

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		

LANDSCAPE LEGEND

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

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		
MISC. UTILITIES		
VENT PIPE		
TEST HOLE DESIGNATOR		

MONUMENTATION LEGEND

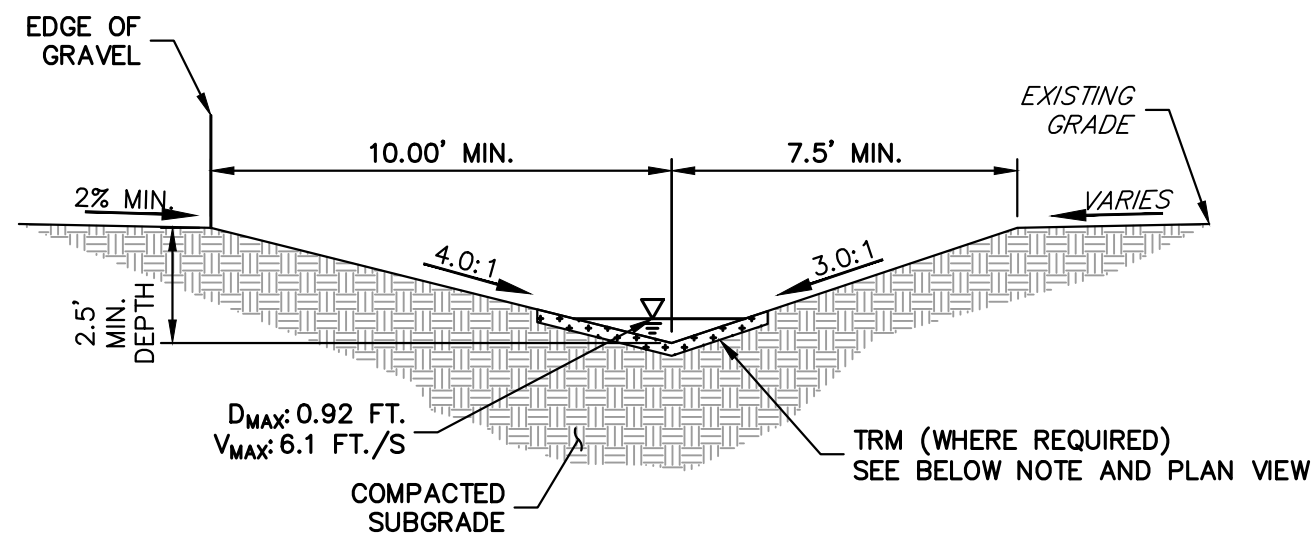
ALUMINUM CAP - FOUND	
BRASS CAP - FOUND	
BENCHMARK - FOUND	
CROSS - FOUND	
MONUMENT - SET	
MONUMENT - FOUND (DEFAULT)	
MONUMENT - FOUND (ALTERNATE 1)	
MONUMENT - FOUND (ALTERNATE 2)	
MONUMENT - FOUND (ALTERNATE 3)	
MONUMENT - FOUND (ALTERNATE 4)	
MONUMENT - FOUND (ALTERNATE 5)	
MONUMENT - FOUND (ALTERNATE 6)	
MONUMENT - FOUND (ALTERNATE 7)	
NAIL & WASHER - FOUND	
PANEL - FOUND	
PK NAIL - FOUND	
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/TRVERSE POINT - SET	

LEGEND

SILT FENCE		PROPOSED FLOW PATH	
CUT/FILL BOUNDARY		EXISTING FLOW PATH	
STABILIZED STAGING AREA		LIMITS OF CONSTRUCTION/DISTURBANCE	
VEHICLE TRACKING CONTROL		TEMPORARY SEEDING AND MULCHING	
SURFACE ROUGHENING		TEMPORARY CHECK DAM	
TEMP. SWALE		OUTLET PROTECTION	
INLET PROTECTION		STOCK PILE	
TEMPORARY SEDIMENT BASIN		TURF REINFORCEMENT MAT	
CONSTRUCTION FENCE		TEMPORARY SLOPE DRAIN	
TEMPORARY OUTLET PROTECTION		SEDIMENT CONTROL LOG	

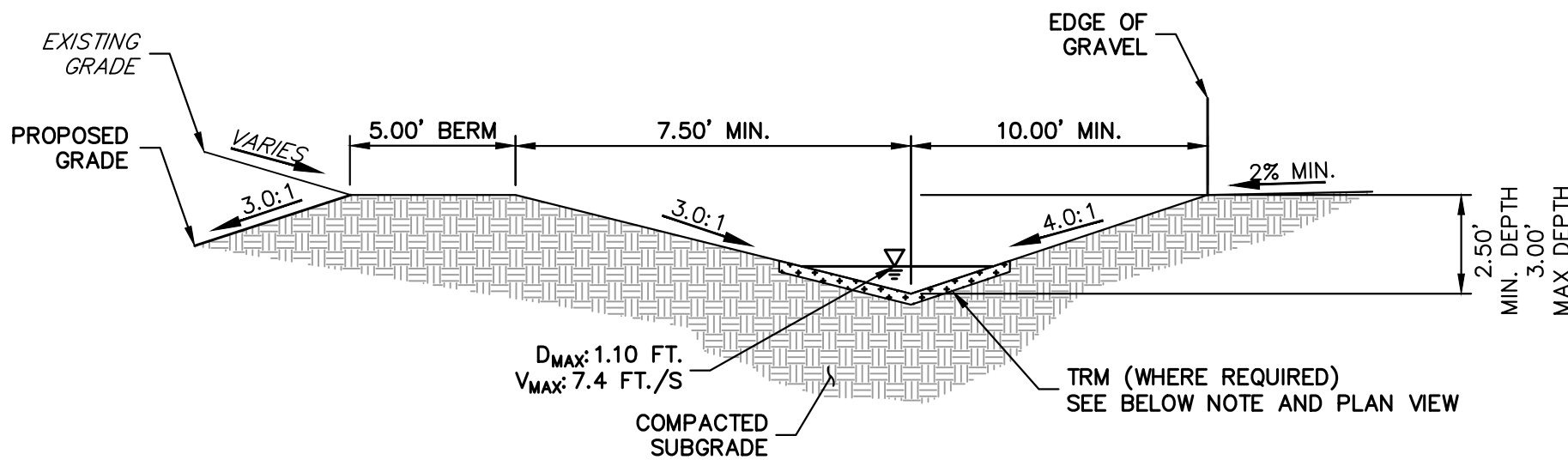
ABBREVIATIONS

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	LOMR	LETTER OF MAP REVISION
BNDR	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	MANHOLE	MANHOLE
CATV	CABLE TELEVISION	MH	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 CONCRETE	PKWY	PARKWAY
CR	CIRCLE	PL	PROPERTY LINE
CSP	CORRUGATED STEEL PIPE	PR	PROPOSED
CSU	COLORADO SPRINGS UTILITIES COURT	PRC	POINT OF REVERSE CURVATURE
CTRB	CONCRETE THRUST REDUCER BLOCK	PT	POINT OF TANGENCY
CY	CUBIC YARD	PV	PLUG VALVE
DBPS	DRAINAGE BASIN PLANNING STUDY	PVC	POLYVINYL CHLORIDE
DE	DRAINAGE EASEMENT	R	RADIUS
DIA	DIAMETER	RCBC	REINFORCED CONCRETE BOX CULVERT
DIP	DUCTILE IRON PIPE	RCP	REINFORCED CONCRETE PIPE
DR	DRIVE	RD	ROAD
DRC	DESIGN REVIEW COMMITTEE	ROW	RIGHT OF WAY
DU	DWELLING UNITS	RT	RIGHT
DY	DAY	S	SOUTH
E	EAST	STE	STEEL
EA	EACH	SAN	SANITARY SEWER
EGL	ENERGY GRADE LINE	SF	SQUARE FOOT
EL	ELEVATION	ST	STREET
ELEC	ELECTRIC	STA	STATION
EOA	EDGE OF ASPHALT	STM	STORM SEWER
EPC	EL PASO COUNTY	SY	SQUARE YARD
ERCP	ELLIPTICAL RCP	SY-IN	SQUARE YARD INCH
ESMT	EASEMENT	TB	THRUST BLOCK
EST	ESTIMATE	TBC	TOP BACK OF CURB
EX	EXISTING	TBW	TOP BACK OF WALK
FDP	FINAL DEVELOPMENT PLAN	TEL	TELEPHONE
FDR	FINAL DRAINAGE REPORT	TN	TON
FES	FLARED END SECTION	TOA	TOP OF ASPHALT
FF	FINISHED FLOOR ELEVATION	TOB	TOP OF BOX
FG	FINISHED GRADE	TOC	TOP OF CURB OR CONCRETE
FH	FIRE HYDRANT	TOF	TOP OF FOUNDATION
FL	FLOWLINE	TOP	TOP OF PIPE
FIL	FILING	TW	TOP OF WALL
FO	FIBER OPTIC CABLE	TYP	TYPICAL
GB	GRADE BREAK	UDFCD	URBAN DRAINAGE AND FLOOD CONTROL DISTRICT
GB	GRADE BREAK	UE	UTILITY EASEMENT
GE	GAS EASEMENT	U&DE	UTILITY & DRAINAGE EASEMENT
GIS	GEOGRAPHIC INFORMATION SYSTEM	UGE	UNDERGROUND ELECTRIC
GL	GAS LINE	VCP	VITRIFIED CLAY PIPE
GPS	GLOBAL POSITIONING SYSTEM	VPC	VERTICAL POINT OF CURVATURE
GV	GATE VALVE	VPI	VERTICAL POINT OF INTERSECTION
HBP	HOT BITUMINOUS PAVEMENT	VPT	VERTICAL POINT OF TANGENCY
HC	HANDICAP	VTC	VEHICLE TRACKING CONTROL
HDC	HIGH DEFLECTION COUPLING	W	WEST
HDPE	HIGH DENSITY POLYETHYLENE	WL	WATER LINE
HGL	HYDRAULIC GRADE LINE	WM	WATER MAIN
HMA	HOT MIX ASPHALT	WRD	WATER RESOURCES DEPARTMENT
HOA	HOME OWNERS ASSOCIATION	WS	WATER SURFACE
HP	HIGH POINT	WSE	WATER SURFACE ELEVATION
HR	HOUR	WTR	WATER
I	INLET	YR	YEAR
IE	IRRIGATION EASEMENT		



