

Oversight / NHS

FHWA FULL OVERSIGHT?	<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES
NATIONAL HIGHWAY SYSTEM?	<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES

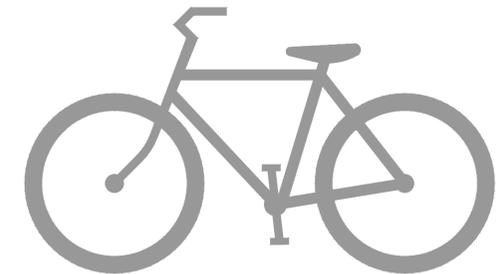
# DEPARTMENT OF TRANSPORTATION STATE OF COLORADO

CONSTRUCTION SUB-ACCOUNT NO. 15540

CITY OF COLORADO SPRINGS PARKS and RECREATION TRAIL IMPROVEMENT PROGRAM

PLAN of the SAND CREEK MULTI-USE TRAIL

COMBINED FEDERAL AID PROJECT NO. STE M-240-094  
EL PASO COUNTY



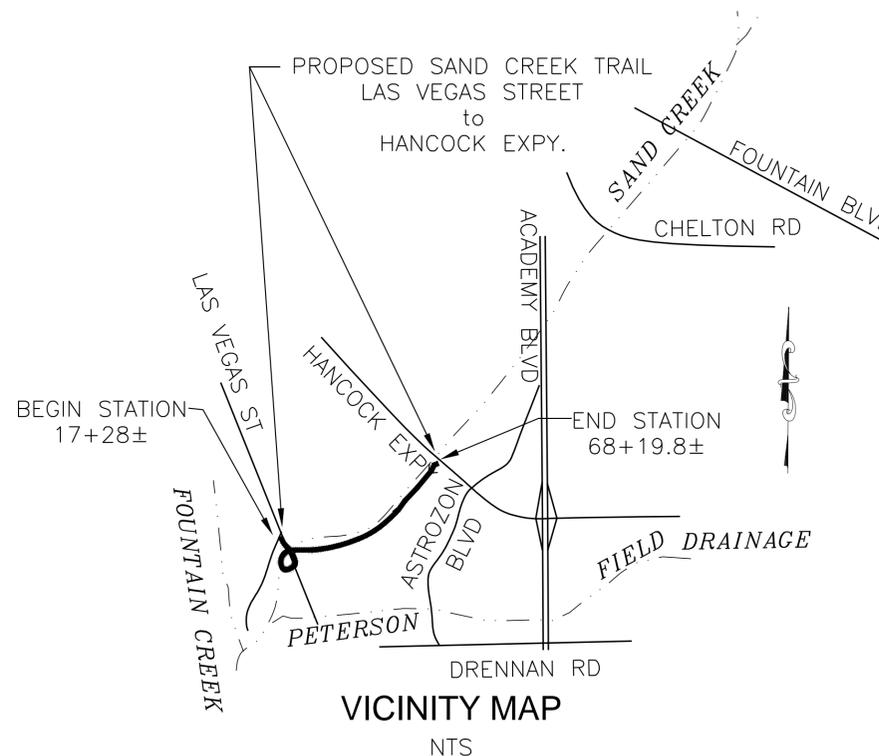
January 23, 2015

**APPROVAL SIGNATURES**

TITLE	NAME	SIGNATURE	DATE
PARKS DEVELOPMENT MANAGER/TOPS PROGRAM MANAGER	CHRIS LIEBER	_____	_____
PARKS DEVELOPMENT MANAGER/TOPS PROGRAM MANAGER	CHRIS LIEBER	_____	_____
PARKS OPERATION & DEVELOPMENT MANAGER	KURT SCHROEDER	_____	_____
CITY FORESTER	PAUL SMITH	_____	_____
REGIONAL SUPERVISOR, PARKS, TRAILS & OPEN SPACE	SCOTT ABBOTT	_____	_____
CONSTRUCTION PROJECT MANAGER	STEVE BODETTE	_____	_____
CITY ENGINEERING	TIM MITROS	_____	_____
CITY TRAFFIC ENGINEERING	KATHLEEN KRAGER	_____	_____
DEPT. OF UTILITIES - WATER	ADAM BAKER	_____	_____
DEPT. OF UTILITIES - WASTEWATER	ADAM BAKER	_____	_____
DEPT. OF UTILITIES - GAS	ADRIAN PEREIDA	_____	_____
DEPT. OF UTILITIES - ELECTRIC	ADRIAN PEREIDA	_____	_____
CENTURY/LINK		_____	_____
COLORADO DEPARTMENT OF TRANSPORTATION		_____	_____
EL PASO COUNTY DEPARTMENT OF TRANSPORTATION	ANDRE BRACKIN	_____	_____

**SHEET NO. INDEX OF SHEETS**

1	TITLE SHEET
2	STANDARD PLANS LIST
3	SUMMARY OF APPROXIMATE QUANTITIES
4	GENERAL NOTES
5	TABULATION OF QUANTITIES
6	SURVEY TABULATION
7	STA. 17+28± TO STA. 23+00
8A	STA. 23+00 TO STA. 33+00
8B	GRADING PLAN TRAIL STATION 27+50 TO 33+00
9A	STA. 33+00 TO STA. 44+00
9B	GRADING PLAN TRAIL STATION 38+05 TO 43+55
10	STA. 44+00 TO STA. 53+30
11	STA. 53+30 TO STA. 68+19.8±
12	NO WORK ON THIS SHEET/INFORMATION ONLY
13	DETAIL SHEET
	HANDRAIL DETAILS
	TANGENT WITH FLARE SECTION
	TYPICAL CONCRETE TRAIL SECTION A
	CONCRETE RAILROAD CROSSING PAD
	LOCKING STEEL POST
14	DETAIL SHEET
	PEDESTRIAN RAMP DETAIL
	CROSSWALK MARKING DETAIL
	STANDARD INLET DETAILS
	STD. COMMERCIAL DRIVEWAY DETAIL
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15	CONSTRUCTION ACCESS PLAN & TRAFFIC CONTROL PLAN
	SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES
16	TRAIL SIGNAGE & PLANTING PLANS
17	RAILROAD UNDERPASS PLAN
18	RAILROAD UNDERPASS STRUCTURE DETAILS
19	SWMP CONSTRUCTION PLAN SHEET 1 of 4
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22	SWMP CONSTRUCTION PLAN SHEET 4 of 4



**TRAIL DESIGN DATA**

BEGIN STATION	17+28±
END STATION	68+19.8±
MAXIMUM GRADE	8.33%
MINIMUM HORIZONTAL CURVE	25'
MINIMUM WIDTH	10.0'
TYPICAL WIDTH	12'
CROSS-SLOPE	2%
LENGTH	5114

\*A.G.A./A.P.W.A. STANDARD UTILITY MARKING COLOR CODE

NATURAL GAS	YELLOW
ELECTRIC	RED
WATER	BLUE
WASTEWATER	GREEN

Know what's below.  
Call before you dig.

**DETAILED PLANS AND SPECIFICATIONS ENGINEER'S STATEMENT:**

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID DETAILED PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE CITY FOR DETAILED PLANS AND SPECIFICATIONS. SAID DETAILED PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR FACILITY(S) IS DESIGNED. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THE DETAILED PLANS AND SPECIFICATIONS.



Colorado Department of Transportation



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Region 2 - Engineering



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KIOWA PROJ. NO. 13015



Sheet Revisions

As Constructed

No Revisions:

Revised:

Void:

Title Sheet

Designer: RNW

Detailer: RNW

Sheet Subset:

Structure

Numbers

Subset Sheets:

Project No./Code

STE M-240-094

Code 15540

Sheet Number 1 of 22

KIOWA ENGINEERING CORPORATION

PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER	PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER	PLAN NUMBER	NEW OR REVISED	S STANDARD TITLE	PAGE NUMBER
M-100-1		STANDARD SYMBOLS (3 SHEETS)	1-3	M-607-1		WIRE FENCES AND GATES (3 SHEETS)	100-102	S-612-1		DELINEATOR INSTALLATIONS (7 SHEETS)	151-157
M-100-2		ACRONYMS AND ABBREVIATIONS (4 SHEETS)	4-7	<input checked="" type="checkbox"/> M-607-2		CHAIN LINK FENCE (3 SHEETS)	103-105	<input checked="" type="checkbox"/> S-614-1	<input type="checkbox"/>	GROUND SIGN PLACEMENT (2 SHEETS) (REVISED ON DECEMBER 12, 2014)	<del>158-159</del>
M-203-1	<input type="checkbox"/>	APPROACH ROADS (REVISED ON JULY 08, 2013)	8	M-607-3		BARRIER FENCE	106	<input checked="" type="checkbox"/> S-614-2		CLASS I SIGNS	160
M-203-2		DITCH TYPES	9	M-607-4		DEER FENCE AND GATES (3 SHEETS)	107-109	<input checked="" type="checkbox"/> S-614-3		CLASS II SIGNS	161
M-203-11		SUPERELEVATION CROWNED AND DIVIDED HIGHWAYS (3 SHEETS)	10-12	M-607-10		PICKET SNOW FENCE	110	S-614-4	<input type="checkbox"/>	CLASS III SIGNS (3 SHEETS) (REVISED ON DECEMBER 17, 2014)	<del>162-164</del>
M-203-12		SUPERELEVATION STREETS (2 SHEETS)	13-14	M-607-15		ROAD CLOSURE GATE (9 SHEETS)	111-119	S-614-5		BREAK-AWAY SIGN SUPPORT DETAILS FOR GROUND SIGNS (2 SHEETS)	165-166
<input checked="" type="checkbox"/> M-206-1		EXCAVATION AND BACKFILL FOR STRUCTURES (2 SHEETS)	15-16	M-608-1	<input type="checkbox"/>	CURB RAMPS (7 SHEETS) (REVISED ON JUNE 16, 2014)	<del>120-125</del>	S-614-6	<input type="checkbox"/>	CONCRETE FOOTINGS AND SIGN ISLANDS FOR CLASS III SIGNS (2 SHEETS) (REVISED ON SEPTEMBER 16, 2013)	<del>167-168</del>
M-206-2		EXCAVATION AND BACKFILL FOR BRIDGES (2 SHEETS)	17-18	M-609-1	<input type="checkbox"/>	CURBS, GUTTERS, AND SIDEWALKS (4 SHEETS) (REVISED ON JULY 24, 2012)	<del>126-129</del>	S-614-8	<input type="checkbox"/>	TUBULAR STEEL SIGN SUPPORT DETAILS (6 SHEETS) (REVISED ON OCTOBER 23, 2014)	<del>169-173</del>
<input checked="" type="checkbox"/> M-208-1		TEMPORARY EROSION CONTROL (12 SHEETS)	19-30	M-611-1		CATTLE GUARD (2 SHEETS)	130-131	S-614-9		PEDESTRIAN PUSH BUTTON POST ASSEMBLY	174
M-210-1		MAILBOX SUPPORTS (2 SHEETS)	31-32	M-613-1		ROADWAY LIGHTING (4 SHEETS)	132-135	S-614-10		MARKER ASSEMBLY INSTALLATIONS	175
<input checked="" type="checkbox"/> M-214-1		PLANTING DETAILS	33	M-614-1		RUMBLE STRIPS (3 SHEETS)	136-138	S-614-11		MILEPOST SIGN DETAIL FOR HIGH SNOW AREAS	176
<input checked="" type="checkbox"/> M-412-1	<input type="checkbox"/>	CONCRETE PAVEMENT JOINTS (5 SHEETS) (REVISED ON JULY 24, 2012)	<del>34-38</del>	M-614-2		SAND BARREL ARRAYS (2 SHEETS)	139-140	S-614-12		STRUCTURE NUMBER INSTALLATION	177
M-510-1		STRUCTURAL PLATE PIPE H-20 LOADING	39	M-615-1		EMBANKMENT PROTECTOR TYPE 3	141	S-614-14		FLASHING BEACON AND SIGN INSTALLATIONS (3 SHEETS)	178-180
M-601-1	<input type="checkbox"/>	SINGLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON AUGUST 27, 2013)	<del>40-41</del>	M-615-2		EMBANKMENT PROTECTOR TYPE 5	142	<input checked="" type="checkbox"/> S-614-20		TYPICAL POLE MOUNT SIGN INSTALLATIONS	181
M-601-2	<input type="checkbox"/>	DOUBLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON AUGUST 27, 2013)	<del>42-43</del>	M-616-1		INVERTED SIPHON	143	S-614-21		CONCRETE BARRIER SIGN POST INSTALLATIONS	182
M-601-3	<input type="checkbox"/>	TRIPLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON AUGUST 27, 2013)	<del>44-45</del>	M-620-1		FIELD LABORATORY CLASS 1	144	S-614-22		TYPICAL MULTI-SIGN INSTALLATIONS	183
M-601-10		HEADWALL FOR PIPES	46	M-620-2		FIELD LABORATORY CLASS 2 (2 SHEETS)	145-146	S-614-40A	<input type="checkbox"/>	ALTERNATIVE TRAFFIC SIGNAL INSTALLATION DETAILS (4 SHEETS) (REVISED ON SEPTEMBER 25, 2012)	<del>189-192</del>
M-601-11		TYPE "S" SADDLE HEADWALLS FOR PIPE	47	M-620-11		FIELD OFFICE CLASS 1	147	S-614-41	<input type="checkbox"/>	TEMPORARY SPAN WIRE SIGNALS (REVISED ON NOVEMBER 18, 2014)	<del>193</del>
M-601-12		HEADWALLS AND PIPE OUTLET PAVING	48	M-620-12		FIELD OFFICE CLASS 2	148	S-614-42		CABINET FOUNDATION DETAIL (4 SHEETS)	194-197
M-601-20		WINGWALLS FOR PIPE OR BOX CULVERTS	49	M-629-1		SURVEY MONUMENTS (2 SHEETS)	149-150	S-614-43		TRAFFIC LOOP AND MISCELLANEOUS SIGNAL DETAILS (10 SHEETS)	198-207
M-603-1	<input type="checkbox"/>	METAL PIPE (4 SHEETS) (REVISED ON OCTOBER 02, 2014)	<del>50-53</del>					S-614-44	<input type="checkbox"/>	PEDESTAL POLE SIGNALS (2 SHEETS) (REVISED ON NOVEMBER 03, 2014)	
M-603-2	<input type="checkbox"/>	REINFORCED CONCRETE PIPE (REVISED ON OCTOBER 02, 2014)	<del>54</del>					S-614-50	<input type="checkbox"/>	STATIC SIGN MONOTUBE STRUCTURES (12 SHEETS) (REVISED ON NOVEMBER 28, 2012)	<del>208-219</del>
M-603-3		PRECAST CONCRETE BOX CULVERT	55					S-614-60	<input type="checkbox"/>	DYNAMIC SIGN MONOTUBE STRUCTURES (14 SHEETS) (REVISED ON NOVEMBER 28, 2012)	<del>220-233</del>
<input checked="" type="checkbox"/> M-603-4	<input type="checkbox"/>	CORRUGATED POLYETHYLENE PIPE (AASHTO M294) (REVISED ON OCT. 02, 2014)	<del>56</del>					<input checked="" type="checkbox"/> S-627-1	<input type="checkbox"/>	PAVEMENT MARKINGS (5 SHEETS) (REVISED ON JUNE 10, 2014)	<del>234-238</del>
M-603-5	<input type="checkbox"/>	POLYVINYL CHLORIDE (PVC) PIPE (AASHTO M304) (REVISED ON OCT. 02, 2014)	<del>57</del>					<input checked="" type="checkbox"/> S-630-1	<input type="checkbox"/>	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION (20 SHEETS) (REVISED ON DECEMBER 08, 2014)	<del>239-258</del>
M-603-10		CONCRETE AND METAL END SECTIONS (2 SHEETS)	58-59					S-630-2		BARRICADES, DRUMS, CONCRETE BARRIERS (TEMP) AND VERTICAL PANELS	259
<input checked="" type="checkbox"/> M-604-10		INLET, TYPE C	60					S-630-3		FLASHING BEACON (PORTABLE) DETAILS	260
M-604-11		INLET, TYPE D	61					S-630-4		STEEL SIGN SUPPORT (TEMPORARY) INSTALLATION DETAILS (2 SHEETS)	261-262
M-604-12		CURB INLET TYPE R (2 SHEETS)	62-63					S-630-5	<input type="checkbox"/>	PORTABLE RUMBLE STRIPS (TEMPORARY) (2 SHEETS) (REVISED ON JULY 28, 2013)	<del>263-264</del>
M-604-13		CONCRETE INLET TYPE 13	64					S-630-6		EMERGENCY PULL-OFF AREA (TEMPORARY)	265
M-604-20		MANHOLES (3 SHEETS)	65-67					S-630-7		ROLLING ROADBLOCKS FOR TRAFFIC CONTROL (3 SHEETS)	266-268
M-604-25		VANE GRATE INLET (5 SHEETS)	68-72								
M-605-1		SUBSURFACE DRAINS	73								
<input checked="" type="checkbox"/> M-606-1	<input type="checkbox"/>	GUARDRAIL TYPE 3 W-BEAM (19 SHEETS) (REVISED ON OCT. 27, 2014)	<del>74-92</del>								
M-606-13	<input type="checkbox"/>	GUARDRAIL TYPE 7 F-SHAPE BARRIER (4 SHEETS) (REVISED ON AUGUST 30, 2013)	<del>93-96</del>								
<input checked="" type="checkbox"/> M-606-14		PRECAST TYPE 7 CONCRETE BARRIER (3 SHEETS)	97-99								

**COLORADO**  
**DEPARTMENT OF TRANSPORTATION**  
**M&S STANDARDS PLANS LIST**  
 July 04, 2012  
 Revised on December 17, 2014

ALL OF THE M&S STANDARD PLANS, AS SUPPLEMENTED AND REVISED, APPLY TO THIS PROJECT WHEN USED BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

THE STANDARD PLAN SHEETS INDICATED HEREON BY A MARKED BOX (  ) ARE TO BE USED TO CONSTRUCT THIS PROJECT.



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**Kiowa**  
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 KIOWA PROJ. NO. 13015

<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Sheet Revisions	As Constructed
		No Revisions:
		Revised:
		Void:

Standard Plans List	
Designer: RNW	Structure Numbers
Detailer: RNW	
Sheet Subset:	Subset Sheets:

Project No./Code  
 STE M-240-094  
 Code 15540  
 Sheet Number 2 of 22

SUMMARY OF APPROXIMATE QUANTITIES

CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	PROJECT TOTALS	
			PLAN	AS CONST.
201	CLEARING & GRUBBING	LS	1	
203.1	EXCAVATION (HAUL)	CY	1173	
207	TOPSOIL	CY	950	
208.1	STORM DRAIN / CULVERT INLET PROTECTION	EA	1	
208.2	SILT FENCING	LF	4,350	
208.3	CONCRETE WASHOUT STRUCTURE	EA	2	
208.4	VEHICLE TRACKING CONTROL	EA	2	
212.1	SEEDING	AC	3.0	
212.2	EROSION CONTROL FABRIC	SY	2650	
212.3	MULCHING	AC	3.0	
212.4	PERIMETER FENCING	LF	1,000	
212.5	EROSION CONTROL SUPERVISOR	LS	1	
214.1	1" CALIPER COTTONWOOD TREE	EA	12	
304.1	AGGREGATE BASE COURSE (CLASS 6)	CY	310	
304.2	3/4" CRUSHED ROCK	CY	65	
406	HBP, 4" THICK	TON	40	
506.1	18-INCH D50 SOIL/RIPRAP	CY	1250	
506.2	3'-4'Ø BOULDERS	LF	170	
506.3	12" D50 RIPRAP (CULVERT OUTLET PROTECTION)	CY	2	
514.1	BIKEWAY RAILINGS	LF	331	
514.2	SMOOTH RAIL FENCE	LF	814	
604.1	CITY STD. 10-FOOT D10R CURB INLET	EA	1	
604.2	CITY STD. 4'Ø MANHOLE	EA	1	
604.3	ADJUST MANHOLE COVERS & VALVE COVERS	EA	5	
606.1	REMOVE EXISTING GUARD RAILING	LF	84	
606.2	STANDARD NON-FLARED END TERMINAL, TYPE 3D	EA	1	
606.3	TYPE 7 BARRIER	LF	30	
606.4	INSTALL SALVAGED END TERMINAL	EA	1	
607.1	6' CHAIN LINK FENCE WITH 28' WIDE SLIDING GATE	EA	1	
607.2	REMOVE 6' CHAINLINK FENCE & SALVAGE FABRIC	LF	318	
607.3	REPLACE 6' CHAINLINK FENCE & SALVAGED FABRIC	LF	271	
607.4	REMOVE EXISTING BARBED WIRE FENCE	LF	45	
607.5	REMOVE & REPLACE POST & RAIL ASSEMBLY	EA	1	
607.6	6' CHAINLINK FENCE, POSTS 10'C	LF	120	
608.1	CONCRETE TRAIL SECTION A	SY	5,444	
608.2	CONCRETE TRAIL SECTION B	SY	512	
608.3	CONCRETE TRAIL SECTION C	SY	368	
608.4	CONCRETE CURB RAMPS, CITY STD.	EA	4	
608.5	CONCRETE DRIVEWAY, CITY STD.	EA	1	
608.6	TYPE I CURB & GUTTER, CITY STD.	LF	106	
608.7	TYPE III CURB & GUTTER, CITY STD.	LF	26	
608.8	STD. CURB FLARES	EA	3	
608.9	ROLLED ASPHALT CURB	LF	20	
608.10	CONCRETE DRIVEWAY 8" THICK	SF	1130	
617.1	18" HDPE CULVERT	LF	147	
617.2	18" PVC SDR35	LF	5	
617.3	18" HDPE FES	EA	1	
620	SANITARY FACILITY	EA	1	
625	CONSTRUCTION STAKING	LS	1	
627	EPOXY PAVEMENT MARKING, CROSSWALKS	LS	1	
629	MONUMENTATION	LS	1	
630.1	CONSTRUCTION ZONE TRAFFIC CONTROL 30"x30"	EA	8	
630.2	TRAIL SIGNAGE, PANEL SIZE A	EA	11	
630.3	REMOVE/REPLACE SIGNS	EA	2	
630.4	REMOVE/REPLACE MAILBOX	EA	1	
712.1	REMOVABLE LOCKING STEEL POSTS	EA	4	
712.2	CONCRETE RAIL CROSSING PADS: GAGE & FIELD PANELS (2)	LF	48	
712.3	MSE RETAINING WALL	SF	3496	
712.4	TRAIL/RR DEBRIS STRUCTURE	EA	1	
712.5	FORCE ACCOUNTS/MINOR CONTRACT REVISIONS	FA	1	



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		No Revisions:			STE M-240-094
		Revised:	Designer: RNW	Structure Numbers	Code 15540
		Void:	Detailer: RNW	Subset Sheets:	Sheet Number 3 of 22

# GENERAL NOTES

ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE LATEST COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2012.

