

SADDLEHORN RANCH - FILING 2

A PARCEL OF LAND LOCATED IN THE SOUTH HALF OF SECTION 3 AND THE NORTH HALF OF THE NORTH HALF OF SECTION 10
TOWNSHIP 13 SOUTH, RANGE 64 WEST OF THE 6TH P.M.,
EL PASO COUNTY, STATE OF COLORADO
GRADING AND EROSION CONTROL PLANS



Know what's below.
Call before you dig.

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

PREPARED FOR
ROI PROPERTY GROUP, LLC
2495 RIGDON STREET
NAPA, CALIFORNIA 94558
(707) 365-6891
BRADY WILLIAMS

J.R. ENGINEERING
A Western Company
Central 303-740-9888 • Colorado Springs 719-583-2583
Fort Collins 970-491-9888 • www.jrengineering.com

BY	DATE

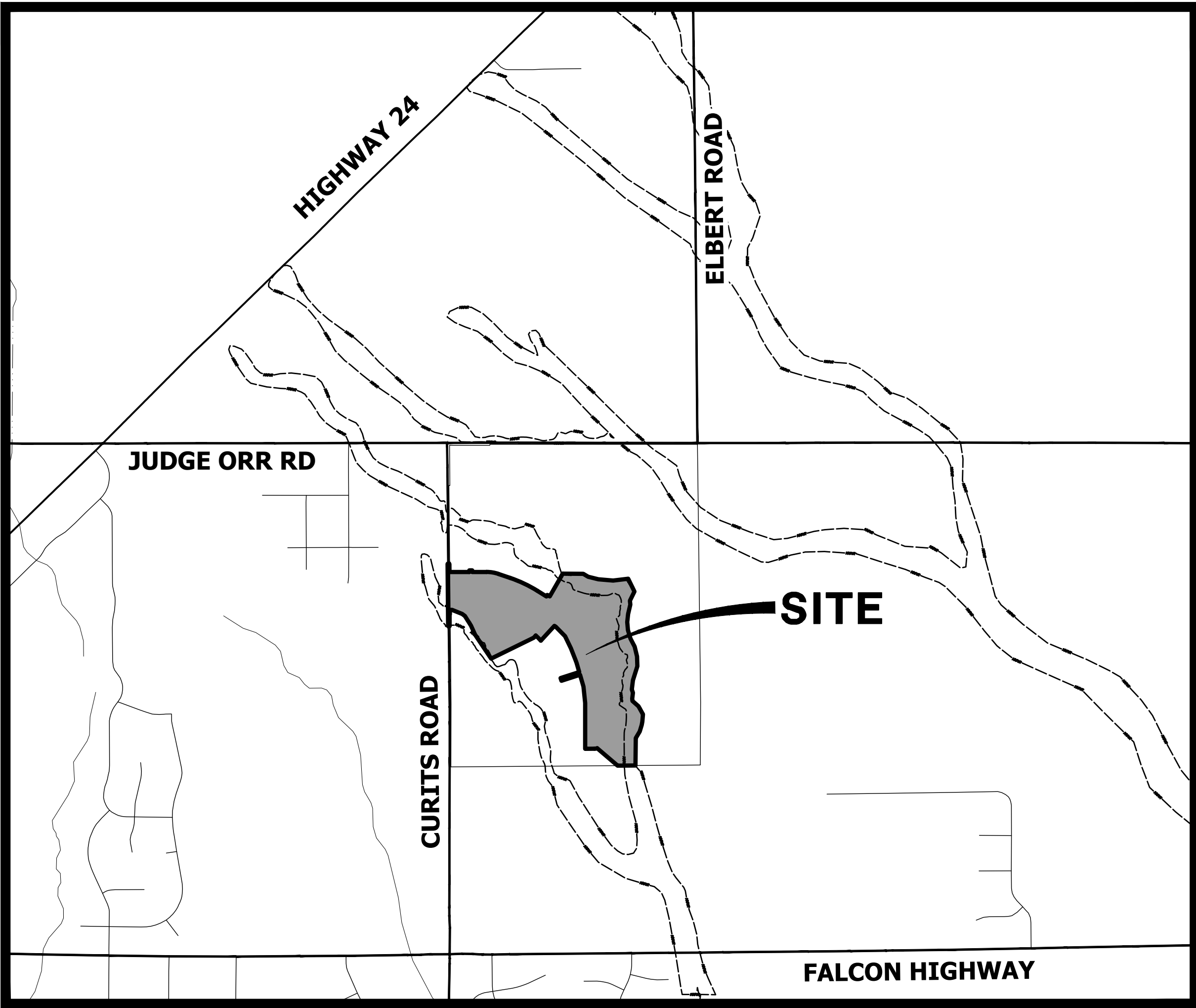
REVISION	No.								

SADDLEHORN RANCH -
FILING 2
COVER SHEET

SHEET 1 OF 14
JOB NO. 2514204

ABBREVIATIONS

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



VICINITY MAP
SCALE: 1" = 2000'

SHEET INDEX

1	-	COVER SHEET
2	-	LEGEND & NOTES
3	-	TYPICAL SECTIONS
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8-14	-	GRADING & EROSION CONTROL DETAILS

EARTHWORK SUMMARY TABLE	
NET CUT (CY)	50,633
NET FILL (CY)	46,469
NET EXPORT (CY)	4,164
* 1' ROAD CUT	
* 10% COMPACTION	

THE LOCATIONS OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL ABOVE GROUND AND UNDERGROUND UTILITIES.

OWNER/DEVELOPER STATEMENT

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

BILL GUMAN

DATE

WILLIAM GUMAN AND ASSOCIATES
731 NORTH WEBER STREET
COLORADO SPRINGS, CO 80903

CONTACTS:

OWNER/DEVELOPER	ROI PROPERTY GROUP, LLC 2495 RIGDON STREET NAPA, CALIFORNIA 94558 P~707-633-9700
ENGINEER/SURVEYOR	JR ENGINEERING, LLC ATTN: BRYAN LAW 5475 TECH CENTER DRIVE, SUITE 235 COLORADO SPRINGS, CO 80919 P~(303) 267-6254
FIRE PROTECTION DISTRICT	FALCON FIRE PROTECTION 12072 ROYAL COUNTY DOWN ROAD FALCON, CO 80831 P~(719) 495-4050
DISTRICT	SADDLEHORN RANCH METRO DISTRICT



J.R. ENGINEERING

BENCHMARK:

THE VERTICAL DATUM IS BASED OFF AN OPUS SOLUTION RAN ON CONTROL POINT #100 (NO. 4 REBAR) AND IS ADJUSTED TO NGVD 1929, ELEVATION 6754.61.

BASIS OF BEARINGS:

THE WEST LINE OF SECTION 3, T3S, R64W, 6TH P.M., MONUMENTED BY A 3-1/4" ALUMINUM CAP STAMPED "PLS 17496" IN A RANGE BOX AT THE NORTHWEST CORNER OF SECTION 3 AND A NO. 8 REBAR IN A RANGE BOX AT THE SOUTHWEST CORNER OF SECTION 3, BEARING N00°32'28"W AS REFERENCED TO COLORADO STATE PLANE CENTRAL ZONE.

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 EOM 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.

JENNIFER IRVINE, P.E.

DATE

COUNTY ENGINEER/ECM ADMINISTRATOR

ENGINEER'S STATEMENT

THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLANS.

BRYAN T. LAW, P.E.

DATE

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

GRADING AND EROSION CONTROL STANDARD NOTES

1. CONSTRUCTION MAY NOT COMMENCE UNTIL A CONSTRUCTION PERMIT IS OBTAINED FROM PLANNING AND COMMUNITY DEVELOPMENT AND A PRECONSTRUCTION CONFERENCE IS HELD WITH PLANING AND COMMUNITY DEVELOPMENT INSPECTIONS.
2. 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.
3. 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.
4. A SEPARATE STORMWATER MANAGEMENT PLAN (SWMP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SWMP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SWMP SHALL BE LOCATED ON SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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 OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND BEFORE PERMIT CLOSURE.
10. ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT AFFECT THE DESIGN OR FUNCTION OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
11. 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.
12. 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 LOOSENEED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).
13. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT OFF SITE.
14. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED 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.
15. DURING DEWATERING OPERATIONS OF UNCONTAMINATED GROUND WATER MAY BE DISCHARGED ON SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.
16. EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
17. 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.
18. 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 DEMAED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
19. TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
20. 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.
21. 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.
22. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ONSITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
23. BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ONSITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.
24. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
25. 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.
26. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
27. PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
28. 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.
29. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY ENTECH ENGINEERING, INC. AND SHALL BE CONSIDERED A PART OF THESE PLANS.
30. 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

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		
CENTERLINE		
CITY LIMITS		
WIRE FENCE		
CHAIN LINK FENCE		
WOOD FENCE		
MASONRY FENCE		
GUARDRAIL		
CONC. BARRIER		
CABLE TV		
ELECTRIC		
FIBER OPTIC		
GAS MAIN		
IRRIGATION MAIN		
OIL/PETRO. MAIN		
OVERHEAD UTILITY		
SANITARY SEWER		
STORM DRAIN		
TELEPHONE		
WATER MAIN		
RAW WATER LINE		
SWALE/WATERWAY FLOWLINE		
DIVERSION DITCH		
DIVERSION CHANNEL		
MAJOR DRAINAGE BASIN		
MINOR DRAINAGE BASIN		
TOP OF SLOPE		
TOE OF SLOPE		
EDGE OF WATER		
INDEX CONTOUR		
INTERMEDIATE CONTOUR		
DEPRESSION CONT. (INDEX)		
DEPRESSION CONT. (INTER)		
TOP OF CUTS		
TOE OF FILLS		
CUT AND FILL LINE		
SILT FENCE		
100 YEAR FLOODPLAIN		
500 YEAR FLOODPLAIN		
FLOODWAY		
BASE FLOOD ELEVATION		
EDGE OF WETLANDS		
STONE WALL		
STORMWATER FLOW ARROWS		

UTILITIES LEGEND

	EXISTING	PROPOSED
STORM SEWER		
MANHOLE		
STORM INLET		
AREA INLET – SQUARE		
AREA INLET – ROUND		
FLARED END SECTION		
RIPRAP		
SANITARY SEWER		
LINE MARKER		
SERVICE MARKER		
CLEAN-OUT		
MANHOLE W/ DIRECTIONAL FLOW ARROW		
WATER LINE		
LINE MARKER		
SERVICE MARKER		
FIRE HYDRANT		
FIRE CONNECTION		
MANHOLE		
BEND		
BLOW-OFF VALVE		
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		
SERVICE MARKER		
METER		
VALVE		
PLUG		
TEE		
DRY UTILITIES		
CABLE TV MARKER		
CABLE TELEVISION PEDESTAL		
ELECTRIC MARKER		
ELECTRIC SERVICE MARKER		
ELECTRICAL PEDESTAL		
ELECTRICAL METER		
ELECTRICAL MANHOLE		
FIBER-OPTIC MARKER		
IRRIGATION PEDESTAL		
TELEPHONE MARKER		
TELEPHONE PEDESTAL		
TELEPHONE MANHOLE		
UTILITY POLE		
GUY ANCHOR		
GUY POLE		

STORM WATER MANAGEMENT

	KEY	SYMBOL
CHECK DAM		
CONSTRUCTION ROAD STABILIZATION		
CURB SOCK INLET PROTECTION		
CONCRETE WASHOUT AREA		
DIVERSION DITCH AND DIKE, TEMPORARY		
DIVERSION CHANNEL, TEMPORARY		
DEWATERING		
EROSION CONTROL BLANKET		
INLET FILTER		
INLET PROTECTION		
MULCHING		
OUTLET PROTECTION		
PAVED FLUME		
PERMENENT SEEDING		
REINFORCED CONCRETE DAM		
ROUGH CUT STREET CONTROL		
SEDIMENT BASIN		
SEDIMENT CONTROL LOG		
SILT FENCE		
SURFACE ROUGHENING		
STABILIZED STAGING AREA		
SEDIMENT TRAP		
STRAW BALE BARRIER		
TERRACING		
TEMPORARY SEEDING		
TEMPORARY STREAM CROSSING CULVERT/BRIDGE		
TEMPORARY STREAM CROSSING FORD TYPE		
TEMPORARY SLOPE DRAIN		
VEHICLE TRACKING CONTROL		
VEHICLE TRACKING CONTROL WITH WASH RACK		
CONSTRUCTION MARKER		
LIMITS OF CONSTRUCTION		

