and measure dimensions of the rock using a tape measure.
- Due to quarry availability and material variability, it may be necessary to adjust the size. Get approval from the Engineer before making any material adjustments.

The District has 5 different riprap sizes or gradations:

- Type VL (D50 6")
- Type L (D50 9")
- Type M (D50 12")
- Type H (D50 18")
- Type VH (D50 24")

Type VH Riprap (D50 = 24-inches)

Riprap Materials

Table 1: Riprap Gradation

Riprap Designation	% Smaller than Given Size by Weight	Intermmediate Rock Dimension (inches)	d_{50}* (inches)
Type VL	70 - 100 50 - 70 35 - 50 2 - 10	12 9 6 2	6
Type L	70 - 100 50 - 70 35 - 50 2 - 10	15 12 9 3	9
Type M	70 - 100 50 - 70 35 - 50 2 - 10	21 18 12 4	12
Type H	70 - 100 50 - 70 35 - 50 2 - 10	30 24 18 6	18
Type VH	70 - 100 50 - 70 35 - 50 2 - 10	41 33 24 9	24

*d_{50} - Mean Particle Size

Soil Riprap Mixing

STEP 2 (Soil Riprap Mixing):

- Soil riprap is created by mixing 2/3 riprap with 1/3 soil by volume. Soil material should be native or topsoil.
- Front end loaders or excavators should be used to scoop up the riprap and soil material and add into a combined mixing pile.
- Verify that the proper proportions of the riprap and soil are used.
- Verify that the materials are thoroughly mixed using a loader or large track excavator. The final product should consist of a uniform mixture of soil and riprap without voids.

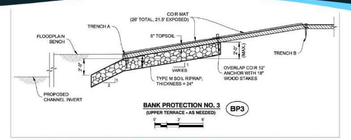
Soil riprap being mixed

Conventional/Soil Riprap Subgrade

STEP 3 (Subgrade):

Verify that the subgrade is prepared prior to riprap installation.

- Confirm that areas to receive riprap are excavated to a depth that accounts for the riprap thickness, topsoil and granular bedding thickness if specified.
- Subgrade should be firm and unyielding.
- There should be no groundwater present during riprap installation.



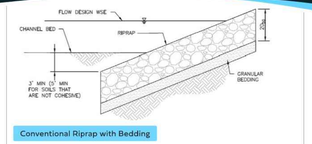
Excavated subgrade for riprap

Conventional/Soil Riprap Installation

STEP 4 (Bedding):

Granular bedding material is generally required under conventional riprap to prevent piping of underlying subgrade soils. It is not typically required for soil riprap. Verify that:

- Granular bedding is crushed, angular rock that meets gradation requirements.
- Granular bedding is placed at specified thickness.



Conventional Riprap with Bedding

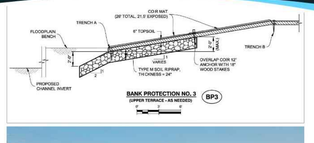
Granular Bedding

Conventional/Soil Riprap Installation

STEP 5 (Installation):

Riprap should be installed to the lines and grades shown on the plans. Verify that:

- Riprap is placed at thickness specified.
- Riprap is placed and well distributed such that there are no large accumulations of either smaller or larger sizes of stone. If segregation occurs during placement, riprap will need to be reworked to ensure that it is well mixed.
- Larger rock material is flush to the top surface and arranged to minimize voids with smaller rock material in between.



Soil riprap installation complete before topsoil placement

Conventional/Soil Riprap Installation

STEP 5 (Installation continued):

- Make sure that conventional and soil riprap is consolidated and compacted with an excavator bucket (plated) or a tracked piece of equipment to smooth the surface and interlock the rock material.
- For soil riprap, verify that there are no excessively thick zones or pockets of soil that could create a weak spot and be prone to washing out.

Conventional/Soil Riprap Installation

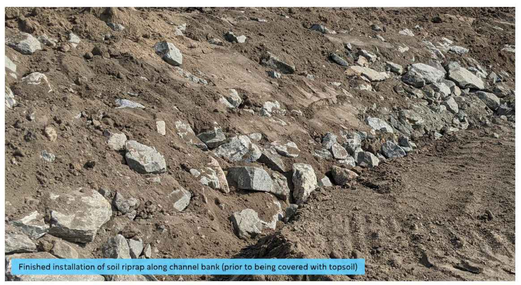
STEP 5 (Installation continued):

- Following placement, soil riprap is sometimes specified to be buried with several inches of topsoil.

Soil riprap installed and ready to be covered with topsoil

Finished Installation

After mixing, placing and compacting, soil riprap should be smooth on the surface and all the voids filled with soil.