THE CONTRACTOR SHALL HAVE IN HIS POSSESSION AT ALL TIMES ONE (1) SIGNED COPY OF THE PLANS AND SPECIFICATIONS WHICH HAVE BEEN APPROVED BY THE COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) AND THE CITY OF COLORADO SPRINGS (CITY).

THE CONTRACTOR SHALL NOTIFY THE OWNER (CITY) AND ENGINEER OF ANY PROBLEM IN CONFORMING TO THE APPROVED PLANS FOR ANY ELEMENT OF THE PROPOSED IMPROVEMENTS PRIOR TO ITS CONSTRUCTION.

THE CONTRACTOR SHALL PROTECT ALL EXISTING FACILITIES IN THE GENERAL AREA OF CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OPERATIONS AT NO COST TO THE PROJECT.

UTILITY LINES AS SHOWN ON THESE DRAWINGS ARE PLOTTED FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL CALL 811 FOR UTILITY LOCATIONS AT LEAST TWO WORKING DAYS PRIOR TO ANY DIGGING. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND SHALL PROTECT THEM FROM DAMAGE DURING CONSTRUCTION.

A CITY OF COLORADO SPRINGS DEPARTMENT OF UTILITIES INSPECTOR IS REQUIRED TO BE ONSITE DURING EXCAVATION AND CONSTRUCTION AROUND GAS FACILITIES. IT IS THE RESPONSIBILITY TO COORDINATE WITH THE GAS DEPARTMENT FORTY-EIGHT (48) HOURS PRIOR TO CONSTRUCTION NEAR GAS FACILITIES.

DEPTH OF MOISTURE-DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS: FULL DEPTH OF ALL EMBANKMENTS. BASES OF CUTS AND FILLS 0.5 FOOT.

EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED AS SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.

THE TESTING OF COMPACTION FOR THIS PROJECT WILL BE PER AASHTO T 99.

SUBGRADE UNDER TRAIL SHALL BE RECOMPACTED TO 95% STANDARD PROCTOR IN ACCORDANCE WITH SECTION 304 OF THE ABOVE REFERENCED CDOT SPECIFICATIONS.

SOIL PREPARATION AND SEEDING WILL BE REQUIRED FOR AN ESTIMATED 3.0 ACRES WITHIN THE LIMITS OF THE TRAIL. SEE SWMP FOR SEEDING TYPES AND APPLICATION RATES.

SURVEYING FOR THIS PROJECT SHALL BE CONDUCTED IN ACCORDANCE WITH CDOT STANDARDS.

BENCHMARK: FIMS MONUMENT No. F220 IS A BERNTSEN C1DB 3.25-INCH DIAMETER BRASS FIMS CAP, SET ON THE NORTHEAST CORNER OF A STORM SEWER INLET, LOCATED ON THE NORTH SIDE OF WABASH STREET, ABOUT 30 FEET EAST OF LAS VEGAS STREET. A MANHOLE IS 31.5 FEET TO THE SOUTH AND A HYDRANT IS 26.5 FEET TO THE SOUTHWEST.

TWELVE NATIVE COTTONWOOD TREES SHALL BE PLANTED ALONG COTTONWOOD CREEK WITHIN THE PROJECT AREA PER THE SB40 AGREEMENT WITH COLORADO PARKS AND WILDLIFE.

THE CONTRACTOR SHALL OBTAIN THE CDPS PERMIT FROM CDPHE.



WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. LOCATIONS SHALL BE AS DIRECTED BY THE ENGINEER. WATER WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE SUBSIDIARY TO THE EXCAVATION ITEM.

ALL REMOVED ASPHALT WILL BECOME THE PROPERTY OF THE CONTRACTOR AND WILL BE DISPOSED OF OUTSIDE PROJECT LIMITS.

THE SOIL TO BE PLACED AS TOPSOIL MATERIAL SHALL BE FREE OF REFUSE, STUMPS, ROOTS, ROCKS, BRUSH, WEEDS, HARD CLODS, TOXIC SUBSTANCES OR OTHER MATERIAL WHICH WOULD BE DETRIMENTAL TO ITS USE ON THE PROJECT. IT SHALL HAVE A MINIMUM P.I. OF 5 BUT SHALL NOT BE SUCH HEAVY CLAY AS TO PRECLUDE PLACEMENT WITH A SHOULDER MACHINE.

SALVAGEABLE MATERIAL: MATERIAL THAT CAN BE SAVED OR SALVAGED. UNLESS OTHERWISE SPECIFIED IN THE CONTRACT, ALL SALVABLE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

TOPOGRAPHIC DATA INDICATED ON THESE DRAWINGS WAS COMPILED FROM AERIAL AND FIELD SURVEYS. CONTRACTOR MUST VERIFY EXTENT OF WORK WITHIN THESE AREAS. DIMENSIONS, ELEVATIONS, AND LOCATIONS OF EXISTING STRUCTURES, PIPELINES, AND UTILITIES ARE APPROXIMATE. WHERE SUCH DIMENSIONS OR LOCATIONS DETERMINE THE LIMITS OF THE WORK, SUCH DIMENSIONS OR LOCATIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION.

THE LOCATIONS OF EXISTING STRUCTURES, PIPELINES, UTILITIES, ETC., SHOWN ON THE DRAWINGS HAVE BEEN APPROXIMATED. THERE MAY BE OTHER STRUCTURES, PIPELINES, UTILITIES, ETC., NOT SHOWN ON THE DRAWINGS WHICH PRESENTLY EXIST IN THE AREA OF CONSTRUCTION. THE ENGINEER AND/OR OWNER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL IMPACTED EXISTING STRUCTURES, PIPELINES, UTILITIES, ETC., IN THE PROJECT SITE.

THE CONTRACTOR SHALL CAREFULLY PRESERVE ALL MONUMENTS, BENCHMARKS, PROPERTY MARKERS, REFERENCE POINTS, AND STAKES. IN CASE OF HIS DESTRUCTION OF THESE, THE CONTRACTOR WILL BE RESPONSIBLE FOR RESETTING SAME, AT NO COST TO THE OWNER, AND SHALL BE RESPONSIBLE FOR ANY LOSS OF TIME THAT MAY BE CAUSED.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHERE UTILITIES CONFLICT WITH THE WORK IN CONFORMANCE WITH THE SPECIFICATIONS. WHERE FIELD VERIFICATION IS NOTED NOTED ON THE PLANS, THIS SHALL REQUIRE THE CONTRACTOR TO DETERMINE THE LOCATION OF THE FACILITY IN QUESTION PRIOR TO CONSTRUCTION. A DETERMINATION SHALL BE MADE BY THE CONTRACTOR IF THE CURRENT DESIGN WILL CONFLICT WITH THE EXISTING FACILITY AND NOTIFY THE ENGINEER IN WRITING.

ALL EXISTING AREAS DISTURBED OUTSIDE THE LIMITS OF CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED IN CONFORMANCE WITH THE SPECIFICATIONS AT NO ADDITIONAL COST TO THE PROJECT.

ALL EXISTING ROADWAYS AND SIDEWALKS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR RECONSTRUCTED IN CONFORMANCE WITH THE SPECIFICATIONS.

SIGNAGE SHALL FOLLOW THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), LATEST EDITION. CONTRACTOR SHALL SUBMIT TO THE CITY A TRAFFIC CONTROL PLAN PRIOR TO COMMENCING WITH THE WORK.

CONTRACTOR SHALL ESTABLISH TRAIL CORRIDOR WITH STAKES. THE OWNER WILL THEN MARK ALL TREES TO BE SAVED IN A WALKTHROUGH OF THE TRAIL CORRIDOR WITH THE CONTRACTOR.

ALL DISCHARGES TO DRAINAGE COURSES AND STORM SEWER SYSTEMS MUST COMPLY WITH THE APPLICABLE PROVISIONS OF THE COLORADO WATER QUALITY CONTROL ACT AND THE COLORADO DISCHARGE PERMIT REGULATIONS, AND ARE SUBJECT TO INSPECTION BY THE CDOT AND CDPHE. EL PASO COUNTY AND COLORADO SPRINGS ARE REQUIRED TO OBTAIN MS-4 PERMITS. CONTRACTOR SHALL DEVISE AND IMPLEMENT A PERMANENT PLAN FOR PERIODIC REMOVAL AND DISPOSAL OF SEDIMENT FROM EROSION CONTROL FACILITIES AND FOR MAINTENANCE OF EROSION CONTROL FACILITIES.

## KNOWN UTILITIES WITHIN PROJECT LIMITS

CONTRACTOR MUST VERIFY ALL UTILITIES PRIOR TO EXCAVATION

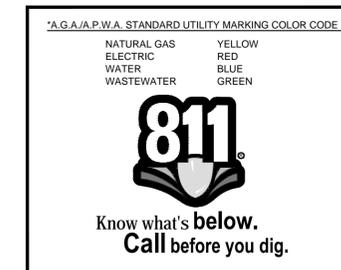
1. CITY OF COLORADO SPRINGS DEPT. OF UTILITIES: WATER, WASTEWATER, ELECTRIC & GAS DIVISIONS
2. CENTURY LINK TELEPHONE SERVICE
3. FOUNTAIN MUTUAL IRRIGATION COMPANY
4. COMCAST CATV LINES
- 5.

## PRE-EXCAVATION CHECKLIST

- GAS AND OTHER UTILITY LINES OF RECORD SHOWN ON PLANS.
- UTILITIES CENTRAL LOCATING CALLED AT LEAST 2 BUSINESS DAYS AHEAD. (811)
- UTILITIES LOCATED AND MARKED.
- EMPLOYEES BRIEFED ON MARKING AND COLOR CODES.\*
- EMPLOYEES TRAINED ON EXCAVATION AND SAFETY PROCEDURES FOR NATURAL GAS LINES.
- WHEN EXCAVATION APPROACHES GAS LINES, EMPLOYEES EXPOSE LINES BY CAREFUL PROBING AND HAND DIGGING.

### \*A.G.A./A.P.W.A. STANDARD UTILITY MARKING COLOR CODE

NATURAL GAS	YELLOW
ELECTRIC	RED
WATER	BLUE
WASTEWATER	GREEN



## LEGEND

	BOLLARD
	FENCE
	GUARDRAIL
	SIGN
	ELECTRIC POWER POLE
	ELECTRIC LINE
	ELECTRIC VAULT
	GAS MAIN
	GAS VENT
	SANITARY SEWER MAIN
	SANITARY SEWER MANHOLE
	TELEPHONE MAIN
	TELEPHONE MANHOLE
	TELEPHONE RISER
	WATER MAIN
	WATER VALVE

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KIOWA PROJ. NO. 13015

	Sheet Revisions	As Constructed	General Notes		Project No./Code
		No Revisions:	Designer: RNW	Structure Numbers	STE M-240-094
		Revised:	Detailer: RNW		Code 15540
		Void:	Sheet Subset:	Subset Sheets:	Sheet Number 4 of 22

**TABULATION OF EARTHWORK ( ITEM 203 )**

PROJECT	ITEM	QUANTITY (CY)
STE M 240-094	UNCLASSIFIED EXCAVATION	2570 *
	EMBANKMENT (FILL)	1215 *
	NET HAUL	1355 *
	15% SHRINKAGE	182 *
	TOTAL HAUL	1173

\* THESE QUANTITIES FOR INFORMATION ONLY

(PAY ITEM)

**SUMMARY OF DRAINAGE STRUCTURE QUANTITIES**

PROJECT	STATION	PIPE (ITEMS 603, 617.1 & 617.2)	FITTINGS	END SECTION (ITEMS 617.3 & 617.4)	12" D50 RIPRAP (CY) (CULVERT OUTLET PROTECTION) (ITEM 506.3)	LENGTH (LF)
STE M 240-094	STA 27+50	18" HDPE	TYPE D10R INLET (604.1)	1 - 18" HDPE	1.0	147
	STA 30+85.71	18" HDPE	4'ø MANHOLE (604.2)		1.0	22
	STA 30+84	18" PVC SDR35			0	5
					TOTAL	2.0 CY

**TABULATION OF TRAIL SIGNAGE PANEL SIZE A ( ITEM 630.2 )**

SIGN SCHEDULE	DESIGNATION	AMOUNT
① - ④ BICYCLES AHEAD	W11-1	4
⑤ - ⑥ SAND CREEK TRAIL	RL-090	2
⑦ 	M7-5R	1
⑧ - ⑩ "BICYCLISTS DISMOUNT"		3
⑪ "STOP-TRAIL AHEAD"		1
		TOTAL=11

**TABULATION OF GUARDRAILS**

PROJECT	BID TEM	DESCRIPTION	QUANTITY (LF)
STE M 240-094	606.1	REMOVE EXISTING GUARDRAIL	84
	606.2	STD. NON-FLARED END TERM TYPE 3D	1
	606.3	TYPE 7 BARRIER	30
	606.4	INSTALL SALVAGED END TERMINAL	1

**TABULATION OF BIKEWAY RAIL ( ITEM 514.1 )**

PROJECT	STA. TO STA.	LENGTH, L.F.
STE M 240-094	28+90 TO 32+20.76	331
PROJECT TOTAL		331

**TABULATION OF FENCING**

PROJECT	BID TEM	DESCRIPTION	QUANTITY
STE M 240-094	607.1	28' WIDE, 6' CHAINLINK SLIDING GATE	1
	607.2	REMOVE 6' CHAINLINK FENCE & SALVAGE FABRIC	318 LF
	607.3	REPLACE 6' CHAINLINK FENCE W/SALVAGED FABRIC	271 LF
	607.4	REMOVE EXISTING BARBED WIRE FENCE	45 LF
	607.5	REMOVE & REPLACE POST & RAIL ASSEMBLY	1
	607.6	6'CHAINLINK FENCE, POST 10' OC	120

**TABULATION OF SMOOTH RAIL FENCE ( ITEM 514.2 )**

PROJECT	STA. TO STA.	LENGTH, L.F.
STE M 240-094	42+64 TO 50+78.09	814
PROJECT TOTAL		814

**TABULATION OF TRAIL QUANTITIES ( ITEMS 608.1-4 )**

PROJECT	STA. TO STA.	TYPICAL TRAIL WIDTH	SECT.	5" THICK CONCRETE (BID ITEMS 608.1-4)	LENGTH	COMMENTS
		FT.		SQ. YD.		
STE M 240-094	STA 17+92 TO STA 22+89	10'	A	391	352	-
	STA 22+89 TO STA 27+50.1	10'	B	512	461	12" THICK CONC.
	STA 27+60 TO STA 28+90	10.5'	A	156	140	
	STA 28+90 TO STA 32+20.76	10.5'	C	368	331	KNEE & CUT-OFF WALLS
	STA 32+20.76 TO STA 68+19.8±	12'	A	4797	3598	-
PROJECT TOTAL				6224	4882	-

NOTE: MATERIALS AND INSTALLATION OF CONCRETE TRAIL SECTIONS A-C TO BE PAID FOR ON A PER SQ. YD. BASIS. UNIT PRICE INCLUDES EXCAVATION, SUB GRADE PREP, STEEL OR FIBER REINFORCING, FORMING, POURING, FINISHING AND CURING OF CONCRETE TRAIL, WIDTH TRANSITIONS, CUT-OFF WALLS & KNEE-WALLS AS APPLICABLE TO EACH TRAIL SECTION. ALL CONCRETE FOR TRAIL SECTIONS A-C SHALL BE CITY OF COLORADO SPRINGS STANDARD DESIGN MIX, f'c=4,000psi

**SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES ( ITEM 630.1 )**

PROJECT	SIGN CODE	LEGEND	PANEL SIZE - DIMENSIONS (QUANTITY EACH) 30" x 30"
STE M-240-094	30W8-6	"TRUCKS TURNING"	3
	30W21-5	"ROAD WORK AHEAD"	5
TOTAL			8

NOTES:

1. MAN-HOUR COST FOR TRAFFIC CONTROL SUPERVISOR AND MANAGER WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK FOR BID ITEM 630.1.



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 KIOWA PROJ. NO. 13015

Sheet Revisions	As Constructed	Tabulation of Quantities		Project No./Code	
				STE M-240-094	
○	No Revisions:	Designer: RNW	Structure Numbers	Code 15540	
○	Revised:	Detailer: RNW		Sheet Number 5 of 22	
○	Void:	Sheet Subset:	Subset Sheets:		

TO ESTABLISH GEOMETRIC CONTROL FOR THE CONSTRUCTION OF THIS PROJECT, THE DEPARTMENT HAS PROVIDED THE FOLLOWING INFORMATION:

- Horizontal Control PLAN SHEET
- Vertical Control PLAN SHEET
- Roadway Alignment PLAN SHEET
- Original Terrain Data PLAN SHEET
- Other: \_\_\_\_\_

Specify the information format, i.e., plan sheet, computer disk, computer printout, or other. The information marked is either contained on the plans or is available from the Engineer.

TYPE OF PROJECT

- Landscaping
- Signalization
- Safety Improvement
- Asphalt Overlay
- Concrete Overlay
- Minor Widening
- Major Reconstruction
- New Roadway Construction
- Bridge Replacement
- Bridge Widening
- New Bridge
- Other: TRAIL IMPROVEMENTS

SURVEY WORK TO BE PERFORMED BY OTHERS: \_\_\_\_\_

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 625:

- Establish and Maintain Project Centerline or Engineer Approved Offset Line(s)
- Verification and Maintenance of Horizontal and Vertical Control
- Verify or Determine existing grades and alignments
- GPS/RTS (Global Positioning System/Robotic Total Station) Construction Machine Control
- Verify or Determine existing topography
- Clearing and Grubbing Limits (Section 201)
- Removal Limits (Section 202)
- Reset Items (Section 210)
- Excavation and Embankment (Section 203)

	Slope Staking (Y/N)	Grid (Y/N)	Grade (Y/N)	Special Interval
<input type="checkbox"/> Excavation				
<input type="checkbox"/> Unclassified	-	-	-	-
<input type="checkbox"/> Stripping	-	-	-	-
<input type="checkbox"/> Muck	-	-	-	-
<input type="checkbox"/> Rock	-	-	-	-
<input type="checkbox"/> Borrow	-	-	-	-
<input type="checkbox"/> Other: _____	-	-	-	-
<input type="checkbox"/> Potholing	-	-	-	-

	Slope Staking (Y/N)	Grid (Y/N)	Grade (Y/N)	Special Interval
<input type="checkbox"/> Embankment				
<input type="checkbox"/> Site Grading	-	-	-	-
<input type="checkbox"/> Erosion Control (Perm)	-	-	-	-
<input type="checkbox"/> Other: _____	-	-	-	-

- As Staked Earthwork Quantities (See General Notes)
- Landscaping
- Top Soil (Section 207)
- Seeding (Section 212)
- Mulching (Section 213)
- Planting (Section 214)
- Herbicide (Section 217)
- Other: \_\_\_\_\_

- Erosion Control (Section 208)
- Seeding (Temp)
- Silt Fence
- Erosion Bales
- Erosion Logs
- Riprap (Temp)
- Other: \_\_\_\_\_

- Roadway Bases
- Untreated Subgrade
- Treated Subgrade
- Aggregate Base Course (Section 304)
- Reconditioning
- PMBB - Plant Mix Bituminous Base
- Other: \_\_\_\_\_

	Grid (Y/N)	Grade (Y/N)	Special Interval	Special Offset
<input type="checkbox"/>	-	-	-	-
<input type="checkbox"/>	-	-	-	-
<input type="checkbox"/>	-	-	-	-
<input type="checkbox"/>	-	-	-	-
<input type="checkbox"/>	-	-	-	-

- Pavements
- HMA - Hot Mix Asphalt (Section 403)
- Concrete (Section 412)
- Heating & Scarifying Treatment
- Prime Coat, Tack Coat & Rejuvenating Agent (Section 407)
- Seal Coat or Chip Seal (Section 409)
- Other: \_\_\_\_\_

Pavements	Grid (Y/N)	Special Interval	Special Offset
	<input type="checkbox"/>	-	-
<input type="checkbox"/>	-	-	-
<input type="checkbox"/>	-	-	-
<input type="checkbox"/>	-	-	-

- Roadway Elements
- Curb and Gutter (Section 609)
- Drop inlets - alignment and grades (Section 604)

Curb & Gutter	Tangent Interval	Curve Interval	Special Offset
	<input type="checkbox"/>	-	-

- Retaining Walls
- Guard Rail (Section 606)
- Sidewalk (Section 608)
- Overlay Stationing
- Other: \_\_\_\_\_

Stationing	Left Interval	Center Interval	Right Interval
	<input type="checkbox"/>	-	-

- Riprap (Perm) (Section 506)
- Slope and Ditch Paving (Section 507)

- Minor Structures
- Structure Excavation limits (Section 206)
- Culverts (Section 603)
- Culverts w/ Headwalls and Wingwalls (Section 601)
- Concrete Box Culverts w/ Headwalls and Wingwalls
- Pipes (Section 603)
  - Sanitary Sewer
  - Storm Sewer
  - Water
  - Irrigation
  - Miscellaneous
- Manholes (Section 604)
- Inlets (Section 604)
- Other: \_\_\_\_\_

- Major Structures - Overhead Signs (Section 614), Concrete Box Culverts, Bridges - and all other structures assigned a structure number
- Structure Excavation limits (Section 206)
- Concrete Box Culverts (Section 603) w/ Headwalls and Wingwalls (Section 601)
- Piling locations and cut off elevations (Section 502)
- Caisson locations and elevations (Section 503)
- Footing locations, alignment, and elevations
- Abutment/Pier locations, alignment, and elevations
- Wingwall skew angles/offsets
- Structural concrete form locations
- Substructure As-constructed survey required for Bridges (Subsection 601 .12) and Overhead signs (S-614-50)
- Bridge expansion joint(s) alignment and grade (longitudinal and transverse)
- Deck grades at Girder 10th or "n" th point locations and elevations
- Slope and Ditch Paving (Section 507)
- Other: \_\_\_\_\_

- Fencing (Section 607)
- Temporary
- Permanent
- Sound Barrier
- Other: \_\_\_\_\_

- Delineators (Section 612)
- Temporary
- Permanent

- Lighting (Section 613) and Traffic Control Devices (Permanent) (Section 614)
- Signal pole locations and elevations
- Light pole locations and elevations
- Sign locations
- Field verify sign post locations, elevations, and lengths before fabrication.
- Other: \_\_\_\_\_

- Pavement Marking (Section 627)
  - Striping (Temp)
  - Striping (Perm)
  - Symbols
  - Other: \_\_\_\_\_
- Temporary Lighting and Construction Traffic Control Devices (Section 630)
  - Signal pole locations and elevations (Temp)
  - Light pole locations and elevations (Temp)
  - Sign Locations (Temp)
  - Other: \_\_\_\_\_
- All Easements (Temp Staking by P.L.S. Only)
- Right of Way (Temp Staking by P.L.S. Only)

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 629:

- Monumentation (Section 629)
  - Control
  - Right of Way
  - Land corners, Aliquot corners
  - Easements
  - Reference the specified existing monuments: \*\* \_\_\_\_\_
  - Replace the specified existing monuments: \*\* \_\_\_\_\_
  - Locate monuments. It is estimated \_\_\_\_\_ hours are required.

