# **BENCHMARK:**

SITE BM NO. 1: CENTER OF SANITARY SEWER MANHOLE LOCATED 242 FEET SOUTH OF THE SOUTH EDGE OF ASPHALT OF HIGHWAY 24 AND 9 FEET EAST OF THE EAST EDGE OF ASPHALT OF OLD MERIDIAN ROAD NAVD88 DATUM ELEVATION 6825.51.

SITE BM NO. 2: CENTER OF SANITARY SEWER MANHOLE LOCATED 861 FEET SOUTH OF THE SOUTH EDGE OF ASPHALT OF HIGHWAY 24 AND 3 FEET EAST OF THE EAST EDGE OF ASPHALT OF OLD MERIDIAN ROAD NAVD88 DATUM ELEVATION 6816.71.

# **BASIS OF BEARINGS:**

ALL BEARINGS ARE BASED ON THE SOUTH LINE OF THE SOUTHEAST 1/4 OF SECTION 12 AS MONUMENTED BY A 3-1/4 INCH ALUMINUM CAP STAMPED "EL PASO COUNTY DPW T13S S12/S7/S13/S18 R65W R64W 1982 LS 17496" AT THE SOUTHEAST CORNER OF SECTION 12 AND BY A 3-1/4 INCH ALUMINUM CAP STAMPED "SURVCON INC. T13S R65W 1/4 S12 S13 2003 PLS 30829" AT THE SOUTH 1/4 CORNER OF SECTION 12, SAID LINE BEARS N89°50'28"W.

# **ENGINEER'S STATEMENT:**

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

DATE: BY:

NICOLE SCHANEL, PE #52434 FOR AND ON BEHALF OF MATRIX DESIGN GROUP. INC.

# **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 PALMER COUNTY ENGINEER / ECM ADMINISTRATOR DATE

# **OWNER/DEVELOPER:**

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

ZOE PERICAK LAND DEVELOPMENT CONSULTANTS 950 S. CHERRY STREET, SUITE 512 DENVER, CO 80246

DATE

# CONTACT LIST

OWNER

CIRCLE K STORES INC. 5500 S. QUEBEC STREET, SUITE 100 GREENWOOD VILLAGE, CO 80111 PHONE: (720) 758-6223

DEVELOPER LAND DEVELOPMENT CONSULTANTS, LLC 950 S. CHERRY ST., SUITE 512 DENVER, CO 80246 SOFIA HERNANDEZ PHONE: (303) 717-3305 SOFIA@LDCAZ.COM

CIVIL ENGINEER/ LANDSCAPE ARCHITECT MATRIX DESIGN GROUP 2435 RESEARCH PARKWAY, SUITE 300 COLORADO SPRINGS, CO 80920 NICOLE SCHANEL/ JASON ALWINE PHONE: (719) 575-0100 NICOLE.SCHANEL@MATRIXDESIGNGROUP.COM WATER & SANITARY

ARCHITECT GREENBERG FARROW 30 EXECUTIVE DRIVE, SUITE 100 **IRVINE**, CA 92614 DOUG COUPER PHONE: (949) 296-0450

LAND SURVEYOR **RUBINO SURVEYING** 3312 AIRPORT ROAD BOULDER, COLORADO 80301 PHONE: (303) 464-9515

GEOTECHNICAL ENGINEER TERRACON CONSULTANTS, INC. 4172 CENTER PARK DRIVE COLORADO SPRINGS, CO 80916 PHONE: (719) 597-2116

ELECTRICAL SERVICE MOUNTAIN VIEW ELECTRIC ASSOCIATION 11140 E. WOODMEN ROAD PEYTON, COLORADO 80831 PHONE: (719) 495-2283

WOODMEN HILLS METRO DISTRICT 8046 EASTONVILLE ROAD FALCON, CO 80831 PHONE: (719) 495-2500

FIRE FALCON FIRE PROTECTION DISTRICT 7030 OLD MERIDIAN ROAD FALCON, CO 80831 PHONE: (719) 495-4050

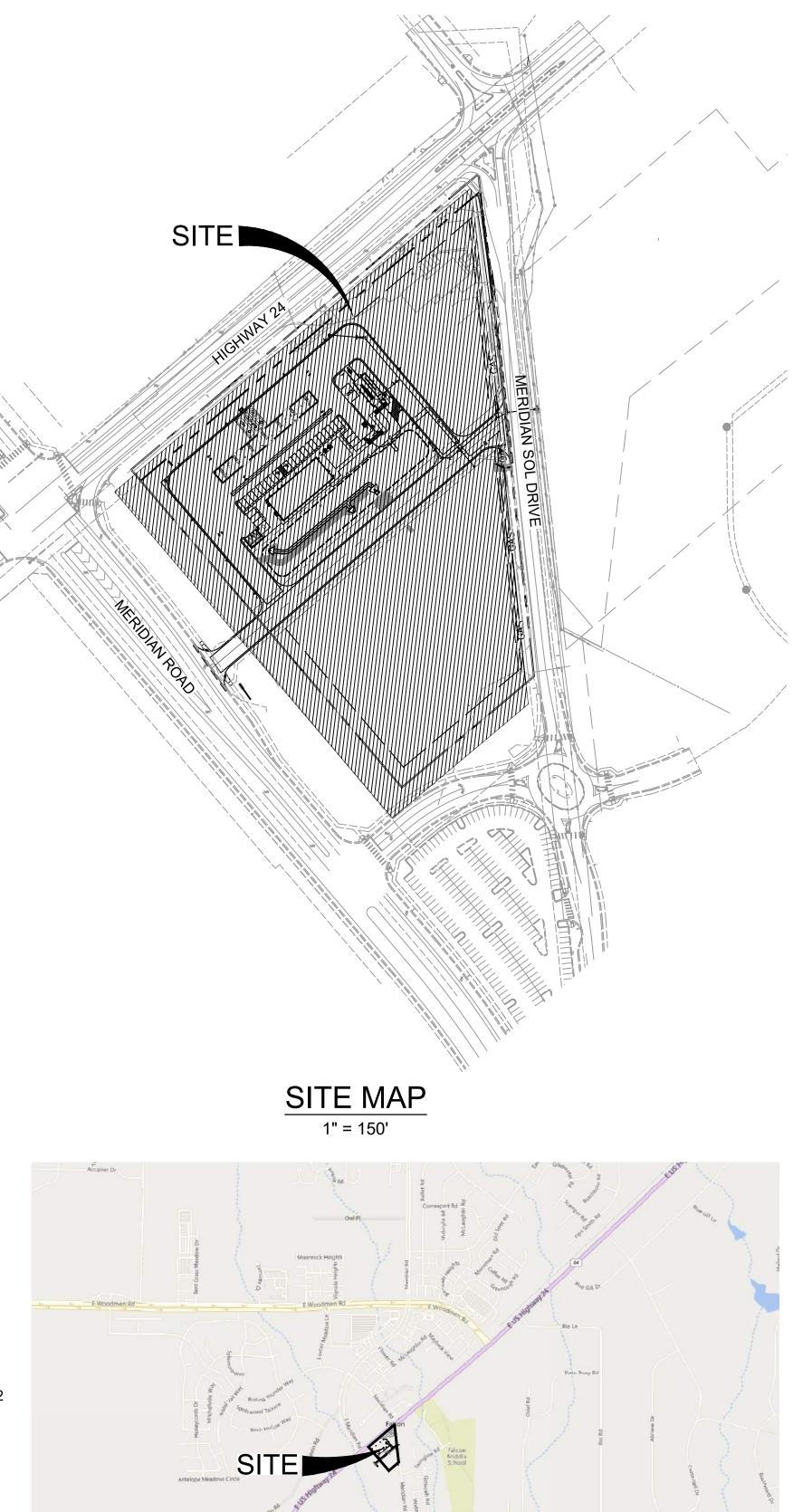
STORM SEWER EL PASO COUNTY PUBLIC SERVICES 3275 AKERS DR. COLORADO SPRINGS, COLORADO 80922 PHONE: (719) 520-6460

GAS COLORADO SPRINGS UTILITIES 7710 DURANT DRIVE COLORADO SPRINGS, COLORADO 80920 TIM BENEDICT PHONE: (719) 668-3574

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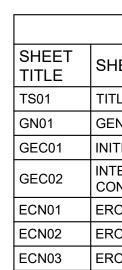
# CIRCLE K AT HIGHWAY 24 & MERIDIAN ROAD **GRADING & EROSION CONTROL PLANS**

EL PASO COUNTY, CO **DECEMBER 2022** 



VICINITY MAP

1" = 2,000'



THIS FINAL GRADING PLAN IS AN ACCURATE REPRESENTATION OF THE GENERAL DRAINAGE PATTERNS ON THE SITE, BUT IS NOT A COMPREHENSIVE DETAILED GRADING PLAN THAT ADDRESSES ALL CONDITIONS THAT MAY OCCUR. THE GRADING SHOULD BE CHECKED BY THE BUILDER TO ENSURE THAT DRAINAGE WILL NOT BE COMPROMISED ON THE PROPERTY OR THE ADJACENT PROPERTIES. CONTRACTOR TO CONTACT DESIGN ENGINEER IF FIELD CONDITIONS DIFFER FROM WHAT IS SHOWN WITHIN THESE PLANS.