Finished installation of soil riprap along channel bank (prior to being covered with topsoil)

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WATERBURY FILING NO. 1

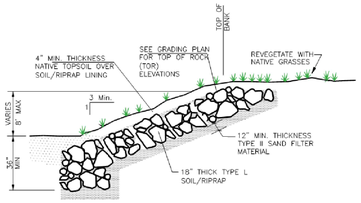
CONSTRUCTION SET
SOIL RIPRAP DETAILS

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

QUENTIN ARMIJO
COLORADO P.E. NO. 37170

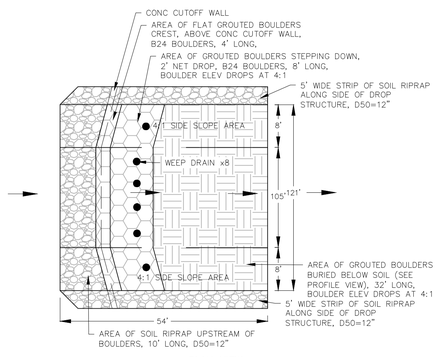
COLORADO LICENSED
QUENTIN N ARMIJO
37170
10/13/24
PROFESSIONAL ENGINEER

DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H-SCALE NA
V-SCALE N/A
JOB NO. 2356.00
DATE ISSUED 12/22/24
SHEET NO. 50 OF 54

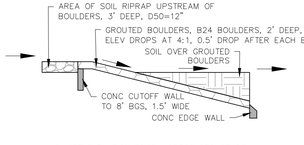


TYPICAL SOIL/RIPRAP BANK LINING

SCALE : N.T.S.



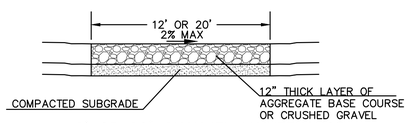
PLAN VIEW



PROFILE VIEW (CENTER LINE)

