

**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.

BY: Nicole Schanel DATE: 03/01/2023

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 \_\_\_\_\_ DATE \_\_\_\_\_  
COUNTY ENGINEER / ECM ADMINISTRATOR

**OWNER/DEVELOPER:**

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

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

**CONTACT LIST**

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

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

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

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

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

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

**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

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

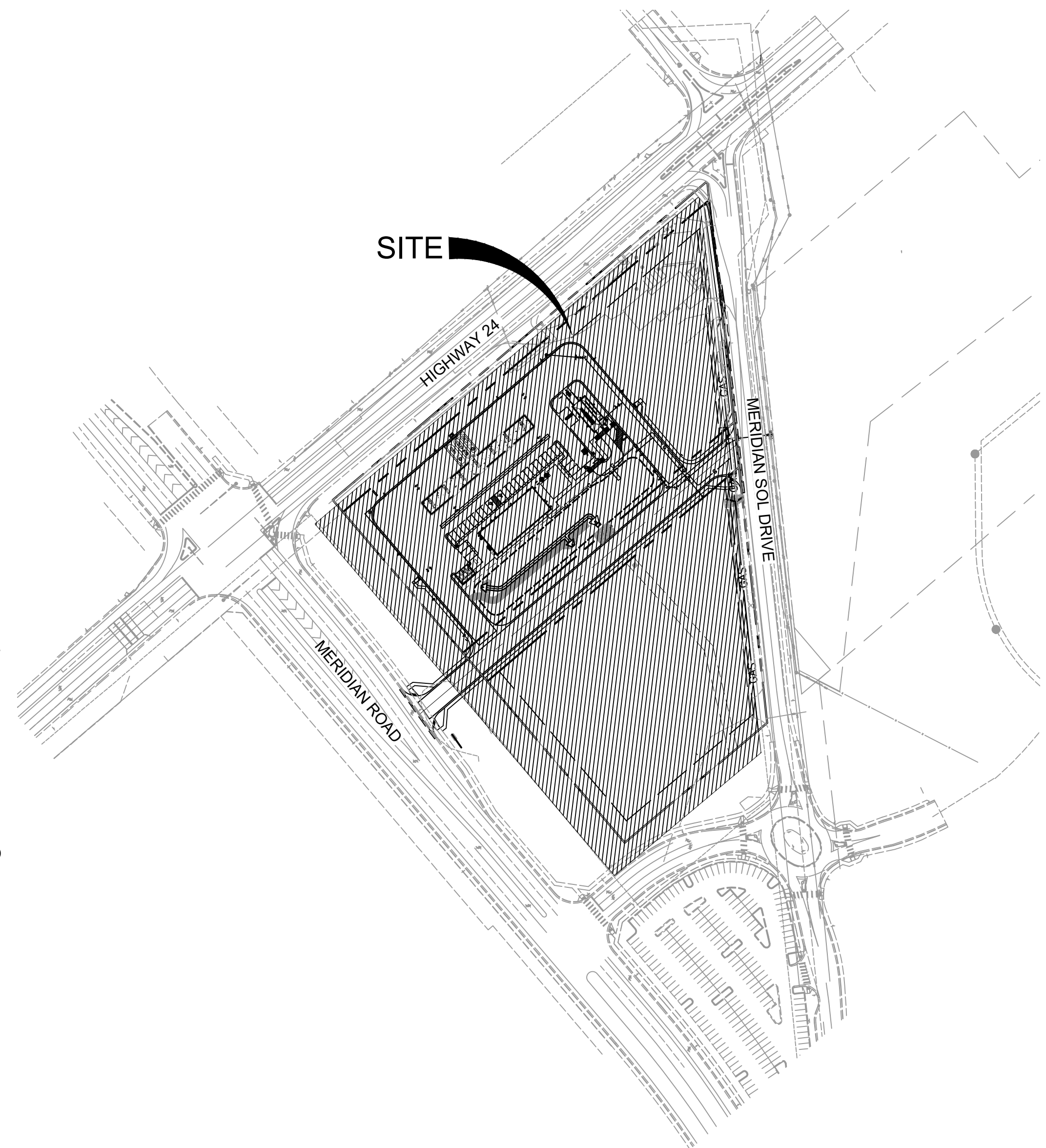
**GAS**  
COLORADO SPRINGS UTILITIES  
7710 DURANT DRIVE  
COLORADO SPRINGS, COLORADO 80920  
TIM BENEDICT  
PHONE: (719) 668-3574

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

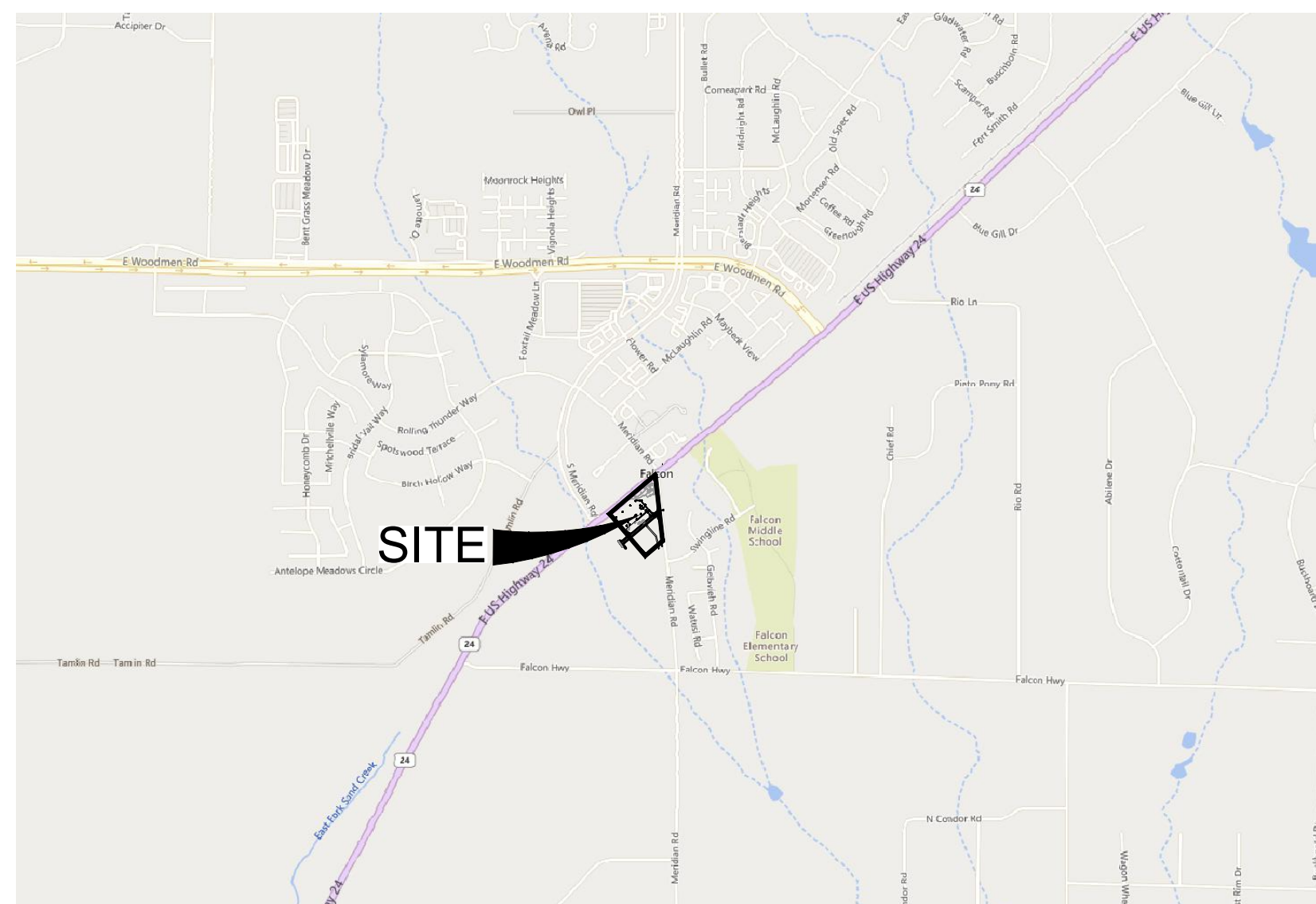
**WATER & SANITARY**  
WOODMEN HILLS METRO DISTRICT  
8046 EASTONVILLE ROAD  
FALCON, CO 80831  
PHONE: (719) 495-2500

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

EL PASO COUNTY, CO  
JANUARY 2023



**SITE MAP**  
1" = 150'



**VICINITY MAP**  
1" = 2,000'

SHEET INDEX		
SHEET TITLE	SHEET DESCRIPTION	SHEET NUMBER
TS01	TITLE SHEET	1
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**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 \_\_\_\_\_

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.



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

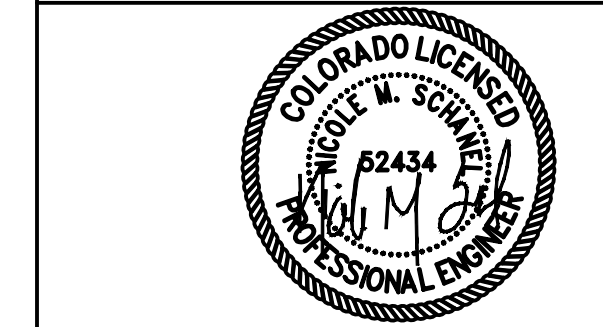
**LAND DEVELOPMENT**  
CONSULTANTS, LLC  
950 S. CHERRY ST., SUITE 512  
DENVER, CO 80246

OWNER/DEVELOPER:



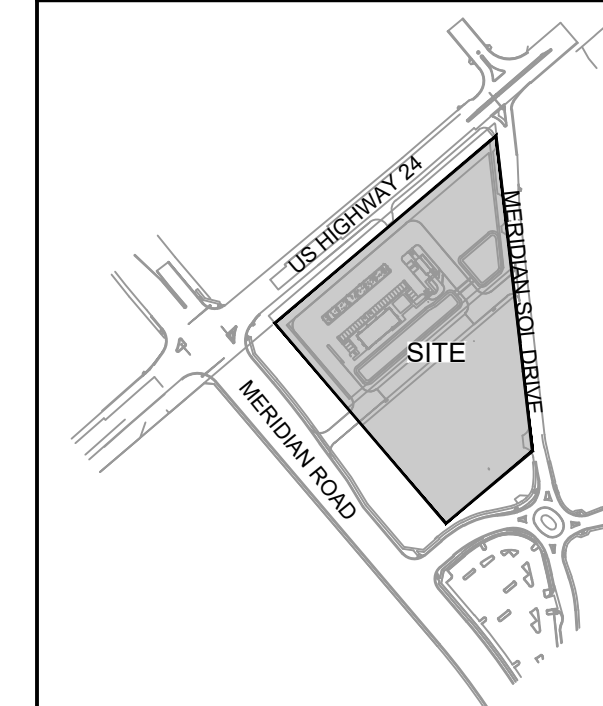
ROCKY MOUNTAINS DIVISION  
5500 S QUEBEC STREET, SUITE 100  
GREENWOOD VILLAGE, CO 80111  
PHONE: (720) 758-6223

SEAL



FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC  
CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE MOST RECENT PROJECT CONSTRUCTION DOCUMENTS. 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	BY

DRAWING INFORMATION:

PROJECT NO.: 21.1207.037  
DRAWN BY: LCB  
CHECKED BY: NMS  
DESIGNED BY: NMS

SHEET TITLE:

**TITLE SHEET**

**SHEET 1 OF 7**  
**TS01**

FILE LOCATION: S:\CIRCLE K HWY 24 & MERIDIAN\DWG\PLAN SET\SITE DEVELOPMENT PLANS\TS01\_GEC.DWG



**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 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 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.
- 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.
- 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.