NOTE: All 629 items shall include adequate research, calculations, and evaluations of evidence for monuments to be set.

\*\* A Tabulation of Survey Monuments may be provided on the plans.

GENERAL NOTES:

- Unless indicated otherwise on this Survey Tabulation Sheet, all survey work and staking intervals shall be done in accordance with the latest edition of the CDOT Survey Manual.
- Adequate information for establishing lines, grades, and locations for all work items have been specified on the plans. Any additional information required to stake the item or element shall be generated by the Contractor's surveyor.
- The Contractor's surveyor shall provide an estimate of the man-hours necessary to complete the work items indicated on this sheet. A copy of this sheet, with the estimated man-hours written on the blank line to the left of the specified items, shall be submitted with the Survey Schedule to the Engineer \_\_\_\_\_ days prior to the Presurvey Conference - Construction Survey.
- Stakes and Monuments which are damaged or destroyed by the progress of construction shall be replaced by the Contractor at no additional cost to the Department.
- The Contractor shall furnish an As Staked (or GPS/RTS Construction Machine Control) Earthwork Quantity report to the Engineer prior to completion of twenty percent (20%) of the planned earthwork in any phase as per the CDOT Survey Manual. A printed copy of the As Staked (or GPS/RTS Construction Machine Control) Earthwork data report and a computer disk with that information on it, in the specified format shall be submitted to the Engineer. The Contractor shall field verify original ground cross sections at a maximum 500 feet intervals.
- Prior to beginning work on any subsequent operation, such as placing base course or paving, the Contractor shall certify in writing to the Engineer that the final grade is within specified tolerance.
- The Contractor's surveyor shall perform all field surveying and calculations necessary to tie plan grades into field grades.
- The Contractor shall coordinate construction staking on the project with any utility work.
- Fieldbooks shall contain daily records of points set and or measurements observed. The information recorded shall contain: date, crew members' names, point no., description, staking information, and sketches. If the survey information is collected electronically, information recorded shall be provided to the Project Engineer in a hard copy format that is intuitive, clear and related to the supplemental information recorded in the field books. All linear surveys, such as slope stakes and blue tops, shall have the station and offset information related to the measured information. Non-linear surveys such as structures staking shall have sketches relating electronic information, such as point numbers, to the sketch.
- The Contractor's surveyor shall submit the following fieldbooks to the Engineer:

- Horizontal Control (Primary & Secondary)
- Vertical Control (i.e. Benchmarks)
- Property Pin Ties
- Horizontal Alignment
- Grading
- Slope Staking
- Minor Structures
- Major Structures
- One fieldbook for each work category shown on this sheet
- Other Fieldbook(s): \_\_\_\_\_

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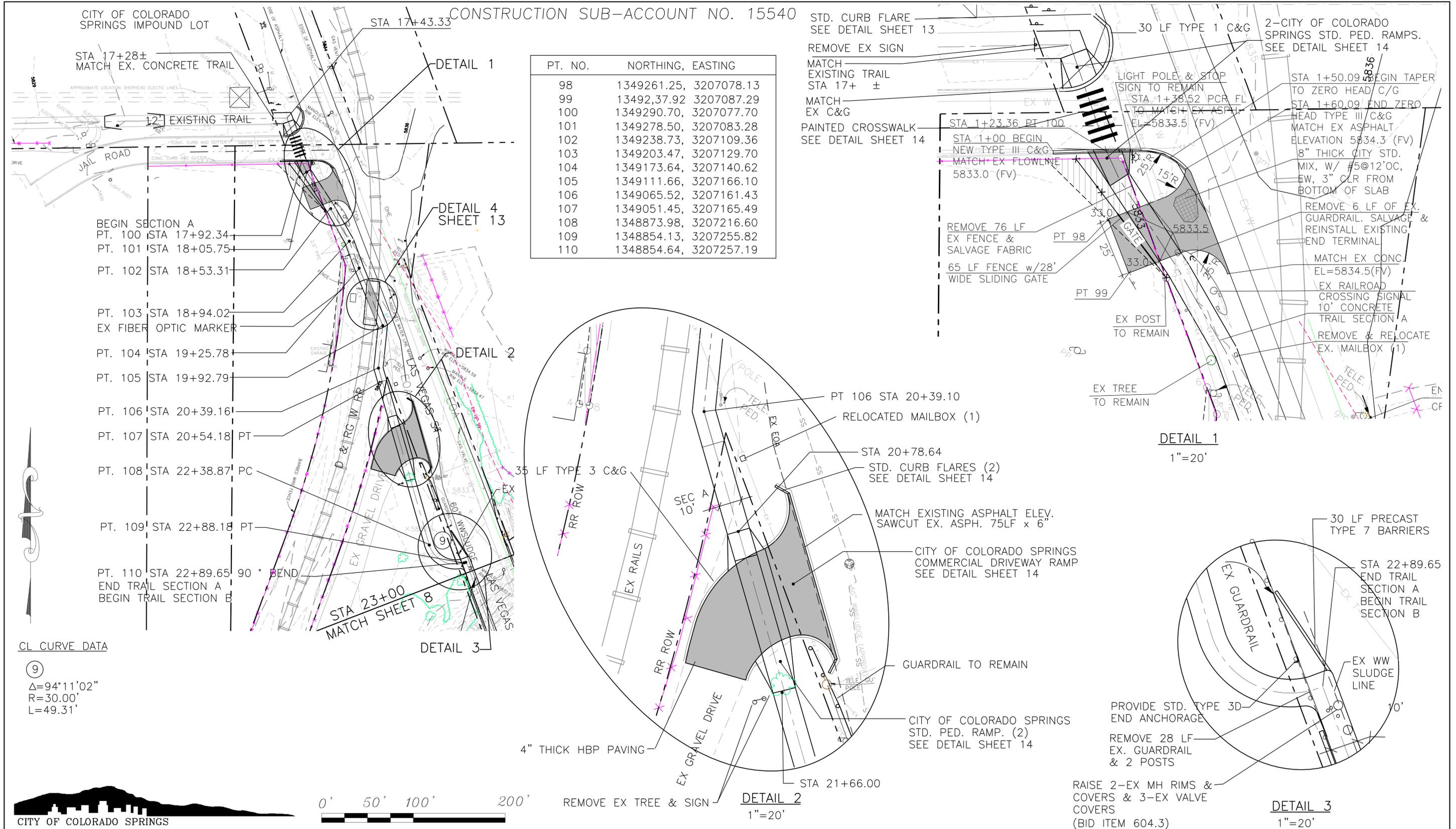
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<input type="checkbox"/>	Revised:
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SURVEY TABULATION SHEET	
Designer: RNW	Structure Numbers
Detailer: RNW	
Sheet Subset:	Subset Sheets:

Project No./Code	STE M-240-094
Code	15540
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CITY OF COLORADO SPRINGS IMPOUND LOT

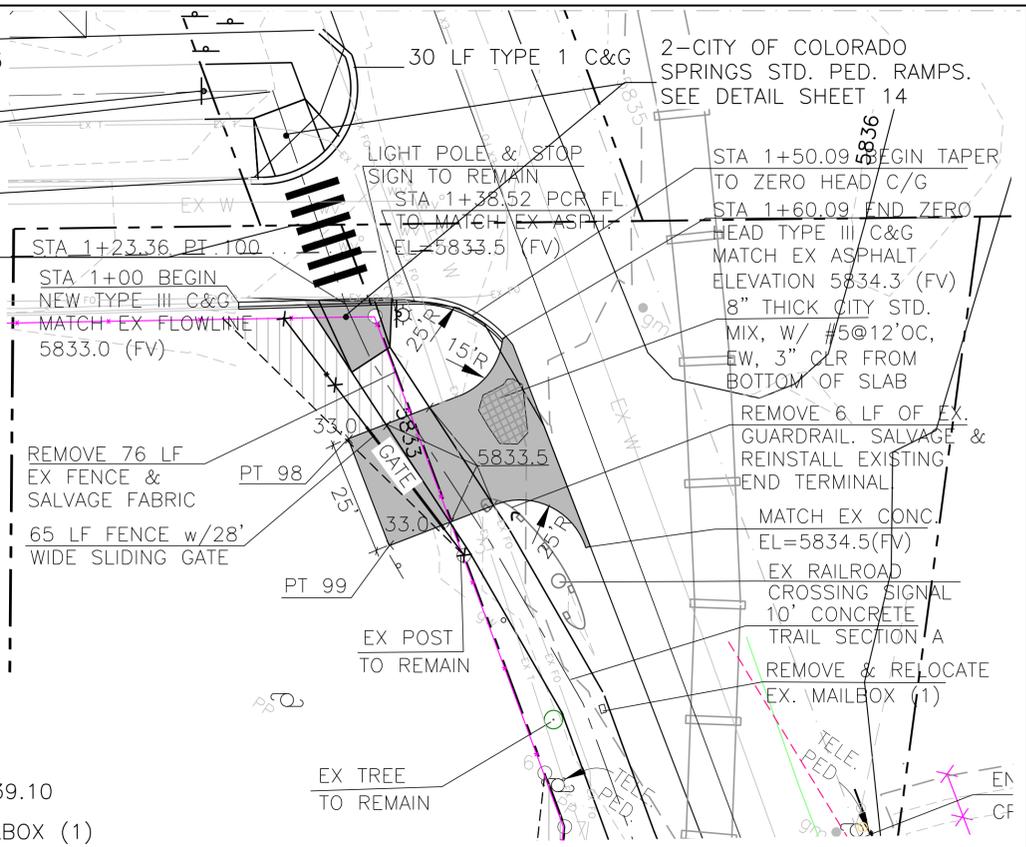
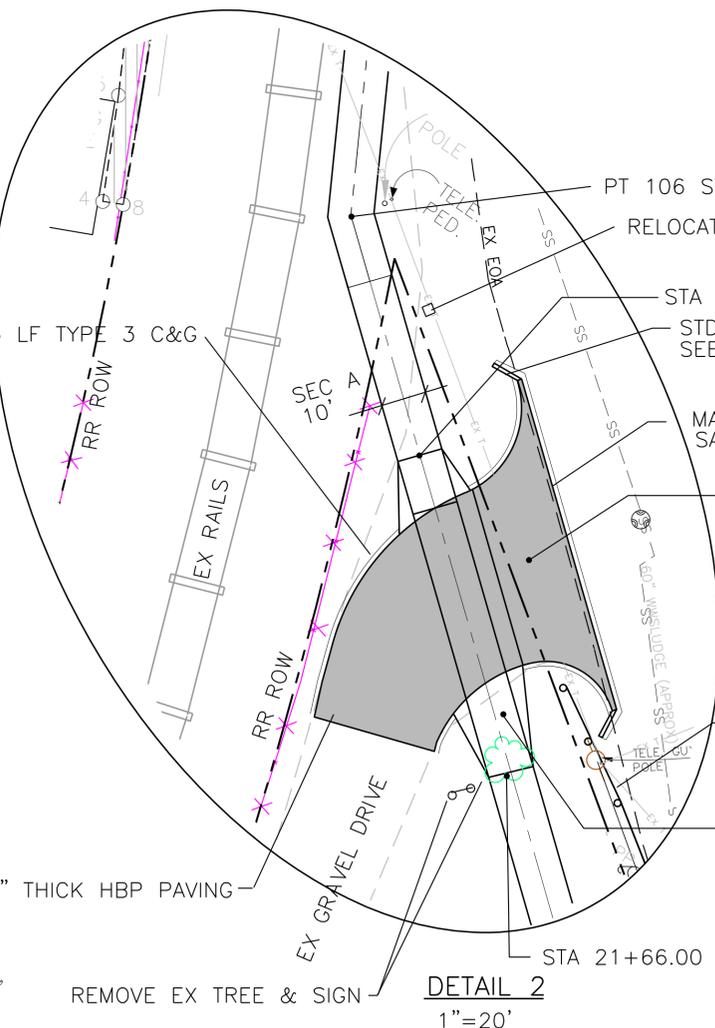
CONSTRUCTION SUB-ACCOUNT NO. 15540



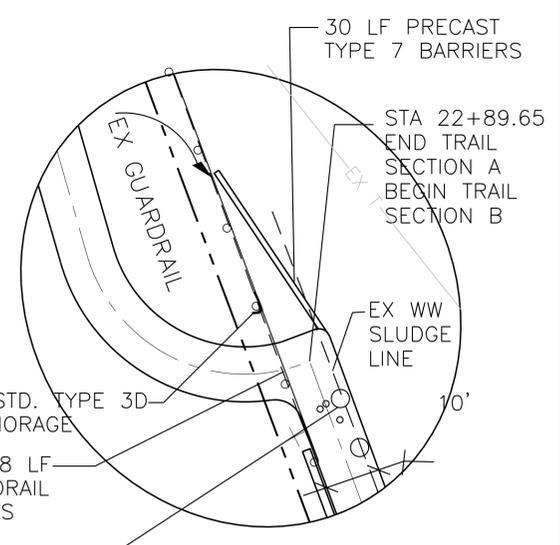
PT. NO.	NORTHING, EASTING
98	1349261.25, 3207078.13
99	1349237.92, 3207087.29
100	1349290.70, 3207077.70
101	1349278.50, 3207083.28
102	1349238.73, 3207109.36
103	1349203.47, 3207129.70
104	1349173.64, 3207140.62
105	1349111.66, 3207166.10
106	1349065.52, 3207161.43
107	1349051.45, 3207165.49
108	1348873.98, 3207216.60
109	1348854.13, 3207255.82
110	1348854.64, 3207257.19

- BEGIN SECTION A  
PT. 100 STA 17+92.34
- PT. 101 STA 18+05.75
- PT. 102 STA 18+53.31
- PT. 103 STA 18+94.02  
EX FIBER OPTIC MARKER
- PT. 104 STA 19+25.78
- PT. 105 STA 19+92.79
- PT. 106 STA 20+39.16
- PT. 107 STA 20+54.18
- PT. 108 STA 22+38.87
- PT. 109 STA 22+88.18
- PT. 110 STA 22+89.65  
90° BEND  
END TRAIL SECTION A  
BEGIN TRAIL SECTION B

CL CURVE DATA  
 9  
 $\Delta=94^{\circ}11'02''$   
 $R=30.00'$   
 $L=49.31'$



DETAIL 1  
1"=20'



DETAIL 3  
1"=20'

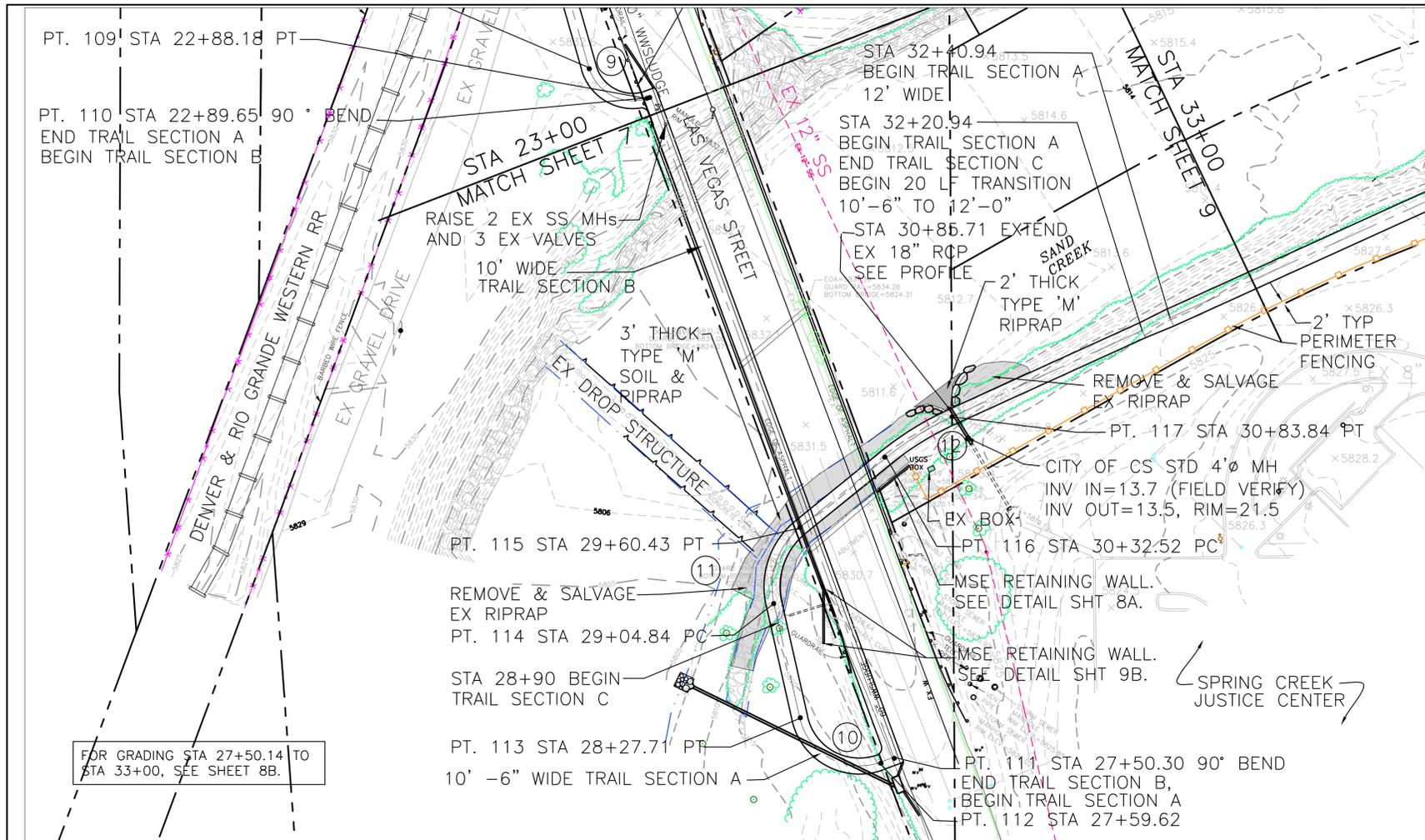
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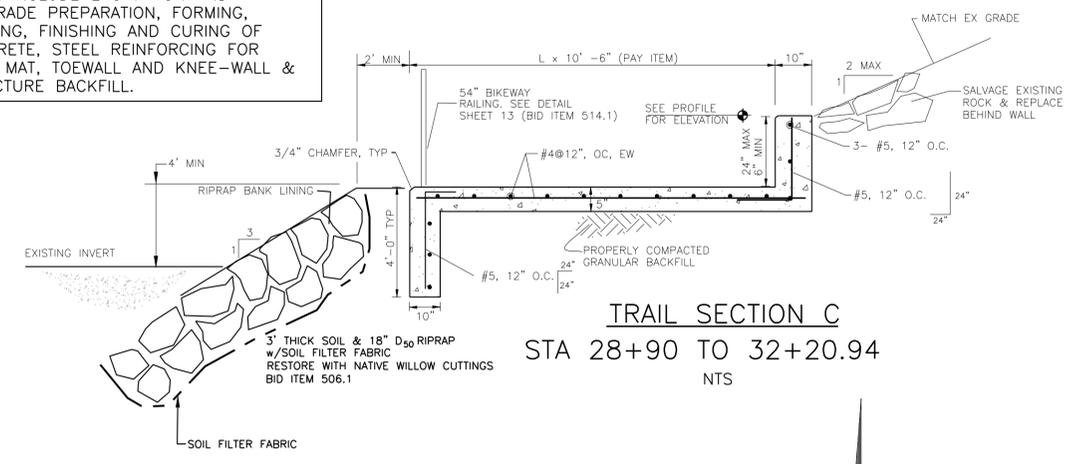
Sheet Revisions	As Constructed
	No Revisions:
	Revised:
	Void:

