

EAST FORK JIMMY CAMP CREEK CHANNEL DESIGN CREEKSIDE DEVELOPMENT

See comment letter.

prior to(?)

GENERAL NOTES

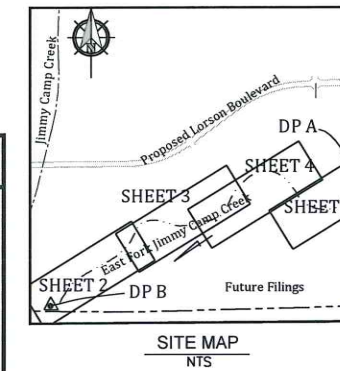
- Profile design lines are based on centerline, as shown, unless otherwise noted.
- All new construction to conform to the specifications of El Paso County Department of Public Works. Any asphalt removed is to be replaced to meet the specifications of the El Paso County Public Works Department.
- For pavement design, curb and gutter, and sidewalks see individual plan and profile sheets. Pavement design to be based on Resistance Value 'R' derived from Hveem tests and are to be approved by the Engineering Division of the El Paso County Planning and Community Development prior to work above subgrade.
- At intersections, all curb returns will have 20-foot radius unless otherwise noted.
- All existing utilities have been shown according to the best available information. The contractor is responsible for field location and verification prior to beginning work. If it appears that there could be a conflict with any utilities, whether indicated on the plans or not, the contractor is to notify the engineer and owner immediately. The contractor is responsible for the protection and repair (if necessary) of all utilities.
- A Pre-Construction meeting shall be held with the El Paso County Planning and Community Development prior to construction.
- Approved plans, Engineering Criteria Manual, etc. is required to be on-site at all times during construction.
- All necessary permits, such as SWMP, ESQCP, Fugitive Dust, Access, C.O.E. 404, etc. shall be obtained prior to construction.
- All handicap ramps to be per El Paso County Standard SD_2-40.
- The contractor shall coordinate locations and layout with the El Paso County Planning and Community Development on the placement of any pedestrian ramps prior to construction of the curb.
- Where appropriate, neatly saw cut all existing concrete and asphalt. Repair/replace all disturbed existing items with like materials and thicknesses.
- All disturbed areas shall be revegetated with native grasses within 21 days of excavation per Erosion Control Plan.
- The prepared Erosion/Sediment Control Plan is to be considered a part of these plans and its requirements adhered to during the construction of this project.
- All storm and sanitary sewer pipe lengths and slopes are figured from center of manhole or bend. Pipe lengths are given as a horizontal length.
- All storm sewer bedding to be per CDoT Standards.
- All storm sewer pipe shall be Class III B Wall unless otherwise shown on the storm sewer plan and profile sheets.
- All pipes and bends used in construction of storm sewer facilities shall be factory fabricated, unless approved by the El Paso County Development Services Department.
- Construction materials used in all storm and sanitary sewer manholes shall be per specifications. Storm sewer radial deflections to be grouted or installed per manufacturer's recommendations.
- Storm sewer manholes sizes as follows unless otherwise shown:
 - 18" thru 36" use 48" I.D. manhole
 - 42" thru 48" use 60" I.D. manhole
 - 54" thru 60" use 72" I.D. manhole
 NOTE: Manhole sizes tabulated here shall be increased, if necessary, to accommodate incoming laterals.
- All horizontal stationing is based on the 'Face of Curb', unless otherwise shown.
- All vertical design and top of curb are based on the design point shown in the typical cross section.
- The curb line design point is located at the intersection of the face and top of curb for the Type III Standard 6-inch vertical curb. See typical street section for design point locations.
- Vertical curb to be used between curb returns (CR) and at curb inlets. Transitions from ramp to vertical curb shall be 10-feet unless otherwise approved by the El Paso County Public Services Department. All other curb & gutter to be ramp curb & gutter.
- Cross pans to be per El Paso County Standard Detail SD_2-26.
- Contractor responsible for meeting all Widefield Water and Sanitation District criteria when connecting to existing stubs.
- Curb returns shall be straight graded from CR to CR unless otherwise noted.
- Inlets are Type 'R' inlets (CDoT STD M 604-12) unless otherwise noted.

BENCHMARK: Monument is located at the Northwest corner of the intersection of Powers Boulevard and Fontaine Street. The monument is a 3-inch aluminum cap (FIMS ID #206). Located 51.3 feet west of the west edge of asphalt of Powers Blvd and 65.5 feet north of the north edge of asphalt of Fontaine Street. Elevation=5897.89 feet (NGVD 1929, 1960 Adj.)
Basis of Bearing: All bearings used herein are based on an assumed bearing of N89°42'02" E, a distance of 1873.45 feet between the northeasterly corner of Pioneer Landing at Lorson Ranch Filing No. 1, as recorded under Reception No. 210713013 of the records of the El Paso County Clerk and Recorder, as monumented by a rebar and orange surveyors cap stamped "Rampart PLS 26965", from which the east one-quarter corner (E $\frac{1}{4}$) of said section 14, as monumented by a 2-1/2" pipe with galvanized screw on cap only partially stamped.

EL PASO COUNTY, COLORADO PREPARED FOR LORSON DEVELOPMENT

EL PASO COUNTY STANDARD NOTES

- All drainage and roadway construction shall meet the standards and specifications of the City of Colorado Springs/El Paso County Drainage Criteria Manual, Volumes 1 and 2, and the El Paso County Engineering Criteria Manual.
- Contractor shall be responsible for the notification and field notification of all existing utilities, whether shown on the plans or not, before beginning construction. Location of existing utilities shall be verified by the contractor prior to construction. Call 811 to contact the Utility Notification Center of Colorado (UNCC).
- Contractor shall keep a copy of these approved plans, the Grading and Erosion Control Plan, the Stormwater Management Plan (SWMP), the soils and geotechnical report, and the appropriate design and construction standards and specifications at the job site at all times, including the following:
 - El Paso County Engineering Criteria Manual (ECM)
 - City of Colorado Springs/El Paso County Drainage Criteria Manual, Volumes 1 and 2
 - Colorado Department of Transportation (CDOT) Standard Specifications for Road and Bridge Construction
 - CDoT M & S Standards
- 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. Any modifications necessary to meet criteria after-the-fact will be entirely the developer's responsibility to rectify.
- It is the design engineer's responsibility to accurately show existing conditions, both onsite and offsite, on the construction plans. Any modifications necessary due to conflicts, omissions, or changed conditions will be entirely the developer's responsibility to rectify.
- Contractor shall schedule a pre-construction meeting with El Paso County Planning and Community Development (PCD) - Inspections, prior to starting construction.
- It is the contractor's responsibility to understand the requirements of all jurisdictional agencies and to obtain all required permits, including but not limited to El Paso County Erosion and Stormwater Quality Control Permit (ESQCP), Regional Building Floodplain Development Permit, U.S. Army Corps of Engineers-issued 401 and/or 404 permits, and county and state fugitive dust permits.
- Contractor shall not deviate from the plans without first obtaining written approval from the design engineer and PCD. Contractor shall notify the design engineer immediately upon discovery of any errors or inconsistencies.
- All storm drain pipe shall be Class III RCP unless otherwise noted and approved by PCD.
- Contractor shall coordinate geotechnical testing per ECM standards. Pavement design shall be approved by El Paso County PCD prior to placement of curb and gutter and pavement.
- All construction traffic must enter/exit the site at approved construction access points.
- Sight visibility triangles as identified in the plans shall be provided at all intersections. Obstructions greater than 18 inches above flowline are not allowed within sight triangles.
- Signing and striping shall comply with El Paso County Department of Public Works and MUTCD criteria. [If applicable, additional signing and striping notes will be provided.]
- Contractor shall obtain any permits required by El Paso County Department of Public Works, including Work Within the Right-of-Way and Special Transport permits.
- The limits of construction shall remain within the property line unless otherwise noted. The owner/developer shall obtain written permission and easements, where required, from adjoining property owner(s) prior to any off-site disturbance, grading, or construction.



INDEX OF SHEETS	
1	Cover Sheet
2	Plan and Profile - Sta 10+00 to Sta 22+00
3	Plan and Profile - Sta 22+00 to Sta 35+00
4	Plan and Profile - Sta 35+00 to Sta 45+00
5	Plan and Profile - Sta 45+00 to Sta 50+00
6	Typical Sections and Details
7	Cross Sections
8	Grading and Erosion Control Plan
9	Grading and Erosion Control Plan
10	Grading and Erosion Control Plan

STATEMENTS

Design Engineer's Statement:

These detailed plans and specifications were prepared under my direction and supervision. Said plans and specifications have been prepared according to the criteria established by the County for detailed roadway, drainage, grading and erosion control plans and specifications, and said plans and specifications are in conformity with applicable master drainage plans and master transportation plans. Said plans and specifications meet the purposes for which the particular roadway and drainage facilities are designed and are correct to the best of my knowledge and belief. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparation of these detailed plans and specifications.

Richard N. Wray, P.E. #19310 _____ Date _____
For and on behalf of Kiowa Engineering Corp.

Owner/Developer's Statement:

I, the owner/developer have read and will comply with all of the requirements specified in these detailed plans and specifications.

Jeff Mark _____
Lorson Development
212 N. Wahsatch Ave. Suite 301
Colorado Springs, Colorado 80903

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, 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.

