SAND CREEK RESTORATION

A PORTION OF SAND CREEK CHANNEL STERLING RANCH

LOCATED IN SECTIONS 33, 28, TOWNSHIP 12S, RANGE 65W OF THE 6TH PRINCIPAL MERIDIAN

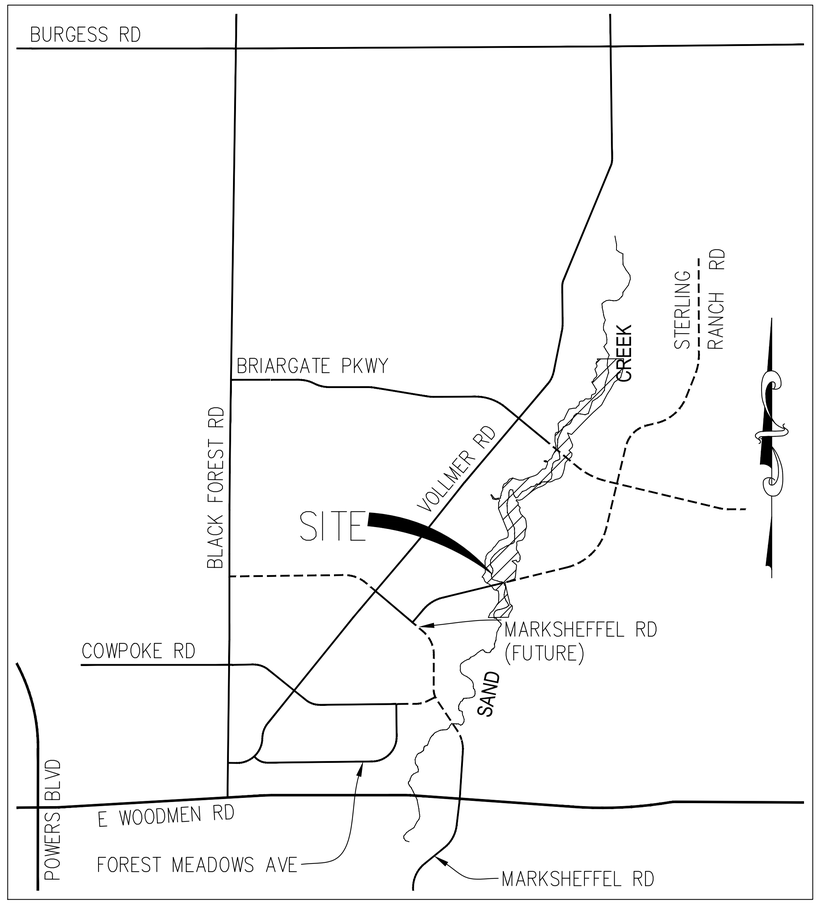
COUNTY OF EL PASO, STATE OF COLORADO

PCD PROJECT NUMBER: CDR-20-004

PUBLIC IMPROVEMENT CONSTRUCTION PLANS

AGENCIES

OWNER/DEVELOPER:	SR LAND, LLC 20 BOULDER CRESCENT, SUITE 201 COLORADO SPRINGS, CO 80903 JAMES F. MORLEY (719) 471–1742
CIVIL ENGINEER:	JR ENGINEERING, LLC 5475 TECH CENTER DRIVE COLORADO SPRINGS, CO 80919 MIKE BRAMLETT P.E. (303) 267–6240
COUNTY ENGINEERING:	EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910 JEFF RICE, P.E. (719) 520–6300
WATER RESOURCES:	STERLING RANCH METRO DISTRICT ENGINEERS JDS–HYDRO CONSULTANTS 545 E. PIKES PEAK AVE., SUITE 300 COLORADO SPRINGS, CO 80903 JOHN MCGINN (719) 668–8769
FIRE DISTRICT:	BLACK FOREST FIRE PROTECTION DISTRICT 11445 TEACHOUT ROAD COLORADO SPRINGS, CO 80908 CHIEF BRYAN JACK (719) 495–4300
GAS DEPARTMENT:	COLORADO SPRINGS UTILITIES 7710 DURANT DR. COLORADO SPRINGS, CO 80947 TIM WENDT (719) 668–3556
ELECTRIC DEPARTMENT:	MOUNTAIN VIEW ELECTRIC 11140 E. WOODMEN ROAD FALCON, CO 80831 (719) 495–2283
COMMUNICATIONS:	QWEST COMMUNICATIONS (U.N.C.C. LOCATORS) (800) 922–1987 AT&T (LOCATORS) (719) 635–3674
COMMUNICATIONS:	QWEST COMMUNICATIONS (U.N.C.C LOCATORS) (800) 922–1987 AT&T (LOCATORS) (719) 635–3674
GAS:	STEPHEN BACON SR. ROW AGENT II COLORADO INTERSTATE GAS CO. (KINDER MORGAN) 2 N. NEVADA AVE. COLORADO SPRINGS, CO 80903 719–659–5936
GAS:	CRAIG KEIRSEY REAL ESTATE | MAGELLAN MIDSTREAM PARTNERS, L.P. ONE WILLIAMS CENTER, OTC–8, TULSA, OK 74172 918–574–7986



VICINITY MAP
1" = 1000'

PCD PROJECT NUMBER: CDR–20–004

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2–1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2–1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

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146	TOTAL SHEETS	

EL PASO COUNTY STATEMENT

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTORS DISCRETION.

JOSHUA PALMER, P.E. — DATE

COUNTY ENGINEER/ECM ADMINISTRATOR

OWNER/DEVELOPER STATEMENT

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

12/20/24

JAMES F. MORLEY — DATE

SR LAND, LLC
20 BOULDER CRESCENT, SUITE 201
COLORADO SPRINGS, CO 80903

ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.

COLORADO REGISTERED PROFESSIONAL ENGINEER 25043

12/20/24

BRYAN T. LAW, P.E. — DATE
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

811 Know what's below. Call before you dig.

DISTRICT APPROVALS

THESE DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR STORM DRAIN AND ASSOCIATED UTILITY SERVICE CONSTRUCTION.

12/20/24

FOR AND ON BEHALF OF THE STERLING RANCH METRO DISTRICT NO.3 — DATE

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

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419–3024

J·R ENGINEERING
A Westrian Company
Centennial 303–740–9393 • Colorado Springs 719–593–2593
Fort Collins 970–491–9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H–SCALE	N/A
V–SCALE	N/A
DATE	12/20/24
DESIGNED BY	SCH
DRAWN BY	SCH
CHECKED BY	

SAND CREEK RESTORATION

COVER SHEET

SHEET 1 OF 121

JOB NO. 25188.04

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GENERAL/ CONSTRUCTION NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN COMPLIANCE WITH EL PASO COUNTY ENGINEERING CRITERIA MANUAL AND EL PASO COUNTY DRAINAGE CRITERIA MANUAL.

2. 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. ANY DAMAGE TO THE UTILITIES WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AND ANY SERVICE DISRUPTION WILL BE SETTLED BY THE CONTRACTOR.

3. CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
   - 3.1. EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
   - 3.2. CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL VOLUMES 1&2

4. THE CONTRACTOR WILL HOLD A PRE-CONSTRUCTION MEETING WITH THE EL PASO COUNTY ENGINEERING DEPARTMENT REPRESENTATIVE AND THE ENGINEER PRIOR TO CONSTRUCTION OF PUBLIC IMPROVEMENTS.

5. 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.

6. IT IS THE CONTRACTOR'S 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, REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.

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

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

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

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

11. THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY.

12. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE ENGINEER OR APPLICABLE ENTITY.

13. EL PASO COUNTY SHALL BE NOTIFIED 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

14. ALL WORK SHALL BE DONE TO THE LINES, GRADES, SECTIONS, AND ELEVATIONS SHOWN ON THE PLANS UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER.

15. ALL RANGE POINTS, TIES, BENCH MARKS, AND OTHER SURVEY CONTROL POINTS WHICH MAY BE ENCOUNTERED DURING CONSTRUCTION MUST BE PRESERVED.

16. THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND/OR TOES OF SLOPE AS SHOWN ON THE PLANS AND CROSS SECTIONS. ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITIONS AT THE CONTRACTOR'S EXPENSE. CONSTRUCTION ACTIVITIES, IN ADDITION TO NORMAL CONSTRUCTION PROCEDURES, SHALL INCLUDE THE PARKING OF VEHICLES OR EQUIPMENT, DISPOSAL OF LITTER AND ANY OTHER ACTION WHICH WOULD ALTER EXISTING CONDITIONS AS APPROVED.

17. CONSTRUCTION ACTIVITY SHALL BE SCHEDULED WITH MINIMUM IMPACT TO PEDESTRIAN AND VEHICULAR TRAFFIC. ALLOWABLE WORK HOURS SHALL BE AS SPECIFIED IN THE PROJECT SPECIAL PROVISIONS.

18. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL UTILITIES AND STRUCTURES AFFECTED BY THE WORK AND ANY DAMAGE SHALL BE REPAIRED AND RESTORED TO THE SATISFACTION OF THE ENGINEER OR APPLICABLE ENTITY.

19. THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN TEMPORARY TRAFFIC CONTROL DEVICES NECESSARY THROUGHOUT THE DURATION OF CONSTRUCTION IN CONFORMANCE WITH TRAFFIC CONTROL PLANS. NO LANE CLOSURES WILL BE PERMITTED UNLESS OTHERWISE SPECIFIED IN THE PROJECT SPECIAL PROVISION "TRAFFIC CONTROL".

20. THE CONTRACTOR SHALL MAINTAIN PAVEMENT MARKINGS ON THE ROADWAYS DURING ALL PHASES OF CONSTRUCTION IN ACCORDANCE WITH MUTCD AND CDOT STANDARDS.

21. WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. LOCATIONS SHALL BE AS ORDERED. WATER WILL NOT BE PAID FOR SEPARATELY.

22. THE CONTRACTOR SHALL OBTAIN A STATE CONSTRUCTION DEWATERING DISCHARGE PERMIT FOR DISCHARGES TO ANY ROADWAY DITCHES, STORM SEWER, CHANNEL, IRRIGATION DITCH, ANY STREAM THAT IS TRIBUTARY TO THE AFOREMENTIONED FACILITIES, OR ANY WATERS OF THE UNITED STATES.

23. DEWATERING OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 107 OF THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

24. CONTRACTOR SHALL NOTIFY ALL BUSINESSES AND RESIDENTS, IN WRITING, PRIOR TO ANY INTERRUPTION IN UTILITY SERVICE. NOTICE MUST BEAR ALL APPROPRIATE CONTACT INFORMATION, AND AN EMERGENCY NUMBER FOR AFTER HOURS CALLS.

25. AT THE COMPLETION OF CONSTRUCTION AND PRIOR TO PROJECT CLOSEOUT, THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF PLANS MARKED "AS-BUILT". THE PLANS SHALL SHOW ANY AND ALL VARIATIONS FROM THE APPROVED PLAN SET.

26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SITE SPECIFIC STAGING PLAN FOR ACCESS TO THE WORK AREAS AND FIELD FACILITIES TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION. ALL COSTS ASSOCIATED WITH THE CONSTRUCTION OF TEMPORARY INGRESS/EGRESS SHALL BE PAID FOR UNDER THE LUMP SUM TRAFFIC CONTROL. EARTHWORK, DRAINAGE, AND OTHER ITEMS RELATED TO THE ACCESS SHALL BE SUBSIDIARY TO THE WORK INCLUDING EROSION CONTROL MEASURES FOR RESTORATION OF THE SITE TO ORIGINAL CONDITION.

27. THE CONTRACTOR SHALL PROTECT EXISTING WETLANDS WITH TEMPORARY FENCING BEFORE ANY GROUND DISTURBANCE BEGINS. WETLANDS AREAS TO BE PROTECTED ARE SHOWN ON THE PLANS.

28. ALL INFRASTRUCTURE WITHIN THE PROJECT IS PRIVATELY OWNED AND MAINTAINED BY STERLING RANCH METRO DISTRICT (SRMD) UNLESS LABELED OTHERWISE, OR CHANGED BY AN UPDATED CHANNEL MAINTENANCE AGREEMENT SIGNED BY BOTH SRMD AND EL PASO COUNTY.

GRADING NOTES:

1. SAND CREEK IS AN ACTIVE MAJOR DRAINAGEWAY WITH PERENNIAL BASE FLOWS. CONTRACTOR SHALL ANTICIPATE STORMWATER INFLOWS TO THE SITE DURING CONSTRUCTION AND PROVIDE A MEANS OF CONVEYANCE/REMOVAL OF ANY CONTINUOUS INFLOWS.

2. THERE IS A LIKELIHOOD FOR LARGE FLOW EVENTS IN SAND CREEK WHICH COULD JEOPARDIZE CONSTRUCTION. THE LIKELIHOOD OF THESE EVENTS CHANGES WITH THE SEASONS. THE CONTRACTOR SHOULD ACCOUNT FOR THE EVENTUALITY OF THESE LARGE FLOW EVENTS BASED ON THE TIMING OF CONSTRUCTION.

3. DEWATERING.
   - 3.a. DEWATERING/BYPASS PUMPING OF SAND CREEK SHALL OCCUR IN ADVANCE OF CONSTRUCTION ACTIVITIES.
   - 3.b. THE CONTRACTOR SHALL OBTAIN A CONSTRUCTION DEWATERING (CDW) PERMIT FROM CDPHE ANYTIME GROUNDWATER, INCLUDING GROUNDWATER THAT IS COMMINGLED WITH STORMWATER OR SURFACE WATER, IS ENCOUNTERED DURING CONSTRUCTION ACTIVITIES AND THE GROUNDWATER OR COMMINGLED WATER NEEDS TO BE DISCHARGED TO SURFACE WATER.
   - 3.c. WATER FROM DEWATERING OPERATIONS SHALL ONLY BE DISCHARGED INTO STATE WATERS IF ALLOWED BY A PERMIT.

4. MUCK EXCAVATION IS NOT ANTICIPATED FOR THIS PROJECT. IF ENCOUNTERED, CONTRACTOR SHALL REMOVE UNSUITABLE ORGANIC MATERIAL TO THE DEPTH AS DETERMINED BY THE ENGINEER AND REPLACE THE EXCAVATED VOLUME WITH SUITABLE APPROVED FILL MATERIAL PRIOR TO CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.

5. THE MAXIMUM SLOPE FOR EXCAVATION AND PLACEMENT OF FILL IS 4:1 HORIZONTAL:VERTICAL, UNLESS OTHERWISE SHOWN IN THE PLANS.

6. THE EXISTING DROP STRUCTURE, ANY ASSOCIATED FEATURES, AND DEBRIS SHOULD BE REMOVED FROM THE PROPOSED CONSTRUCTION AREA. EXPOSED SURFACES SHOULD BE FREE OF MOUNDS AND DEPRESSIONS WHICH COULD PREVENT UNIFORM COMPACTION.

7. EXPOSED AREAS WHICH WILL RECEIVE FILL, ONCE PROPERLY CLEARED WHERE NECESSARY, SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF 8 INCHES, CONDITIONED TO NEAR OPTIMUM WATER CONTENT, AND COMPACTED.

8. A GEOTECHNICAL ENGINEER SHALL BE PRESENT FOR OVER-EXCAVATION AND FILL OPERATIONS.

9. THE EARTHWORK EFFORTS SHOULD BE MONITORED UNDER THE DIRECTION OF THE GEOTECHNICAL ENGINEER. MONITORING SHOULD INCLUDE DOCUMENTATION OF ADEQUATE REMOVAL OF VEGETATION AND TOP SOIL, PROOF-ROLLING AND MITIGATION OF AREAS DELINEATED BY THE PROOF-ROLL TO REQUIRE MITIGATION.

10. EACH LIFT OF COMPACTED FILL SHOULD BE TESTED, EVALUATED, AND REWORKED AS NECESSARY UNTIL APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF ADDITIONAL LIFTS. EACH LIFT OF FILL SHOULD BE TESTED FOR DENSITY AND WATER CONTENT AT A FREQUENCY OF AT LEAST ONE TEST FOR EVERY 2,500 SQUARE FEET OF COMPACTED FILL PLACED BENEATH THE DROP STRUCTURE, OR WITHIN CONSTRUCTED SLOPES.

11. IN AREAS OF FOUNDATION EXCAVATIONS, THE BEARING SUBGRADE SHOULD BE EVALUATED UNDER THE DIRECTION OF THE GEOTECHNICAL ENGINEER. IN THE EVENT UNANTICIPATED CONDITIONS ARE ENCOUNTERED, THE GEOTECHNICAL ENGINEER SHOULD PRESCRIBE MITIGATION OPTIONS.

12. THE ON-SITE SOILS ARE GENERALLY CONSIDERED SUITABLE FOR REUSE AS STRUCTURAL AND/OR GENERAL FILL. IMPORTED SOILS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF AS DIRECTED. PARTIAL REMOVAL OF THE FILL SOILS SHOULD INCLUDE OVER-EXCAVATING A MINIMUM OF 4 FEET OF THE FILL SOILS, PROCESSING AS REQUIRED, MOISTURE CONDITIONING, AND RECOMPACTING AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

13. THE FILL SHALL BE PLACED IN THIN, LOOSE LIFTS OF 8 INCHES OR LESS (WHEN HEAVY SELF-PROPELLED COMPACTION EQUIPMENT IS USED) OR 4-6 INCHES (WHEN HAND-GUIDED EQUIPMENT IS USED). WATER CONTENT SHALL BE WITHIN 3 PERCENT OF OPTIMUM. FILL IS TO BE COMPACTED TO A MINIMUM OF:
   - 13.a. WITHIN 10 FEET OF STRUCTURES, OR IN CONSTRUCTED SLOPES: 95 PERCENT OF MAXIMUM DRY DENSITY
   - 13.b. GENERAL FILL OUTSIDE OF STRUCTURAL AREAS: 90 PERCENT OF MAXIMUM DRY DENSITY

14. A COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE) WATER QUALITY DIVISION STORMWATER DISCHARGE PERMIT SHALL BE OBTAINED AND A COPY SHALL BE SUBMITTED TO EL PASO COUNTY.

15. PROPOSED SPOT ELEVATIONS REFLECT MEAN FINISHED GROUND GRADES IRRESPECTIVE OF VARIATIONS DUE TO PROPOSED GROUT, BOULDER, AND RIPRAP.

16. EXISTING GRADES REFLECT CHANNEL CONDITIONS AS OF AUGUST 1, 2017. CHANNEL SCOUR MAY AFFECT SHOWN ELEVATIONS.

17. TOPSOIL SHALL BE STOCKPILED TO THE EXTENT PRACTICAL ON THE SITE FOR USE ON AREAS TO BE REVEGETATED. ANY AND ALL STOCKPILES SHALL BE LOCATED AND PROTECTED FROM EROSIVE ELEMENTS. THE MINIMUM THICKNESS OF TOPSOIL SHALL BE 4" AND SHALL BE OBTAINED BY STOCKPILING EXISTING TOPSOIL. THE TOPSOIL SHALL BE APPLIED TO ALL SURFACES REQUIRING SEEDING OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL DISPOSE OF EXCESS TOPSOIL IN A DESIGNATED AREA ON SITE.

ABBREVIATIONS

AC	ACRE
AD	ALGEBRAIC DIFFERENCE
AH	AHEAD
ARCH	ARCHITECT
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASS'Y	ASSEMBLY
AVE	AVENUE
BB	BOX BASE
BK	BACK
BNDY	BOUNDARY
BOP	BOTTOM OF PIPE
BOV	BLOW OFF VALVE
BFV	BUTTERFLY VALVE
BLVD	BOULEVARD
BW	BOTTOM OF WALL
C&G	CURB & GUTTER
CATV	CABLE TELEVISION
CB	CATCH BASIN
CBC	CONCRETE BOX CULVERT
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION
CDS	CUL-DE-SAC
CF	CUBIC FOOT
CFS	CUBIC FEET PER SECOND
CIP	COMPLETE IN PLACE
CL	CENTER LINE
CLOMR	CONDITIONAL LETTER OF MAP REVISION
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
COCS	CITY OF COLORADO SPRINGS
CONC	CONCRETE
CR	CIRCLE
CSP	CORRUGATED STEEL PIPE
CSU	COLORADO SPRINGS UTILITIES
CT	COURT
CTRB	CONCRETE THRUST REDUCER BLOCK
CY	CUBIC YARD
DBPS	DRAINAGE BASIN PLANNING STUDY
DE	DRAINAGE EASEMENT
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DR	DRIVE
DRC	DESIGN REVIEW COMMITTEE
DU	DWELLING UNITS
DY	DAY
E	EAST
EA	EACH
EGL	ENERGY GRADE LINE
EL	ELEVATION
ELEC	ELECTRIC
EOA	EDGE OF ASPHALT
EPC	EL PASO COUNTY
ERCP	ELLIPTICAL RCP
ESMT	EASEMENT
EST	ESTIMATE
EX	EXISTING
FDP	FINAL DEVELOPMENT PLAN
FDR	FINAL DRAINAGE REPORT
FES	FLARED END SECTION
FF	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLOWLINE
FIL	FILING
FO	FIBER OPTIC CABLE
GB	GRADE BREAK
GE	GAS EASEMENT
GIS	GEOGRAPHIC INFORMATION SYSTEM
GL	GAS LINE
GPS	GLOBAL POSITIONING SYSTEM
GV	GATE VALVE
HBP	HOT BITUMINOUS PAVEMENT
HC	HANDICAP
HDC	HIGH DEFLECTION COUPLING
HDPE	HIGH DENSITY POLYETHYLENE
HGL	HYDRAULIC GRADE LINE
HMA	HOT MIX ASPHALT
HOA	HOME OWNERS ASSOCIATION
HP	HIGH POINT
HR	HOUR
I	INLET
IE	IRRIGATION EASEMENT
INT	INTERSECTION
INV	INVERT
IRR	IRRIGATION
KB	KICK (THRUST) BLOCK
LB	POUND
LE	LANDSCAPE EASEMENT
LF	LINEAR FOOT
LN	LANE
LOMR	LETTER OF MAP REVISION
LP	LOW POINT
LS	LUMP SUM
LT	LEFT
MAX	MAXIMUM
M/D	MOISTURE DENSITY
MDDP	MASTER DEVELOPMENT DRAINAGE PLAN
MH	MANHOLE
MIN	MINIMUM
MS	MOUNTABLE SIDEWALK
N	NORTH
NRCP	NON-REINFORCED CONCRETE PIPE
ODP	OFFICIAL DEVELOPMENT PLAN
OHE	OVERHEAD ELECTRIC
OHU	OVERHEAD UTILITY
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCR	POINT OF CURB RETURN
PDP	PRELIMINARY DEVELOPMENT PLAN
PE	PROFESSIONAL ENGINEER
PI	POINT OF INTERSECTION
PKWY	PARKWAY
PL	PROPERTY LINE
PR	PROPOSED
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCBC	REINFORCED CONCRETE BOX CULVERT
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
ROW	RIGHT OF WAY
RT	RIGHT
S	SOUTH
STE	STEEL
SAN	SANITARY SEWER
SF	SQUARE FOOT
ST	STREET
STA	STATION
STM	STORM SEWER
SY	SQUARE YARD
SY-IN	SQUARE YARD INCH
TB	THRUST BLOCK
TBC	TOP BACK OF CURB
TBW	TOP BACK OF WALK
TEL	TELEPHONE
TN	TON
TOA	TOP OF ASPHALT
TOB	TOP OF BOX
TOC	TOP OF CURB OR CONCRETE
TOF	TOP OF FOUNDATION
TOP	TOP OF PIPE
TW	TOP OF WALL
TYP	TYPICAL
UDFCD	URBAN DRAINAGE AND FLOOD CONTROL DISTRICT
UE	UTILITY EASEMENT
U&DE	UTILITY & DRAINAGE EASEMENT
UGE	UNDERGROUND ELECTRIC
VCP	VITRIFIED CLAY PIPE
VPC	VERTICAL POINT OF CURVATURE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENCY
VTC	VEHICLE TRACKING CONTROL
W	WEST
WL	WATER LINE
WM	WATER MAIN
WRD	WATER RESOURCES DEPARTMENT
WS	WATER SURFACE
WSE	WATER SURFACE ELEVATION
WTR	WATER
YR	YEAR

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS:

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

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

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

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

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

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

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

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

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

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

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

12. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH OR FROM THE EARTH DISTURBANCE AREA SHALL BE 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, UNCONTAMINATED GROUNDWATER MAY BE DISCHARGED ON-SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.

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

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

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

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

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

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

21. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ON-SITE 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 ON-SITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.

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

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

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

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

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

28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY ENTECH ENGINEERING INC, JULY 2020 AND SHALL BE CONSIDERED A PART OF THESE PLANS.

29. AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE (1) ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:
    COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
    WATER QUALITY CONTROL DIVISION
    WQCD -PERMITS
    4300 CHERRY CREEK DRIVE SOUTH
    DENVER, CO 80246-1530
    ATTN: PERMITS UNIT

VEGETATIVE RESTORATION NOTES:

1. EXISTING VEGETATION IS MINIMAL, CONSISTING PRIMARILY OF LOW LYING WILLOW STANDS AND SPARSE SHRUBS IN THE UPPER RIPARIAN AREAS. EXISTING VEGETATION COVER IS APPROXIMATELY 8%.

2. THE STABILITY OF SAND CREEK CHANNEL DEPENDS ON THE GROWTH OF RIPARIAN VEGETATION IN ACCORDANCE WITH THE PLANTING PLAN AND WETLAND MITIGATION PLAN (BY OTHERS).

3. ESTABLISHMENT OF THE PROPER VEGETATION MAY REQUIRE TEMPORARY IRRIGATION. THE IRRIGATION REQUIREMENTS OF THE PLANTINGS (BY OTHERS) MAY REQUIRE AN IRRIGATION SYSTEM DESIGN. JR ENGINEERING HAS NOT PREPARED A DESIGN OF THE IRRIGATION SYSTEM TO SUPPORT THE GROWTH OF THE VEGETATION IN THE CHANNEL.

Know what's **below.** **Call** before you dig.

ENGINEER'S STATEMENT

STANDARD DETAILS SHOWN WERE REVIEWED ONLY AS TO THEIR APPLICATION ON THIS PROJECT

COLORADO REGISTERED PROFESSIONAL ENGINEER BRYAN T. LAW 25043 12/20/24

BRYAN T. LAW, P.E. DATE
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	N/A
V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	SCH
DRAWN BY	SCH
CHECKED BY	

SAND CREEK RESTORATION

GENERAL NOTES

JOB NO. 25188.04

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LAYER LINETYPE LEGEND

	EXISTING	PROPOSED
PHASE LINE		
MATCH LINE		
SECTION LINE		
BOUNDARY LINE		
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
R.O.W. A LINE	A	A
CENTERLINE		
CITY LIMITS		
WIRE FENCE	X	X
CHAIN LINK FENCE	O	O
WOOD FENCE	◇	◇
MASONRY FENCE	□	■
GUARDRAIL		
CONC. BARRIER		
CABLE TV	TV	TV
ELECTRIC	E	E
FIBER OPTIC	FO	FO
GAS MAIN	G	G
IRRIGATION MAIN	IRR	IRR
OIL/PETRO. MAIN	O	O
OVERHEAD UTILITY	OHU	OHU
SANITARY SEWER	S	S
STORM DRAIN		
TELEPHONE	T	T
WATER MAIN	W	W
RAW WATER LINE	RWL	RWL
SWALE/WATERWAY FLOWLINE		
DIVERSION DITCH		
DIVERSION CHANNEL		
MAJOR DRAINAGE BASIN		
MINOR DRAINAGE BASIN		
TOP OF SLOPE		
TOE OF SLOPE		
EDGE OF WATER		
INDEX CONTOUR	6100	6100
INTERMEDIATE CONTOUR		
DEPRESSION CONT. (INDEX)	6100	6100
DEPRESSION CONT. (INTER)		
TOP OF CUTS		
TOE OF FILLS		
CUT AND FILL LINE		C/F C/F
SILT FENCE	SF SF	SF SF
100 YEAR FIS FLOODPLAIN	100YR	100YR
100 YEAR MDDP FLOODPLAIN	100YR	100YR
500 YEAR FLOODPLAIN	500YR	500YR
FLOODWAY	FLDWY	FLDWY
BASE FLOOD ELEVATION		
EDGE OF WETLANDS		

UTILITIES LEGEND

	EXISTING	PROPOSED
STORM SEWER		
MANHOLE		
STORM INLET		
AREA INLET – SQUARE		
AREA INLET – ROUND		
FLARED END SECTION		
RIPRAP		
SANITARY SEWER		
LINE MARKER	Mkr San	
SERVICE MARKER		
CLEAN-OUT		
MANHOLE W/ DIRECTIONAL FLOW ARROW		
WATER LINE		
LINE MARKER	Mkr W	
SERVICE MARKER		
FIRE HYDRANT		
FIRE CONNECTION		
MANHOLE		
BEND		
BLOW-OFF VALVE		
WELL	WELL	WELL
METER		
VALVE		
REDUCER		
THRUST BLOCK		
CROSS		
PLUG W/ THRUST BLOCK		
TEE		
REVERSE ANCHOR		
ANODE		
AIR & VACUUM VALVE ASSEMBLY		
TRANSMISSION BLOW-OFF ASSEMBLY		
GAS LINE		
MARKER	Mkr G	
SERVICE MARKER		
METER		
VALVE		
PLUG		
TEE		
DRY UTILITIES		
CABLE TV MARKER	Mkr TV	
CABLE TELEVISION PEDESTAL		
ELECTRIC MARKER	Mkr E	
ELECTRIC SERVICE MARKER		
ELECTRICAL PEDESTAL		
ELECTRICAL METER		
ELECTRICAL MANHOLE		
FIBER-OPTIC MARKER	Mkr FO	
IRRIGATION PEDESTAL		
TELEPHONE MARKER	Mkr T	
TELEPHONE PEDESTAL		
TELEPHONE MANHOLE		
UTILITY POLE		
GUY ANCHOR		
GUY POLE		
MISC. UTILITIES		
VENT PIPE	VP	VP
TEST HOLE DESIGNATOR	TH# FIRM/AGENCY	

MONUMENTATION LEGEND

ALUMINUM CAP – FOUND	AC
BRASS CAP – FOUND	BC
BENCHMARK – FOUND	
CROSS – FOUND	
MONUMENT – SET	
MONUMENT – FOUND (DEFAULT)	
MONUMENT – FOUND (ALTERNATE 1)	
MONUMENT – FOUND (ALTERNATE 2)	
MONUMENT – FOUND (ALTERNATE 3)	
MONUMENT – FOUND (ALTERNATE 4)	
MONUMENT – FOUND (ALTERNATE 5)	
MONUMENT – FOUND (ALTERNATE 6)	
MONUMENT – FOUND (ALTERNATE 7)	
NAIL & WASHER – FOUND	NAIL & WASHER
PANEL – FOUND	
PK NAIL – FOUND	PK NAIL
ROW MONUMENT – FOUND	
ROW MARKER – FOUND	
SECTION CORNER – FOUND	
SECTION CORNER – SET	
QUARTER-SECTION CORNER – FOUND	
QUARTER-SECTION CORNER – SET	
SECTION CENTER – FOUND	
SECTION CENTER – FOUND	
CONTROL/TRAVERSE POINT – SET	

TRAFFIC LEGEND

	EXISTING	PROPOSED
PARKING METER		
TRAFFIC SIGNAL BOX		
TRAFFIC SIGNAL POLE		
TRAFFIC SIGNAL		
BARRICADE		
GUARD RAIL POST		
IMPACT ATTENUATOR		
BRIDGE STYLE HIGHWAY SIGN POST		
CANTILEVER STYLE HIGHWAY SIGN POST		
SIGN		
RAILROAD MARKER/SIGN		
STREET LIGHT		
STREET LIGHT – SINGLE		
STREET LIGHT – DOUBLE		
LUMINAIRE		
ALTERNATE LUMINAIRE		
SIGNAL MAST ARM W/ LUMINAIRE		
PEDESTAL POLE FOUNDATION		
TRAFFIC SIGNAL POLE		
ROUND PULL BOX		
MEDIUM PULL BOX		
LARGE PULL BOX (20X33X15)		
SIGNAL HEAD WITHOUT BACK PLATE		
SIGNAL HEAD WITH BACK PLATE		
PEDESTRIAN SIGNAL HEAD		
VIDEO IMAGE DETECTOR		
OPTICOM DETECTOR		
VEHICLE DETECTION ZONE		V

STORM WATER MANAGEMENT

	KEY	SYMBOL
CHECK DAM	CD	
CONSTRUCTION ROAD STABILIZATION	CRS	
CURB SOCK INLET PROTECTION	CS	
CONCRETE WASHOUT AREA	CWA	
DIVERSION DITCH AND DIKE, TEMPORARY	DD	
DIVERSION CHANNEL, TEMPORARY	DV	
DEWATERING	DW	
EROSION CONTROL BLANKET	ECB	
INLET FILTER	IF	
INLET PROTECTION	IP	
MULCHING	MU	
OUTLET PROTECTION	OP	
PAVED FLUME	PF	
PERMENENT SEEDING	PS	
REINFORCED CONCRETE DAM	RCD	
ROUGH CUT STREET CONTROL	RCS	
SEDIMENT BASIN	SB	
SEDIMENT CONTROL LOG	SCL	
SILT FENCE	SF	
SURFACE ROUGHENING	SR	
STABILIZED STAGING AREA	SSA	
SEDIMENT TRAP	ST	
STRAW BALE BARRIER	STB	
TERRACING	TER	
TEMPORARY SEEDING	TS	
TEMPORARY STREAM CROSSING CULVERT/BRIDGE	TSC C	
TEMPORARY STREAM CROSSING FORD TYPE	TSC F	
TEMPORARY SLOPE DRAIN	TSD	
VEHICLE TRACKING CONTROL	VTC	
VEHICLE TRACKING CONTROL WITH WASH RACK	WR	

LANDSCAPE LEGEND

	EXISTING
TREE – CONIFEROUS	
TREE – DECIDUOUS	
SHRUB/BUSH	
SHRUBS AND BUSHES	
IRRIGATION BOX	
IRRIGATION SPRINKLER	
IRRIGATION VALVE	
BOLLARD	
FLAGPOLE	FP

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ENGINEER'S STATEMENT

STANDARD DETAILS SHOWN WERE REVIEWED ONLY AS TO THEIR APPLICATION ON THIS PROJECT

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24 DATE

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H-SCALE	N/A
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DESIGNED BY	SCH
DRAWN BY	SCH
CHECKED BY	

SAND CREEK RESTORATION

LEGEND

SHEET 3 OF 121

JOB NO. 25188.04

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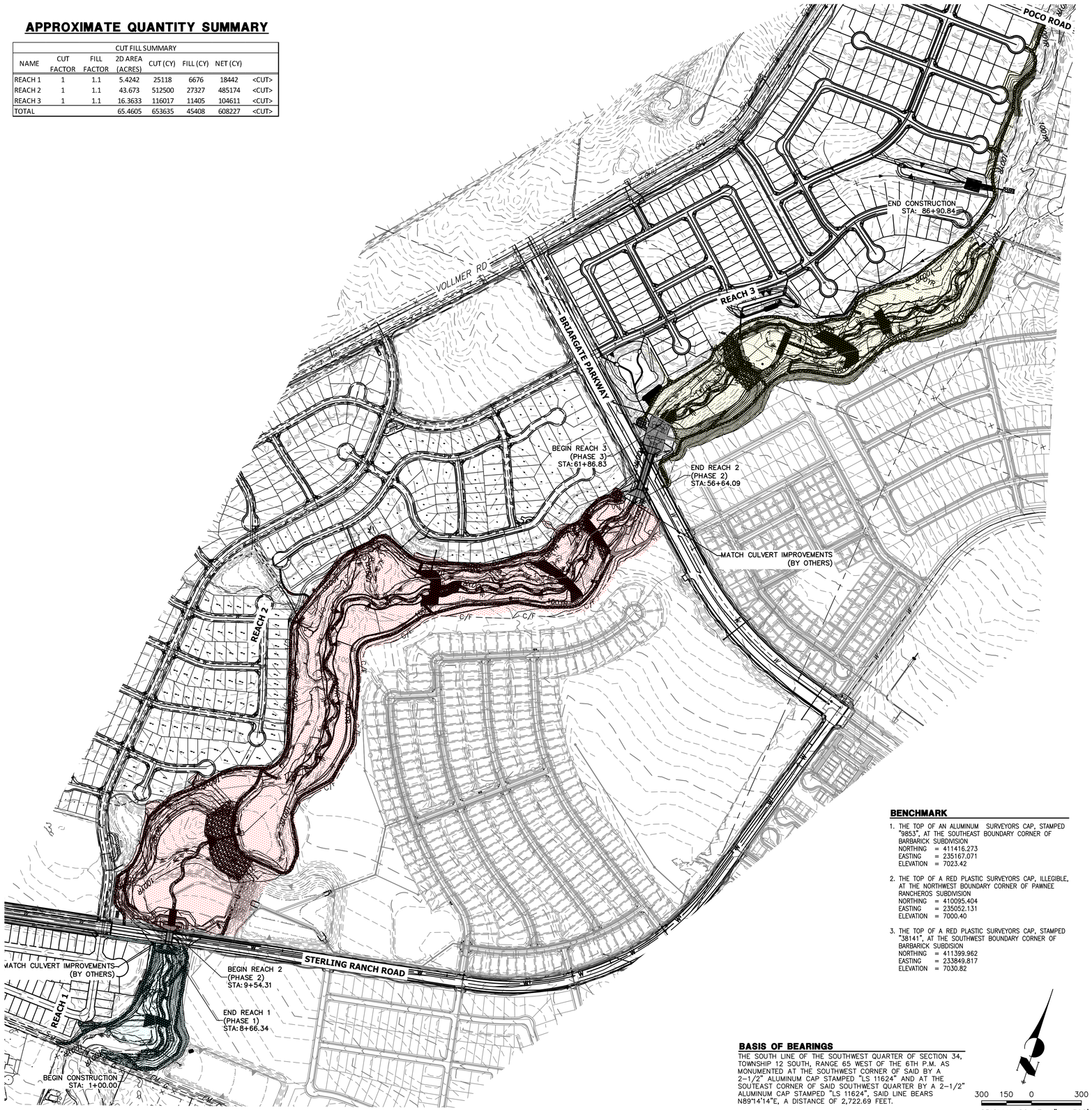
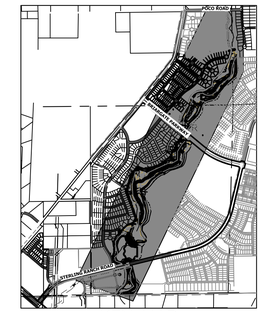
APPROXIMATE QUANTITY SUMMARY

CUT FILL SUMMARY							
NAME	CUT FACTOR	FILL FACTOR	2D AREA (ACRES)	CUT (CY)	FILL (CY)	NET (CY)	
REACH 1	1	1.1	5.4242	25118	6676	18442	<CUT>
REACH 2	1	1.1	43.673	512500	27327	485174	<CUT>
REACH 3	1	1.1	16.3633	116017	11405	104611	<CUT>
TOTAL			65.4605	653635	45408	608227	<CUT>



LEGEND

- REACH 1 (PHASE 1)
- REACH 2 (PHASE 2)
- REACH 3 (PHASE 3)



KEY MAP
SCALE: 1"=2000'

GRADING NOTES:

1. SAND CREEK IS AN ACTIVE MAJOR DRAINAGEWAY WITH PERENNIAL BASE FLOWS. CONTRACTOR SHALL ANTICIPATE STORMWATER INFLOWS TO THE SITE DURING CONSTRUCTION AND PROVIDE A MEANS OF CONVEYANCE/REMOVAL OF ANY CONTINUOUS INFLOWS.

2. THERE IS A LIKELIHOOD FOR LARGE FLOW EVENTS IN SAND CREEK WHICH COULD JEOPARDIZE CONSTRUCTION. THE LIKELIHOOD OF THESE EVENTS CHANGES WITH THE SEASONS. THE CONTRACTOR SHOULD ACCOUNT FOR THE EVENTUALITY OF THESE LARGE FLOW EVENTS BASED ON THE TIMING OF CONSTRUCTION.

3. DEWATERING.
   - 3.a. DEWATERING/BYPASS PUMPING OF SAND CREEK SHALL OCCUR IN ADVANCE OF CONSTRUCTION ACTIVITIES.
   - 3.b. THE CONTRACTOR SHALL OBTAIN A CONSTRUCTION DEWATERING (CDW) PERMIT FROM CDPHE PRIOR TO GROUNDWATER, INCLUDING GROUNDWATER THAT IS COMMINGLED WITH STORMWATER OR SURFACE WATER, BEING ENCOUNTERED DURING CONSTRUCTION ACTIVITIES AND THE GROUNDWATER OR COMMINGLED WATER NEEDS TO BE DISCHARGED TO SURFACE WATER.
   - 3.c. WATER FROM DEWATERING OPERATIONS SHALL ONLY BE DISCHARGED INTO STATE WATERS IF ALLOWED BY A PERMIT.

4. MUCK EXCAVATION IS NOT ANTICIPATED FOR THIS PROJECT. IF ENCOUNTERED, CONTRACTOR SHALL REMOVE UNSUITABLE ORGANIC MATERIAL TO THE DEPTH AS DETERMINED BY THE ENGINEER AND REPLACE THE EXCAVATED VOLUME WITH SUITABLE APPROVED FILL MATERIAL PRIOR TO CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.

5. THE MAXIMUM SLOPE FOR EXCAVATION AND PLACEMENT OF FILL IS 4:1 HORIZONTAL:VERTICAL, UNLESS OTHERWISE SHOWN IN THE PLANS.

6. THE EXISTING DROP STRUCTURE AT BRIARGATE PARKWAY, ANY ASSOCIATED FEATURES, AND DEBRIS SHOULD BE REMOVED FROM THE PROPOSED CONSTRUCTION AREA. EXPOSED SURFACES SHOULD BE FREE OF MOUNDS AND DEPRESSIONS WHICH COULD PREVENT UNIFORM COMPACTION.

7. EXPOSED AREAS WHICH WILL RECEIVE FILL, ONCE PROPERLY CLEARED WHERE NECESSARY, SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF 8 INCHES, CONDITIONED TO NEAR OPTIMUM WATER CONTENT, AND COMPACTED.

8. A GEOTECHNICAL ENGINEER SHALL BE PRESENT FOR OVER-EXCAVATION AND FILL OPERATIONS.

9. THE EARTHWORK EFFORTS SHOULD BE MONITORED UNDER THE DIRECTION OF THE GEOTECHNICAL ENGINEER. MONITORING SHOULD INCLUDE DOCUMENTATION OF ADEQUATE REMOVAL OF VEGETATION AND TOP SOIL, PROOF-ROLLING AND MITIGATION OF AREAS DELINEATED BY THE PROOF-ROLL TO REQUIRE MITIGATION.

10. EACH LIFT OF COMPACTED FILL SHOULD BE TESTED, EVALUATED, AND REWORKED AS NECESSARY UNTIL APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF ADDITIONAL LIFTS. EACH LIFT OF FILL SHOULD BE TESTED FOR DENSITY AND WATER CONTENT AT A FREQUENCY OF AT LEAST ONE TEST FOR EVERY 2,500 SQUARE FEET OF COMPACTED FILL PLACED BENEATH THE DROP STRUCTURE, OR WITHIN CONSTRUCTED SLOPES.

11. IN AREAS OF FOUNDATION EXCAVATIONS, THE BEARING SUBGRADE SHOULD BE EVALUATED UNDER THE DIRECTION OF THE GEOTECHNICAL ENGINEER. IN THE EVENT UNANTICIPATED CONDITIONS ARE ENCOUNTERED, THE GEOTECHNICAL ENGINEER SHOULD PRESCRIBE MITIGATION OPTIONS.

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   - 13.b. GENERAL FILL OUTSIDE OF STRUCTURAL AREAS:
     90 PERCENT OF MAXIMUM DRY DENSITY

14. A COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE) WATER QUALITY DIVISION STORMWATER DISCHARGE PERMIT SHALL BE OBTAINED AND A COPY SHALL BE SUBMITTED TO EL PASO COUNTY.

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1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
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   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
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   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

300 150 0 300
ORIGINAL SCALE: 1" = 300'

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PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24 DATE

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No.	REVISION	BY	DATE

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V-SCALE	N/A
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DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

EARTHWORK & PHASING PLAN

SHEET 4 OF 121

JOB NO. 25188.04

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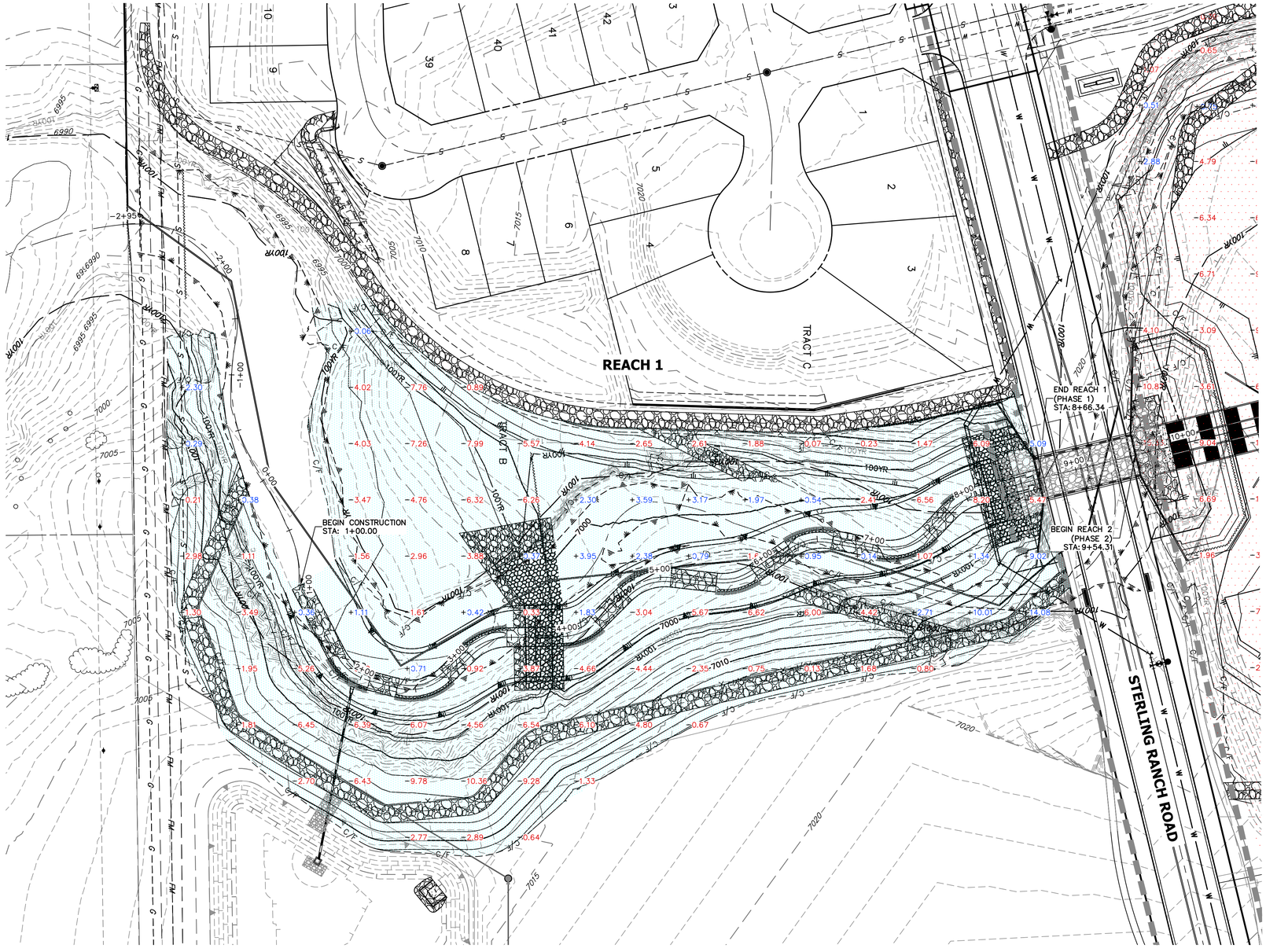

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- REACH 1 (PHASE 1)
- REACH 2 (PHASE 2)
- REACH 3 (PHASE 3)
- −0.00 CUT HEIGHT (FEET)
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NAME	CUT FACTOR	FILL FACTOR	2D AREA (ACRES)	CUT (CY)	FILL (CY)	NET (CY)	
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REACH 2	1	1.1	43.673	512500	27327	485174	<CUT>
REACH 3	1	1.1	16.3633	116017	11405	104611	<CUT>
TOTAL			65.4605	653635	45408	608227	<CUT>

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

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ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

COLORADO REGISTERED BRYANT T. LAW 25043 PROFESSIONAL ENGINEER

12/20/24
BRYAN T. LAW, P.E. DATE
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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SAND CREEK RESTORATION

EARTHWORK & PHASING PLAN

SHEET 5 OF 121

JOB NO. 25188.04

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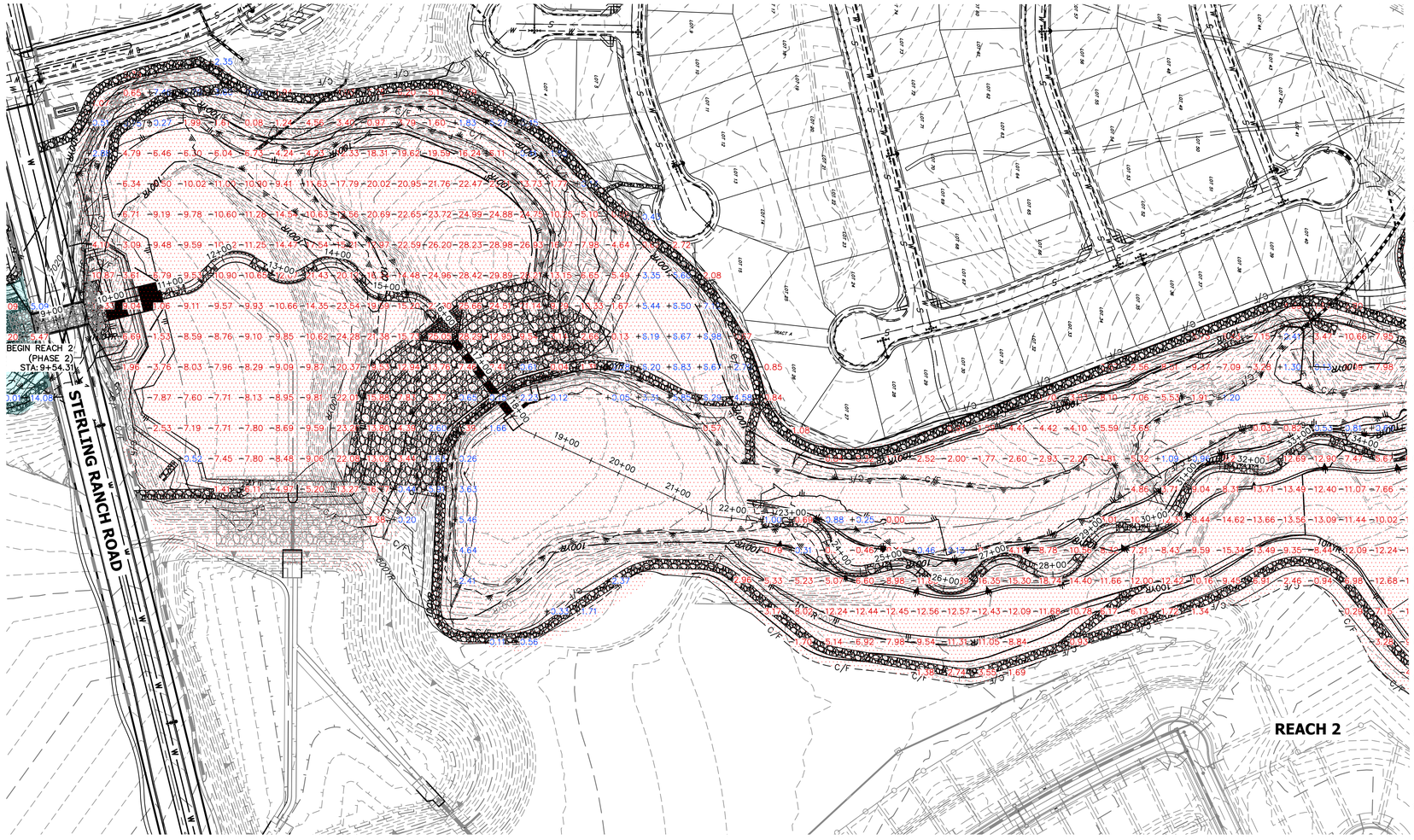

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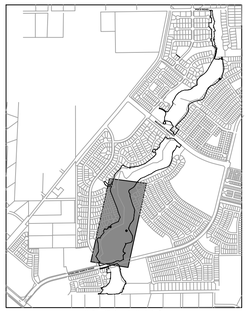

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EARTHWORK & PHASING PLAN

SHEET 6 OF 121

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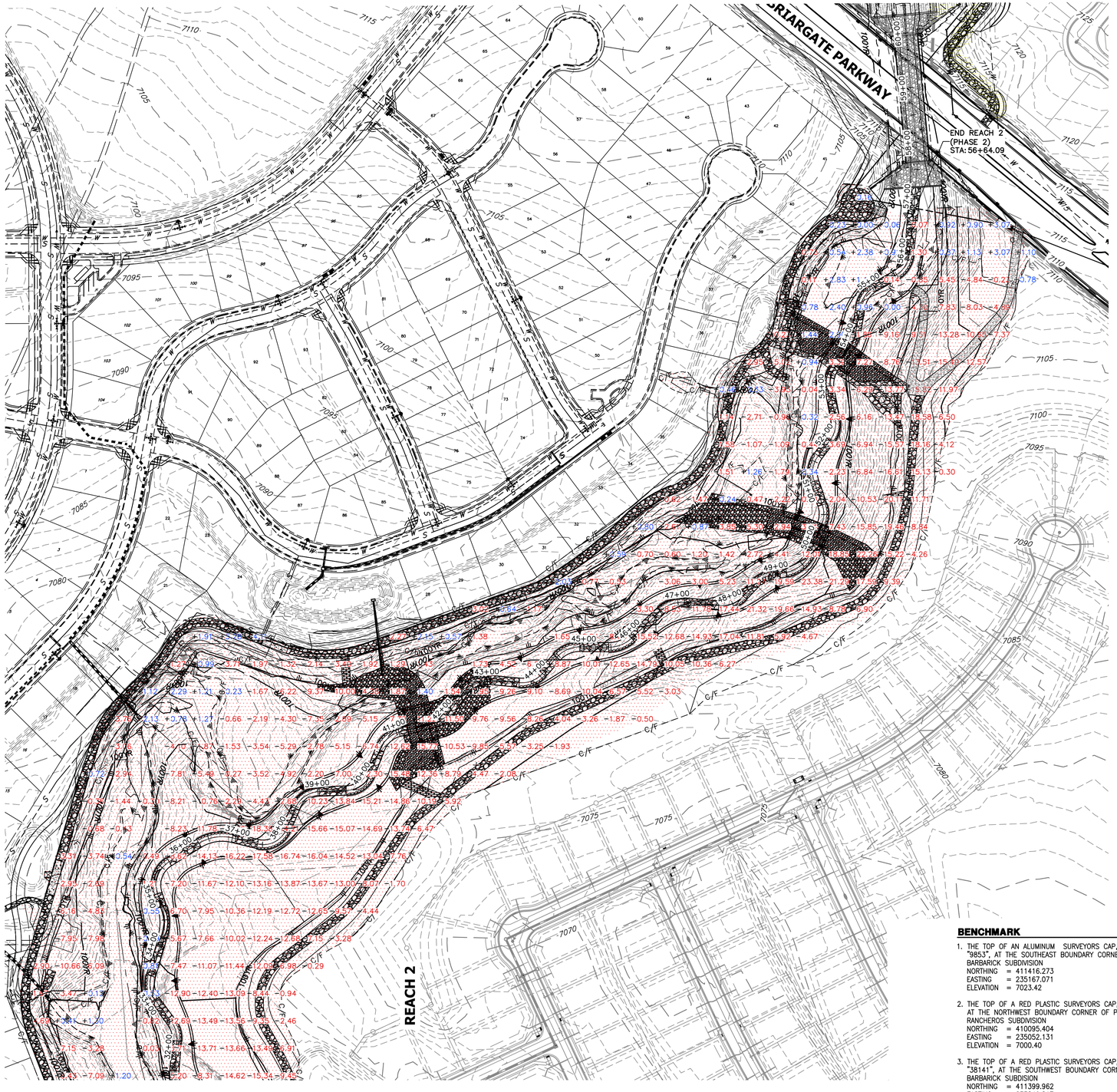

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1. SAND CREEK IS AN ACTIVE MAJOR DRAINAGEWAY WITH PERENNIAL BASE FLOWS. CONTRACTOR SHALL ANTICIPATE STORMWATER INFLOWS TO THE SITE DURING CONSTRUCTION AND PROVIDE A MEANS OF CONVEYANCE/REMOVAL OF ANY CONTINUOUS INFLOWS.

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3. DEWATERING.
   - 3.a. DEWATERING/BYPASS PUMPING OF SAND CREEK SHALL OCCUR IN ADVANCE OF CONSTRUCTION ACTIVITIES.
   - 3.b. THE CONTRACTOR SHALL OBTAIN A CONSTRUCTION DEWATERING (CDW) PERMIT FROM CDPHE PRIOR TO GROUNDWATER, INCLUDING GROUNDWATER THAT IS COMMINGLED WITH STORMWATER OR SURFACE WATER, BEING ENCOUNTERED DURING CONSTRUCTION ACTIVITIES AND THE GROUNDWATER OR COMMINGLED WATER NEEDS TO BE DISCHARGED TO SURFACE WATER.
   - 3.c. WATER FROM DEWATERING OPERATIONS SHALL ONLY BE DISCHARGED INTO STATE WATERS IF ALLOWED BY A PERMIT.

4. MUCK EXCAVATION IS NOT ANTICIPATED FOR THIS PROJECT. IF ENCOUNTERED, CONTRACTOR SHALL REMOVE UNSUITABLE ORGANIC MATERIAL TO THE DEPTH AS DETERMINED BY THE ENGINEER AND REPLACE THE EXCAVATED VOLUME WITH SUITABLE APPROVED FILL MATERIAL PRIOR TO CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.

5. THE MAXIMUM SLOPE FOR EXCAVATION AND PLACEMENT OF FILL IS 4:1 HORIZONTAL:VERTICAL, UNLESS OTHERWISE SHOWN IN THE PLANS.

6. THE EXISTING DROP STRUCTURE AT BRIARGATE PARKWAY, ANY ASSOCIATED FEATURES, AND DEBRIS SHOULD BE REMOVED FROM THE PROPOSED CONSTRUCTION AREA. EXPOSED SURFACES SHOULD BE FREE OF MOUNDS AND DEPRESSIONS WHICH COULD PREVENT UNIFORM COMPACTION.

7. EXPOSED AREAS WHICH WILL RECEIVE FILL, ONCE PROPERLY CLEARED WHERE NECESSARY, SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF 8 INCHES, CONDITIONED TO NEAR OPTIMUM WATER CONTENT, AND COMPACTED.

8. A GEOTECHNICAL ENGINEER SHALL BE PRESENT FOR OVER-EXCAVATION AND FILL OPERATIONS.

9. THE EARTHWORK EFFORTS SHOULD BE MONITORED UNDER THE DIRECTION OF THE GEOTECHNICAL ENGINEER. MONITORING SHOULD INCLUDE DOCUMENTATION OF ADEQUATE REMOVAL OF VEGETATION AND TOP SOIL, PROOF-ROLLING AND MITIGATION OF AREAS DELINEATED BY THE PROOF-ROLL TO REQUIRE MITIGATION.

10. EACH LIFT OF COMPACTED FILL SHOULD BE TESTED, EVALUATED, AND REWORKED AS NECESSARY UNTIL APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF ADDITIONAL LIFTS. EACH LIFT OF FILL SHOULD BE TESTED FOR DENSITY AND WATER CONTENT AT A FREQUENCY OF AT LEAST ONE TEST FOR EVERY 2,500 SQUARE FEET OF COMPACTED FILL PLACED BENEATH THE DROP STRUCTURE, OR WITHIN CONSTRUCTED SLOPES.

11. IN AREAS OF FOUNDATION EXCAVATIONS, THE BEARING SUBGRADE SHOULD BE EVALUATED UNDER THE DIRECTION OF THE GEOTECHNICAL ENGINEER. IN THE EVENT UNANTICIPATED CONDITIONS ARE ENCOUNTERED, THE GEOTECHNICAL ENGINEER SHOULD PRESCRIBE MITIGATION OPTIONS.

12. THE ON-SITE SOILS ARE GENERALLY CONSIDERED SUITABLE FOR REUSE AS STRUCTURAL AND/OR GENERAL FILL. IMPORTED SOILS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF AS DIRECTED. PARTIAL REMOVAL OF THE FILL SOILS SHOULD INCLUDE OVER-EXCAVATING A MINIMUM OF 4 FEET OF THE FILL SOILS, PROCESSING AS REQUIRED, MOISTURE CONDITIONING, AND RECOMPACTING AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

13. THE FILL SHALL BE PLACED IN THIN, LOOSE LIFTS OF 8 INCHES OR LESS (WHEN HEAVY SELF-PROPELLED COMPACTION EQUIPMENT IS USED) OR 4-6 INCHES (WHEN HAND-GUIDED EQUIPMENT IS USED). WATER CONTENT SHALL BE WITHIN 3 PERCENT OF OPTIMUM. FILL IS TO BE COMPACTED TO A MINIMUM OF:
   - 13.a. WITHIN 10 FEET OF STRUCTURES, OR IN CONSTRUCTED SLOPES: 95 PERCENT OF MAXIMUM DRY DENSITY
   - 13.b. GENERAL FILL OUTSIDE OF STRUCTURAL AREAS: 90 PERCENT OF MAXIMUM DRY DENSITY

14. A COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE) WATER QUALITY DIVISION STORMWATER DISCHARGE PERMIT SHALL BE OBTAINED AND A COPY SHALL BE SUBMITTED TO EL PASO COUNTY.

15. PROPOSED SPOT ELEVATIONS REFLECT MEAN FINISHED GROUND GRADES IRRESPECTIVE OF VARIATIONS DUE TO PROPOSED GROUT, BOULDER, AND RIPRAP.

16. EXISTING GRADES REFLECT CHANNEL CONDITIONS AS OF AUGUST 1, 2017. CHANNEL SCOUR MAY AFFECT SHOWN ELEVATIONS.

17. TOPSOIL SHALL BE STOCKPILED TO THE EXTENT PRACTICAL ON THE SITE FOR USE ON AREAS TO BE REVEGETATED. ANY AND ALL STOCKPILES SHALL BE LOCATED AND PROTECTED FROM EROSIVE ELEMENTS. THE MINIMUM THICKNESS OF TOPSOIL SHALL BE 4" AND SHALL BE OBTAINED BY STOCKPILING EXISTING TOPSOIL. THE TOPSOIL SHALL BE APPLIED TO ALL SURFACES REQUIRING SEEDING OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL DISPOSE OF EXCESS TOPSOIL IN A DESIGNATED AREA ON SITE.

18. CONFLICTS OF PROPOSED GRADING WITHIN FUTURE LOTS EAST OF THE PROPOSED CHANNEL WILL BE ADDRESSED DURING DESIGN OF THE RESPECTIVE FILINGS. THESE LOTS ARE CURRENTLY UNPLATTED AND PLANNED FUTURE LOT LINES ARE SHOWN REFERENCE ONLY.

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
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   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
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   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

APPROXIMATE QUANTITY SUMMARY

CUT FILL SUMMARY							
NAME	CUT FACTOR	FILL FACTOR	2D AREA (ACRES)	CUT (CY)	FILL (CY)	NET (CY)	
REACH 1	1	1.1	5.4242	25118	6676	18442	<CUT>
REACH 2	1	1.1	43.673	512500	27327	485174	<CUT>
REACH 3	1	1.1	16.3633	116017	11405	104611	<CUT>
TOTAL			65.4605	653635	45408	608227	<CUT>

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

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DATE

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No.	REVISION	BY	DATE

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V-SCALE	N/A
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DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

EARTHWORK & PHASING PLAN

SHEET 7 OF 121

JOB NO. 25188.04

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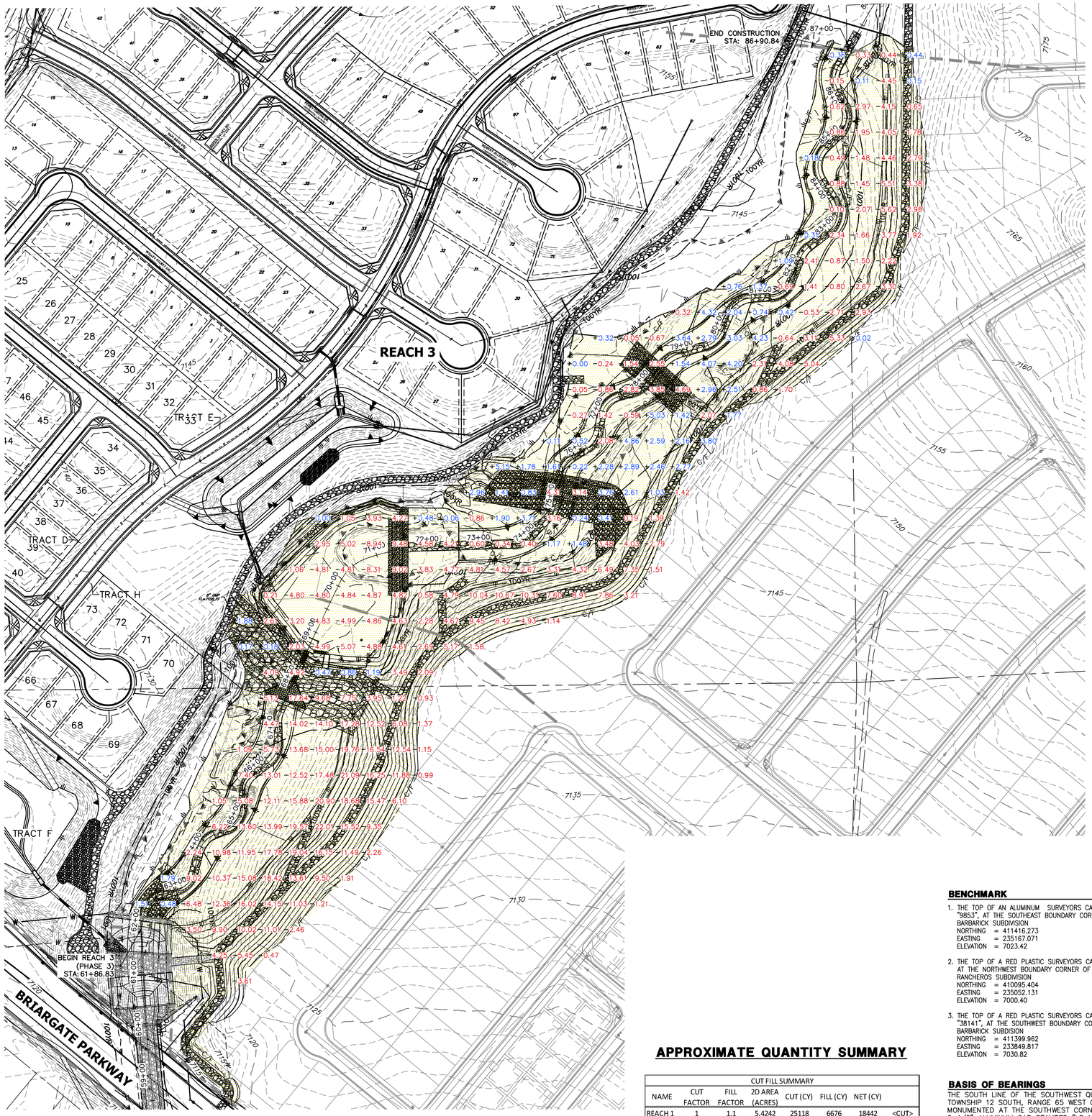

LEGEND

- REACH 1 (PHASE 1)
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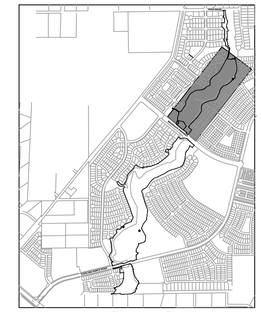
- REACH 3 (PHASE 3)
- −0.00 CUT HEIGHT (FEET)
- +0.00 FILL HEIGHT (FEET)



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N

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

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COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24 DATE

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PREPARED FOR
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2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
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No.	REVISION	BY	DATE

H-SCALE	1"=100'
V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

EARTHWORK & PHASING PLAN

SHEET 8 OF 121

JOB NO. 25188.04

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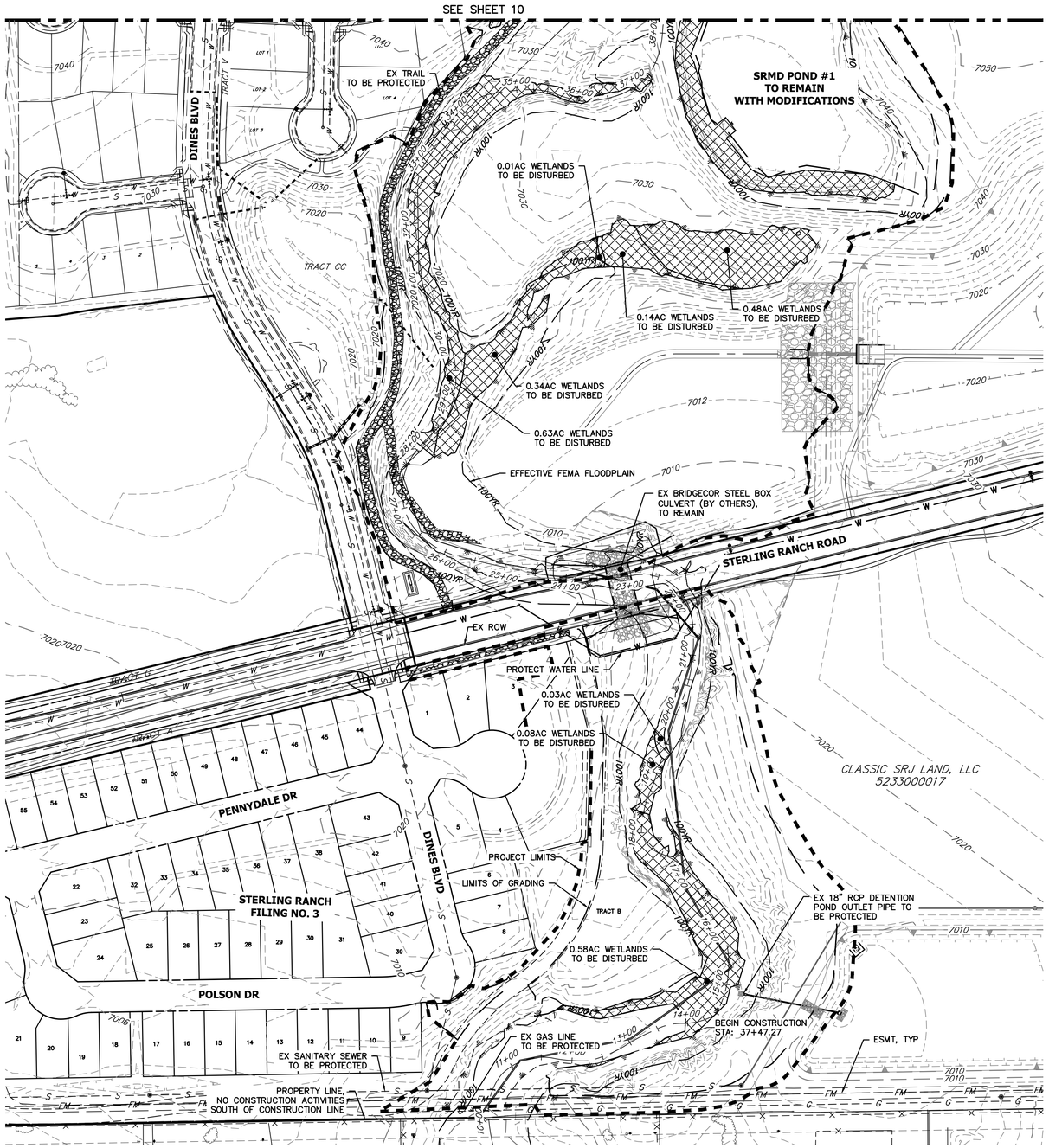

DEMOLITION PLANS
EX STA 11+00.00 TO 38+00.00
SCALE: 1"=100'

LEGEND

WETLAND: DISTURBED AREAS

LIMIT OF GRADING

LIMIT OF CONSTRUCTION

KEY MAP
SCALE: 1"=2000'

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SAND CREEK RESTORATION

DEMOLITION PLAN

SHEET 9 OF 121

JOB NO. 25188.04

SAND CREEK APPROXIMATE WETLAND IMPACTS		
Totals	**Sq Ft**	**Acres**
Reach 1 Permanent Loss	32,636.00	0.74
Reach 2 Permanent Loss	159,695.00	4.28
Reach 3 Permanent Loss	184,711.00	5.44
Total Permanent Loss	**377,042.00**	**10.46**

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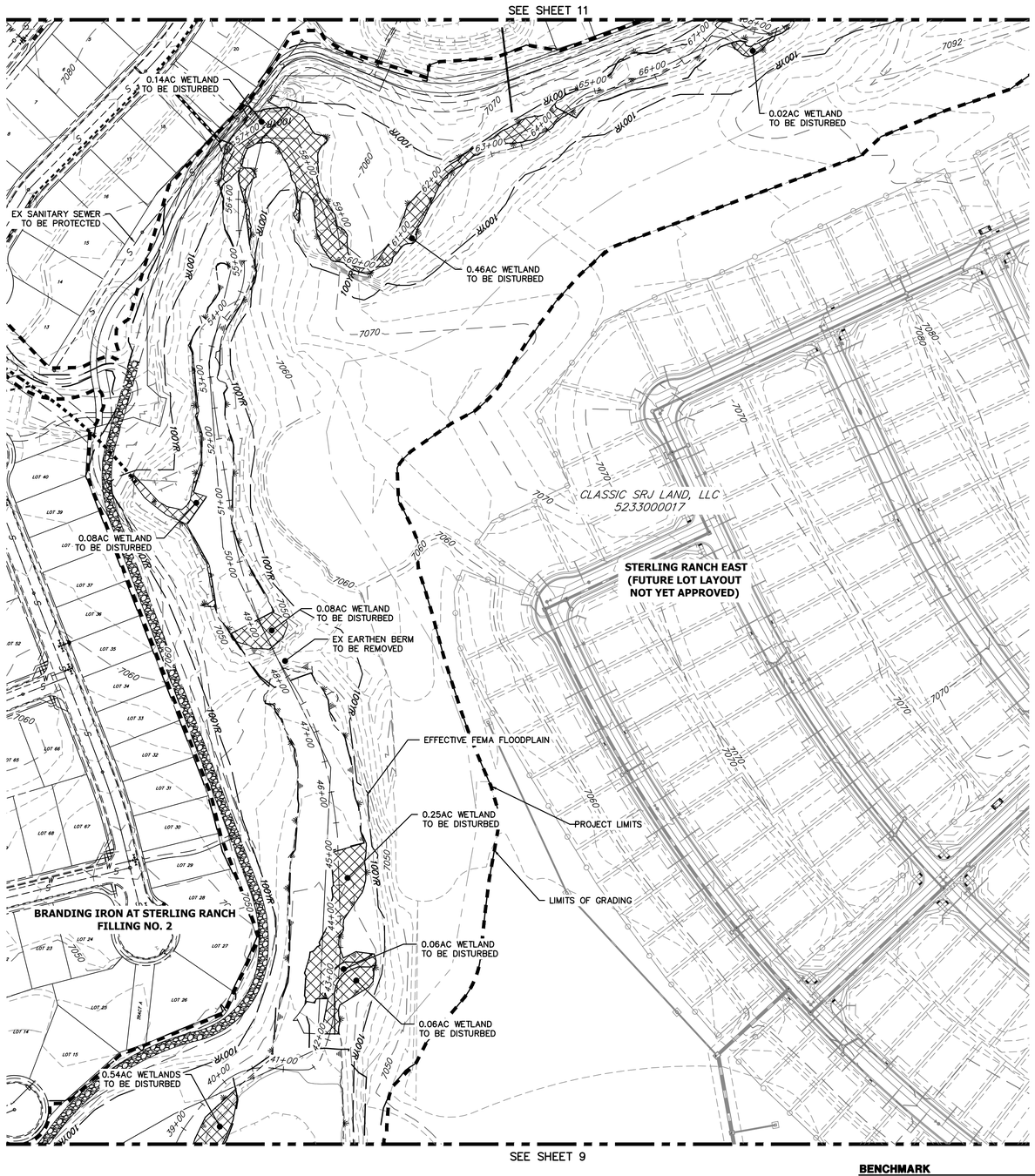

DEMOLITION PLANS
EX STA: 38+00.00 TO 68+00.00
SCALE: 1"=100'

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DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

DEMOLITION PLAN

SHEET 10 OF 121

JOB NO. 25188.04

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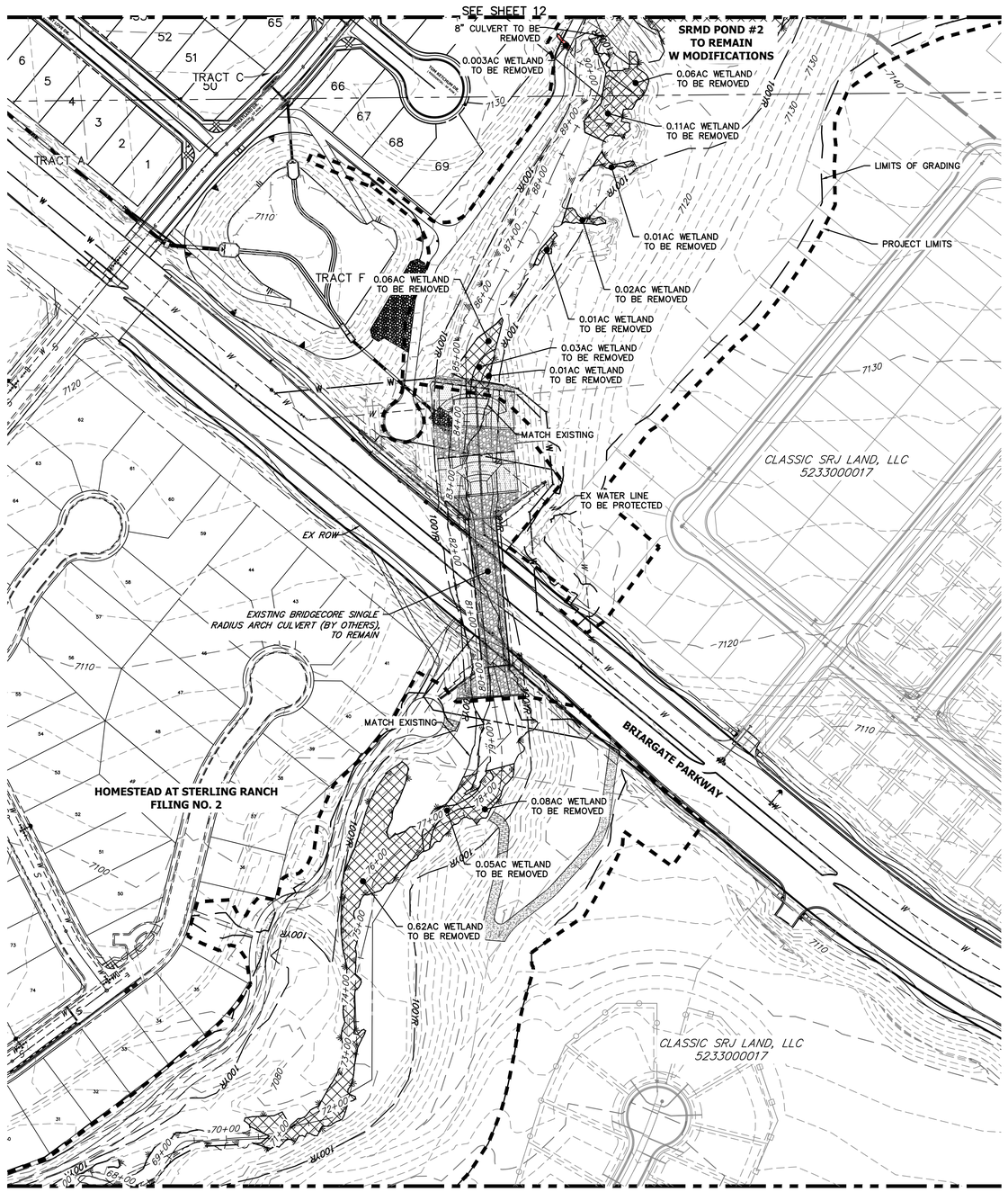


SEE SHEET 10

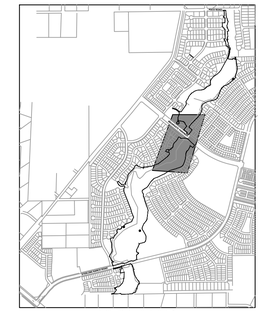
DEMOLITION PLANS
EX STA: 68+00.00 TO 91+00.00
SCALE: 1"=100'

LEGEND

WETLAND: DISTURBED AREAS

LIMIT OF GRADING

LIMIT OF CONSTRUCTION



KEY MAP
SCALE: 1"=2000'

SAND CREEK APPROXIMATE WETLAND IMPACTS		
Totals	**Sq Ft**	**Acres**
Reach 1 Permanent Loss	32,636.00	0.74
Reach 2 Permanent Loss	159,695.00	4.28
Reach 3 Permanent Loss	184,711.00	5.44
Total Permanent Loss	**377,042.00**	**10.46**

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "98853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

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

811 Know what's **below.** **Call** before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12-20-24
DATE

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

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	1"=100'
V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

DEMOLITION PLAN

SHEET 11 OF 121

JOB NO. 25188.04

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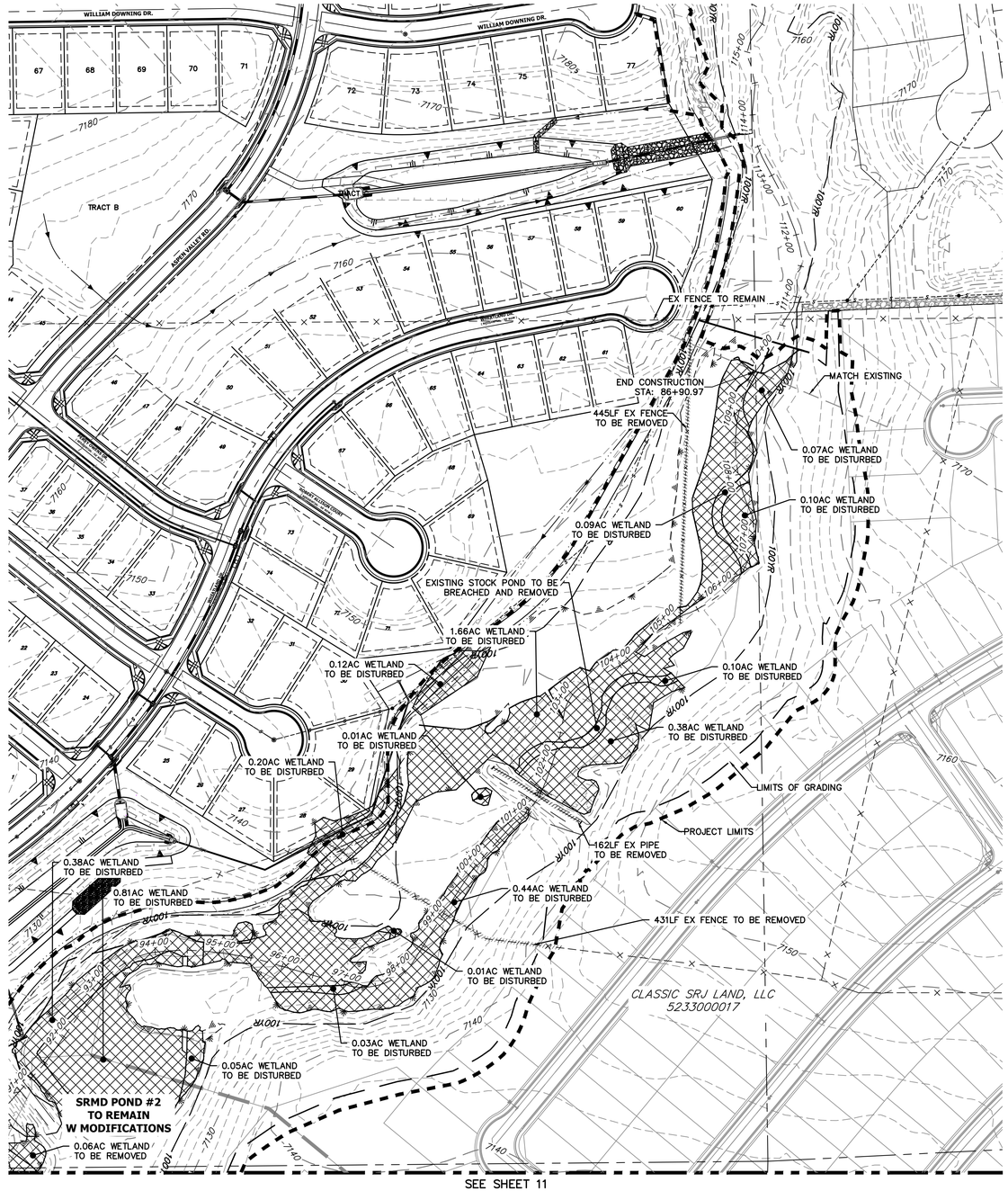


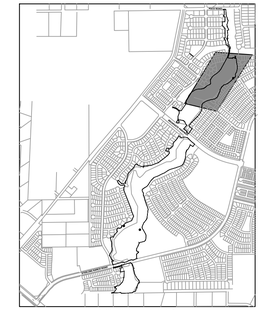
SEE SHEET 11

LEGEND

WETLAND: DISTURBED AREAS

LIMIT OF GRADING

LIMIT OF CONSTRUCTION



KEY MAP
SCALE: 1"=2000'

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SAND CREEK RESTORATION

DEMOLITION PLAN

SHEET 12 OF 121

JOB NO. 25188.04

DEMOLITION PLANS
EX STA 91+00.00 TO 110+00.00
SCALE: 1"=100'

SAND CREEK APPROXIMATE WETLAND IMPACTS		
Totals	**Sq Ft**	**Acres**
Reach 1 Permanent Loss	32,636.00	0.74
Reach 2 Permanent Loss	159,695.00	4.28
Reach 3 Permanent Loss	184,711.00	5.44
Total Permanent Loss	**377,042.00**	**10.46**

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
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   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION
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   EASTING = 233849.817
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100 50 0 100
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ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

COLORADO REGISTERED BRYAN T. LAW 25043 PROFESSIONAL ENGINEER

12/20/24 DATE

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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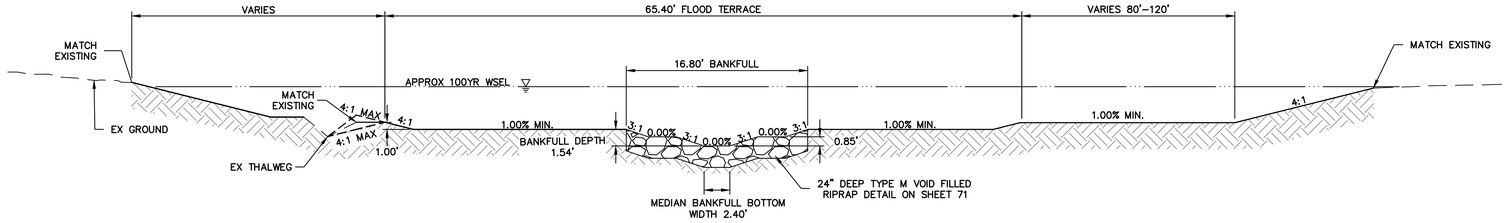
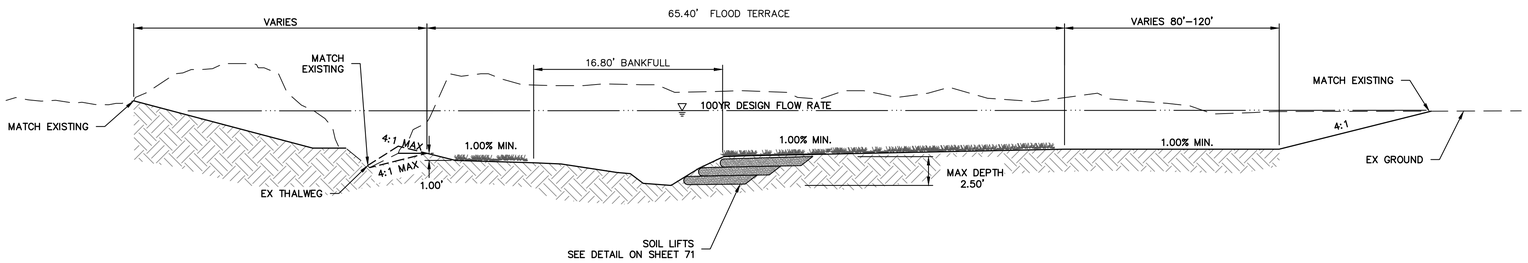


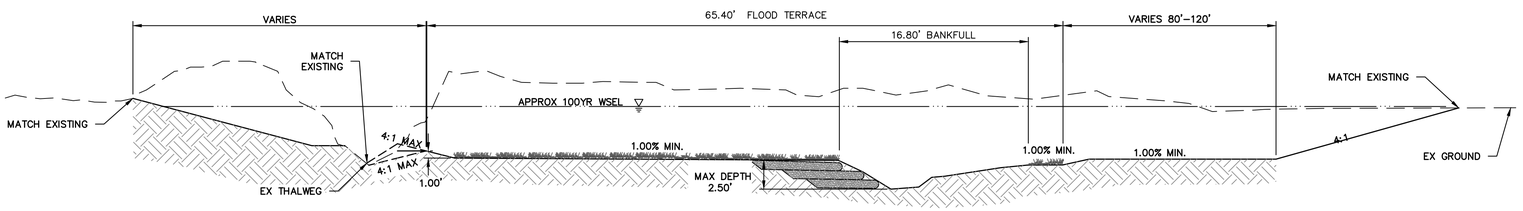
RIFFLE TYPICAL SECTION A-A

SCALE: N.T.S



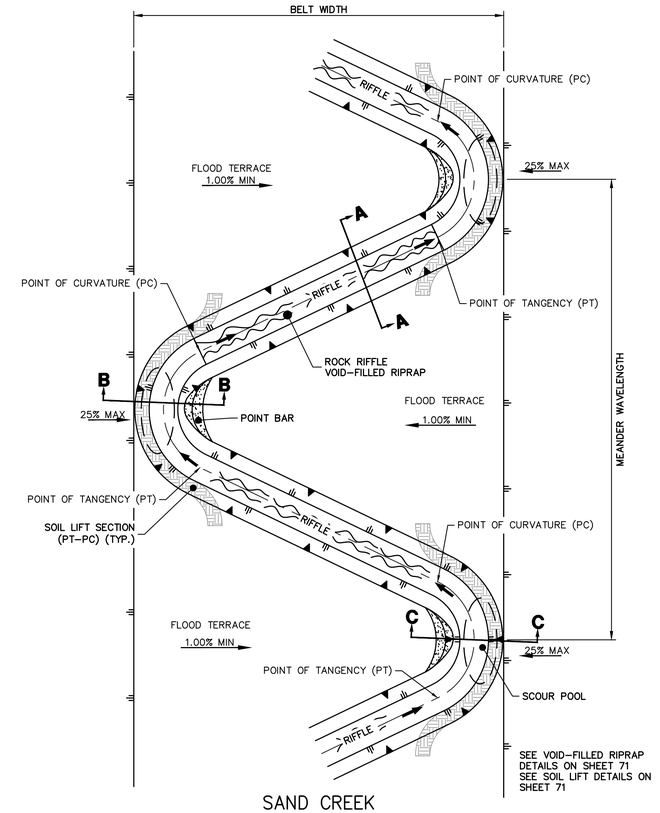
LEFT POOL TYPICAL SECTION B-B

SCALE: N.T.S



RIGHT POOL TYPICAL SECTION C-C

SCALE: N.T.S



SAND CREEK
STREAM LAYOUT TYPICAL – PLAN

SCALE: N.T.S.

