CALLAHAN, SEAN, 10/16/2026 3:23 PM

COLORADO KIDS RANCH - 105 ACCESS IMPROVEMENTS
GRADING & EROSION CONTROL PLAN

LOCATED WITHIN THE NORTHWEST QUARTER OF SECTION 16, TOWNSHIP 11 SOUTH, RANGE 66 WEST OF THE 6TH P.M. COUNTY OF EL PASO, STATE OF COLORADO
OCTOBER 2026

STANDARD NOTES FOR EL PASO COUNTY GEC PLANS

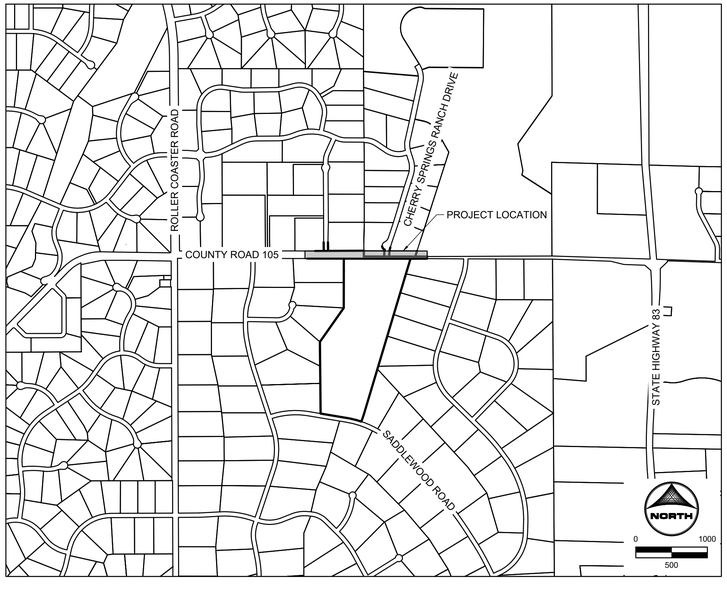
1. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE, AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY (EPC) STANDARDS, 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 CCM(S) TO MINIMIZE EROSION OR SEDIMENT IN THE DISCHARGE. THE CCM(S) MUST CONTAIN OR FILTER FLOWS IN ORDER TO PREVENT THE BYPASS OF FLOWS 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 A CHANGE IN DESIGN, 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 A 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 VEGETATIVE COVER AS A 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 ENVIRONMENT'S (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., INDIVIDUAL CONTAINERS OF 55 GALLONS OR GREATER) OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT, OR EQUIVALENT PROTECTION, TO CONTAIN ALL SPILLS ON-SITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM, OR OTHER FACILITIES.
24. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ON-SITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
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

BASIS OF BEARINGS

A LINE BEGINNING AT THE NORTHEAST CORNER OF LOT 29, CANTERBURY WEST, AS RECORDED IN THE OFFICE OF THE EL PASO COUNTY CLERK AND RECORDER IN PLAT BOOK F-2 AT PAGE 14, DATED DECEMBER 4, 1963, SAID CORNER BEING MONUMENTED BY A YELLOW CAP FLUSH, LS 30130 AND TERMINATING AT A POINT BEING THE NORTHWEST CORNER OF LOT 107, CANTERBURY EAST AS RECORDED IN THE OFFICE OF THE EL PASO COUNTY CLERK AND RECORDER, SAID POINT BEING A YELLOW CAP FLUSH LS , 30130, WITH A BEARING OF S89°50'52"E, A DISTANCE OF 932.07 FEET.

BENCHMARKS

NATIONAL GEODETIC SURVEY, RETRIEVAL DATE = AUGUST 4, 2026
PID KK0273 FIRST VERTICAL ORDER, DATUM NAVD 88, ORTHO HEIGHT = 7247.10 FEET
SOUTH SIDE OF HIGBY ROAD TOP OF A 4X4 FOOT BOULDER



VICINITY MAP
1" = 1000'

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
CENTERLINE		
BARBED WIRE FENCE	X X	
U.G. ELECTRIC	ELEC	ELEC
OVERHEAD ELECTRIC	OHE	OHE
FIBER OPTIC	FO	FO
GAS MAIN	GAS	GAS
HIGH PRESSURE GAS	HP GAS	HP GAS
SANITARY SEWER		
STORM DRAIN		
TELEPHONE	UT	UT
WATER MAIN	W	W
SWALE		
CURB & GUTTER		
INDEX CONTOUR	1000	1000
FEMA FLOODPLAIN	100YR	

DRAINAGE	EXISTING	PROPOSED
DRAINAGE BASIN		
BASIN TAG		ID. AC. %
DESIGN POINT		DP

STORM SEWER

	EXISTING	PROPOSED
MANHOLE	D	D
STORM INLET		
FLARED END SECTION		
RIPRAP		

SANITARY SEWER

CLEAN OUT	
MANHOLE	S
PLUG	

WATER

FIRE HYDRANT	
GATE VALVE	
MANHOLE	W
METER	
TEE	
REDUCER	

DRY UTILITIES

ELECTRIC PEDESTAL	E
OVERHEAD POWER POLE	
ELECTRICAL CABINET	E
FIBER OPTIC PULL BOX	F
ASPHALT PAVEMENT	
GRAVEL AREA	
CHANNEL LINING	

MISCELLANEOUS

SIGN	
BOLLARD	
ACCESSIBLE PARKING	

ABBREVIATIONS:

Ø, DIA	DIAMETER
AC	ACRE
ASPH	ASPHALT
BFE	BASE FLOOD ELEVATION
BLDG	BUILDING
BM	BENCH MARK
CFS	CUBIC FEET PER SECOND
CIP	CAST IRON PIPE
CL	CENTER LINE
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CY	CUBIC YARD
DIP	DUCTILE IRON PIPE
EL	ELEVATION
ELEC	ELECTRIC
EOG	EDGE OF GRAVEL
EOA	EDGE OF ASPHALT
ESMT	EASEMENT
EX	EXISTING
FES	FLARED END SECTION
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FOC	FIBER OPTICS CABLE
FT	FOOT OR FEET
GB	GRADE BREAK
INV	INVERT
LF	LINEAR FEET
ME	MATCH EXISTING
MIN	MINIMUM
MISC	MISCELLANEOUS
MAINT	MAINTENANCE
MAX	MAXIMUM
MH	MANHOLE
NO	NUMBER
OH	OVERHEAD
PB	PUBLIC
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
PR	PROPOSED
PRC	POINT OF REVERSE CURVATURE
PVC	POLYVINYL CHLORIDE
PVT	PRIVATE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REC	RECEPTION
ROW	RIGHT OF WAY
SS	SANITARY SEWER
TOP	TOP OF POND
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND

SHEET INDEX

SHEET NUMBER	SHEET DESCRIPTION	SHEET TITLE
01	C.01	COVER & NOTES
02	C.02	INITIAL AND INTERIM EROSION CONTROL PLAN
03	C.03	FINAL EROSION CONTROL PLAN
04	C.04	DETAILS I
05	C.05	DETAILS II
06	C.06	DETAILS III

EL PASO COUNTY CONSERVATION DISTRICT NOTES:

EROSION CONTROLS/REVEGETATION PLANS/WATERSHED PROTECTIONS

1. DISTURBED AREAS NOT BEING BUILT ON SHOULD BE MULCHED AND REVEGETATED WITHIN 45 DAYS OF DISTURBANCE USING PLANT/GRASS SPECIES NATIVE AND/OR NATURALIZED TO EL PASO COUNTY, WEATHER DEPENDING.
2. DISTURBED AREAS BE EITHER: MULCHED AFTER SEEDING WITH EITHER WEED-FREE HAY OR STRAW MULCH AT APPROXIMATELY 5,000 LBS PER ACRE; OR APPROX. 1-2" OF WOOD MULCH COVERAGE OF THESE DISTURBED AREAS MADE FROM FOREST MITIGATION WORK AND TREE CLEARING ON SITE; OR AREAS THAT ARE NOT SUITABLE FOR REVEGETATION SUCH AS DRIVEWAYS, PARKING AREAS (IF NOT GOING TO BE PAVED), OR SAFETY AREAS AROUND BUILDINGS SHOULD HAVE A 1-2" THICK LAYER OF CRUSHED ROCK, ROAD BASE, OR GRAVEL TO ASSIST IN PREVENTING HAVING EXPOSED SOIL THAT WOULD BE PRONE TO WIND/RUNOFF EROSION CONCERNS.
3. PRIOR TO ANY SOIL WORK EVEN FOR HOUSES, SILT FENCES NEED TO BE INSTALLED AROUND ALL WORK AREAS TO ENSURE LOOSE SOIL DOES NOT BECOME AN EROSION ISSUE FOR THE DRAINAGE IN THE EVENT OF HEAVY RAINFALL EVENTS. THIS HELPS PROTECT THE UPSTREAM PORTIONS OF THE DRAINAGE LEADING TO THE FPE-2 DAM.
4. FOR AREAS BEING REPLANTED WITH NATURAL GRASS, CONSIDER USING THE EL PASO COUNTY CONSERVATION DISTRICT'S NATIVE SHOTGUN MIX (AVAILABLE AT EPCCD.ORG) FOR RESEEDING, WHICH IS WELL SUITED TO SOILS PRESENT ON THIS SITE AND IS COMPRISED OF 100% NATIVE AND NATURALIZED GRASS SPECIES.

FIREWISE, FIRE RISK, AND FOREST HEALTH

1. VEGETATION MANAGEMENT CONSISTENT WITH FIREWISE PRINCIPLES, INCLUDING CLEARING TREES AND BRUSH WITHIN APPROXIMATELY 35 FEET OF ANY PROPOSED BUILDING. TREES SHOULD ALSO BE CLEARED TO APPROXIMATELY 15 FEET FROM THE CENTERLINE ON EACH SIDE OF ALL DRIVEWAYS, WHICH IS CRITICAL FOR SAFE EMERGENCY VEHICLE ACCESS AND FOR FASTER EMERGENCY EGRESS OF RESIDENCE IN THE EVENT OF A WILDFIRE.
2. THINNING FORESTED AREAS WITHIN 35–100 FEET BEYOND ANY PROPOSED HOUSES (AS RECOMMENDED BY FIREWISE PRACTICES) TO APPROXIMATELY 40–60 TREES PER ACRE, REFLECTING A HEALTHY PONDEROSA PINE AND DOUGLAS FIR FOREST DENSITY BASED ON U.S. FOREST SERVICE AND COLORADO STATE FOREST SERVICE GUIDANCE. THIS ALSO SUPPORTS IMPROVED FIRE RESILIENCE, WILDLIFE HABITAT, AND VISUAL QUALITY CONSISTENT WITH THE EL PASO COUNTY MASTER PLAN FOR THIS AREA.

EL PASO COUNTY

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

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

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

JOSHUA J. PALMER, P.E. — DATE
COUNTY ENGINEER

ENGINEER'S STATEMENT

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

RICHARD D. LYON, COLORADO P.E. NO. 53921 — DATE

OWNER'S STATEMENT:

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

JD CHAPMAN — DATE
OWNER

PROJECT TEAM & AGENCIES:

OWNER: COLORADO PUMPKIN PATCH LLC
18065 SADDLEWOOD RD
MONUMENT, CO 80132
TEL: (719) 799-6708
CONTACT: JD CHAPMAN

CIVIL ENGINEER: HR GREEN DEVELOPMENT, LLC
1975 RESEARCH PKWY, SUITE 160
COLORADO SPRINGS, CO 80920
TEL: (719) 394-2435
CONTACT: RICHIE LYON, P.E.

