

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS

- NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS OR 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 (EPC) STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE (LDC), THE ENGINEERING CRITERIA MANUAL (ECM), THE DRAINAGE CRITERIA MANUAL (DCM) VOLUME 1 AND 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
2. A PRECONSTRUCTION MEETING BETWEEN THE PERMIT HOLDER(S) AND EL PASO COUNTY SHALL BE HELD PRIOR TO ANY CONSTRUCTION ACTIVITIES. IT IS THE RESPONSIBILITY OF THE PERMIT HOLDER(S) TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY STAFF. NO LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES BEYOND THE INSTALLATION OF THE INITIAL CONSTRUCTION CONTROL MEASURES (CCMS), AS INDICATED ON THE APPROVED GEC PLAN OR CDS WITH GEC PLANS, MAY OCCUR PRIOR TO RECEIVING A NOTICE TO PROCEED (NTP) ISSUED BY THE ECM ADMINISTRATOR. FAILURE TO OBTAIN A NOTICE TO PROCEED PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES MAY RESULT IN AN IMMEDIATE STOP WORK ORDER (SWO).
3. CONSTRUCTION CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT COULD CONTRIBUTE POLLUTANTS TO STORMWATER. STORMWATER RUNOFF FROM ALL DISTURBED AREAS AND SOIL STORAGE AREAS MUST UTILIZE OR FLOW TO ONE OR MORE CCMS(S) TO PREVENT EROSION OR SEDIMENT IN THE DISCHARGE. THE CCMS(S) MUST CONTAIN OR FILTER FLOWS IN ORDER TO PREVENT THE BYPASS OF RUNOFF WITHOUT TREATMENT AND MUST BE APPROPRIATE FOR STORMWATER RUNOFF FROM DISTURBED AREAS AND FOR THE EXPECTED FLOW RATE, DURATION, AND FLOW CONDITIONS (E.G., SHEET OR CONCENTRATED FLOW).
4. ALL CCMS SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITION UNTIL FINAL STABILIZATION IS ACHIEVED. THE QUALIFIED STORMWATER MANAGER (QSM) SHALL ASSESS THE ADEQUACY OF CCMS AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CCMS ARE NEEDED TO ENSURE THE CONTINUED EFFECTIVE PERFORMANCE OF THE CCMS.
5. PRIOR TO CONSTRUCTION THE PERMIT HOLDER(S) SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
6. MANAGEMENT OF THE STORMWATER MANAGEMENT PLAN (SWMP) DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QSM. THE SWMP SHALL BE LOCATED ON-SITE OR DIGITALLY ACCESSIBLE AT ALL TIMES DURING CONSTRUCTION ACTIVITIES AND MUST BE IMPLEMENTED AS WRITTEN FROM THE START OF CONSTRUCTION ACTIVITY UNTIL FINAL STABILIZATION IS ACHIEVED. THE QSM SHALL AMEND THE SWMP WHEN THERE IS CHANGE IN THE CONSTRUCTION, OPERATION, OR MAINTENANCE OF THE SITE WHICH WOULD REQUIRE THE IMPLEMENTATION OF NEW OR REVISED CCMS OR IF THE SWMP PROVES TO BE INEFFECTIVE IN CONTROLLING POLLUTANTS IN STORMWATER RUNOFF ASSOCIATED WITH CONSTRUCTION ACTIVITY OR WHEN CCMS ARE NO LONGER NECESSARY AND ARE REMOVED. THE QSM SHALL MAINTAIN A RECORD OF AMENDMENTS MADE TO THE SWMP THAT INCLUDES THE DATE AND IDENTIFICATION OF THE CHANGES.
7. 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 RECEIVING WATER UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED. IN ADDITION TO MAINTAINING 50 HORIZONTAL FEET OF PRE-EXISTING VEGETATION UPGRADIENT OF A RECEIVING WATER (UNLESS INFEASIBLE AND APPROVED), THE PERMIT HOLDER(S) MUST INSTALL CCMS UPGRADIENT OF THE VEGETATIVE BUFFER.
8. TEMPORARY STABILIZATION MEASURES 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. EROSION CONTROL BLANKET (ECB) OR OTHER APPROVED CONTROL MEASURE(S) SHALL BE USED ON SLOPES STEEPER THAN 3:1.
10. VEHICLE TRACKING CONTROLS (VTC) MUST BE IMPLEMENTED TO MINIMIZE VEHICLE TRACKING OF SEDIMENT FROM DISTURBED AREAS. VTCs MUST INCLUDE STRUCTURE CONTROL MEASURE (E.G., TRACKING PAD) AND MAY INCLUDE A NON-STRUCTURAL CONTROL MEASURE (E.G., SWEEPING). MATERIAL TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
11. ANY TEMPORARY OR PERMANENT CONTROL MEASURE 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.
12. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER, PERMANENT CONTROL MEASURES (PCMS), OR DITCHES EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
13. ALL PCMS SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT AFFECT THE DESIGN OR FUNCTION OF PCMS MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
14. SOIL COMPACTION MUST BE MINIMIZED IN AREAS WHERE INFILTRATION PCMS WILL BE INSTALLED OR IN AREAS WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION PCMS SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. IF SOIL COMPACTION DOES OCCUR IN AREAS WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER OR IN AREAS WHERE INFILTRATION PCMS WILL BE INSTALLED, DECOMPACTION OF THE SOIL MUST BE COMPLETED PRIOR TO PLANTING OR INSTALLATION OF THE PCM(S). AN INFILTRATION TEST MUST BE CONDUCTED FOR ALL INFILTRATION PCMS AND THE INFILTRATION TEST RESULTS SUBMITTED TO EL PASO COUNTY PRIOR TO PRELIMINARY ACCEPTANCE (PA).
15. FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND PERMANENT STABILIZATION METHODS ARE COMPLETE. WHEN USING THE CONSTRUCTION OF PERMANENT STABILIZATION METHOD, THE VEGETATION SHALL BE EVENLY DISTRIBUTED PERENNIAL VEGETATION AND OF THE VARIETY AND SPECIES FOUND IN THE COUNTY-APPROVED SEED MIXES OR IN THE APPROVED GEC PLAN. VEGETATION COVERAGE SHALL BE, AT A MINIMUM, EQUAL TO 70% OF WHAT WOULD HAVE BEEN PROVIDED BY NATIVE VEGETATION IN A LOCAL, UNDISTURBED AREA OR ADEQUATE REFERENCE SITE. ALL TEMPORARY CCMS SHALL BE REMOVED UPON FINAL STABILIZATION AND PRIOR TO STORMWATER PERMIT TERMINATION.
16. 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.
17. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO BE DISCHARGED OFFSITE OR TO ENTER STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR CONTROL MEASURES. CONCRETE WASHOUT AREAS 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.
18. DURING CONSTRUCTION DEWATERING OPERATIONS, UNCONTAMINATED GROUNDWATER MAY BE DISCHARGED ON-SITE IN ACCORDANCE WITH THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENTS (CDPHE) LOW RISK DISCHARGE GUIDANCE POLICY FOR DISCHARGES OF UNCONTAMINATED GROUNDWATER TO LAND. IF CONSTRUCTION DEWATERING OPERATIONS ARE UNABLE TO MEET ALL CRITERIA, CONDITIONS, AND CONTROL MEASURE REQUIREMENTS OF THE LOW RISK DISCHARGE GUIDANCE POLICY, A COLORADO DISCHARGE PERMIT SYSTEM (CDPS) GENERAL PERMIT COG080000 WILL BE REQUIRED.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTE 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.
20. THE PERMIT HOLDER(S) 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. 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. APPROPRIATE CMS SHALL BE UTILIZED BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
23. BULK STORAGE (I.E., INDUSTRIAL CONTAINERS OF 65 GALLONS OR GREATER) OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID SHALL REQUIRE AN ADEQUATE SECONDARY CONTAINMENT, OR EQUIVALENT PROTECTION, TO CONTAIN ANY SPILLS ON-SITE, TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM, OR OTHER FACILITIES.
24. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ON-SITE UNLESS PERMITS FOR THE USE OF SUCH CHEMICAL(S) ARE OBTAINED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
25. ON AREAS OF EXPOSED SOIL, MINIMIZE DUST THROUGH THE APPROPRIATE APPLICATION OF WATER OR OTHER DUST SUPPRESSION TECHNIQUES. WATER APPLICATION MUST BE CONDUCTED IN A MANNER TO PREVENT DISCHARGE OFFSITE UNLESS AUTHORIZED BY A CDPS OR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT.
26. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
27. FOR SITES WHERE A SOILS REPORT IS REQUIRED, THE APPROVED SOILS REPORT FOR THIS SITE SHALL BE CONSIDERED A PART OF THESE PLANS.
28. PERMIT HOLDER(S) 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, DRAINAGE CRITERIA MANUAL VOLUME 2, AND ENGINEERING CRITERIA MANUAL. ALL APPLICABLE LOCAL, STATE, AND FEDERAL PERMITS MUST BE OBTAINED PRIOR TO CONSTRUCTION. 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.
29. AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE (1) ACRE OR MORE OR LESS THAN 1 ACRE AND PART OF A LARGER COMMON PLAN OF DEVELOPMENT OR SALE THAT WOULD DISTURB 1 OR MORE ACRES, THE PERMIT HOLDER(S) SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE (COR400000 PERMIT) TO THE CDPHE WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A SWMP, OF WHICH THIS GEC 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

Froude Number Calculations: 100-YR							
Section	Velocity ft/s	Gravitational Constant ft/s^2	Hydraulic depth ft	Xsectional Area ft^2	top Width ft	Froude # N/A	
Channel Section HH	5.94	32.17	0.42	3.16	7.51	1.61	
Channel Section II	5.27	32.17	0.54	13.44	25.12	1.27	
Channel Section KK	6.15	32.17	1.44	32.74	22.66	0.90	
Channel Section I1	4.95	32.17	0.37	11.81	31.74	1.43	
Channel Section J5	5.43	32.17	0.52	23.46	45.28	1.33	
SANDBAGGER DR (NORTH)	3.14	32.17	0.53	3.86	7.35	0.76	
SANDBAGGER DR (SOUTH)	3.14	32.17	0.53	3.86	7.35	0.76	

Shear Stress Calculations: 100-YR					
Section	unit weight of water lb/ft ³	Depth of flow ft	Slope ft/ft	Shear Stress lb/ft ²	
Channel Section HH	63.43	0.55	0.049	1.71	
Channel Section II	63.43	0.68	0.027	1.16	
Channel Section KK	63.43	2.89	0.010	1.83	
Channel Section I1	63.43	0.40	0.040	1.01	
Channel Section J5	63.43	0.74	0.030	1.41	
SANDBAGGER DR (NORTH)	63.43	1.05	0.010	0.67	
SANDBAGGER DR (SOUTH)	63.43	1.05	0.010	0.67	

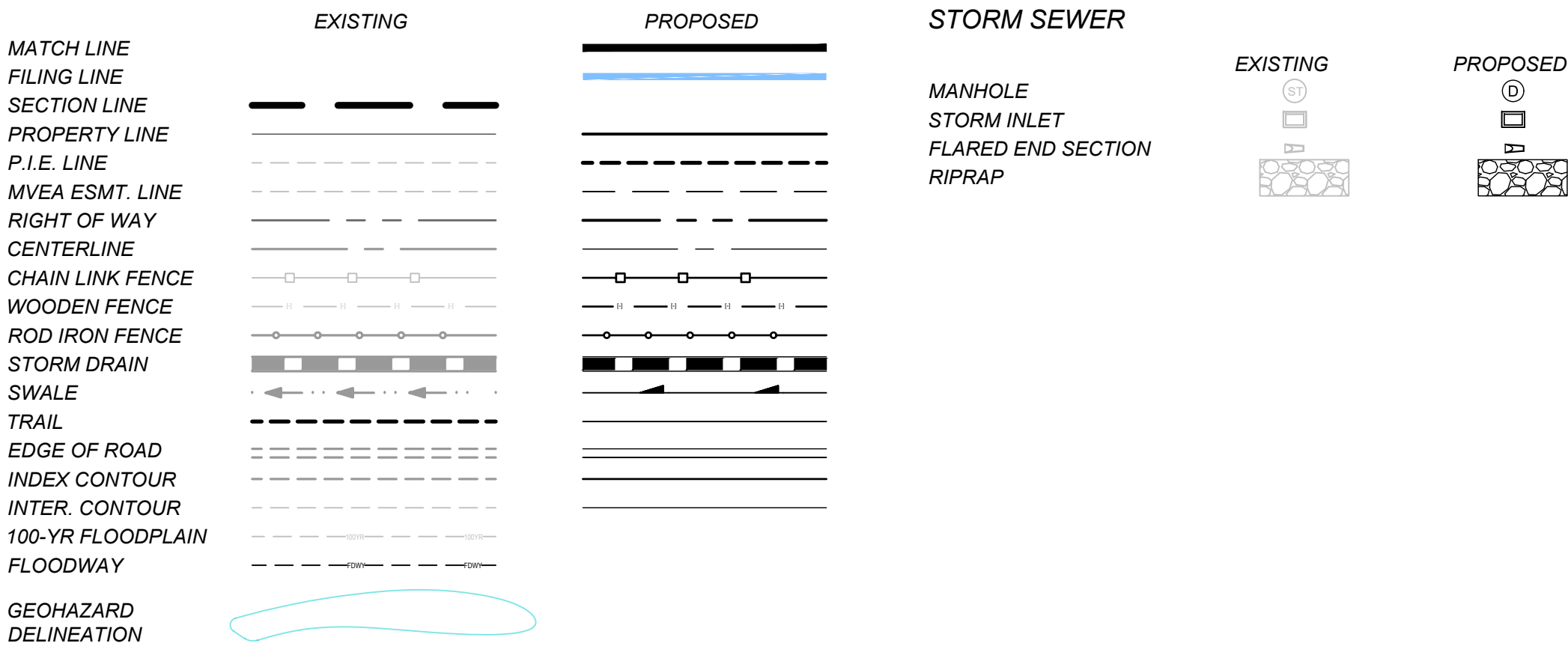
Channel Lining Determination					
Section	Calculated Values		P300 Max Values		Lining Required
	Shear Stress	Velocity	Shear Stress	Velocity	
Channel Section HH	1.71	5.94	3		9 P300
Channel Section II	1.16	5.27	3		9 P300
Channel Section KK	1.83	6.15	3		9 P300
Channel Section IJ	1.01	4.95	3		9 P300
Channel Section J5	1.41	5.43	3		9 P300
SANDBAGGER DR (NORTH)	0.67	3.14	3		9 P300
SANDBAGGER DR (SOUTH)	0.67	3.14	3		9 P300