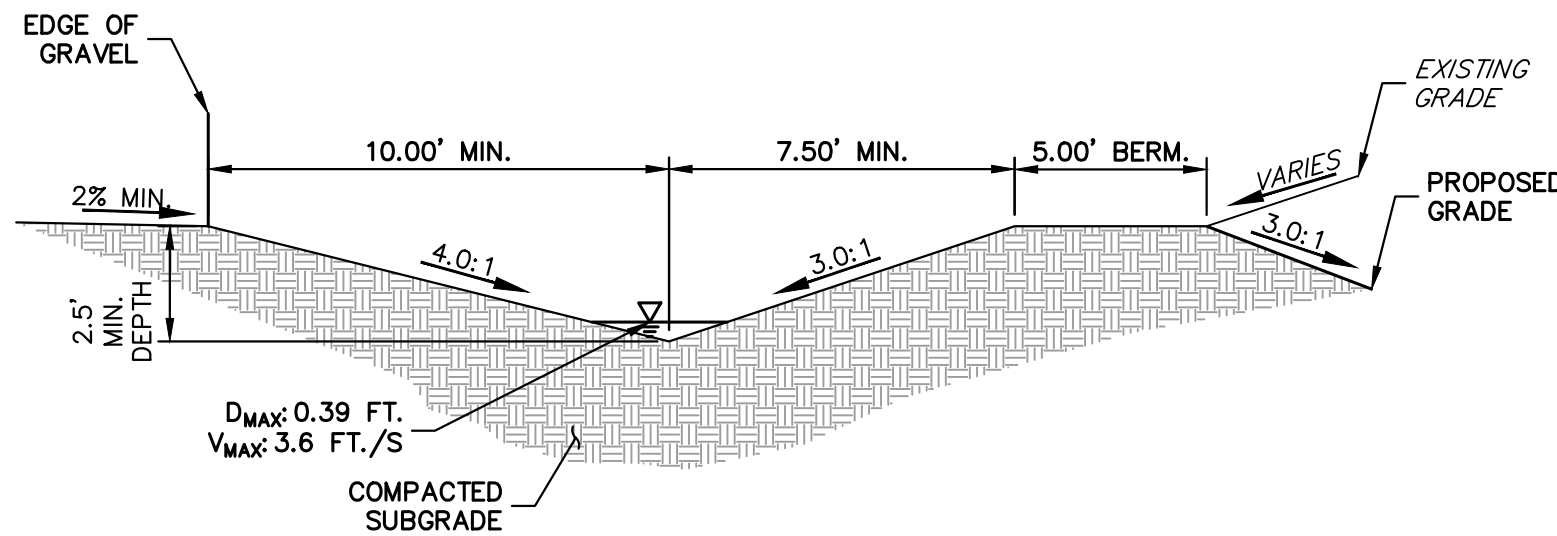
SWALE SECTION BASIN D
N.T.S.

SC250 VMAX (OR APPROVED EQUIVALENT) PERMANENT TURF REINFORCEMENT MAT (TRM) IS REQUIRED TO BE INSTALLED 70' NORTH OF THE ROAD HIGH POINT AND CONTINUE FOR 400' (SEE GEC PLAN FOR LOCATIONS)

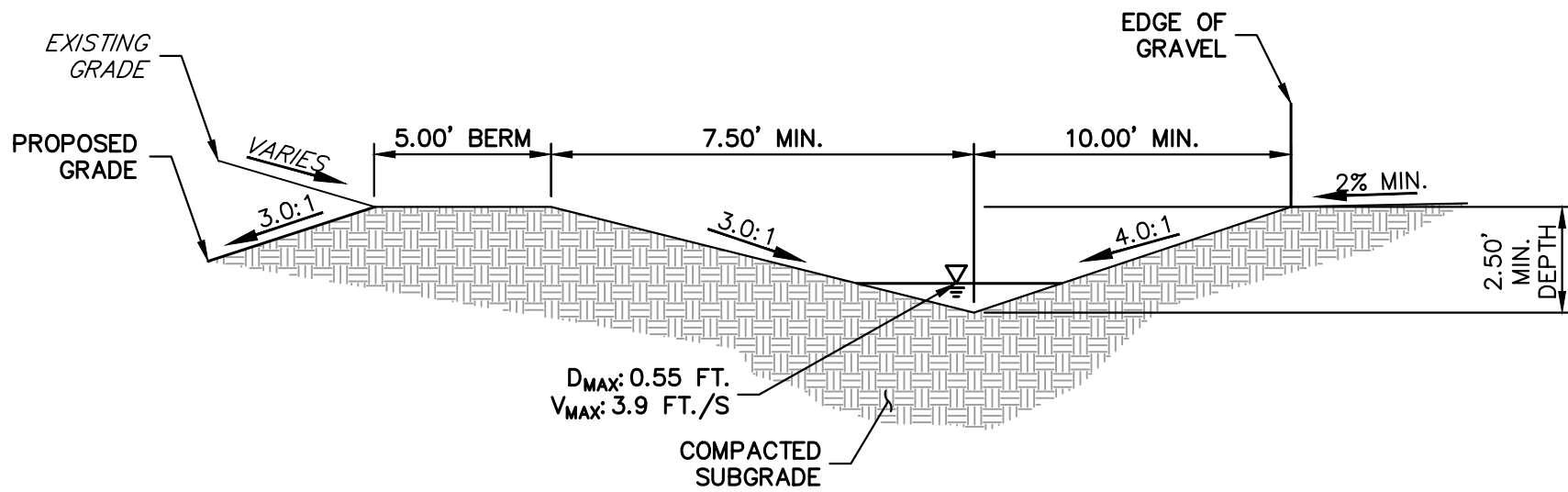


SWALE SECTION BASIN L
N.T.S.

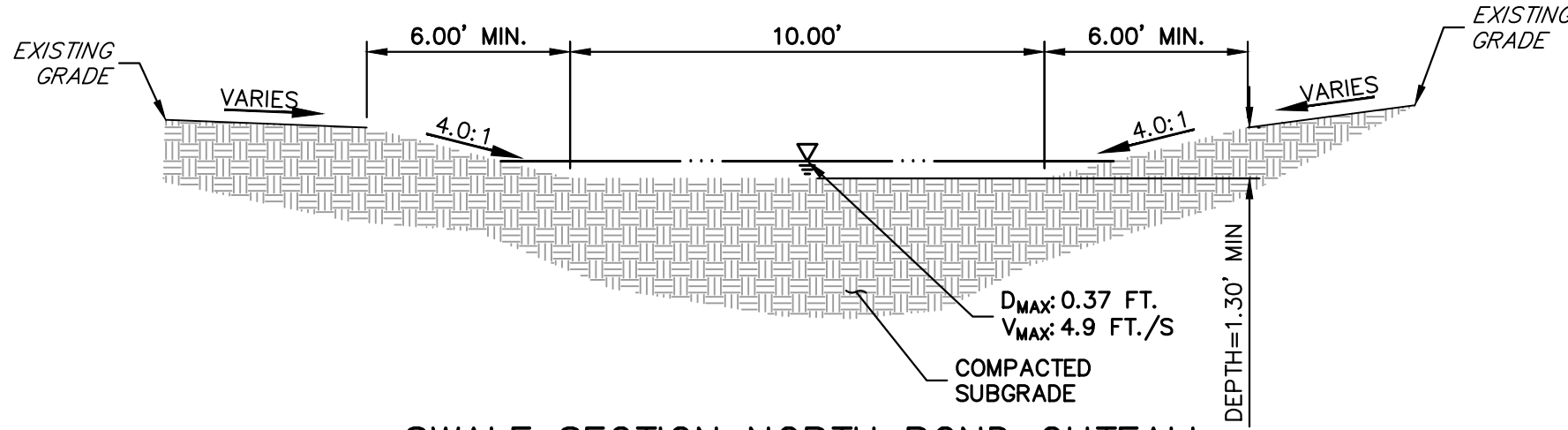
SC250 VMAX (OR APPROVED EQUIVALENT) PERMANENT TURF REINFORCEMENT MAT (TRM) IS REQUIRED TO BE INSTALLED 60' SOUTH OF THE ROAD HIGH POINT AND CONTINUE FOR 280' (SEE GEC PLAN FOR LOCATIONS)



SWALE SECTION BASIN M
N.T.S.



SWALE SECTION BASIN E
N.T.S.



SWALE SECTION NORTH POND OUTFALL
SCALE: N.T.S.



Know what's below.
Call before you dig.

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.

[Signature]