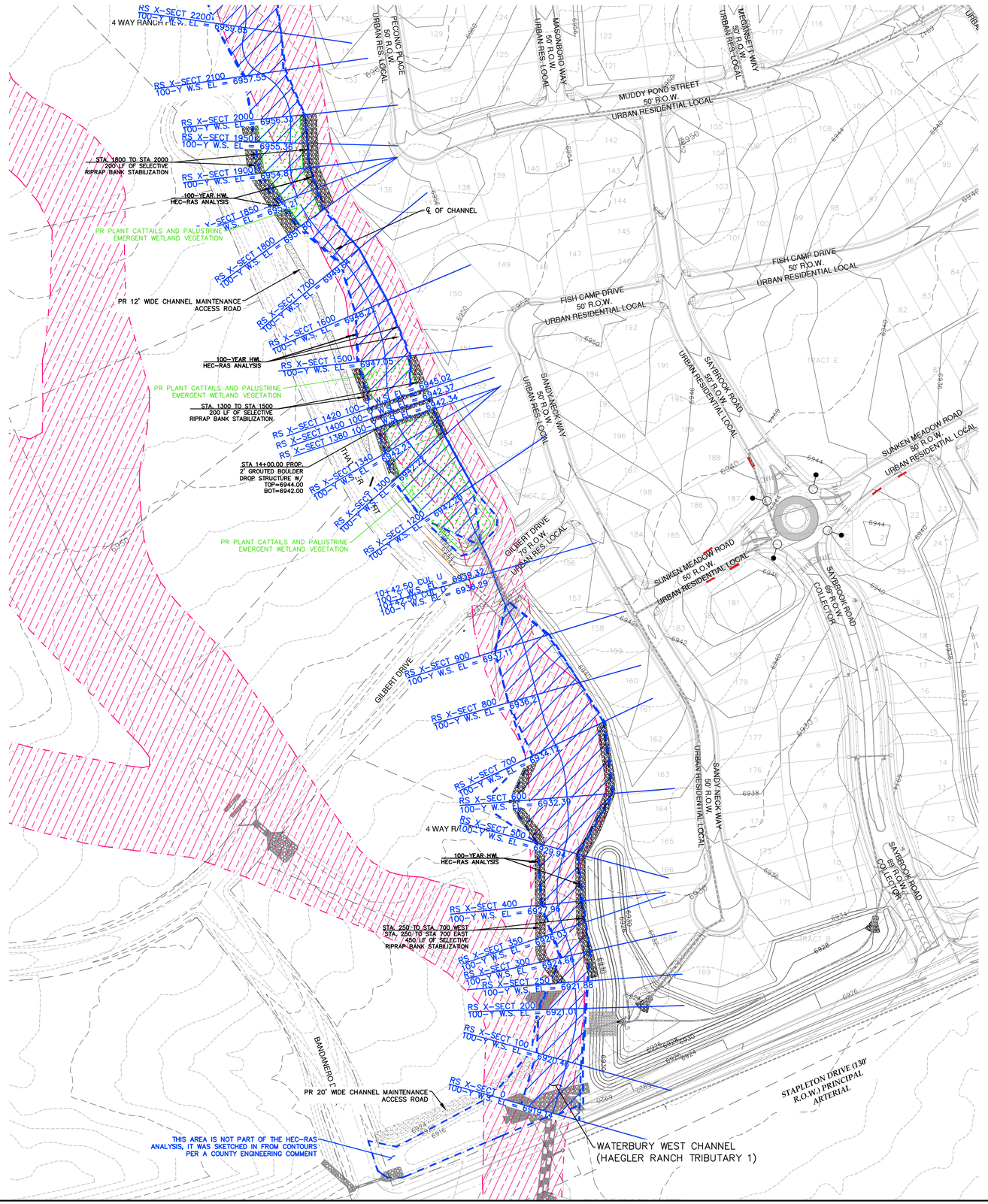
GROUTED BOULDER DROP STRUCTURE DETAIL

NOT TO SCALE



12' OR 20' CHANNEL MAINTENANCE ACCESS ROAD SECTION

SCALE: N.T.S.



SCALE: 1" = 100'

GENERAL NOTES

1. B24 BOULDERS ARE 24"ø MIN.

CONSTRUCTION REQUIREMENT NOTES

1. GROUT DEPTH RANGES FROM HALF TO FULL BOULDER HEIGHT. ALL GROUT SHALL BE A MINIMUM HALF BOULDER HEIGHT.
2. AN EDGE WALL IS REQUIRED AROUND THE ENTIRE DROP STRUCTURE.
3. THE MAX ALLOWABLE INDIVIDUAL DROP HEIGHT OFF A BOULDER IS 1.5' (0.5' USED IN DESIGN).

CHANNEL REVEGETATION SPECS (OUTSIDE WETLANDS)

SEED DISTURBED CHANNEL AREA PER COLORADO SPRINGS SCM 'TABLE 5-1 EL PASO COUNTY CONSERVATION DISTRICT ALL-PURPOSE MIX FOR UPLAND, TRANSITION AND PERMANENT CONTROL MEASURE AREAS' AND COLORADO SPRINGS DCM VOL 1 TABLE 14-10 'WILDFLOWER MIX'. SEED ALL DISTURBED.

LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR 6810
- PROPOSED CONTOUR 6810
- SUBDIVISION BOUNDARY
- CHANNEL FLOW LINE
- 100-Y FEMA FLOODPLAIN
- EXISTING 100-Y HWL PER HECRAS ANLYSIS
- PROPOSED 100-Y HWL PER HECRAS ANLYSIS
- PROPOSED RIPRAP
- PROPOSED PLANTING AREA

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

QUENTIN ARMIJO
COLORADO P.E. NO. 37170

COLORADO LICENSED QUENTIN N ARMIJO 37170 PROFESSIONAL ENGINEER 10/13/24

REVISIONS		
NO.	DESCRIPTION	DATE

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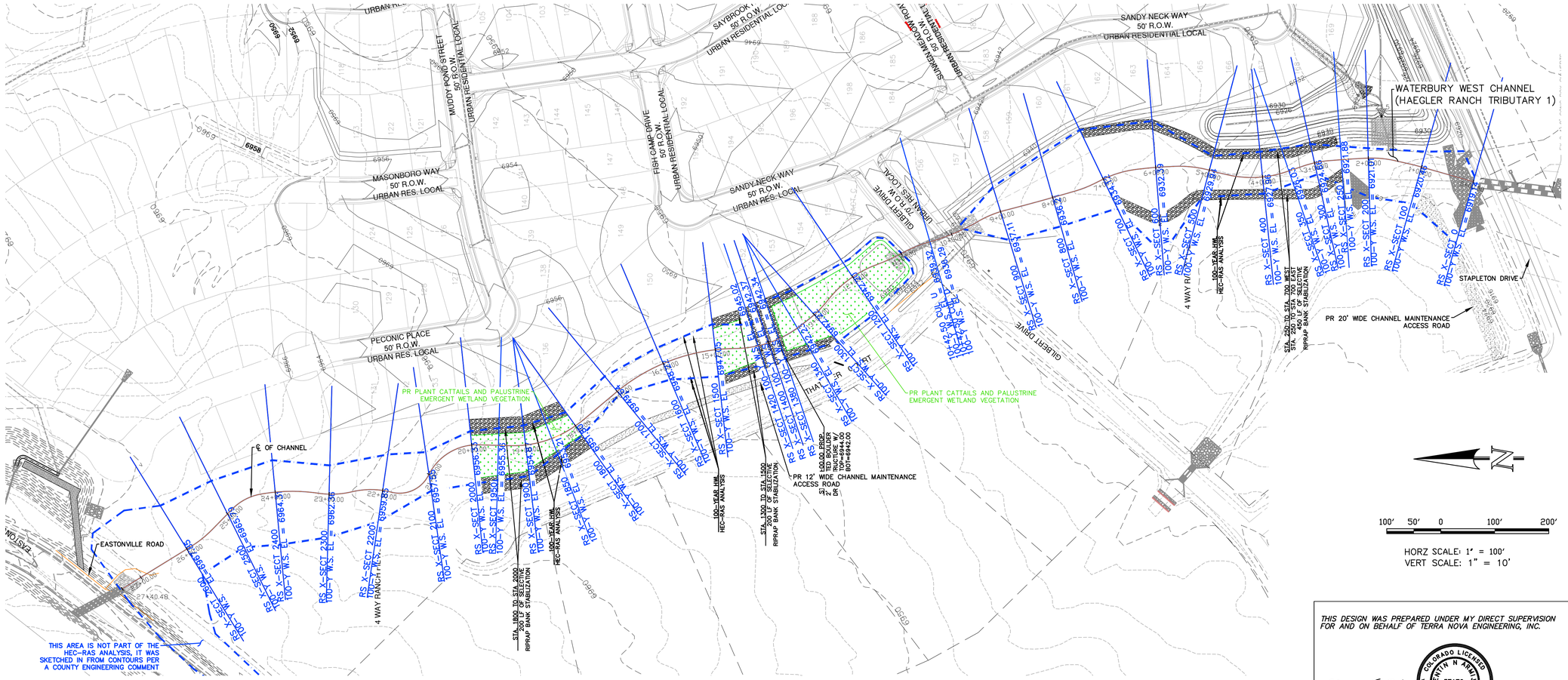
WATERBURY FILING NO. 1