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987
Utility Notification Center of Colorado

PCD FILE NO.: xxxxx

DRAWN BY: SPC — JOB DATE: ----
APPROVED: RDL — JOB NUMBER: ----
CAD DATE: 10/16/2026
CAD FILE: J:\2026\2603197\CAD\Dwgs\C\GEC\Cover
BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1"
IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

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

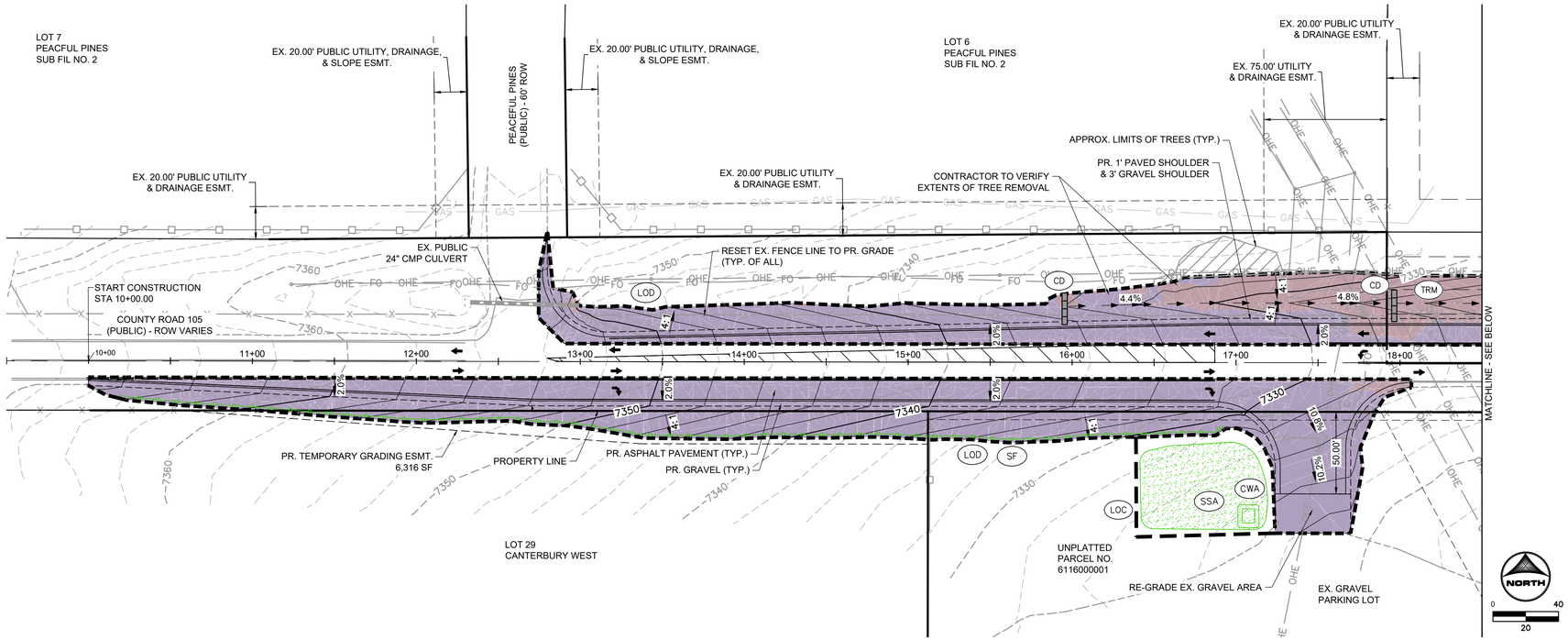
COLORADO KIDS RANCH - 105 ACCESS
CONSTRUCTION DOCUMENTS
EL PASO COUNTY, CO

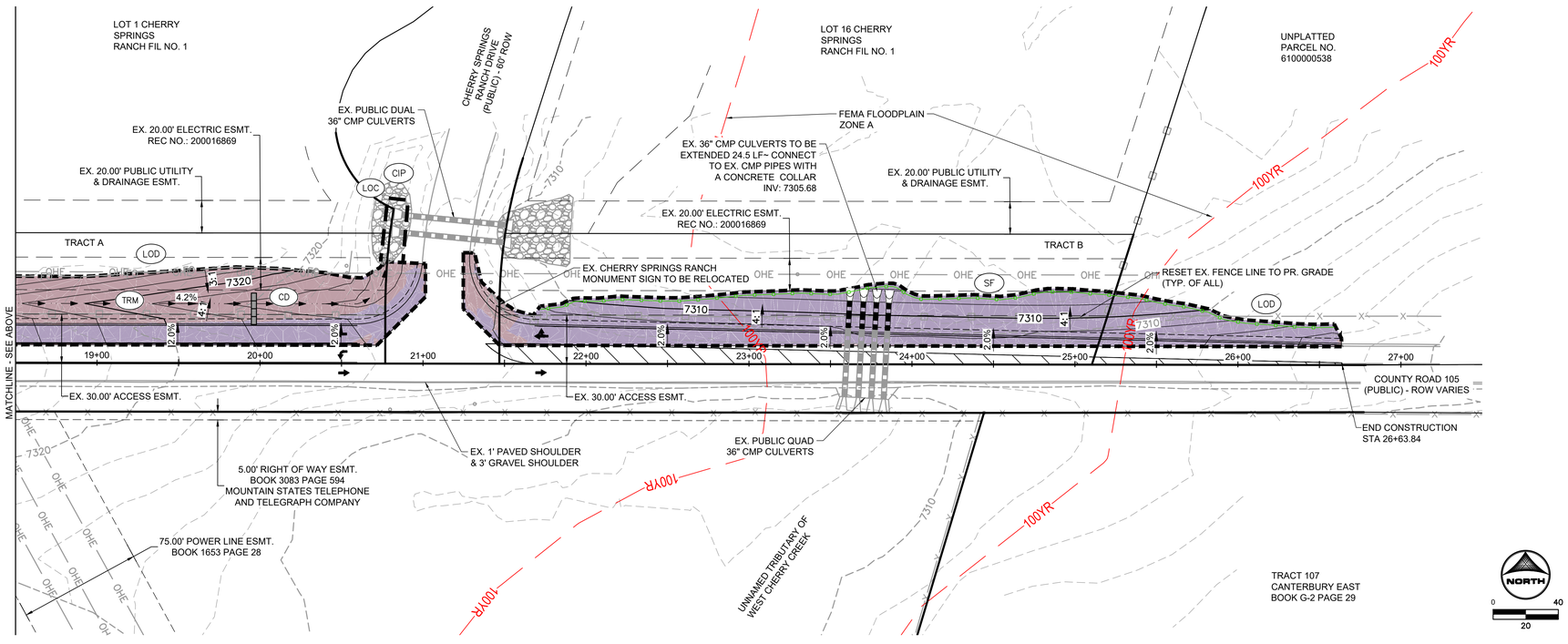
GRADING AND EROSION CONTROL PLAN
COVER & NOTES