- DURING DEWATERING OPERATIONS OF UNCONTAMINATED GROUND WATER MAY BE DISCHARGED ON SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.
- EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.
- WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. CONTROL MEASURES MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
- TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
- THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, SOIL, AND SAND THAT MAY ACCUMULATE IN ROADS, STORM DRAINS AND OTHER DRAINAGE CONVEYANCE SYSTEMS AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.
- 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.
- 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.
- BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ON-SITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.
- NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
- OWNER/DEVELOPER AND THEIR AGENTS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE, DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (1041, NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND OTHER LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, LOCAL, OR COUNTY AGENCIES, THE MOST RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
- PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
- A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
- THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY TERRACON CONSULTANTS, INC., DATED NOVEMBER 30, 2018 AND SHALL BE CONSIDERED A PART OF THESE PLANS.
- AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE (1) ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:  
  
COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT  
WATER QUALITY CONTROL DIVISION  
WQCD - PERMITS  
4300 CHERRY CREEK DRIVE SOUTH  
DENVER, CO 80246-1530  
ATTN: PERMITS UNIT

**NPDES NOTES:**

- 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.
- 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 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.
- 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.
- 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.
- 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 CONTROL MEASURES ARE IMPLEMENTED.
- THE CONTRACTOR SHALL LOCATE, INSTALL, AND MAINTAIN ALL EROSION CONTROL AND WATER QUALITY "BEST MANAGEMENT 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.
- 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 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.
- 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 ACCEPTABLE.
- SOILS THAT WILL BE STOCKPILED FOR MORE THAN 30 DAYS SHALL BE MULCHED AND SEEDED WITH A TEMPORARY OR PERMANENT GRASS 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.
- 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 PERMIT UPON COMPLETION OF THE PROJECT REQUIRES NOTIFICATION OF AND APPROVAL BY THE CITY OF COLORADO SPRINGS.
- 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.
- 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.
- 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 FOR EL PASO COUNTY**

SOIL ID NO.	SOIL TYPE	HYDROLOGIC CLASSIFICATION
9	BLAKELAND-FLUVAQUENTIC HAPLAQUOLLS	A
19	COLUMBINE GRAVELLY SANDY LOAM (0%-3% SLOPES)	A

**TIMING**

ANTICIPATED STARTING AND COMPLETION TIME PERIOD OF SITE GRADING:  
OCT 2022 THRU FEBRUARY 2023

EXPECTED DATE ON WHICH THE FINAL STABILIZATION WILL BE COMPLETED:  
FEBRUARY 2024

**AREAS**

TOTAL AREA: 5.00 ACRES

**RECEIVING WATERS**

NAME OF RECEIVING WATERS  
CHICO CREEK (ULTIMATE)

**ENGINEER'S NOTES:**

THE EXISTING VEGETATION CONSISTS OF NATIVE GRASSES AND SCRUB OAK WITH AREAS OF FARM TILLAGE.

**ABBREVIATIONS**

AD	ALGEBRAIC DIFFERENCE	MID	MIDDLE or MIDPOINT
ASSY	ASSEMBLY	MIN	MINIMUM
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS	MJ	MECHANICAL JOINT
APPROX	APPROXIMATE or APPROXIMATELY	MSL	MEAN SEA LEVEL
AVE	AVENUE	NC	NORMAL CROWN
AVG	AVERAGE	NIC	NOT IN CONTRACT
B/C	BACK OF CURB	NO	NUMBER
† or BL	BASELINE	NOM	NOMINAL
BLVD	BOULEVARD	NTS	NOT TO SCALE
BTM	BOTTOM	OC	ON CENTER
CI	CAST IRON	O/S	OFFSET
CEN	CENTER	P	PROPOSED
† or CL	CENTERLINE	PC	POINT OF CURVATURE
CFS	CUBIC FEET PER SECOND	PCC	POINT OF COMPOUND CURVE
CLR	CLEAR	PCR	POINT OF CURB RETURN
CMP	CORRUGATED METAL PIPE	PE	PLAIN END
CONC	CONCRETE	PIE	PUBLIC IMPROVEMENT EASEMENT
CONST	CONSTRUCTION	PGL	PROFILE GRADE LINE
CONT	CONTINUOUS	† or P/L	PROPERTY LINE
DIA	DIAMETER	PRC	POINT OF REVERSE CURVE
DN	DOWN	PT	POINT OF TANGENCY
DWG	DRAWING	PVC	POINT OF VERTICAL CURVE or POLYVINYL CHLORIDE
EA	EACH	PVI	POINT OF VERTICAL INTERSECTION
EGL	ENERGY GRADE LINE	PVMT	PAVEMENT
ELEV or EL	ELEVATION	PVT	POINT OF VERTICAL TANGENT
ELL	ELBOW	R OR RAD	RADIUS
ESMT	EASEMENT	RC	REVERSE CROWN
EW	EACHWAY	RCP	REINFORCED CONCRETE PIPE
EX or EXIST	EXISTING	RED	REDUCER
FES	FLARED END SECTION	REF	REFERENCE
FIN	FINISHED	REINF	REINFORCING
† or FL	FLOWLINE	REQ	REQUIRED
FLG	FLANGE	REV	REVISION
FT	FOOT / FEET	ROW	RIGHT-OF-WAY
FRP	FIBERGLASS REINFORCED PIPE	RT	RIGHT
GAL	GALLON	SCH	SCHEDULE
GALV	GALVANIZED	SD	STORM SEWER
GAU	GAUGE (MATERIAL)	SQ	SQUARE
GV	GATE VALVE	ST	STREET
GW	GROUNDWATER	STA	STATION
HBP	HOT BITUMINOUS PAVEMENT	STD	STANDARD
HERCP	HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE	STL	STEEL
HGL	HYDRAULIC GRADE LINE	SS OR SAN	SANITARY SEWER
HP	HIGH POINT	SW OR S/W	SIDEWALK
HORIZ	HORIZONTAL	TAN	TANGENT
HCL	HORIZONTAL CONTROL LINE	TB	THRUST BLOCK
HR	HOUR	TBC	TOP BACK OF CURB
INV	INVERT	TFC	TOP FACE OF CURB
K	VERTICAL CURVE FACTOR	THD	THREADED
LBS	POUNDS	THK	THICKNESS
LF	LINEAR FEET	TYP	TYPICAL
LN	LANE	UG	UNDERGROUND
LP	LOW POINT	UTIL	UTILITY
LS	LANDSCAPING	VC	VERTICAL CURVE
LT	LEFT	VERT	VERTICAL
MAX	MAXIMUM	W	WIDTH
MFR	MANUFACTURER	W	WITH
MH	MANHOLE		

**SYMBOLS**

---	PROPOSED CENTERLINE	--- UT ---	EXISTING UNDERGROUND UTILITY
----	EXISTING FENCE	--- UE ---	EXISTING UNDERGROUND UTILITY
-----	RIGHT OF WAY/PROPERTY BOUNDARY	---	EXISTING WATER
- - - - -	EXISTING EASEMENT	---	EXISTING WATER
=====	PROPERTY LINE/TRACT A BOUNDARY	--- W ---	EXISTING WATER
=====	EXISTING CURB & GUTTER	--- H ---	EXISTING HYDRANT
=====	PROPOSED CURB & GUTTER	--- V ---	EXISTING WATER VALVE
----- 5635	EXISTING CONTOUR	--- SS ---	EXISTING SANITARY
----- 5630	PROPOSED CONTOUR	=====	PROPOSED STORM
		=====	PROPOSED STORM FLARED END SECTION (FES)
		=====	PROPOSED STORM INLET



**CONSULTANTS:**

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DENVER, CO 80246

**OWNER/DEVELOPER:**

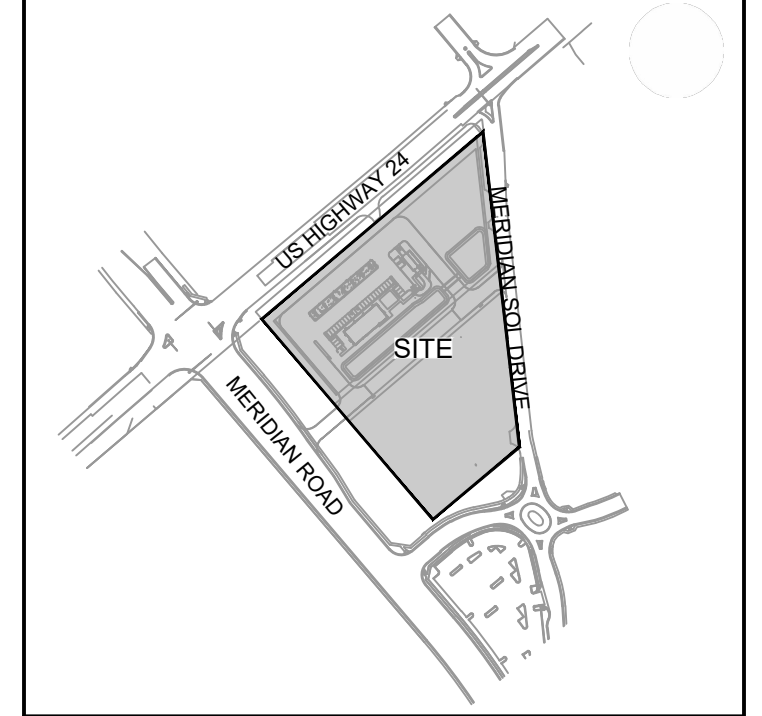
**CIRCLE K**

ROCKY MOUNTAINS DIVISION  
5500 S QUEBEC STREET, SUITE 100  
GREENWOOD VILLAGE, CO 80111  
PHONE: (720) 758-8223

**SEAL**

COLORADO LICENSED PROFESSIONAL ENGINEER  
52434

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**PROJECT:**

**CIRCLE K STORES INC.**

**GRADING & EROSION CONTROL PLANS**

**HIGHWAY 24 & MERIDIAN ROAD**

**FALCON, CO**

**REVISION HISTORY:**

NO.	DATE	DESCRIPTION	BY

**DRAWING INFORMATION:**

PROJECT NO: 21.1207.037  
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CHECKED BY: NMS  
DESIGNED BY: NMS