ABBREVIATIONS

Ø, DIA	DEFLECTION ANGLE
ASSTGT	DIAMETER
ABC	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ABD	ASPHALT BASE COURSE
AC	ABANDONED
ADA	ACRE
ASPH	THE AMERICANS WITH DISABILITIES ACT
ASSY	ASPHALT
ASTM	ASSEMBLY
BLDG	AMERICAN SOCIETY FOR TESTING MATERIALS
BLVD	BASE FLOOD ELEVATION
BM	BUILDING
BNDY	BOULEVARD
BOP	BENCH MARK
BW	BOUNDARY
C&G	BOTTOM OF POND
CA	BOTTOM OF WALL
CATV	CURB AND GUTTER
CB	COARSE AGGREGATE
CFS	CABLE TELEVISION
CIP	CHORD BEARING/CATCH BASIN
CL	CUBIC FEET PER SECOND
CMP	CAST IRON PIPE
CNC	CENTER LINE
CONST	CORRUGATED METAL PIPE
CSP	COMPOSITE
CONC	CONCRETE
CONSTR	CONSTRUCT OR CONSTRUCTION
CSF	CORRUGATED STEEL PIPE
CT	COLORADO SPRINGS UTILITIES
CTR	COURT
CU	CENTER
CY	COPPER
DBL	CUBIC YARD
DEG	DOUBLE
DET	DEGREE
DEPT	DETAIL
DM	DEPARTMENT
DIP	DIMENSION
DWG	DUCTILE IRON PIPE
E	DEPARTMENT OF TRANSPORTATION
EL	DRAWING
ELEC	EAST/EASTING
EOG	ELEVATION
EOP	ELECTRIC
ESMT	EDGE OF GUTTER
EW	EDGE OF PAVEMENT
EX	EASEMENT
FD	ENDWALL
FDC	EXISTING
FE	FIRE DRINK
FES	FIRE DEPARTMENT CONNECTION
FF	FLANGE ELEVATION
FG	FLARED END SECTION
FH	FINISHED FLOOR
	FINISHED GRADE
	FIRE HYDRANT

FHWA	FEDERAL HIGHWAY ADMINISTRATION
FL	FLOW LINE
FOC	FIBER OPTICS CABLE
FO	FOOT OR FEET
GB	GRADE BREAK
GALL	GALLON
HDPE	HIGH DENSITY POLYETHYLENE
HC RAMP	HANDICAP RAMP
HW	HEADWALL
INV	INVERT
KM	KILOMETER
L	LENGTH
LF	LINEAR FEET
M	METER
MIN	MINIMUM
MISC	MISCELLANEOUS
MAINT	MAINTENANCE
MAX	MAXIMUM
MH	MANHOLE
MP	MIDPOINT
N	NORTH/NORTHING
NO	NUMBER
NC	ON CENTER
OH	OVERHEAD
PB	PUBLIC
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCR	POINT OF CURB RETURN
PI	POINT OF INTERSECTION
PIE	PUBLIC IMPROVEMENT ESMT
PT	POINT OF TANGENCY
PRC	PROPOSED
PRC	POINT OF REVERSE CURVATURE
PRV	PRESSURE REDUCING VALVE
PVE	PUBLIC USE
PVAE	PUBLIC UTILITY AND ACCESS ESMT
PVC	POLYVINYL CHLORIDE
R	RADIUS
REC	RECEPTION
RCBC	REINFORCED CONCRETE BOX CULVERT
S	SOUTH
SHT	SHEET
SQ	SQUARE
SW	SPILLWAY
TC	TOP BACK OF CURB
TR	TRICKLE CHANNEL
TOP	TOP OF POND
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
VERT	VERTICAL
W	WEST
WW	WASTEWATER
WWF	WELDED WIRE FABRIC
W	WITH
WO	WITHOUT
YD	YARD

LEGEND



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HR GREEN - COLORADO SPRINGS
1975 RESEARCH PARKWAY SUITE 160
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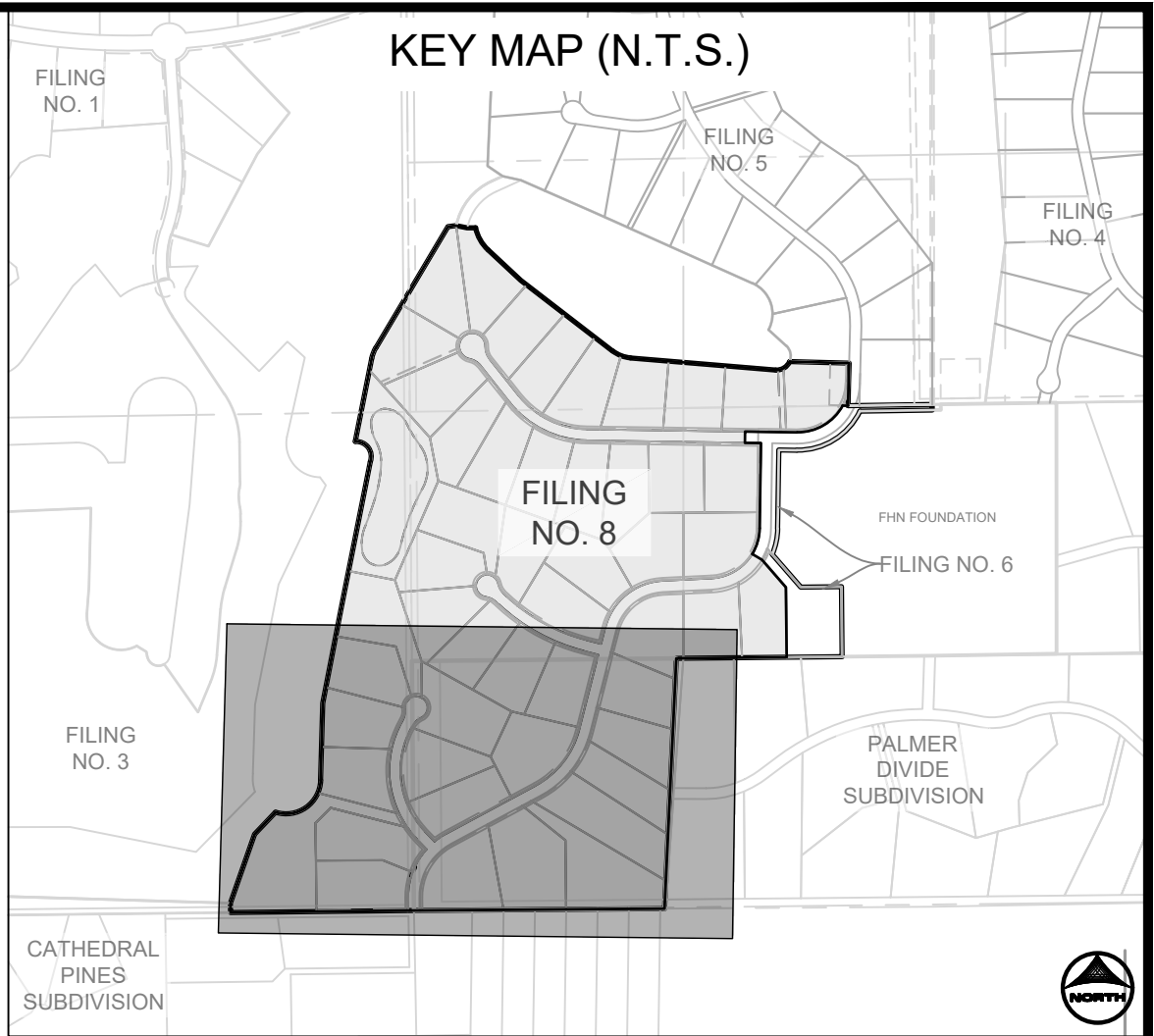
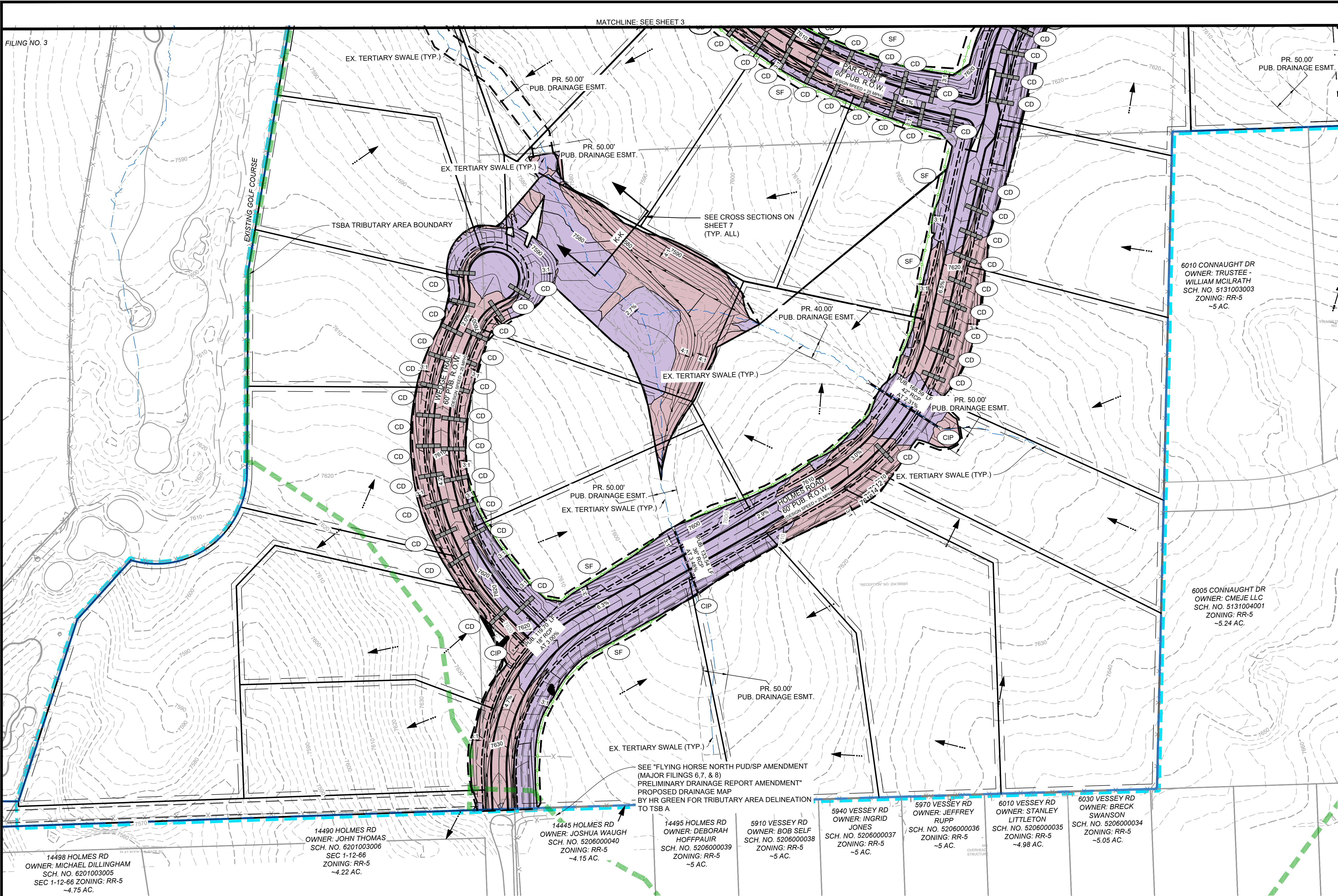
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EL PASO COUNTY, CO

LEGEND & NOTES

PCD FILE NO.: SF2531

SHEET
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2



GEC LEGEND:		PHASE:
	SILT FENCE	INITIAL/INTERIM
	STABILIZED STAGING AREA	INITIAL/INTERIM
	STOCKPILE MANAGEMENT	INITIAL/INTERIM
	CULVERT INLET PROTECTION	INTERIM
	VEHICLE TRACKING CONTROL	INITIAL
	DRAINAGE SWALE	INTERIM
	LIMITS OF CONSTRUCTION	INITIAL/INTERIM/FINAL
	LIMITS OF DISTURBANCE	INITIAL/INTERIM/FINAL
	FILL CONDITION	
	SEEDING AND MULCHING	
	PERMANENT TURF REINFORCEMENT MAT	
	EROSION CONTROL BLANKET	INTERIM/FINAL
	CHECK DAM (STRAW BALE)	INTERIM
	CONCRETE WASH OUT	INITIAL
	TEMPORARY SEDIMENT BASIN	INITIAL
	TSB TRIBUTARY AREA DELINEATION	INITIAL

- GRADING & EROSION CONTROL PLAN NOTES:**
- SEE SHEET 8-9 FOR EL PASO COUNTY GRADING AND EROSION CONTROL DETAILS.
 - ALL STORMWATER MANAGEMENT MEASURES SHOWN ON THIS PLAN MUST BE INSTALLED AND MAINTAINED PER THE EL PASO COUNTY STORMWATER CONSTRUCTION MANUAL, LATEST REVISIONS.
 - AREA WITHIN LIMITS OF DISTURBANCE TO BE CLEARED, GRUBBED AND STOCKPILED PRIOR TO IMPORT OF ANY FILL.
 - ALL GREATER THAN 4:1 SLOPES MUST BE RECEIVE SLOPE TRACKING TREATMENT AND EROSION CONTROL BLANKET.
 - STOCKPILES REQUIRED DURING ONSITE CONSTRUCTION ACTIVITIES WILL BE PLACED AT THE DISCRETION OF THE CONTRACTOR. STOCKPILING OF MATERIAL MUST NOT OCCUR OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON THIS PLAN.
 - NON-STRUCTURAL CONTROLS (I.E. STREET SWEEPING) WILL BE AT THE DISCRETION OF THE PROJECT'S CERTIFIED GEC ADMINISTRATOR THROUGHOUT THE DURATION OF LAND DISTURBING ACTIVITIES.
 - THERE ARE NO ANTICIPATED ASPHALT AND/OR CONCRETE BATCH PLANTS, OR MASONRY MIX STATIONS ASSOCIATED WITH THIS PROJECT. IF THE CONTRACTOR REQUIRES A ASPHALT/CONCRETE BATCH PLANTS OR MASONRY MIX STATIONS, THESE PLANS WILL BE AMENDED AS REQUIRED.
 - THERE ARE NO EXISTING PRESERVATION EASEMENTS LOCATED ON SITE.
 - ONSITE EXISTING VEGETATION IS NATIVE GRASSES, WEEDS, AND PINE TREES. THERE IS NO NOTABLE VEGETATION OTHERWISE.
 - THE NATURAL TERTIARY SWALES ARE PLATTED WITHIN PUBLIC DRAINAGE EASEMENTS AS SHOWN ON PLANS. THESE CHANNELS ARE TO HAVE TMAX TRM INSTALLED WITH PERMANENT SEEDING. SEE THE PERMANENT CHANNEL LINING ON CROSS SECTIONS PROVIDED ON THE PROPOSED DRAINAGE MAP.
 - ALL ROADSIDE DITCHES AND NATURAL CHANNELS WITHIN EASEMENTS ARE TO HAVE PERMANENT TRM (ROLLMAX P300 OR EQUIV.) INSTALLED.
 - ALL CULVERTS ARE TO HAVE RIP-RAP INSTALLED AT OUTLET POINTS AS SEEN IN STORM CONSTRUCTION DRAWINGS.