CONSULTANTS:

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

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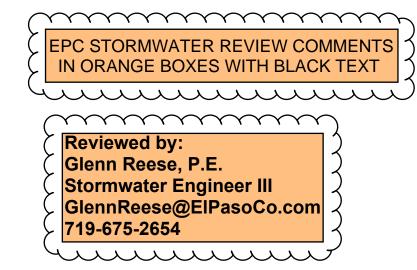
SHEET INDEX	
EET DESCRIPTION	SHEET NUMBER
LE SHEET	1
NERAL NOTES	2
FIAL GRADING & EROSION CONTROL PLAN	3
ERIM/FINAL GRADING & EROSION NTROL PLAN	4
OSION CONTROL NOTES	5
OSION CONTROL NOTES	6
OSION CONTROL NOTES	7

# COUNTY PLANNING CERTIFICATION

THESE CONSTRUCTION DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN ACCORDANCE WITH EL PASO COUNTY LAND DEVELOPMENT CODE

DIRECTOR, PLANNING AND COMMUNITY DEVELOPMENT

DATE



PCD FILING NO.: PPR2230 ISSUE DATE: DECEMBER 2022

## GENERAL CONSTRUCTION NOTES:

- 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.
- NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
- A SEPARATE STORMWATER MANAGEMENT PLAN (SMWP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. DURING CONSTRUCTION THE SWMP IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SWMP SHALL BE LOCATED ON SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
- ONCE THE ESQCP IS APPROVED AND A "NOTICE TO PROCEED" HAS BEEN ISSUED. THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON THE APPROVED GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY STAFF.
- CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT COULD CONTRIBUTE POLLUTANTS TO STORMWATER. TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, AND DISTURBED LAND AREAS SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF THE DISTURBANCE.
- ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITION UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND FINAL STABILIZATION IS ESTABLISHED. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF CONTROL MEASURES AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CONTROL MEASURES ARE NEEDED TO ENSURE THE CONTINUED EFFECTIVE PERFORMANCE OF THE CONTROL MEASURES. ALL CHANGES TO TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES MUST BE INCORPORATED INTO THE STORMWATER MANAGEMENT PLAN PRIOR TO IMPLEMENTATION.
- TEMPORARY STABILIZATION SHALL BE IMPLEMENTED ON DISTURBED AREAS AND STOCKPILES WHERE GROUND DISTURBING CONSTRUCTION 24. OWNER/DEVELOPER AND THEIR AGENTS SHALL COI ACTIVITY HAS PERMANENTLY CEASED OR TEMPORARILY CEASED FOR LONGER THAN 14 DAYS. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL ALSO BE STABILIZED.
- FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBING ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS EITHER HAVE A UNIFORM VEGETATIVE COVER WITH INDIVIDUAL PLAN DENSITY OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL 25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THI STABILIZATION AND BEFORE PERMIT CLOSURE.
- ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DEFINED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT EFFECT THE HYDROLOGY OR HYDRAULICS OF A PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
- 10. ANY EARTH DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME. PRE-EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED WITHIN 50 HORIZONTAL FEET OF A WATERS OF THE STATE, UNLESS INFEASIBLE.
- COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION CONTROL SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED.
- 12. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND. THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT OFF SITE.
- CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO RUNOFF TO STATE WATERS INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUT SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY.

- 14. DURING DEWATERING OPERATIONS OF UNCONTAM WATER MAY BE DISCHARGED ON SITE, BUT SHALL N IN THE FORM OF SURFACE RUNOFF UNLESS AN APP DEWATERING PERMIT IS IN PLACE.
- 15. EROSION CONTROL BLANKETING OR OTHER PROTE SHALL BE USED ON SLOPES STEEPER THAN 3:1.
- 16. CONTRACTOR SHALL BE RESPONSIBLE FOR THE RE WASTES FROM THE CONSTRUCTION SITE FOR DISP ACCORDANCE WITH LOCAL AND STATE REGULATOR NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING OR UNUSED BUILDING MATERIALS SHALL BE BURIED DISCHARGED AT THE SITE.
- 17. WASTE MATERIALS SHALL NOT BE TEMPORARILY PL IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNL ACCORDANCE WITH AN APPROVED TRAFFIC CONTR MEASURES MAY BE REQUIRED BY EL PASO COUNTY DEEMED NECESSARY, BASED ON SPECIFIC CONDITI CIRCUMSTANCES.
- 18. TRACKING OF SOILS AND CONSTRUCTION DEBRIS C MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL B PROPERLY DISPOSED OF IMMEDIATELY.
- 19. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE F OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCH AND SAND THAT MAY ACCUMULATE IN ROADS, STOP OTHER DRAINAGE CONVEYANCE SYSTEMS AND STO APPURTENANCES AS A RESULT OF SITE DEVELOPM
- 20. THE QUANTITY OF MATERIALS STORED ON THE PRO LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTI PERFORM THE WORK IN AN ORDERLY SEQUENCE. STORED ON-SITE SHALL BE STORED IN A NEAT, ORE THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MAN LABELS.
- 21. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE REL STORMWATER ARE TO BE STORED OR USED ONSIT PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS WRITING BY THE ECM ADMINISTRATOR. IN GRANTIN THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIC MONITORING MAY BE REQUIRED.
- 22. BULK STORAGE OF ALLOWED PETROLEUM PRODUC ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GAL REQUIRE ADEQUATE SECONDARY CONTAINMENT P CONTAIN ALL SPILLS ONSITE AND TO PREVENT ANY FROM ENTERING STATE WATERS, ANY SURFACE OR STORM DRAINAGE SYSTEM OR OTHER FACILITIES.
- 23. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STO THE CURB AND GUTTER OR DITCH EXCEPT WITH AP CONTROL MEASURES.
- "COLORADO WATER QUALITY CONTROL ACT" (TITLE AND THE "CLEAN WATER ACT" (33 USC 1344). IN ADD REQUIREMENTS OF THE LAND DEVELOPMENT CODE AND THE ECM APPENDIX I. ALL APPROPRIATE PERM OBTAINED BY THE CONTRACTOR PRIOR TO CONSTR NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN CONFLICTS BETWEEN THESE REQUIREMENTS AND RULES, OR REGULATIONS OF OTHER FEDERAL, STA COUNTY AGENCIES, THE MOST RESTRICTIVE LAWS, **REGULATIONS SHALL APPLY.**
- APPROVED CONSTRUCTION ACCESS POINTS.
- 26. PRIOR TO CONSTRUCTION THE PERMITTEE SHALL V LOCATION OF EXISTING UTILITIES.
- 27. A WATER SOURCE SHALL BE AVAILABLE ON SITE DU OPERATIONS AND SHALL BE UTILIZED AS REQUIRED FROM EARTHWORK EQUIPMENT AND WIND.
- 28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREP. CONSULTANTS, INC., DATED NOVEMBER 30, 2018 AM CONSIDERED A PART OF THESE PLANS.
- 29. AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATE CONSTRUCTION, FOR PROJECTS THAT WILL DISTUR MORE, THE OWNER OR OPERATOR OF CONSTRUCT SUBMIT A PERMIT APPLICATION FOR STORMWATER COLORADO DEPARTMENT OF PUBLIC HEALTH AND I WATER QUALITY DIVISION. THE APPLICATION CONTA OF COMPLETION OF A STORMWATER MANAGEMENT WHICH THIS GRADING AND EROSION CONTROL PLAI FOR INFORMATION OR APPLICATION MATERIALS CO

COLORADO DEPARTMENT OF PUBLIC HEALTH AND WATER QUALITY CONTROL DIVISION WQCD - PERMITS 4300 CHERRY CREEK DRIVE SOUTH DENVER, CO 80246-1530