TRAIL PLAN	
STA.17+28 TO STA.23+00	
Designer: RNW	Structure Numbers
Detailer: RNW	
Sheet Subset:	Subset Sheets:

Project No./Code
STE M-240-094
Code 15540
Sheet Number 7 of 22



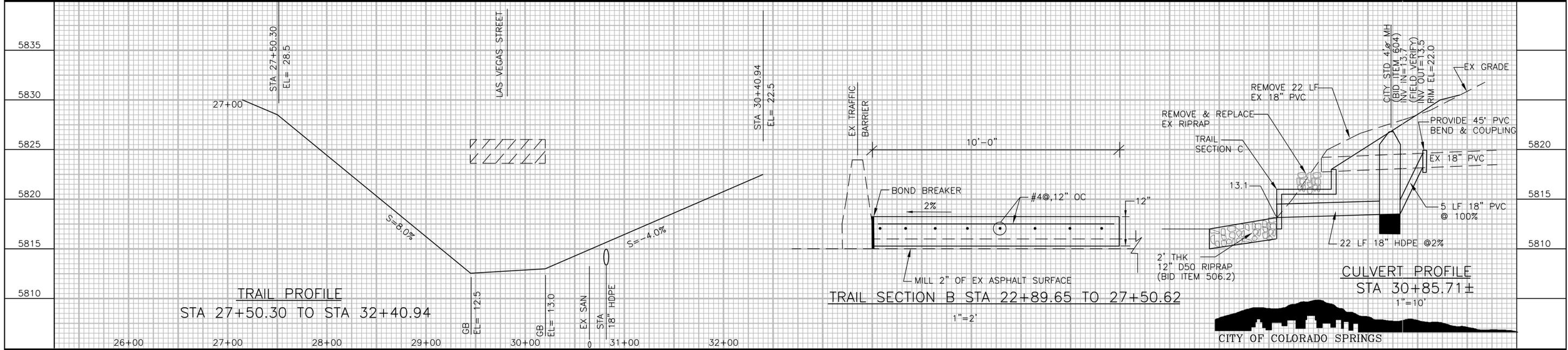
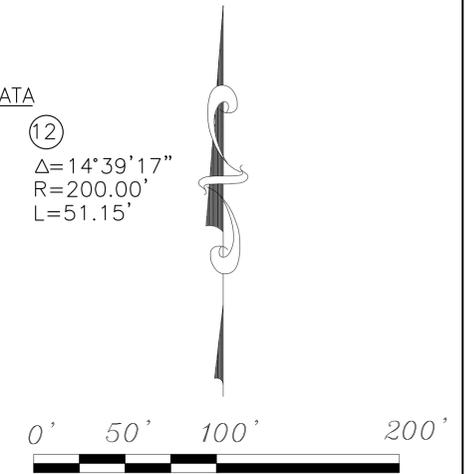
NOTE: ALL MATERIALS AND INSTALLATION FOR TRAIL SECTION 'C' TO BE PAID FOR UNDER BID ITEM 608.3. UNIT PRICE SHALL INCLUDE EXCAVATION AND SUBGRADE PREPARATION, FORMING, POURING, FINISHING AND CURING OF CONCRETE, STEEL REINFORCING FOR TRAIL MAT, TOEWALL AND KNEE-WALL & STRUCTURE BACKFILL.



PT. NO.	NORTHING	EASTING
111	1348422.47	3207416.64
112	1348419.24	3207407.89
113	1348447.95	3207355.03
114	1348523.19	3207338.03
115	1348573.05	3207355.32
116	1348618.55	3207411.45
117	1348645.36	3207454.86

CL CURVE DATA

PT. NO.	Δ	R	L
10	Δ=97°31'23"	R=40.00'	L=68.08'
11	Δ=63°42'03"	R=50.00'	L=55.59'
12	Δ=14°39'17"	R=200.00'	L=51.15'



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	Revised:
	Void:

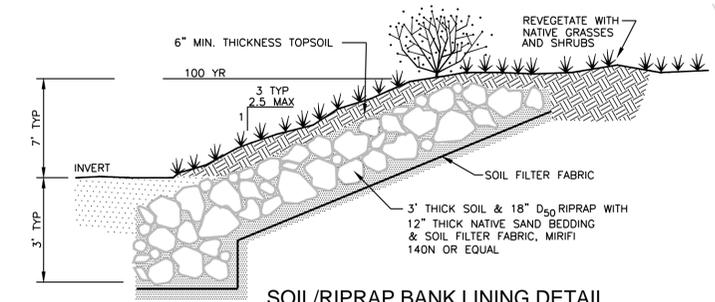
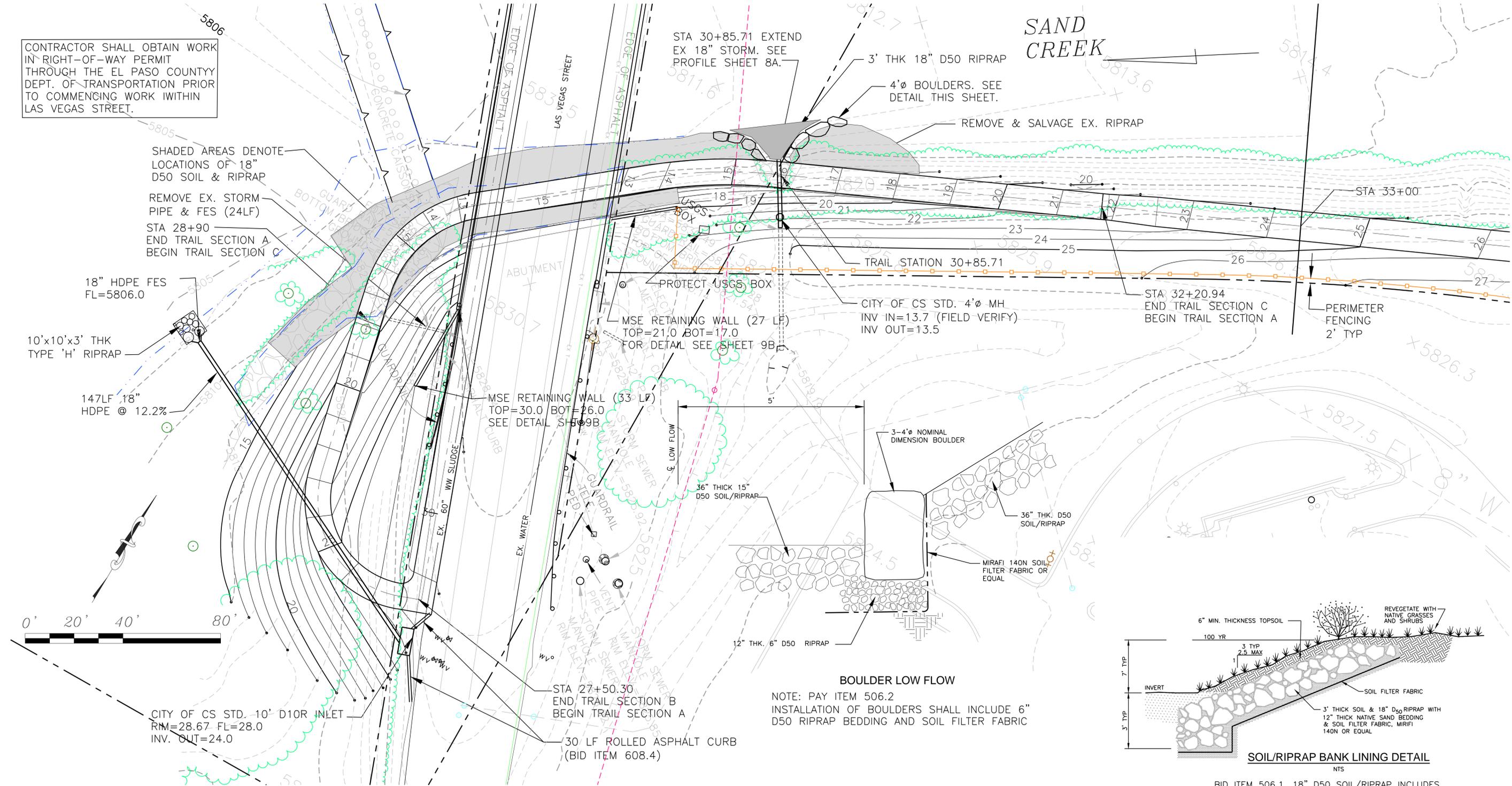
**TRAIL PLAN**  
**STA.23+00.00 TO STA.33+00.00**

Designer:	RNW	Structure Numbers:	
Detailer:	RNW	Sheet Subset:	
		Subset Sheets:	

Project No./Code  
 STE M-240-094  
 Code 15540  
 Sheet Number 8A of 22

SAND CREEK

CONTRACTOR SHALL OBTAIN WORK IN RIGHT-OF-WAY PERMIT THROUGH THE EL PASO COUNTY DEPT. OF TRANSPORTATION PRIOR TO COMMENCING WORK WITHIN LAS VEGAS STREET.



**BOULDER LOW FLOW**  
 NOTE: PAY ITEM 506.2  
 INSTALLATION OF BOULDERS SHALL INCLUDE 6" D50 RIPRAP BEDDING AND SOIL FILTER FABRIC

BID ITEM 506.1, 18" D50 SOIL/RIPRAP INCLUDES BUT IS NOT LIMITED TO EXCAVATION, SUBGRADE, PREPARATION, RIPRAP, SOIL, SAND BEDDING, & SOIL FILTER FABRIC. MATERIAL & INSTALLATION OF TOPSOIL TO BE PAID FOR UNDER BID ITEM 207.

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**Kiowa**  
 Engineering Corporation  
 1604 South 21st Street  
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Sheet Revisions	
1	Rev. 6/3/08 to avoid parcel with unknown ownership trail alignment is modified.

As Constructed
No Revisions:
Revised:
Void:

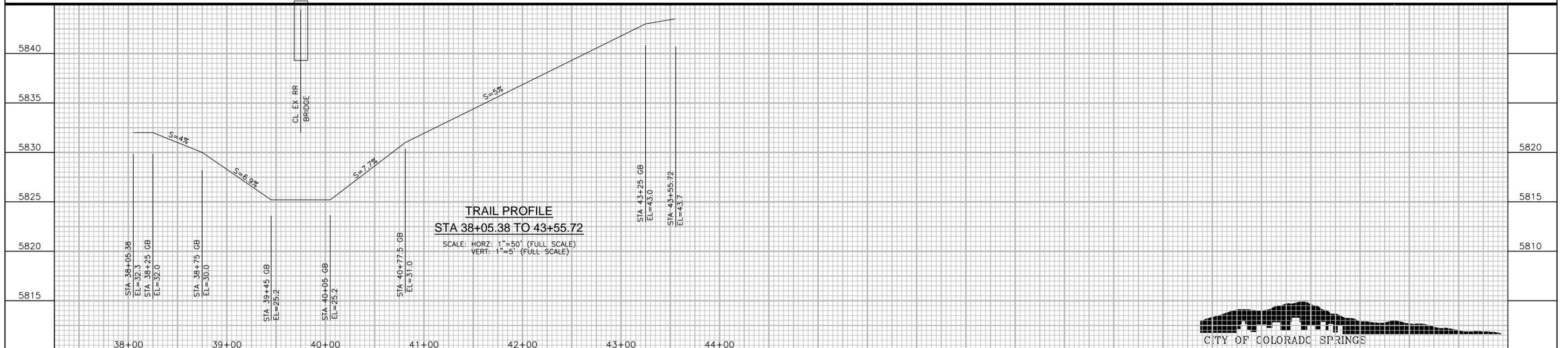
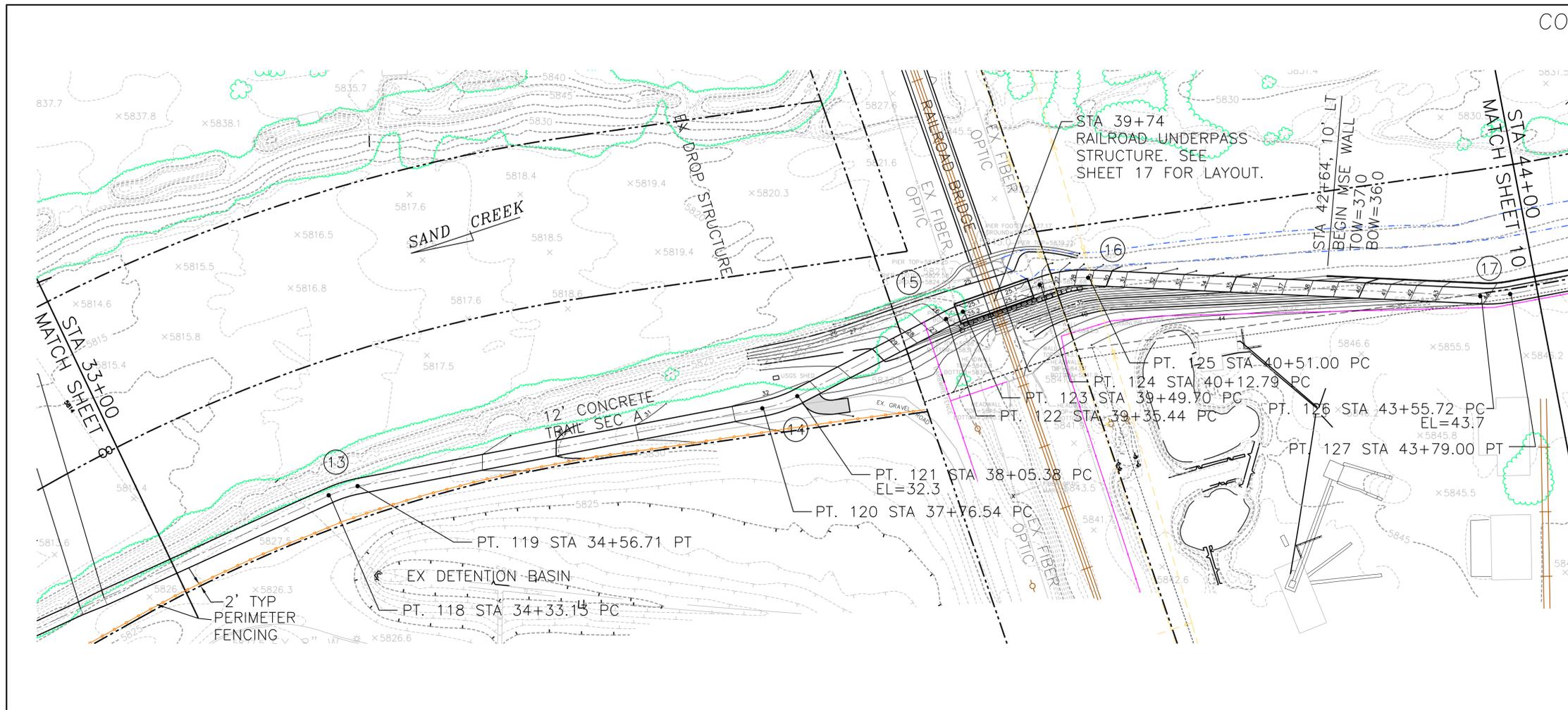
GRADING PLAN TRAIL STATIONS	
STA.27+50 TO STA.33+00	
Designer: RNW	Structure Numbers
Detailer: RNW	
Sheet Subset:	Subset Sheets:

Project No./Code	STE M-240-094
Code	15540
Sheet Number	8B of 22

CL CURVE DATA

⑬	⑭	⑮
$\Delta=13^{\circ}30'42''$	$\Delta=16^{\circ}31'39''$	$\Delta=8^{\circ}10'01''$
$R=100.00'$	$R=100.00'$	$R=100.00'$
$L=23.58'$	$L=28.85'$	$L=14.25'$
⑯	⑰	
$\Delta=21^{\circ}53'43''$	$\Delta=13^{\circ}20'23''$	
$R=100.00'$	$R=100.00'$	
$L=38.21'$	$L=23.28'$	

PT. NO.	NORTHING, EASTING
118	1348789.50, 3207773.02
119	1348796.62, 3207795.44
120	1348856.88, 3208109.54
121	1348866.30, 3208136.70
122	1348926.13, 3208252.18
123	1348931.76, 3208265.26
124	1348952.53, 3208324.84
125	1348958.00, 3208362.42
126	1348943.78, 3208666.81
127	1348945.40, 3208689.98



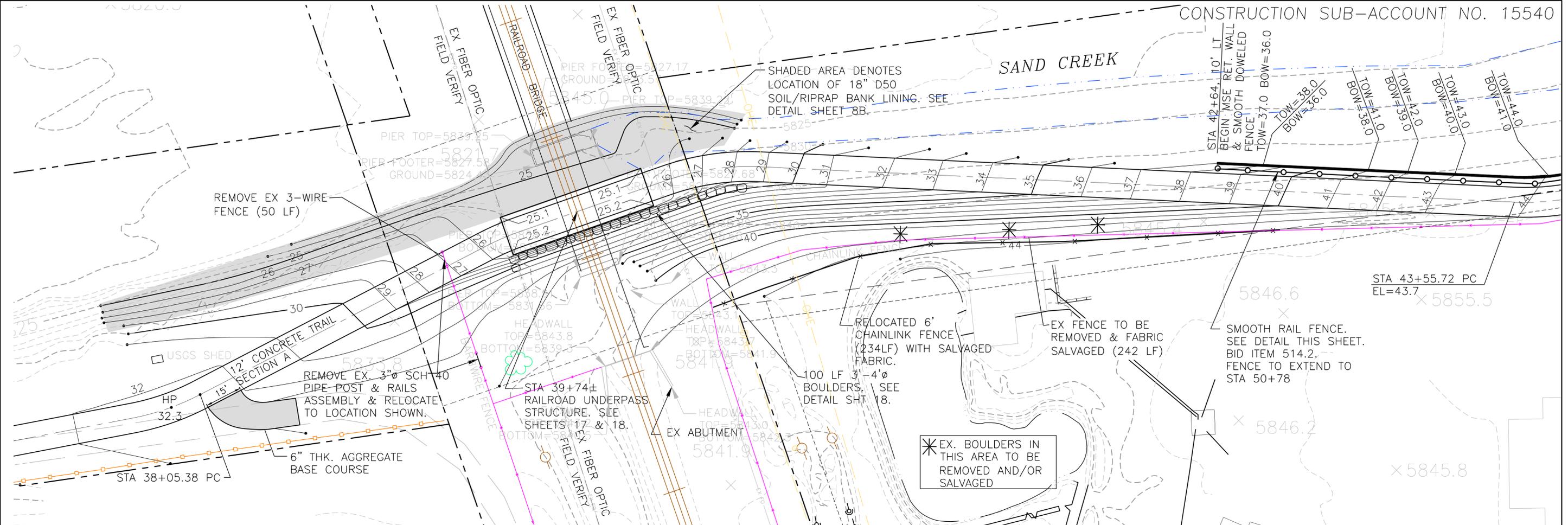
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Sheet Revisions	As Constructed
	No Revisions:
	Revised:
	Void:

**TRAIL PLAN**  
 STA.33+00 TO STA.44+00  
 Designer: RNW  
 Detailer: RNW  
 Sheet Subset: Structure Numbers  
 Subset Sheets:

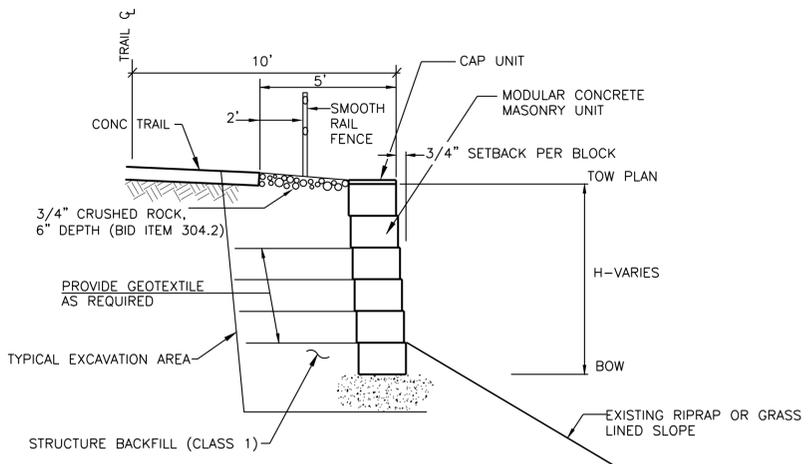
Project No./Code  
 STE M-240-094  
 Code 15540  
 Sheet Number 9A of 22



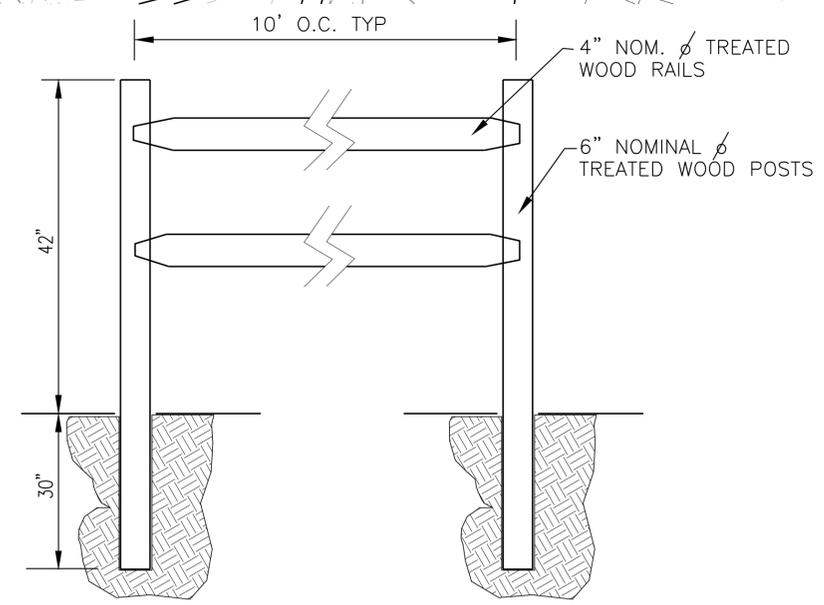
NOTE: SHOP DRAWINGS DEPICTING THE DESIGN OF BLOCK WALL SHALL BE SUBMITTED TO ENGINEER PRIOR TO CONSTRUCTION PER THE PROJECT SPECIFICATIONS. DESIGN SHALL BE COMPLETED UNDER THE DIRECT SUPERVISION OF A PROPERLY REGISTERED PROFESSIONAL ENGINEER WITH THE STATE OF COLORADO. FINAL CONSTRUCTION DRAWINGS SHALL BEAR HIS/HER SEAL AND SIGNATURE. RETAINING WALL DESIGN SHALL BE APPROVED BY THE CITY OF COLORADO SPRINGS. CONCRETE MASONRY UNITS FOR WALL SHALL BE IN CONFORMANCE WITH SECTION 704 OF THE STD. SPECIFICATIONS.