Sand Creek Design Matrix

Bankfull Channel	Width; ft		16.8	
	Mean Depth; ft		0.85	
	Max Depth; ft			
	Area; sqft		14.0	
	Bend to Bend Spacing; ft	4.5 -6 times Bankfull Width	76	101
	Radius of Curvature (ROC); ft	2.5 - 3.5 times Bankfull Width	42	59
	Tangent Lengths; ft	1.5 - 2.5 times Bankfull Width	25	42
	Meander Wavelength; ft	9- 12 times Bankfull Width	151	202
	Meander Beltwidth; ft	2 - 3.5 times Bankfull Width	34	59
Flood Terrace	Width; ft		64.5	
	Area (300% of Bankfull Area); sqft			
	Bend to Bend Spacing; ft	Same as Bankfull Pattern	--	--
	Radius of Curvature; ft	2 - 4 times the Flood Terrace Width	129	258
	Tangent Riffle Lengths; ft	1 - 2 times the Bankfull Width	17	34
	Meander Beltwidth; ft	1.5 - 2 times the Flood Terrace Width	97	129
	Expansion and Contraction Ratios	greater than 10:1	--	--

SAND CREEK FLOW RATES

Location	Station	MDDP DESIGN POINT	Flow Rate (cfs) 100-YR Design MDDP	Flow Rate (cfs) 100-YR FIS
Northern Bndy	STA: 87+10	DP-72	1644.1	2600
Stock Pond 2	STA:73+50	DP-71	1667.0	2600
Briargate Pkwy	STA:61+00	DP-70	1763.9	2600
	STA:36+05	DP-69	1880.4	2600
SRMD Pond 1	STA:16+80	DP 87	1848.8	2600
Sterling Ranch Road	STA:09+05	DP-68	1562.5	2600
Sterling Ranch Southern Bndy	STA:00+00	DP-63	1585.2	2600

SAND CREEK TYPICAL SECTIONS

REACH 1: STA: 1+00.00 TO 10+05.89
REACH 2: STA: 11+18.00 TO 59+27.25
REACH 3: STA: 61+54.83 TO 88+62.94

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ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE 12/20/24

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V–SCALE	N/A
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION
TYPICAL SECTIONS

SHEET 13 OF 121

JOB NO. 25188.04

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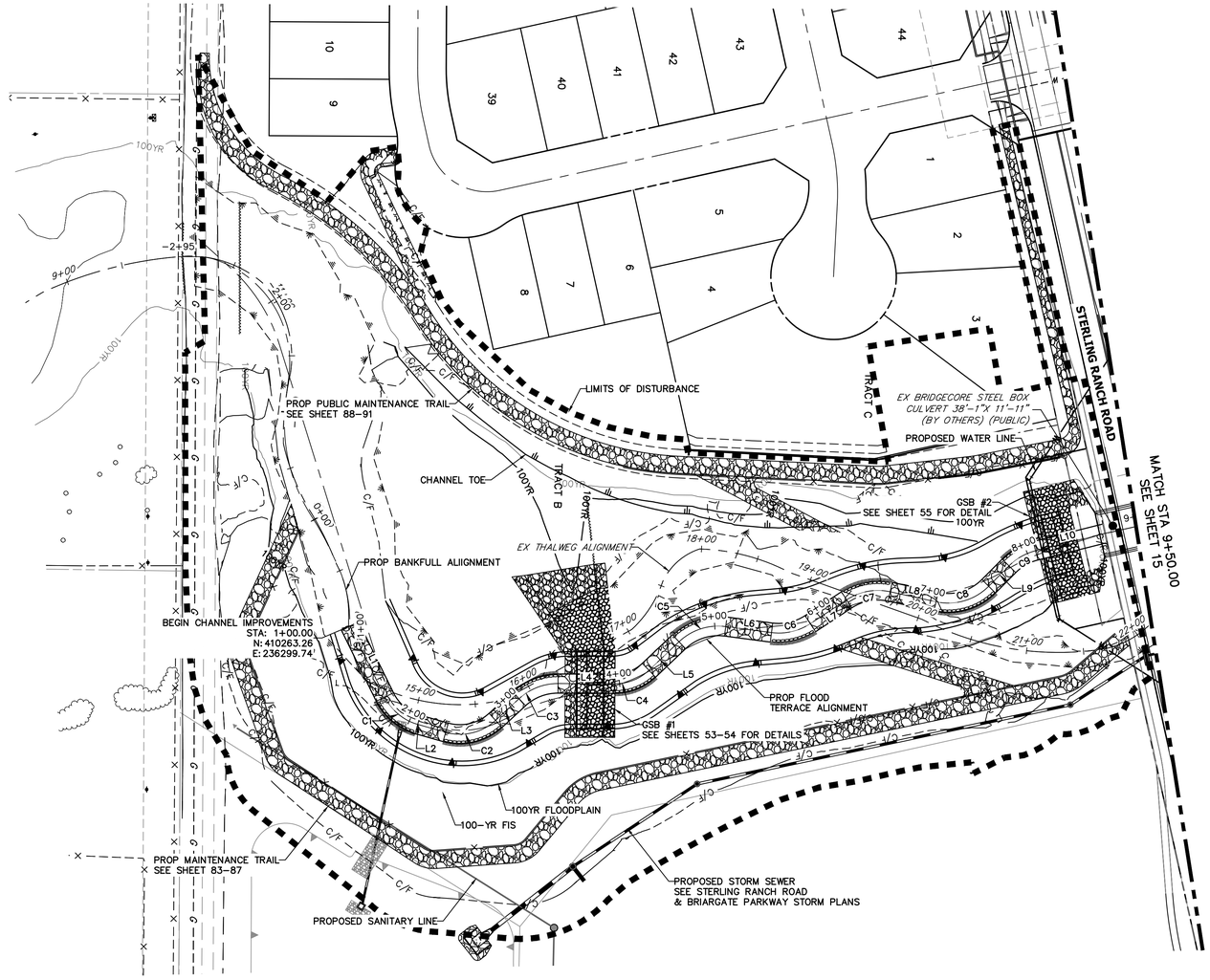
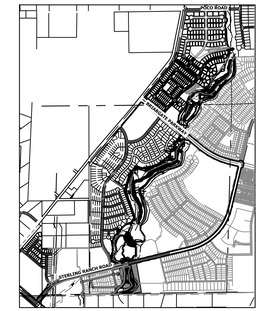


HORIZONTAL CONTROL PLAN - SAND CREEK CHANNEL

SCALE: 1"=60'



KEY MAP

SCALE: 1"=2000'

LINE AND CURVE TABLES - SAND CREEK BANKFULL CHANNEL

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N62°37'57"E	69.39'
L2	N14°33'15"E	25.49'
L3	N43°57'43"W	28.06'
L4	N01°00'09"W	49.93'
L5	N44°46'46"W	36.31'
L6	N06°15'46"E	40.46'
L7	S34°33'06"E	38.16'
L8	N11°07'56"E	41.11'
L9	N46°25'49"W	25.24'
L10	N15°18'22"W	61.05'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C1	48°04'42"	46.00'	38.60'
C2	58°30'58"	46.00'	46.98'
C3	42°57'35"	50.00'	37.49'
C4	43°46'38"	43.00'	32.85'
C5	51°02'32"	50.00'	44.54'
C6	40°48'52"	50.00'	35.62'
C7	45°41'02"	50.00'	39.87'
C8	57°33'46"	50.00'	50.23'
C9	31°07'27"	50.00'	27.16'

60 30 0 60

ORIGINAL SCALE: 1" = 60'

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SAND CREEK RESTORATION

HORIZONTAL CONTROL PLAN

SHEET 14 OF 121

JOB NO. 25188.04

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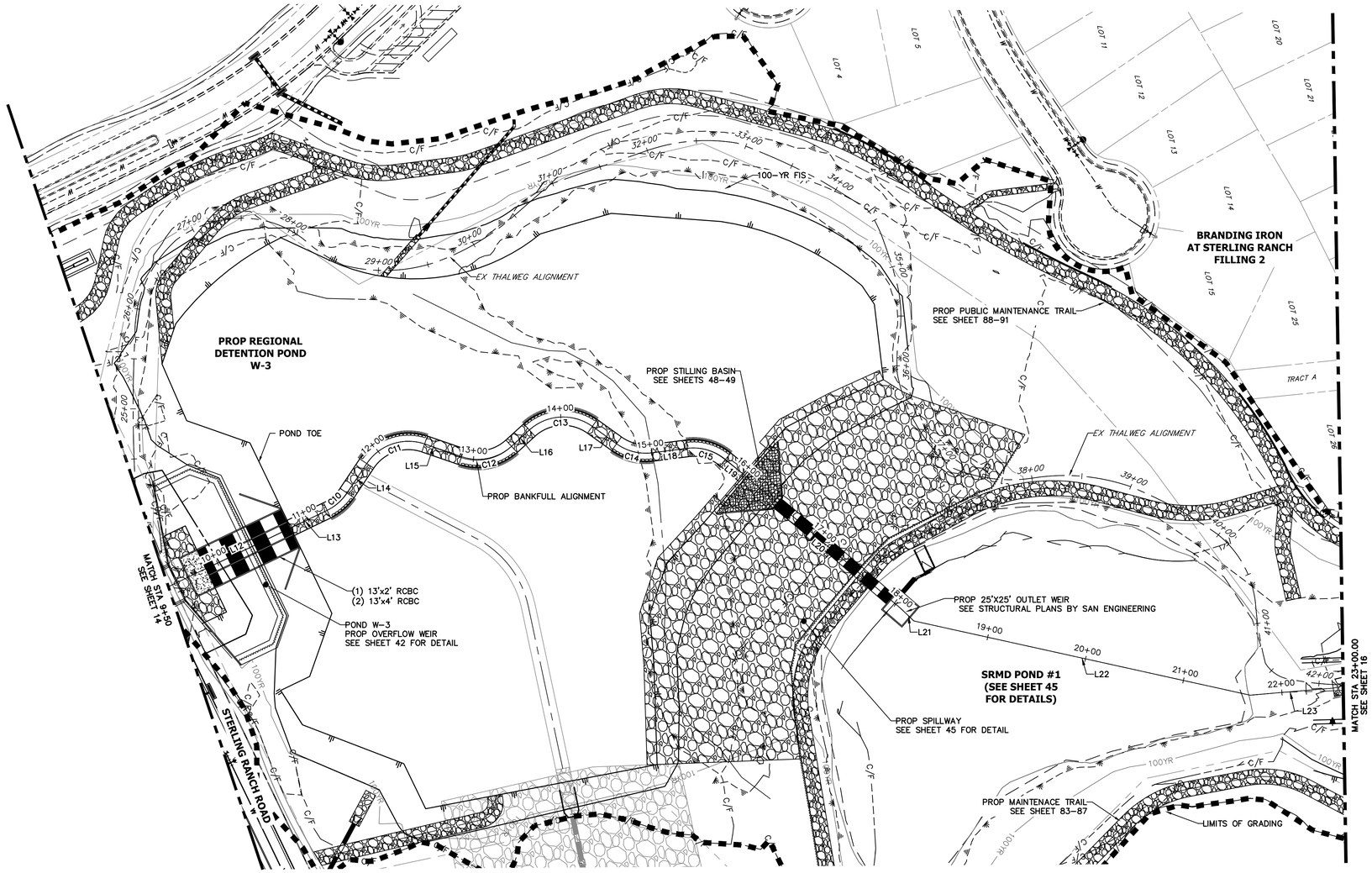
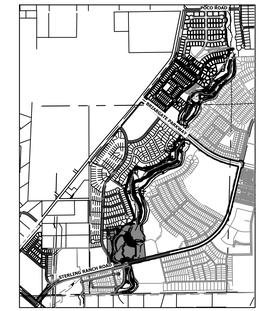


HORIZONTAL CONTROL PLAN - SAND CREEK CHANNEL

SCALE: 1"=60'



KEY MAP

SCALE: 1"=2000'

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LINE AND CURVE TABLES - SAND CREEK BANKFULL CHANNEL

LINE TABLE		
LINE	BEARING	DISTANCE
L12	N13°40'36"W	112.14'
L13	N13°44'44"W	41.29'
L14	N44°17'13"W	35.34'
L15	N30°54'11"E	38.94'
L16	N30°18'24"W	24.14'
L17	N47°41'02"E	29.75'
L18	N04°47'34"E	35.38'
L19	N51°32'30"E	23.98'
L20	N52°27'37"E	205.18'
L21	N55°27'43"E	18.57'
L22	N24°26'44"E	343.60'
L23	N07°07'50"E	83.24'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C10	30°32'29"	50.00'	26.65'
C11	75°11'23"	50.00'	65.62'
C12	61°12'35"	50.00'	53.42'
C13	77°59'26"	50.00'	68.06'
C14	42°53'28"	50.00'	37.43'
C15	46°44'56"	50.00'	40.80'

60 30 0 60

ORIGINAL SCALE: 1" = 60'

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT

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12/20/24 DATE

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DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

HORIZONTAL CONTROL PLAN

SHEET 15 OF 121

JOB NO. 25188.04

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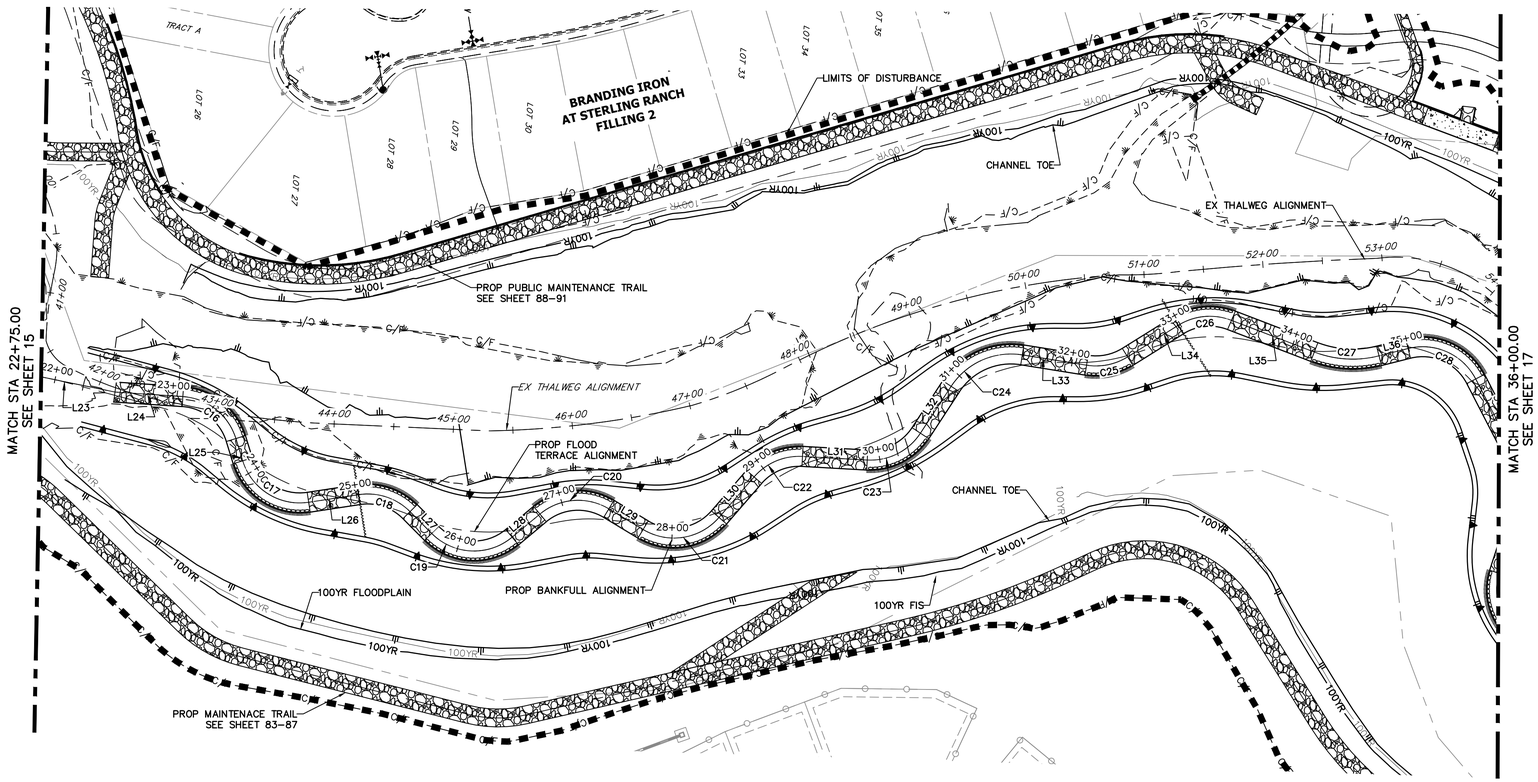

HORIZONTAL CONTROL PLAN - SAND CREEK CHANNEL

SCALE: 1"=60'

LINE AND CURVE TABLES - SAND CREEK BANKFULL CHANNEL

LINE TABLE		
LINE	BEARING	DISTANCE
L23	N07°07'50"E	83.24'
L24	N00°39'45"W	57.02'
L25	N68°26'27"E	35.05'
L26	N13°07'27"W	51.07'
L27	N40°46'05"E	34.86'
L28	N44°15'32"W	39.48'
L29	N26°36'38"E	33.54'
L30	N53°36'32"W	44.94'
L31	N01°16'36"W	54.35'
L32	N61°14'53"W	46.99'
L33	N04°37'48"E	54.56'
L34	N36°27'31"W	50.02'
L35	N16°27'51"E	74.39'
L36	N18°40'48"W	25.12'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C16	69°37'36"	49.66'	60.35'
C17	81°38'38"	49.95'	71.18'
C18	53°53'33"	50.00'	47.03'
C19	85°03'54"	49.97'	74.20'
C20	70°52'11"	50.00'	61.85'
C21	80°13'10"	50.00'	70.00'
C22	52°19'56"	50.00'	45.67'
C23	59°58'18"	50.00'	52.34'
C24	65°52'41"	60.00'	68.99'
C25	41°05'20"	50.00'	35.86'
C26	53°16'13"	50.02'	46.50'
C27	35°08'56"	90.00'	55.21'
C28	76°55'41"	50.00'	67.13'

60 30 0 60
ORIGINAL SCALE: 1" = 60'

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COLORADO P.E. 25043
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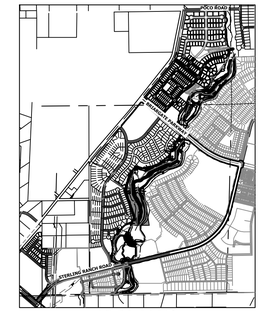
12/20/24
DATE



KEY MAP
SCALE: 1"=2000'

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CHECKED BY	

SAND CREEK RESTORATION

HORIZONTAL CONTROL PLAN

SHEET 16 OF 121

JOB NO. 25188.04

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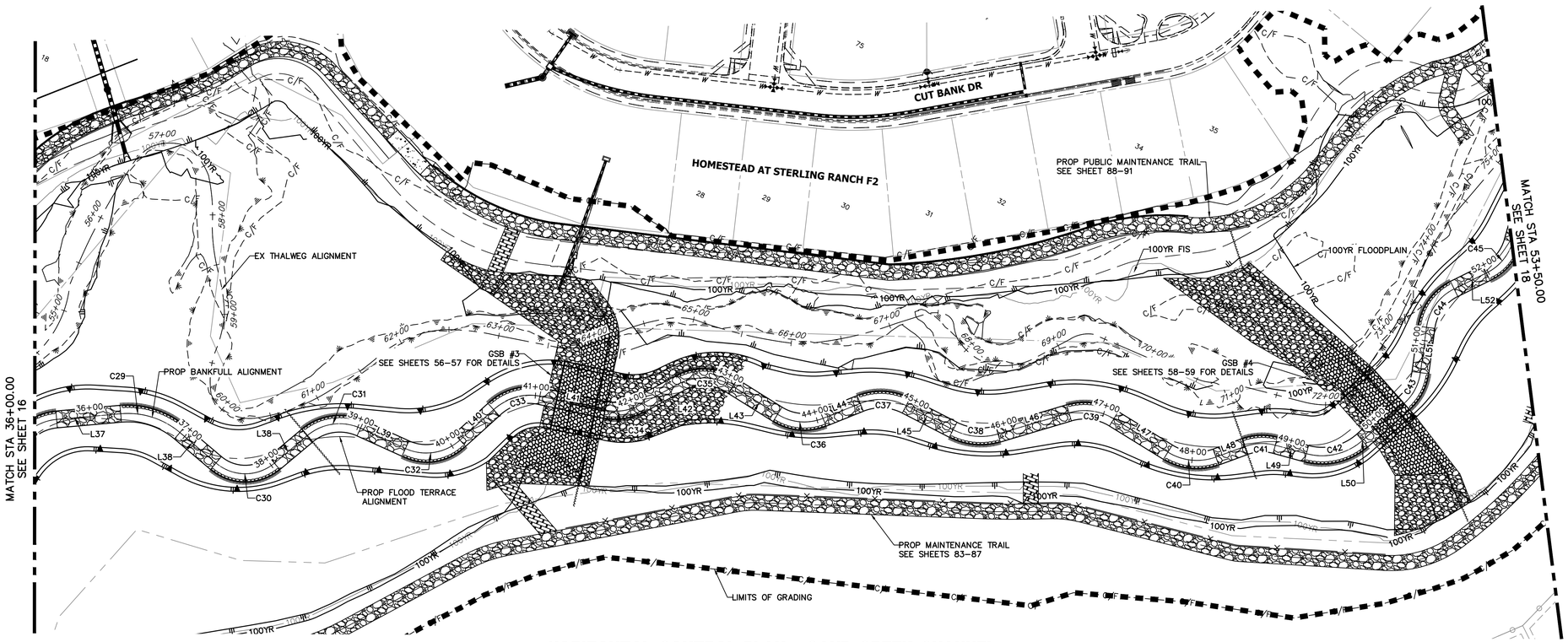


HORIZONTAL CONTROL PLAN - SAND CREEK CHANNEL

SCALE: 1"=60'

LINE AND CURVE TABLES - SAND CREEK BANKFULL CHANNEL

LINE TABLE		
LINE	BEARING	DISTANCE
L37	N58°14'53"E	63.95'
L38	N23°17'02"E	42.76'
L38	S76°25'16"E	47.01'
L39	N87°41'41"E	45.75'
L40	N21°13'33"E	44.40'
L41	N75°25'05"E	64.51'
L42	N34°33'05"E	42.89'
L43	S84°42'53"E	55.35'
L44	N41°26'25"E	39.80'
L45	S89°25'20"E	52.47'
L46	N46°45'21"E	73.56'
L47	S85°00'28"E	63.14'
L48	N43°19'47"E	30.76'
L49	N78°33'01"E	31.87'
L50	N21°39'45"E	55.35'
L51	N19°00'37"W	45.47'
L52	N37°01'40"E	38.30'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C29	45°19'51"	80.00'	63.29'
C30	80°20'28"	44.98'	63.07'
C31	64°24'39"	50.00'	56.21'
C32	66°28'33"	50.00'	58.01'
C33	54°11'32"	50.00'	47.29'
C34	40°52'03"	50.00'	35.66'
C35	54°22'21"	55.35'	52.53'
C36	53°55'33"	50.00'	47.06'
C37	49°08'15"	55.00'	47.17'
C38	43°49'19"	60.00'	45.89'
C39	48°14'11"	55.00'	46.30'
C40	51°39'45"	55.00'	49.59'
C41	35°13'13"	50.00'	30.74'
C42	58°17'59"	58.67'	59.70'
C43	40°40'23"	50.00'	35.49'
C44	56°02'17"	50.00'	48.90'
C45	48°10'16"	49.86'	41.92'

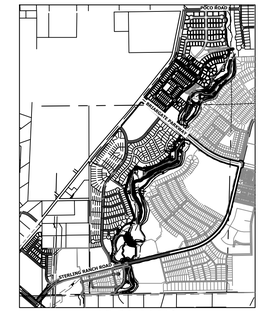
60 30 0 60
ORIGINAL SCALE: 1" = 60'

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT
PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE



KEY MAP
SCALE: 1"=2000'

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PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419–3024

J·R ENGINEERING
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Centennial 303–740–9393 • Colorado Springs 719–593–2593
Fort Collins 970–491–9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H–SCALE	1"=60'
V–SCALE	N/A
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

HORIZONTAL CONTROL PLAN

SHEET 17 OF 121

JOB NO. 25188.04

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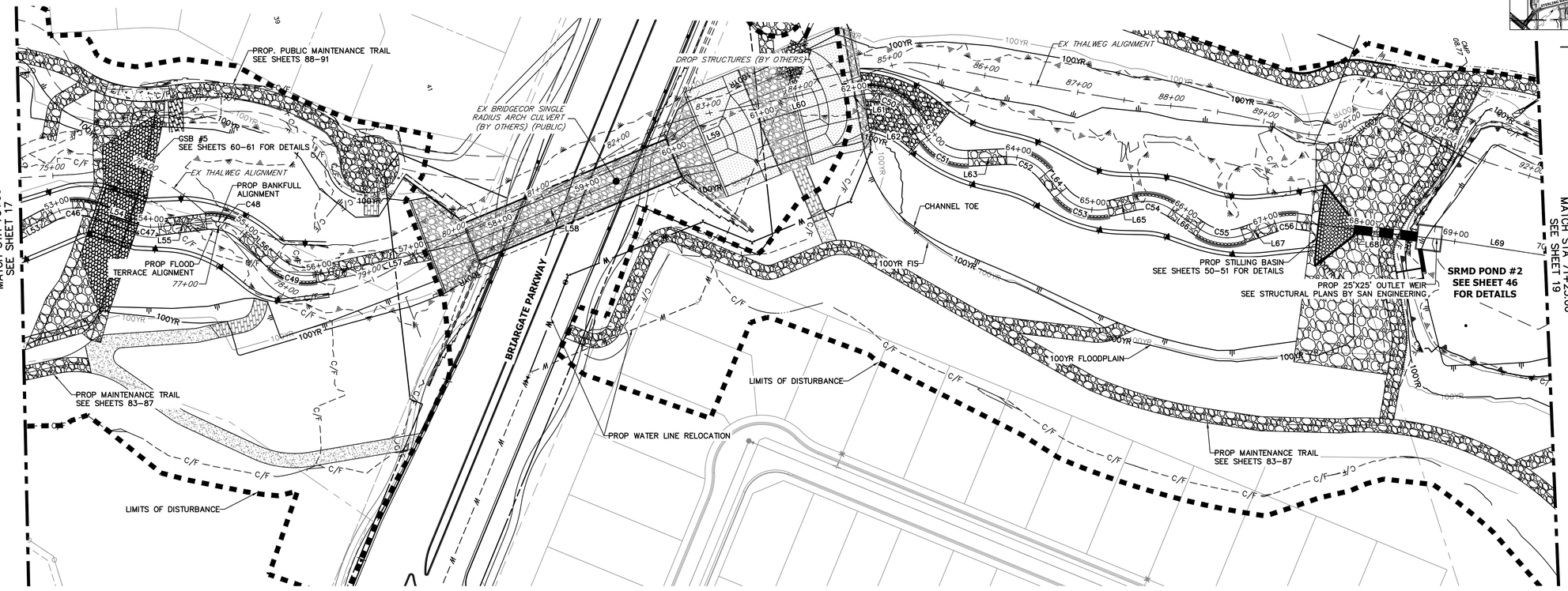

HORIZONTAL CONTROL PLAN - SAND CREEK CHANNEL

SCALE: 1"=60'

LINE AND CURVE TABLES - SAND CREEK BANKFULL CHANNEL

LINE TABLE		
LINE	BEARING	DISTANCE
L53	N10°26'39"W	52.51'
L54	N35°00'03"E	50.07'
L55	N10°44'45"E	50.63'
L56	N60°54'10"E	43.33'
L57	N05°12'24"E	171.36'
L58	N05°23'49"W	227.79'
L59	N05°23'49"W	100.46'
L60	N00°44'30"E	91.02'
L61	N07°39'00"E	24.57'
L62	N73°38'46"E	29.14'
L63	N14°36'29"E	40.64'
L64	N68°08'38"E	25.60'
L65	N03°58'14"E	28.73'
L66	N51°56'37"E	36.80'
L67	N02°24'18"W	36.29'
L68	N24°19'33"E	149.34'
L69	N25°56'53"E	128.38'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C46	45°46'29"	55.01'	43.95'
C47	25°20'29"	50.22'	22.21'
C48	50°37'31"	50.00'	44.18'
C49	54°19'17"	50.00'	47.40'
C50	65°59'46"	50.00'	57.59'
C51	58°56'29"	50.19'	51.63'
C52	53°32'09"	50.00'	46.72'
C53	64°10'24"	50.00'	56.00'
C54	47°58'23"	50.00'	41.86'
C55	54°20'55"	50.00'	47.43'
C56	26°43'51"	50.00'	23.33'

60 30 0 60
ORIGINAL SCALE: 1" = 60'

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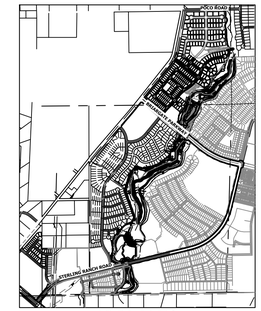

KEY MAP
SCALE: 1"=2000'

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V–SCALE	N/A
DATE	12/20/24
DESIGNED BY	DJV
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CHECKED BY	

SAND CREEK RESTORATION

HORIZONTAL CONTROL PLAN

SHEET 18 OF 121

JOB NO. 25188.04

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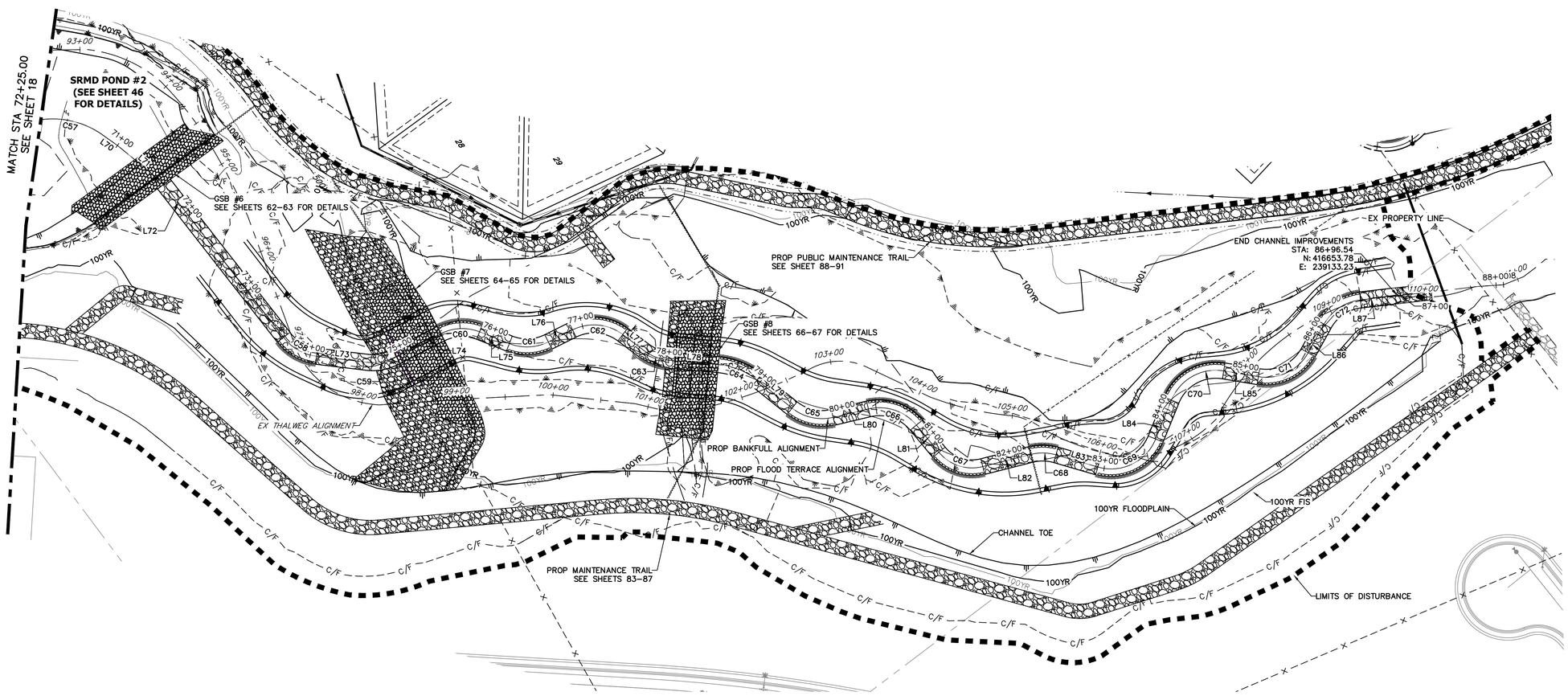

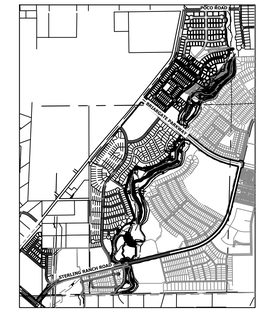

KEY MAP
SCALE: 1"=2000'

HORIZONTAL CONTROL PLAN - SAND CREEK CHANNEL

SCALE: 1"=50'

LINE AND CURVE TABLES - SAND CREEK BANKFULL CHANNEL

LINE TABLE

LINE	BEARING	DISTANCE
L70	N71°47'03"E	19.62'
L71	N75°44'54"E	61.12'
L72	N88°15'33"E	204.10'
L73	N43°02'34"E	52.87'
L74	N09°08'25"E	54.02'
L75	N57°53'21"E	33.46'
L76	N09°48'06"E	28.21'
L77	N73°17'31"E	27.67'
L78	N41°18'28"E	51.56'
L79	N74°55'24"E	46.84'
L80	N22°53'04"E	37.83'
L81	N86°42'25"E	36.83'
L82	N22°00'31"E	51.65'
L83	N52°26'30"E	45.59'
L84	N31°41'54"W	43.63'
L85	N45°44'54"E	36.65'
L86	N24°37'06"W	34.08'
L87	N29°45'43"E	33.26'

CURVE TABLE

CURVE	DELTA	RADIUS	LENGTH
C57	45°50'10"	90.00'	72.00'
C58	46°32'33"	50.08'	40.68'
C59	34°22'46"	50.02'	30.02'
C60	47°43'06"	50.03'	41.67'
C61	48°17'05"	49.81'	41.98'
C62	63°30'09"	49.99'	55.41'
C63	32°34'55"	50.22'	28.56'
C64	33°32'59"	75.28'	44.08'
C65	52°02'18"	50.00'	45.41'
C66	63°49'22"	50.00'	55.70'
C67	64°37'45"	45.04'	50.81'
C68	30°26'04"	50.00'	26.56'
C69	83°48'51"	50.22'	73.47'
C70	77°26'48"	50.00'	67.59'
C71	70°22'00"	50.00'	61.41'
C72	54°22'49"	50.00'	47.46'

60 30 0 60
ORIGINAL SCALE: 1" = 60'

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT
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12/20/24
DATE

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H-SCALE	1"=60'
V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	NEO
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

HORIZONTAL CONTROL PLAN

SHEET 19 OF 121

JOB NO. 25188.04

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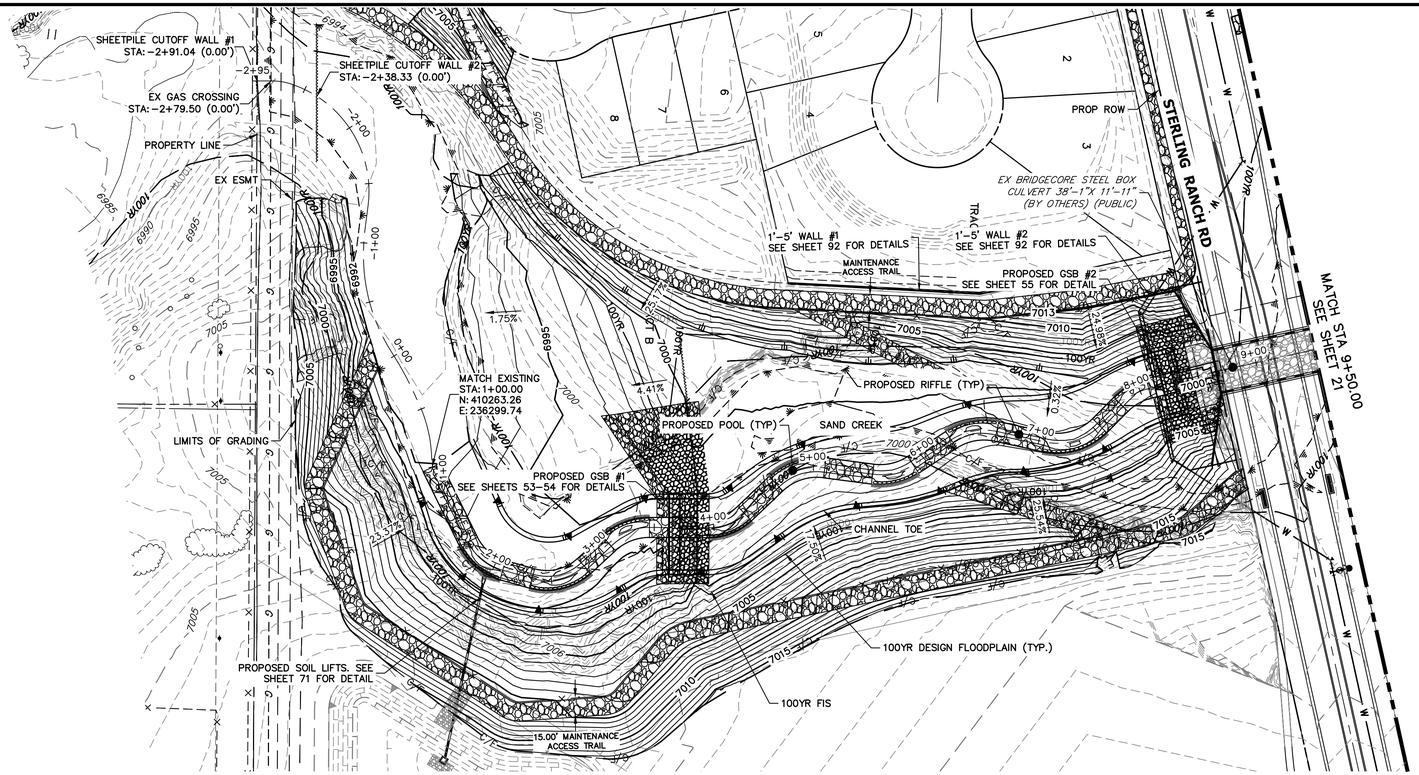


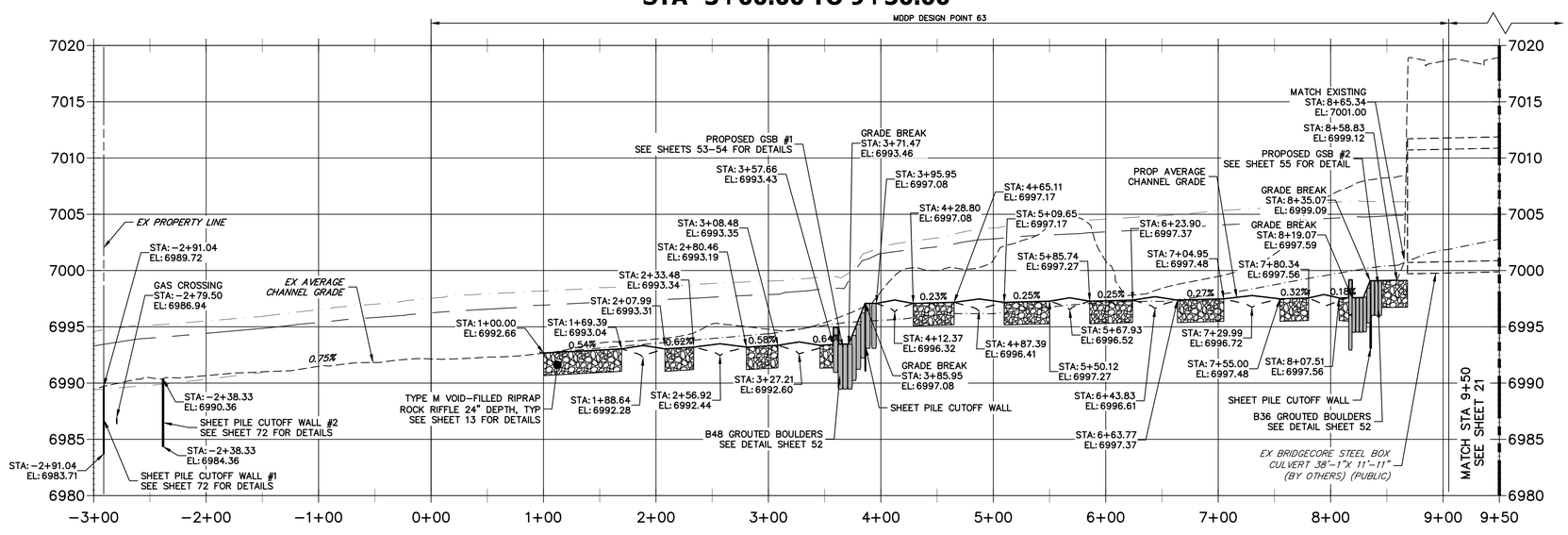
KEY MAP
SCALE: 1"=2000'

PROFILE LEGEND

- EXISTING GRADE PROFILE @ CHANNEL ℄
- FINISHED GRADE PROFILE @ CHANNEL ℄
- EXISTING THALWEG PROFILE
- THALWEG PROFILE
- 100-YR FIS WSEL PROFILE
- 100-YR MDDP WSEL PROFILE

SAND CREEK FLOW RATES				
Location	Station	MDDP DESIGN POINT	Flow Rate (cfs)	
			100-YR Design MDDP	100-YR FIS
Northern Bndy	STA: 87+10	DP-72	1644.1	2600
Stock Pond 2	STA:73+50	DP-71	1667.0	2600
Briargate Pkwy	STA:61+00	DP-70	1763.9	2600
	STA:36+05	DP-69	1880.4	2600
SRMD Pond 1	STA:16+80	DP 87	1848.8	2600
Sterling Ranch Road	STA:09+05	DP-68	1562.5	2600
Sterling Ranch Southern Bndy	STA:00+00	DP-63	1585.2	2600

SAND CREEK - BANKFULL PROFILE 1
STA -3+00.00 TO 9+50.00



NOTE

1. NO GRADING OR CONSTRUCTION ACTIVITIES ON PRIVATE PROPERTY.
2. DRIVE SHEET PILE THROUGH BEDROCK OR MINIMUM OF 6 FEET.
3. SEE SHEETS 26-31 FOR STABLE GRADE PROFILES.

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

60 30 0 60
HORIZONTAL
ORIGINAL SCALE: 1" = 60'
VERTICAL
ORIGINAL SCALE: 1" = 6'

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12/20/24
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V-SCALE	1"=6'
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION
CHANNEL PLAN & PROFILE

SHEET 20 OF 121
JOB NO. 25188.04

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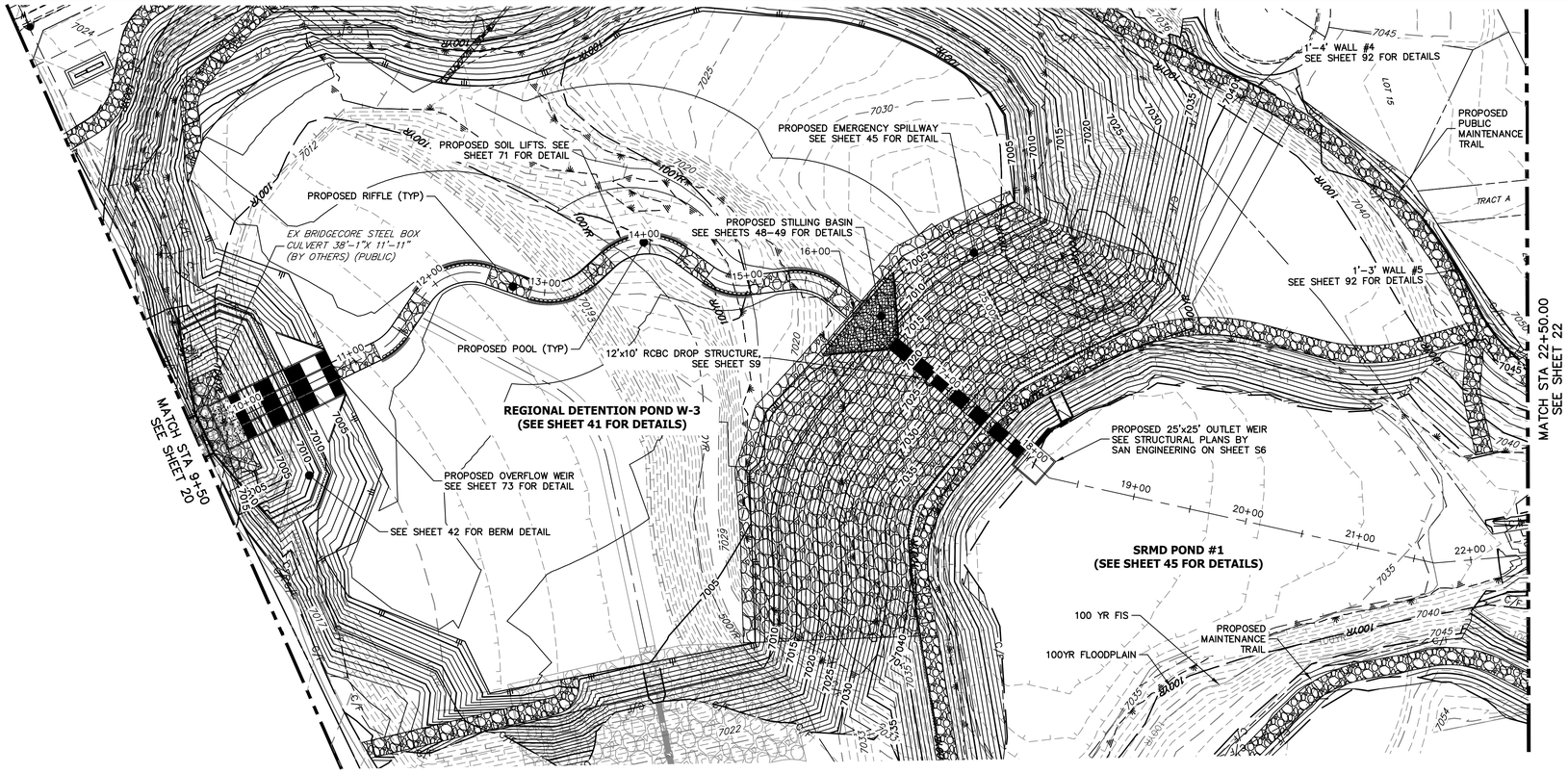
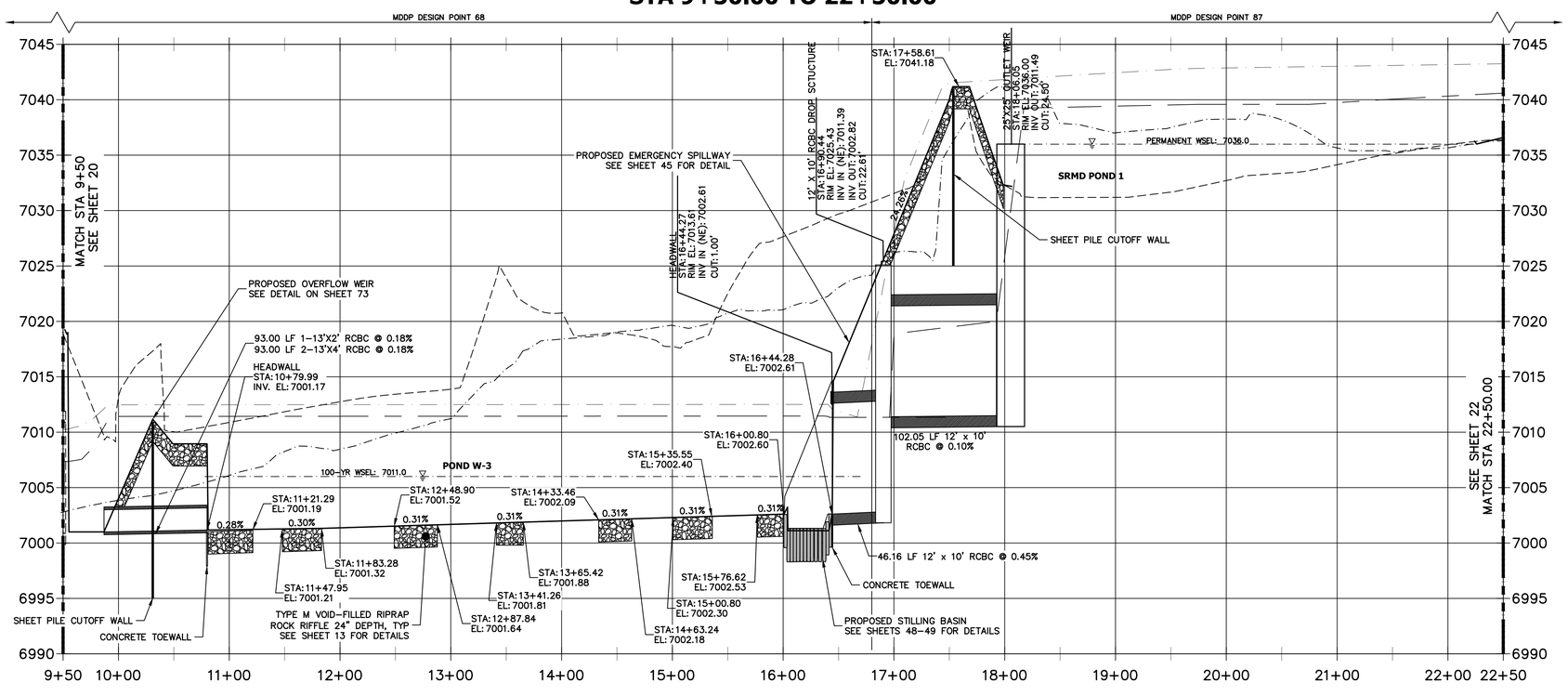


SAND CREEK - BANKFULL PROFILE 2
STA 9+50.00 TO 22+50.00



KEY MAP
SCALE: 1"=2000'

PROFILE LEGEND

- EXISTING GRADE PROFILE @ CHANNEL ℄
- FINISHED GRADE PROFILE @ CHANNEL ℄
- EXISTING THALWEG PROFILE
- THALWEG PROFILE
- 100-YR FIS WSEL PROFILE
- 100-YR MDDP WSEL PROFILE

SAND CREEK FLOW RATES				
Location	Station	MDDP DESIGN POINT	Flow Rate (cfs)	
			100-YR Design MDDP	100-YR FIS
Northern Bndy	STA: 87+10	DP-72	1644.1	2600
Stock Pond 2	STA:73+50	DP-71	1667.0	2600
Briargate Pkwy	STA:61+00	DP-70	1763.9	2600
	STA:36+05	DP-69	1880.4	2600
SRMD Pond 1	STA:16+80	DP 87	1848.8	2600
Sterling Ranch Road	STA:09+05	DP-68	1562.5	2600
Sterling Ranch Southern Bndy	STA:00+00	DP-63	1585.2	2600

Know what's **below.** **Call** before you dig.

60 30 0 60
HORIZONTAL
ORIGINAL SCALE: 1" = 60'
VERTICAL
ORIGINAL SCALE: 1" = 6'

ENGINEER'S STATEMENT

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DATE	12/20/24
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DRAWN BY	NEO
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SAND CREEK RESTORATION

CHANNEL PLAN & PROFILE

SHEET 21 OF 121

JOB NO. 25188.04

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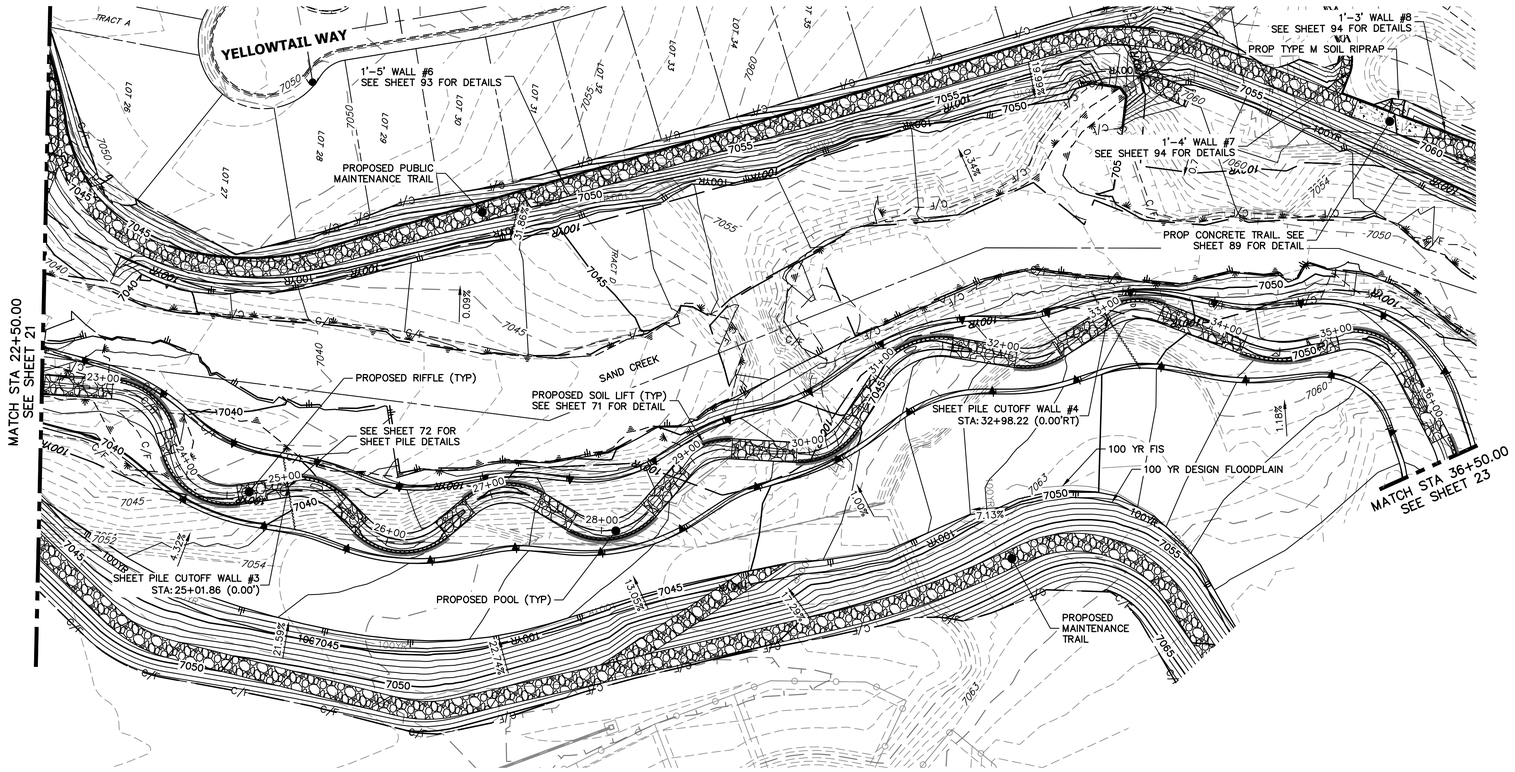


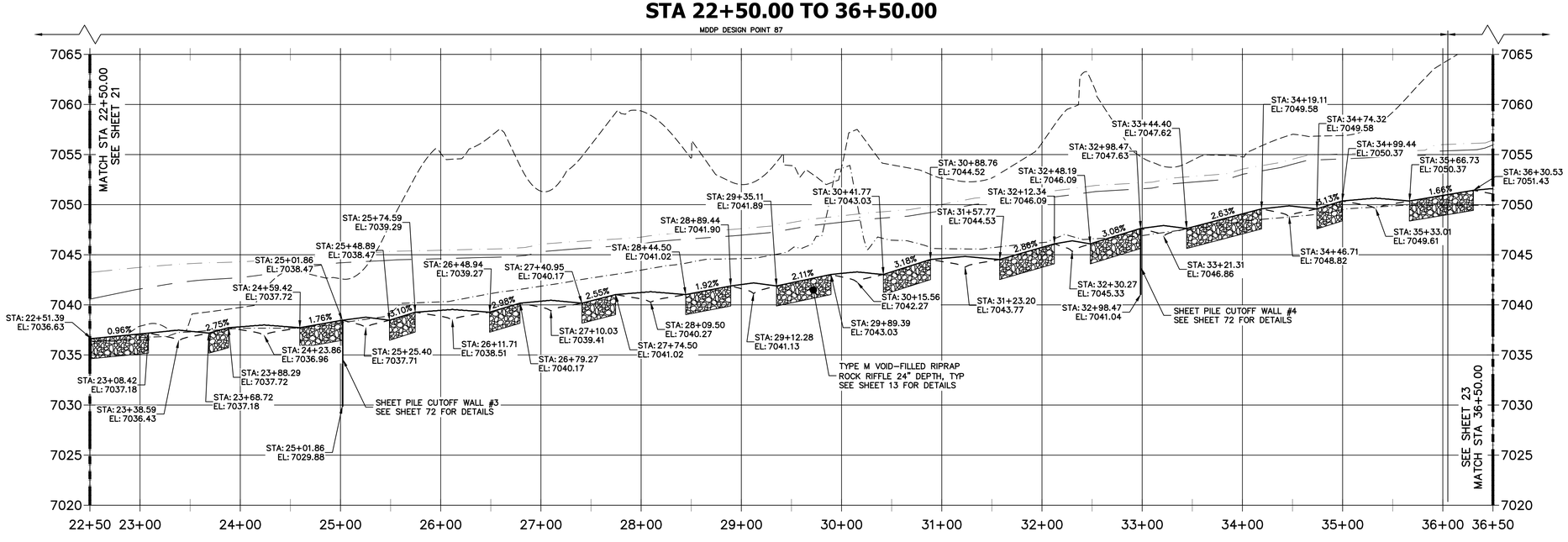
KEY MAP
SCALE: 1"=2000'

PROFILE LEGEND

- EXISTING GRADE PROFILE @ CHANNEL ℄
- FINISHED GRADE PROFILE @ CHANNEL ℄
- EXISTING THALWEG PROFILE
- THALWEG PROFILE
- 100-YR FIS WSEL PROFILE
- 100-YR MDDP WSEL PROFILE

SAND CREEK FLOW RATES				
Location	Station	MDDP DESIGN POINT	Flow Rate (cfs)	
			100-YR Design MDDP	100-YR FIS
Northern Bndy	STA: 87+10	DP-72	1644.1	2600
Stock Pond 2	STA:73+50	DP-71	1667.0	2600
Briargate Pkwy	STA:61+00	DP-70	1763.9	2600
	STA:36+05	DP-69	1880.4	2600
SRMD Pond 1	STA:16+80	DP 87	1848.8	2600
Sterling Ranch Road	STA:09+05	DP-68	1562.5	2600
Sterling Ranch Southern Bndy	STA:00+00	DP-63	1585.2	2600

SAND CREEK - BANKFULL PROFILE 3
STA 22+50.00 TO 36+50.00



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V-SCALE	1"=6'
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

CHANNEL PLAN & PROFILE

SHEET 22 OF 121

JOB NO. 25188.04

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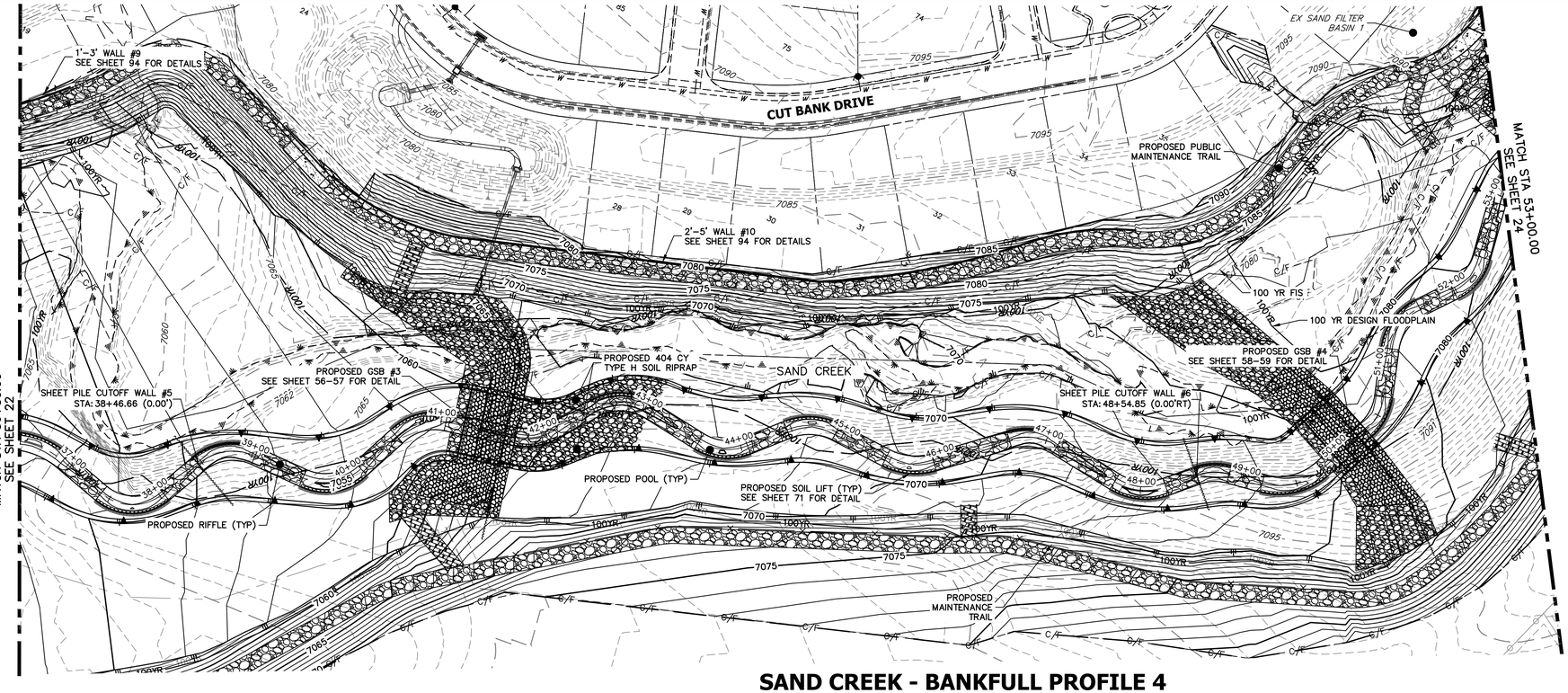
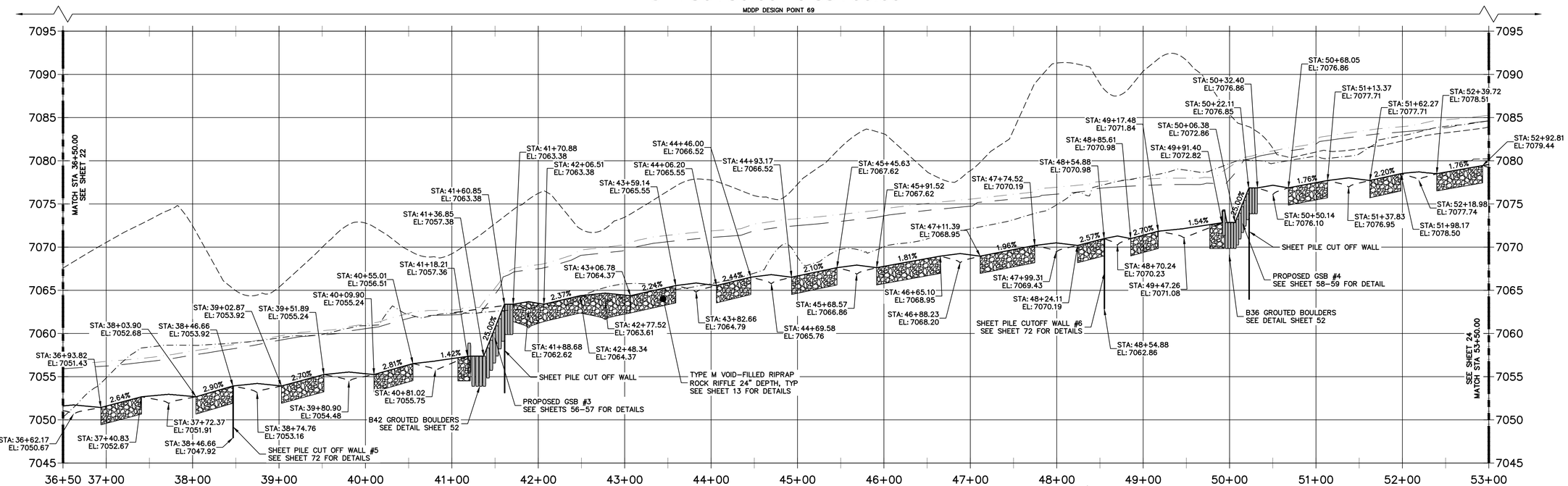


SAND CREEK - BANKFULL PROFILE 4
STA 36+50.00 TO 53+00.00



KEY MAP
SCALE: 1"=2000'

PROFILE LEGEND

- EXISTING GRADE PROFILE @ CHANNEL ℄
- FINISHED GRADE PROFILE @ CHANNEL ℄
- EXISTING THALWEG PROFILE
- THALWEG PROFILE
- 100-YR FIS WSEL PROFILE
- 100-YR MDDP WSEL PROFILE

SAND CREEK FLOW RATES

Location	Station	MDDP DESIGN POINT	Flow Rate (cfs)	
			100-YR Design MDDP	100-YR FIS
Northern Bndy	STA: 87+10	DP-72	1644.1	2600
Stock Pond 2	STA:73+50	DP-71	1667.0	2600
Briargate Pkwy	STA:61+00	DP-70	1763.9	2600
	STA:36+05	DP-69	1880.4	2600
SRMD Pond 1	STA:16+80	DP 87	1848.8	2600
Sterling Ranch Road	STA:09+05	DP-68	1562.5	2600
Sterling Ranch Southern Bndy	STA:00+00	DP-63	1585.2	2600

HORIZONTAL
ORIGINAL SCALE: 1" = 60'
VERTICAL
ORIGINAL SCALE: 1" = 6'

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT
PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24
DATE

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

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	1"=60'
V-SCALE	1"=6'
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION
CHANNEL PLAN & PROFILE

SHEET 23 OF 121
JOB NO. 25188.04

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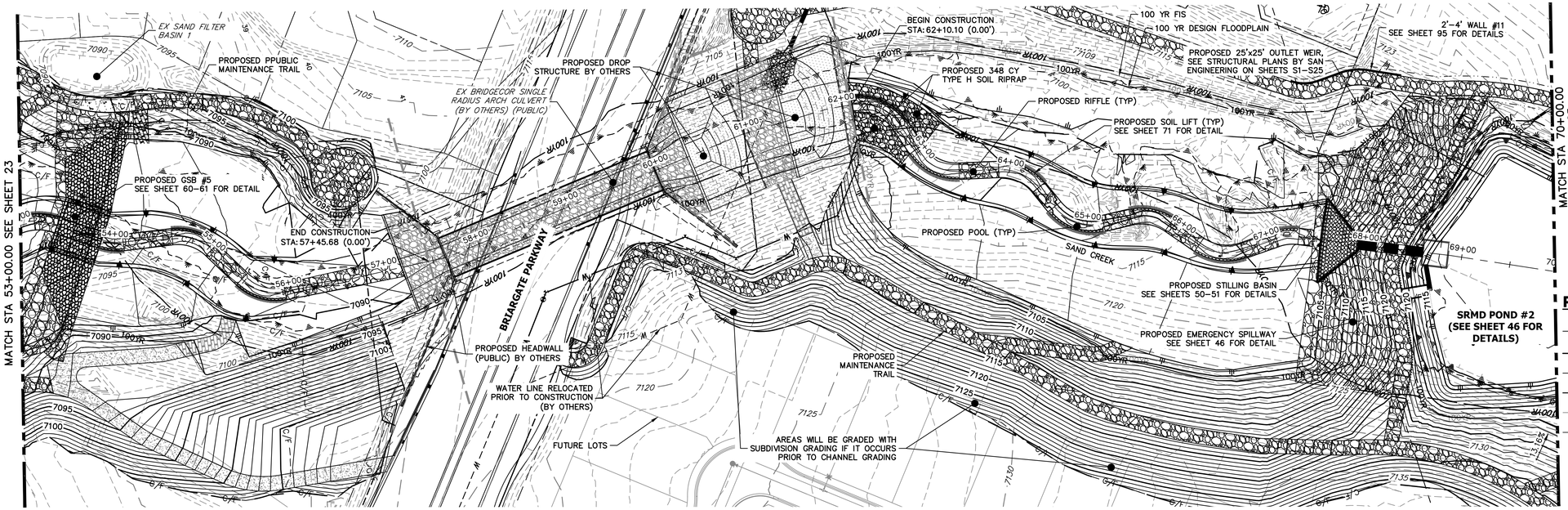
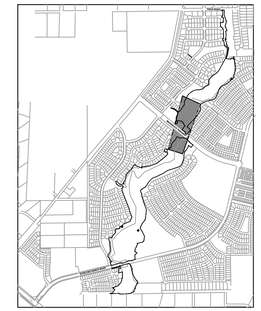




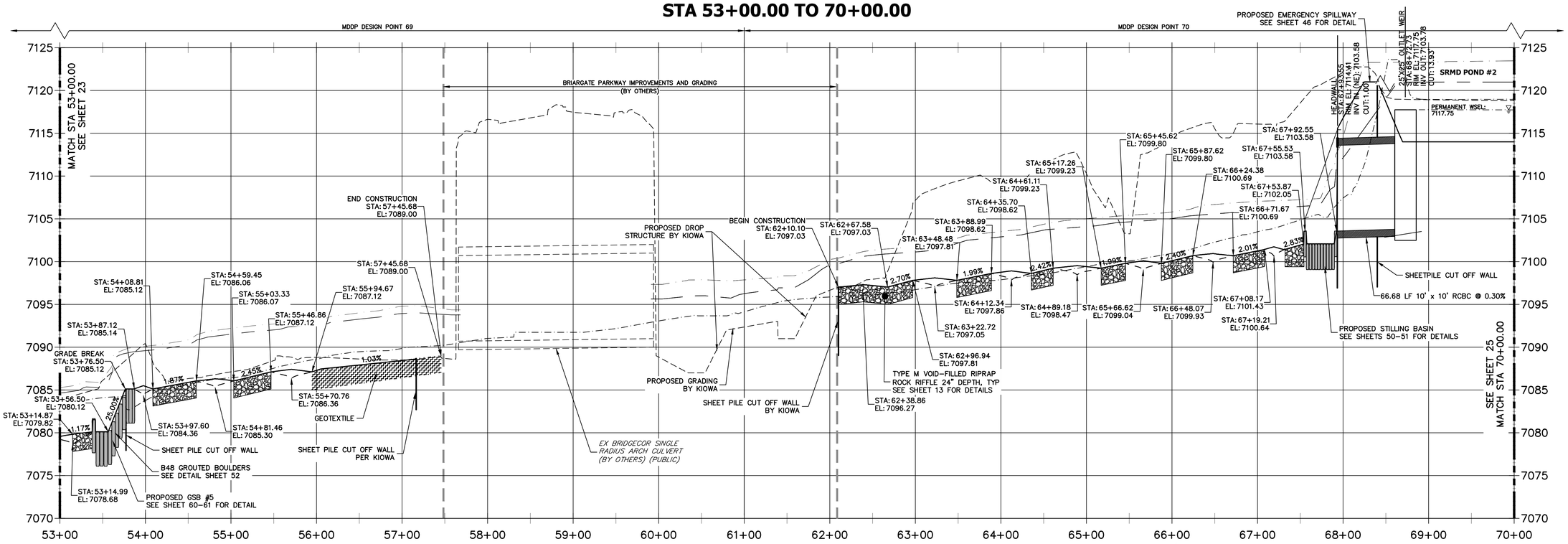
KEY MAP

SCALE: 1"=2000'

PROFILE LEGEND

- EXISTING GRADE PROFILE @ CHANNEL ℄
- FINISHED GRADE PROFILE @ CHANNEL ℄
- EXISTING THALWEG PROFILE
- THALWEG PROFILE
- 100-YR FIS WSEL PROFILE
- 100-YR MDDP WSEL PROFILE

SAND CREEK - BANKFULL PROFILE 5
STA 53+00.00 TO 70+00.00



SAND CREEK FLOW RATES				
Location	Station	MDDP DESIGN POINT	Flow Rate (cfs)	
			100-YR Design MDDP	100-YR FIS
Northern Bndy	STA: 87+10	DP-72	1644.1	2600
Stock Pond 2	STA:73+50	DP-71	1667.0	2600
Briargate Pkwy	STA:61+00	DP-70	1763.9	2600
	STA:36+05	DP-69	1880.4	2600
SRMD Pond 1	STA:16+80	DP 87	1848.8	2600
Sterling Ranch Road	STA:09+05	DP-68	1562.5	2600
Sterling Ranch Southern Bndy	STA:00+00	DP-63	1585.2	2600

60 30 0 60

HORIZONTAL ORIGINAL SCALE: 1" = 60'

VERTICAL ORIGINAL SCALE: 1" = 6'

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ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

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DATE 12/20/24

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V-SCALE	1"=6'
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

CHANNEL PLAN & PROFILE

SHEET 24 OF 121

JOB NO. 25188.04

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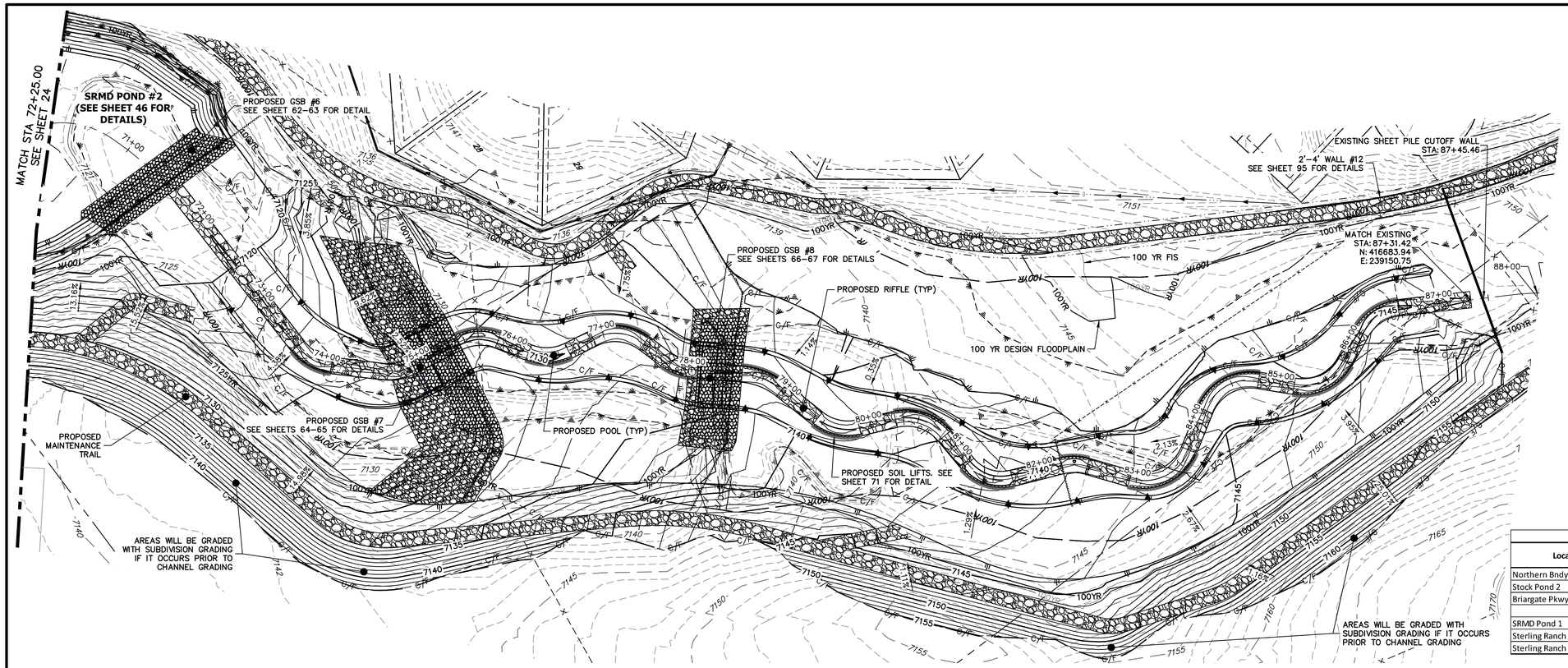


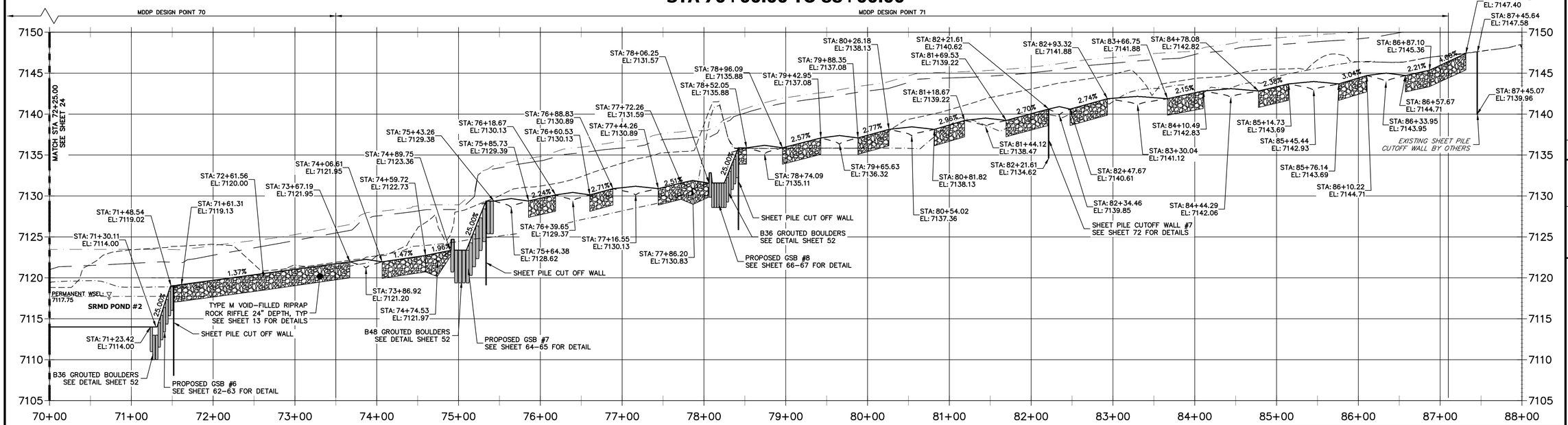
KEY MAP
SCALE: 1"=2000'

PROFILE LEGEND

- EXISTING GRADE PROFILE @ CHANNEL ℄
- FINISHED GRADE PROFILE @ CHANNEL ℄
- EXISTING THALWEG PROFILE
- THALWEG PROFILE
- 100–YR FIS WSEL PROFILE
- 100–YR MDDP WSEL PROFILE

SAND CREEK FLOW RATES				
Location	Station	MDDP DESIGN POINT	Flow Rate (cfs) 100-YR Design MDDP	Flow Rate (cfs) 100-YR FIS
Northern Bndy	STA: 87+10	DP-72	1644.1	2600
Stock Pond 2	STA:73+50	DP-71	1667.0	2600
Briargate Pkwy	STA:61+00	DP-70	1763.9	2600
	STA:36+05	DP-69	1880.4	2600
SRMD Pond 1	STA:16+80	DP 87	1848.8	2600
Sterling Ranch Road	STA:09+05	DP-68	1562.5	2600
Sterling Ranch Southern Bndy	STA:00+00	DP-63	1585.2	2600

SAND CREEK - BANKFULL PROFILE 6
STA 70+00.00 TO 88+00.00



HORIZONTAL
ORIGINAL SCALE: 1" = 60'
VERTICAL
ORIGINAL SCALE: 1" = 6'

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ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

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COLORADO P.E. 25043
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12/20/24
DATE

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V–SCALE	1"=6'
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION
CHANNEL PLAN & PROFILE

SHEET 25 OF 121
JOB NO. 25188.04

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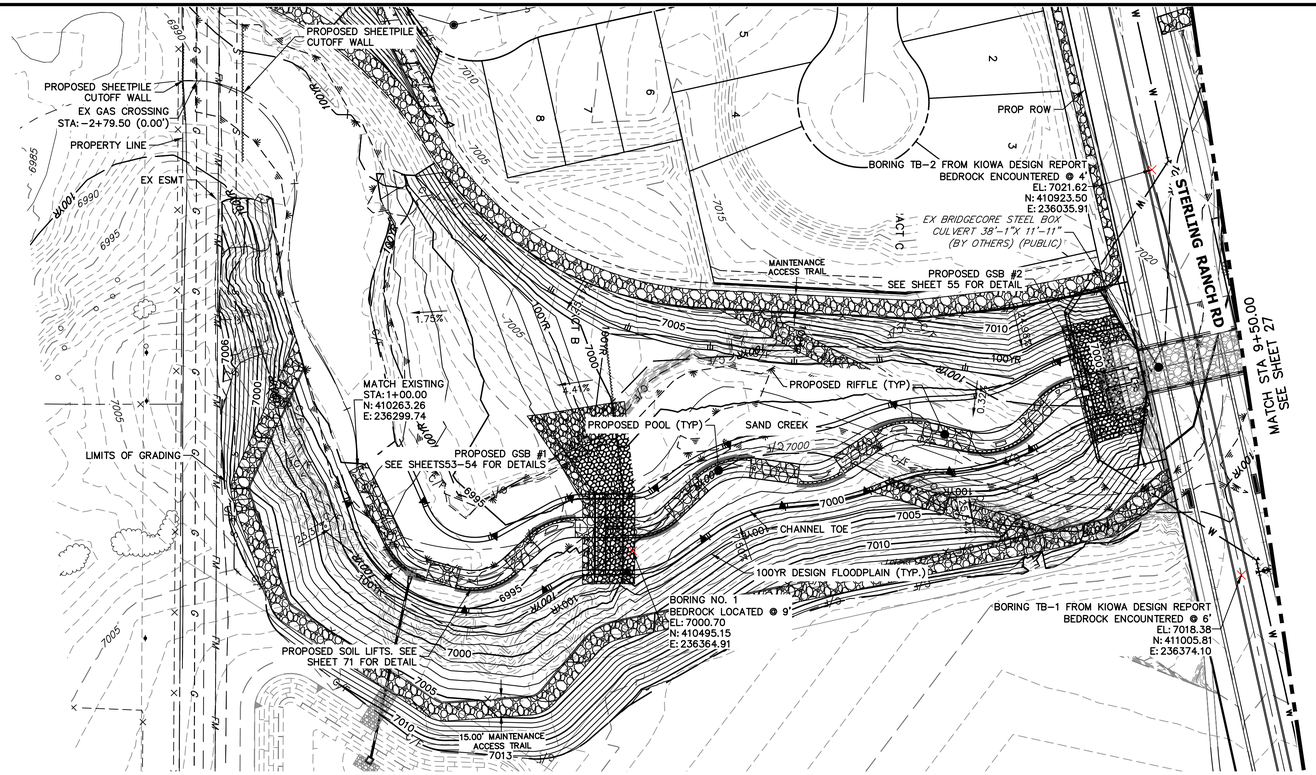
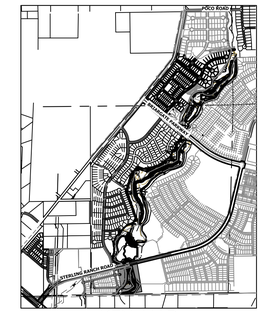
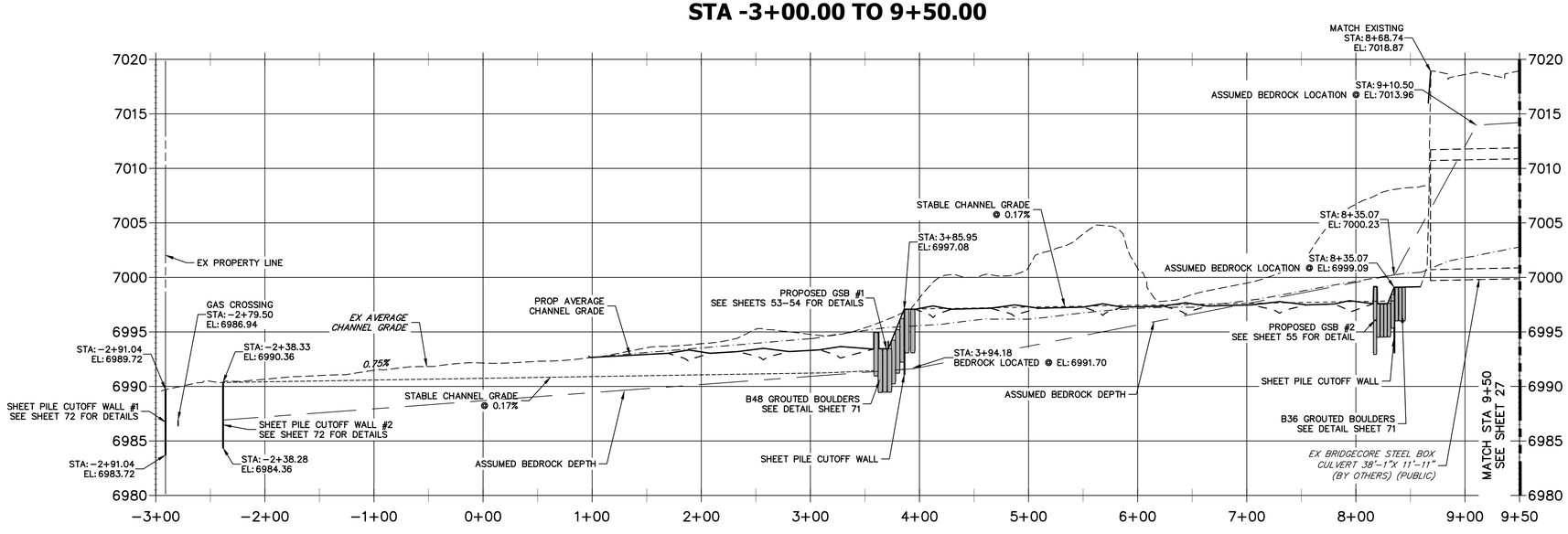




KEY MAP
SCALE: 1"=2000'

SAND CREEK -STABLE CHANNEL GRADE BANKFULL PROFILE 1
STA -3+00.00 TO 9+50.00



LEGEND

- FINISHED GRADE PROFILE @ CHANNEL ℄
- THALWEG PROFILE
- EXISTING GRADE PROFILE @ CHANNEL ℄
- EXISTING THALWEG PROFILE
- STABLE CHANNEL GRADE PROFILE
- ASSUMED BEDROCK LOCATION PROFILE

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2−1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2−1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

NOTE

1. NO GRADING OR CONSTRUCTION ACTIVITIES ON PRIVATE PROPERTY
2. DRIVE SHEET PILE THROUGH BEDROCK OR MINIMUM OF 6 FEET.

60 30 0 60
HORIZONTAL ORIGINAL SCALE: 1" = 60'
VERTICAL ORIGINAL SCALE: 1" = 6'

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24
DATE

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PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419−3024

J·R ENGINEERING
A Westrian Company
Centennial 303−740−9393 • Colorado Springs 719−593−2593
Fort Collins 970−491−9888 • www.jrengineering.com

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H−SCALE	1"=60'
V−SCALE	1"=6'
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

CHANNEL STABLE GRADE PLAN AND PROFILE

SHEET 26 OF 121

JOB NO. 25188.04

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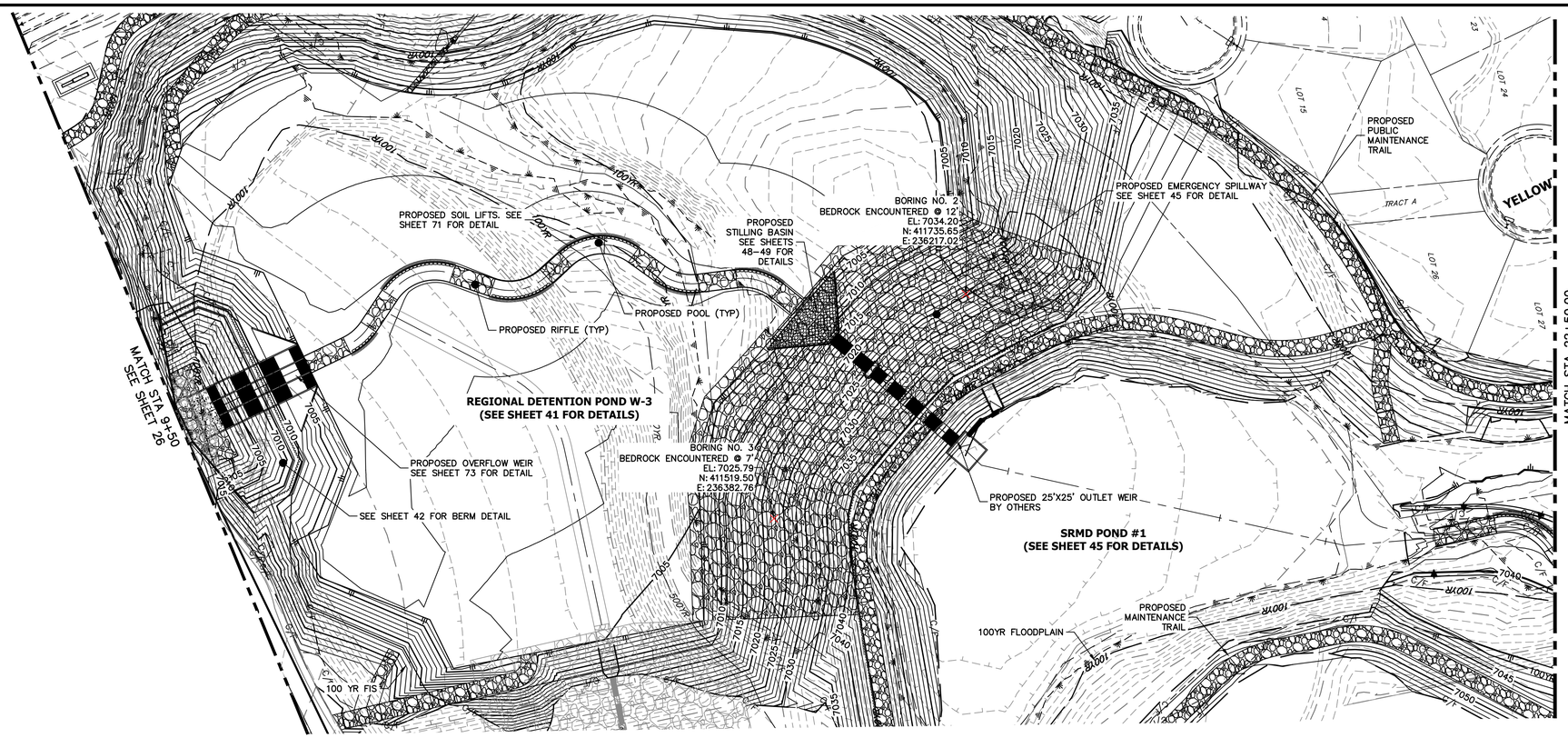

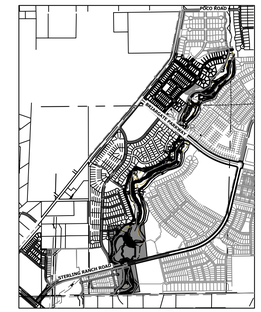

KEY MAP
SCALE: 1"=2000'

LEGEND

- FINISHED GRADE PROFILE @ CHANNEL ℄
- THALWEG PROFILE
- EXISTING GRADE PROFILE @ CHANNEL ℄
- EXISTING THALWEG PROFILE
- STABLE CHANNEL GRADE PROFILE
- ASSUMED BEDROCK LOCATION PROFILE

NOTE

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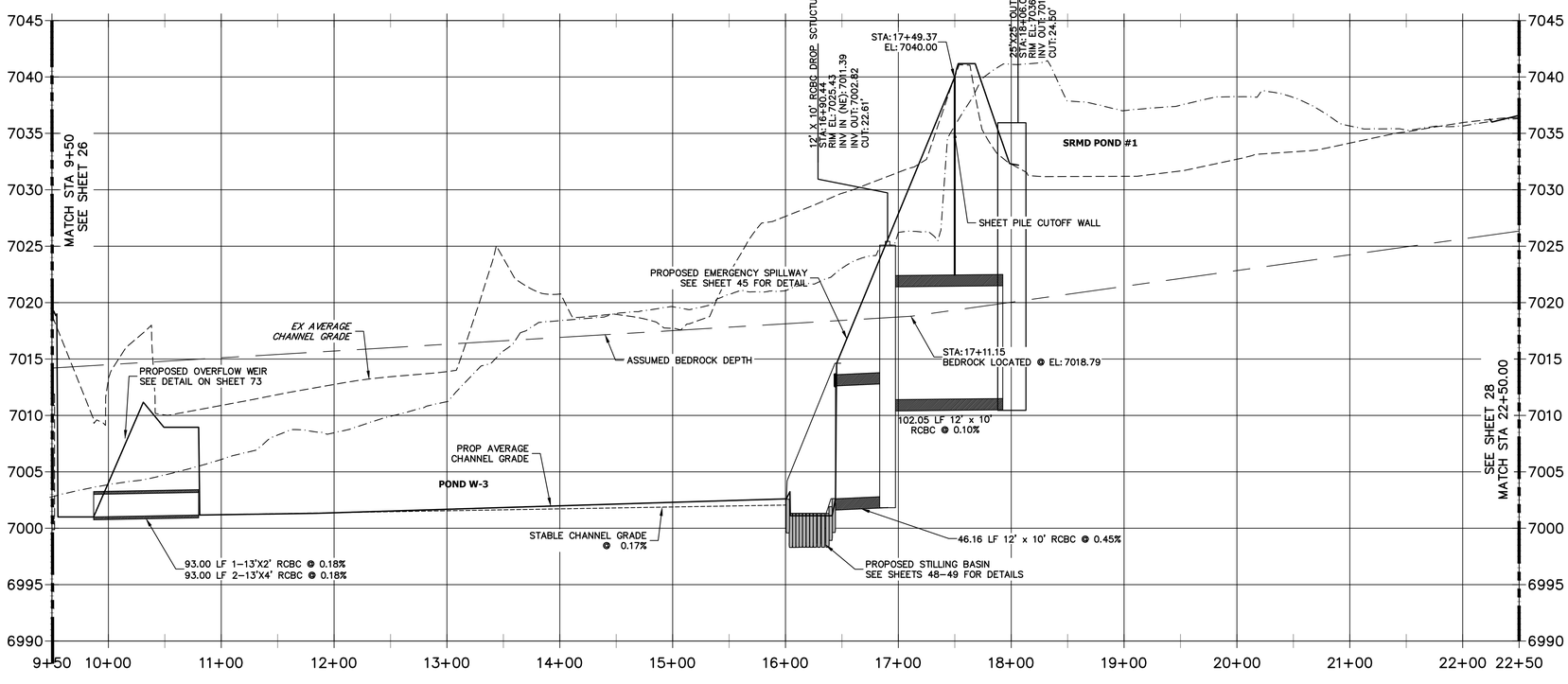
SAND CREEK - STABLE CHANNEL GRADE BANKFULL PROFILE 2
STA 9+50.00 TO 22+50.00



Know what's **below.**
Call before you dig.