Jennifer Irvine, P.E., _____ Date _____
County Engineer / ECM Administrator

Planning and
Community
Development

Engineering Review

06/18/2019 12:22:48 PM

dsdrice

JeffRice@elpasoco.com

(719) 520-7877

EPC Planning & Community
Development Department

ABBREVIATIONS	
ASSY = ASSEMBLY	MIN. = MINIMUM
BNDY = BOUNDARY	NTS = NOT TO SCALE
BOP = BOTTOM OF PIPE	OD = OUTSIDE DIAMETER
CL = CENTERLINE	PC = POINT OF HORIZONTAL CURVATURE
CRA = CONCRETE REVERSE ANCHOR	PP = PROPOSED
CTRB = CONCRETE THRUST BLOCK	PT = POINT OF HORIZONTAL TANGENCY
CR = POINT OF CURB RETURN	PVC = POLY VINYL CHLORIDE PIPE
DIP = DUCTILE IRON PIPE	PVC = POINT OF VERTICAL CURVATURE
EL = ELEVATION	PM = POINT OF VERTICAL INTERSECTION
ESMT = EASEMENT	PVT = POINT OF VERTICAL TANGENCY
EX. = EXISTING	RCB = REINFORCED CONCRETE BOX
FC = FACE OF CURB	RCP = REINFORCED CONCRETE PIPE
FES = FLARED END SECTION	ROW = RIGHT OF WAY
FLG = FLANGE	RT = RIGHT
FL = FLOWLINE	SHT = SHEET
GB = GRADE BREAK	SS = SANITARY SEWER
HP = HIGH POINT	STA = STATION
HORIZ = HORIZONTAL	STD = STANDARD
HYD = HYDRANT	TA = TOP OF ASPHALT
I.D. = INSIDE DIAMETER	TC = TOP OF CURB
LT = LEFT	TOP = TOP OF PIPE
LF = LINEAR FEET	TOR = TOP OF ROCK
LP = LOW POINT	TYP = TYPICAL
MAX = MAXIMUM	VC = VERTICAL CURVE
MH = MANHOLE	VERT = VERTICAL

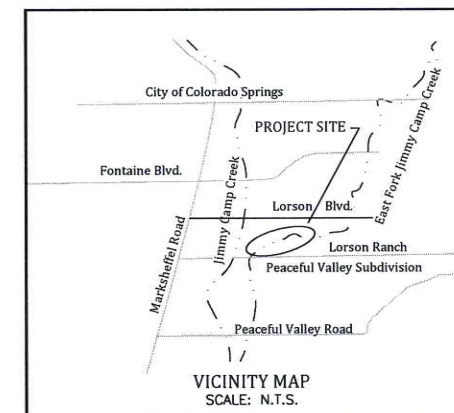
SUMMARY OF DESIGN FLOWS (cfs)

Design Point	Type	EPC FIS ⁽¹⁾		2014 DPBS		
		10yr	100yr	5yr	10yr	100yr
A	NR	2600	5200	100	1860	4530
B	NR	2800	5500	120	1900	4600



Know what's below.
Call before you dig.

Kiowa Project No. 18020
MAY 1, 2019



DEVELOPER:

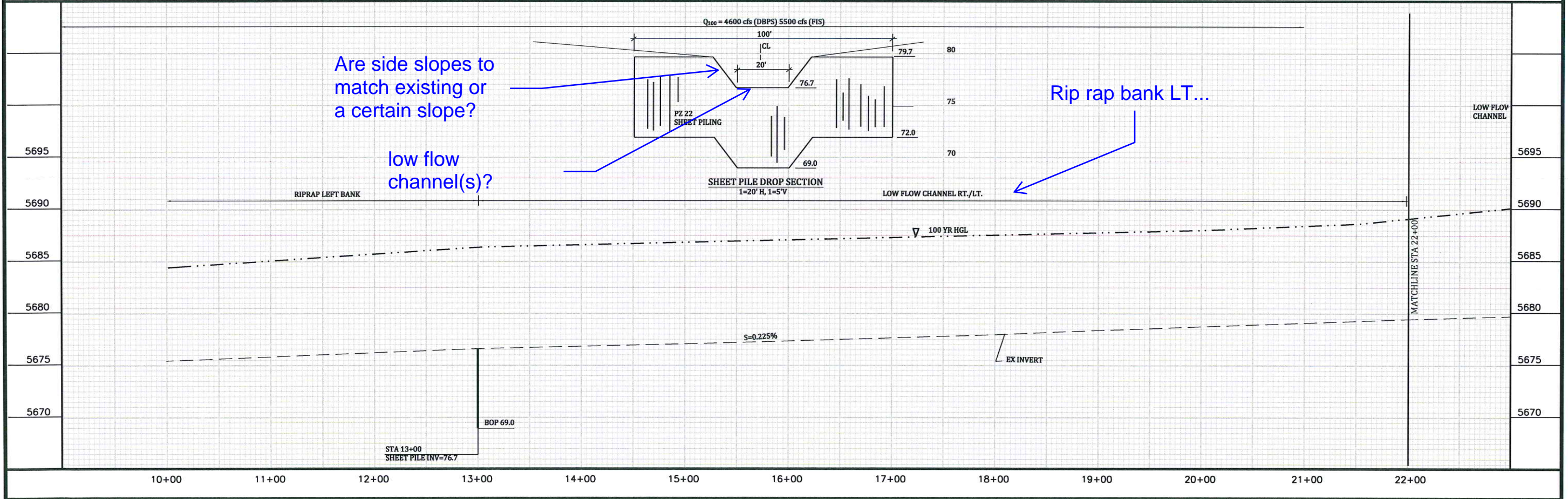
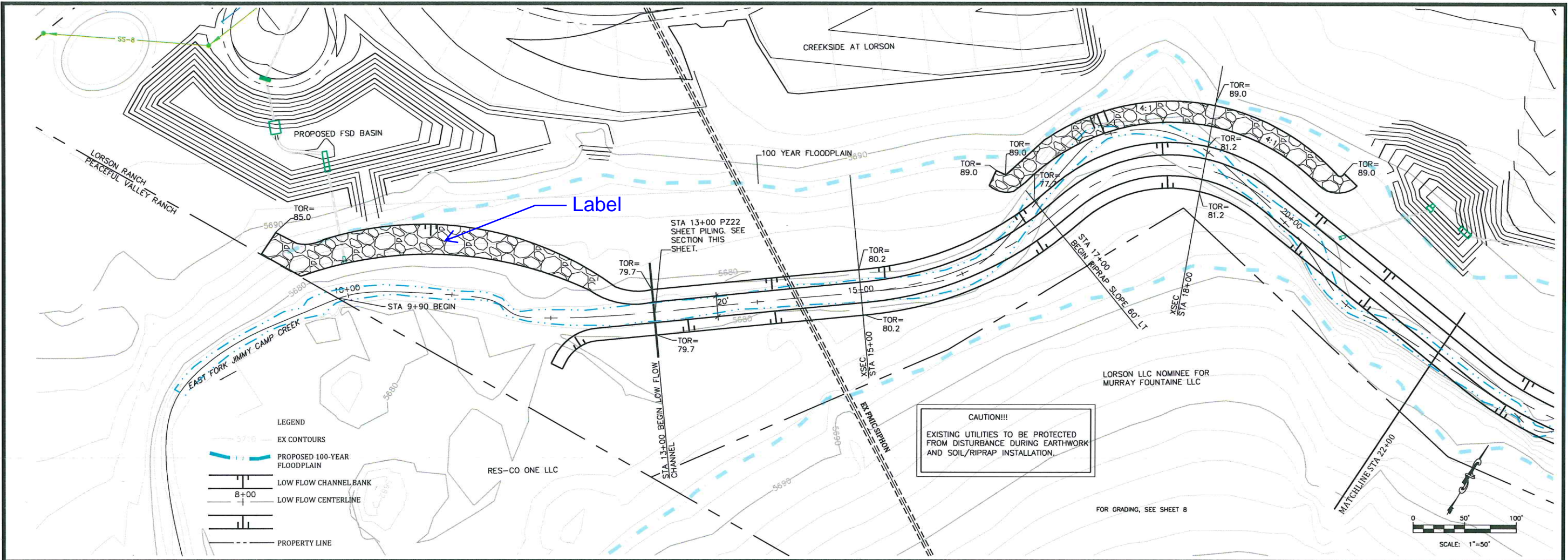
Lorson Development
212 N. Wahsatch #301
Colorado Springs, CO
80903

PREPARED BY:

Kiowa
Engineering Corporation

1804 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

PCD FILE # CDR-

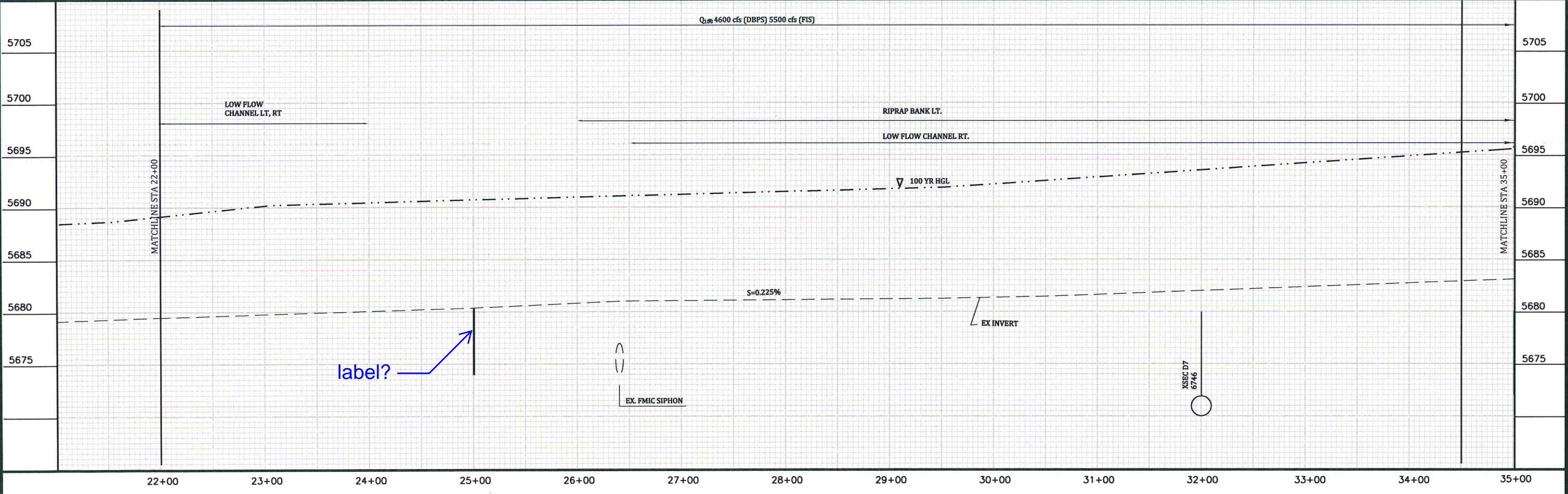
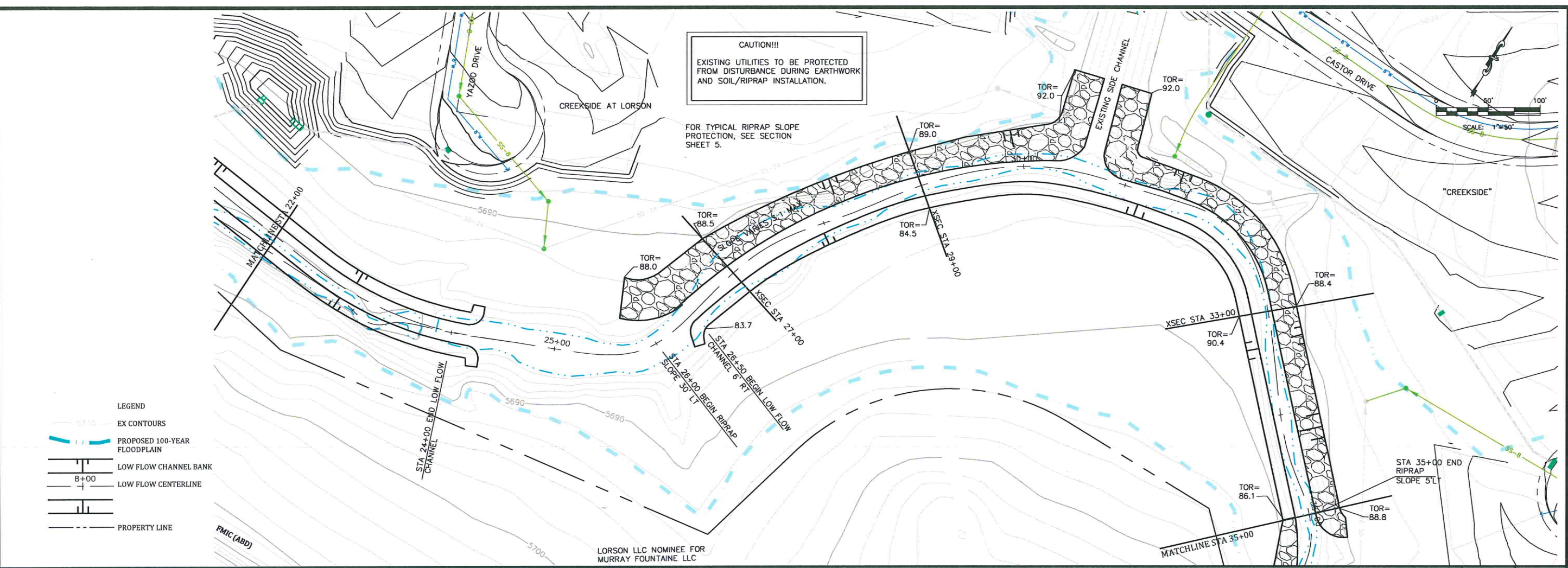


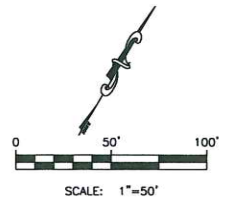
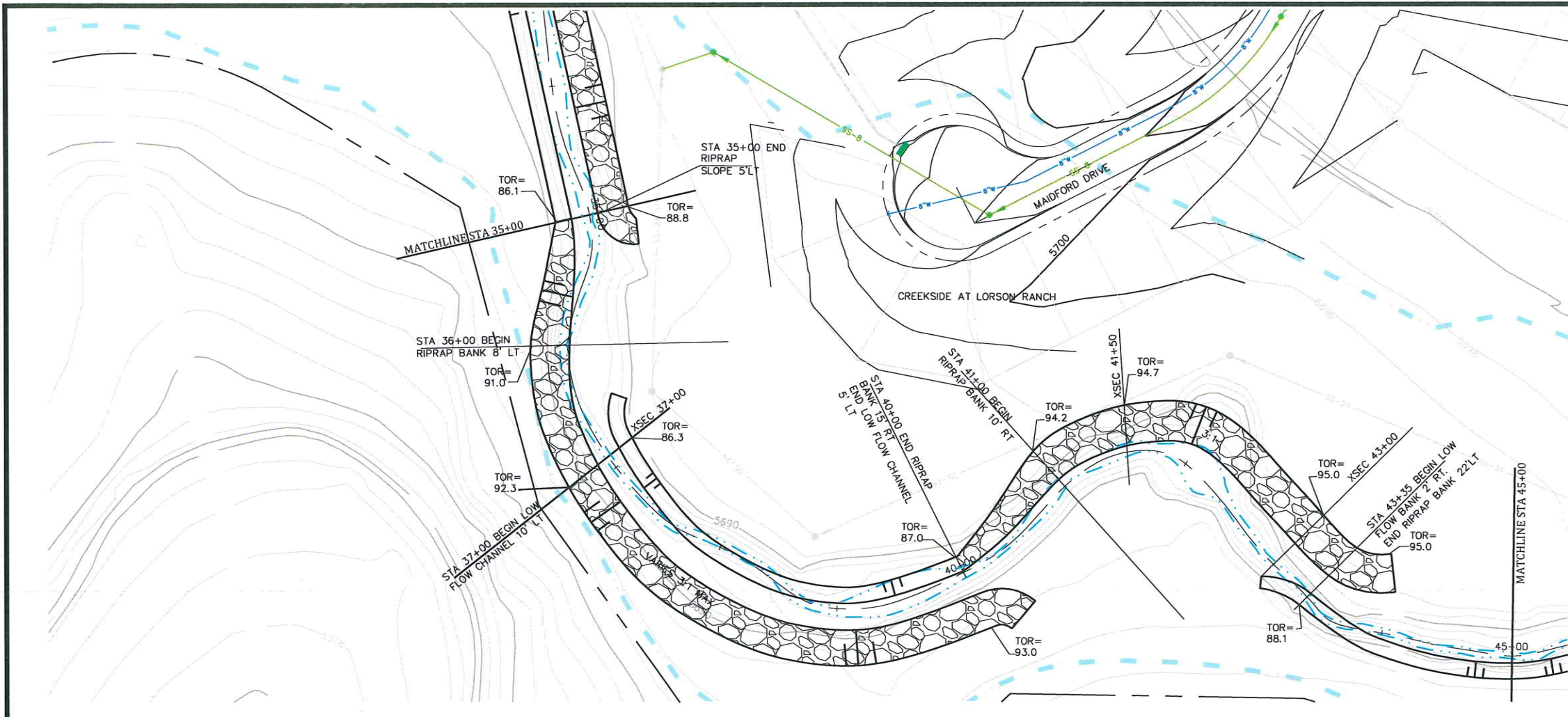
LORSON RANCH
CREEKSIDE DEVELOPMENT
EAST FORK JIMMY CAMP CREEK
CHANNEL PLAN AND PROFILE STA 10+00 TO STA 22+00
EL PASO COUNTY, COLORADO

Project No.:	18020
Date:	5/1/19
Design:	RNW
Drawn:	EAK
Check:	RNW
Revisions:	

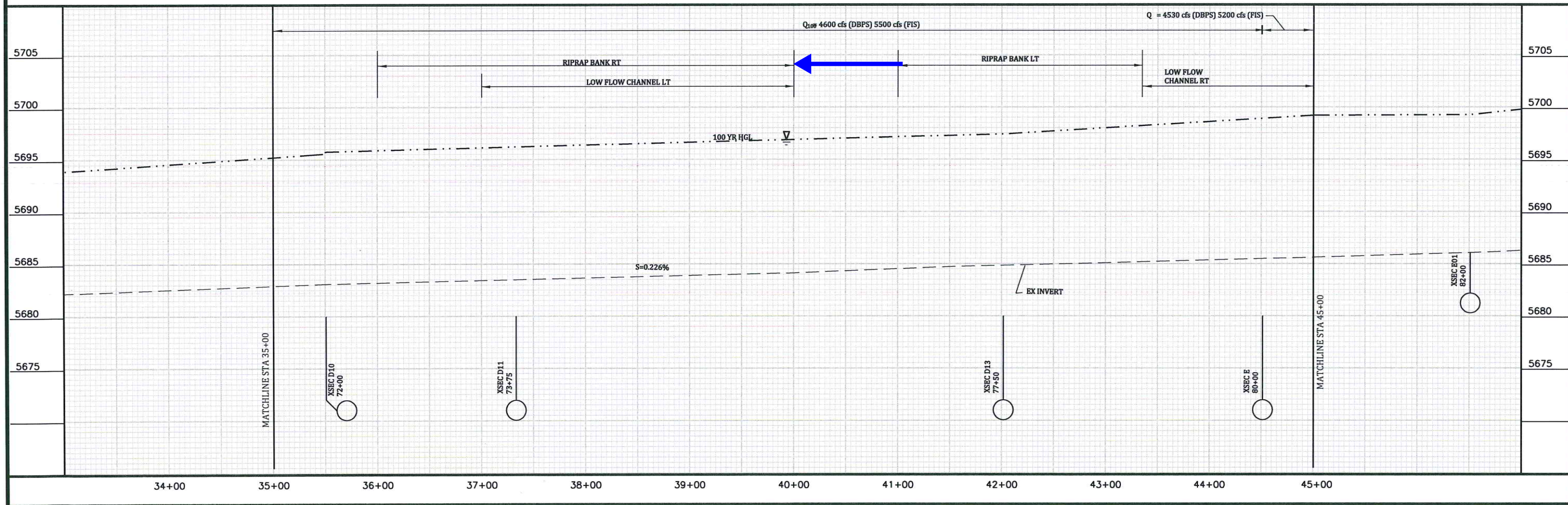
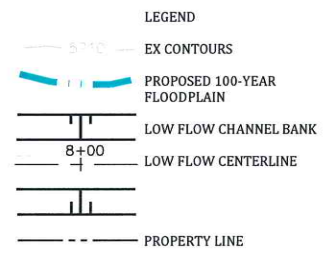
LORSON RANCH
CREEKSIDE DEVELOPMENT
EAST FORK JIMMY CAMP CREEK
CHANNEL PLAN AND PROFILE STA 22+00 TO STA 35+00
EL PASO COUNTY, COLORADO