NOTE: MSE WALL TO BE PAID FOR UNDER ITEM 712.3, UNIT PRICE SHALL INCLUDE EXCAVATION, SUBGRADE PREPARATION, CONCRETE BLOCK, GEOTEXTILE (AS APPLICABLE), CONCRETE LEVELING PAD, STRUCTURAL BACKFILL & COMPACTION. QUANTITY OF PAY ITEM HAS BEEN BASED UPON THE AREA OF THE MSE WALL (HEIGHT x LENGTH)

NOTE: BLOCK COLOR SHALL BE APPROVED BY CS P&R PRIOR TO CONSTRUCTION.



**CONCRETE BLOCK MSE WALL CROSS SECTION**  
 STA 42+64 TO STA 50+78  
 NOT TO SCALE



**TWO RAILED SMOOTH DOWELED FENCING DETAIL**  
 STA 42+64 TO STA 50+78  
 NOT TO SCALE



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Sheet Revisions	As Constructed
	No Revisions:
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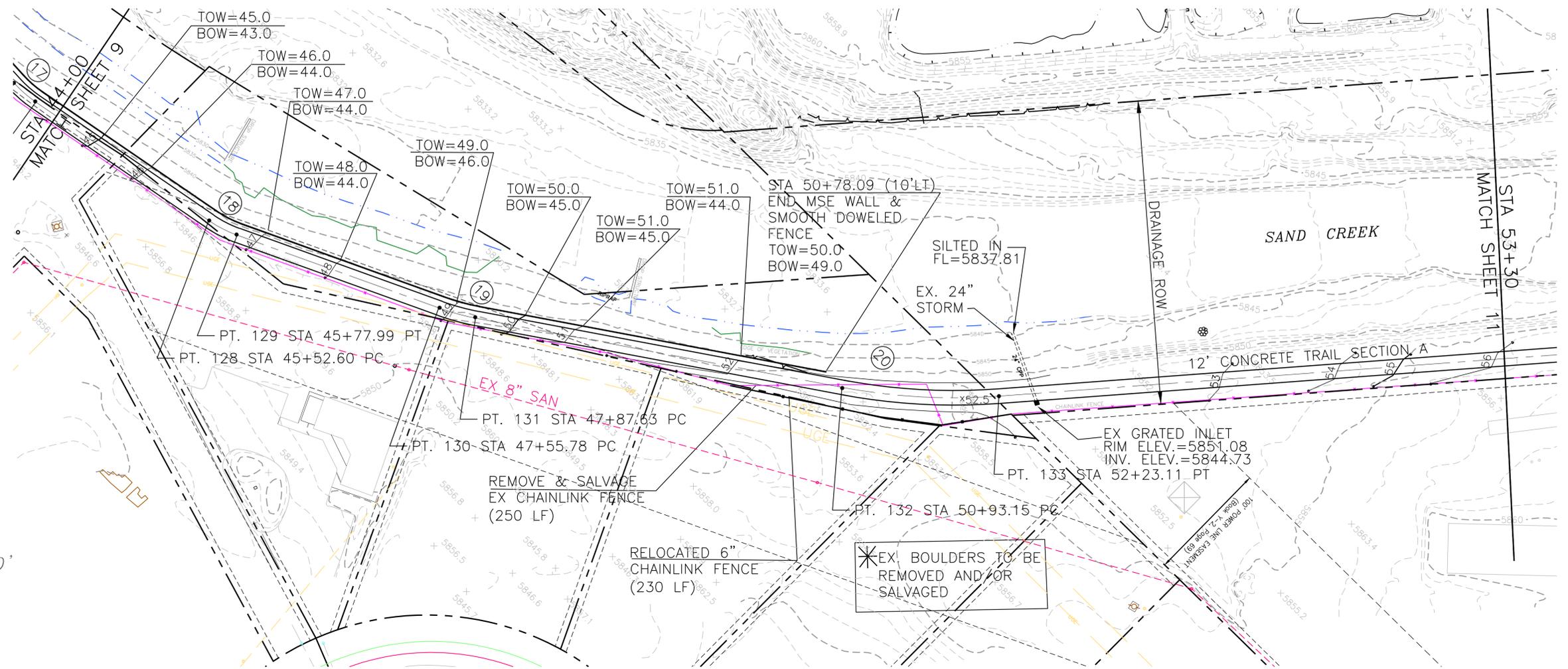
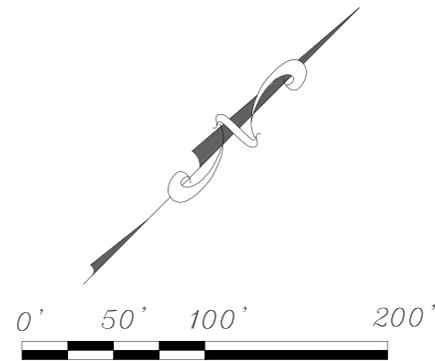
GRADING PLAN	
<b>STA.38+05 TO STA.43+55</b>	
Designer: RNW	Structure Numbers
Detailer: RNW	
Sheet Subset:	Subset Sheets:

Project No./Code	STE M-240-094
Code	15540
Sheet Number	9B of 22

CL CURVE DATA

- ⑱      ⑲
- Δ=14°32'54"   Δ=9°7'28"
- R=100.00'    R=200.00'
- L=25.39'      L=31.85'
  
- ⑳
- Δ=14°53'29"
- R=500.00'
- L=129.95'

PT. NO.	NORTHING, EASTING
128	1348977.53, 3208860.58
129	1348985.33, 3208884.67
130	1349061.07, 3209044.02
131	1349075.91, 3209071.72
132	1349249.21, 3209325.41
133	1349335.56, 3209422.04



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Colorado Springs, Colorado 80904  
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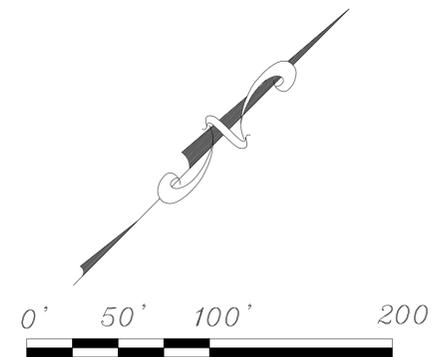
	As Constructed
	No Revisions:
	Revised:
	Void:

TRAIL PLAN	
STA.44+00	TO STA.53+30
Designer: RNW	Structure Numbers:
Detailer: RNW	
Sheet Subset:	Subset Sheets:

Project No./Code
STE M-240-094
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PT. NO.	NORTHING,	EASTING
146	1350468.15,	3210398.64
147	1350500.20,	3210433.37
148	1350505.10,	3210498.83



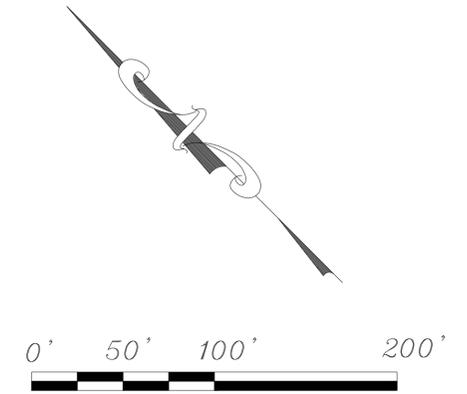
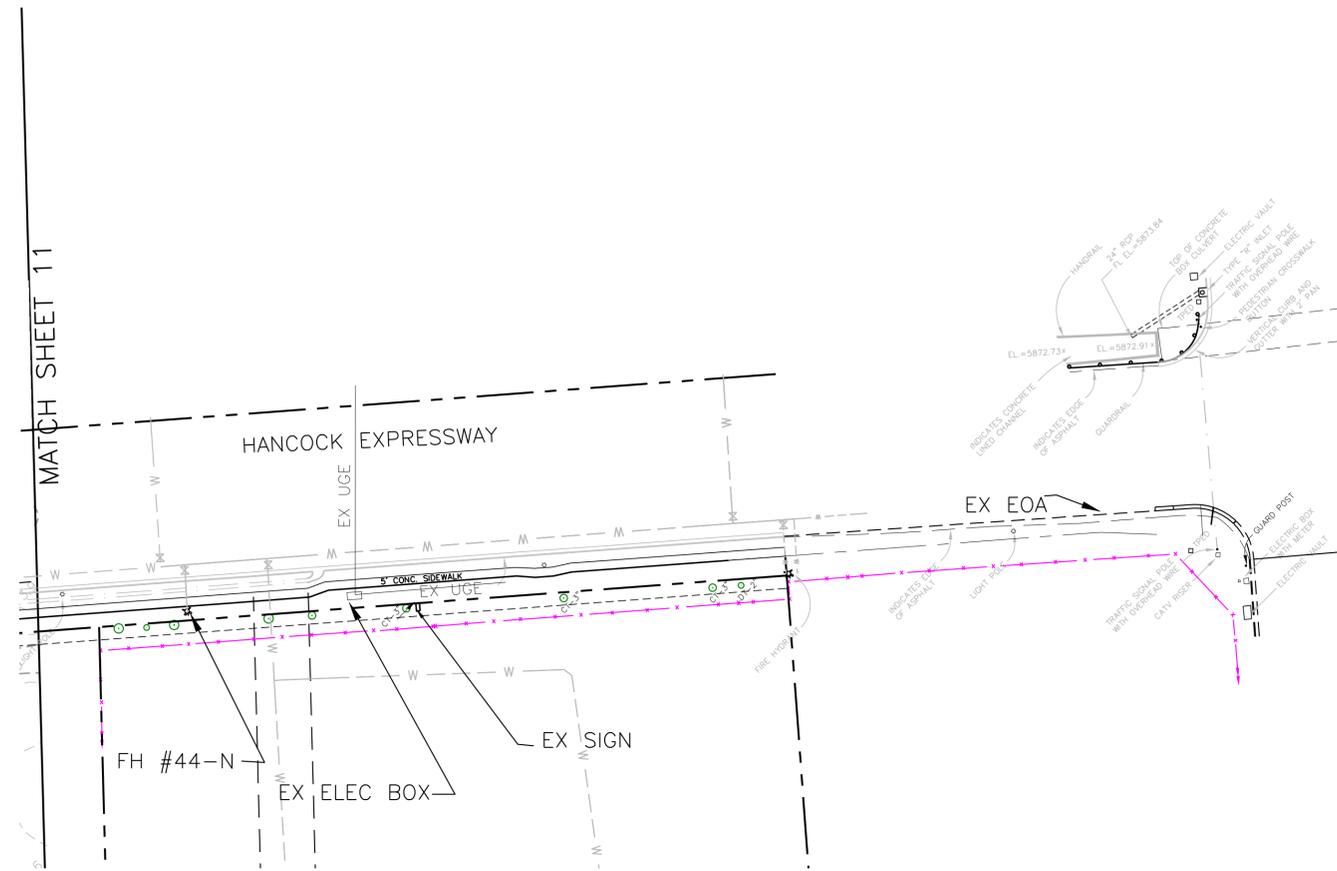
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TRAIL PLAN	
STA.53+30 TO STA.68+19.8±	
Designer: RNW	Structure Numbers:
Detailer: RNW	Subset Sheets:
Sheet Subset:	

Project No./Code	STE M-240-094
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THIS SHEET PROVIDED FOR INFORMATION ONLY. NO WORK IN THIS AREA



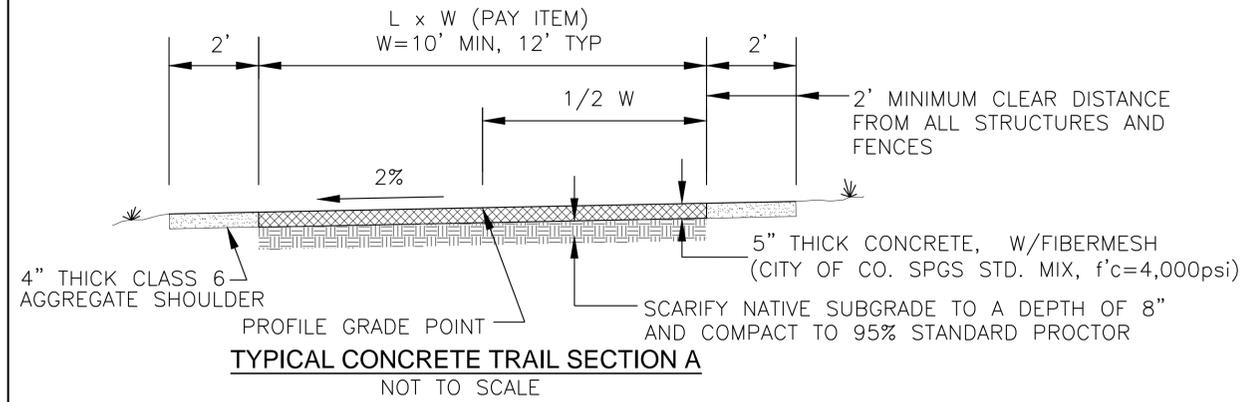
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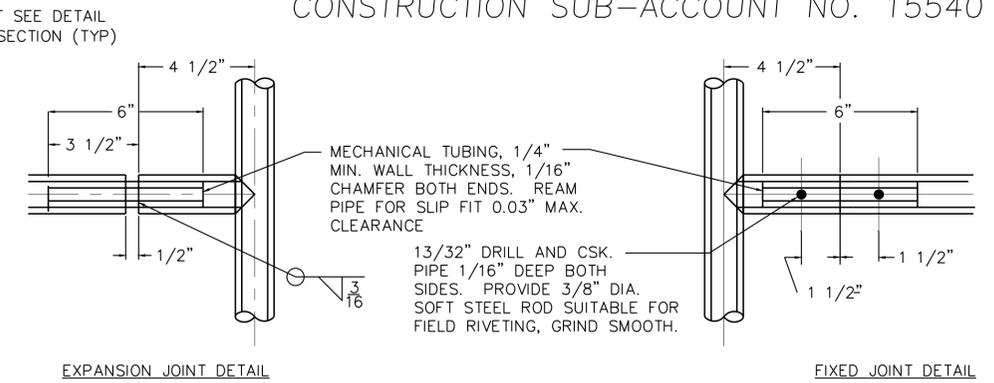
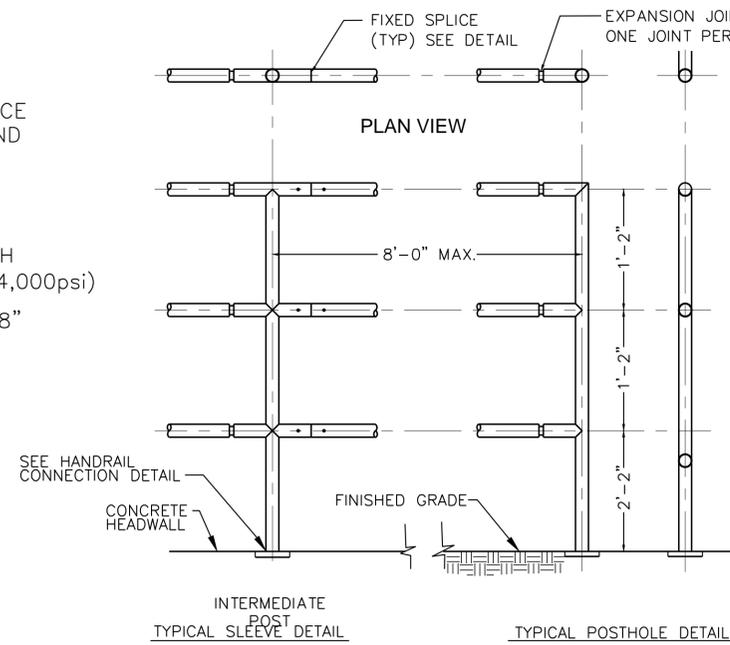
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TRAIL PLAN	
Designer: RNW	Structure Numbers
Detailer: RNW	
Sheet Subset:	Subset Sheets:

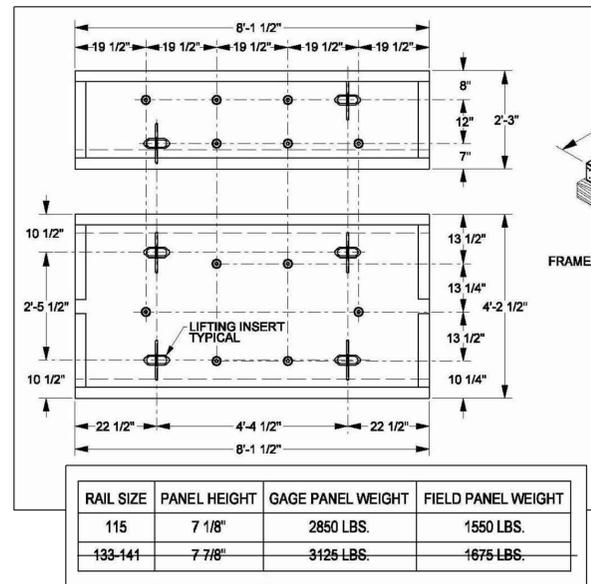
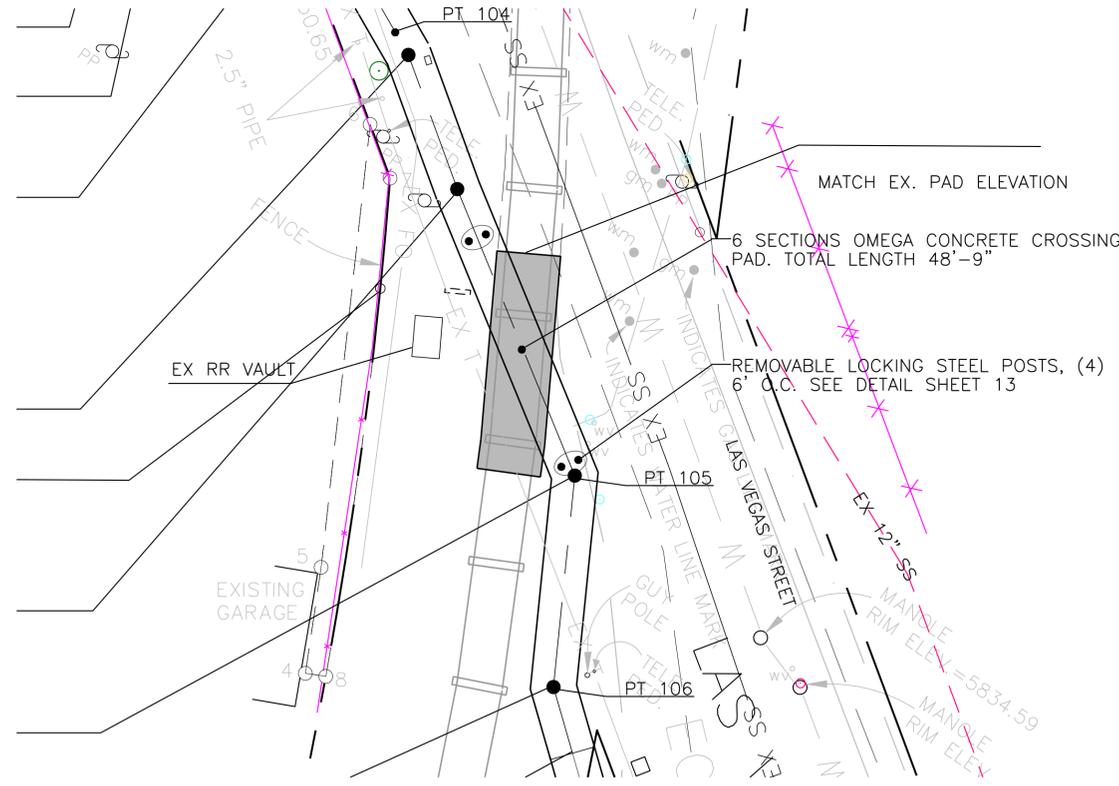
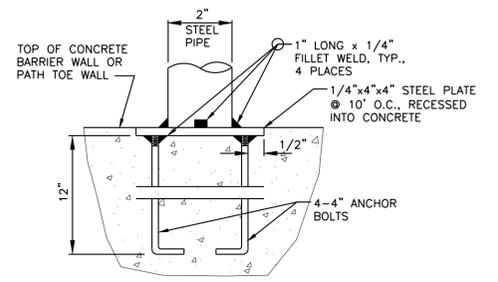
Project No./Code
STE M-240-094
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Sheet Number 12 of 22



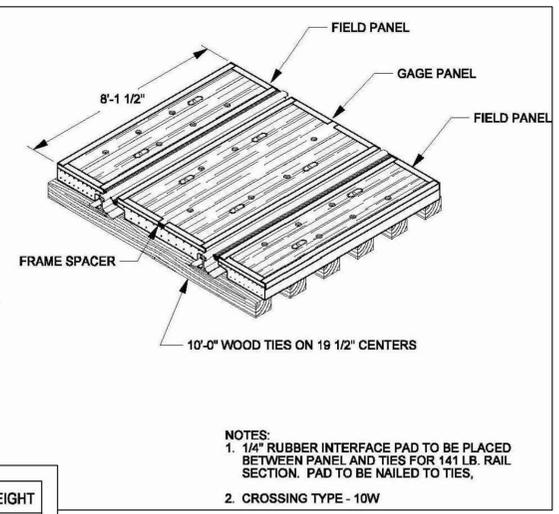
NOTE: ALL MATERIALS AND INSTALLATION FOR TRAIL SECTION 'A' TO BE PAID FOR UNDER BID ITEM 608.1. UNIT PRICE SHALL INCLUDE EXCAVATION AND SUBGRADE PREPARATION, FORMING, POURING, FINISHING AND CURING OF CONCRETE, STEEL REINFORCING FOR TRAIL MAT, WIDTH TRANSITIONS & BACKFILL.