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISON AND ON BEHALF OF JR ENGINEERING

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

DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, OR ENGINEERING APPROVES THEIR USES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
ROI PROPERTY GROUP, LLC
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(707) 365-6891
BRADY WILLIAMS

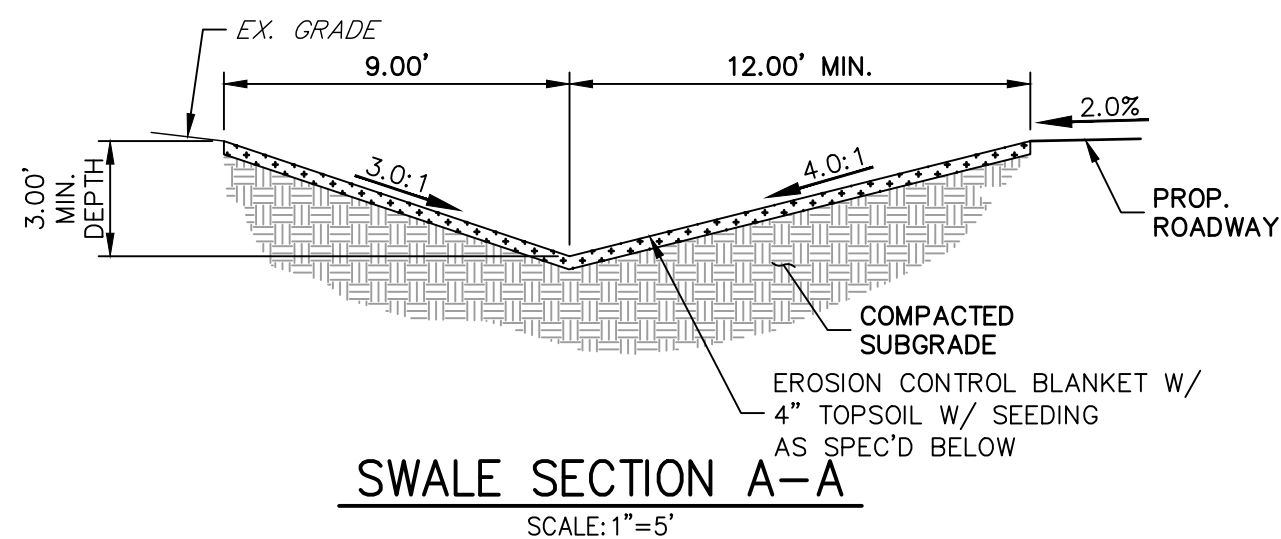
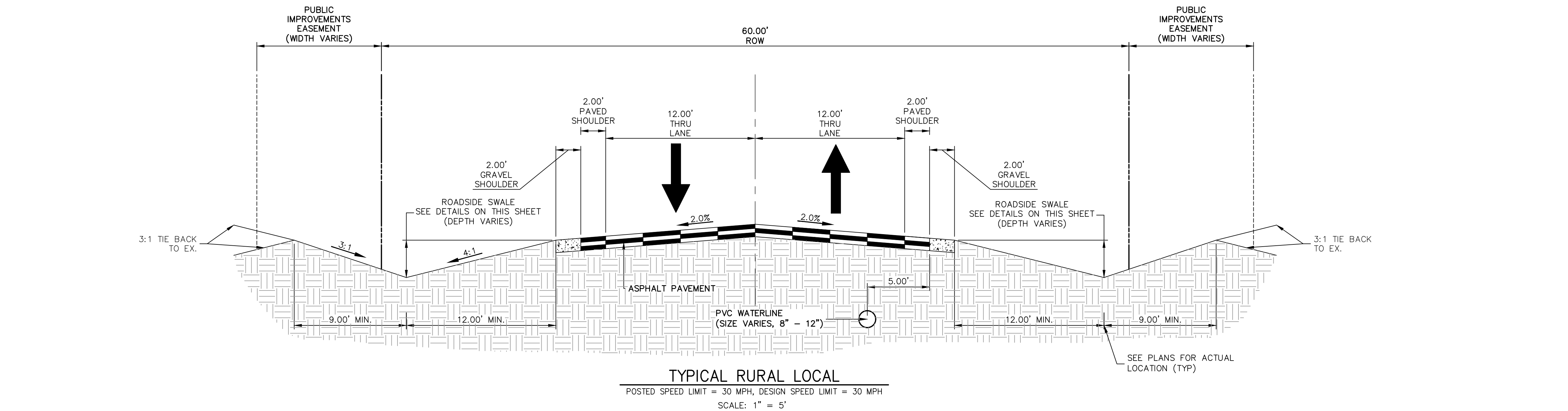
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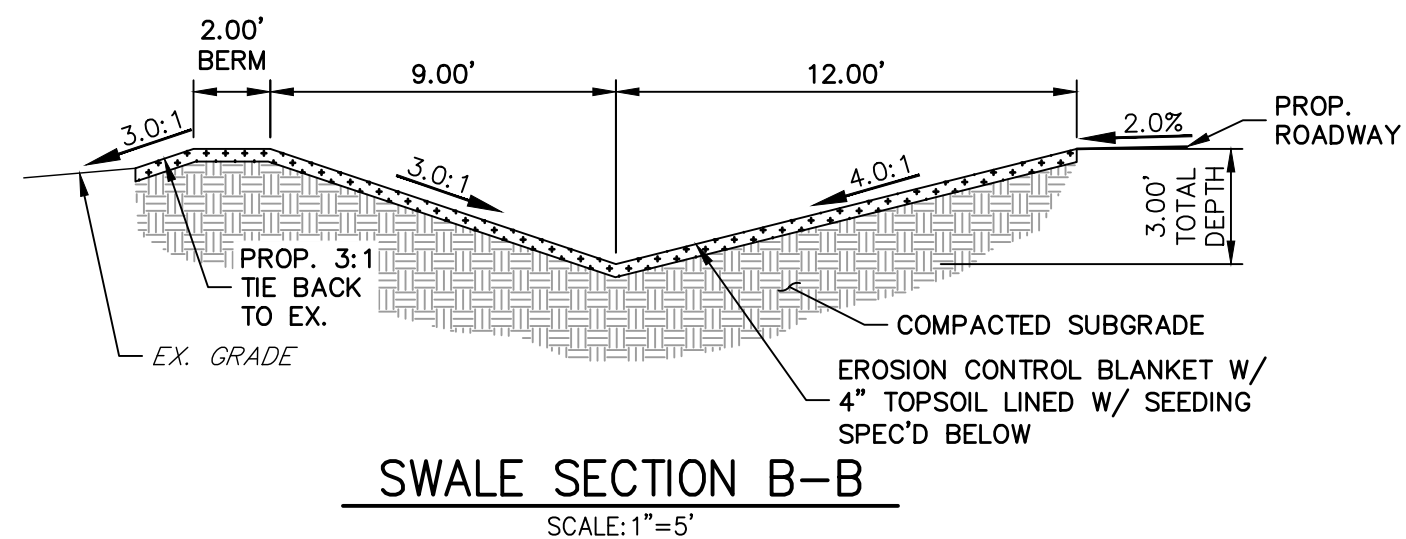
SADDLEHORN RANCH –
FILING 2
GRADING & EROSION
CONTROL NOTES & LEGEND

SHEET 2 OF 14

JOB NO. 2514204



SWALE SEED MIX:
EROSION CONTROL BLANKET WITH PAWNEE BUTTES SEED INC. - "LOW GROW NATIVE MIX"
-IDAHO FESCUE
-SANDBERG BLUEGRASS
-ROCKY MOUNTAIN FESCUE
-BIG BLUEGRASS



SWALE SEED MIX:
EROSION CONTROL BLANKET WITH PAWNEE BUTTES SEED INC. - "LOW GROW NATIVE MIX"
-IDAHO FESCUE
-SANDBERG BLUEGRASS
-ROCKY MOUNTAIN FESCUE
-BIG BLUEGRASS

ROADSIDE SWALE NOTES

- SWALE SECTION A-A PROVIDES MINIMUM SWALE DIMENSIONS. IN AREAS WHERE 3:1 TIE BACK TO EXISTING DOES NOT PROVIDE MINIMUM SWALE DEPTH, SWALE TO BE CUT DEEPER SUCH THAT 3' DEPTH IS PROVIDED RELATIVE TO EXISTING GRADE.
- SWALE SECTION B-B TO BE USED IN FILL AREAS OF ROADWAY WHERE CUTTING SWALE DEEPER TO ACHIEVE 3.0' DEPTH RELATIVE TO EXISTING GRADE CAN NOT BE ACHIEVED DUE TO DOWN STREAM GRADE REQUIREMENTS. 2.0' BERM MUST BE PROVIDED TO MITIGATE FUTURE EROSION.



ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

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


DATE

SADDLEHORN RANCH -
FILING 2
TYPICAL SECTIONS

SHEET 3 OF 14

JOB NO. 2514204

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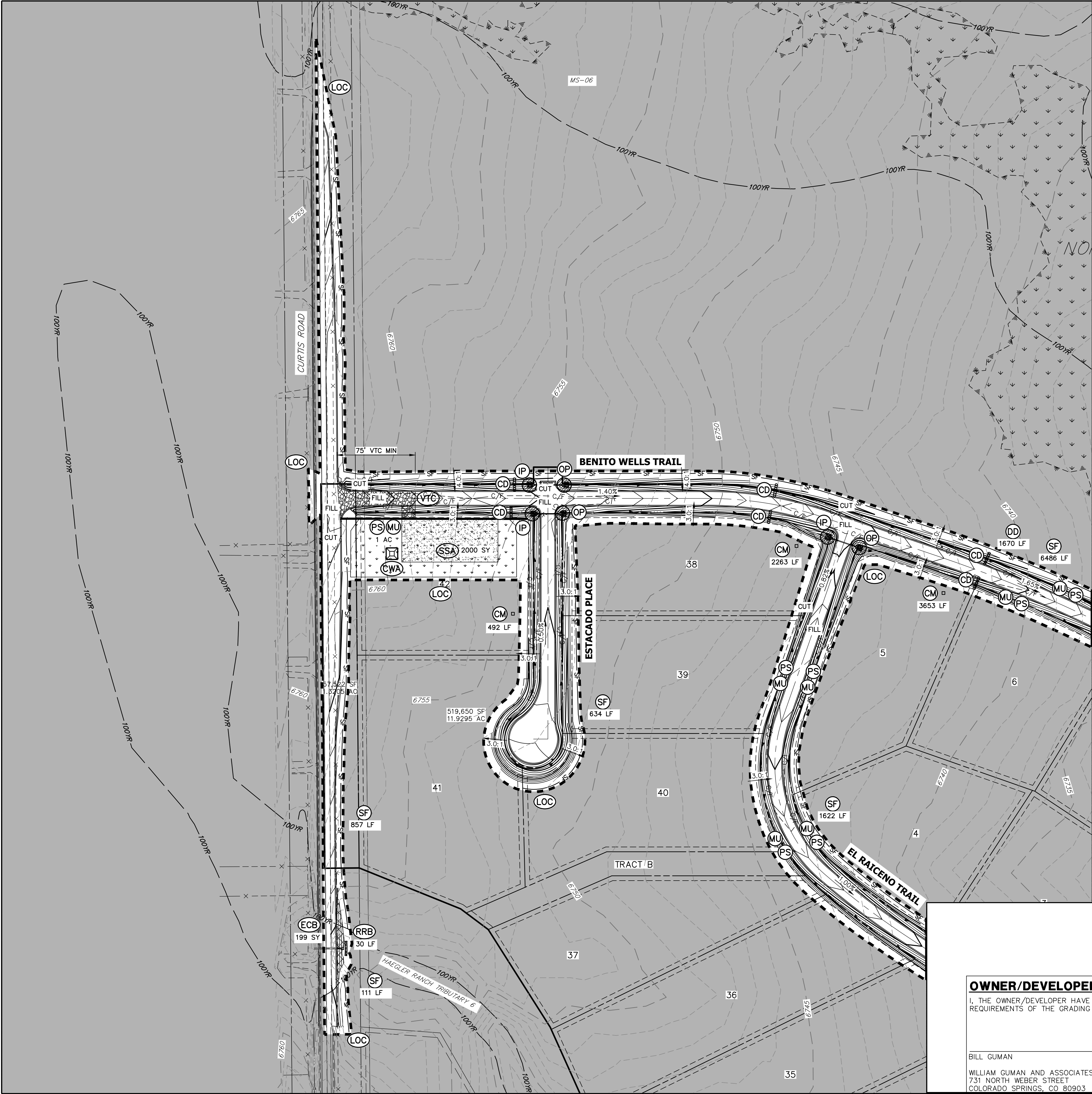