Project No.:	18020
Date:	5/1/19
Design:	RNW
Drawn:	EAK
Check:	RNW
Revisions:	





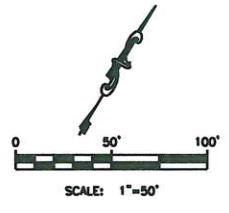
CAUTION!!!
 EXISTING UTILITIES TO BE PROTECTED FROM DISTURBANCE DURING EARTHWORK AND SOIL/RIPRAP INSTALLATION.



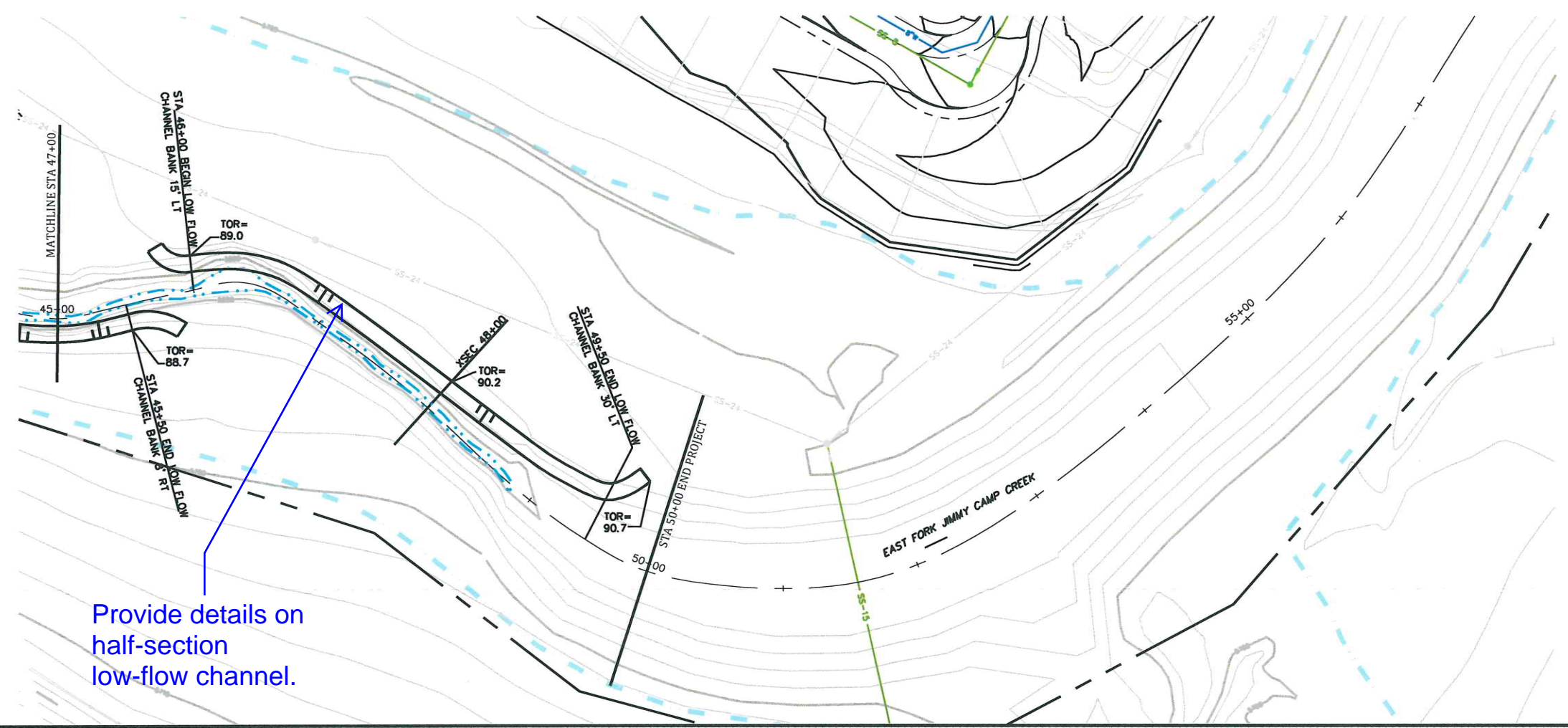
LORSON RANCH
CREEKSIDE DEVELOPMENT
EAST FORK JIMMY CAMP CREEK
 CHANNEL PLAN AND PROFILE STA 35+00 TO STA 45+00
 EL PASO COUNTY, COLORADO

Project No.:	18020
Date:	5/1/19
Design:	RNW
Drawn:	EAK
Check:	RNW
Revisions:	

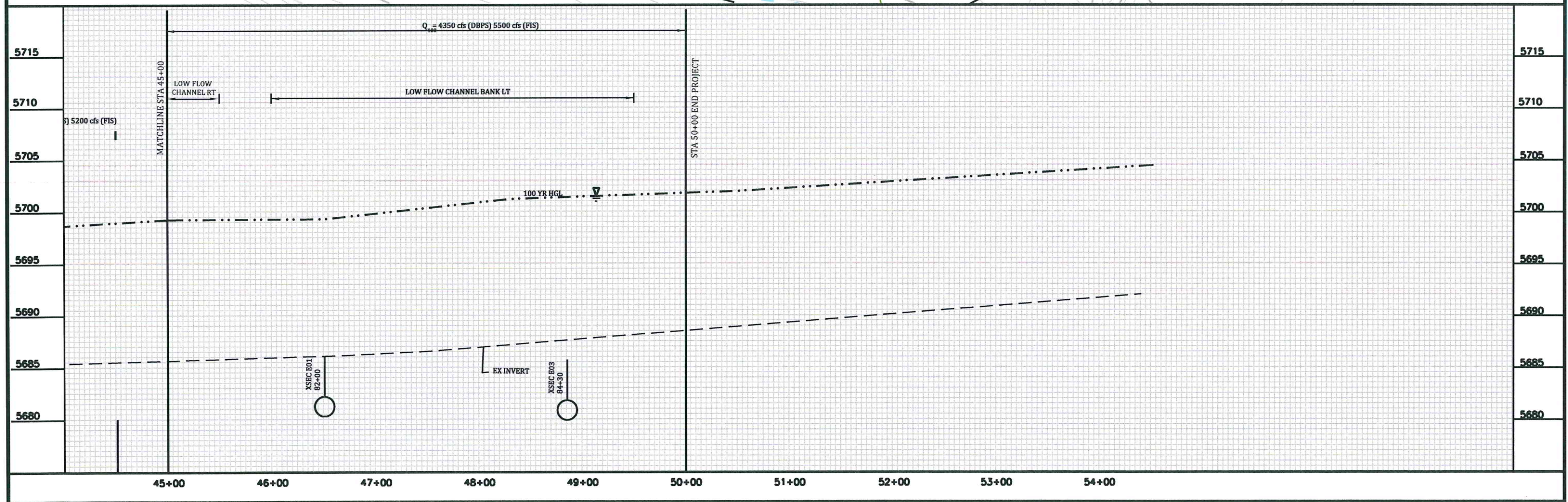
CAUTION!!!
 EXISTING UTILITIES TO BE PROTECTED FROM DISTURBANCE DURING EARTHWORK AND SOIL/RIPRAP INSTALLATION.



- LEGEND**
- EX CONTOURS
 - PROPOSED 100-YEAR FLOODPLAIN
 - LOW FLOW CHANNEL BANK
 - 8+00 LOW FLOW CENTERLINE
 - PROPERTY LINE



Provide details on half-section low-flow channel.

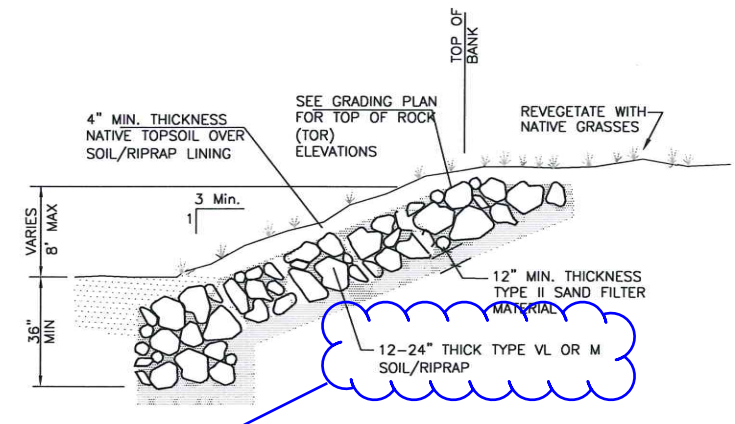


LORSON RANCH
CREEKSIDE DEVELOPMENT
EAST FORK JIMMY CAMP CREEK
CHANNEL PLAN AND PROFILE STA 45+00 TO 50+00
EL PASO COUNTY, COLORADO

Project No.:	18020
Date:	5/1/19
Design:	RNW
Drawn:	EAK
Check:	RNW
Revisions:	

RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D ₅₀ (INCHES)
TYPE VL	70-100	12	6
	50-70	9	
	35-50	6	
	2-10	2	
TYPE L	70-100	15	9
	50-70	12	
	35-50	9	
	2-10	3	
TYPE M	70-100	21	12
	50-70	18	
	35-50	12	
	2-10	4	
TYPE H	70-100	30	18
	50-70	24	
	35-50	18	
	2-10	6	
TYPE VH	70-100	41	24
	50-70	33	
	35-50	24	
	2-10	9	

*D₅₀ = MEAN PARTICLE SIZE



TYPICAL SOIL/RIPRAP BANK LINING
SCALE : N.T.S.