**SHEET TITLE:**

**GENERAL NOTES**

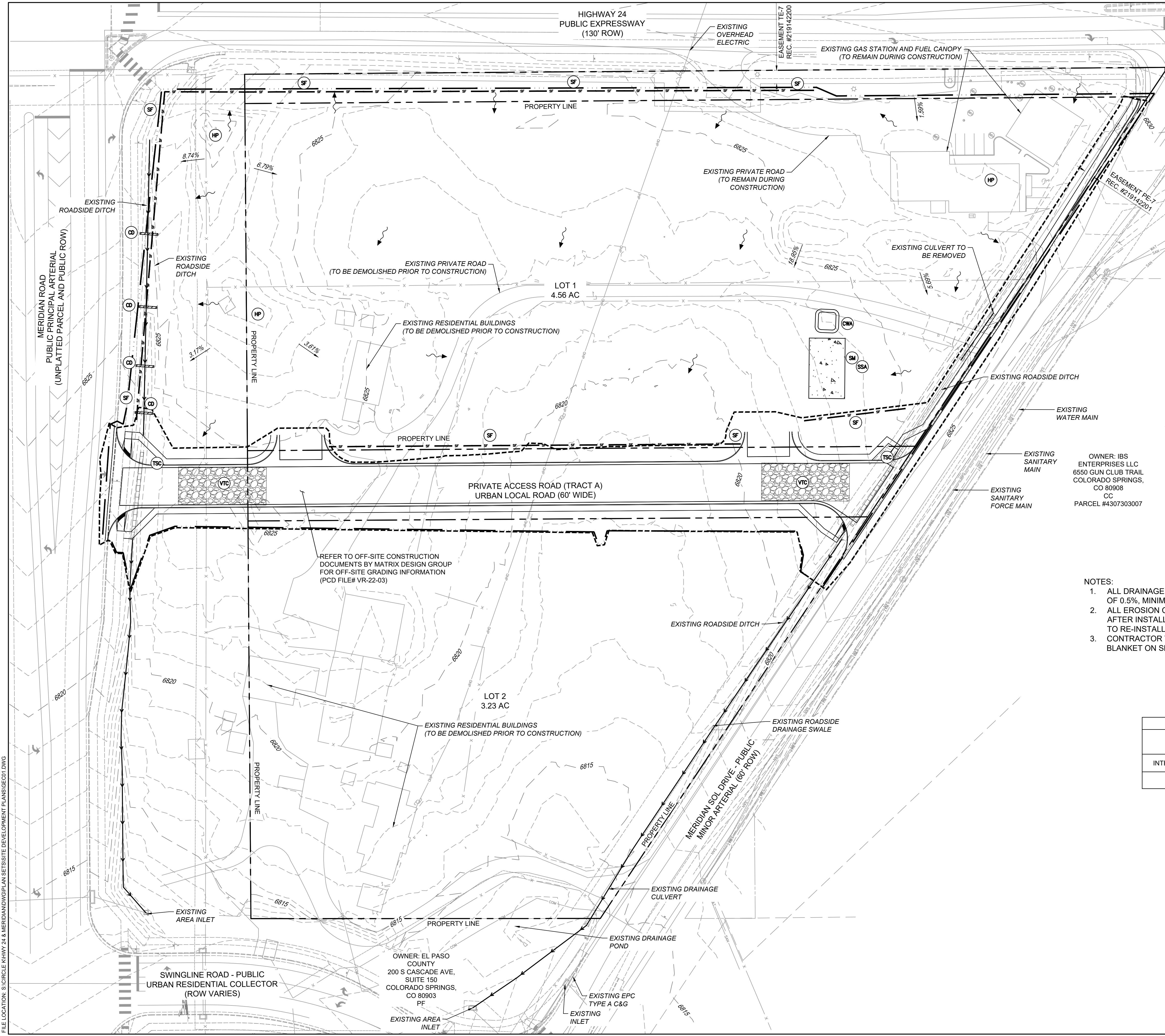
**SHEET 2 OF 7**

**GN01**

PCD FILING NO.: PPR2230  
ISSUE DATE: JANUARY 2023

FILE LOCATION: S:\CIRCLE K HWY 24 & MERIDIAN\GN01\PLAN SET\SITE DEVELOPMENT\PLANS\GN01\_GEC.DWG





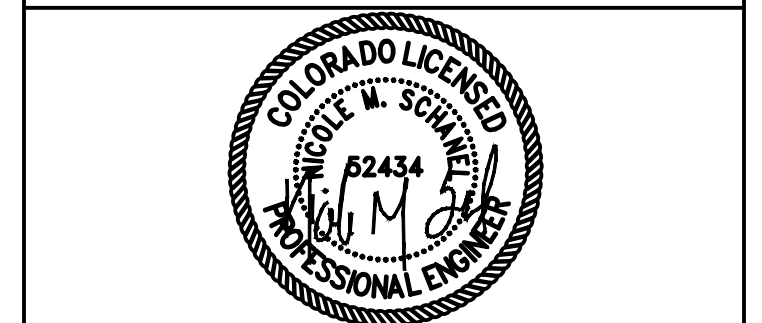
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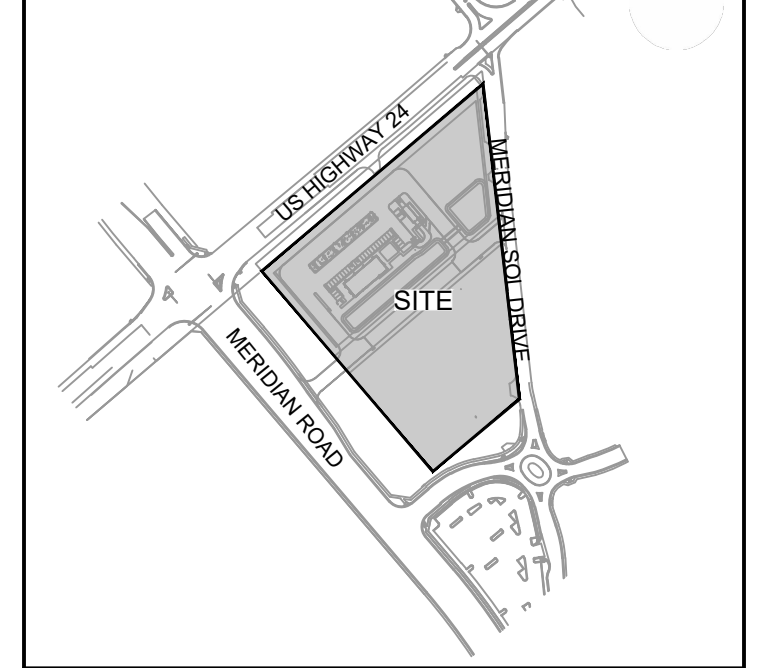


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VICINITY MAP:



PROJECT:  
**CIRCLE K STORES INC.**

GRADING & EROSION CONTROL PLANS  
 HIGHWAY 24 & MERIDIAN ROAD  
 FALCON, CO

REVISION HISTORY:

NO.	DATE	DESCRIPTION	BY

DRAWING INFORMATION:  
 PROJECT NO: 21.1207.037  
 DRAWN BY: LCB  
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 SHEET TITLE:

# INITIAL GRADING & EROSION CONTROL PLAN

SHEET 3 OF 7  
**GEC01**

### EROSION CONTROL LEGEND

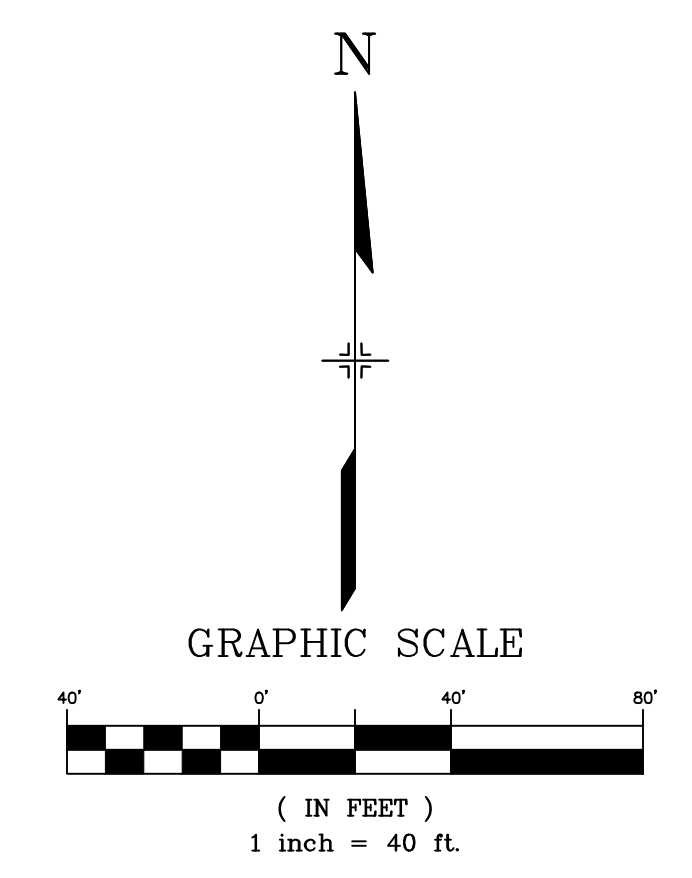
- SF SILT FENCE
- SCL SEDIMENT CONTROL LOG
- CD CHECK DAM
- VTC VEHICLE TRACKING CONTROL
- TSC TEMPORARY STREAM CROSSING
- CWA CONCRETE WASHOUT
- SM STOCKPILE MANAGEMENT / STABILIZED STAGING AREA
- CIP CULVERT INLET PROTECTION / OUTLET PROTECTION
- HP LP HIGH POINT / LOW POINT
- 5975 EXISTING CONTOURS
- 2% 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)

OWNER: IBS ENTERPRISES LLC  
 6550 GUN CLUB TRAIL  
 COLORADO SPRINGS, CO 80908  
 CC  
 PARCEL #4307303007

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

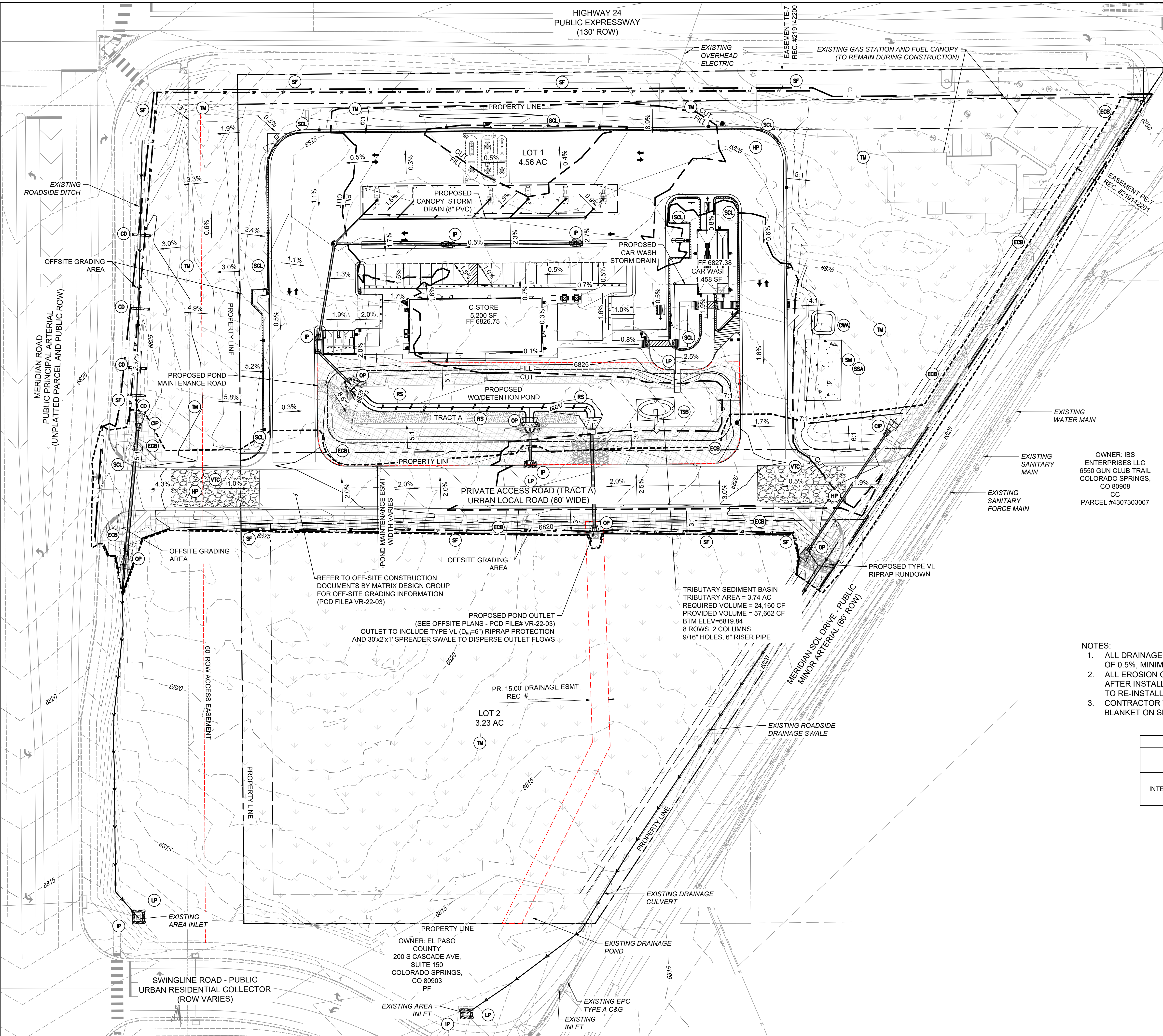
BMP SEQUENCING

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



FILE LOCATION: S:\CIRCLE K HWY 24 & MERIDIAN\DWG\PLAN\SET\SITE DEVELOPMENT\PLANS\GEC01.DWG





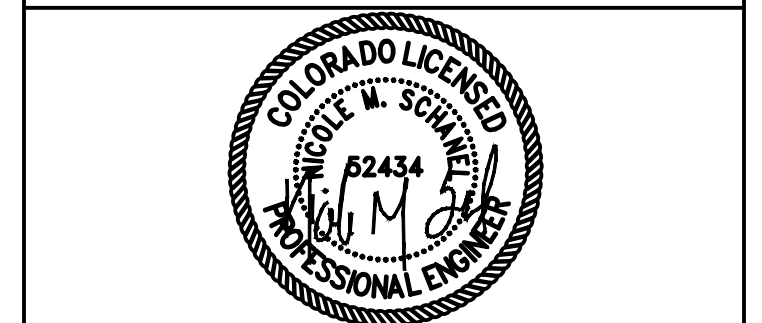
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 Excellence by Design  
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 DENVER, CO 80246

OWNER/DEVELOPER:

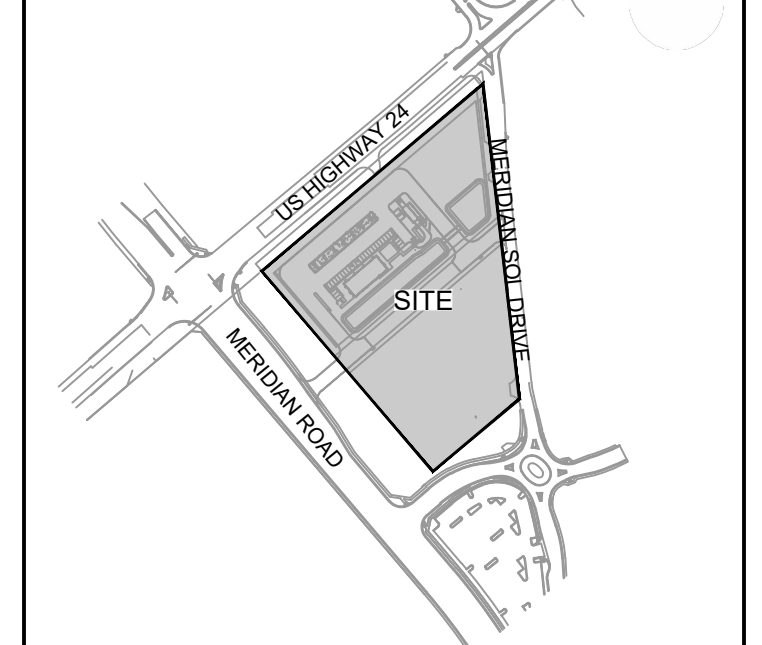


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VICINITY MAP:



PROJECT:  
**CIRCLE K STORES INC.**

GRADING & EROSION CONTROL PLANS  
 HIGHWAY 24 & MERIDIAN ROAD  
 FALCON, CO

REVISION HISTORY:

NO.	DATE	DESCRIPTION	BY

DRAWING INFORMATION:  
 PROJECT NO: 21.1207.037  
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 CHECKED BY: NMS  
 DESIGNED BY: NMS