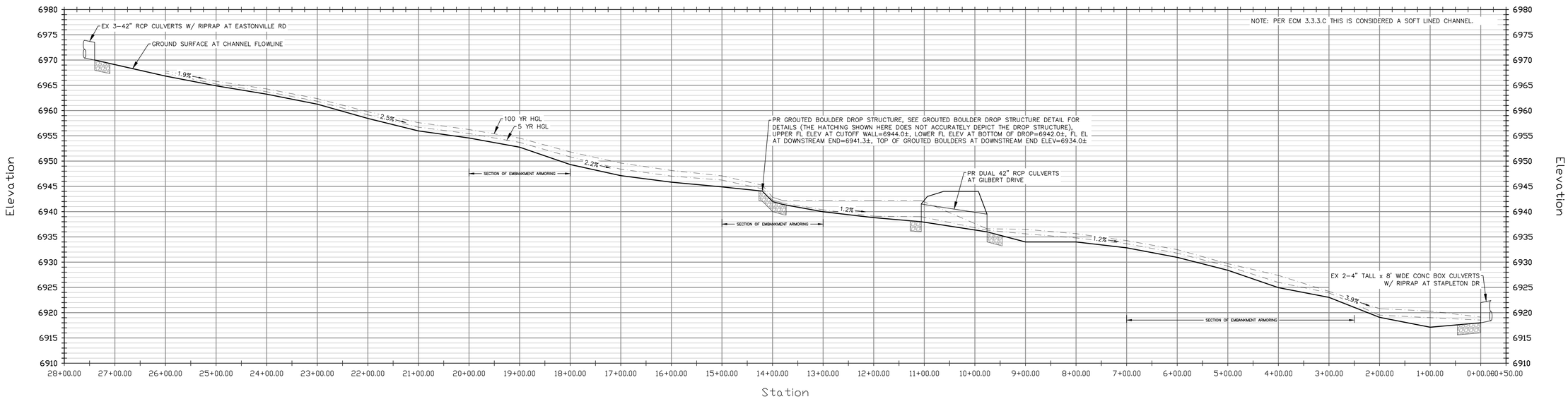
CONSTRUCTION SET
WEST CHANNEL - CHANNEL IMPROVEMENTS PLAN

DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	AS SHOWN
V-SCALE	N/A
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	51 OF 54



WATERBURY WEST CHANNEL (HAEGLER RANCH TRIBUTARY 1) PLAN & PROFILE VIEW

HORZ SCALE: 1"=100' – VERT SCALE: 1"=10'



