STATE OF COLORADO
DEPARTMENT OF TRANSPORTATION
CITY OF COLORADO SPRINGS
Parks, Recreation and Cultural Services Department

TRAIL IMPROVEMENT PROGRAM

COMBINED FEDERAL AID PROJECT No. TAP M240-162, SubAccT. No.20391

PLAN of the ROCK ISLAND MULTI-USE TRAIL

SAND CREEK TO CONSTITUTION AVENUE

COLORADO SPRINGS & EL PASO COUNTY, COLORADO

JANUARY 30, 2020

Engineering Review
02/26/2020 10:10 AM
Steve Kuehster
stevekuehster@elpasoco.com
(719) 520-6813
EPC Planning & Community Development Department

Comment only made on sheets 2, 20, 22, and 29

APPROVAL SIGNATURES

TITLE	NAME	SIGNATURE	DATE
DIRECTOR, PARKS, REC. & CULT. SVS	BRITT HALEY		
PARKS OPERATION & DEVELOPMENT MANAGER	KURT SCHROEDER		
CITY FORESTER	JAY HEIN		
REG. SUPERVISOR, PARKS, TRAILS & OPEN SPACE	SCOTT ABBOTT		
CONSTRUCTION PROJECT MANAGER	STEVE BODETTE		
COLORADO DEPARTMENT OF TRANSPORTATION			
EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS	JENNIFER IRVINE, PE		

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.

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

VICINITY & SHEET INDEX MAP

SHEET NO. INDEX OF SHEETS

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G2 SUMMARY OF QUANTITIES
G3 GENERAL NOTES

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DT1 TYPICAL STANDARD DETAILS
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DT3 SIGNAGE & STRIPING PLAN – PETERSON ROAD

S1 STORMWATER MANAGEMENT SITE PLAN
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S5 STORMWATER MANAGEMENT PLAN DETAILS
S6 STORMWATER MANAGEMENT PLAN DETAILS
S7 STORMWATER MANAGEMENT PLAN DETAILS

TRAIL DESIGN DATA

BEGIN STATION ROCK ISLAND TRAIL 10+00	
END STATION ROCK ISLAND TRAIL 106+25	
MAXIMUM GRADE	8.33%
MINIMUM HORIZONTAL CURVE	25'
MINIMUM WIDTH	8'
TYPICAL WIDTH	10'
CROSS-SLOPE	2%
LENGTH SAND CREEK TRAIL	9449 LF

BENCHMARK: FIMS MONUMENT SR10 IS A 2-INCH DIAMETER ALUMINUM CAP STAMPED "CSU FIMS CONTROL SR10" ON TOP OF THE NORTH CURB OF CONSTITUTION AVENUE AT THE NORTHWEST CORNER OF THE BRIDGE OVER SAND CREEK.

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

NATURAL GAS	YELLOW
ELECTRIC	RED
WATER	BLUE
WASTEWATER	GREEN

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

Sheet Revisions	90% BID SET	Cover Sheet	Kiowa Proj. No. 16028
	No Revisions:		TAP M240-162
	Revised:	Designer: RNW	SubAcct No. 20391
	Void:	Detailer: RNW	
		Date: 1/30/2020	Sheet Number G1

16028-G1-Cover.dwg/Jan 09, 2020

SUMMARY OF APPROXIMATE QUANTITIES

Move GEC notes here from sheet 29.