# INTERIM/FINAL GRADING & EROSION CONTROL PLAN

SHEET 4 OF 7  
 GEC02

ISSUE DATE: JANUARY 2023

### EROSION CONTROL LEGEND

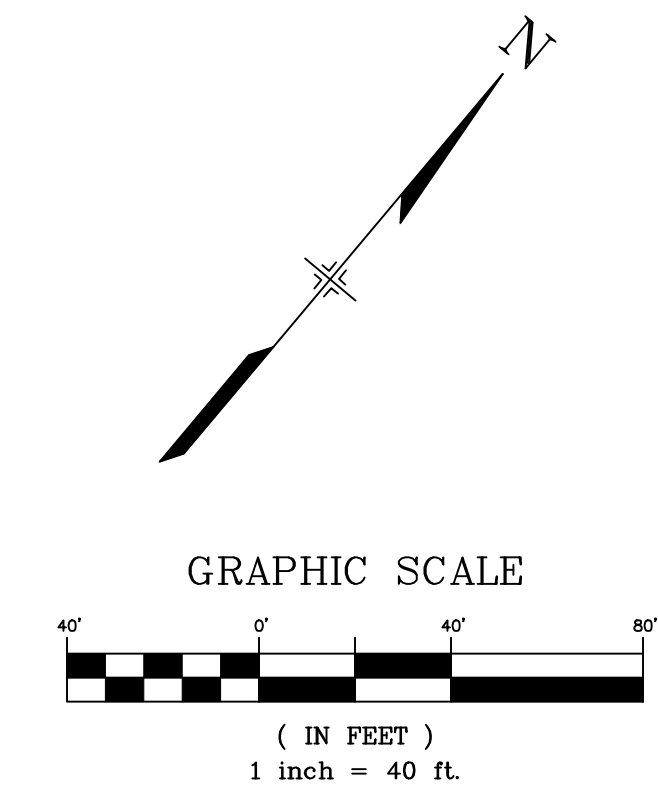
- ST** SLOPE TRACKING
- SR** SURFACE ROUGHENING
- SF** SILT FENCE
- ECB** EROSION CONTROL BLANKET
- TM** TEMPORARY MULCHING AND SEEDING
- SCL** SEDIMENT CONTROL LOG
- CD** CHECK DAM
- RS** ROCK SOCK
- VTC** VEHICLE TRACKING CONTROL
- TSB** TEMPORARY SEDIMENT BASIN
- CWA** CONCRETE WASHOUT
- SSA** STOCKPILE MANAGEMENT / STABILIZED STAGING AREA
- CIP** CULVERT INLET PROTECTION / OUTLET PROTECTION
- IP** INLET PROTECTION
- HP** HIGH POINT / LOW POINT
- LP** HIGH POINT / LOW POINT
- 7050** PROPOSED CONTOURS
- 5975** EXISTING CONTOURS
- 4:1** DRAINAGE SWALE SLOPE LABEL
- OVERLAND FLOW** OVERLAND FLOW
- LIMITS OF DISTURBANCE/ CONSTRUCTION SITE BOUNDARY** LIMITS OF DISTURBANCE/ CONSTRUCTION SITE BOUNDARY
- PROPERTY LINE** PROPERTY LINE
- OVERFLOW ROUTE** OVERFLOW ROUTE
- CUT / FILL LINE** CUT / FILL LINE
- PROPOSED EASEMENT** PROPOSED EASEMENT
- OFFSITE CONSTRUCTION LIMITS (SEE PCD FILE #VR-22-03)** OFFSITE CONSTRUCTION LIMITS (SEE PCD FILE #VR-22-03)

OWNER: IBS ENTERPRISES LLC  
 6550 GUN CLUB TRAIL  
 COLORADO SPRINGS, CO 80908  
 CC  
 PARCEL #4307303007

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

BMP SEQUENCING

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



PCD FILING NO.: PPR2230

FILE LOCATION: S:\CIRCLE K HWY 24 & MERIDIAN\DWG\PLAN\SET\SITE DEVELOPMENT\PLANS\GEC02.DWG



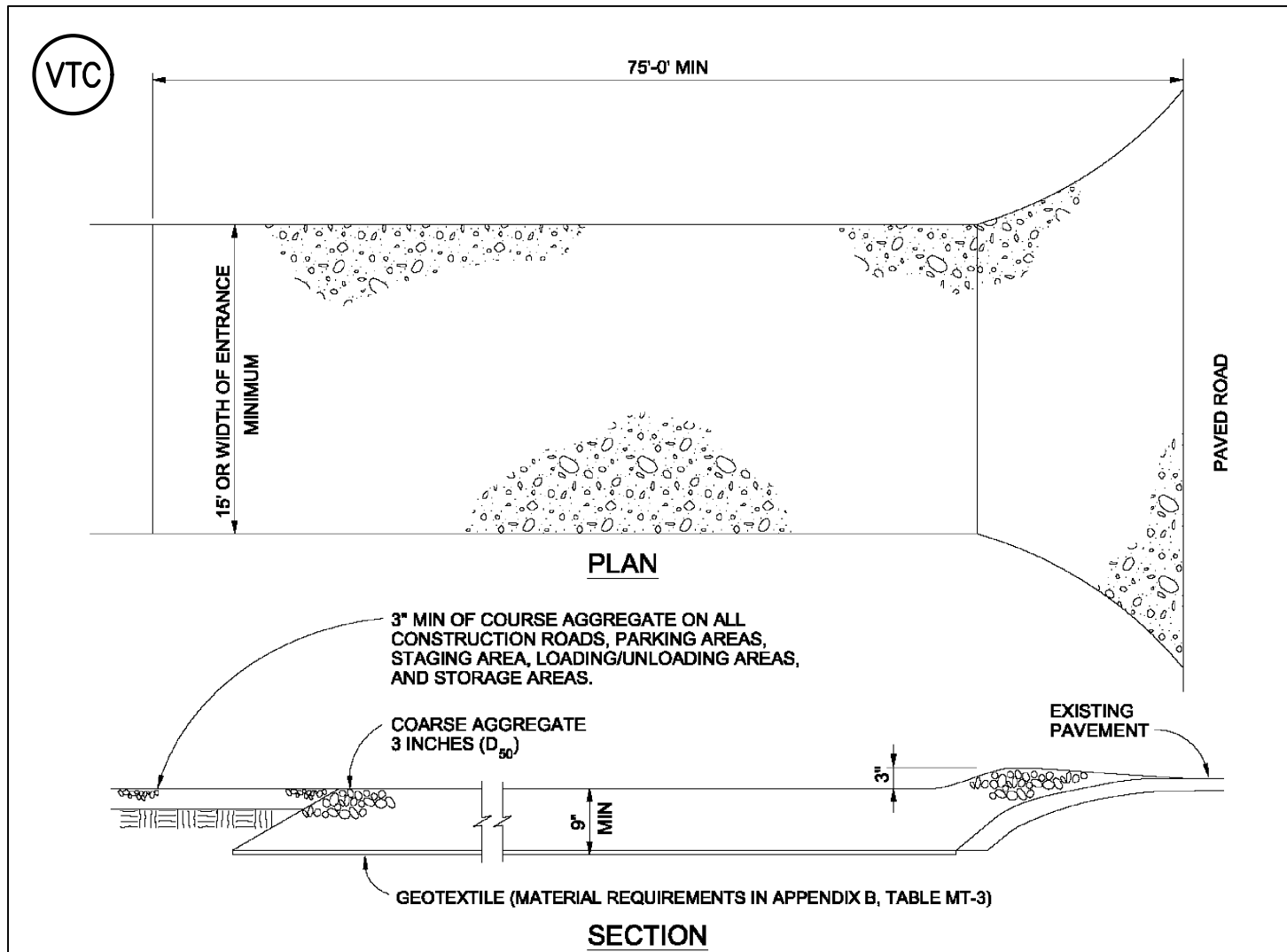


Figure VT-2  
VEHICLE TRACKING  
CITY OF COLORADO SPRINGS  
STORMWATER QUALITY

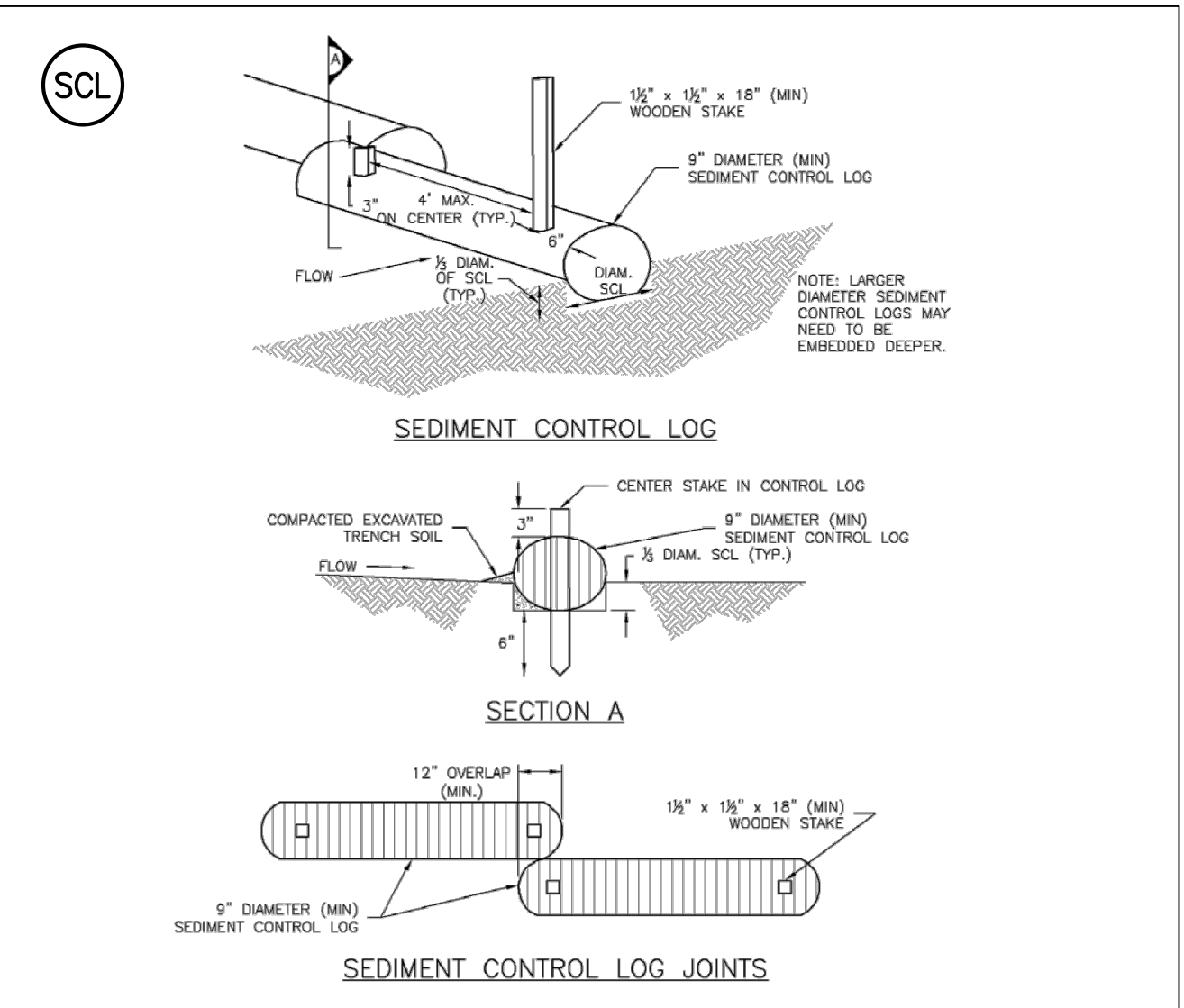


Figure SC-2  
Sediment Control Log  
Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3