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

COLORADO LICENSED
QUENTIN N ARMIJO
37170
10/13/24
PROFESSIONAL ENGINEER

QUENTIN ARMIJO
COLORADO P.E. NO. 37170

REVISIONS

NO.	DESCRIPTION	DATE

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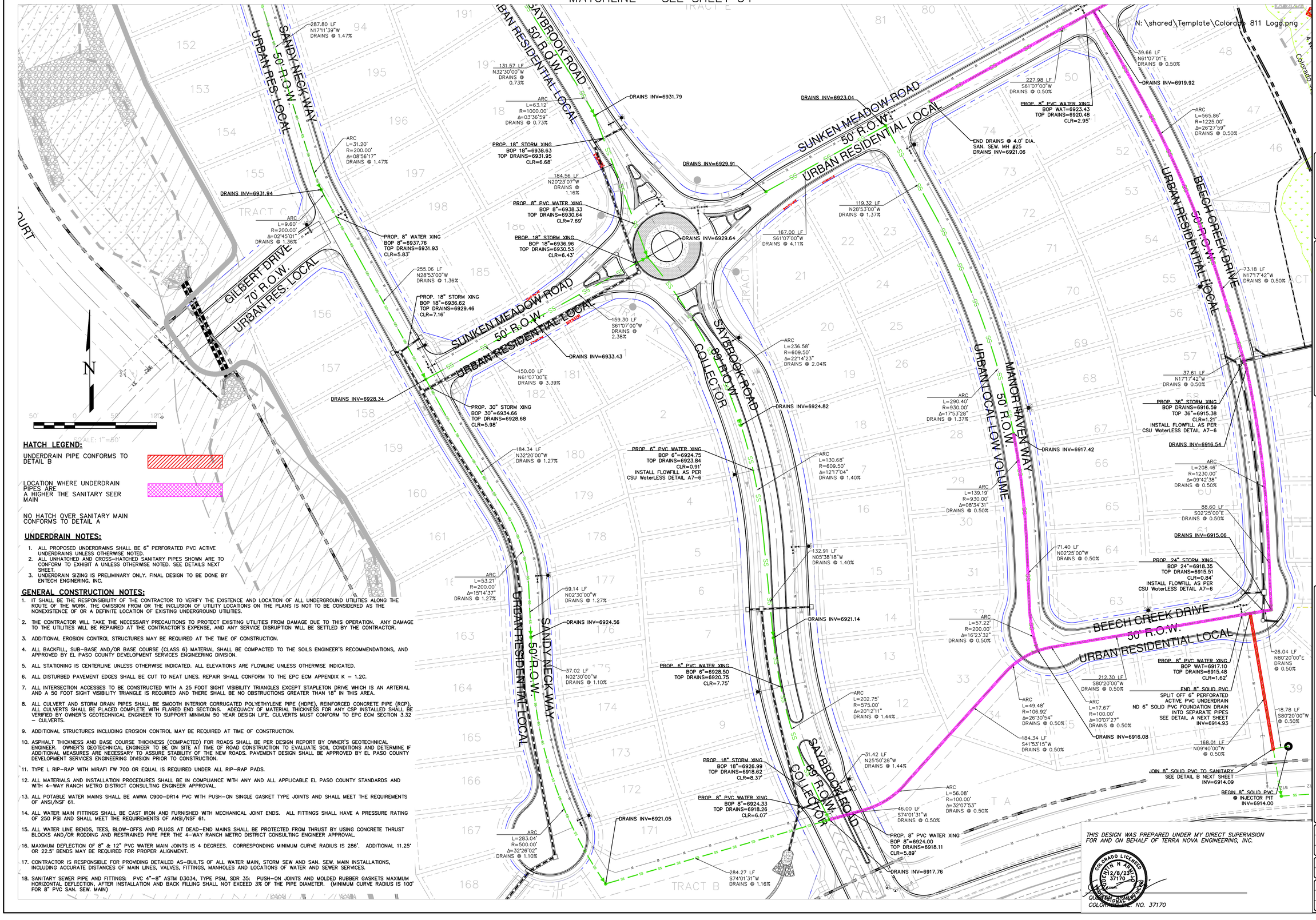
WATERBURY FILING NO. 1

CONSTRUCTION SET
WEST CHANNEL – PLAN AND PROFILE

DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	AS SHOWN
V-SCALE	AS SHOWN
JOB NO.	2356.00
DATE ISSUED	12/22/24
SHEET NO.	52 OF 54

MATCHLINE – SEE SHEET 54



HATCH LEGEND:

UNDERDRAIN PIPE CONFORMS TO DETAIL B

LOCATION WHERE UNDERDRAIN PIPES ARE A HIGHER THE SANITARY SEER MAIN

NO HATCH OVER SANITARY MAIN CONFORMS TO DETAIL A

UNDERDRAIN NOTES:

1. ALL PROPOSED UNDERDRAINS SHALL BE 6" PERFORATED PVC ACTIVE UNDERDRAINS UNLESS OTHERWISE NOTED.
2. ALL UNHATCHED AND CROSS-HATCHED SANITARY PIPES SHOWN ARE TO CONFORM TO EXHIBIT A UNLESS OTHERWISE NOTED. SEE DETAILS NEXT SHEET.
3. UNDERDRAIN SIZING IS PRELIMINARY ONLY. FINAL DESIGN TO BE DONE BY ENTECH ENGINEERING, INC.