SHEET C.01 — 01

HR GREEN Xrefs: Project_Team; xgl-1-dfd1-24d8-C0S; Legend-Color; Abbreviations; EPC_CD_Approval; EPC_GEC_Owner_Approval; EPC_engineers_CD_statement; hrg_general_construction_notes; BM_BOB; xv-row:3197; xc-dsgn:3197

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GEC LEGEND:

		PHASE:
SF	SILT FENCE	INITIAL/INTERIM
SSA	STABILIZED STAGING AREA	INITIAL/INTERIM
CIP	CULVERT INLET PROTECTION	INTERIM
LOD	LIMITS OF DISTURBANCE	INITIAL/INTERIM/FINAL
LOC	LIMITS OF CONSTRUCTION	INITIAL/INTERIM/FINAL
	CUT CONDITION	
	FILL CONDITION	
SM	SEEDING AND MULCHING	FINAL
TRM	PERMANENT TURF REINFORCEMENT MAT	FINAL
	FLOW DIRECTION	
ECB	EROSION CONTROL BLANKET	INTERIM/FINAL
CD	CHECK DAM	INTERIM
CWA	CONCRETE WASH OUT	INITIAL

GRADING & EROSION CONTROL PLAN NOTES:

1. SEE SHEET 4-6 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. AREA 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 ASSOCIATED 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. THERE IS NO NOTABLE VEGETATION OTHERWISE.
10. ALL INITIAL/INTERIM BMPS TO BE REMOVED UPON FINAL STABILIZATION OF THE SITE.

PROJECT INFO:

VOLUME:

CUT FACTOR: 1.00
FILL FACTOR: 1.15
CUT VOLUME(ADJUSTED): 915.82 CUBIC YARDS
FILL VOLUME(ADJUSTED): 2,447.45 CUBIC YARDS
NET VOLUME(ADJUSTED): 1,531.62 (FILL) CUBIC YARDS

CUT FACTOR: 1.00
FILL FACTOR: 1.00
CUT VOLUME(UNADJUSTED): 915.82 CUBIC YARDS
FILL VOLUME(UNADJUSTED): 2,128.22 CUBIC YARDS
NET VOLUME(UNADJUSTED): 1,212.39 (FILL) CUBIC YARDS

LOD - LIMITS OF DISTURBANCE (ROADWAYS, UTILITIES, GRADING) = 1.65 AC

LOC - LIMITS OF CONSTRUCTION (STAGING AREA, CWA, CIP) = 1.78 AC

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

PCD FILE NO.: xxxxx

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APPROVED: RDL	JOB NUMBER: ----		
CAD DATE: 10/16/2026			
CAD FILE: J:\2026\2603197\CAD\Dwgs\C\GEC\Initial_Interim Plan			

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

COLORADO KIDS RANCH - 105 ACCESS
CONSTRUCTION DOCUMENTS
EL PASO COUNTY, CO

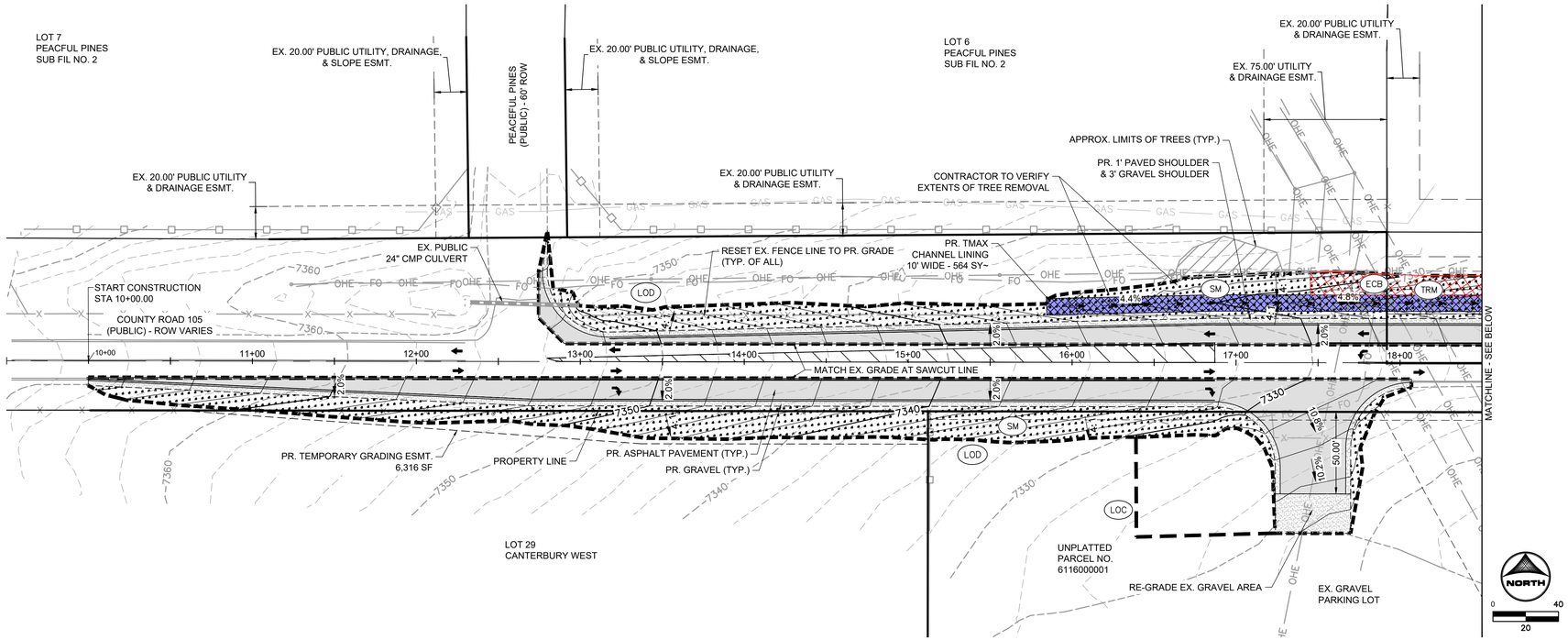
GRADING AND EROSION CONTROL PLAN
INITIAL AND INTERIM EROSION CONTROL PLAN

SHEET C.02

02

HR GREEN Xrefs: xv-util-3197; xc-dsgn-3197; xv-dsgn-3197; xv-flood-3197; xv-row-3197; xgt-1-dh01-24x36-COS; xc-GI-3197