PROJECT INFO:	
VOLUME:	
BASE SURFACE: F7-EF	COMPARISON SURFACE: FILING-8-EF
CUT FACTOR: 1.00	
FILL FACTOR: 1.15	
CUT VOLUME(ADJUSTED):	90,487.33 CUBIC YARDS
FILL VOLUME(ADJUSTED):	57,502.78 CUBIC YARDS
NET VOLUME(ADJUSTED):	32,984.54 (CUT) CUBIC YARDS
CUT FACTOR: 1.00	
FILL FACTOR: 1.00	
CUT VOLUME(UNADJUSTED):	90,487.33 CUBIC YARDS
FILL VOLUME(UNADJUSTED):	57,502.78 CUBIC YARDS
NET VOLUME(UNADJUSTED):	32,984.54 (CUT) CUBIC YARDS
LOC - LIMITS OF CONSTRUCTION (ENTIRE FILING PERIMETER CONTROL) =	157.06 AC
LOD - LIMITS OF DISTURBANCE (ROADWAYS, UTILITIES, GRADING) =	30.42 AC

TABLE 1.1 - CHECK DAM SPACING		
SLOPE @ CHANNEL FLOWLINE (%)	HEIGHT (FEET)	MAX SPACING (FEET)
1-2	2	100
2-3	2	67
3-4	2	50
4-5	3	60
5-6	3	50
6-7.5	3	40

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BAR IS ONE INCH ON OFFICIAL DRAWINGS.
IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

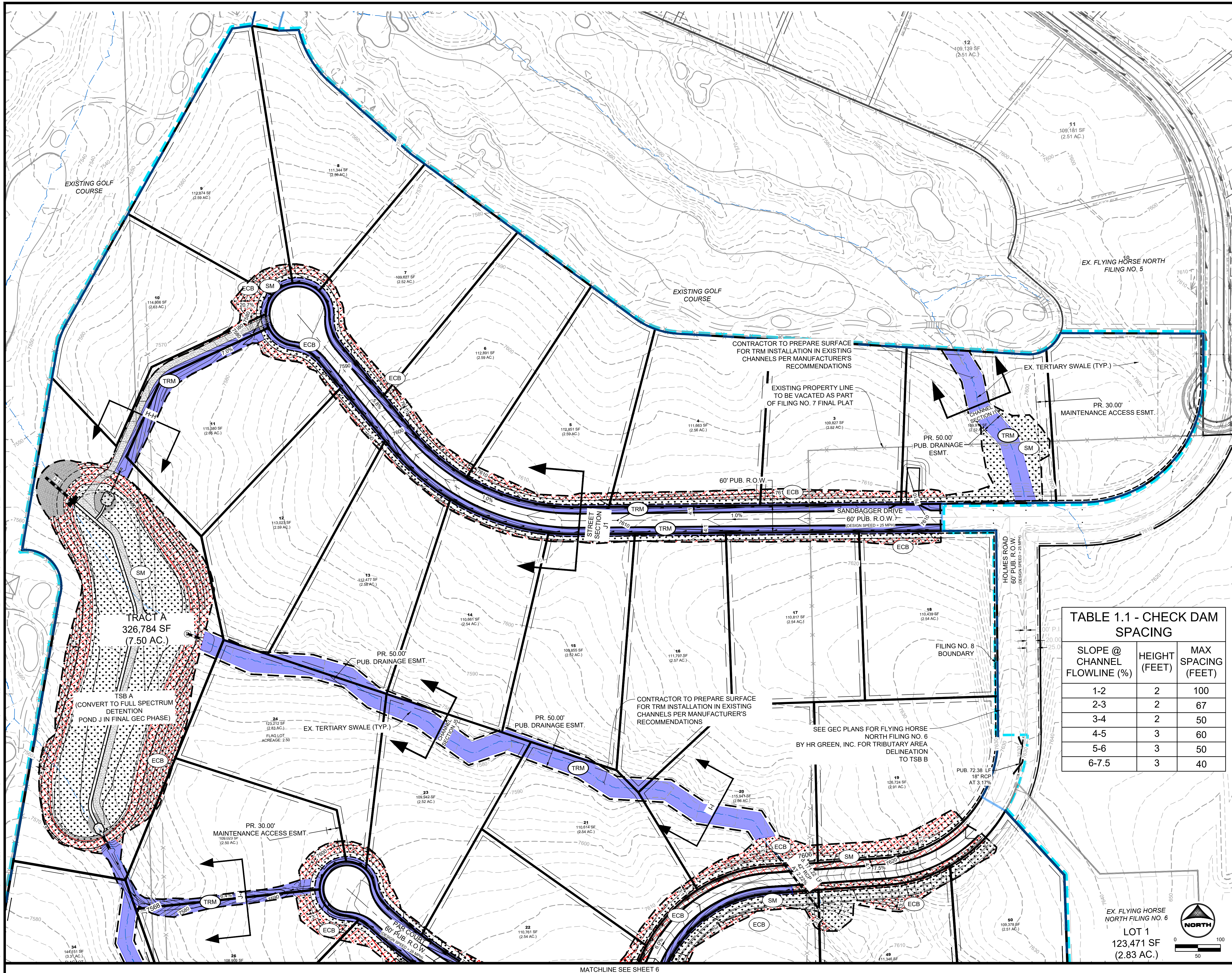
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EL PASO COUNTY, CO

GRADING & EROSION CONTROL PLANS
INITIAL & INTERIM PHASES

SHEET
GEC
4



SEC LEGEND:		PHASE:
	(SF) SILT FENCE	INITIAL/INTERIM
	(SSA) STABILIZED STAGING AREA	INITIAL/INTERIM
	(SP) STOCKPILE MANAGEMENT	INITIAL/INTERIM
	(CIP) CULVERT INLET PROTECTION	INTERIM
	(VTC) VEHICLE TRACKING CONTROL	INITIAL
	(DS) DRAINAGE SWALE	INTERIM
	(LOC) LIMITS OF CONSTRUCTION	INITIAL/INTERIM/FINAL
	LIMITS OF DISTURBANCE	INITIAL/INTERIM/FINAL
	CUT CONDITION	
	FILL CONDITION	
	(SM) SEEDING AND MULCHING	
	(TRM) PERMANENT TURF REINFORCEMENT MAT	
	FLOW DIRECTION	
	(ECB) EROSION CONTROL BLANKET	INTERIM/FINAL
	(CD) CHECK DAM (STRAW BALE)	INTERIM
	(CWA) CONCRETE WASH OUT	INITIAL
	(TSB) TEMPORARY SEDIMENT BASIN	INITIAL
	TSB TRIBUTARY AREA DELINEATION	INITIAL

GRADING & EROSION CONTROL PLAN NOTES:

1. SEE SHEET 8-9 FOR EL PASO COUNTY GRADING AND EROSION CONTROL DETAILS.
2. ALL STORMWATER MANAGEMENT MEASURES SHOWN ON THIS PLAN MUST BE INSTALLED AND MAINTAINED PER THE EL PASO COUNTY STORMWATER CONSTRUCTION MANUAL DISTURBANCE SECTIONS.
3. AREAS WITHIN LIMITS OF DISTURBANCE TO BE CLEARED, GRUBBED AND STOCKPILED PRIOR TO IMPORT OF ANY FILL.
4. ALL GREATER THAN 4:1 SLOPES MUST BE RECEIVE SLOPE TRACKING TREATMENT AND EROSION CONTROL BLANKET.
5. STOCKPILES REQUIRED DURING ONSITE CONSTRUCTION ACTIVITIES WILL BE PLACED AT THE DISCRETION OF THE CONTRACTOR. STOCKPILING OF MATERIAL MUST NOT OCCUR OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON THIS PLAN.
6. NON-STRUCTURAL CONTROLS (I.E. STREET SWEEPING) WILL BE AT THE DISCRETION OF THE PROJECT'S CERTIFIED GEC ADMINISTRATOR THROUGHOUT THE DURATION OF LAND DISTURBING ACTIVITIES.
7. THERE ARE NO ANTICIPATED ASPHALT AND/OR CONCRETE BATCH PLANTS, OR MASONRY MIX STATIONS LOCATED WITH THIS PROJECT. IF THE CONTRACTOR REQUIRES A ASPHALT/CONCRETE BATCH PLANTS OR MASONRY MIX STATIONS, THESE PLANS WILL BE AMENDED AS REQUIRED.
8. THERE ARE NO EXISTING PRESERVATION EASEMENTS LOCATED ON SITE.
9. ONSITE EXISTING VEGETATION IS NATIVE GRASSES, WEEDS, AND PINE TREES.
10. THERE IS NO NOTABLE VEGETATION OTHERWISE.
11. THE NATURAL DRAINAGE SWALES ARE PLACED WITHIN PUBLIC DRAINAGE EASEMENTS AS SHOWN ON PLANS. THESE CHANNELS ARE TO HAVE 7M3 TRM INSTALLED WITH PERMANENT SEEDING. SEE THE PERMANENT CHANNEL LINING ON CROSS SECTIONS PROVIDED ON THE PROPOSED DRAINAGE MAP.
12. ALL ROADSIDE DITCHES AND NATURAL CHANNELS WITHIN EASEMENTS ARE TO HAVE PERMANENT TRM (RIP-RAP 3500 OR EQUIV.) INSTALLED.
13. ALL CULVERTS ARE TO HAVE RIP-RAP INSTALLED AT OUTLET POINTS AS SEEN IN STORM CONSTRUCTION DRAWINGS.

SLOPE @ CHANNEL FLOWLINE (%)	HEIGHT (FEET)	MAX SPACING (FEET)
1-2	2	100
2-3	2	67
3-4	2	50
4-5	3	60
5-6	3	50
6-7.5	3	40

PROJECT INFO:

BASE SURFACE: F7-EF VOLUME: COMPARISON SURFACE: FILING-8-FG

CUT FACTOR: 1.00
FILL FACTOR: 1.15
CUT VOLUME(ADJUSTED): 90,487.33 CUBIC YARDS
FILL VOLUME(ADJUSTED): 57,502.78 CUBIC YARDS
NET VOLUME(ADJUSTED): 32,984.54 (CUT) CUBIC YARDS

CUT FACTOR: 1.00
FILL FACTOR: 1.00
CUT VOLUME(UNADJUSTED): 90,487.33 CUBIC YARDS
FILL VOLUME(UNADJUSTED): 57,502.78 CUBIC YARDS
NET VOLUME(UNADJUSTED): 32,984.54 (CUT) CUBIC YARDS

LOC - LIMITS OF CONSTRUCTION (ENTIRE
FILING PERIMETER CONTROL) = 157.06 AC

LOD - LIMITS OF DISTURBANCE (ROADWAYS,
UTILITIES, GRADING) = 30.42 AC

NO.	DATE	BY	REVISION DESCRIPTION



HR GREEN - COLORADO SPRINGS
1975 RESEARCH PARKWAY SUITE 160
COLORADO SPRINGS, CO 80920
PHONE: 719.300.4140
FAX: 713.965.0044

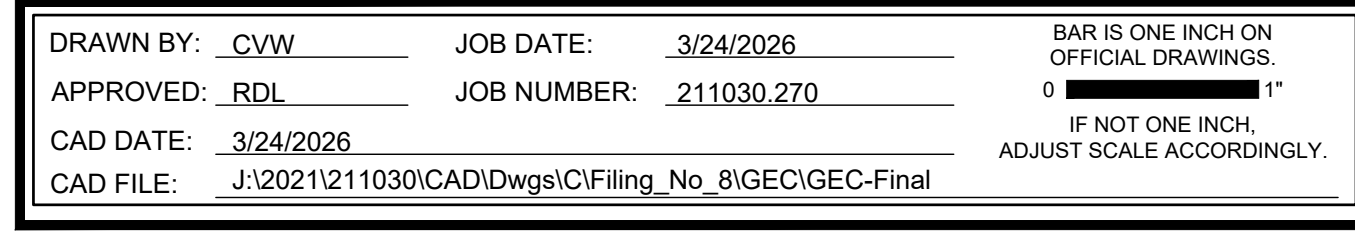
FLYING HORSE NORTH FILING NO. 8
PRI #2, LLC.
EL PASO COUNTY, CO