GENERAL CONSTRUCTION NOTES:

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES.
2. THE CONTRACTOR WILL TAKE THE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES FROM DAMAGE DUE TO THIS OPERATION. ANY DAMAGE TO THE UTILITIES WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AND ANY SERVICE DISRUPTION WILL BE SETTLED BY THE CONTRACTOR.
3. ADDITIONAL EROSION CONTROL STRUCTURES MAY BE REQUIRED AT THE TIME OF CONSTRUCTION.
4. ALL BACKFILL, SUB-BASE AND/OR BASE COURSE (CLASS 6) MATERIAL SHALL BE COMPACTED TO THE SOILS ENGINEER'S RECOMMENDATIONS, AND APPROVED BY EL PASO COUNTY DEVELOPMENT SERVICES ENGINEERING DIVISION.
5. ALL STATIONING IS CENTERLINE UNLESS OTHERWISE INDICATED. ALL ELEVATIONS ARE FLOWLINE UNLESS OTHERWISE INDICATED.
6. ALL DISTURBED PAVEMENT EDGES SHALL BE CUT TO NEAT LINES. REPAIR SHALL CONFORM TO THE EPC ECM APPENDIX K – 1.2C.
7. ALL INTERSECTION ACCESSES TO BE CONSTRUCTED WITH A 25 FOOT SIGHT VISIBILITY TRIANGLES EXCEPT STAPLETON DRIVE WHICH IS AN ARTERIAL AND A 50 FOOT SIGHT VISIBILITY TRIANGLE IS REQUIRED AND THERE SHALL BE NO OBSTRUCTIONS GREATER THAN 18" IN THIS AREA.
8. ALL CULVERT AND STORM DRAIN PIPES SHALL BE SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE (HDPE), REINFORCED CONCRETE PIPE (RCP), ALL CULVERTS SHALL BE PLACED COMPLETE 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 SECTION 3.32 – CULVERTS.
9. ADDITIONAL STRUCTURES INCLUDING EROSION CONTROL MAY BE REQUIRED AT TIME OF CONSTRUCTION.
10. ASPHALT THICKNESS AND BASE COURSE THICKNESS (COMPACTED) FOR ROADS SHALL BE PER DESIGN REPORT BY OWNER'S GEOTECHNICAL ENGINEER. OWNER'S GEOTECHNICAL ENGINEER TO BE ON SITE AT TIME OF ROAD CONSTRUCTION TO EVALUATE SOIL CONDITIONS AND DETERMINE IF ADDITIONAL MEASURES ARE NECESSARY TO ASSURE STABILITY OF THE NEW ROADS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY DEVELOPMENT SERVICES ENGINEERING DIVISION PRIOR TO CONSTRUCTION.
11. TYPE L RIP-RAP WITH MIRAFI FW 700 OR EQUAL IS REQUIRED UNDER ALL RIP-RAP PADS.
12. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN COMPLIANCE WITH ANY AND ALL APPLICABLE EL PASO COUNTY STANDARDS AND WITH 4-WAY RANCH METRO DISTRICT CONSULTING ENGINEER APPROVAL.
13. ALL POTABLE WATER MAINS SHALL BE AWWA C900-DR14 PVC WITH PUSH-ON SINGLE GASKET TYPE JOINTS AND SHALL MEET THE REQUIREMENTS OF ANSI/NSF 61.
14. ALL WATER MAIN FITTINGS 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.
15. ALL WATER LINE BENDS, TEES, BLOW-OFFS AND PLUGS AT DEAD-END MAINS SHALL BE PROTECTED FROM THRUST BY USING CONCRETE THRUST BLOCKS AND/OR RODDING AND RESTRAINED PIPE PER THE 4-WAY RANCH METRO DISTRICT CONSULTING ENGINEER APPROVAL.
16. MAXIMUM DEFLECTION OF 8" & 12" PVC WATER MAIN JOINTS IS 4 DEGREES. CORRESPONDING MINIMUM CURVE RADIUS IS 286'. ADDITIONAL 11.25° OR 22.5° BENDS MAY BE REQUIRED FOR PROPER ALIGNMENT.
17. CONTRACTOR IS RESPONSIBLE FOR PROVIDING DETAILED AS-BUILTS OF ALL WATER MAIN, STORM SEW AND SAN. SEW. MAIN INSTALLATIONS, INCLUDING ACCURATE DISTANCES OF MAIN LINES, VALVES, FITTINGS, MANHOLES AND LOCATIONS OF WATER AND SEWER SERVICES.
18. SANITARY SEWER PIPE AND FITTINGS: PVC 4"-8" ASTM D3034, TYPE PSM, SDR 35: PUSH-ON JOINTS AND MOLDED RUBBER GASKETS MAXIMUM HORIZONTAL DEFLECTION, AFTER INSTALLATION AND BACK FILLING SHALL NOT EXCEED 3% OF THE PIPE DIAMETER. (MINIMUM CURVE RADIUS IS 100' FOR 8" PVC SAN. SEW. MAIN)