CONTRACT ITEM NO.	CONTRACT ITEM	PROJECT TOTALS QUANTITY	PROJECT TOTALS UNIT
Item No.	**Description**	**Quantity**	**Units**
201	Clearing and grubbing	1	EA
202.1	Remove and dispose concrete curb and gutter	80	LF
202.2	Remove and dispose concrete sidewalk	80	LF
202.3	Remove concrete bridge abutment	1	EA
202.4	Remove and dispose trees	12	EA
203.1	Excavation- cut to fill on site	2,000	CY
203.2	Scarify, rake and revegetate existing trails, 5-foot avg width	9,337	LF
207	Topsoil	950	CY
208.1	Storm Drain/Inlet protection	2	EA
208.2	Silt Fencing	11,500	LF
208.3	Concrete wash out area	2	EA
208.4	Vehicle tracking control	3	EA
212.1	Permanent seeding	3	AC
212.2	Mulching	3	AC
212.3	Sanitary facility	2	EA
304	Aggregate base course, Class 6	510	CY
406	Hot Mix Asphalt Pavement, 6-inch thick	91	SY
506	18-inch Type L soil riprap	10	CY
514	Smooth rail fence	104	LF
604	CDoT std. Type C inlet	2	EA
608.1	Concrete trail section A	9,449	LF
608.2	Breeze trail section, 4-feet wide	2,695	LF
608.3	EPC std. pedestrian ramps	3	EA
608.4	EPC Type A curb and gutter	32	LF
608.5	EPC Type B median curb and gutter	172	LF
608.6	EPC Std sidewalk, 4-inch thick	1,900	SF
608.7	Patterned and colored median concrete, 4-inch thick	504	SF
608.8	Concrete refuge island, 6-inch thick	144	SF
617.1	18-inch HDPE	80	LF
617.2	18-inch HDPE flared end section	2	EA
625	Construction staking	1	EA
627	Epoxy coated pavement markings	240	SF
630.1	Construction zone traffic control signs, 30" x 30"	4	EA
630.2	Trail signage, panel size 12" x 18"	6	EA
630.3	Traffic signage 12" x 18"	3	EA
630.4	Traffic signage 24" x 30"	2	EA
630.5	Traffic signage 24" x 24"	3	EA
630.6	Traffic signage 30" x 30"	3	EA
630.7	Traffic signage 12" x 36"	2	EA
712.1	Removable locking steel posts	3	EA
712.2	MSE retaining wall	390	SF

GENERAL NOTES

ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE LATEST VERSION OF COLORADO DEPARTMENT OF TRANSPORTATION (CDoT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND SUPPLEMENTED WITH THE CITY OF COLORADO SPRINGS STANDARD SPECIFICATIONS.

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 DURINGS 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.

COMPACTION OF EACH LAYER OF SUBGRADE SHALL CONTINUE UNTIL A DENSITY OF AT LEAST 95 PERCENT OF THE MAXIMUM FOR DAY DENSITY HAS BEEN ACHIEVED AS DETERMINED IN ACCORDANCE WITH AASHTO T 180 AS MODIFIED BY CP23.

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 SR10 IS A 2-INCH DIAMETER ALUMINUM CAP STAMPED "CSU FIMS CONTROL SR10" ON TOP OF THE NORTH CURB OF CONSTITUTION AVENUE AT THE NORTHWEST CORNER OF THE BRIDGE OVER SAND CREEK.

ALL EXISTING MANHOLES TO BE MARKED WITH T-POSTS AND CAUTION TAPE PRIOR TO COMMENCING WITH THE CONSTRUCTION.

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 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" LATEST EDITION AND THE CITY OF COLORADO SPRINGS TRAFFIC ENGINEERING SIGNAGE & PAVEMENT MARKING STANDARDS. CONTRACTOR SHALL SUBMIT TO THE COUNTY 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 EL PASO COUNTY AND CDPHE. EL PASO HAS A MS-4 PERMIT. 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.

THE CONTRACTOR SHALL OBTAIN CONSTRUCTION STORMWATER DISCHARGE PERMIT FROM CDPHE.

KNOWN UTILITIES WITHIN PROJECT LIMITS

CONTRACTOR MUST VERIFY ALL UTILITIES PRIOR TO EXCAVATION

1. CITY OF COLORADO SPRINGS DEPT. OF UTILITIES: ELECTRIC & GAS DIVISIONS
2. CENTURY LINK
3. LEVEL 3 COMMUNICATIONS.
4. CIMMARON WATER AND SANITATION DISTRICT.