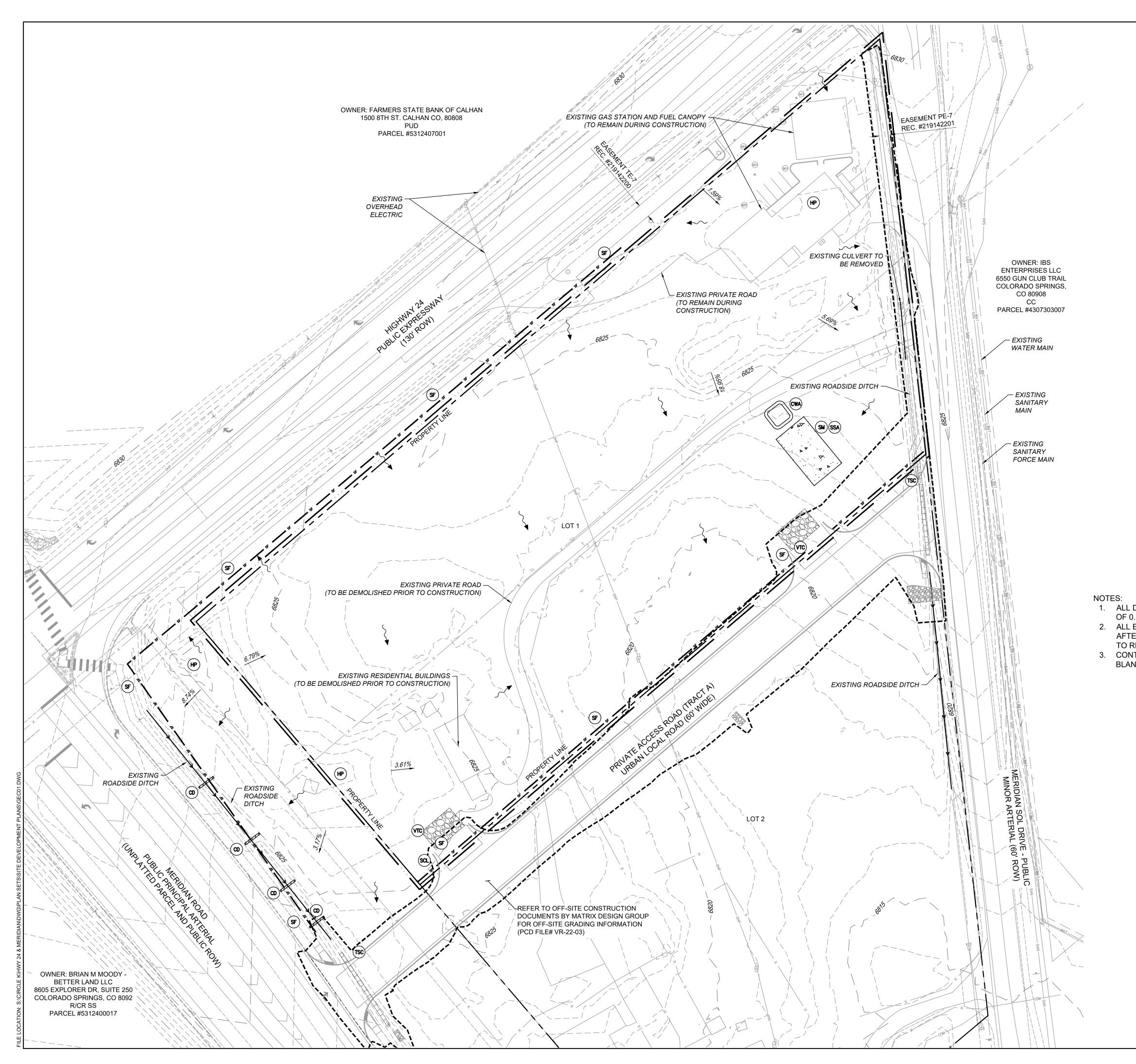
ATTN: PERMITS UNIT

	NPD	ES NOTES:
VINATED GROUND NOT LEAVE THE SITE PROVED STATE	1.	THE CONTRACTOR SHALL REMOVE ALL SEDIMENT, MUD, AND CONSTRUCTION DEBRIS THAT MAY ACCUMULATE IN THE FLOWLINES AND PUBLIC RIGHTS OF WAYS AS A RESULT OF THIS CONSTRUCTION PROJECT. SAID REMOVAL SHALL BE CONDUCTED IN A TIMELY MANNER, OR AS DIRECTED BY THE ENGINEER.
EMOVAL OF ALL POSAL IN ORY REQUIREMENTS. IG MATERIAL WASTES ED, DUMPED, OR PLACED OR STORED	2.	THIS CONSTRUCTION ACTIVITIES STORMWATER MANAGEMENT PLAN (SWMP) HAS BEEN SUBMITTED AS PART OF AN APPLICATION FOR AN EROSION AND SEDIMENT CONTROL PERMIT FILED WITH THE CITY OF COLORADO SPRINGS AND AS INCLUSION BY REFERENCE TO THE CDPHE CONSTRUCTION ACTIVITY PERMIT. THE SWMP IS A LIVING DOCUMENT AND ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED OF THE CONTRACTOR DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT FUNCTION AS INTENDED. THE REQUIREMENTS OF THIS PLAN
NLESS IN ROL PLAN. CONTROL Y ENGINEERING IF TIONS AND		SHALL BE THE OBLIGATION OF THE LAND OWNER AND/OR HIS SUCCESSORS OR HEIRS; UNTIL SUCH TIME AS THE PLAN IS PROPERLY COMPLETED, MODIFIED, OR VOIDED.
OFF-SITE SHALL BE BE CLEANED UP AND	3.	THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR REMEDIATION OF ANY ADVERSE IMPACTS TO ADJACENT WATERWAYS, WETLANDS, ETC., RESULTING FROM WORK DONE AS PART OF THIS PROJECT.
FOR THE REMOVAL CK, SEDIMENT, SOIL, DRM DRAINS AND FORMWATER	4.	THE CONTRACTOR SHALL PREVENT SEDIMENT, DEBRIS AND ALL OTHER POLLUTANTS FROM ENTERING THE STORM SEWER SYSTEM DURING ALL DEMOLITION, EXCAVATION, TRENCHING, BORING, GRADING OR OTHER CONSTRUCTION OPERATIONS THAT ARE PART OF THIS PROJECT.
MENT. COJECT SITE SHALL BE TTY REQUIRED TO ALL MATERIALS RDERLY MANNER, IN NUFACTURER'S ELEASED IN TE UNLESS IS GRANTED IN	5.	A LAYER OF SUITABLE MULCH SHALL BE APPLIED TO ALL DISTURBED PORTIONS OF THE SITE WITHIN 21 DAYS OF THE COMPLETION OF GRADING. SAID MULCH SHALL BE APPLIED AT A RATE OF 2 TONS PER ACRE AND SHALL BE TACKED OR FASTENED BY AN APPROVED METHOD SUITABLE FOR THE TYPE OF MULCH USED. ROUGH-CUT STREETS SHALL BE MULCHED UNLESS A LAYER OF AGGREGATE ROAD BASE OR ASPHALT PAVING IS TO BE APPLIED TO SAID ROUGH-CUT STREETS WITHIN THE 21 DAY PERIOD AFTER COMPLETION OF OVERLOT GRADING. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THEN SIXTY (60) DAYS SHALL ALSO BE SEEDED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND BMP'S SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION
ING APPROVAL FOR ONS AND	6.	CONTROL MEASURES ARE IMPLEMENTED. THE CONTRACTOR SHALL LOCATE, INSTALL, AND MAINTAIN ALL EROSION CONTROL AND WATER QUALITY "BEST MANAGEMENT
CTS OR OTHER LLONS SHALL PROTECTION TO Y SPILLED MATERIALS OR SUBSURFACE		PRACTICES" AS INDICATED IN THE APPROVED CONSTRUCTION ACTIVITIES STORMWATER MANAGEMENT PLAN. BMP'S SHALL BE MAINTAINED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THIS PROJECT.
ORMWATER FLOW IN PPROVED SEDIMENT	7.	AT A MINIMUM, THE CONTRACTOR SHALL INSPECT, AND KEEP A LOG OF, ALL BMP'S WEEKLY AND AFTER SIGNIFICANT PRECIPITATION EVENTS. ALL NECESSARY MAINTENANCE AND REPAIR SHALL BE COMPLETED IN A TIMELY MANNER. ACCUMULATED SEDIMENT AND DEBRIS SHALL BE REMOVED FROM A BMP WHEN THE SEDIMENT LEVEL REACHES ONE-HALF THE HEIGHT OF THE BMP, OR, AT ANY TIME THAT SEDIMENT OR DEBRIS ADVERSELY IMPACTS THE FUNCTIONING OF
E 25, ARTICLE 8, CRS), DITION TO THE DE, DCM VOLUME II MITS MUST BE FRUCTION (1041, N THE EVENT OF	8.	THE BMP. THE CONTRACTOR SHALL PROPERLY COVER ALL LOADS OF CUT AND FILL MATERIAL IMPORTED TO OR EXPORTED FROM THIS SITE TO PREVENT LOSS OF THE MATERIAL DURING TRANSPORT WITHIN PUBLIC RIGHTS OF WAY.
) OTHER LAWS, ATE, LOCAL, OR S, RULES, OR HE SITE ONLY AT	9.	THE USE OF REBAR, STEEL STAKES, OR STEEL FENCE POSTS TO STAKE DOWN STRAW OR HAY BALES; OR TO SUPPORT SILT FENCING USED AS AN EROSION CONTROL MEASURE; IS PROHIBITED. THE USE OF OSHA APPROVED COLORED WARNING CAPS ON REBAR OR FENCE POSTS USED WITH EROSION CONTROL MEASURES IS NOT
VERIFY THE	10.	ACCEPTABLE. SOILS THAT WILL BE STOCKPILED FOR MORE THAN 30 DAYS SHALL BE MULCHED AND SEEDED WITH A TEMPORARY OR PERMANENT GRASS
OURING EARTHWORK D TO MINIMIZE DUST		COVER WITHIN 21 DAYS OF STOCKPILE CONSTRUCTION. IF STOCKPILES ARE LOCATED WITHIN 100 FEET OF A DRAINAGEWAY, ADDITIONAL SEDIMENT CONTROLS SUCH AS TEMPORARY DIKES OR SILT FENCE SHALL BE REQUIRED.
PARED BY TERRACON AND SHALL BE ED START OF	11.	MODIFICATION OF AN ACTIVE EROSION AND SEDIMENT CONTROL PERMIT BY THE CONTRACTOR SHALL REQUIRE TIMELY NOTIFICATION OF AND APPROVAL BY THE CITY OF COLORADO SPRINGS. TERMINATION OF AN ACTIVE EROSION AND SEDIMENT CONTROL
RB ONE (1) ACRE OR TION ACTIVITY SHALL R DISCHARGE TO THE		PERMIT UPON COMPLETION OF THE PROJECT REQUIRES NOTIFICATION OF AND APPROVAL BY THE CITY OF COLORADO SPRINGS.
ENVIRONMENT, TAINS CERTIFICATION IT PLAN (SWMP), OF AN MAY BE A PART. ONTACT:	12.	UNLESS CONFINED IN A PREDEFINED, BERMED CONTAINMENT AREA, THE CLEANING OF CONCRETE TRUCK DELIVERY CHUTES IS PROHIBITED AT THE JOB SITE. THE DISCHARGE OF WATER CONTAINING WASTE CEMENT TO THE STORM SEWER SYSTEM IS PROHIBITED.
D ENVIRONMENT	13.	THE CONTRACTOR SHALL PROTECT ALL STORM SEWER FACILITIES ADJACENT TO ANY LOCATION WHERE PAVEMENT CUTTING OPERATIONS INVOLVING WHEEL CUTTING, SAW CUTTING OR ABRASIVE WATER JET CUTTING ARE TO TAKE PLACE. THE DISCHARGE OF ANY WATER CONTAMINATED BY WASTE PRODUCTS FROM CUTTING OPERATIONS TO THE STORM SEWER SYSTEM IS PROHIBITED. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL WASTE PRODUCTS GENERATED BY SAID CUTTING OPERATIONS ON A DAILY BASIS.
	14.	LOCATION OF STAGING, STORAGE, EQUIPMENT MAINTENANCE,