SOIL RIPRAP

THE SOIL MATERIAL SHALL BE NATIVE OR TOPSOIL AND MIXED WITH SIXTY FIVE PERCENT (65%) RIPRAP AND THIRTY FIVE PERCENT (35%) SOIL BY VOLUME.

SOIL RIPRAP SHALL CONSIST OF A UNIFORM MIXTURE OF SOIL AND RIPRAP WITHOUT VOIDS.

CONTRACTOR SHALL COOPERATE WITH ENGINEER IN OBTAINING AND PROVIDING SAMPLES OF ALL SPECIFIED MATERIALS.

CONTRACTOR SHALL SUBMIT CERTIFIED LABORATORY TEST CERTIFICATES FOR ALL ITEMS REQUIRED FOR SOIL RIPRAP.

RIPRAP USED SHALL BE THE TYPE DESIGNATED ON THE DRAWINGS AND SHALL CONFORM TO TABLE SHOWN TO THE RIGHT.

THE RIPRAP DESIGNATION AND TOTAL THICKNESS OF RIPRAP SHALL BE AS SHOWN ON THE DRAWINGS. THE MAXIMUM STONE SIZE SHALL NOT LARGER THAN THE THICKNESS OF THE RIPRAP.

NEITHER WIDTH NOR THICKNESS OF A SINGLE STONE OF RIPRAP SHALL BE LESS THAN ONE-THIRD ($\frac{1}{3}$) OF ITS LENGTH.

THE SPECIFIC GRAVITY OF THE RIPRAP SHALL BE TWO AND ONE-HALF (2.5) OR GREATER.

MINIMUM DENSITY FOR ACCEPTABLE RIPRAP SHALL BE ONE HUNDRED AND SIXTY FIVE (165) POUNDS PER CUBIC FOOT.

RIPRAP SPECIFIC GRAVITY SHALL BE ACCORDING TO THE BULK-SATURATED, SURFACE-DRY BASIS, IN ACCORDANCE WITH AASHTO T85.

THE RIPRAP SHALL HAVE A PERCENTAGE LOSS OF NOT MORE THAN FORTY PERCENT (40%) AFTER FIVE HUNDRED (500) REVOLUTIONS WHEN TESTED IN ACCORDANCE WITH AASHTO T96.

THE RIPRAP SHALL HAVE A PERCENTAGE LOSS OF NOT MORE THAN TEN (10%) AFTER FIVE (5) CYCLES WHEN TESTED IN ACCORDANCE WITH AASHTO T104 FOR LEDGE ROCK USING SODIUM SULFATE.

THE RIPRAP SHALL HAVE A PERCENTAGE LOSS OF NOT MORE THAN TEN PERCENT (10%) AFTER TWELVE (12) CYCLES OF FREEZING AND THAWING WHEN TESTED IN ACCORDANCE WITH AASHTO T103 FOR LEDGE ROCK, PROCEDURE A. ROCK SHALL BE FREE FROM CALCITE INTRUSIONS.

RUBBLE FOR USE AS SOIL/RIPRAP SHALL BE GRADED TO MEET THE EQUIVALENT ROCK RIPRAP GRADATION. RUBBLE PROPOSED FOR USE IN PLACE OF ROCK RIPRAP SHALL BE STOCKPILED FOR OBSERVATION BY THE ENGINEER PRIOR TO THE COMMENCEMENT OF THE WORK

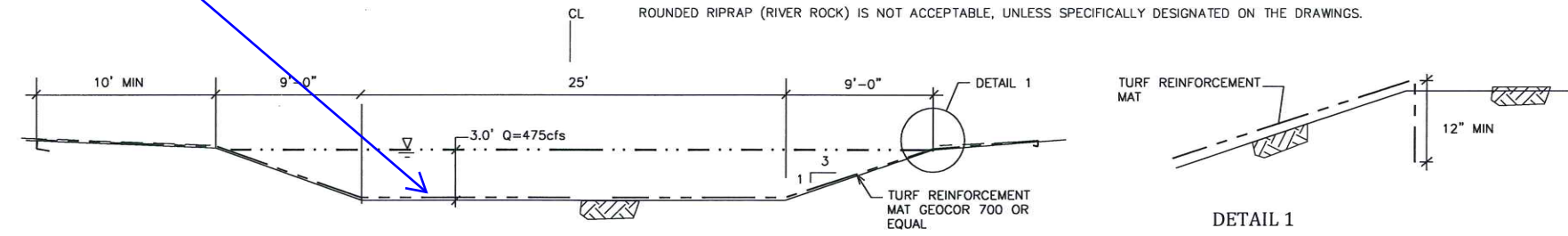
GRADATION:
A. EACH LOAD OF RIPRAP SHALL BE REASONABLY WELL GRADED FROM THE SMALLEST TO THE LARGEST SIZE SPECIFIED.
B. STONES SMALLER THAN THE TWO TO TEN PERCENT (2%-10%) SIZE WILL NOT BE PERMITTED IN AN AMOUNT EXCEEDING TEN PERCENT (10%) BY WEIGHT OF EACH LOAD.
C. CONTROL OF GRADATION SHALL BE BY VISUAL INSPECTION. HOWEVER IN THE EVENT THE ENGINEER DETERMINES THE RIPRAP TO BE UNACCEPTABLE, THE ENGINEER SHALL PICK TWO (2) RANDOM TRUCKLOADS TO BE DUMPED AND CHECKED FOR GRADATION.
1) MECHANICAL EQUIPMENT AND LABOR NEEDED TO ASSIST IN CHECKING GRADATION SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST.

BROKEN ASPHALT PAVEMENT SHALL NOT BE ACCEPTABLE FOR USE IN THE WORK.

ROUNDED RIPRAP (RIVER ROCK) IS NOT ACCEPTABLE, UNLESS SPECIFICALLY DESIGNATED ON THE DRAWINGS.

Specify sizes on the plan or provide a table with stationing.

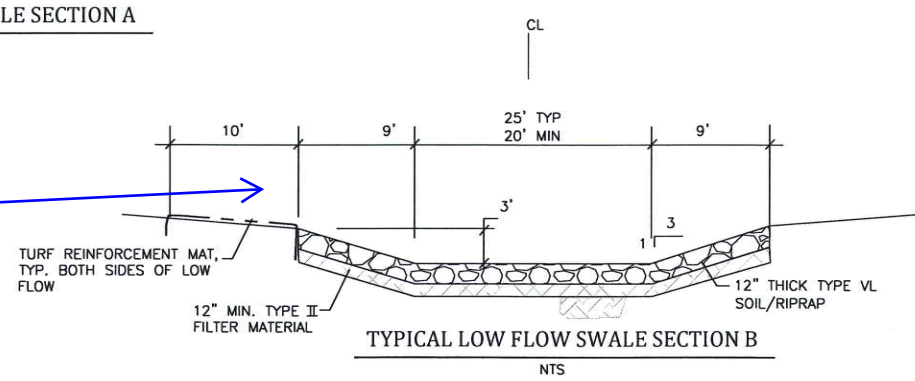
Is this used anywhere?



TYPICAL LOW FLOW SWALE SECTION A
SCALE : 1"=5'

Verify that all GEC checklist items are complete.