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

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

NATURAL GAS	YELLOW
ELECTRIC	RED
WATER	BLUE
WASTEWATER	GREEN

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

LEGEND

- BOLLARD
- FENCE
- GUARDRAIL
- SIGN
- ELECTRIC POWER POLE
- E — ELECTRIC LINE
- E — ELECTRIC VAULT
- G — GAS MAIN
- GVO — GAS VENT
- SS — SANITARY SEWER MAIN
- SANITARY SEWER MANHOLE
- T — TELEPHONE MAIN
- TELEPHONE MANHOLE
- T — TELEPHONE RISER
- W — WATER MAIN
- WATER VALVE

COLORADO SPRINGS

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(719) 630-7342

Sheet Revisions	
	No Revisions:
	Revised:
	Void:

ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
GENERAL NOTES

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number G3

16028-G3-GenNotes.dwg/Jan 09, 2020

PROPOSED EASEMENTS

EASEMENT 1 7700.24 SF

EASEMENT 2 8238.18 SF

NOTE:
ALL UTILITIES DEPICTED IN THE PLANS ARE A QUALITY LEVEL D. UTILITIES IN CONFLICT WITH CONSTRUCTION WILL BE POTHOLED AND POSITIVELY IDENTIFIED (QUALITY LEVEL A) PRIOR TO EXCAVATION.

COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
100	1378591.13	3224761.21	BEGIN TRAIL	6394.8
101	1388610.98	3224772.35	PC	6394.9

CURVE DATA

(1) R=1910.00'
L=916.54'
Δ=27°29'39"

TRAIL SECTION A
NOT TO SCALE

0 20' 40'

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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 10+00 TO STA 15+20

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number P1

16028 RI Final Shts P1-17 D1-3.DWG/Jan 09, 2020

COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
102	1377992.88	3225437.19	PC/ANGLE PT	6411.2

CURVE DATA

(1) R=1910.00'
L=916.54'
Δ=27°29'39"

NOTE:
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0 20' 40'

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Sheet Revisions

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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 15+20 TO STA 20+70

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number P2

16028 RI Final Shts P1-17 D1-3.DWG/Jan 09, 2020

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COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
103	1377555.89	3225671.54	PC	6413.92
104	1377490.20	3225693.19	PT	6413.40
105	1375707.35	3225707.35	PC	6413.10

CURVE DATA

(2) R=200.00'
L=69.51'
Δ=19°54'52"

(3) R=250.00'
L=132.27'
Δ=30°20'11"

0 20' 40'

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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 20+70 TO STA 26+50

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
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Sheet Number P3

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COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
106	1377272.22	3225760.05	PT	6413.10
107	1377056.72	3225932.24	PC	6415.77
108	1377026.62	3225952.13	PT	6416.08
109	1376928.93	3226004.06	PC	6417.04
110	1376896.14	3226025.87	PT	6417.28

CURVE DATA

(3) R=250.00' L=132.27' Δ=30°20'11"

(4) R=200.00' L=37.13' Δ=10°38'09"

(5) R=200.00' L=39.45' Δ=11°18'04"

0 20' 40'

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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 26+50 TO STA 32+00

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number P4

16028 Rt Final Shts P1-17 D1-3.DWG/Jan 09, 2020

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COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
111	1376762.79	3226134.99	PC	6418.25
112	1376729.95	3226156.83	PT	6418.45
113	1376478.54	3226290.37	PC	6419.71
114	1376393.46	3226313.55	PT	6420.95

CURVE DATA

(6) R=200.00'
L=39.50'
Δ=11°18'58"

(7) R=200.00'
L=89.91'
Δ=25°45'27"

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Void:

ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 32+00 TO STA 37+80

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number P5

16028 RI Final Shts P1-17 D1-3.DWG/Jan 09, 2020

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BREEZE TRAIL SECTION
1"=2'

COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
115	1376290.41	3226317.15	PC	6418.82
116	1376206.27	3226339.74	PT	6415.40
117	1375933.01	3226481.05	PC	6407.15
118	1375891.41	3226509.75	PT	6406.82

CURVE DATA

(8) R=200.00' L=87.71' Δ=25°7'38"

(9) R=200.00' L=50.68' Δ=14°31'08"

0 20' 40'

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Sheet Revisions

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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 37+80 TO STA 43+50

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
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SubAcct No. 20391
Sheet Number P6

16028 Ri Final Shts P1-17 D1-3.DWG/Jan 09, 2020

COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
119	1375763.61	3226624.28	PC	6406.18
120	1375761.18	3226626.32	PT	6406.13
121	1376828.23	3225504.85	PC	6401.42

CURVE DATA

(10) R=50.00'
L=3.17'
Δ=3°37'52"

(11) R=200.00'
L=105.03'
Δ=30°05'19"

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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 43+50 TO STA 49+00

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number P7

16028 RI Final Shts P1-17 D1-3.DWG/Jan 09, 2020

NOTE:
ALL UTILITIES DEPICTED IN THE PLANS ARE A QUALITY LEVEL D. UTILITIES IN CONFLICT WITH CONSTRUCTION WILL BE POTHOLED AND POSITIVELY IDENTIFIED (QUALITY LEVEL A) PRIOR TO EXCAVATION.

COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
122	1375442.81	3226911.45	PT	6399.76
123	1375418.57	3226972.42	PC	6401.42
124	1375412.12	3226987.25	PT	6401.85
125	1375315.71	3227190.40	PC	6404.68
126	1375303.75	3227212.63	PT	6404.80

CURVE DATA

(12) R=250.00'
L=16.18'
Δ=3°42'29"

(13) R=250.00'
L=25.25'
Δ=5°47'11"

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Colorado Springs, Colorado 80904
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Sheet Revisions

No Revisions:
Revised:
Void:

ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 49+00 TO STA 54+60

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number P8

16028 RI Final Shts P1-17 D1-3.DWG/Jan 09, 2020

COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
127	1375165.48	3227441.18	PC	6408.0
128	1375129.39	3227568.81	PT	6413.93
129	1375128.03	3227758.58	PC	6422.41
130	1375122.15	3227810.73	PT	6423.56

CURVE DATA

(14) R=250.00' L=134.24' Δ=30°45'53"

(15) R=250.00' L=52.58' Δ=12°3'2"

NOTE:
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0 20' 40'

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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 54+60 TO STA 60+30

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number P9

16028 RI Final Shts P1-17 D1-3.DWG/Jan 09, 2020

COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
131	1375091.06	3227951.44	PC	6427.15
132	1375096.19	3228188.24	PT	6434.25

CURVE DATA

(16) R=500.00'
L=239.12'
Δ=27°24'5"

NOTE:
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0 20' 40'

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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 60+30 TO STA 66+00

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number P10

16028 RI Final Shts P1-17 D1-3.DWG/Jan 09, 2020

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NOTES:

1. CONTRACTOR TO OBTAIN EPC-DPW ROAD CUT WORK PERMIT FOR WORK IN RIGHT-OF-WAY.

2. CONTRACTOR TO SUPPLY TO EPC-DPW CONSTRUCTION TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WITH ANY WORK WITHIN THE PETERSON ROAD RIGHT-OF-WAY.

COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
133	1375189.16	3228536.61	PC	6444.85
134	1375191.51	3228544.71	PT	6446.0
135	1375252.48	3228739.76	EX.WEST FL	MATCH EX.
136	1375271.64	3228803.12	EX. EAST FL	MATCH EX.
137	1375277.35	3228822.28	ANGLE PT	6451.4

CURVE DATA

(17) R=200.00'
L=8.23'
Δ=2°24'54"

TRAFFIC SIGNAGE

SIGNAGE		#	PANEL SIZE
1	TRAIL CROSSING AHEAD	2	30x30 W11-1
2	KEEP RIGHT	2	24x30 R4-7
3	PEDESTRIAN CROSSING	2	24x24 W11A-2
4	YIELD TO PEDESTRIANS	2	12x36 R1-6
5		2	12X18 W16-7P

TRAIL SIGNAGE

SIGNAGE		#	PANEL SIZE
1	STOP AHEAD	2	12x18
2	RIDERS DISMOUNT	2	12x18

0 20' 40'

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Sheet Revisions

No Revisions:
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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 66+00 TO STA 71+40

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number P11

16028 RI Final Shts P1-17 D1-3.DWG/Jan 09, 2020

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COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
138	1375475.97	3229211.44	PC	6448.78
139	1375522.69	3229258.66	PT	6449.91
140	1375536.62	3229238.05	PC	6450.75
141	1375572.64	3229251.20	PT	6452.20

CURVE DATA

(18) R=50.00'
L=57.13'
Δ=65°27'56"

(19) R=50.00'
L=39.36'
Δ=45°6'10"

0 20' 40'

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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 71+40 TO STA 77+20