LOCATION OF STAGING, STORAGE, EQUIPMENT MAINTENANCE, TEMPORARY DISPOSAL, VEHICLE TRACKING CONTROL AND CONCRETE TRUCK WASHOUT AREAS WILL BE DETERMINED IN THE FIELD AT THE START OF CONSTRUCTION ACTIVITY AND DELINEATED ON THIS PLAN.

	NRCS SOIL SURVEY FO	R EL PASO CO	UNTY	<u> </u>	CONSULT	ANTS:
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19		ŚANDY LOAM	A	Know what's <b>below.</b> <b>Call</b> before you dig.	2435 RESE	<b>ence by Design</b> EARCH PARKWAY, SUITE
TIMING ANTIC	(0%-3% SLOPES)	PLETION TIME PE	RIOD OF SITE GRADING:			RADO SPRINGS, CO 80920 719) 575-0100
	2022 THRU FEBRUARY 2023 CTED DATE ON WHICH THE FI	NAL STABILIZATI				
FEBRU	UARY 2024		ON WILL DE CONFLETED.		LAN	D DEVELOPMENT
AREAS TOTAL	L AREA: 5.00 ACRES				950 S. CH	CONSULTANTS, LLC     ERRY ST., SUITE 512     CO 20046
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	<u>D CREEK (ULTIMATE)</u> R'S NOTES:				C	
THE E	EXISTING VEGETATION CONSI WITH AREAS OF FARM TILLAG		GRASSES AND SCRUB			
	ABBREVI	ATIONS			5500 S QL	R OUNTAINS DIVISION JEBEC STREET, SUITE 100
AD ASSY	ALGEBRAIC DIFFERENCE ASSEMBLY	MID MIN	MIDDLE or MIDPOINT MINIMUM			OOD VILLAGE, CO 80111 720) 758-6223
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS	MJ MSL	MECHANICAL JOINT MEAN SEA LEVEL		SEAL	
	APPROXIMATE or APPROXIMATEL		NORMAL CROWN			ORADO LICENTO
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B/C ፄ or B/L	BACK OF CURB BASELINE	NOM NTS	NOMINAL NOT TO SCALE			
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CEN € or CL	CENTER CENTERLINE	PC PCC	POINT OF CURVATURE POINT OF COMPOUND CUR	VE		ND ON BEHALF OF MATRIX DESIGN GROUP, INC RACTOR IS RESPONSIBLE FOR OBTAINING THE
CFS CLR	CUBIC FEET PER SECOND CLEAR	PCR PE	POINT OF CURB RETURN PLAIN END		MOST R	RACTOR IS RESPONSIBLE FOR OBTAINING THE ECENT PROJECT CONSTRUCTION DOCUMENTS. RIX DESIGN GROUP IS NOT RESPONSIBLE FOR
CMP CONC	CORRUGATED METAL PIPE CONCRETE	PIE PGL	PUBLIC IMPROVEMENT EAS PROFILE GRADE LINE	EMENT	CHANG	SES, ALTERATIONS, OR USE OF CONSTRUCTION MENTS PRIOR TO JURISDICTIONAL APPROVAL.
CONST	CONSTRUCTION CONTINUOUS	৫ or P/L PRC	PROPERTY LINE POINT OF REVERSE CURVE			ИАР:
DIA	DIAMETER	PT	POINT OF TANGENCY			
DN DWG	DOWN DRAWING	PVC	POINT OF VERTICAL CURVE POLYVINYL CHLORIDE			
EA EGL	EACH ENERGY GRADE LINE	PVI PVMT	POINT OF VERTICAL INTERS PAVEMENT	SECTION		AT THE
ELEV or EL ELL	ELEVATION ELBOW	PVT R OR RAD	POINT OF VERTICAL TANGE RADIUS	NT		5HGHM
ESMT EW	EASEMENT EACHWAY	RC RCP	REVERSE CROWN REINFORCED CONCRETE PI	IPF		SITE
EX or EXIST	EXISTING	RED	REDUCER REFERENCE			
FES FIN	FLARED END SECTION FINISHED	REF REINF	REINFORCING			WITH ADD AND ADD ADD ADD ADD ADD ADD ADD ADD
⁼ or FL FLG	FLOWLINE FLANGE	REQ REV	REQUIRED REVISION			THE POINT
FT FRP	FOOT / FEET FIBERGLASS REINFORCED PIPE	ROW RT	RIGHT-OF-WAY RIGHT			B
GAL GALV	GALLON GALVANIZED	SCH SD	SCHEDULE STORM SEWER			8
GAU	GAUGE (MATERIAL)	SQ	SQUARE			
GV GW	GATE VALVE GROUNDWATER	ST STA	STREET STATION			
HBP HERCP	HOT BITUMINOUS PAVEMENT HORIZONTAL ELLIPTICAL REINFO	STD RCED STL	STANDARD STEEL		PROJECT:	
HGL	CONCRETE PIPE HYDRAULIC GRADE LINE	SS OR SAN SW OR S/W	SANITARY SEWER			LE K STORES INC.
HP	HIGH POINT	TAN	TANGENT			
HORIZ HCL	HORIZONTAL HORIZONTAL CONTROL LINE	TB TBC	THRUST BLOCK TOP BACK OF CURB		PLANS	NG & EROSION CONTROL
HR INV	HOUR INVERT	TFC THD	TOP FACE OF CURB THREADED			AY 24 & MERIDIAN ROAD
K LBS	VERTICAL CURVE FACTOR POUNDS	THK TYP	THICKNESS TYPICAL		FALCO	
LBO LF LN	LINEAR FEET LANE	UG UTIL	UNDERGROUND UTILITY		REVISION	HISTORY:
LP	LOW POINT	VC	VERTICAL CURVE		NO. DATE	DESCRIPTION B
LS LT	LANDSCAPING LEFT	VERT W	VERTICAL WIDTH		$\left  - \right  - $	
MAX MFGR	MAXIMUM MANUFACTURER	W/	WITH			
ΜΗ	MANHOLE	SYMBOLS				
						INFORMATION:
	PROPOSED CENTERLIN	E	UT UE		PROJECT NC	D: 21.1207.037 LCB
	EXISTING FENCE		G	UNDERGROUND UTILITY	CHECKED BY	
	- RIGHT OF WAY/PROPER	TY BOUNDARY	W	EXISTING WATER	DESIGNED B	
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	PROPERTY LINE/TRACT	A BOUNDARY	$\overset{\textrm{\tiny WV}}{\boxtimes}$	EXISTING WATER VALVE		
	EXISTING CURB & GUT		SS	EXISTING SANITARY		NERAL NOTES
635 — —	PROPOSED CURB & GU	TTER	<u> </u>	PROPOSED STORM PROPOSED STORM FLARED END SECTION (FES)		
635 — — — — 630 — — — —			$\bigcirc$	PROPOSED STORM INLET		
	PROPOSED CONTOUR					SHEET 2 OF 7 GN01
				PCD FILING NO.: PPR2230		TE: DECEMBER 2022

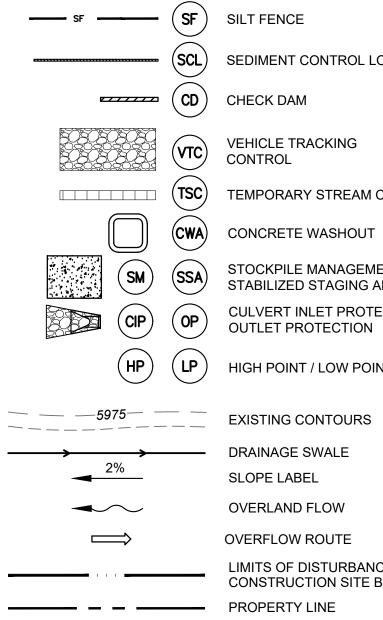
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Know what's **below**. Call before you dig.