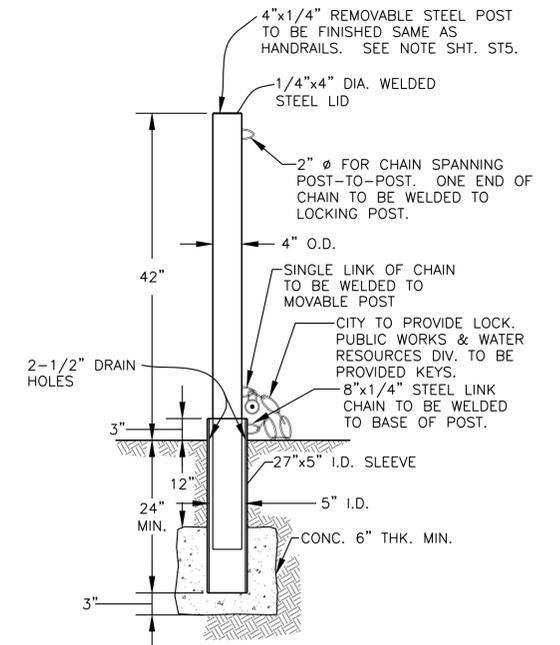
**HANDRAIL NOTES**  
 ALL HANDRAIL SHALL BE FABRICATED WITH NEW 2" DIAMETER STANDARD WEIGHT TUBING.  
 WELD ALL PIPE JOINTS WITH 1/8" REINFORCED WELDS AND DRESS SMOOTH.  
 CORNERS AND EDGES OF ALL BARS, PLATES AND PIPE ENDS SHALL BE SANDED SMOOTH AND FREE OF BURRS.  
 ALL HANDRAIL MATERIAL REQUIRED FOR COMPLETE INSTALLATION SHALL BE PROVIDED.  
 HANDRAIL FINISH SHALL BE ONE COAT RED METAL PRIMER AND TWO COATS ENAMEL (RUSTOLEUM OR EQUIVALENT). COLOR SHALL BE APPROVED BY ENGINEER PRIOR TO APPLICATION.



RAIL SIZE	PANEL HEIGHT	GAUGE PANEL WEIGHT	FIELD PANEL WEIGHT
115	7 1/8"	2850 LBS.	1550 LBS.
133-141	7 7/8"	3125 LBS.	1675 LBS.



NOTES:  
 1. 1/4" RUBBER INTERFACE PAD TO BE PLACED BETWEEN PANEL AND TIES FOR 141 LB. RAIL SECTION. PAD TO BE NAILED TO TIES.  
 2. CROSSING TYPE - 10W



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Sheet Revisions	As Constructed
	No Revisions:
	Revised:
	Void:

Detail Sheet	
Designer: RNW	Structure Numbers
Detailer: RNW	
Sheet Subset:	Subset Sheets:

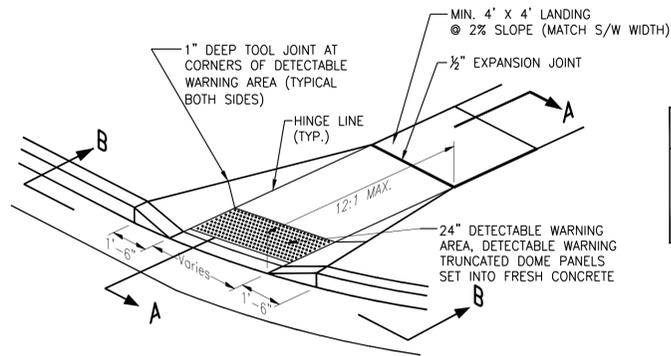
Project No./Code
STE M-240-094
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**GENERAL NOTES**

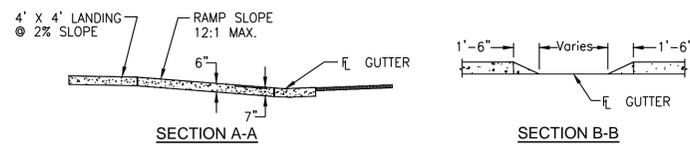
▲ EXPANSION JOINTS SHALL BE INSTALLED WHEN ABUTTING EXISTING CONCRETE OR FIXED STRUCTURE. EXPANSION JOINT MATERIAL SHALL BE 1/2" THICK AND SHALL EXTEND THE FULL DEPTH OF CONTACT SURFACE.

CONCRETE SHALL BE PER CITY OF COLORADO SPRINGS ENGINEERING DIVISION SPECIFICATIONS.

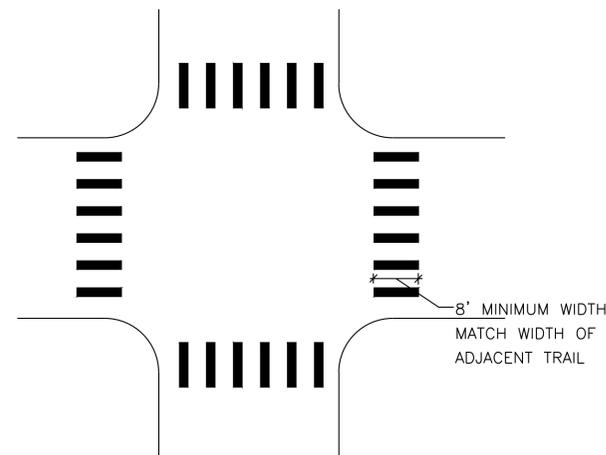
\* CONCRETE SHALL MEET CITY OF COS STD. DESIGN MIX, f'c=4000 psi



LENGTH FOR RADII	
A	= 1/2"
C	= 1-1/2"
D	= 1-1/2" TO 2"

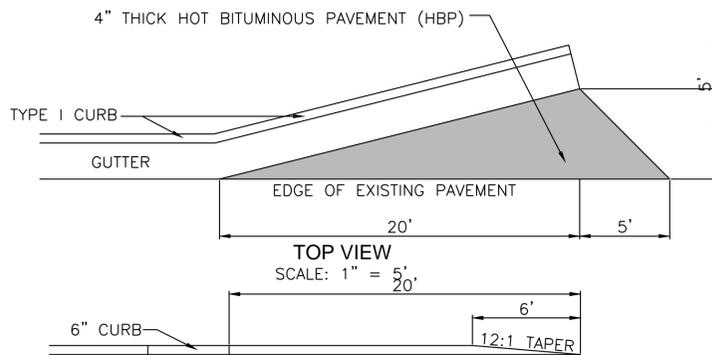
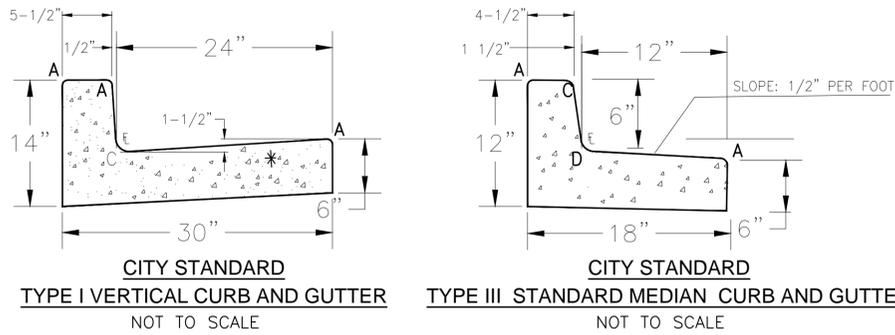


**PEDESTRIAN RAMP DETAILS** CITY STD. D-8  
NO SCALE

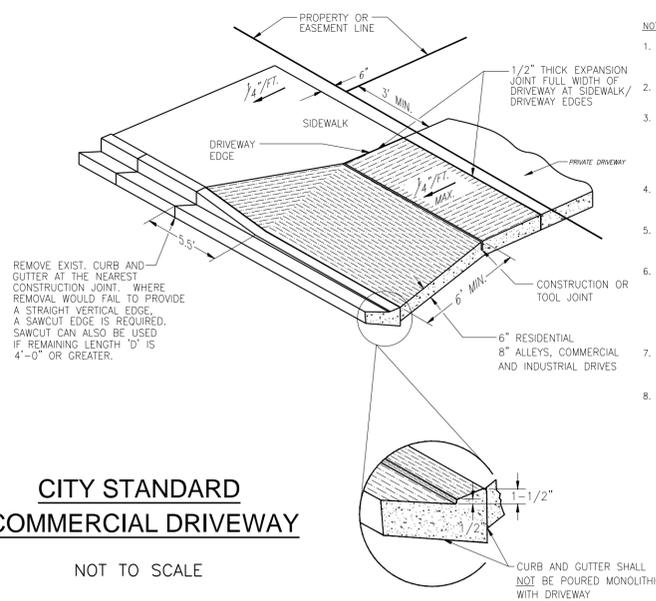


**CROSSWALK MARKING DETAIL**  
NOT TO SCALE

NOTES:  
CENTER CROSSWALK MARKINGS ON PEDESTRIAN RAMPS. CROSSWALK MARKINGS SHALL BE 12" TO 24" WIDE AND SPACED 12" TO 24" APART. MARKINGS SHALL BE MADE WITH EPOXY PAINT. REFER TO CDOT STANDARD S-627-1 FOR LAYOUT OF MARKINGS.

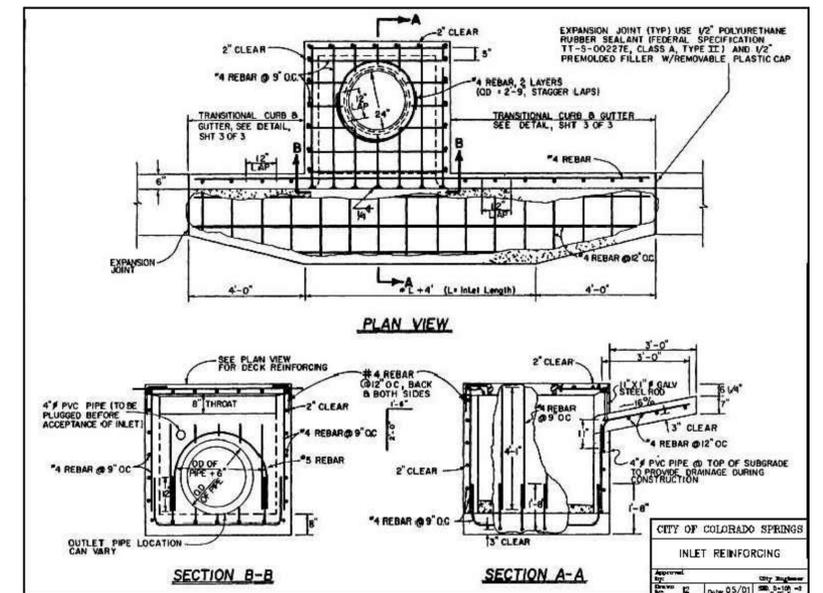
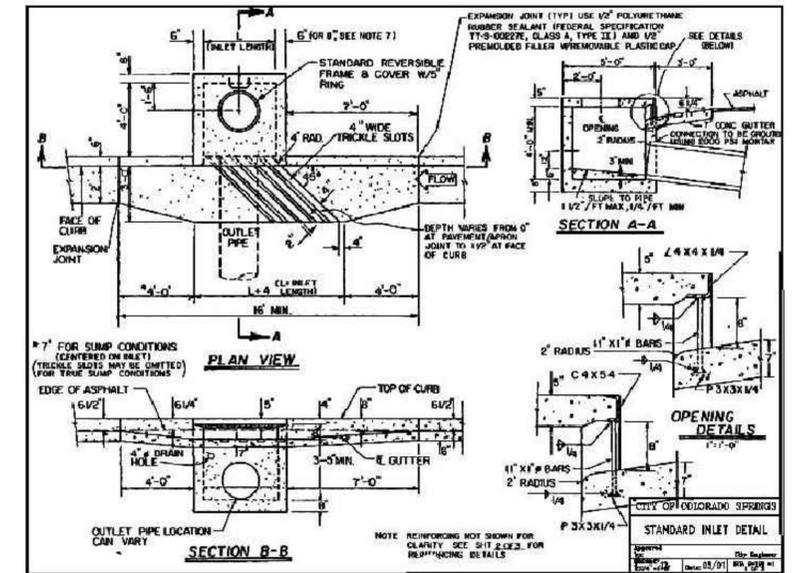


**CDOT STANDARD CURB AND GUTTER**  
TANGENT WITH FLARE SECTION



**CITY STANDARD**  
**COMMERCIAL DRIVEWAY**  
NOT TO SCALE

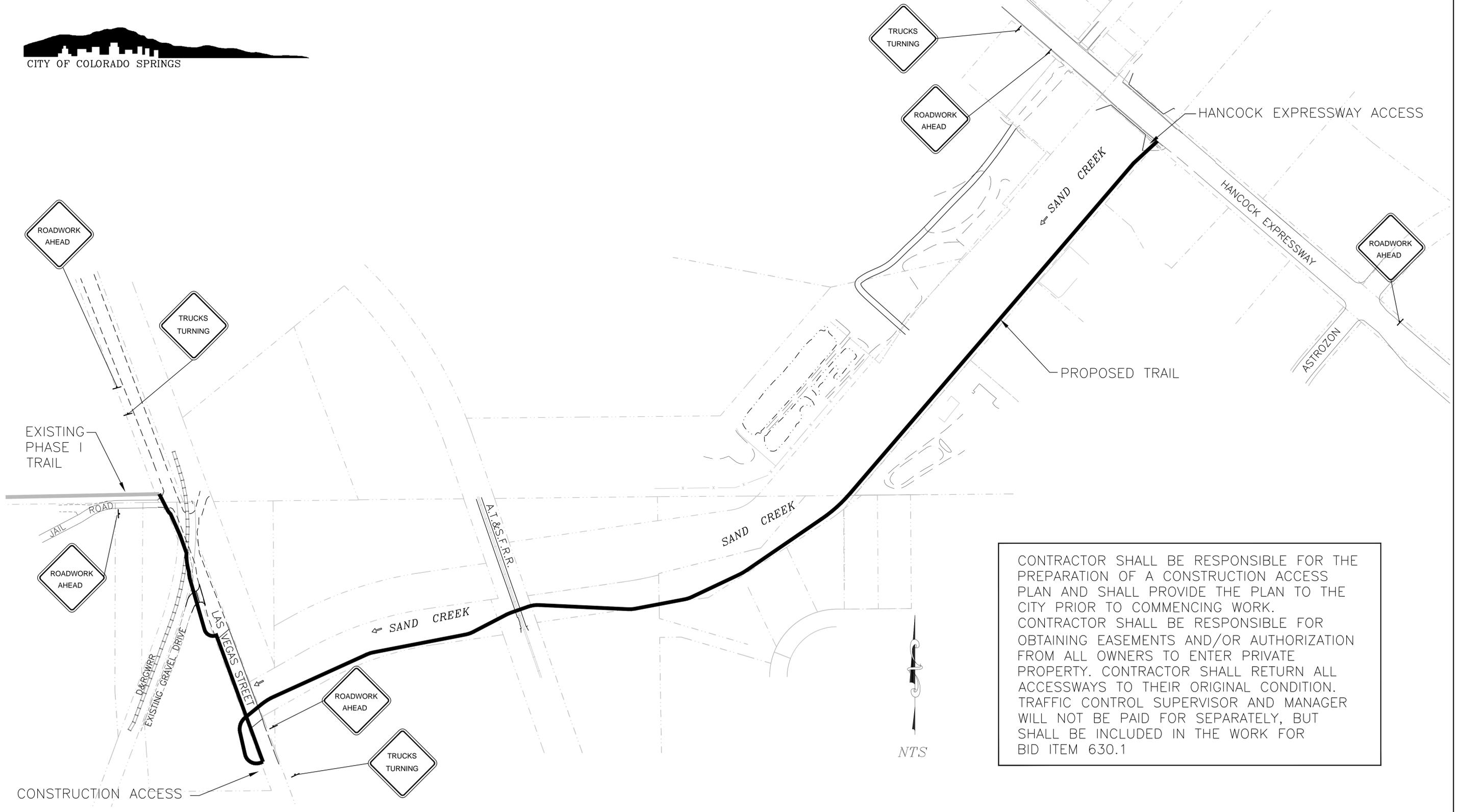
- NOTES:
- Provide centerline construction or tool joint when driveway width (edge to edge) is 14' or greater.
  - All tool joints shall be a minimum of 1-1/2" deep.
  - When replacing existing curb and gutter with new driveway, entire curb and gutter section shall be removed and replaced with curb and gutter (variable-curb-height) as shown. Do NOT break curb from gutter section.
  - Flared portion of driveway shall be poured monolithic with main rectangular portion of driveway.
  - Where there is more than one driveway on a lot, 30' of full curb shall be provided between driveways.
  - Where an existing sidewalk is in place, and its thickness is less than 6" (residential) or 8" (commercial, industrial, or alley) the sidewalk through the driveway shall be removed and replaced with Portland Cement Concrete, 6" (residential) or 8" (commercial) in thickness.
  - All excavation, embankment and concrete shall be in accordance with City Standard Specifications.
  - When a driveway is to be taken out of service, the entire length of curb and gutter (variable-curb-height) shall be removed and replaced with new curb and gutter. Do NOT place new curb head on existing variable-curb-height curb and gutter.



Sheet Revisions	As Constructed
	No Revisions:
	Revised:
	Void:

Detail Sheet	
Designer: RNW	Structure Numbers
Detailer: RNW	Sheet Subset:
Subset Sheets:	

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CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION OF A CONSTRUCTION ACCESS PLAN AND SHALL PROVIDE THE PLAN TO THE CITY PRIOR TO COMMENCING WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING EASEMENTS AND/OR AUTHORIZATION FROM ALL OWNERS TO ENTER PRIVATE PROPERTY. CONTRACTOR SHALL RETURN ALL ACCESSWAYS TO THEIR ORIGINAL CONDITION. TRAFFIC CONTROL SUPERVISOR AND MANAGER WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK FOR BID ITEM 630.1

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○	Revised:
○	Void:

Construction Access & Traffic Control Plan	
Designer: RNW	Structure Numbers
Detailer: RNW	
Sheet Subset:	Subset Sheets:

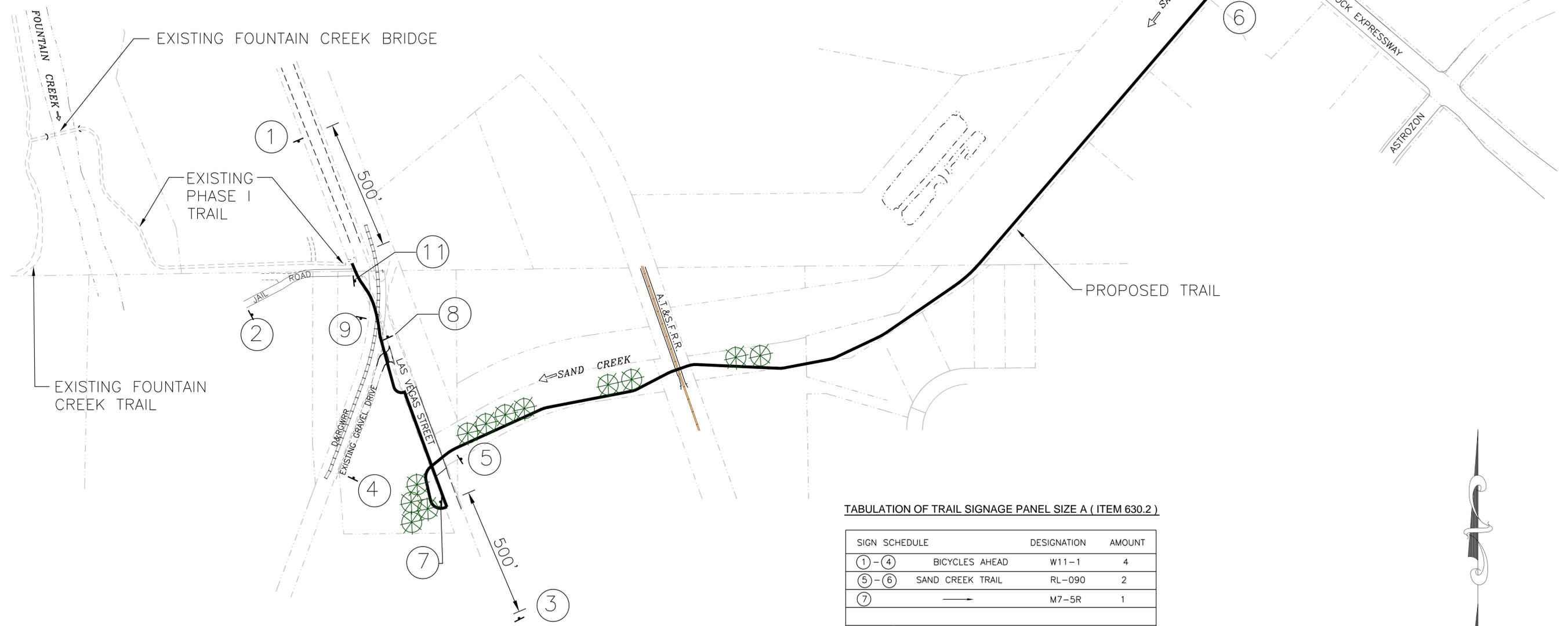
Project No./Code	STE M-240-094
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SCHEDULE OF RIPARIAN PLANTINGS

TREES	SIZE	QUANTITY
 <i>Populus deltoides</i> Plains Cottonwood	1.0" caliper	12

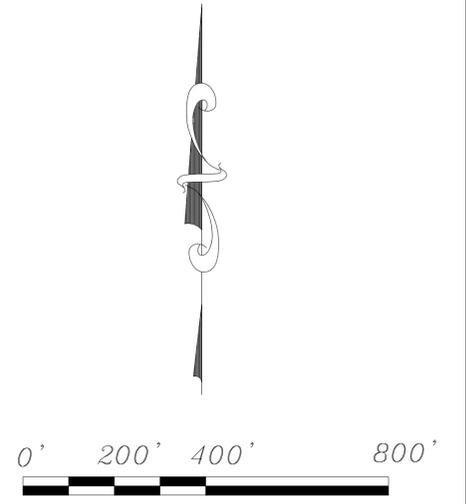
SEE CDOT STANDARD PLAN NO. M-214-1 FOR PLANTING DETAILS.