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number P12

16028 RI Final Shts P1-17 D1-3.DWG/Jan 09, 2020

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COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
142	1375764.36	3229427.48	PC	6447.66
143	1375795.19	3229446.82	PT	6447.46
144	1375873.15	3229477.74	PC	6446.68
145	1375899.13	3229492.91	PT	6445.13

CURVE DATA

(20) R=100.00' L=36.59' Δ=20°58'0"

(21) R=100.00' L=30.20' Δ=17°18'4"

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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 77+20 TO STA 82+90

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number P13

16028 Rt Final Shts P1-17 D1-3.DWG/Jan 09, 2020

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COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
146	1376222.47	3229754.11	PC	6448.21
147	1376237.28	3229764.03	PT	6449.20
148	1376349.33	3229825.39	PC	6456.0
149	1376373.35	3229857.16	PT	6457.90
150	1376376.78	3229871.63	PC	6458.30
151	1376393.39	3229913.16	CL 18" HDPE	6457.8
152	1376518.71	3229987.26	PT	6461.78
153	1376691.11	3229991.97	PC	6464.95

CURVE DATA

(22) R=100.00'
L=17.85'
Δ=10°13'45"

(23) R=50.00'
L=41.87'
Δ=47°58'28"

(24) R=150.00'
L=196.65'
Δ=75°6'53"

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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 82+90 TO STA 89+00

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number P14

16028 RI Final Shts P1-17 D1-3.DWG/Jan 09, 2020

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COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
154	1376804.80	3220031.26	PRC	6465.10
155	1376995.36	3220099.68	PT	6465.68

CURVE DATA

(25) R=200.00'
L=122.18'
Δ=35°0'7"

(26) R=350.00'
L=205.40'
Δ=33°37'30"

0 20' 40'

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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 89+00 TO STA 94+70

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number P15

16028 RI Final Shts P1-17 D1-3.DWG/Jan 09, 2020

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COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
156	1377499.57	322012557	PC	6472.05
157	1377576.86	3220138.32	PT	6473.05

CURVE DATA

27 R=350.00'
L=78.50'
Δ=12°51'3"

0 20' 40'

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Sheet Revisions

No Revisions:
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Void:

ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 94+70 TO STA 100+30

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number P16

16028 RI Final Shts P1-17 D1-3.DWG/Jan 09, 2020

TRAFFIC SIGNAGE

SIGNAGE		#	PANEL SIZE
1	TRAIL CROSSING AHEAD	1	30x30 W11-1
2	PEDESTRIAN CROSSING	1	24x24 W11A-2
3		1	12x18 W16-TP

TRAIL SIGNAGE

SIGNAGE		#	PANEL SIZE
1	STOP AHEAD	1	12x18
2	RIDERS DISMOUNT	1	12x18

COORDINATES

PT#	N	E	DESCRIPTION	ELEVATION
158	1377827.63	3220209.23	PC	6475.44
159	1377940.27	3220208.12	PT	6476.20
160	1378030.70	3220180.60	PC	6478.27
161	1378052.60	3220178.98	PT	6478.53
162	1378360.72	3220224.85	ANGLE POINT	6482.93
163	1378382.73	3220224.60	BACK OF HC RAMP	6482.7

CURVE DATA

28 R=200.00' L=114.20' Δ=32°42'58"

29 R=50.00' L=22.16' Δ=25°23'43"

NOTE:
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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
FINAL TRAIL PLAN STA 100+30 TO STA 106+25