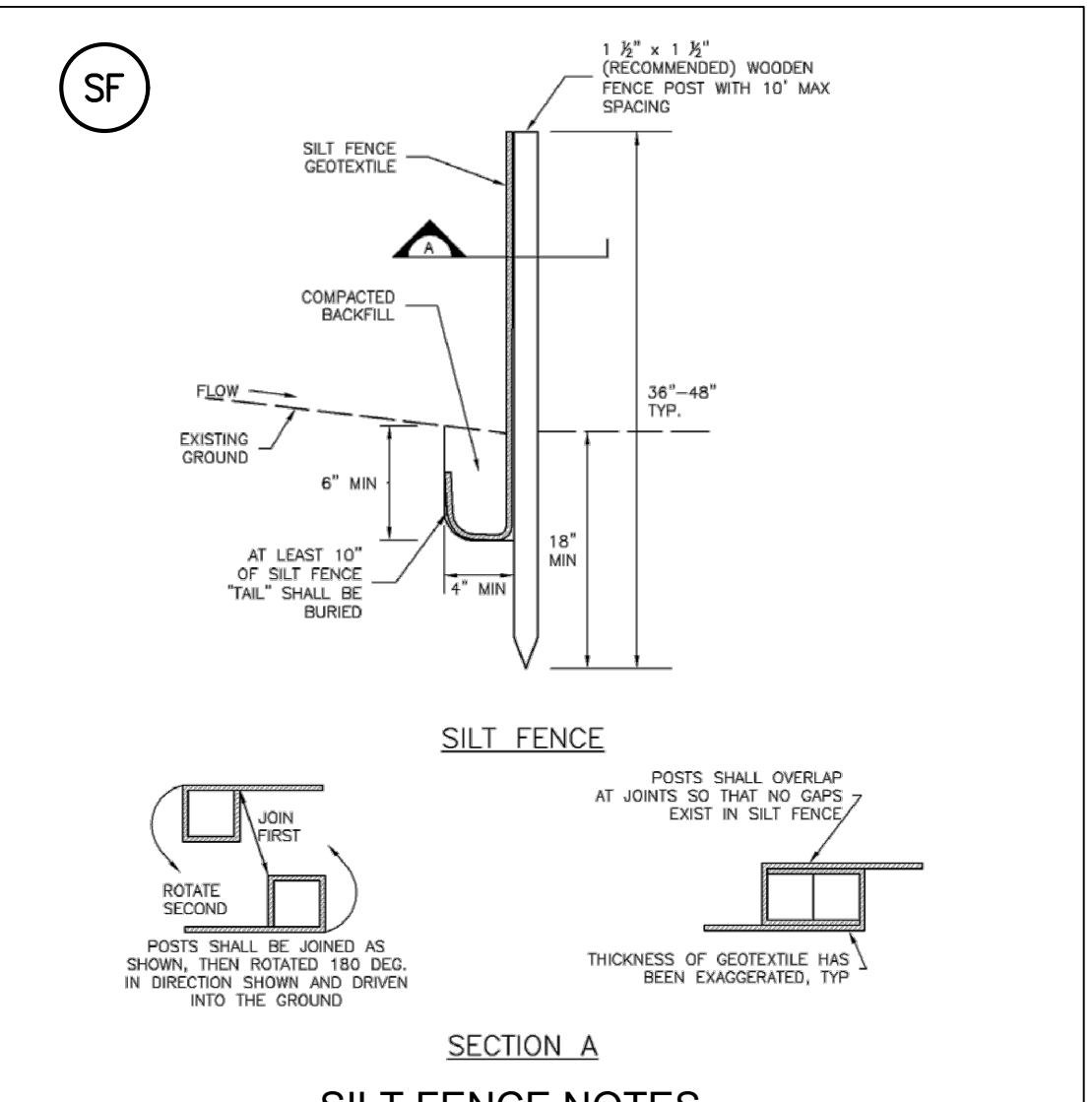


Figure SC-1  
Silt Fence  
Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3

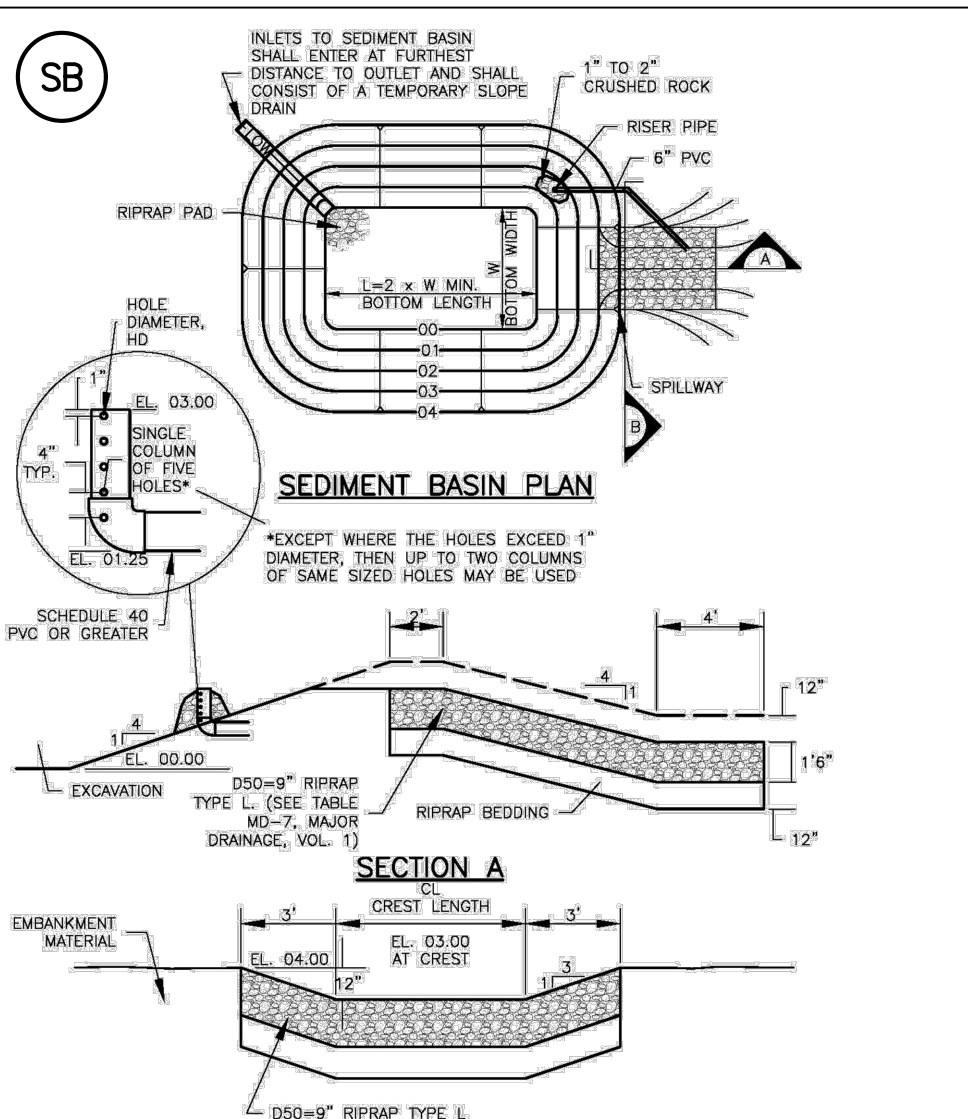


Figure SB-1  
Sediment Basin  
Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3

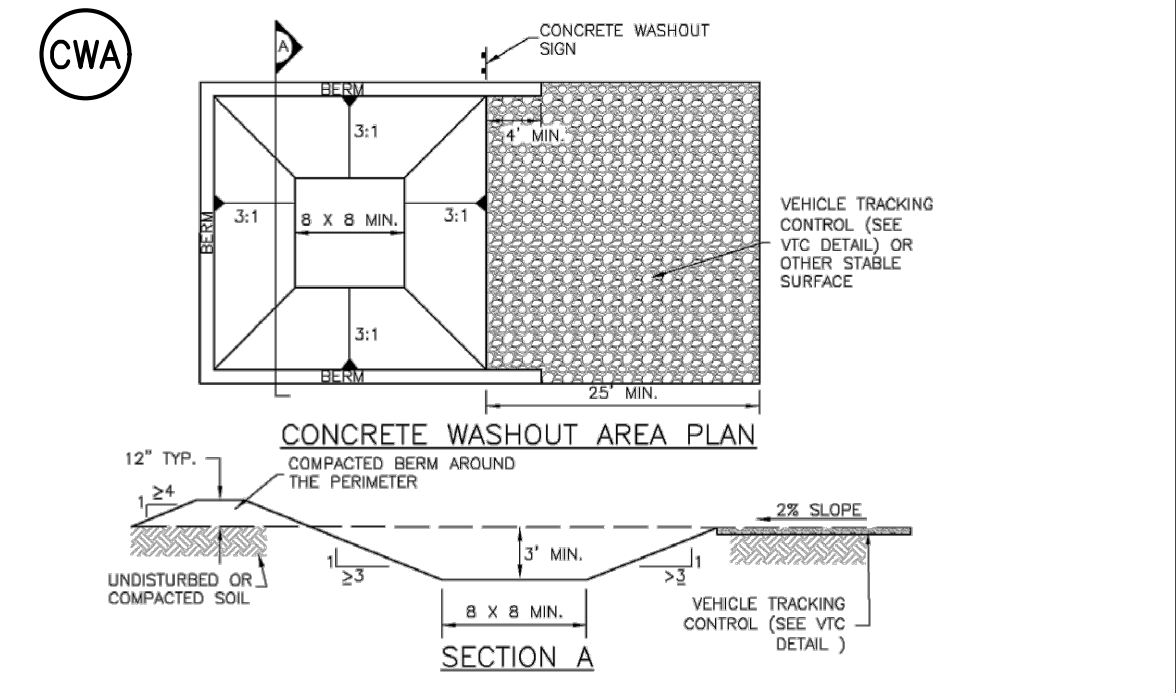


Figure CWA-3  
Concrete Washout Area  
Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3

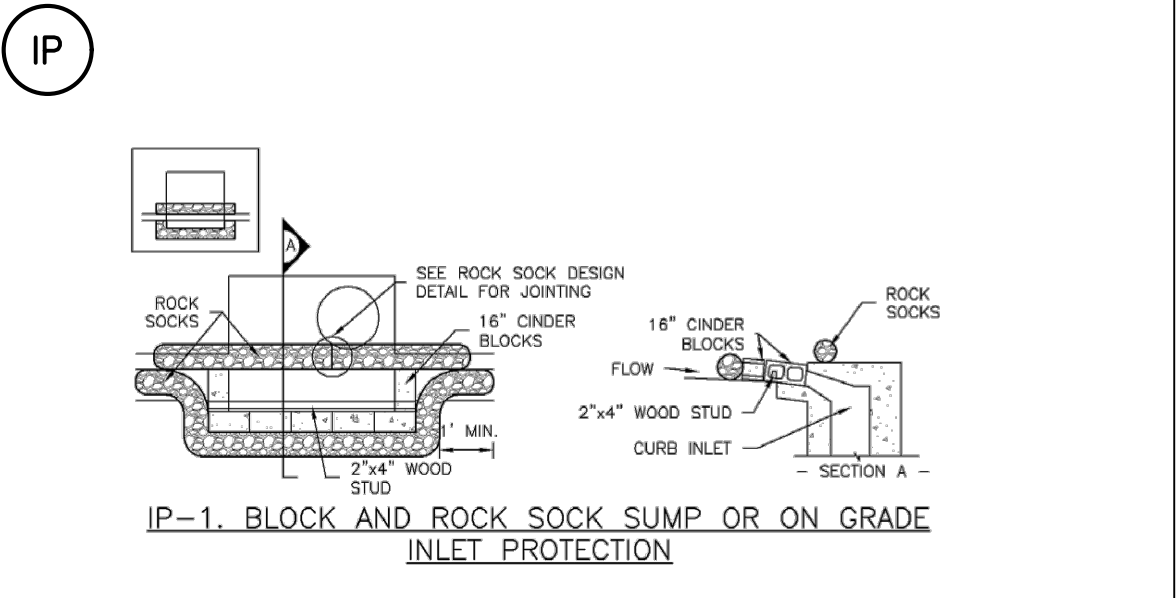


Figure IP-1  
Temporary Inlet Protection  
Urban Drainage and Flood Control District

Table 14-10. Recommended Seed Mix for Transition Areas<sup>1</sup>

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

<sup>1</sup>For side slopes or between wet and dry areas.  
<sup>2</sup>Substitute 1.7 lbs PLS/Acre of inland saltgrass (*Dactylis spicata*) in salty soils.

**SEED MIX NOTES:**

A MIXTURE DEVELOPED FOR ELEVATIONS 3,000 TO 8,000 FEET TO PROVIDE NATURAL COVER UNDER DRYLAND CONDITIONS. CONTAINS BOTH COOL AND WARM SEASON GRASSES ADAPTED TO THE WESTERN GREAT PLAINS AND SOUTHWESTERN REGION. HAS EXCELLENT COLD AND DROUGHT TOLERANCE. GOOD FOR SOIL STABILIZATION ON POOR SOILS.