ALL COTTONWOOD TREES TO BE PLANTED ABOUT 4' TO 6' ABOVE THE WATERLINE OF THE CREEK AWAY FROM MAINTAINED AREAS.



TABULATION OF TRAIL SIGNAGE PANEL SIZE A ( ITEM 630.2 )

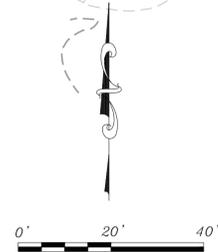
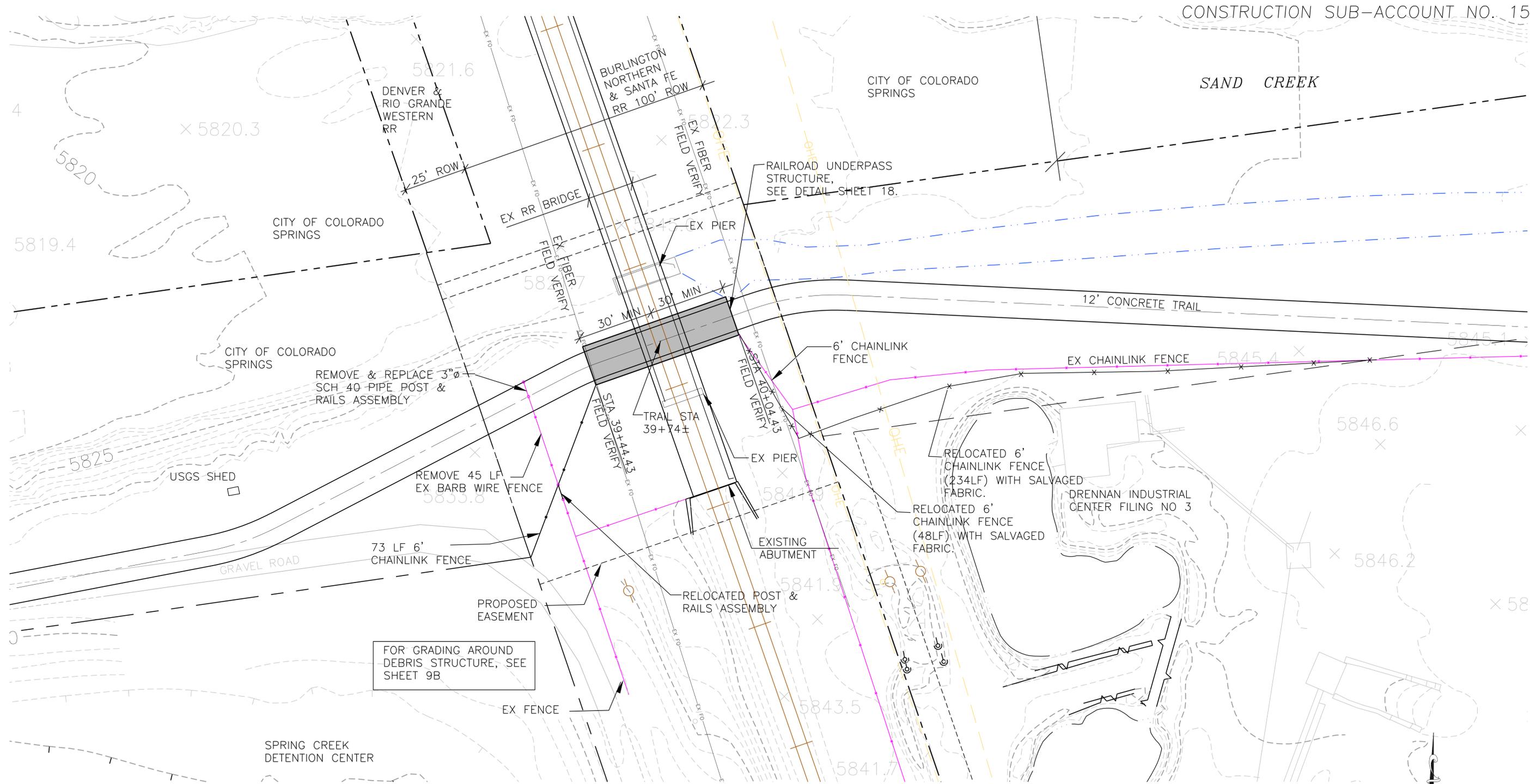
SIGN SCHEDULE	DESIGNATION	AMOUNT
①-④ BICYCLES AHEAD	W11-1	4
⑤-⑥ SAND CREEK TRAIL	RL-090	2
⑦ →	M7-5R	1
⑧-⑩ "BICYCLISTS DISMOUNT"		3
⑪ STOP-TRAIL AHEAD		1
		TOTAL=11



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Sheet Revisions	As Constructed	Trail Signage & Planting Plans		Project No./Code
	No Revisions:	Designer: RNW	Structure Numbers	STE M-240-094
	Revised:	Detailer: RNW		Code 15540
	Void:	Sheet Subset:	Subset Sheets:	Sheet Number 16 of 22



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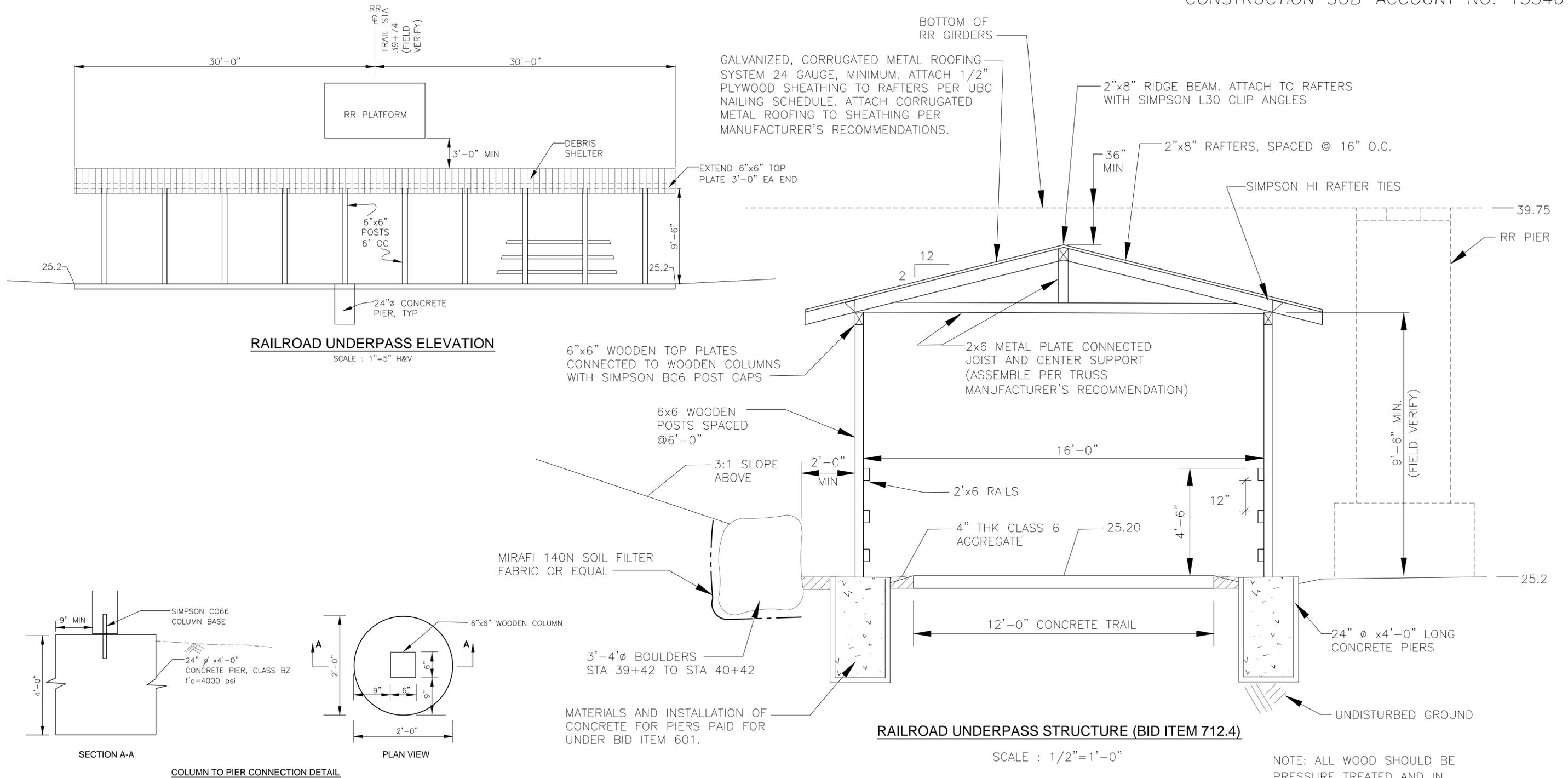
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Sheet Revisions	As Constructed
	No Revisions:
	Revised:
	Void:

As Constructed

RAILROAD UNDERPASS PLAN STA.39+74±	
Designer: RNW	Structure Numbers:
Detailer: RNW	
Sheet Subset:	Subset Sheets:

Project No./Code	STE M-240-094
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MATERIALS AND INSTALLATION OF TRAIL/RAILROAD UNDER PASS TO BE PAID FOR UNDER BID ITEM 712.4. MATERIALS AND INSTALLATION SHALL INCLUDE LUMBER, ROOFING MATERIALS, AND ALL FASTENERS.

NOTE: ALL WOOD SHOULD BE PRESSURE TREATED AND IN CONFORMANCE WITH CDOT STANDARD SPECIFICATIONS



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	Revised:
	Void:

RAILROAD UNDERPASS STRUCTURE DETAILS	
Designer: RNW	Structure Numbers
Detailer: RNW	
Sheet Subset:	Subset Sheets:

Project No./Code
STE M-240-094
Code 15540
Sheet Number 18 of 22

FEBRUARY 17, 2011 [REVISED ON OCTOBER 28, 2013]

**SWMP TEMPLATE TEXT WITH BMP NARRATIVES FOR PROJECTS WITH 1 ACRE OR MORE OF DISTURBANCE**

**1. SITE DESCRIPTION**

For Information Only to fulfill the CDPS-SCP (Colorado Discharge Permit System - Stormwater Construction Permit) Update to reflect current project site conditions.

- A. **PROJECT SITE DESCRIPTION:** This project is the installation of 5100 linear feet of concrete trail, a roadway underpass, a railroad underpass and debris shed, 814 linear feet of MSE wall, the extension of two existing outlet pipes, a new 10' inlet with an 18" outlet pipe. Two areas of existing riprap and soil banks will be reformed to accommodate the new trail.
- B. **PROPOSED SEQUENCING FOR MAJOR ACTIVITIES:** Prior to clearing and grubbing, silt fencing and vehicle tracking control will be installed as shown on sheet 22. After clearing, grubbing, riprap salvage, and grading, the concrete trail construction and riprap replacement will commence. At the time of the culvert installations, inlet protection will also be placed.
- C. **ACRES OF DISTURBANCE:**
  - 1. Total area of construction site: 1.0 +/- acres
  - 2. Total area of disturbance: 5.0 +/- acres
  - 3. Acreage of seeding: 3.0 +/- acres
- D. **EXISTING SOIL DATA:** The native soil within the corridor is the Ellicott loamy coarse sand, which is a deep somewhat excessively drained soil of terraces and floodplains. The erosion hazard if the Ellicott soil is high.
- E. **EXISTING VEGETATION, INCLUDING PERCENT COVER:** Existing vegetation was determined to be 33% per plant count as prescribed in Chapter 4 of the CDOT erosion control and stormwater quality guide. The existing vegetation on site was primarily grass and herb species with minor amounts of trees and shrubs. Many of the existing trees and shrubs such as Siberian elm and Russian olive have been cut in recent years. In general, the site is moderately to heavily disturbed prior to the proposed construction.
- F. **POTENTIAL POLLUTANTS SOURCES:** See First Construction Activities under Potential Pollutant Sources. The ECS shall prepare a list of all potential pollutants and their locations in accordance with subsection 107.25.
- G. **RECEIVING WATER:**
  - 1. Outfall locations are in the Sand Creek corridor which is part of the City of Colorado Springs MS4 Permit Number COS000004 owned by the City of Colorado Springs.
  - 2. Names of receiving water(s) on site and the ultimate receiving water: Sand Creek and Fountain Creek, respectively.
  - 3. Distance ultimate receiving water is from project: The project is directly on Sand Creek which discharges to Fountain Creek in less than a mile.
- H. **ALLOWABLE NON-STORMWATER DISCHARGES:**
  - 1. Groundwater and stormwater dewatering: Discharges to the ground of water from construction dewatering activities may be authorized provided that:
    - a. the source is groundwater and/or groundwater combined with stormwater that does not contain pollutants
    - b. the source and BMPs are identified in the SWMP
    - c. discharges do not leave the site as surface runoff or to surface waters.
  - 2. If discharges do not meet the above criteria a separate permit from the Department of Health will be required. Contaminated groundwater requiring coverage under a separate permit may include groundwater contaminated with pollutants from a landfill, mining activities, industrial pollutant plumes, underground storage tank, etc.
- I. **ENVIRONMENTAL IMPACTS:**
  - 1. Wetland Impacts: YES NO
  - 2. Stream Impacts: YES NO 0.005 ac (250 square feet)
  - 3. Threatened and Endangered Species: none

**2. SITE MAP COMPONENTS:**

Pre-construction

- A. **PROJECT CONSTRUCTION POTENTIAL SITE BOUNDARIES**
- B. **ALL AREAS OF GROUND SURFACE DISTURBANCE**
- C. **AREAS OF CUT AND FILL**
- D. **LOCATION OF ALL STRUCTURAL BMPs IDENTIFIED IN THE SWMP**
- E. **LOCATION OF NON-STRUCTURAL BMPs AS APPLICABLE IN THE SWMP**
- F. **SPRINGS, STREAMS, WETLANDS AND OTHER SURFACE WATER**
- G. **PROTECTION OF TREES, SHRUBS, CULTURAL RESOURCES AND MATURE VEGETATION** Locations as labeled on map. All existing vegetation not directly in the trail corridor shall be preserved.
- H. **AREAS USED FOR STORING AND STOCKPILING OF MATERIALS, STAGING AREAS (field trailer, fueling, etc) and BATCH PLANTS:** Areas used for storage and stockpiling of materials and staging areas will be designated by the Contractor. Batch plants are not anticipated to be needed.

**3. SWMP ADMINSTRATOR FOR DESIGN:** Kiowa Engineering is responsible for developing SWMP sheets during design phase.

**4. STORMWATER MANAGEMENT CONTROLS FIRST CONSTRUCTION ACTIVITIES**

THE CONTRACTOR SHALL PERFORM THE FOLLOWING:

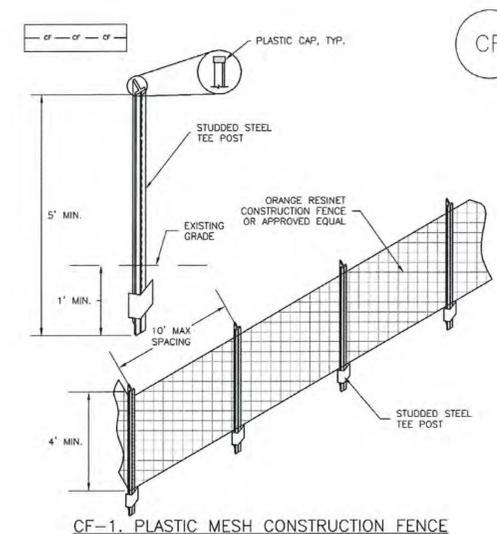
A. **DESIGNATE A SWMP ADMINISTRATOR/EROSION CONTROL SUPERVISOR** (To be filled out at time of construction; designate the individual(s) responsible for implementing, maintaining and revising the SWMP, including the title and contact information. The activities and responsibilities of the administrator shall address all aspects of the projects SWMP.)

Name/Title: \_\_\_\_\_ Contact information: \_\_\_\_\_

B. **POTENTIAL POLLUTANT SOURCES**

Evaluate, identify and describe all potential sources of pollutants at the site in accordance with subsection 107.25 and place in the SWMP notebook. All BMPs related to potential pollutants shall be shown on the SWMP site map by the contractor's ECS.

**SM-3 Construction Fence (CF)**



**CF-1. PLASTIC MESH CONSTRUCTION FENCE**

**CONSTRUCTION FENCE INSTALLATION NOTES**

1. SEE PLAN VIEW FOR:
  - LOCATION OF CONSTRUCTION FENCE.
2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.
4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.
5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

**CONSTRUCTION FENCE MAINTENANCE NOTES**

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
  2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
  3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
  4. CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
  5. WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDPCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.



<p>Colorado Department of Transportation 902 North Erie Avenue P.O. Box 536 Pueblo, Colorado 81001 Phone: (719) 546-5748 FAX: (719) 546-5414 Region 2 - Engineering</p>	<p>Kiowa Engineering Corporation 1604 South 21st Street Colorado Springs, Colorado 80904 (719) 630-7342 KIOWA PROJ. NO. 13015</p>	Sheet Revisions		As Constructed		SWMP CONSTRUCTION PLAN SHEET 1 OF 4		Project No./Code			
				No Revisions:				STE M-240-094			
				Revised:		Designer: RNW		Structure Numbers		Code 15540	
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C. BEST MANAGEMENT PRACTICES (BMPs) FOR STORMWATER POLLUTION PREVENTION

PHASED BMP IMPLEMENTATION, APPLICATION AND NARRATIVE:

During Design: "BMP as Designed" boxes are marked when used in the SWMP. During construction: the ECS shall update the narratives, include new narratives and update the "In use on site" boxes to match which BMPs are currently in use on site. Clearly describe the relationship between the phases of construction and the implementation of BMP controls.

STRUCTURAL and NONSTRUCTURAL BMPs that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to:

Structural BMPs and Application	Narrative	BMP as Designed	In use on site	FIRST CONSTRUCTION ACTIVITIES	DURING CONSTRUCTION	INTERIM/FINAL STABILIZATION
Earth Berm/Stockpile	Placed around toe to contain sediment around stockpile					
Earth Berm/Toe of fill	Placed prior to earthwork within specified distance of toe to capture sediment and protect undisturbed areas					
Earthberm/Diversion	Placed to divert drainage and subdivide runoff volume from less than 10 acre sub basins. Temp feature to be removed upon final stabilization					
*Rock Check Dams/Ditch	Velocity checks in ditches placed immediately after ditch grading					
Silt Fence/Sediment Control	Placed on contour to contain construction runoff	X		X	X	
Silt Fence/Protection of Vegetation	Placed to protect undisturbed area and delineate boundary of protected area					
Erosion Logs, Silt Berms or Silt Dikes/Ditch Checks	Erosion Control checks in ditches placed immediately after ditch grading to reduce flow velocity of runoff in ditch					
Erosion Logs/ Existing Inlet	Placed prior to disturbance at existing inlets where disturbance maybe occurring to cause sediment laden water to enter pipe	X		X	X	
Erosion Logs/culvert inlet or outlet	Placed on culvert to filter or prevent sediment from entering pipe. If disturbance occurs above pipe then erosion logs are placed above pipe	X		X	X	
Erosion Logs/Sediment Control	Placed to protect undisturbed area and delineate boundary of protected area					
Storm Drain Inlet Protection/Sediment Control	Placed to protect storm drain inlets to filter or prevent sediment from entering drainage system.	X		X	X	
Temporary Sediment Trap/Basin	Contain and filter sediment laden water from < 5 acre sub basins within construction disturbance					
Permanent Sediment Trap/Basin	Utilized during construction to act as temporary sediment containment. Outlet structure shall be modified for construction runoff					
Embankment Protection or Temp Slope Drain	Placed as a conduit or chute to drain runoff down slope and prevent erosion of slope					
Outlet Protection	Material placed as energy dissipation device to prevent erosion at outlet structure					
Concrete Washouts/Construction Control	Construction waste management of concrete washout material	X			X	
Vehicle tracking Pad/ Construction Control	Placed to prevent tracking of sediment from disturbance to offsite surface	X		X	X	
Sweeping/Construction or Source Control	Utilized to remove sediment on pavement surface and to prevent sediment from entering drainage system				X	
Dewatering/ Construction Control	Sediment control to remove or filter sediment from construction dewatering					
Temporary Stream Crossing/ Construction Control	Constructed over stream or drainage to prevent discharge of pollutants from construction equipment into stream.					
Clean water diversion	Placed to divert clean surface or ground water from mixing with construction runoff or activity					
Other						

Non Structural BMPs and Application	Narrative	BMP As Designed	In Use On Site	First Construction Activities	During Construction	Interim/ Final Stabilization
Surface Roughening/Grading Techniques	Interim and temp stabilization of disturbance and to minimize wind and erosion					
Seeding Permanent/Final Stabilization	Reduce runoff and control erosion on disturbed areas					X
Seeding Temporary	Over wintering of disturbance or used to control erosion for areas scheduled for future construction					
Mulch/Mulch Tackifier/ Temp or Final Stabilization	Placed as a surface cover for erosion control and or seeding establishment					X
Soil Retention Blanket /Temp or Final Stabilization	Placed as surface cover for erosion control and seeding establishment	X				X
Turf Reinforcement Mat/ Final Stabilization	Placed in channels or on slopes for erosion control, channel liner and seeding establishment					
Soil Binder/Temp Stabilization	Placed as surface treatment to provide temp erosion control					
Spray on mulch blanket/ Temp or Final Stabilization	Placed cover on slopes to control erosion and seeding establishment					
Vegetative Buffer Strips	Filter sediment laden runoff from disturbance area					
Protection Of Trees/Protected Resources -Fence Plastic	Placed prior to construction to protect existing vegetation to remain					
Preservation Of Mature Vegetation/Work access and grading plans	Used to protect existing stable cover and minimize impact to vegetation					

\*Check dams may be rock, erosion logs, silt dike, silt berm, etc. as indicated in the narratives and SWMP site map. Erosion control devices are used to limit the amount of soil loss on site. Sediment control devices are designed to capture sediment on the project site. Construction control are BMPs related to construction access and staging. BMP locations are indicated on the SWMP site map. BMP details and narratives not covered by the SWMP or Standard Plan M-208-1 shall be added to the SWMP notebook by the ECS.