60 30 0 60
HORIZONTAL
ORIGINAL SCALE: 1" = 60'
VERTICAL
ORIGINAL SCALE: 1" = 6'

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24
DATE

COLORADO REGISTERED PROFESSIONAL ENGINEER 25043

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

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
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V-SCALE	1"=6'
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

CHANNEL STABLE GRADE PLAN AND PROFILE

SHEET 27 OF 121

JOB NO. 25188.04

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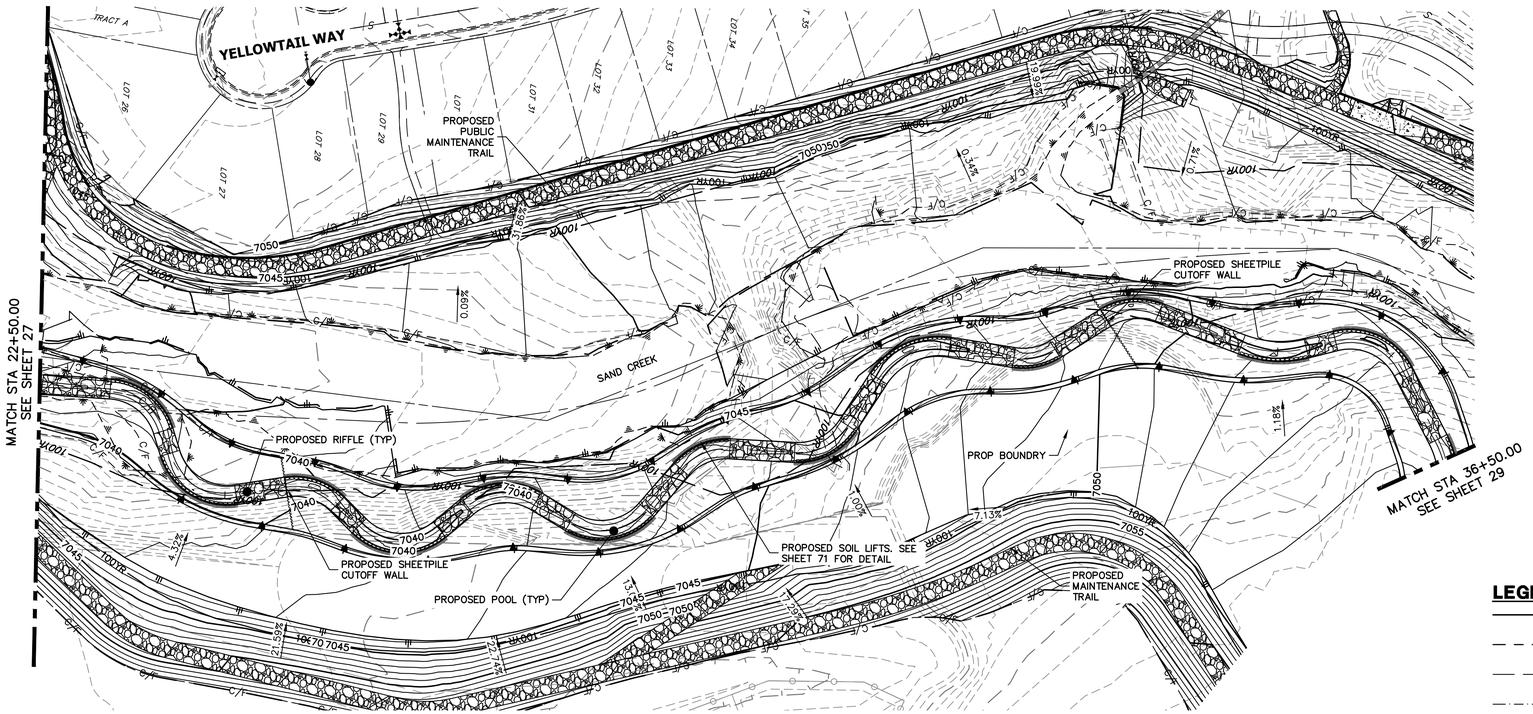
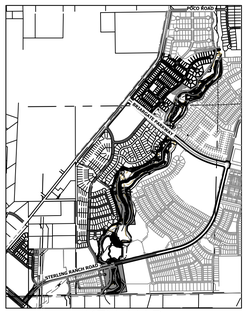


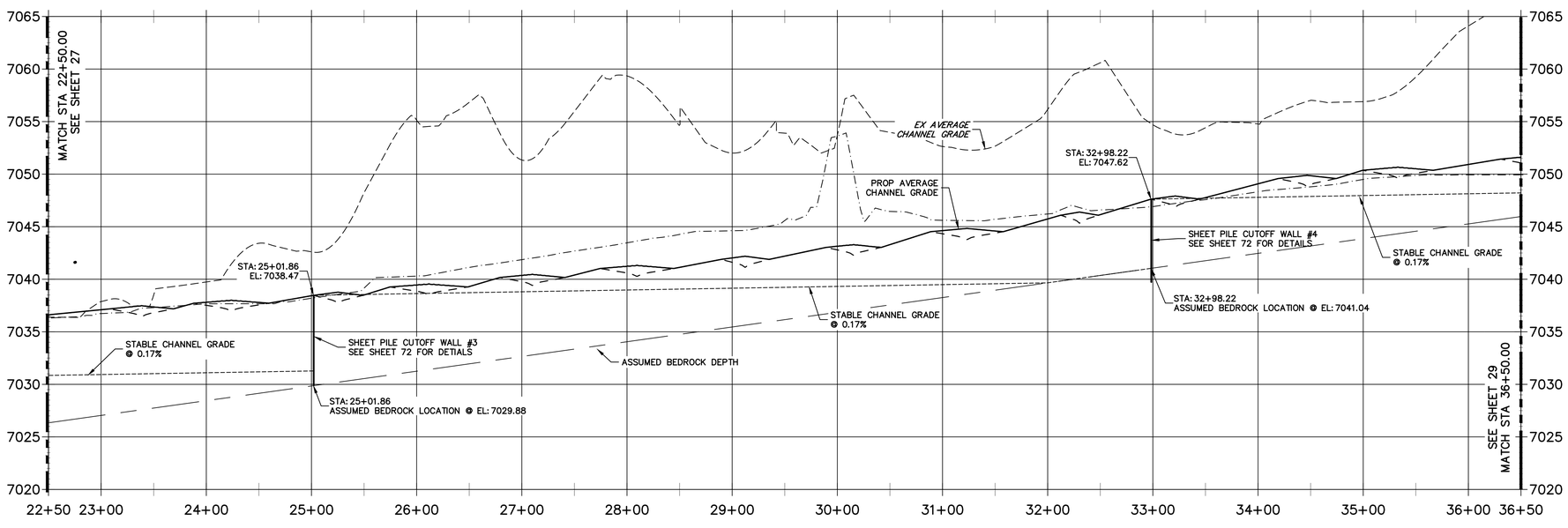


KEY MAP
SCALE: 1"=2000'

LEGEND

- FINISHED GRADE PROFILE @ CHANNEL ℄
- THALWEG PROFILE
- EXISTING GRADE PROFILE @ CHANNEL ℄
- EXISTING THALWEG PROFILE
- STABLE CHANNEL GRADE PROFILE
- ASSUMED BEDROCK LOCATION PROFILE

SAND CREEK - STABLE CHANNEL GRADE BANKFULL PROFILE 3
STA 22+50.00 TO 36+50.00



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60 30 0 60
HORIZONTAL
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VERTICAL
ORIGINAL SCALE: 1" = 6'

NOTE

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ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

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DATE

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DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

CHANNEL STABLE GRADE PLAN AND PROFILE

SHEET 28 OF 121

JOB NO. 25188.04

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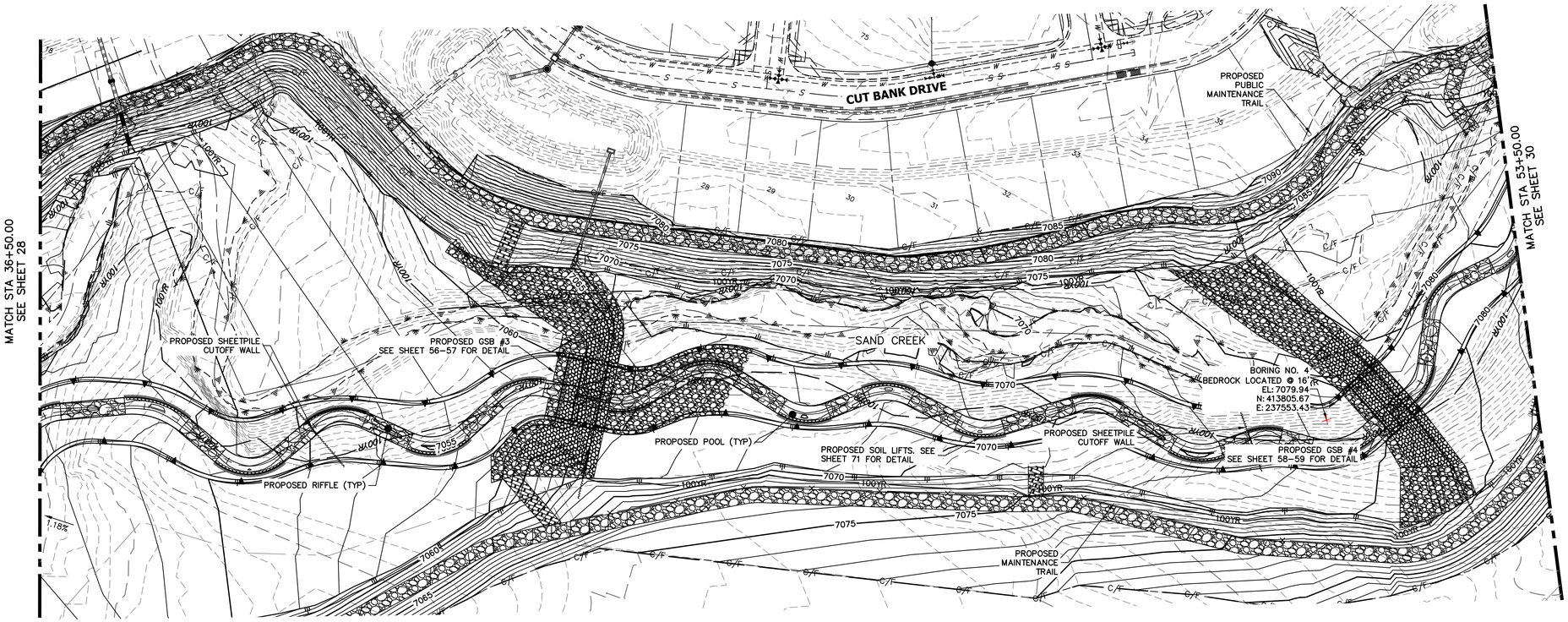
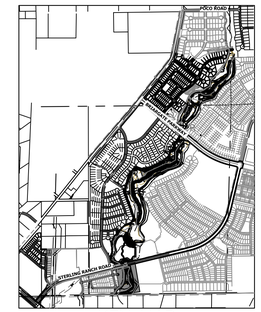




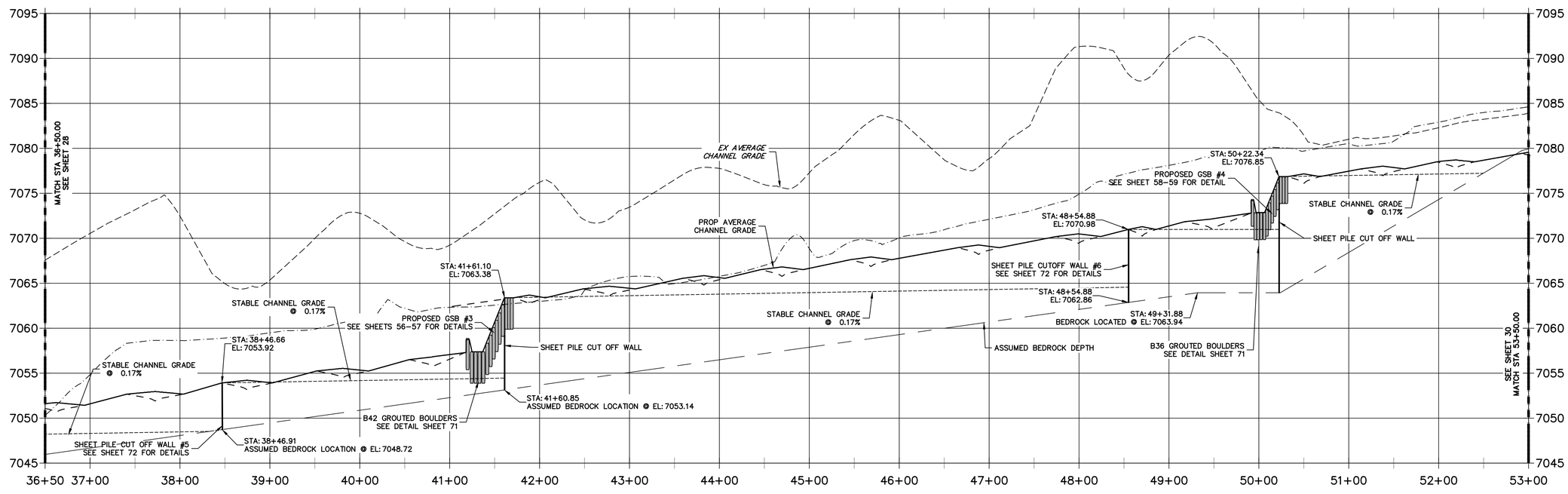
KEY MAP
SCALE: 1"=2000'

LEGEND

- FINISHED GRADE PROFILE @ CHANNEL ℄
- THALWEG PROFILE
- EXISTING GRADE PROFILE @ CHANNEL ℄
- EXISTING THALWEG PROFILE
- STABLE CHANNEL GRADE PROFILE
- ASSUMED BEDROCK LOCATION PROFILE

60 30 0 60
HORIZONTAL
ORIGINAL SCALE: 1" = 60'
VERTICAL
ORIGINAL SCALE: 1" = 6'

SAND CREEK - STABLE CHANNEL GRADE BANKFULL PROFILE 4
STA 36+50.00 TO 53+00.00



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DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

CHANNEL STABLE GRADE PLAN AND PROFILE

SHEET 29 OF 121

JOB NO. 25188.04

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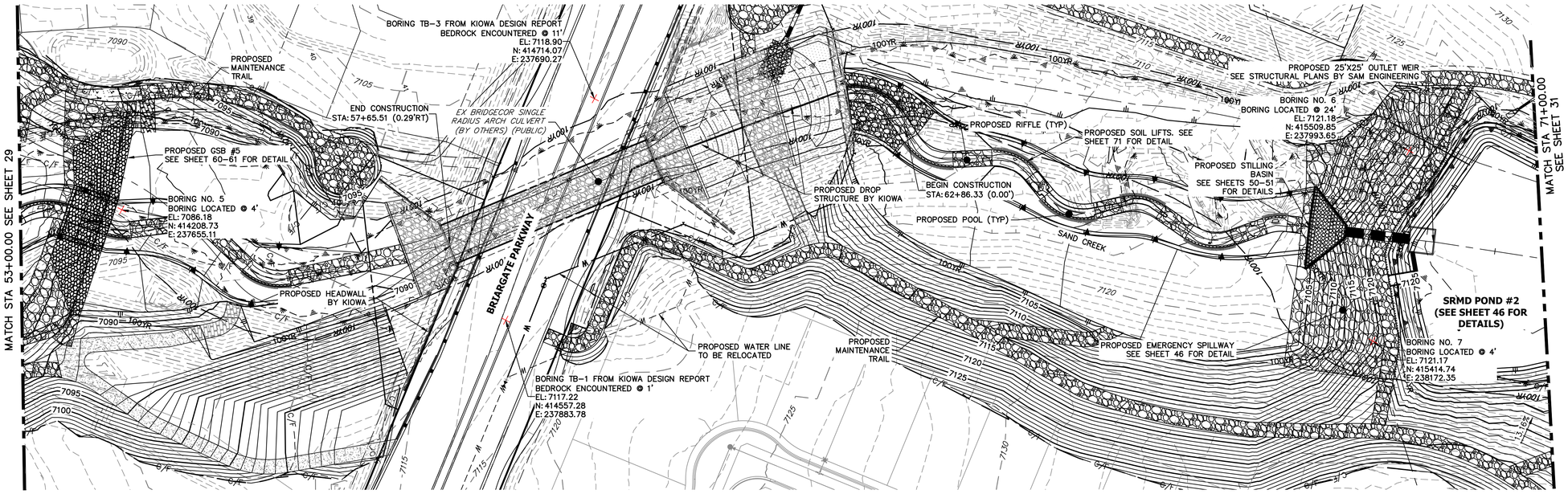
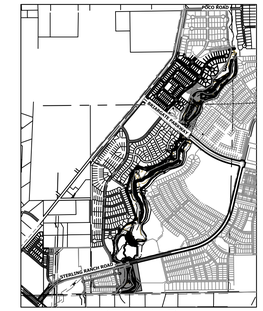
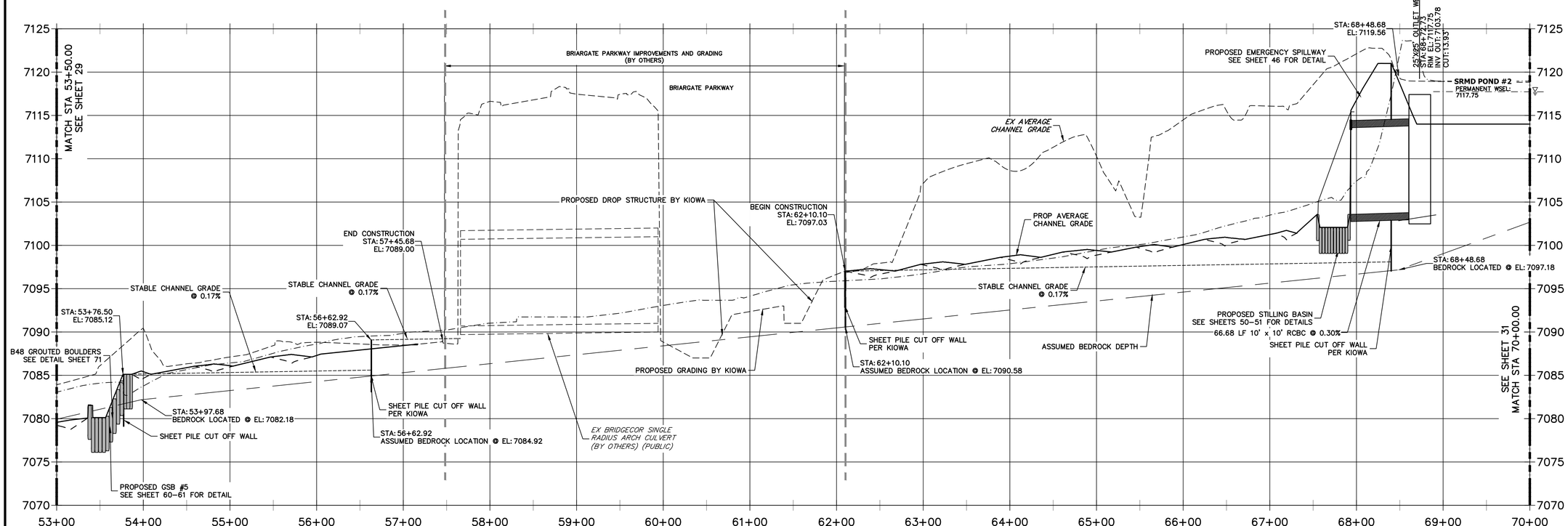




KEY MAP
SCALE: 1"=2000'

SAND CREEK -STABLE CHANNEL GRADE BANKFULL PROFILE 5
STA 53+00.00 TO 70+00.00



LEGEND

- FINISHED GRADE PROFILE @ CHANNEL ℄
- THALWEG PROFILE
- EXISTING GRADE PROFILE @ CHANNEL ℄
- EXISTING THALWEG PROFILE
- STABLE CHANNEL GRADE PROFILE
- ASSUMED BEDROCK LOCATION PROFILE

NOTE

1. NO GRADING OR CONSTRUCTION ACTIVITIES ON PRIVATE PROPERTY
2. DRIVE SHEET PILE THROUGH BEDROCK OR MINIMUM OF 6 FEET.

60 30 0 60
HORIZONTAL
ORIGINAL SCALE: 1" = 60'
VERTICAL
ORIGINAL SCALE: 1" = 6'

811 Know what's **below.** **Call** before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24 DATE

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

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	1"=60'
V-SCALE	1"=6'
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

CHANNEL STABLE GRADE PLAN AND PROFILE

SHEET 30 OF 121

JOB NO. 25188.04

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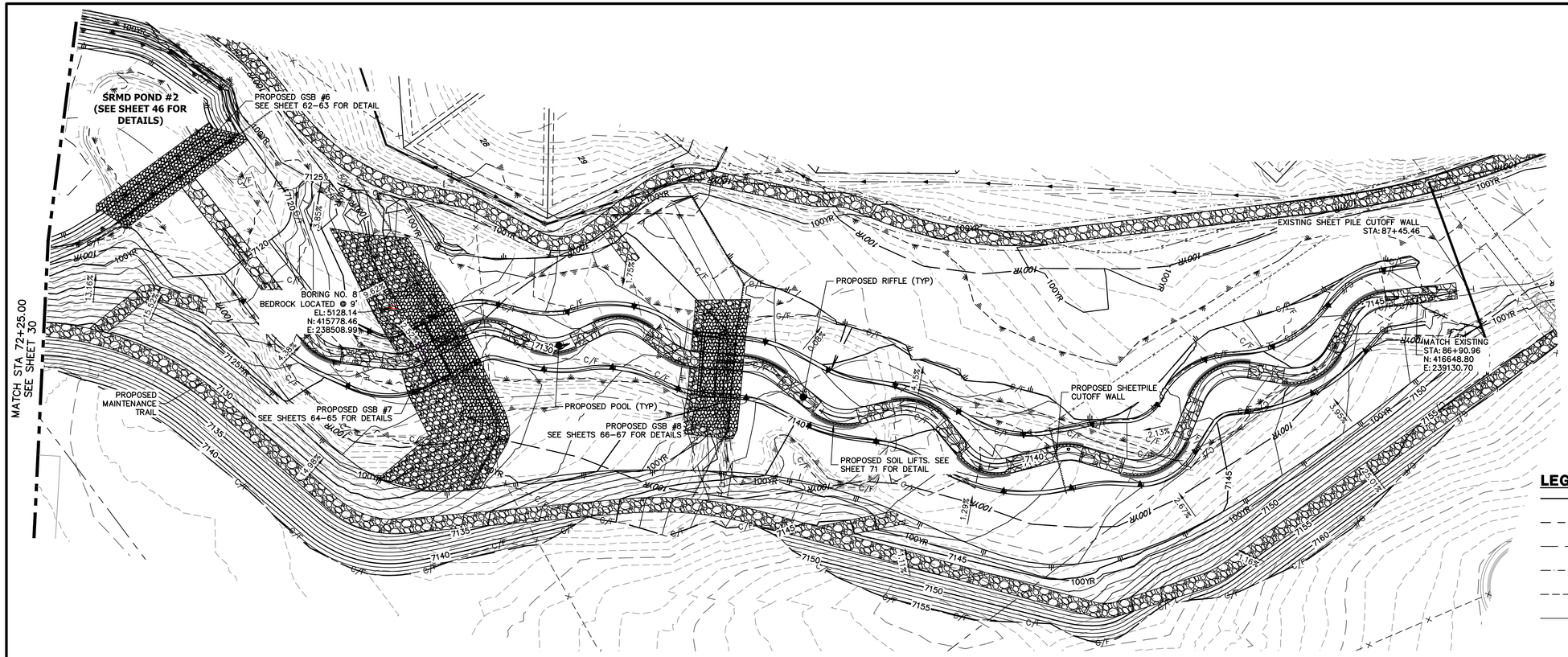
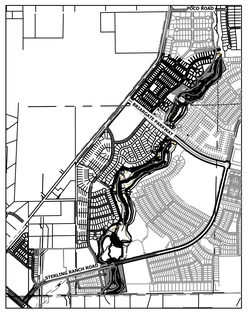


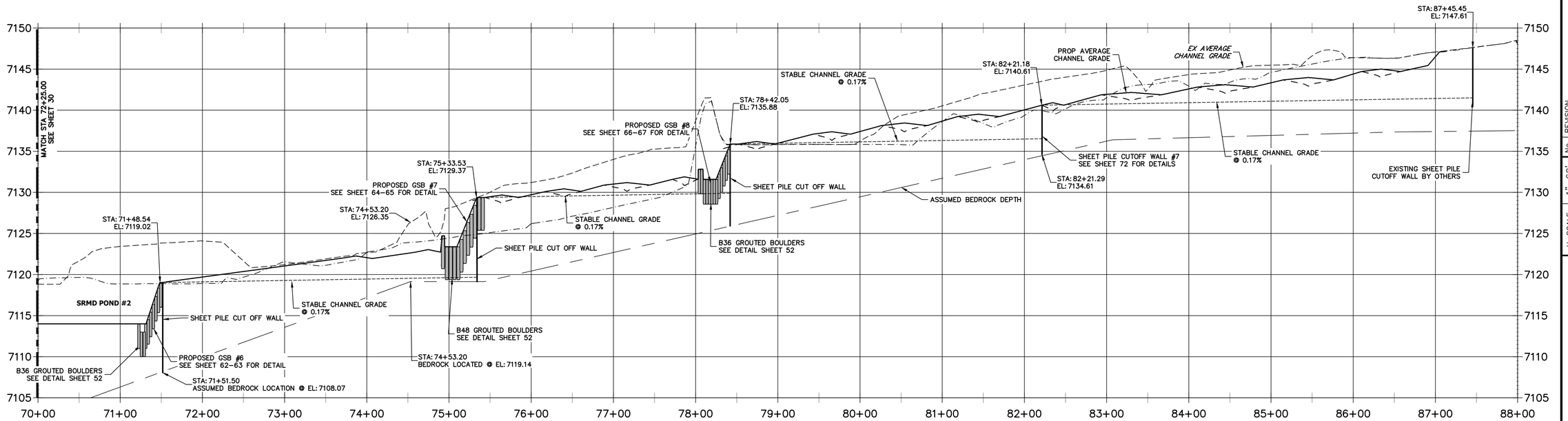


KEY MAP
SCALE: 1"=2000'

LEGEND

- FINISHED GRADE PROFILE @ CHANNEL ℄
- THALWEG PROFILE
- EXISTING GRADE PROFILE @ CHANNEL ℄
- EXISTING THALWEG PROFILE
- STABLE CHANNEL GRADE PROFILE
- ASSUMED BEDROCK LOCATION PROFILE

SAND CREEK - STABLE CHANNEL GRADE BANKFULL PROFILE 6
STA 70+00.00 TO 88+00.00



NOTE

1. NO GRADING OR CONSTRUCTION ACTIVITIES ON PRIVATE PROPERTY
2. DRIVE SHEET PILE THROUGH BEDROCK OR MINIMUM OF 6 FEET.

60 30 0 60
HORIZONTAL
ORIGINAL SCALE: 1" = 60'
VERTICAL
ORIGINAL SCALE: 1" = 6'

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT
PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24
DATE

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PREPARED FOR
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JAMES F. MORLEY
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Fort Collins 970–491–9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H–SCALE	1"=60'
V–SCALE	1"=6'
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

CHANNEL STABLE GRADE PLAN AND PROFILE

SHEET 31 OF 121

JOB NO. 25188.04

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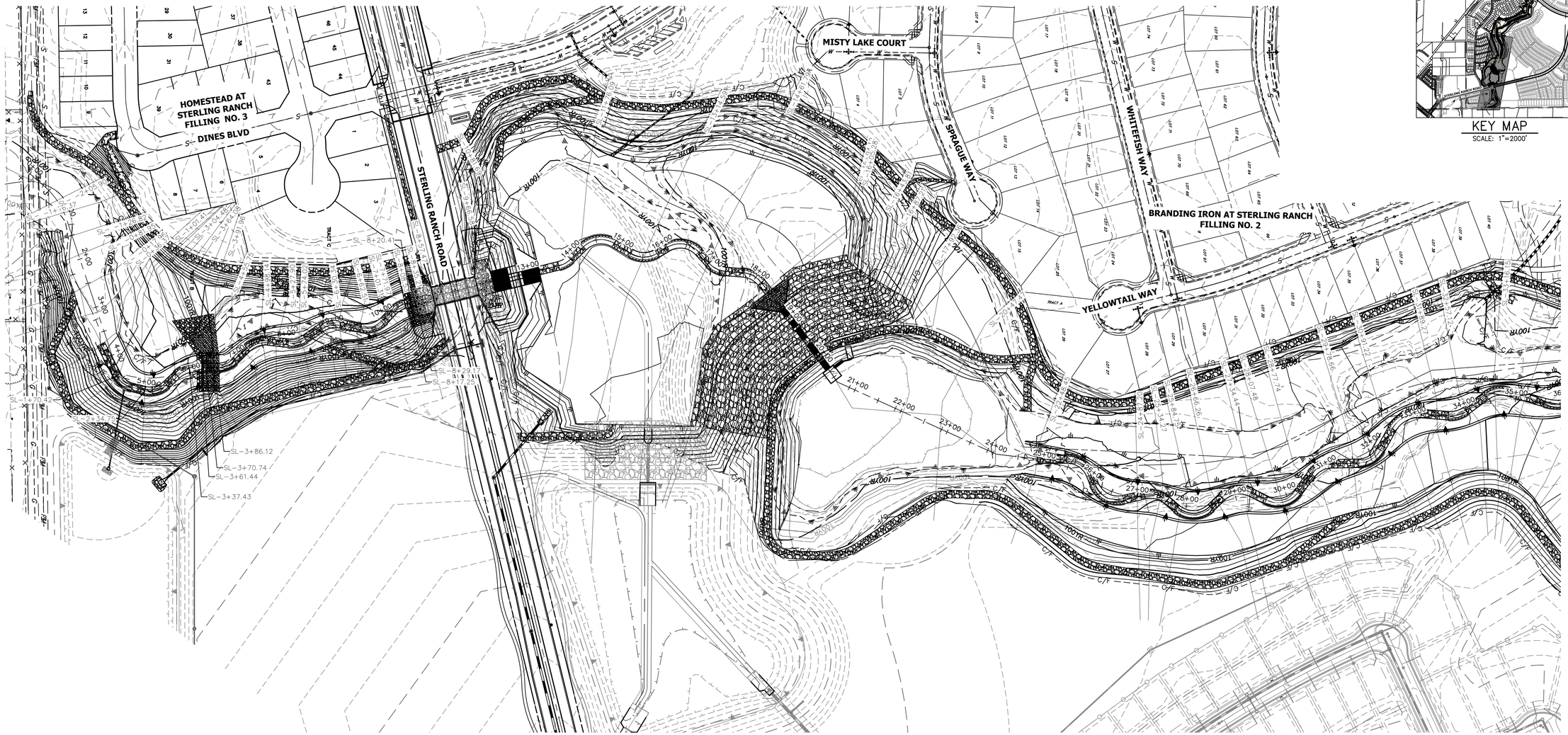
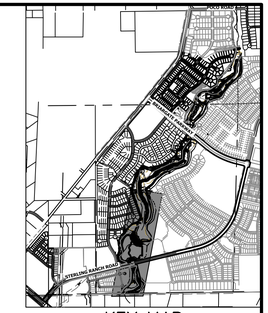


BANKFULL CROSS SECTION – SAND CREEK
STA: 1+00 TO 35+00

SCALE: 1"=100'



KEY MAP

SCALE: 1"=2000'

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

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No.	REVISION	BY	DATE

H-SCALE	1"=100'
V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

CROSS SECTIONS

SHEET 32 OF 121

JOB NO. 25188.04

100 50 0 100

ORIGINAL SCALE: 1" = 100'

NOTE

SEE SHEETS 35–40 FOR CROSS SECTIONS

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

25043

12/20/24

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE

COLORADO REGISTERED PROFESSIONAL ENGINEER BRYAN T. LAW 25043

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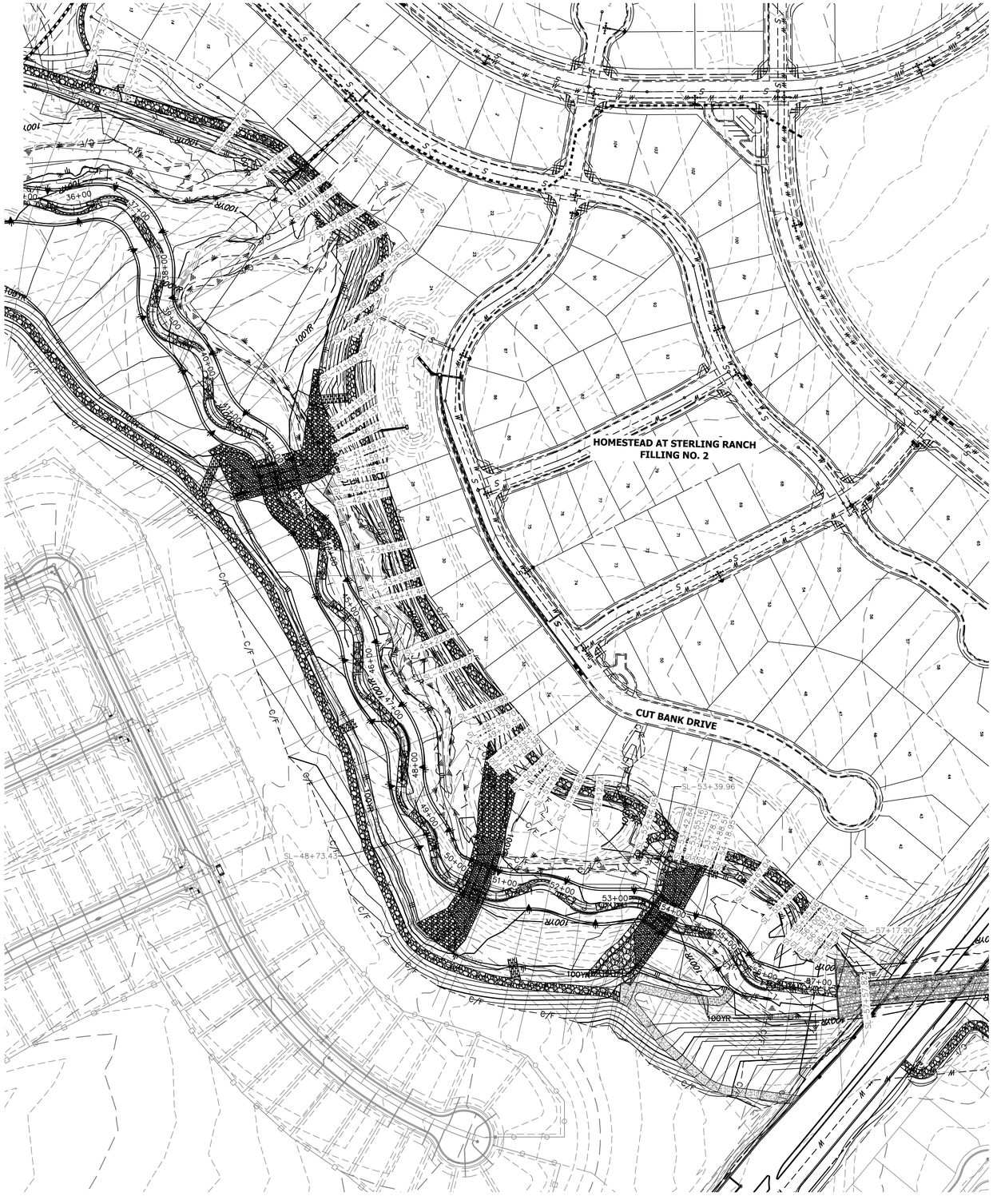
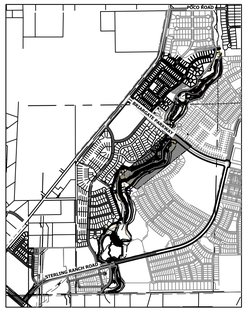


BANKFULL CROSS SECTION – SAND CREEK
STA: 35+00 TO 60+00
SCALE: 1"=100'



KEY MAP
SCALE: 1"=2000'

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
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   ELEVATION = 7023.42
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   EASTING = 235052.131
   ELEVATION = 7000.40
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   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

NOTE

SEE SHEETS 35–40 FOR CROSS SECTIONS

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2–1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2–1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

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

811 Know what's **below.** **Call** before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24
DATE

COLORADO REGISTERED BRYAN T. LAW 25043 PROFESSIONAL ENGINEER

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V–SCALE	N/A
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

CROSS SECTIONS

SHEET 33 OF 121

JOB NO. 25188.04

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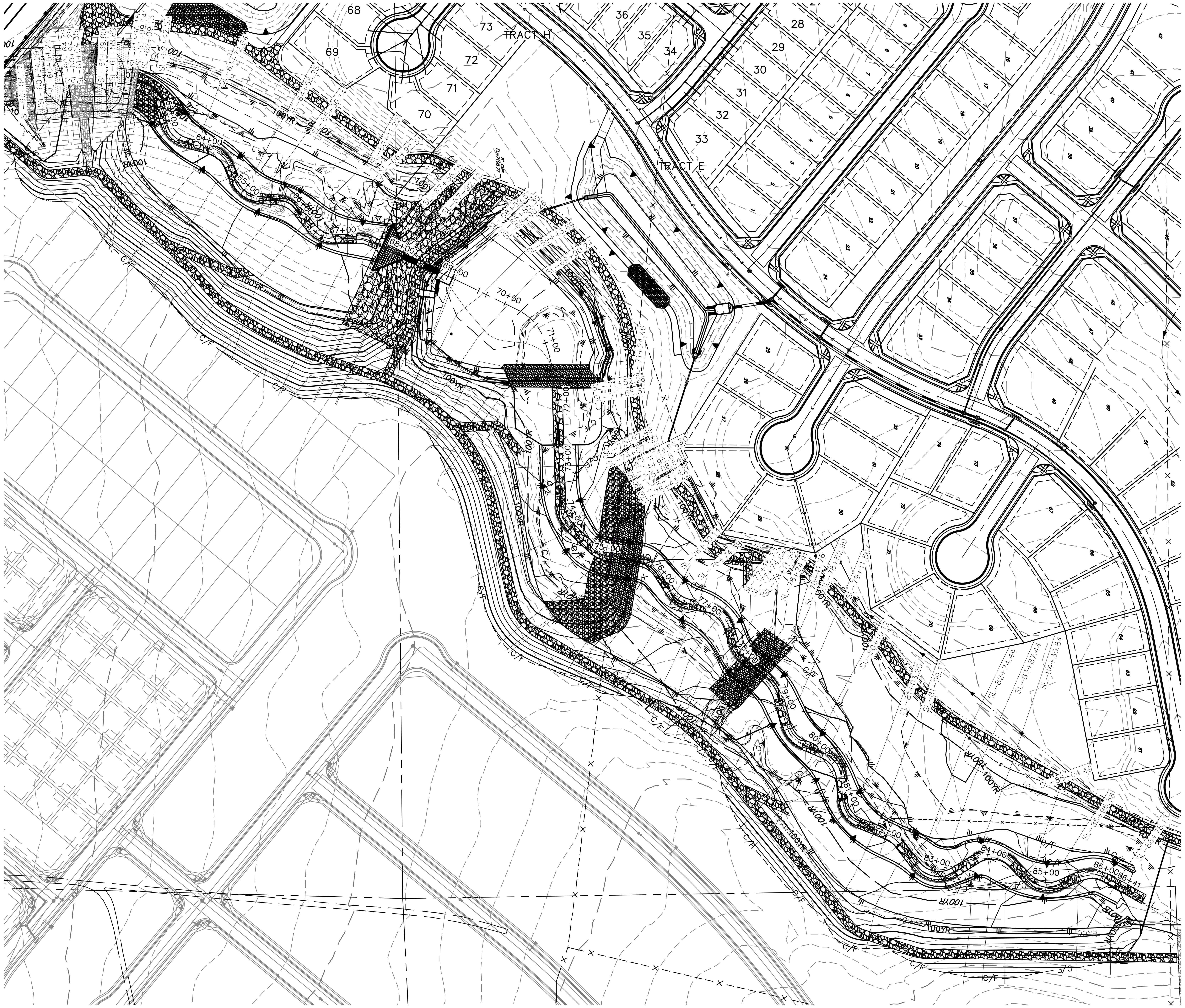
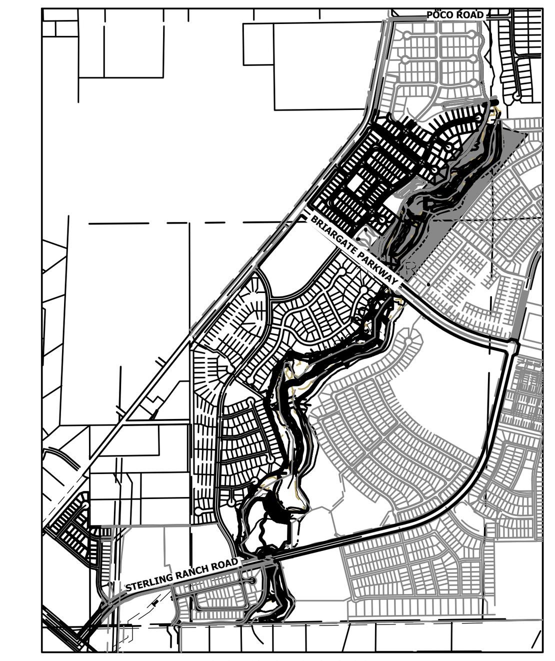


BANKFULL CROSS SECTION – SAND CREEK
STA: 60+00 TO 88+60
SCALE: 1"=100'



KEY MAP
SCALE: 1"=2000'

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
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   ELEVATION = 7023.42

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   EASTING = 235052.131
   ELEVATION = 7000.40

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   EASTING = 233849.817
   ELEVATION = 7030.82

NOTE

SEE SHEETS 35–40 FOR CROSS SECTIONS

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2–1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2–1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

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

811
Know what's **below.**
Call before you dig.

ENGINEER'S STATEMENT
PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E. DATE
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

COLORADO REGISTERED PROFESSIONAL ENGINEER BRYAN T. LAW 25043 12/20/24

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No.	REVISION	BY	DATE

H–SCALE	1"=100'
V–SCALE	N/A
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION
CROSS SECTIONS

JOB NO. 25188.04

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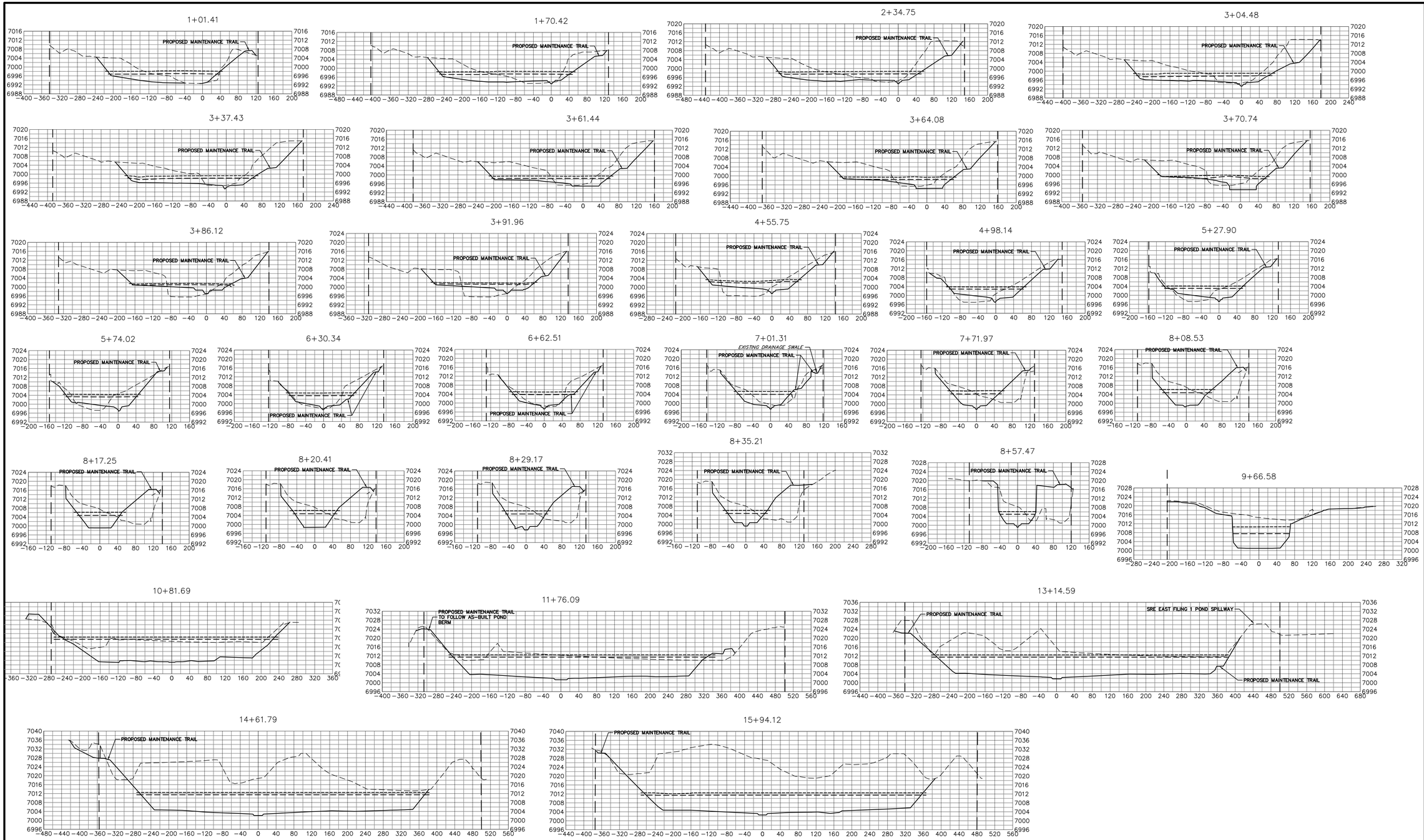

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   ELEVATION = 7000.40
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   EASTING = 233849.817
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100 50 0 100

HORIZONTAL
ORIGINAL SCALE: 1" = 100'
VERTICAL
ORIGINAL SCALE: 1" = 10'

811 Know what's below. Call before you dig.

LEGEND

- PROP GROUND SURFACE
- EX GROUND SURFACE
- 100YR FIS WSEL
- 100YR DESIGN WSEL
- PROPERTY LINE

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

12/20/24
DATE

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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No.	REVISION	BY	DATE

H-SCALE	1"=100'
V-SCALE	1"=10'
DATE	3/11/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

CROSS SECTIONS

SHEET 35 OF 121

JOB NO. 25188.04

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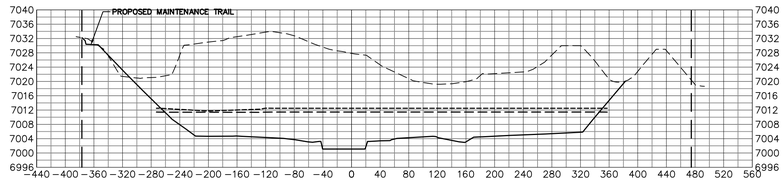

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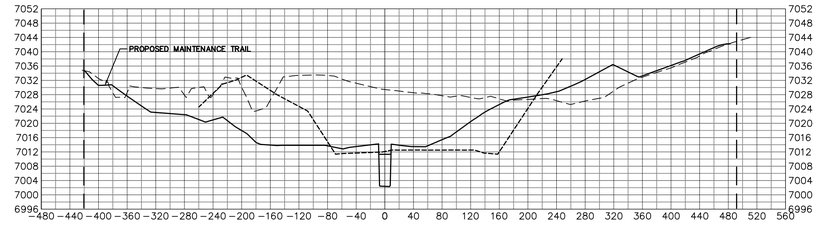

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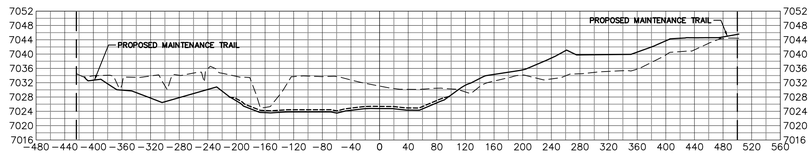

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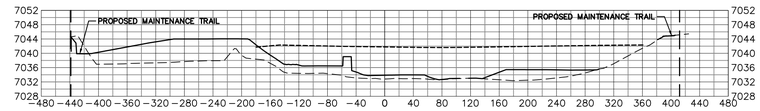

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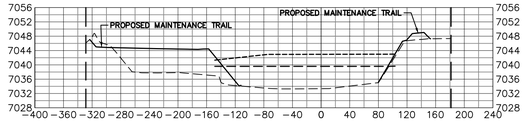

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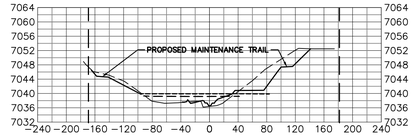

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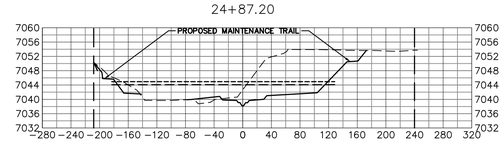

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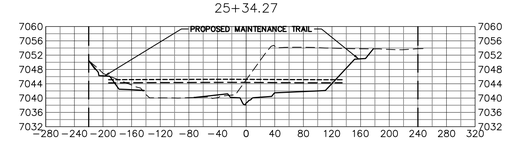
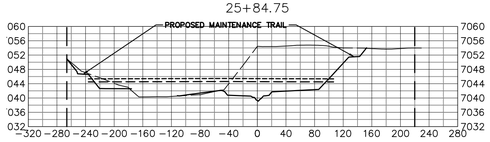


25+84.75



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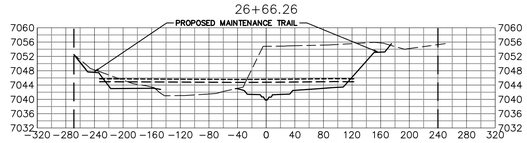

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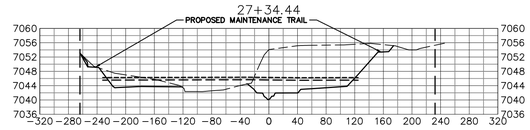

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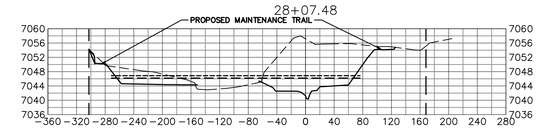

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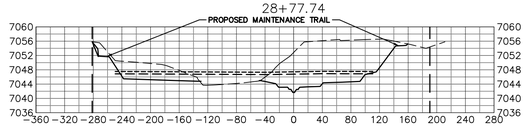

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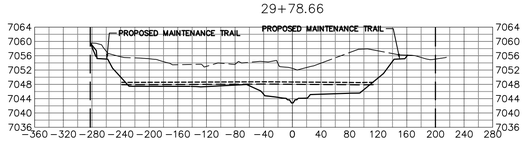

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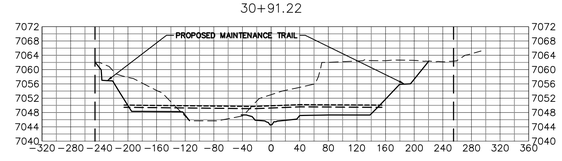

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   EASTING = 233849.817
   ELEVATION = 7030.82

LEGEND

- PROP GROUND SURFACE
- EX GROUND SURFACE
- 100YR FIS WSEL
- 100YR DESIGN WSEL
- PROPERTY LINE

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100 50 0 100

HORIZONTAL
ORIGINAL SCALE: 1" = 100'
VERTICAL
ORIGINAL SCALE: 1" = 10'

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ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24 DATE

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COLORADO SPRINGS, CO 80903
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SAND CREEK RESTORATION

CROSS SECTIONS

SHEET 36 OF 121

JOB NO. 25188.04

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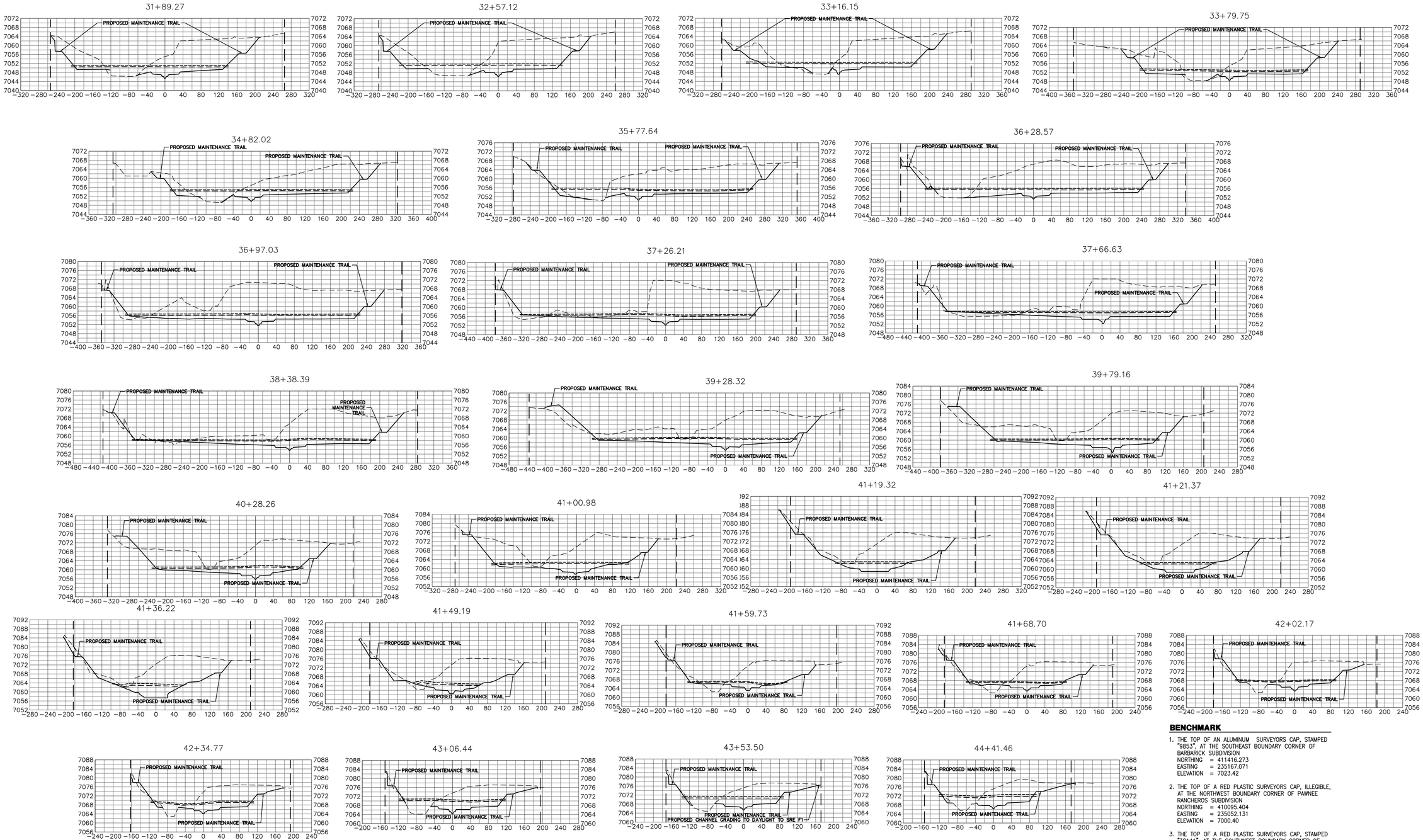

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   EASTING = 233849.817
   ELEVATION = 7030.82

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SAND CREEK RESTORATION

CROSS SECTIONS

SHEET 37 OF 121

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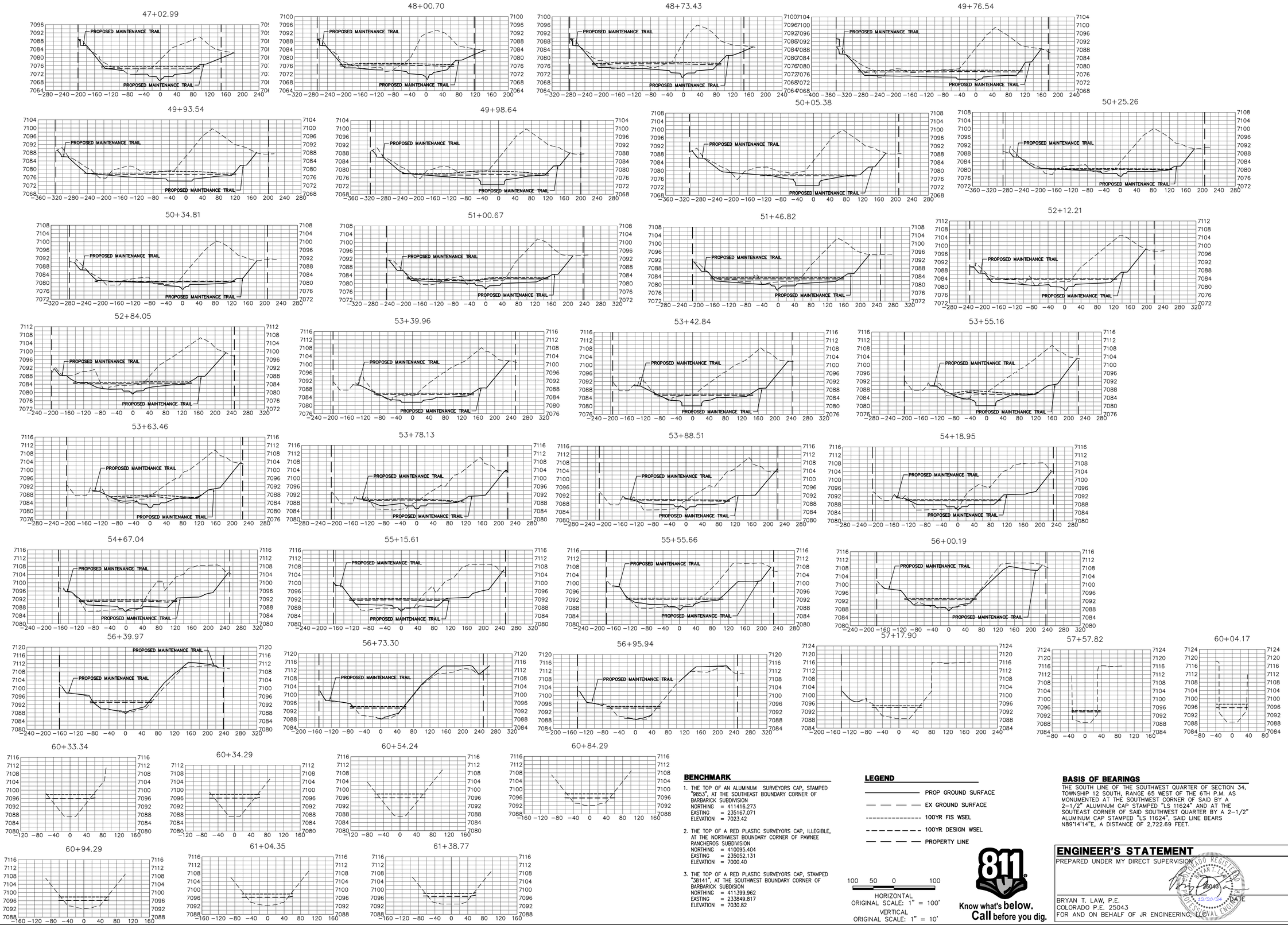

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SAND CREEK RESTORATION

CROSS SECTIONS

SHEET 38 OF 121

JOB NO. 25188.04

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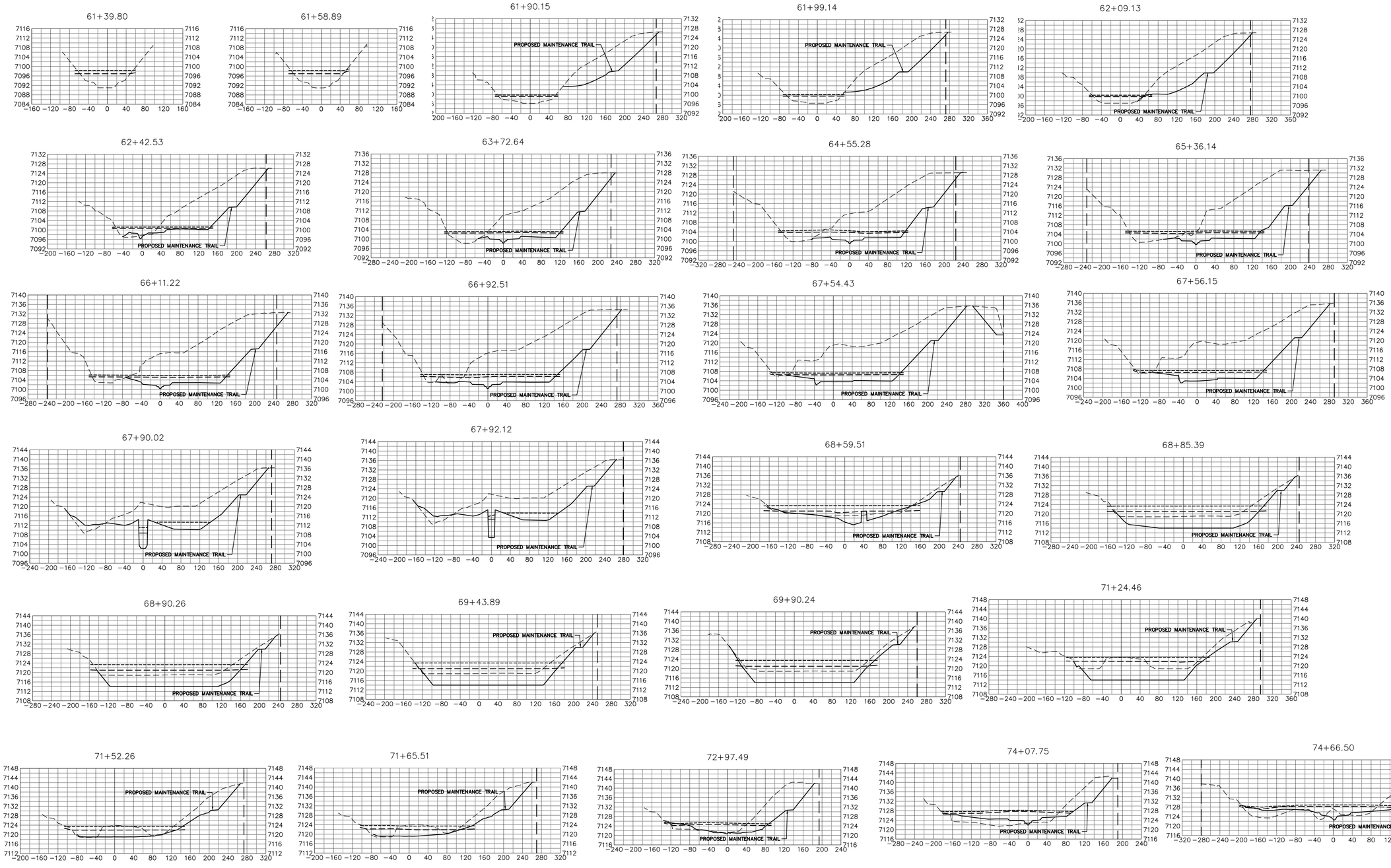

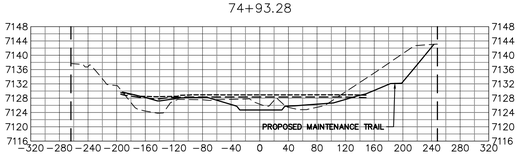

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COLORADO REGISTERED BRYAN T. LAW 25043 PROFESSIONAL ENGINEER

12/20/24 DATE

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SAND CREEK RESTORATION

CROSS SECTIONS

SHEET 39 OF 121

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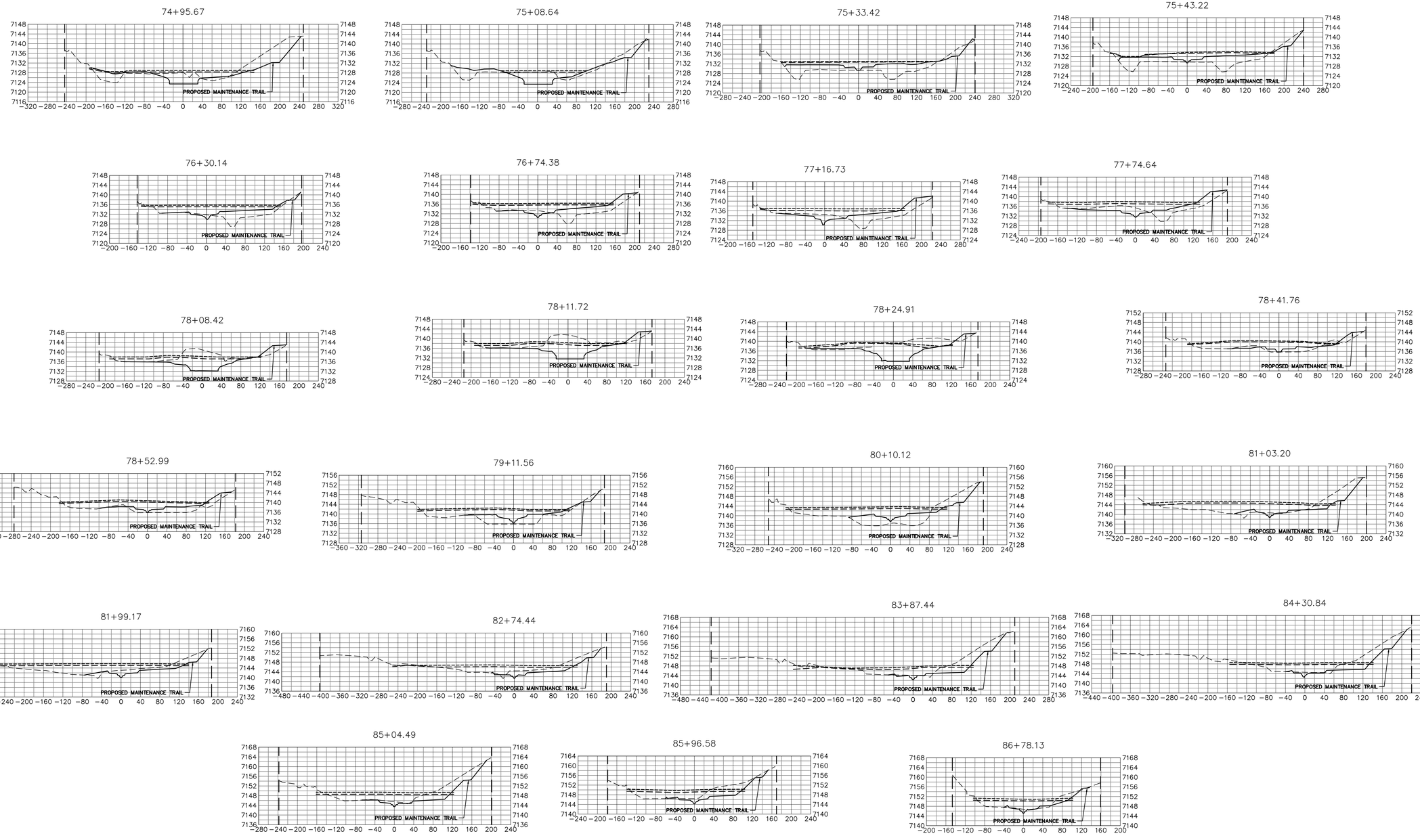

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SAND CREEK RESTORATION

CROSS SECTIONS

SHEET 40 OF 121

JOB NO. 25188.04

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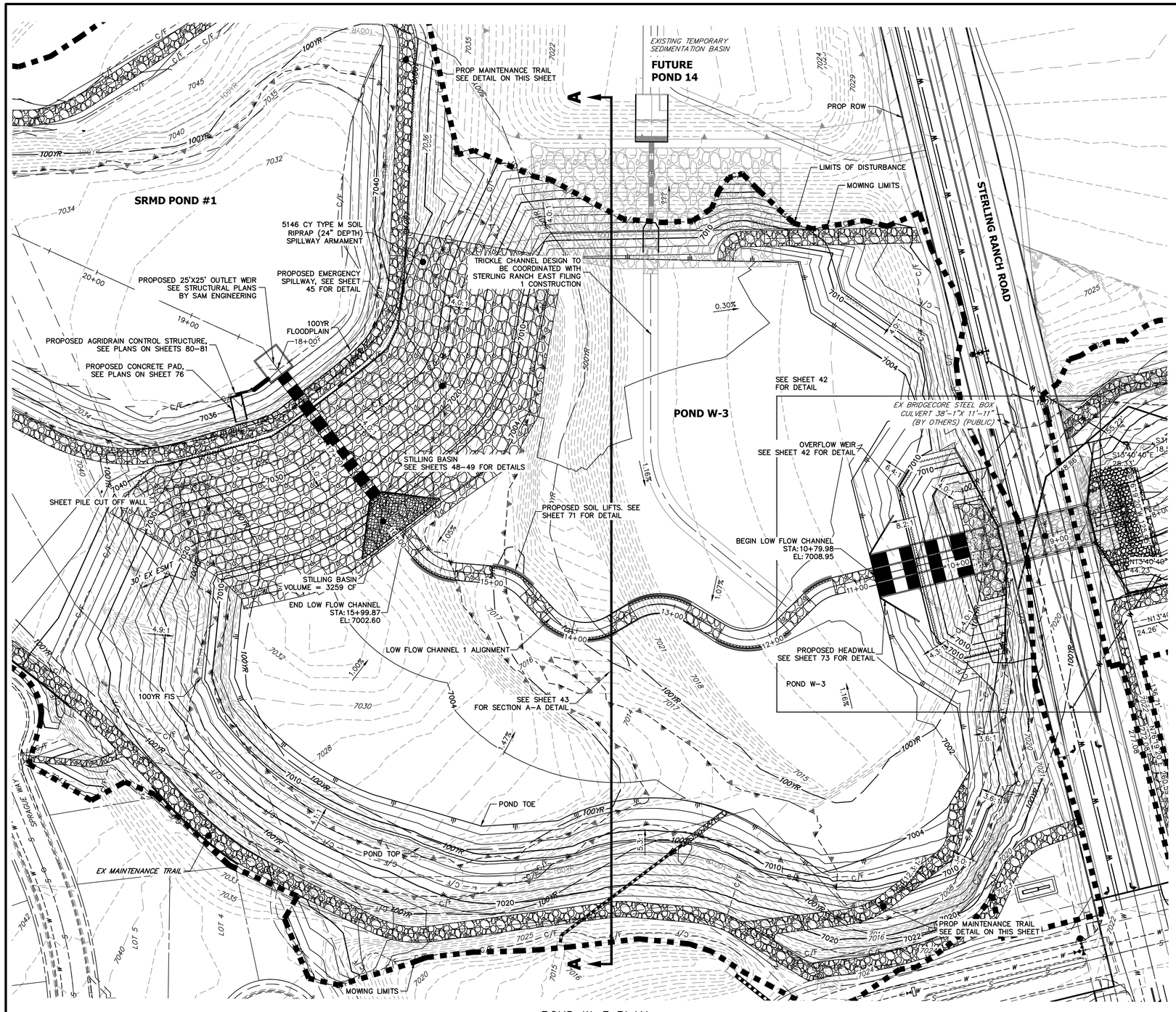
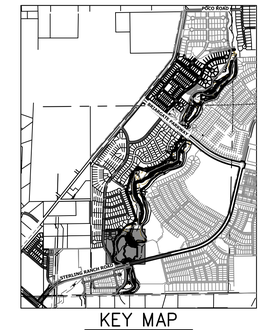


POND W-3 PLAN

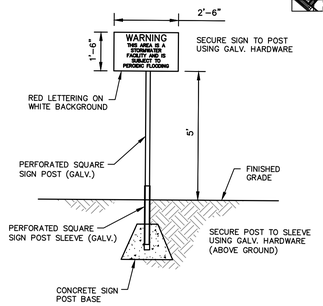
SCALE: 1"=50'

POND W-3		
DRAINAGE AREA (AC)	2729.9	
AVERAGE % IMP.	17%	
	5-YR	100-YR
Q_{IN} (CFS)	578.95	2160.40
Q_{OUT} (CFS)	470.55	1562.40
WSEL (FT)	7004.72	7011.17
DEPTH (FT)	3.55	10.00
VOLUME (AC-FT)	6.75	50.60
SURFACE AREA (AC)	5.46	7.84



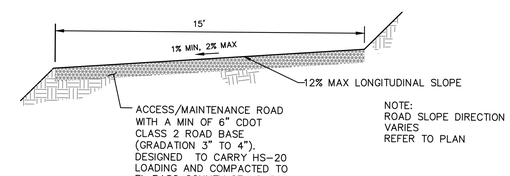
KEY MAP

SCALE: 1"=2000'



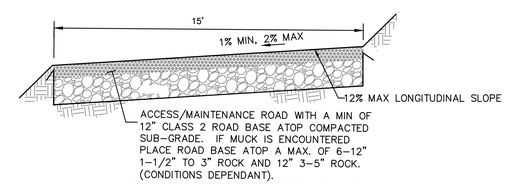
POND WARNING SIGN

SCALE: N.T.S.



MAINTENANCE & ACCESS ROAD ABOVE 100-YR WSEL TYPICAL SECTION

SCALE: N.T.S.



MAINTENANCE & ACCESS ROAD BELOW 100-YR WSEL TYPICAL SECTION

SCALE: N.T.S.

50 25 0 50

ORIGINAL SCALE: 1" = 50'

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SAND CREEK RESTORATION

POND PLANS

SHEET 41 OF 121

JOB NO. 25188.04

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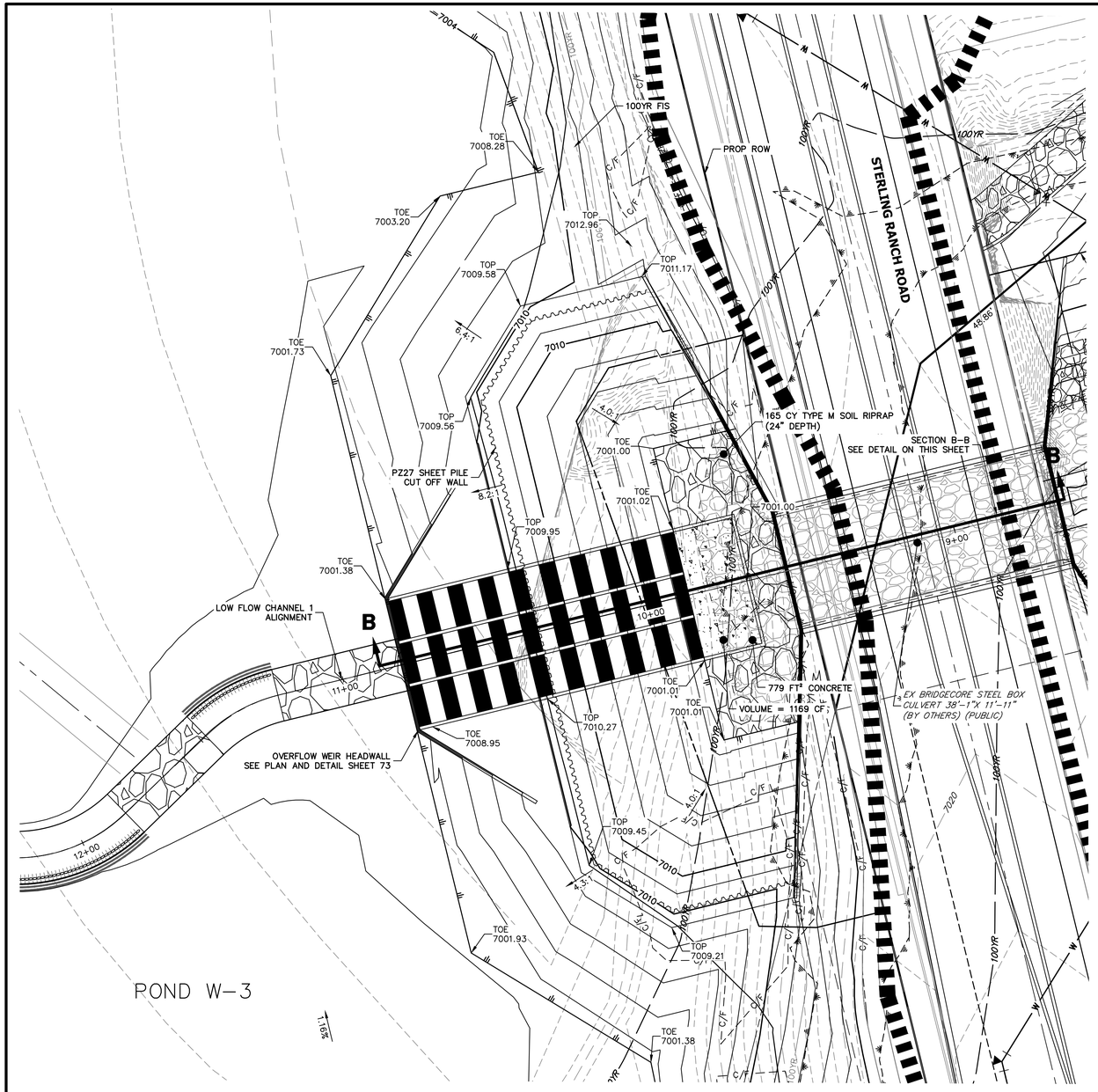


POND W–3 OVERFLOW WEIR

SCALE: 1"=20'

DB Features	Sediment Removal	Mowing/ Weed control	Trash & Debris Removal	Erosion	Overgrown Vegetation Removal	Standing Water (mosquito/ algae control)	Structure Repair
Inflow Points (outfalls)	X		X				X
Low-flow channel	X		X	X	X		X
Bottom Stage	X	X	X	X	X	X	
Outlet Works	X		X				X
Emergency Spillway			X	X	X		X
Upper Stage			X	X			
Embankment		X		X	X		

TYPICAL DB O&M REQUIREMENTS MATRIX

Maintenance Activity	Minimum Frequency	Look for:	Maintenance Action
Mowing	Twice annually	Excessive grass height/aesthetics	Mow grass to a height of 4" to 6"
Trash/Debris Removal	Twice annually	Trash & debris in DB	Remove and dispose of trash and debris
Outlet Works Cleaning	As needed - after significant rain events – twice annually min.	Clogged outlet structure; ponding water	Remove and dispose of debris/trash/sediment to allow outlet to function properly
Weed control	Minimum twice annually	Noxious weeds; Unwanted vegetation	Treat w/ herbicide or hand pull; Consult the local weed specialist
Mosquito Treatment	As needed	Standing water/mosquito habitat	Treat w/ EPA approved chemicals
Algae Treatment	As needed	Standing water/ Algal growth/green color	Treat w/ EPA approved chemicals

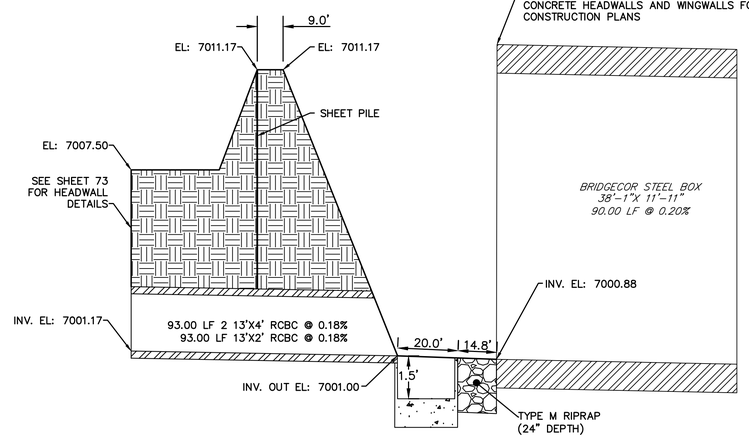
SUMMARY OF ROUTINE MAINTENANCE ACTIVITIES

Maintenance Activity	Minimum Frequency	Look for:	Maintenance Action
Sediment Removal*	As needed; typically every 1 –2 years	Sediment build-up; decrease in pond volume	Remove and dispose of sediment
Erosion Repair	As needed, based upon inspection	Rills/gullies forming on side slopes, trickle channel, other areas	Repair eroded areas Revegetate; address source of erosion
Vegetation Removal/Tree Thinning	As needed, based upon inspection	Large trees/wood vegetation in lower chamber of pond	Remove vegetation; restore grade and surface
Drain Cleaning/Jet Vac	As needed, based upon inspection	Sediment build-up /non draining system	Clean drains; Jet Vac if needed

SUMMARY OF MINOR MAINTENANCE ACTIVITIES

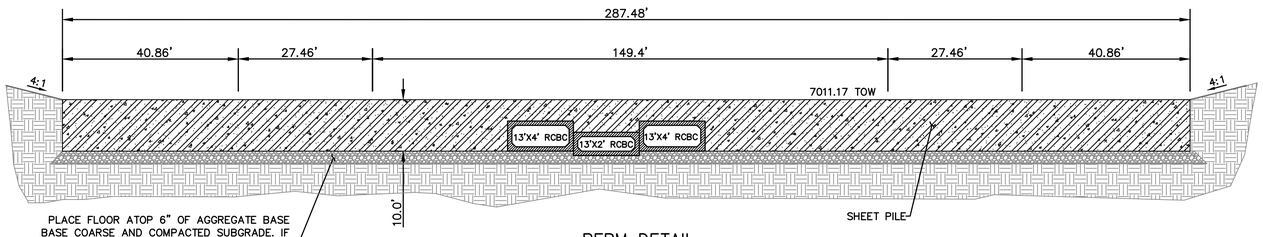
Maintenance Activity	Minimum Frequency	Look for:	Maintenance Action
Major Sediment Removal	As needed – based upon scheduled inspections	Large quantities of sediment; reduced pond capacity	Remove and dispose of sediment. Repair vegetation as needed
Major Erosion Repair	As needed – based upon scheduled inspections	Severe erosion including gullies, excessive soil displacement, areas of settlement, holes	Repair erosion – find cause of problem and address to avoid future erosion
Structural Repair	As needed – based upon scheduled inspections	Deterioration and/or damage to structural components – broken concrete, damaged pipes, outlet works	Structural repair to restore the structure to its original design

SUMMARY OF MAJOR MAINTENANCE ACTIVITIES



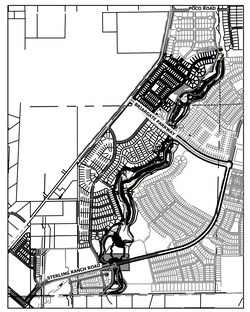
SECTION B–B

SCALE: N.T.S.



BERM DETAIL

SCALE: N.T.S.



KEY MAP

SCALE: 1"=2000'

20 10 0 20 40

HORIZONTAL
ORIGINAL SCALE: 1" = 20'
VERTICAL
ORIGINAL SCALE: 1" = 5'

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24 DATE

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PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419–3024

J·R ENGINEERING
A Westrian Company
Centennial 303–740–9393 • Colorado Springs 719–593–2593
Fort Collins 970–491–9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H–SCALE	1"=20'
V–SCALE	1"=5'
DATE	12/20/24
DESIGNED BY	DV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

POND PLANS

SHEET 42 OF 121

JOB NO. 25188.04

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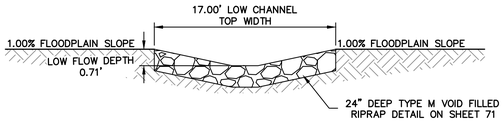
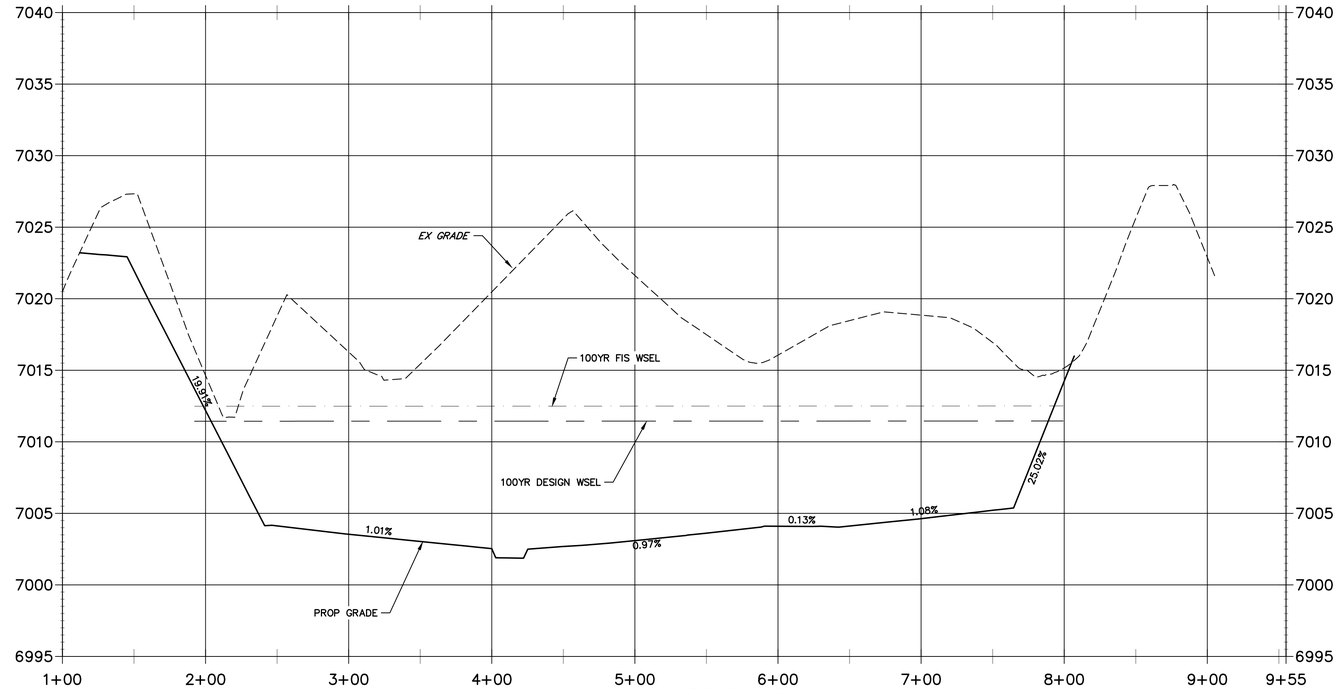
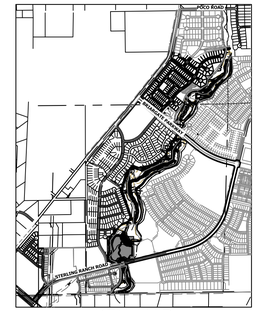


LOW FLOW CHANNEL DETAIL
SCALE: NTS

CROSS SECTION A-A
STA 1+00.00 TO 9+55.00

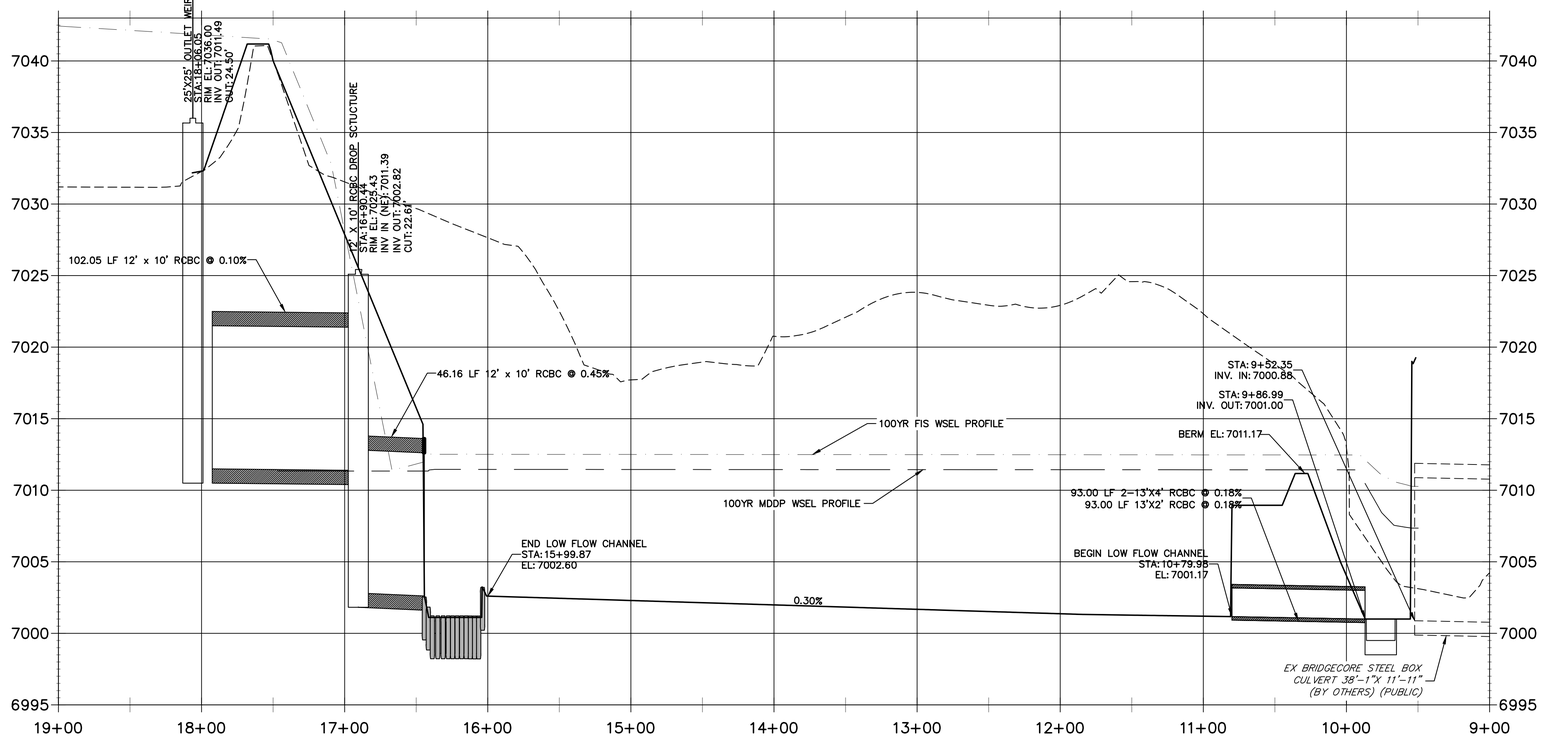


POND W-3
CROSS SECTION A-A
HORIZONTAL SCALE: 1"=50'



KEY MAP
SCALE: 1"=2000'

LOW FLOW CHANNEL 1
STA 9+00.00 TO 19+00.00



POND W-3 LOW FLOW CHANNEL
HORIZONTAL SCALE: 1"=100'

50 25 0 50 100
HORIZONTAL
ORIGINAL SCALE: 1" = 50'
VERTICAL
ORIGINAL SCALE: 1" = 5'

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CHECKED BY	

SAND CREEK RESTORATION

POND PLANS

SHEET 43 OF 121

JOB NO. 25188.04

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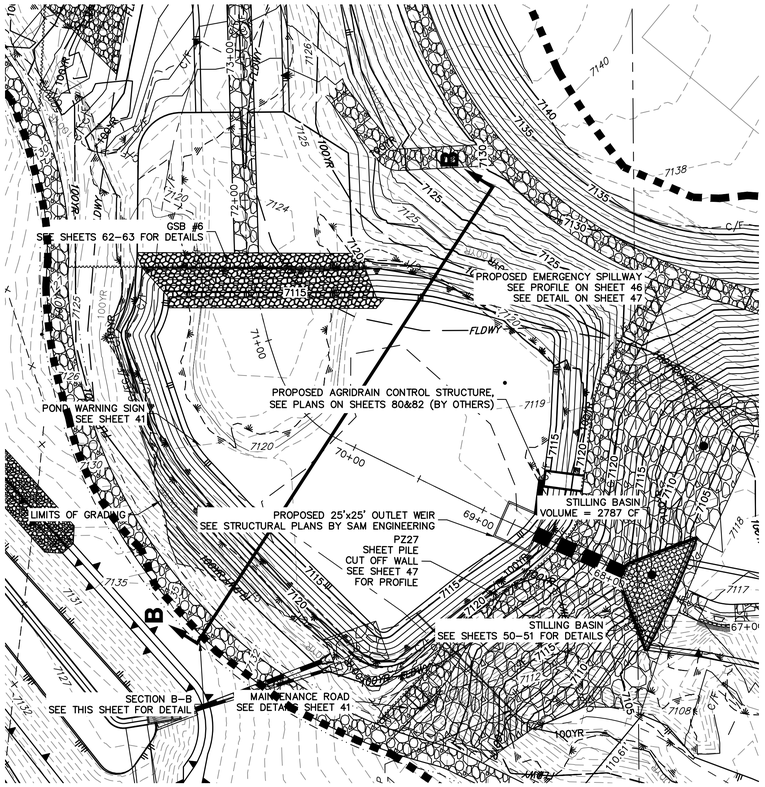
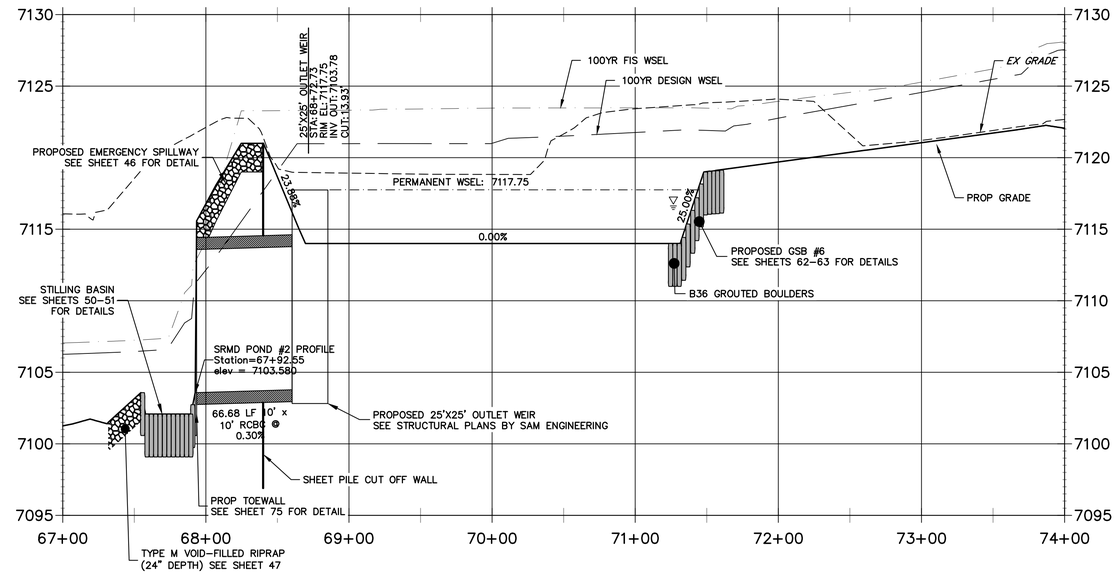
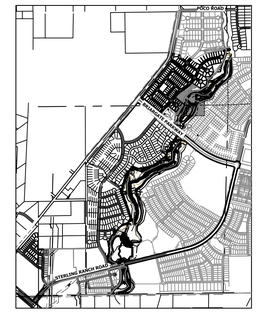


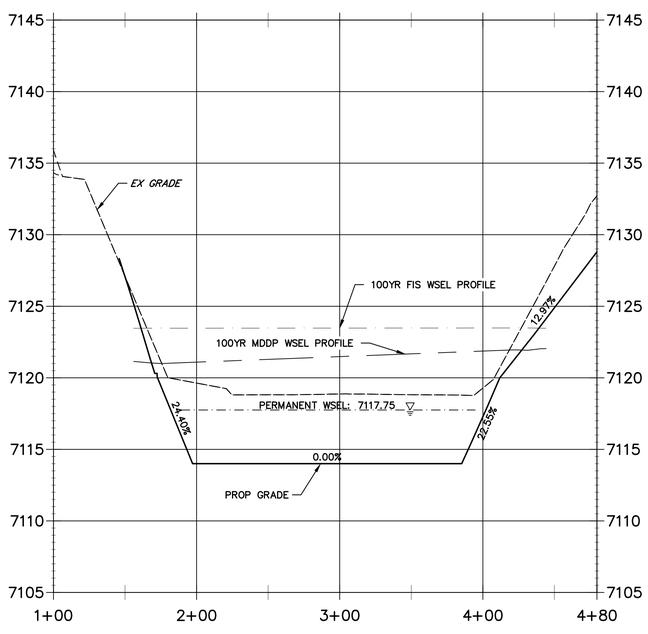
SRMD POND #2 PROFILE
STA 67+00.00 TO 74+00.00





KEY MAP
SCALE: 1"=2000'

CROSS SECTION B-B
STA 1+00.00 TO 4+79.69



DB Features	Sediment Removal	Mowing/ Weed control	Trash & Debris Removal	Erosion	Overgrown Vegetation Removal	Standing Water (mosquito/ algae control)	Structure Repair
Inflow Points (outfalls)	X		X				X
Low-flow channel	X		X	X	X		X
Bottom Stage	X	X	X	X	X	X	
Outlet Works	X		X				X
Emergency Spillway			X	X	X		X
Upper Stage			X	X			
Embankment		X		X	X		

TYPICAL DB O&M REQUIREMENTS MATRIX

Maintenance Activity	Minimum Frequency	Look for:	Maintenance Action
Mowing	Twice annually	Excessive grass height/aesthetics	Mow grass to a height of 4" to 6"
Trash/Debris Removal	Twice annually	Trash & debris in DB	Remove and dispose of trash and debris
Outlet Works Cleaning	As needed - after significant rain events -- twice annually min.	Clogged outlet structure; ponding water	Remove and dispose of debris/trash/sediment to allow outlet to function properly
Weed control	Minimum twice annually	Noxious weeds; Unwanted vegetation	Treat w/ herbicide or hand pull; Consult the local weed specialist
Mosquito Treatment	As needed	Standing water/mosquito habitat	Treat w/ EPA approved chemicals
Algae Treatment	As needed	Standing water/ Algal growth/green color	Treat w/ EPA approved chemicals

SUMMARY OF ROUTINE MAINTENANCE ACTIVITIES

Maintenance Activity	Minimum Frequency	Look for:	Maintenance Action
Sediment Removal*	As needed; typically every 1 –2 years	Sediment build-up; decrease in pond volume	Remove and dispose of sediment
Erosion Repair	As needed, based upon inspection	Rills/gullies forming on side slopes, trickle channel, other areas	Repair eroded areas Revegetate; address source of erosion
Vegetation Removal/Tree Thinning	As needed, based upon inspection	Large trees/wood vegetation in lower chamber of pond	Remove vegetation; restore grade and surface
Drain Cleaning/Jet Vac	As needed, based upon inspection	Sediment build-up /non draining system	Clean drains; Jet Vac if needed

SUMMARY OF MINOR MAINTENANCE ACTIVITIES

Maintenance Activity	Minimum Frequency	Look for:	Maintenance Action
Major Sediment Removal	As needed – based upon scheduled inspections	Large quantities of sediment; reduced pond capacity	Remove and dispose of sediment. Repair vegetation as needed
Major Erosion Repair	As needed – based upon scheduled inspections	Severe erosion including gullies, excessive soil displacement, areas of settlement, holes	Repair erosion – find cause of problem and address to avoid future erosion
Structural Repair	As needed – based upon scheduled inspections	Deterioration and/or damage to structural components – broken concrete, damaged pipes, outlet works	Structural repair to restore the structure to its original design

SUMMARY OF MAJOR MAINTENANCE ACTIVITIES

50 25 0 50
HORIZONTAL
ORIGINAL SCALE: 1" = 50'
VERTICAL
ORIGINAL SCALE: 1" = 5'

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COLORADO P.E. 25043
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DATE 12/20/24

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COLORADO SPRINGS, CO 80903
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No.	REVISION	BY	DATE

H-SCALE	1"=50'
V-SCALE	1"=5'
DATE	12/20/24
DESIGNED BY	DV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION
POND PLANS

SHEET 44 OF 121
JOB NO. 25188.04

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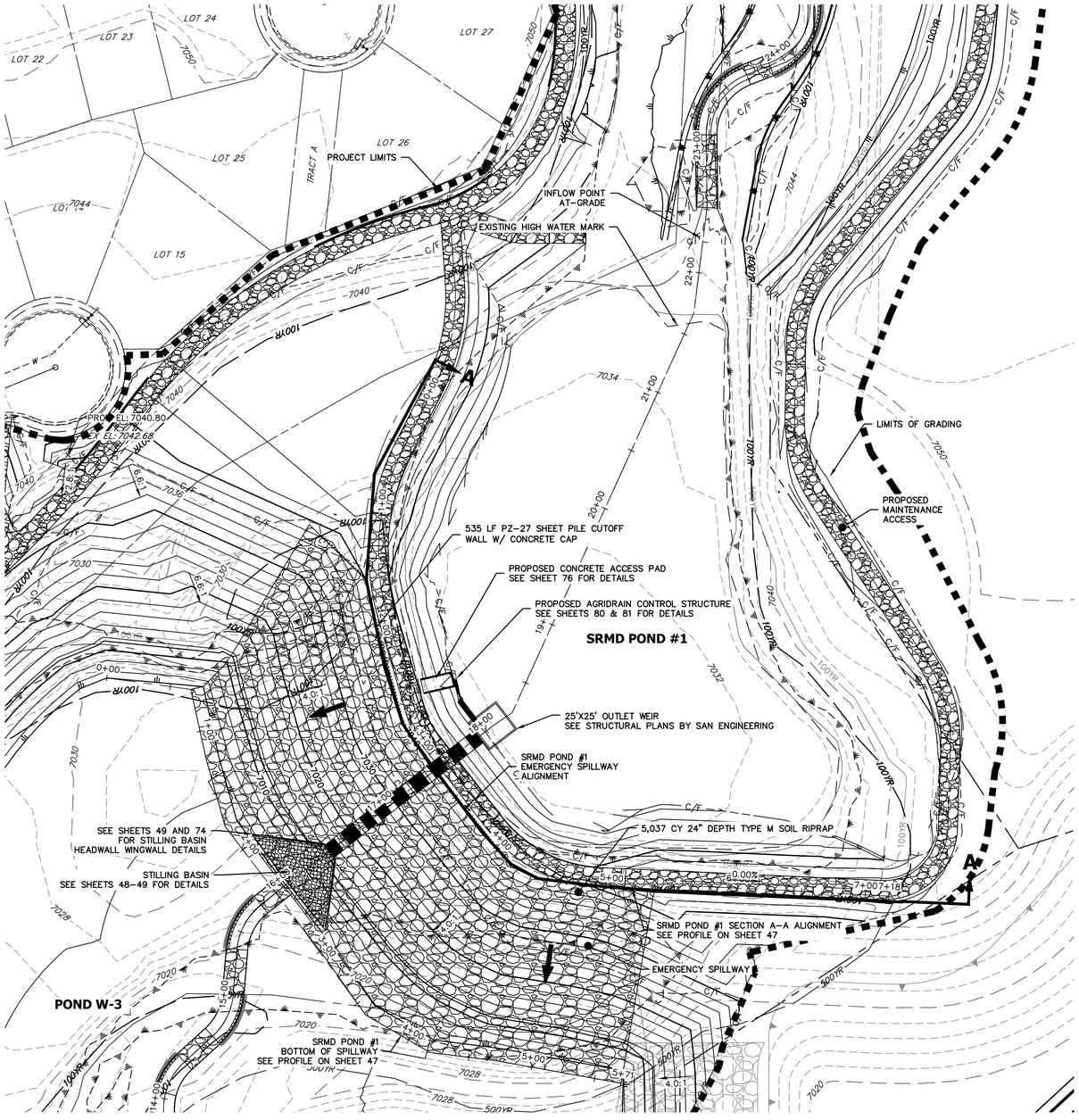
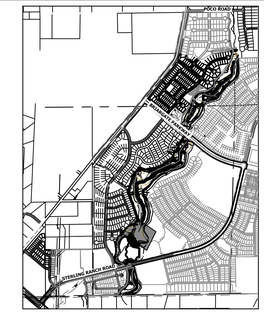


EXISTING SRMD POND #1 EMERGENCY SPILLWAY

SCALE: 1"=50'

GRADING NOTES:

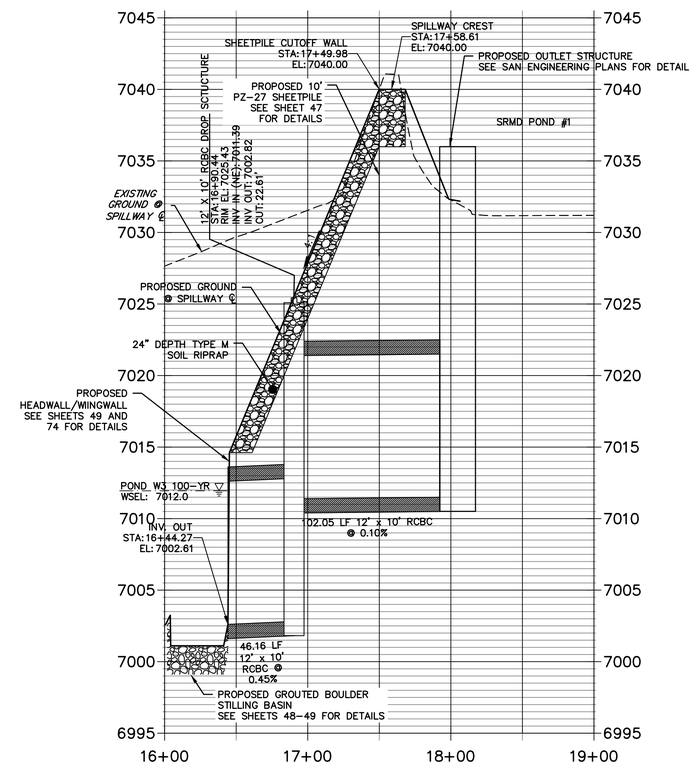
1. ALL PROPOSED CONTOURS ARE TO FINISHED GRADE.
2. EARTHEN CUT AND FILL SLOPES SHALL BE 3:1 MAXIMUM. SLOPES IN EXCESS OF 4:1 AND AREAS OTHERWISE INDICATED BY WITHIN THESE PLANS. SHALL BE COVERED WITH SOIL RETENTION BLANKET OVER 4" MIN. THICKNESS OF TOPSOIL AND SEEDED.
3. IF THE PROJECT IS CONSTRUCTED DURING THE SUMMER WHEN SEEDING IS NOT ALLOWED, APPLY 1-1/2 TONS OF CERTIFIED WEED FREE MULCH PER ACRE MECHANICALLY CRIMPED INTO THE SOIL IN COMBINATION WITH AN ORGANIC MULCH TACKIFIER.
4. PRIOR TO ANY CONSTRUCTION ACTIVITIES THE PROPOSED SILT FENCE SHOWN ON THE EROSION CONTROL SHEET SHALL BE CONSTRUCTED. THE FENCE SHALL BE REMOVED UPON THE LATER OF STABILIZATION OF THE SITE OR COMPLETION OF CONSTRUCTION.
5. TO REDUCE THE POTENTIAL FOR CLOGGING OF DEBRIS GRATES, NO STRAW MULCH SHALL BE USED WITHIN THE EURV OR WQCV OF A DETENTION BASIN. INSTEAD, EROSION CONTROL BLANKETS SHALL BE INSTALLED FOR A WIDTH OF AT LEAST 6 FEET ON EITHER SIDE OF CONCRETE LOW-FLOW CHANNELS. THE BLANKETS SHALL COMPLY WITH THE MATERIALS AND INSTALLATION REQUIREMENTS FOR EROSION CONTROL BLANKETS (STRAW COCONUT OR 100 PERCENT COCONUT). SITE-SPECIFIC CONDITIONS MAY REQUIRE ADDITIONAL BLANKET OR OTHER EROSION CONTROL MEASURES.