# **EROSION CONTROL LEGEND**



-----

# (SCL) SEDIMENT CONTROL LOG

VEHICLE TRACKING

CONTROL (TSC) TEMPORARY STREAM CROSSING

CONCRETE WASHOUT

STOCKPILE MANAGEMENT / STABILIZED STAGING AREA

CULVERT INLET PROTECTION / OUTLET PROTECTION

HIGH POINT / LOW POINT

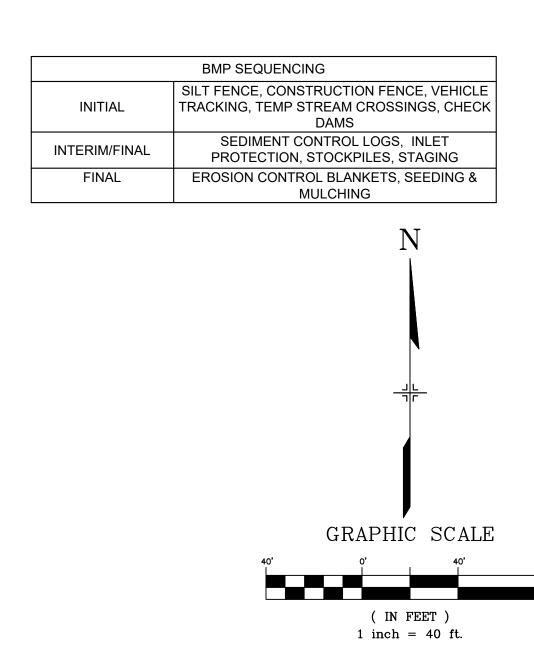
DRAINAGE SWALE SLOPE LABEL

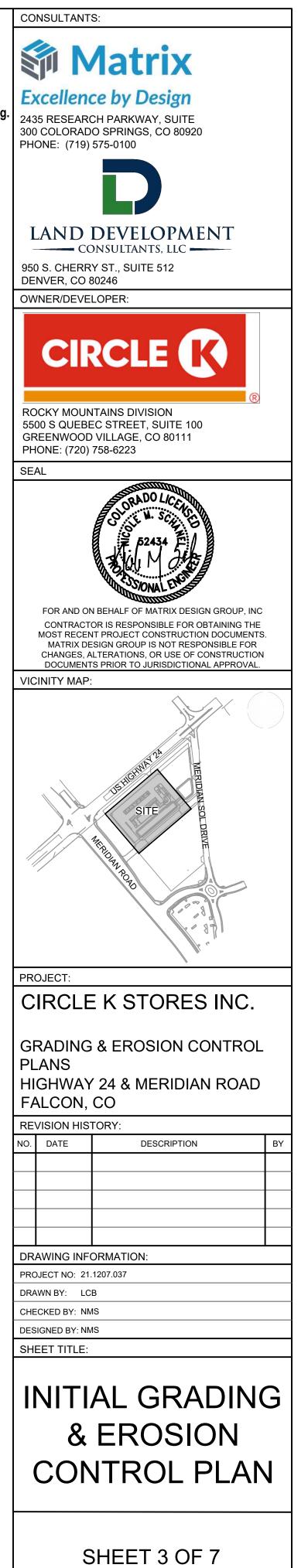
OVERLAND FLOW

OVERFLOW ROUTE

LIMITS OF DISTURBANCE/ CONSTRUCTION SITE BOUNDARY PROPERTY LINE OFFSITE CONSTRUCTION LIMITS (SEE PCD FILE #VR-22-03)

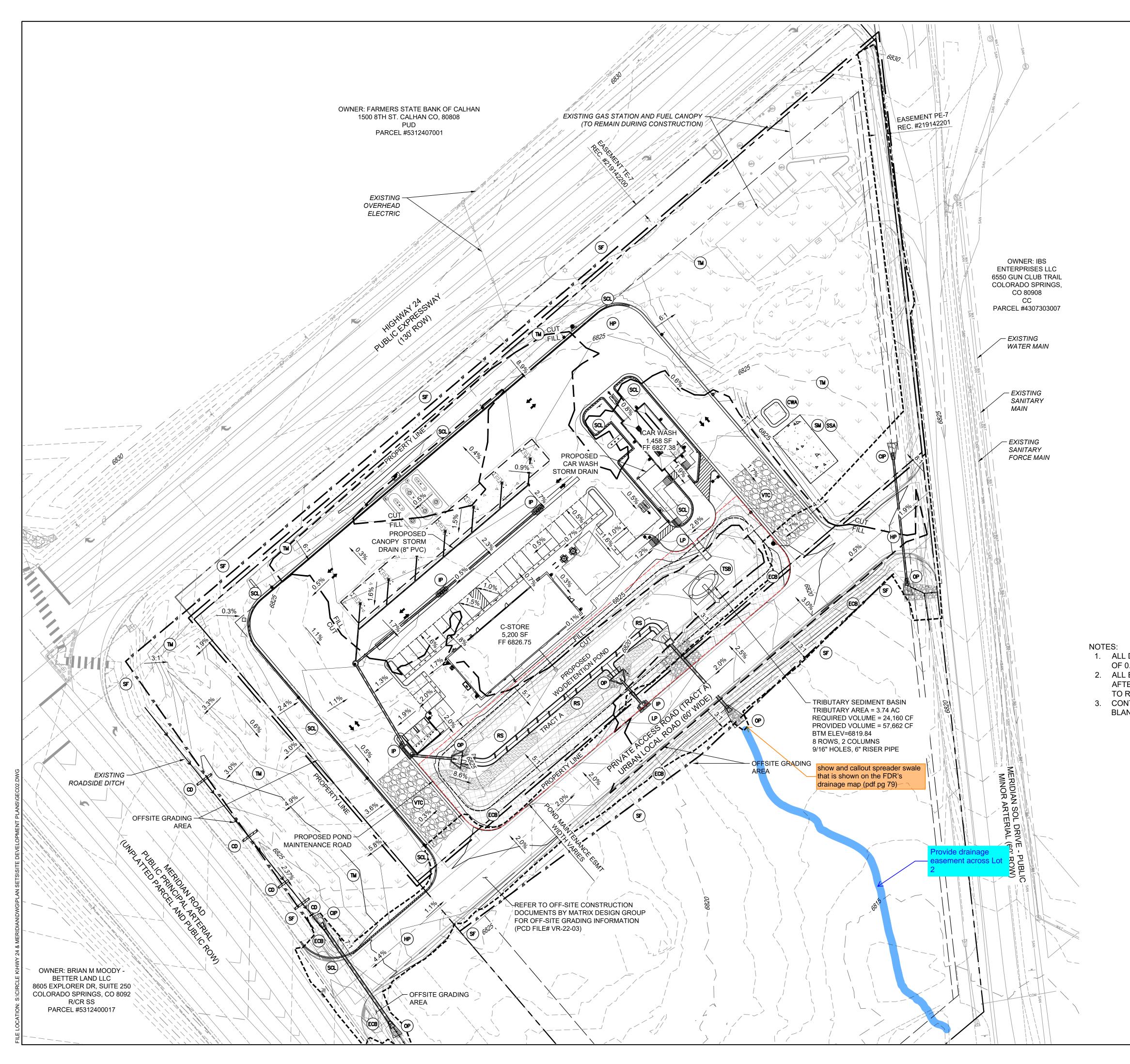
1. ALL DRAINAGE SWALES SHALL HAVE A MINIMUM LONGITUDINAL SLOPE OF 0.5%, MINIMUM 1.5' DEPTH, AND MAXIMUM 3:1 SIDE SLOPES. 2. ALL EROSION CONTROL BLANKET SHALL BE INSPECTED 24-MONTHS AFTER INSTALLATION. EROSION CONTROL BLANKET MAY BE REQUIRED TO RE-INSTALLED PER MANUFACTURER SPECIFICATIONS. 3. CONTRACTOR TO USE SLOPE TRACKING OR EROSION CONTROL **BLANKET ON SLOPES 3:1 OR GREATER** 