D. OFFSITE DRAINAGE (RUN ON WATER)

1. Describe and record BMPs on the SWMP site map that has been implemented to address off site run-on water in accordance with subsection 208.03.

E. VEHICLE TRACKING PAD

1. BMPs shall be implemented in accordance with subsection 208.04.

F. PERIMETER CONTROL

1. Perimeter control shall be established as the first item on the SWMP to prevent the potential for pollutants leaving th construction site boundaries, entering the stormwater drainage system, or discharging to state waters.  
 2. Perimeter control may consist of vegetation buffers, berms, silt fence, erosion logs, existing landforms, or other BMP as approved.  
 3. Perimeter control shall be in accordance with subsection 208.04.



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**5. DURING CONSTRUCTION**

**RESPONSIBILITIES OF THE SWMP ADMINISTRATOR/EROSION CONTROL SUPERVISOR DURING CONSTRUCTION**

The SWMP should be considered a "living document" that is continuously reviewed and modified. During construction, the following items shall be added, updated, or amended as needed by the SWMP Administrator/Erosion Control Supervisor (ECS) in accordance with Section 208.

During construction, indicate how items that have not been addressed during design are being handled in construction. If items are covered in the template or other sections of the SWMP notebook indicate below what section the discussion takes place.

- A. **STOCKPILE MANAGEMENT** - shall be done in accordance with subsection 107.25 and 208.07
- B. **CONCRETE WASHOUT** - Concrete wash out water or waste from field laboratories and paving equipment shall be contained in accordance with subsection 208.05.
- C. **SAW CUTTING** - shall be done in accordance with subsection 107.25, 208.04, 208.05
- D. **STREET CLEANING** - shall be done in accordance with subsection 208.04

**6. INSPECTIONS**

- A. Inspections shall be in accordance with subsection 208.03 (c).

**7. BMP MAINTENANCE**

- A. Maintenance shall be in accordance with subsection 208.04 (f).

**8. RECORD KEEPING**

- A. Records shall be kept in accordance with subsection 208.03 (c).

**9. INTERIM AND FINAL STABILIZATION**

**A. SEEDING PLAN**

Soil preparation, soil conditioning or topsoil, seeding (native), mulching (weed free) and mulch tackifier will be required for an estimated 3.0 acres of disturbed area within the right-of-way limits which are not surfaced. The following types and rates shall be used:

COMMON NAME	BOTANICAL NAME	LBS. PLS PER ACRE
Western wheatgrass	<i>Pascopyrum smithii</i>	4
Sideoats grama	<i>Bouteloua curtipendula</i>	2
Purple prairie clover	<i>Petalostemum purpurea</i>	0.5
Prairie sand reed	<i>Calamovilfa longifolia</i>	2
Thickspike wheatgrass	<i>Elymus lanceolatus</i>	2.5
Switchgrass	<i>Panicum virgatum</i>	1
Sand bluestem	<i>Andropogon hallii</i>	2
Indian grass	<i>Sorghastrum nutans</i>	1.5
Gaillardia	<i>Gaillardia aristata</i>	1
<b>TOTAL</b>		16.5

- B. **SEEDING APPLICATION:** Drill seed 0.25 inch to 0.5 inch into the soil. In small areas not accessible to a drill, hand broadcast at double the rate and rake 0.25 inch to 0.5 inch into the soil.
- C. **MULCHING APPLICATION:** Apply a minimum of 1 1/2 tons of certified weed free native hay per acre and in accordance with Section 213, and mechanically crimp it into the soil in combination with an organic mulch tackifier.
- D. **SPECIAL REQUIREMENTS:** Due to high failure rates, hydromulching and/or hydroseeding will not be allowed
- E. **SOIL CONDITIONING AND FERTILIZER REQUIREMENTS:**

Soil conditioner paid for as Item 212- Soil Conditioning (Acre)		
Biological nutrient organic based fertilizer (lbs/acre)*	Humate (lbs/acre)	Compost (cys/acre) (1/2 inch depth)
600	200	65

\*Biological nutrient shall not exceed 8-8-8 (N-P-K). Humate based material shall be in accordance to Section 212 and compost shall be in accordance to Special Provision 212.

F. **BLANKET APPLICATION:** On slopes and ditches requiring a blanket, the blanket shall be placed in lieu of mulch and mulch tackifier. See SWMP for blanket locations.

**G. RESEEDING OPERATIONS/CORRECTIVE STABILIZATION**

- Prior to final acceptance.
  1. Seeded areas shall be reviewed during the 14 day inspections by the Erosion Control Supervisor for bare soils caused by surface or wind erosion. Bare areas caused by surface or gully erosion, blown away mulch, etc. shall be regraded, seeded, mulched and have mulch tackifier (or blanket) applied as necessary, at no additional cost to the project.
  3. The Contractor shall maintain seeding/mulch/tackifier, mow to control weeds or apply herbicide to control weeds in the seeded areas until Final Acceptance.

**10. PRIOR TO FINAL ACCEPTANCE**

- A. Final Acceptance shall be in accordance with subsection 208.10.

**11. TABULATION OF STORMWATER QUANTITIES**

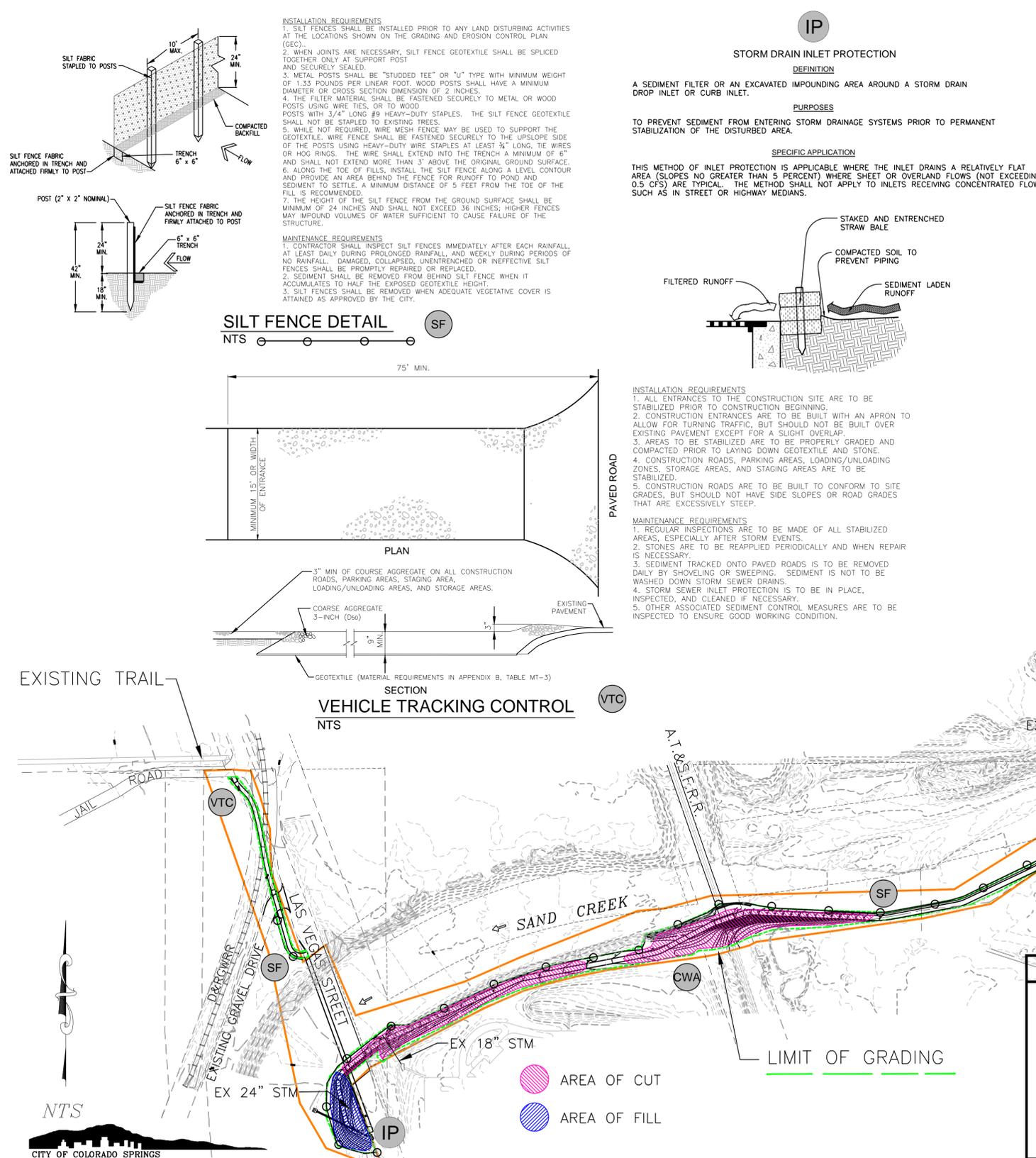
Pay Item	Description	Pay Unit	*Quantity
203-01500	Blading	Hour	
203-01510	Backhoe	Hour	
203-01550	Dozing	Hour	
203-01594	Combination Loader	Hour	
203-02330	Laborer	Hour	
207-00205	Topsoil	CY	950
207-00210	Stockpile Topsoil	CY	950
208-00020	Silt Fence	LF	4350
208-00045	Concrete Washout Structure	Each	2
208-00051	Storm Drain Inlet Protection (Type1)	LF	x
208-00052	Storm Drain Inlet Protection (Type2)	LF	x
208-00055	Rigid Inlet Protection Device	Each	
208-00070	Vehicle Tracking Pad	Each	2
208-00103	Removal and Disposal of Sediment (Labor)	Hour	
208-00105	Removal and Disposal of Sediment (Equipment)	Hour	
208-00106	Sweeping (Sediment Removal)	Hour	
208-00107	Removal of Trash	Hour	
208-00205	Erosion Control Supervisor	LS	1
212-00006	Seeding (Native)	Acre	3.0
213-00002	Mulching (Weed Free Hay)	Acre	3.0
216-00111	Soil Retention Blanket (Excelsior) (Photodegradable Class 1)	SY	2650
607-11525	Fence (Plastic)	LF	1000
700-70380	Erosion Control	FA	

\*It is anticipated that additional BMPs and BMP quantities not shown on the SWMP Site Maps shall be required on the project for unforeseen conditions and replacement of items that are beyond their useful service life, see subsection 208.03 and 208.04 (e). Quantities for all BMPs shown above are estimated, and have been increased for unforeseen Project conditions.

- A. BMP sediment removal and disposal shall be paid for as: 208 Removal and Disposal of Sediment (Equipment) and 208 Removal and Disposal of Sediment (Labor). All other BMP maintenance shall be included in the cost of the BMP Device.
- B. It is estimated that **XXX** hours of labor, blading (**X** horsepower), dozing (**X** horsepower), combination loader (**X** horsepower) and/or backhoe (**X** horsepower) may be required for miscellaneous erosion control work as directed by the Engineer. Work shall be paid for as: **[Select appropriate pay item, delete references to others]** 203 Labor, 203 Blading, 203 Dozing, 203 Combination Loader or 203 Backhoe.
- C. Maintenance of seeded areas shall be paid for as: **[FA Erosion Control, 212 Seeding (native), 213 Mulching, 216 Soil Retention Covering, 214 Landscape Maintenance Lump Sum, 203 Labor Hours, or included in the price of the work]**



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		ZOOM IS 18/1XP			Designer: RNW Detailer: RNW Sheet Subset:	Structure Numbers Subset Sheets:

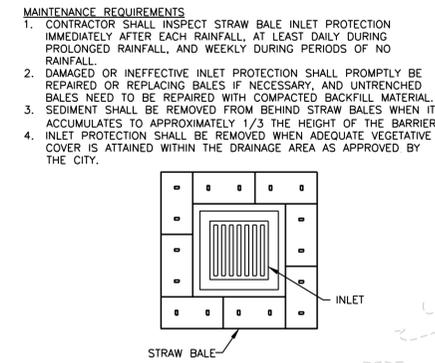


**INSTALLATION REQUIREMENTS**

- INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET.
- BALES ARE TO BE PLACED IN A SINGLE ROW AROUND THE INLET WITH THE END OF THE BALES TIGHTLY ABUTTING ONE ANOTHER.
- SEE STRAW BALE BARRIER DETAILS AND NOTES FOR INSTALLATION REQUIREMENTS.

**MAINTENANCE REQUIREMENTS**

- CONTRACTOR SHALL INSPECT STRAW BALE INLET PROTECTION IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.
- DAMAGED OR INEFFECTIVE INLET PROTECTION SHALL PROMPTLY BE REPAIRED OR REPLACING BALES IF NECESSARY, AND UNTRENCHED BALES NEED TO BE REPAIRED WITH COMPACTED BACKFILL MATERIAL.
- SEDIMENT SHALL BE REMOVED FROM BEHIND STRAW BALES WHEN IT ACCUMULATES TO APPROXIMATELY 1/3 THE HEIGHT OF THE BARRIER.
- INLET PROTECTION SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED WITHIN THE DRAINAGE AREA AS APPROVED BY THE CITY.

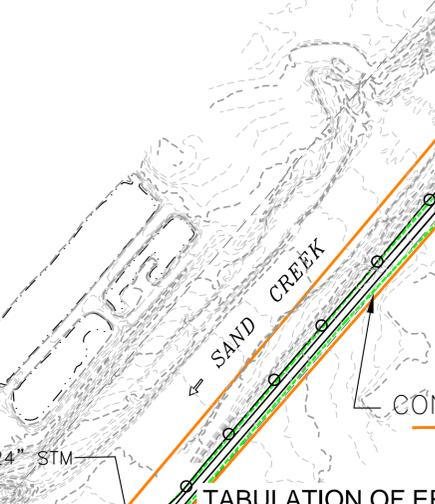


**INSTALLATION REQUIREMENTS**

- ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.
- CONSTRUCTION ENTRANCES ARE TO BE BUILT WITH AN APRON TO ALLOW FOR TURNING TRAFFIC, BUT SHOULD NOT BE BUILT OVER EXISTING PAVEMENT EXCEPT FOR A SLIGHT OVERLAP.
- AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.
- CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.
- CONSTRUCTION ROADS ARE TO BE BUILT TO CONFORM TO SITE GRADES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.

**MAINTENANCE REQUIREMENTS**

- REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.
- STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.
- SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED DAILY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.
- STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.
- OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.

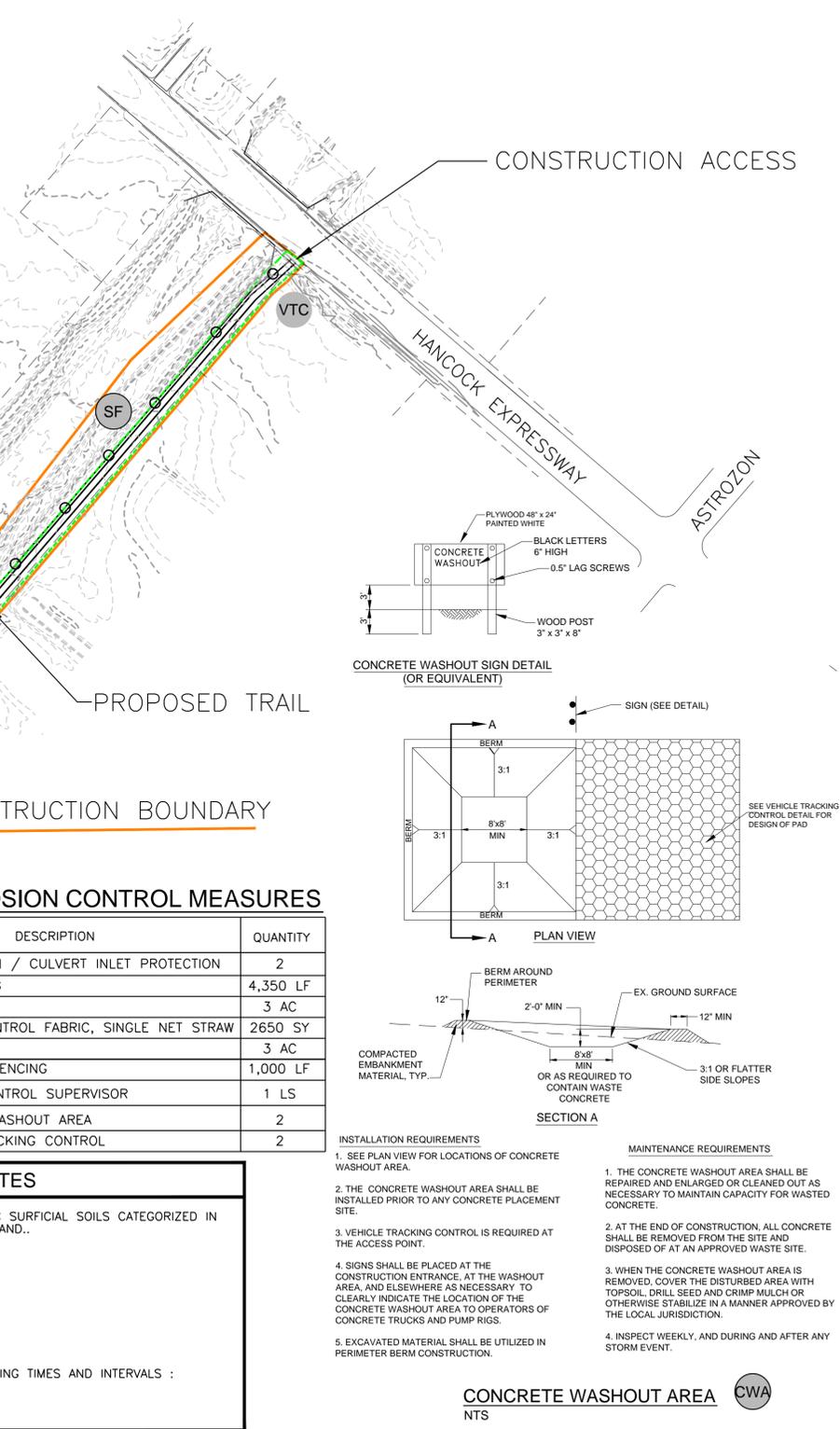


**TABULATION OF EROSION CONTROL MEASURES**

PROJECT	BID ITEM	DESCRIPTION	QUANTITY
STE M 240-094	208.1	STORM DRAIN / CULVERT INLET PROTECTION	2
	208.2	SILT FENCING	4,350 LF
	212.1	SEEDING	3 AC
	212.2	EROSION CONTROL FABRIC, SINGLE NET STRAW	2650 SY
STE M 240-094	212.3	MULCHING	3 AC
	212.4	PERIMETER FENCING	1,000 LF
	212.5	EROSION CONTROL SUPERVISOR	1 LS
	208.3	CONCRETE WASHOUT AREA	2
	208.4	VEHICLE TRACKING CONTROL	2

**EROSION CONTROL NOTES**

- SOILS ON THE SITE ARE CLASSIFIED AS HYDROLOGIC SOIL GROUP C SURFICIAL SOILS CATEGORIZED IN THE EL PASO COUNTY SOIL SURVEY AS ELLICOTT LOAMY COURSE SAND.
- EXISTING RUNOFF COEFFICIENT, 0.25 (100-YR)  
PROPOSED RUNOFF COEFFICIENT, 0.30 (100-YR)
- ANTICIPATED SCHEDULE :  
BEGIN GRADING :  
END GRADING :  
INSTALLATION OF EROSION CONTROL :  
MONITORING AND MAINTENANCE OF EROSION CONTROL :
- MAINTENANCE SCHEDULE :  
CONTRACTOR SHALL INSPECT CONSTRUCTION BMP'S AT THE FOLLOWING TIMES AND INTERVALS :  
(1) AFTER INSTALLATION OF ANY CONSTRUCTION BMP;  
(2) AFTER ANY RUNOFF EVENT THAT CAUSES EROSION;  
(3) AT LEAST ONCE A EVERY 14 DAYS.



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Sheet Revisions	As Constructed
○	No Revisions:
○	Revised:
○	Void:

**SWMP CONSTRUCTION PLAN**  
**SHEET 4 OF 4**

Designer: RNW  
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