CALLAHAN, SEAN, 10/16/2026 3:23 PM

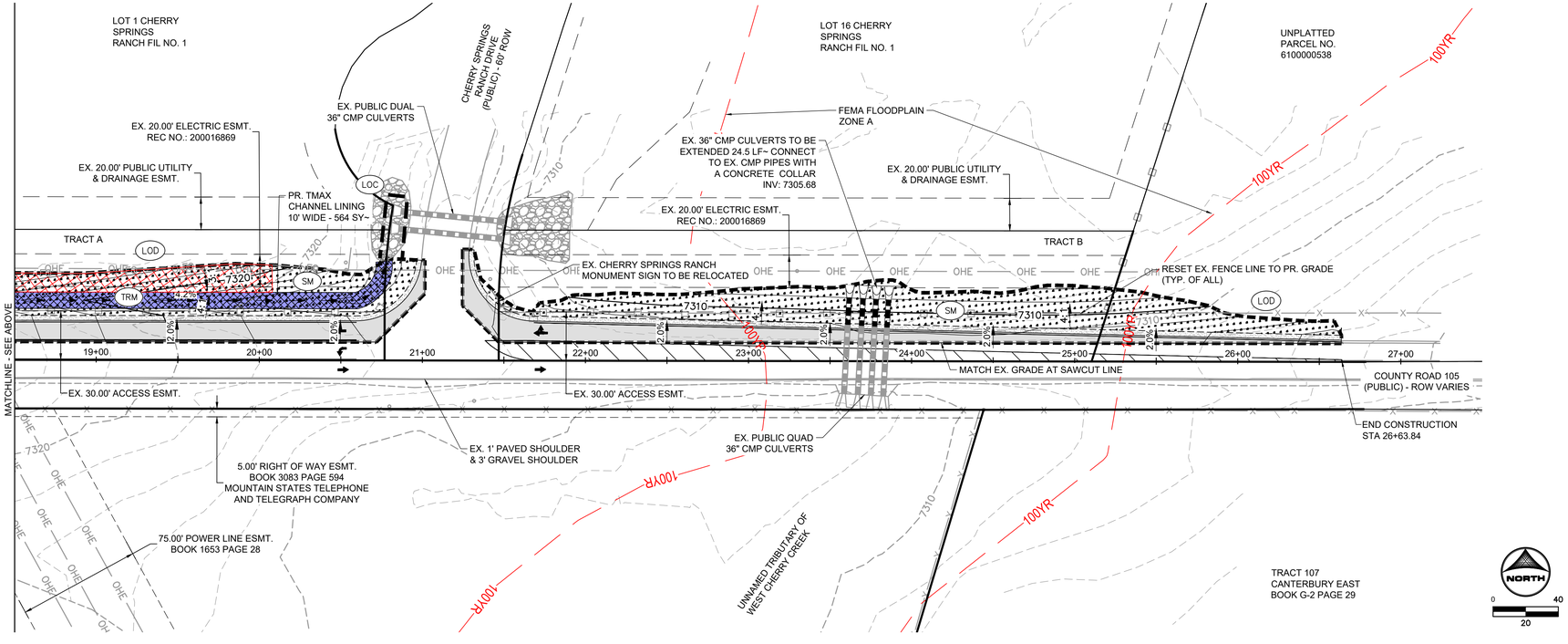


GEC LEGEND:

			PHASE:
	SF	SILT FENCE	INITIAL/INTERIM
	SSA	STABILIZED STAGING AREA	INITIAL/INTERIM
	CIP	CULVERT INLET PROTECTION	INTERIM
	LOD	LIMITS OF DISTURBANCE	INITIAL/INTERIM/FINAL
	LOC	LIMITS OF CONSTRUCTION	INITIAL/INTERIM/FINAL
		CUT CONDITION	
		FILL CONDITION	
	SM	SEEDING AND MULCHING	FINAL
	TRM	PERMANENT TURF REINFORCEMENT MAT	FINAL
		FLOW DIRECTION	
	ECB	EROSION CONTROL BLANKET	INTERIM/FINAL
	CD	CHECK DAM	INTERIM
	CWA	CONCRETE WASH OUT	INITIAL

GRADING & EROSION CONTROL PLAN NOTES:

1. SEE SHEET 4-6 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. AREA WITHIN LIMITS OF DISTURBANCE TO BE CLEARED, GRUBBED AND STOCKPILED PRIOR TO IMPORT OF ANY FILL.
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10. ALL INITIAL/INTERIM BMPS TO BE REMOVED UPON FINAL STABILIZATION OF THE SITE.



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HR GREEN Xrefs: xv-util-3197; xc-dsgn-3197; xv-dsgn-3197; xv-flood-3197; xv-row-3197; xgt-1-dh01-24x36-COS; xc-GI-3197

DRAWN BY: SPC JOB DATE: 10/14/2026
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NO.	DATE	BY	REVISION DESCRIPTION

HRGreen
HR GREEN - COLORADO SPRINGS
1975 RESEARCH PARKWAY SUITE 160
COLORADO SPRINGS, CO 80920
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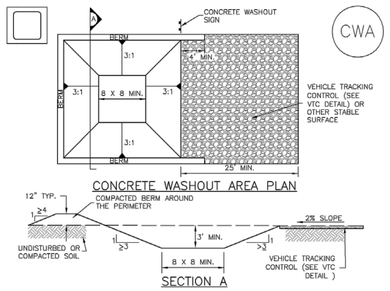
GRADING AND EROSION CONTROL PLAN
FINAL EROSION CONTROL PLAN

SHEET C.03

03

CALLAHAN, SEAN, 10/16/2026 3:24 PM

Concrete Washout Area (CWA) MM-1



CONCRETE WASHOUT AREA PLAN

SECTION A

CWA–1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –CWA INSTALLATION LOCATION.