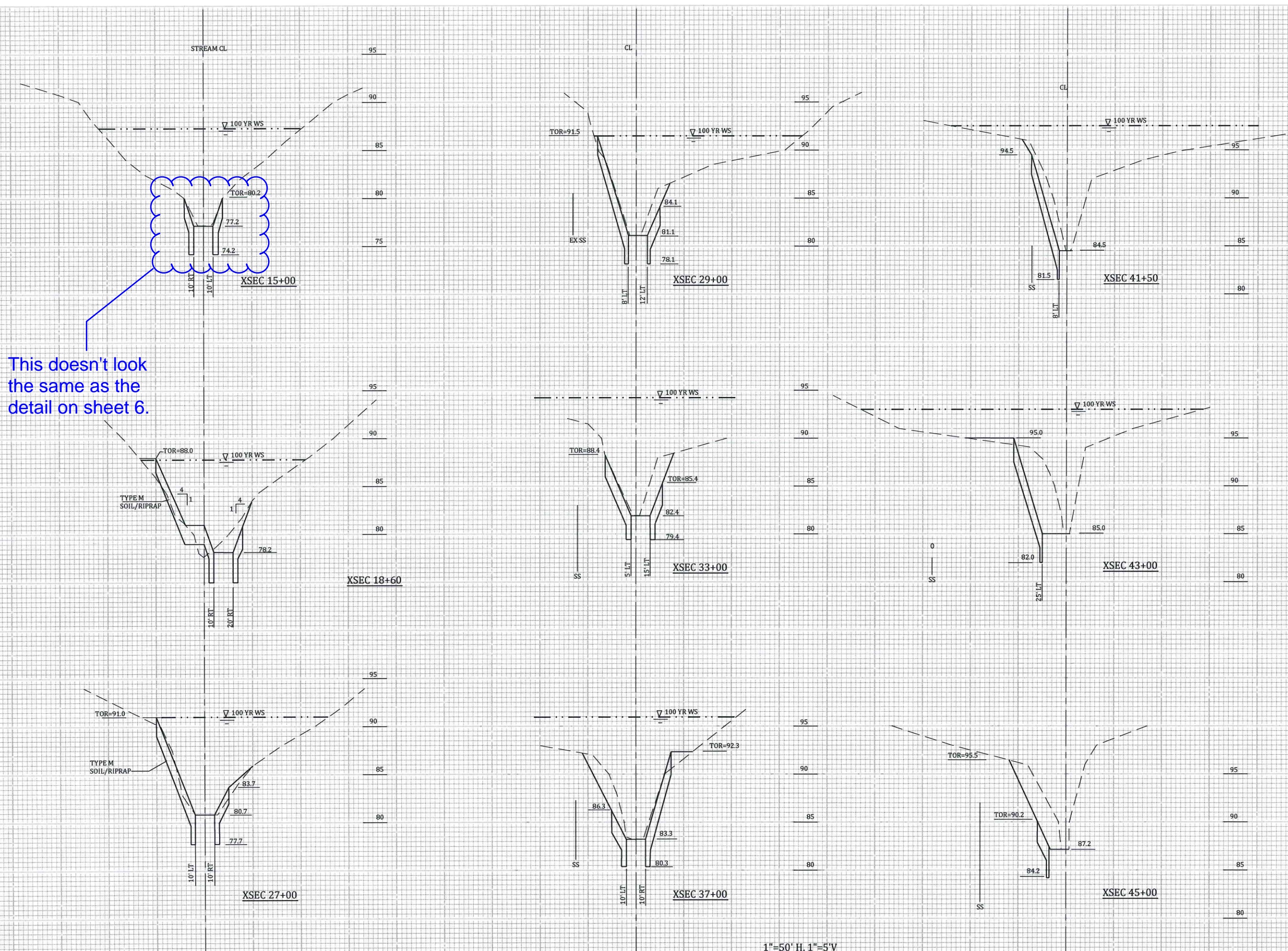
How does this work when it's shown on only one side on the plan?



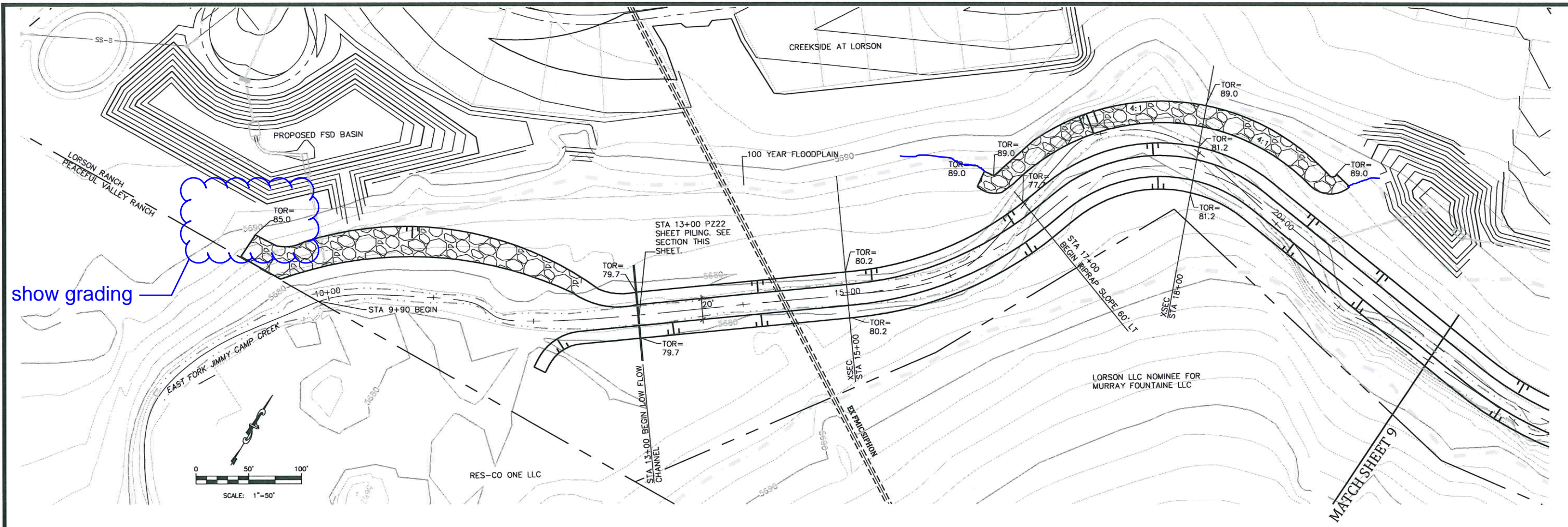
TYPICAL LOW FLOW SWALE SECTION B
NTS

**LORSON RANCH
CREEKSIDE DEVELOPMENT
EAST FORK JIMMY CAMP CREEK
CHANNEL PLAN AND PROFILE
EL PASO COUNTY, COLORADO**

Project No.:	18020
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Design:	RNW
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Check:	RNW
Revisions:	



1"=50' H, 1"=5' V



show grading

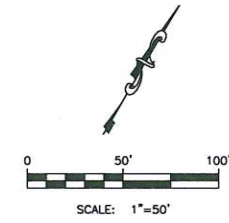
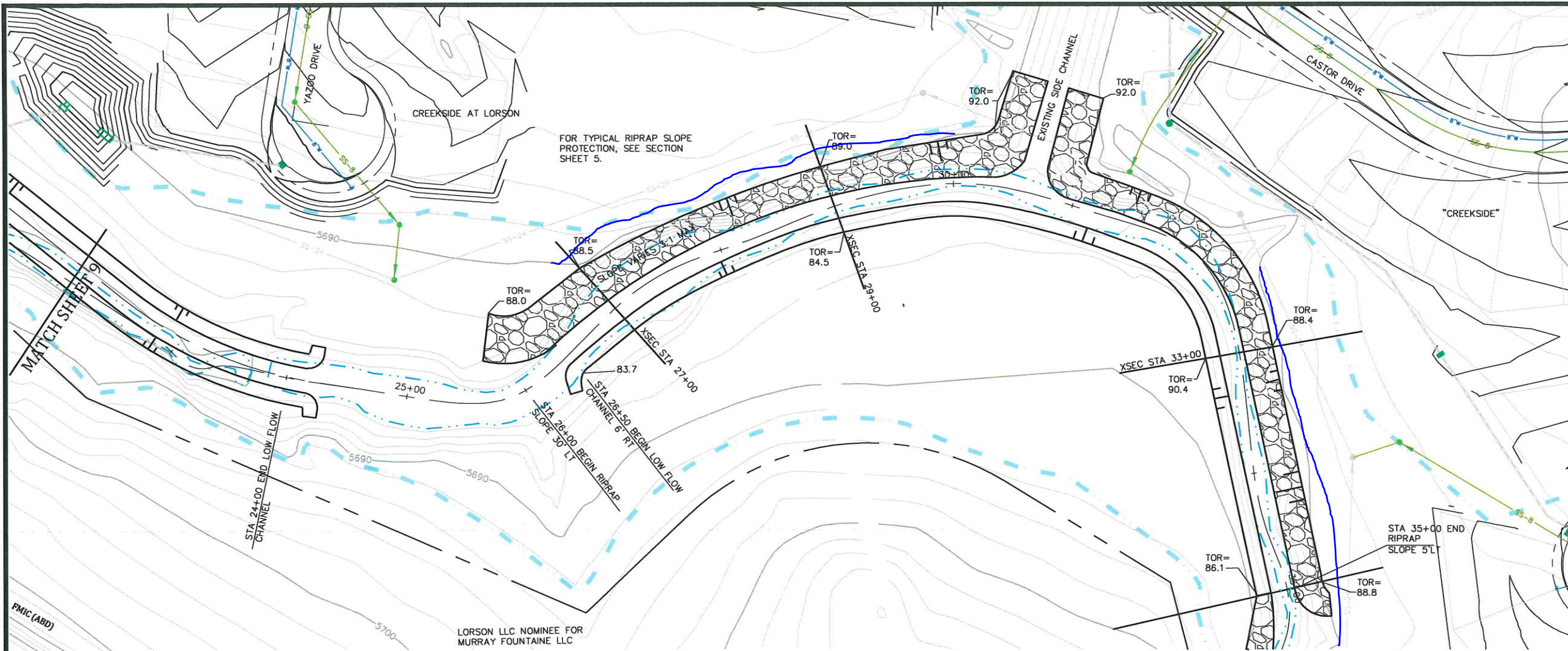
- Show all proposed contours where grading is required.
- Show and label maintenance access roads/trails.
- Show all erosion and sediment control BMPs
- Show and label seeding and mulching, ECB, TRM, etc.
- If certain BMPs are not being used on these sheets, delete the details - VTC, CWA?

NOTES:
 1. CONTRACTOR TO IDENTIFY MATERIAL AND SOIL STOCKPILES AREA ON THE SWMP PRIOR TO THE COMMENCEMENT OF MOBILIZATION.
 2. CONTRACTOR TO IDENTIFY STABILIZED STAGING AREA PRIOR TO THE COMMENCEMENT OF MOBILIZATION.