COLORADO REGISTERED PROFESSIONAL ENGINEER
0054412

RYAN E. BURNS, P.E.
COLORADO P.E. 0054412
FOR AND ON BEHALF OF JR ENGINEERING

2/14/24

ESTATES AT CATHEDRAL PINES

TYPICAL SECTIONS

SHEET 3 OF 11

JOB NO. 25260.00

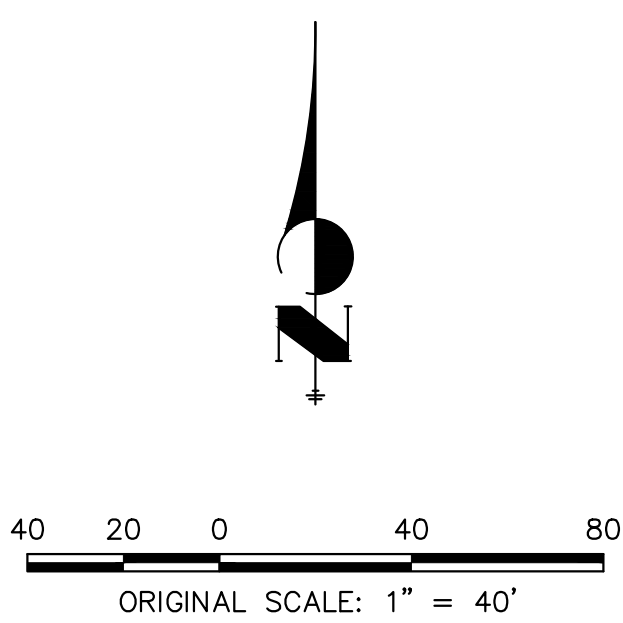
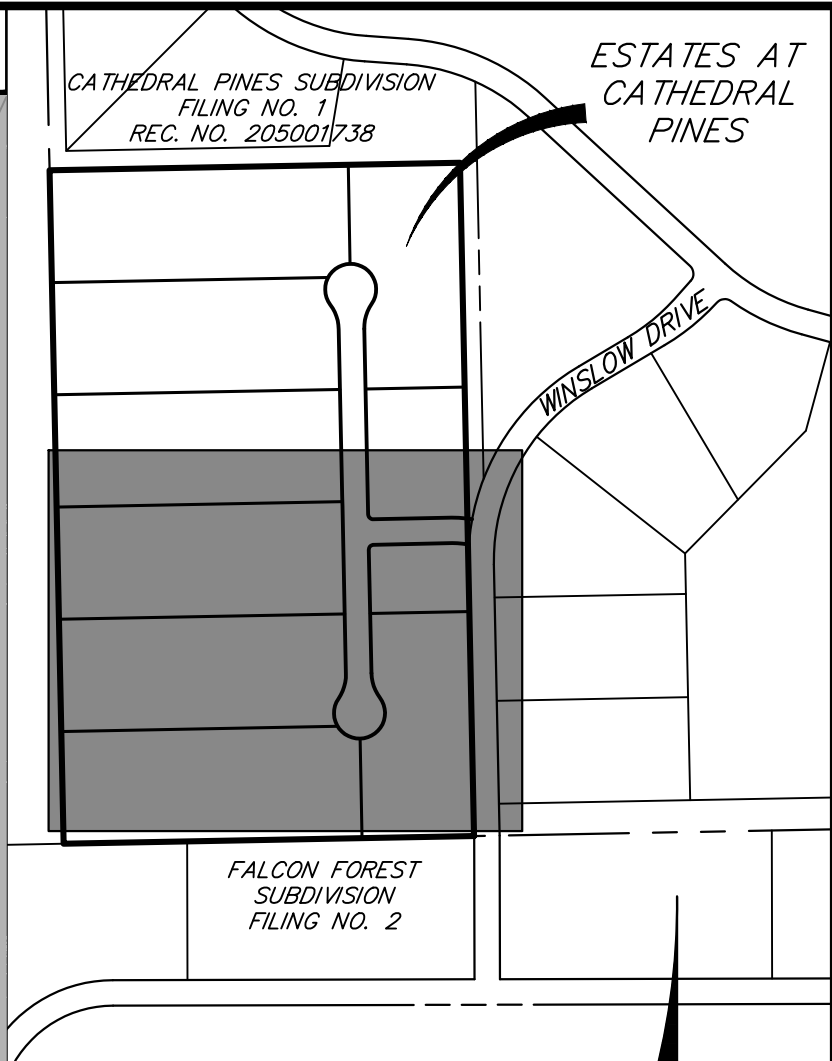
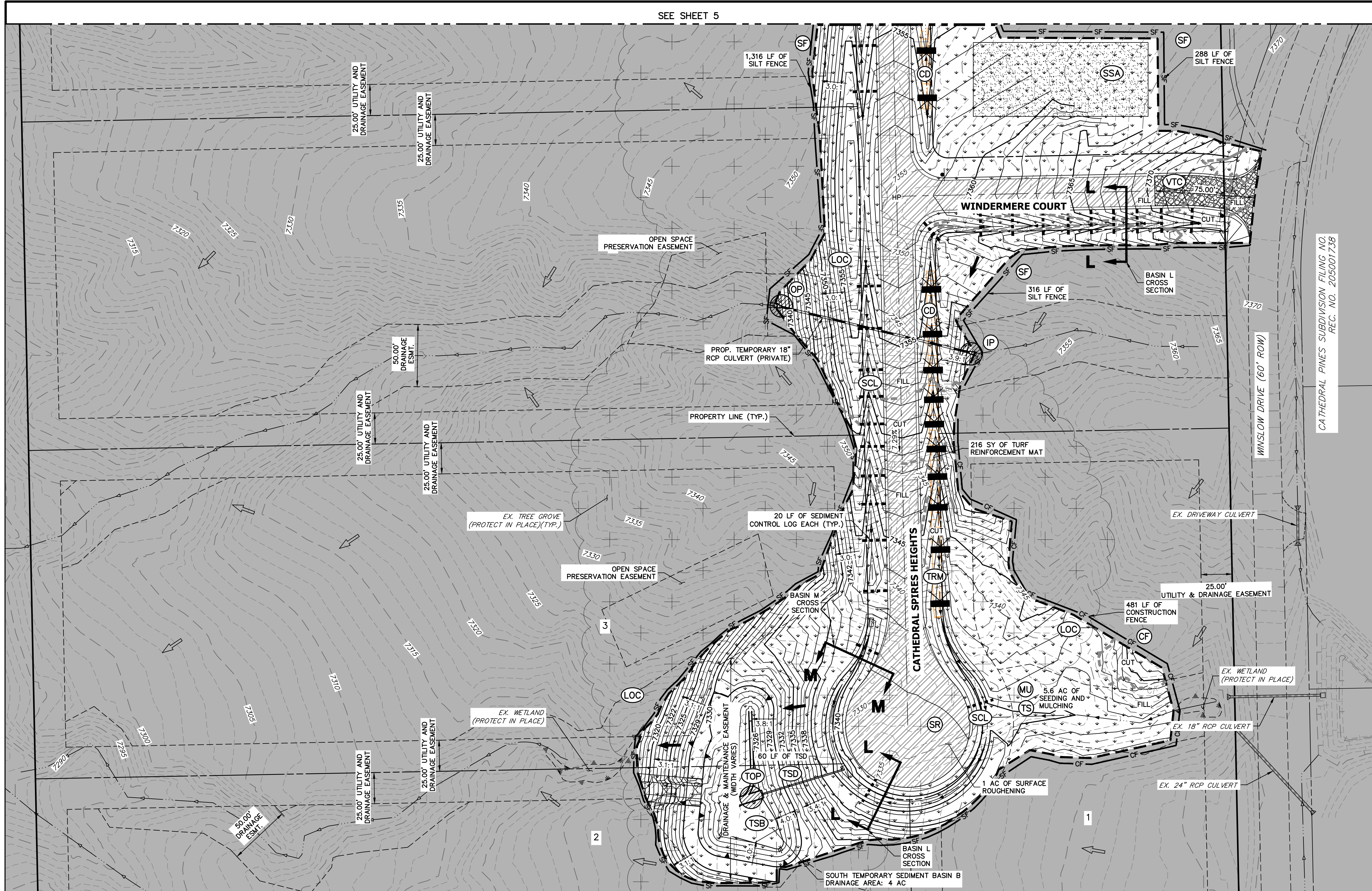
REVISION	BY	DATE
No.		
NTS		
N/A		
DATE		
DESIGNED BY		
DRAWN BY		
CHECKED BY		

J.R. ENGINEERING
A Westman Company

Central 303-740-9888 • Colorado Springs 719-583-2583
Fort Collins 970-491-9888 • www.jrengineering.com

PREPARED FOR
VILLAGREE DEVELOPMENT LLC
5710 VESSEY RD
COLORADO SPRINGS, CO 80908
GREGG & ELAINE CAWFIELD
(719) 413-6900

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.



LEGEND

SILT FENCE	SF	PROPOSED FLOW PATH	→
CUT/FILL BOUNDARY	---	EXISTING FLOW PATH	→
STABILIZED STAGING AREA	SSA	LIMITS OF CONSTRUCTION/ DISTURBANCE	LOC
VEHICLE TRACKING CONTROL	VTC	TEMPORARY SEEDING AND MULCHING	SM
SURFACE ROUGHENING	SR	TEMPORARY CHECK DAM	CD
TEMP. SWALE	TSW	OUTLET PROTECTION	OP
INLET PROTECTION	IP	STOCK PILE	SP
TEMPORARY SEDIMENT BASIN	TSB	TURF REINFORCEMENT MAT	TRM
CONSTRUCTION FENCE	CF	TEMPORARY SLOPE DRAIN	TSD
TEMPORARY OUTLET PROTECTION	TOP	SEDIMENT CONTROL LOG	SCL

BMP PHASING

INITIAL	INTERIM	FINAL
1. INSTALL VTC	1. MAINTAIN ALL BMP'S	1. INSTALL MULCH AND TEMPORARY SEEDING
2. INSTALL SILT FENCE	2. LOCATE/INSTALL TEMPORARY STOCK PILE	2. IN ALL DISTURBED AREA
3. INSTALL SEDIMENT BASINS	3. REMOVE ALL TEMPORARY BMP'S AFTER 70% VEGETATION HAS BEEN ACHIEVED	
	4. INSTALL INLET AND OUTLET PROTECTION	
	5. ESTABLISH SSA	
	6. INSTALL CONSTRUCTION FENCE	
	7. INSTALL SR	
	8. INSTALL TEMPORARY SWALE	
	9. INSTALL CHECK DAMS	

NOTE:
FUTURE ANTICIPATED LOTS AND EASEMENTS SHOWN FOR INFORMATION ONLY.
EARLY GRADING REQUEST IS FOR THE EXISTING 35 ACRE PARCEL.

CONSTRUCTION NOTES:
EXISTING VEGETATION ON THE PROJECT SITE CONSISTS OF SPARSE GRASS AND TREES.

NO WETLANDS ARE TO BE PERMANENTLY DISTURBED PER THIS GRADING PLAN.

THERE ARE NO DEDICATED ASPHALT OR CONCRETE BATCH PLANTS PROPOSED AS PART OF THIS PROJECT.

DEWATERING OPERATIONS ARE NOT ANTICIPATED FOR THIS PROJECT.

NO EARLY GRADING IS TO OCCUR WITHIN THE 100 YEAR FLOODPLAIN.

ALL TEMPORARY RIPRAP SHOWN ON THE PLANS SHALL BE TYPE 'M'. RIPRAP SHALL BE PLACED IN THE LOCATIONS INDICATED BY THE PLAN OR IN AREAS AS THE CONTRACTOR SEES FIT TO CONTROL EROSION. ALL RIPRAP SHALL BE PLACED AT A MINIMUM THICKNESS OF 2.0' DEEP.



Know what's below.
Call before you dig.