2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (10 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.

3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.

4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.

5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.

6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.

7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.

8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

MM-1 Concrete Washout Area (CWA)

CWA MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

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

4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.

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

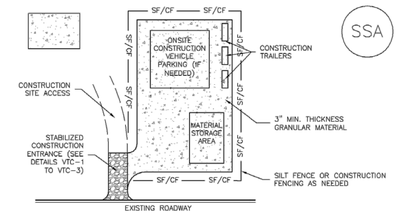
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.

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

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

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

Stabilized Staging Area (SSA) SM-6



SSA–1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   –LOCATION OF STAGING AREA(S).
   –CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.

2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.

3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.

4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.

5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

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

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

SM-6 Stabilized Staging Area (SSA)

STABILIZED STAGING AREA MAINTENANCE NOTES

5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.

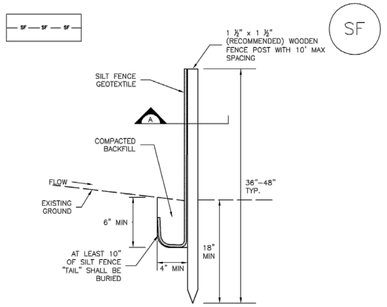
6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

NOTE: MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE–ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.

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

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

Silt Fence (SF) SC-1



SILT FENCE



SECTION A

SF–1. SILT FENCE

SC-1 Silt Fence (SF)

SILT FENCE INSTALLATION NOTES

1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2–5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.

2. A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.

3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.

4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.

5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.

6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J–HOOK." THE "J–HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' – 20').

7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

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

4. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".

5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.

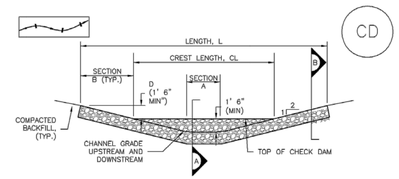
6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.

7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

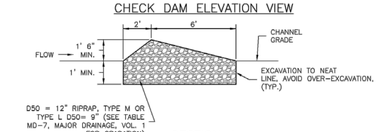
(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, NOT AVAILABLE IN AUTOCAD)

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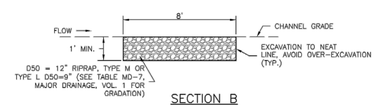
Check Dams (CD) EC-12



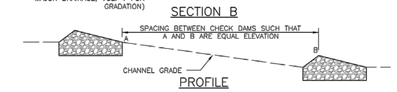
CHECK DAM ELEVATION VIEW



SECTION A



SECTION B



PROFILE

CD–1. CHECK DAM

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

PCD FILE NO.: xxxxx

DRAWN BY: SPC JOB DATE: 10/13/2026
APPROVED: RDL JOB NUMBER: ----
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CAD FILE: J:\2026\2603197\CAD\Dwgs\C\GEC\Details

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

COLORADO KIDS RANCH - 105 ACCESS
CONSTRUCTION DOCUMENTS
EL PASO COUNTY, CO

GRADING AND EROSION CONTROL PLAN
DETAILS I

SHEET C.04 | 04

HR GREEN Xrefs: xgt-1-dt01-24x36-CDS; Typical_Street_Sections

CHECK DAM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF CHECK DAMS.
   –CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
   –LENGTH (L), CREST LENGTH (CL), AND DEPTH (D).

2. CHECK DAMS INDICATED ON INITIAL SWMP SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND DISTURBING ACTIVITIES.

3. RIPRAP UTILIZED FOR CHECK DAMS SHOULD BE OF APPROPRIATE SIZE FOR THE APPLICATION. TYPICAL TYPES OF RIPRAP USED FOR CHECK DAMS ARE TYPE M (D50 12") OR TYPE L (D50 9").

4. RIPRAP PAD SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1'.

5. THE ENDS OF THE CHECK DAM SHALL BE A MINIMUM OF 1' 6" HIGHER THAN THE CENTER OF THE CHECK DAM.

CHECK DAM MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

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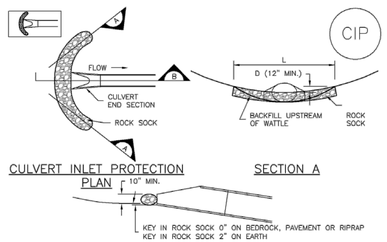
4. SEDIMENT ACCUMULATED UPSTREAM OF THE CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS WITHIN ½ OF THE HEIGHT OF THE CREST.

5. CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

6. WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACKFILL. DISTURBED AREA SHALL BE SEEDED AND MULCHED AND COVERED WITH GEOTEXTILE OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

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CIP–1. CULVERT INLET PROTECTION

CULVERT INLET PROTECTION INSTALLATION NOTES

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

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

CULVERT INLET PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

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

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

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

(DETAILS ADAPTED FROM AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

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

GENERAL INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF INLET PROTECTION.
   –TYPE OF INLET PROTECTION (IP.1, IP.2, IP.3, IP.4, IP.5, IP.6)

2. INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.

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

INLET PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

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

4. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR ¼ OF THE HEIGHT FOR STRAW BALES.

5. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.