KEY MAP

SCALE: 1"=2000'

SRMD POND #1 EMERGENCY SPILLWAY PROFILE
STA 16+00.00 TO 19+00.00



SRMD POND #1		
DRAINAGE AREA (AC)	2313.1	
AVERAGE % IMP.	9%	
	5-YR	100-YR
Q_{IN} (CFS)	511.84	1977.60
Q_{OUT} (CFS)	499.73	1819.90
STATIC WSEL (FT)	7036.00	7036.00
MAX WSEL (FT)	7040.00	7040.00
DEPTH (FT)	6.17	8.09
VOLUME (AC-FT)	10.43	36.00
SURFACE AREA (AC)	2.7	4.40

811 Know what's below. Call before you dig.

N

50 25 0 50

HORIZONTAL ORIGINAL SCALE: 1" = 50'

VERTICAL ORIGINAL SCALE: 1" = 5'

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

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COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24 DATE

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2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
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Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	1"=50'
V-SCALE	1"=5'
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	DJV
CHECKED BY	

SAND CREEK RESTORATION

POND PLANS

SHEET 45 OF 26

JOB NO. 25188.04

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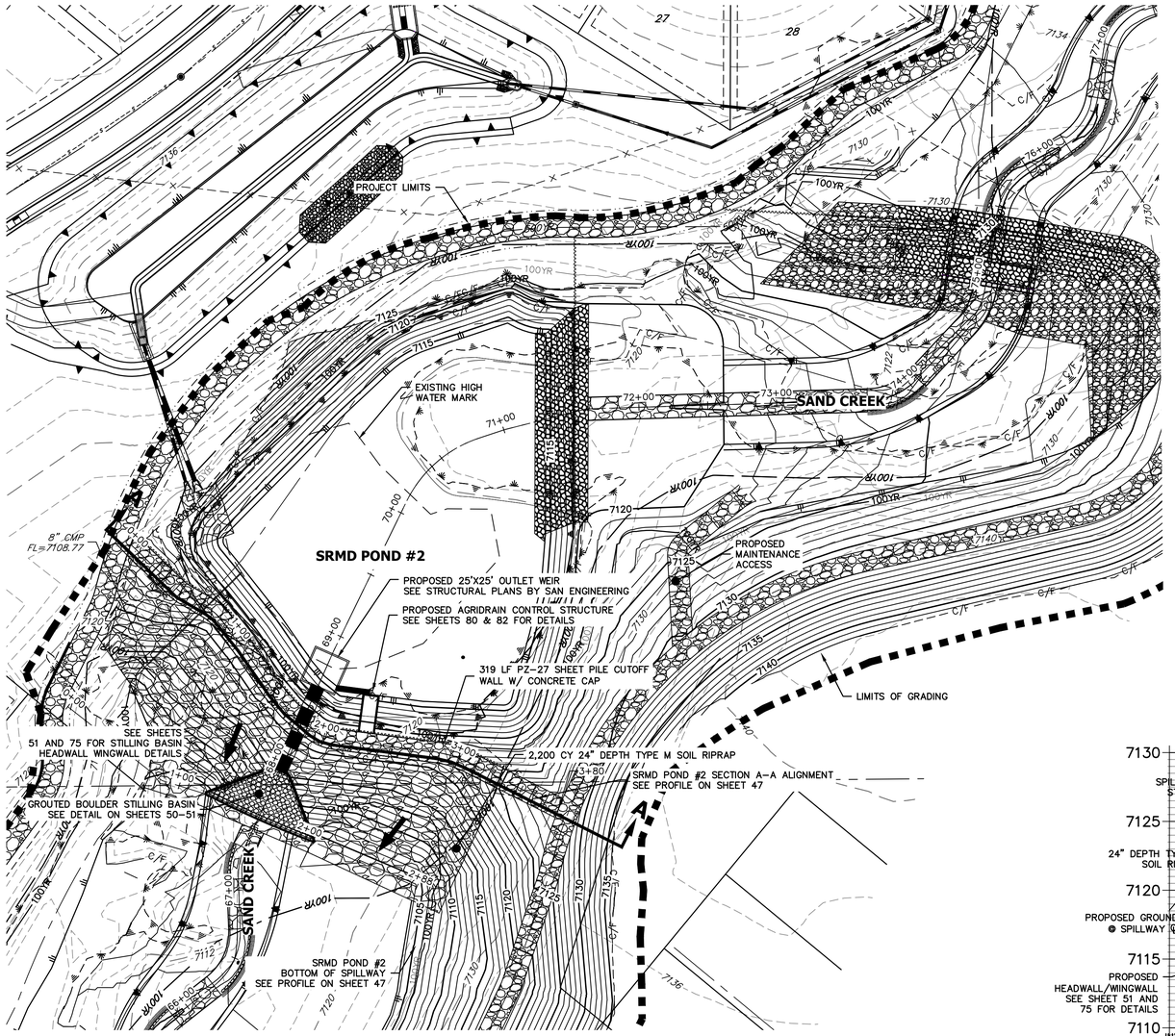

GRADING NOTES:

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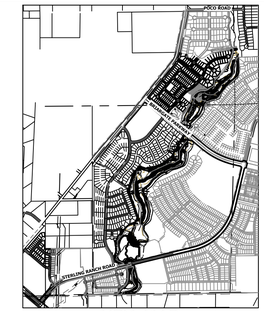
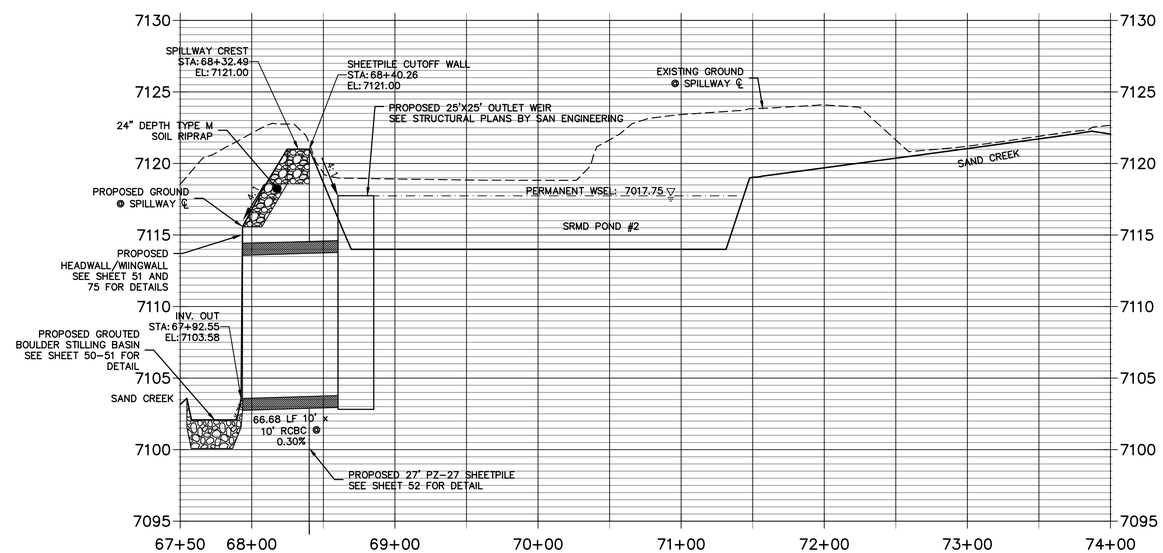
SRMD POND #2		
DRAINAGE AREA (AC)	2003.2	
AVERAGE % IMP.	8%	
	5-YR	100-YR
Q_{IN} (CFS)	477.23	1666.90
Q_{OUT} (CFS)	476.24	1661.20
STATIC WSEL (FT)	7117.75	7117.75
MAX WSEL (FT)	7019.27	7021.00
DEPTH (FT)	5.08	6.81
VOLUME (AC-FT)	6.26	8.70
SURFACE AREA (AC)	1.35	2.10



KEY MAP
SCALE: 1"=2000'

SRMD POND #2 EMERGENCY SPILLWAY PROFILE
STA 67+50.00 TO 74+00.00



811 Know what's below. Call before you dig.

N

50 25 0 50
HORIZONTAL ORIGINAL SCALE: 1" = 50'
VERTICAL ORIGINAL SCALE: 1" = 5'

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COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE

COLORADO REGISTERED PROFESSIONAL ENGINEER BRYAN T. LAW 25043 12/20/24

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DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	DJV
CHECKED BY	

SAND CREEK RESTORATION

POND PLANS

SHEET 46 OF 26

JOB NO. 25188.04

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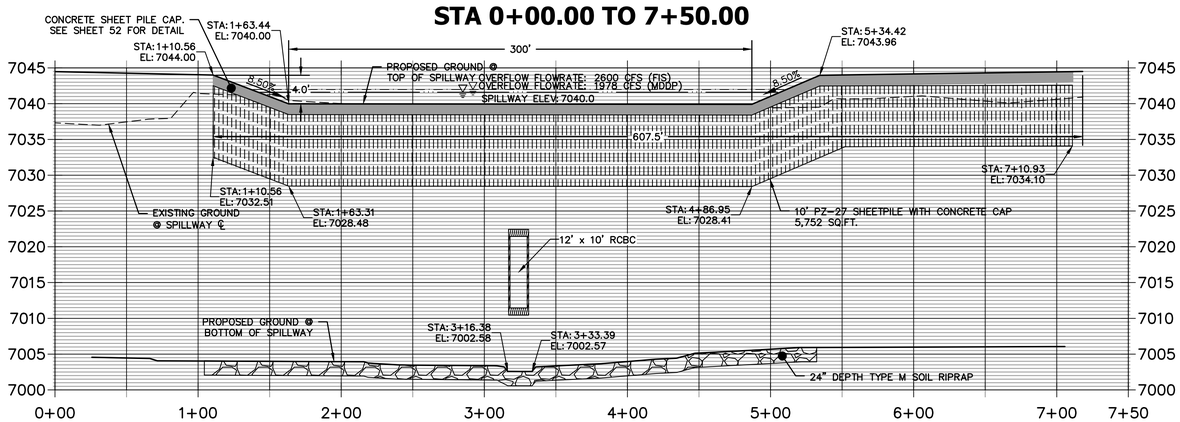
SRMD POND #1 SECTION A-A PROFILE
STA 0+00.00 TO 7+50.00



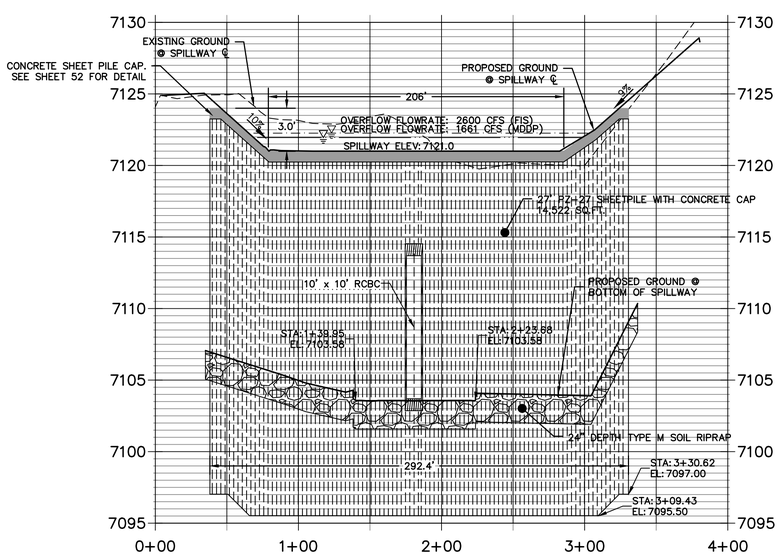
SRMD POND #1 SECTION A-A PROFILE

HORZ SCALE: 1"=50'
VERT SCALE: 1"=10'

NOTES:

SEE STRUCTURAL PLANS BY SAM ENGINEERING FOR OUTLET STRUCTURE DESIGN.

SRMD POND #2 SECTION A-A PROFILE
STA 0+00.00 TO 4+00.00



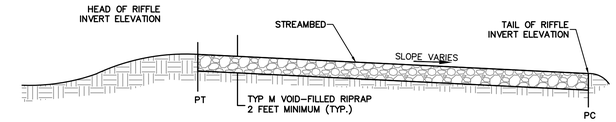
SRMD POND #2 SPILLWAY PROFILE

HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'

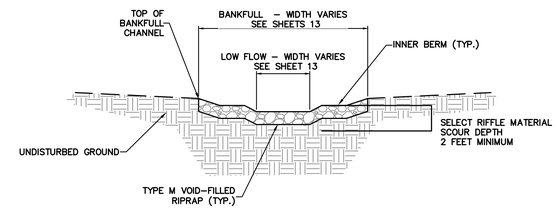
RIPRAP NOTES:

1. WHERE "SOIL RIPRAP" IS DESIGNATED ON THE CONTRACT DRAWINGS, RIPRAP VOIDS ARE TO BE FILLED WITH APPROVED FILL. THE RIPRAP SHALL BE PRE-MIXED WITH THE APPROVED FILL AT THE FOLLOWING PROPORTIONS BY VOLUME: 65 PERCENT RIPRAP AND 35 PERCENT SOIL. THE SOIL USED FOR MIXING SHALL BE NATIVE TOPSOIL AND SHALL HAVE A MINIMUM FINES CONTENT OF 15 PERCENT. THE SOIL RIPRAP SHALL BE INSTALLED IN A MANNER THAT RESULTS IN A DENSE, INTERLOCKED LAYER OF RIPRAP WITH RIPRAP VOIDS FILLED COMPLETELY WITH SOIL. SEGREGATION OF MATERIALS SHALL BE AVOIDED AND IN NO CASE SHALL THE COMBINED MATERIAL CONSIST PRIMARILY OF SOIL; THE DENSITY AND INTERLOCKING NATURE OF RIPRAP IN THE MIXED MATERIAL SHALL ESSENTIALLY BE THE SAME AS IF THE RIPRAP WAS PLACED WITHOUT SOIL.
2. PLACE ALL RIPRAP AND SOIL-RIPRAP TO RESULT IN SECURELY INTERLOCKED ROCK AT THE DESIGN THICKNESS AND GRADE. COMPACT AND ALL LEVEL TO ELIMINATE VOIDS AND ROCKS PROJECTING DESIGN ABOVE RIPRAP TOP GRADE.
3. ALL SOIL RIPRAP THAT IS BURIED WITH TOPSOIL SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ANY TOPSOIL PLACEMENT.
4. CRIMP OR TACKIFY MULCH OR USE APPROVED HYDROMULCH AS CALLED FOR IN THE PLANS AND SPECIFICATIONS.
5. ELEVATION TOLERANCES FOR RIPRAP SHALL BE 0.10 FEET. THICKNESS OF SOIL RIPRAP SHALL BE NO LESS THAN THICKNESS SHOWN AND NO MORE THAN 2-INCHES GREATER THAN THE THICKNESS SHOWN.

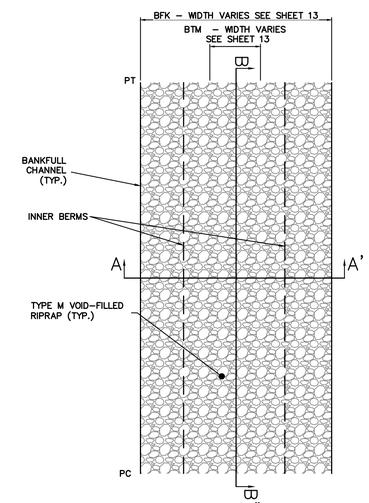
RIPRAP DESIGNATION	INTERMEDIATE ROCK DIMENSION (IN.)	PERCENT PASSING (%)	D_{50} (IN.)
TYPE VL	12 9 6 2	70-100 50-70 35-50 2-10	6
TYPE M	21 18 12 4	70-100 50-70 35-50 2-10	12
TYPE H	30 24 18 6	70-100 50-70 35-50 2-10	18



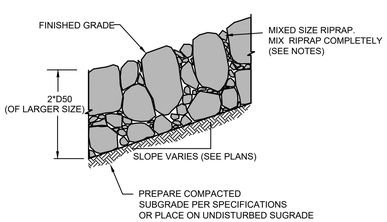
SECTION B-B'



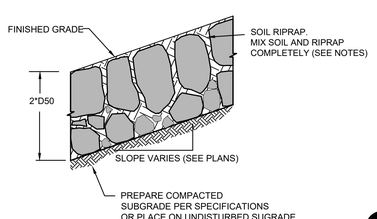
SECTION A-A'



PLAN VIEW



TYPICAL SECTION - VOID-FILLED RIPRAP



TYPICAL SECTION - SOIL RIPRAP

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24
DATE

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

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	1"=50'
V-SCALE	VARIES
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	DJV
CHECKED BY	

SAND CREEK RESTORATION

POND PLANS

SHEET 47 OF 26

JOB NO. 25188.04

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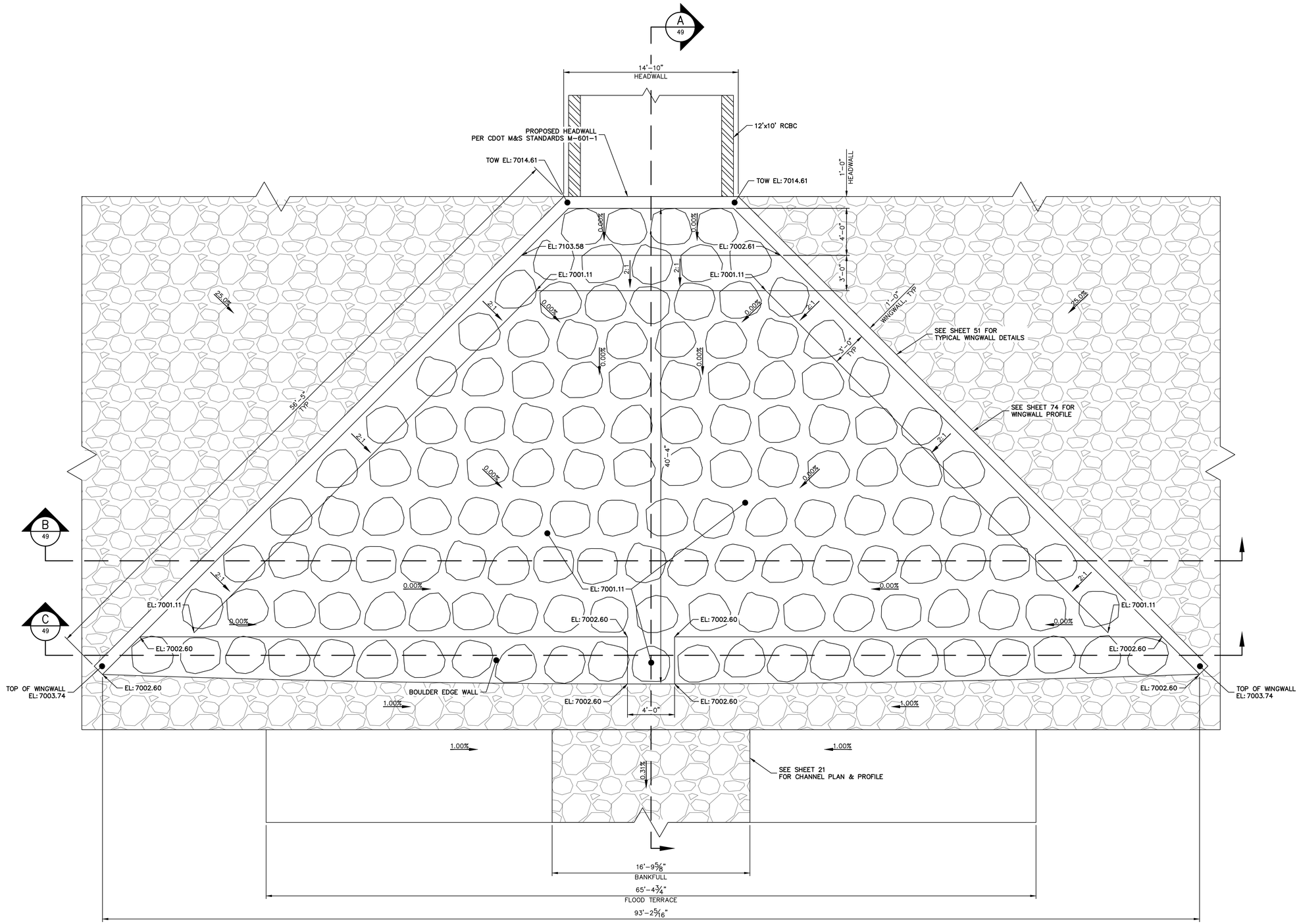

SRMD POND #1 STILLING BASIN PLAN

SCALE: 1/4"=1'

1/4 1/8 0 1/4

ORIGINAL SCALE: 1" = 1/4'

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V-SCALE	N/A
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SAND CREEK RESTORATION

POND PLANS

SHEET 48 OF 121

JOB NO. 25188.04

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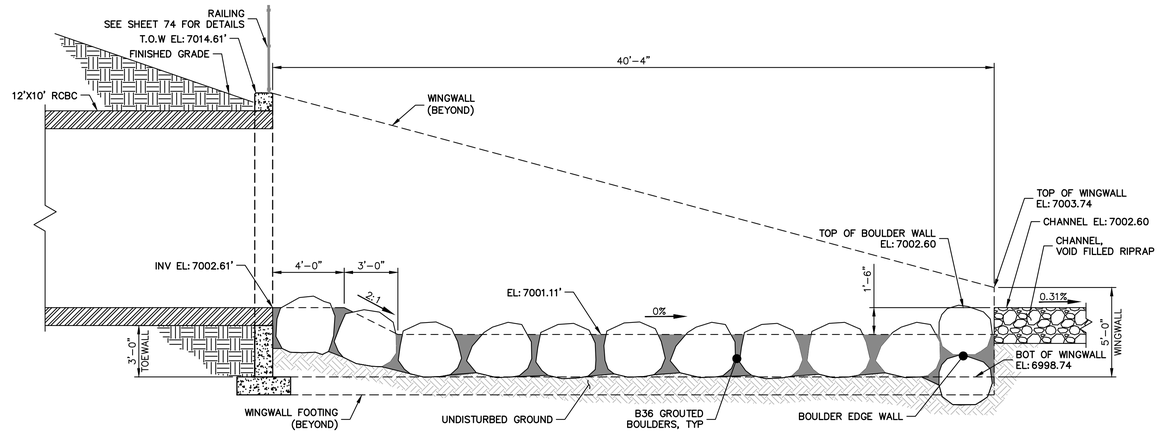
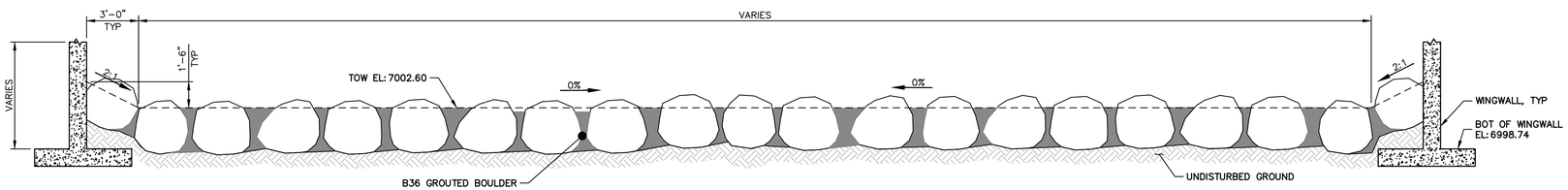


A 48 SRMD POND #1 STILLING BASIN SECTION
SCALE: 1/4"=1'-0"



B 48 SRMD POND #1 STILLING BASIN SECTION
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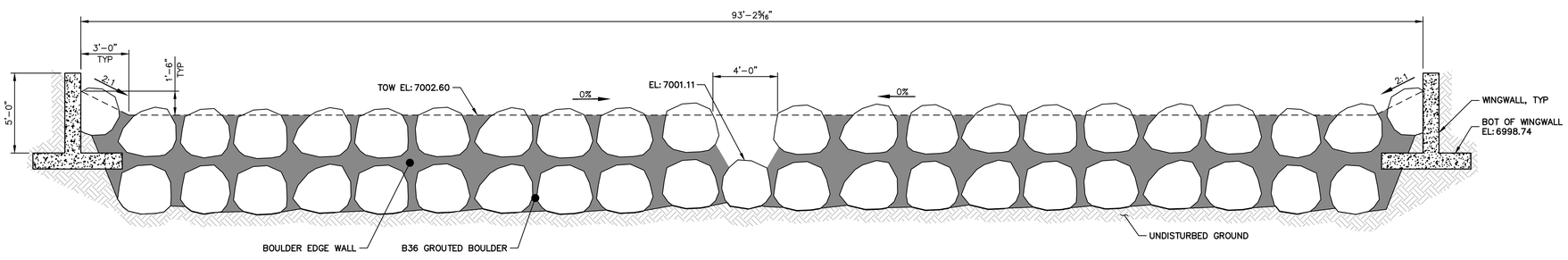

C 48 SRMD POND #1 STILLING BASIN SECTION
SCALE: 1/4"=1'-0"

Maintenance Activity	Minimum Frequency	Look for:	Maintenance Action
Major Sediment Removal	As needed – based upon scheduled inspections	Large quantities of sediment; reduced pond capacity	Remove and dispose of sediment. Repair vegetation as needed
Major Erosion Repair	As needed – based upon scheduled inspections	Severe erosion including gullies, excessive soil displacement, areas of settlement, holes	Repair erosion – find cause of problem and address to avoid future erosion
Structural Repair	As needed – based upon scheduled inspections	Deterioration and/or damage to structural components – broken concrete, damaged pipes, outlet works	Structural repair to restore the structure to its original design

SUMMARY OF MAJOR MAINTENANCE ACTIVITIES

DB Features	Sediment Removal	Mowing/ Weed control	Trash & Debris Removal	Erosion	Overgrown Vegetation Removal	Standing Water (mosquito/ algae control)	Structure Repair
Inflow Points (outfalls)	X		X				X
Low-flow channel	X		X	X	X		X
Bottom Stage	X	X	X	X	X	X	
Outlet Works	X		X				X
Emergency Spillway			X	X	X		X
Upper Stage			X	X			
Embankment		X		X	X		

TYPICAL DB O&M REQUIREMENTS MATRIX

Maintenance Activity	Minimum Frequency	Look for:	Maintenance Action
Mowing	Twice annually	Excessive grass height/aesthetics	Mow grass to a height of 4" to 6"
Trash/Debris Removal	Twice annually	Trash & debris in DB	Remove and dispose of trash and debris
Outlet Works Cleaning	As needed - after significant rain events – twice annually min.	Clogged outlet structure, ponding water	Remove and dispose of debris/trash/sediment to allow outlet to function properly
Weed control	Minimum twice annually	Noxious weeds; Unwanted vegetation	Treat w/ herbicide or hand pull; Consult the local weed specialist
Mosquito Treatment	As needed	Standing water/mosquito habitat	Treat w/ EPA approved chemicals
Algae Treatment	As needed	Standing water/ Algal growth/green color	Treat w/ EPA approved chemicals

SUMMARY OF ROUTINE MAINTENANCE ACTIVITIES

Maintenance Activity	Minimum Frequency	Look for:	Maintenance Action
Sediment Removal*	As needed; typically every 1 –2 years	Sediment build-up; decrease in pond volume	Remove and dispose of sediment
Erosion Repair	As needed, based upon inspection	Rills/gullies forming on side slopes, trickle channel, other areas	Repair eroded areas Revegetate; address source of erosion
Vegetation Removal/Tree Thinning	As needed, based upon inspection	Large trees/wood vegetation in lower chamber of pond	Remove vegetation; restore grade and surface
Drain Cleaning/Jet Vac	As needed, based upon inspection	Sediment build-up /non draining system	Clean drains; Jet Vac if needed

SUMMARY OF MINOR MAINTENANCE ACTIVITIES

1/4 1/8 0 1/4
ORIGINAL SCALE: 1" = 1/4'

Know what's **below.** **Call** before you dig.

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V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

POND PLANS

SHEET 49 OF 121

JOB NO. 25188.04

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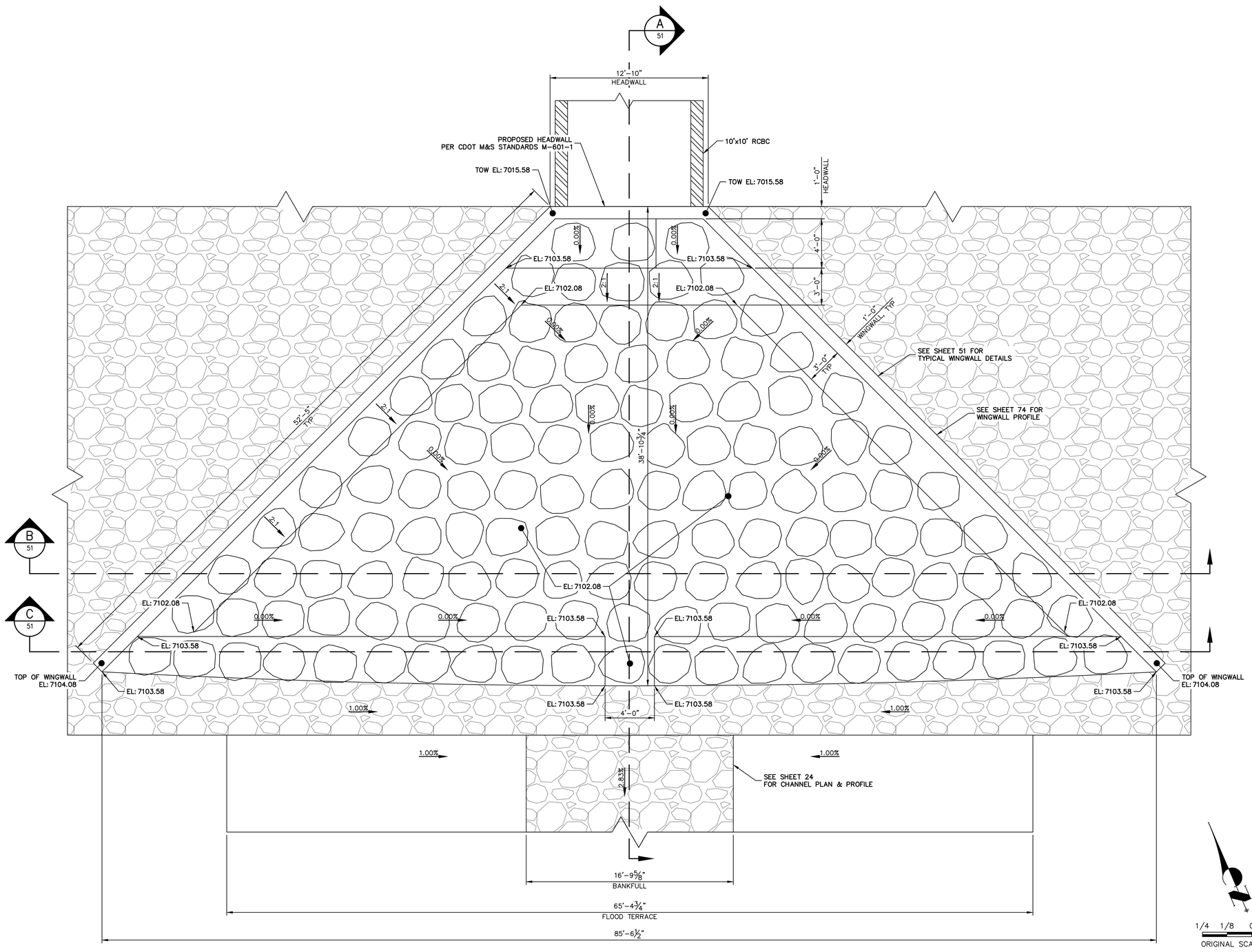

SRMD POND #2 STILLING BASIN PLAN

SCALE: 1/4"=1'

1/4 1/8 0 1/4

ORIGINAL SCALE: 1" = 1/4'

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V-SCALE	N/A
DATE	12/20/24
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SAND CREEK RESTORATION

POND PLANS

SHEET 50 OF 121

JOB NO. 25188.04

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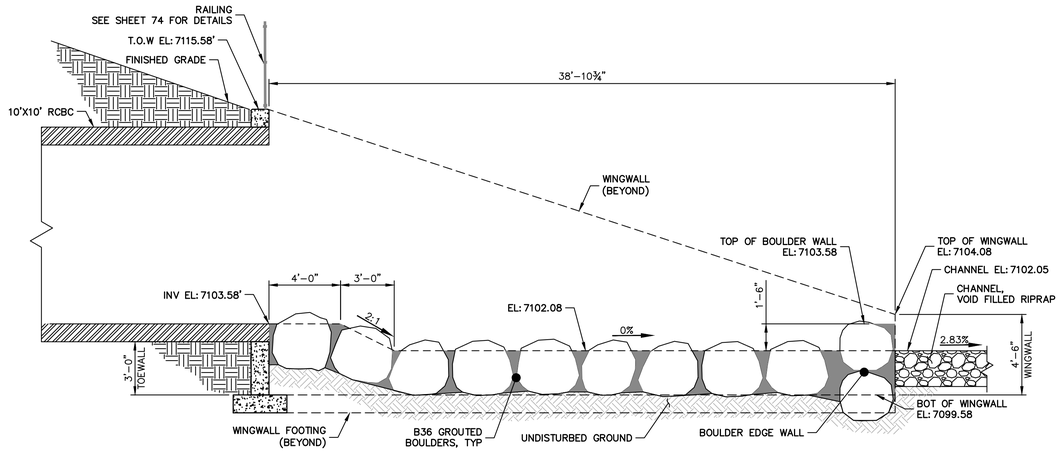
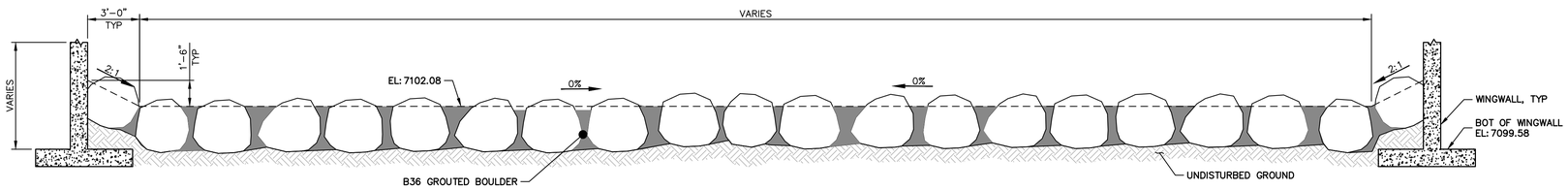


A / 50 SRMD POND #2 STILLING BASIN SECTION
SCALE: 1/4"=1'-0"



B / 50 SRMD POND #2 STILLING BASIN SECTION
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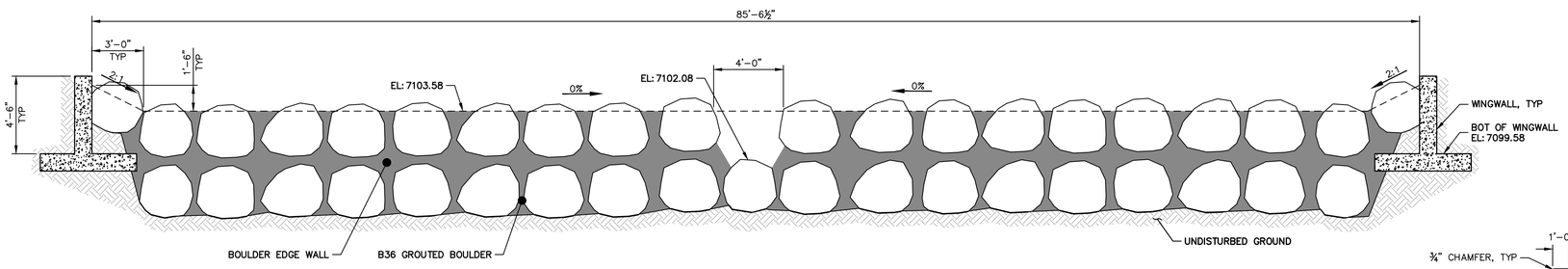

C / 50 SRMD POND #2 STILLING BASIN SECTION
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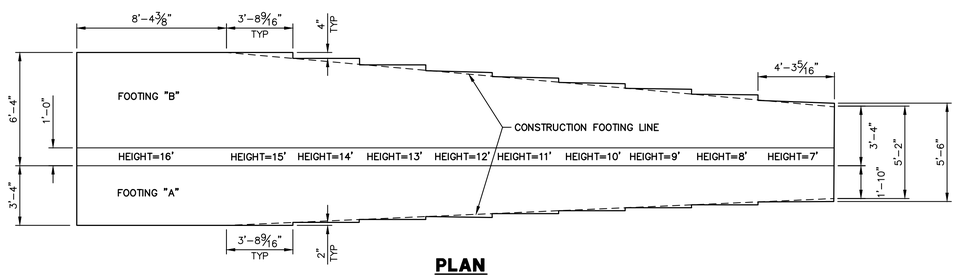
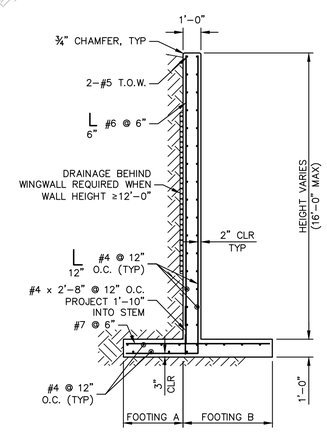


PLAN



SECTION

TYPICAL WINGWALL DETAILS
SCALE: 1/4"=1'

WINGWALL NOTES:

1. AASHTO LRFO EIGHTH EDITION, 2017 DESIGN METHOD:LOAD AND RESISTANCE FACTOR DESIGN, YIELD LINE METHOD
2. REINFORCED CONCRETE:
   - 2.1. CONCRETE CLASS D (BOX CULVERT): F'c= 4,500 PSI
   - 2.2. REINFORCING STEEL: Fy = 60,000 PSI
3. LOADING:
   - 3.1. AT-REST EARTH (FLUID) PRESSURE FOR CONCRETE STEM DESIGN = 55 PCF FOR 2 (MIN.) : 1 SLOPED BACKFILL
   - 3.2. ACTIVE EARTH (FLUID) PRESSURE FOR CONCRETE FOOTING DESIGN = 40 PCF FOR 2 (MIN.) : 1 SLOPED BACKFILL
   - 3.3. LIVE LOAD SURCHARGE = 2'
   - 3.4. MINIMUM RESISTANCE FOR SOIL BEARING = 5.5 KSF
   - 3.5. SOIL BEARING RESISTANCE FACTOR = 0.45
4. GENERAL NOTES:
   - 4.1. ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾" IN.
   - 4.2. WINGWALL FOOTING AND FLOOR OF BOX CULVERT SHALL BE PLACED MONOLITHICALLY.
   - 4.3. MINIMUM CLASS B LAP SPLICE LENGTH FOR BLACK REINFORCING BARS:
     - 4.3.1. BAR SIZE & SPLICE LENGTH: #4(1'-6"), #5(1'-11"), #6(2'-3"), #7(2'-7")
   - 4.4. DESIGN DOES NOT CONSIDER ANY SCOUR EFFECTS.

GROUTED BOULDER NOTES:

1. BOULDERS USED FOR GROUTING SHOULD MEET ALL THE PROPERTIES OF ROCK FOR ORDINARY RIPRAP, AND ROCK OF UNIFORM SIZE SHOULD BE USED.
2. ROCK SHALL BE HARD, DURABLE, AND FREE FROM CRACKS, OVERBURDEN, SHALE, AND ORGANIC MATTER.
3. GROUTED BOULDERS SHALL BE PLACED DIRECTLY ON STABILIZED, COMPACTED SUBGRADE WITHOUT GRANULAR BEDDING.
4. THE TOP ONE-THIRD OF THE BOULDERS SHALL BE LEFT UNGROUTED AND EXPOSED.
5. ROCK HAVING A MINIMUM SPECIFIC GRAVITY OF 2.65 IS PREFERRED; HOWEVER, IN NO CASE SHALL ROCK HAVE A SPECIFIC GRAVITY LESS THAN 2.50.
6. WEEP HOLES SHALL BE PROVIDED AT THE CHANNEL SLOPES AND CHANNEL DROPS AS SHOWN TO REDUCE UPLIFT FORCES ON THE GROUTED CHANNEL LINING.
7. PLACEMENT AND GROUTING OF BOULDERS SHALL GENERALLY CONFORM TO THE SPECIFICATIONS AND DETAILS FOR GROUTED BOULDER DROPS. SEE DETAILS AND NOTES FOR GROUTED BOULDER DROPS ON THIS SHEET.
8. BOULDERS SHALL BE SET IN A STEPPED MANNER. BOULDERS SHALL NOT BE ORIENTED INTO A SMOOTH SLOPING FACE.
9. BOULDERS SHALL BE GROUTED TO ⅔ THE ROCK HEIGHT.
10. BOULDERS OF DIFFERENT SOURCES AND/OR COLORS SHALL BE MIXED WITH THE OTHER ROCK AND EVENLY DISPERSED THROUGHOUT THE PROJECT TO AVOID HAVING AREAS OF NON-UNIFORMITY.
11. THE BOULDER SIZES SHOWN ON THE PLANS ARE MINIMUM DIMENSIONS. LARGER ROCK MAY BE SUBSTITUTED AS LONG AS THE TOP OF BOULDER ELEVATIONS SHOWN ON THE PLANS ARE MET AND THE MINIMUM OVER-EXCAVATION REQUIREMENTS ARE MET AT EACH BOULDER LOCATION.

1/4 1/8 0 1/4
ORIGINAL SCALE: 1" = 1/4'

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V-SCALE	N/A
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SAND CREEK RESTORATION

POND PLANS

SHEET 51 OF 121

JOB NO. 25188.04

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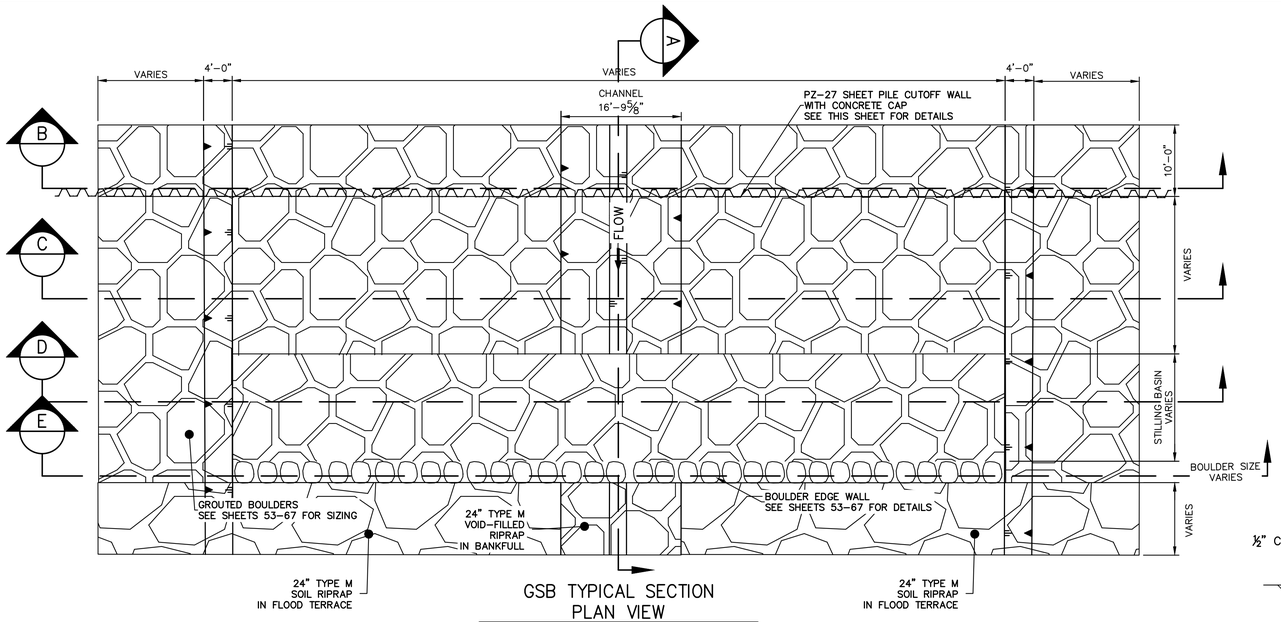
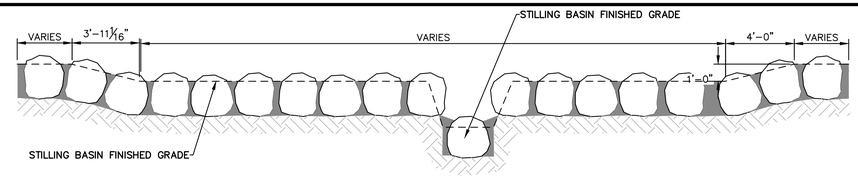
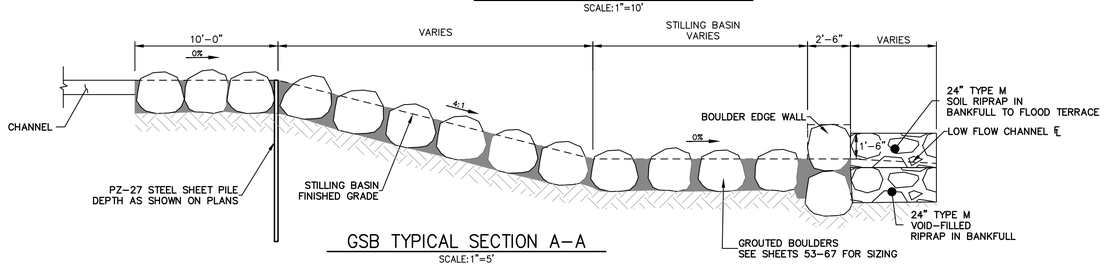


GSB TYPICAL SECTION
PLAN VIEW
SCALE: 1"=10'



GSB TYPICAL SECTION E-E
SCALE: 1"=5'



GSB TYPICAL SECTION A-A
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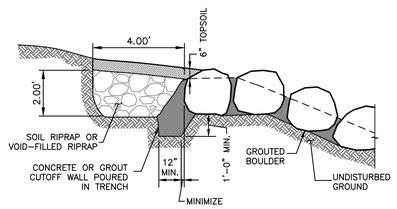
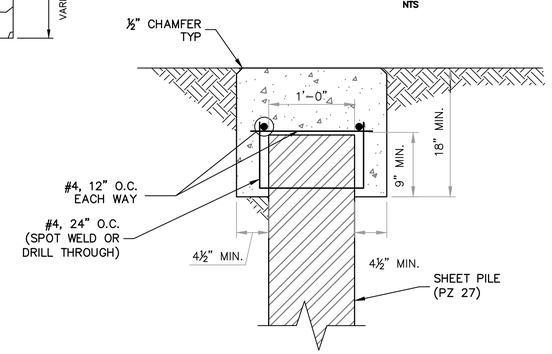
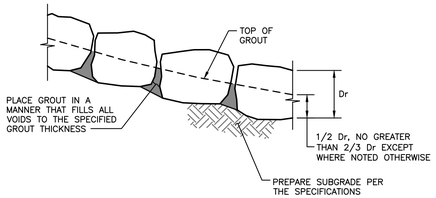


STRUCTURE EDGE WALL DETAIL (GSB)
NTS



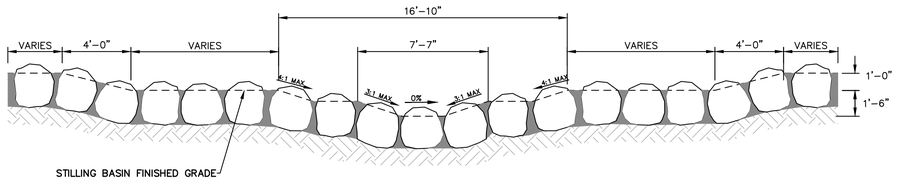
CONCRETE SHEET PILE CAP
N.T.S.



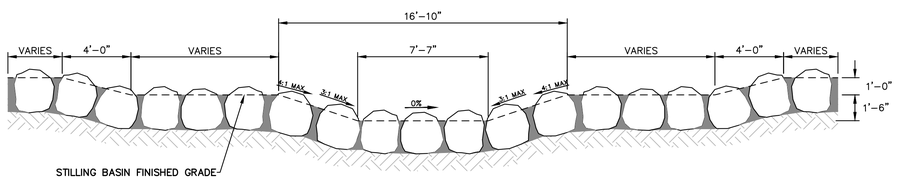
BOULDER PLACEMENT NOTES:
1. PLACE BOULDERS WITH THE REQUIRED BOULDER HEIGHT VERTICAL. PLACE BOULDERS AS TIGHTLY TOGETHER AS POSSIBLE (WITHOUT TOUCHING) WHILE PROVIDING ENOUGH ROOM BETWEEN THEM TO THOROUGHLY VIBRATE THE GROUT AND TO ENSURE NO GAPS IN THE GROUT. THE SMALL DIMENSION OF A 2X4 CAN BE USED AS A GUIDE TO CHECK MINIMUM SPACING.
2. BEFORE GROUTING, CLEAN ALL DIRT AND MATERIAL FROM ROCK THAT COULD PREVENT THE GROUT FROM BINDING TO THE ROCK. KEEP BOULDERS FROM TOUCHING. AVOID SLIDING BOULDERS AGAINST SUBGRADE TO PROPERLY POSITION.

MATERIAL SPECIFICATIONS:
1. ALL GROUT SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH EQUAL TO 3200 PSI.
2. ONE CUBIC YARD OF GROUT SHALL HAVE A MINIMUM OF SIX (6) SACKS OF TYPE II PORTLAND CEMENT.
3. A MAXIMUM OF 25% TYPE F FLY ASH MAY BE SUBSTITUTED FOR THE PORTLAND CEMENT.
4. THE AGGREGATE SHALL BE COMPRISED OF 70% NATURAL SAND (FINES) AND 30% ⅜-INCH ROCK (COARSE).
5. THE GROUT SLUMP SHALL BE BETWEEN 4-INCHES TO 6-INCHES.
6. AIR ENTRAINMENT SHALL BE BETWEEN 5.5% AND 7.5%.
7. TO CONTROL SHRINKAGE AND CRACKING, 1.5 POUNDS OF FIBERMESH, OR EQUIVALENT, SHALL BE USED PER CUBIC YARD OF GROUT.
8. COLOR ADDITIVE IN REQUIRED AMOUNTS SHALL BE USED WHEN SO SPECIFIED BY CONTRACT.

GROUT PLACEMENT SPECIFICATIONS:
1. SPECIAL PROCEDURES SHALL BE REQUIRED FOR GROUT PLACEMENT WHEN THE AIR TEMPERATURES ARE LESS THAN 40°F OR GREATER THAN 90°F. CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FROM THE DESIGN ENGINEER OF THE PROCEDURES TO BE USED FOR PROTECTING THE GROUT.
2. GROUT SHALL BE DELIVERED BY MEANS OF A LOW PRESSURE (LESS THAN 10 PSI) GROUT PUMP USING A 2-INCH DIAMETER (MAXIMUM) NOZZLE.
3. FULL DEPTH PENETRATION OF THE GROUT INTO THE BOULDER VOIDS SHALL BE ACHIEVED BY INJECTING GROUT STARTING WITH THE NOZZLE NEAR THE BOTTOM AND RAISING IT AS THE GROUT FILLS, WHILE VIBRATING GROUT INTO PLACE USING A PENCIL VIBRATOR.
4. ALL GROUT BETWEEN BOULDERS SHALL BE TREATED WITH A BROOM FINISH.
5. AFTER GROUT PLACEMENT, EXPOSED BOULDER FACES SHALL BE CLEANED AND FREE OF GROUT.
6. ALL FINISHED GROUT SURFACES SHALL BE SPRAYED WITH A CLEAR LIQUID MEMBRANE CURING COMPOUND AS SPECIFIED IN ASTM C309.



GSB TYPICAL SECTION B-B
SCALE: 1"=5'



GSB TYPICAL SECTION C-C
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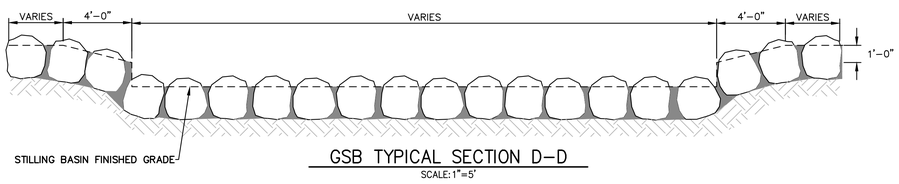

GSB TYPICAL SECTION D-D
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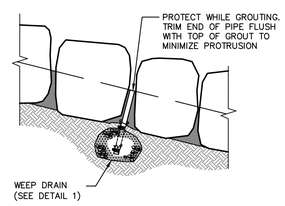
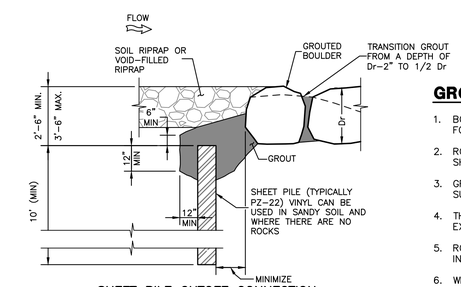
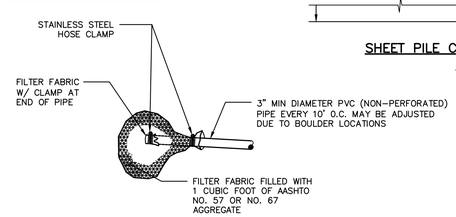


GROUTED BOULDERS



SHEET PILE CUTOFF CONNECTION
(GSB)



DETAIL
WEEP DRAIN 1

NOTE: INSTALL WEEP DRAINS FOR DROPS AND WALLS 5' AND GREATER AT 10' O.C. AT ELEVATIONS AND LOCATIONS SHOWN ON THE DRAWINGS

WEEP DRAINS

GROUTED BOULDER PLACEMENT DETAIL
NTS

GROUTED BOULDER NOTES:

1. BOULDERS USED FOR GROUTING SHOULD MEET ALL THE PROPERTIES OF ROCK FOR ORDINARY RIPRAP, AND ROCK OF UNIFORM SIZE SHOULD BE USED.
2. ROCK SHALL BE HARD, DURABLE, AND FREE FROM CRACKS, OVERBURDEN, SHALE, AND ORGANIC MATTER.
3. GROUTED BOULDERS SHALL BE PLACED DIRECTLY ON STABILIZED, COMPACTED SUBGRADE WITHOUT GRANULAR BEDDING.
4. THE TOP ONE-THIRD OF THE BOULDERS SHALL BE LEFT UNGROUTED AND EXPOSED.
5. ROCK HAVING A MINIMUM SPECIFIC GRAVITY OF 2.65 IS PREFERRED; HOWEVER, IN NO CASE SHALL ROCK HAVE A SPECIFIC GRAVITY LESS THAN 2.50.
6. WEEP HOLES SHALL BE PROVIDED AT THE CHANNEL SLOPES AND CHANNEL DROPS AS SHOWN TO REDUCE UPLIFT FORCES ON THE GROUTED CHANNEL LINING.
7. PLACEMENT AND GROUTING OF BOULDERS SHALL GENERALLY CONFORM TO THE SPECIFICATIONS AND DETAILS FOR GROUTED BOULDER DROPS. SEE DETAILS AND NOTES FOR GROUTED BOULDER DROPS ON THIS SHEET.
8. BOULDERS SHALL BE SET IN A STEPPED MANNER. BOULDERS SHALL NOT BE ORIENTED INTO A SMOOTH SLOPING FACE.
9. BOULDERS SHALL BE GROUTED TO ⅔ THE ROCK HEIGHT.
10. BOULDERS OF DIFFERENT SOURCES AND/OR COLORS SHALL BE MIXED WITH THE OTHER ROCK AND EVENLY DISPERSED THROUGHOUT THE PROJECT TO AVOID HAVING AREAS OF NON-UNIFORMITY.
11. THE BOULDER SIZES SHOWN ON THE PLANS ARE MINIMUM DIMENSIONS. LARGER ROCK MAY BE SUBSTITUTED AS LONG AS THE TOP OF BOULDER ELEVATIONS SHOWN ON THE PLANS ARE MET AND THE MINIMUM OVER-EXCAVATION REQUIREMENTS ARE MET AT EACH BOULDER LOCATION.

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24
DATE

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

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

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DATE	12/20/24
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SAND CREEK RESTORATION

GSB DETAILS

SHEET 52 OF 121

JOB NO. 25188.04

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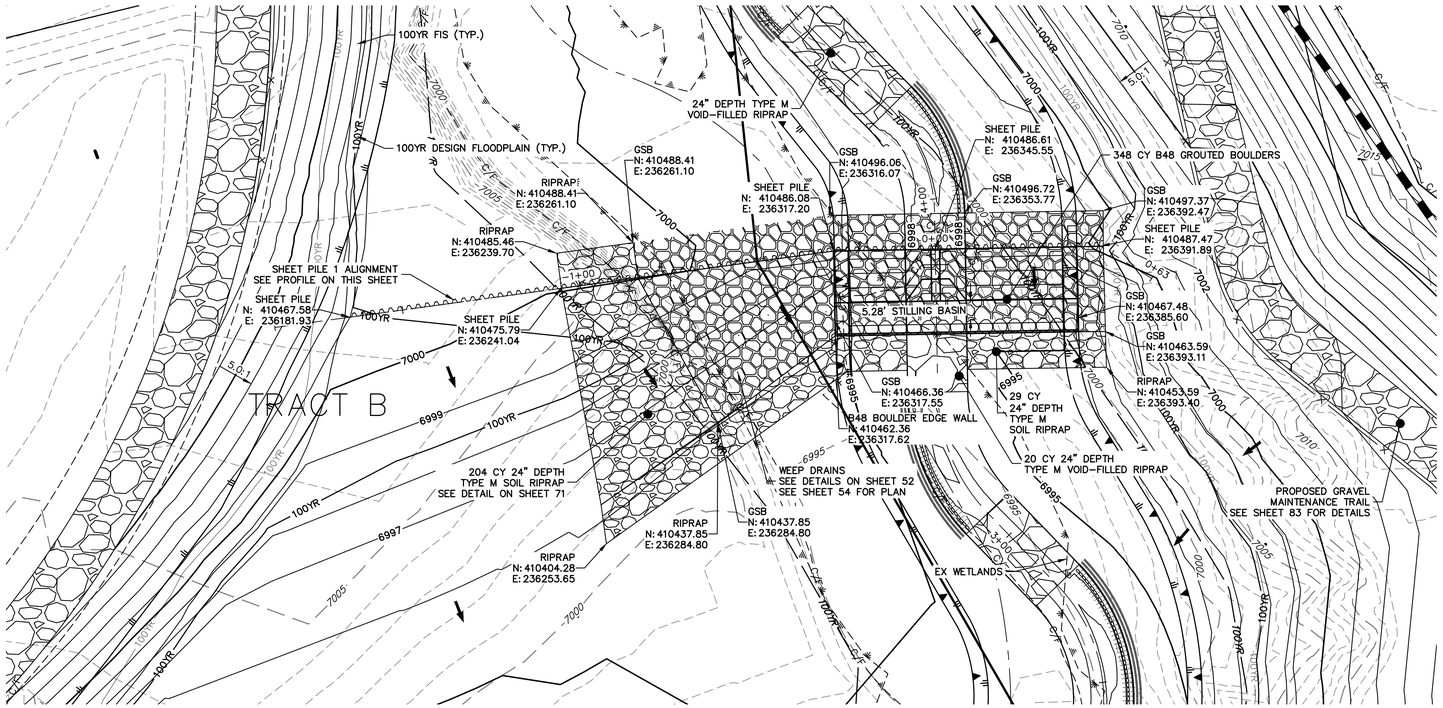
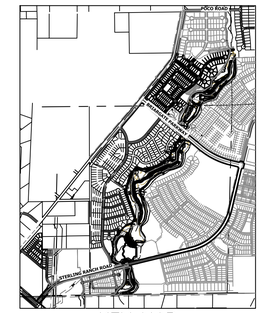
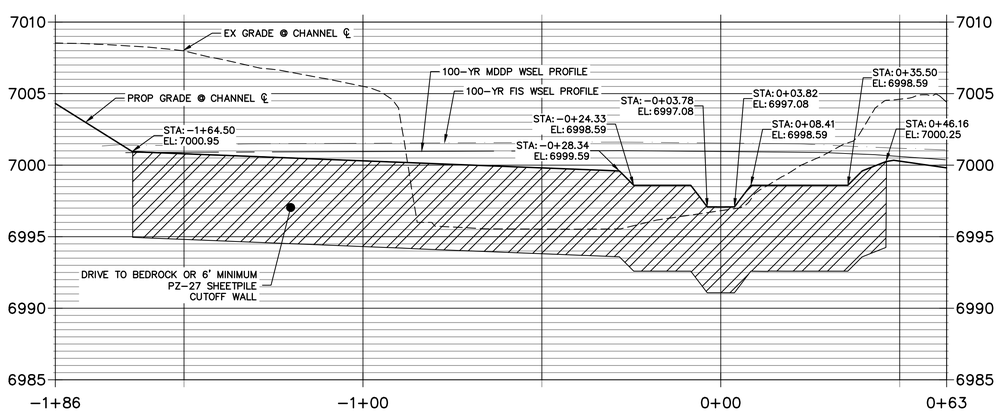


GROUTED STEPPED BOULDER DROP #1 DETAIL
PLAN VIEW
SCALE: 1"=20'

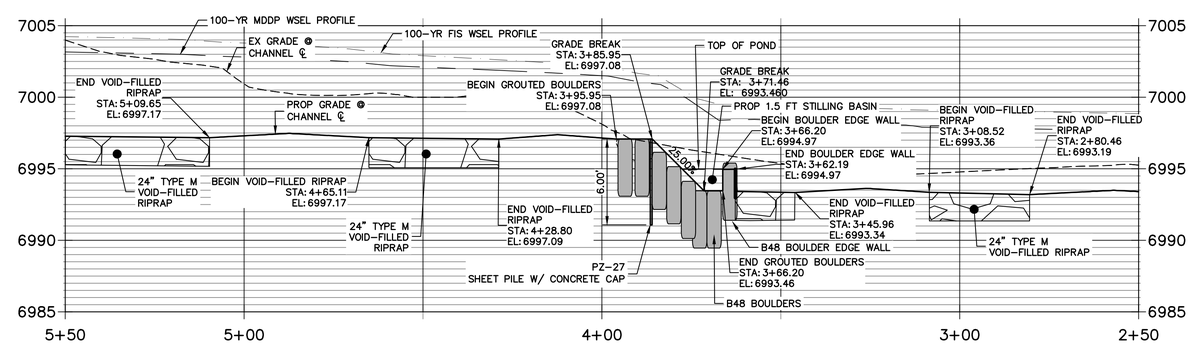


KEY MAP
SCALE: 1"=2000'

GSB 1 SHEET PILE PROFILE
STA -1+85.99 TO 0+63.12



GSB DETAIL 1
STA 2+50.00 TO 5+50.00



NOTE

1. SEE TYPICAL GSB DETAILS ON SHEET 52
2. DRIVE SHEET PILE THROUGH BEDROCK OR MINIMUM OF 6 FEET.
3. SHEET PILE ELEVATIONS ARE AT TOP OF CONCRETE CAP.
4. NO GRADING OR CONSTRUCTION ACTIVITIES ON PRIVATE PROPERTY

N

20 10 0 20
HORIZONTAL
ORIGINAL SCALE: 1" = 20'
VERTICAL
ORIGINAL SCALE: 1" = 5'

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DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

GSB DETAILS

SHEET 53 OF 121

JOB NO. 25188.04

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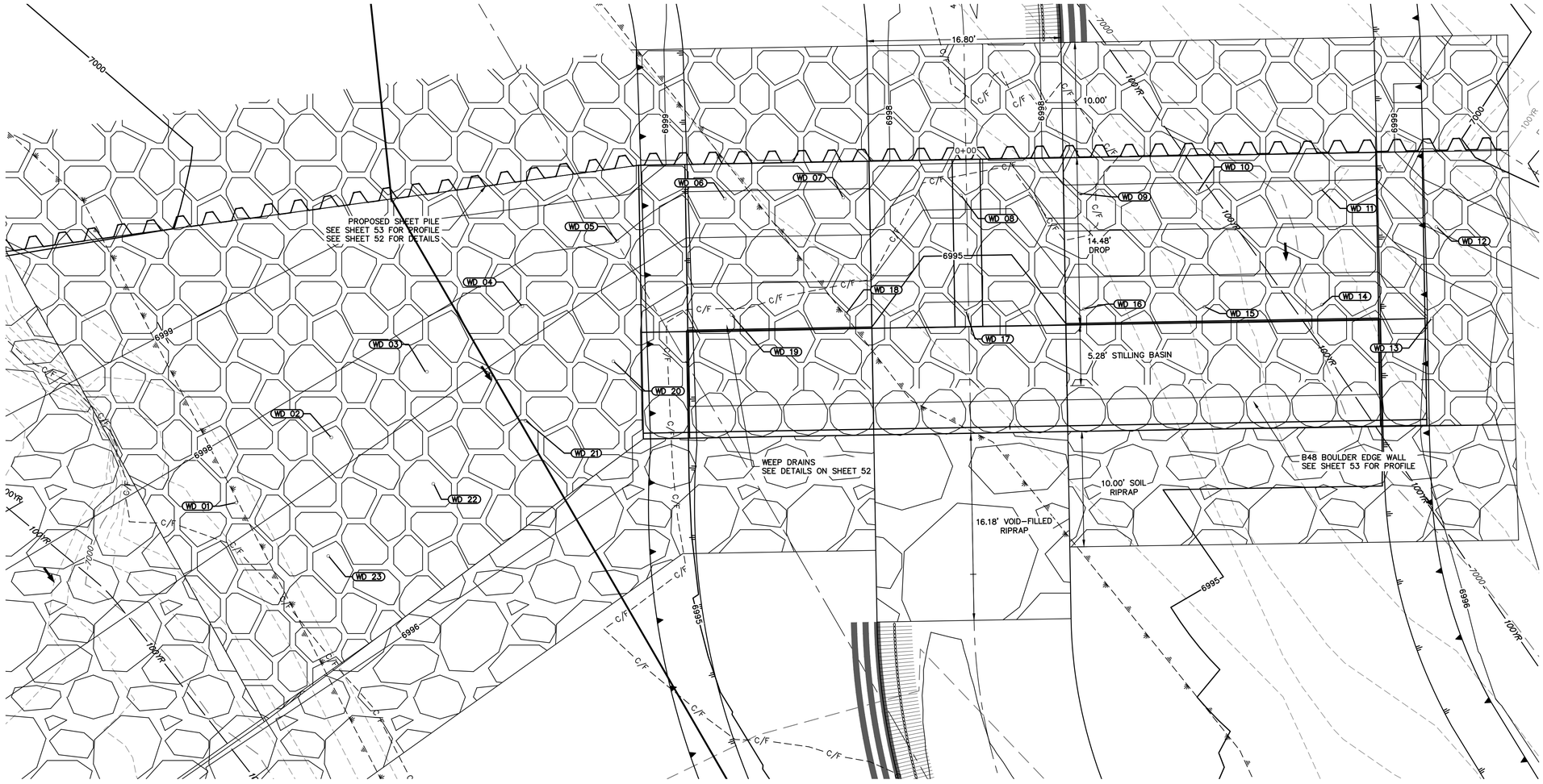
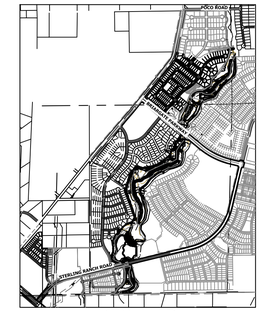


GSB01 WEEP DRAINS PLAN VIEW

SCALE: 1"=5'



KEY MAP

SCALE: 1"=2000'

POINT TABULATION			
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEV
WD 01	WEEP DRAIN	N: 410456.84 E: 236282.37	6997.36
WD 02	WEEP DRAIN	N: 410462.49 E: 236290.60	6997.44
WD 03	WEEP DRAIN	N: 410468.11 E: 236298.80	6997.46
WD 04	WEEP DRAIN	N: 410473.85 E: 236307.14	6997.46
WD 05	WEEP DRAIN	N: 410479.51 E: 236315.39	6997.97
WD 06	WEEP DRAIN	N: 410483.18 E: 236324.67	6997.84
WD 07	WEEP DRAIN	N: 410483.27 E: 236334.93	6997.81
WD 08	WEEP DRAIN	N: 410483.45 E: 236345.11	6996.30
WD 09	WEEP DRAIN	N: 410483.63 E: 236355.37	6997.81
WD 10	WEEP DRAIN	N: 410483.81 E: 236365.63	6997.81
WD 11	WEEP DRAIN	N: 410484.00 E: 236376.28	6997.81
WD 12	WEEP DRAIN	N: 410480.72 E: 236386.28	6998.09

POINT TABULATION			
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEV
WD 13	WEEP DRAIN	N: 410472.80 E: 236385.88	6996.07
WD 14	WEEP DRAIN	N: 410473.99 E: 236376.36	6995.31
WD 15	WEEP DRAIN	N: 410473.81 E: 236366.19	6995.31
WD 16	WEEP DRAIN	N: 410473.63 E: 236355.77	6995.31
WD 17	WEEP DRAIN	N: 410473.45 E: 236345.51	6993.80
WD 18	WEEP DRAIN	N: 410473.27 E: 236335.18	6995.31
WD 19	WEEP DRAIN	N: 410473.10 E: 236325.24	6995.31
WD 20	WEEP DRAIN	N: 410469.09 E: 236315.02	6996.52
WD 21	WEEP DRAIN	N: 410463.95 E: 236307.41	6996.53
WD 22	WEEP DRAIN	N: 410458.47 E: 236299.43	6996.53
WD 23	WEEP DRAIN	N: 410452.21 E: 236290.33	6996.63

5 3 0 5 10

ORIGINAL SCALE: 1" = 5'

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ENGINEER'S STATEMENT

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BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE 12/20/24

COLORADO REGISTERED BRYAN T. LAW 25043 PROFESSIONAL ENGINEER

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20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

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A Westrian Company
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Fort Collins 970-491-9888 • www.jrengineering.com

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DATE	12/20/24
DESIGNED BY	DV
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CHECKED BY	

SAND CREEK RESTORATION

GSB DETAILS

SHEET 54 OF 121

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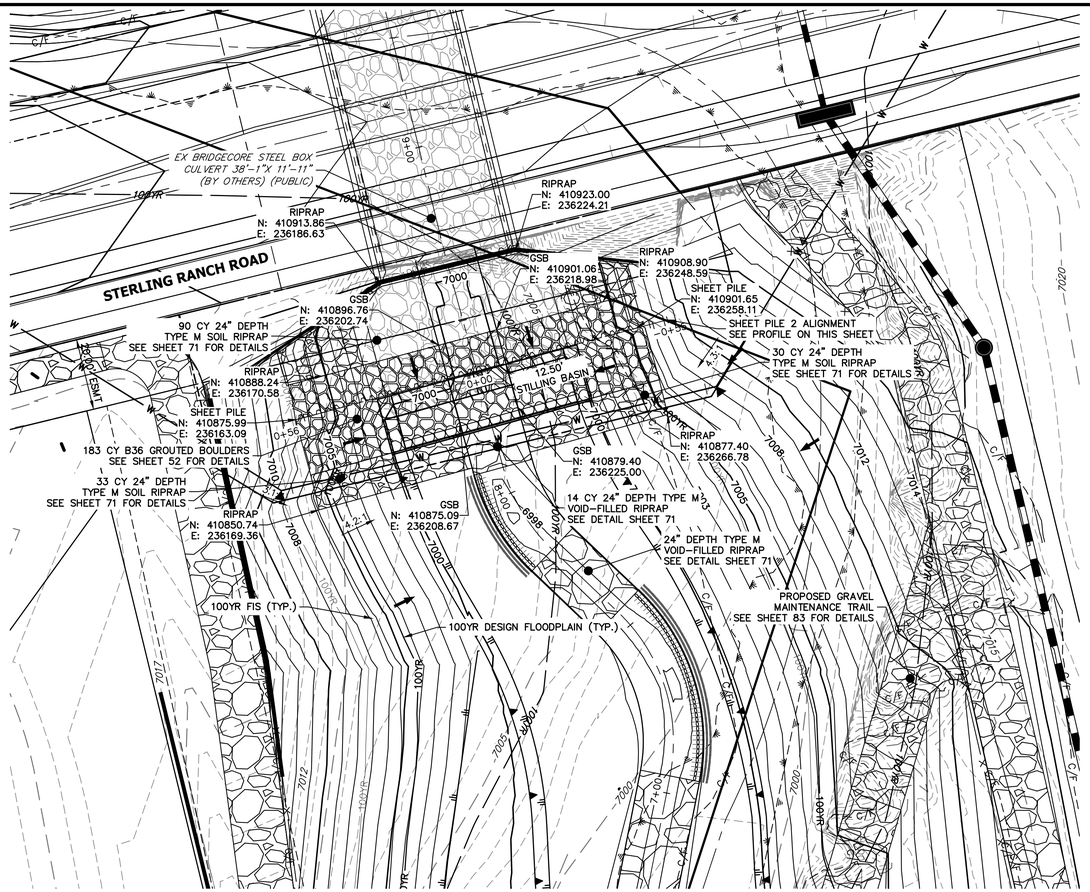
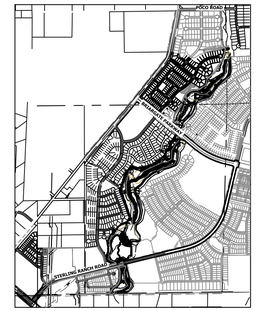
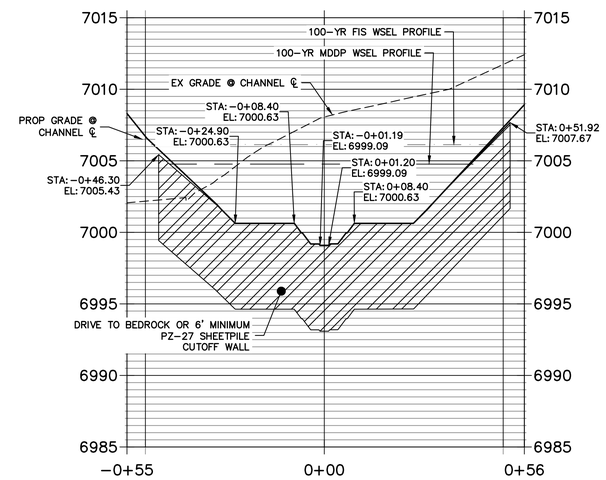


GROUTED STEPPED BOULDER DROP #2 DETAIL
PLAN VIEW
SCALE: 1"=20'

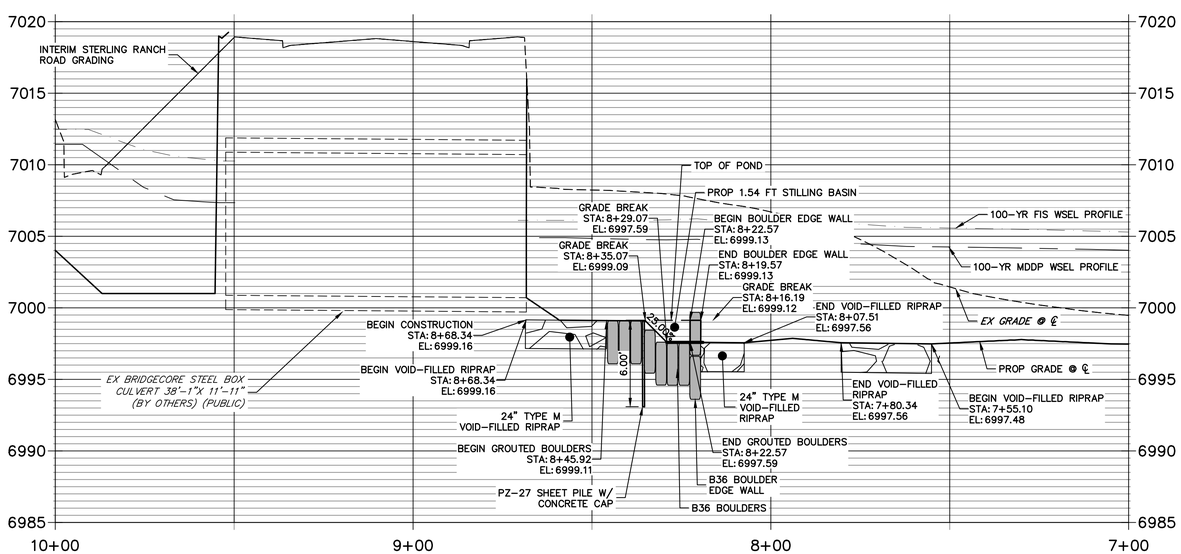


KEY MAP
SCALE: 1"=2000'

GSB 2 SHEET PILE PROFILE
STA -0+55.15 TO 0+55.91



GSB PROFILE 2
STA 7+00.00 TO 10+00.00



20 10 0 20
HORIZONTAL
ORIGINAL SCALE: 1" = 20'
VERTICAL
ORIGINAL SCALE: 1" = 5'

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SAND CREEK RESTORATION

GSB DETAILS

SHEET 55 OF 121

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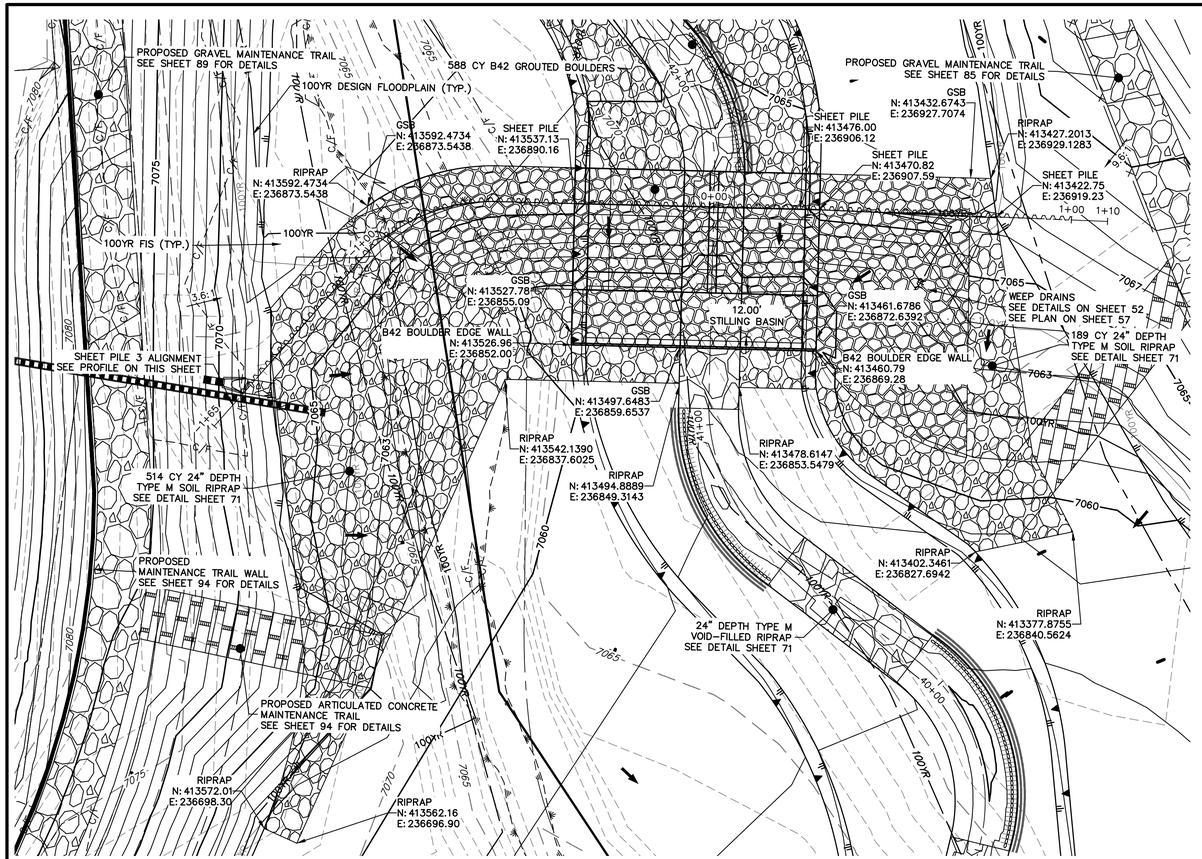
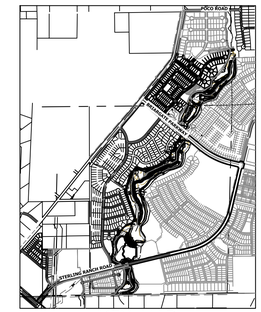
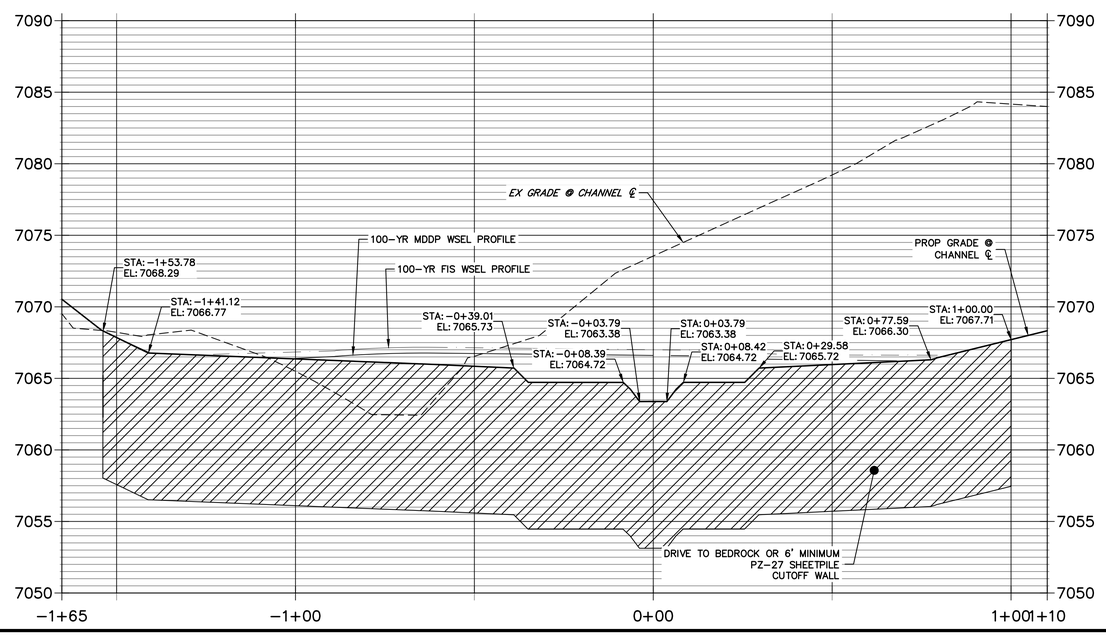


GROUTED STEPPED BOULDER DROP #3 DETAIL
PLAN VIEW
SCALE: 1"=20"

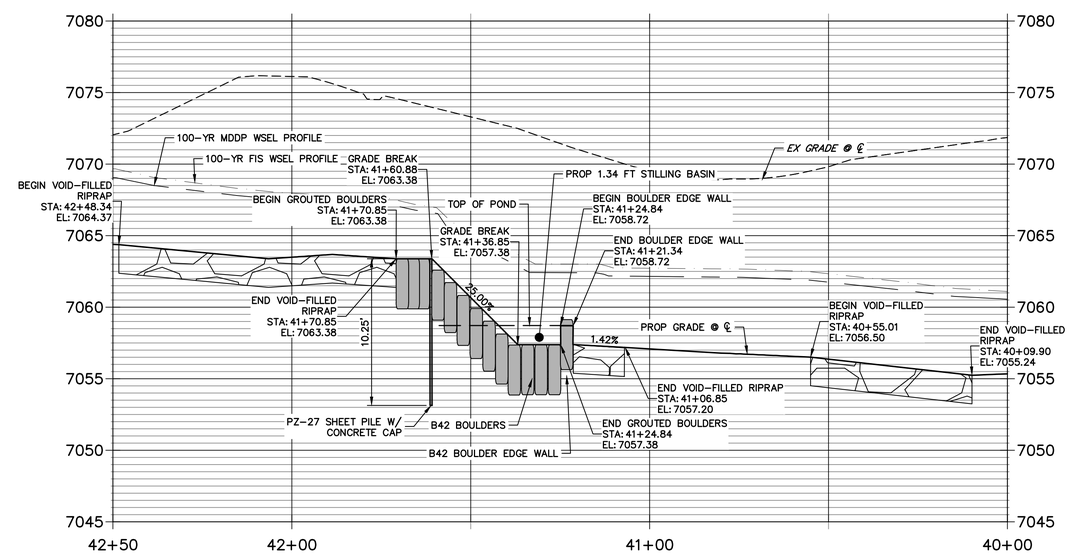


KEY MAP
SCALE: 1"=2000'

GSB 3 SHEET PILE PROFILE
STA -1+65.30 TO 1+10.11



GSB PROFILE 3
STA 40+00.00 TO 42+50.00



20 10 0 20
HORIZONTAL
ORIGINAL SCALE: 1" = 20'
VERTICAL
ORIGINAL SCALE: 1" = 5'

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DRAWN BY	NEO
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SAND CREEK RESTORATION

GSB DETAILS

SHEET 56 OF 121

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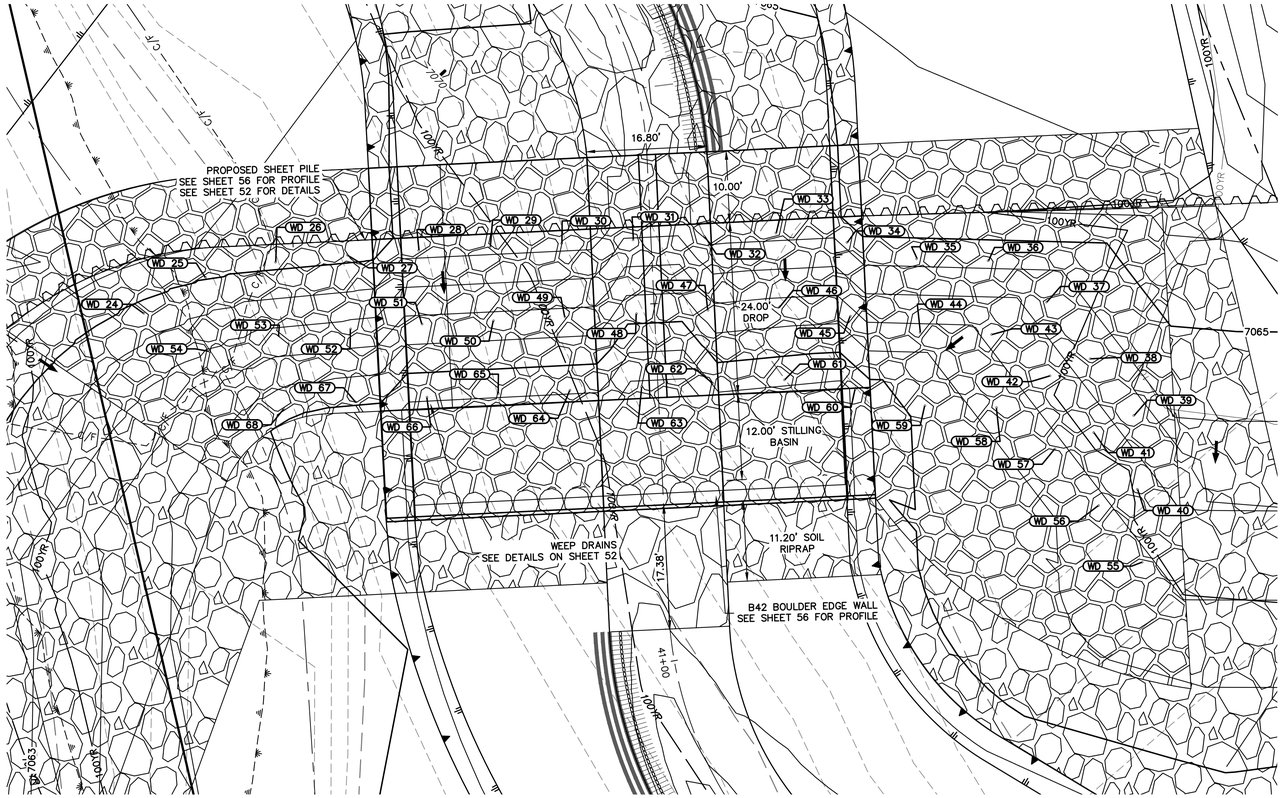
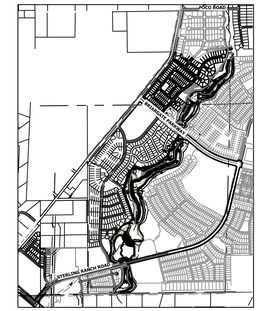


GSB03 WEEP DRAINS PLAN VIEW

SCALE: 1"=10'



KEY MAP

SCALE: 1"=2000'

POINT TABULATION			
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEV
WD 24	WEEP DRAIN	N: 413566.16 E: 236873.55	7064.66
WD 25	WEEP DRAIN	N: 413558.73 E: 236880.22	7065.06
WD 26	WEEP DRAIN	N: 413549.62 E: 236884.33	7065.26
WD 27	WEEP DRAIN	N: 413540.02 E: 236887.35	7065.27
WD 28	WEEP DRAIN	N: 413530.39 E: 236890.05	7064.27
WD 29	WEEP DRAIN	N: 413520.71 E: 236892.57	7064.27
WD 30	WEEP DRAIN	N: 413511.04 E: 236895.10	7064.27
WD 31	WEEP DRAIN	N: 413501.36 E: 236897.63	7062.93
WD 32	WEEP DRAIN	N: 413491.69 E: 236900.15	7064.05
WD 33	WEEP DRAIN	N: 413482.01 E: 236902.67	7064.26
WD 34	WEEP DRAIN	N: 413472.04 E: 236903.43	7064.26
WD 35	WEEP DRAIN	N: 413462.04 E: 236903.18	7064.27
WD 36	WEEP DRAIN	N: 413452.20 E: 236904.97	7064.27
WD 37	WEEP DRAIN	N: 413443.03 E: 236900.99	7063.40
WD 38	WEEP DRAIN	N: 413435.43 E: 236894.49	7063.40

POINT TABULATION			
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEV
WD 39	WEEP DRAIN	N: 413427.84 E: 236887.98	7063.40
WD 40	WEEP DRAIN	N: 413425.24 E: 236878.00	7062.59
WD 41	WEEP DRAIN	N: 413432.84 E: 236884.50	7062.59
WD 42	WEEP DRAIN	N: 413440.43 E: 236891.01	7062.59
WD 43	WEEP DRAIN	N: 413449.61 E: 236894.98	7062.18
WD 44	WEEP DRAIN	N: 413459.45 E: 236893.19	7061.69
WD 45	WEEP DRAIN	N: 413469.44 E: 236893.45	7061.68
WD 46	WEEP DRAIN	N: 413479.42 E: 236892.68	7061.69
WD 47	WEEP DRAIN	N: 413489.09 E: 236890.17	7061.48
WD 48	WEEP DRAIN	N: 413498.77 E: 236887.64	7060.35
WD 49	WEEP DRAIN	N: 413508.45 E: 236885.12	7061.69
WD 50	WEEP DRAIN	N: 413518.12 E: 236882.59	7061.69
WD 51	WEEP DRAIN	N: 413527.80 E: 236880.06	7061.69
WD 52	WEEP DRAIN	N: 413537.42 E: 236877.36	7062.68
WD 53	WEEP DRAIN	N: 413547.03 E: 236874.34	7062.71

POINT TABULATION			
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEV
WD 54	WEEP DRAIN	N: 413556.14 E: 236870.24	7062.93
WD 55	WEEP DRAIN	N: 413422.47 E: 236868.15	7061.81
WD 56	WEEP DRAIN	N: 413430.07 E: 236874.66	7061.81
WD 57	WEEP DRAIN	N: 413437.66 E: 236881.16	7061.81
WD 58	WEEP DRAIN	N: 413446.84 E: 236885.14	7061.40
WD 59	WEEP DRAIN	N: 413456.68 E: 236883.34	7060.34
WD 60	WEEP DRAIN	N: 413466.67 E: 236883.60	7059.20
WD 61	WEEP DRAIN	N: 413476.64 E: 236882.84	7059.20
WD 62	WEEP DRAIN	N: 413486.32 E: 236880.32	7059.07
WD 63	WEEP DRAIN	N: 413496.00 E: 236877.80	7057.79
WD 64	WEEP DRAIN	N: 413505.67 E: 236875.27	7059.13
WD 65	WEEP DRAIN	N: 413515.35 E: 236872.74	7059.14
WD 66	WEEP DRAIN	N: 413525.03 E: 236870.22	7059.14
WD 67	WEEP DRAIN	N: 413534.65 E: 236867.52	7060.12
WD 68	WEEP DRAIN	N: 413544.26 E: 236864.50	7060.37

10 5 0 10 20

ORIGINAL SCALE: 1" = 10'

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24 DATE

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PREPARED FOR
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2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

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A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	1"=10'
V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	DV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

GSB DETAILS

SHEET 57 OF 121

JOB NO. 25188.04

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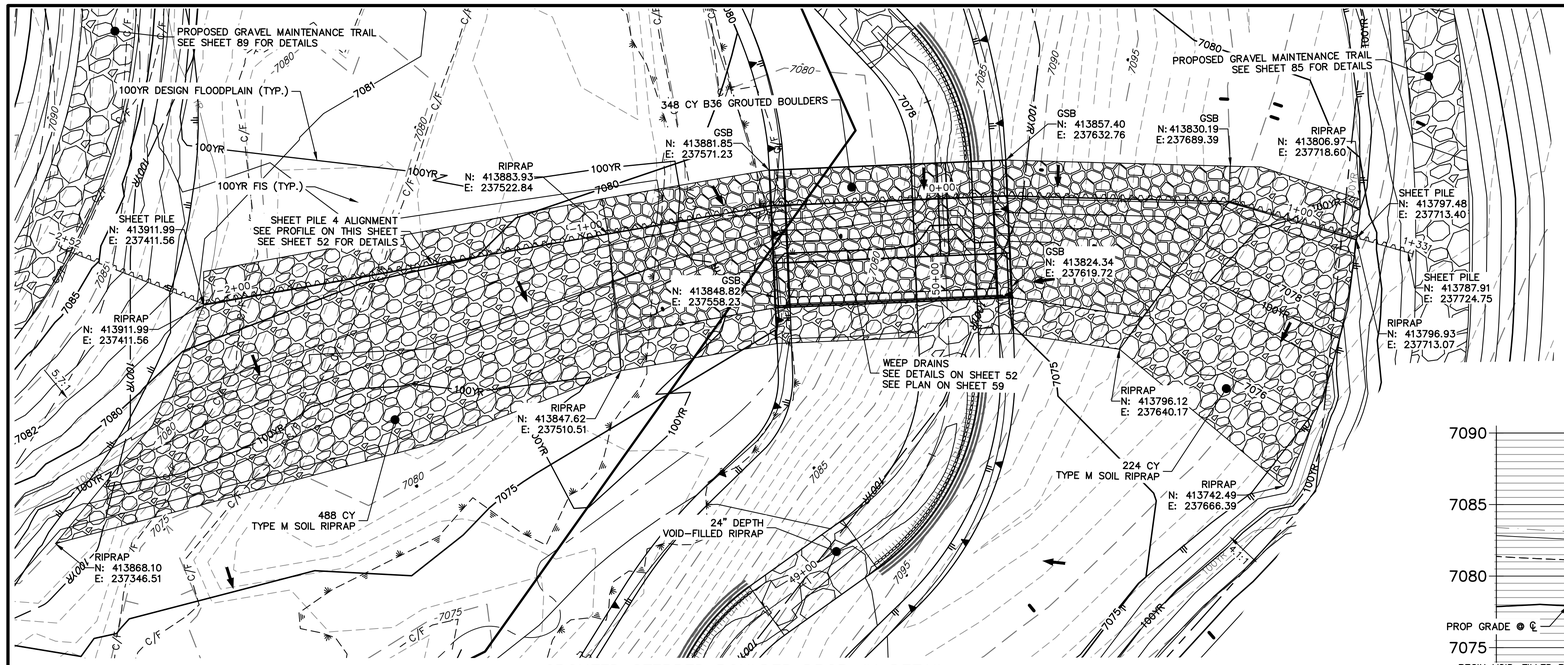
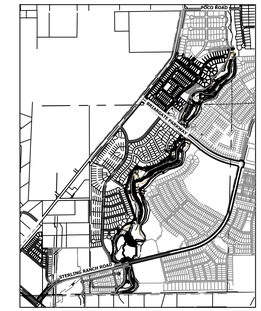
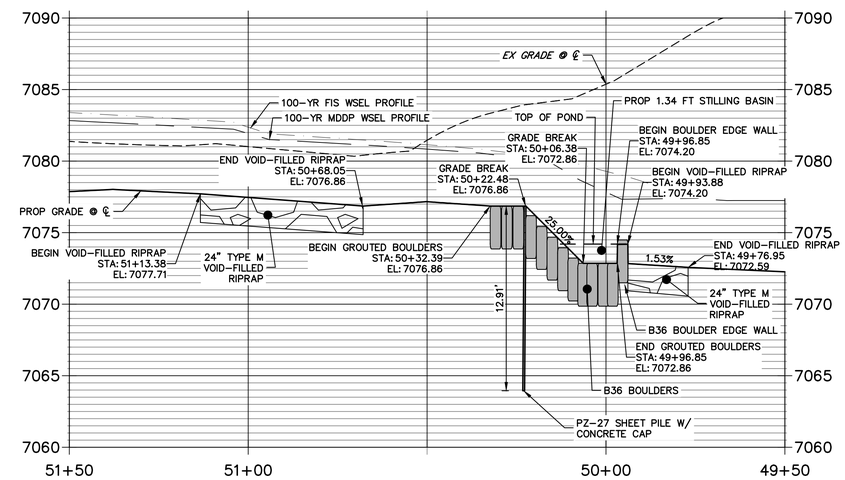


GROUTED STEPPED BOULDER DROP #4 DETAIL
PLAN VIEW
SCALE: 1"=20'

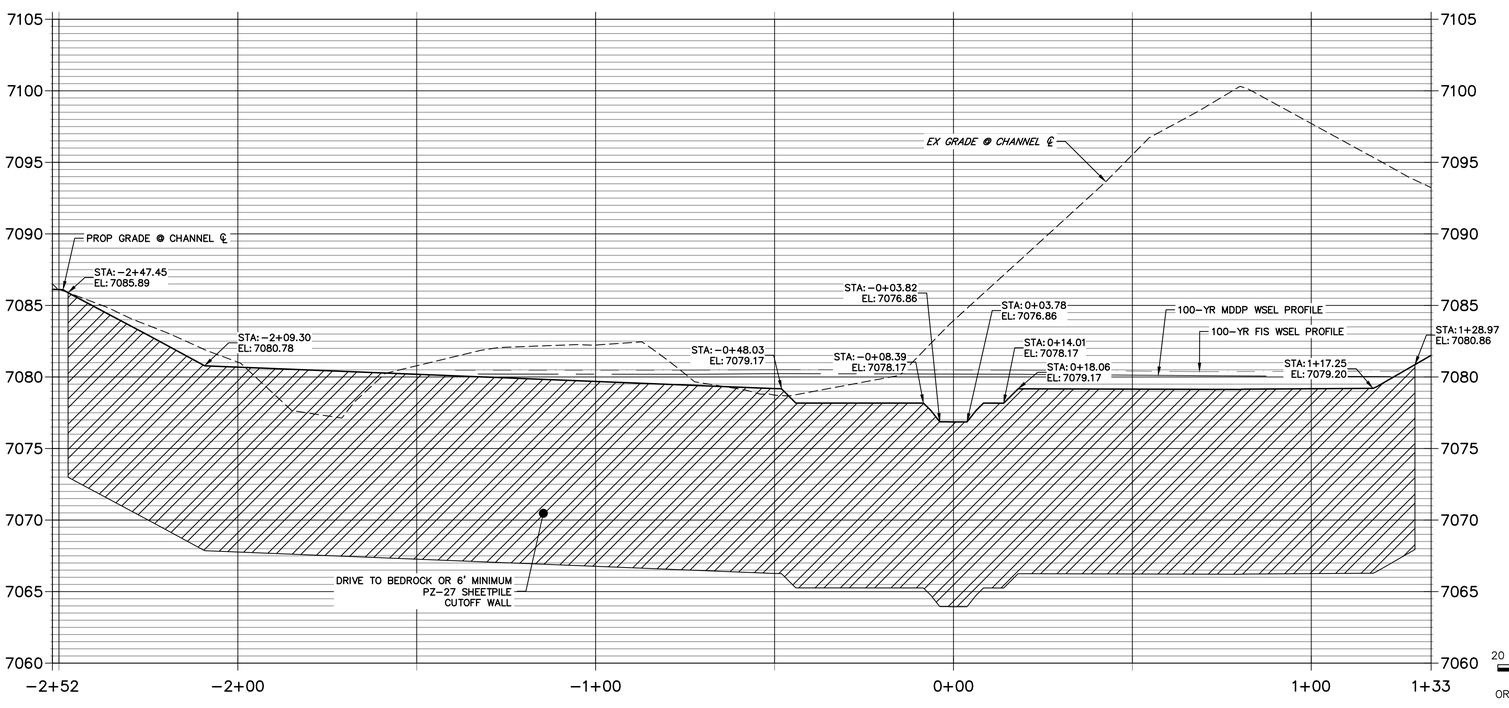


KEY MAP
SCALE: 1"=2000'

GSB PROFILE 4
STA 49+50.00 TO 51+50.00



GSB 4 SHEET PILE PROFILE
STA -2+51.83 TO 1+33.48



20 10 0 20
HORIZONTAL
ORIGINAL SCALE: 1" = 20'
VERTICAL
ORIGINAL SCALE: 1" = 5'