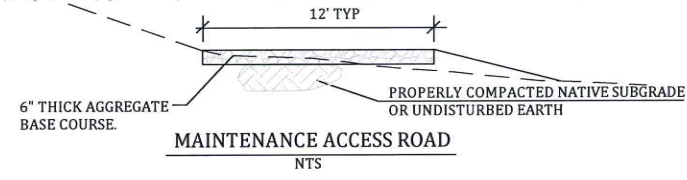
LEGEND	
---	LIMITS OF GRADING & CONSTRUCTION
(VTC)	VEHICLE TRACKING CONTROL
(CWA)	CONCRETE WASHOUT AREA
(SSA)	STABILIZED STAGING AREA
(SM)	SEED AND MULCH
TOR	TOP OF SOIL/RIPRAP

**LORSON RANCH
 CREEKSIDE DEVELOPMENT
 EAST FORK JIMMY CAMP CREEK
 GRADING AND EROSION CONTROL PLAN
 EL PASO COUNTY, COLORADO**

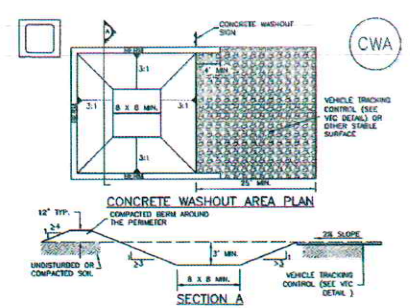
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Revisions:	



**LORSON RANCH
CREEKSIDE DEVELOPMENT
EAST FORK JIMMY CAMP CREEK
GRADING AND EROSION CONTROL PLAN
EL PASO COUNTY, COLORADO**



Concrete Washout Area (CWA) MM-1



CWA-1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

- SEE PLAN VIEW FOR CWA INSTALLATION LOCATION.
- DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 100' OF ANY WELLS OR DRINKING WATER SOURCES. IF THIS CONSTRAINTS HAVE THE IMPACTS OF A HOUSING FEASIBILITY STUDY END OR THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (1/2 MIN. THICKNESS) OR SURFACE DRAINAGE ALTERNATIVE USING PRECASTER CONCRETE WASHOUT COVERS ON A LINED ARCH' GROUND STORAGE ARE SHOULD BE USED.
- THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
- CWA SHALL INCLUDE A FLEX CURB (MINIMUM 20 INCHES) AS AT LEAST 18 INCHES HIGH, LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3/1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
- BEFORE SUPERIMPOSING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
- VEHICLE TRACKING PITS SHALL BE 10' MIN TO 15' MIN FROM THE CWA.
- CONCRETE SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND THROUGHOUT AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP TRUCKS.
- USE EXHAUSTED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

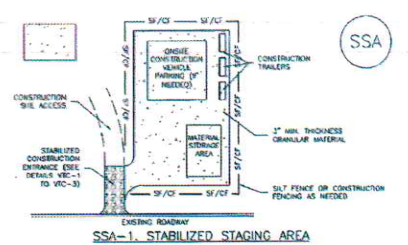
Concrete Washout Area (CWA) MM-1

CWA MAINTENANCE NOTES

- INSPECT BMPs EACH MONTH, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROMPT, NOT DEFERRED. 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.
- THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASHOUT. CONCRETE MATERIALS, RECALCULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
- CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
- THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
- WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED BY A METHOD APPROVED BY THE LOCAL JURISDICTION.

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

Stabilized Staging Area (SSA) SM-6



SSA-1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

- SEE PLAN VIEW FOR LOCATION OF STAGING AREA(S).
- 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. OVERSIZING 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\"/>

STABILIZED STAGING AREA MAINTENANCE NOTES

- INSPECT BMPs EACH MONTH, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROMPT, NOT DEFERRED. 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 REPAIRED OR REDOSED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

Stabilized Staging Area (SSA) SM-6

STABILIZED STAGING AREA MAINTENANCE NOTES

- STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO COVER PAVING, STORAGE, AND UNLOADING/LOADING OPERATIONS.
- IF THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE AND THE AREA COVERED WITH TOPSOIL, SEEDS AND MULCH OR OTHERWISE STABILIZED BY A METHOD APPROVED BY LOCAL JURISDICTION.
- NOTE:** MANY JURISDICTIONS PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.
- NOTE:** MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM USFCO STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM USFCO'S CONCRETE, NOT AVAILABLE IN ARIID)

Project No.:	18020
Date:	5/1/19
Design:	RNW
Drawn:	EAK
Check:	RNW
Revisions:	

SEEDING AND MULCHING INSTALLATION NOTES

- 1. SEE PLAN VIEW FOR:
-TYPE OF SEED MIX
-AREA OF SEEDING AND MULCHING
-TYPE OF SEED MIX
ALL BRANDS FURNISHED SHALL BE FREE FROM SUCH NOXIOUS SEEDS AS RUSSIAN OR CANADIAN THISTLE, COARSE FESCUE, EUROPEAN BINWEEED, JOHNSON GRASS, KNAW WEED AND LEAFY SPURGE.
THE SEEDER SHALL FURNISH TO THE CONTRACTOR A SIGNED STATEMENT CERTIFYING THAT THE SEED FURNISHED IS FROM A LOT THAT HAS BEEN TESTED BY A RECOGNIZED LABORATORY...
IF THE SEED AVAILABLE ON THE MARKET DOES NOT MEET THE MINIMUM PURITY AND GERMINATION PERCENTAGES SPECIFIED, THE SUBCONTRACTOR MUST COMPENSATE FOR A LESSER PERCENTAGE OF PURITY OR GERMINATION BY FURNISHING SUFFICIENT ADDITIONAL SEED TO EQUAL THE SPECIFIED PRODUCT.
TACKIFIER SHOULD BE UTILIZED TO HELP WITH STRAW DISPLACEMENT.

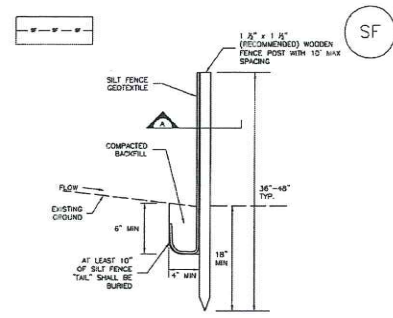
SEEDING AND MULCHING MAINTENANCE NOTES

- 1. SEEDING AND MULCHED AREAS SHALL BE INSPECTED FOR REQUIRED COVERAGE MONTHLY FOR A PERIOD OF TWO YEARS FOLLOWING INITIAL SEEDING, REPAIRS AND RE-SEEDING AND MULCHING SHALL BE UNDERTAKEN AFTER THE FIRST GROWING SEASON FOR ANY AREAS FAILING TO MEET THE REQUIRED COVERAGE.
2. REQUIRED COVERAGE FOR STANDARD, OPEN SPACE AND LOW GROWTH SEED MIXES SHALL BE DEFINED AS FOLLOWS:
1. THREE (3) PLANTS PER SQUARE FOOT WITH A MINIMUM HEIGHT OF 3 INCHES. THE 3 PLANTS PER SQUARE FOOT SHALL BE OF THE VARIETY AND SPECIES FOUND IN THE DOUGLAS COUNTY-APPROVED MIX.
2. NO BARE AREAS LARGER THAN 4 SQUARE FEET (TWO-FEET BY TWO-FEET OR EQUIVALENT).
3. FREE OF ERODED AREAS.
4. FREE FROM INFESTATION OF NOXIOUS WEEDS IN ACCORDANCE WITH SECTION 6.4 OF THE GESC CRITERIA MANUAL.
5. RILL AND GULLY EROSION SHALL BE FILLED WITH TOPSOIL PRIOR TO RESEEDING. THE RESEEDING METHOD SHALL BE APPROVED BY THE COUNTY.

SEEDING AND MULCH



Silt Fence (SF) SC-1

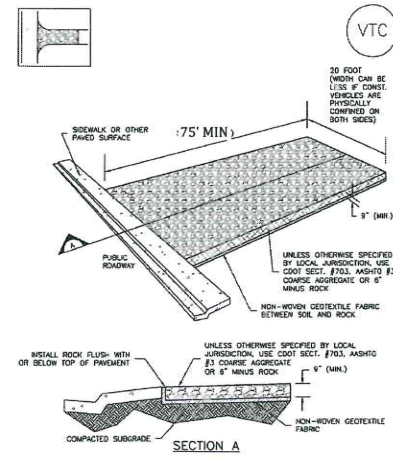


Silt Fence (SF) SC-1

SILT FENCE INSTALLATION NOTES
1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER FLOWING UNDER THE SILT FENCE...
2. A UNIFORM 4" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE...
3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING...
4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES...
5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES...
6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "U-BEND"...
7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

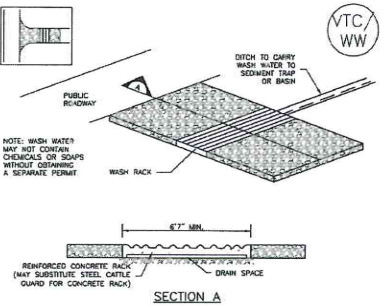
SILT FENCE MAINTENANCE NOTES
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION...
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION...
3. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDING AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

Vehicle Tracking Control (VTC) SM-4



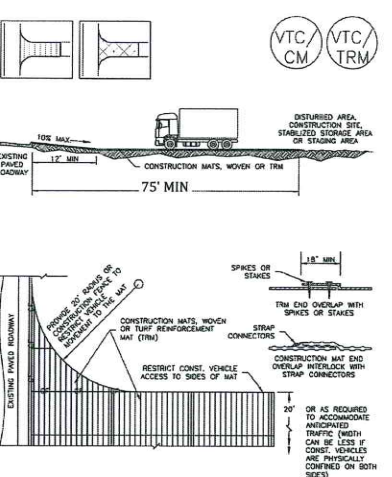
VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

Vehicle Tracking Control (VTC) SM-4



VTC-2. AGGREGATE VEHICLE TRACKING CONTROL WITH WASH RACK

Vehicle Tracking Control (VTC) SM-4



VTC-3. VEHICLE TRACKING CONTROL W/ CONSTRUCTION MAT OR TURF REINFORCEMENT MAT (TRM)