N:\shared\Template\Colorado 811 Logo.png

NO.	REVISIONS	DESCRIPTION	DATE

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WATERBURY FILING NO. 1

CONSTRUCTION SET
UNDERDRAIN PLAN
SOUTH

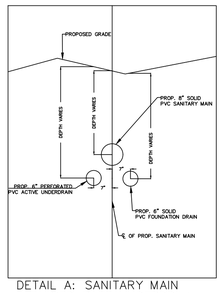
THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

COLORADO LICENSED
QUINTIN NAVA
12/8/23
37170
PROFESSIONAL ENGINEER

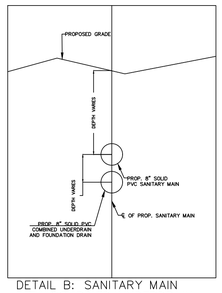
QUINTIN NAVA
COLORADO P.E. NO. 37170

DESIGNED BY	QNA
DRAWN BY	JS
CHECKED BY	QNA
H-SCALE	1"=50'
V-SCALE	N/A
JOB NO.	2356.00
DATE ISSUED	12/22/23
SHEET NO.	53 OF 54

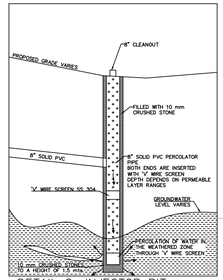
DWG: N:\2023\2356.00\Drawings\Civil\2356.00 SHEET 12/22/2023 8:15:12 AM



DETAIL A: SANITARY MAIN WITH SEPARATE UNDERDRAIN AND FOUNDATION DRAIN
N.T.S.



DETAIL B: SANITARY MAIN WITH COMBINED UNDERDRAIN AND FOUNDATION DRAIN
N.T.S.



DETAIL C: INJECTOR PIT
N.T.S.
DESIGN OF INJECTOR PIT IS A PLACEHOLDER ONLY. FINAL DESIGN TO BE DONE BY ENTECH ENGINEERING, INC.

HATCH LEGEND:

UNDERDRAIN PIPE CONFORMS TO DETAIL B

LOCATION WHERE UNDERDRAIN PIPES ARE A HIGHER THE SANITARY SEER MAIN

NO HATCH OVER SANITARY MAIN CONFORMS TO DETAIL A

N

50' 0 50' 100'

SCALE: 1"=50'