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No.	REVISION	BY	DATE

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V-SCALE	1"=5'
DATE	10/30/24
DESIGNED BY	DV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

GSB DETAILS

SHEET 58 OF 121

JOB NO. 25188.04

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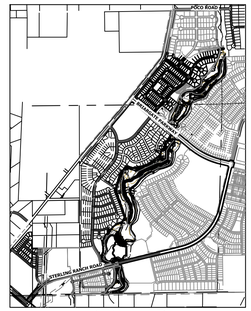
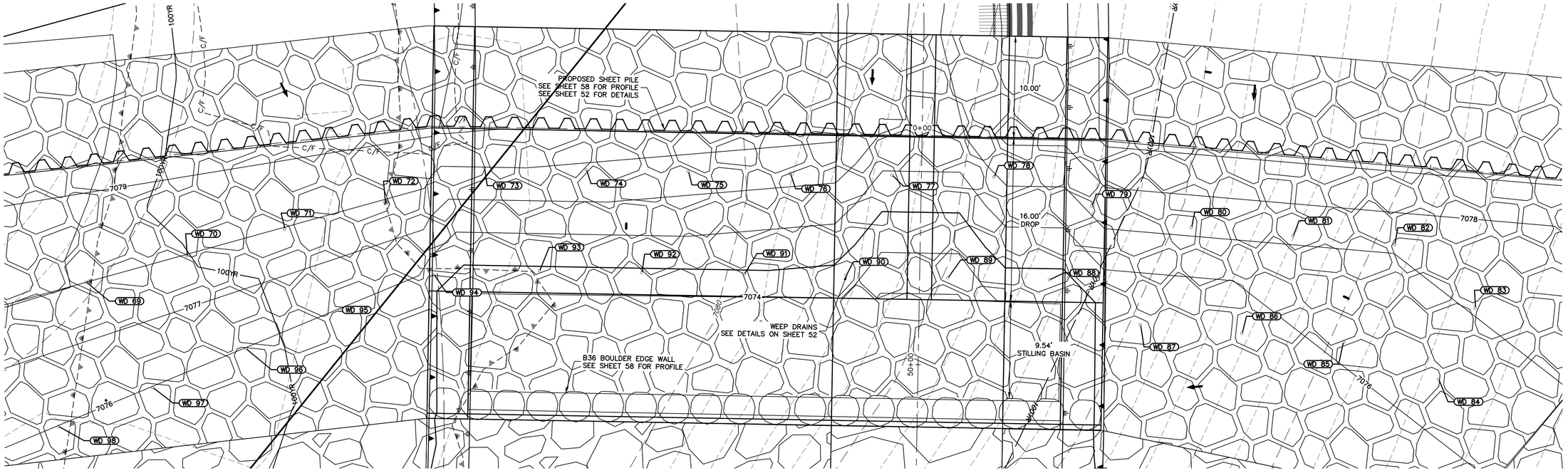


KEY MAP
SCALE: 1"=2000'



GSB04 WEEP DRAINS PLAN VIEW

SCALE: 1"=5'

POINT TABULATION			
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEV
WD 69	WEEP DRAIN	N: 413870.35 E: 237530.45	7078.00
WD 70	WEEP DRAIN	N: 413869.31 E: 237540.62	7077.99
WD 71	WEEP DRAIN	N: 413868.36 E: 237550.49	7077.98
WD 72	WEEP DRAIN	N: 413867.36 E: 237560.66	7077.97
WD 73	WEEP DRAIN	N: 413867.07 E: 237570.93	7077.97
WD 74	WEEP DRAIN	N: 413863.38 E: 237580.22	7077.83
WD 75	WEEP DRAIN	N: 413859.69 E: 237589.52	7077.58
WD 76	WEEP DRAIN	N: 413856.00 E: 237598.81	7077.33
WD 77	WEEP DRAIN	N: 413852.31 E: 237608.11	7075.90
WD 78	WEEP DRAIN	N: 413848.62 E: 237617.40	7076.89
WD 79	WEEP DRAIN	N: 413842.57 E: 237625.37	7077.22
WD 80	WEEP DRAIN	N: 413837.16 E: 237633.78	7077.21
WD 81	WEEP DRAIN	N: 413832.85 E: 237642.80	7077.21
WD 82	WEEP DRAIN	N: 413828.54 E: 237651.82	7077.21
WD 83	WEEP DRAIN	N: 413819.94 E: 237657.03	7077.06

POINT TABULATION			
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEV
WD 84	WEEP DRAIN	N: 413814.67 E: 237651.21	7076.40
WD 85	WEEP DRAIN	N: 413821.35 E: 237643.80	7076.16
WD 86	WEEP DRAIN	N: 413825.68 E: 237634.75	7075.70
WD 87	WEEP DRAIN	N: 413829.99 E: 237625.73	7075.27
WD 88	WEEP DRAIN	N: 413837.25 E: 237618.94	7074.73
WD 89	WEEP DRAIN	N: 413840.95 E: 237609.69	7073.41
WD 90	WEEP DRAIN	N: 413844.72 E: 237600.45	7074.46
WD 91	WEEP DRAIN	N: 413848.33 E: 237591.12	7074.88
WD 92	WEEP DRAIN	N: 413852.02 E: 237581.76	7074.87
WD 93	WEEP DRAIN	N: 413855.72 E: 237572.44	7074.86
WD 94	WEEP DRAIN	N: 413858.95 E: 237562.64	7075.46
WD 95	WEEP DRAIN	N: 413859.02 E: 237552.78	7075.99
WD 96	WEEP DRAIN	N: 413858.71 E: 237542.82	7075.99
WD 97	WEEP DRAIN	N: 413858.39 E: 237532.91	7075.99
WD 98	WEEP DRAIN	N: 413858.08 E: 237522.91	7076.00

5 3 0 5 10
ORIGINAL SCALE: 1" = 5'

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V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	DV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

GSB DETAILS

SHEET 59 OF 121

JOB NO. 25188.04

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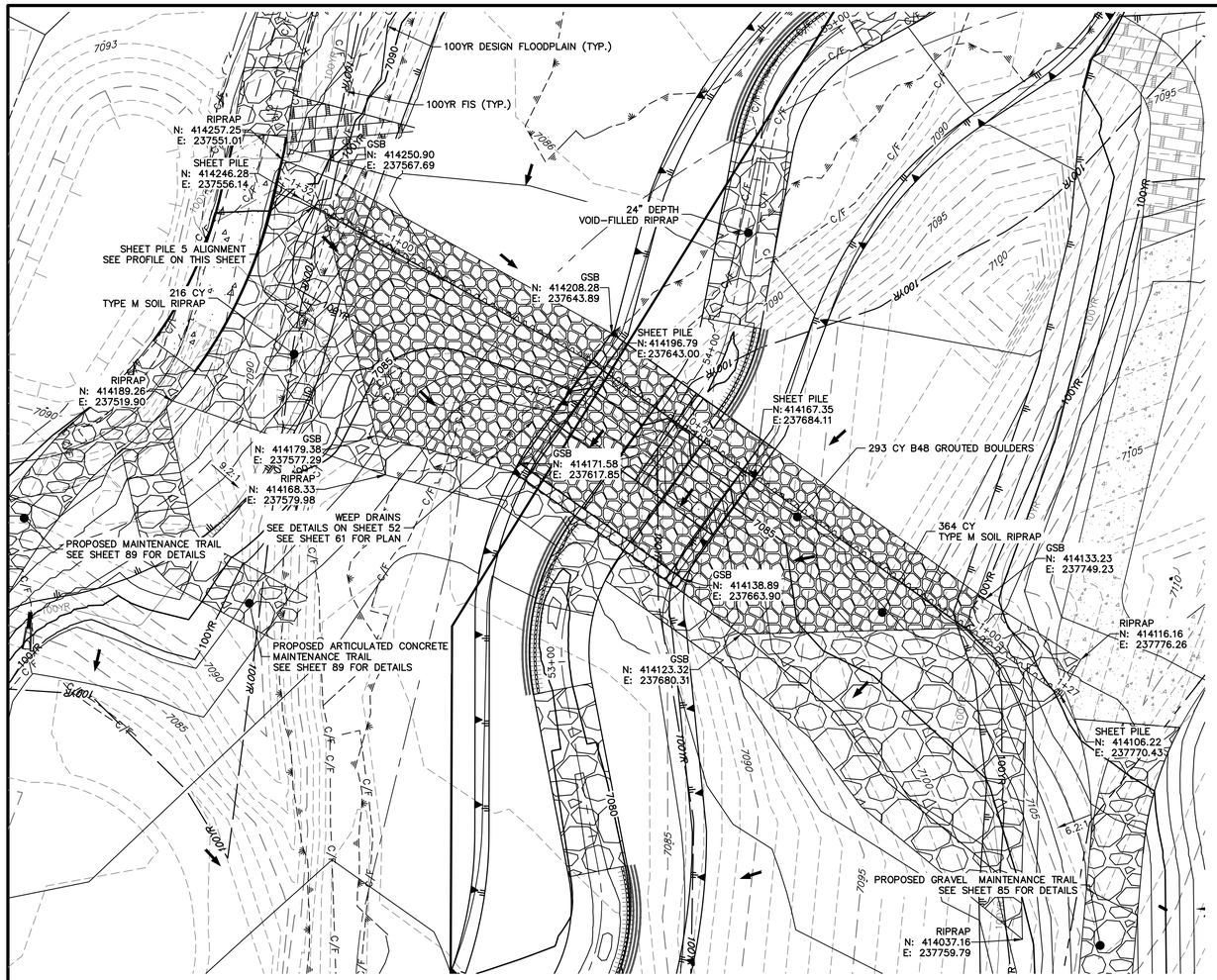
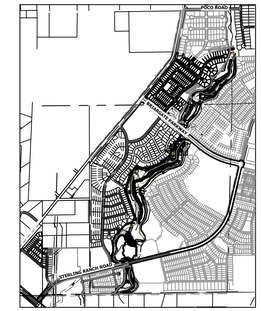
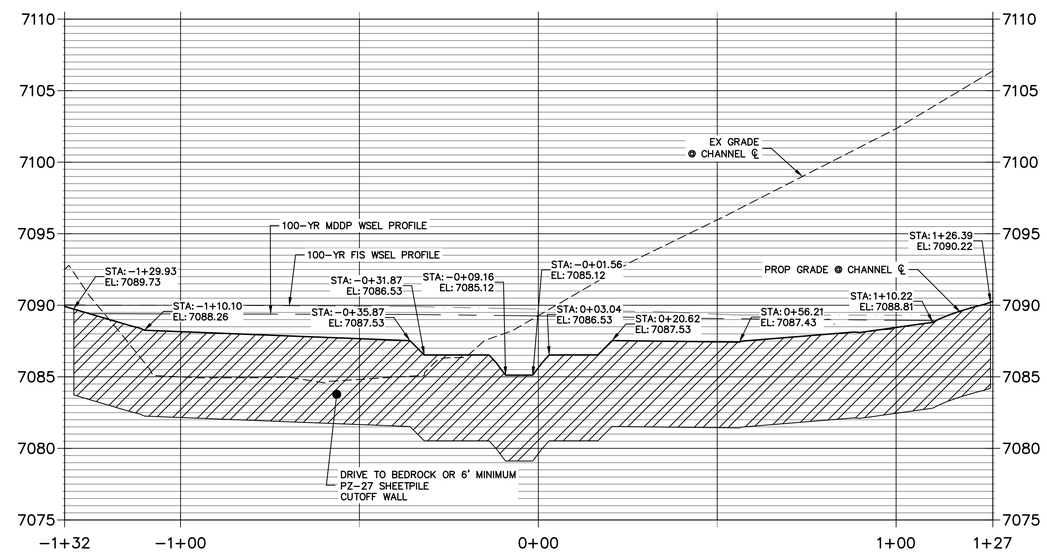


GROUTED STEPPED BOULDER DROP #5 DETAIL
PLAN VIEW
SCALE: 1"=20'

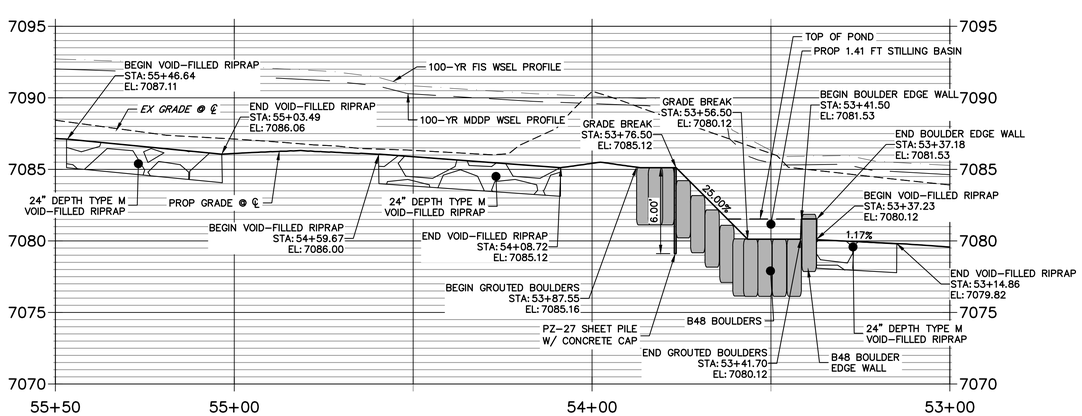


KEY MAP
SCALE: 1"=2000'

GSB 5 SHEET PILE PROFILE
STA -1+32.40 TO 1+27.04



GSB PROFILE 5
STA 53+00.00 TO 55+50.00



N

20 10 0 20
HORIZONTAL
ORIGINAL SCALE: 1" = 20'
VERTICAL
ORIGINAL SCALE: 1" = 5'

811
Know what's **below.**
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No.	REVISION	BY	DATE

H-SCALE	1"=20'
V-SCALE	1"=5'
DATE	10/30/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

GSB DETAILS

SHEET 60 OF 121

JOB NO. 25188.04

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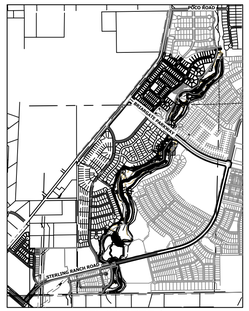
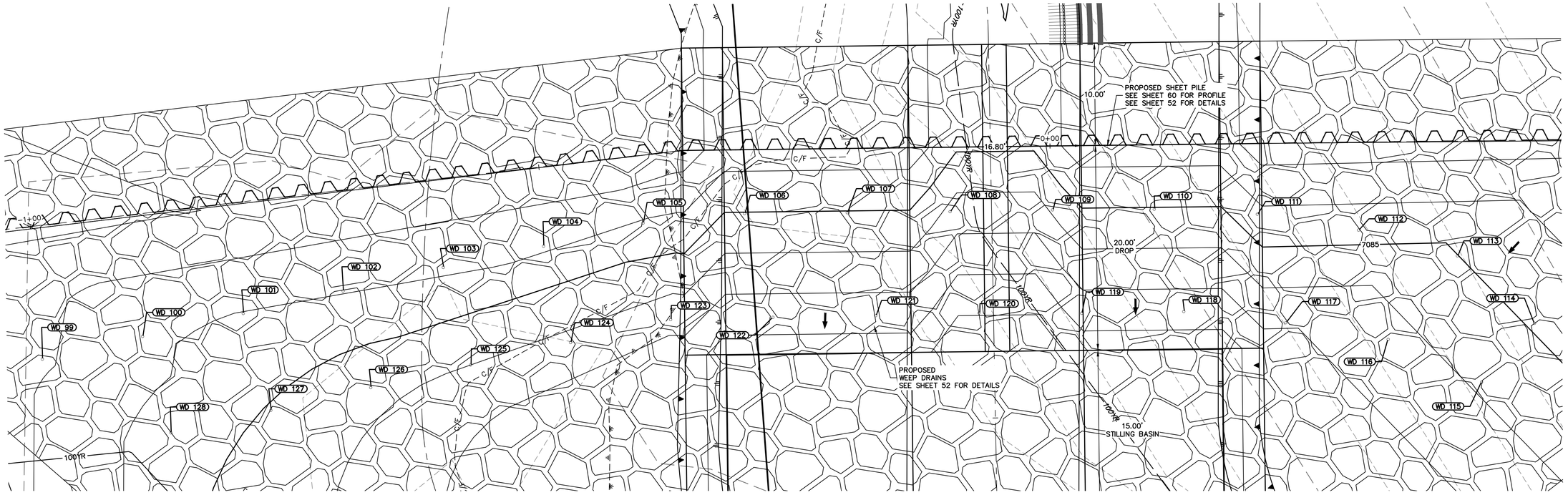


KEY MAP
SCALE: 1"=2000'



GSB05 WEEP DRAINS PLAN VIEW

SCALE: 1"=5'

POINT TABULATION			
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEV
WD 99	WEEP DRAIN	N: 414220.44 E: 237575.56	7087.12
WD 100	WEEP DRAIN	N: 414216.47 E: 237584.78	7086.30
WD 101	WEEP DRAIN	N: 414212.50 E: 237594.05	7085.97
WD 102	WEEP DRAIN	N: 414208.53 E: 237603.22	7086.05
WD 103	WEEP DRAIN	N: 414204.64 E: 237612.48	7086.16
WD 104	WEEP DRAIN	N: 414200.55 E: 237621.61	7086.17
WD 105	WEEP DRAIN	N: 414196.66 E: 237630.80	7085.91
WD 106	WEEP DRAIN	N: 414191.58 E: 237639.36	7084.97
WD 107	WEEP DRAIN	N: 414185.74 E: 237647.51	7084.96
WD 108	WEEP DRAIN	N: 414179.92 E: 237655.69	7083.76
WD 109	WEEP DRAIN	N: 414174.17 E: 237663.88	7084.13
WD 110	WEEP DRAIN	N: 414168.38 E: 237671.94	7084.95
WD 111	WEEP DRAIN	N: 414162.06 E: 237679.80	7085.69
WD 112	WEEP DRAIN	N: 414154.99 E: 237686.87	7085.36
WD 113	WEEP DRAIN	N: 414147.26 E: 237693.19	7084.99

POINT TABULATION			
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEV
WD 114	WEEP DRAIN	N: 414137.51 E: 237695.40	7085.09
WD 115	WEEP DRAIN	N: 414135.91 E: 237687.84	7084.14
WD 116	WEEP DRAIN	N: 414144.65 E: 237682.92	7083.69
WD 117	WEEP DRAIN	N: 414151.85 E: 237675.80	7083.14
WD 118	WEEP DRAIN	N: 414158.60 E: 237668.39	7082.45
WD 119	WEEP DRAIN	N: 414164.33 E: 237660.22	7082.39
WD 120	WEEP DRAIN	N: 414170.24 E: 237652.14	7081.06
WD 121	WEEP DRAIN	N: 414175.98 E: 237643.84	7082.43
WD 122	WEEP DRAIN	N: 414181.75 E: 237635.63	7082.42
WD 123	WEEP DRAIN	N: 414187.46 E: 237627.42	7083.38
WD 124	WEEP DRAIN	N: 414191.39 E: 237618.21	7083.77
WD 125	WEEP DRAIN	N: 414195.37 E: 237609.03	7084.00
WD 126	WEEP DRAIN	N: 414199.32 E: 237599.84	7084.38
WD 127	WEEP DRAIN	N: 414203.27 E: 237590.66	7084.93
WD 128	WEEP DRAIN	N: 414207.23 E: 237581.48	7085.62

5 3 0 5 10
ORIGINAL SCALE: 1" = 5'

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V-SCALE	N/A
DATE	10/30/24
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DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

GSB DETAILS

SHEET 61 OF 121

JOB NO. 25188.04

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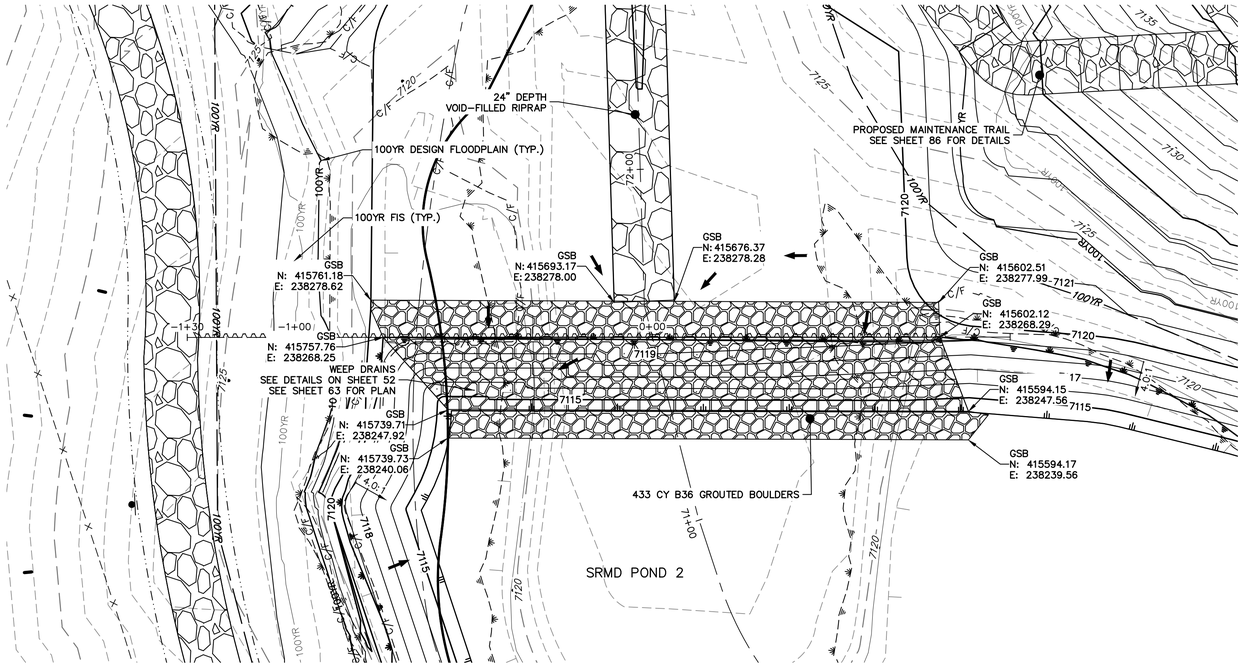
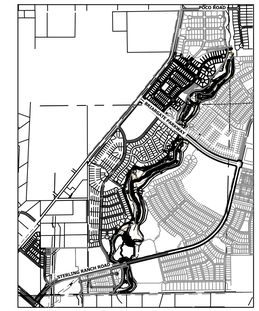
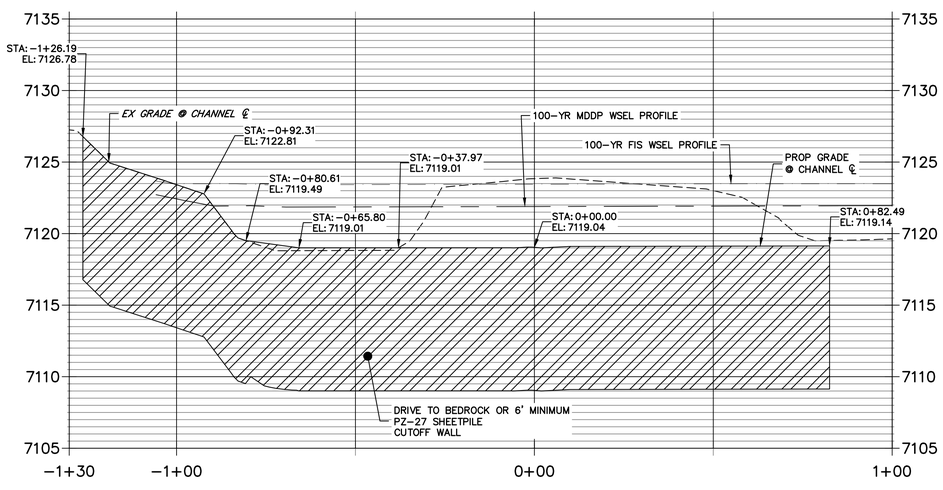


GROUTED STEPPED BOULDER DROP #6 DETAIL
PLAN VIEW
SCALE: 1"=20'

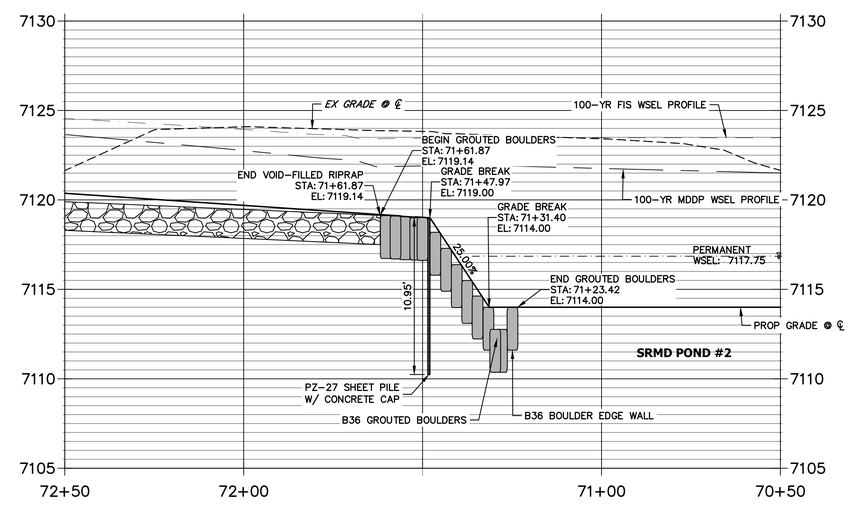


KEY MAP
SCALE: 1"=2000'

GSB 6 SHEET PILE PROFILE
STA -1+30.00 TO 1+00.00



GSB PROFILE 6
STA 70+50.00 TO 72+50.00



20 10 0 20
HORIZONTAL
ORIGINAL SCALE: 1" = 20'
VERTICAL
ORIGINAL SCALE: 1" = 5'

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DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

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SHEET 62 OF 121

JOB NO. 25188.04

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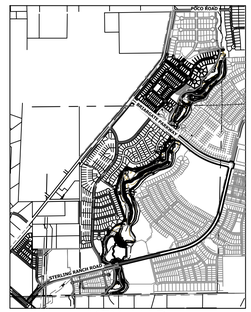
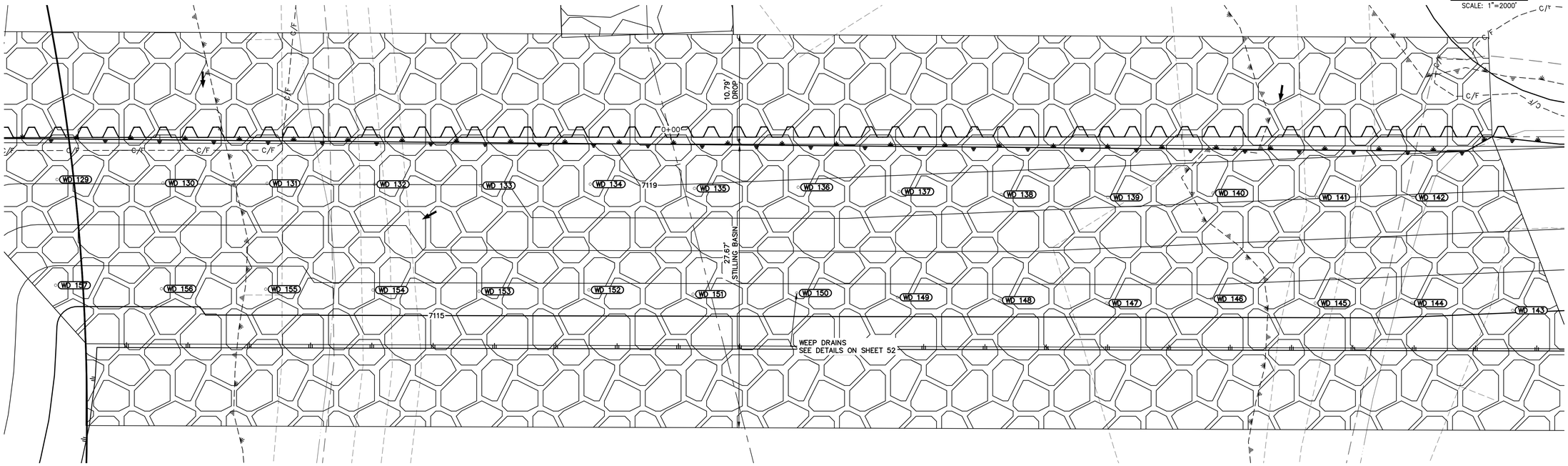


KEY MAP
SCALE: 1"=2000'



GSB06 WEEP DRAINS PLAN VIEW
SCALE: 1"=5"

POINT TABULATION			
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEV
WD 129	WEEP DRAIN	N: 415742.56 E: 238264.15	7118.11
WD 130	WEEP DRAIN	N: 415732.20 E: 238263.80	7118.02
WD 131	WEEP DRAIN	N: 415722.01 E: 238263.76	7118.02
WD 132	WEEP DRAIN	N: 415711.50 E: 238263.67	7118.01
WD 133	WEEP DRAIN	N: 415701.13 E: 238263.56	7117.98
WD 134	WEEP DRAIN	N: 415690.38 E: 238263.69	7118.63
WD 135	WEEP DRAIN	N: 415680.18 E: 238263.27	7118.89
WD 136	WEEP DRAIN	N: 415670.03 E: 238263.39	7118.81
WD 137	WEEP DRAIN	N: 415660.17 E: 238262.96	7118.60
WD 138	WEEP DRAIN	N: 415650.16 E: 238262.68	7118.43
WD 139	WEEP DRAIN	N: 415639.73 E: 238262.40	7118.25
WD 140	WEEP DRAIN	N: 415629.44 E: 238262.82	7118.24
WD 141	WEEP DRAIN	N: 415619.29 E: 238262.40	7118.03
WD 142	WEEP DRAIN	N: 415609.85 E: 238262.40	7117.93
WD 143	WEEP DRAIN	N: 415600.12 E: 238251.35	7115.06

POINT TABULATION			
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEV
WD 144	WEEP DRAIN	N: 415609.99 E: 238252.06	7115.34
WD 145	WEEP DRAIN	N: 415619.43 E: 238252.06	7115.44
WD 146	WEEP DRAIN	N: 415629.58 E: 238252.48	7115.57
WD 147	WEEP DRAIN	N: 415639.87 E: 238252.06	7115.43
WD 148	WEEP DRAIN	N: 415650.30 E: 238252.34	7115.51
WD 149	WEEP DRAIN	N: 415660.31 E: 238252.62	7115.59
WD 150	WEEP DRAIN	N: 415670.17 E: 238253.05	7115.72
WD 151	WEEP DRAIN	N: 415680.32 E: 238252.93	7115.67
WD 152	WEEP DRAIN	N: 415690.52 E: 238253.35	7115.80
WD 153	WEEP DRAIN	N: 415701.27 E: 238253.21	7115.75
WD 154	WEEP DRAIN	N: 415711.64 E: 238253.33	7115.78
WD 155	WEEP DRAIN	N: 415722.15 E: 238253.42	7115.59
WD 156	WEEP DRAIN	N: 415732.34 E: 238253.45	7115.44
WD 157	WEEP DRAIN	N: 415742.70 E: 238253.81	7115.57

5 3 0 5 10
ORIGINAL SCALE: 1" = 5'

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT
PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

COLORADO REGISTERED PROFESSIONAL ENGINEER BRYAN T. LAW 25043 12/20/24

DATE

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SR LAND, LLC
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2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	1"=5'
V-SCALE	N/A
DATE	10/30/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

GSB DETAILS

SHEET 63 OF 121

JOB NO. 25188.04

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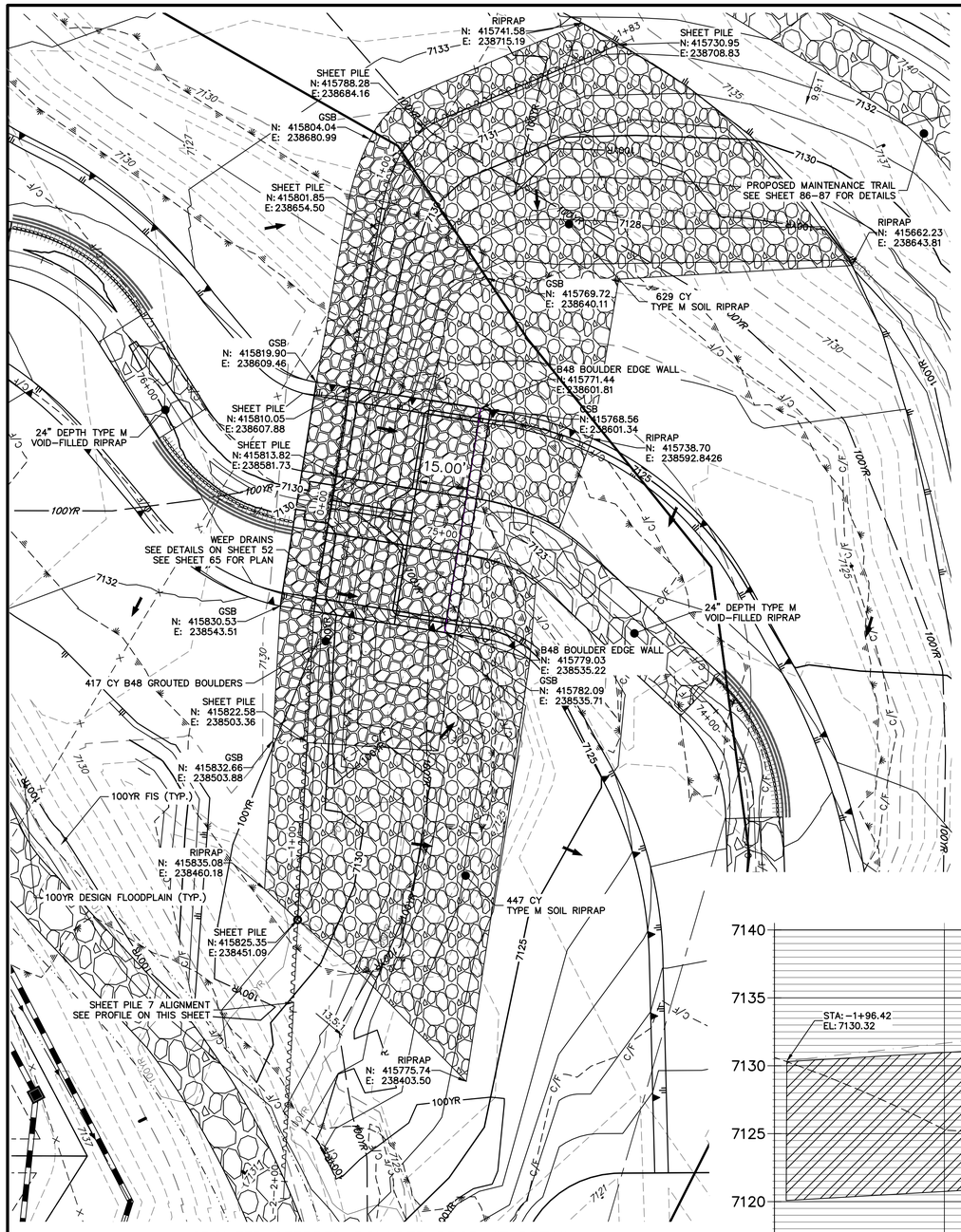
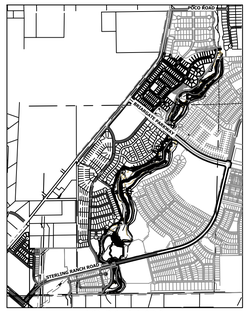
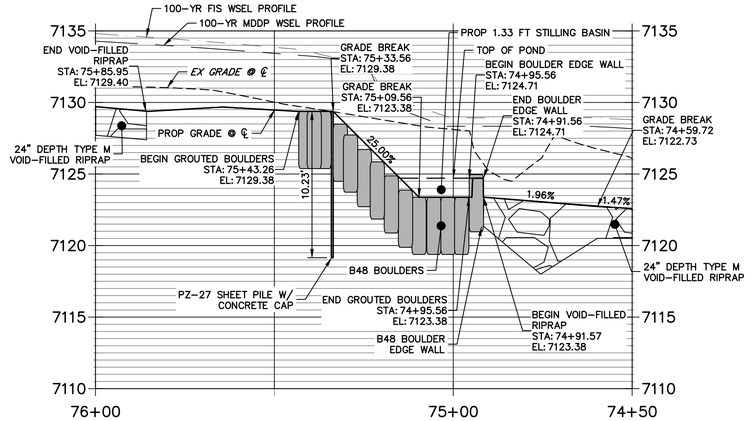


GROUTED STEPPED BOULDER DROP #7 DETAIL
PLAN VIEW
HOIZONTAL SCALE: 1"=20'

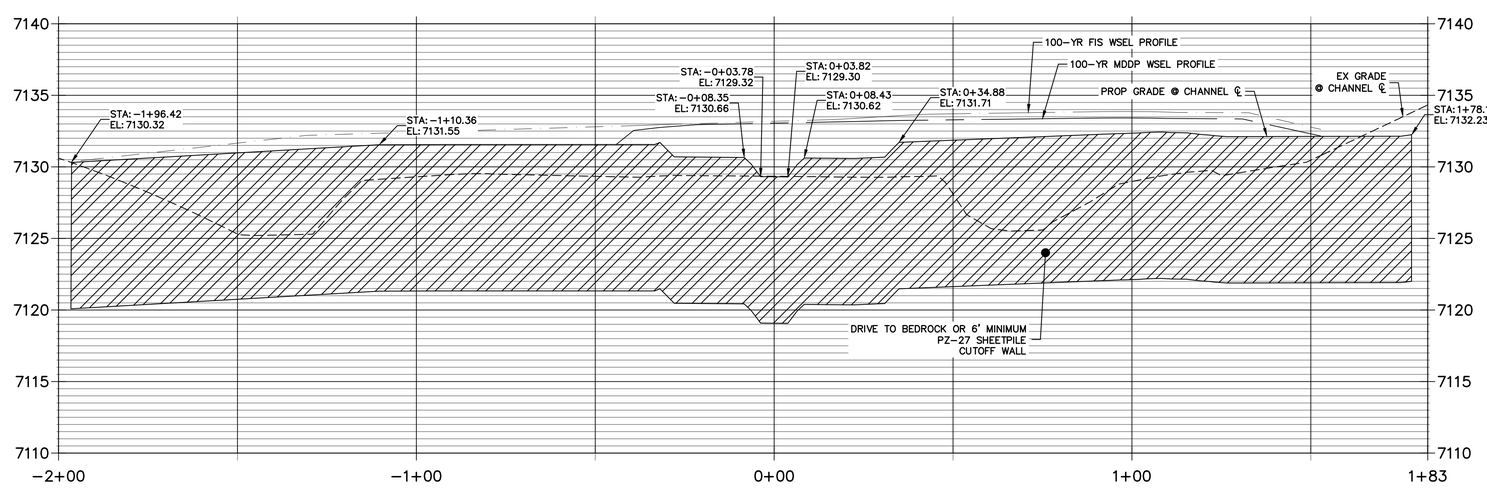


KEY MAP
SCALE: 1"=2000'

GSB PROFILE 7
STA 74+50.00 TO 76+00.00



GSB 7 SHEET PILE PROFILE
STA -2+00.00 TO 1+82.67



20 10 0 20
HORIZONTAL
ORIGINAL SCALE: 1" = 20'
VERTICAL
ORIGINAL SCALE: 1" = 5'

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DATE 12/20/24

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No.	REVISION	BY	DATE

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V-SCALE	1"=5'
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

GSB DETAILS

SHEET 64 OF 121

JOB NO. 25188.04

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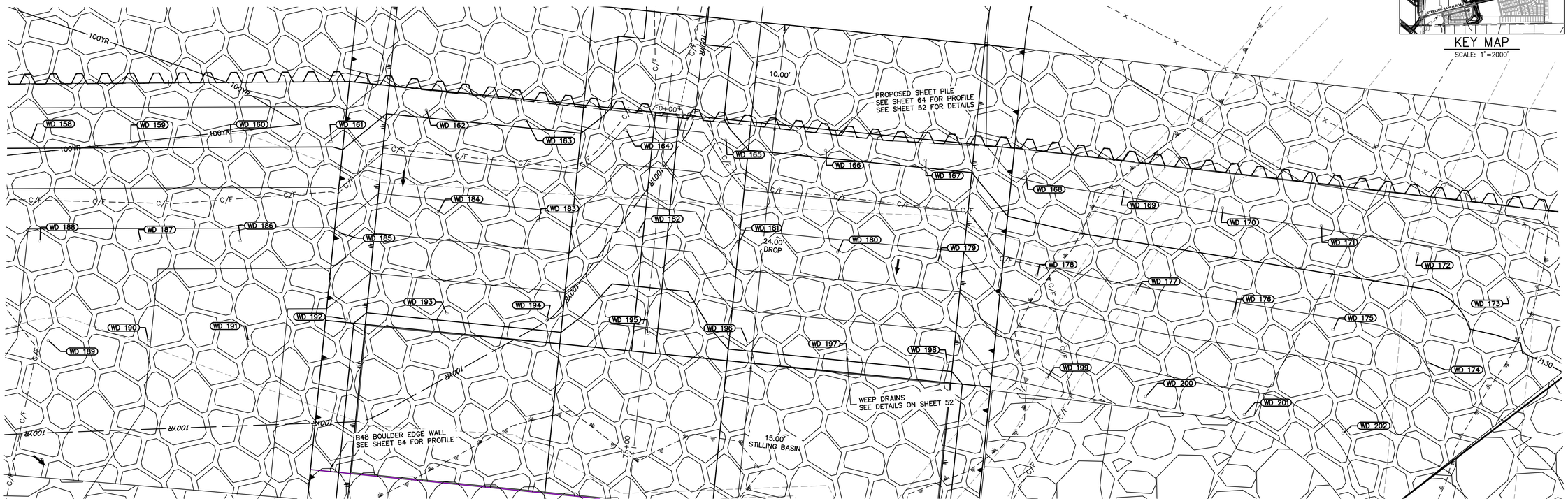
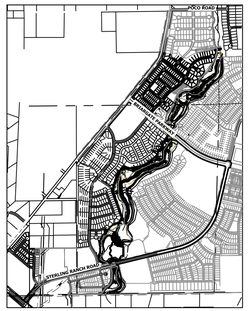


GSB07 WEEP DRAINS PLAN VIEW

SCALE: 1"=5'



KEY MAP

SCALE: 1"=2000'

POINT TABULATION			
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEV
WD 158	WEEP DRAIN	N: 415816.51 E: 238509.68	7130.17
WD 159	WEEP DRAIN	N: 415815.95 E: 238519.70	7130.16
WD 160	WEEP DRAIN	N: 415815.35 E: 238529.71	7130.15
WD 161	WEEP DRAIN	N: 415814.70 E: 238539.71	7130.13
WD 162	WEEP DRAIN	N: 415817.29 E: 238549.40	7130.19
WD 163	WEEP DRAIN	N: 415815.69 E: 238559.30	7130.19
WD 164	WEEP DRAIN	N: 415814.10 E: 238569.20	7128.91
WD 165	WEEP DRAIN	N: 415812.51 E: 238579.11	7129.61
WD 166	WEEP DRAIN	N: 415810.92 E: 238589.01	7130.19
WD 167	WEEP DRAIN	N: 415809.32 E: 238598.91	7130.19
WD 168	WEEP DRAIN	N: 415807.60 E: 238608.79	7131.20
WD 169	WEEP DRAIN	N: 415805.20 E: 238618.53	7131.16
WD 170	WEEP DRAIN	N: 415802.80 E: 238628.27	7131.11
WD 171	WEEP DRAIN	N: 415800.41 E: 238638.01	7131.06
WD 172	WEEP DRAIN	N: 415797.09 E: 238647.48	7130.79

POINT TABULATION			
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEV
WD 173	WEEP DRAIN	N: 415792.20 E: 238656.24	7130.67
WD 174	WEEP DRAIN	N: 415786.14 E: 238647.82	7129.05
WD 175	WEEP DRAIN	N: 415790.01 E: 238638.57	7128.73
WD 176	WEEP DRAIN	N: 415792.40 E: 238628.83	7128.78
WD 177	WEEP DRAIN	N: 415794.80 E: 238619.09	7128.83
WD 178	WEEP DRAIN	N: 415797.20 E: 238609.35	7128.72
WD 179	WEEP DRAIN	N: 415799.10 E: 238599.50	7127.69
WD 180	WEEP DRAIN	N: 415800.69 E: 238589.60	7127.69
WD 181	WEEP DRAIN	N: 415802.25 E: 238579.82	7127.69
WD 182	WEEP DRAIN	N: 415803.88 E: 238569.79	7126.36
WD 183	WEEP DRAIN	N: 415805.58 E: 238559.91	7127.72
WD 184	WEEP DRAIN	N: 415807.06 E: 238549.99	7127.69
WD 185	WEEP DRAIN	N: 415805.51 E: 238540.08	7127.76
WD 186	WEEP DRAIN	N: 415805.34 E: 238530.06	7127.68
WD 187	WEEP DRAIN	N: 415805.94 E: 238520.05	7127.70

POINT TABULATION			
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEV
WD 188	WEEP DRAIN	N: 415806.51 E: 238510.04	7127.91
WD 189	WEEP DRAIN	N: 415796.53 E: 238510.31	7127.77
WD 190	WEEP DRAIN	N: 415795.93 E: 238520.32	7127.02
WD 191	WEEP DRAIN	N: 415795.33 E: 238530.33	7126.27
WD 192	WEEP DRAIN	N: 415796.89 E: 238540.23	7125.26
WD 193	WEEP DRAIN	N: 415796.89 E: 238550.26	7125.19
WD 194	WEEP DRAIN	N: 415795.57 E: 238560.20	7125.26
WD 195	WEEP DRAIN	N: 415793.68 E: 238570.21	7123.86
WD 196	WEEP DRAIN	N: 415792.09 E: 238580.11	7125.19
WD 197	WEEP DRAIN	N: 415790.50 E: 238590.01	7125.19
WD 198	WEEP DRAIN	N: 415788.90 E: 238599.92	7125.19
WD 199	WEEP DRAIN	N: 415786.84 E: 238609.73	7126.25
WD 200	WEEP DRAIN	N: 415784.44 E: 238619.47	7126.37
WD 201	WEEP DRAIN	N: 415782.04 E: 238629.21	7126.45
WD 202	WEEP DRAIN	N: 415779.60 E: 238638.94	7127.16

5 3 0 5 10

ORIGINAL SCALE: 1" = 5'

Know what's **below.**
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COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24 DATE

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COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
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V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

GSB DETAILS

SHEET 65 OF 121

JOB NO. 25188.04

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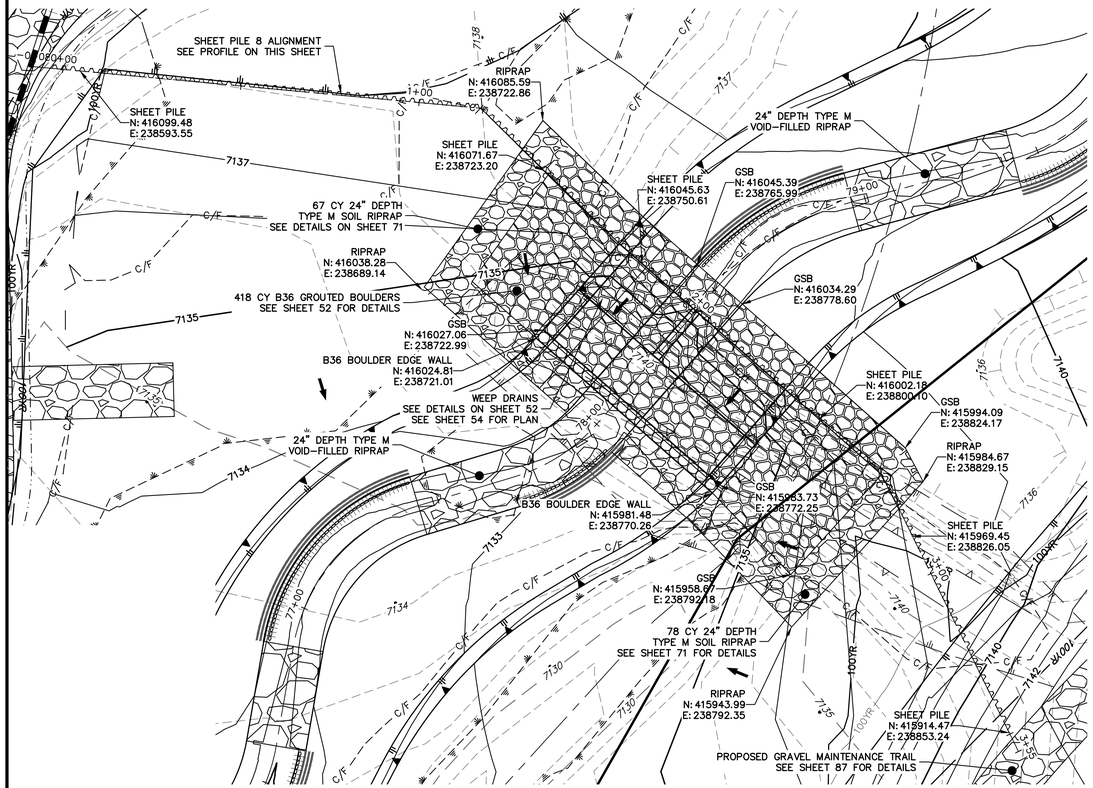
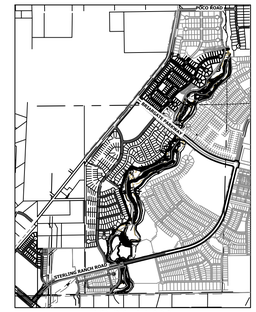
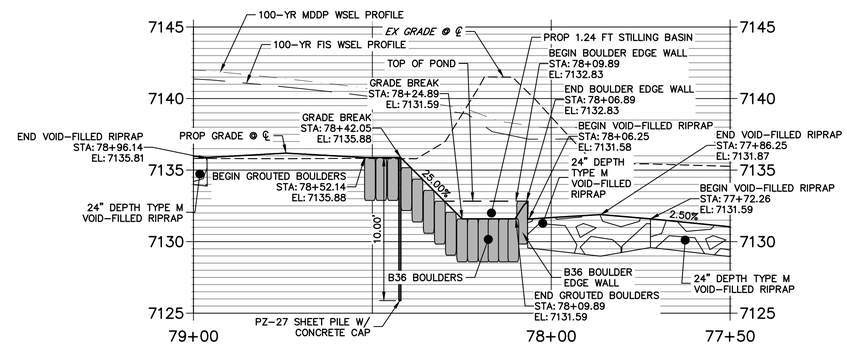


GROUTED STEPPED BOULDER DROP #8 DETAIL
PLAN VIEW
HOIZONTAL SCALE: 1"=20'

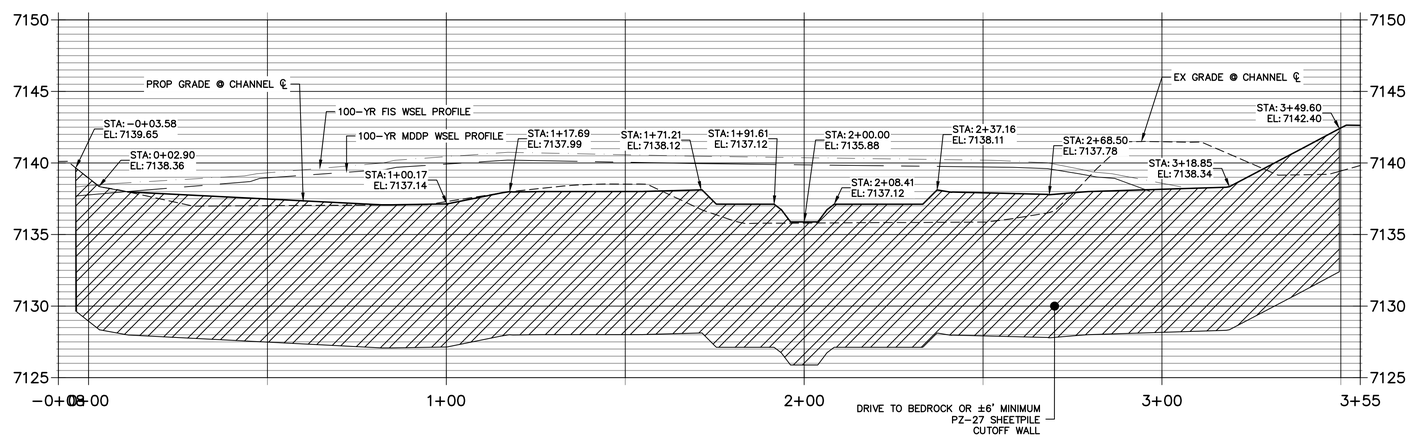


KEY MAP
SCALE: 1"=2000'

GSB PROFILE 8
STA 77+50.00 TO 79+00.00



GSB 8 SHEET PILE PROFILE
STA -0+08.44 TO 3+55.43



N

20 10 0 20
HORIZONTAL
ORIGINAL SCALE: 1" = 20'
VERTICAL
ORIGINAL SCALE: 1" = 5'

811 Know what's below. Call before you dig.

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COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

COLORADO REGISTERED PROFESSIONAL ENGINEER BRYAN T. LAW 25043 12/20/24

DATE

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No.	REVISION	BY	DATE

H-SCALE	1"=20'
V-SCALE	1"=5'
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

GSB DETAILS

SHEET 66 OF 121

JOB NO. 25188.04

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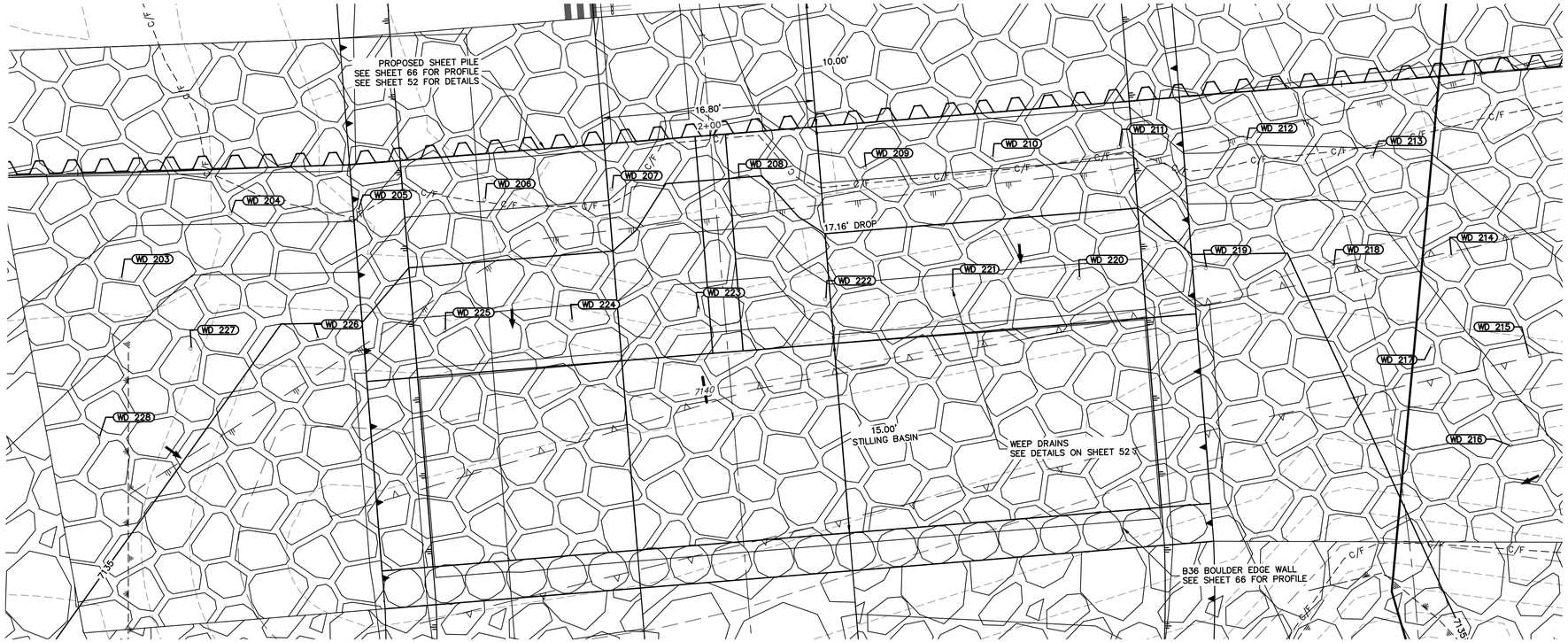
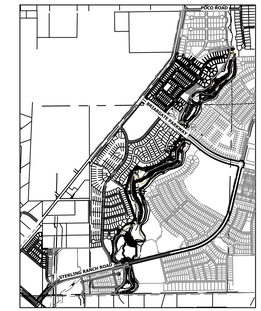


GSB08 WEEP DRAINS PLAN VIEW

SCALE: 1"=5"

POINT TABULATION			
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEV
WD 203	WEEP DRAIN	N: 416057.94 E: 238725.28	7136.58
WD 204	WEEP DRAIN	N: 416055.29 E: 238734.98	7137.20
WD 205	WEEP DRAIN	N: 416048.25 E: 238742.14	7137.13
WD 206	WEEP DRAIN	N: 416041.63 E: 238749.70	7136.22
WD 207	WEEP DRAIN	N: 416035.01 E: 238757.25	7136.17
WD 208	WEEP DRAIN	N: 416028.39 E: 238764.81	7134.99
WD 209	WEEP DRAIN	N: 416021.77 E: 238772.37	7136.23
WD 210	WEEP DRAIN	N: 416015.15 E: 238779.92	7136.23
WD 211	WEEP DRAIN	N: 416008.53 E: 238787.48	7136.24
WD 212	WEEP DRAIN	N: 416001.65 E: 238794.80	7137.08
WD 213	WEEP DRAIN	N: 415993.62 E: 238800.82	7136.84
WD 214	WEEP DRAIN	N: 415983.71 E: 238799.49	7136.43
WD 215	WEEP DRAIN	N: 415973.79 E: 238798.16	7136.43
WD 216	WEEP DRAIN	N: 415969.91 E: 238792.01	7135.61
WD 217	WEEP DRAIN	N: 415979.82 E: 238793.34	7135.61

POINT TABULATION			
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEV
WD 218	WEEP DRAIN	N: 415989.79 E: 238792.42	7135.30
WD 219	WEEP DRAIN	N: 415996.92 E: 238785.35	7134.72
WD 220	WEEP DRAIN	N: 416003.60 E: 238777.84	7133.72
WD 221	WEEP DRAIN	N: 416010.22 E: 238770.28	7133.72
WD 222	WEEP DRAIN	N: 416016.84 E: 238762.73	7133.64
WD 223	WEEP DRAIN	N: 416023.46 E: 238755.17	7132.47
WD 224	WEEP DRAIN	N: 416030.08 E: 238747.62	7133.71
WD 225	WEEP DRAIN	N: 416036.70 E: 238740.06	7133.70
WD 226	WEEP DRAIN	N: 416043.48 E: 238732.65	7134.70
WD 227	WEEP DRAIN	N: 416050.14 E: 238725.13	7135.59
WD 228	WEEP DRAIN	N: 416050.52 E: 238715.08	7135.82



KEY MAP

SCALE: 1"=2000'

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V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

GSB DETAILS

SHEET 67 OF 121

JOB NO. 25188.04

ORIGINAL SCALE: 1" = 5'

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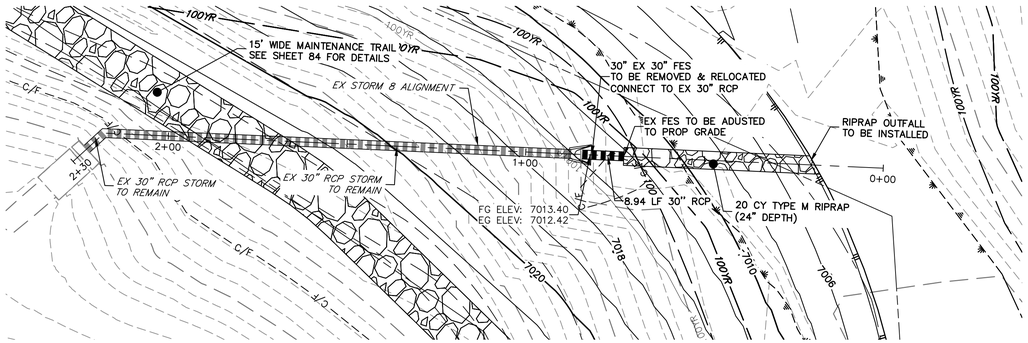
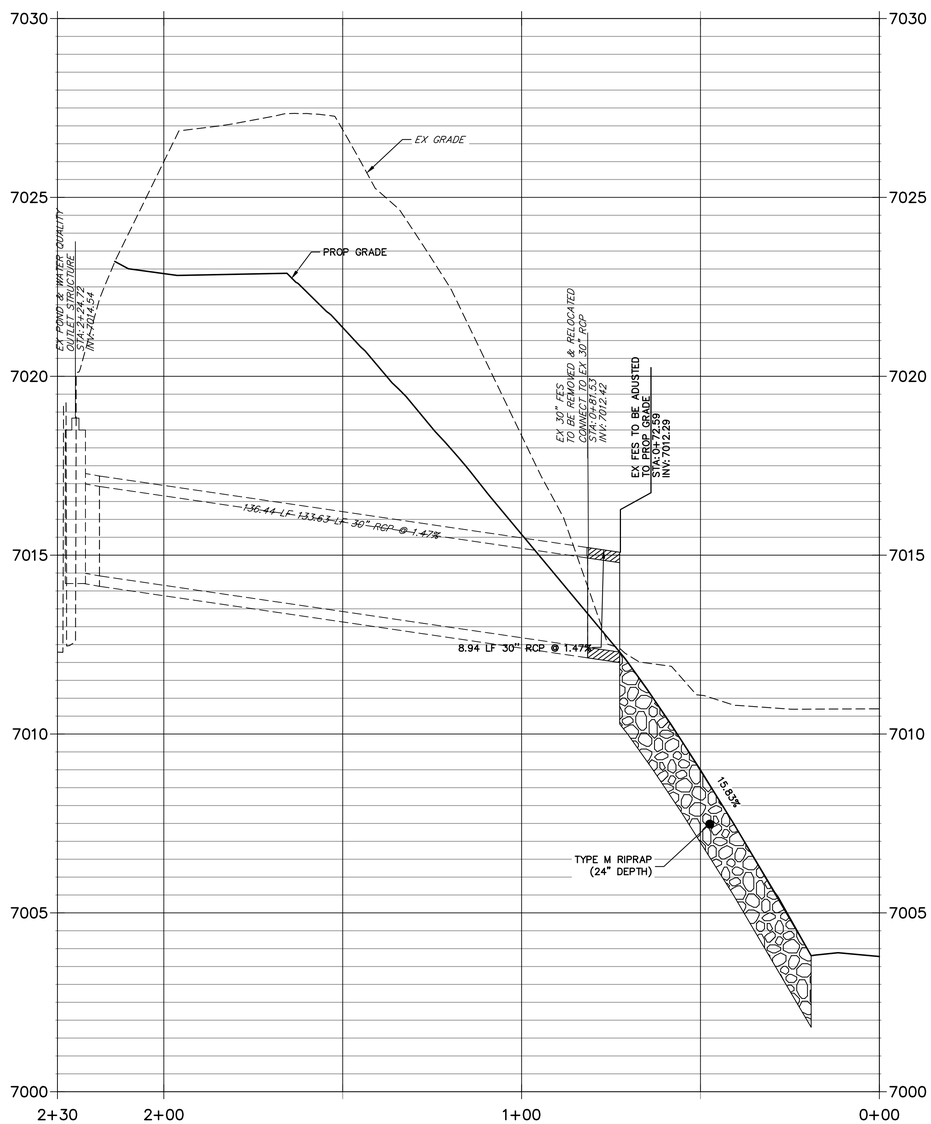
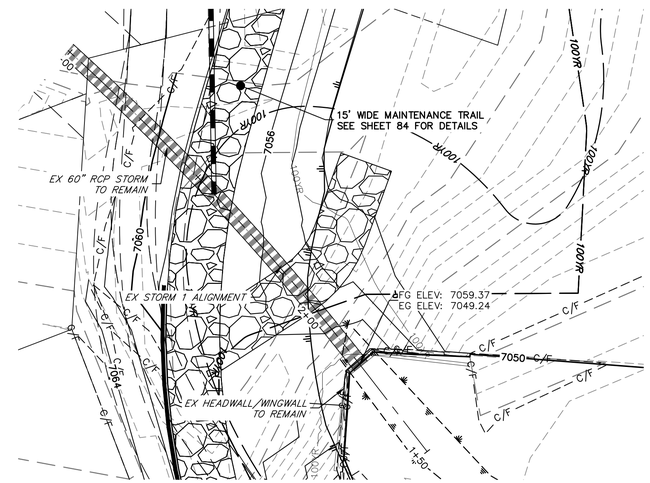
X:\2510000 all\25188\04\Drawings\Sheet Dwgs\GSB Details\GSB Details.dwg, 68 GSB08B, 1/3/2025 4:36:12 PM, VaughtD



SEE STERLING RANCH FILING NO. 1 PLANS FOR AS BUILTS
(BY M&S CIVIL)

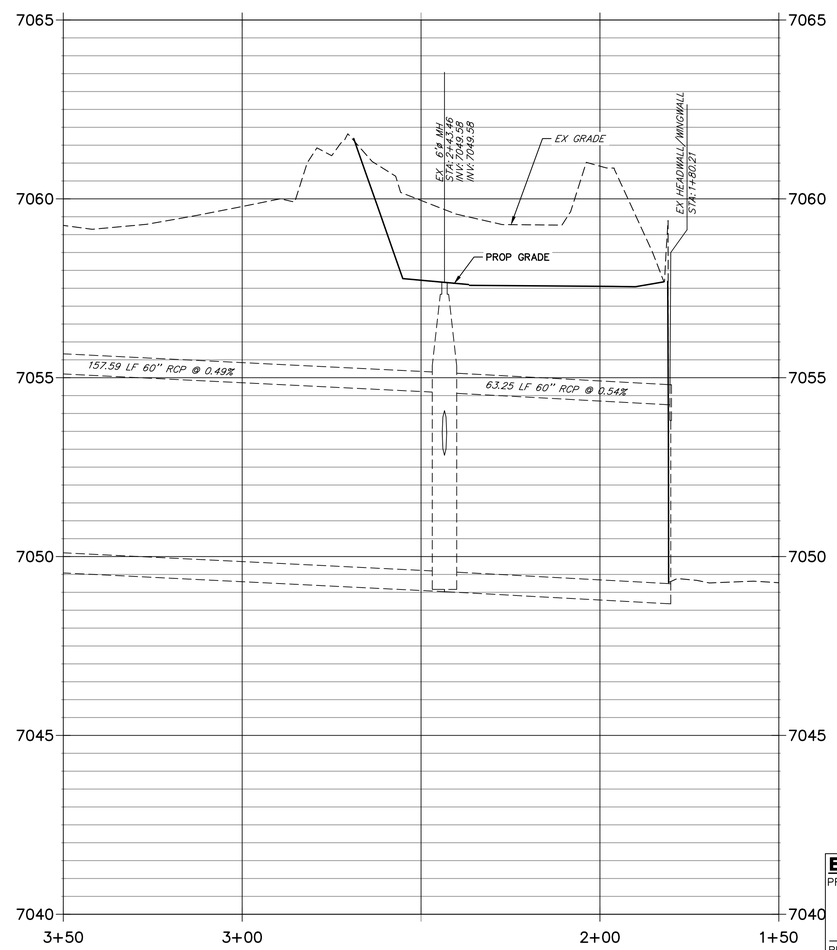
EX STORM 8
STA 0+00.00 TO 2+29.72

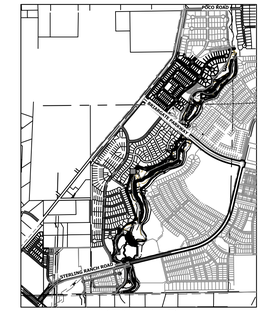




SEE STERLING RANCH FILING NO. 1 PLANS FOR AS BUILTS
(BY M&S CIVIL)

EX STORM 1
STA 1+50.00 TO 3+50.00





KEY MAP
SCALE: 1"=2000'

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
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   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
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   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

811 Know what's below. Call before you dig.

20 10 0 20
HORIZONTAL
ORIGINAL SCALE: 1" = 20'
VERTICAL
ORIGINAL SCALE: 1" = 2'

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24
DATE

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

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	1"=20'
V-SCALE	1"=2'
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

STORM PLAN & PROFILE

SHEET 68 OF 121

JOB NO. 25188.04

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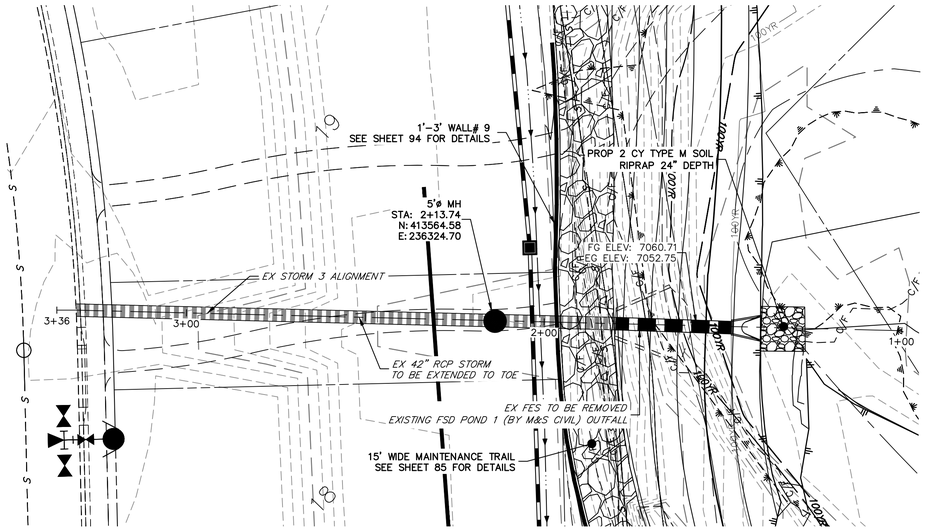

SEE HOMESTEAD AT STERLING RANCH FILING NO. 2 PLANS FOR AS BUILTS
(BY M&S CIVIL)

EX STORM 3
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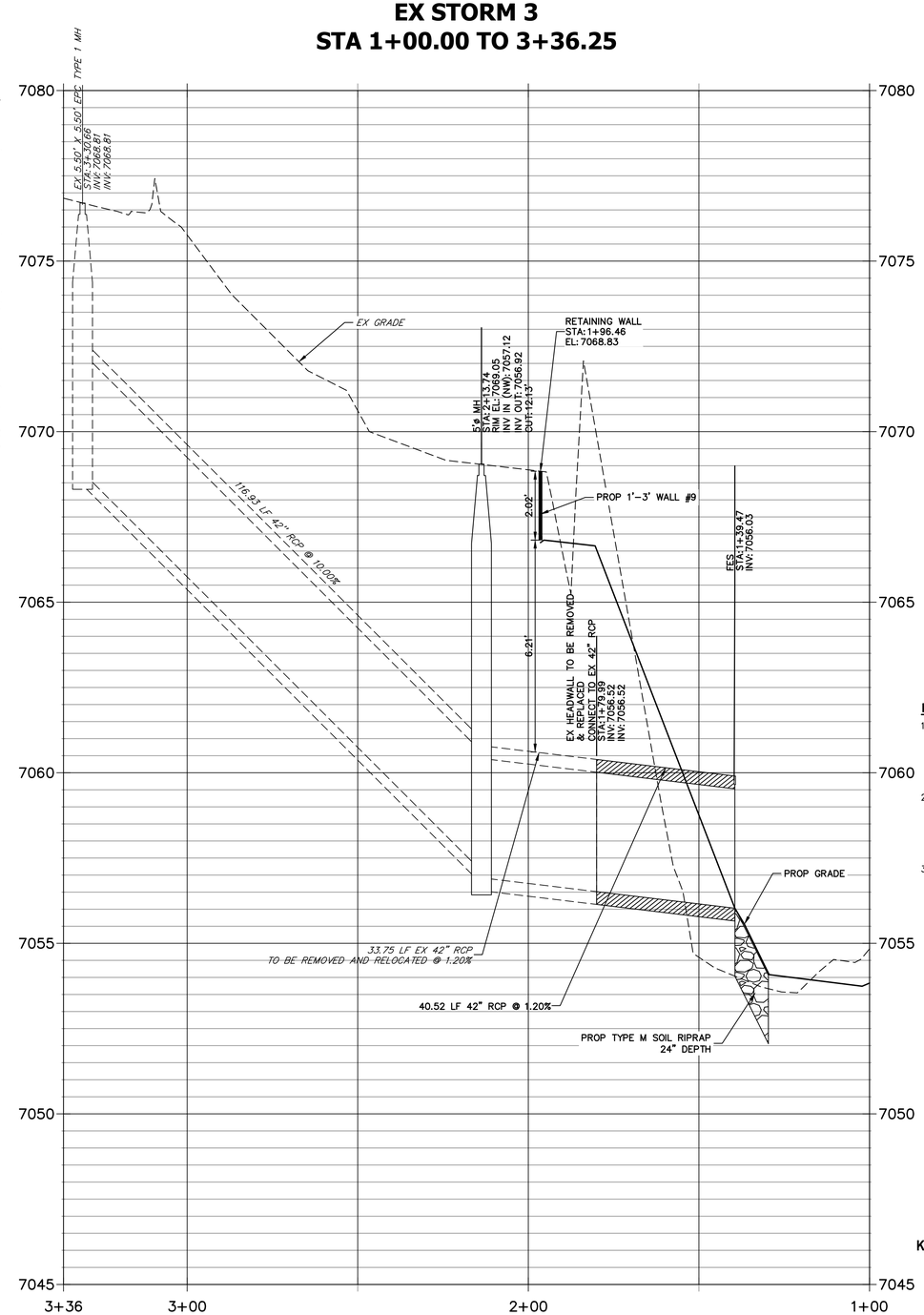

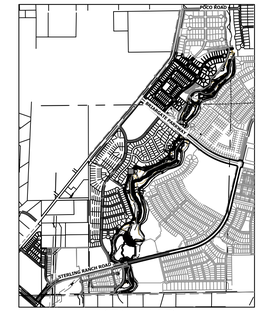

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COLORADO REGISTERED PROFESSIONAL ENGINEER 25043

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SAND CREEK RESTORATION

STORM PLAN & PROFILE

SHEET 69 OF 121

JOB NO. 25188.04

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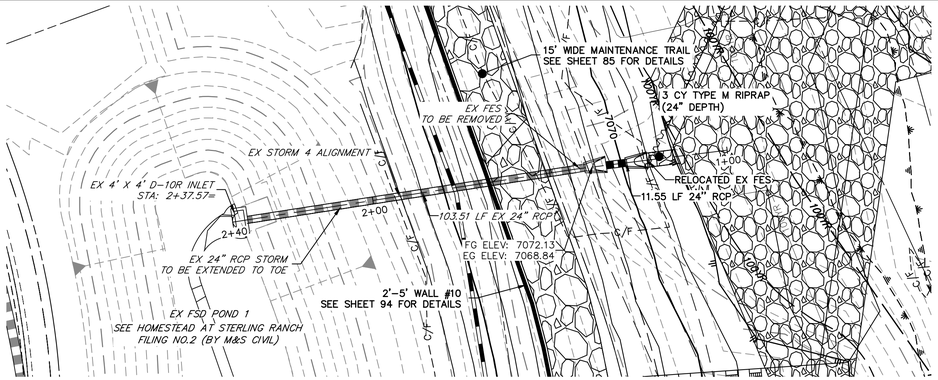

SEE STERLING RANCH FILING NO. 1 PLANS FOR AS BUILTS
(BY M&S CIVIL)

EX STORM 4 (PRIVATE)
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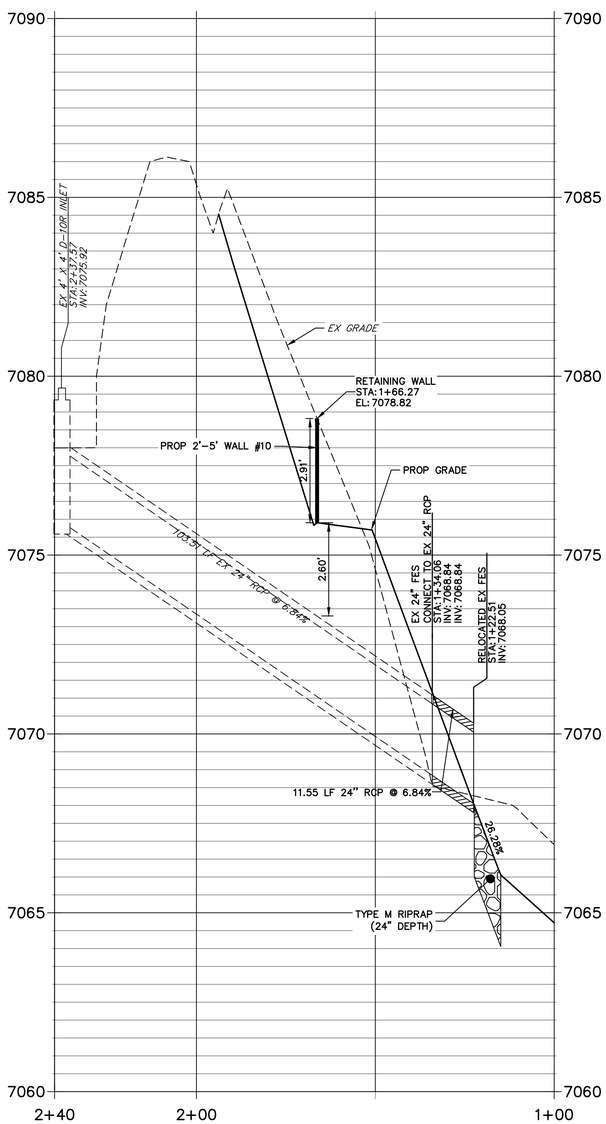

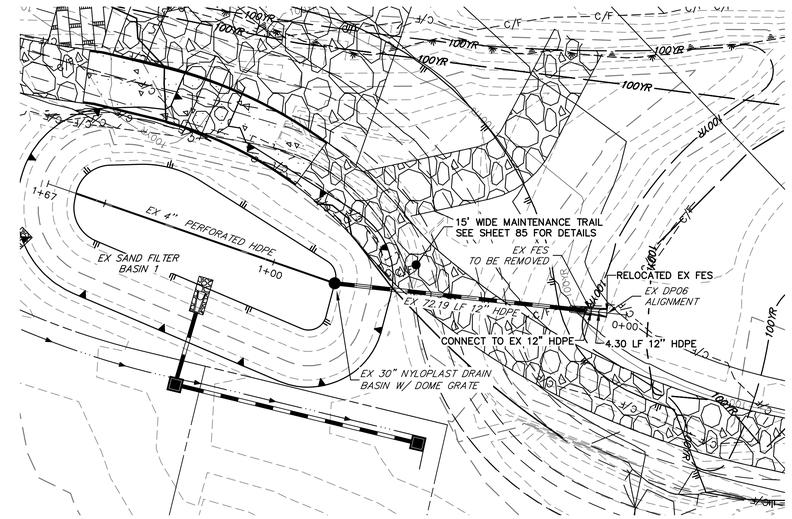

SEE HOMESTEAD 2 COMMONS SAND FILTER STORM PLANS FOR AS BUILTS
(BY JR ENGINEERING)

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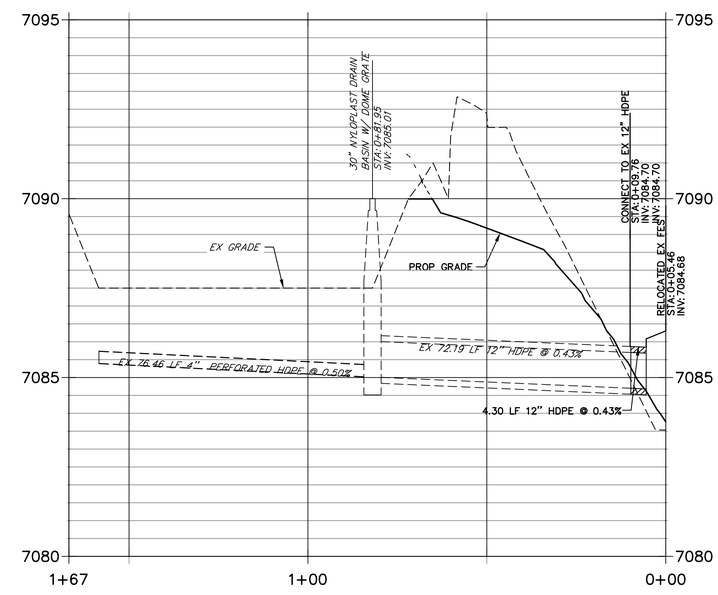

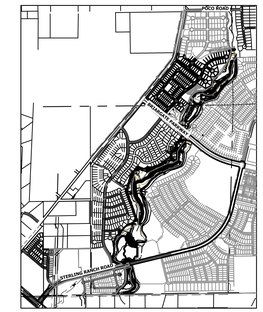

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COLORADO REGISTERED BRYAN T. LAW 25043 PROFESSIONAL ENGINEER

12/20/24

BRYAN T. LAW, P.E. DATE
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

No.	REVISION	BY	DATE

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DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

STORM PLAN & PROFILE

SHEET 70 OF 121

JOB NO. 25188.04

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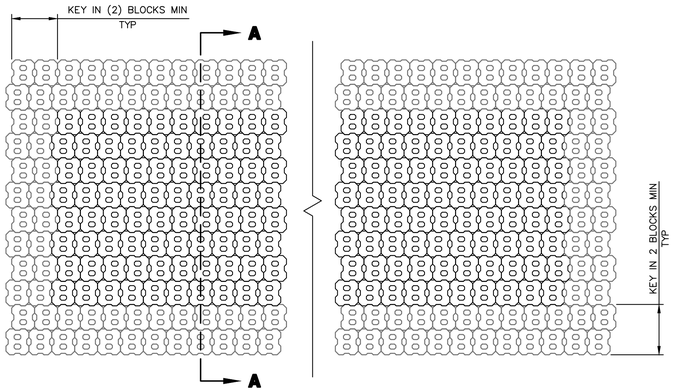
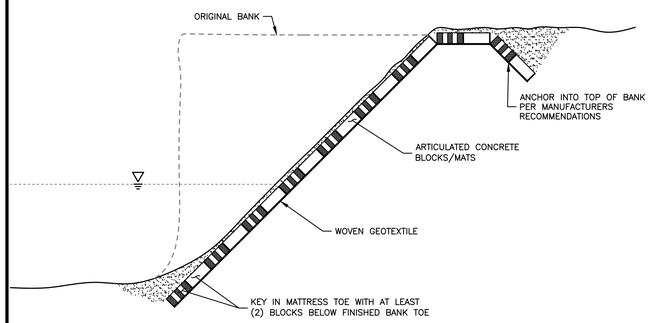
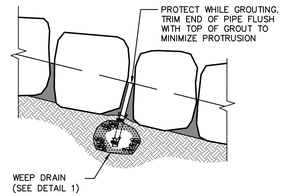


PLAN
NTS

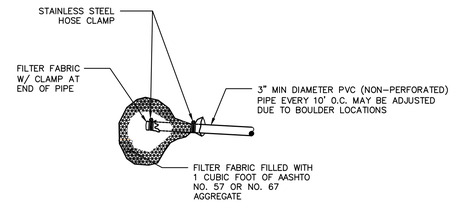


SECTION A–A
NTS

ARTICULATED CONCRETE BLOCK MATS



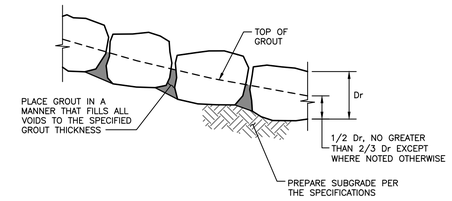
GROUTED BOULDERS



DETAIL 1
WEEP DRAIN

NOTE: INSTALL WEEP DRAINS FOR DROPS AND WALLS 5' AND GREATER AT 10' O.C. AT ELEVATIONS AND LOCATIONS SHOWN ON THE DRAWINGS

WEEP DRAINS



BOULDER PLACEMENT NOTES:
1. PLACE BOULDERS WITH THE REQUIRED BOULDER HEIGHT VERTICAL. PLACE BOULDERS AS TIGHTLY TOGETHER AS POSSIBLE (WITHOUT TOUCHING) WHILE PROVIDING ENOUGH ROOM BETWEEN THEM TO THOROUGHLY VIBRATE THE GROUT AND TO ENSURE NO GAPS IN THE GROUT. THE SMALL DIMENSION OF A 2X4 CAN BE USED AS A GUIDE TO CHECK MINIMUM SPACING.
2. BEFORE GROUTING, CLEAN ALL DIRT AND MATERIAL FROM ROCK THAT COULD PREVENT THE GROUT FROM BINDING TO THE ROCK. KEEP BOULDERS FROM TOUCHING. AVOID SLIDING BOULDERS AGAINST SUBGRADE TO PROPERLY POSITION.

MATERIAL SPECIFICATIONS:
1. ALL GROUT SHALL HAVE A MINIMUM 28–DAY COMPRESSIVE STRENGTH EQUAL TO 3200 PSI.
2. ONE CUBIC YARD OF GROUT SHALL HAVE A MINIMUM OF SIX (6) SACKS OF TYPE II PORTLAND CEMENT.
3. A MAXIMUM OF 25% TYPE F FLY ASH MAY BE SUBSTITUTED FOR THE PORTLAND CEMENT.
4. THE AGGREGATE SHALL BE COMPRISED OF 70% NATURAL SAND (FINES) AND 30% ⅜–INCH ROCK (COARSE).
5. THE GROUT SLUMP SHALL BE BETWEEN 4–INCHES TO 6–INCHES.
6. AIR ENTRAINMENT SHALL BE BETWEEN 5.5% AND 7.5%.
7. TO CONTROL SHRINKAGE AND CRACKING, 1.5 POUNDS OF FIBERMESH, OR EQUIVALENT, SHALL BE USED PER CUBIC YARD OF GROUT.
8. COLOR ADDITIVE IN REQUIRED AMOUNTS SHALL BE USED WHEN SO SPECIFIED BY CONTRACT.

GROUT PLACEMENT SPECIFICATIONS:
1. SPECIAL PROCEDURES SHALL BE REQUIRED FOR GROUT PLACEMENT WHEN THE AIR TEMPERATURES ARE LESS THAN 40°F OR GREATER THAN 90°F. CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FROM THE DESIGN ENGINEER OF THE PROCEDURES TO BE USED FOR PROTECTING THE GROUT.
2. GROUT SHALL BE DELIVERED BY MEANS OF A LOW PRESSURE (LESS THAN 10 PSI) GROUT PUMP USING A 2–INCH DIAMETER (MAXIMUM) NOZZLE.
3. FULL DEPTH PENETRATION OF THE GROUT INTO THE BOULDER VOIDS SHALL BE ACHIEVED BY INJECTING GROUT STARTING WITH THE NOZZLE NEAR THE BOTTOM AND RAISING IT AS THE GROUT FILLS, WHILE VIBRATING GROUT INTO PLACE USING A PENCIL VIBRATOR.
4. ALL GROUT BETWEEN BOULDERS SHALL BE TREATED WITH A BROOM FINISH.
5. AFTER GROUT PLACEMENT, EXPOSED BOULDER FACES SHALL BE CLEANED AND FREE OF GROUT.
6. ALL FINISHED GROUT SURFACES SHALL BE SPRAYED WITH A CLEAR LIQUID MEMBRANE CURING COMPOUND AS SPECIFIED IN ASTM C309.

GROUTED BOULDER PLACEMENT DETAIL
NTS

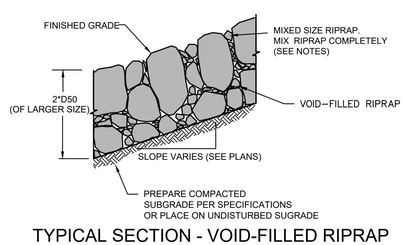
GROUTED BOULDER NOTES:

1. BOULDERS USED FOR GROUTING SHOULD MEET ALL THE PROPERTIES OF ROCK FOR ORDINARY RIPRAP, AND ROCK OF UNIFORM SIZE SHOULD BE USED.
2. ROCK SHALL BE HARD, DURABLE, AND FREE FROM CRACKS, OVERBURDEN, SHALE, AND ORGANIC MATTER.
3. GROUTED BOULDERS SHALL BE PLACED DIRECTLY ON STABILIZED, COMPACTED SUBGRADE WITHOUT GRANULAR BEDDING.
4. THE TOP ONE–THIRD OF THE BOULDERS SHALL BE LEFT UNGROUTED AND EXPOSED.
5. ROCK HAVING A MINIMUM SPECIFIC GRAVITY OF 2.65 IS PREFERRED; HOWEVER, IN NO CASE SHALL ROCK HAVE A SPECIFIC GRAVITY LESS THAN 2.50.
6. WEEP HOLES SHALL BE PROVIDED AT THE CHANNEL SLOPES AND CHANNEL DROPS AS SHOWN TO REDUCE UPLIFT FORCES ON THE GROUTED CHANNEL LINING.
7. PLACEMENT AND GROUTING OF BOULDERS SHALL GENERALLY CONFORM TO THE SPECIFICATIONS AND DETAILS FOR GROUTED BOULDER DROPS. SEE DETAILS AND NOTES FOR GROUTED BOULDER DROPS ON THIS SHEET.
8. BOULDERS SHALL BE SET IN A STEPPED MANNER. BOULDERS SHALL NOT BE ORIENTED INTO A SMOOTH SLOPING FACE.
9. BOULDERS SHALL BE GROUTED TO ⅔ THE ROCK HEIGHT.
10. BOULDERS OF DIFFERENT SOURCES AND/OR COLORS SHALL BE MIXED WITH THE OTHER ROCK AND EVENLY DISPERSED THROUGHOUT THE PROJECT TO AVOID HAVING AREAS OF NON–UNIFORMITY.
11. THE BOULDER SIZES SHOWN ON THE PLANS ARE MINIMUM DIMENSIONS. LARGER ROCK MAY BE SUBSTITUTED AS LONG AS THE TOP OF BOULDER ELEVATIONS SHOWN ON THE PLANS ARE MET AND THE MINIMUM OVER–EXCAVATION REQUIREMENTS ARE MET AT EACH BOULDER LOCATION.

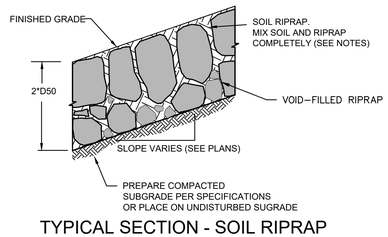
RIPRAP NOTES:

1. WHERE "SOIL RIPRAP" IS DESIGNATED ON THE CONTRACT DRAWINGS, RIPRAP VOIDS ARE TO BE FILLED WITH APPROVED FILL. THE RIPRAP SHALL BE PRE–MIXED WITH THE APPROVED FILL AT THE FOLLOWING PROPORTIONS BY VOLUME: 65 PERCENT RIPRAP AND 35 PERCENT SOIL. THE SOIL USED FOR MIXING SHALL BE NATIVE TOPSOIL AND SHALL HAVE A MINIMUM FINES CONTENT OF 15 PERCENT. THE SOIL RIPRAP SHALL BE INSTALLED IN A MANNER THAT RESULTS IN A DENSE, INTERLOCKED LAYER OF RIPRAP WITH RIPRAP VOIDS FILLED COMPLETELY WITH SOIL. SEGREGATION OF MATERIALS SHALL BE AVOIDED AND IN NO CASE SHALL THE COMBINED MATERIAL CONSIST PRIMARILY OF SOIL; THE DENSITY AND INTERLOCKING NATURE OF RIPRAP IN THE MIXED MATERIAL SHALL ESSENTIALLY BE THE SAME AS IF THE RIPRAP WAS PLACED WITHOUT SOIL.
2. PLACE ALL RIPRAP AND SOIL–RIPRAP TO RESULT IN SECURELY INTERLOCKED ROCK AT THE DESIGN THICKNESS AND GRADE. COMPACT AND ALL LEVEL TO ELIMINATE VOIDS AND ROCKS PROJECTING DESIGN ABOVE RIPRAP TOP GRADE.
3. ALL SOIL RIPRAP THAT IS BURIED WITH TOPSOIL SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ANY TOPSOIL PLACEMENT.
4. CRIMP OR TACKIFY MULCH OR USE APPROVED HYDROMULCH AS CALLED FOR IN THE PLANS AND SPECIFICATIONS.
5. ELEVATION TOLERANCES FOR RIPRAP SHALL BE 0.10 FEET. THICKNESS OF SOIL RIPRAP SHALL BE NO LESS THAN THICKNESS SHOWN AND NO MORE THAN 2–INCHES GREATER THAN THE THICKNESS SHOWN.

RIPRAP DESIGNATION	INTERMEDIATE ROCK DIMENSION (IN.)	PERCENT PASSING (%)	D50 (IN.)
TYPE VL	12 9 6 2	70–100 50–70 35–50 2–10	6
TYPE M	21 18 12 4	70–100 50–70 35–50 2–10	12
TYPE H	30 24 18 6	70–100 50–70 35–50 2–10	18



TYPICAL SECTION - VOID-FILLED RIPRAP



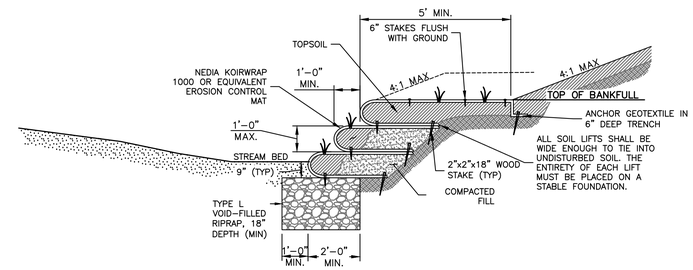
TYPICAL SECTION - SOIL RIPRAP

SOIL LIFT NOTES:

1. THE SOIL BACKFILL USED FOR LIFTS AND TOPSOIL USED FOR LAYERING WITH THE LIVE BRANCHES SHALL BE FREE OF ANY LARGE ROOTS OR DEBRIS AND SHALL GENERALLY BE FREE OF GRAVEL OR COBBLE MATERIAL.
2. SOIL BACKFILL SHALL BE COMPACTED WITHOUT DAMAGING THE UNDERLYING SOIL LIFT.
3. PLACE SOIL BACKFILL UP TO THE LIFT HEIGHT SPECIFIED, NO GREATER THAN 12", WITHOUT AFFECTING OR TEARING THE PREVIOUSLY PLACED LIFT AND COIR FABRIC.
4. THE COIR FABRIC SHALL BE PULLED AS TIGHT AS POSSIBLE WITHOUT TEARING OR DISTORTING THE FABRIC.
5. PLACE A LAYER OF TOPSOIL AND LIVE BRANCHES ON TOP OF EACH SOIL LIFT, EXPOSING 6"–12" OF EACH LIVE BRANCH AND 24"–48" OF THE BRANCH WILL BE COVERED BY THE FOLLOWING SOIL LIFT.
6. STAKE ALL EXPOSED SOIL LIFTS WITH LIVE STAKES SPACED @ 24" EACH WAY.
7. LIVE STAKES AND BRANCHES SHALL BE OF A SPECIES APPROVED BY THE ENGINEER. NO INVASIVE SPECIES SHALL BE PERMITTED.
8. THE COIR FABRIC ON THE UPPER–MOST LIFT SHALL BE SECURED WITH A 6" DEEP TRENCH AS SHOWN.
9. THE SURFACE OF THE SOIL LIFTS SHALL BE FINISHED TO A SMOOTH AND COMPACT SURFACE IN ACCORDANCE WITH THE CONTOURS AND ELEVATIONS IN THE PLANS.
10. RE–DRESSING OF THE CHANNEL AND BANKFULL STREAM BED MAY BE REQUIRED POST–INSTALLATION AND IS INCIDENTAL TO CONSTRUCTION.

RECOMMENDED SOIL LIFT PROCEDURE:

1. PLACE A LAYER OF 6.5–FOOT WIDE COIR BLANKET ON TOP OF THE TOPSOIL AND LIVE BRANCHES ALLOWING 2.5 FEET OF THE BLANKET TO BE BURIED BELOW THE NEXT SOIL LIFT. ALLOW ROUGHLY 4.0 FEET TO HANG FREELY OVER THE PRECEDING LIFTS.
2. PLACE A LAYER OF NON–WOVEN COIR MATTING OVER THE SAME LIMITS.
3. ADD SOIL AND COMPACT, USING A PIECE OF 2x6 LUMBER PLACED AS A BACKSTOP AND SECURED WITH WOODEN STAKES.
4. PLACE BACKFILL TO THE LIFT HEIGHT SPECIFIED.
5. TOP DRESS THE SOIL LIFT WITH TOPSOIL, FROM THE FACE OF THE LIFT BACK 4.0 FEET MINIMUM.
6. REMOVE THE SAWN LUMBER BACKSTOP AND STAKES AND WRAP THE FACE OF THE SOIL LIFT WITH THE FEE–HANGING COIR AND NON–WOVEN MATTING.
7. PULL THE COIR AND MATTING AS TIGHT AS POSSIBLE TO FORM THE FACE OF THE LIFT.
8. SECURE THE COIR AND MATTING IN PLACE BY STAKING THE END OF THE FABRICS WITH WOODEN STAKES AT 18" ON CENTER EACH WAY FLUSH WITH THE COIR.
9. BEGIN CONSTRUCTION OF THE NEXT LIFT REPEATING FROM STEP 1.