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number P17

16028 RI Final Shts P1-17 D1-3.DWG/Jan 09, 2020

PEDESTRIAN RAMP NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT ENGINEERING CRITERIA MANUAL AND ADA REQUIREMENTS.
2. CONTRACTOR TO NOTIFY ENGINEERING DIVISION INSPECTION STAFF 48 HOURS PRIOR TO CONCRETE PLACEMENT.
3. PEDESTRIAN RAMP CONSTRUCTION SHALL BE A MINIMUM 4,500 PSI CONCRETE, MINIMUM 4" THICK, NON-COLORED, NON-SCORED, COARSE BROOM FINISH.
4. RAMP LOCATION AND LENGTH MAY REQUIRE MODIFICATION TO MAINTAIN THE 12:1 MAXIMUM RUNNING RAMP SLOPE AND 20:1 DETECTABLE WARNING AREA DUE TO STREET INTERSECTION GRADES AND/OR ALIGNMENTS.
5. DETECTABLE WARNING AREA SHALL START A MINIMUM OF 6" BUT NOT MORE THAN 8" FROM THE FLOWLINE OF THE CURB AT ANY POINT.
6. DETECTABLE WARNING AREA SHALL BE PREFABRICATED, REDDISH INTEGRALLY COLORED, TRUNCATED-DOME, PAVERS. THERMOPLASTIC TRUNCATED DOMES WILL NOT BE ACCEPTED.
7. THE DETECTABLE WARNING AREA SHALL BE 24" IN LENGTH AND THE FULL WIDTH OF THE RAMP.
8. RAMP WIDTH REQUIRED IS SAME AS APPROACHING SIDEWALK; 4' MINIMUM.
9. ALL RAMPS WILL BE PERPENDICULAR TO TRAFFIC WITH THE EXCEPTION OF MID-BLOCK OR TERMINAL RAMPS WHICH MAY BE PARALLEL SUBJECT TO APPROVAL.
10. AVOID PLACING DRAINAGE STRUCTURES, TRAFFIC SIGNAL/SIGNAGE, UTILITIES/JUNCTION BOXES, OR OTHER OBSTRUCTIONS WITHIN PROPOSED RAMP AREAS.

GENERAL NOTES

1. WHERE THE 1'-6" FLARED SIDE(S) OF A PERPENDICULAR CURB RAMP IS (ARE) CONTIGUOUS WITH A PEDESTRIAN OR HARD SURFACE AREA, THE MAXIMUM FLARE SLOPE SHALL NOT EXCEED 10:1.
2. PEDESTRIAN WALKWAY AND/OR LOCATION OF EXISTING OR FUTURE PEDESTRIAN RAMPS ON OPPOSITE CORNERS SHALL BE REVIEWED BEFORE CONSTRUCTING NEW RAMPS.
3. AT MARKED PEDESTRIAN CROSSINGS, THE BOTTOM OF THE RAMPS, EXCLUSIVE OF THE FLARE SIDES, SHALL BE TOTALLY CONTAINED WITHIN THE MARKINGS.

7/9/09 DATE APPROVED: André P. Brackin DEPARTMENT OF TRANSPORTATION	Pedestrian Intersection Ramp Standard Drawing REVISION DATE: 12/8/15 FILE NAME: SD_2-41	EL PASO COUNTY DEPARTMENT OF TRANSPORTATION

EPC STANDARD RAMP DETAIL

SCALE: NOT TO SCALE

8/11/11 DATE APPROVED: André P. Brackin DEPARTMENT OF TRANSPORTATION	Typical Curb and Gutter Details Standard Drawing REVISION DATE: 12/8/15 FILE NAME: SD_2-20	EL PASO COUNTY DEPARTMENT OF TRANSPORTATION

STANDARD CURB AND GUTTER

TWO RAILED SMOOTH DOWELED FENCING DETAIL
NOT TO SCALE

PLOWABLE END SECTION DETAIL

SECTION A–A

SECTION B–B

NOTES:
1. MEDIAN NOSE CONCRETE AND CURB & GUTTER SHALL BE PLACED MONOLITHIC WITH NON-COLORED CONCRETE REINFORCED #4 REBAR AT 18" E.W.
2. MEDIANS GREATER THAN 10' WIDE (BOC TO BOC) DO NOT REQUIRE MEDIAN NOSE.

SCALE: NOT TO SCALE

1/12/16 DATE APPROVED: André P. Brackin DEPARTMENT OF TRANSPORTATION	Plowable Median Nose Detail Standard Drawing REVISION DATE: 1/12/16 FILE NAME: SD_2-22	EL PASO COUNTY DEPARTMENT OF TRANSPORTATION

MEDIAN DETAIL

NOT TO SCALE

NOTES:

A) The median paving shall be constructed with 4 inch thick, integrally colored concrete, embossed with a running bond 4" x 8" brick pattern as shown.

B) Install 1/2" x 4" expansion material at median noses, fixed objects, and at transverse joints at 50 ft. intervals (maximum) along the median.