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BRADY WILLIAMS

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LEGEND

SEDIMENT BASIN	(SB)		TOE
SILT FENCE	(SF)		TOP
STABILIZED STAGING AREA	(SSA)		
CONSTRUCTION MARKER	(CM)		
VEHICLE TRACKING CONTROL	(VTC)		
TEMPORARY STOCK PILE	(TSP)		
EROSION CONTROL BLANKET	(ECB)		
INLET PROTECTION	(IP)		
OUTLET PROTECTION	(OP)		
DIVERSION DITCH AND DIKE, TEMPORARY	(DD)		
CUT AND FILL LINE			C/F
LIMITS OF CONSTRUCTION	(LOC)		
CONCRETE WASHOUT AREA	(CWA)		
MULCHING & PERMANENT SEEDING	(MU) (PS)		
TEMPORARY SLOPE DRAIN	(TSD)		
REINFORCED ROCK BERM	(RRB)		
CHECK DAM	(CD)		
ROCK SOCK	(RS)		
CONSTRUCTION MARKERS	(CM)		

KEY MAP
N.T.S.

100 50 0 100 200
ORIGINAL SCALE: 1" = 100'

NOTES

- REFER TO THE STORMWATER MANAGEMENT PLAN (SWMP) FOR A DETAILED DESCRIPTION OF THE MAINTENANCE PROGRAMS FOR EROSION CONTROL FACILITIES.
- SEE SHEET 3 FOR SWALE TYPICAL CROSS SECTIONS THAT INCLUDES SWALE LINING DETAIL.
- ALL DISTURBED AREAS NOT TO BE PAVED SHALL BE PERMANENTLY SEEDDED PER THE PAWNEE BUTTES SEED INC. - "LOW GROW NATIVE MIX" OR APPROVED EQUAL. SEE SHEET 3 FOR SEED MIX DETAILS. 12.7 TOTAL ACRES OF SEEDING ESTIMATED.
- P.I.E = PUBLIC IMPROVEMENTS EASEMENT
- EXISTING VEGETATION CONSISTS OF NATIVE MEADOW GRASSES (APPROX. 70% COVERAGE) DETERMINED THROUGH A COMBINATION OF FIELD VERIFICATION AND AERIAL INSPECTION.

BMP PHASING

- INITIAL (09/2021 - 10/2021):
- INSTALL VTC
 - INSTALL CWA
 - ESTABLISH SSA
 - INSTALL CONSTRUCTION MARKERS
 - INSTALL SILT FENCE
 - INSTALL SEDIMENT BASINS
 - INSTALL DIVERSION DITCHES
- INTERIM (10/2021 - 04/2022):
- LOCATE/INSTALL TEMPORARY STOCKPILE
 - MAINTAIN ALL BMPs
 - INSTALL RRBs
 - INSTALL INLET AND OUTLET PROTECTION
 - INSTALL EROSION CONTROL BLANKETS
- FINAL (04/2022 - 09/2022):
- INSTALL MULCH AND PERMANENT SEEDING IN ALL DISTURBED AREAS
 - REMOVE SILT FENCE AFTER STABILIZED
- FINAL STABILIZATION ANTICIPATED 09/2022.



Know what's below.
Call before you dig.

OWNER/DEVELOPER STATEMENT

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

BILL GUMAN
WILLIAM GUMAN AND ASSOCIATES
731 NORTH WEBER STREET
COLORADO SPRINGS, CO 80903

ENGINEER'S STATEMENT

THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLANS.

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

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BRADY WILLIAMS

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A Western Company

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SADDLEHORN RANCH -
FILING 2

GRADING & EROSION
CONTROL PLANS

SHEET 5 OF 14

JOB NO. 2514204



LEGEND

SEDIMENT BASIN	(SB)		TOE
SILT FENCE	(SF)		TOP
STABILIZED STAGING AREA	(SSA)		
CONSTRUCTION MARKER	(CM)		
VEHICLE TRACKING CONTROL	(VTC)		
TEMPORARY STOCK PILE	(TSP)		
EROSION CONTROL BLANKET	(ECB)		
INLET PROTECTION	(IP)		
OUTLET PROTECTION	(OP)		
DIVERSION DITCH AND DIKE, TEMPORARY	(DD)		
CUT AND FILL LINE			C/F
LIMITS OF CONSTRUCTION	(LOC)		
CONCRETE WASHOUT AREA	(CWA)		
MULCHING & PERMANENT SEEDING	(MU, PS)		
TEMPORARY SLOPE DRAIN	(TSD)		
REINFORCED ROCK BERM	(RRB)		
CHECK DAM	(CD)		
ROCK SOCK	(RS)		
CONSTRUCTION MARKERS	(CM)		

KEY MAP
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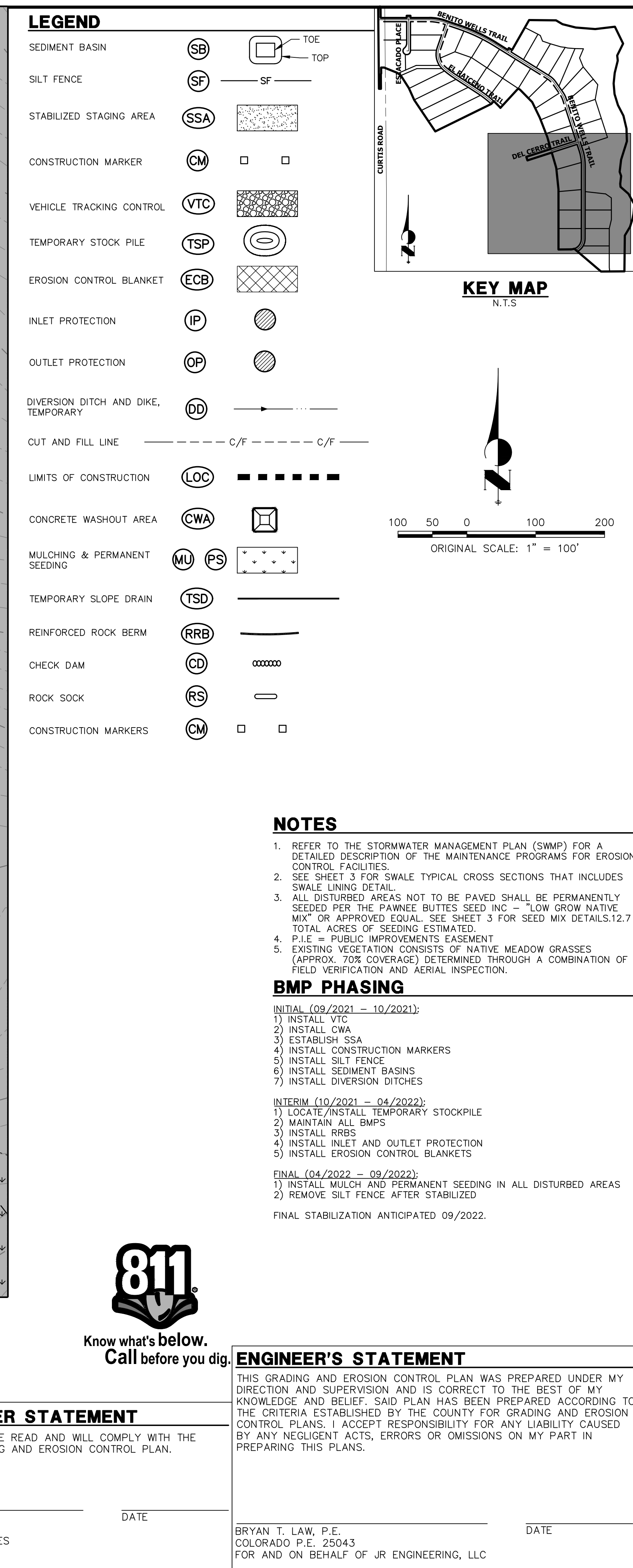
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SADDLEHORN RANCH - FILING 2

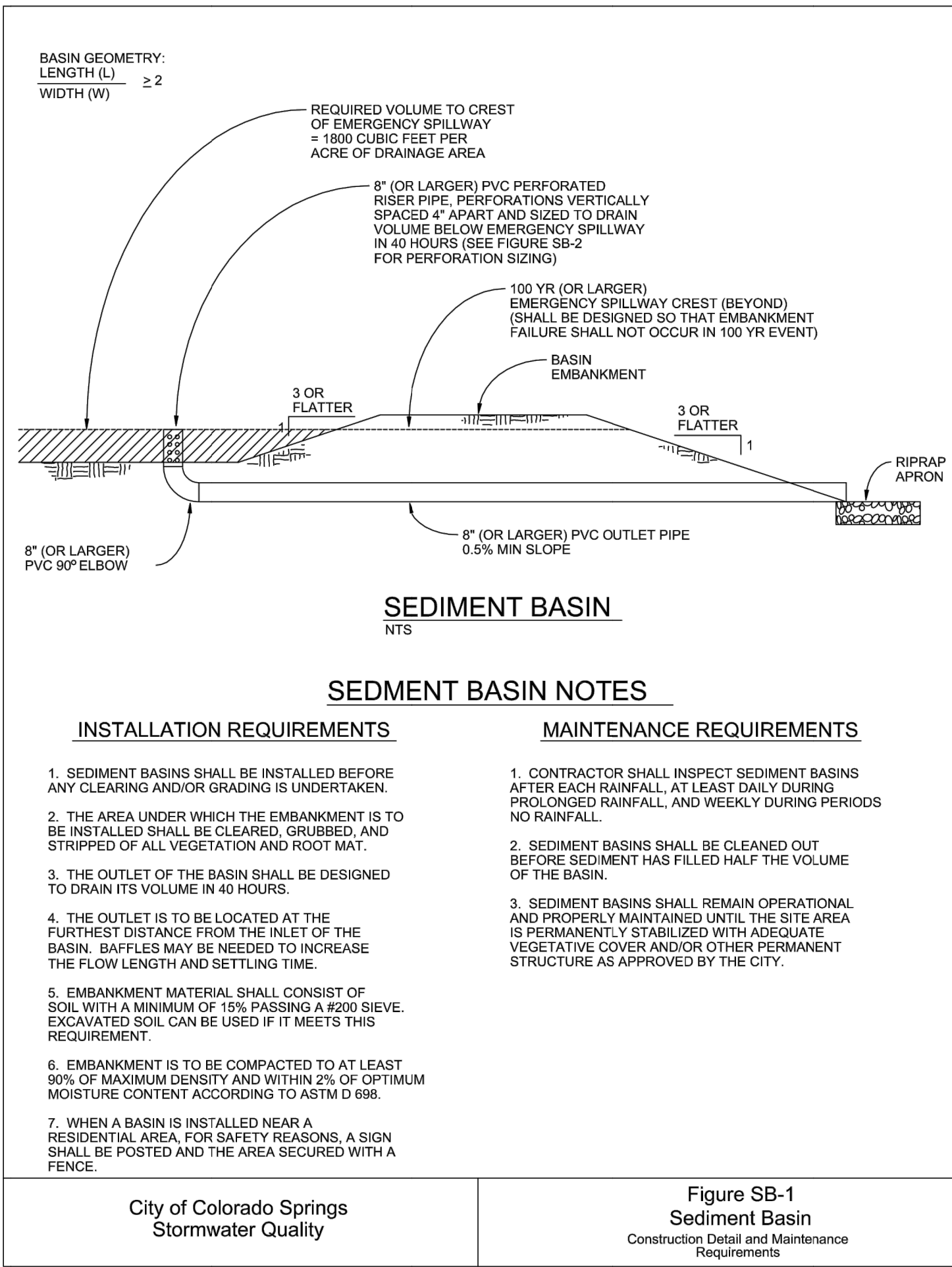
GRADING & EROSION CONTROL PLANS

SHEET 6 OF 14

JOB NO. 2514204



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	DATE	06/14/21				
	DESIGNED BY	GVT				
	DRAWN BY	GVT				
GRADING & EROSION CONTROL PLANS	CHECKED BY					
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Required Area per Row (in²)