SOIL LIFT TYPICAL SECTION
NTS

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24
DATE

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

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419–3024

J·R ENGINEERING
A Westrian Company
Centennial 303–740–9393 • Colorado Springs 719–593–2593
Fort Collins 970–491–9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H–SCALE	NA
V–SCALE	NA
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	DJV
CHECKED BY	

SAND CREEK RESTORATION

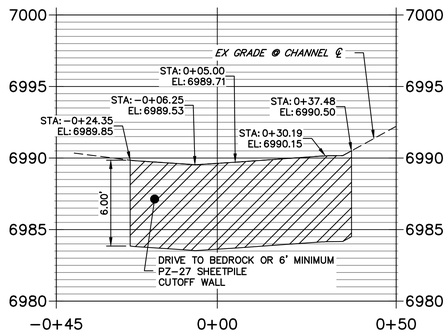
CONSTRUCTION DETAILS

SHEET 71 OF 121

JOB NO. 25188.04

X:\251000.all\251804\Drawings\Sheet Dwgs\Details\251804 - Construction Details.dwg, 69-251804 - Construction Details - Details 1, 1/3/2025 4:44:26 PM, VaughnD

SHEET PILE CUTOFF WALL #1
STA -0+45.00 TO 0+50.00



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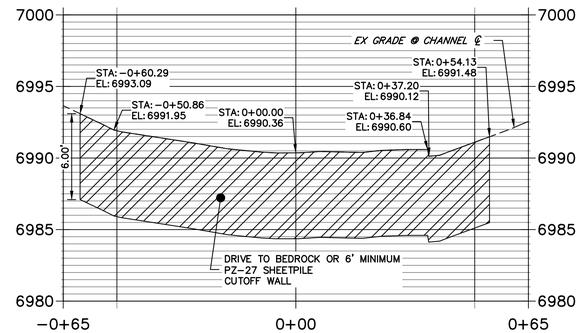

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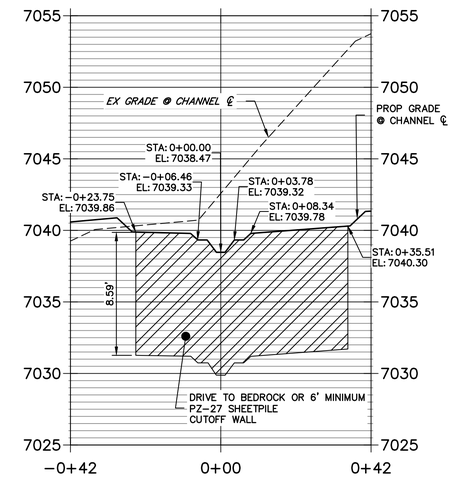

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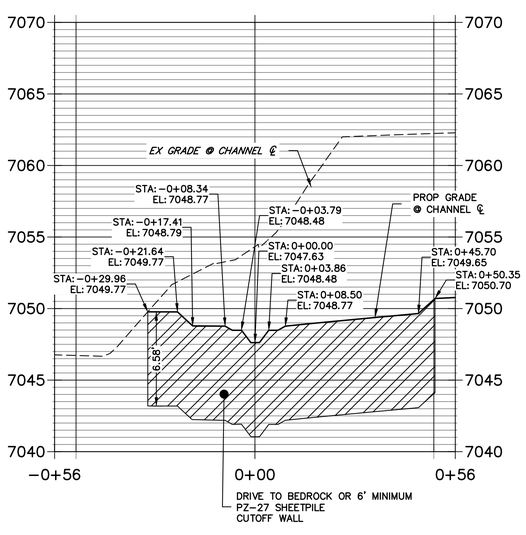

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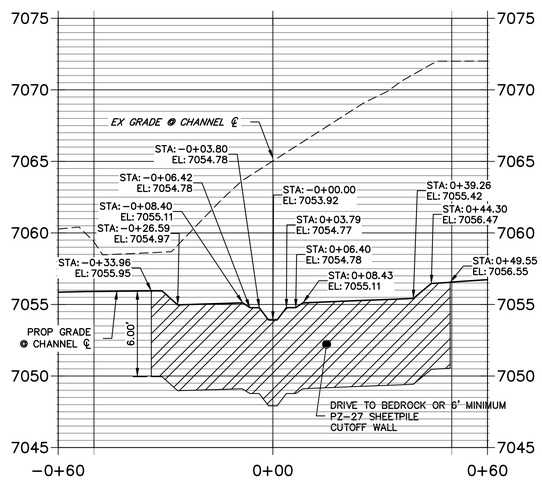

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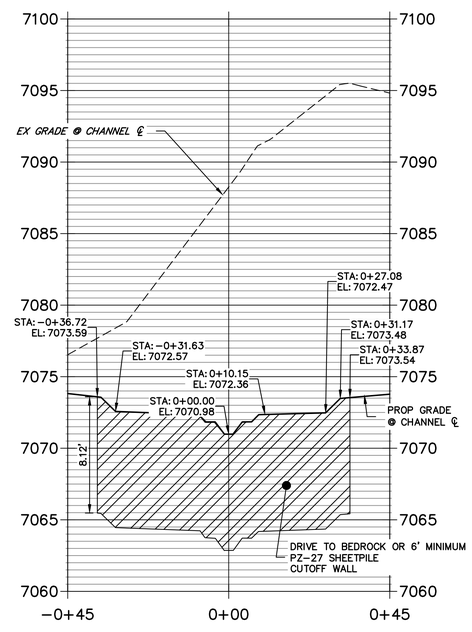

SHEET PILE CUTOFF WALL #7
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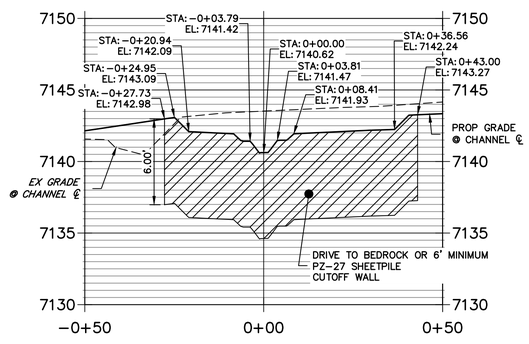

20 10 0 20
HORIZONTAL
ORIGINAL SCALE: 1" = 20'
VERTICAL
ORIGINAL SCALE: 1" = 5'

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT
PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24
DATE

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PREPARED FOR
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No.	REVISION	BY	DATE

H-SCALE	1"=20'
V-SCALE	1"=5"
DATE	12/20/24
DESIGNED BY	DV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION
CONSTRUCTION DETAILS

SHEET 72 OF 121
JOB NO. 25188.04

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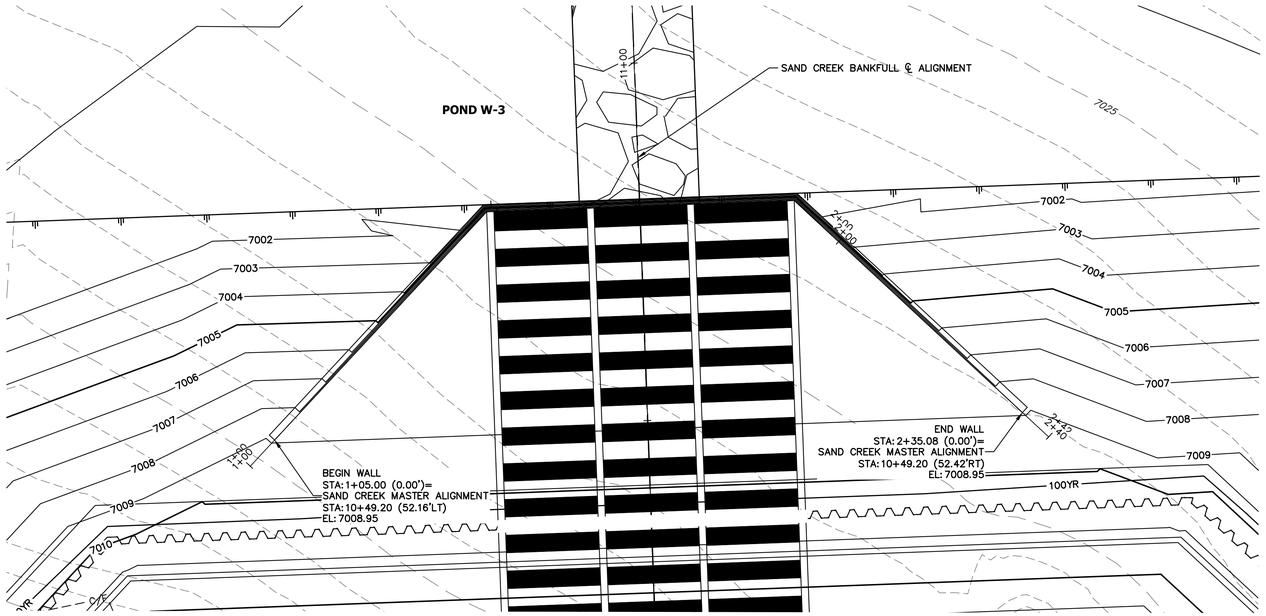
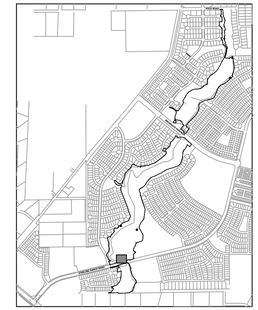


POND W-3 CULVERT PLAN

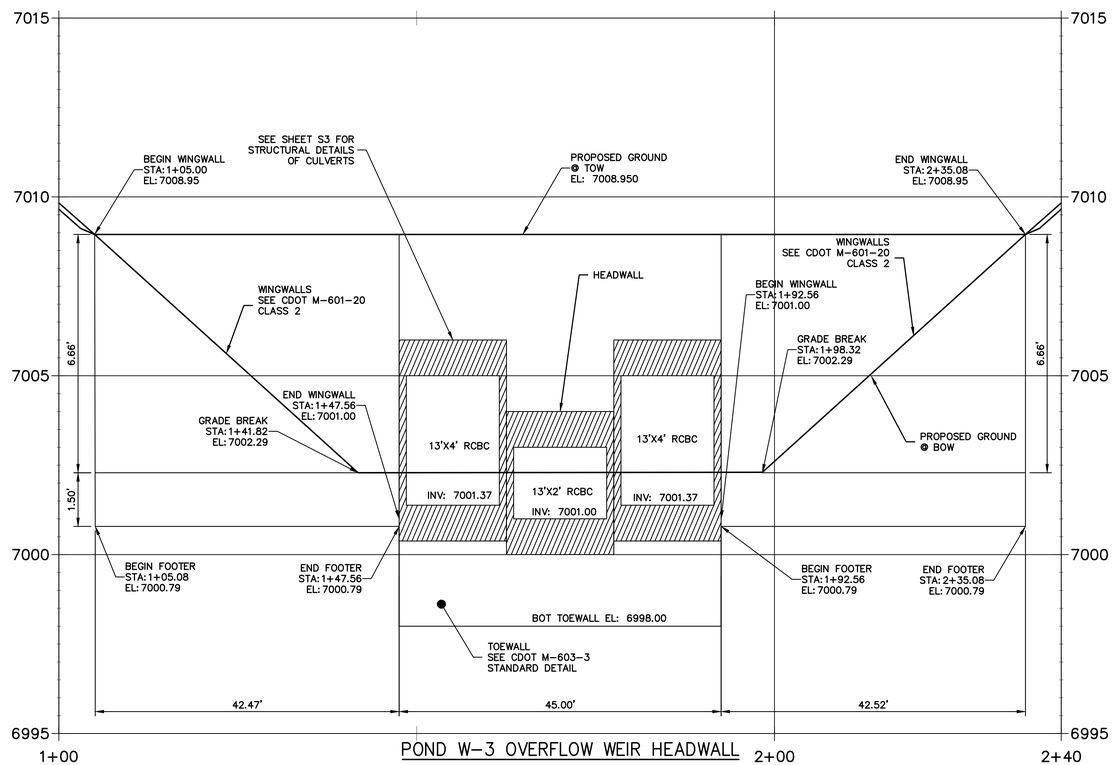
SCALE: 1"=10'



KEY MAP

SCALE: 1"=2000'

HW TOW PROFILE
STA 1+00.00 TO 2+40.08



POND W-3 OVERFLOW WEIR HEADWALL

HORIZONTAL
ORIGINAL SCALE: 1" = 10'
VERTICAL
ORIGINAL SCALE: 1" = 2'

Know what's **below.**
Call before you dig.

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No.	REVISION	BY	DATE

H-SCALE	1"=10'
V-SCALE	1"=2'
DATE	12/20/24
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CHECKED BY	

SAND CREEK RESTORATION

STRUCTURAL DETAILS

SHEET 73 OF 121

JOB NO. 25188.04

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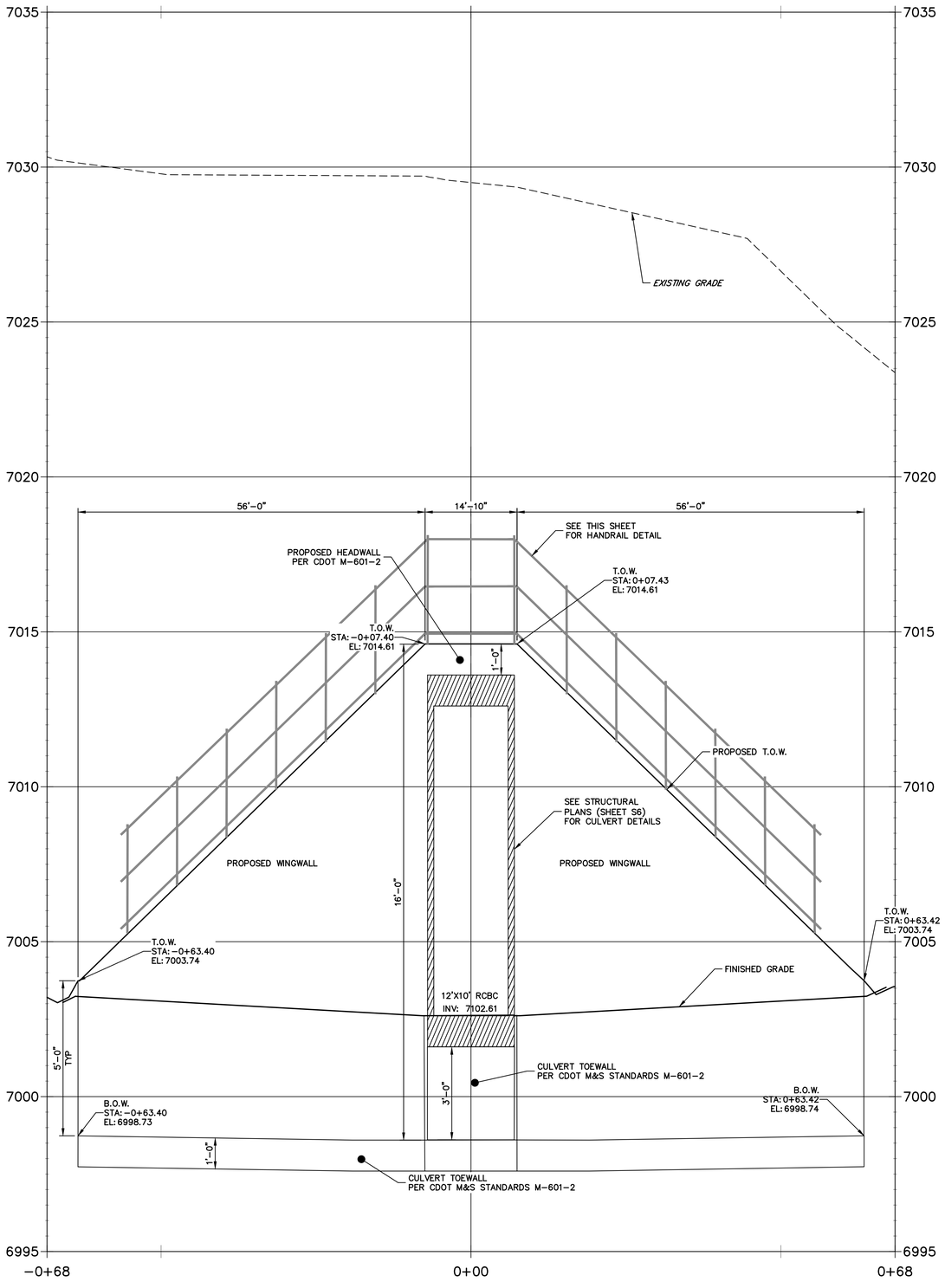
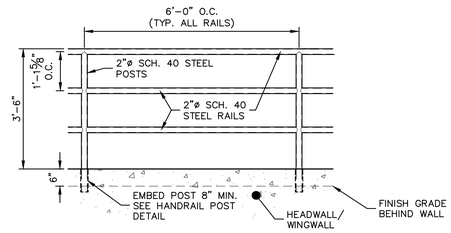
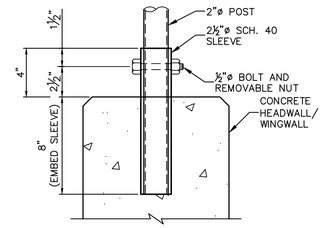
POND 1 STILLING BASIN WINGWALL PROFILE
STA -0+68.40 TO 0+68.42

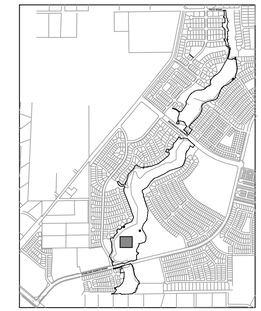




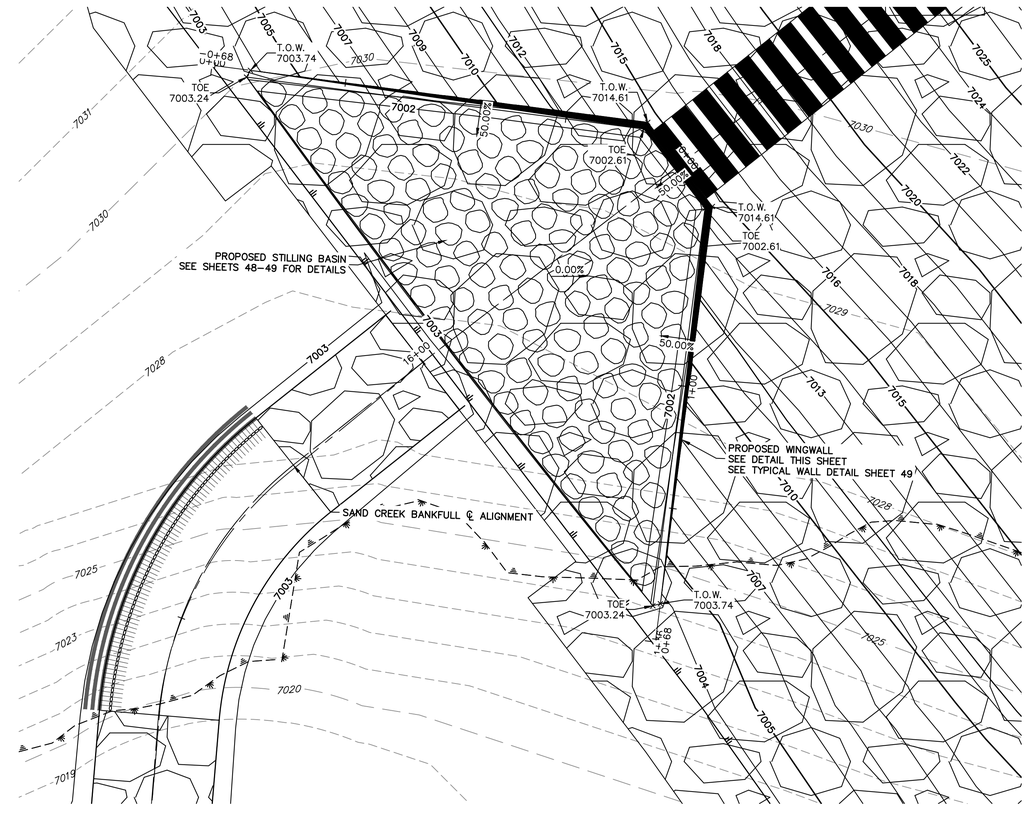
PEDESTRIAN RAILING DETAIL
SCALE: 1/2"=1'



PEDESTRIAN RAILING POST
SCALE:NTS



KEY MAP
SCALE: 1"=2000'



POND 1 STILLING BASIN HEADWALL WINGWALL PLAN VIEW
SCALE: 1"=10'

N

10 5 0 10
HORIZONTAL ORIGINAL SCALE: 1" = 10'
VERTICAL ORIGINAL SCALE: 1" = 2'

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ENGINEER'S STATEMENT
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COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE

COLORADO REGISTERED BRYAN T. LAW 25043 PROFESSIONAL ENGINEER 12/20/24

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V-SCALE	1"=2'
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DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

STRUCTURAL DETAILS

SHEET 74 OF 121

JOB NO. 25188.04

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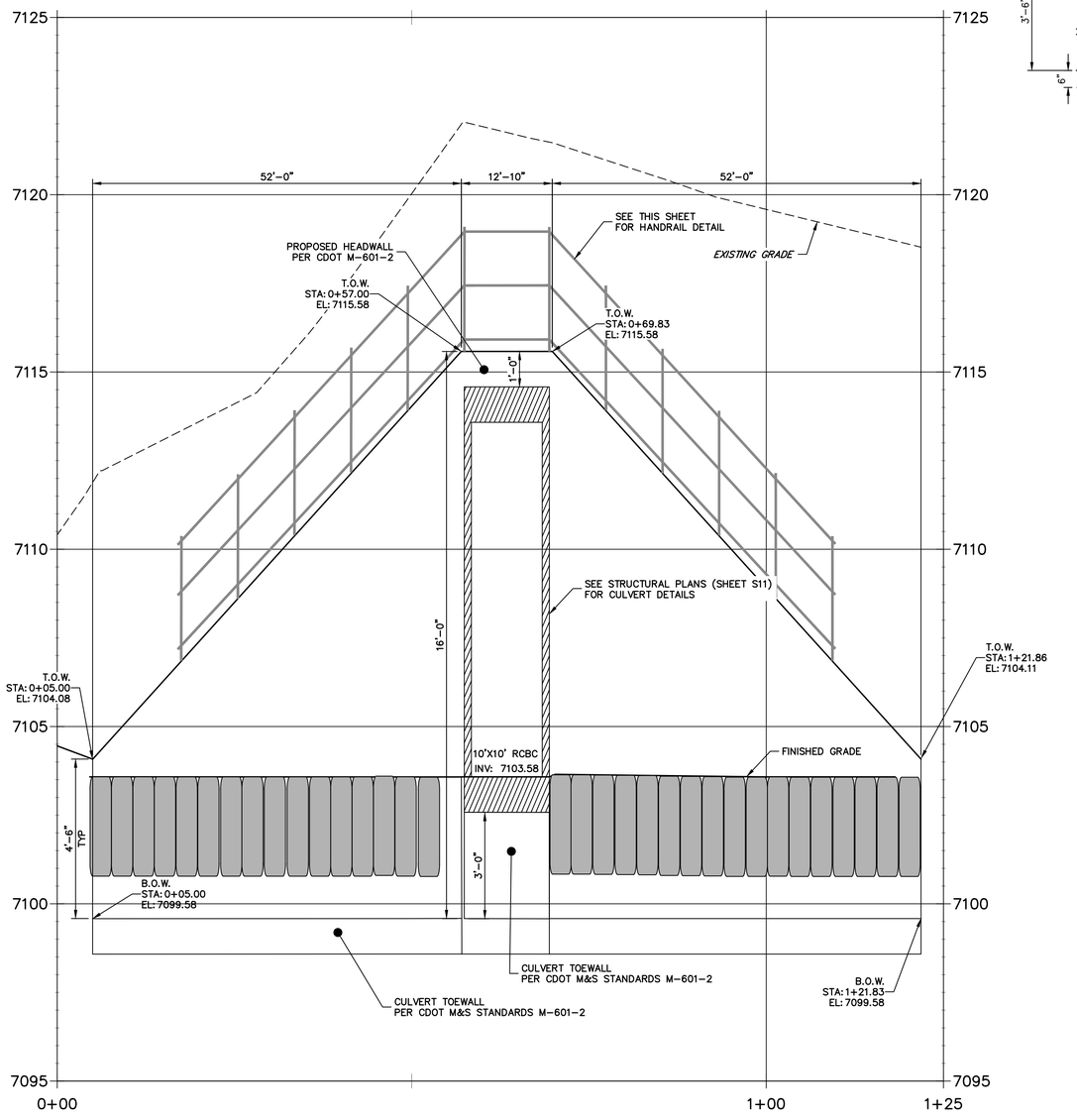
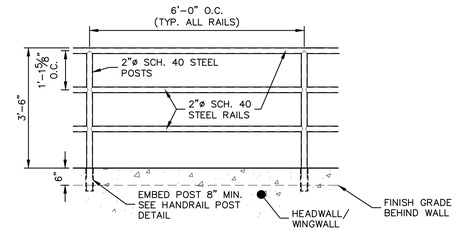
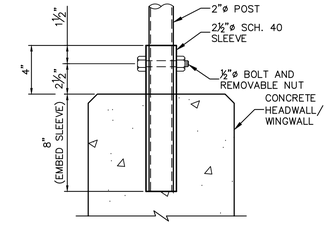
POND 2 STILLING BASIN WINGWALL PROFILE
STA 0+00.00 TO 1+25.00

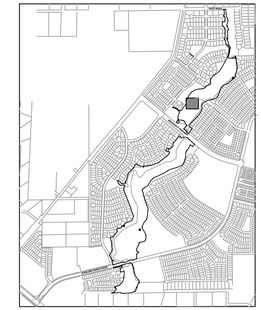




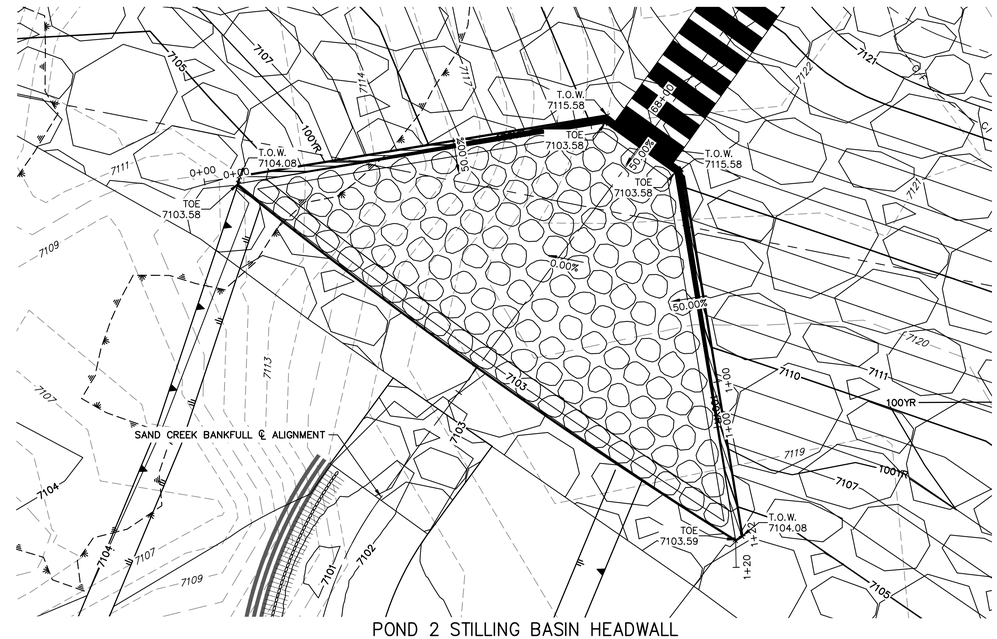
PEDESTRIAN RAILING DETAIL
SCALE: 1/2"=1'



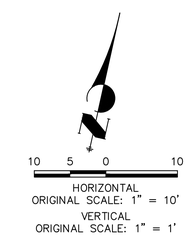
PEDESTRIAN RAILING POST
SCALE: NTS



KEY MAP
SCALE: 1"=2000'



POND 2 STILLING BASIN HEADWALL WINGWALL PLAN VIEW
SCALE: 1"=10'



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ENGINEER'S STATEMENT
PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
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12/20/24 DATE

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V-SCALE	1"=1'
DATE	12/20/24
DESIGNED BY	DV
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

STRUCTURAL DETAILS

SHEET 75 OF 121

JOB NO. 25188.04

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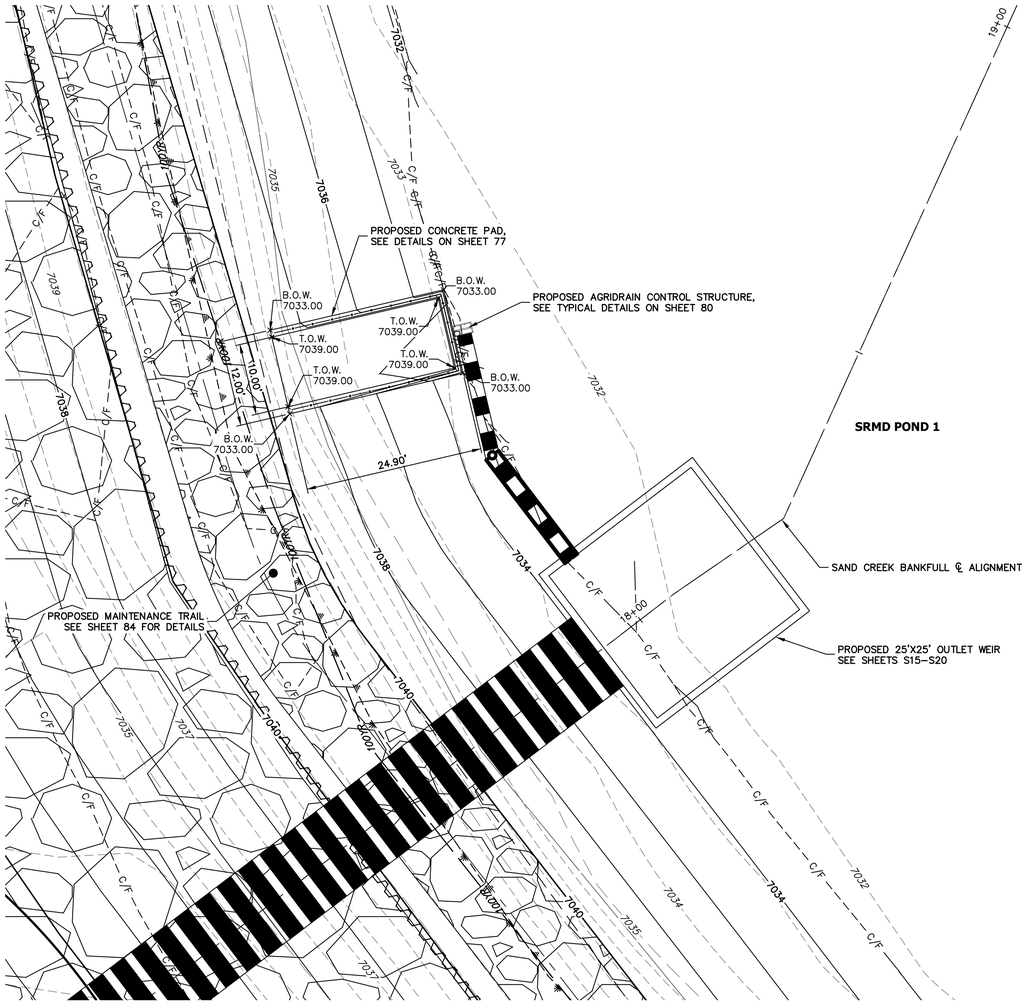
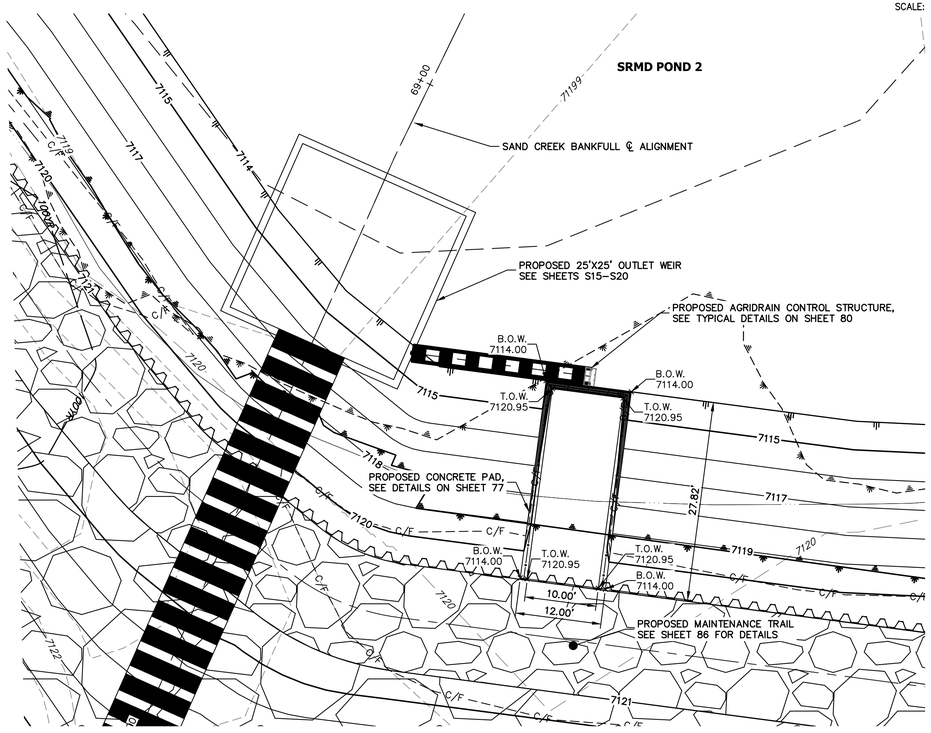


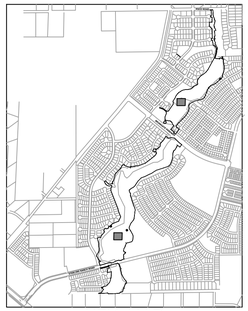
SRMD POND 1 CONCRETE PAD

SCALE: 1"=10'



SRMD POND 2 CONCRETE PAD

SCALE: 1"=10'



KEY MAP

SCALE: 1"=2000'

N

10 5 0 10

ORIGINAL SCALE: 1" = 10'

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24 DATE

COLORADO REGISTERED PROFESSIONAL ENGINEER 25043

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No.	REVISION	BY	DATE

H-SCALE	1"=10'
V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	DV
DRAWN BY	NEO
CHECKED BY	

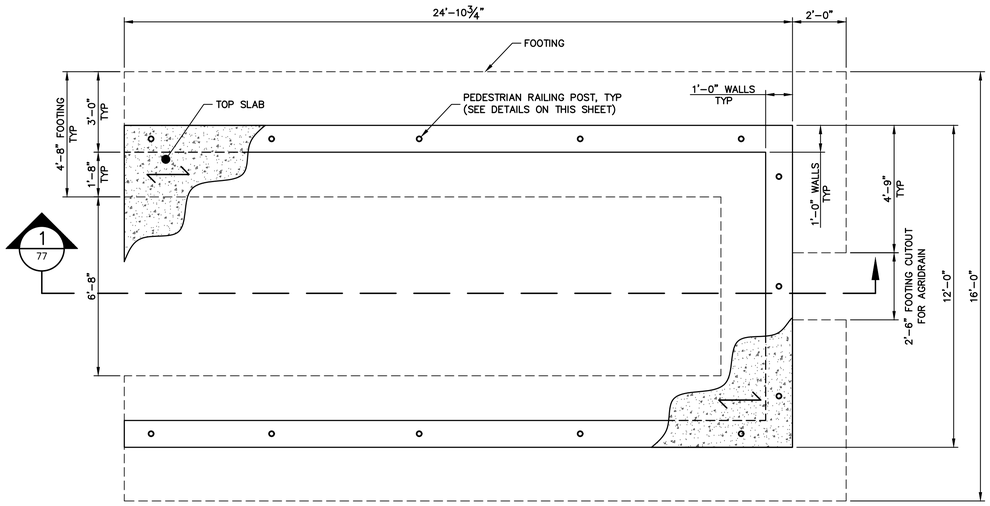
SAND CREEK RESTORATION

STRUCTURAL DETAILS

SHEET 76 OF 121

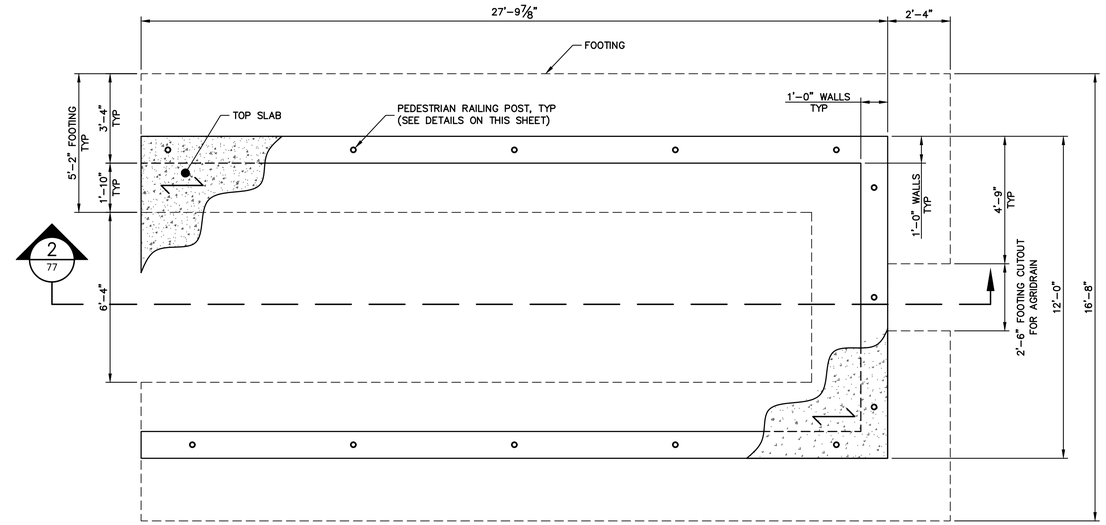
JOB NO. 25188.04

X:\2510000.all\2518804\Drawings\Sheet Dwgs\Details\2518804-Concrete Pad Details.dwg, 73 Pond 1 & 2 Concrete Pad Plan, 1/3/2025 4:59:22 PM, VaughnID



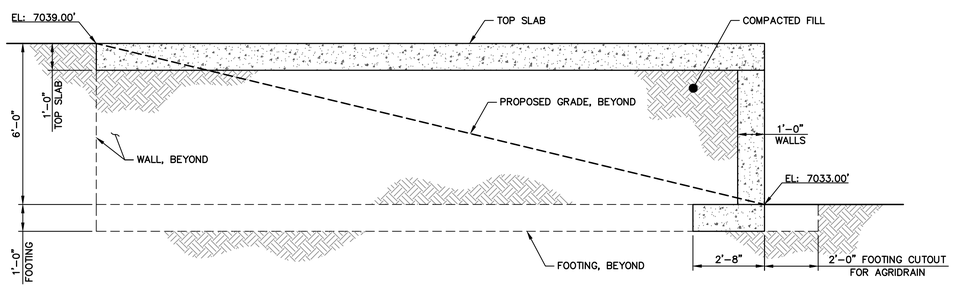
POND 1 CONCRETE PAD PLAN

SCALE: 3/8"=1'-0"



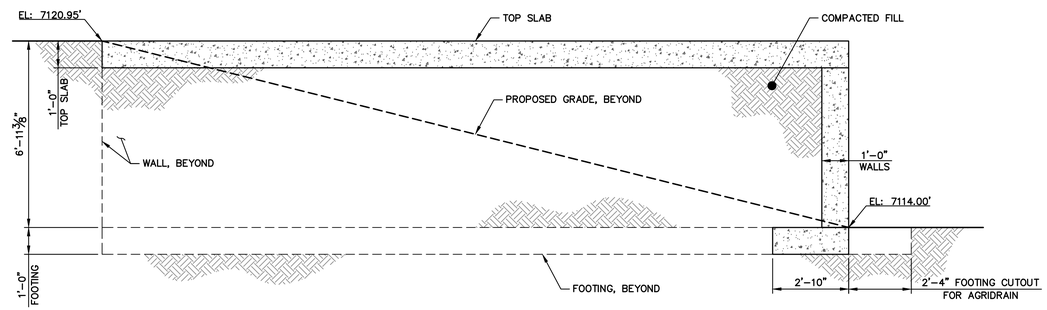
POND 2 CONCRETE PAD PLAN

SCALE: 3/8"=1'-0"



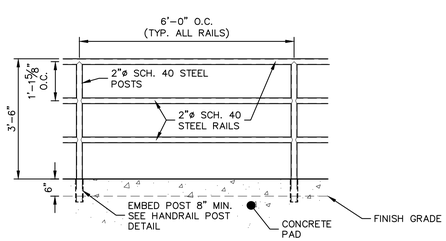
1 / 77 POND 1 CONCRETE PAD SECTION

SCALE: 3/8"=1'-0"



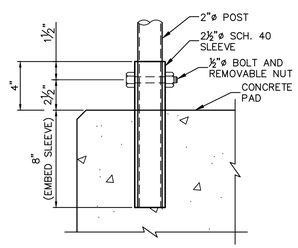
2 / 77 POND 2 CONCRETE PAD SECTION

SCALE: 3/8"=1'-0"



PEDESTRIAN RAILING DETAIL

SCALE: 1/2"=1'



PEDESTRIAN RAILING POST

SCALE:NTS

1 1 0 1

ORIGINAL SCALE: 1" = 1'

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ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24
DATE

COLORADO REGISTERED PROFESSIONAL ENGINEER 25043 BRYAN T. LAW

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

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	VARIES
V-SCALE	VARIES
DATE	12/20/24
DESIGNED BY	R.C.B.
DRAWN BY	R.C.B.
CHECKED BY	

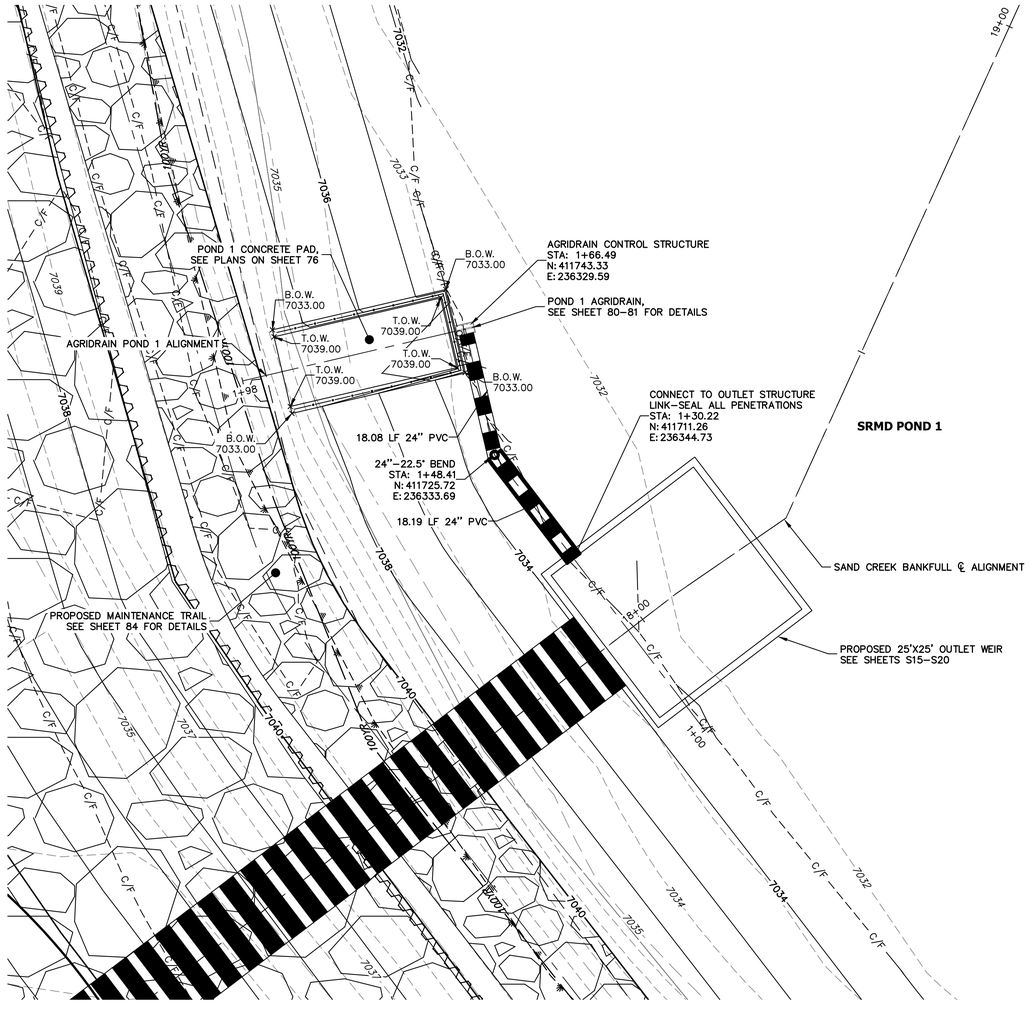
SAND CREEK RESTORATION

STRUCTURAL DETAILS

SHEET 77 OF 121

JOB NO. 25188.04

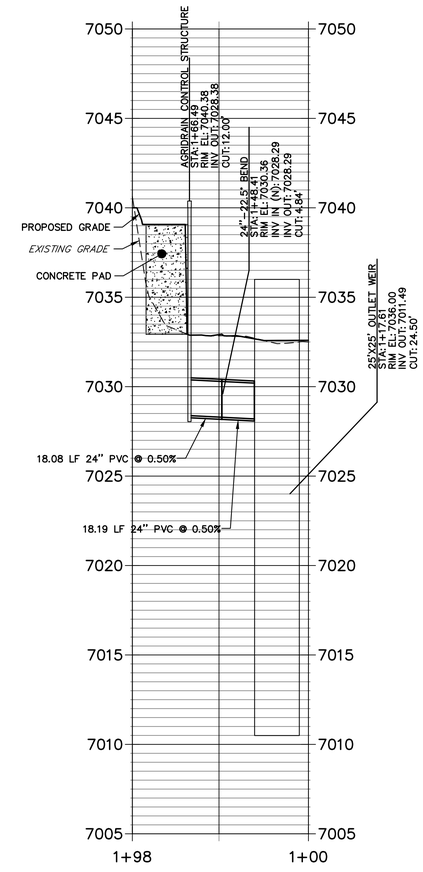
X:\2510000.all\2518804\Drawings\Sheet Dwgs\Structural Details\2518804_ST-DT.dwg, Concrete Pad Details, 1/3/2025 5:00:11 PM, VaughnD



AGRIDRAIN – POND 1

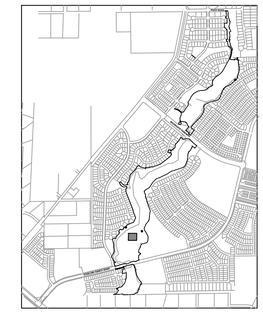
SCALE: 1"=10'

AGRIDRAIN POND 1 PROFILE
STA 1+00.00 TO 1+98.44



AGRIDRAIN – POND 1 PROFILE

SCALE: H: 1"=40' V:1"=40



KEY MAP

SCALE: 1"=2000'

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No.	REVISION	BY	DATE

H–SCALE	VARIES
V–SCALE	1"=4'
DATE	12/20/24
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CHECKED BY	

SAND CREEK RESTORATION

AGRIDRAIN DETAILS

SHEET 78 OF 121

JOB NO. 25188.04

10 5 0 10
HORIZONTAL
ORIGINAL SCALE: 1" = 10'
VERTICAL
ORIGINAL SCALE: 1" = 4'

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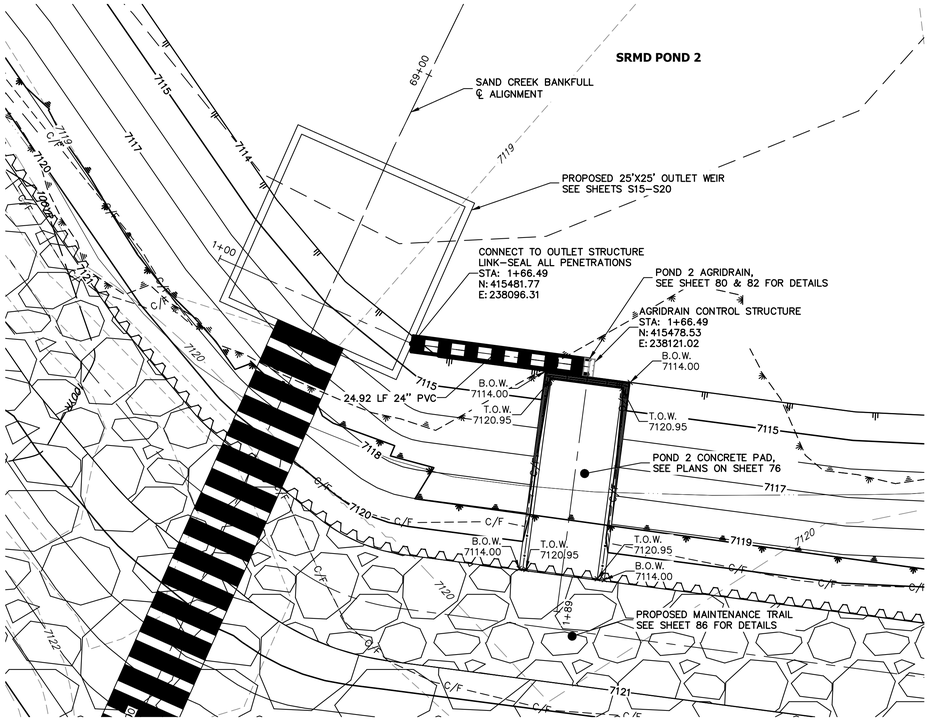
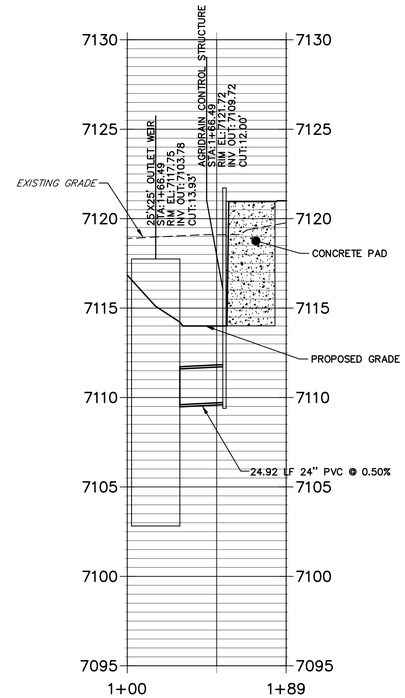
X:\2510000.all\2518804\Drawings\Sheet Dwgs\Second Creek Plan&Profile\2518804-Agridrain Pond 1 & 2.dwg, Pond 1 Agridrain P&P, 1/3/2025 5:03:27 PM, VaughnD

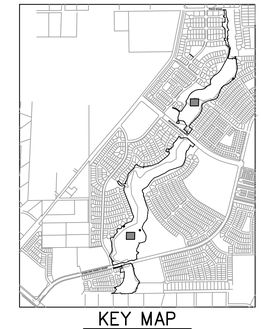
AGRIDRAIN POND 2 PROFILE
STA 1+00.00 TO 1+88.83



AGRIDRAIN – POND 2
SCALE: 1"=10'



AGRIDRAIN – POND 2 PROFILE
SCALE: H: 1"=40' V:1"=40



KEY MAP
SCALE: 1"=2000'

N

10 5 0 10
HORIZONTAL
ORIGINAL SCALE: 1" = 10'
VERTICAL
ORIGINAL SCALE: 1" = 4'

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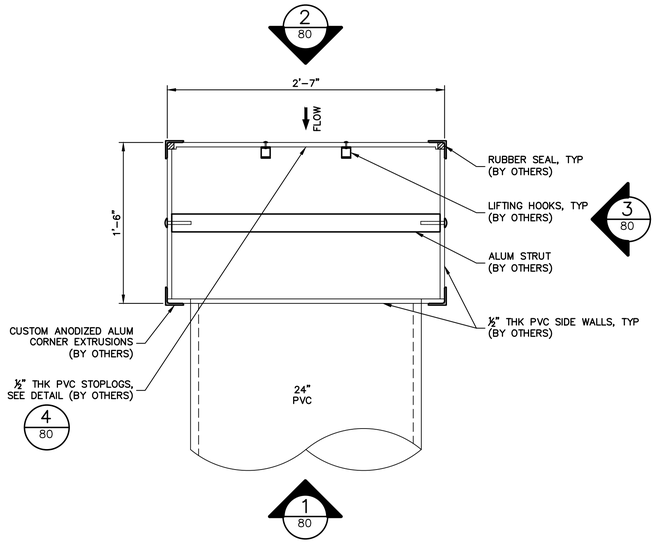
SAND CREEK RESTORATION

AGRIDRAIN DETAILS

SHEET 79 OF 121

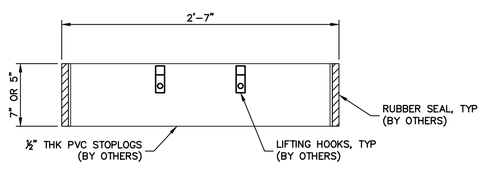
JOB NO. 25188.04

X:\2510000.all\2518804\Drawings\Sheet Dwgs\Second Creek Plans\Profile\2518804-Agridrain Pond 1 & 2.dwg, Pond 2 Agridrain PAP, 1/3/2025 5:04:04 PM, VraghiD



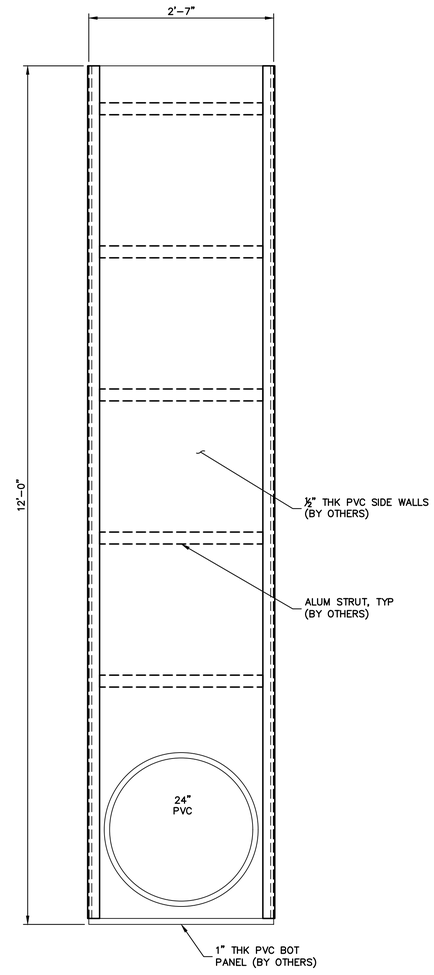
TYPICAL AGRIDRAIN PLAN

SCALE: 1-1/2" = 1'



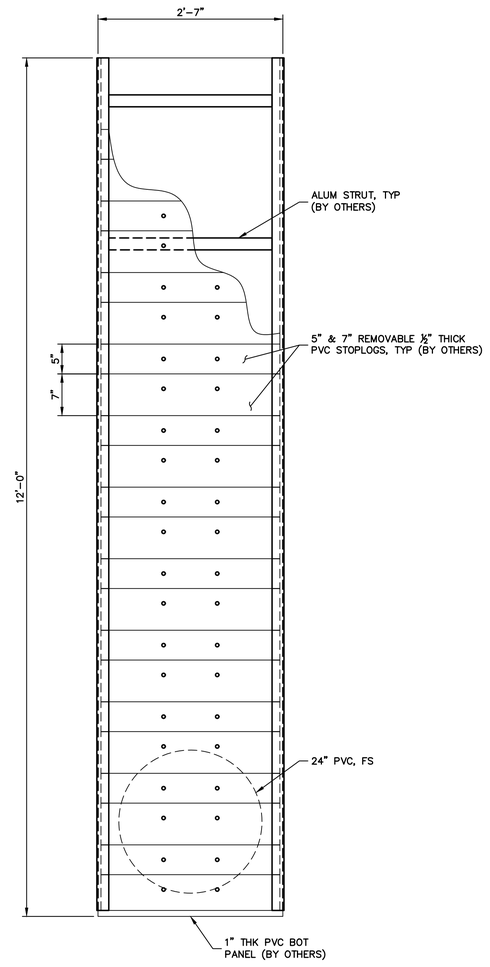
4 80 TYPICAL STOPLOG DETAIL

SCALE: 1-1/2"=1'



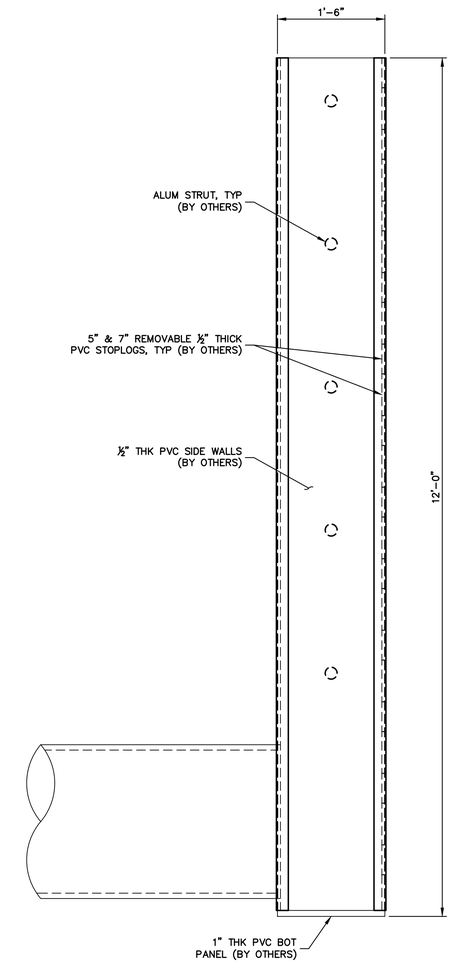
1 80 ELEVATION

SCALE: 1"=1'



2 80 ELEVATION

SCALE: 1"=1'



3 80 ELEVATION

SCALE: 1"=1'

1 1 0 1

ORIGINAL SCALE: 1" = 1"

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CHECKED BY	

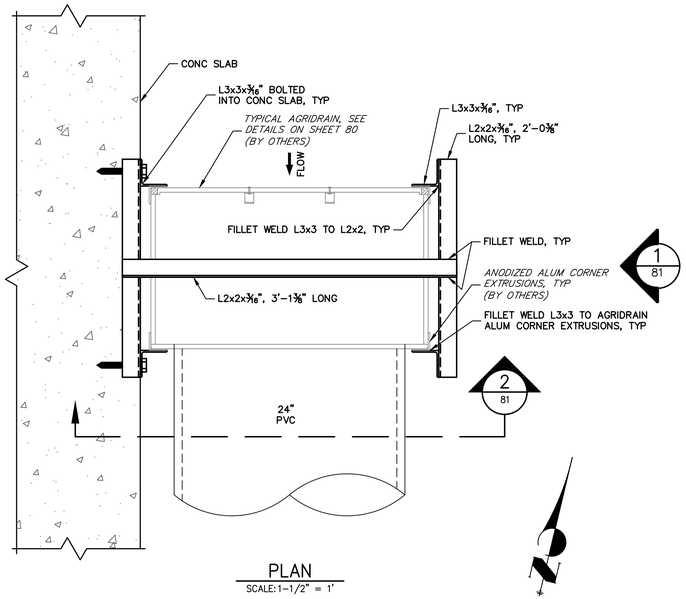
SAND CREEK RESTORATION

AGRIDRAIN DETAILS

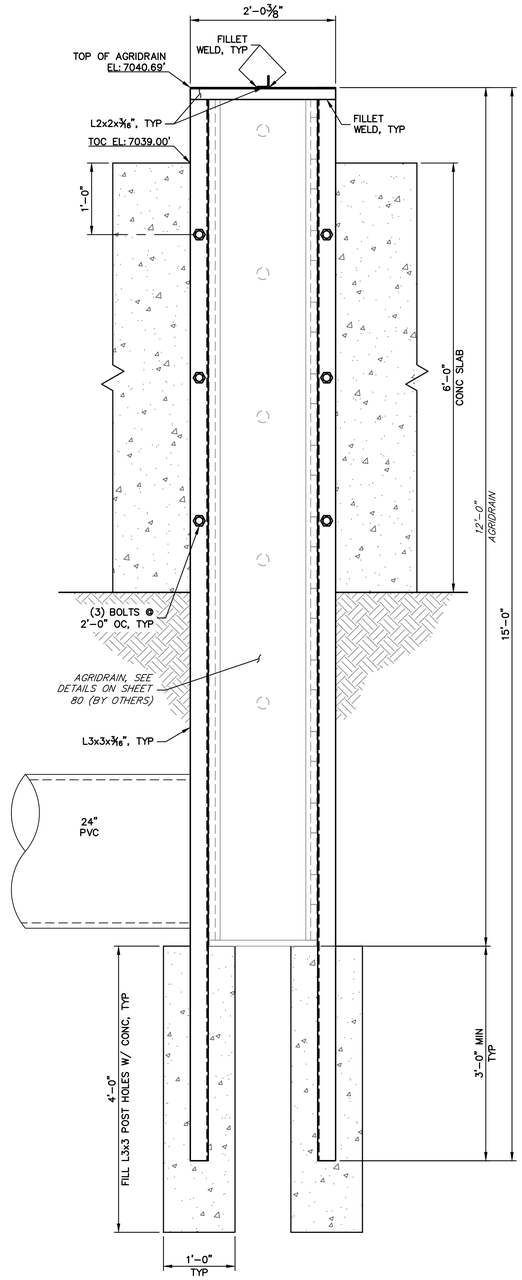
SHEET 80 OF 121

JOB NO. 25188.04

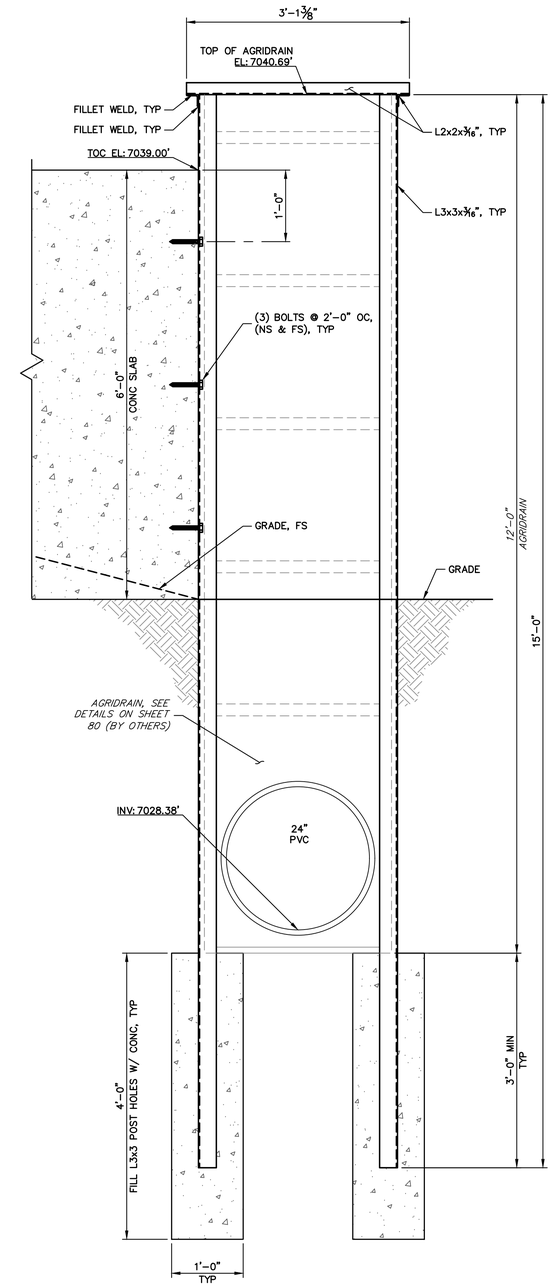
X:\2510000.all\2518804\Drawings\Sheet Dwgs\Details\2518804_Agridrain Details.dwg, DT01 - Typical Agridrain Details, 10/20/25 5:04:31 PM, VaughID



PLAN
SCALE: 1-1/2" = 1'



1 / 81 ELEVATION
SCALE: 1"=1'



2 / 81 SECTION
SCALE: 1"=1'

1 1 0 1
ORIGINAL SCALE: 1" = 1'

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CHECKED BY	

SAND CREEK RESTORATION

AGRIDRAIN DETAILS

SHEET 81 OF 121

JOB NO. 25188.04

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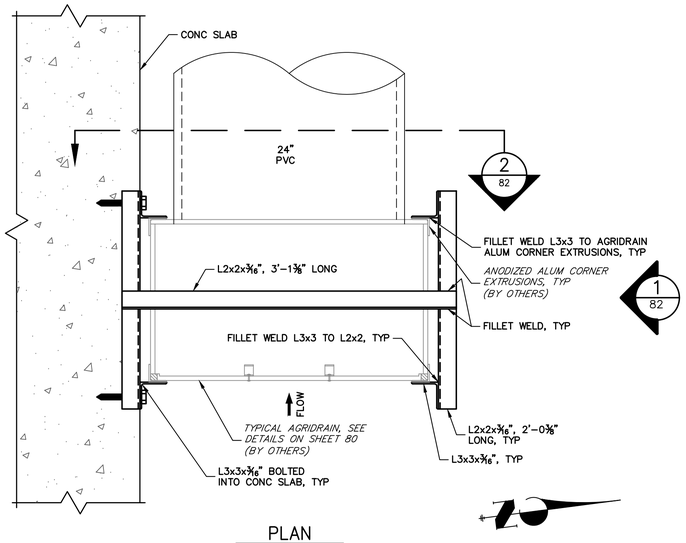
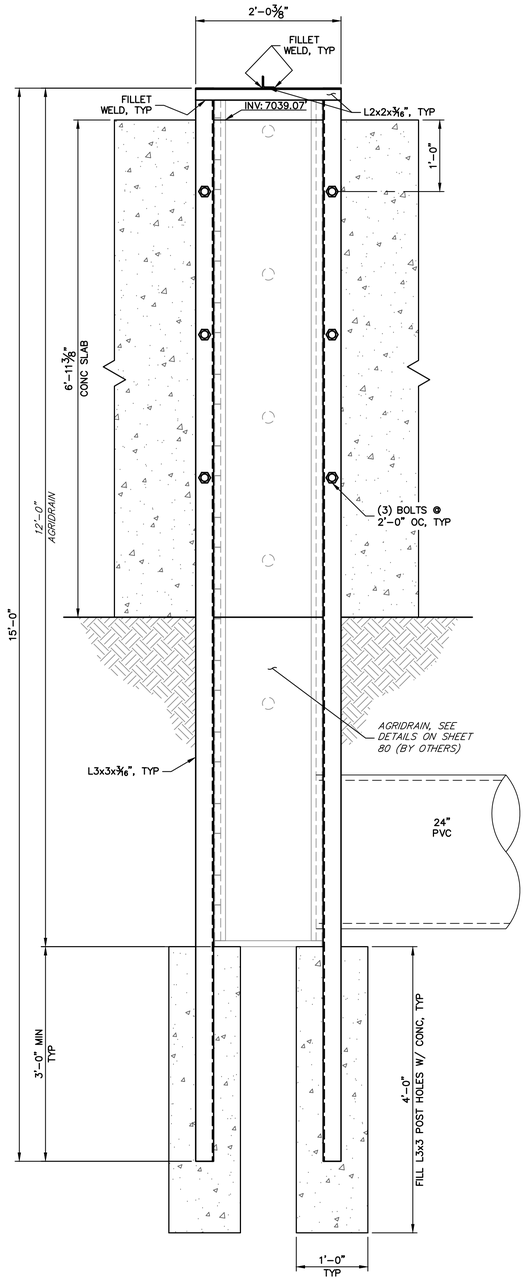
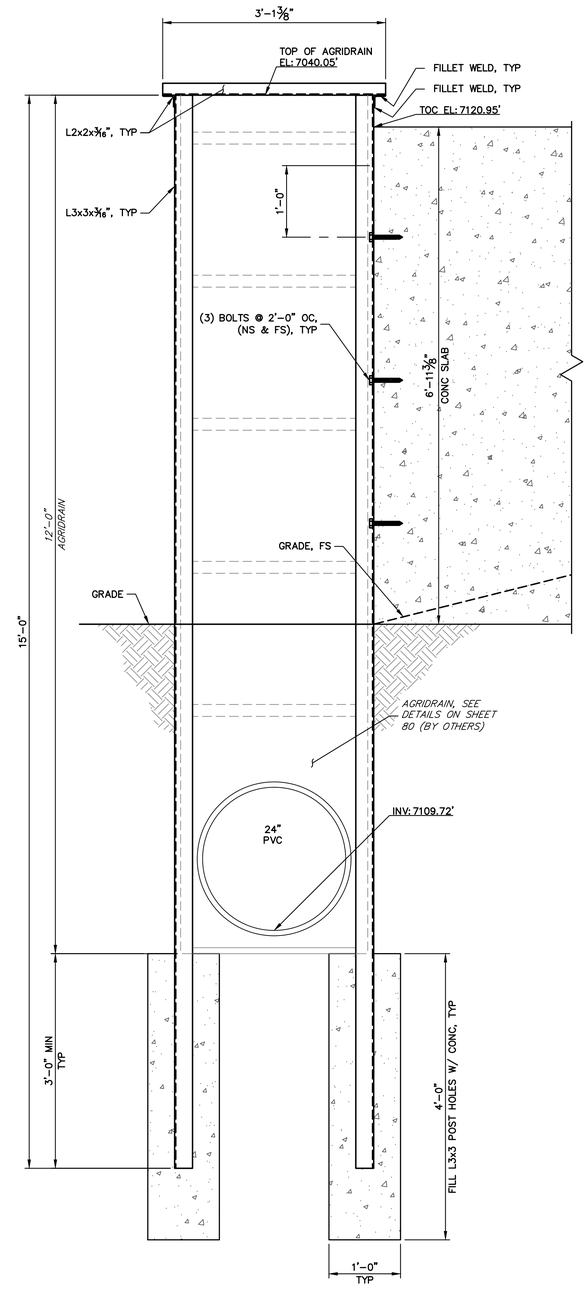


PLAN
SCALE: 1-1/2" = 1'



1 / 82 ELEVATION
SCALE: 1"=1'



2 / 82 SECTION
SCALE: 1"=1'

1 1 0 1
ORIGINAL SCALE: 1" = 1'

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CHECKED BY	

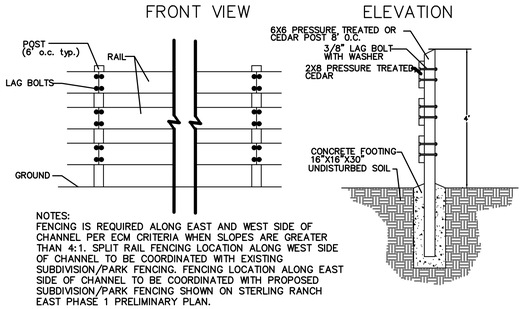
SAND CREEK RESTORATION

AGRIDRAIN DETAILS

SHEET 82 OF 121

JOB NO. 25188.04

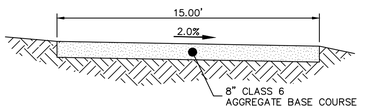
X:\2510000.all\2518804\Drawings\Sheet Dwgs\Details\2518804_Agridrain Details.dwg, DT03 - Agridrain Pond 2, 1/3/2025 5:04:44 PM, VaughnD



NOTES:
FENCING IS REQUIRED ALONG EAST AND WEST SIDE OF CHANNEL PER ECM CRITERIA WHEN SLOPES ARE GREATER THAN 4:1. SPLIT RAIL FENCING LOCATION ALONG WEST SIDE OF CHANNEL TO BE COORDINATED WITH EXISTING SUBDIVISION/PARK FENCING. FENCING LOCATION ALONG EAST SIDE OF CHANNEL TO BE COORDINATED WITH PROPOSED SUBDIVISION/PARK FENCING SHOWN ON STERLING RANCH EAST PHASE 1 PRELIMINARY PLAN.

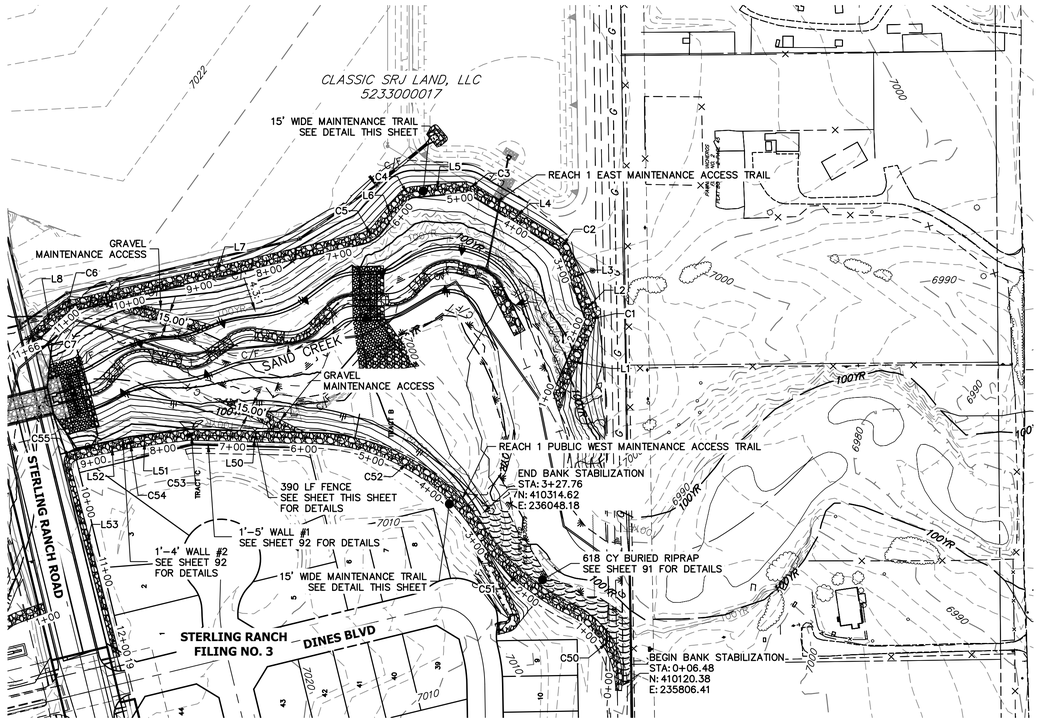
3 RAIL FENCE

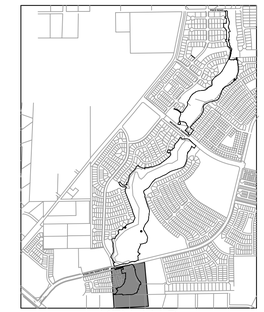
SCALE: N.T.S.



EAST SIDE: SAND CREEK MAINTENANCE ACCESS TRAIL

N.T.S.





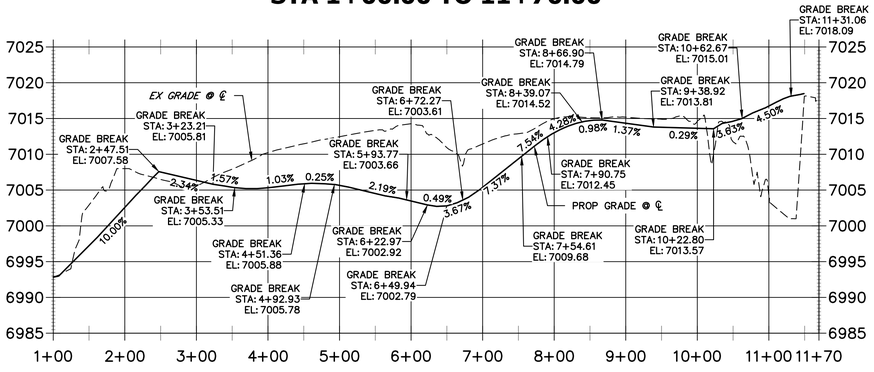
KEY MAP

SCALE: 1"=2000'

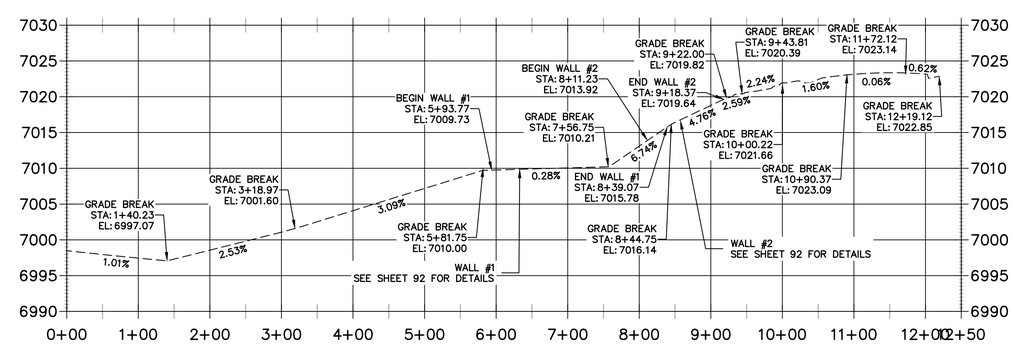
LINE TABLE		
LINE	BEARING	DISTANCE
L1	S66°28'16"E	115.56'
L2	N70°37'22"E	18.85'
L3	N69°00'00"E	75.70'
L4	N31°56'59"E	141.86'
L5	N05°18'50"W	69.68'
L6	N51°23'41"W	53.67'
L7	N12°59'41"W	414.03'
L8	N41°42'42"W	48.15'
L50	N01°40'18"E	175.00'
L51	N07°32'37"W	77.15'
L52	N12°21'08"W	75.72'
L53	S75°34'07"W	274.28'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C1	42°53'48"	17.50'	13.10'
C2	37°03'01"	22.50'	14.55'
C3	37°15'49"	22.50'	14.63'
C4	46°04'50"	22.50'	18.10'
C5	38°23'59"	42.50'	28.48'
C6	28°43'00"	32.50'	16.29'
C7	14°58'17"	32.50'	8.49'
C50	70°40'45"	113.34'	139.81'
C51	32°21'06"	317.29'	179.16'
C52	53°54'56"	279.25'	262.78'
C53	7°50'43"	47.50'	6.50'
C54	7°38'34"	47.50'	6.34'
C55	91°31'17"	14.00'	22.37'

EAST SIDE: SAND CREEK MAINTENANCE ACCESS TRAIL PROFILE REACH 1
STA 1+00.00 TO 11+70.00



WEST SIDE: SAND CREEK REGIONAL TRAIL & MAINTENANCE ACCESS TRAIL PROFILE REACH 1
STA 0+00.00 TO 12+50.00



NOTES:
1. SAWCUT CONSTRUCTION JOINTS EVERY 10' (1/4 DEPTH OF TRAIL)
2. INSTALL EXPANSION JOINTS EVERY 100'
3. STAKING AND WOOD FORMS ARE TO BE APPROVED PRIOR TO POURING CONCRETE. THIS NOTE SHALL BE INCLUDED ON ALL SETS OF CONSTRUCTION DOCUMENTS COVERING THE SCOPE OF THE TRAIL.

BENCHMARK

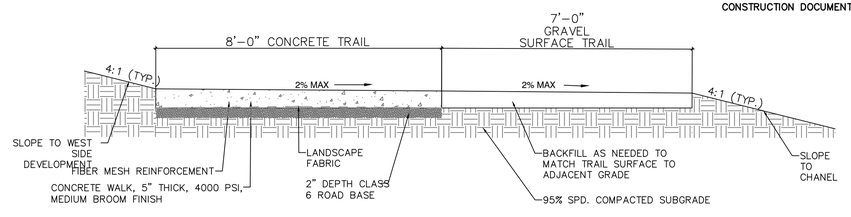
1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

NOTES:

1. STEEPEST ALLOWABLE GRADE IS 12%.
2. MAINTENENCE ACCESS TRAILS WITH SLOPES GREATER THAN 10% ARTICULATED CONCRETE WILL BE USED.

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.



WEST SIDE: SAND CREEK REGIONAL TRAIL/MAINTENANCE ACCESS TRAIL

SCALE: 1"=2'

100 50 0 100

HORIZONTAL ORIGINAL SCALE: 1" = 100'

VERTICAL ORIGINAL SCALE: 1" = 10'

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J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	1"=100'
V-SCALE	1"=10'
DATE	12/20/24
DESIGNED BY	NEO
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

MAINTENANCE ACCESS PLAN & PROFILE

SHEET 83 OF 121

JOB NO. 25188.04

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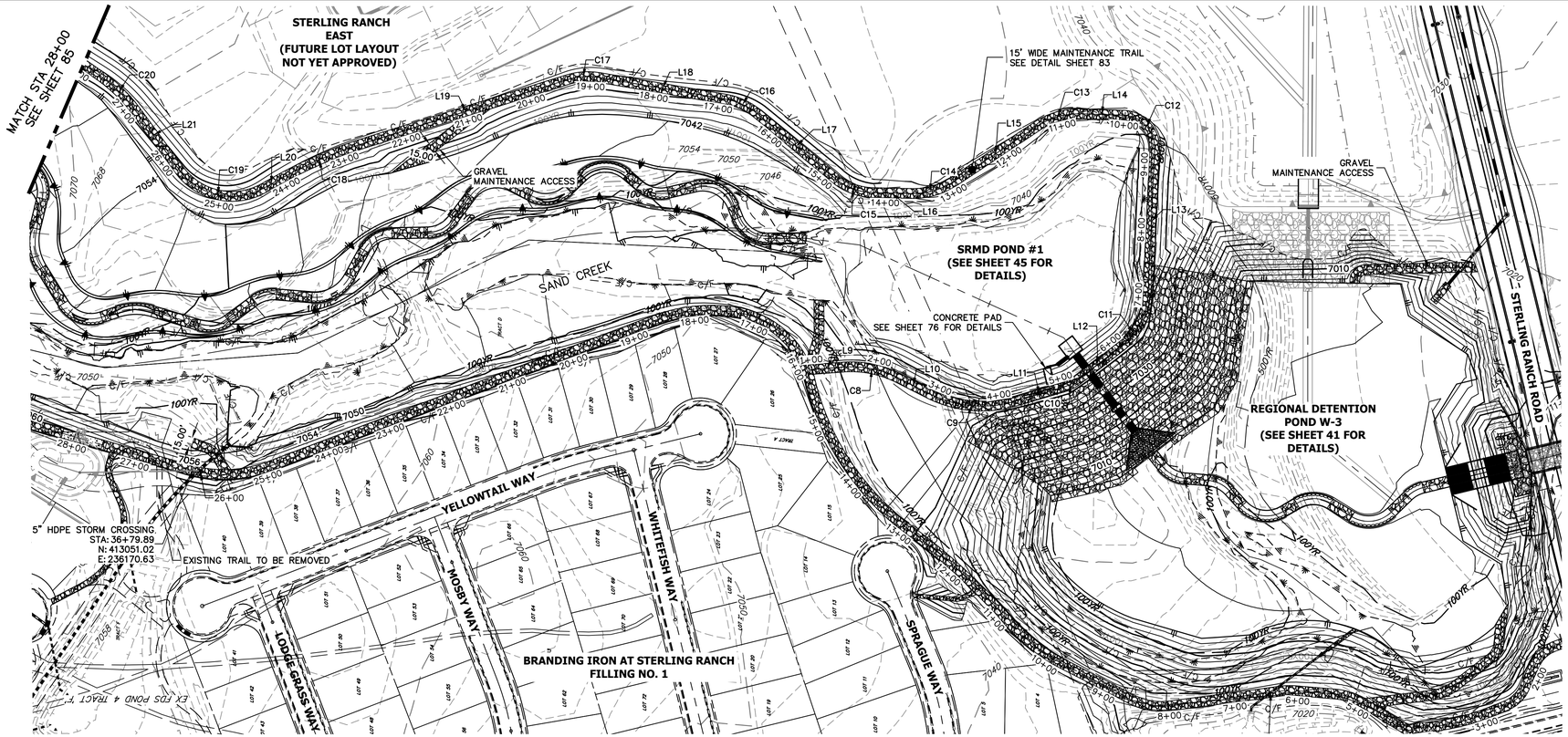
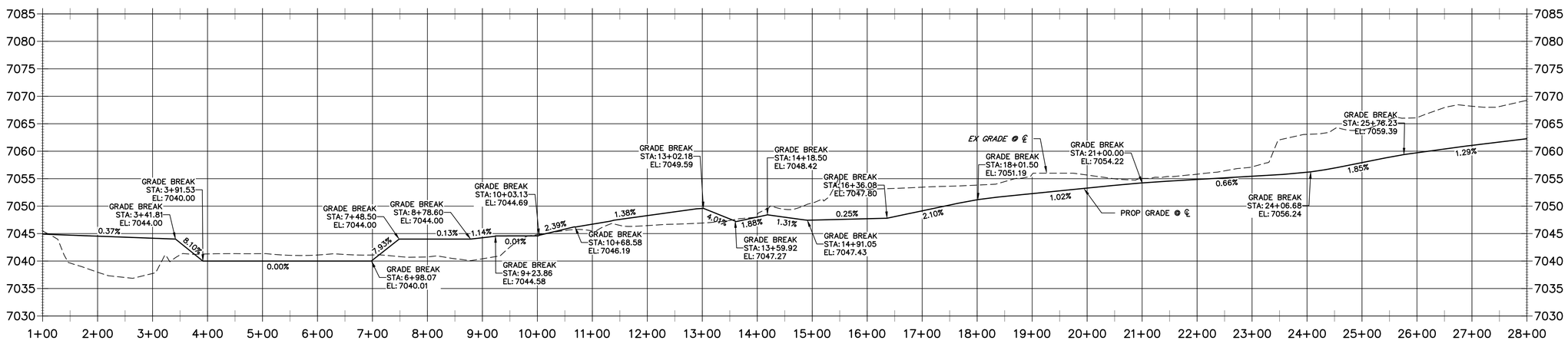


KEY MAP
SCALE: 1"=2000'

LINE TABLE		
LINE	BEARING	DISTANCE
L9	S04°12'48"E	48.53'
L10	S26°54'20"W	51.80'
L11	S16°26'06"E	77.36'
L12	S37°46'47"E	82.58'
L13	S87°22'29"E	221.11'
L14	N01°47'20"E	64.75'
L15	N33°38'47"W	150.85'
L16	N01°15'46"E	58.58'
L17	N39°49'15"E	153.65'
L18	N09°44'33"E	195.76'
L19	N17°20'47"W	327.23'
L20	N29°16'34"W	24.89'
L21	N53°36'38"E	113.38'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C8	30°40'46"	162.24'	86.87'
C9	43°19'59"	180.03'	136.16'
C10	21°20'41"	65.00'	24.21'
C11	49°35'43"	110.00'	95.22'
C12	90°50'11"	50.00'	79.27'
C13	35°26'06"	115.00'	71.12'
C14	34°54'33"	115.00'	70.07'
C15	38°33'29"	95.00'	63.93'
C16	29°14'48"	107.92'	55.09'
C17	27°05'20"	105.00'	49.64'
C18	11°55'47"	686.05'	142.84'
C19	82°52'35"	100.00'	144.65'
C20	18°33'53"	235.00'	76.14'

EAST SIDE: SAND CREEK MAINTENANCE ACCESS TRAIL PROFILE REACH 2
STA 1+00.00 TO 28+00.00



BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

NOTES:

1. STEEPEST ALLOWABLE GRADE IS 12%.
2. MAINTENENCE ACCESS TRAILS WITH SLOPES GREATER THAN 10% ARTICULATED CONCRETE WILL BE USED.