PCD FILING NO.: PPR2230 ISSUE DATE: DECEMBER 2022

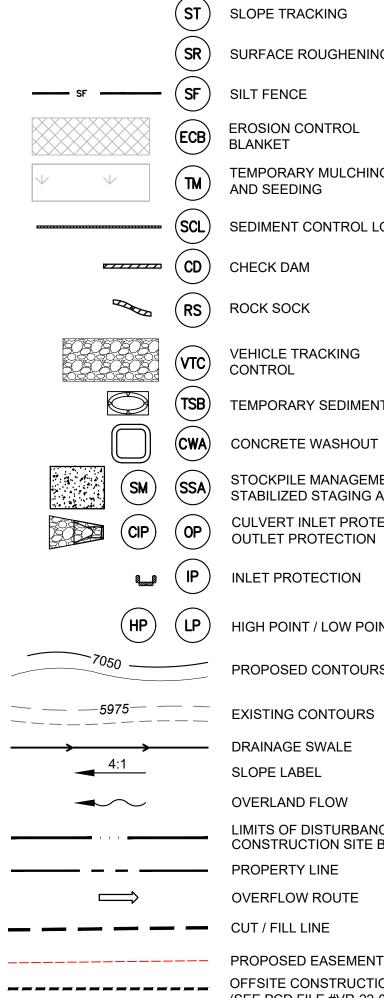
GEC01





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

# EROSION CONTROL LEGEND



SLOPE TRACKING
SURFACE ROUGHENING
SILT FENCE
EROSION CONTROL BLANKET
TEMPORARY MULCHING AND SEEDING
SEDIMENT CONTROL LOG
CHECK DAM
ROCK SOCK
/EHICLE TRACKING CONTROL
FEMPORARY SEDIMENT BASIN
CONCRETE WASHOUT
STOCKPILE MANAGEMENT / STABILIZED STAGING AREA
CULVERT INLET PROTECTION / OUTLET PROTECTION
INLET PROTECTION
HIGH POINT / LOW POINT
PROPOSED CONTOURS
EXISTING CONTOURS
DRAINAGE SWALE
SLOPE LABEL
OVERLAND FLOW
LIMITS OF DISTURBANCE/ CONSTRUCTION SITE BOUNDARY
PROPERTY LINE

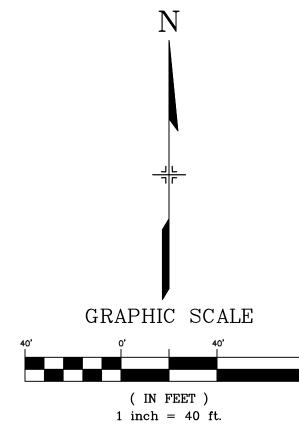
**OVERFLOW ROUTE** 

CUT / FILL LINE

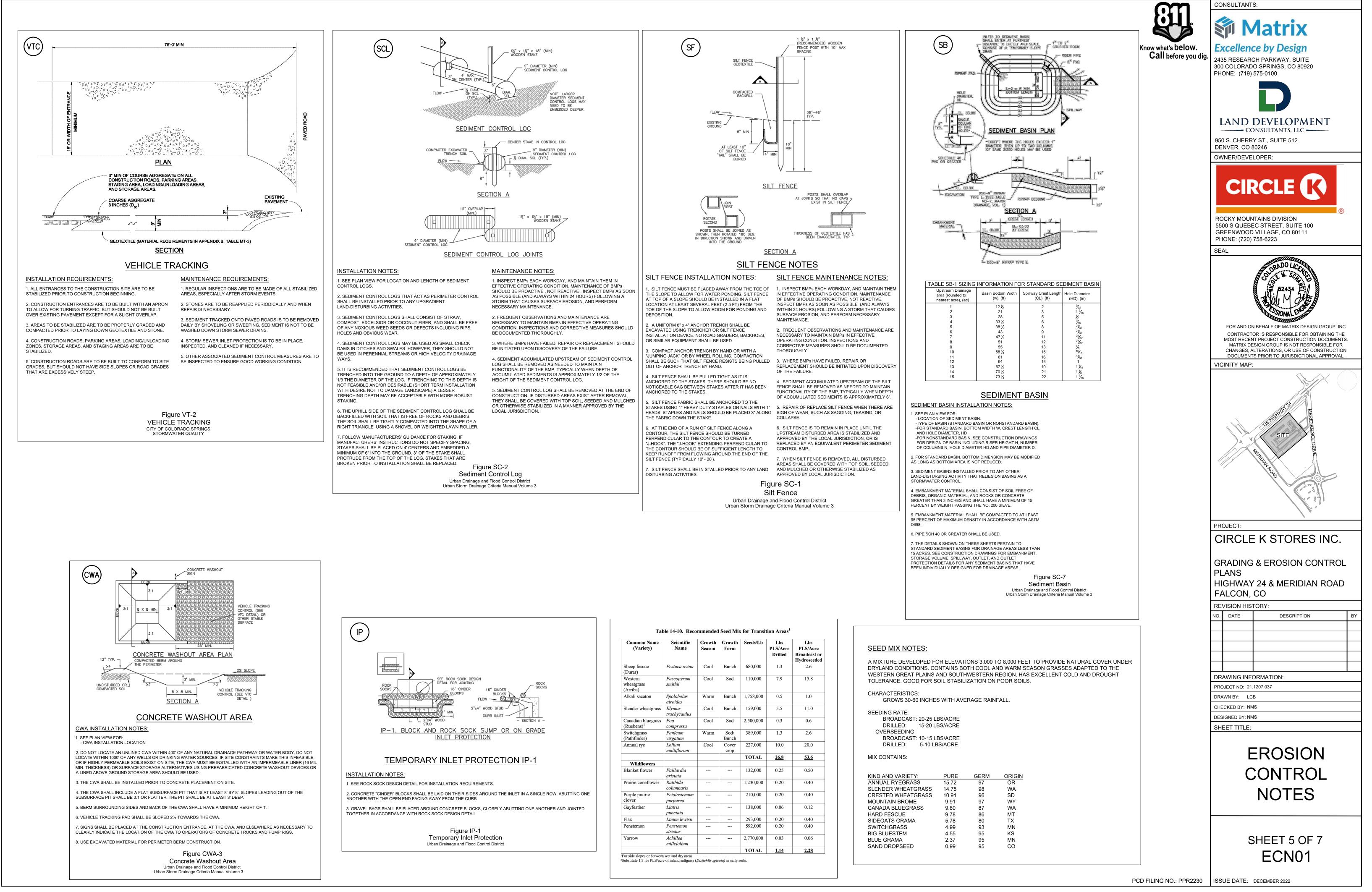
OFFSITE CONSTRUCTION LIMITS (SEE PCD FILE #VR-22-03)

1. ALL DRAINAGE SWALES SHALL HAVE A MINIMUM LONGITUDINAL SLOPE OF 0.5%, MINIMUM 1.5' DEPTH, AND MAXIMUM 3:1 SIDE SLOPES. 2. ALL EROSION CONTROL BLANKET SHALL BE INSPECTED 24-MONTHS AFTER INSTALLATION. EROSION CONTROL BLANKET MAY BE REQUIRED TO RE-INSTALLED PER MANUFACTURER SPECIFICATIONS. 3. CONTRACTOR TO USE SLOPE TRACKING OR EROSION CONTROL **BLANKET ON SLOPES 3:1 OR GREATER** 

	BMP SEQUENCING
INITIAL	SILT FENCE, CONSTRUCTION FENCE, VEHICLE TRACKING, TEMP STREAM CROSSINGS, CHECK DAMS
INTERIM / FINAL	SEDIMENT CONTROL LOGS, INLET PROTECTION, STOCKPILES, STAGING, EROSION CONTROL BLANKETS, SEEDING & MULCHING