Design Volume (acre-ft)	Depth at Outlet (ft)							
	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
2	15.04	7.71	5.10	3.76	2.95	2.41	2.02	1.73
1	7.52	3.86	2.55	1.88	1.48	1.21	1.01	0.87
0.6	4.51	2.31	1.53	1.13	0.89	0.72	0.61	0.52
0.4	3.01	1.54	1.02	0.75	0.59	0.48	0.40	0.35
0.2	1.50	0.77	0.51	0.38	0.30	0.24	0.20	0.17
0.1	0.75	0.39	0.26	0.19	0.15	0.12	0.10	0.09
0.08	0.45	0.23	0.15	0.11	0.09	0.07	0.06	0.05
0.04	0.20	0.10	0.10	0.08	0.06	0.05	0.04	0.03
0.02	0.15	0.08	0.05	0.04	0.03	0.02	0.02	0.02
0.01	0.08	0.04	0.03	0.02	0.01	0.01	0.01	0.01

TABLE SB-1

Circular Perforation Sizing

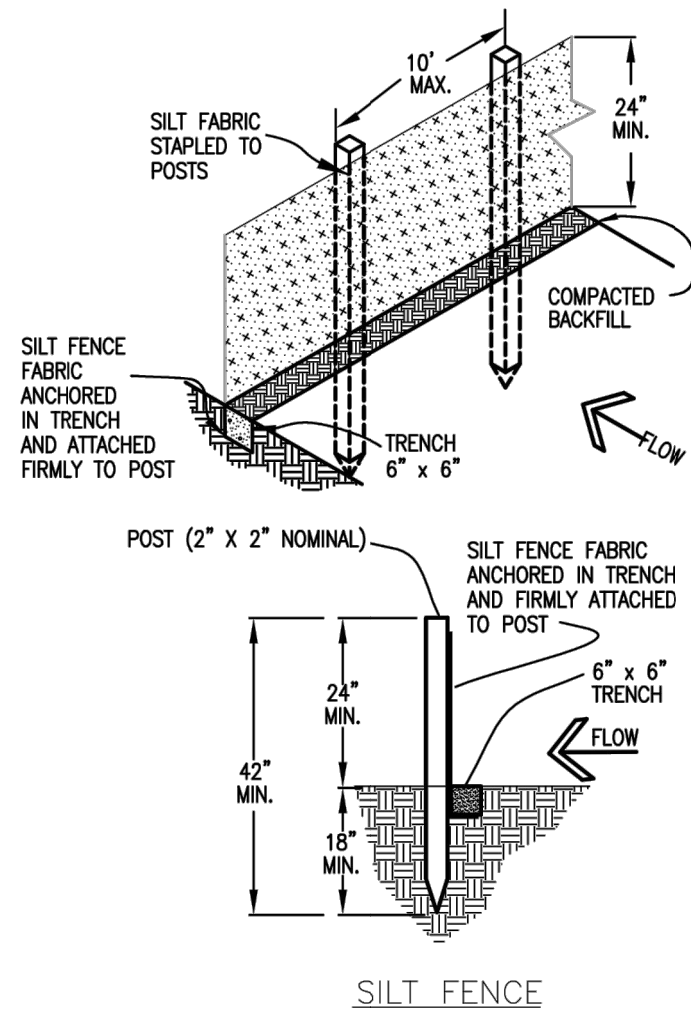
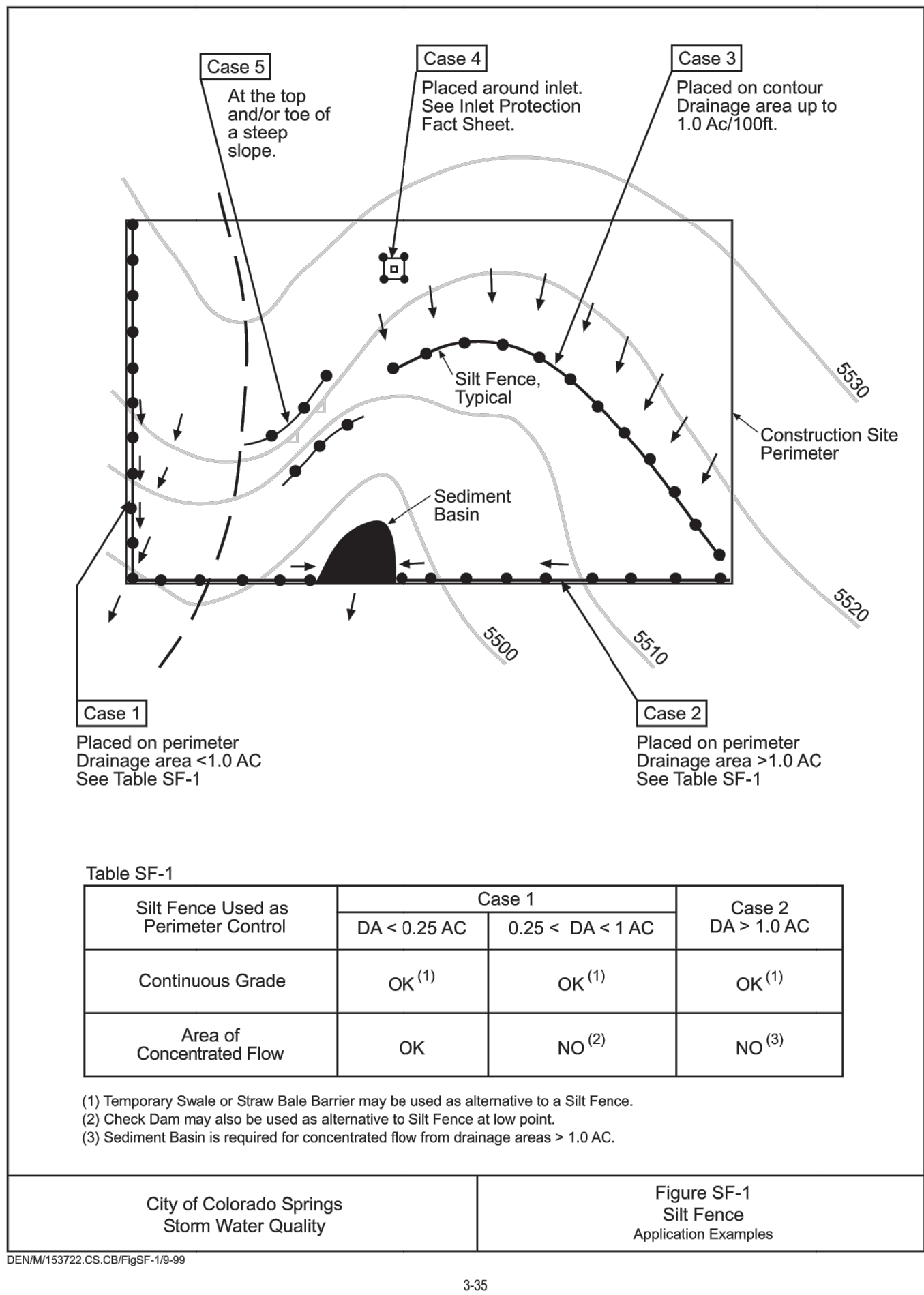
Hole Diameter (in)	Hole Diameter (in)	Area per Row (in ²)		
		n = 1	n = 2	n = 3
1/4	0.250	0.05	0.10	0.15
5/16	0.313	0.08	0.15	0.23
3/8	0.375	0.11	0.22	0.33
7/16	0.438	0.15	0.30	0.45
1/2	0.500	0.20	0.39	0.59
9/16	0.563	0.25	0.50	0.75
5/8	0.625	0.31	0.61	0.92
11/16	0.688	0.37	0.74	1.11
3/4	0.750	0.44	0.88	1.33
7/8	0.875	0.60	1.20	1.80
1	1.000	0.79	1.57	2.36
1 1/8	1.125	0.99	1.99	2.98
1 1/4	1.250	1.23	2.45	3.68
1 3/8	1.375	1.48	2.97	4.45
1 1/2	1.500	1.77	3.53	5.30
1 5/8	1.625	2.07	4.15	6.22
1 3/4	1.750	2.41	4.81	7.22
1 7/8	1.875	2.76	5.52	8.28
2	2.000	3.14	6.28	9.42
n = Number of columns of perforations				
Minimum steel plate thickness		1/4"	5/16"	3/8"

TABLE SB-2

City of Colorado Springs
Stormwater Quality

Figure SB-2
Outlet Sizing
Application Techniques and Maintenance
Requirements

3-33



SILT FENCE NOTES

INSTALLATION REQUIREMENTS

1. SILT FENCES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
2. WHEN JOINTS ARE NECESSARY, SILT FENCE GEOTEXTILE SHALL BE SPICED TOGETHER ONLY AT SUPPORT POST AND SECURELY SEALED.
3. METAL POSTS SHALL BE "STUDDED TEE" OR "U" TYPE WITH MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT. WOOD POSTS SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION DIMENSION OF 2 INCHES.
4. THE FILTER MATERIAL SHALL BE FASTENED SECURELY TO METAL OR WOOD POSTS USING WIRE TIES, OR TO WOOD POSTS WITH 3/4" LONG #8 HEAVY-DUTY STAPLES. THE SILT FENCE GEOTEXTILE SHALL NOT BE STAPLED TO EXISTING TREES.
5. WHILE NOT REQUIRED, WIRE MESH FENCE MAY BE USED TO SUPPORT THE GEOTEXTILE. WIRE FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 3/4" LONG. THE WIRES OR HOG RINGS, THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 6" AND SHALL NOT EXCEED MORE THAN 3" ABOVE THE ORIGINAL GROUND SURFACE.

6. ALONG THE TOE OF FILLS, INSTALL THE SILT FENCE ALONG A LEVEL CONTOUR AND PROVIDE AN AREA BEHIND THE FENCE FOR RUNOFF TO POND AND SEDIMENT TO SETTLE. A MINIMUM DISTANCE OF 5 FEET FROM THE TOE OF THE FILL IS RECOMMENDED.
7. THE HEIGHT OF THE SILT FENCE FROM THE GROUND SURFACE SHALL BE MINIMUM OF 24 INCHES AND SHALL NOT EXCEED 36 INCHES. HIGHER FENCES MAY INPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SILT FENCES IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL. DAMAGED, COLLAPSED, UNINTRENCHED OR INEFFECTIVE SILT FENCES SHALL BE PROMPTLY REPAIRED OR REPLACED.
2. SEDIMENT SHALL BE REMOVED FROM BEHIND SILT FENCE WHEN IT ACCUMULATES TO HALF THE EXPOSED GEOTEXTILE HEIGHT.
3. SILT FENCES SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED AS APPROVED BY THE CITY.