100 50 0 100
HORIZONTAL
ORIGINAL SCALE: 1" = 100'
VERTICAL
ORIGINAL SCALE: 1" = 10'

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24
DATE

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

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
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SAND CREEK RESTORATION

MAINTENANCE ACCESS PLAN & PROFILE

SHEET 84 OF 121

JOB NO. 25188.04

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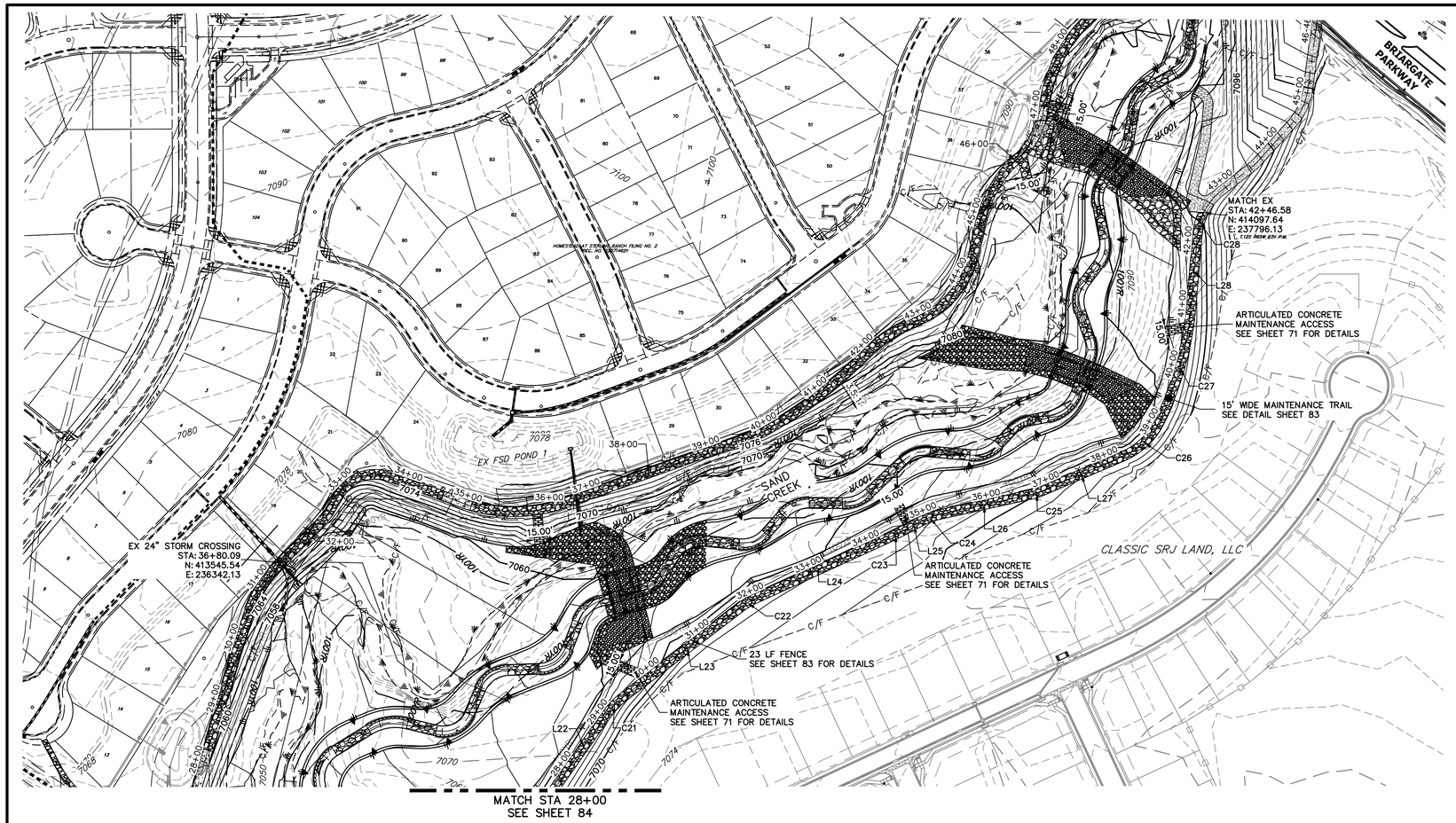
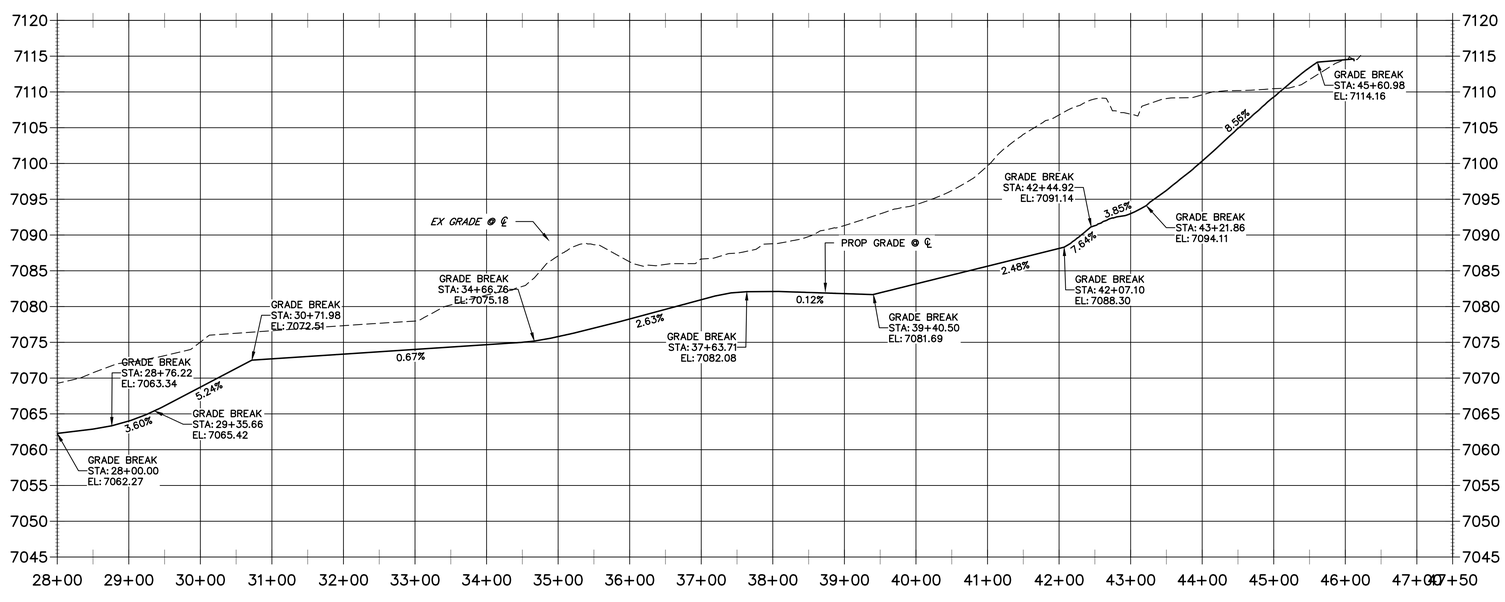


KEY MAP
SCALE: 1"=2000'

LINE TABLE		
LINE	BEARING	DISTANCE
L22	N35°02'46"E	136.97'
L23	N52°34'53"E	233.05'
L24	N65°29'36"E	225.86'
L25	N62°08'58"E	23.44'
L26	N77°34'21"E	153.82'
L27	N66°49'31"E	144.95'
L28	N05°00'27"E	115.78'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C21	17°32'07"	140.00'	42.85'
C22	12°54'44"	90.00'	20.28'
C23	3°20'38"	720.00'	42.02'
C24	15°30'13"	114.41'	30.96'
C25	10°44'50"	40.00'	7.50'
C26	39°36'05"	112.28'	77.61'
C27	21°26'03"	505.01'	188.92'
C28	21°06'26"	99.81'	36.77'

EAST SIDE: SAND CREEK MAINTENANCE ACCESS TRAIL PROFILE REACH 2 (1)
STA 28+00.00 TO 47+50.00



NOTES:

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   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
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   NORTHING = 410095.404
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   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

100 50 0 100
HORIZONTAL
ORIGINAL SCALE: 1" = 100'
VERTICAL
ORIGINAL SCALE: 1" = 10'

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

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COLORADO REGISTERED PROFESSIONAL ENGINEER 25043 12/20/24

DATE

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SAND CREEK RESTORATION

MAINTENANCE ACCESS PLAN & PROFILE

SHEET 85 OF 121

JOB NO. 25188.04

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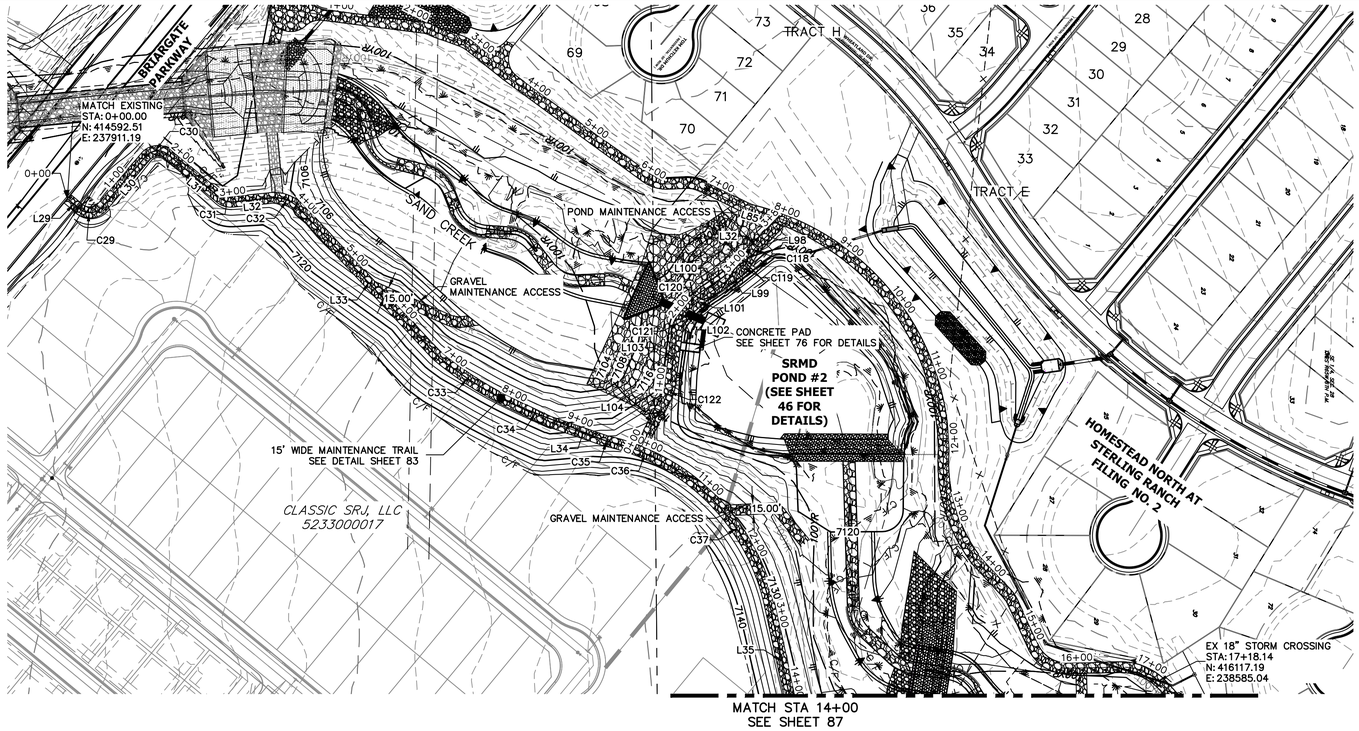
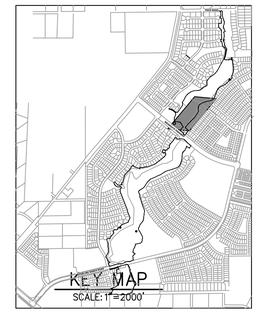


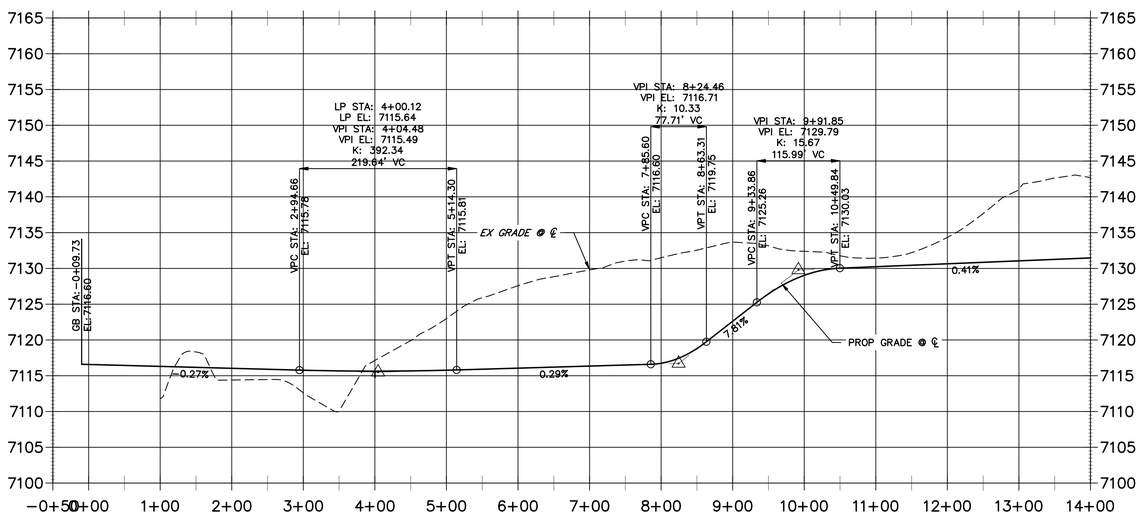


KEY MAP
SCALE: 1"=2000'

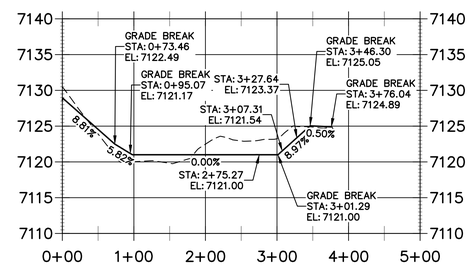
LINE TABLE		
LINE	BEARING	DISTANCE
L29	S39°45'04"W	22.07'
L30	S49°15'42"E	93.20'
L31	S39°50'06"W	94.81'
L32	N59°51'43"W	20.33'
L32	S05°34'19"E	53.17'
L33	N46°58'58"E	276.46'
L34	N21°40'00"E	47.11'
L35	N77°47'23"E	159.50'
L98	N46°08'35"W	46.35'
L99	N38°17'54"W	24.47'
L100	N34°31'49"W	39.44'
L101	N39°58'37"W	16.86'
L102	N50°52'33"W	18.31'
L103	N82°29'28"W	77.57'
L104	N63°11'00"W	73.46'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C32	55°30'37"	50.23'	48.66'
C33	12°30'01"	500.00'	109.08'
C34	2°06'20"	2751.68'	101.12'
C36	18°26'25"	299.93'	96.53'
C37	45°06'36"	300.85'	236.86'
C118	13°43'08"	27.50'	6.58'
C119	21°33'49"	32.50'	12.23'
C120	10°53'57"	31.50'	5.99'
C121	31°39'29"	31.50'	17.40'
C122	17°03'05"	72.50'	21.58'

EAST SIDE: SAND CREEK MAINTENANCE ACCESS TRAIL PROFILE REACH 3
STA -0+50.00 TO 14+00.00



POND MAINTENANCE ACCESS TRAIL PROFILE REACH 3
STA 0+00.00 TO 5+00.00



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NOTES:

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SAND CREEK RESTORATION

MAINTENANCE ACCESS PLAN & PROFILE

SHEET 86 OF 121

JOB NO. 25188.04

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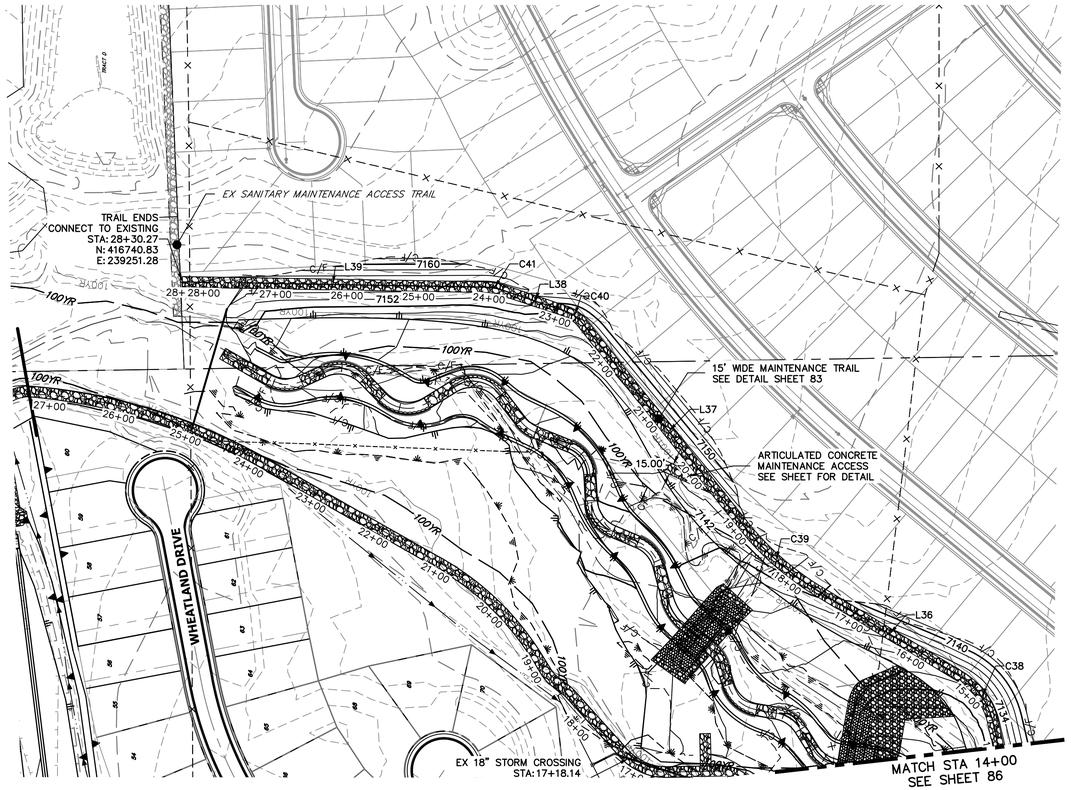
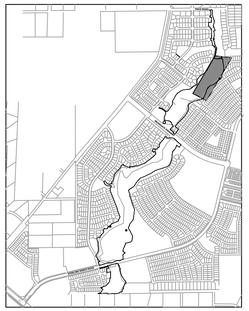


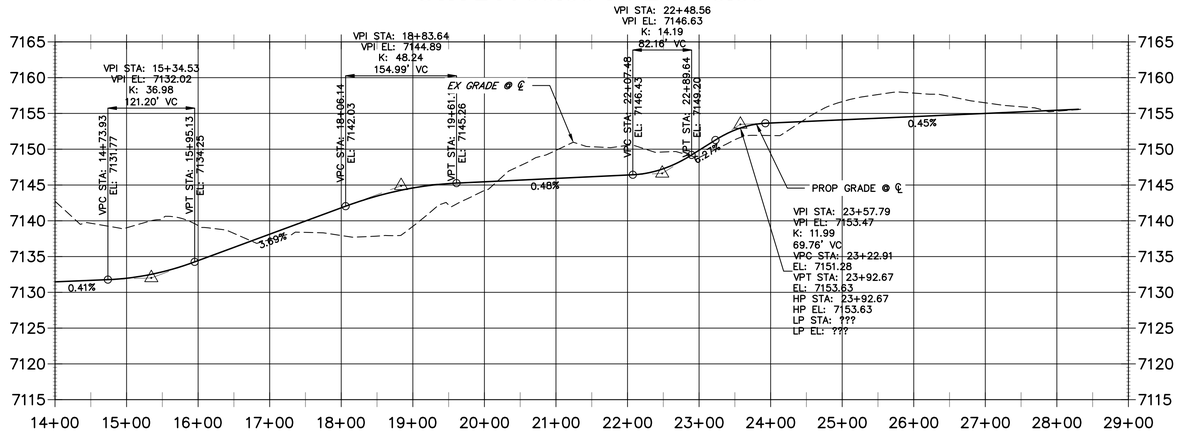


KEY MAP
SCALE: 1"=2000'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C38	46°45'59"	100.00'	81.62'
C39	21°27'49"	400.00'	149.84'
C40	30°11'53"	50.59'	26.66'
C41	17°34'04"	100.00'	30.66'

LINE TABLE		
LINE	BEARING	DISTANCE
L36	N31°01'24"E	229.41'
L37	N51°28'24"E	353.36'
L38	N18°35'32"E	91.99'
L39	N01°01'28"E	420.45'

EAST SIDE: SAND CREEK MAINTENANCE ACCESS TRAIL PROFILE REACH 3 (2)
STA 14+00.00 TO 29+00.00



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COLORADO REGISTERED PROFESSIONAL ENGINEER BRYAN T. LAW #25043 12/20/24

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SHEET 87 OF 121

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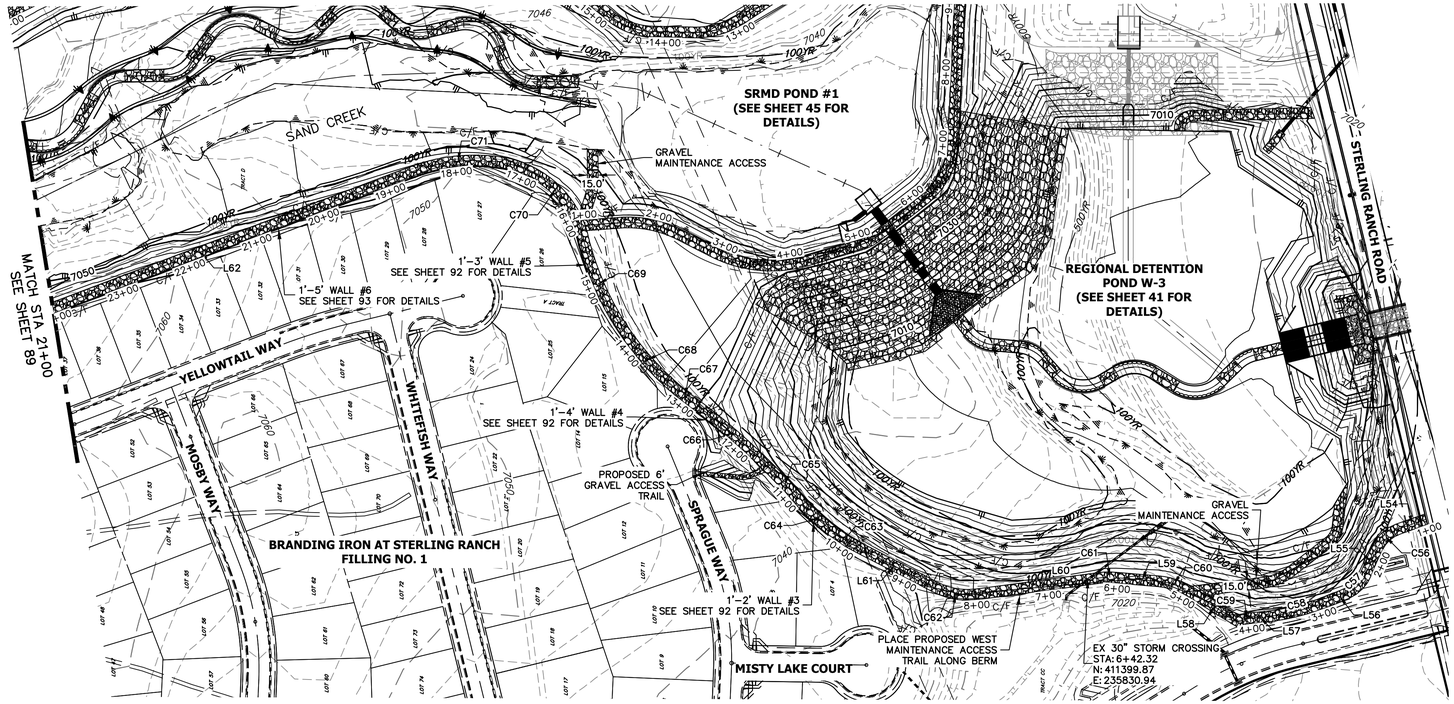
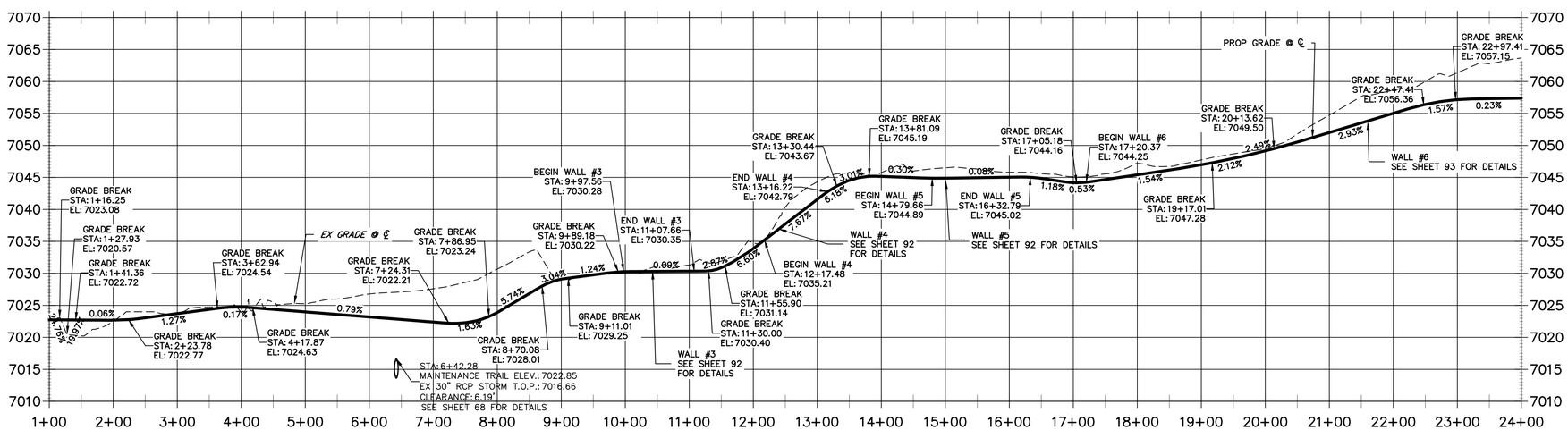


KEY MAP
SCALE: 1"=2000'

LINE TABLE		
LINE	BEARING	DISTANCE
L54	N19°31'17"W	41.36'
L55	N66°04'20"W	41.88'
L56	N22°48'16"W	24.32'
L57	N05°03'38"W	10.52'
L58	N31°31'18"E	79.04'
L59	N04°49'30"E	53.49'
L60	N07°37'16"W	172.14'
L61	N27°19'03"E	130.00'
L62	N20°45'21"W	624.75'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C56	46°33'03"	50.00'	40.62'
C57	36°57'31"	53.95'	34.80'
C58	16°23'12"	345.51'	98.82'
C59	9°02'20"	162.03'	25.56'
C60	26°37'52"	99.89'	46.43'
C61	14°19'27"	117.02'	29.26'
C62	34°56'47"	100.00'	60.99'
C63	10°27'43"	135.22'	24.69'
C64	11°40'32"	355.68'	72.48'
C65	4°26'59"	749.68'	58.22'
C66	8°47'11"	936.18'	143.56'
C67	2°55'23"	561.72'	28.66'
C68	16°32'59"	408.98'	118.13'
C69	19°17'00"	402.92'	135.60'
C70	64°55'43"	139.40'	157.97'
C71	31°49'22"	247.39'	137.41'

WEST SIDE: SAND CREEK REGIONAL TRAIL & MAINTENANCE ACCESS TRAIL PROFILE REACH 2
STA 1+00.00 TO 24+00.00



BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

NOTES:

1. STEEPEST ALLOWABLE GRADE IS 12%.
2. MAINTENENCE ACCESS TRAILS WITH SLOPES GREATER THAN 10% ARTICULATED CONCRETE WILL BE USED.

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

100 50 0 100
HORIZONTAL
ORIGINAL SCALE: 1" = 100'
VERTICAL
ORIGINAL SCALE: 1" = 10'

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE

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20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
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Centennial 303-740-9393 • Colorado Springs 719-593-2593
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No.	REVISION	BY	DATE

H-SCALE	1"=100'
V-SCALE	1"=10'
DATE	12/20/24
DESIGNED BY	NEO
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

MAINTENANCE ACCESS PLAN & PROFILE

SHEET 88 OF 121

JOB NO. 25188.04

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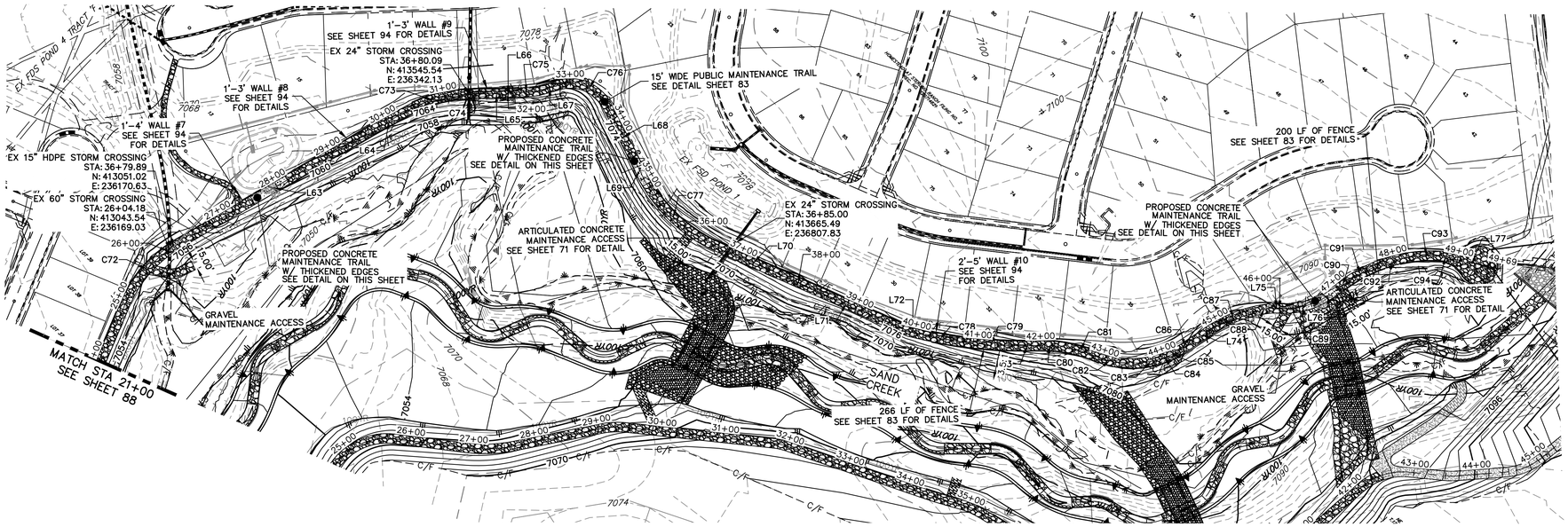
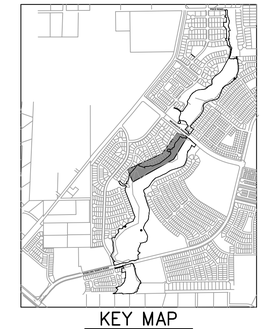


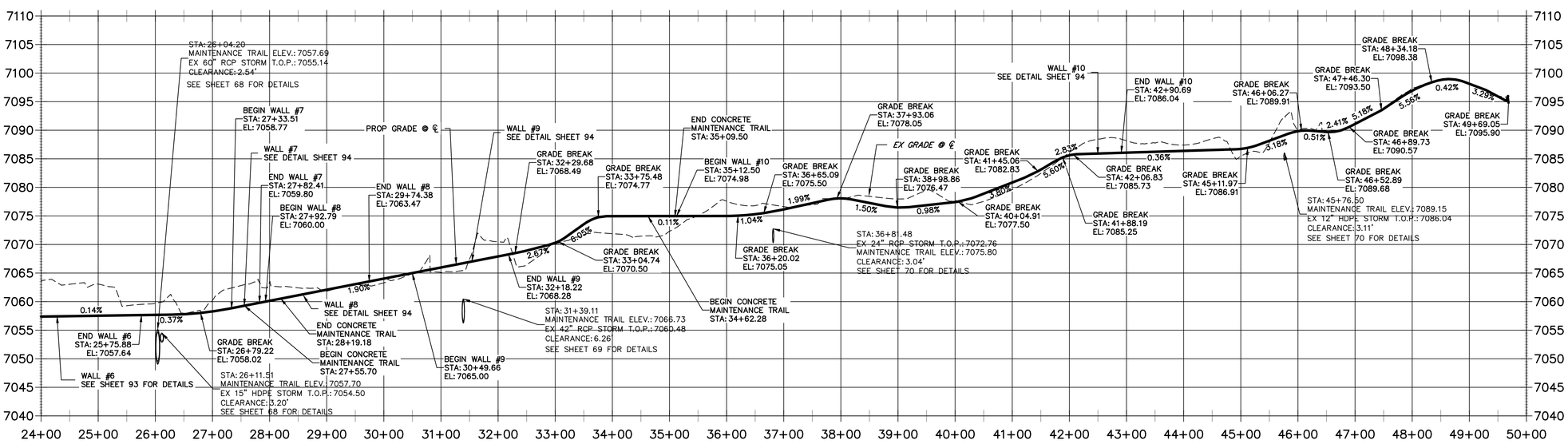


KEY MAP

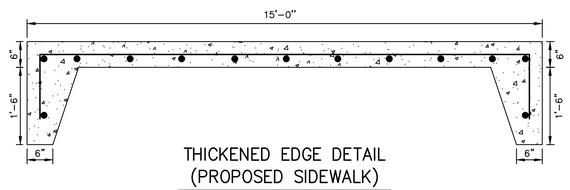
SCALE: 1"=2000'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C72	36°51'45"	201.15'	129.41'
C73	22°43'18"	204.34'	81.04'
C74	6°53'27"	434.92'	52.31'
C75	3°28'49"	608.08'	36.94'
C76	76°47'16"	65.42'	87.67'
C77	38°50'05"	243.92'	165.33'
C78	5°05'18"	788.83'	70.06'
C79	7°18'30"	732.60'	93.45'
C80	13°14'11"	208.18'	48.09'
C81	13°44'23"	212.18'	50.88'
C82	18°26'11"	140.49'	45.21'
C83	10°23'47"	169.13'	30.69'
C84	5°13'57"	168.44'	15.38'
C85	4°04'08"	219.86'	15.61'
C86	2°23'43"	712.74'	29.80'
C87	21°50'51"	216.05'	82.38'
C88	6°09'19"	225.56'	24.23'
C89	34°38'04"	121.21'	73.27'
C90	5°09'31"	245.57'	22.11'
C91	11°34'55"	238.43'	48.20'
C92	14°31'27"	233.08'	59.08'
C93	12°14'40"	242.11'	51.74'
C94	13°22'35"	46.54'	10.86'

WEST SIDE: SAND CREEK REGIONAL TRAIL & MAINTENANCE ACCESS TRAIL PROFILE REACH 2 (2)
STA 24+00.00 TO 50+00.00



LINE TABLE		
LINE	BEARING	DISTANCE
L63	N16°04'48"E	351.11'
L64	N17°23'32"E	68.38'
L65	N45°41'49"E	18.46'
L66	N43°55'18"E	18.51'
L67	N31°02'29"E	40.99'
L68	S70°48'57"E	78.00'
L69	S69°23'43"E	46.22'
L70	N70°22'53"E	111.85'
L71	N70°22'53"E	212.36'
L72	N60°26'50"E	15.61'
L73	N45°38'08"E	19.93'
L74	N12°26'24"E	31.11'
L75	N47°43'42"E	9.79'
L76	N13°52'47"E	21.87'
L77	N58°12'37"E	80.86'



THICKENED EDGE DETAIL
(PROPOSED SIDEWALK)

SCALE: N.T.S.

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
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   NORTHING = 410095.404
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   ELEVATION = 7000.40
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   EASTING = 233849.817
   ELEVATION = 7030.82

NOTES:

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BASIS OF BEARINGS

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100 50 0 100

HORIZONTAL
ORIGINAL SCALE: 1" = 100'
VERTICAL
ORIGINAL SCALE: 1" = 10'

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12/20/24
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CHECKED BY	

SAND CREEK RESTORATION

MAINTENANCE ACCESS PLAN & PROFILE

SHEET 89 OF 121

JOB NO. 25188.04

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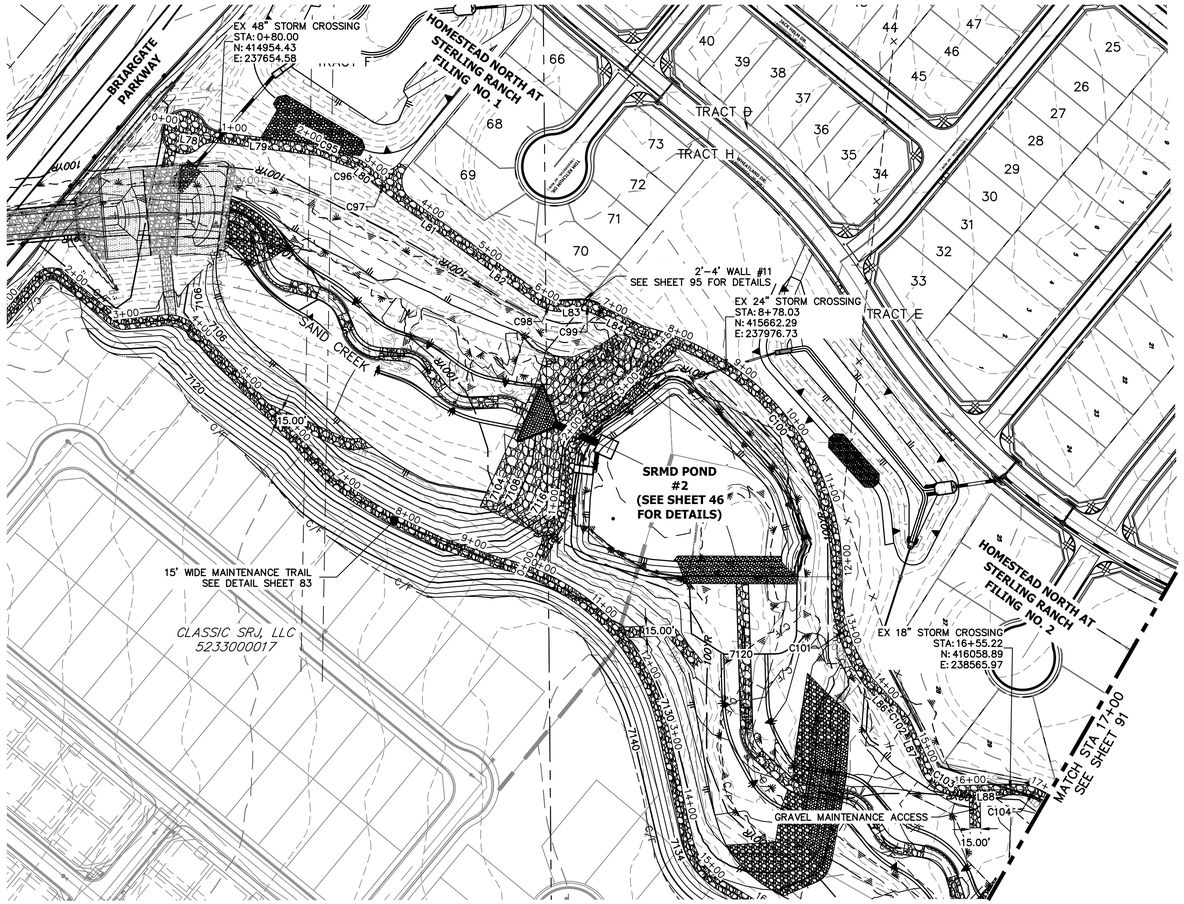
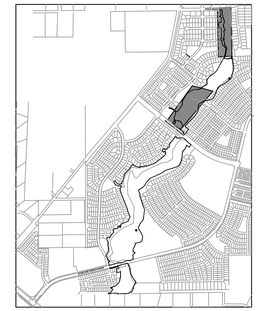


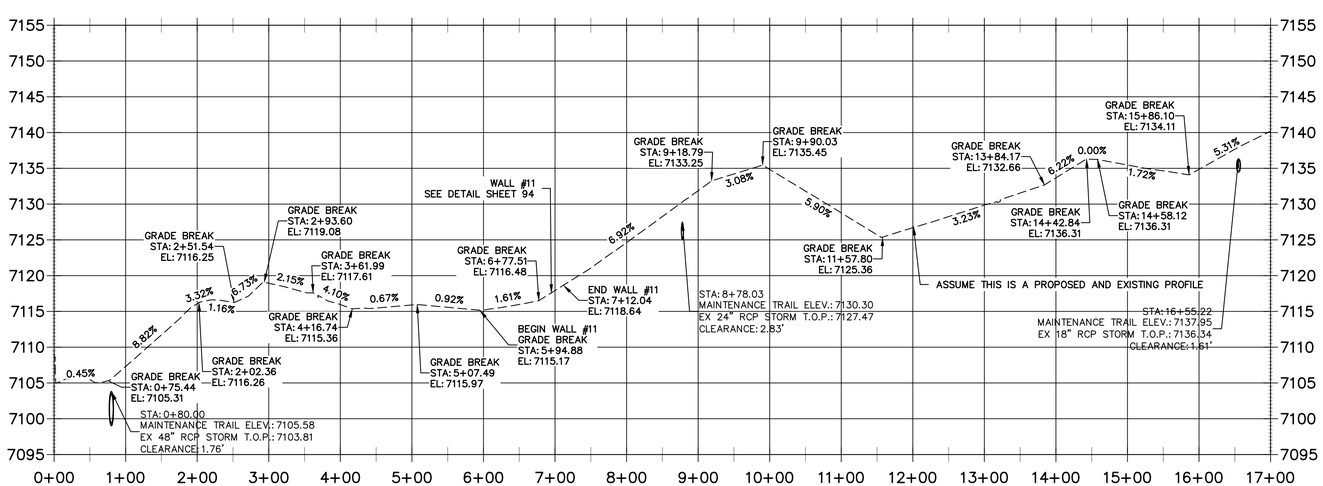


KEY MAP
SCALE: 1"=2000'

LINE TABLE		
LINE	BEARING	DISTANCE
L78	S08°37'43"W	75.44'
L79	S03°01'50"W	118.27'
L80	S38°42'38"W	6.00'
L81	S36°18'51"W	113.03'
L82	S36°05'29"W	128.11'
L83	S02°34'56"E	24.28'
L84	S26°11'26"W	68.42'
L85	S16°42'01"W	4.06'
L86	S47°06'52"W	61.16'
L87	S65°16'17"W	68.61'
L88	S01°15'45"E	69.52'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C95	8°40'59"	514.97'	78.04'
C96	19°10'27"	57.50'	19.24'
C97	0°58'06"	3358.10'	56.75'
C98	38°40'25"	50.00'	33.75'
C99	28°46'22"	50.00'	25.11'
C100	75°34'05"	349.70'	461.22'
C101	41°21'14"	228.66'	165.04'
C102	18°02'51"	48.50'	15.28'
C103	66°32'02"	51.50'	59.80'
C104	45°41'11"	80.36'	64.08'

WEST SIDE: SAND CREEK REGIONAL TRAIL & MAINTENANCE ACCESS TRAIL PROFILE REACH 3
STA 0+00.00 TO 17+00.00



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   ELEVATION = 7023.42
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   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

NOTES:

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100 50 0 100
HORIZONTAL
ORIGINAL SCALE: 1" = 100'
VERTICAL
ORIGINAL SCALE: 1" = 10'

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DATE	12/20/24
DESIGNED BY	NEO
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

MAINTENANCE ACCESS PLAN & PROFILE

SHEET 90 OF 121

JOB NO. 25188.04

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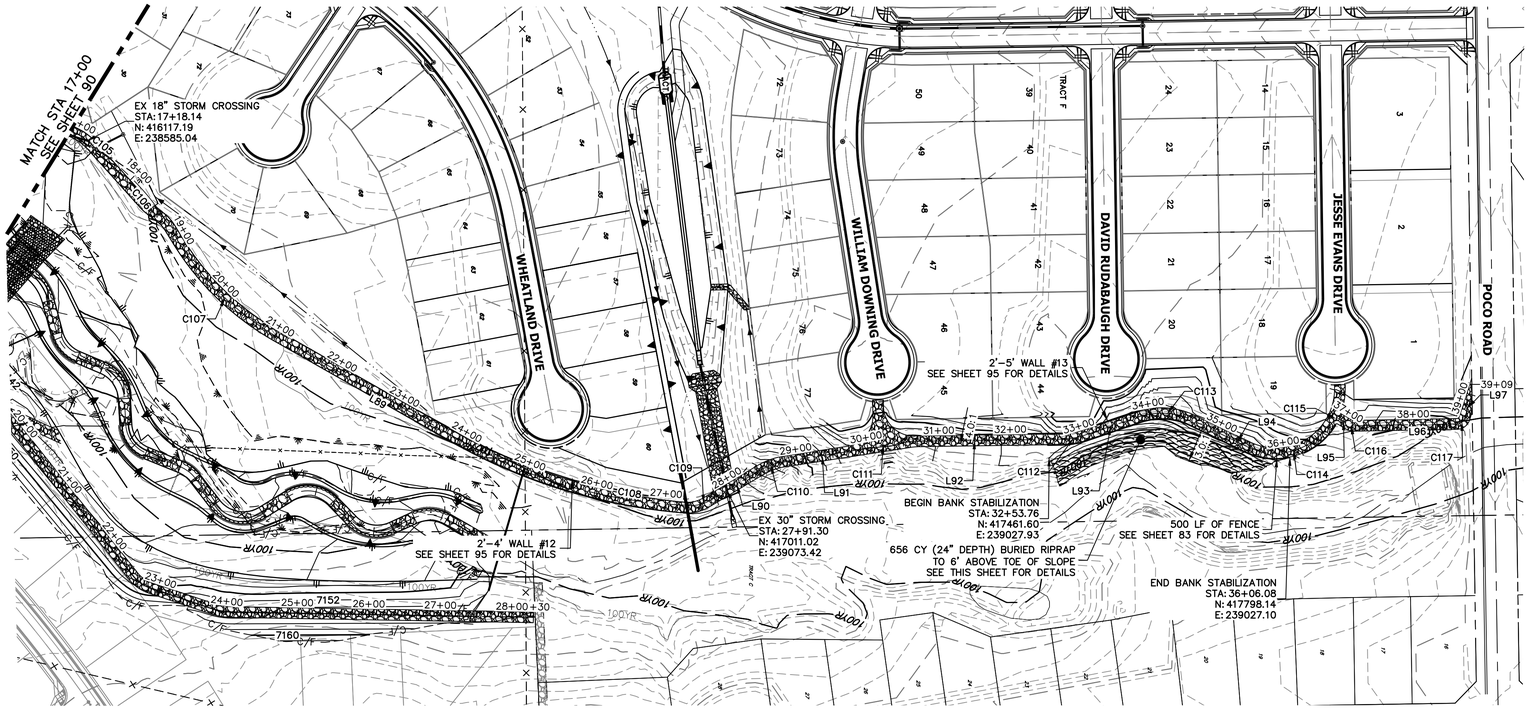
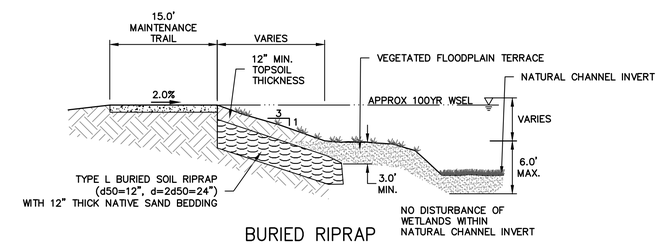


CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C105	7°06'54"	302.74'	37.59'
C106	23°51'40"	357.55'	148.90'
C107	29°59'00"	404.13'	211.49'
C108	25°58'25"	697.22'	316.06'
C109	36°32'28"	50.00'	31.89'
C110	22°05'57"	100.00'	38.57'
C111	6°18'13"	853.96'	93.95'
C112	17°51'03"	100.00'	31.16'
C113	44°32'40"	100.00'	77.74'
C114	85°25'36"	89.24'	133.05'

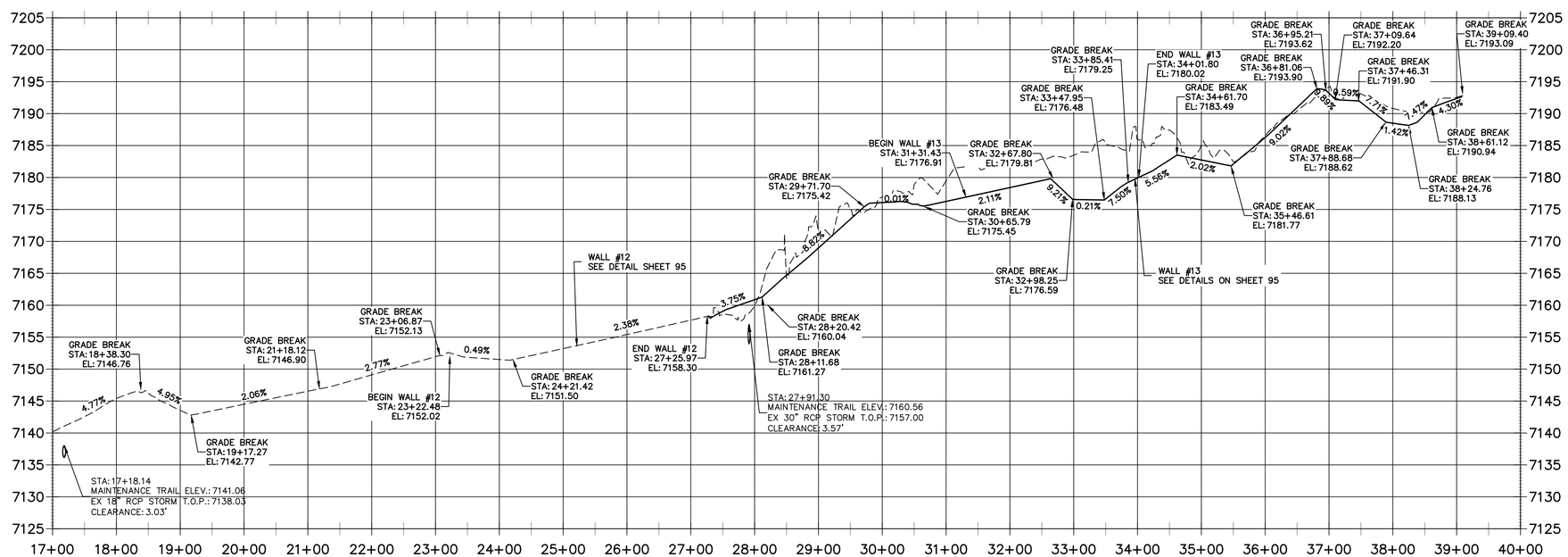
LINE TABLE		
LINE	BEARING	DISTANCE
L89	S29°27'35"W	303.30'
L90	S30°52'26"E	75.20'
L91	S08°46'30"E	88.45'
L92	S00°51'29"E	206.73'
L93	S18°42'32"E	80.54'
L94	S25°50'08"W	84.89'
L95	S31°04'35"W	14.57'

KEY MAP
SCALE: 1"=2000'



BURIED RIPRAP
BANK STABILIZATION
SCALE: N.T.S.

WEST SIDE: SAND CREEK REGIONAL TRAIL & MAINTENANCE ACCESS TRAIL PROFILE REACH 3 (2)
STA 17+00.00 TO 40+00.00



100 50 0 100
HORIZONTAL
ORIGINAL SCALE: 1" = 100'
VERTICAL
ORIGINAL SCALE: 1" = 10'

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DATE	12/20/24
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DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

MAINTENANCE ACCESS PLAN & PROFILE

SHEET 91 OF 121

JOB NO. 25188.04

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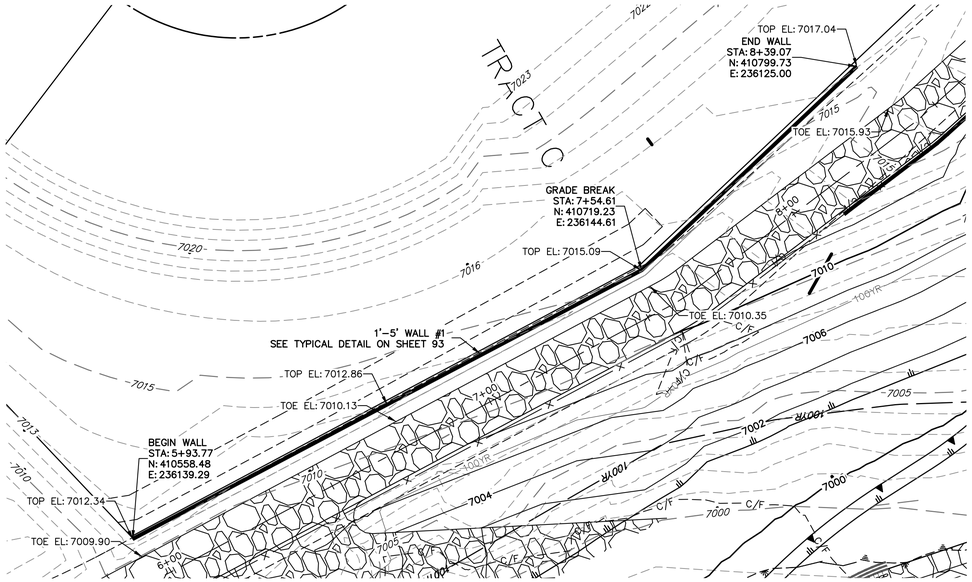
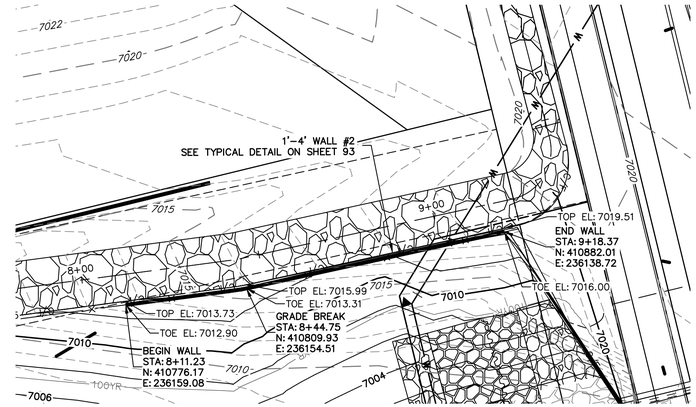
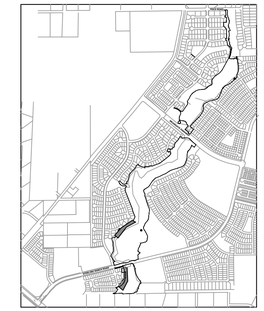


MAINTENANCE TRAIL WALL #1

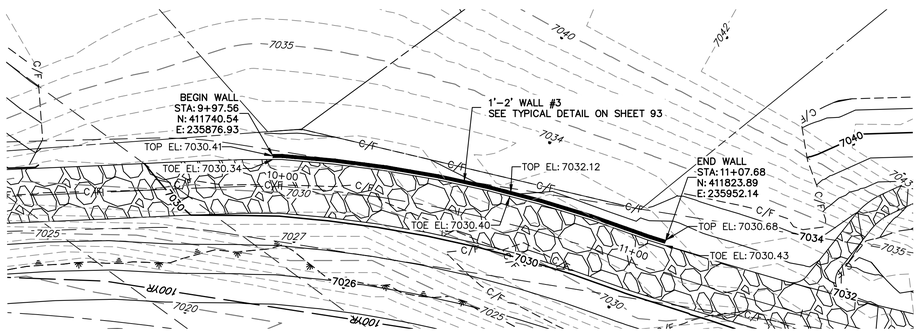


MAINTENANCE TRAIL WALL #2

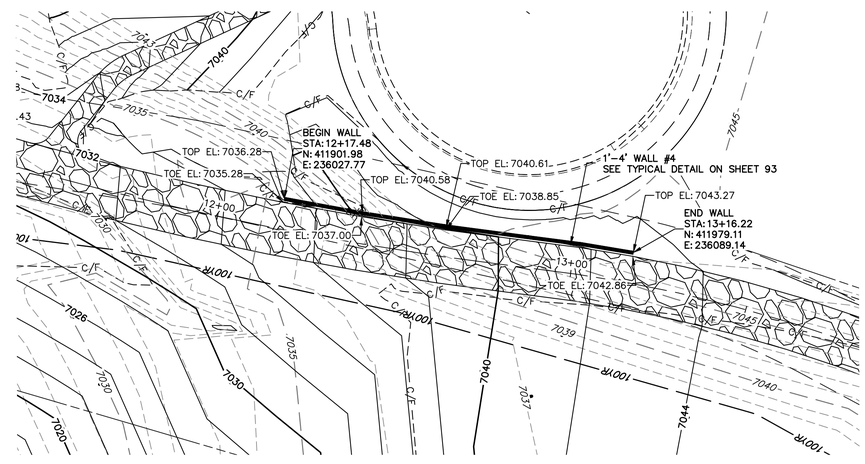


KEY MAP

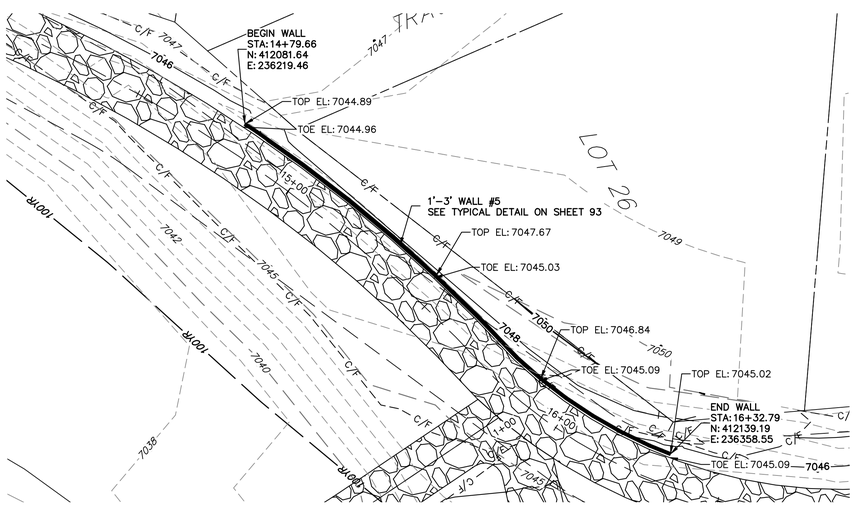
SCALE: 1"=2000'



MAINTENANCE TRAIL WALL #3



MAINTENANCE TRAIL WALL #4



MAINTENANCE TRAIL WALL #5

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   EASTING = 235167.071
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2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

20 10 0 20

ORIGINAL SCALE: 1" = 20'

Know what's **below.**
Call before you dig.

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E. DATE
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

COLORADO REGISTERED BRYAN T. LAW 25043 PROFESSIONAL ENGINEER 12/20/24

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

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	1"=20'
V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	NEO
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

MAINTENANCE ACCESS PLAN & PROFILE

SHEET 92 OF 121

JOB NO. 25188.04

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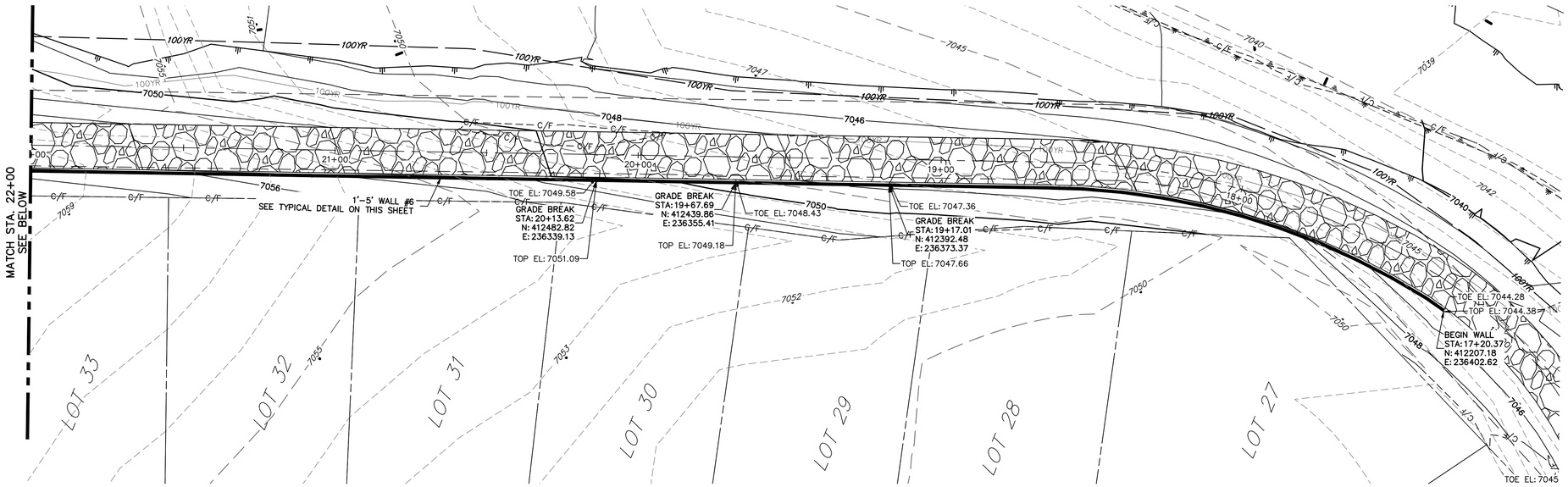
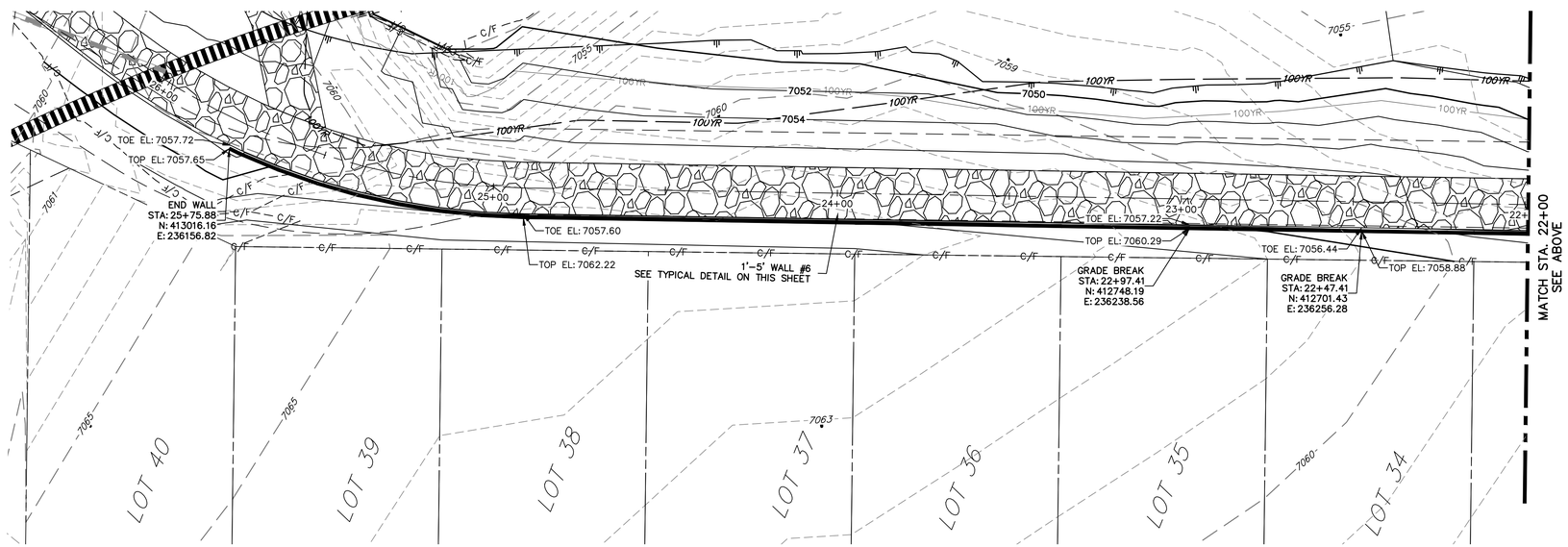
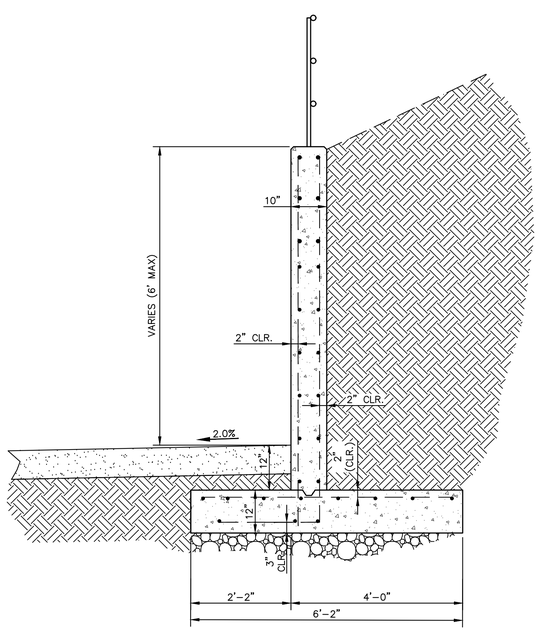


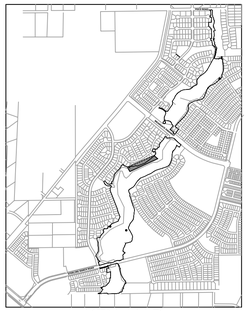
MAINTENANCE TRAIL WALL #6





TYPICAL WALL DETAIL

SCALE: NTS



KEY MAP

SCALE: 1"=2000'

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

NOTES:

1. STEEPEST ALLOWABLE GRADE IS 12%.
2. MAINTENENCE ACCESS TRAILS WITH SLOPES GREATER THAN 10% ARTICULATED CONCRETE WILL BE USED.

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

20 10 0 20

ORIGINAL SCALE: 1" = 20'

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ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

12/20/24 DATE

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PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
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No.	REVISION	BY	DATE

H-SCALE	1"=20'
V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	NEO
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

MAINTENANCE ACCESS PLAN & PROFILE

SHEET 93 OF 121

JOB NO. 25188.04

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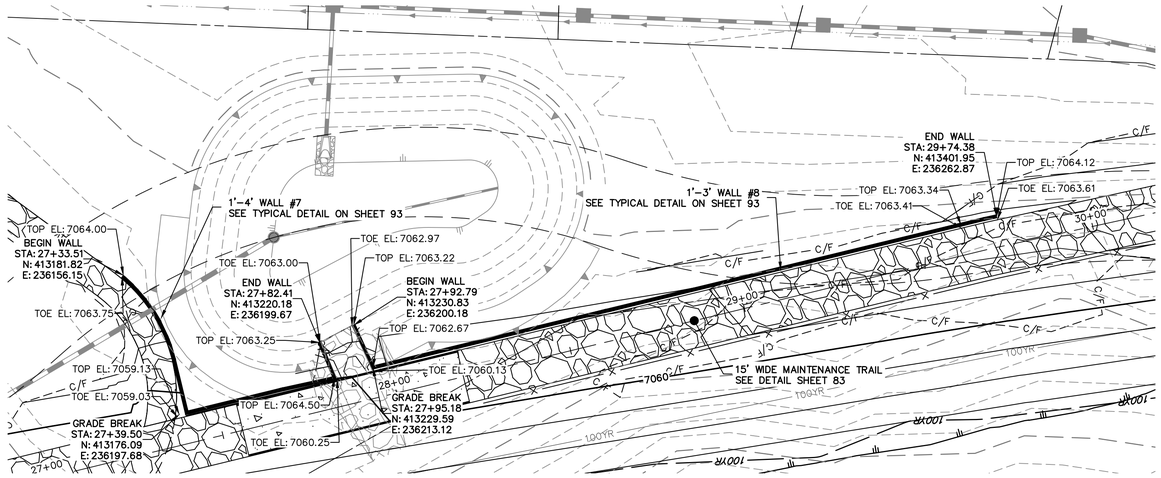
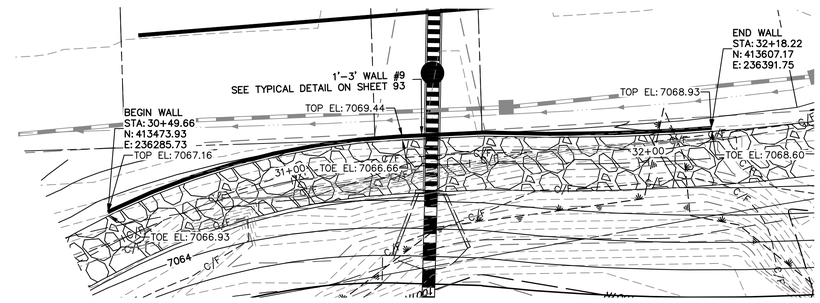


MAINTENANCE TRAIL WALLS #7 AND #8



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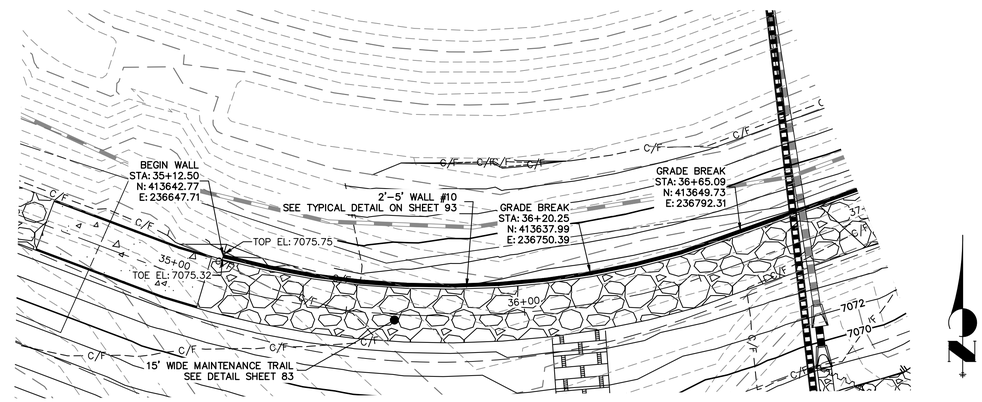
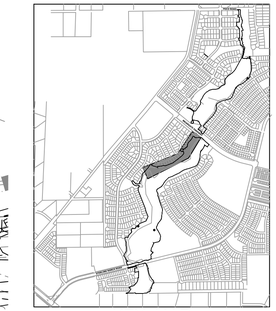
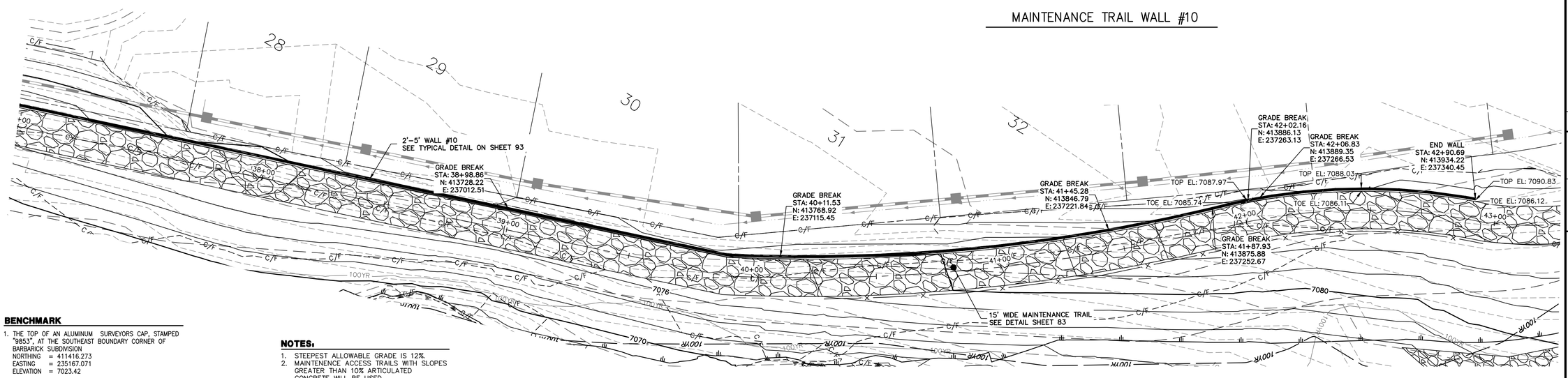


MAINTENANCE TRAIL WALL #10



KEY MAP
SCALE: 1"=2000'



MAINTENANCE TRAIL WALL #10

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
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   EASTING = 233849.817
   ELEVATION = 7030.82

NOTES:

1. STEEPEST ALLOWABLE GRADE IS 12%
2. MAINTENENCE ACCESS TRAILS WITH SLOPES GREATER THAN 10% ARTICULATED CONCRETE WILL BE USED.

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

20 10 0 20
ORIGINAL SCALE: 1" = 20'

811 Know what's **below.** **Call** before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE

COLORADO REGISTERED PROFESSIONAL ENGINEER BRYAN T. LAW 25043 12/20/24

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2ND FLOOR
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CHECKED BY	

SAND CREEK RESTORATION

MAINTENANCE ACCESS PLAN & PROFILE

SHEET 94 OF 121

JOB NO. 25188.04

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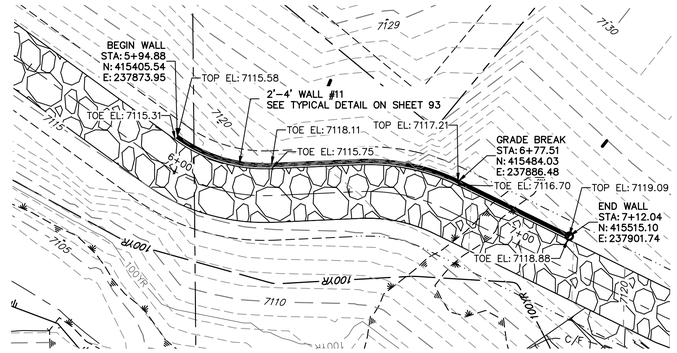
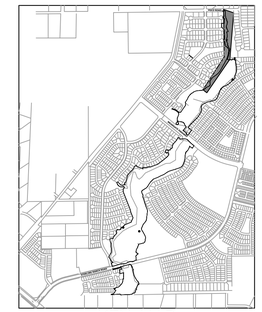
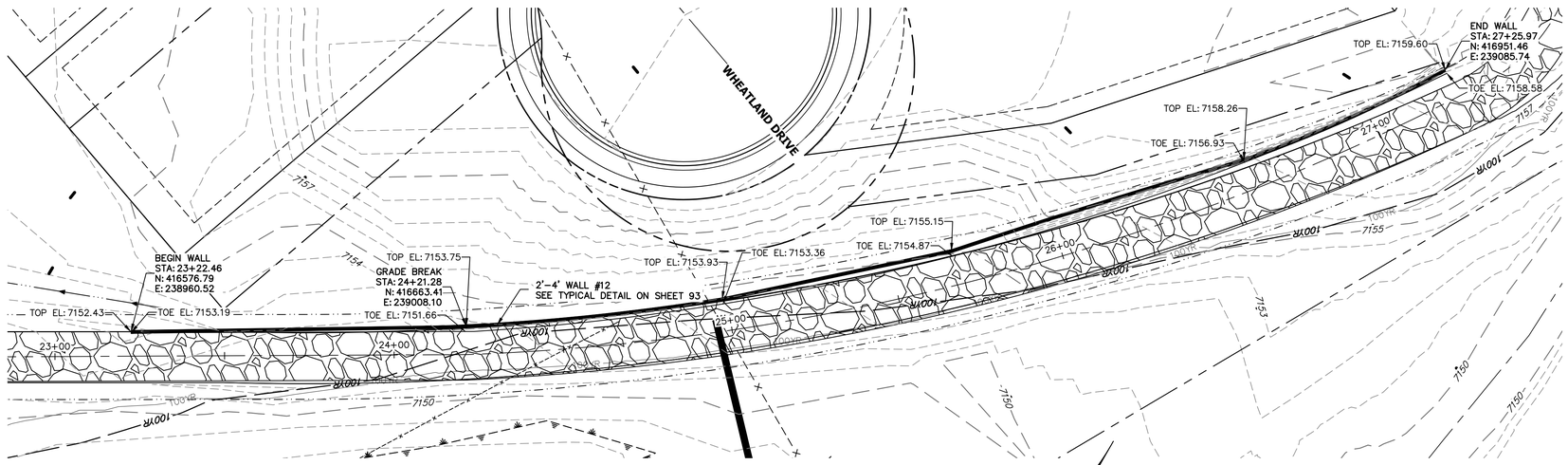


MAINTENANCE TRAIL WALL #11

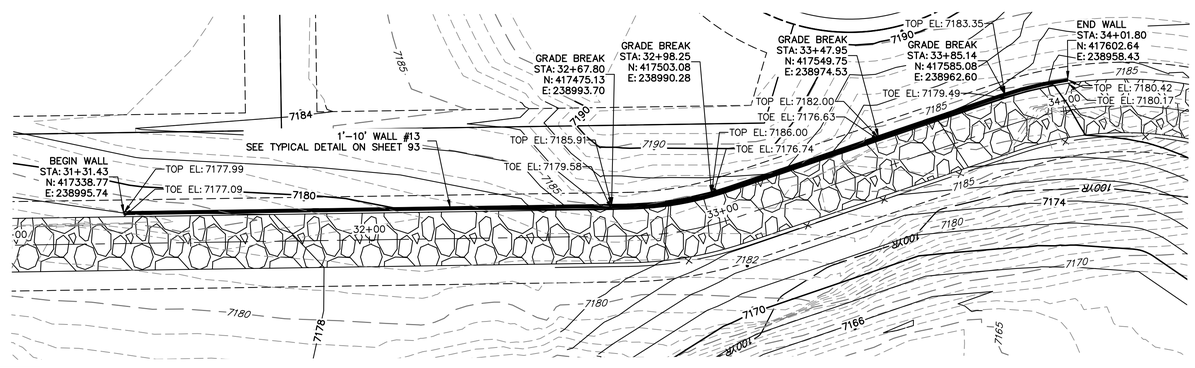


KEY MAP

SCALE: 1"=2000'



MAINTENANCE TRAIL WALL #12



MAINTENANCE TRAIL WALL #13

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

NOTES:

1. STEEPEST ALLOWABLE GRADE IS 12%.
2. MAINTENENCE ACCESS TRAILS WITH SLOPES GREATER THAN 10% ARTICULATED CONCRETE WILL BE USED.

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

20 10 0 20

ORIGINAL SCALE: 1" = 20'

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE

COLORADO REGISTERED PROFESSIONAL ENGINEER BRYAN T. LAW #25043 12/20/24

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PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
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No.	REVISION	BY	DATE

H-SCALE	1"=20'
V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	NEO
DRAWN BY	NEO
CHECKED BY	

SAND CREEK RESTORATION

MAINTENANCE ACCESS PLAN & PROFILE

SHEET 95 OF 121

JOB NO. 25188.04

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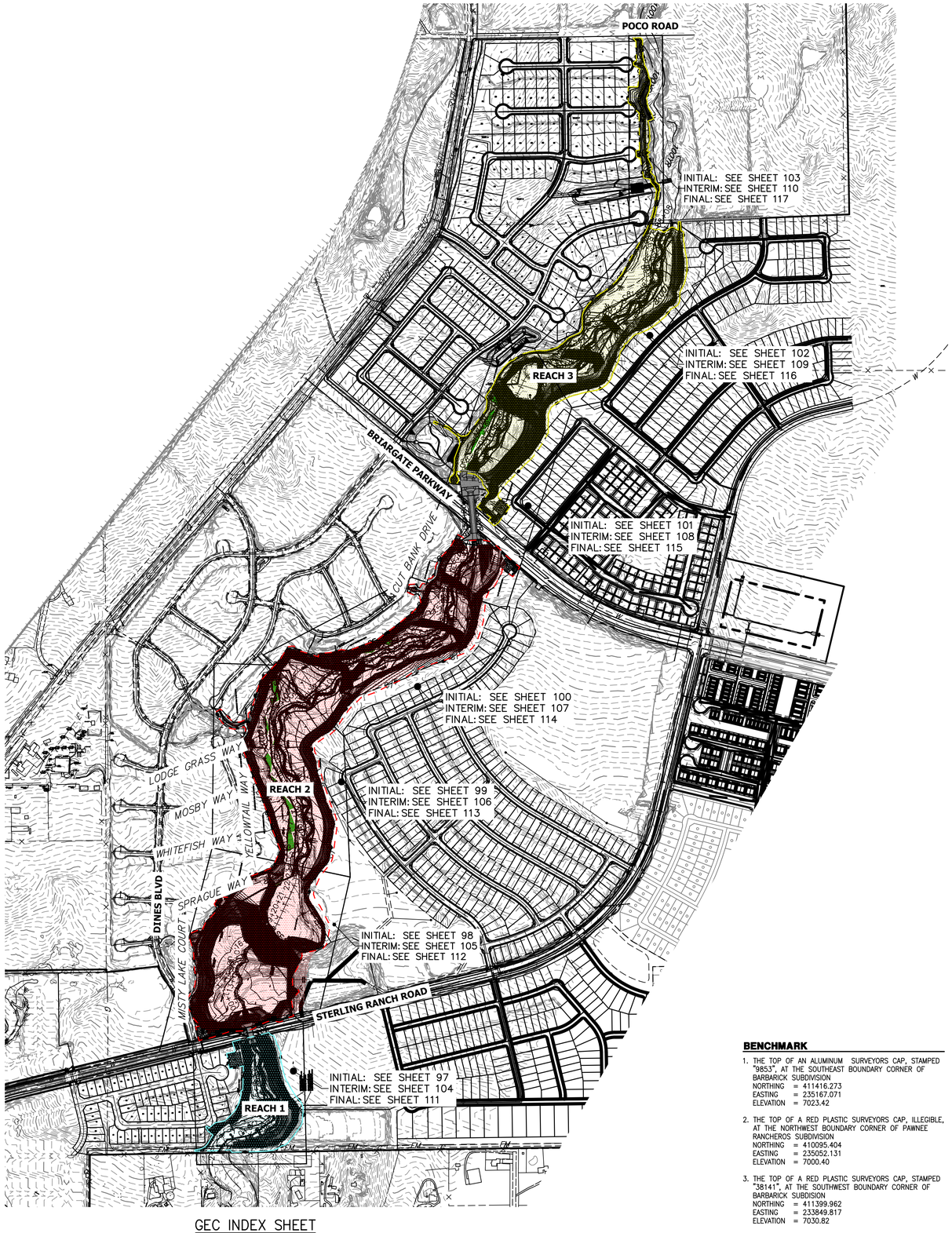
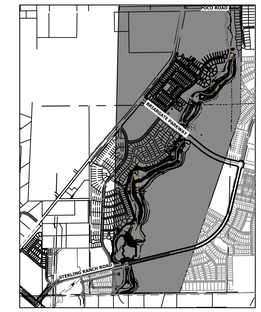


GEC INDEX SHEET
SCALE: 1" = 400'



KEY MAP
SCALE: 1"=2000'

LEGEND

- REACH 1 (PHASE 1)
- REACH 2 (PHASE 2)
- REACH 3 (PHASE 3)

NOTES

SEE SHEET 2 FOR VEGETATIVE RESTORATION NOTES.

N

400 200 0 400
ORIGINAL SCALE: 1" = 400'

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "98533", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
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OWNER/DEVELOPER STATEMENT

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

JAMES F. MORLEY — DATE 12/20/24

SR LAND, LLC
20 BOULDER CRESCENT, SUITE 201
COLORADO SPRINGS, CO 80903

ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.

COLORADO REGISTERED PROFESSIONAL ENGINEER 25043 — 12/20/24

BRYAN T. LAW, P.E. — DATE
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	WJL
CHECKED BY	

SAND CREEK RESTORATION

GEC PLANS

SHEET 96 OF 121

JOB NO. 25188.04

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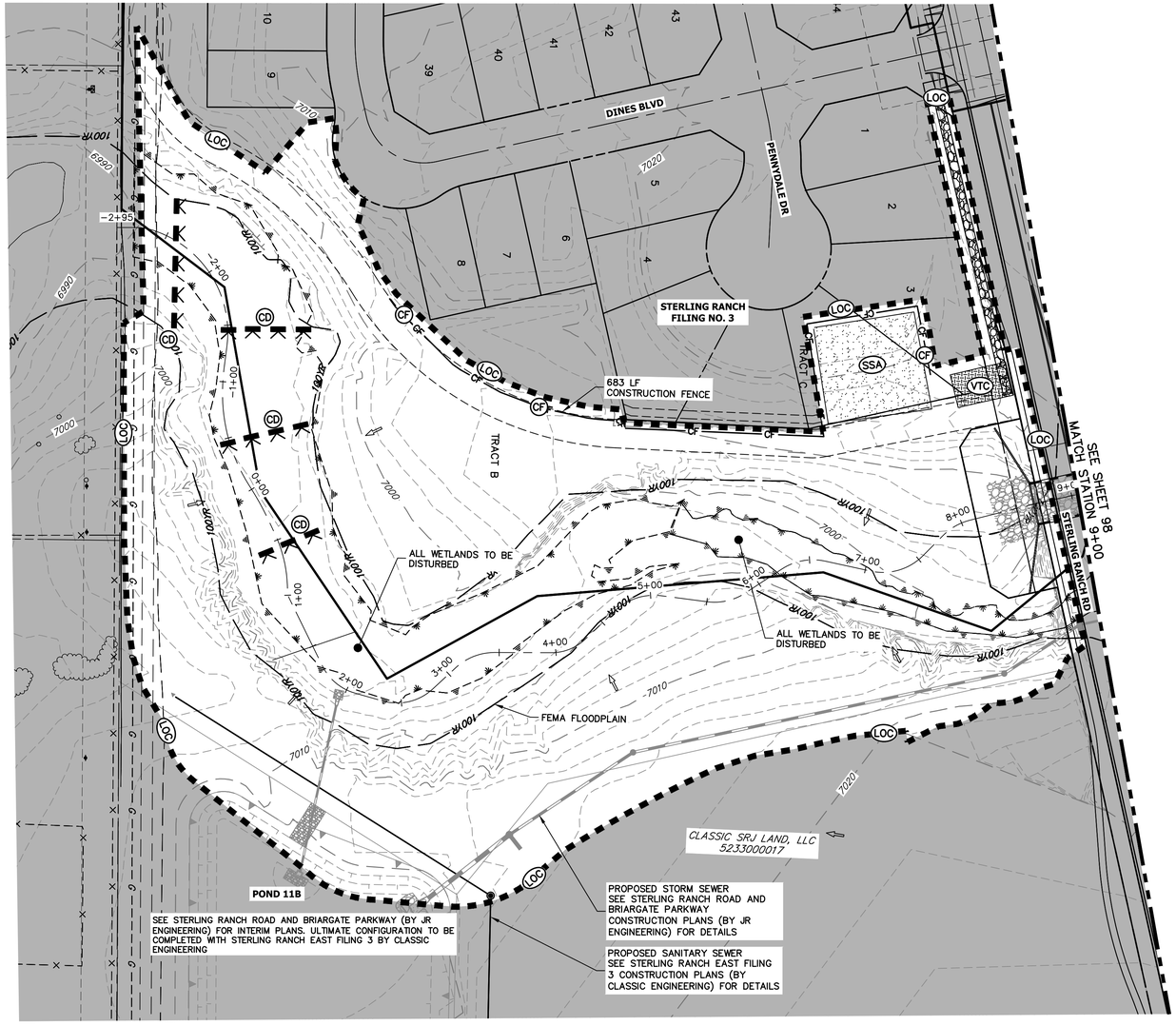

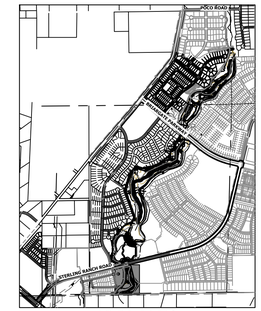

KEY MAP
SCALE: 1"=2000'

LEGEND

EXISTING CONTOUR
EXISTING PROPERTY LINE
EXISTING RIGHT OF WAY LINE
EXISTING EASEMENT
SECTION LINE
EXISTING STORM SEWER
EXISTING CURB & GUTTER
PROPOSED RIGHT OF WAY LINE
PROPOSED EASEMENT
PROPOSED STORM SEWER
PROPOSED CURB & GUTTER
PROPOSED TOP OF SLOPE
PROPOSED TOE OF SLOPE
EXISTING DRAINAGE ARROW
PROPOSED DRAINAGE ARROW

PROPOSED CONTOUR
LIMITS OF CONSTRUCTION (LOC)
DRAINAGE SWALE (DS)
CONSTRUCTION FENCE (CF)
SILT FENCE (SF)
VEHICLE TRACKING CONTROL (VTC)
STABILIZED STAGING AREA (SSA)
CONCRETE WASHOUT AREA (CWA)
STOCK PILE (SP)
TEMP DRAINAGE CHANNEL

REINFORCED ROCK BERM FOR CULVERT PROTECTION (RRB)
SEDIMENT CONTROL LOG (SCL)
PERMANENT SEEDING AND MULCHING – NATIVE REVEGETATION SEED MIX (SM)
WETLANDS TO REMAIN
PERMANENT LANDSCAPING (LS)
GEOTEXTILE (ECB)
COIR MATTING (ECB)
ARTICULATED CONCRETE

DEWATERING (DW)
TEMPORARY SEDIMENTATION BASIN (SB)
CHECK DAM (CD)
SURFACE ROUGHENING (SR)

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2–1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2–1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

TOTAL INITIAL PHASE SUMMARY OF APPROXIMATE QUANTITIES

3294	LF	–	SILT FENCE (SF)
18900	LF	–	CONSTRUCTION FENCE (CF)
4	EA	–	CHECK DAMS (CD)
4	LS	–	STABILIZED STAGING AREA (SSA)
4	LS	–	VEHICLE TRACKING CONTROL (VTC)

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
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   EASTING = 235052.131
   ELEVATION = 7000.40
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   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

811 Know what's below. Call before you dig.

60 30 0 60
ORIGINAL SCALE: 1" = 60'

ENGINEER'S STATEMENT

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COLORADO REGISTERED BRYAN T. LAW 25043 PROFESSIONAL ENGINEER 12/20/24

BRYAN T. LAW, P.E. DATE
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419–3024

J·R ENGINEERING
A Westrian Company
Centennial 303–740–9393 • Colorado Springs 719–593–2593
Fort Collins 970–491–9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H–SCALE	1"=60'
V–SCALE	N/A
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	WJL
CHECKED BY	

SAND CREEK RESTORATION

GEC INITIAL

SHEET 97 OF 121

JOB NO. 25188.04

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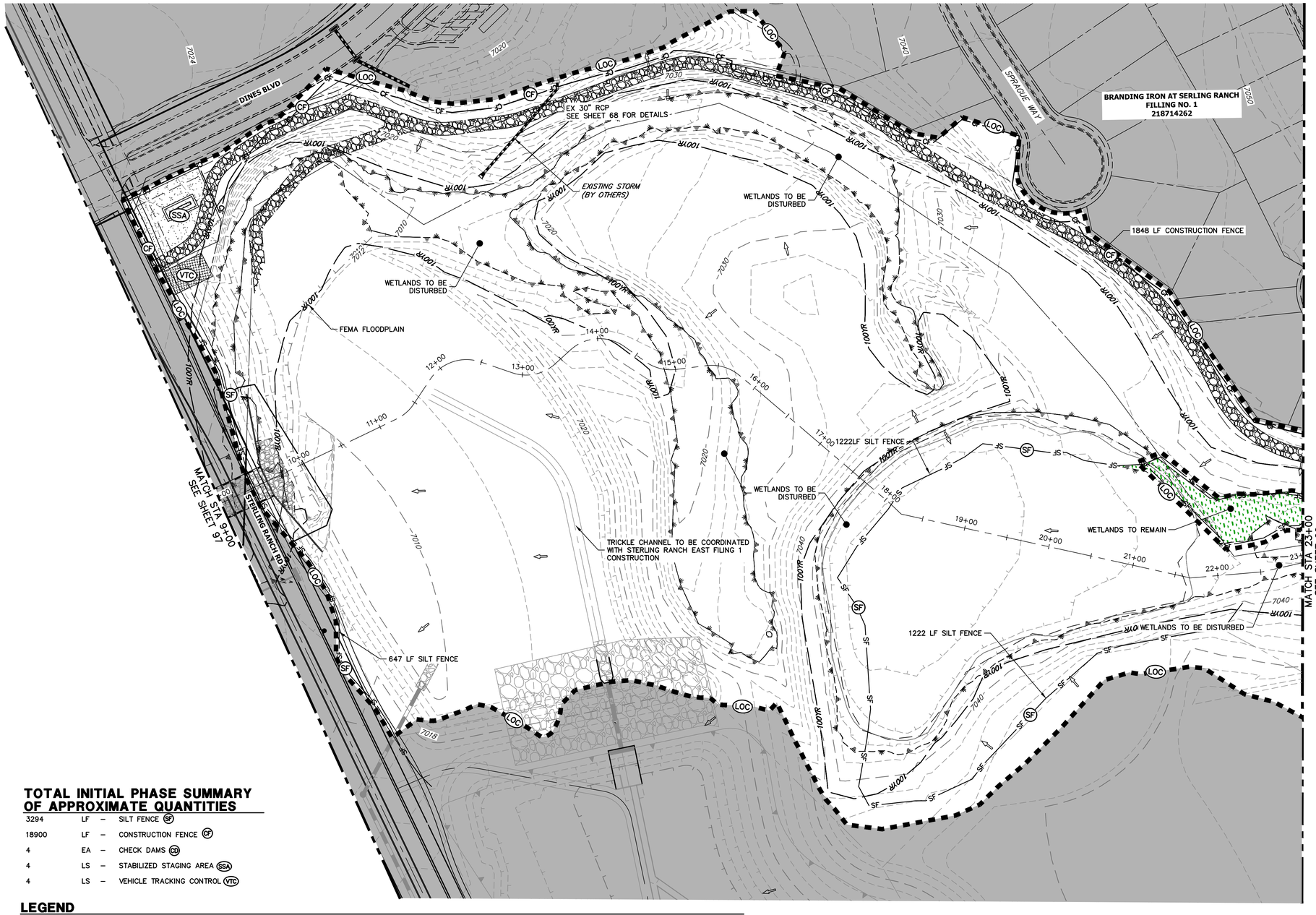

TOTAL INITIAL PHASE SUMMARY OF APPROXIMATE QUANTITIES

3294	LF	–	SILT FENCE (SF)
18900	LF	–	CONSTRUCTION FENCE (CF)
4	EA	–	CHECK DAMS (CD)
4	LS	–	STABILIZED STAGING AREA (SSA)
4	LS	–	VEHICLE TRACKING CONTROL (VTC)

LEGEND

EXISTING CONTOUR	PROPOSED CONTOUR	REINFORCED ROCK BERM FOR CULVERT PROTECTION (RRB)	DEWATERING (DW)
EXISTING PROPERTY LINE	LIMITS OF CONSTRUCTION (LOC)	SEDIMENT CONTROL LOG (SCL)	TEMPORARY SEDIMENTATION BASIN (SB)
EXISTING RIGHT OF WAY LINE	DRAINAGE SWALE (DS)	PERMANENT SEEDING AND MULCHING – NATIVE REVEGETATION SEED MIX (SM)	CHECK DAM (CD)
EXISTING EASEMENT	CONSTRUCTION FENCE (CF)	WETLANDS TO REMAIN	SURFACE ROUGHENING (SR)
SECTION LINE	SILT FENCE (SF)	PERMANENT LANDSCAPING (LS)	
EXISTING STORM SEWER	VEHICLE TRACKING CONTROL (VTC)	GEOTEXTILE (ECB)	
EXISTING CURB & GUTTER	STABILIZED STAGING AREA (SSA)	COIR MATTING (ECB)	
PROPOSED RIGHT OF WAY LINE	CONCRETE WASHOUT AREA (CWA)	ARTICULATED CONCRETE	
PROPOSED EASEMENT	STOCK PILE (SP)		
PROPOSED STORM SEWER	TEMP DRAINAGE CHANNEL		
PROPOSED CURB & GUTTER			
PROPOSED TOP OF SLOPE			
PROPOSED TOE OF SLOPE			
EXISTING DRAINAGE ARROW			
PROPOSED DRAINAGE ARROW			

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COLORADO REGISTERED PROFESSIONAL ENGINEER 25043

12/20/24
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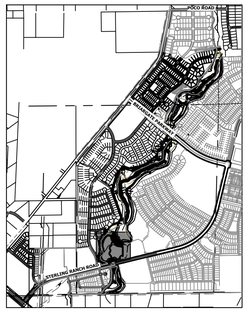
BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC



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SAND CREEK RESTORATION

GEC INITIAL

SHEET 98 OF 121

JOB NO. 25188.04

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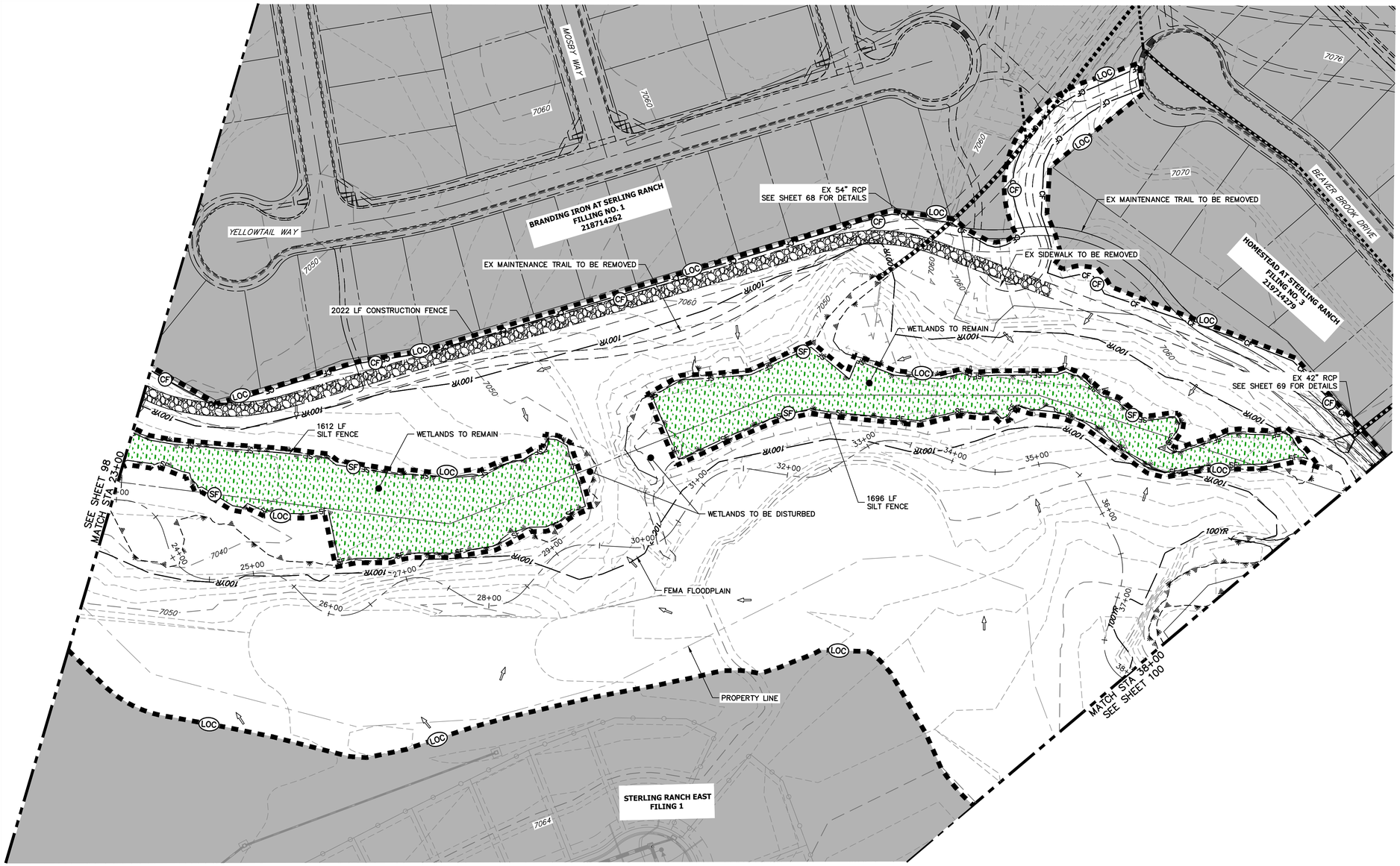

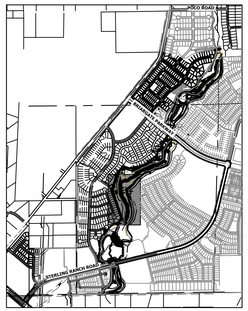

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SHEET 99 OF 121

JOB NO. 25188.04

LEGEND

EXISTING CONTOUR
EXISTING PROPERTY LINE
EXISTING RIGHT OF WAY LINE
EXISTING EASEMENT
SECTION LINE
EXISTING STORM SEWER
EXISTING CURB & GUTTER
PROPOSED RIGHT OF WAY LINE
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DRAINAGE SWALE (DS)
CONSTRUCTION FENCE (CF)
SILT FENCE (SF)
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12/20/24

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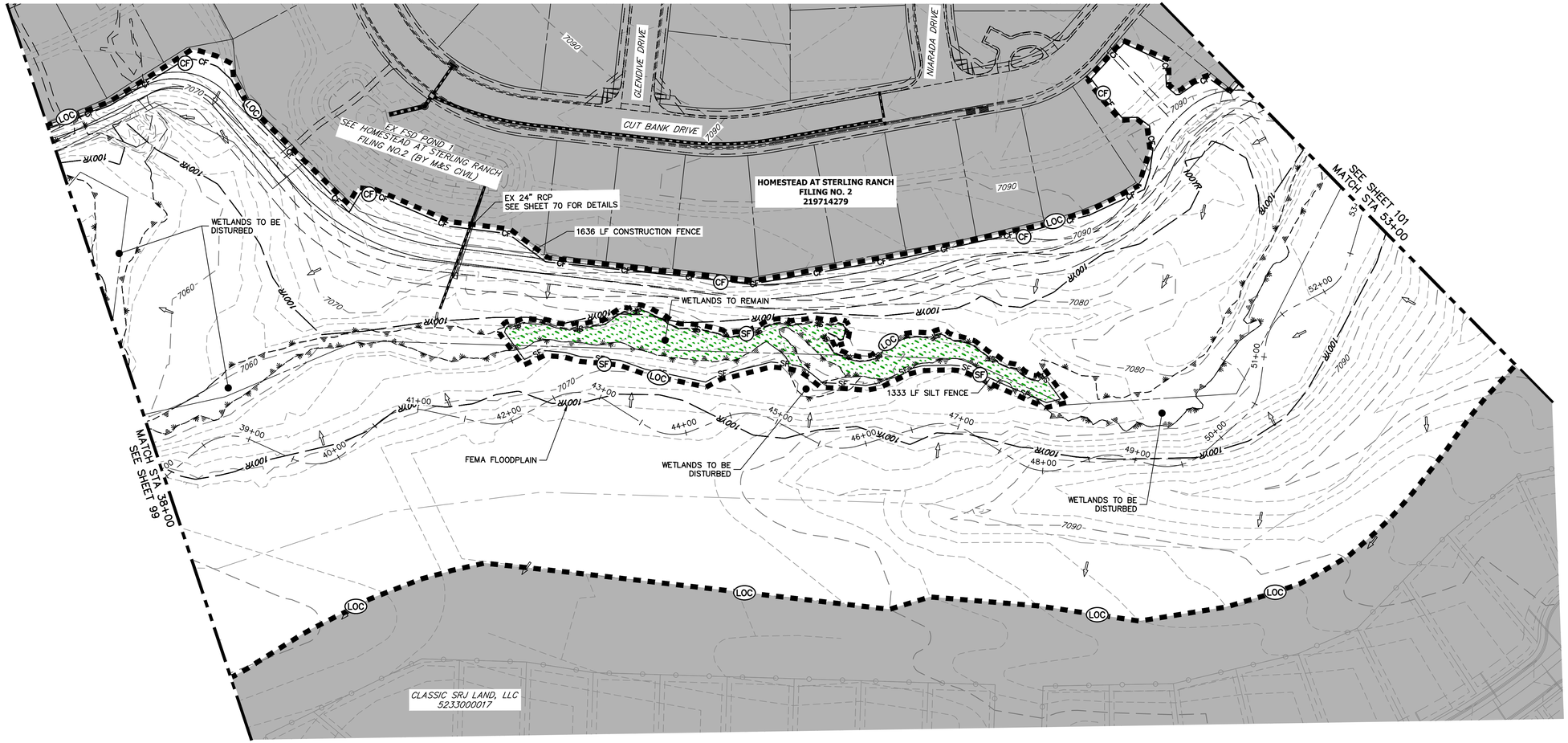

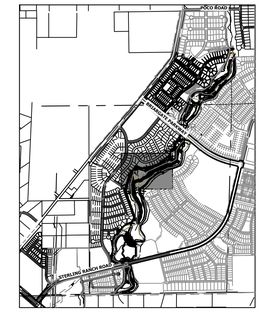

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LEGEND

EXISTING CONTOUR
EXISTING PROPERTY LINE
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SECTION LINE
EXISTING STORM SEWER
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COLORADO REGISTERED PROFESSIONAL ENGINEER BRYAN T. LAW 25043 12/20/24

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SAND CREEK RESTORATION

GEC INITIAL

SHEET 100 OF 121

JOB NO. 25188.04

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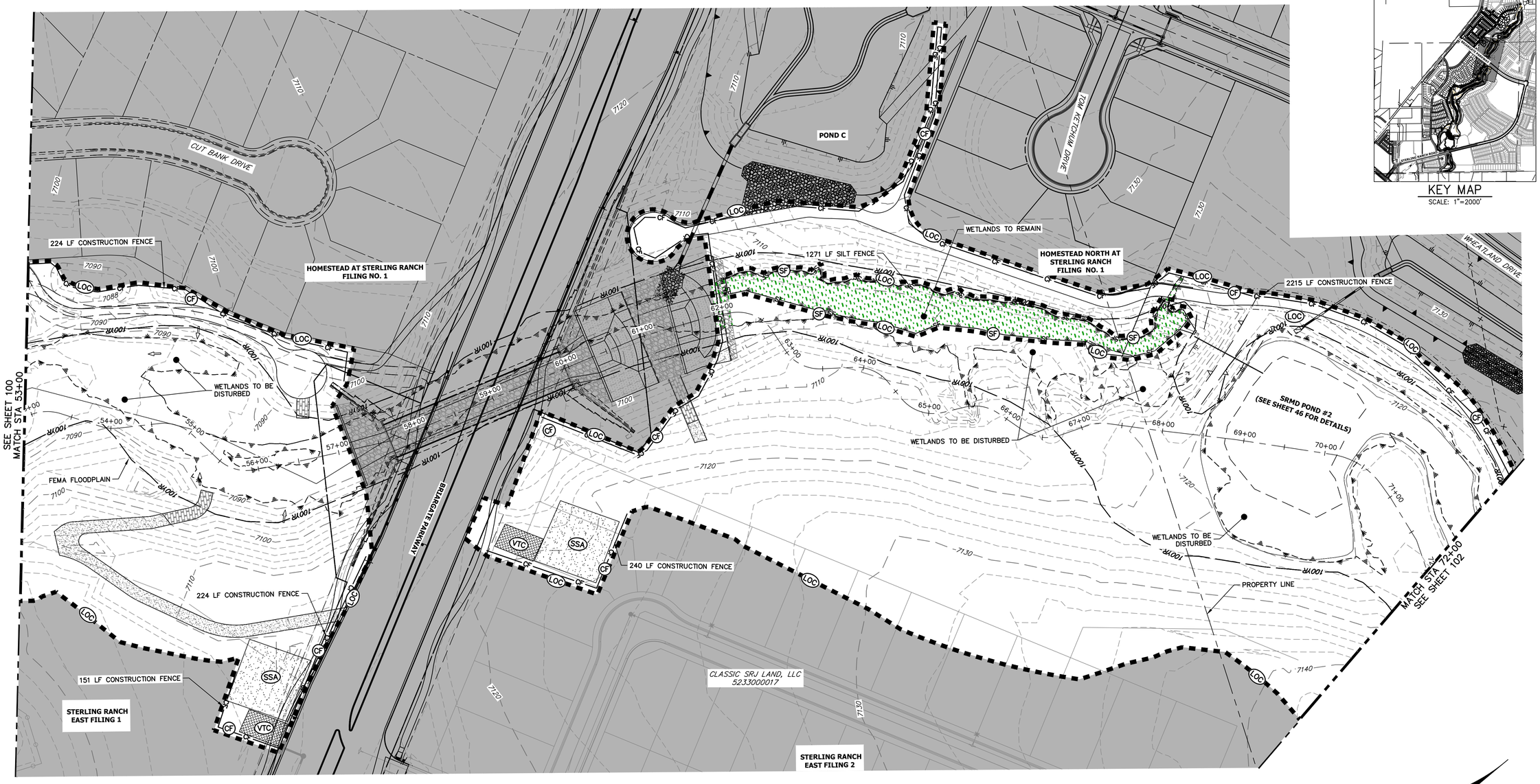

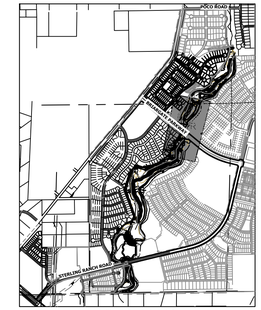

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PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	1"=60'
V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	WJL
CHECKED BY	

SAND CREEK RESTORATION

GEC INITIAL

SHEET 101 OF 121

JOB NO. 25188.04

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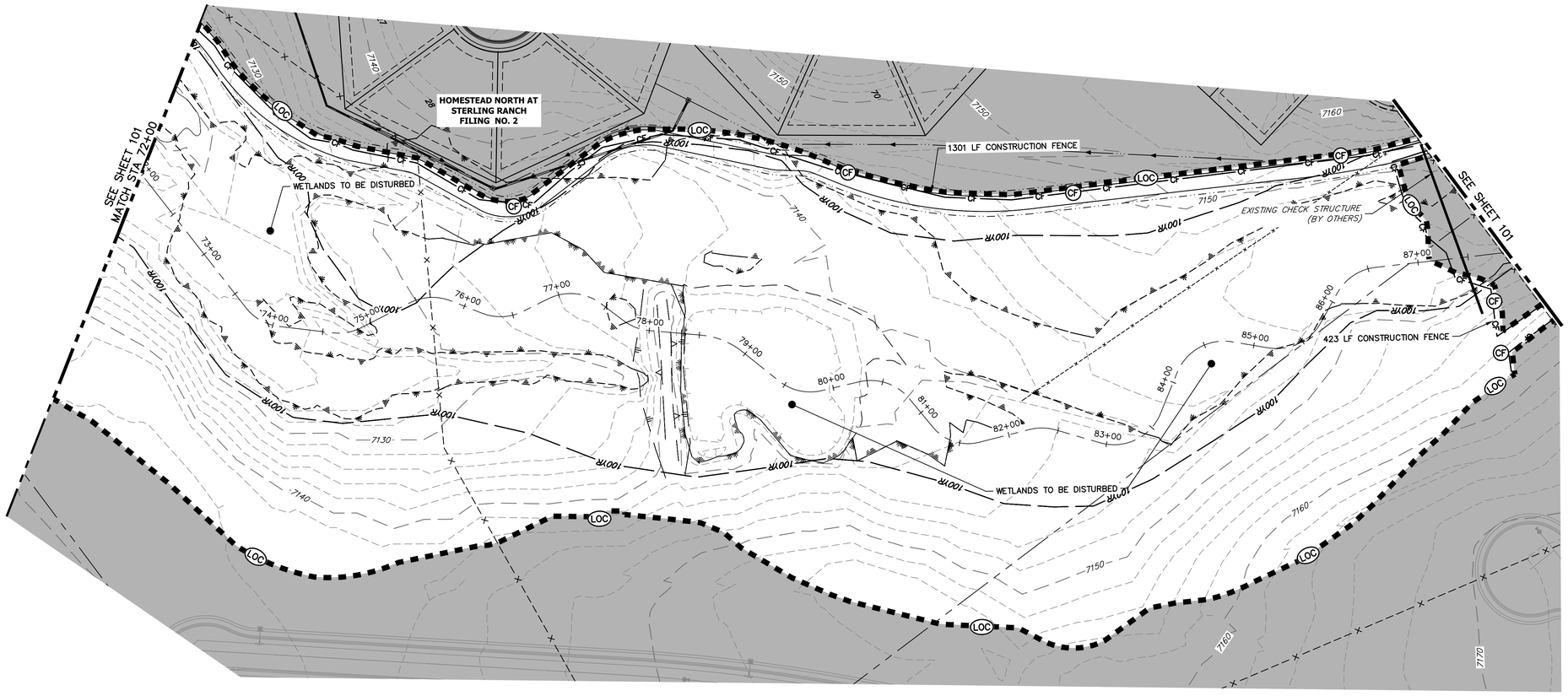

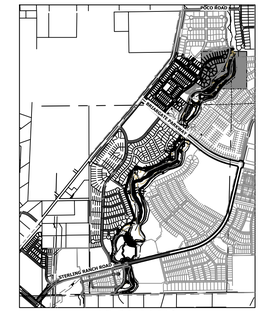

KEY MAP
SCALE: 1"=2000'

LEGEND

EXISTING CONTOUR	PROPOSED CONTOUR	REINFORCED ROCK BERM FOR CULVERT PROTECTION (RRB)	DEWATERING (DW)
EXISTING PROPERTY LINE	LIMITS OF CONSTRUCTION (LOC)	SEDIMENT CONTROL LOG (SCL)	TEMPORARY SEDIMENTATION BASIN (SB)
EXISTING RIGHT OF WAY LINE	DRAINAGE SWALE (DS)	PERMANENT SEEDING AND MULCHING – NATIVE REVEGETATION SEED MIX (SM)	CHECK DAM (CD)
EXISTING EASEMENT	CONSTRUCTION FENCE (CF)	WETLANDS TO REMAIN	SURFACE ROUGHENING (SR)
SECTION LINE	SILT FENCE (SF)	PERMANENT LANDSCAPING (LS)	
EXISTING STORM SEWER	VEHICLE TRACKING CONTROL (VTC)	GEOTEXTILE (ECB)	
EXISTING CURB & GUTTER	STABILIZED STAGING AREA (SSA)	COIR MATTING (ECB)	
PROPOSED RIGHT OF WAY LINE	CONCRETE WASHOUT AREA (CWA)	ARTICULATED CONCRETE	
PROPOSED EASEMENT	STOCK PILE (SP)		
PROPOSED STORM SEWER	TEMP DRAINAGE CHANNEL		
PROPOSED CURB & GUTTER			
PROPOSED TOP OF SLOPE			
PROPOSED TOE OF SLOPE			
EXISTING DRAINAGE ARROW			
PROPOSED DRAINAGE ARROW			

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M., AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

TOTAL INITIAL PHASE SUMMARY OF APPROXIMATE QUANTITIES

3294	LF	–	SILT FENCE (SF)
18900	LF	–	CONSTRUCTION FENCE (CF)
4	EA	–	CHECK DAMS (CD)
4	LS	–	STABILIZED STAGING AREA (SSA)
4	LS	–	VEHICLE TRACKING CONTROL (VTC)

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

Know what's **below.**
Call before you dig.