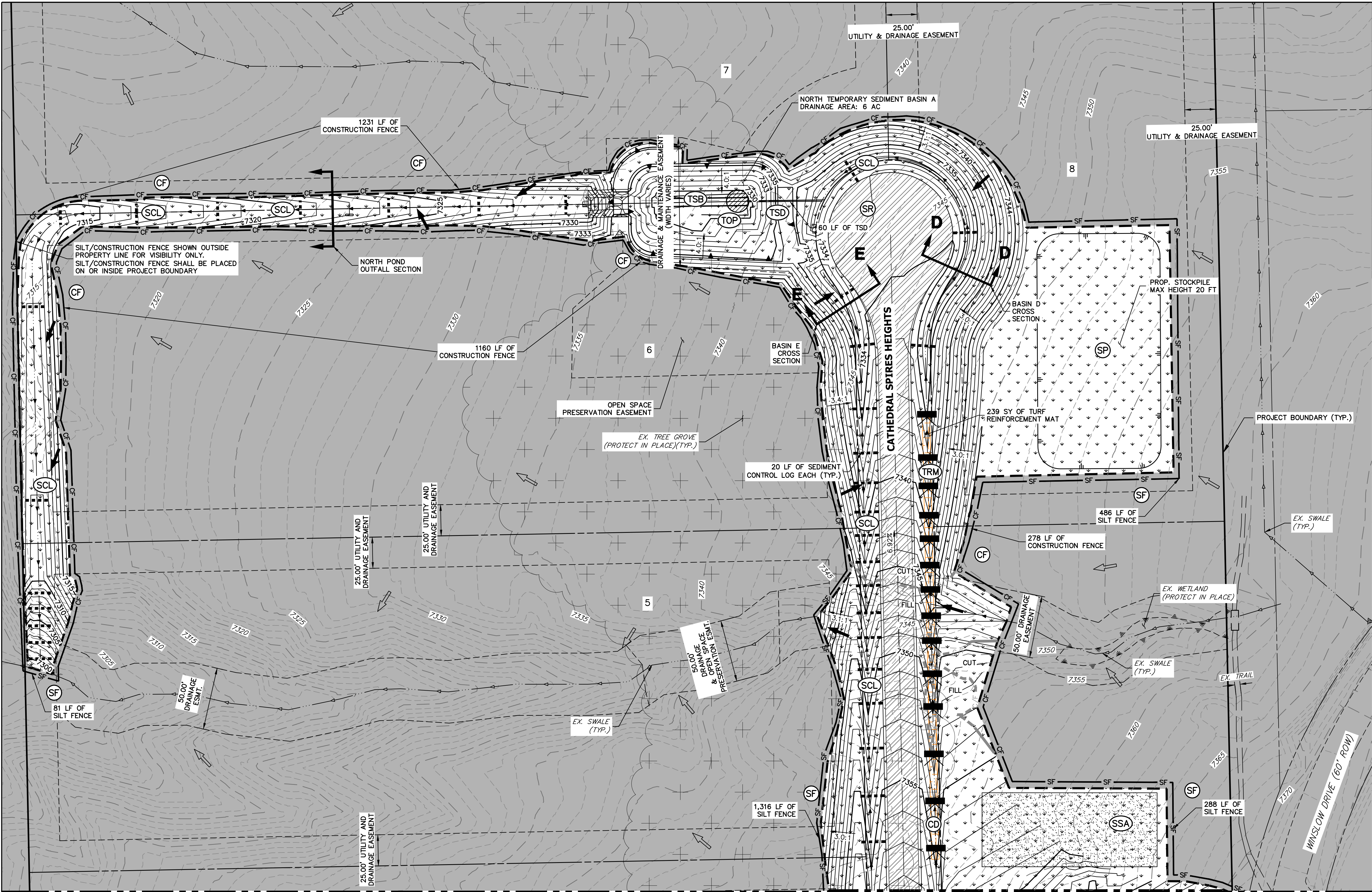
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RYAN E. BURNS, P.E.
COLORADO P.E. 0054412



ESTATES AT CATHEDRAL PINES	PREPARED FOR		VILLAGREE DEVELOPMENT LLC 5710 VESSEY RD COLORADO SPRINGS, CO 80908 GREGG & ELAINE CAWFIELD (719) 413-6900	
	BY		DATE	
	REVISION		DATE	
GRADING & EROSION CONTROL PLAN	H-SCALE	1"=40'	N/A	
	V-SCALE		2/14/24	
	DESIGNED BY		PAL	
	DRAWN BY		PAL	
SHEET 4 OF 11		JOB NO. 25260.00		



SEE SHEET 4

LEGEND

SILT FENCE

CUT/FILL BOUNDARY

STABILIZED STAGING AREA

VEHICLE TRACKING CONTROL

SURFACE ROUGHENING

TEMP. SWALE

INLET PROTECTION

TEMPORARY SEDIMENT BASIN

CONSTRUCTION FENCE

TEMPORARY OUTLET PROTECTION

SF

SSA

VTC

SR

TSW

IP

TSB

CF

TOP

SF

C/F

SM

CD

OP

SP

TRM

TSD

SCL

PROPOSED FLOW PATH

EXISTING FLOW PATH

LIMITS OF CONSTRUCTION/DISTURBANCE

TEMPORARY SEEDING AND MULCHING

TEMPORARY CHECK DAM

OUTLET PROTECTION

STOCK PILE

TURF REINFORCEMENT MAT

TEMPORARY SLOPE DRAIN

SEDIMENT CONTROL LOG

→

⇄

LOC

SM

CD

OP

SP

TRM

TSD

SCL

BMP PHASING

- INITIAL**
 1. INSTALL VTC
 2. INSTALL SILT FENCE
 3. INSTALL SEDIMENT BASINS
- INTERIM**
 1. MAINTAIN ALL BMP'S
 2. LOCATE/INSTALL TEMPORARY STOCK PILE
 3. INSTALL INLET AND OUTLET PROTECTION
 4. ESTABLISH SSA
 5. INSTALL CONSTRUCTION FENCE
 6. INSTALL SR
 7. INSTALL TEMPORARY SWALE
 8. INSTALL CHECK DAMS
- FINAL**
 1. INSTALL MULCH AND TEMPORARY SEEDING IN ALL DISTURBED AREA
 2. REMOVE ALL TEMPORARY BMP'S AFTER 70% VEGETATION HAS BEEN ACHIEVED

NOTE:
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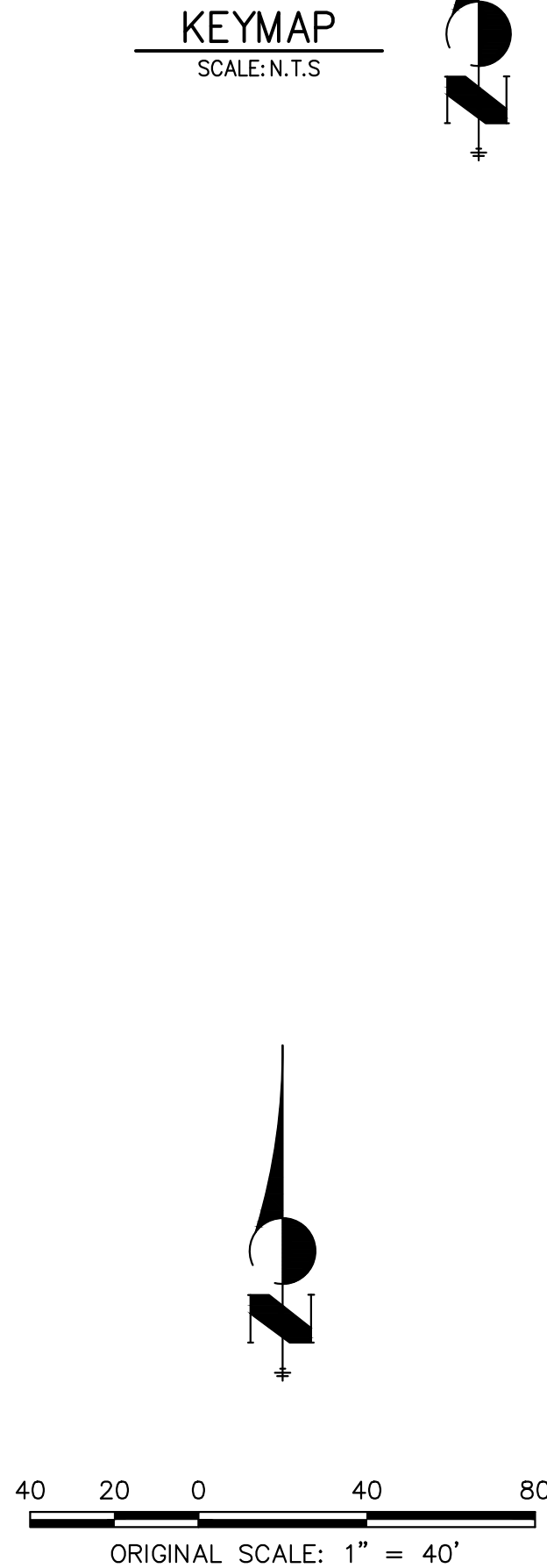
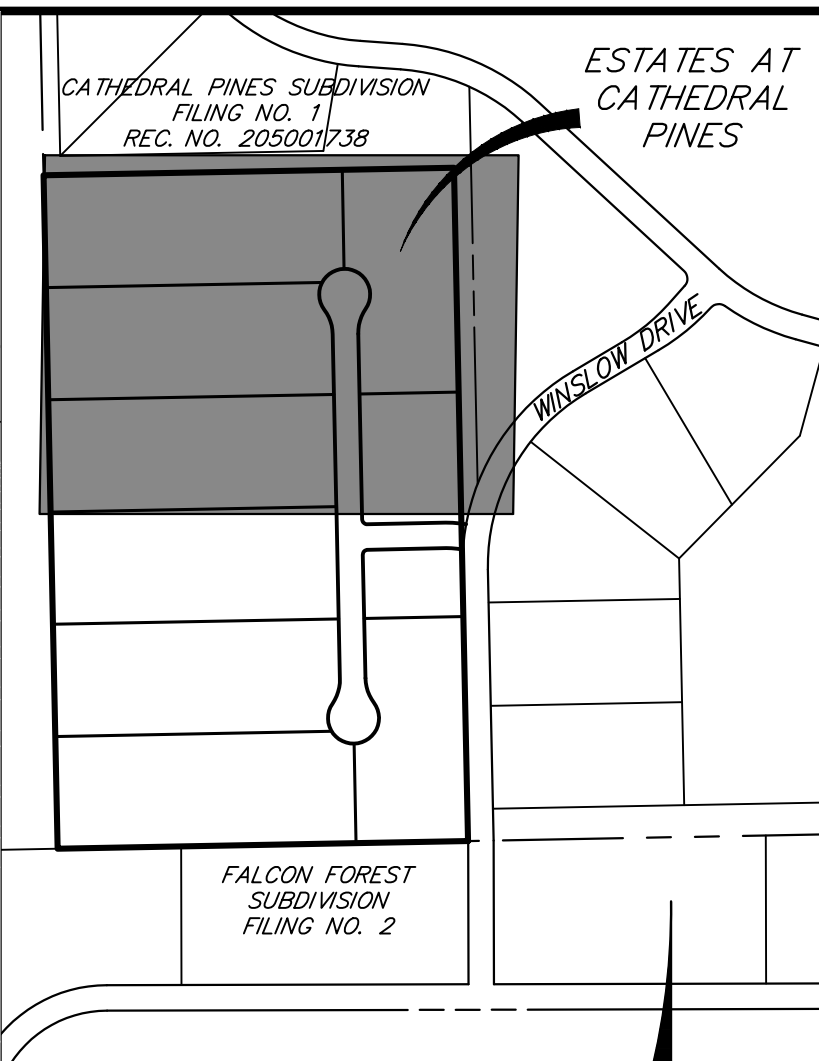
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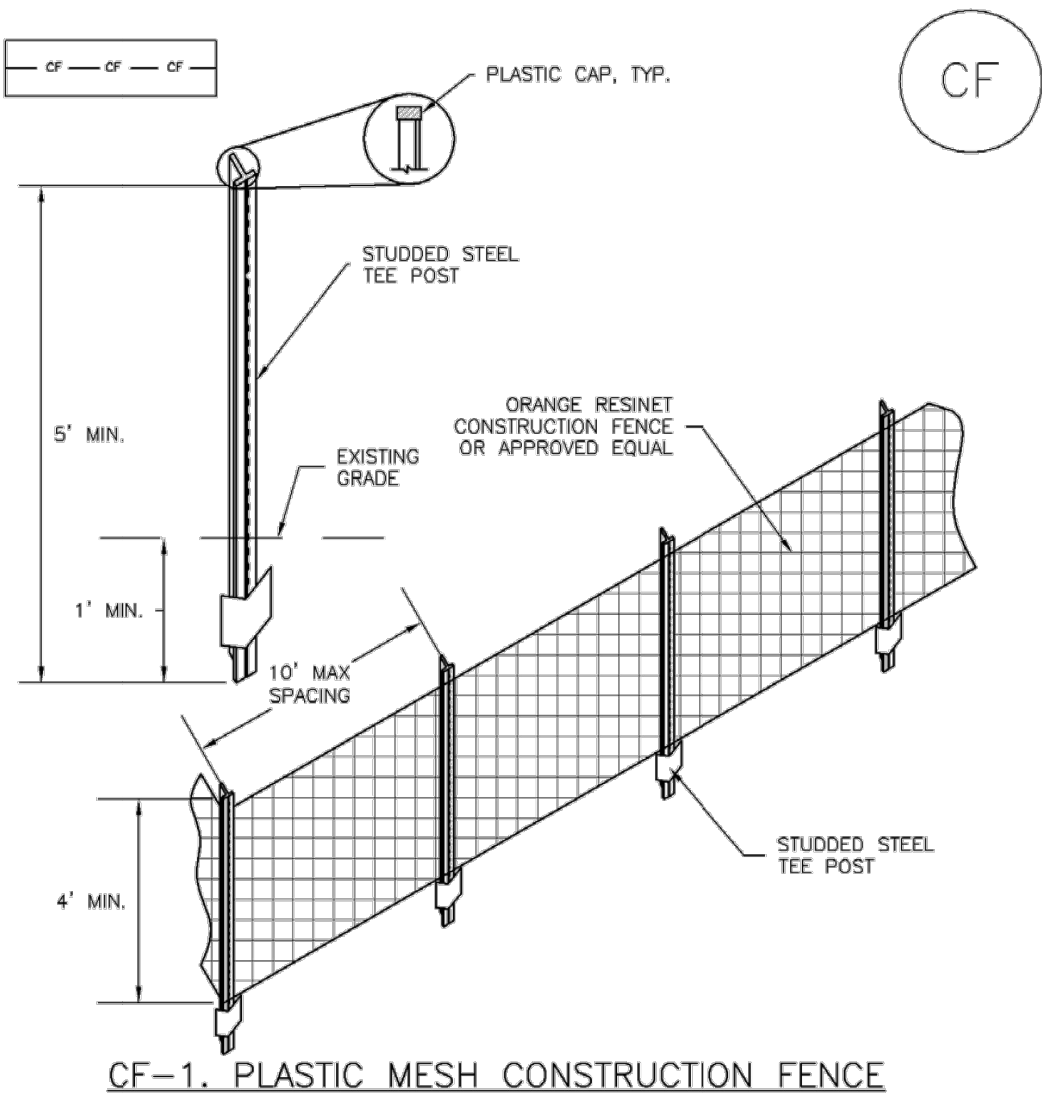
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RYAN E. BURNS, P.E.
COLORADO P.E. 0054412
FOR AND ON BEHALF OF JR ENGINEERING