City of Colorado Springs
Stormwater Quality

Figure SF-2
Silt Fence
Construction Detail and Maintenance
Requirements

3-36



Know what's below.
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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

SADDLEHORN RANCH -
FILING 2

GRADING AND EROSION
CONTROL DETAILS

SHEET 8 OF 14

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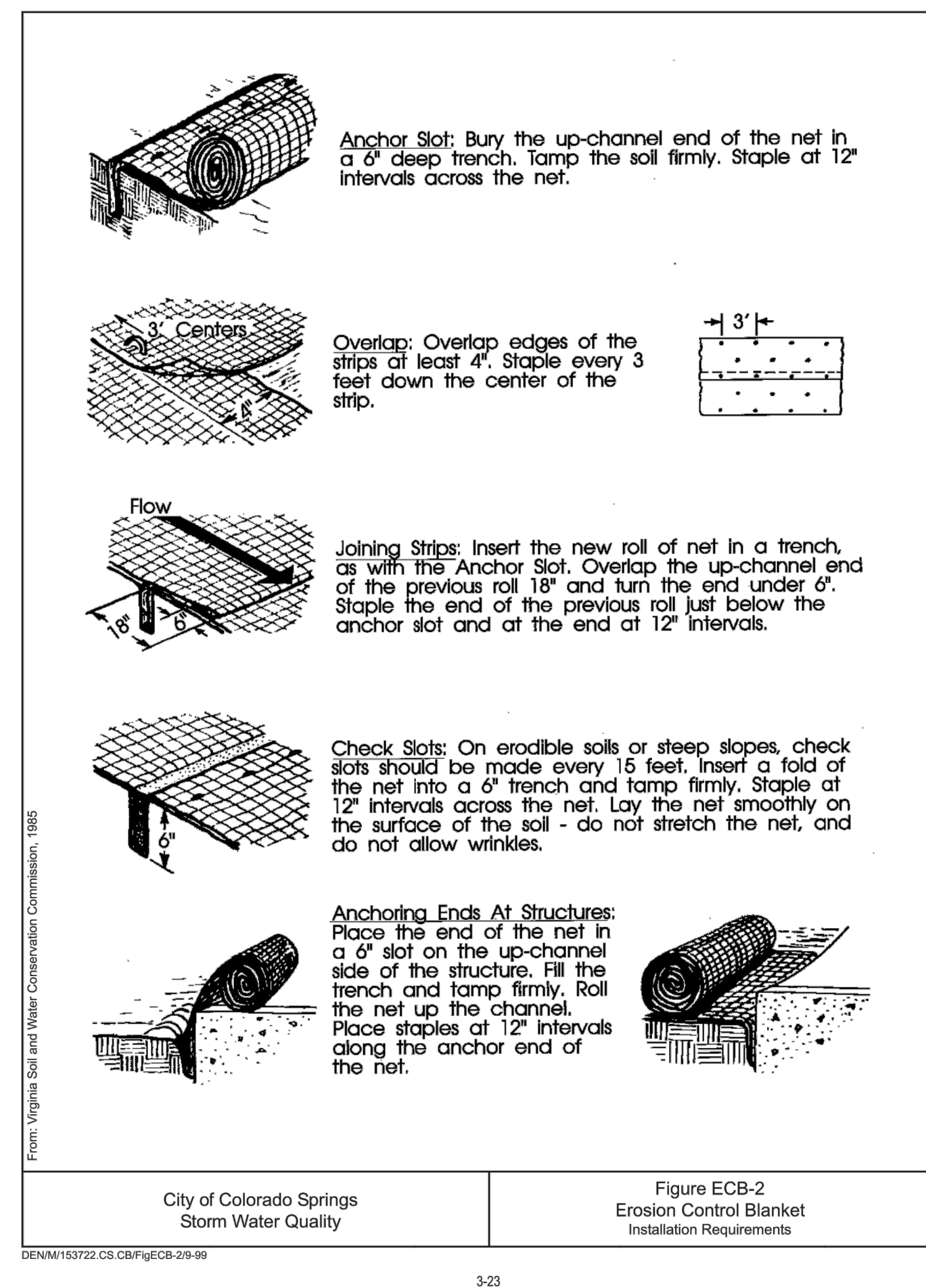
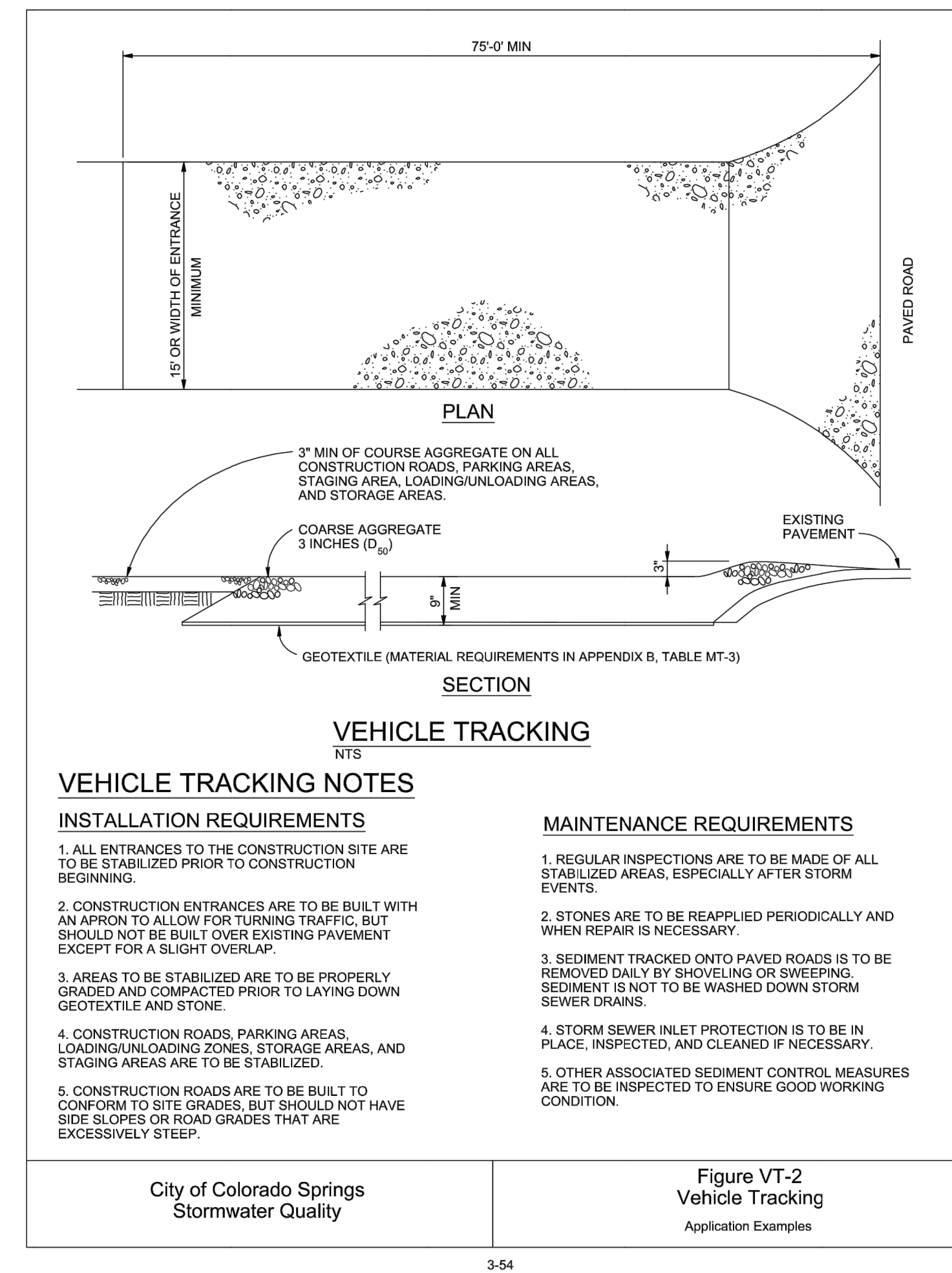
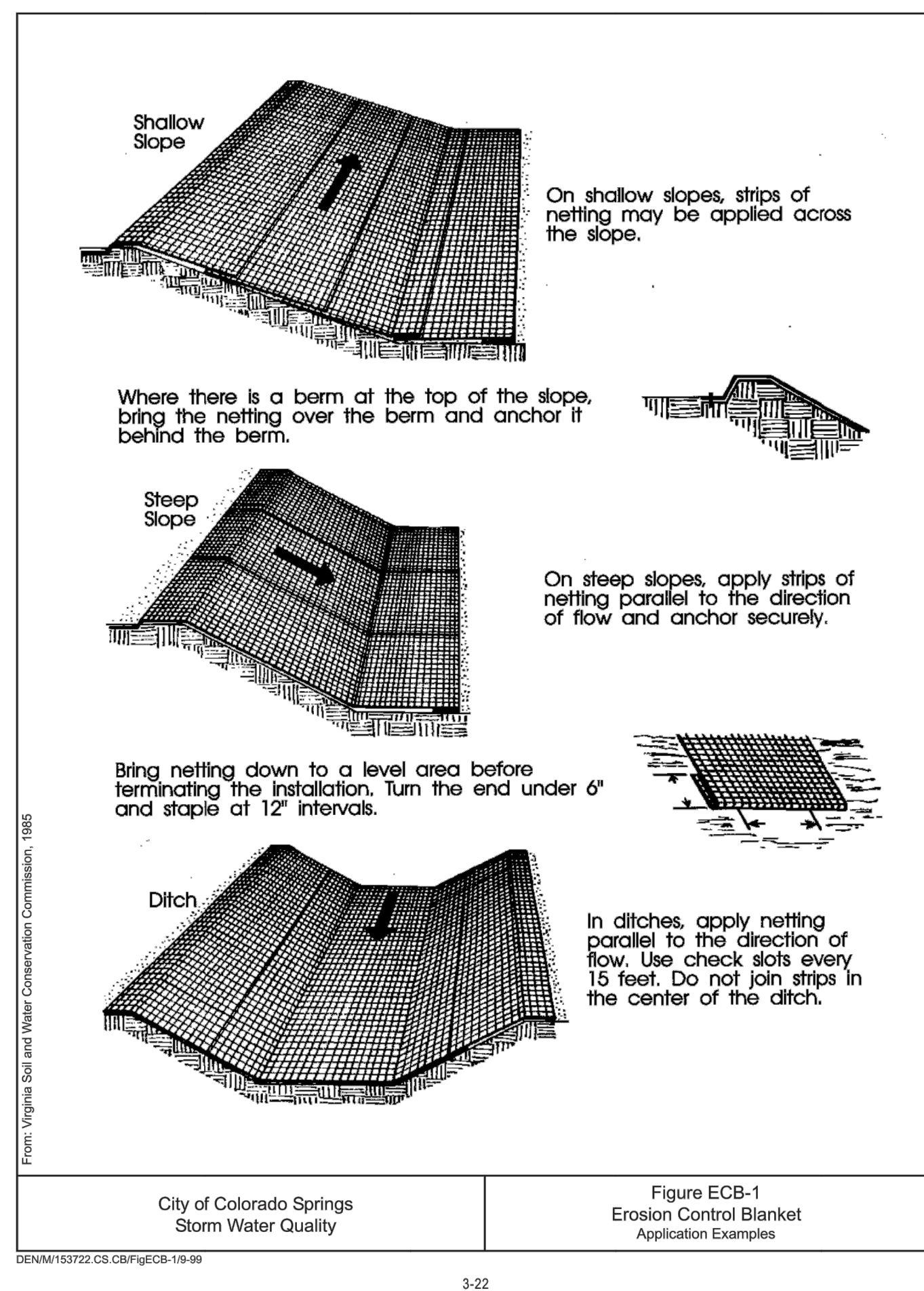
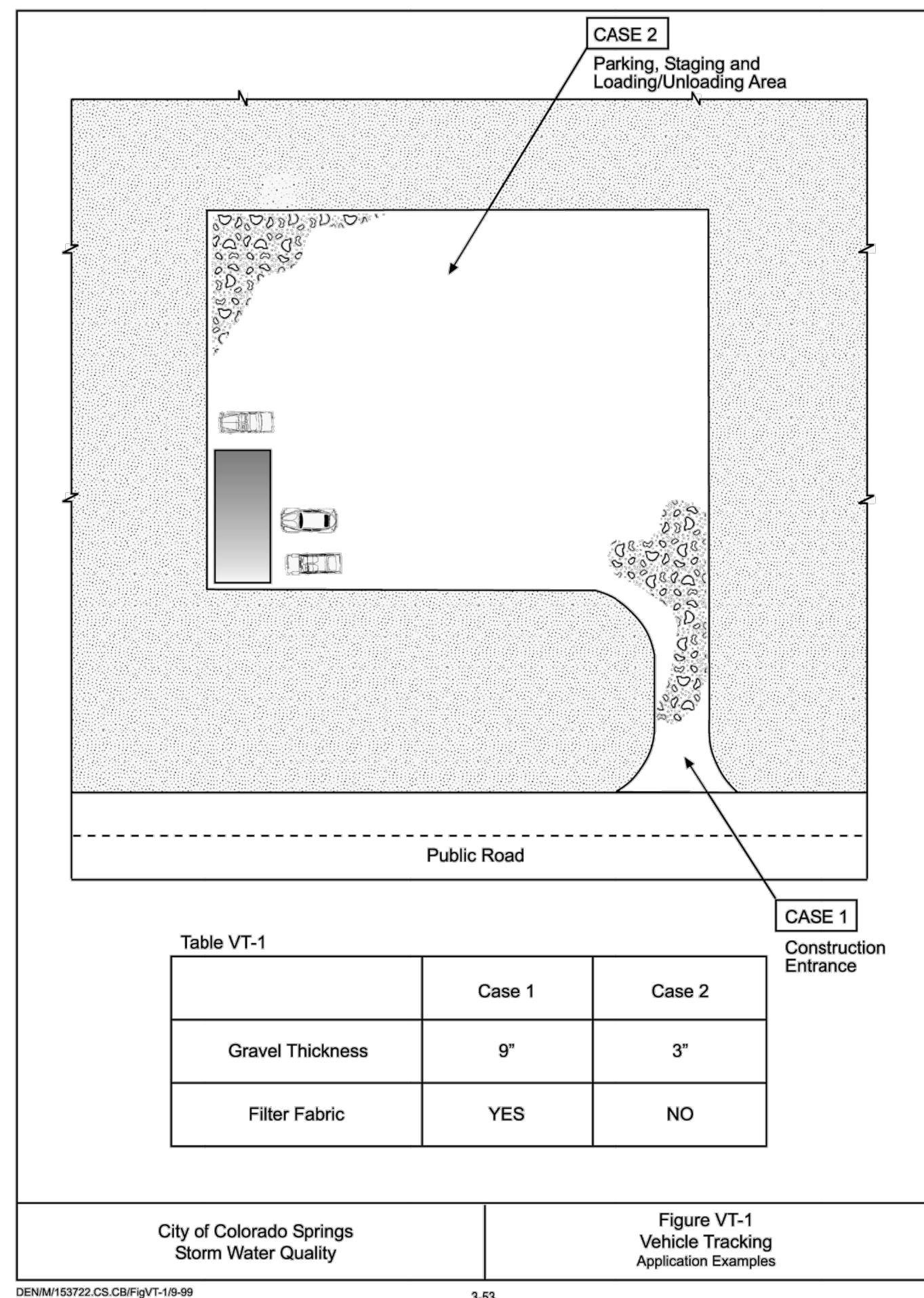
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COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE _____