**CHARACTERISTICS:**  
GROWS 30-60 INCHES WITH AVERAGE RAINFALL.

**SEEDING RATE:**  
BROADCAST: 20-25 LBS/ACRE  
DRILLED: 15-20 LBS/ACRE

**OVERSEEDING:**  
BROADCAST: 10-15 LBS/ACRE  
DRILLED: 5-10 LBS/ACRE

**MIX CONTAINS:**

KIND AND VARIETY:	PURE	GERM	ORIGIN
ANNUAL RYEGRASS	15.72	97	OR
SLENDER WHEATGRASS	14.75	98	WA
CRESTED WHEATGRASS	10.91	96	SD
MOUNTAIN BROME	9.91	97	WY
CANADA BLUEGRASS	9.80	87	WA
HARD FESCUE	9.78	86	MT
SIDE-OATS GRAMA	5.78	80	TX
SWITCHGRASS	4.99	93	MN
BIG BLUESTEM	4.55	95	KS
BLUE GRAMA	2.37	95	MO
SAND DROPSOED	0.99	95	CO

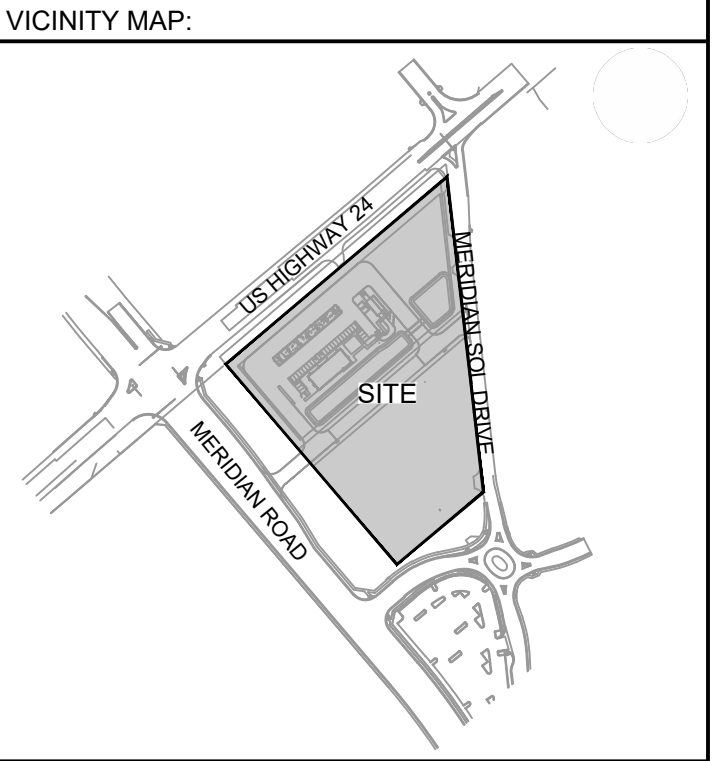
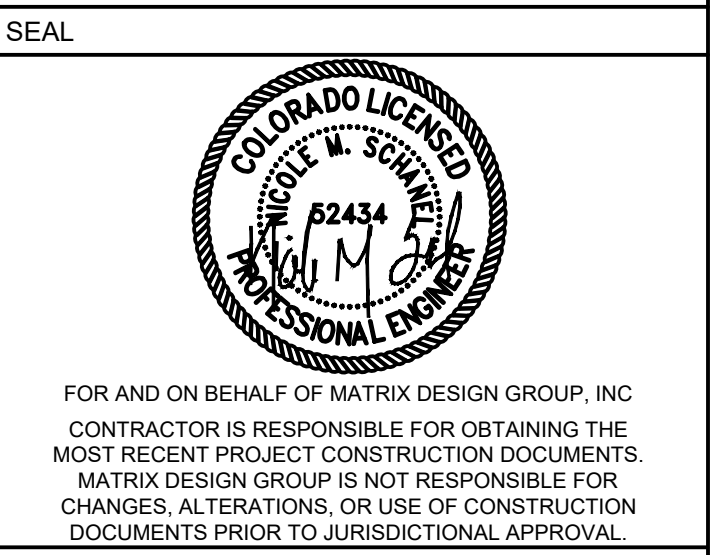


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PROJECT:  
**CIRCLE K STORES INC.**  
GRADING & EROSION CONTROL PLANS  
HIGHWAY 24 & MERIDIAN ROAD  
FALCON, CO

REVISION HISTORY:

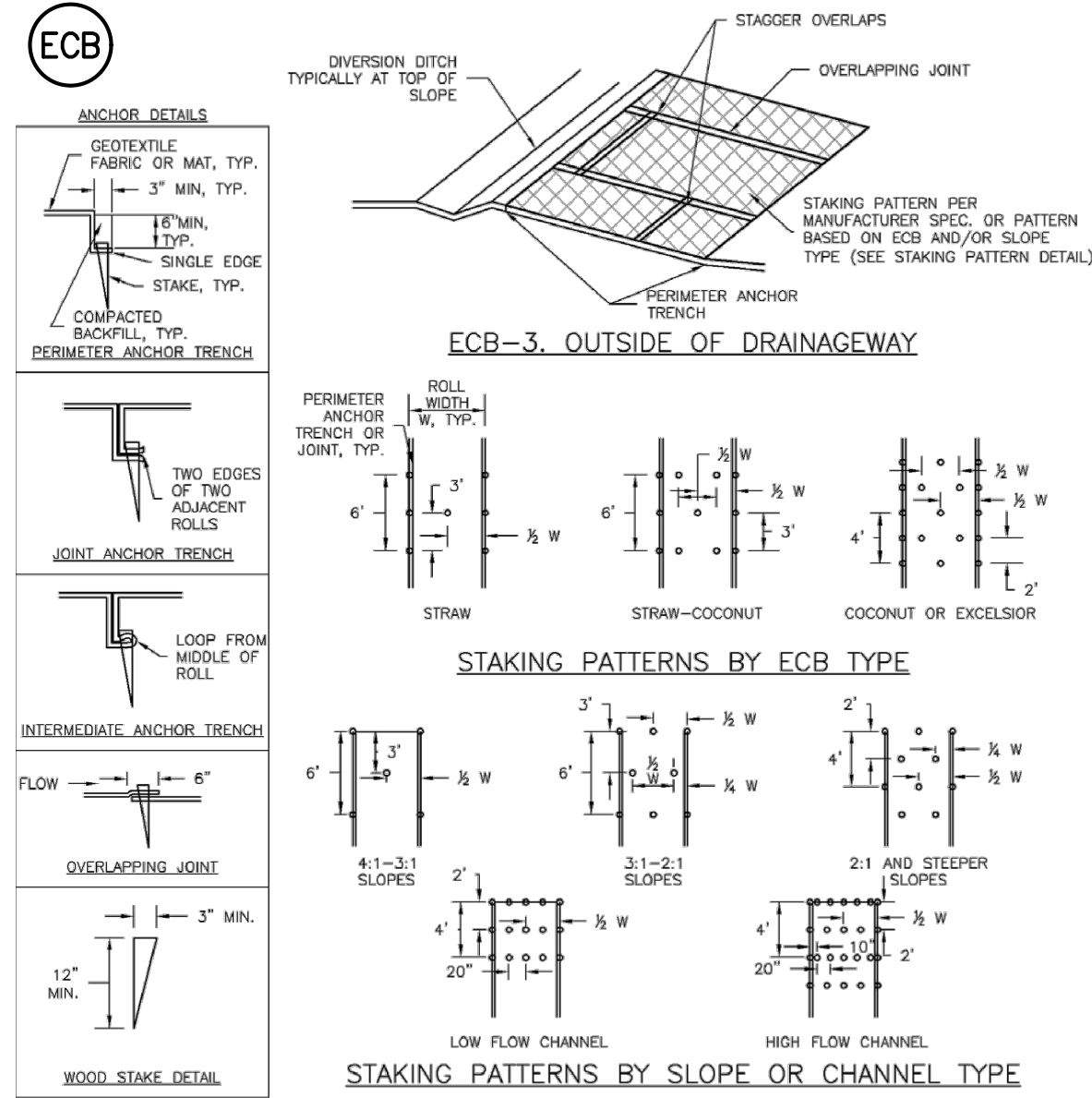
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DRAWING INFORMATION:  
PROJECT NO: 21.1207.037  
DRAWN BY: LCB  
CHECKED BY: NMS  
DESIGNED BY: NMS  
SHEET TITLE:

**EROSION CONTROL NOTES**

SHEET 5 OF 7  
ECN01





TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING*
STRAW	-	100%	-	DOUBLE/NATURAL
STRAW-COCONUT	30% MIN	70% MAX	-	DOUBLE/NATURAL
COCONUT	100%	-	-	DOUBLE/NATURAL
EXCELSIOR	-	-	100%	DOUBLE/NATURAL

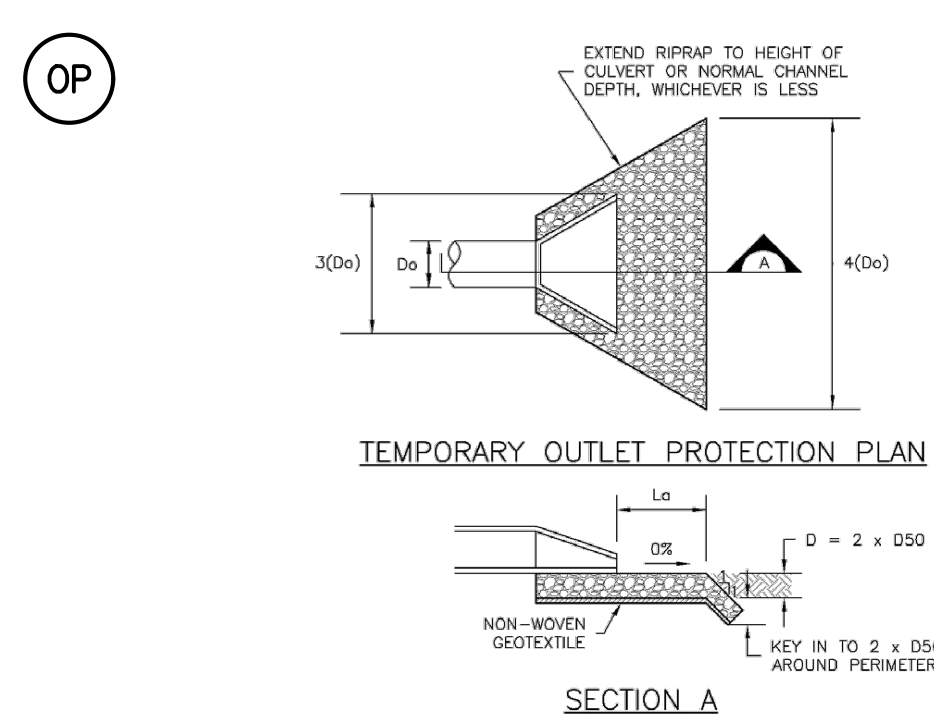
**INSTALLATION NOTES:**

- SEE PLAN VIEW FOR:
  - LOCATION OF ECB
  - TYPE OF ECB (STRAW, STRAW-COCONUT, COCONUT, EXCELSIOR)
  - AREA A, IN SQUARE YARDS OF EACH TYPE OF ECB
- 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR RECPs, ALTHOUGH SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.
- 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.
- PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.
- 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.
- INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE-HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs.
- OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES.
- MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB-1.
- ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBs SHALL BE RESEED AND MULCHED.
- DETAILS ON DESIGN PLAND FOR MAJOR DRAINAGEWAY STABILIZATION WILL GOVERN IF DIFFERENT FROM THOSE SHOWN HERE.

**MAINTENANCE NOTES:**

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ECBs SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE, UNLESS REQUESTED TO BE REMOVED BY THE LOCAL JURISDICTION.
- ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEED AND MULCHED AND THE ECBs REINSTALLED.

Figure EC-6  
Rolled Erosion Control Product  
Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3



PIPE DIAMETER, D <sub>p</sub> (INCHES)	DISCHARGE, Q (CFS)	APRON LENGTH, L <sub>a</sub> (FT)	RRIPRAP DIAMETER MIN (INCHES)
8	2.5	5	4
	5	10	6
12	5	10	4
	10	12	6
18	10	10	6
	20	16	9
	30	22	12
	40	26	16
24	30	16	9
	40	26	9
	50	26	12
	60	30	16

**TEMPORARY OUTLET PROTECTION**

**INSTALLATION NOTES:**

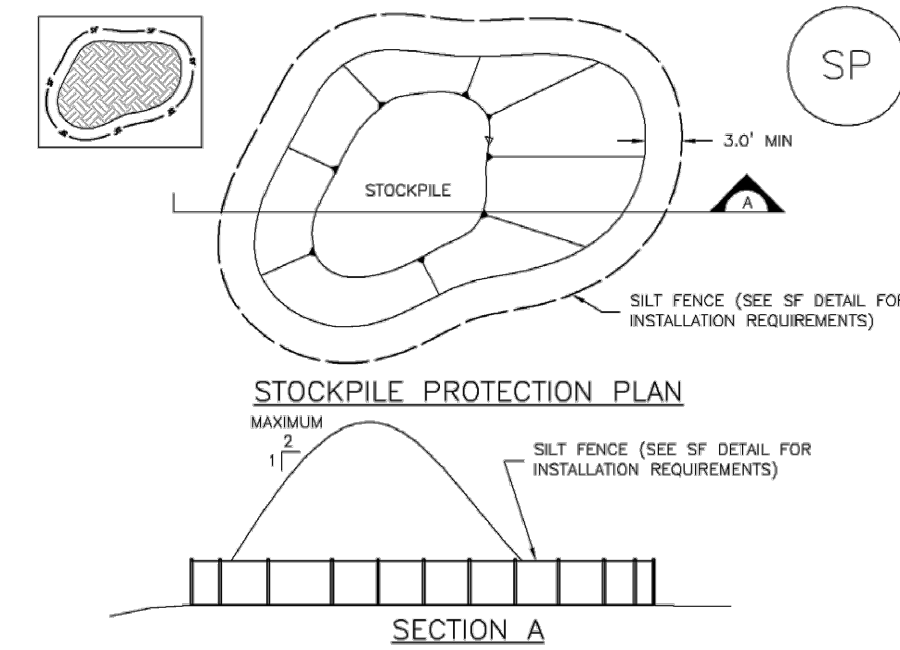
- SEE PLAN VIEW FOR:
  - LOCATION OF OUTLET PROTECTION
  - DIMENSIONS OF OUTLET PROTECTION
- DETAIL IS INTENDED FOR PIPES WITH SLOPE  $\leq 10\%$ . ADDITIONAL EVALUATION OF RIPRAP SIZING AND OUTLET PROTECTION DIMENSIONS REQUIRED FOR STEEPER SLOPES.
- TEMPORARY OUTLET PROTECTION INFORMATION IS FOR OUTLETS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