2/14/24

ESTATES AT CATHEDRAL PINES	SHEET 5 OF 11	
	JOB NO. 25260.00	
	GRADING & EROSION CONTROL PLAN	
PREPARED FOR	VILLAGREE DEVELOPMENT LLC	UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, OR ENGINEERING APPROVES THEIR USE. DESIGNATED BY WRITTEN AUTHORIZATION.
BY	DATE	
REVISION	DATE	
1"=40'	N/A	
V-SCALE	2/14/24	
DESIGNED BY	PAL	
DRAWN BY	PAL	
CHECKED BY		



CONSTRUCTION FENCE INSTALLATION NOTES

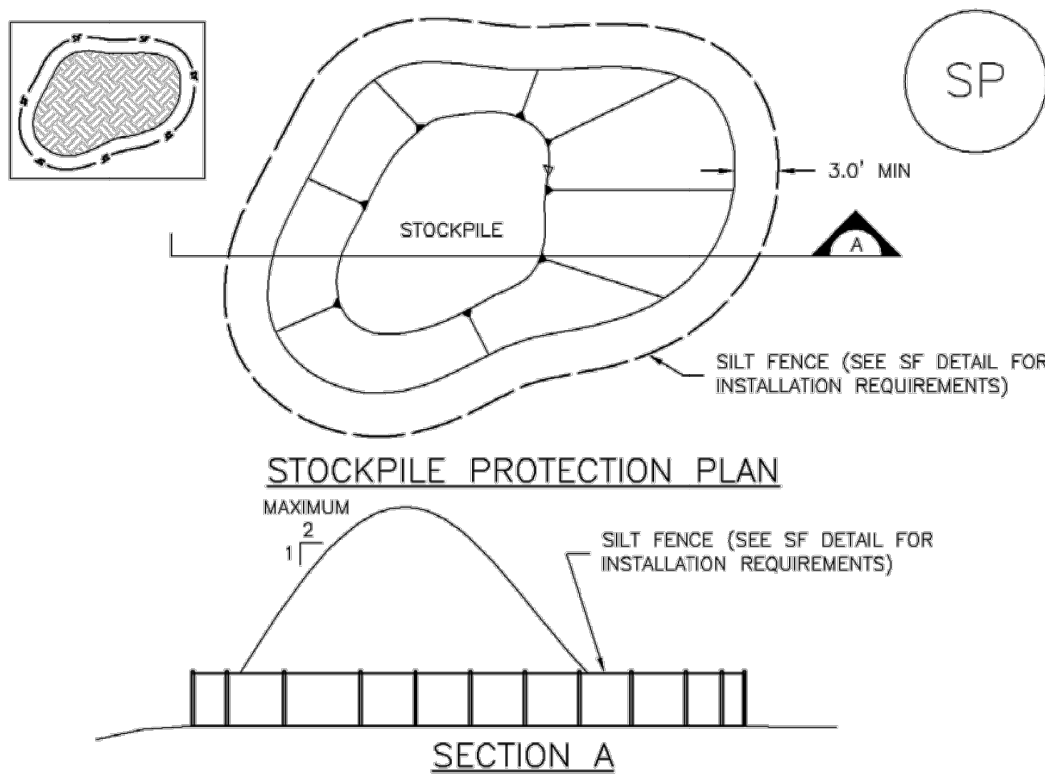
1. SEE PLAN VIEW FOR: -LOCATION OF CONSTRUCTION FENCE.
2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4" HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.
4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.
5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

CONSTRUCTION FENCE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
5. WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

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

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



SP-1. STOCKPILE PROTECTION

STOCKPILE PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR: -LOCATION OF STOCKPILES. -TYPE OF STOCKPILE PROTECTION.
2. INSTALL PERIMETER CONTROLS IN ACCORDANCE WITH THEIR RESPECTIVE DESIGN DETAILS. SILT FENCE IS SHOWN IN THE STOCKPILE PROTECTION DETAILS; HOWEVER, OTHER TYPES OF PERIMETER CONTROLS INCLUDING SEDIMENT CONTROL LOGS OR ROCK SOCKS MAY BE SUITABLE IN SOME CIRCUMSTANCES. CONSIDERATIONS FOR DETERMINING THE APPROPRIATE TYPE OF PERIMETER CONTROL FOR A STOCKPILE INCLUDE WHETHER THE STOCKPILE IS LOCATED ON A PERVIOUS OR IMPERVIOUS SURFACE, THE RELATIVE HEIGHTS OF THE PERIMETER CONTROL AND STOCKPILE, THE ABILITY OF THE PERIMETER CONTROL TO CONTAIN THE STOCKPILE WITHOUT FAILING IN THE EVENT THAT MATERIAL FROM THE STOCKPILE SHIFTS OR SLUMPS AGAINST THE PERIMETER, AND OTHER FACTORS.
3. STABILIZE THE STOCKPILE SURFACE WITH SURFACE ROUGHENING, TEMPORARY SEEDING AND MULCHING, EROSION CONTROL, BLANKETS, OR SOIL BINDERS. SOILS STOCKPILED FOR AN EXTENDED PERIOD (TYPICALLY FOR MORE THAN 60 DAYS) SHOULD BE SEEDED AND MULCHED WITH A TEMPORARY GRASS COVER ONCE THE STOCKPILE IS PLACED (TYPICALLY WITHIN 14 DAYS). USE OF MULCH ONLY OR A SOIL BINDER IS ACCEPTABLE IF THE STOCKPILE WILL BE IN PLACE FOR A MORE LIMITED TIME PERIOD (TYPICALLY 30-60 DAYS).
4. FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADEMENT CONTROLS, INCLUDING PERIMETER CONTROL, ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

STOCKPILE PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

STOCKPILE PROTECTION MAINTENANCE NOTES

4. IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY.
 5. STOCKPILE PERIMETER CONTROLS CAN BE REMOVED ONCE ALL THE MATERIAL FROM THE STOCKPILE HAS BEEN USED.
- (DETAILS ADAPTED FROM PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

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

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REVISION

No.

N/A

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DESIGNED BY

DRAWN BY

CHECKED BY

ESTATES AT CATHEDRAL PINES
DETAIL SHEET

SHEET 6 OF 11
JOB NO. 25260.00

Description

Outlet protection helps to reduce erosion immediately downstream of a pipe, culvert, slope drain, rundown or other conveyance with concentrated, high-velocity flows. Typical outlet protection consists of riprap or rock aprons at the conveyance outlet.



Photograph TOP-1. Riprap outlet protection.

Appropriate Uses

Outlet protection should be used when a conveyance discharges onto a disturbed area where there is potential for accelerated erosion due to concentrated flow. Outlet protection should be provided where the velocity at the culvert outlet exceeds the maximum permissible velocity of the material in the receiving channel.

Note: This Fact Sheet and detail are for temporary outlet protection, outlets that are intended to be used for less than 2 years. For permanent, long-term outlet protection, see the *Major Drainage* chapter of Volume 1.

Design and Installation

Design outlet protection to handle runoff from the largest drainage area that may be contributing runoff during construction (the drainage area may change as a result of grading). Key in rock, around the entire perimeter of the apron, to a minimum depth of 6 inches for stability. Extend riprap to the height of the culvert or the normal flow depth of the downstream channel, whichever is less. Additional erosion control measures such as vegetative lining, turf reinforcement mat and/or other channel lining methods may be required downstream of the outlet protection if the channel is susceptible to erosion. See Design Detail OP-1 for additional information.