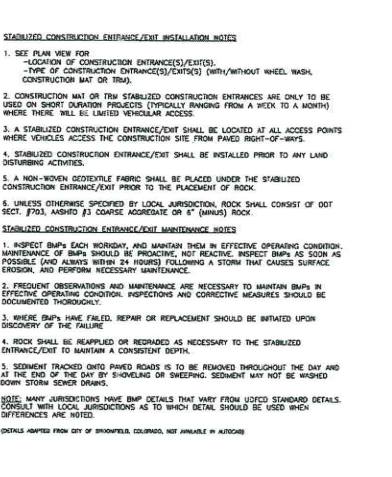
PROJECT SPECIFIC GRADING AND EROSION CONTROL NOTES

- 1. All earthwork required of this construction shall be completed in accordance with all applicable sections of the Project Specifications and Soil Investigation Report (Geotechnical Report).
2. Rubbish including timber, concrete rubble, trees, brush, and asphalt shall not be backfilled adjacent to any of the structures or be in the placement of any undisturbed fill. The Contractor shall be responsible for the removal and hauling of such materials to a suitable spoil area.
3. Excess excavation shall become the property of the Contractor and shall be disposed of at the Contractor's expense.
4. Water shall be used as a dust palliative as required and shall be included in the cost for earthwork item(s).
5. The road grades shall be cleared of vegetation and the topsoil stockpiled for later use.
6. All grading shall be in conformance with the Geotechnical Report for the area.
7. Placement of fill for roadway embankments shall be completed in conformance with the Geotechnical Report.
8. Grading contours shown on this plan are to final grade.
9. Compaction under filled areas, including roadway and detention basin embankments, shall be 95 percent of the maximum Standard Proctor Density (ASTM D698) at two (2) percent of optimum moisture content.
10. No rubble or debris shall be placed in the backfill under any of the proposed buildings, streets, curb & gutter, sidewalk and drainage structures or within five (5) feet of a building footprint.
11. Contractor is responsible for reviewing the site prior to bidding to verify site conditions.
12. Contractor is responsible for providing erosion control measures as approved by the El Paso County PCD Engineering Division and as may be required by the El Paso County Inspector.
13. All slopes equal to or greater than 3:1 shall require anchored soil retention blanket (SRB), Geocir 700 or equal.
14. The Developer is responsible for maintaining erosion control measures until a mature stage of vegetation is established.
15. All soils used for fill must be approved by a representative of the Geotechnical Engineer.
16. All natural ground to receive fill must be properly scarified, watered and compacted prior to placing fill.
17. The Contractor is solely responsible for the design, maintenance and operation of any required dewatering system.
18. No fill shall be placed, spread or rolled while it is frozen, thawing or during unfavorable weather conditions.
19. Additional erosion control structures and/or grading may be required at the time of construction.
20. Sediment removal for erosion control facilities shall be performed continuously for proper function.
21. Base mapping was provided by Core Engineering. The date of the last survey update was January 2016.
22. Proposed Construction Schedule:
Begin Construction: pending
End Construction: pending
Total Site Area = 9.7 Acres
Area to be disturbed = 9.7 Acres (est.)
Existing 100-year runoff coefficient = 0.25
Proposed 100-year runoff coefficient = 0.25
Existing Hydrologic Soil Groups: B/C (B ASCALON SANDY LOAM) (C MANZANIST CLAY LOAM)
23. Site is currently undeveloped and covered with native grasses on moderate to steep slopes (3%-6%).
25. Site is located in the Jimmy Camp Creek Drainage Basin.

SEED MIX

Table with columns: SPECIES, Quantity (pils/acre), and SEEDING APPLICATION. Includes species like Western Wheat Grass, Sidecoats Grama, Slender Wheat Grass, Little Bluestem, Blue Grama, Switch Grass, June Grass, Sand Dropseed.

Vehicle Tracking Control (VTC) SM-4



VTC-4. STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

STANDARD EPC GRADING AND EROSION CONTROL NOTES

- 1. Construction may not commence until a Construction Permit is obtained from Planning and Community Development Department (PCD) and a Preconstruction Conference is held with PCD Inspectors.
2. Stormwater discharges from construction sites shall not cause or threaten to cause pollution, contamination, or degradation of State Waters.
3. 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.
4. A separate Stormwater Management Plan (SWMP) for this project shall be completed and an Erosion and Stormwater Quality Control Permit (ESQCP) issued prior to commencing construction.
5. A separate Stormwater Management Plan (SWMP) for this project shall be completed and an Erosion and Stormwater Quality Control Permit (ESQCP) issued prior to commencing construction.
6. Soil erosion control measures for all slopes, channels, ditches, or any disturbed land area shall be completed within 21 calendar days after final grading, or earth disturbance, has been completed.
7. Temporary soil erosion control facilities shall be removed and earth disturbance areas graded and stabilized with permanent soil erosion control measures pursuant to standards and specification prescribed in the DCM Volume II and the Engineering Criteria Manual (ECM) appendix I.
8. All persons engaged with earth disturbance shall implement and maintain acceptable soil erosion and sediment control measures including BMPs in conformance with the erosion control technical standards of the Drainage Criteria Manual (DCM) Volume II and in accordance with the Stormwater Management Plan (SWMP).
9. All temporary erosion control facilities including BMPs and all permanent facilities intended to control erosion of any earth disturbance operations shall be installed as defined in the approved plans, the SWMP and the DCM Volume II and maintained throughout the duration of the earth disturbance operation.
10. Any disturbance shall be conducted in such a manner so as to effectively reduce accelerated soil erosion and resulting sedimentation.
11. Any temporary or permanent facility designed and constructed for the conveyance of stormwater around, through, or from the earth disturbance area shall be designed to limit the discharge to a non-erosive velocity.
12. Concrete wash water shall be contained and disposed of in accordance with the SWMP.
13. Erosion control blanketing is to be used on slopes steeper than 3:1.
14. Building, construction, excavation, or other 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.
15. Vehicle tracking of soils and construction debris off-site shall be minimized.
16. Contractor shall be responsible for the removal of all wastes from the construction site for disposal in accordance with local and State regulatory requirements.
17. The owner, site developer, contractor, and/or their authorized agents shall be responsible for the removal of all construction debris, dirt, trash, rock, sediment, and sand that may accumulate in the storm sewer or other drainage conveyance and stormwater appurtenances as a result of site development.
18. 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.
19. No chemicals are to be used by the contractor, which have the potential to be released in stormwater unless permission for the use of a specific chemical is granted in writing by the ECM Administrator.
20. Bulk storage structures for petroleum products and other chemicals shall have adequate protection so as to contain all spills and prevent any spilled material from entering State Waters.
21. No person shall cause the impediment of stormwater flow in the flow line of the curb and gutter or in the ditchline.
22. Individuals 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 included in the DCM Volume II and the ECM Appendix I.
23. All construction traffic must enter/exit the site at approved construction access points.
24. Prior to actual construction the permittee shall verify the location of existing utilities.
25. A water source shall be available on site during earthwork operations and utilized as required to minimize dust from earthwork equipment and wind.
26. The soils report for this site entitled "Geotechnical Report Fontaine Boulevard Bridge over East Tributary Jimmy Camp Creek, Lorson Ranch, El Paso County, Colorado, prepared by RMG engineers, Sept. 24, 2016 and shall be considered a part of these plans.
27. At least ten days prior to the anticipated start of construction, for projects that will disturb 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.
Colorado Department of Public Health and Environment
Water Quality Control Division
WQCD - Permits
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530
Attn: Permits Unit

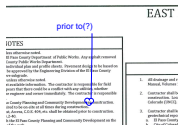
Kiowa Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

LORSON RANCH
CREEKSIDE DEVELOPMENT
EAST FORK JIMMY CAMP CREEK
CHANNEL PLAN AND PROFILE
EL PASO COUNTY, COLORADO

Project No.: 16029
Date: 5/1/19
Design: RNW
Drawn: EAK
Check: RNW
Revisions:

ENG-SF1913-R1-CD2-Redlines.pdf Markup Summary

1 (4)



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Planning and Community Development



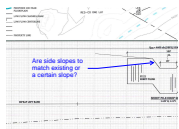
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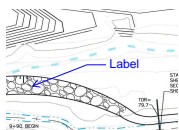
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2 (4)



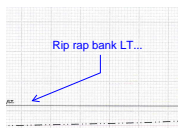
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Are side slopes to match existing or a certain slope?



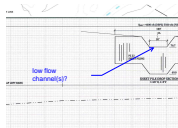
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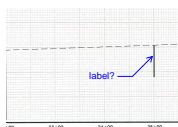
Rip rap bank LT...



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low flow channel(s)?

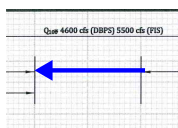
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label?

4 (1)



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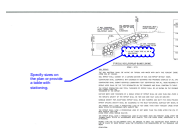
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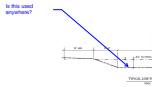
Provide details on half-section low-flow channel.

6 (4)



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Specify sizes on the plan or provide a table with stationing.



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Is this used anywhere?



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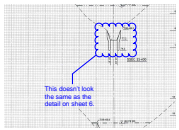
How does this work when it's shown on only one side on the plan?



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Verify that all GEC checklist items are complete.

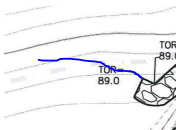
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This doesn't look the same as the detail on sheet 6.

8 (4)



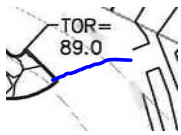
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show grading



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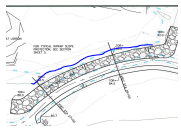
- Show all proposed contours where grading is required.
- Show and label maintenance access roads/trails.
- Show all erosion and sediment control BMPs
- Show and label seeding and mulching, ECB, TRM, etc.
- If certain BMPs are not being used on these sheets, delete the details - VTC, CWA?

9 (2)



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show grading



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