**MAINTENANCE NOTES:**

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

Figure EC-8  
Temporary Outlet Protection  
Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3

**Stockpile Management (SP) MM-2**



**STOCKPILE PROTECTION PLAN**

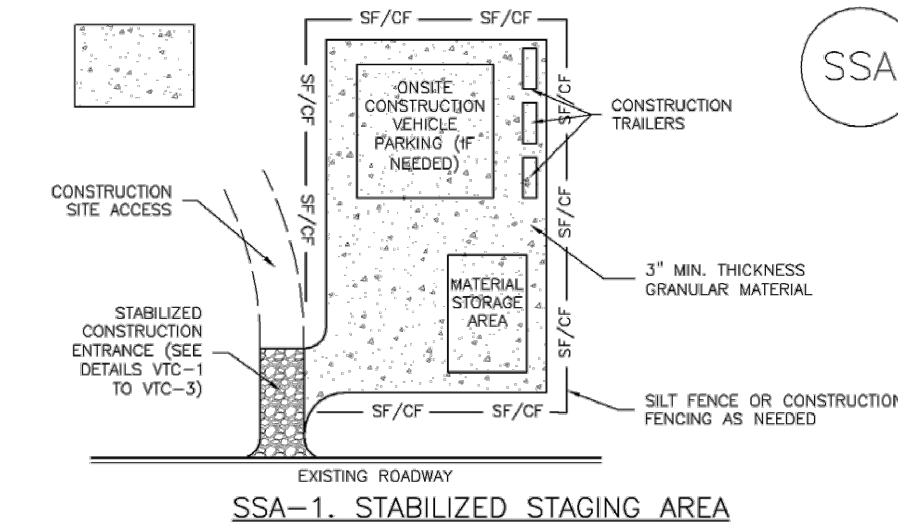
**SP-1. STOCKPILE PROTECTION**

**STOCKPILE PROTECTION INSTALLATION NOTES:**

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

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

**Stabilized Staging Area (SSA) SM-6**



**SSA-1. STABILIZED STAGING AREA**

**STABILIZED STAGING AREA INSTALLATION NOTES:**

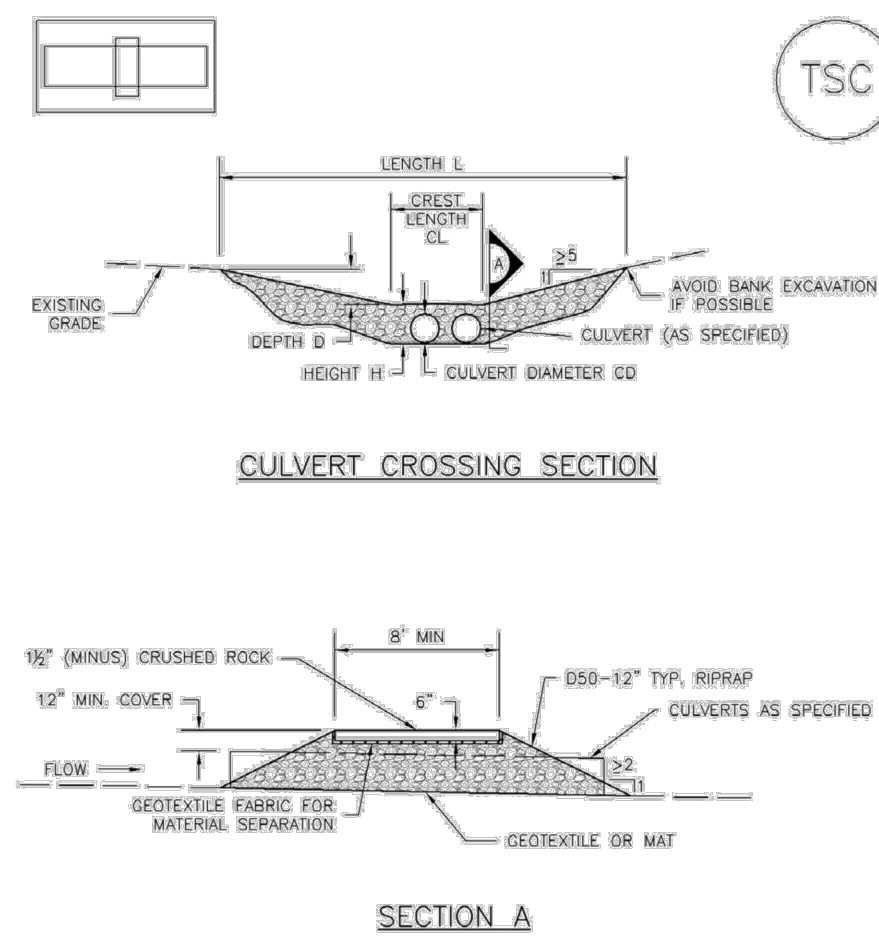
- SEE PLAN VIEW FOR:
  - LOCATION OF STAGING AREAS
  - CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION
- STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. CROSSING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.
- STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.
- THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.
- UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT #703, MASHED #3 COARSE AGGREGATE OR 8" (MINUS) ROCK.
- ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

**STABILIZED STAGING AREA MAINTENANCE NOTES:**

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ROCK SHALL BE REPLACED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

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Urban Storm Drainage Criteria Manual Volume 3 SSA-3

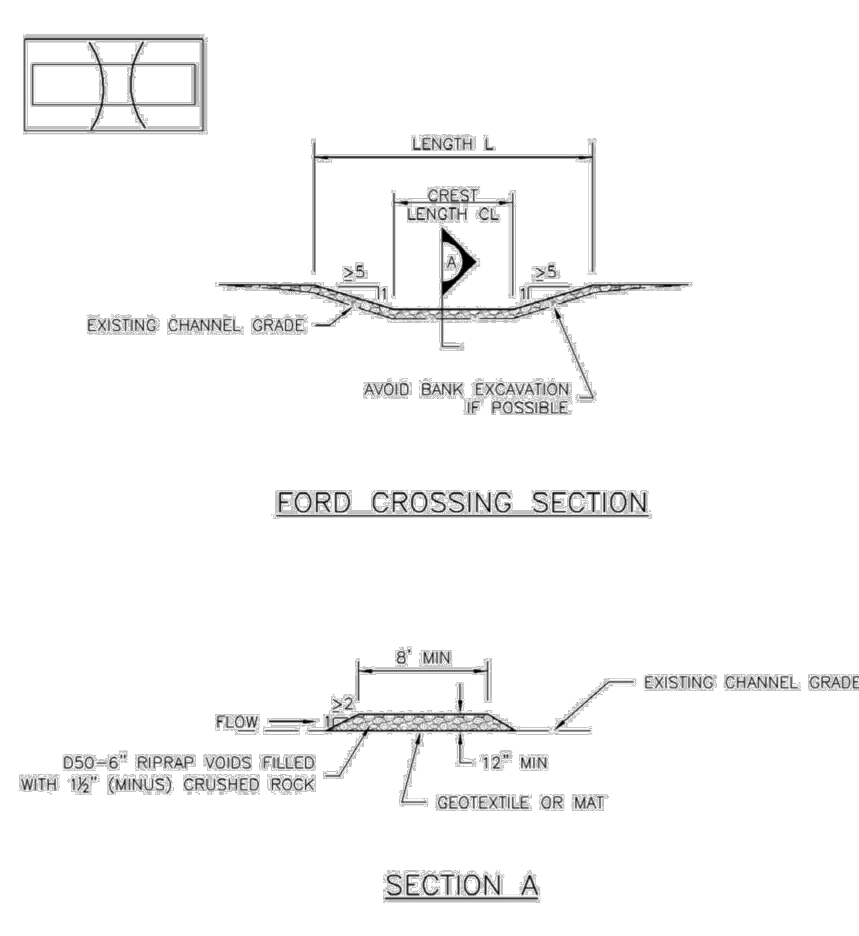
**TSC Temporary Stream Crossing (TSC) SM-10**



TSC-1. CULVERT CROSSING

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

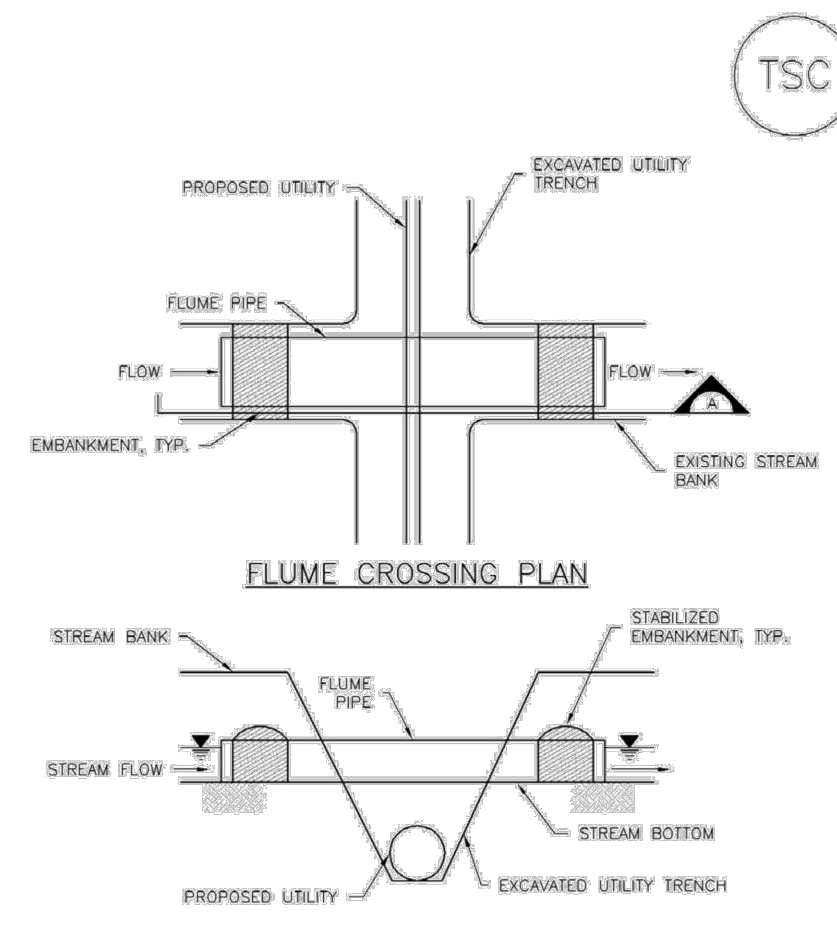
**TSC SM-10 Temporary Stream Crossing (TSC)**



TSC-2. FORD CROSSING

TSC-4 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 June 2012

**TSC Temporary Stream Crossing (TSC) SM-10**



TSC-3. FLUME CROSSING

June 2012 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 TSC-5

**TSC SM-10 Temporary Stream Crossing (TSC)**

**TEMPORARY STREAM CROSSING INSTALLATION NOTES:**

- SEE PLAN VIEW 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 GRADE OF CULVERTS
- TEMPORARY STREAM CROSSING DIMENSIONS, DSO, AND NUMBER OF CULVERTS INDICATED FROM CULVERT CROSSING SHALL BE CONSIDERED MINIMUM DIMENSIONS. ENGINEER MAY ELECT TO INSTALL LARGER FACILITIES. ANY DAMAGE TO STREAM CROSSING OR EXISTING STREAM CHANNEL DURING BASEFLOW OR FLOOD EVENTS SHALL BE PROMPTLY REPAIRED.
- SEE MAJOR DRAINAGE CHAPTER FOR RIPRAP GRADATIONS.
- WHERE FAILURE OF A STREAM CROSSING CAN RESULT IN SIGNIFICANT DAMAGE OR HARM IT MUST BE DESIGNED BY A STRUCTURAL ENGINEER.