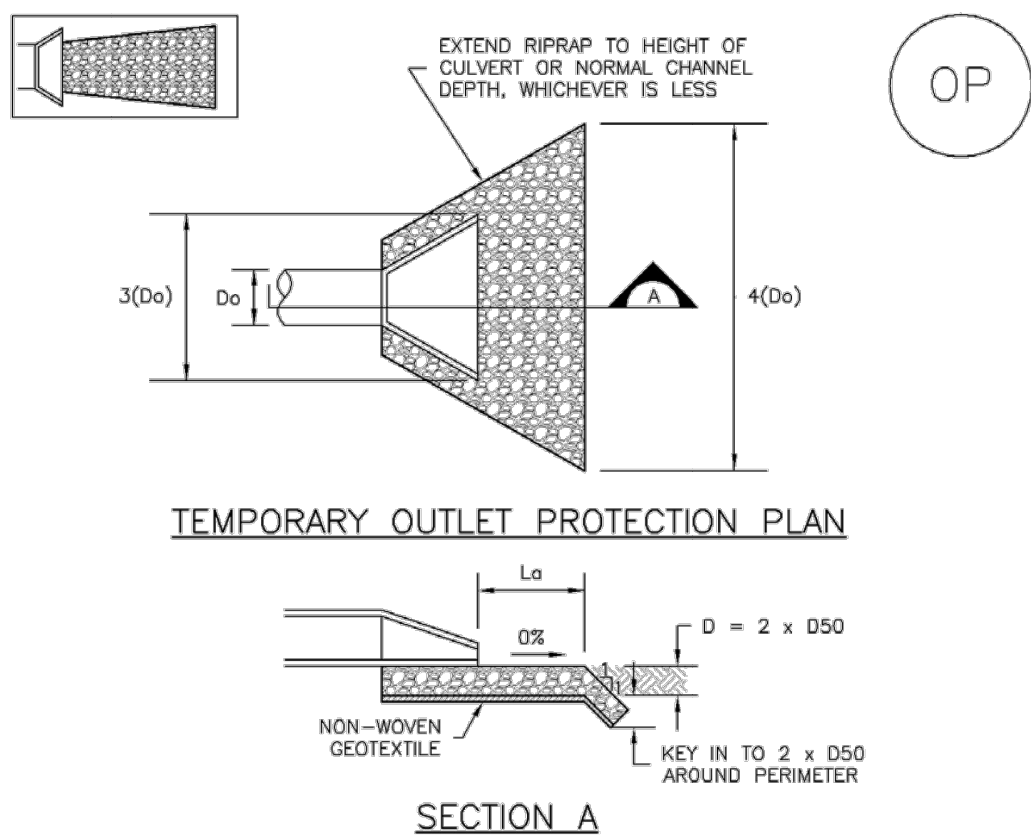
Maintenance and Removal

Inspect apron for damage and displaced rocks. If rocks are missing or significantly displaced, repair or replace as necessary. If rocks are continuously missing or displaced, consider increasing the size of the riprap or deeper keying of the perimeter.

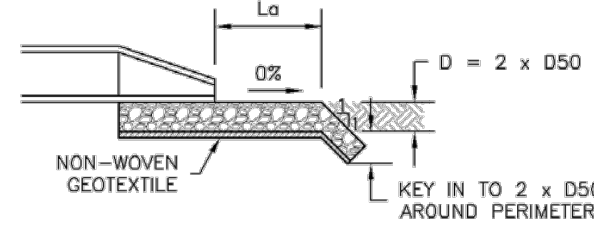
Remove sediment accumulated at the outlet before the outlet protection becomes buried and ineffective. When sediment accumulation is noted, check that upgradient BMPs, including inlet protection, are in effective operating condition.

Outlet Protection	
Functions	
Erosion Control	Yes
Sediment Control	Moderate
Site/Material Management	No

Outlet protection may be removed once the pipe is no longer draining an upstream area, or once the downstream area has been sufficiently stabilized. If the drainage pipe is permanent, outlet protection can be left in place; however, permanent outlet protection should be designed and constructed in accordance with the requirements of the *Major Drainage* chapter of Volume 2.



TEMPORARY OUTLET PROTECTION PLAN



SECTION A

TABLE OP-1. TEMPORARY OUTLET PROTECTION SIZING TABLE				
PIPE DIAMETER, D _o (INCHES)	DISCHARGE, Q (CFS)	APRON LENGTH, L _a (FT)	RIPRAP D ₅₀ MIN (INCHES)	RIPRAP D ₅₀ MAX (INCHES)
8	2.5	5	4	6
	5	10	4	6
12	5	10	4	6
	10	13	6	6
18	10	16	6	9
	20	23	12	16
	30	23	12	16
	40	26	12	16
24	30	16	9	9
	40	26	9	9
	50	26	12	12
	60	30	16	16

OP-1. TEMPORARY OUTLET PROTECTION

ENGINEER'S STATEMENT

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

RYAN E. BURNS, P.E.
COLORADO P.E. 0054412
FOR AND ON BEHALF OF JR ENGINEERING

0054412
2/14/24
DATE

Temporary Slope Drains (TSD)

EC-7

Description

A temporary slope drain is a pipe or culvert used to convey water down a slope where there is a high potential for erosion. A drainage channel or swale at the top of the slope typically directs upgradient runoff to the pipe entrance for conveyance down the slope. The pipe outlet must be equipped with outlet protection.



Photograph TSD-1. A temporary slope drain installed to convey runoff down a slope during construction. Photo courtesy of the City of Aurora.

Appropriate Uses

Use on long, steep slopes when there is a high potential of flow concentration or rill development.

Design and Installation

Effective use of temporary slope drains involves design of an effective collection system to direct flows to the pipe, proper sizing and anchoring of the pipe, and outlet protection. Upgradient of the temporary slope drain, a temporary drainage ditch or swale should be constructed to collect surface runoff from the drainage area and convey it to the drain entrance. The temporary slope drain must be sized to safely convey the desired flow volume. At a minimum, it should be sized to convey the 2-year, 24-hour storm.

Temporary slope drains may be constructed of flexible or rigid pipe, riprap, or heavy (30 mil) plastic lining. When piping is used, it must be properly anchored by burying it with adequate cover or by using an anchor system to secure it to the ground.

The discharge from the slope drain must be directed to a stabilized outlet, temporary or permanent channel, and/or sedimentation basin.

See Detail TSD-1 for additional sizing and design information.

Temporary Slope Drains	
Functions	
Erosion Control	Yes
Sediment Control	No
Site/Material Management	No

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Temporary Outlet Protection (TOP)

EC-8

Description

Outlet protection helps to reduce erosion immediately downstream of a pipe, culvert, slope drain, rundown or other conveyance with concentrated, high-velocity flows. Typical outlet protection consists of riprap or rock aprons at the conveyance outlet.



Photograph TOP-1. Riprap outlet protection.

Appropriate Uses

Outlet protection should be used when a conveyance discharges onto a disturbed area where there is potential for accelerated erosion due to concentrated flow. Outlet protection should be provided where the velocity at the culvert outlet exceeds the maximum permissible velocity of the material in the receiving channel.

Note: This Fact Sheet and detail are for temporary outlet protection, outlets that are intended to be used for less than 2 years. For permanent, long-term outlet protection, see the *Major Drainage* chapter of Volume 1.

Design and Installation

Design outlet protection to handle runoff from the largest drainage area that may be contributing runoff during construction (the drainage area may change as a result of grading). Key in rock, around the entire perimeter of the apron, to a minimum depth of 6 inches for stability. Extend riprap to the height of the culvert or the normal flow depth of the downstream channel, whichever is less. Additional erosion control measures such as vegetative lining, turf reinforcement mat and/or other channel lining methods may be required downstream of the outlet protection if the channel is susceptible to erosion. See Design Detail OP-1 for additional information.

Maintenance and Removal

Inspect apron for damage and displaced rocks. If rocks are missing or significantly displaced, repair or replace as necessary. If rocks are continuously missing or displaced, consider increasing the size of the riprap or deeper keying of the perimeter.

Remove sediment accumulated at the outlet before the outlet protection becomes buried and ineffective. When sediment accumulation is noted, check that upgradient BMPs, including inlet protection, are in effective operating condition.

Outlet protection may be removed once the pipe is no longer draining an upstream area, or once the downstream area has been sufficiently stabilized. If the drainage pipe is permanent, outlet protection can be left in place; however, permanent outlet protection should be designed and constructed in accordance with the requirements of the *Major Drainage* chapter of Volume 2.

Outlet Protection	
Functions	
Erosion Control	Yes
Sediment Control	Moderate
Site/Material Management	No

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Temporary Slope Drains (TSD)

Maintenance and Removal

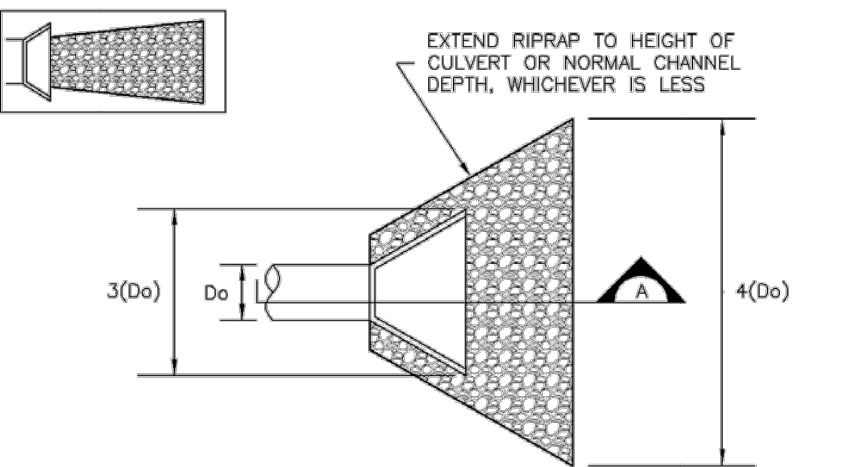
Inspect the entrance for sediment accumulation and remove, as needed. Clogging as a result of sediment deposition at the entrance can lead to ponding upstream causing flooding or overtopping of the slope drain. Inspect the downstream outlet for signs of erosion and stabilize, as needed. It may also be necessary to remove accumulated sediment at the outfall. Inspect pipe anchors to ensure that they are secure. If the pipe is secured by ground cover, ensure erosion has not compromised the depth of cover.

Slope drains should be removed when no longer needed or just prior to installation of permanent slope stabilization measures that cannot be installed with the slope drain in place. When slope drains are removed, the disturbed areas should be covered with topsoil, seeded, mulched or otherwise stabilized as required by the local jurisdiction.