SADDLEHORN RANCH –
 FILING 2
 GRADING AND EROSION
 CONTROL DETAILS

SHEET 10 OF 14

JOB NO. 2514204

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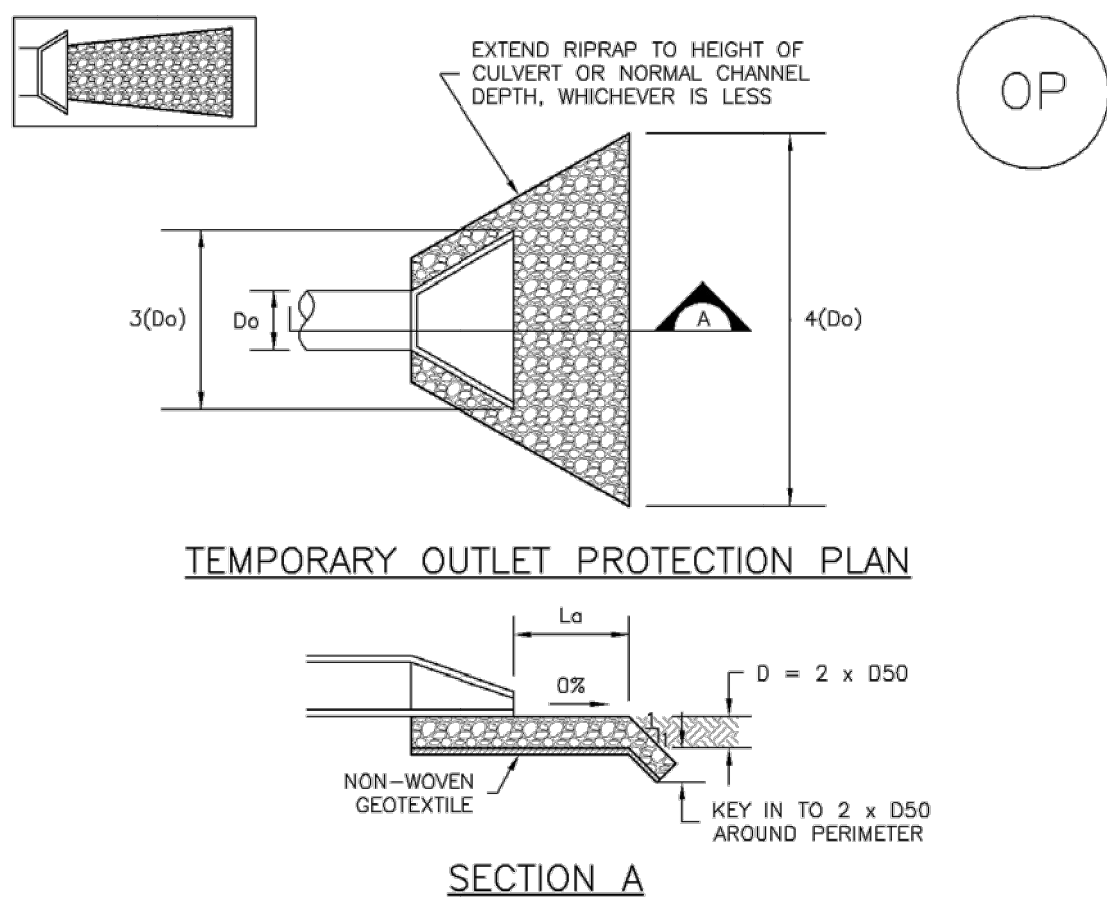
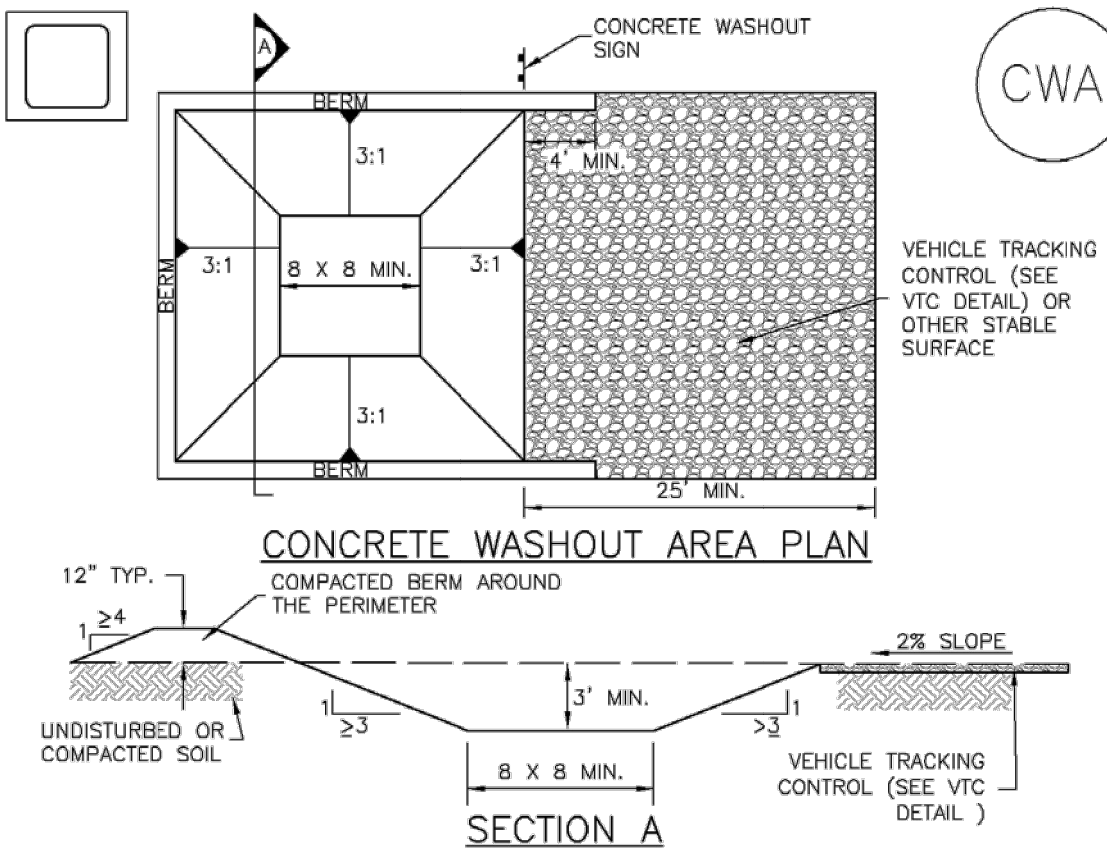


TABLE OP-1. TEMPORARY OUTLET PROTECTION SIZING TABLE

PIPE DIAMETER, Do (INCHES)	DISCHARGE, Q (CFS)	APRON LENGTH, La (FT)	RIPRAP D50 DIAMETER MIN (INCHES)
8	2.5 5	5 10	4 6
12	5 10	5 10 1.5	4 6
18	10 20 30 40	10 16 23 26	6 9 12 16
24	30 40 50 60	16 26 26 30	9 9 12 16

OP-1. TEMPORARY OUTLET PROTECTION



CWA-1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

- SEE PLAN VIEW FOR:
-CWA INSTALLATION LOCATION.
- DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (15 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.
- THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
- CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
- BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
- VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
- SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
- USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

TEMPORARY OUTLET PROTECTION INSTALLATION NOTES

- SEE PLAN VIEW FOR
-LOCATION OF OUTLET PROTECTION.
-DIMENSIONS OF OUTLET PROTECTION.
- DETAIL IS INTENDED FOR PIPES WITH SLOPE $\leq 10\%$. ADDITIONAL EVALUATION OF RIPRAP SIZING AND OUTLET PROTECTION DIMENSIONS REQUIRED FOR STEEPER SLOPES.
- TEMPORARY OUTLET PROTECTION INFORMATION IS FOR OUTLETS INTENDED TO BE UTILIZED LESS THAN 2 YEARS.