DRAINS INV=6950.01 PLUG & CAP BOTH PIPES
ARC L=17.79' R=500.00' Δ=02°02'19" DRAINS @ 2.70%
DRAINS INV=6949.53
PECONIC PLACE 50' R.O.W. URBAN RES-LOCAL
314.72 LF N08°54'30"W DRAINS @ 2.28%
ARC L=275.07' R=910.00' Δ=17°19'09" DRAINS @ 1.76%
DRAINS INV=6942.37
DRAINS INV=6944.36 PLUG & CAP BOTH PIPES
DRAINS INV=6943.87
13.00 LF N01°10'00"E DRAINS @ 3.77%
22.47 LF N01°10'00"E DRAINS @ 2.73%
ARC L=31.42' R=900.00' Δ=02°00'01" DRAINS @ 2.73%
MASONBORO WAY 50' R.O.W. URBAN RES-LOCAL
186.65 LF N07°50'00"W DRAINS @ 2.73%
222.06 LF S82°10'00"W DRAINS @ 1.59%
13.44 LF S81°55'22"W DRAINS @ 1.76%
DRAINS INV=6937.30
PROP. 18" STORM XING BOP 18"=6948.23 TOP DRAINS=6939.97 CLR=8.26'
DRAINS INV=6937.98
PROP. 18" STORM XING BOP 18"=6946.57 TOP DRAINS=6936.91 CLR=9.66'
MUDDY POND STREET 50' R.O.W. URBAN RESIDENTIAL LOCAL
234.10 LF N07°50'00"W DRAINS @ 1.44%
DRAINS INV=6936.64
299.20 LF S79°50'00"W DRAINS @ 0.88%
287.80 LF N17°11'39"W DRAINS @ 1.47%
DRAINS INV=6934.00
10.53 LF N10°10'00"W DRAINS @ 1.44%
ARC L=32.58' R=800.00' Δ=02°20'00" DRAINS @ 1.44%
241.22 LF S79°50'00"W DRAINS @ 3.61%
FISH CAMP DRIVE 50' R.O.W. URBAN RESIDENTIAL LOCAL
DRAINS INV=6935.53
29.23 LF N10°10'00"W DRAINS @ 0.73%
ARC L=77.96' R=200.00' Δ=22°20'02" DRAINS @ 0.73%
131.57 LF N32°30'00"W DRAINS @ 0.73%
PROP. 8" PVC WATER XING BOP 8"=6939.53 TOP DRAINS=6934.42 CLR=5.11'
DRAINS INV=6934.41 PLUG & CAP BOTH PIPES
DRAINS INV=6933.98
51.58 LF N01°45'00"E DRAINS @ 1.14%
13.00 LF N01°45'00"E DRAINS @ 3.31%
ARC L=55.62' R=200.00' Δ=15°56'02" DRAINS @ 1.14%
PROP. 24" STORM XING BOP 24"=6941.14 TOP DRAINS=6933.23 CLR=7.91'
PROP. 8" PVC WATER XING BOP 8"=6941.33 TOP DRAINS=6932.20 CLR=9.13'
MECHANSETT WAY 50' R.O.W. URBAN RES-LOCAL
103.03 LF N14°11'00"W DRAINS @ 1.14%
ARC L=138.54' R=1250.00' Δ=06°21'01" DRAINS @ 1.59%
DRAINS INV=6931.58
PROP. 30" STORM XING BOP 30"=6941.14 TOP DRAINS=6932.24 CLR=8.90'
PROP. 8" PVC WATER XING BOP 8"=6944.58 TOP DRAINS=6934.94 CLR=9.64'
DRAINS INV=6927.64 PLUG & CAP BOTH PIPES
ARC L=140.21' R=1250.00' Δ=06°25'36" DRAINS @ 0.50%
DRAINS INV=6926.94
PROP. 18" STORM XING BOP 18"=6935.81 TOP DRAINS=6928.48 CLR=7.33'
ARC L=434.15' R=1250.00' Δ=19°53'60" DRAINS @ 1.07%
PROP. 8" PVC WATER XING BOP 8"=6936.68 TOP DRAINS=6927.50 CLR=9.18'
FISH CAMP DRIVE 50' R.O.W. URBAN RESIDENTIAL LOCAL
165.87 LF N34°05'00"W DRAINS @ 1.40%
ARC L=41.04' R=500.00' Δ=04°42'10" DRAINS @ 0.50%
ARC L=90.58' R=500.00' Δ=10°22'47" DRAINS @ 1.40%
PROP. 30" STORM XING BOP 30"=6926.97 TOP DRAINS=6923.21 CLR=3.76'
DRAINS INV=6923.36
ARC L=27.38' R=100.00' Δ=15°41'15" DRAINS @ 0.50%
16.49 LF N19°00'00"W DRAINS @ 0.50%
PROP. 8" PVC WATER XING BOP WAT=6930.58 TOP DRAINS=6923.77 CLR=6.81'
37.08 LF N03°18'37"W DRAINS @ 0.50%
ARC L=41.73' R=100.00' Δ=23°54'34" DRAINS @ 0.50%
ARC L=49.79' R=200.00' Δ=14°15'50" DRAINS @ 0.50%
ARC L=39.24' R=100.00' Δ=22°28'58" DRAINS @ 0.50%
207.16 LF S60°50'00"W DRAINS @ 0.50%
DRAINS INV=6922.75
ARC L=32.86' R=300.00' Δ=06°16'33" DRAINS @ 0.50%
DRAINS INV=6924.41
ARC L=66.62' R=300.00' Δ=12°43'25" DRAINS @ 3.61%
109.73 LF N58°52'15"W DRAINS @ 0.50%
ARC L=76.54' R=100.00' Δ=43°51'15" DRAINS @ 0.50%
PROP. 12" STORM XING BOP 12"=6925.31 TOP DRAINS=6922.27 CLR=3.04'
PROP. 12" STORM XING BOP FD=6928.08 TOP 12"=6925.48 BOP 12"=6924.48 TOP UD=6921.50 CLR=2.60'
PROP. 8" PVC WATER XING BOP DRAINS=6920.90 TOP WAT=6920.00 CLR=0.90' INSTALL FLOWFILL AS PER CSU WaterLESS DETAIL A7-6
156.55 LF N15°01'06"W DRAINS @ 0.50%
ARC L=145.19' R=600.00' Δ=13°51'53" UD @ 0.50% FD @ 0.50%
DRAINS INV=6920.84
39.66 LF N61°07'01"E UD @ 0.50% FD @ 0.50%
TRACT G
TRACT H
TRACT F

4 WAY RANCH JOINT V
P.O. Box 502
Colorado Springs,

MATCHLINE – SEE SHEET 53

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

COLORADO LICENSED QUENTIN N RAU 37170 12/8/23 PROFESSIONAL ENGINEER

QUENTIN N. RAU, 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:
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(303) 984-9800

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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
UNDERDRAIN PLAN
NORTH

DESIGNED BY QNA
DRAWN BY JS
CHECKED BY QNA
H-SCALE 1"=50'
V-SCALE N/A
JOB NO. 2356.00
DATE ISSUED 12/22/23
SHEET NO. 54 OF 54