GRADING & EROSION CONTROL PLANS

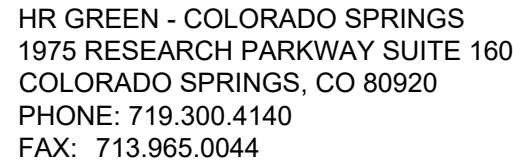
FINAL PHASE

SHEET
GEC

5



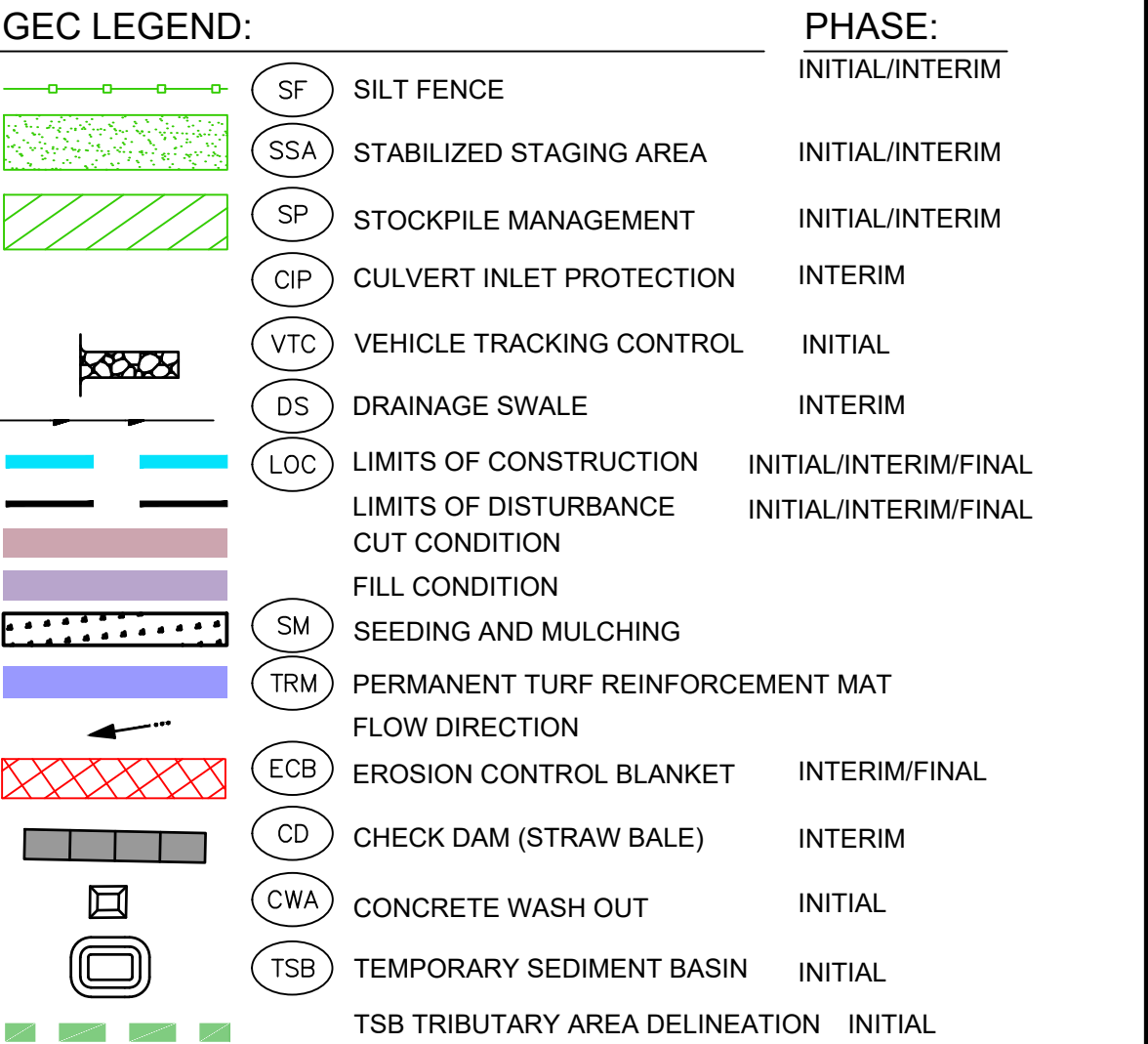
NO.	DATE	BY	REVISION DESCRIPTION



GRADING & EROSION CONTROL PLANS

FINAL PHASE

6



GRADING & EROSION CONTROL PLAN NOTES:

1. SEE SHEET 8-9 FOR EL PASO COUNTY GRADING AND EROSION CONTROL DETAILS.
2. ALL STORMWATER MANAGEMENT MEASURES SHOWN ON THIS PLAN MUST BE INSTALLED AND MAINTAINED PER THE EL PASO COUNTY STORMWATER CONSTRUCTION MANUAL LATEST REVISIONS.
3. ARE WITHIN LIMITS OF DISTURBANCE TO BE CLEARED, GRUBBED AND STOCKPILED PRIOR TO IMPORT OF ANY FILL.
4. ALL GREATER THAN 4:1 SLOPES MUST BE RECEIVE SLOPE TRACKING TREATMENT AND EROSION CONTROL BLANKET.
5. STOCKPILES REQUIRED DURING CONSTRUCTION ACTIVITIES WILL BE PLACED AT THE DISCRETION OF THE CONTRACTOR. STOCKPILING OF MATERIAL MUST NOT OCCUR OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON THIS PLAN.
6. NON-STRUCTURAL CONTROLS (I.E. STREET SWEEPING) WILL BE AT THE DISCRETION OF THE PROJECT'S CERTIFIED GEC ADMINISTRATOR THROUGHOUT THE DURATION OF LAND DISTURBING ACTIVITIES.
7. THERE ARE NO ANTICIPATED ASPHALT AND/OR CONCRETE BATCH PLANTS, OR MIXING PLANTS ASSOCIATED WITH THIS PROJECT. IF THE CONSTRUCTION REQUIRES A ASPHALT/CONCRETE BATCH PLANTS OR MASONRY MIX STATIONS, THESE PLANS WILL BE AMENDED AS REQUIRED.
8. THERE ARE NO EXISTING PRESERVATION EASEMENTS LOCATED ON SITE.
9. ONSITE EXISTING VEGETATION IS NATIVE GRASSES, WEEDS, AND PINE TREES. THERE IS NO NOTABLE VEGETATION OTHERWISE.
10. ALL NATURAL CERTIFIED SWALES ARE PLATTED WITHIN PUBLIC DRAINAGE EASEMENTS AS SHOWN ON PLANS. THESE CHANNELS ARE TO HAVE TMAX TRM INSTALLED WITH PERMANENT SEEDING. SEE THE PERMANENT CHANNEL LINING ON CROSS SECTIONS PROVIDED ON THE PROPOSED DRAINAGE MAP.
11. ALL ROADSIDE DITCHES AND NATURAL CHANNELS WITHIN EASEMENTS ARE TO HAVE PERMANENT SEEDING (RIP RAP OR P300 OR EQUIV.) INSTALLED.
12. ALL CULVERTS ARE TO HAVE RIP-RAP INSTALLED AT OUTLET POINTS AS SEEN IN STORM CONSTRUCTION DRAWINGS.

PROJECT INFO:

VOLUME:

BASE SURFACE: F7-EF COMPARISON SURFACE: FILING-8-FG

CUT FACTOR: 1.00
FILL FACTOR: 1.15
CUT VOLUME(ADJUSTED): 90,487.33 CUBIC YARDS
FILL VOLUME(ADJUSTED): 57,502.78 CUBIC YARDS
NET VOLUME(ADJUSTED): 32,984.54 (CUT) CUBIC YARDS

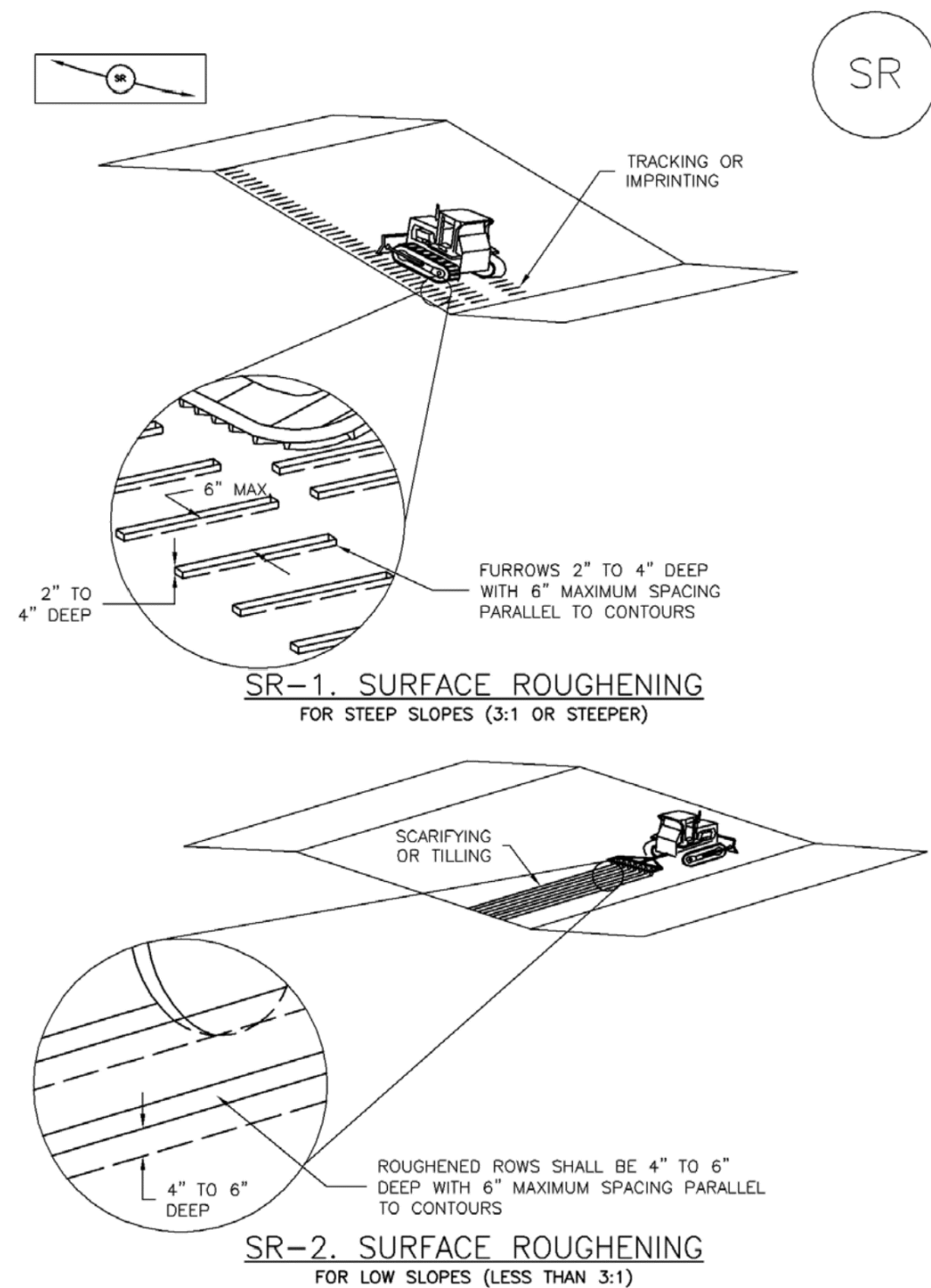
CUT FACTOR: 1.00
FILL FACTOR: 1.00
CUT VOLUME(UNADJUSTED): 90,487.33 CUBIC YARDS
FILL VOLUME(UNADJUSTED): 57,502.78 CUBIC YARDS
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LOC - LIMITS OF CONSTRUCTION (ENTIRE
FILING PERIMETER CONTROL) = 157.06 AC

LOD - LIMITS OF DISTURBANCE (ROADWAYS
UTILITIES, GRADING) = 30.42 AC

PCD FILE NO.: SF2531

Surface Roughening (SR) EC-1



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Mulching (MU) EC-4

Description

Mulching consists of evenly applying straw, hay, shredded wood mulch, rock, bark or compost to disturbed soils and securing the mulch by crimping, tackifiers, netting or other measures. Mulching helps reduce erosion by protecting bare soil from rainfall impact, increasing infiltration, and reducing runoff. Although often applied in conjunction with temporary or permanent seeding, it can also be used for temporary stabilization of areas that cannot be reseeded due to seasonal constraints.

Mulch can be applied either using standard mechanical dry application methods or using hydromulching equipment that hydraulically applies a slurry of water, wood fiber mulch, and often a tackifier.

Appropriate Uses

Use mulch in conjunction with seeding to help protect the seedbed and stabilize the soil. Mulch can also be used as a temporary cover on low to mild slopes to help temporarily stabilize disturbed areas where growing season constraints prevent effective reseeding. Disturbed areas should be properly mulched and tacked, or seeded, mulched and tacked promptly after final grade is reached (typically within no longer than 14 days) on portions of the site not otherwise permanently stabilized.

Standard dry mulching is encouraged in most jurisdictions; however, hydromulching may not be allowed in certain jurisdictions or may not be allowed near waterways.

Do not apply mulch during windy conditions.

Design and Installation

Prior to mulching, surface-roughen areas by rolling with a crimping or punching type roller or by track walking. Track walking should only be used where other methods are impractical because track walking with heavy equipment typically compacts the soil.

A variety of mulches can be used effectively at construction sites. Consider the following:

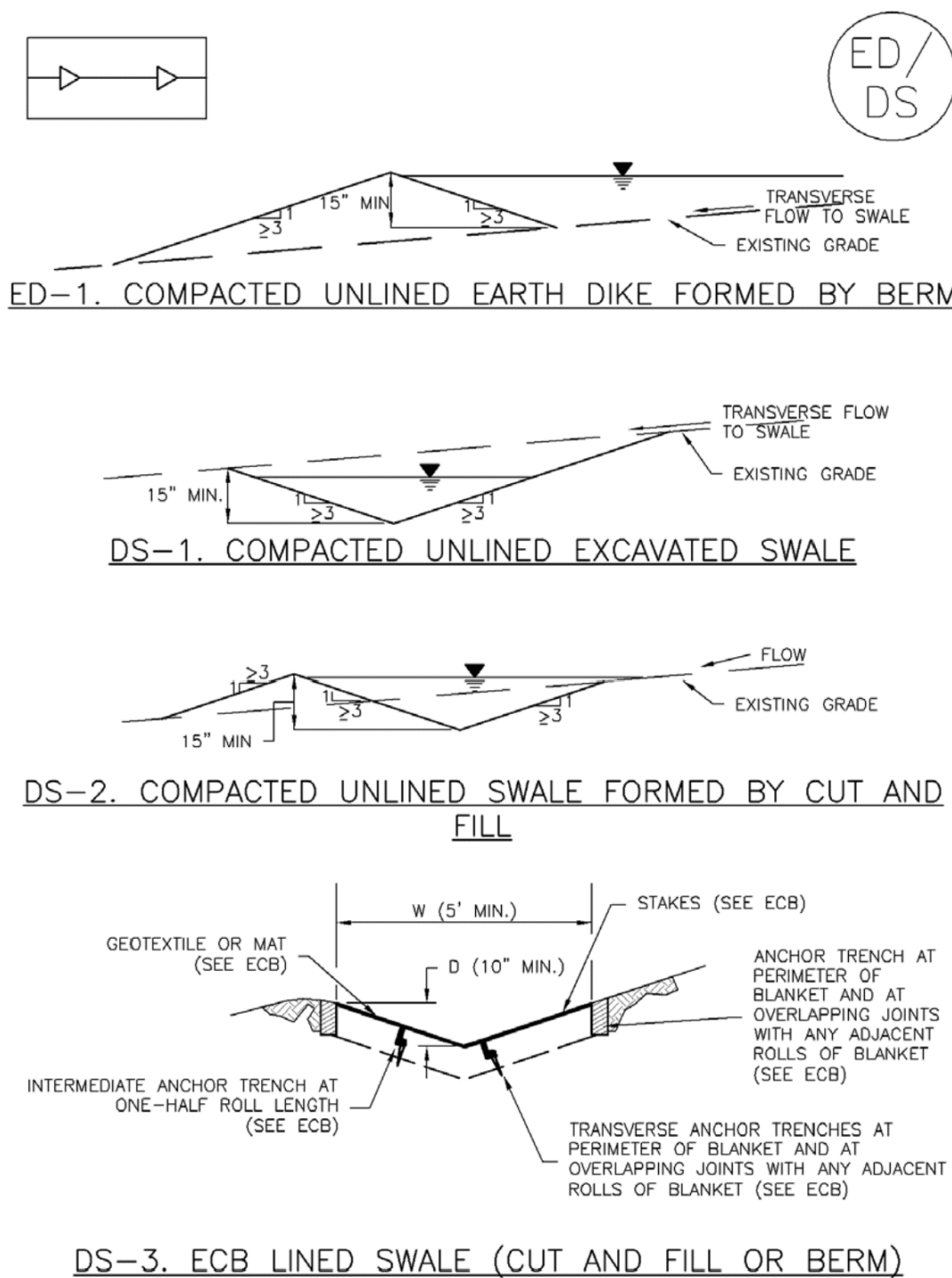
Mulch	
Functions	
Erosion Control	Yes
Sediment Control	Moderate
Site/Material Management	No