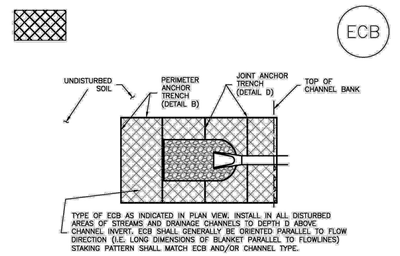
6. WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

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

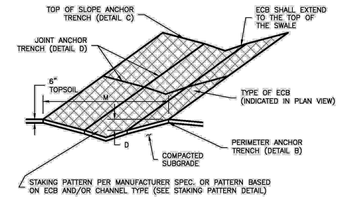
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF INLET PROTECTION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY PROPRIETARY INLET PROTECTION METHODS ON THE MARKET. UDFCD NEITHER ENDORSES NOR DISCOURAGES USE OF PROPRIETARY INLET PROTECTION; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

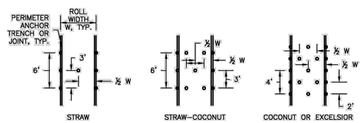
NOTE: SOME MUNICIPALITIES DISCOURAGE OR PROHIBIT THE USE OF STRAW BALES FOR INLET PROTECTION. CHECK WITH LOCAL JURISDICTION TO DETERMINE IF STRAW BALE INLET PROTECTION IS ACCEPTABLE.



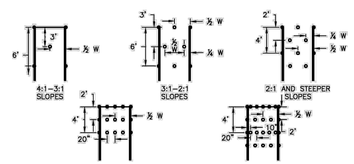
ECB–1. PIPE OUTLET TO DRAINAGEWAY



ECB–2. SMALL DITCH OR SWALE

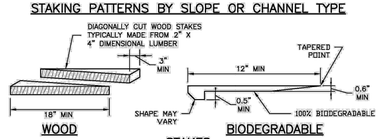


STAKING PATTERNS BY ECB TYPE

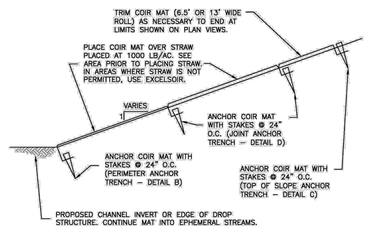


NOTE: IN ADDITION TO FLOW CONDITIONS, THE DESIGNER SHOULD CONSIDER THE PROPERTIES OF THE UNDERLYING SOIL. LESS COHESIVE SOILS MAY WARRANT A TIGHTER STAKING PATTERN.

STAKING PATTERNS BY SLOPE OR CHANNEL TYPE



NOTES
1. PLACE STAKES 18" O.C. TO 3' ABOVE WATER, THEN 24" O.C. TO UPPER LIMIT OF FABRIC OR AS RECOMMEND BY THE MANUFACTURER.
2. WHEN BLANKETING IS PLACED OVER RIPRAP, USE WOOD STAKES.



NOTE: USE WOODEN STAKES IN AREAS WHERE MAT IS PLACED OVER RIPRAP.

COIR MAT PLACEMENT DETAIL

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)

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.

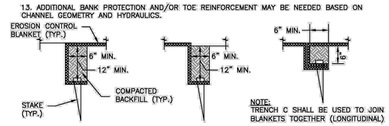
10. MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB–1.

11. ALL EXPOSED ROOTS SHALL BE TRIMMED TO BELOW THE SOIL SURFACE. ECB/TRM SHALL NOT BE INSTALLED OVER ROCKS OR SOIL CLODS 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.



ANCHOR TRENCH DETAILS FOR EROSION CONTROL BLANKETS

UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

PCD FILE NO.: xxxxx

DRAWN BY: SPC JOB DATE: 10/13/2026
APPROVED: RDL JOB NUMBER: ----
CAD DATE: 10/16/2026
CAD FILE: J:\2026\2603197\CAD\Dwgs\C\GEC\Details

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1"
IF NOT ONE INCH ADJUST SCALE ACCORDINGLY.

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

COLORADO KIDS RANCH - 105 ACCESS
CONSTRUCTION DOCUMENTS
EL PASO COUNTY, CO

GRADING AND EROSION CONTROL PLAN
DETAILS II

SHEET C.05

05

CALLAHAN, SEAN, 10/16/2026 3:24 PM

HR GREEN Xrefs: xgt-1--dt01--24x36--CDS; Typical_Street_Sections

CALLAHAN, SEAN, 10/16/2026 3:24 PM

MATERIAL PROPERTY DATA SHEET

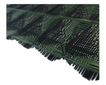
WESTERN GREEN

TMAX™

Permanent • 3-D Woven • UV Stable • High Performance Turf Reinforcement Mat

DESCRIPTION

TMAX is a High-Performance Turf Reinforcement Mat (HP-TRM) produced by weaving 100% UV-stabilized, high denier synthetic mono-filament yarns woven into permanent, high-strength, three-dimensional structure. The optimized properties of the material provide immediate erosion control with excellent vegetation establishment and class-leading long-term turf reinforcement. Additionally, the high strength at low elongation is ideal for slope stability applications (when paired with deep-seated, high strength anchors) and is unique compared to other HPTRMs. The design life of TMAX is rated at fifty years in typical installations, however, can vary based on conditions. TMAX is made in the USA and monitored by quality assurance testing at a GAI-LAP accredited laboratory.



Material Content	
Woven , Single Layer	Green or Tan

Standard Roll Sizes				
Width	11.5 ft	(3.5 m)	11.5 ft	(3.5 m)
Length	78 ft	(24.0 m)	156 ft	(47.5 m)
Weight ± 10%	75 lb	(35.0 kg)	150 lb	(70.0 kg)
Area	100 sy	(83.6 m^2)	200 SY	(167.0 m^2)

Material available in custom roll sizes

Approvals & Classification	
Classification	FHWA: Type 5.C / ECTC: 5.F
TTI Approvals	N/A
NTPEP Number	N/A

Index Property	Test Method	MARV	
Thickness	ASTM D6525	0.4 in.	(9 mm)
Mass/Unit Area	ASTM D6566	10.0 oz/sy	(350 g/sm)
Tensile Strength – MD	ASTM D6818	4,400 lbs/ft	(64.2 kN/m)
Tensile Strength – TD	ASTM D6818	3,300 lbs/ft	(48.2 kN/m)
Elongation - MD	ASTM D6818	35%	
Elongation – TD	ASTM D6818	30%	
UV Stability	ASTM D4355	90% @6000 hr	
UV Stability	ASTM D7238	90% @6000 hr	
Resiliency	ASTM D6524	75%	
Light Penetration	ASTM D6567	25%	
Biomass Improvement	ASTM D7322	300%	
Specific Gravity	ASTM D792	57.4 lb/ft^3	(0.92 g/cm^3)
Porosity	ECTC	96%	
Carbon Footprint	GHG*	1.9 kg CO_2e/m^2	