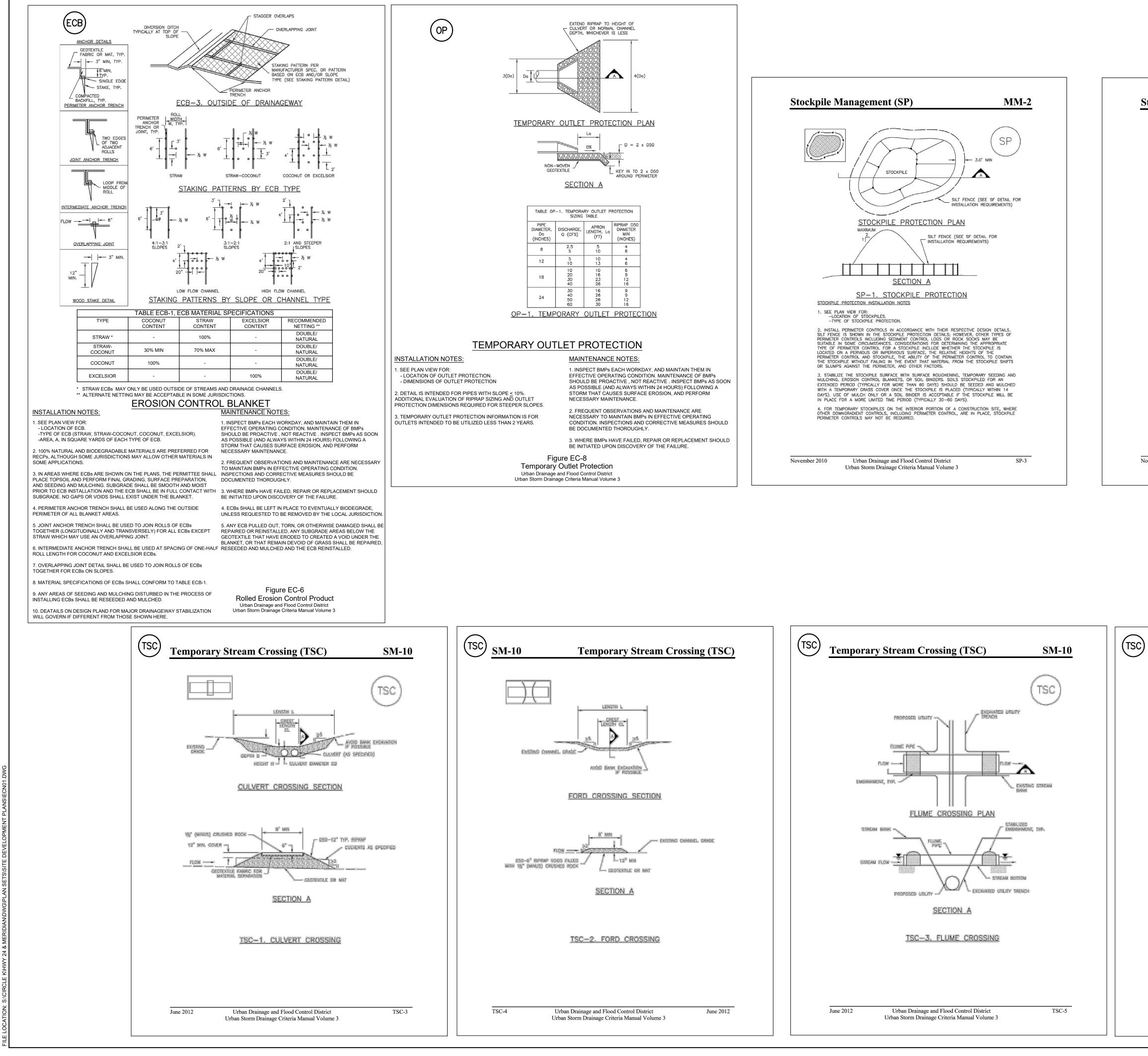


CONSULTANTS: Matrix Excellence by Design 2435 RESEARCH PARKWAY, SUITE 300 COLORADO SPRINGS, CO 80920 PHONE: (719) 575-0100 LAND DEVELOPMENT CONSULTANTS, LLC 950 S. CHERRY ST., SUITE 512 DENVER, CO 80246 OWNER/DEVELOPER: CIRCLE ROCKY MOUNTAINS DIVISION 5500 S QUEBEC STREET, SUITE 100 GREENWOOD VILLAGE, CO 80111 PHONE: (720) 758-6223 SEAL FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE MOST RECENT PROJECT CONSTRUCTION DOCUMENTS. MOST RECENT PROJECT CONSTRUCTION DOCUMENTS. MATRIX DESIGN GROUP IS NOT RESPONSIBLE FOR CHANGES, ALTERATIONS, OR USE OF CONSTRUCTION DOCUMENTS PRIOR TO JURISDICTIONAL APPROVAL. VICINITY MAP: PROJECT: CIRCLE K STORES INC. **GRADING & EROSION CONTROL** PLANS HIGHWAY 24 & MERIDIAN ROAD FALCON, CO **REVISION HISTORY:** NO. DATE DESCRIPTION DRAWING INFORMATION: PROJECT NO: 21.1207.037 DRAWN BY: LCB CHECKED BY: NMS DESIGNED BY: NMS SHEET TITLE: **INTERIM/FINAL GRADING &** EROSION CONTROL PLAN SHEET 4 OF 7 GEC02 PCD FILING NO.: PPR2230 ISSUE DATE: DECEMBER 2022



Common Name (Variety)	Scientific Name	Growth Season	Growth Form	Seeds/Lb	Lbs PLS/Acre Drilled	Lbs PLS/Acre Broadcast or Hydroseeded
Sheep fescue (Durar)	Festuca ovina	Cool	Bunch	680,000	1.3	2.6
Western wheatgrass (Arriba)	Pascopyrum smithii	Cool	Sod	110,000	7.9	15.8
Alkali sacaton	Spolobolus airoides	Warm	Bunch	1,758,000	0.5	1.0
Slender wheatgrass	Elymus trachycaulus	Cool	Bunch	159,000	5.5	11.0
Canadian bluegrass (Ruebens) <sup>1</sup>	Poa compressa	Cool	Sod	2,500,000	0.3	0.6
Switchgrass (Pathfinder)	Panicum virgatum	Warm	Sod/ Bunch	389,000	1.3	2.6
Annual rye	Lolium multiflorum	Cool	Cover crop	227,000	10.0	20.0
XX/11 1.01				TOTAL	<u>26.8</u>	<u>53.6</u>
Wildflowers Blanket flower	Faillardia aristata			132,000	0.25	0.50
Prairie coneflower	Ratibida columnaris			1,230,000	0.20	0.40
Purple prairie clover	Petalostemum purpurea			210,000	0.20	0.40
Gayfeather	Liatris punctata			138,000	0.06	0.12
Flax	Linum lewisii			293,000	0.20	0.40
Penstemon	Penstemon strictus			592,000	0.20	0.40
Yarrow	Achillea millefolium			2,770,000	0.03	0.06
				TOTAL	1.14	2.28

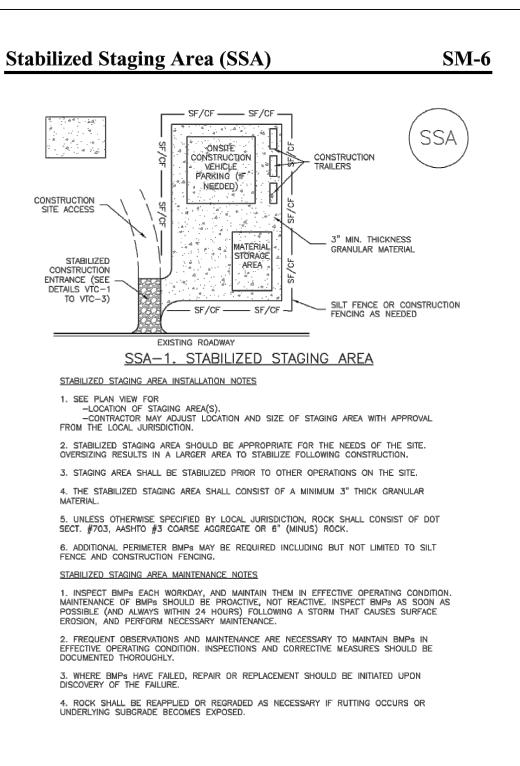
KIND AND VARIETY:	PUR
ANNUAL RYEGRASS	15.7
SLENDER WHEATGRASS	14.7
CRESTED WHEATGRASS	10.9
MOUNTAIN BROME	9.91
CANADA BLUEGRASS	9.80
HARD FESCUE	9.78
SIDEOATS GRAMA	5.78
SWITCHGRASS	4.99
BIG BLUESTEM	4.55
BLUE GRAMA	2.37
SAND DROPSEED	0.99





CONSULTANTS:

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



Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3

November 2010

**SM-10** 

TSC-6

SSA-3

TEMPORARY STREAM CROSSING INSTALLATION NOTES.

- SEE PLAN NEW FOR: -LOCATIONS OF TEMPORARY STREAM CROSSINGS. -STREAM CROSSING TYPE (FORD, CULVERT, OR FLUME). -FOR FORD CROSSING: LENGTH (L), CREST LENGTH (CL), AND DEPTH (D). -FOR CULVERT CROSSING: LENGTH (L), CREST LENGTH (CL), CROSSING HEIGHT (H), DEPTH (D), CULVERT DIAMETER (CD), AND NUMBER, TYPE AND CLASS OR GAUGE OF CULVERTS.

**Temporary Stream Crossing (TSC)** 

2. TEMPORARY STREAM CROSSING DIMENSIONS, D50, AND NUMBER OF CULVERTS INDICATED (FOR CULVERT CROSSING) SHALL BE CONSIDERED MINIMUM DIMENSIONS; ENCINEER MAY ELECT TO INSTALL LARGER FACILITIES, ANY DAMAGE TO ISTREAM CROSSING OR EXISTING STREAM CHANNEL DURING BASEFLOW OR FLOOD EVENTS SHALL BE PROMPTLY REPAIRED.

3. SEE MAJOR DRAINAGE CHAPTER FOR RIPRAP GRADATIONS. 4. WHERE FAILURE OF A STREAM CROSSING CAN RESULT IN SIGNIFICANT DAMAGE OR HARM IT MUST BE DESIGNED BY A STRUCTURAL ENGINEER.

TEMPORARY\_STREAM\_GROSSING\_MAINTENANCE\_NOTES INSPECT BMPS EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION... MAINTENANCE OF BMPS SHOULD BE PROACTIVE, NOT REACTIVE, INSPECT BMPS AS ISOON 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.

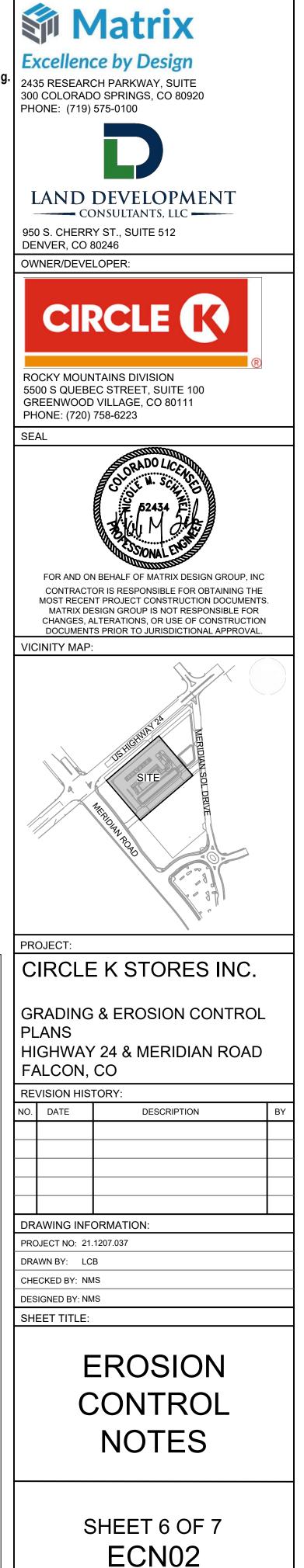
3. WHERE BMPS HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. REMOVE SEDIMENT ACCUMULATED UPSTREAM OF CROSSING AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE CROSSING.