June 2012 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 MU-1



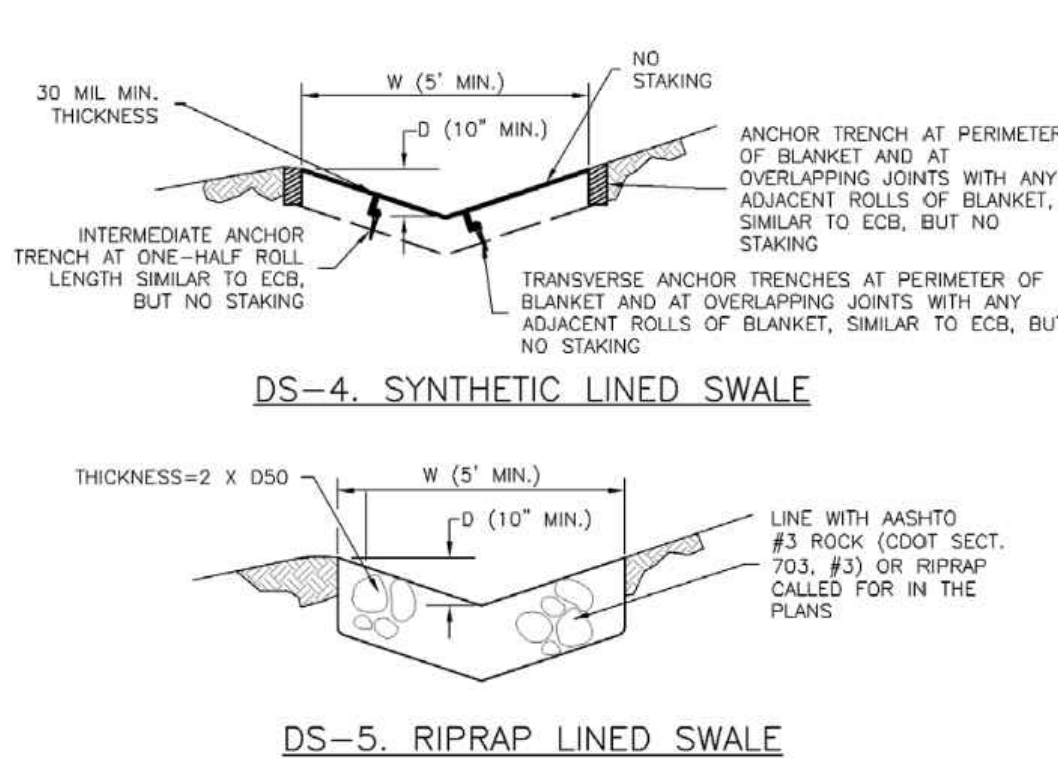
Photograph MU-1. An area that was recently seeded, mulched, and crimped.

Earth Dikes and Drainage Swales (ED/DS) EC-10



November 2010 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 ED/DS-3

EC-10 Earth Dikes and Drainage Swales (ED/DS)

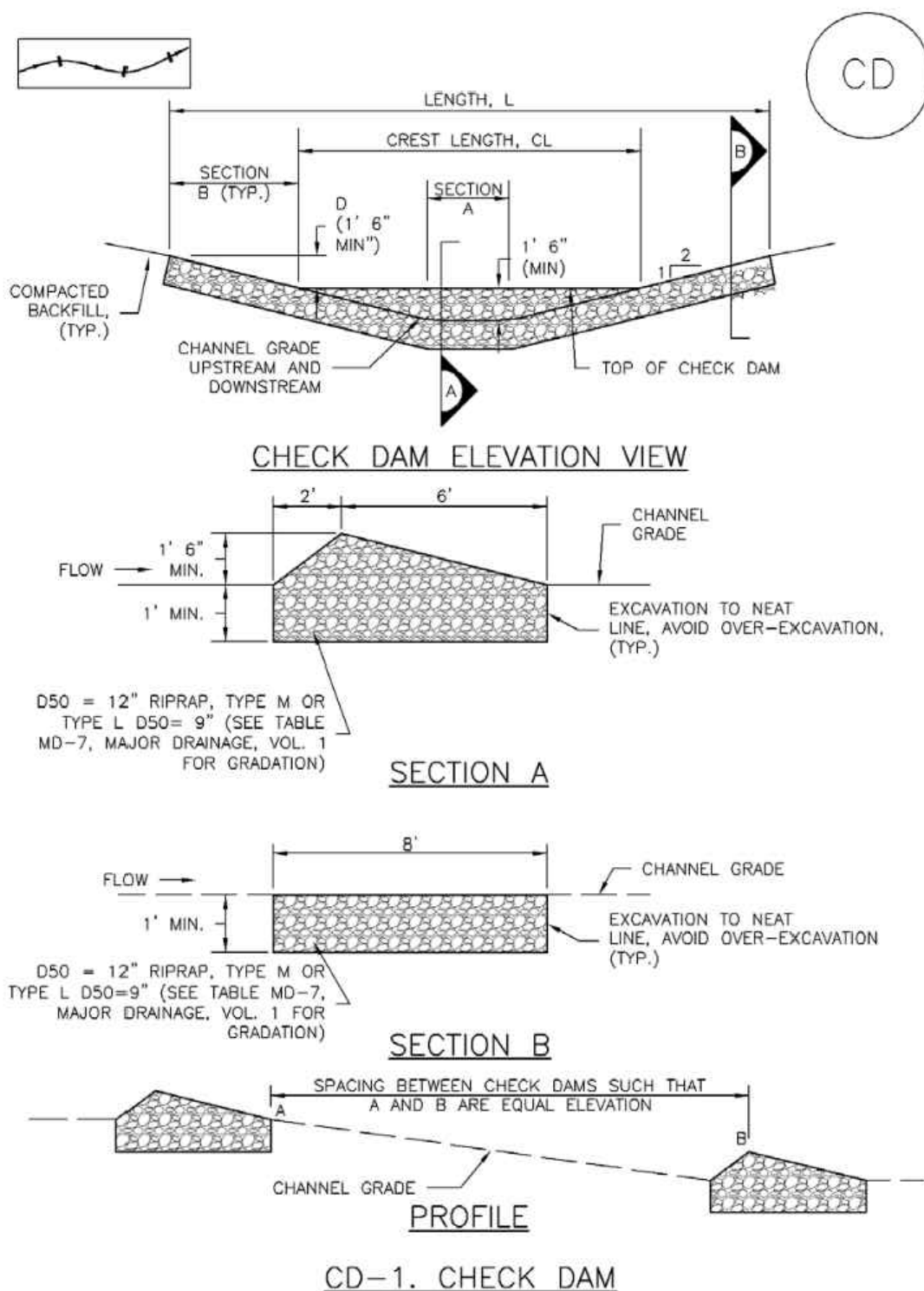


EARTH DIKE AND DRAINAGE SWALE INSTALLATION NOTES

- 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.
- SEE DRAINAGE PLANS FOR DETAILS OF PERMANENT CONVEYANCE FACILITIES AND/OR DIVERSION SWALES EXCEEDING 2-YEAR FLOW RATE OR 10 CFS.
- EARTH DIKES AND SWALES INDICATED ON SWMP PLAN SHALL BE INSTALLED PRIOR TO LAND-DISTURBING ACTIVITIES IN PROXIMITY.
- EMBANKMENT IS TO BE COMPACTED TO 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D698.
- SWALES ARE TO DRAIN TO A SEDIMENT CONTROL BMP.
- FOR LINED DITCHES, INSTALLATION OF ECB/TRM SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
- WHEN CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION SWALE, INSTALL A TEMPORARY CULVERT WITH A MINIMUM DIAMETER OF 12 INCHES.

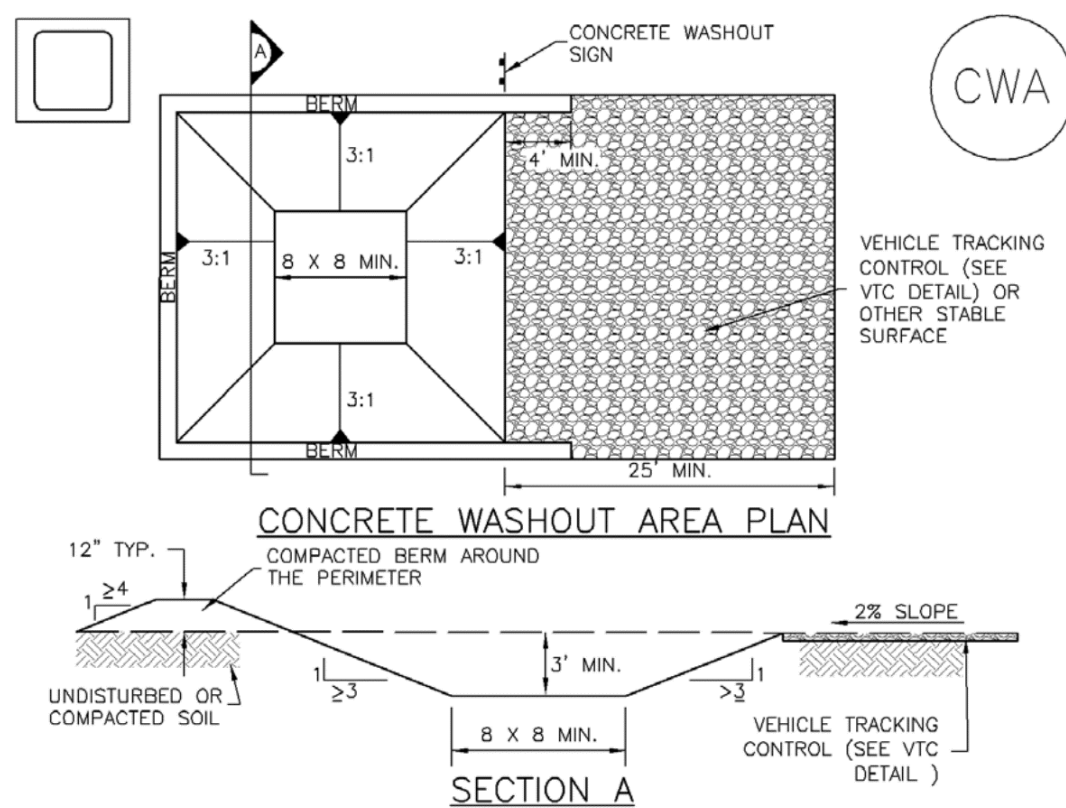
ED/DS-4 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 November 2010

Check Dams (CD) EC-12



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Urban Storm Drainage Criteria Manual Volume 3 CD-3

Concrete Washout Area (CWA) MM-1



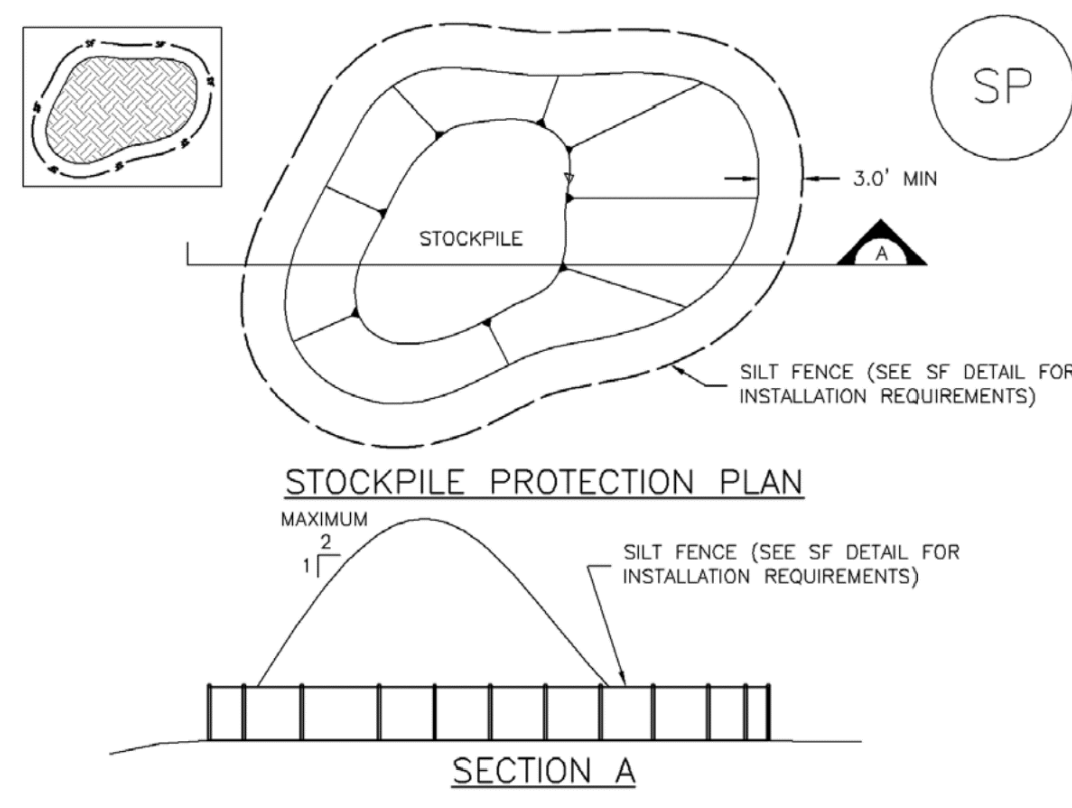
CWA-1. CONCRETE WASHOUT AREA

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 (1.6 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 TRUCKS.
- USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

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Stockpile Management (SP) MM-2



SP-1. STOCKPILE PROTECTION

STOCKPILE PROTECTION INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATION OF STOCKPILES.
 - TYPE OF STOCKPILE PROTECTION.
- 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.
- 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).
- FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS, INCLUDING PERIMETER CONTROL, ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

November 2010 Urban Drainage and Flood Control District
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El Paso County Conservation District
EPCCD Native Shotgun Mix

Seed (lb)		Land	
Broadcast	Drilled	Acres	Feet ²
1.00	0.50	0.10	4,356
2.00	1.00	0.20	8,712
2.50	1.25	0.25	10,890
5.00	2.50	0.50	21,780
7.50	3.75	0.75	32,670
10.00	5.00	1.00	43,560
20.00	10.00	2.00	87,120
50.00	25.00	5.00	217,800

APPROXIMATE SITE TOTALS

SEED (LB)		LAND	
BROADCAST	DRILLED	ACRES	FEET ²
91.40	45.70	9.14	398138.40

SCHEDULE & PREP

This shotgun native mix is best planted from November 1 to May 15 into soil that isn't frozen or muddy. During this time, soil moisture and temperatures give these seeds the best opportunity to vernalize and store resources but not germinate until early spring (cool season seeds) or early summer (warm season seeds). The seedbed is firm and free of competing vegetation. Seeds are placed at the proper depth; a loose, fluffy bed will place seeds too deep for germination.