C) The color additive shall be an approved commercially pure or synthetic mineral pigment, factory formulated and packaged in cubic yard dosage increments. The mixture shall be "Chromix" as manufactured by L.M. Scofield Company, "Davis Colors" as manufactured by Davis Color Company, Pigment No. 678, 5 lbs/sack, or an approved equal.

D) Patterned concrete to be colored L.M. Scofield Company "Santa Barbara Brown, C-35", Davis Color Company, Pigment No. 678, 5 lbs/sack, or an approved equal.

E) The Matching curing compound shall be a blend of waxes and pigments in a solvent emulsion base and conform to the requirements of ASTM C-309. The curing compound shall be "Lithocrome Colorwax" as manufactured by L.M. Scofield Company, Davis Color-Seal, as manufactured by Davis Color Company, or approved equal.

F) The concrete mix design shall conform to the requirements of the color admixture manufacturer and shall meet CDOT Class B concrete requirements, unless otherwise approved.

G) For weed control prior to median paving, apply a pre-emergent herbicide to median subgrade area per manufacturer's specifications for paving under Barrier 50 label (pbi Gordon). Trifluralin is labeled for use under asphalt under the Treflan 4EC label (Elanco).

SCALE: NOT TO SCALE

7/9/09 DATE APPROVED: André P. Brackin DEPARTMENT OF TRANSPORTATION	Patterned Concrete Median Paving Standard Drawing REVISION DATE: 1/18/11 FILE NAME: SD_2-21	EL PASO COUNTY DEPARTMENT OF TRANSPORTATION

MEDIAN DETAIL

CROSSWALK MARKING DETAIL
NOT TO SCALE

NOTES:
CENTER CROSSWALK MARKINGS ON PEDESTRIAN RAMPS.
CROSSWALK MARKINGS SHALL BE 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.

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Sheet Revisions		ROCK ISLAND TRAIL Sand Creek to Constitution Avenue DETAILS	Kiowa Proj. No. 16028
	No Revisions:		TAP M240-162
	Revised:	Designer: RNW	SubAcct No. 20391
	Void:	Detailer: RNW Date: 1/30/2020	Sheet Number DT1

16028 RI Final Shts P1-17 DT-3.DWG/Jan 09, 2020

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 (⅓) 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.

LOCKING STEEL POST DETAIL

NTS

Remove the note and welded loop that indicate this trail could be closed by a chain. That method of closing a road or trail is no longer allowed due to safety concerns.

NOTES:
1. 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 DIRCT SUPERVISION OF A PROPERLY REGISTERED PROFESSIONAL ENGINEER WITH THE STATE OF COLORADO. FINAL CONSTRUCTION DRAWINGS SHALL BEAR HIS/HER SEAL AND SIGNATURE.
2. BUILDING PERMITS FOR THE INSTALLATION OF THE MSE WALL MAY BE REQUIRED THROUGH THE PIKES PEAK REGIONAL BUILDING DEPARTMENT.

CONCRETE BLOCK FACING MSE WALL CROSS SECTION

NOT TO SCALE

REFUGE ISLAND CURB-CUT

NOT TO SCALE

Call out the minimum pavement section as a composite section only (full depth asphalt is no longer allowed in El Paso County) 4 inches of asphalt on 8 inches of ABC.

FOR PETERSON ROAD SIGNAGE & STRIPING PLAN, SEE SHEET DT3.

FOR ROAD AND TRAIL SIGNAGE, SEE SHEET P11.

REFUGE ISLAND PLAN

1"=10'

CLASSIFICATION AND GRADATION OF RIPRAP			
RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	d50* (INCHES)
TYPE VL	70–100 50–70 35–50 2–10	12 9 6 2	6**
TYPE L	70–100 50–70 35–50 2–10	15 12 9 3	9**
TYPE M	70–100 50–70 35–50 2–10	21 18 12 4	12**
TYPE H	100 50–70 35–50 2–10	30 24 18 6	18
TYPE VH	100 50–70 35–50 2–10	42 33 24 9	24