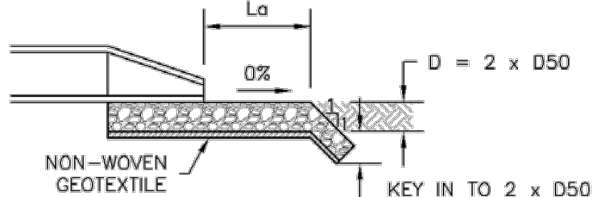
SD-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

EC-8

Temporary Outlet Protection (TOP)



TEMPORARY OUTLET PROTECTION PLAN



SECTION A

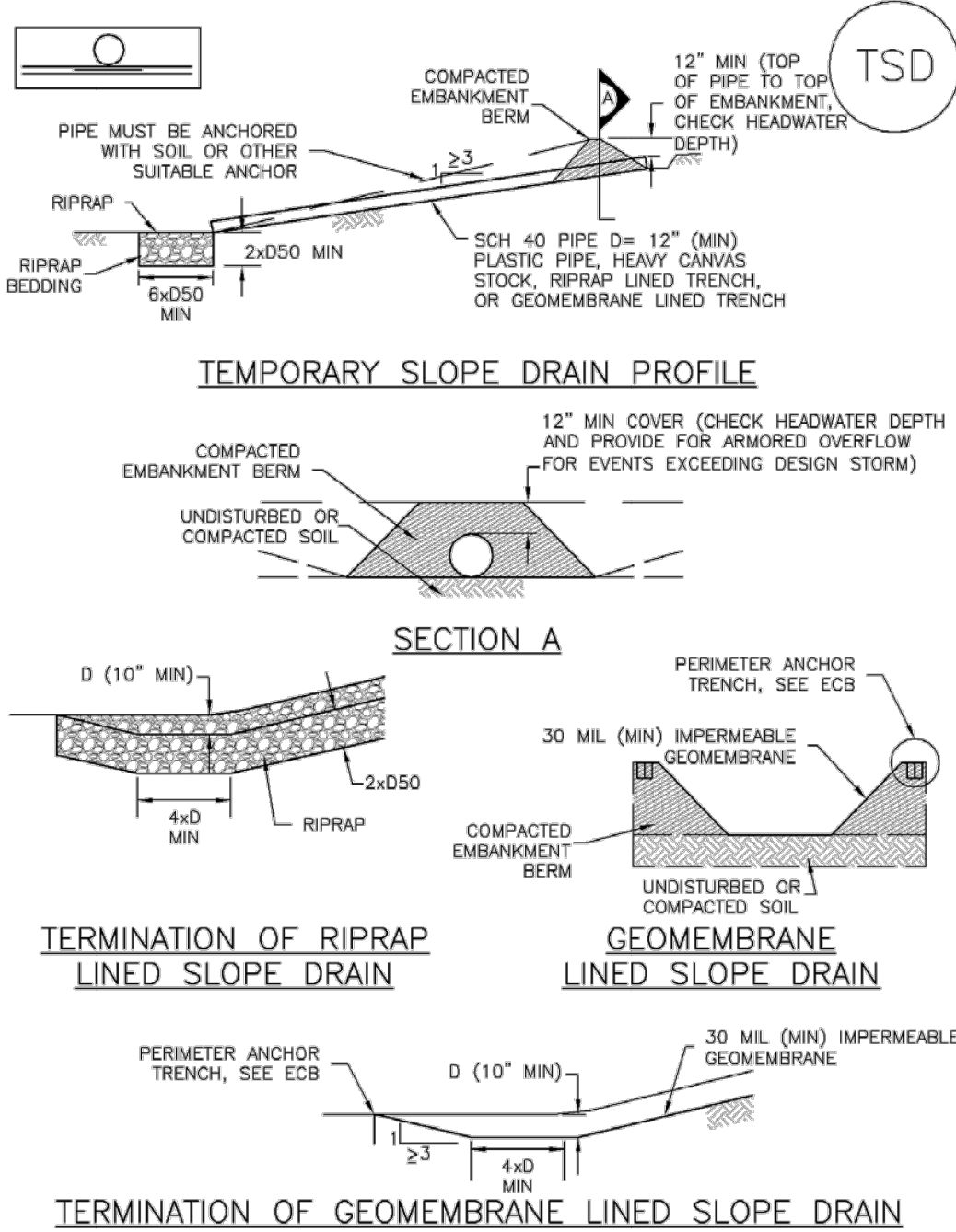
TABLE OP-1. TEMPORARY OUTLET PROTECTION SIZING TABLE			
PIPE DIAMETER, D _p (INCHES)	DISCHARGE, Q (CFS)	APRON LENGTH, L _a (FT)	RIPRAP D ₅₀ DIAMETER MIN (INCHES)
8	2.5	5	4
	5	10	6
	10	10	6
12	5	10	4
	10	13	6
	10	10	6
	20	16	9
18	30	23	12
	40	26	16
	40	26	16
24	30	16	9
	40	26	9
	50	26	12
	60	30	16

OP-1. TEMPORARY OUTLET PROTECTION

TOP-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Temporary Slope Drains (TSD)

EC-7



TEMPORARY SLOPE DRAIN PROFILE

SECTION A

TERMINATION OF RIPRAP LINED SLOPE DRAIN

GEOMEMBRANE LINED SLOPE DRAIN

TERMINATION OF GEOMEMBRANE LINED SLOPE DRAIN

TSD-1. TEMPORARY SLOPE DRAIN PROFILE

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Temporary Outlet Protection (TOP)

EC-8

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)

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EC-7

Temporary Slope Drains (TSD)

SLOPE DRAIN INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATION AND LENGTH OF SLOPE DRAIN
 - PIPE DIAMETER, D, AND RIPRAP SIZE, D₅₀.
- SLOPE DRAIN SHALL BE DESIGNED TO CONVEY PEAK RUNOFF FOR 2-YEAR 24-HOUR STORM AT A MINIMUM. FOR LONGER DURATION PROJECTS, LARGER MAY BE APPROPRIATE.
- SLOPE DRAIN DIMENSIONS SHALL BE CONSIDERED MINIMUM DIMENSIONS; CONTRACTOR MAY ELECT TO INSTALL LARGER FACILITIES.
- SLOPE DRAINS INDICATED SHALL BE INSTALLED PRIOR TO UPGRADIENT LAND-DISTURBING ACTIVITIES.
- CHECK HEADWATER DEPTHS FOR TEMPORARY AND PERMANENT SLOPE DRAINS. DETAILS SHOW MINIMUM COVER; INCREASE AS NECESSARY FOR DESIGN HEADWATER DEPTH.
- RIPRAP PAD SHALL BE PLACED AT SLOPE DRAIN OUTFALL.
- ANCHOR PIPE BY COVERING WITH SOIL OR AN ALTERNATE SUITABLE ANCHOR MATERIAL.

SLOPE DRAIN 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.
- INSPECT INLET AND OUTLET POINTS AFTER STORMS FOR CLOGGING OR EVIDENCE OF OVERTOPPING. BREACHES IN PIPE OR OTHER CONVEYANCE SHALL BE REPAIRED AS SOON AS PRACTICABLE IF OBSERVED.
- INSPECT RIPRAP PAD AT OUTLET FOR SIGNS OF EROSION. IF SIGNS OF EROSION EXIST, ADDITIONAL ARMORING SHALL BE INSTALLED.
- TEMPORARY SLOPE DRAINS ARE TO REMAIN IN PLACE UNTIL NO LONGER NEEDED, BUT SHALL BE REMOVED PRIOR TO THE END OF CONSTRUCTION. WHEN SLOPE DRAINS ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED, MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF COLORADO SPRINGS, 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.

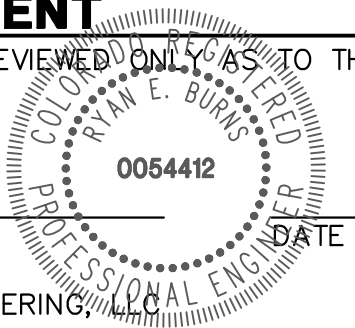
SD-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

ENGINEER'S STATEMENT

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

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FOR AND ON BEHALF OF JR ENGINEERING



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.

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H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	No.	REVISION	BY	DATE
N/A	N/A	2/14/24	PAL	PAL					

ESTATES AT CATHEDRAL PINES
DETAIL SHEET

SHEET 10 OF 11

JOB NO. 25260.00

Sediment Control Log (SCL)

SC-2

Description

A sediment control log is a linear roll made of natural materials such as straw, coconut fiber, or compost. The most common type of sediment control log has straw filling and is often referred to as a "straw wattle." All sediment control logs are used as a sediment barrier to intercept sheet flow runoff from disturbed areas.



Appropriate Uses

Sediment control logs can be used in the following applications to trap sediment:

- As perimeter control for stockpiles and the site.
- As part of inlet protection designs.
- As check dams in small drainage ditches. (Sediment control logs are not intended for use in channels with high flow velocities.)
- On disturbed slopes to shorten flow lengths (as an erosion control).
- As part of multi-layered perimeter control along a receiving water such as a stream, pond or wetland.



Photographs SCL-1 and SCL-2. Sediment control logs used as 1) a perimeter control around a soil stockpile; and, 2) as a "J-hook" perimeter control at the corner of a construction site.

Design and Installation

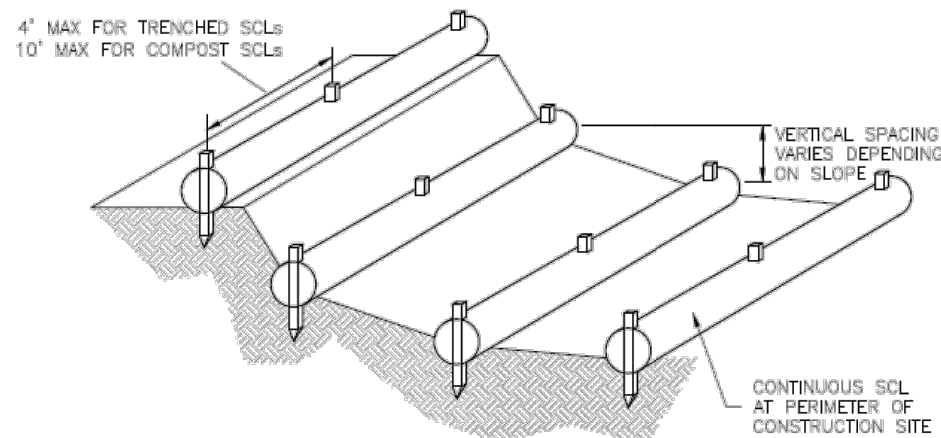
Sediment control logs should be installed along the contour to avoid concentrating flows. The maximum allowable tributary drainage area per 100 linear feet of sediment control log, installed along the contour, is approximately 0.25 acres with a disturbed slope length of up to 150 feet and a tributary slope gradient no steeper than 3:1. Longer and steeper slopes require additional measures. This recommendation only applies to sediment control logs installed along the contour. When installed for other uses, such as perimeter control, it should be installed in a way that will not produce concentrated flows. For example, a "J-hook" installation may be appropriate to force runoff to pond and evaporate or infiltrate in multiple areas rather than concentrate and cause erosive conditions parallel to the BMP.