PLANTING

Small areas can be seeded by broadcasting this mix. Roughen up the soil with a rake and spread the seed across the area; lightly rake back over but don't incorporate the seed into the soil and risk a seed depth greater than 1/2 to 3/4 inch. Large areas should be planted with a grass seed drill; because the drill plants more accurately at a precise depth, you'll need half the amount of broadcast seed.

ESTABLISHING

During drought or low-water conditions, water new seed during the first season but especially the first three weeks; outside of rain or snow, water early AM or late PM every other day so that the seed remains moist. Where seed was broadcast, care should be taken to not displace seed from strong water or grade runoff.

- These grasses should be allowed to grow. Aggressive mowing induces dormancy, allows weed growth, promotes evaporation and increased temperature, limits ground cover and shade, reduces drought resistance, and impairs favorable conditions within the soil.
- Where required, mowing should be limited to one time, in early spring, and no less than 4 inch height.
- Healthy native grasses generally crowd out weeds; however, if they happen to grow, weeds should be removed quickly.
- You can apply fertilizer the day of seed planting and each 3-4 weeks but it isn't required for a great, native grass lawn and fertilizer may also feed weeds.

Good Housekeeping Practices (GH)

MM-3

Description

Implement construction site good housekeeping practices to prevent pollution associated with solid, liquid and hazardous construction-related materials and wastes. Stormwater Management Plans (SWMPs) should clearly specify BMPs including these good housekeeping practices:

- Provide for waste management.
- Establish proper building material staging areas.
- Designate paint and concrete washout areas.
- Establish proper equipment/vehicle fueling and maintenance practices.
- Control equipment/vehicle washing and allowable non-stormwater discharges.
- Develop a spill prevention and response plan.

Acknowledgement: This Fact Sheet is based directly on EPA guidance provided in *Developing Your Stormwater Pollution Prevention Plan* (EPA 2007).

Appropriate Uses

Good housekeeping practices are necessary at all construction sites.

Design and Installation

The following principles and actions should be addressed in SWMPs:

- Provide for Waste Management.** Implement management procedures and practices to prevent or reduce the exposure and transport of pollutants in stormwater from solid, liquid and sanitary wastes that will be generated at the site. Practices such as trash disposal, recycling, proper material handling, and cleanup measures can reduce the potential for stormwater runoff to pick up construction site wastes and discharge them to surface waters. Implement a comprehensive set of waste-management practices for hazardous or toxic materials, such as paints, solvents, petroleum products, pesticides, wood preservatives, acids, roofing tar, and other materials. Practices should include storage, handling, inventory, and cleanup procedures, in case of spills. Specific practices that should be considered include:

Solid or Construction Waste

- Designate trash and bulk waste-collection areas on-site.

Good Housekeeping	
Functions	
Erosion Control	No
Sediment Control	No
Site/Material Management	Yes

November 2010 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 GH-1



Photographs GH-1 and GH-2. Proper materials storage and secondary containment for fuel tanks are important good housekeeping practices. Photos courtesy of CDOT and City of Aurora.

MM-3

Good Housekeeping Practices (GH)

- Recycle materials whenever possible (e.g., paper, wood, concrete, oil).
- Segregate and provide proper disposal options for hazardous material wastes.
- Clean up litter and debris from the construction site daily.
- Locate waste-collection areas away from streets, gutters, watercourses, and storm drains. Waste-collection areas (dumpsters, and such) are often best located near construction site entrances to minimize traffic on disturbed soils. Consider secondary containment around waste collection areas to minimize the likelihood of contaminated discharges.
- Empty waste containers before they are full and overflowing.

Sanitary and Septic Waste

- Provide convenient, well-maintained, and properly located toilet facilities on-site.
- Locate toilet facilities away from storm drain inlets and waterways to prevent accidental spills and contamination of stormwater.
- Maintain clean restroom facilities and empty portable toilets regularly.
- Where possible, provide secondary containment pans under portable toilets.
- Provide tie-downs or stake-downs for portable toilets.
- Educate employees, subcontractors, and suppliers on locations of facilities.
- Treat or dispose of sanitary and septic waste in accordance with state or local regulations. Do not discharge or bury wastewater at the construction site.
- Inspect facilities for leaks. If found, repair or replace immediately.
- Special care is necessary during maintenance (pump out) to ensure that waste and/or biocide are not spilled on the ground.

Hazardous Materials and Wastes

- Develop and implement employee and subcontractor education, as needed, on hazardous and toxic waste handling, storage, disposal, and cleanup.
- Designate hazardous waste-collection areas on-site.
- Place all hazardous and toxic material wastes in secondary containment.

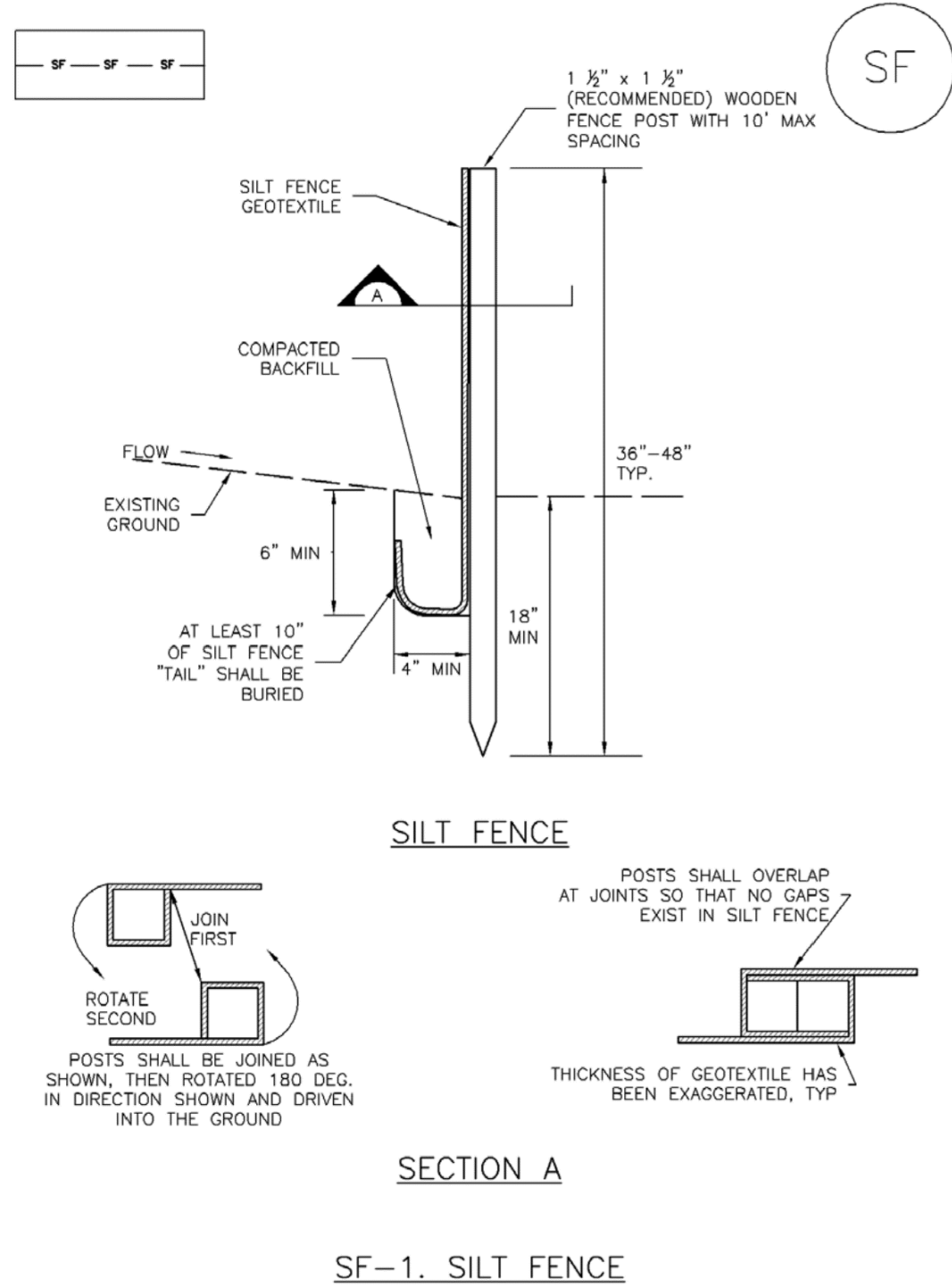


Photograph GH-3. Locate portable toilet facilities on level surfaces away from waterways and storm drains. Photo courtesy of WVE.

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

Silt Fence (SF)

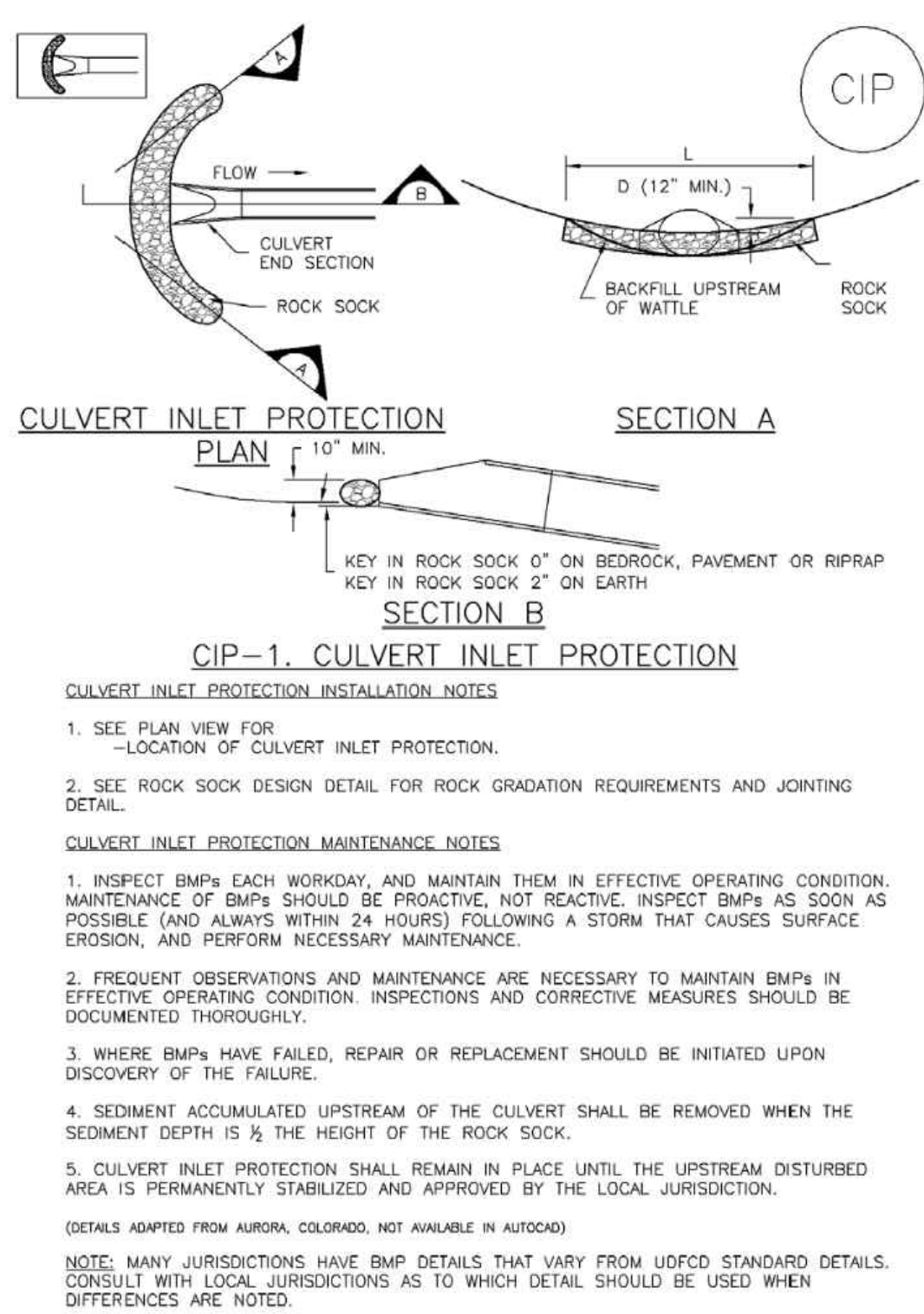
SC-1



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

Inlet Protection (IP)