60 30 0 60
ORIGINAL SCALE: 1" = 60'

ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.

COLORADO REGISTERED BRYAN T. LAW 25043 PROFESSIONAL ENGINEER

BRYAN T. LAW, P.E. DATE
COLORADO P.E. 25043
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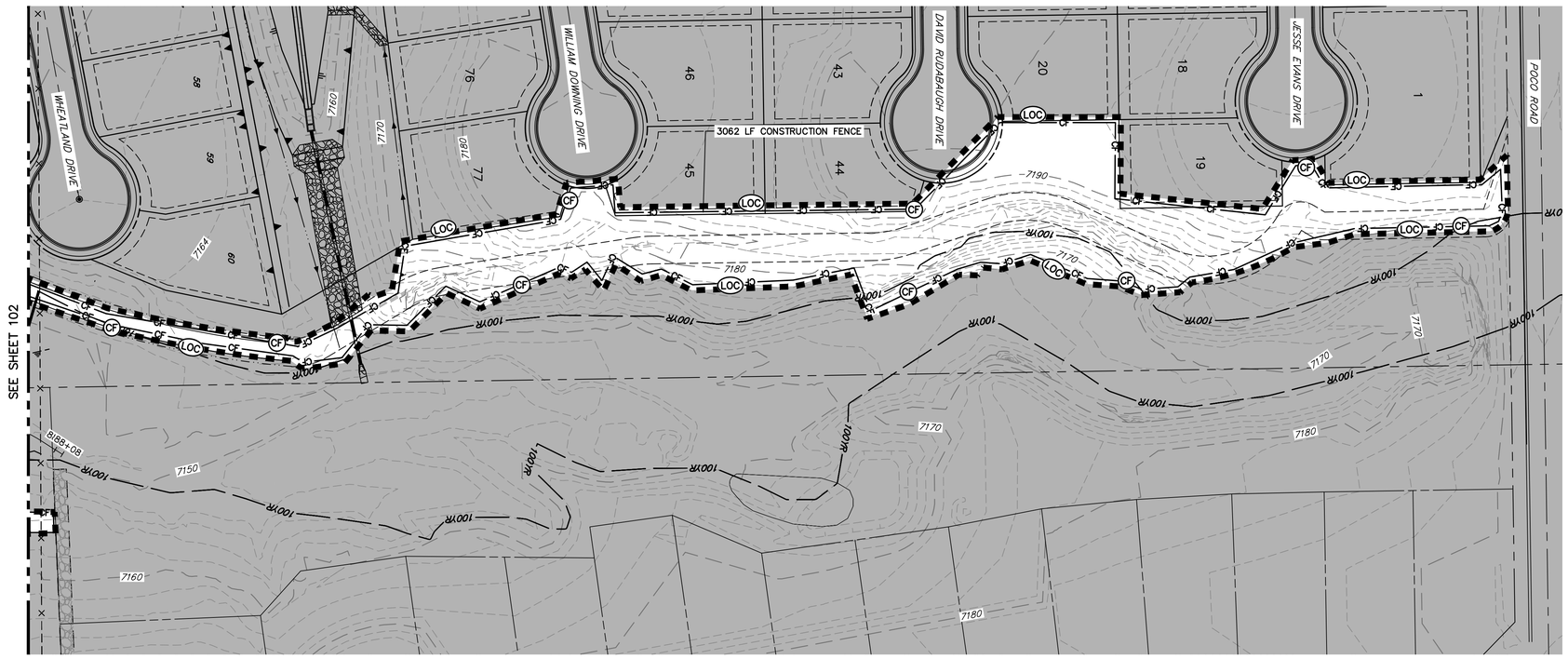

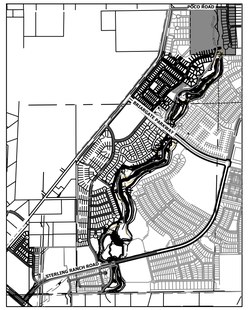

KEY MAP
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LEGEND

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EXISTING EASEMENT	CONSTRUCTION FENCE CF (CF)	WETLANDS TO REMAIN	SURFACE ROUGHENING (SR)
SECTION LINE	SILT FENCE SF (SF)	PERMANENT LANDSCAPING (LS)	
EXISTING STORM SEWER	VEHICLE TRACKING CONTROL (VTC)	GEOTEXTILE (ECB)	
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COLORADO REGISTERED PROFESSIONAL ENGINEER 25043 12/20/24

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SAND CREEK RESTORATION

GEC INITIAL

SHEET 103 OF 121

JOB NO. 25188.04

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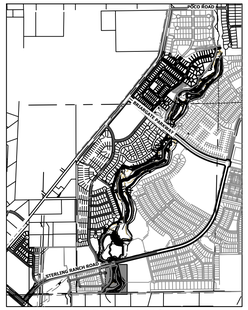

KEY MAP
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LEGEND

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EXISTING RIGHT OF WAY LINE
EXISTING EASEMENT
SECTION LINE
EXISTING STORM SEWER
EXISTING CURB & GUTTER
PROPOSED RIGHT OF WAY LINE
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SAND CREEK RESTORATION

GEC INTERIM

SHEET 104 OF 121

JOB NO. 25188.04

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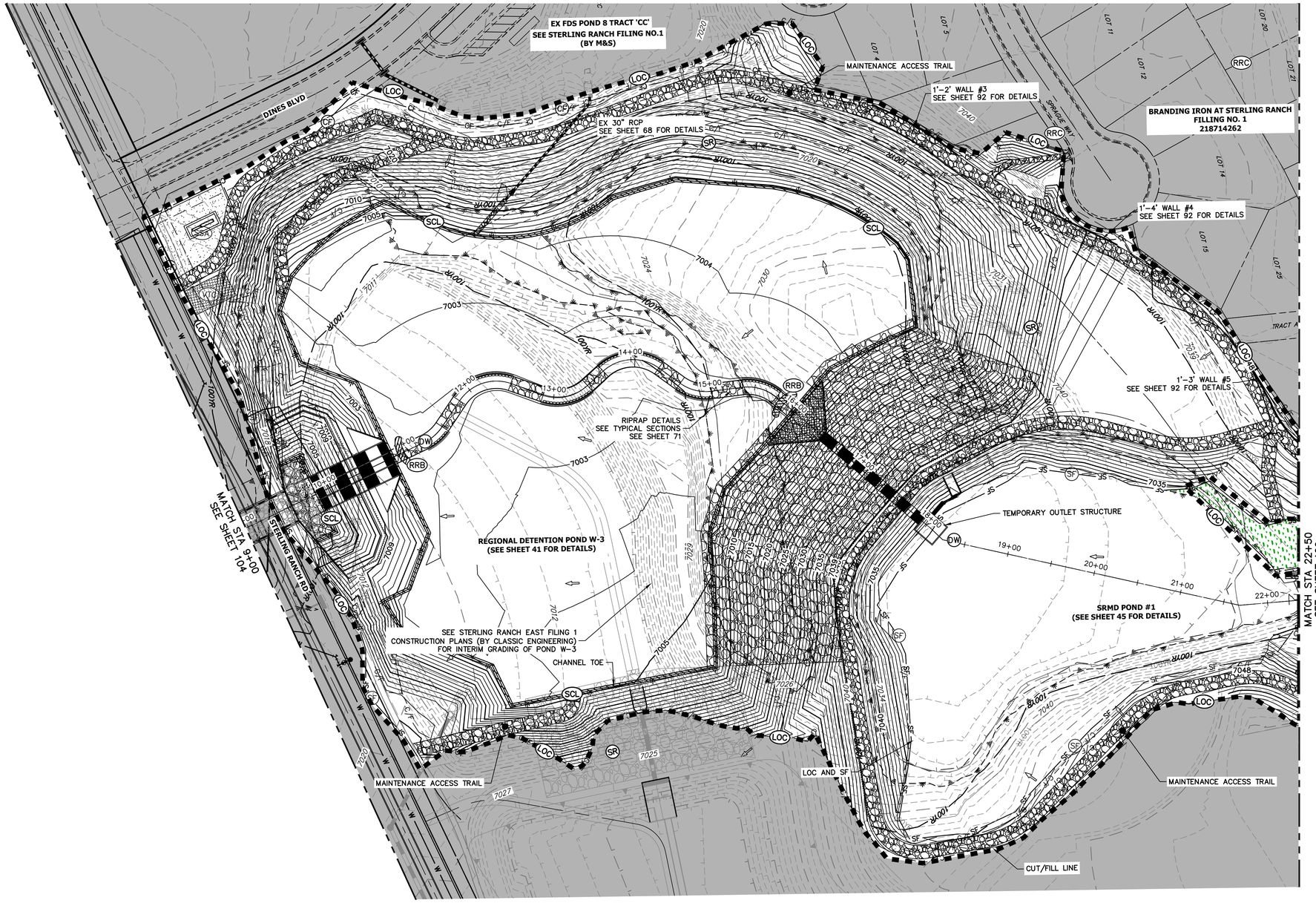

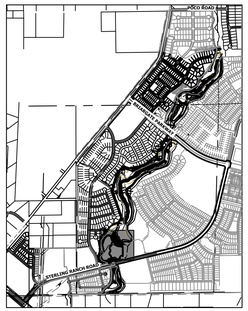

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TEMPORARY SEDIMENT BASIN NOTES:

TEMPORARY SEDIMENT BASIN TO BE CONSTRUCTED PRIOR TO BEGINNING OF CHANNEL GRADING. CHANNEL IMPROVEMENTS WILL START UPSTREAM OF TSB AND CONTINUE UPSTREAM TO SRMD POND #2. UPON COMPLETION OF CHANNEL IMPROVEMENTS AND SRMD #2 OUTLET STRUCTURE AND AGRIDRAIN, TSB WILL BE REMOVED AND THE REMAINDER OF CHANNEL IMPROVEMENTS TO BE COMPLETED.

60 30 0 60
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LEGEND

EXISTING CONTOUR	PROPOSED CONTOUR
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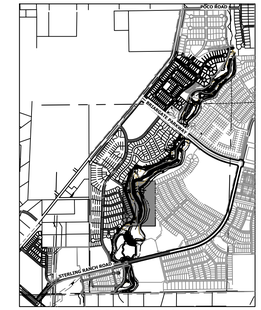

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PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

LEGEND

- EXISTING CONTOUR
- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING EASEMENT
- SECTION LINE
- EXISTING STORM SEWER
- EXISTING CURB & GUTTER
- PROPOSED RIGHT OF WAY LINE
- PROPOSED EASEMENT
- PROPOSED STORM SEWER
- PROPOSED CURB & GUTTER
- PROPOSED TOP OF SLOPE
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- PROPOSED DRAINAGE ARROW
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- REINFORCED ROCK BERM FOR CULVERT PROTECTION (RRB)
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- PERMANENT SEEDING AND MULCHING – NATIVE REVEGETATION SEED MIX (SM)
- WETLANDS TO REMAIN
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- ARTICULATED CONCRETE
- DEWATERING (DW)
- TEMPORARY SEDIMENTATION BASIN (SB)
- CHECK DAM (CD)
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TOTAL INTERIM PHASE SUMMARY OF APPROXIMATE QUANTITIES

9	EA	–	REINFORCED ROCK BERM FOR CULVERT PROTECTION	RRB
3	EA	–	CONCRETE WASHOUT AREA	CWA
15	EA	–	CHECK DAMS	CD
1990	LF	–	SEDIMENT CONTROL LOGS	SCL
1	EA	–	TEMPORARY SEDIMENT BASIN	SB

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

811
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COLORADO REGISTERED PROFESSIONAL ENGINEER 25043 12/20/24

BRYAN T. LAW, P.E. DATE
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

No.	REVISION	BY	DATE

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DRAWN BY	WJL
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SAND CREEK RESTORATION

GEC INTERIM

SHEET 106 OF 121

JOB NO. 25188.04

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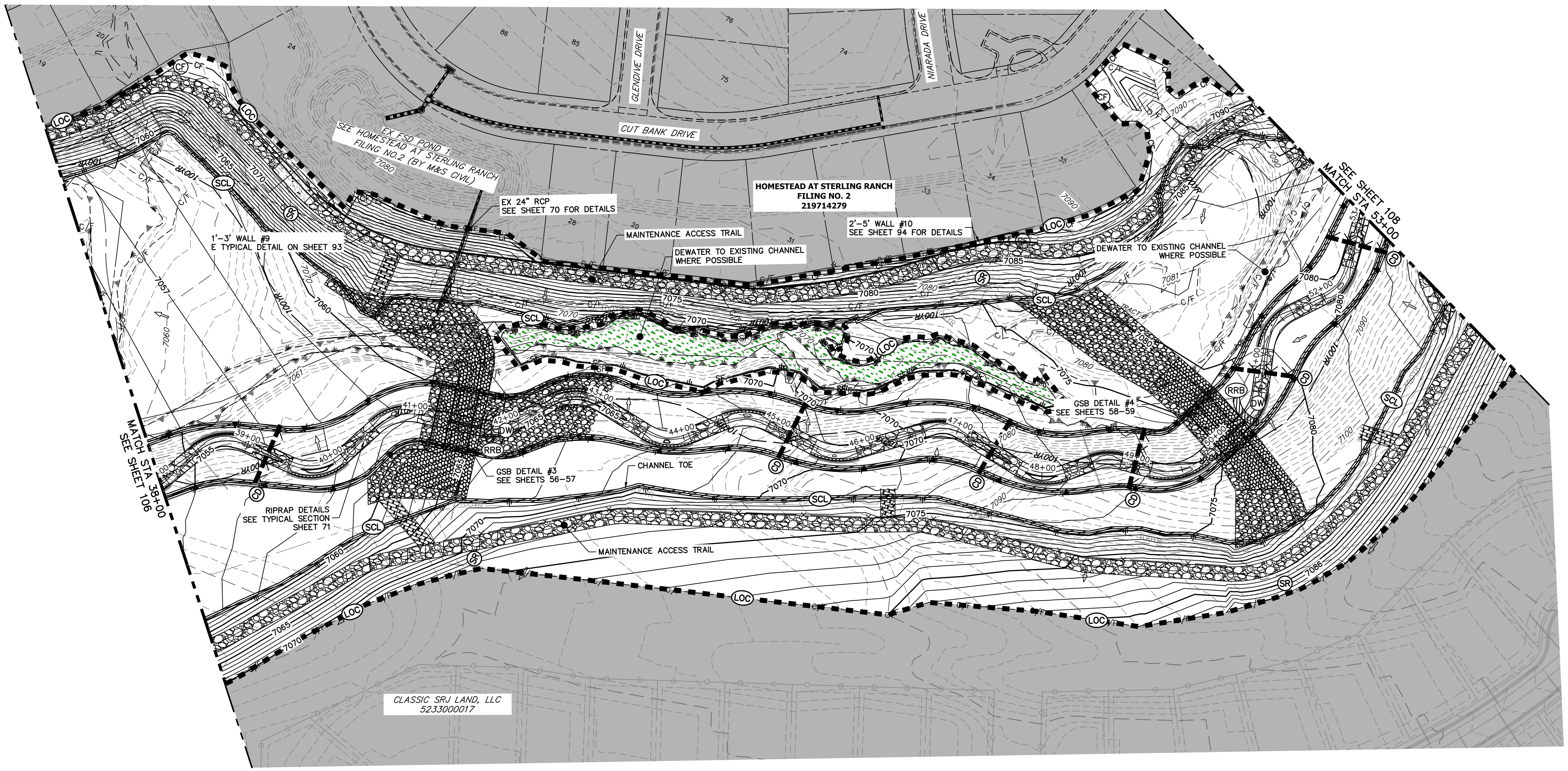

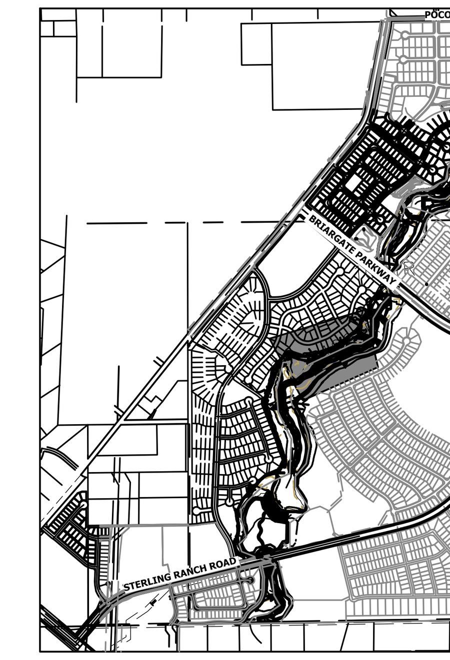

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LEGEND

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EXISTING EASEMENT	CONSTRUCTION FENCE (CF)	WETLANDS TO REMAIN
SECTION LINE	SILT FENCE (SF)	PERMANENT LANDSCAPING (LS)
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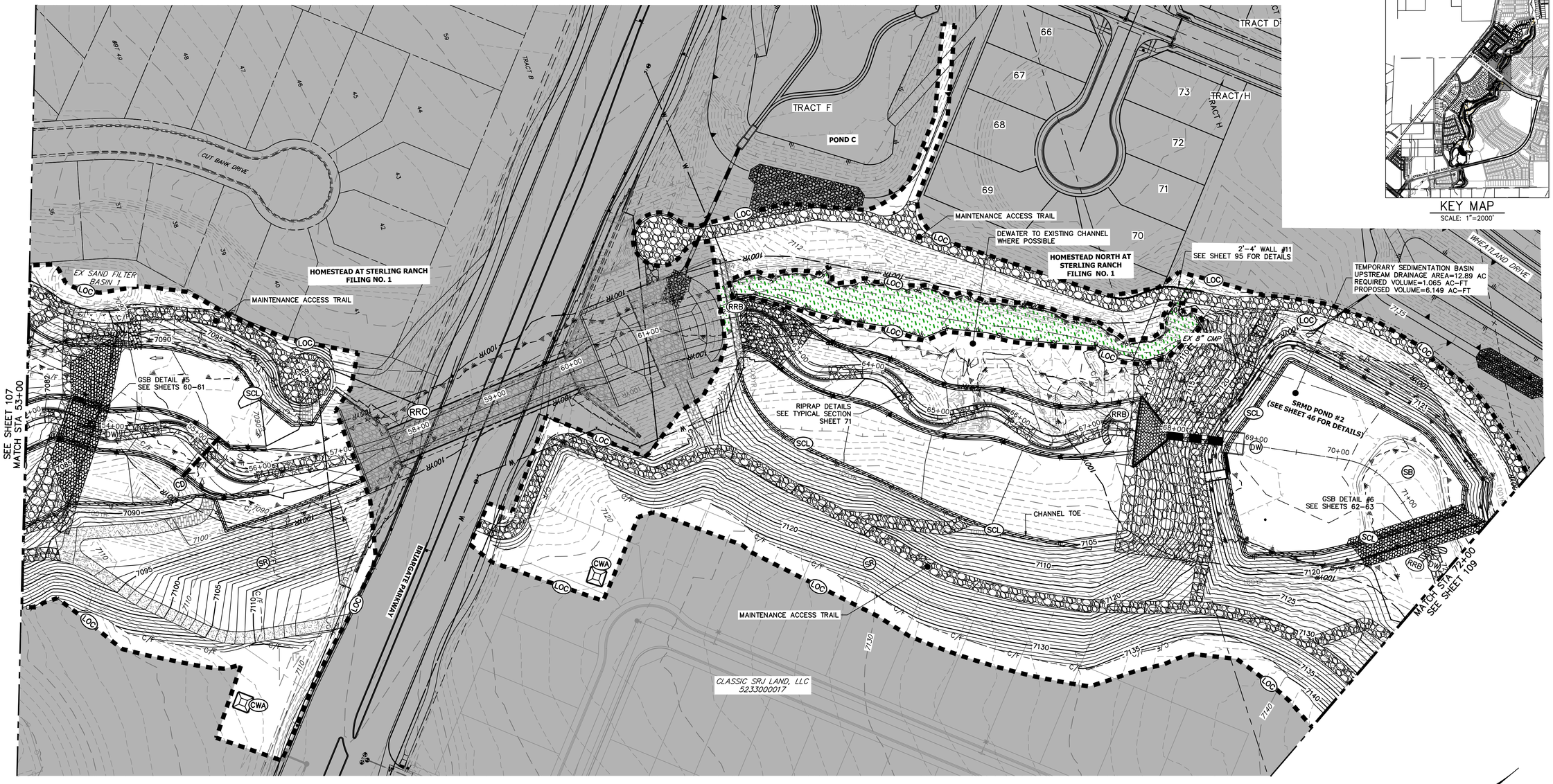

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SHEET 108 OF 121

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TEMPORARY SEDIMENT BASIN NOTES:

SRMD POND #2 TO BE USED AS A TEMPORARY SEDIMENT BASIN WITH NO RISER PIPE ONCE THE OUTLET STRUCTURE AND AGRIDRAIN HAVE BEEN CONSTRUCTED. UPON COMPLETION OF UPSTREAM CHANNEL IMPROVEMENTS, SRMD POND #2 WILL BE DREDGED OF SEDIMENT AND RETURNED TO PROPOSED GRADING.

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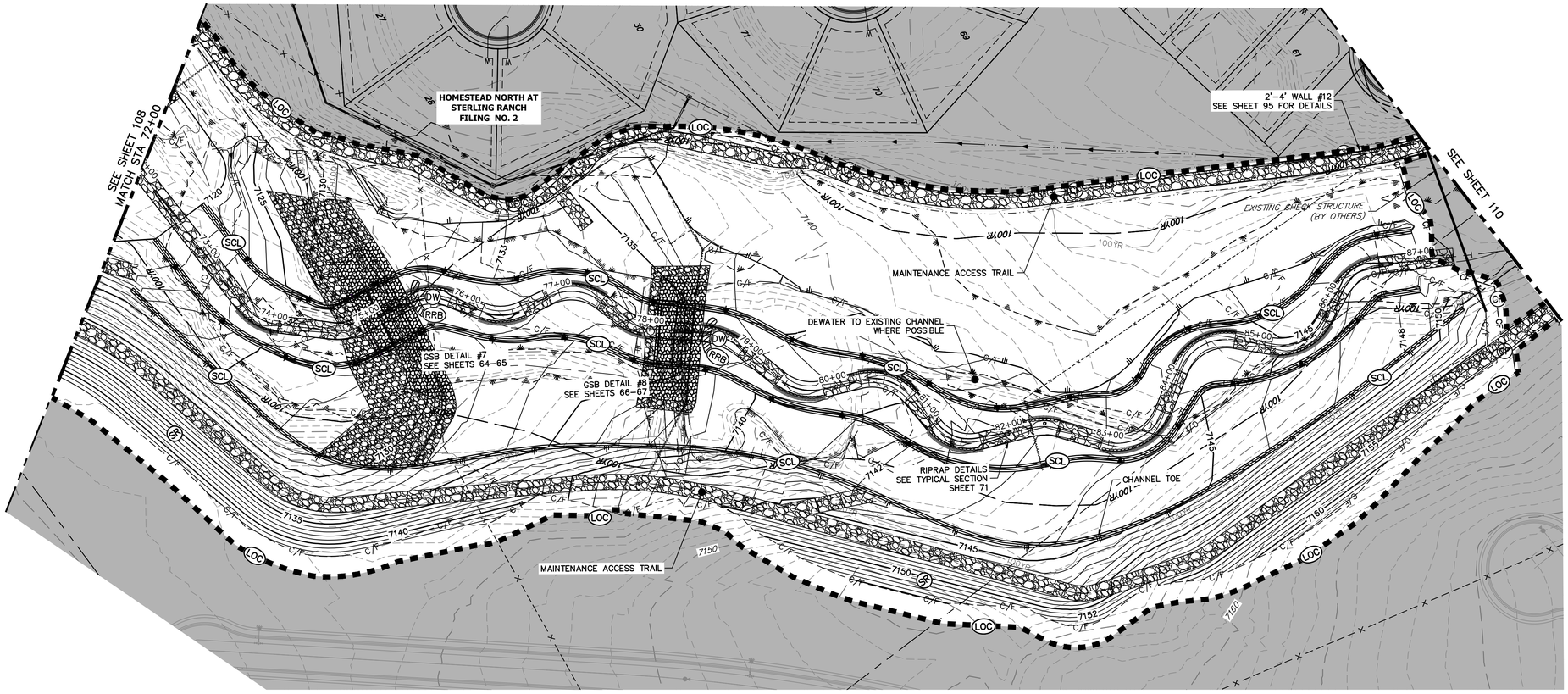

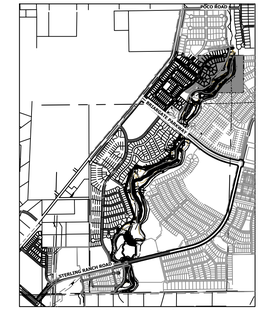

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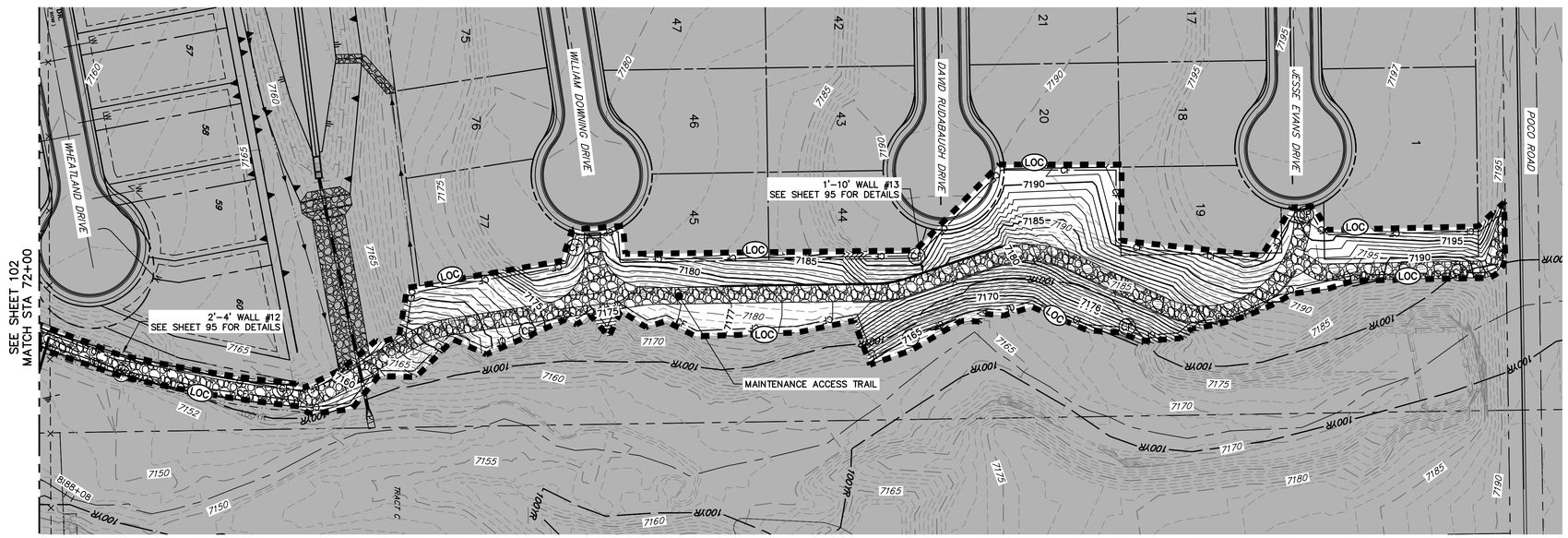

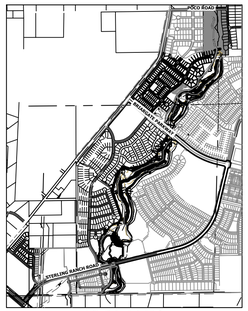

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   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

60 30 0 60
ORIGINAL SCALE: 1" = 60'

Know what's **below.**
Call before you dig.

ENGINEER'S STATEMENT

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COLORADO REGISTERED BRYAN T. LAW 25043 PROFESSIONAL ENGINEER 12/20/24

BRYAN T. LAW, P.E. DATE
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	1"=60'
V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	WJL
CHECKED BY	

SAND CREEK RESTORATION

GEC INTERIM

SHEET 110 OF 121

JOB NO. 25188.04

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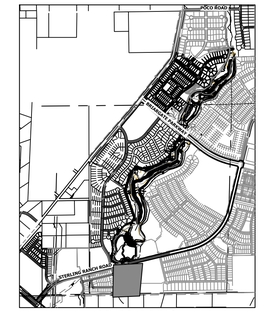

KEY MAP
SCALE: 1"=2000'

LEGEND

EXISTING CONTOUR	PROPOSED CONTOUR	REINFORCED ROCK BERM FOR CULVERT PROTECTION (RRB)	DEWATERING (DW)
EXISTING PROPERTY LINE	LIMITS OF CONSTRUCTION (LOC)	SEDIMENT CONTROL LOG (SCL)	TEMPORARY SEDIMENTATION BASIN (SB)
EXISTING RIGHT OF WAY LINE	DRAINAGE SWALE (DS)	PERMANENT SEEDING AND MULCHING – NATIVE REVEGETATION SEED MIX (SM)	CHECK DAM (CD)
EXISTING EASEMENT	CONSTRUCTION FENCE (CF)	WETLANDS TO REMAIN	SURFACE ROUGHENING (SR)
SECTION LINE	SILT FENCE (SF)	PERMANENT LANDSCAPING (LS)	
EXISTING STORM SEWER	VEHICLE TRACKING CONTROL (VTC)	GEOTEXTILE (ECB)	
EXISTING CURB & GUTTER	STABILIZED STAGING AREA (SSA)	COIR MATTING (ECB)	
PROPOSED RIGHT OF WAY LINE	CONCRETE WASHOUT AREA (CWA)	ARTICULATED CONCRETE	
PROPOSED EASEMENT	STOCK PILE (SP)		
PROPOSED STORM SEWER	TEMP DRAINAGE CHANNEL		
PROPOSED CURB & GUTTER			
PROPOSED TOP OF SLOPE			
PROPOSED TOE OF SLOPE			
EXISTING DRAINAGE ARROW			
PROPOSED DRAINAGE ARROW			

TOTAL FINAL PHASE SUMMARY OF APPROXIMATE QUANTITIES

48.65	AC	–	SEEDING & MULCHING (UPLAND)
3.03	AC	–	SEEDING & MULCHING (WETLAND)
1.93	AC	–	GEOTEXTILE
32.58	AC	–	COIR MATTING

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BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 4114416.273
   EASTING = 2351671.071
   ELEVATION = 7023.42
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   EASTING = 2350521.131
   ELEVATION = 7000.40
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   NORTHING = 4111399.962
   EASTING = 2338491.817
   ELEVATION = 7030.82

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COLORADO REGISTERED PROFESSIONAL ENGINEER 25043 12/20/24

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COLORADO P.E. 25043
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DRAWN BY	WJL
CHECKED BY	

SAND CREEK RESTORATION

GEC FINAL

SHEET 111 OF 121

JOB NO. 25188.04

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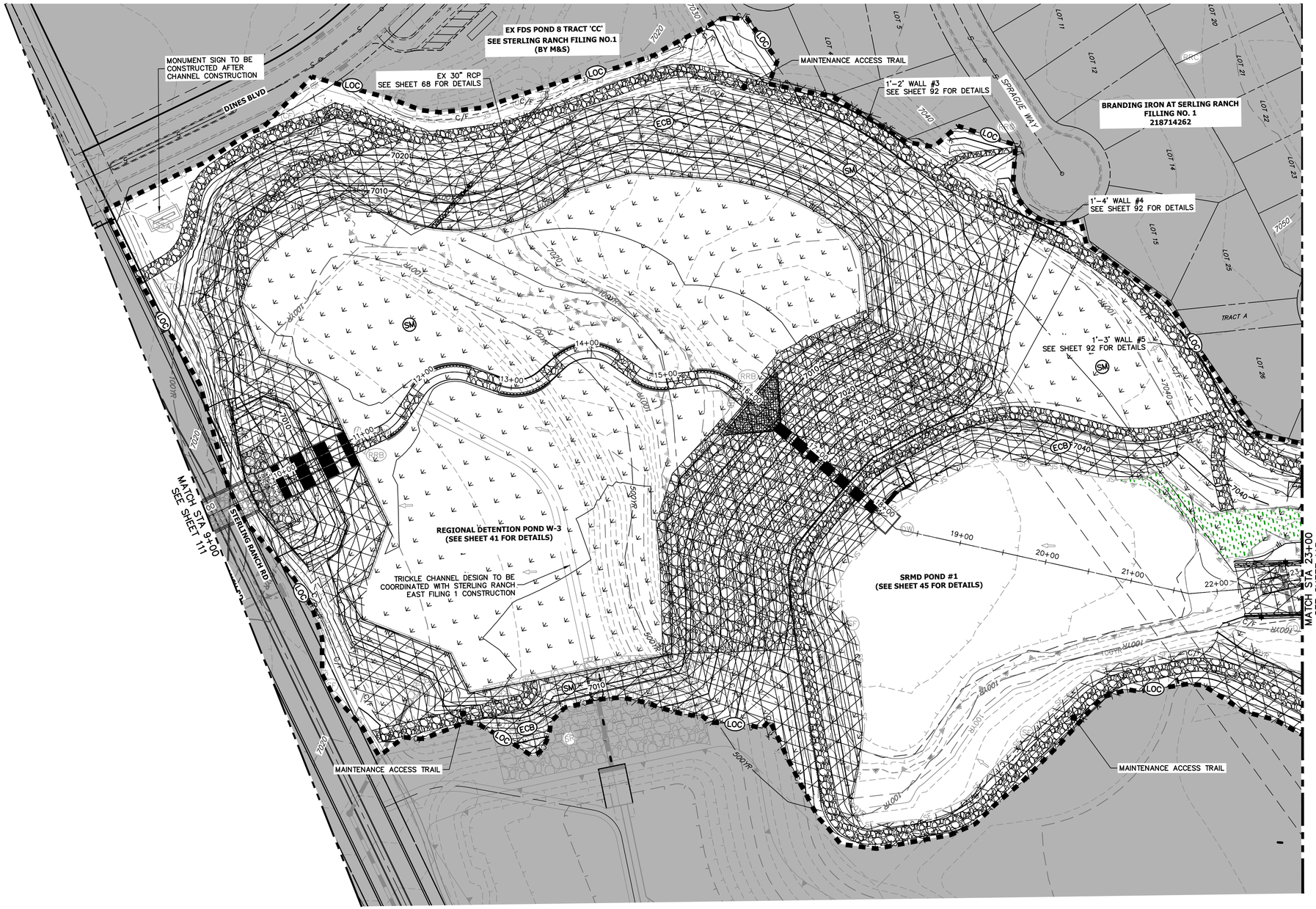

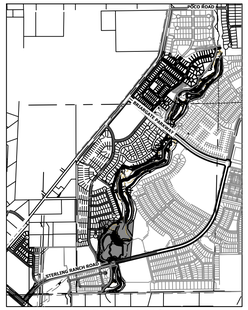

KEY MAP
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SAND CREEK RESTORATION

GEC FINAL

SHEET 112 OF 121

JOB NO. 25188.04

LEGEND

- EXISTING CONTOUR
- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING EASEMENT
- SECTION LINE
- EXISTING STORM SEWER
- EXISTING CURB & GUTTER
- PROPOSED RIGHT OF WAY LINE
- PROPOSED EASEMENT
- PROPOSED STORM SEWER
- PROPOSED CURB & GUTTER
- PROPOSED TOP OF SLOPE
- PROPOSED TOE OF SLOPE
- EXISTING DRAINAGE ARROW
- PROPOSED DRAINAGE ARROW
- PROPOSED CONTOUR
- LIMITS OF CONSTRUCTION (LOC)
- DRAINAGE SWALE (DS)
- CONSTRUCTION FENCE (CF)
- SILT FENCE (SF)
- VEHICLE TRACKING CONTROL (VTC)
- STABILIZED STAGING AREA (SSA)
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- ARTICULATED CONCRETE
- DEWATERING (DW)
- TEMPORARY SEDIMENTATION BASIN (SB)
- CHECK DAM (CD)
- SURFACE ROUGHENING (SR)

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3.03	AC	–	SEEDING & MULCHING (WETLAND)
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COLORADO REGISTERED PROFESSIONAL ENGINEER 25043 12/20/24

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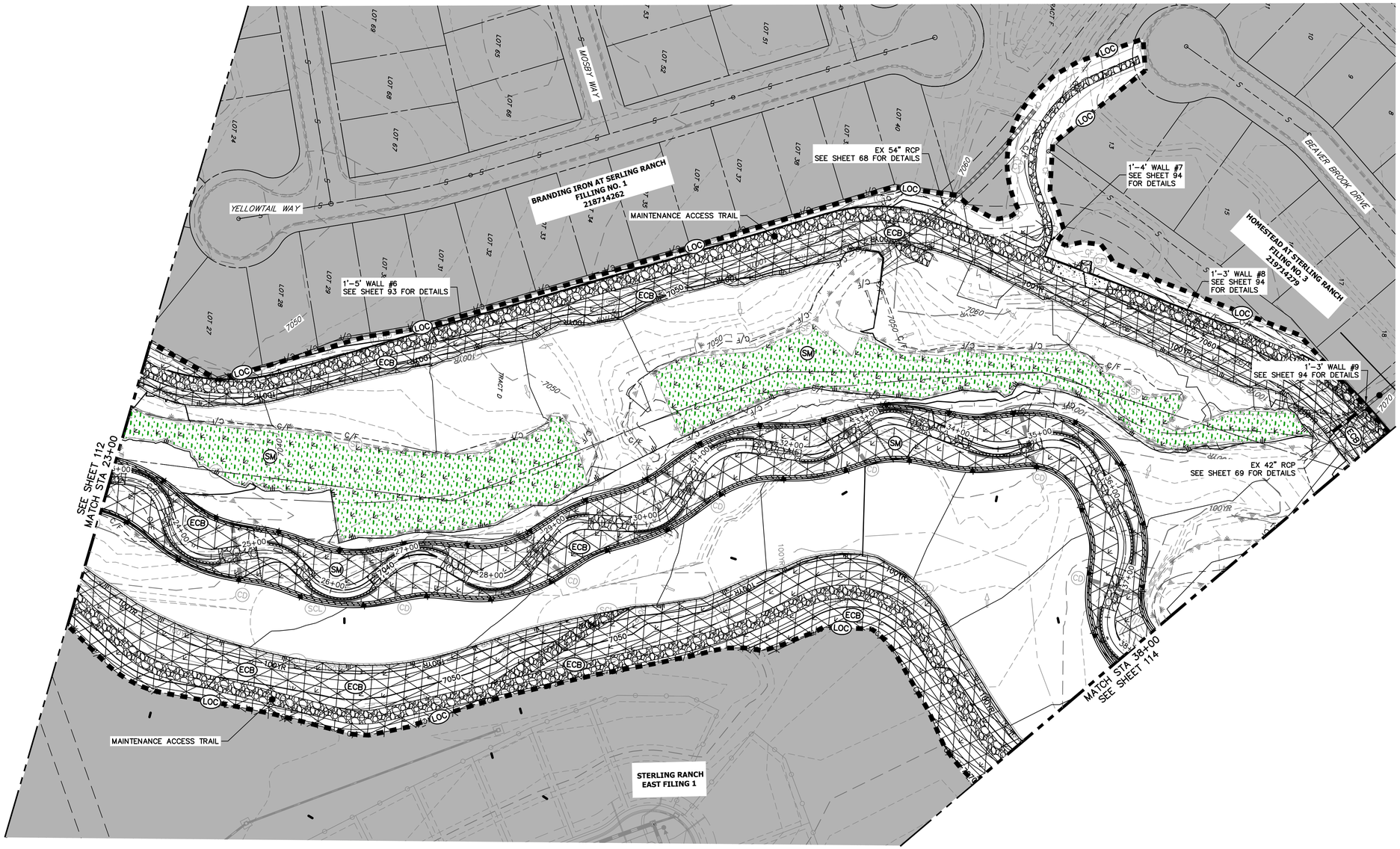

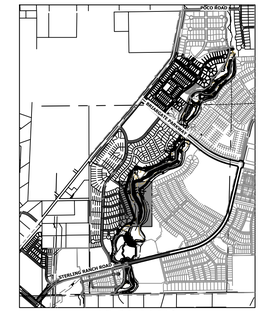

KEY MAP
SCALE: 1"=2000'

LEGEND

EXISTING CONTOUR
EXISTING PROPERTY LINE
EXISTING RIGHT OF WAY LINE
EXISTING EASEMENT
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EXISTING CURB & GUTTER
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ORIGINAL SCALE: 1" = 60'

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SAND CREEK RESTORATION

GEC FINAL

SHEET 113 OF 121

JOB NO. 25188.04

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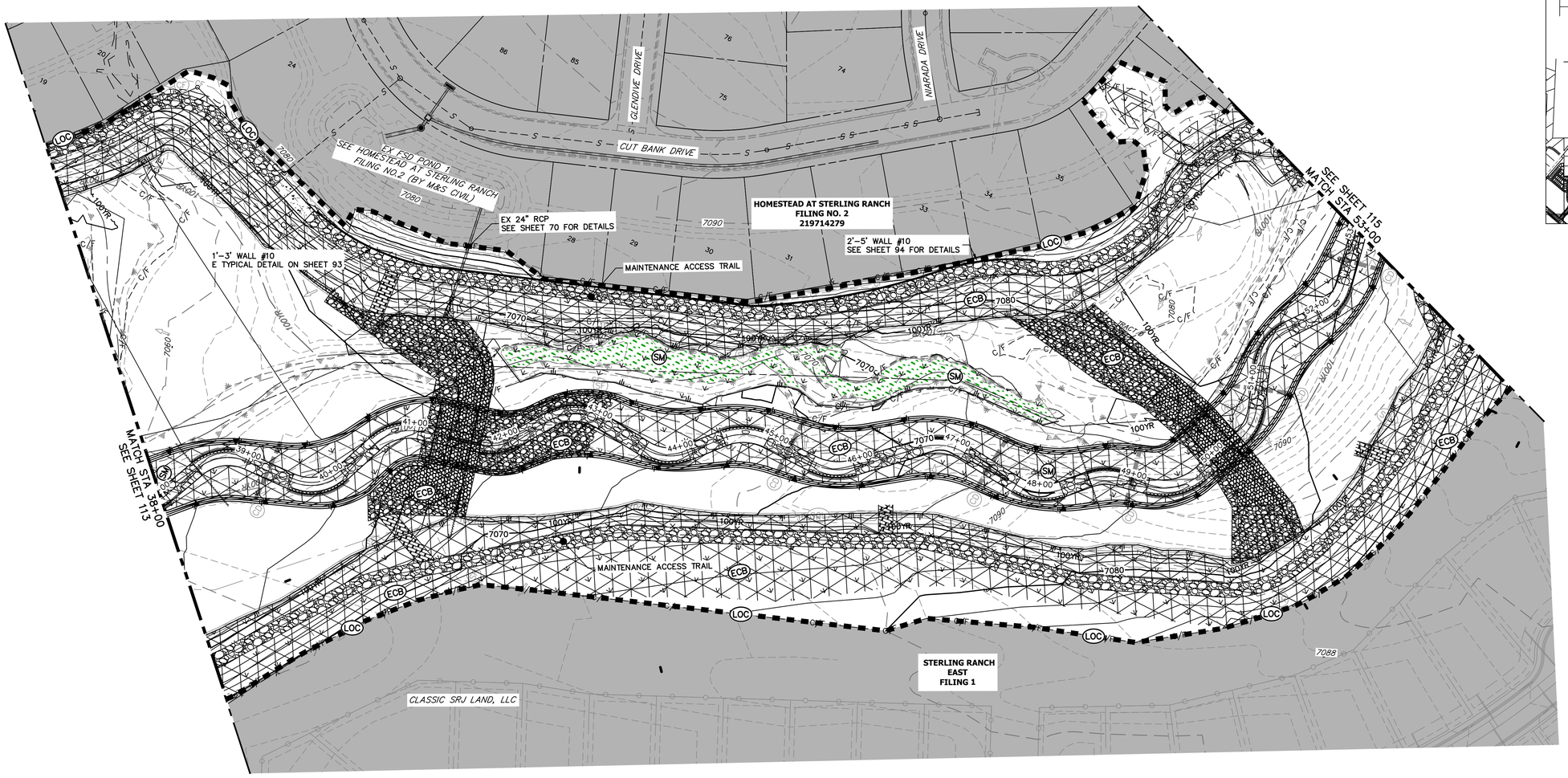

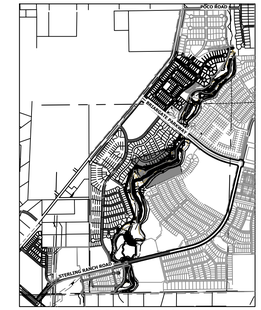

KEY MAP
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60 30 0 60
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FOR AND ON BEHALF OF JR ENGINEERING, LLC

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PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	1"=60'
V-SCALE	N/A
DATE	12/20/24
DESIGNED BY	DJV
DRAWN BY	WJL
CHECKED BY	

SAND CREEK RESTORATION

GEC FINAL

SHEET 114 OF 121

JOB NO. 25188.04

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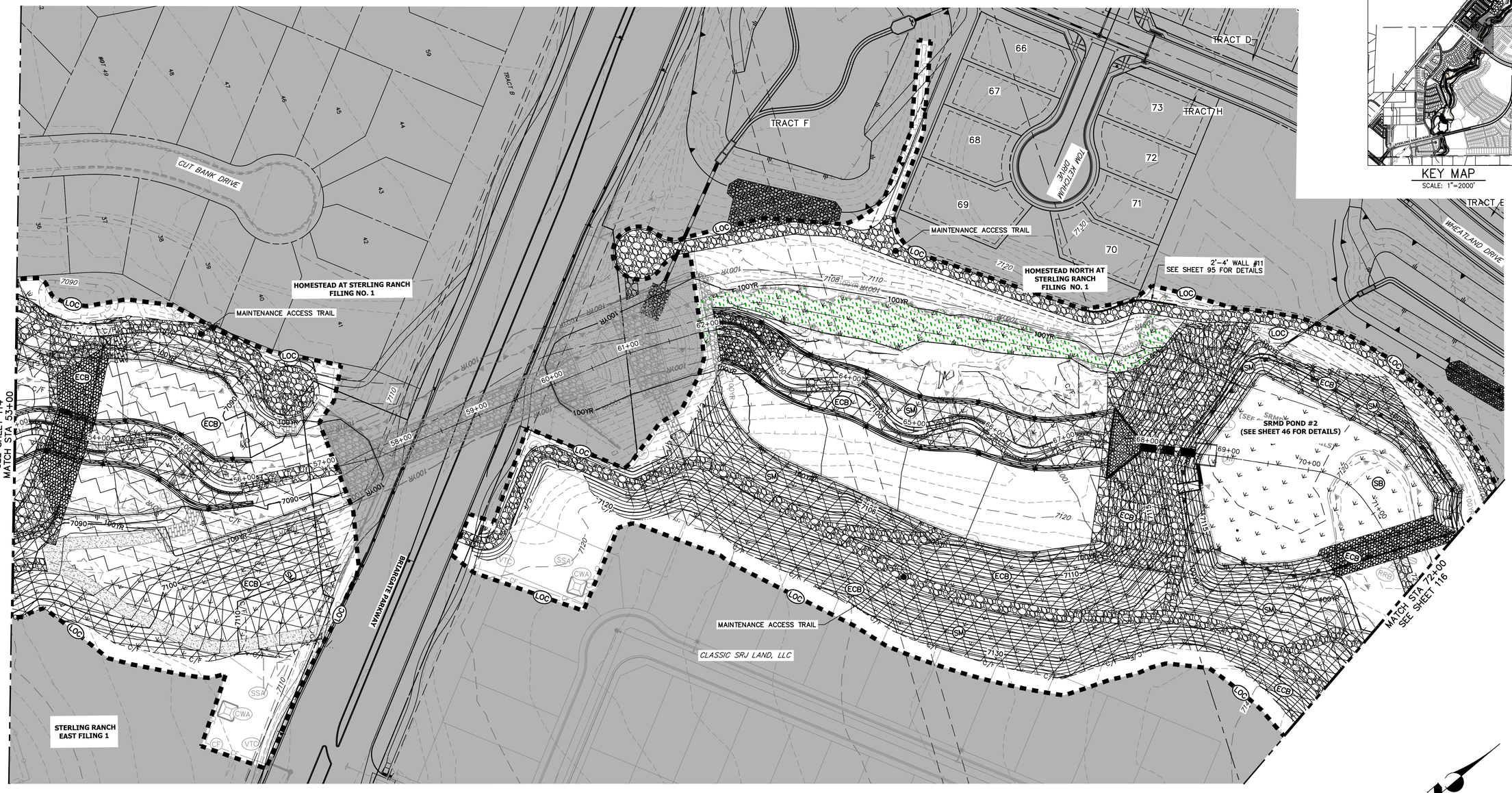

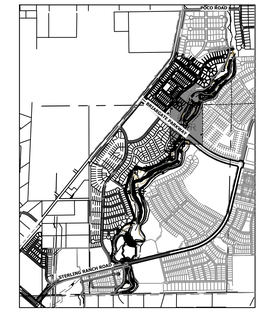

KEY MAP
SCALE: 1"=2000'

60 30 0 60
ORIGINAL SCALE: 1" = 60'

LEGEND

EXISTING CONTOUR	PROPOSED CONTOUR	REINFORCED ROCK BERM FOR CULVERT PROTECTION (RRB)	DEWATERING (DW)
EXISTING PROPERTY LINE	LIMITS OF CONSTRUCTION (LOC)	SEDIMENT CONTROL LOG (SCL)	TEMPORARY SEDIMENTATION BASIN (SB)
EXISTING RIGHT OF WAY LINE	DRAINAGE SWALE (DS)	PERMANENT SEEDING AND MULCHING – NATIVE REVEGETATION SEED MIX (SM)	CHECK DAM (CD)
EXISTING EASEMENT	CONSTRUCTION FENCE (CF)	WETLANDS TO REMAIN	SURFACE ROUGHENING (SR)
SECTION LINE	SILT FENCE (SF)	PERMANENT LANDSCAPING (LS)	
EXISTING STORM SEWER	VEHICLE TRACKING CONTROL (VTC)	GEOTEXTILE (ECB)	
EXISTING CURB & GUTTER	STABILIZED STAGING AREA (SSA)	COIR MATTING (ECB)	
PROPOSED RIGHT OF WAY LINE	CONCRETE WASHOUT AREA (CWA)	ARTICULATED CONCRETE	
PROPOSED EASEMENT	STOCK PILE (SP)		
PROPOSED STORM SEWER	TEMP DRAINAGE CHANNEL		
PROPOSED CURB & GUTTER			
PROPOSED TOP OF SLOPE			
PROPOSED TOE OF SLOPE			
EXISTING DRAINAGE ARROW			
PROPOSED DRAINAGE ARROW			

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.69 FEET.

BENCHMARK

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.

12/20/24
DATE

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SAND CREEK RESTORATION

GEC FINAL

SHEET 115 OF 121

JOB NO. 25188.04

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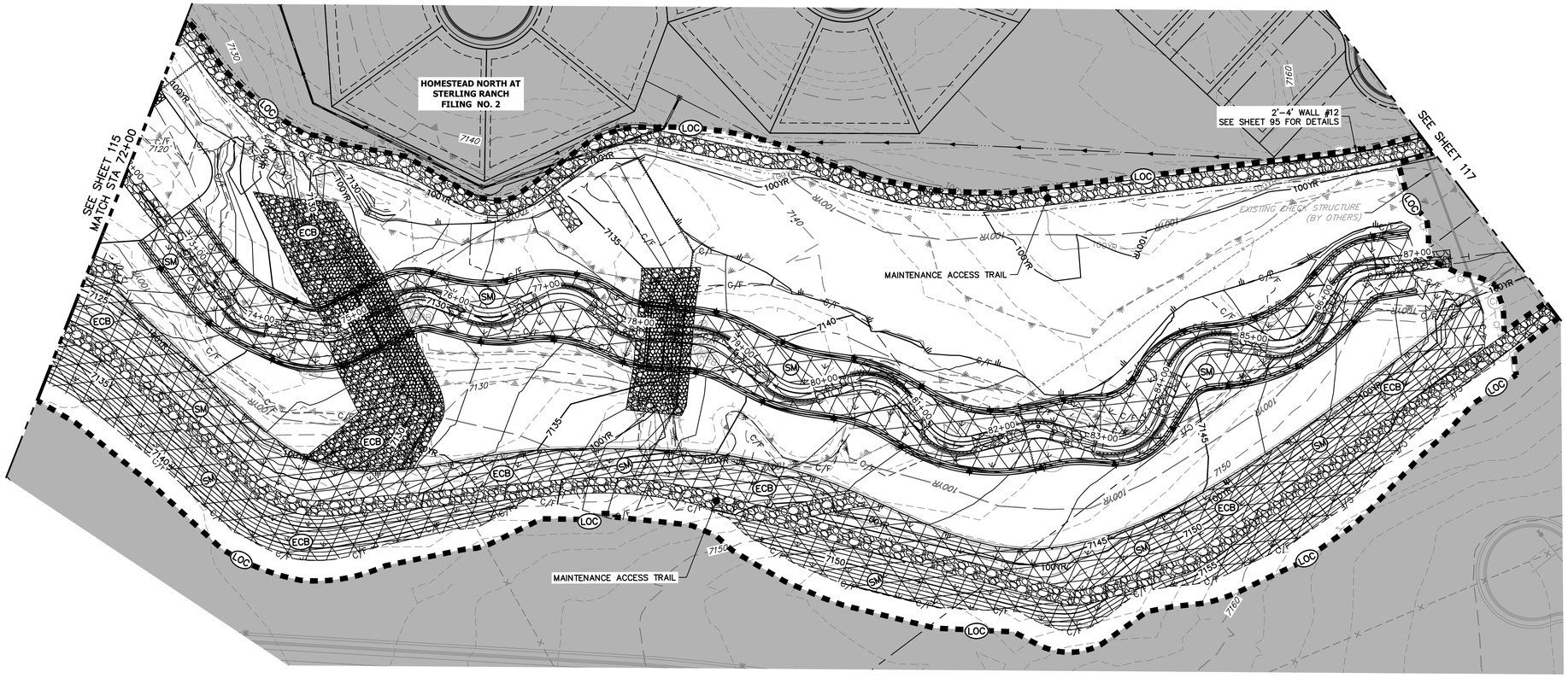

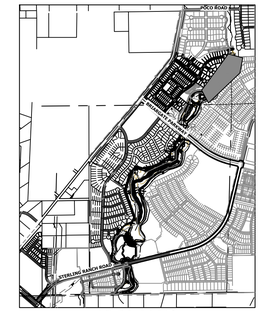

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SHEET 116 OF 121

JOB NO. 25188.04

LEGEND

- EXISTING CONTOUR
- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING EASEMENT
- SECTION LINE
- EXISTING STORM SEWER
- EXISTING CURB & GUTTER
- PROPOSED RIGHT OF WAY LINE
- PROPOSED EASEMENT
- PROPOSED STORM SEWER
- PROPOSED CURB & GUTTER
- PROPOSED TOP OF SLOPE
- PROPOSED TOE OF SLOPE
- EXISTING DRAINAGE ARROW
- PROPOSED DRAINAGE ARROW
- PROPOSED CONTOUR
- LIMITS OF CONSTRUCTION (LOC)
- DRAINAGE SWALE (DS)
- CONSTRUCTION FENCE (CF)
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- PERMANENT LANDSCAPING (LS)
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- COIR MATTING (ECB)
- ARTICULATED CONCRETE
- DEWATERING (DW)
- TEMPORARY SEDIMENTATION BASIN (SB)
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TOTAL FINAL PHASE SUMMARY OF APPROXIMATE QUANTITIES

48.65	AC	–	SEEDING & MULCHING (UPLAND)
3.03	AC	–	SEEDING & MULCHING (WETLAND)
1.93	AC	–	GEOTEXTILE
32.58	AC	–	COIR MATTING

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COLORADO REGISTERED PROFESSIONAL ENGINEER BRYAN T. LAW 25043

12/20/24

BRYAN T. LAW, P.E. DATE
COLORADO P.E. 25043
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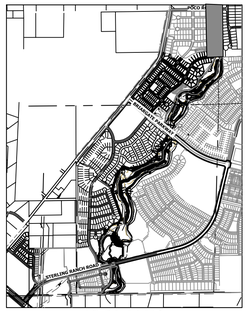

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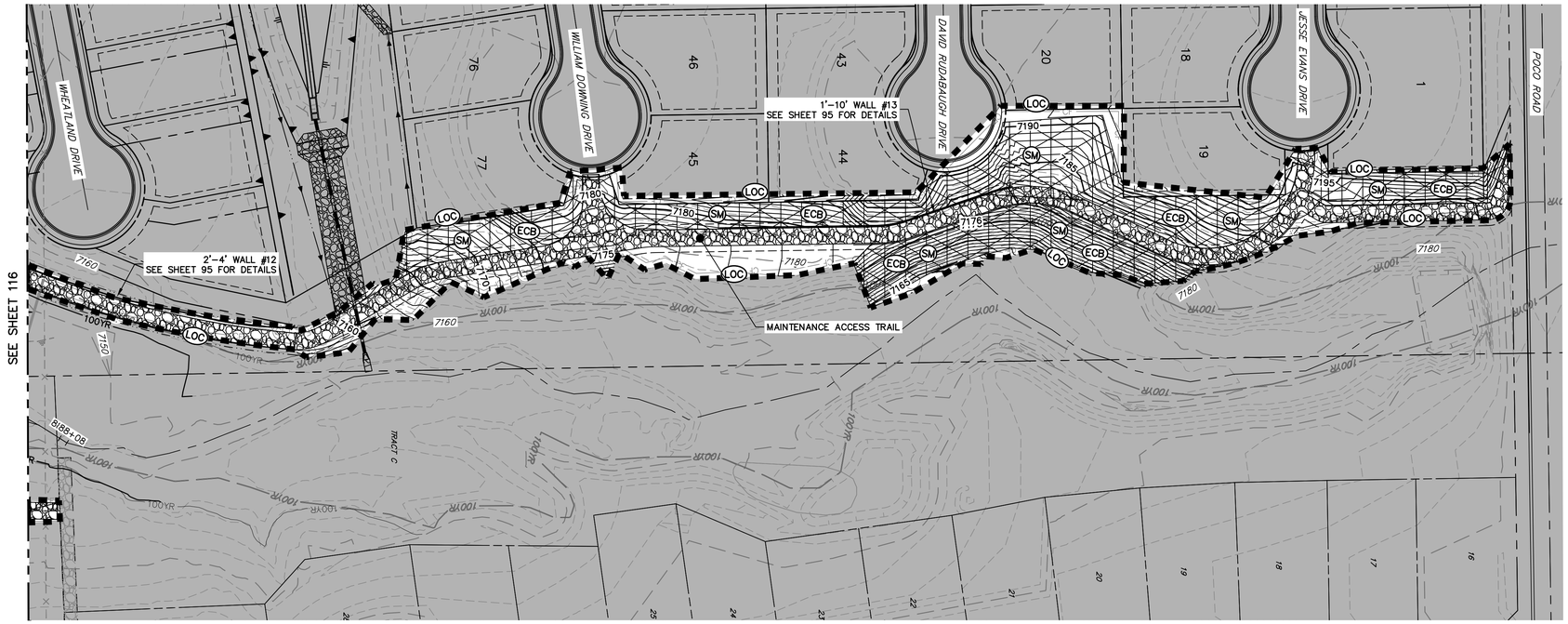

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COLORADO REGISTERED PROFESSIONAL ENGINEER BRYAN T. LAW 25043 12/20/24

BRYAN T. LAW, P.E. DATE
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SAND CREEK RESTORATION

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SHEET 117 OF 121

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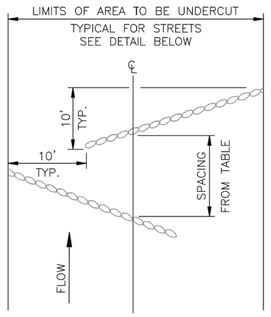
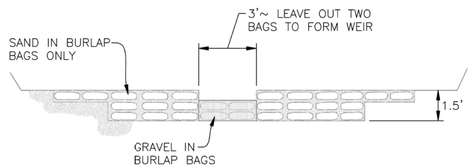


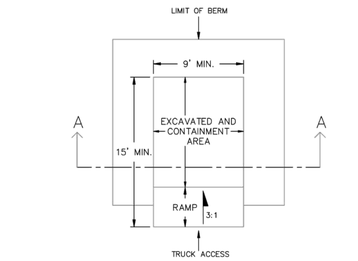
SANDBAG ROW SPACING TABLE

STREET GRADE %	INTERVAL (FT)
0–2	500
2–4	200
4–6	120
6–8	90
8–10	70
10–12	50
12–15	35

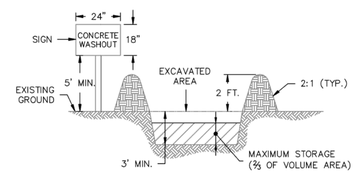


SCALE: NOT TO SCALE

DATE APPROVED: 8/11/11	Typical Check Dam Detail	EL PASO COUNTY DEPARTMENT OF TRANSPORTATION
André P. Brackin, DEPARTMENT OF TRANSPORTATION	Standard Drawing	REVISION DATE: 11/10/04 · FILE NAME: SD_3–62



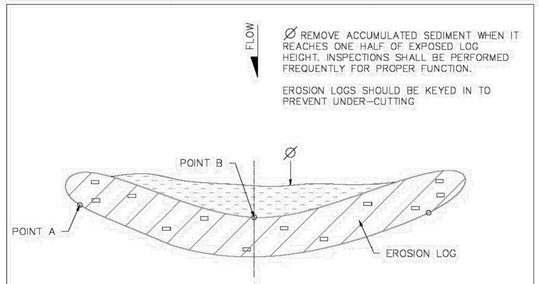
PLAN VIEW



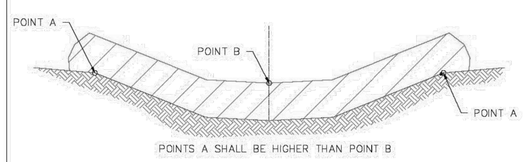
SECTION A–A

NOTES:
1. SIGN MATERIAL, EXCAVATION, AND RESTORATION ARE INCLUDED IN THE COST OF THE CONCRETE WASHOUT STRUCTURE.
2. EROSION BALES MAY BE USED AS AN ALTERNATIVE FOR THE BERM.

DATE APPROVED: 1/1/08	Concrete Washout Structure	EL PASO COUNTY DEPARTMENT OF TRANSPORTATION
John A. McCarty, DEPARTMENT OF TRANSPORTATION	Standard Drawing	REVISION DATE: 7/17/07 · FILE NAME: SD_3–84

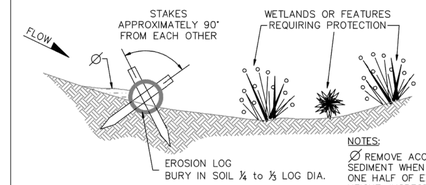


PLAN VIEW



ELEVATION
EROSION LOG DETAIL DITCH INSTALLATION
NOTE: EROSION LOGS SHALL BE TIGHTLY ABUTTED WITH NO GAPS.

DATE APPROVED: 1/1/08	Erosion Log Check Dams	EL PASO COUNTY DEPARTMENT OF TRANSPORTATION
John A. McCarty, DEPARTMENT OF TRANSPORTATION	Standard Drawing	REVISION DATE: 7/17/07 · FILE NAME: SD_3–85

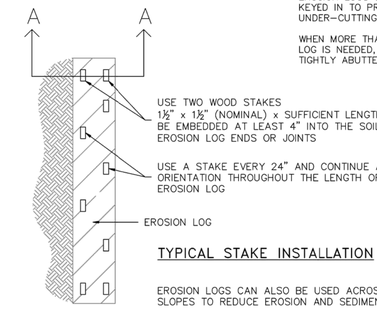


SECTION A–A
EROSION LOG APPLICATION

NOTES:
Ø REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE HALF OF EXPOSED LOG HEIGHT. INSPECTIONS SHALL BE PERFORMED FREQUENTLY FOR PROPER FUNCTION.

EROSION LOGS SHOULD BE KEYED IN TO PREVENT UNDER–CUTTING

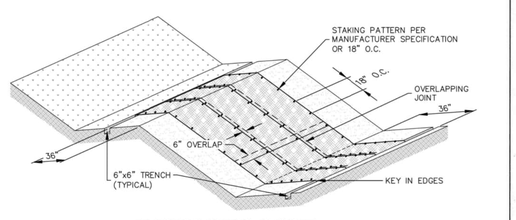
WHEN MORE THAN ONE EROSION LOG IS NEEDED, ENDS MUST BE TIGHTLY ABUTTED.



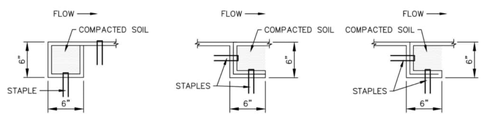
TYPICAL STAKE INSTALLATION

EROSION LOGS CAN ALSO BE USED ACROSS LONG SLOPES TO REDUCE EROSION AND SEDIMENT MOVEMENT

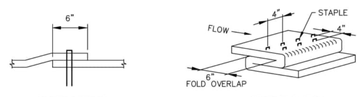
DATE APPROVED: 1/1/08	Erosion Log Barrier	EL PASO COUNTY DEPARTMENT OF TRANSPORTATION
John A. McCarty, DEPARTMENT OF TRANSPORTATION	Standard Drawing	REVISION DATE: 7/17/07 · FILE NAME: SD_3–87



EROSION CONTROL BLANKET



PERIMETER ANCHOR TRENCH · JOINT ANCHOR TRENCH · INTERMEDIATE CHECK SLOT



OVERLAPPING JOINT · STAPLE CHECK
TO BE USED ON SLOPE EVERY 15 FEET

ECB	STORMWATER ENTERPRISE	EROSION CONTROL BLANKET
	APPROVED: CHIEF MANAGER	ISSUED: 10/7/19 · REVISED: 8/19/2020 · DRAWING NO. 900–ECB–1

INSTALLATION NOTES

1. 100% NATURAL AND BIODEGRADABLE MATERIALS ARE REQUIRED FOR EROSION CONTROL BLANKETS. TRM PRODUCTS MAY ME USED WHERE APPROPRIATE AS DESIGNATED BY THE ENGINEER.
2. IN AREAS WHERE EROSION CONTROL BLANKETS ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO EROSION CONTROL BLANKET INSTALLATION, AND THE EROSION CONTROL BLANKET SHALL BE IN FULL CONTACT WITH THE SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
3. PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.
4. JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF EROSION CONTROL BLANKETS TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL EROSION CONTROL BLANKETS.
5. INTERMEDIATE CHECK SLOT OR STAPLE CHECK SHALL BE INSTALLED EVERY 15' DOWN SLOPES. IN DRAINAGEWAYS, INSTALL CHECK SLOTS EVERY 25' PERPENDICULAR TO FLOW DIRECTION.
6. OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF EROSION CONTROL BLANKETS TOGETHER FOR EROSION CONTROL BLANKETS ON SLOPES.
7. MATERIAL SPECIFICATIONS OF EROSION CONTROL BLANKETS SHALL CONFORM TO TABLE ECB–1.
8. ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING EROSION CONTROL BLANKETS SHALL BE RESEEDED AND MULCHED.
9. STRAW EROSION CONTROL BLANKETS SHALL NOT BE USED WITHIN STREAMS AND DRAINAGE CHANNELS.
10. COMPACT ALL TRENCHES.

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. EROSION CONTROL BLANKETS SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE. TRM MUST BE REMOVED AT THE DISCRETION OF THE GEC INSPECTOR.
3. ANY EROSION CONTROL BLANKET PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW GEOTEXTILE THAT HAVE ERODED TO CREATE A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEEDED AND MULCHED AND THE EROSION CONTROL BLANKET REINSTALLED.

TABLE ECB–1, EROSION CONTROL BLANKET MATERIAL SPECIFICATIONS

TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING
STRAW	–	100%	–	DOUBLE/ NATURAL
STRAW–COCONUT	30% MIN.	70% MAX.	–	DOUBLE/ NATURAL
COCONUT	100%	–	–	DOUBLE/ NATURAL
EXCELSIOR	–	–	100%	DOUBLE/ NATURAL

ECB	STORMWATER ENTERPRISE	EROSION CONTROL BLANKET
	APPROVED: CHIEF MANAGER	ISSUED: 10/7/19 · REVISED: 8/19/2020 · DRAWING NO. 900–ECB–2

Know what's below. Call before you dig.

ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.

COLORADO REGISTERED BRYAN T. LAW 25043 PROFESSIONAL ENGINEER

12-20-24

BRYAN T. LAW, P.E. DATE
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419–3024

J·R ENGINEERING
A Westrian Company
Centennial 303–740–9393 • Colorado Springs 719–593–2593
Fort Collins 970–491–9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H–SCALE	N/A
V–SCALE	N/A
DATE	12/20/24
DESIGNED BY	SCH
DRAWN BY	SCH
CHECKED BY	

SAND CREEK RESTORATION

GEC DETAILS

SHEET 118 OF 121

JOB NO. 25188.04

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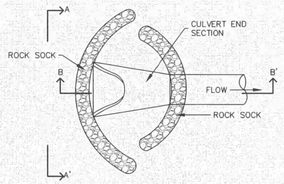
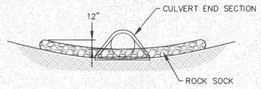
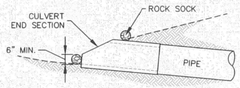


CULVERT INLET PROTECTION PLAN



SECTION A-A'



SECTION B-B'

INSTALLATION NOTES

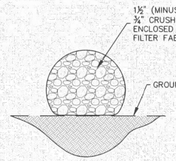
1. SEE ROCK SOCK DETAIL.

MAINTENANCE NOTES

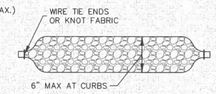
1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS ½ HEIGHT OF THE ROCK SOCK.
3. CULVERT INLET PROTECTION SHALL REMAIN UNTIL THE UPSTREAM AREA IS PERMANENTLY STABILIZED.

CIP

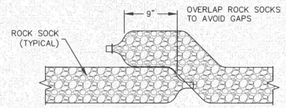
STORMWATER ENTERPRISE | CULVERT INLET PROTECTION
APPROVED: SWENT MANAGER
ISSUED: 10/7/19 | REVISED: 8/19/2020 | DRAWING NO. 900-CIP



ROCK SOCK SECTION



ROCK SOCK PLAN



ROCK SOCK OVERLAP

GRADATION TABLE	
	MASS PERCENT PASSING SQUARE MESH SIEVES
	No. 4
2"	100
1½"	90–100
1"	20–55
¾"	0–15
⅜"	0–5

MATCHES SPECIFICATIONS FOR No. 4 COARSE AGGREGATE FOR CONCRETE PER AASHTO M-43. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES

INSTALLATION NOTES

1. CRUSHED ROCK SHALL BE BETWEEN MAX. 1½" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET AND MIN. ¾" CRUSHED ROCK.
2. WIRE MESH SHALL HAVE OPENINGS SMALLER THAN THE SMALLEST SIZE ROCK.
3. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF SOCKS.

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. ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED OR DAMAGED BEYOND REPAIR.
3. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN THE DEPTH REACHES ½ OF THE HEIGHT OF THE ROCK SOCK.
4. ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL DISTURBED AREA IS STABILIZED.
5. PERMANENTLY STABILIZE AREA AFTER ROCK SOCKS HAVE BEEN REMOVED.

RS

STORMWATER ENTERPRISE | ROCK SOCK
APPROVED: SWENT MANAGER
ISSUED: 10/7/19 | REVISED: 8/19/2020 | DRAWING NO. 900-RS

SEEDING & MULCHING

ALL SOIL TESTING, SOILS AMENDMENT AND FERTILIZER DOCUMENTATION, AND SEED LOAD AND BAG TICKETS MUST BE ADDED TO THE CSWMP:

SOIL PREPARATION

1. IN AREAS TO BE SEEDED, THE UPPER 6 INCHES OF THE SOIL MUST NOT BE HEAVILY COMPACTED, AND SHOULD BE IN FRIABLE CONDITION. LESS THAN 85% STANDARD PROCTOR DENSITY IS ACCEPTABLE. AREAS OF COMPACTION OR GENERAL CONSTRUCTION ACTIVITY MUST BE SCARIFIED TO A DEPTH OF 6 TO 12 INCHES PRIOR TO SPREADING TOPSOIL TO BREAK UP COMPACTED LAYERS AND PROVIDE A BLENDING ZONE BETWEEN DIFFERENT SOIL LAYERS.
2. AREAS TO BE PLANTED SHALL HAVE AT LEAST 4 INCHES OF TOPSOIL SUITABLE TO SUPPORT PLANT GROWTH.
3. THE CITY RECOMMENDS THAT EXISTING AND/OR IMPORTED TOPSOIL BE TESTED TO IDENTIFY SOIL DEFICIENCIES AND ANY SOIL AMENDMENTS NECESSARY TO ADDRESS THESE DEFICIENCIES. SOIL AMENDMENTS AND/OR FERTILIZERS SHOULD BE ADDED TO CORRECT TOPSOIL DEFICIENCIES BASED ON SOIL TESTING RESULTS.
4. TOPSOIL SHALL BE PROTECTED DURING THE CONSTRUCTION PERIOD TO RETAIN ITS STRUCTURE AVOID COMPACTION, AND TO PREVENT EROSION AND CONTAMINATION. STRIPPED TOPSOIL MUST BE STORED IN AN AREA AWAY FROM MACHINERY AND CONSTRUCTION OPERATIONS, AND CARE MUST BE TAKEN TO PROTECT THE TOPSOIL AS A VALUABLE COMMODITY. TOPSOIL MUST NOT BE STRIPPED DURING UNDESIRABLE WORKING CONDITIONS (E.G. DURING WET WEATHER OR WHEN SOILS ARE SATURATED). TOPSOIL SHALL NOT BE STORED IN SWALES OR IN AREAS WITH POOR DRAINAGE.

SEEDING

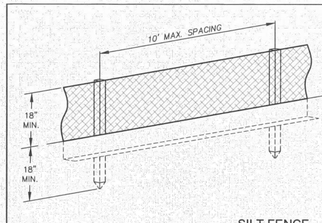
1. ALLOWABLE SEED MIXES ARE INCLUDED IN THE CITY OF COLORADO SPRINGS STORMWATER CONSTRUCTION MANUAL. ALTERNATIVE SEED MIXES ARE ACCEPTABLE IF INCLUDED IN AN APPROVED LANDSCAPING PLAN.
2. SEED SHOULD BE DRILL-SEEDED WHENEVER POSSIBLE
   - SEED DEPTH MUST BE ½ TO ½ INCHES WHEN DRILL-SEEDING IS USED
3. BROADCAST SEEDING OR HYDRO-SEEDING WITH TACKIFIER MAY BE SUBSTITUTED ON SLOPES STEEPER THAN 3:1 OR ON OTHER AREAS NOT PRACTICAL TO DRILL SEED.
   - SEEDING RATES MUST BE DOUBLED FOR BROADCAST SEEDING OR INCREASED BY 50% IF USING A BRILLION DRILL OR HYDRO-SEEDING
   - BROADCAST SEEDING MUST BE LIGHTLY HAND-RAKED INTO THE SOIL

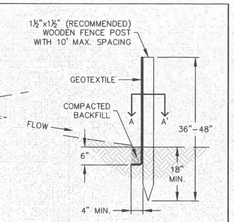
MULCHING

1. MULCHING SHOULD BE COMPLETED AS SOON AS PRACTICABLE AFTER SEEDING, HOWEVER PLANTED AREAS MUST BE MULCHED NO LATER THAN 14 DAYS AFTER PLANTING.
2. MULCHING REQUIREMENTS INCLUDE:
   - HAY OR STRAW MULCH
     - ONLY CERTIFIED WEED-FREE AND CERTIFIED SEED-FREE MULCH MAY BE USED. MULCH MUST BE APPLIED AT 2 TONS/ACRE AND ADEQUATELY SECURED BY CRIMPING AND/OR TACKIFIER.
     - CRIMPING MUST NOT BE USED ON SLOPES GREATER THAN 3:1 AND MULCH FIBERS MUST BE TUCKED INTO THE SOIL TO A DEPTH OF 3 TO 4 INCHES.
     - TACKIFIER MUST BE USED IN PLACE OF CRIMPING ON SLOPES STEEPER THAN 3:1.
   - HYDRAULIC MULCHING
     - HYDRAULIC MULCHING IS AN OPTION ON STEEP SLOPES OR WHERE ACCESS IS LIMITED.
     - IF HYDRO-SEEDING IS USED, MULCHING MUST BE APPLIED AS A SEPARATE, SECOND OPERATION.
     - WOOD CELLULOSE FIBERS MIXED WITH WATER MUST BE APPLIED AT A RATE OF 2,000 TO 2,500 POUNDS/ACRE, AND TACKIFIER MUST BE APPLIED AT A RATE OF 100 POUNDS/ACRE.
   - EROSION CONTROL BLANKET
     - EROSION CONTROL BLANKET MAY BE USED IN PLACE OF TRADITIONAL MULCHING METHODS.

SM

STORMWATER ENTERPRISE | SEEDING & MULCHING
APPROVED: SWENT MANAGER
ISSUED: 10/7/19 | REVISED: 8/19/2020 | DRAWING NO. 900-SM





SILT FENCE

J-HOOK INSTALLATION

SECTION A-A'

INSTALLATION NOTES

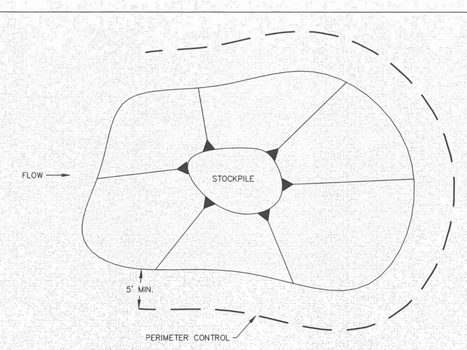
1. SILT FENCE MUST BE PLACED ON A FLAT SURFACE 2'-5' AWAY FROM TOE OF THE SLOPE TO ALLOW FOR PONDING AND DEPOSITION.
2. COMPACT THE TRENCH USING A JUMPING JACK OR WHEEL ROLLING TO THE POINT THAT THE FENCE RESISTS BEING PULLED OUT OF THE GROUND BY HAND.
3. SILT FENCE SHALL BE TAUT WITH NO SAGS AFTER IT HAS BEEN ANCHORED.
4. FABRIC SHALL BE ATTACHED TO POSTS WITH 1" HEAVY DUTY STAPLES OR 1" NAILS. THESE SHOULD BE PLACED VERTICALLY DOWN THE POST, 3" APART.
5. THE PREFERRED INSTALLATION METHOD USES A TRENCHER OR SILT FENCE INSTALLATION DEVICE.
6. INSTALL SILT FENCE ALONG THE CONTOUR OF THE SLOPES OR IN A MANNER TO AVOID CREATING CONCENTRATED FLOW (SUCH AS A "J-HOOK" INSTALLATION).

MAINTENANCE NOTES

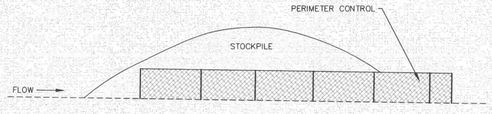
1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES ½ OF THE DESIGN HEIGHT OF THE SILT FENCE.
3. SILT FENCE MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
4. PERMANENTLY STABILIZE AREA AFTER SILT FENCE IS REMOVED.

SF

STORMWATER ENTERPRISE | SILT FENCE
APPROVED: SWENT MANAGER
ISSUED: 10/7/19 | REVISED: 8/19/2020 | DRAWING NO. 900-SF



STOCKPILE PROTECTION PLAN



STOCKPILE PROTECTION ELEVATION

INSTALLATION NOTES

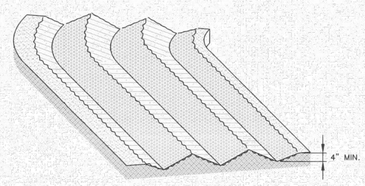
1. INSTALL PERIMETER CONTROL AROUND STOCKPILE ON DOWNGRADIENT SIDE. PERIMETER CONTROL MUST BE SUITABLE TO SITE CONDITIONS AND INSTALLED ACCORDING TO THE RELEVANT DETAIL.
2. FOR STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS INCLUDING PERIMETER CONTROL ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

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. IF PERIMETER CONTROLS MUST BE MOVED TO ACCESS STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORK DAY.
3. ACCUMULATED SEDIMENT MUST BE REMOVED ACCORDING TO PERIMETER CONTROL DETAIL.

SP

STORMWATER ENTERPRISE | STOCKPILE PROTECTION
APPROVED: SWENT MANAGER
ISSUED: 10/7/19 | REVISED: 8/19/2020 | DRAWING NO. 900-SP



SURFACE ROUGHENING

INSTALLATION NOTES

1. SURFACE ROUGHENING MAY BE USED IN AREAS FLATTER THAN 3:1. INSTALL FURROWS ALONG CONTOUR TO INTERCEPT SHEET FLOW.
2. SURFACE ROUGHENING MAY BE ACCOMPLISHED BY FURROWING, SCARIFYING, RIPPING OR DISKING THE SOIL.
3. FURROWS MUST BE A MINIMUM OF 4" IN DEPTH.
4. SURFACE ROUGHENING SHALL NOT BE USED ON EXTREMELY SANDY OR ROCKY SOILS.

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. VEHICLES AND EQUIPMENT SHALL NOT BE DRIVEN OVER AREAS THAT HAVE BEEN SURFACE ROUGHENED.

SR

STORMWATER ENTERPRISE | SURFACE ROUGHENING
APPROVED: SWENT MANAGER
ISSUED: 10/7/19 | REVISED: 8/19/2020 | DRAWING NO. 900-SR

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ENGINEER'S STATEMENT

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COLORADO REGISTERED PROFESSIONAL ENGINEER BRYAN T. LAW 25043 12/20/24

BRYAN T. LAW, P.E. DATE
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
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No.	REVISION	BY	DATE

H-SCALE	N/A
V-SCALE	N/A
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DESIGNED BY	SCH
DRAWN BY	SCH
CHECKED BY	

SAND CREEK RESTORATION

GEC DETAILS

SHEET 119 OF 121

JOB NO. 25188.04

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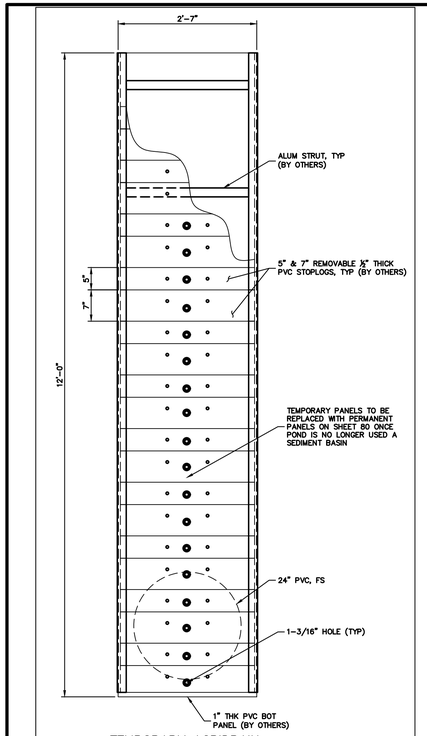

TEMPORARY AGRIDRAIN WATER QUALITY PLATE

SCALE: 1"=1'

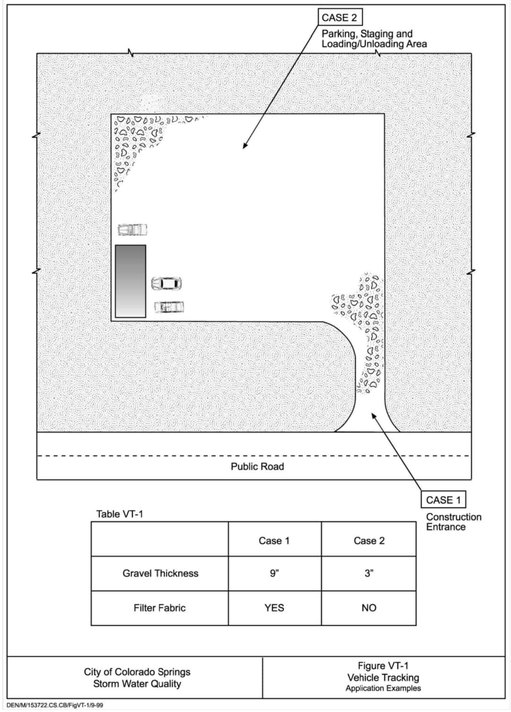

Table VT-1

	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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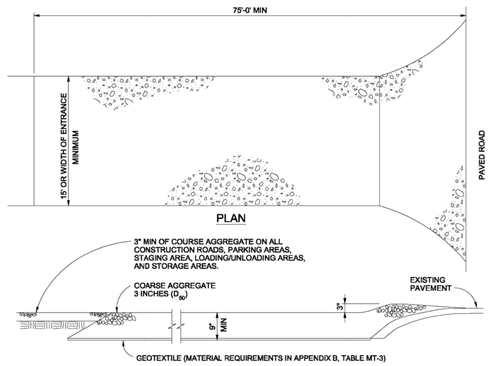


VEHICLE TRACKING

NTS

VEHICLE TRACKING NOTES

INSTALLATION REQUIREMENTS

1. ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.

2. CONSTRUCTION ENTRANCES ARE TO BE BUILT WITH AN APRON TO ALLOW FOR TURNING TRAFFIC, BUT SHOULD NOT BE BUILT OVER EXISTING PAVEMENT EXCEPT FOR A SLIGHT OVERLAP.

3. AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.

4. CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.

5. CONSTRUCTION ROADS ARE TO BE BUILT TO CONFORM TO SITE GRADES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.

2. STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.

3. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED DAILY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.

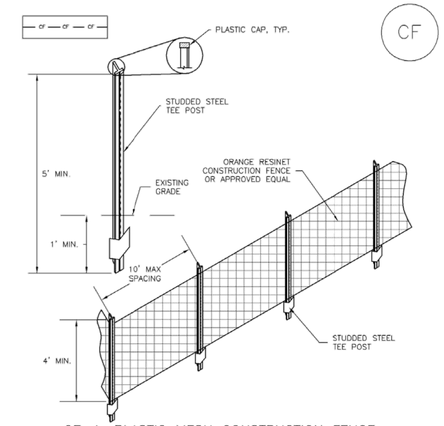
4. STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.

5. OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.

City of Colorado Springs
Stormwater Quality

Figure VT-2
Vehicle Tracking
Application Examples

SM-3 Construction Fence (CF)



CF-1. PLASTIC MESH CONSTRUCTION FENCE

CONSTRUCTION FENCE INSTALLATION NOTES

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

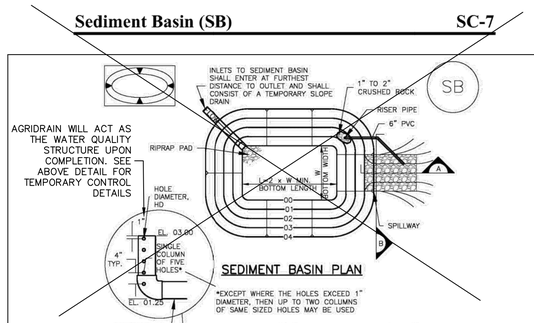
2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

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.

Sediment Basin (SB) SC-7



SRMD POND 1 & 2 WILL ACT AS A SEDIMENT BASIN FOR CONSTRUCTION OF THE CHANNEL NORTH OF IT. UPON COMPLETION OF GRADING ACTIVITIES BETWEEN POND 1 & 2, POND 1 WILL BE DREDGED BACK TO IT'S ORIGINAL VOLUME AND POND 2 WILL ACT AS THE SEDIMENT BASIN. UPON COMPLETION OF GRADING ACTIVITIES NORTH OF POND 2, POND 2 WILL BE DREDGED BACK TO ITS ORIGINAL VOLUME.

SC-7 Sediment Basin (SB)

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	12 ½	2	3/32
2	21	3	1 3/16
3	28	5	¼
4	33 ½	6	9/16
5	38 ½	8	27/32
6	43	9	29/32
7	47 ¼	11	29/32
8	51	12	29/32
9	55	13	⅞
10	58 ¼	15	15/16
11	61	16	31/32
12	64	18	1
13	67 ½	19	1 1/16
14	70 ½	21	1 ⅛
15	73 ¼	22	1 3/16

SEDIMENT BASIN INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION OF SEDIMENT BASIN.
   -TYPE OF BASIN (STANDARD BASIN OR NONSTANDARD BASIN).
   -FOR STANDARD BASIN, BOTTOM WIDTH W, CREST LENGTH CL, AND HOLE DIAMETER, HD.
   -FOR NONSTANDARD BASIN, SEE CONSTRUCTION DRAWINGS FOR DESIGN OF BASIN INCLUDING RISER HEIGHT H, NUMBER OF COLUMNS N, HOLE DIAMETER HD AND PIPE DIAMETER D.

2. FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.

3. SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND-DISTURBING ACTIVITY THAT RELIES ON ON BASINS AS AS A STORMWATER CONTROL.

4. 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.

5. EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.

6. PIPE SCH 40 OR GREATER SHALL BE USED.

7. 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.

Sediment Basin (SB) SC-7

SEDIMENT BASIN 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 IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (I.E., TWO FEET BELOW THE SPILLWAY CREST).

5. SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS ACCEPTED BY THE LOCAL JURISDICTION.

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

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO)

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.

Know what's **below.**
Call before you dig.

ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.

COLORADO REGISTERED PROFESSIONAL ENGINEER BRYAN T. LAW 25043 12/20/24

BRYAN T. LAW, P.E. DATE
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	AS SHOWN
V-SCALE	AS SHOWN
DATE	12/20/24
DESIGNED BY	SCH
DRAWN BY	SCH
CHECKED BY	

SAND CREEK RESTORATION

GEC DETAILS

SHEET 120 OF 121

JOB NO. 25188.04

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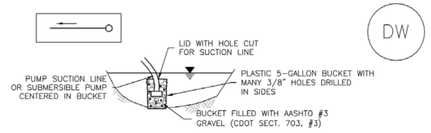
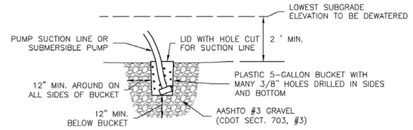
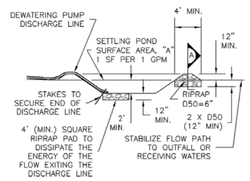
Dewatering Operations (DW) SM-9



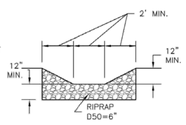
DW-1. DEWATERING POND ALREADY FILLED WITH WATER



DW-2. DEWATERING SUMP FOR SUBMERSED PUMP

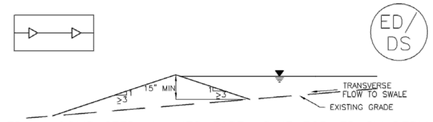


DW-3. SUMP DISCHARGE SETTLING BASIN



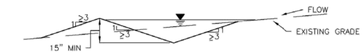
SETTLING BASIN SECTION A

Earth Dikes and Drainage Swales (ED/DS) EC-10

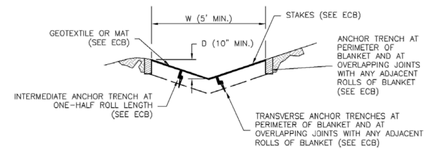


ED-1. COMPACTED UNLINED EARTH DIKE FORMED BY BERM

DS-1. COMPACTED UNLINED EXCAVATED SWALE

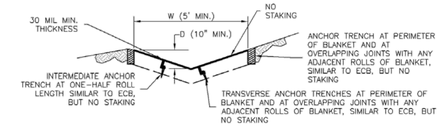


DS-2. COMPACTED UNLINED SWALE FORMED BY CUT AND FILL

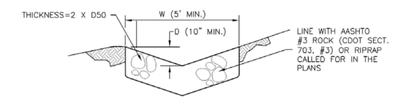


DS-3. ECB LINED SWALE (CUT AND FILL OR BERM)

EC-10 Earth Dikes and Drainage Swales (ED/DS)



DS-4. SYNTHETIC LINED SWALE



DS-5. RIPRAP LINED SWALE

EARTH DIKE AND DRAINAGE SWALE INSTALLATION NOTES

1. SEE SITE PLAN FOR:
   - LOCATION OF DIVERSION SWALE
   - TYPE OF SWALE (UNLINED, COMPACTED AND/OR LINED).
   - LENGTH OF EACH SWALE.
   - DEPTH, D, AND WIDTH, W DIMENSIONS.
   - FOR ECB/TRM LINED DITCH, SEE ECB DETAIL.
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, D50.

2. SEE DRAINAGE PLANS FOR DETAILS OF PERMANENT CONVEYANCE FACILITIES AND/OR DIVERSION SWALES EXCEEDING 2-YEAR FLOW RATE OR 10 CFS.

3. EARTH DIKES AND SWALES INDICATED ON SWMP PLAN SHALL BE INSTALLED PRIOR TO LAND-DISTURBING ACTIVITIES IN PROXIMITY.

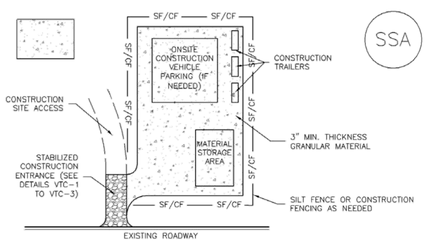
4. EMBANKMENT IS TO BE COMPACTED TO 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D698.

5. SWALES ARE TO DRAIN TO A SEDIMENT CONTROL BMP.

6. FOR LINED DITCHES, INSTALLATION OF ECB/TRM SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.

7. WHEN CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION SWALE, INSTALL A TEMPORARY CULVERT WITH A MINIMUM DIAMETER OF 12 INCHES.

Stabilized Staging Area (SSA) SM-6



SSA-1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   -LOCATION OF STAGING AREA(S).
   -CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.

2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.

3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.

4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.

5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA MAINTENANCE NOTES

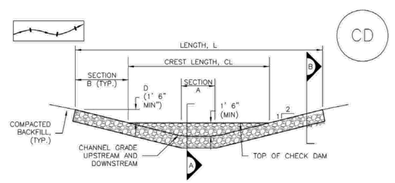
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

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

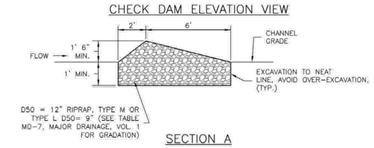
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

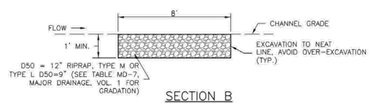
Check Dams (CD) EC-12



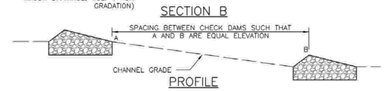
CHECK DAM ELEVATION VIEW



SECTION A



SECTION B



PROFILE

CD-1. CHECK DAM

EC-12 Check Dams (CD)

CHECK DAM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION OF CHECK DAMS.
   -CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
   -LENGTH (L), CREST LENGTH (CL), AND DEPTH (D).

2. CHECK DAMS INDICATED ON INITIAL SWMP SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND DISTURBING ACTIVITIES.

3. RIPRAP UTILIZED FOR CHECK DAMS SHOULD BE OF APPROPRIATE SIZE FOR THE APPLICATION. TYPICAL TYPES OF RIPRAP USED FOR CHECK DAMS ARE TYPE M (D50 12") OR TYPE L (D50 9").

4. RIPRAP PAD SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1'.

5. THE ENDS OF THE CHECK DAM SHALL BE A MINIMUM OF 1' 6" HIGHER THAN THE CENTER OF THE CHECK DAM.

CHECK DAM 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 CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS WITHIN ½ OF THE HEIGHT OF THE CREST.

5. CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

6. WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACKFILL. DISTURBED AREA SHALL BE SEEDED AND MULCHED AND COVERED WITH GEOTEXTILE OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

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

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

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COLORADO REGISTERED PROFESSIONAL ENGINEER 25043 12/20/24

BRYAN T. LAW, P.E. DATE
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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2ND FLOOR
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

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CHECKED BY	

SAND CREEK RESTORATION

GEC DETAILS

SHEET 121 OF 121

JOB NO. 25188.04

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