**TEMPORARY STREAM CROSSING MAINTENANCE NOTES:**

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- REMOVE SEDIMENT ACCUMULATED UPSTREAM OF CROSSING AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE CROSSING.
- STREAM CROSSINGS ARE TO REMAIN IN PLACE UNTIL NO LONGER NEEDED AND SHALL BE RESEED PRIOR TO THE END OF CONSTRUCTION.
- 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 LISTED STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

DETAIL ADAPTED FROM BOULDER COUNTY, COLORADO AND CITY OF JARVIS, COLORADO (SEE TSCs), NOT AVAILABLE IN PDF(S)

TSC-6 Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3 June 2012

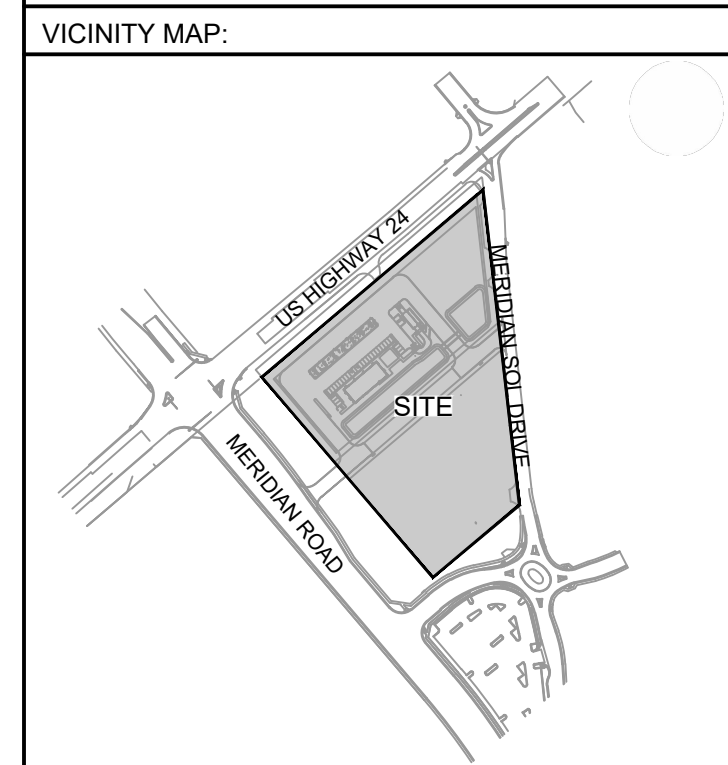
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**LAND DEVELOPMENT**  
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OWNER/DEVELOPER:  
**CIRCLE K**  
ROCKY MOUNTAINS DIVISION  
5500 S QUEBEC STREET, SUITE 100  
GREENWOOD VILLAGE, CO 80111  
PHONE: (720) 758-8223

SEAL  
**COLORADO LICENSED PROFESSIONAL ENGINEER**  
52434  
FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC  
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MATRIX DESIGN GROUP IS NOT RESPONSIBLE FOR CHANGES, ALTERATIONS, OR USE OF CONSTRUCTION DOCUMENTS PRIOR TO JURISDICTIONAL APPROVAL.



PROJECT:  
**CIRCLE K STORES INC.**

GRADING & EROSION CONTROL  
PLANS  
HIGHWAY 24 & MERIDIAN ROAD  
FALCON, CO

REVISION HISTORY:

NO.	DATE	DESCRIPTION	BY

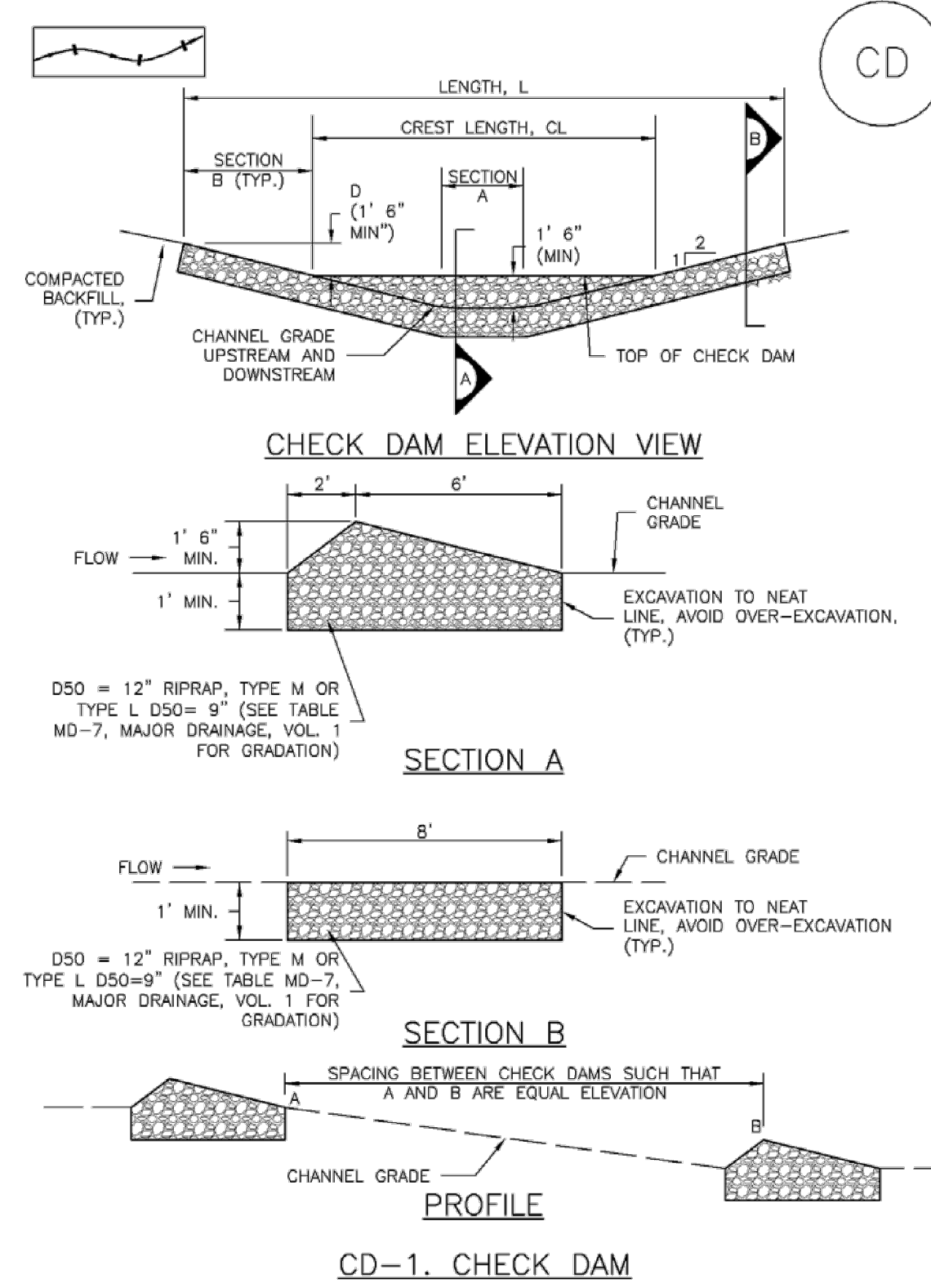
DRAWING INFORMATION:  
PROJECT NO: 21.1207.037  
DRAWN BY: LCB  
CHECKED BY: NMS  
DESIGNED BY: NMS  
SHEET TITLE:

**EROSION CONTROL NOTES**

SHEET 6 OF 7  
ECN02

ISSUE DATE: JANUARY 2023





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).
- CHECK DAMS INDICATED ON INITIAL SWMP SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND DISTURBING ACTIVITIES.
- 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").
- RIPRAP PAD SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1'.
- 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

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
  - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
  - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
  - SEDIMENT ACCUMULATED UPSTREAM OF THE CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS WITHIN 1/2 OF THE HEIGHT OF THE CREST.
  - CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
  - 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.

Description

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

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

Appropriate Uses

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

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

Do not apply mulch during windy conditions.

Design and Installation

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

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

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

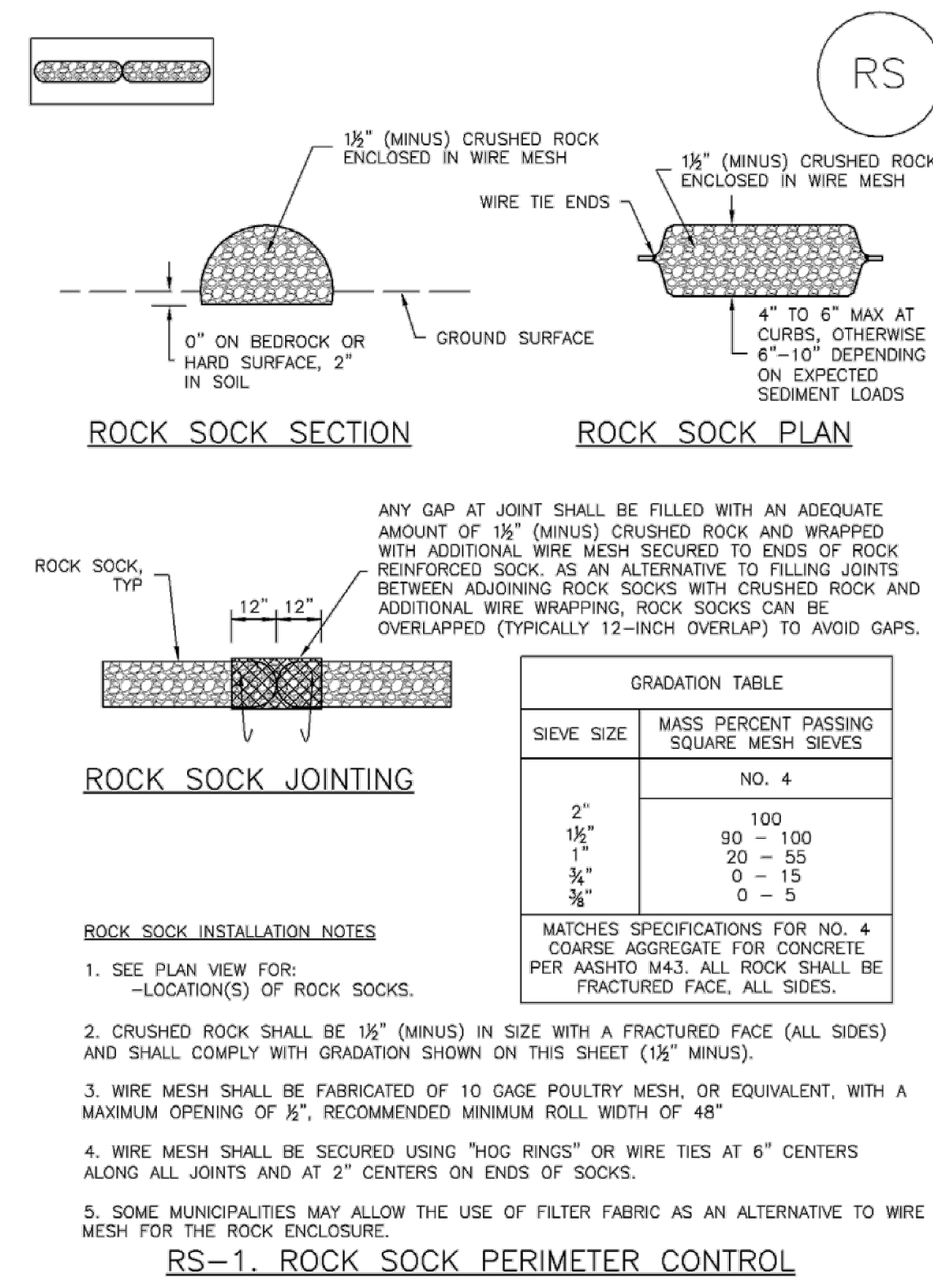
- Clean, weed-free and seed-free cereal grain straw should be applied evenly at a rate of 2 tons per acre and must be tacked or fastened by a method suitable for the condition of the site. Straw mulch must be anchored (and not merely placed) on the surface. This can be accomplished mechanically by crimping 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.



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



ROCK SOCK MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, OR DAMAGED BEYOND REPAIR.
- 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.
- ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
- 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 ENDORSES 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.



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OWNER/DEVELOPER:



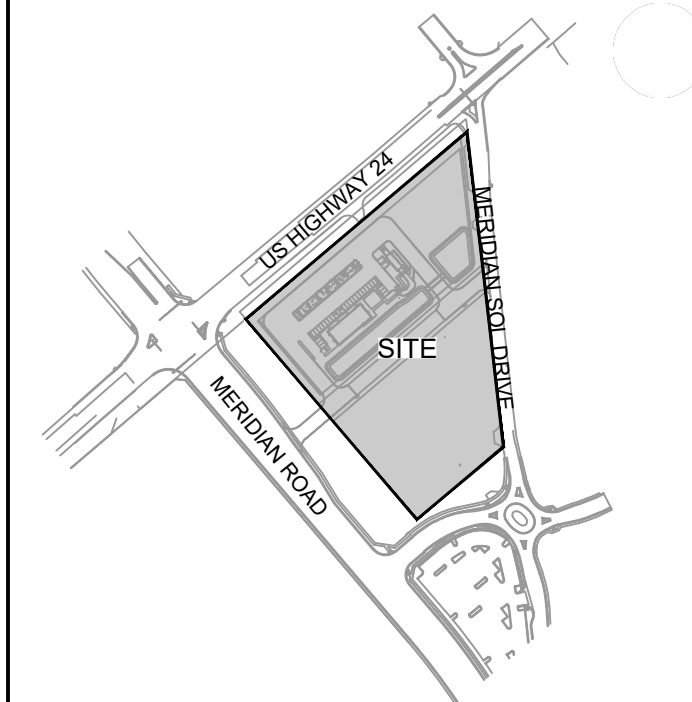
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VICINITY MAP:



PROJECT: CIRCLE K STORES INC.

GRADING & EROSION CONTROL PLANS HIGHWAY 24 & MERIDIAN ROAD FALCON, CO

REVISION HISTORY:

NO.	DATE	DESCRIPTION	BY

DRAWING INFORMATION:

PROJECT NO: 21.1207.037

DRAWN BY: LCB

CHECKED BY: NMS

DESIGNED BY: NMS

SHEET TITLE:

EROSION CONTROL NOTES

SHEET 7 OF 7 ECN03