Sediment Control Log		
Functions		
Erosion Control		Moderate
Sediment Control		Yes
Site/Material Management		No

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Sediment Control Log (SCL)

SC-2



SCL-3. SEDIMENT CONTROL LOGS TO CONTROL SLOPE LENGTH

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SC-2

Sediment Control Log (SCL)

Although sediment control logs initially allow runoff to flow through the BMP, they can quickly become a barrier and should be installed as if they are impermeable.

Design details and notes for sediment control logs are provided in the following details. Sediment logs must be properly installed per the detail to prevent undercutting, bypassing and displacement. When installed on slopes, sediment control logs should be installed along the contours (i.e., perpendicular to flow).

Improper installation can lead to poor performance. Be sure that sediment control logs are properly trenched (if lighter than 8 lb/foot), anchored and tightly jointed.

Maintenance and Removal

Be aware that sediment control logs will eventually degrade. Remove accumulated sediment before the depth is one-half the height of the sediment log and repair damage to the sediment log, typically by replacing the damaged section.

Once the upstream area is stabilized, remove and properly dispose of the logs. Areas disturbed beneath the logs may need to be seeded and mulched. Sediment control logs that are biodegradable may occasionally be left in place (e.g., when logs are used in conjunction with erosion control blankets as permanent slope breaks). However, removal of sediment control logs after final stabilization is typically appropriate when used in perimeter control, inlet protection and check dam applications. Compost from compost sediment control logs may be spread over the area and seeded as long as this does not cover newly established vegetation.

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SC-2

Sediment Control Log (SCL)

SEDIMENT CONTROL LOG INSTALLATION NOTES

- SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.
- SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPSLOPE LAND-DISTURBING ACTIVITIES.
- SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
- SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS.
- IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY 1/2 OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING. COMPOST LOGS THAT ARE 8 LB/FT DO NOT NEED TO BE TRENCHED.
- THE UPSHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL OR FILTER MATERIAL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER OR BLOWN IN PLACE.
- FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED. COMPOST LOGS SHOULD BE STAKED 10' ON CENTER.

SEDIMENT CONTROL LOG 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.
- SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP. TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
- SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION.COMPOST FROM COMPOST LOGS MAY BE LEFT IN PLACE AS LONG AS BAGS ARE REMOVED AND THE AREA SEEDED. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

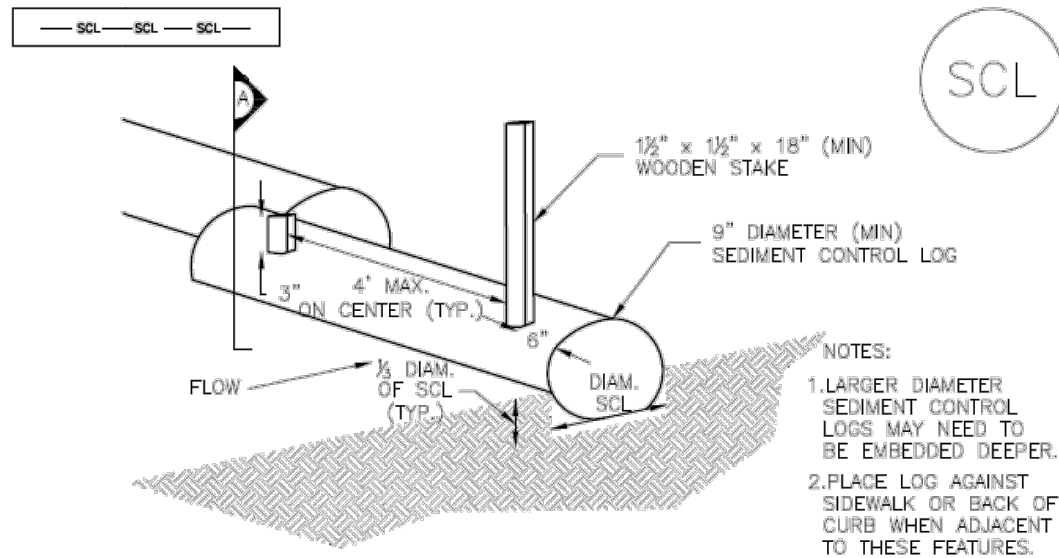
(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, JEFFERSON COUNTY, COLORADO, DOUGLAS COUNTY, COLORADO, AND CITY OF AURORA, COLORADO; NOT AVAILABLE IN AUTOCAD)

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

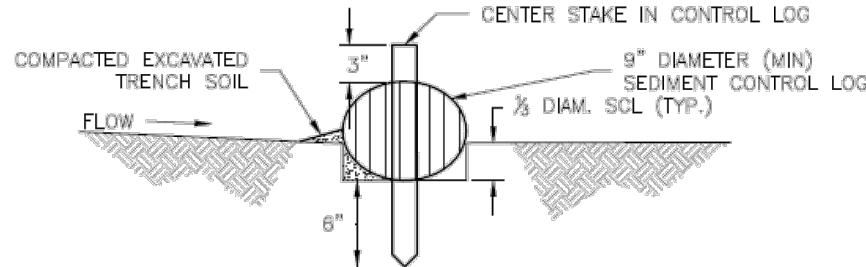
SCL-6	Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3	November 2015
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Sediment Control Log (SCL)

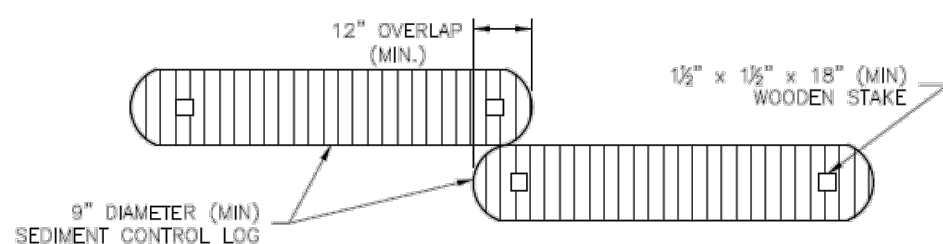
SC-2



TRENCHED SEDIMENT CONTROL LOG



TRENCHED SEDIMENT CONTROL LOG SECTION A



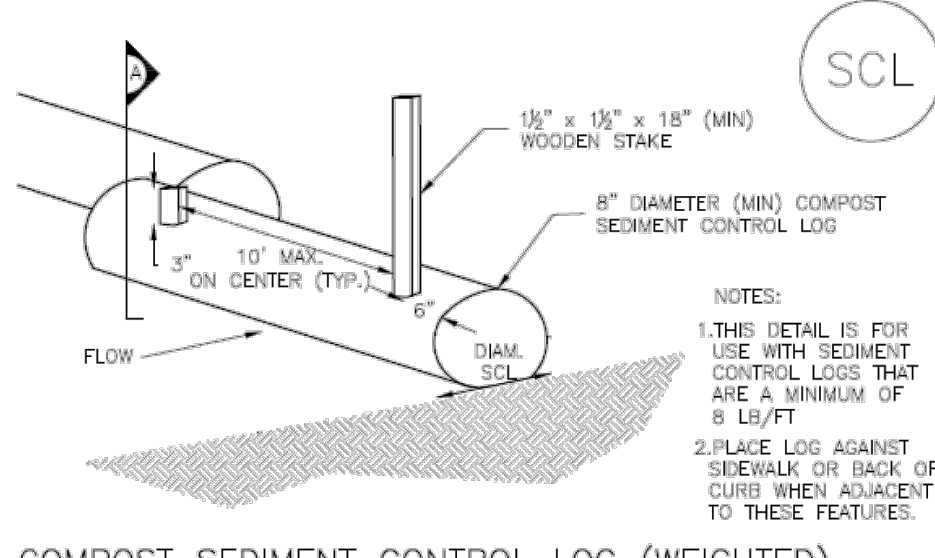
LOG JOINTS

SCL-1. TRENCHED SEDIMENT CONTROL LOG

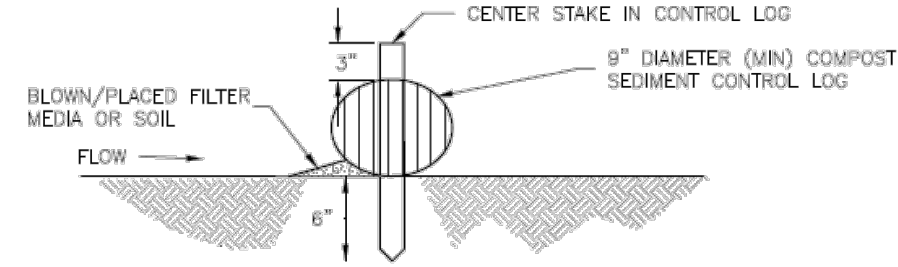
November 2015	Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3	SCL-3
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SC-2

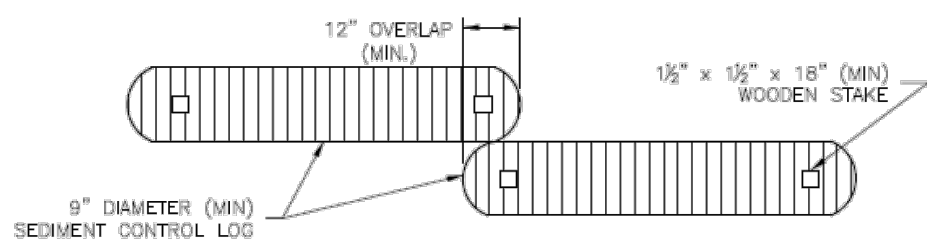
Sediment Control Log (SCL)



COMPOST SEDIMENT CONTROL LOG (WEIGHTED)



COMPOST SEDIMENT CONTROL LOG SECTION A



LOG JOINTS

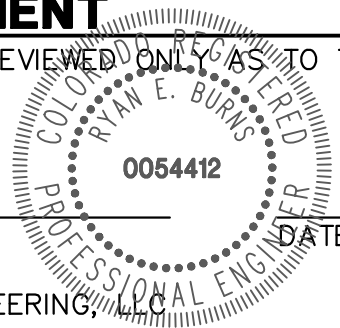
SCL-2. COMPOST SEDIMENT CONTROL LOG (WEIGHTED)

SCL-4	Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3	November 2015
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ENGINEER'S STATEMENT

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

RYAN E. BURNS, P.E.
COLORADO P.E. 0054412
FOR AND ON BEHALF OF JR ENGINEERING



2/14/24

ESTATES AT CATHEDRAL PINES

DETAIL SHEET

SHEET 11 OF 11

JOB NO. 25260.00