TEMPORARY OUTLET PROTECTION INSPECTION AND MAINTENANCE NOTES

- 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.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

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

(DETAILS ADAPTED FROM AURORA, COLORADO AND PREVIOUS VERSION OF VOLUME 3, NOT AVAILABLE IN AUTOCAD)

CWA MAINTENANCE NOTES

- 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.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
- CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
- THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
- WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

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

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



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PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

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

DATE

SADDLEHORN RANCH -
FILING 2
GRADING AND EROSION
CONTROL DETAILS

SHEET 11 OF 14

JOB NO. 2514204

PREPARED FOR

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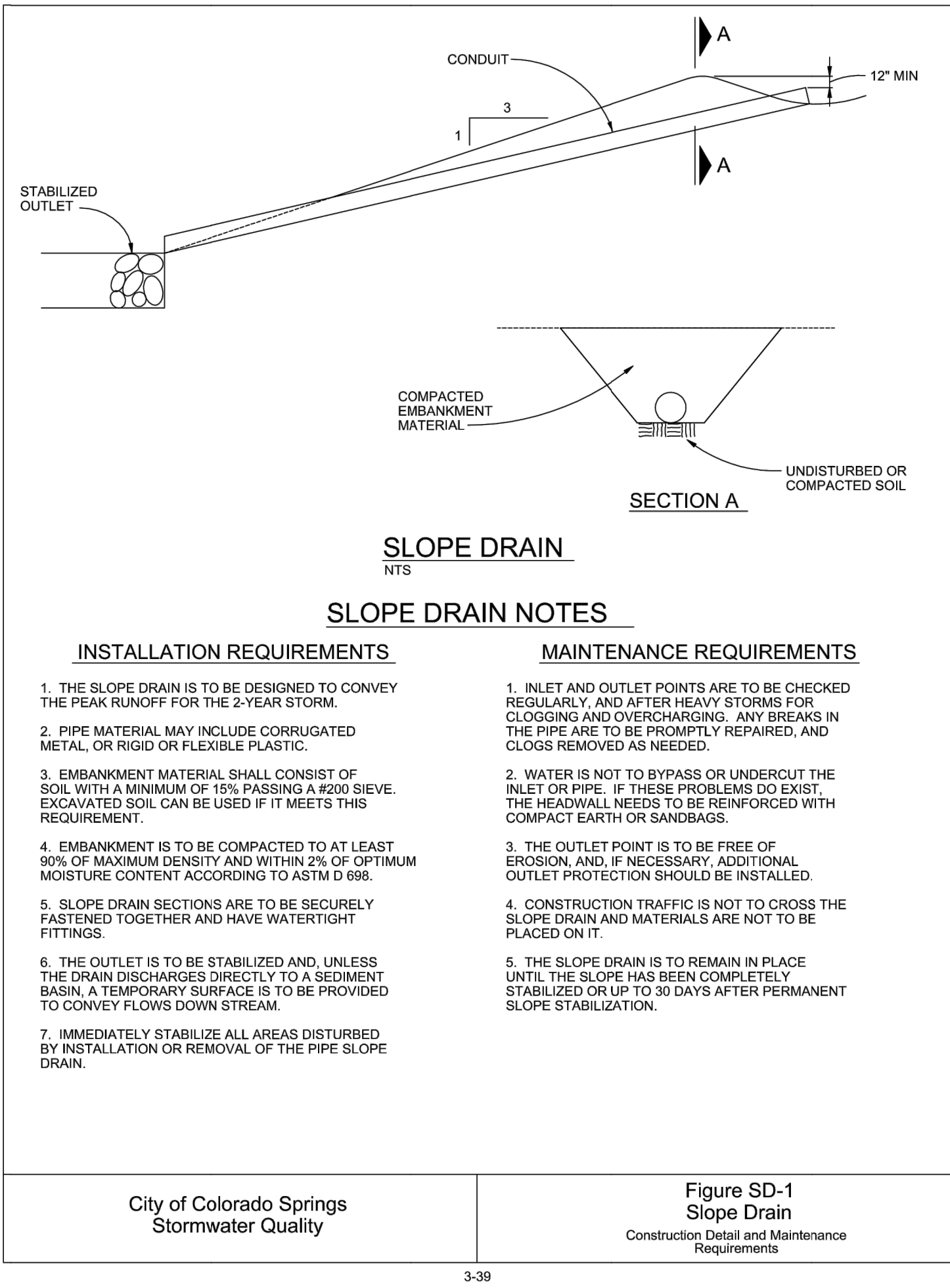
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SM-6 Stabilized Staging Area (SSA)

STABILIZED STAGING AREA MAINTENANCE NOTES

5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.
6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.
- NOTE: MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDPCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)



MULCHING NOTES

INSTALLATION REQUIREMENTS

1. ALL DISTURBED AREAS MUST BE MULCHED WITHIN 21 DAYS AFTER FINAL GRADE AND SEEDED AREAS ARE TO BE MULCHED WITHIN 24 HOURS AFTER SEEDING.
2. MATERIAL USED FOR MULCH CAN BE CERTIFIED CLEAN, WEED- AND SEED-FREE LONG STEMMED FIELD OR MARSH HAY, OR STRAW OF OATS, BARLEY, WHEAT, RYE, OR TRITICALE CERTIFIED BY THE COLORADO DEPARTMENT OF AGRICULTURE WEED-FREE FORAGE CERTIFICATION PROGRAM.
3. HYDRAULIC MULCHING MATERIAL SHALL CONSIST OF VIRGIN WOOD FIBER MANUFACTURED FROM CLEAN WHOLE WOOD CHIPS. WOOD CHIPS CANNOT CONTAIN ANY GROWTH OR GERMINATION INHIBITORS OR BE PRODUCED FROM RECYCLED MATERIAL. GRAVEL CAN ALSO BE USED.
4. MULCH IS TO BE APPLIED EVENLY AT A RATE OF 2 TONS PER ACRE.
5. MULCH IS TO BE ANCHORED EITHER BY CRIMPING (TUCKING MULCH FIBERS 4 INCHES INTO THE SOIL) USING NETTING (USED ON SMALL AREAS WITH STEEP SLOPES), OR WITH A TACKIFIER.
6. HYDRAULIC MULCHING AND TACKIFIERS ARE NOT TO BE USED IN THE PRESENCE OF FREE SURFACE WATER.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL MULCHED AREAS.
2. MULCH IS TO BE REPLACED IMMEDIATELY IN THOSE AREAS IT HAS BEEN REMOVED, AND IF NECESSARY THE AREA SHOULD BE RESEEDED.

Check Dams (CD)

EC-12

Description

Check dams are temporary grade control structures placed in drainage channels to limit the erosivity of stormwater by reducing flow velocity. Check dams are typically constructed from rock, gravel bags, sand bags, or sometimes, proprietary devices. Reinforced check dams are typically constructed from rock and wire gabion. Although the primary function of check dams is to reduce the velocity of concentrated flows, a secondary benefit is sediment trapping upstream of the structure.



Photograph CD-1. Rock check dams in a roadside ditch. Photo courtesy of WWE.

Appropriate Uses

Use as a grade control for temporary drainage ditches or swales until final soil stabilization measures are established upstream and downstream. Check dams can be used on mild or moderately steep slopes. Check dams may be used under the following conditions:

- As temporary grade control facilities along waterways until final stabilization is established.
- Along permanent swales that need protection prior to installation of a non-erodible lining.
- Along temporary channels, ditches or swales that need protection where construction of a non-erodible lining is not practicable.
- Reinforced check dams should be used in areas subject to high flow velocities.

Design and Installation

Place check dams at regularly spaced intervals along the drainage swale or ditch. Check dams heights should allow for pools to develop upstream of each check dam, extending to the downstream toe of the check dam immediately upstream.

When rock is used for the check dam, place rock mechanically or by hand. Do not dump rocks into the drainage channel. Where multiple check dams are used, the top of the lower dam should be at the same elevation as the toe of the upper dam.

When reinforced check dams are used, install erosion control fabric under and around the check dam to prevent erosion on the upstream and downstream sides. Each section of the dam should be keyed in to reduce the potential for washout or undermining. A rock apron upstream and downstream of the dam may be necessary to further control erosion.

Check Dams	
Functions	
Erosion Control	Yes
Sediment Control	Moderate
Site/Material Management	No



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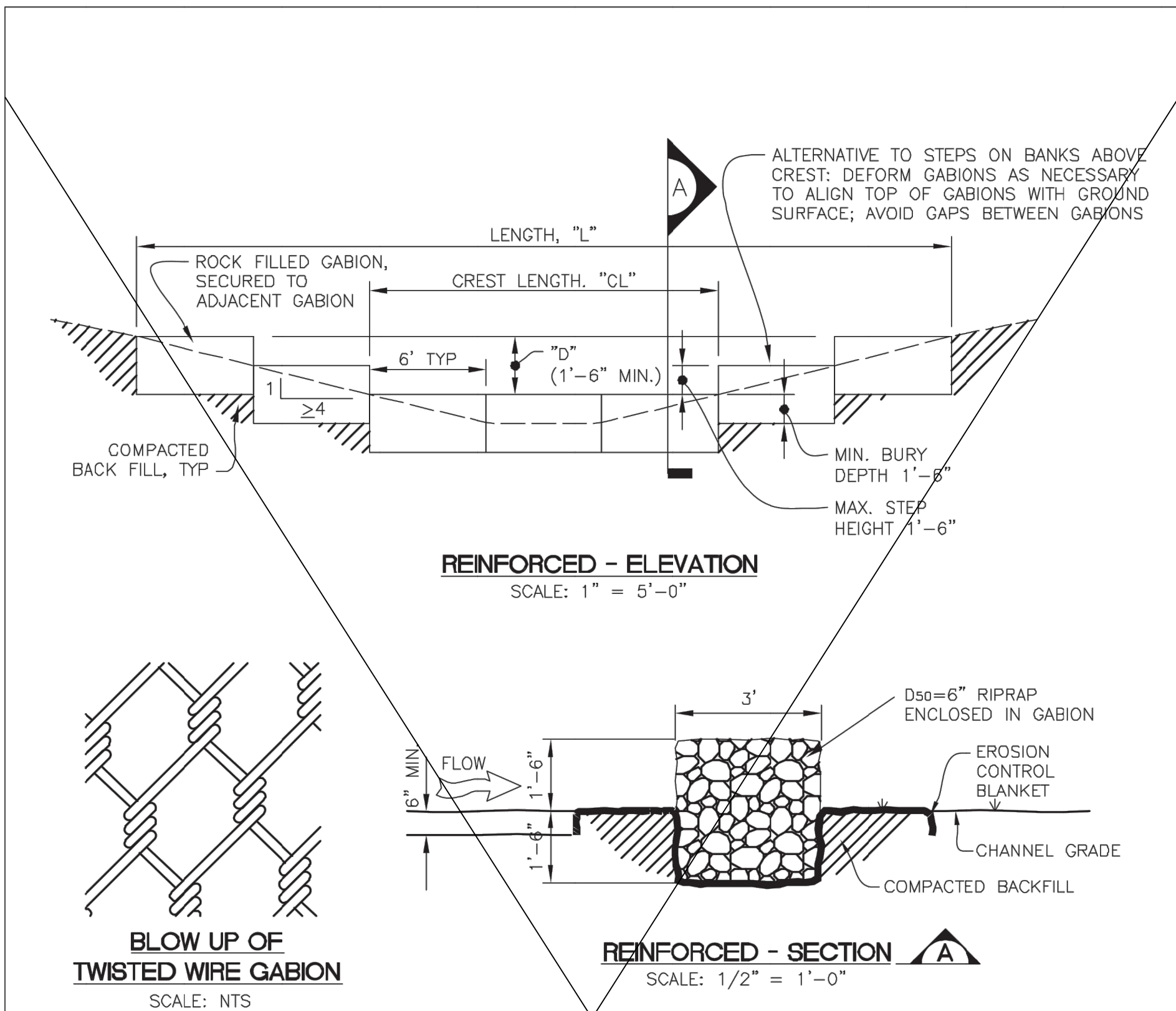
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REINFORCED CHECK DAM INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATIONS OF CHECK DAMS.
 - CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
 - LENGTH, "L", CREST LENGTH, "CL", AND DEPTH, "D".
- CHECK DAMS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND-DISTURBING ACTIVITIES.
- REINFORCED CHECK DAMS, GABIONS SHALL HAVE GALVANIZED TWISTED WIRE NETTING WITH A MAXIMUM OPENING DIMENSION OF 4-1/2" AND A MINIMUM WIRE THICKNESS OF 0.10". WIRE "HOG RINGS" AT 4" SPACING OR OTHER APPROVED MEANS SHALL BE USED AT ALL GABION SEAMS AND TO SECURE THE GABION TO THE ADJACENT GABION.
- RIPRAP UTILIZED FOR CHECK DAMS SHALL HAVE A D₅₀ MEDIAN STONE SIZE OF 6".
- THE CHECK DAM SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1'-6".
- EROSION BLANKET SHALL BE PLACED IN THE REINFORCED CHECK DAM TRENCH EXTENDING A MINIMUM OF 1'-6" ON BOTH THE UPSTREAM AND DOWNSTREAM SIDES OF THE REINFORCED CHECK DAM.