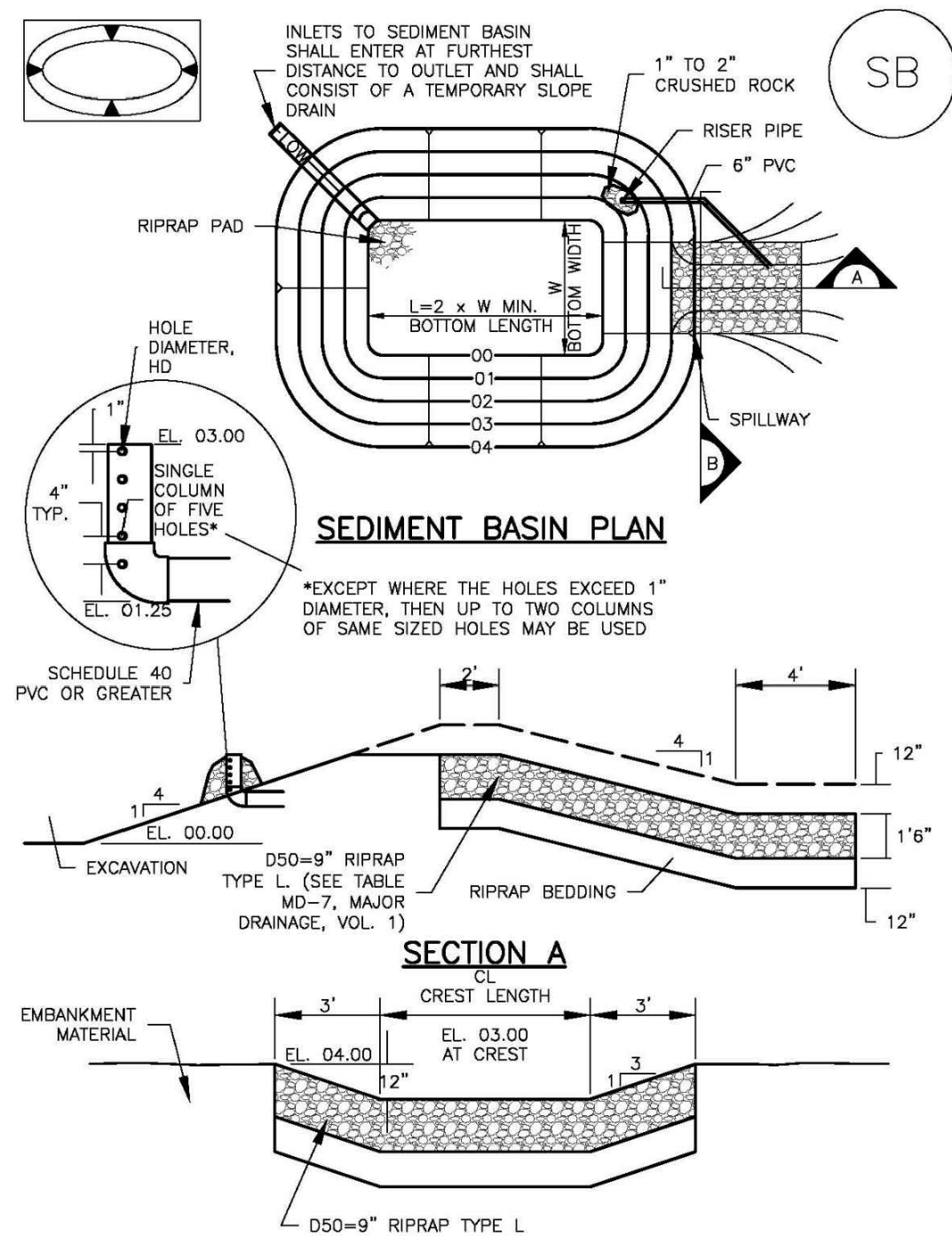
SC-6



August 2013 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 IP-7

Sediment Basin (SB)

SC-7



August 2013 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 SB-5

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

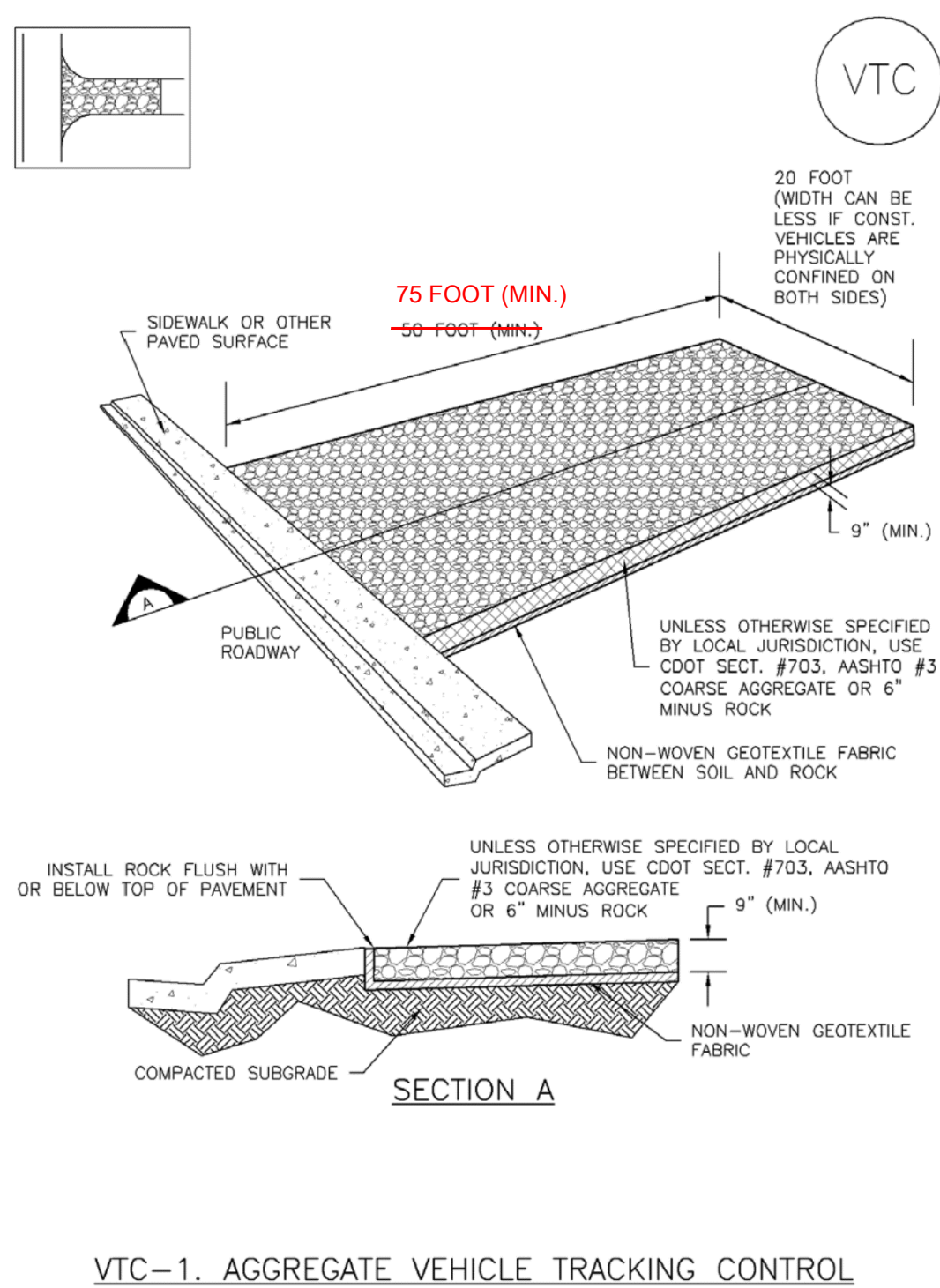
SEDIMENT BASIN INSTALLATION NOTES

- 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.
- FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.
- SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND-DISTURBING ACTIVITY THAT RELIES ON BASINS AS A STORMWATER CONTROL.
- 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.
- EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
- PIPE SCH 40 OR GREATER SHALL BE USED.
- 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.

SB-6 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 August 2013

Vehicle Tracking Control (VTC)

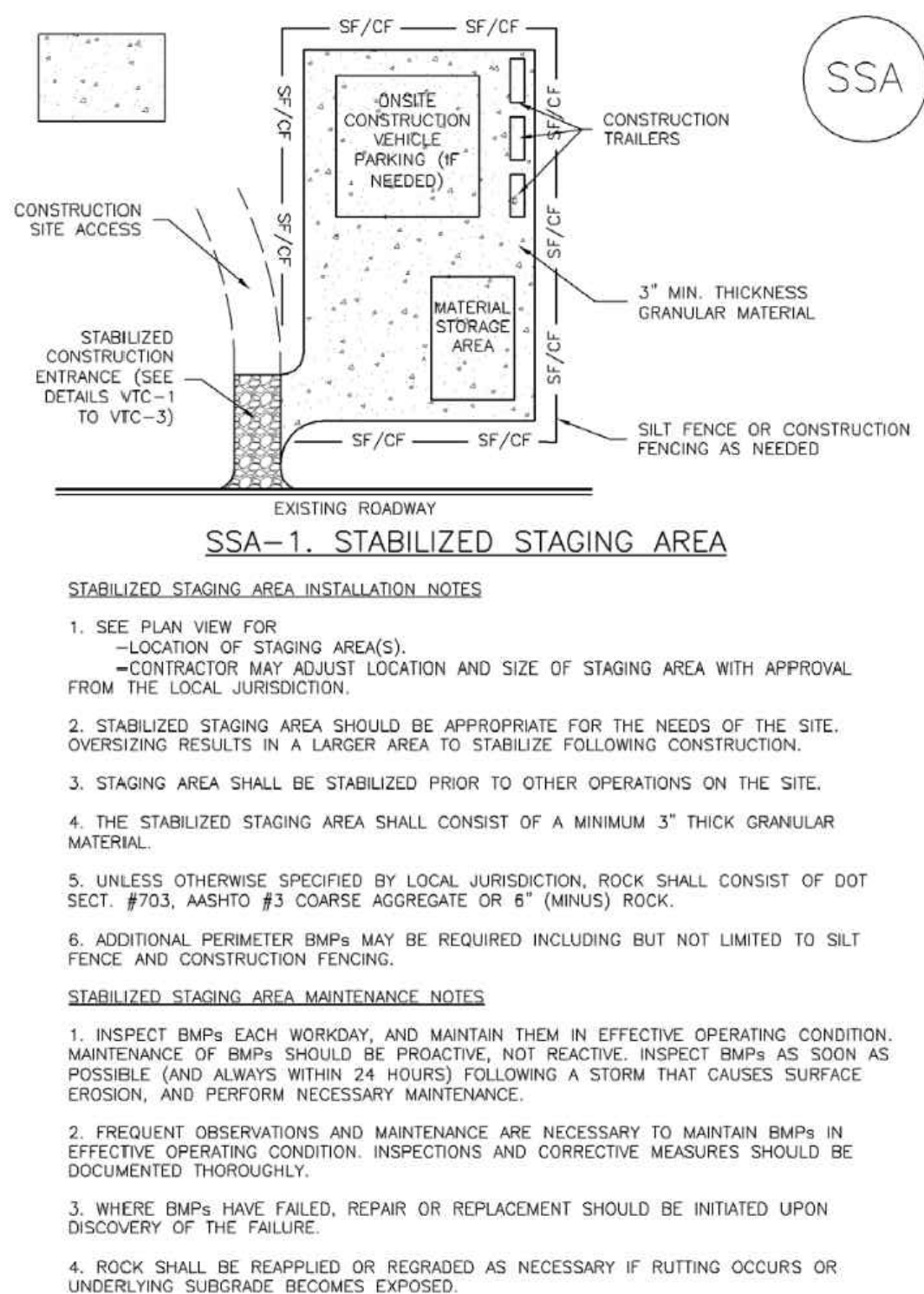
SM-4



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

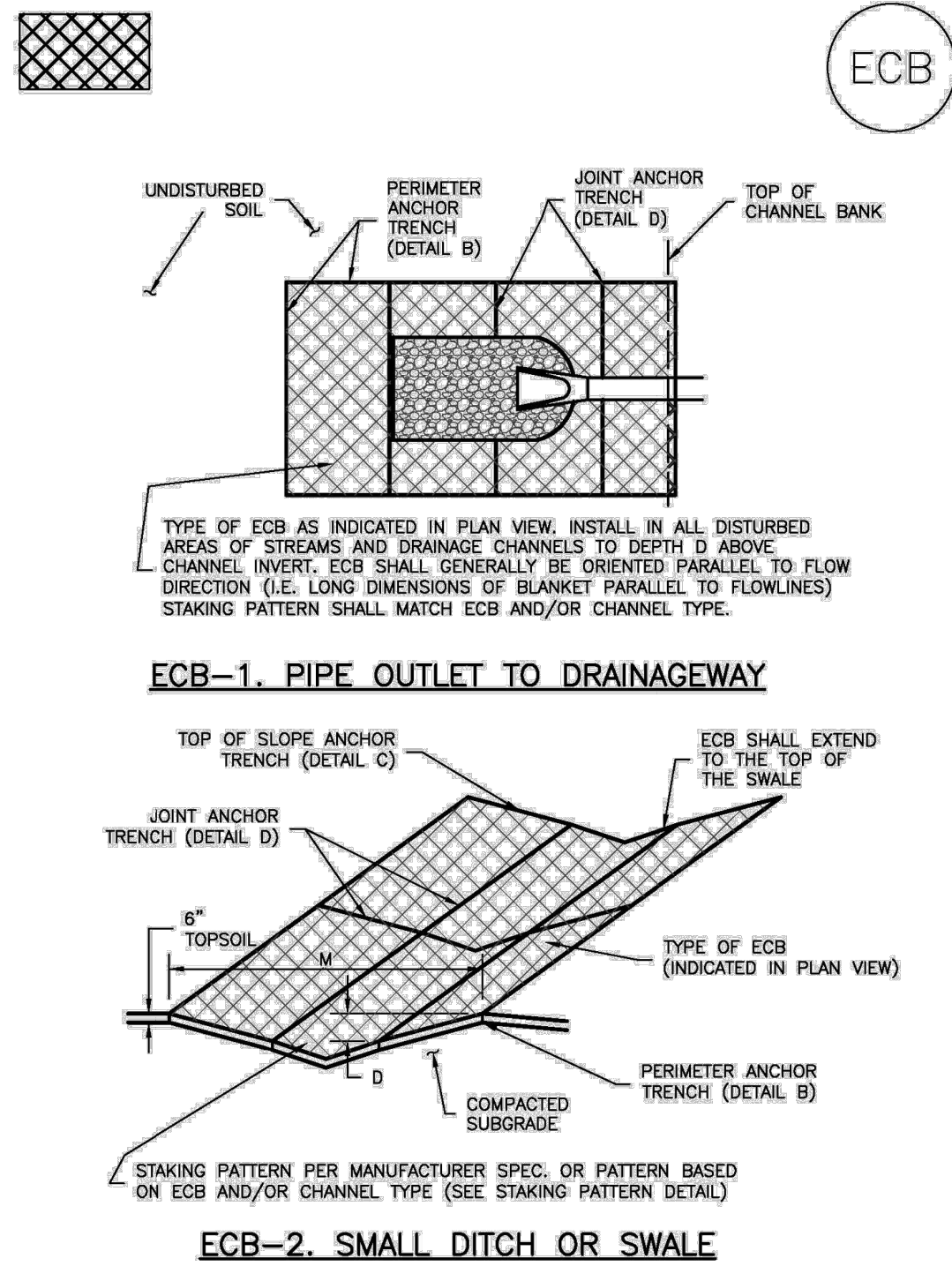
Stabilized Staging Area (SSA)

SM-6



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

Rolled Erosion Control Products (RECP) EC-6



December 2022 Urban Drainage and Flood Control District RECP-5
Urban Storm Drainage Criteria Manual Volume 3

EC-6 Rolled Erosion Control Products (RECP)