5... STREAM CROSSINGS ARE TO REMAIN IN PLACE UNTIL, INC LONGER NEEDED AND SHALL BE REMOVED PRIOR TO THE END OF CONSTRUCTION. 6. WHEN STREAM CROSSINGS ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED AND COVERED WITH GEOTEXTILE OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

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

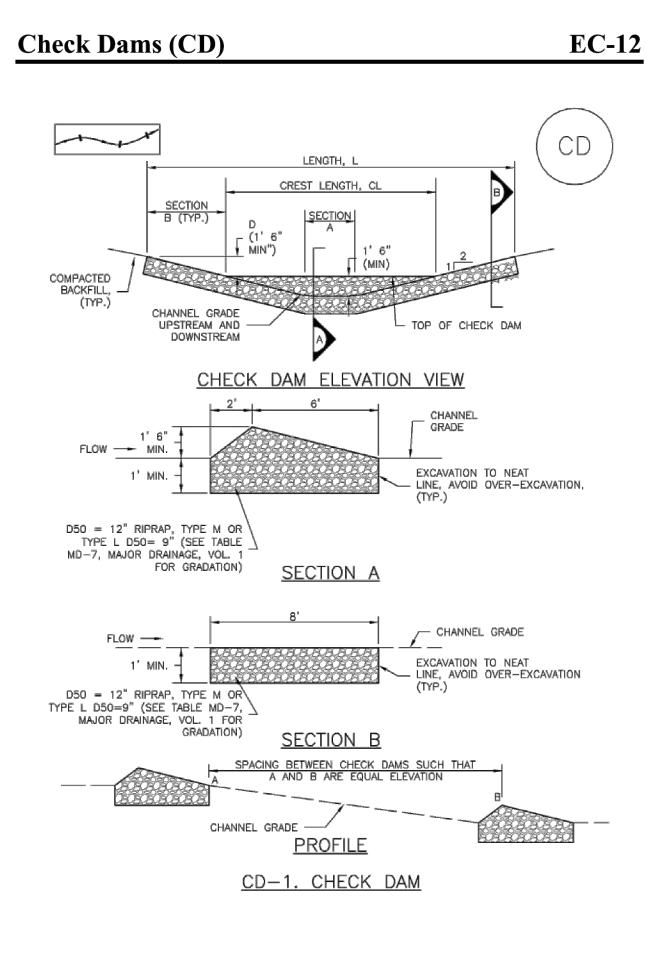
(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND CITY OF AURORA, COLORADO (VG. DSWC), INDI AVAILABLE IN



Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3

June 2012

PCD FILING NO.: PPR2230 ISSUE DATE: DECEMBER 2022



## November 2010 Urban Drainage and Flood Control District

Urban Storm Drainage Criteria Manual Volume 3

# **EC-12**

(CD

# **Check Dams (CD)**

CD-3

CHECK DAM INSTALLATION NOTES 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. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY. 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE. 4. SEDIMENT ACCUMULATED UPSTREAM OF THE CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS WITHIN 1/2 OF THE HEIGHT OF THE CREST. 5. CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION. 6. WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACKFILL. DISTURBED AREA SHALL BE SEEDED AND MULCHED AND COVERED WITH GEOTEXTILE OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION. (DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD) NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

# Mulching (MU)

## 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

and crimped.

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.

sites. Consider the following:

June 2012

## **EC-4**

- have to be weighted to afford proper soil penetration.
- above).
- should be avoided.

- 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.

November 2010

MU-2

A variety of mulches can be used effectively at construction

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

Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3

# Mulching (MU)

MU-1

• 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

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

• 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.

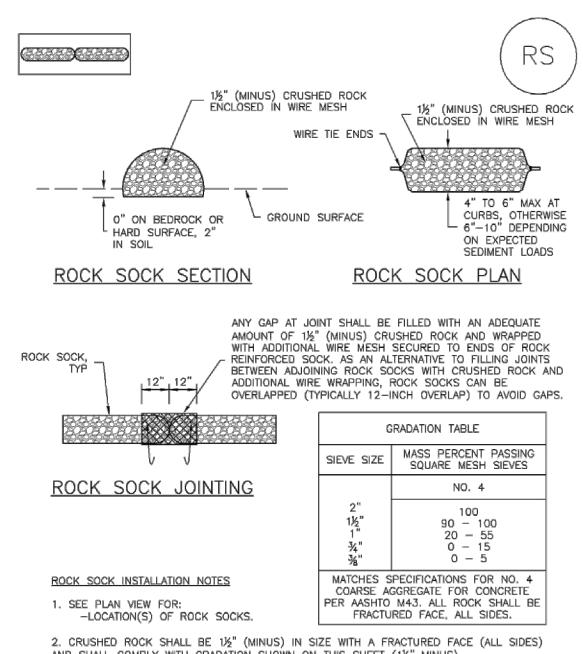
 Hydraulic mulching consists of wood cellulose fibers mixed with water and a tackifying agent and should be applied at a rate of no less than 1,500 pounds per acre (1,425 lbs of fibers mixed with at least 75 lbs of tackifier) with a hydraulic mulcher. For steeper slopes, up to 2000 pounds per acre may 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

• 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

SC-5



AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET (12/2" MINUS). 3. WIRE MESH SHALL BE FABRICATED OF 10 GAGE POULTRY MESH, OR EQUIVALENT, WITH A MAXIMUM OPENING OF 1/2", RECOMMENDED MINIMUM ROLL WIDTH OF 48" 4. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF SOCKS. 5. SOME MUNICIPALITIES MAY ALLOW THE USE OF FILTER FABRIC AS AN ALTERNATIVE TO WIRE MESH FOR THE ROCK ENCLOSURE. RS-1. ROCK SOCK PERIMETER CONTROL

RS-2

Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3

## **Rock Sock (RS)**

## ROCK SOCK 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 SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, OR DAMAGED BEYOND REPAIR.

5. SEDIMENT ACCUMULATED UPSTREAM OF ROCK SOCKS SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE ROCK SOCK. 6. ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS

STABILIZED AND APPROVED BY THE LOCAL JURISDICTION. 7. WHEN ROCK SOCKS ARE 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, 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 ROCK SOCK INSTALLATION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY OTHER SIMILAR PROPRIETARY PRODUCTS ON THE MARKET. UDFCD NEITHER NDORSES NOR DISCOURAGES USE OF PROPRIETARY PROTECTION PRODUCTS; 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.

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



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

# **Rock Sock (RS)**

November 2010

SC-5



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

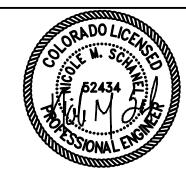
CONSULTANTS: Excellence by Design 2435 RESEARCH PARKWAY, SUITE 300 COLORADO SPRINGS, CO 80920 PHONE: (719) 575-0100



LAND DEVELOPMENT ----- CONSULTANTS, LLC ------

950 S. CHERRY ST., SUITE 512 **DENVER, CO 80246 OWNER/DEVELOPER** 

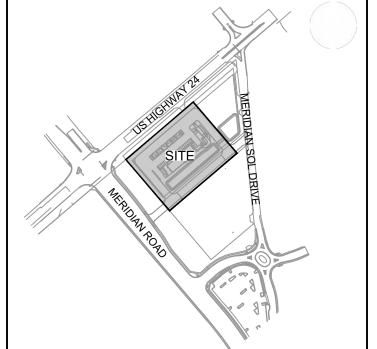
ROCKY MOUNTAINS DIVISION 5500 S QUEBEC STREET, SUITE 100 GREENWOOD VILLAGE, CO 80111 PHONE: (720) 758-6223



FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE MOST RECENT PROJECT CONSTRUCTION DOCUMENTS. MATRIX DESIGN GROUP IS NOT RESPONSIBLE FOR CHANGES, ALTERATIONS, OR USE OF CONSTRUCTION DOCUMENTS PRIOR TO JURISDICTIONAL APPROVAL.

VICINITY MAP:

SEAL



PROJECT: CIRCLE K STORES INC.

GRADING & EROSION CONTROL PLANS

**HIGHWAY 24 & MERIDIAN ROAD** FALCON, CO

RE	REVISION HISTORY:							
NO.	DATE	DESCRIPTION	BY					
DR	AWING INF	ORMATION:						
PRC	DJECT NO: 21	1207.037						
DRA	DRAWN BY: LCB							
CHE	CHECKED BY: NMS							

DESIGNED BY: NMS SHEET TITLE:



SHEET 7 OF 7 ECN03

PCD FILING NO.: PPR2230 ISSUE DATE: DECEMBER 2022

RS-3