REINFORCED CHECK DAM MAINTENANCE NOTES

- THE GESC MANAGER SHALL INSPECT CHECK DAMS WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT AS NECESSARY.
- SEDIMENT ACCUMULATED UPSTREAM OF CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF CHECK DAM IS WITHIN 1/2 OF THE HEIGHT OF THE CREST.
- CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY THE TOWN.
- WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACK FILL. ANY DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED AND COVERED WITH EROSION CONTROL BLANKET OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE TOWN.



Sheet Revisions			
R1	3/11	GESC MANUAL UPDATES	DVD
R2	5/15	GESC MANUAL UPDATES	DVD

NOTE: SCALES SHOWN ARE FOR 22"x34" SHEETS; ADJUST ACCORDINGLY FOR 11"x17" SHEETS.

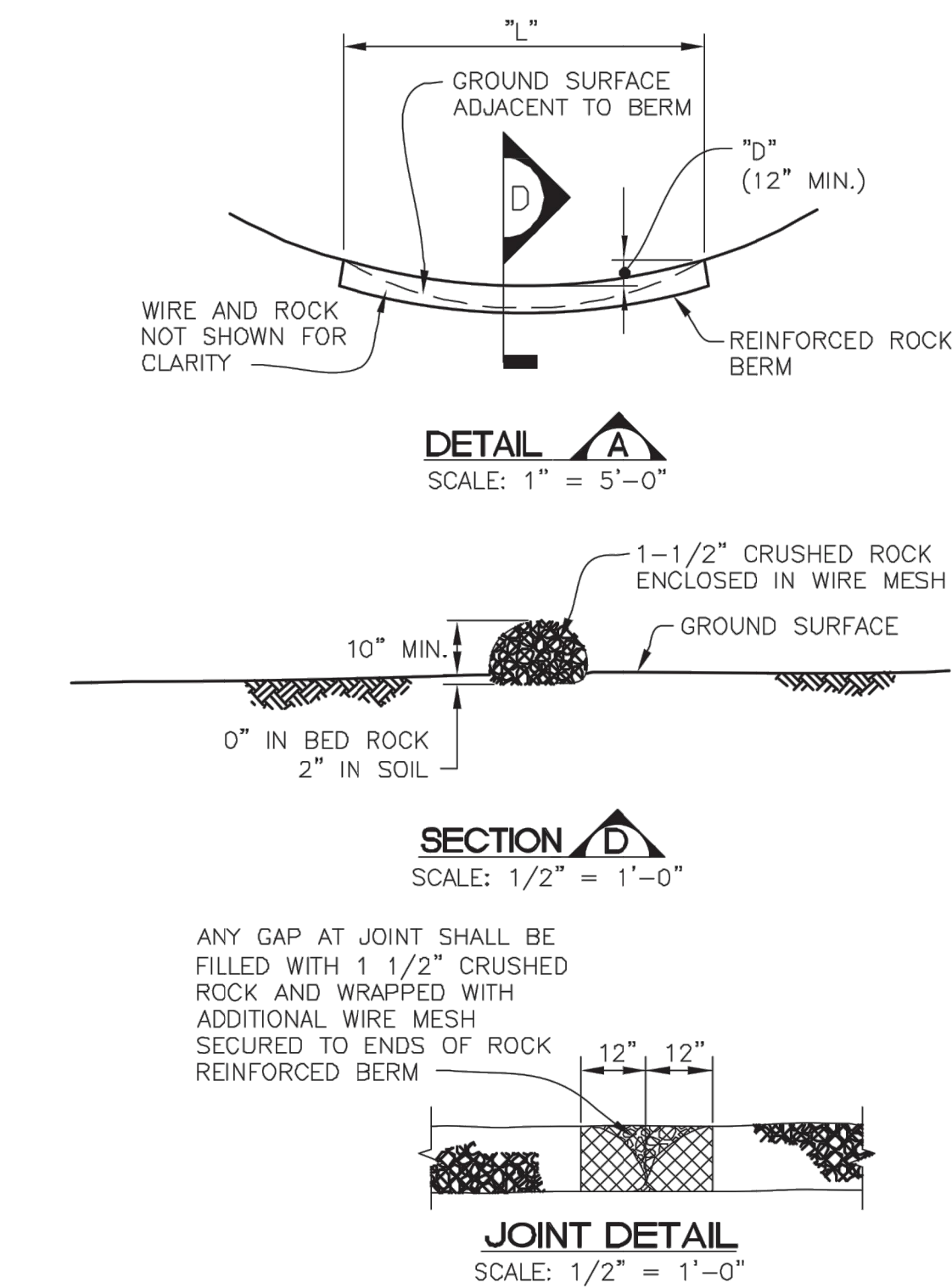


UTILITIES DEPARTMENT
Stormwater Engineering Division

GESC GRADING, EROSION, AND
SEDIMENT CONTROL

GESC PLAN
STANDARD NOTES
AND DETAILS

SHEET
7 OF 14

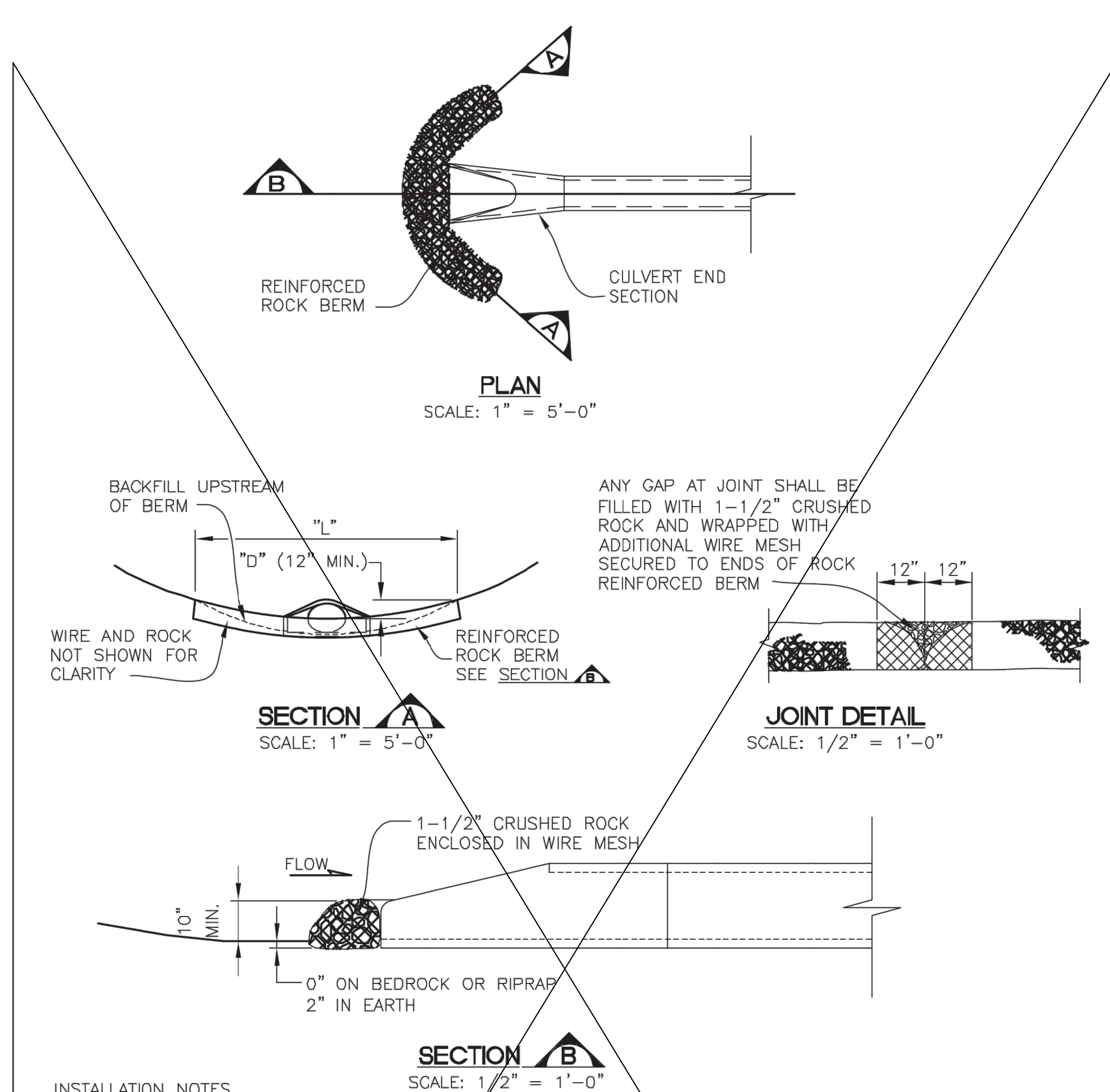


REINFORCED ROCK BERM INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATIONS OF REINFORCED ROCK BERMS.
 - LENGTH, "L", AND DEPTH, "D" DIMENSIONS.
- REINFORCED ROCK BERM SECTION APPLIES TO CULVERT INLET FILTER AND INLET PROTECTION.
- CRUSHED ROCK SHALL BE FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON SHEET 14 (1-1/2" MINUS). RECYCLED CONCRETE MEETING THIS GRADATION MAY BE USED.
- WIRE MESH SHALL BE FABRICATED OF 10 GAUGE WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1.0 INCH (COMMONLY TERMED "CHICKEN WIRE"). ROLL WIDTH SHALL BE 48-INCHES.
- WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6-INCH CENTERS ALONG ALL JOINTS AND AT 2-INCH CENTERS ON ENDS OF BERM.
- FOR CONCENTRATED FLOW AREAS THE ENDS OF THE REINFORCED ROCK BERM SHALL BE 12" HIGHER THAN THE CENTER OF THE BERM.

REINFORCED ROCK BERM MAINTENANCE NOTES

- THE GESC MANAGER SHALL INSPECT REINFORCED ROCK BERM WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT AS NECESSARY.
- SEDIMENT ACCUMULATED UPSTREAM OF REINFORCED ROCK BERM SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF FILTER IS WITHIN 5 INCHES OF THE CREST.
- REINFORCED ROCK BERMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED.
- WHEN REINFORCED ROCK BERMS ARE REMOVED, ANY DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE TOWN.



INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATIONS OF CULVERT INLET FILTERS.
 - LENGTH, "L", AND DEPTH, "D".
- CRUSHED ROCK SHALL BE FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON SHEET 14 (1-1/2" MINUS). RECYCLED CONCRETE MEETING THIS GRADATION MAY BE USED.
- WIRE MESH SHALL BE FABRICATED OF 10 GAUGE WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1.0 INCH (COMMONLY TERMED "CHICKEN WIRE").
- WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6-INCH CENTERS ALONG ALL JOINTS AND AT 2-INCH CENTERS ON ENDS OF BERM.
- THE ENDS OF THE REINFORCED ROCK BERM SHALL BE 12" HIGHER THAN THE CENTER OF THE BERM.

MAINTENANCE NOTES

- THE GESC MANAGER SHALL INSPECT CULVERT INLET FILTER WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT AS NECESSARY.
- SEDIMENT ACCUMULATED UPSTREAM OF CULVERT INLET FILTER SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF FILTER IS 1/2 THE HEIGHT OF THE REINFORCED ROCK BERM.
- RRB FOR CULVERT PROTECTION ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY THE TOWN.
- WHEN CULVERT INLET FILTERS ARE REMOVED, ANY DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE TOWN.



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