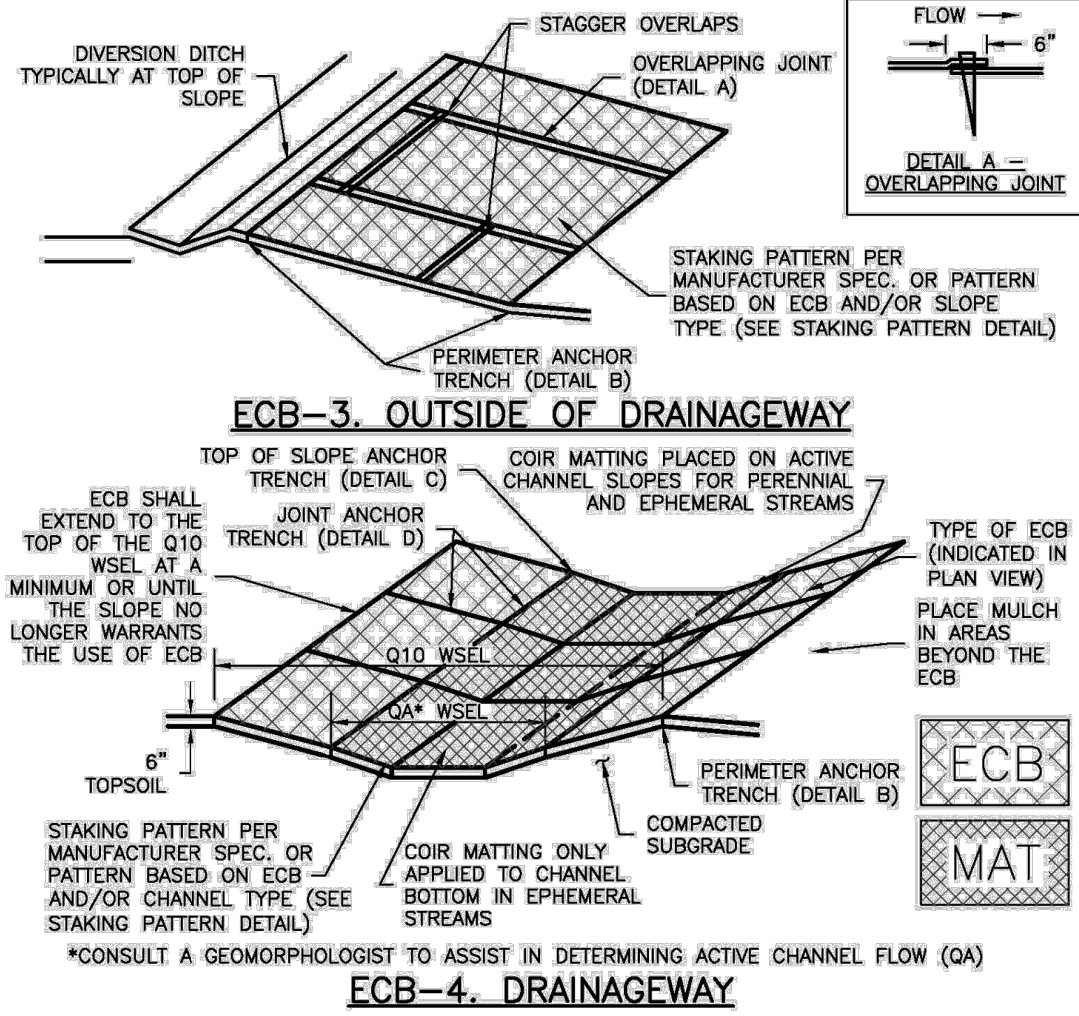
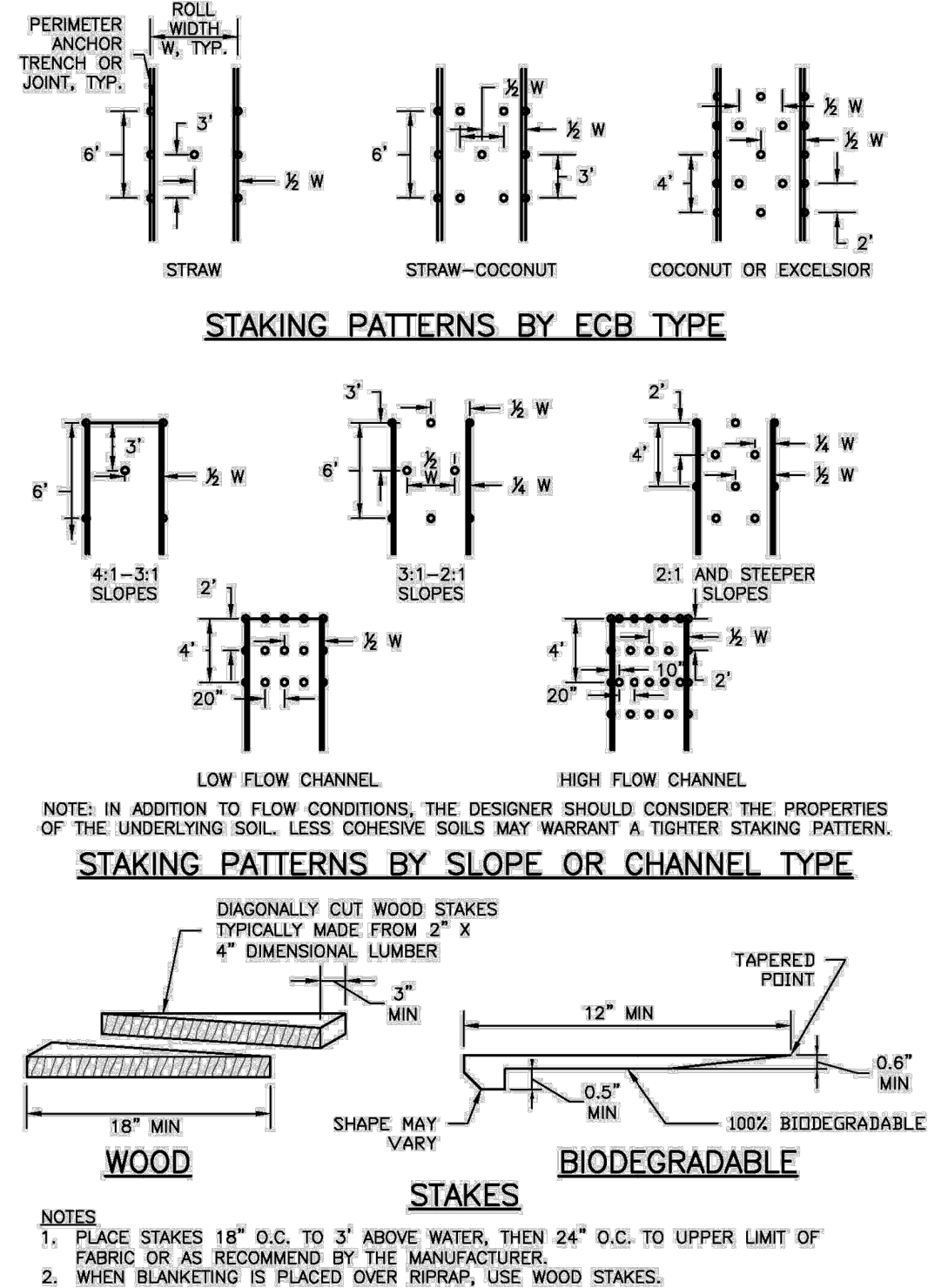


TABLE ECB-1. ECB MATERIAL SPECIFICATIONS				
TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING*
STRAW*	—	100%	—	DOUBLE/NATURAL
STRAW-COCONUT	30% MIN	70% MAX	—	DOUBLE/NATURAL
COIR MAT	100%	—	—	DOUBLE/NATURAL
EXCELSIOR	—	—	100%	DOUBLE/NATURAL

*STRAW ECBs MAY ONLY BE USED OUTSIDE OF STREAMS AND DRAINAGE CHANNEL.
*ALTERNATE NETTING INCLUDING SINGLE NETTING AND SYNTHETIC PHOTODEGRADABLE FIBER MAY BE ACCEPTABLE IN SOME JURISDICTIONS.

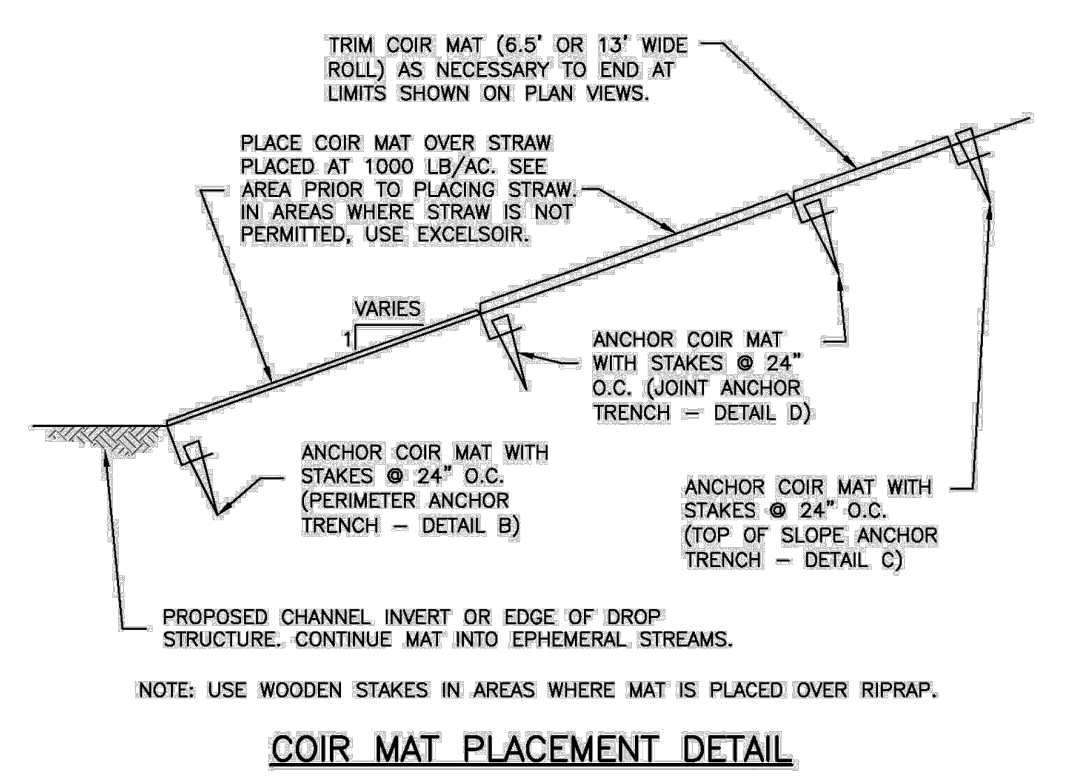
RECP-6 Urban Drainage and Flood Control District December 2022
Urban Storm Drainage Criteria Manual Volume 3

Rolled Erosion Control Products (RECP) EC-6



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EC-6 Rolled Erosion Control Products (RECP)

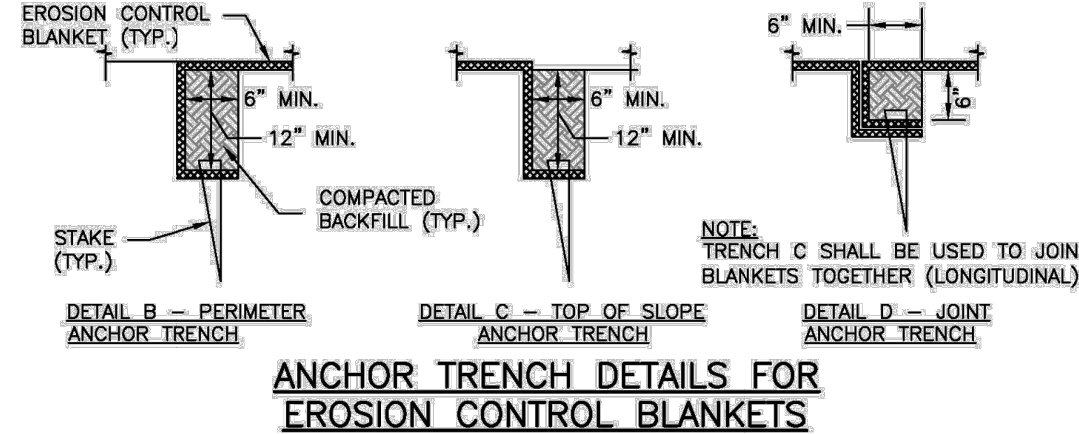


- EROSION CONTROL BLANKET MAINTENANCE NOTES
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM 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. REPEATED FAILURE WARRANTS THE NEED FOR REDESIGN OF THE EROSION CONTROL PROTECTION.
 4. ECBs SHALL BE LEFT IN PLACE TO BIODEGRADE UNLESS REQUESTED TO BE REMOVED BY THE LOCAL JURISDICTION.
 5. ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW THE GEOTEXTILE THAT HAVE ERODED TO CREATED A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEEDED AND MULCHED AND THE ECB REINSTALLED.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO AND TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

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Rolled Erosion Control Products (RECP) EC-6

- EROSION CONTROL BLANKET INSTALLATION NOTES
1. SEE PLAN VIEW FOR:
—LOCATION OF ECB.
—TYPE OF ECB (STRAW, STRAW-COCONUT, COCONUT/ COIR, OR EXCELSIOR).
—AREA, A, IN SQUARE YARDS OF EACH TYPE OF ECB.
 2. ALL RECPs MUST BE 100% NATURAL AND BIODEGRADABLE MATERIALS.
 3. IN AREAS WHERE ECBs 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 ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
 4. FOR MATS THAT HAVE OPENINGS LARGER THAN THE SOIL, ADD STRAW UNDER (RATE OF 1000# PER ACRE) TO HOLD SOIL AND SEED FROM MIGRATING THROUGH OPENINGS.
 5. INSTALL MATS AND BLANKETS PARALLEL TO THE DIRECTION OF STREAM FLOW.
 6. PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.
 7. JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL ECBs EXCEPT STRAW WHICH MAY USE AN OVERLAPPING JOINT.
 8. INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE-HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs.
 9. OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES AND WITHIN DRAINAGEWAYS. OVERLAP SEAMS SO THAT UPSTREAM RECPs IS ON TOP OF DOWNSTREAM RECPs SO THAT EXPOSED EDGE IS NOT LIFTED BY STREAM FLOWS.
 10. MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB-1.
 11. ALL EXPOSED ROOTS SHALL BE TRIMMED TO BELOW THE SOIL SURFACE. ECB/TRM SHALL NOT BE INSTALLED OVER ROCKS OR SOIL CLOUDS GREATER THAN 4 INCHES.
 11. ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBs SHALL BE RESEEDED AND MULCHED.
 12. DETAILS ON DESIGN PLANS FOR MAJOR DRAINAGEWAY STABILIZATION WILL GOVERN IF DIFFERENT FROM THOSE SHOWN HERE.
 13. ADDITIONAL BANK PROTECTION AND/OR TOE REINFORCEMENT MAY BE NEEDED BASED ON CHANNEL GEOMETRY AND HYDRAULICS.



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NO.	DATE	BY	REVISION DESCRIPTION

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FLYING HORSE NORTH FILING NO. 8
PRI #2, LLC.
EL PASO COUNTY, CO

GRADING & EROSION CONTROL PLANS
DETAILS

SHEET
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