Design Parameters		
Property	**Unvegetated**	**Vegetated[3]**
RUSLE C Factor[2]	N/A	N/A
Slope Maximum Gradient[1]	0.5H:1V	0.5H:1V
Permissible Shear Stress[2]	2.3 psf	16.0 psf (765 Pa)
Permissible Velocity[2]	8.0 fps	25.0 fps (7.6 m/s)
C_{m} / C_{mn} (HEC-15)	N/A	0.47

Manning's n Roughness (HEC-15)		
T_{max}	T_{mid}	T_{min}
0.041	0.031	0.027

1 Maximum Gradient a recomendation for typical installations.
2 Hydraulic thresholds compliant with ASTM D6459/D6460 but generalized for typical applications.
3 Vegetated values dependent on established stand of vegetation
*WRI/WBCSD Greenhouse Gas Protocol: Product Life Cycle Accounting and Reporting Standard, 2013.

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Rev. 4.2023
Scan for additional and updated product information, or click here.

NORTH AMERICAN GREEN

Western Green • 4609 E. Boonville-New Harmony Rd.
Evansville, IN 47725 • (800) 772-2040
westerngreen.com

Table 5-2. El Paso County All-Purpose Low Grow Mix for Upland and Transition Areas

Common Name	Scientific Name	Growth Season / Form	% of Mix	Pounds PLS		
				• Irrigated broadcast • Irrigated hydroseeded	• Non-irrigated broadcast • Non-irrigated hydroseeded • Irrigated drilled	• Non-irrigated drilled
				80 seeds/sq ft	40 seeds/sq ft	20 seeds/sq ft
Buffalograss	*Buchloe dactyloides*	Warm, sod	25	9.6	4.8	2.4
Grama, blue	*Bouteloua gracilis*	Warm, bunch	20	10.8	5.4	2.7
Grama, sideoats	*Bouteloua curtipendula*	Warm, bunch	29	5.6	2.8	1.4
Green needlegrass	*Nassella viridula*	Cool, bunch	5	3.2	1.6	0.8
Wheatgrass, western	*Pascopyrum smithii*	Cool, sod	20	12	6	3
Dropseed, sand	*Sporobolus cryptandrus*	Warm, bunch	1	0.8	0.4	0.2
Seed rate (lbs PLS/acre)				42	21	10.3

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.



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

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

- Clean, weed-free and seed-free cereal grain straw should be applied evenly at a rate of 2 tons per acre and must be tacked or fastened by a method suitable for the condition of the site. Straw mulch must be anchored (and not merely placed) on the surface. This can be accomplished mechanically by crimping or with the aid of tackifiers or nets. Anchoring with a crimping implement is preferred, and is the recommended method for areas flatter than 3:1. Mechanical crimpers must be capable of tucking the long mulch fibers into the soil to a depth of 3 inches without cutting them. An agricultural disk, while not an ideal substitute, may work if the disk blades are dull or blunted and set vertically; however, the frame may have to be weighted to afford proper soil penetration.
- Grass hay may be used in place of straw; however, because hay is comprised of the entire plant including seed, mulching with hay may seed the site with non-native grass species which might in turn out-compete the native seed. Alternatively, native species of grass hay may be purchased, but can be difficult to find and are more expensive than straw. Purchasing and utilizing a certified weed-free straw is an easier and less costly mulching method. When using grass hay, follow the same guidelines as for straw (provided above).
- On small areas sheltered from the wind and heavy runoff, spraying a tackifier on the mulch is satisfactory for holding it in place. For steep slopes and special situations where greater control is needed, erosion control blankets anchored with stakes should be used instead of mulch.
- Hydraulic mulching consists of wood cellulose fibers mixed with water and a tackifying agent and should be applied at a rate of no less than 1,500 pounds per acre (1,425 lbs of fibers mixed with at least 75 lbs of tackifier) with a hydraulic mulcher. For steeper slopes, up to 2000 pounds per acre may be required for effective hydroseeding. Hydromulch typically requires up to 24 hours to dry; therefore, it should not be applied immediately prior to inclement weather. Application to roads, waterways and existing vegetation should be avoided.
- Erosion control mats, blankets, or nets are recommended to help stabilize steep slopes (generally 3:1 and steeper) and waterways. Depending on the product, these may be used alone or in conjunction with grass or straw mulch. Normally, use of these products will be restricted to relatively small areas. Biodegradable mats made of straw and jute, straw-coconut, coconut fiber, or excelsior can be used instead of mulch. (See the ECM/TRM BMP for more information.)
- Some tackifiers or binders may be used to anchor mulch. Check with the local jurisdiction for allowed tackifiers. Manufacturer's recommendations should be followed at all times. (See the Soil Binder BMP for more information on general types of tackifiers.)
- Rock can also be used as mulch. It provides protection of exposed soils to wind and water erosion and allows infiltration of precipitation. An aggregate base course can be spread on disturbed areas for temporary or permanent stabilization. The rock mulch layer should be thick enough to provide full coverage of exposed soil on the area it is applied.

Maintenance and Removal

After mulching, the bare ground surface should not be more than 10 percent exposed. Reapply mulch, as needed, to cover bare areas.

UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

PCD FILE NO.: xxxxx

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CAD FILE: J:\2026\2603197\CAD\Dwgs\C\GEC\Details
BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

NO.	DATE	BY	REVISION DESCRIPTION

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

COLORADO KIDS RANCH - 105 ACCESS
CONSTRUCTION DOCUMENTS
EL PASO COUNTY, CO

GRADING AND EROSION CONTROL PLAN
DETAILS III

SHEET C.06

06

HR GREEN Xrefs: xg1-1-dn01-24x36-COS; Typical_Street_Sections