* d50=MEAN PARTICLE SIZE (INTERMEDIATE DIMENSION) BY WEIGHT.
** MIX VL, L AND M RIPRAP WITH 35% TOPSOIL (BY VOLUME) AND BURY WITH 4-6 INCHES OF TOPSOIL, ALL VIBRATION COMPACTED & REVEGETATE.
(TABLE MD-7: CLASSIFICATION AND GRADATION OF ORDINARY RIPRAP. UDFCD, DRAINAGE CRITERIA MANUAL, VOL. 1)

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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
TYPICAL MISCELLANEOUS DETAILS

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
SubAcct No. 20391
Sheet Number DT2

16028 RI Final Shts P1-17 DT-3.DWG/Jan 09, 2020

PETERSON ROAD SIGNAGE PLAN

1"=200'

PETERSON ROAD IS A MINOR ARTERIAL ROADWAY.

FOR REFUGE ISLAND SIGNAGE, SEE SHEET P11.

REFUGE ISLAND STRIPING PLAN

1"=10'

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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
SIGNAGE & STRIPING PLAN – PETERSON ROAD

Designer: RNW
Detailer: RNW
Date: 1/30/2020

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ALL GRADING OUTSIDE OF THE TRAIL & SHOULDER IS IN A FILL CONDITION.

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.

3. LOCATIONS OF VEHICLE TRACKING CONTROL AND CONCRETE WASHOUTS SUBJECT TO APPROVAL OF EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS.

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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
STORMWATER MANAGEMENT PLAN

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240-162
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Sheet Number S3

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ALL GRADING OUTSIDE OF THE TRAIL & SHOULDER IS IN A FILL CONDITION.

0 50' 100'

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.

3. LOCATIONS OF VEHICLE TRACKING CONTROL AND CONCRETE WASHOUTS SUBJECT TO APPROVAL OF EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS.

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STORMWATER MANAGEMENT PLAN

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SILT FENCE

SECTION A

SF–1. SILT FENCE

SILT FENCE INSTALLATION NOTES

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

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

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

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

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

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

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

SILT FENCE MAINTENANCE NOTES

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

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

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

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

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

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

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

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

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

SSA–1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

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

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

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

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

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

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

STABILIZED STAGING AREA MAINTENANCE NOTES

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

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

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

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

STABILIZED STAGING AREA MAINTENANCE NOTES

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

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

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

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

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

SECTION A

VTC–1. AGGREGATE VEHICLE TRACKING CONTROL

SECTION A

VTC–2. AGGREGATE VEHICLE TRACKING CONTROL WITH WASH RACK

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

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

1. SEE PLAN VIEW FOR
–LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
–TYPE OF CONSTRUCTION ENTRANCE(S)/EXITS(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).

2. CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.

3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT–OF–WAYS.

4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

5. A NON–WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.

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

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

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

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

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

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.

5. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.

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

(DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

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ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
STORMWATER MANAGEMENT DETAILS

Designer: RNW
Detailer: RNW
Date: 1/30/2020

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Concrete Washout Area (CWA) MM-1

CONCRETE WASHOUT AREA PLAN

SECTION A

CWA–1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

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

2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.

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

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

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

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

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

8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

MM-1 Concrete Washout Area (CWA)

CWA MAINTENANCE NOTES

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

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

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

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

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

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

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

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

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

Inlet Protection (IP) SC-6

CULVERT INLET PROTECTION PLAN

SECTION A

SECTION B

CIP–1. CULVERT INLET PROTECTION

CULVERT INLET PROTECTION INSTALLATION NOTES

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

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

CULVERT INLET PROTECTION MAINTENANCE NOTES

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

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

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

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

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

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

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

SC-6 Inlet Protection (IP)

GENERAL INLET PROTECTION INSTALLATION NOTES

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

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

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

INLET PROTECTION MAINTENANCE NOTES

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

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

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

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

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

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

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

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

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

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

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 unclassified fill. The Contractor shall be responsible for the removal and hauling of such materials to a suitable spoil area. Costs associated with the removal of such materials shall be paid for as documented in the Project Specifications.
3. Excess excavation shall become the property of the Contractor and shall be disposed of at the Contractor's expense. The cost of haulage and spoiling of excess excavated materials shall be paid for as documented in the Project Specifications.
4. Water shall be used as a dust palliative as required and shall be included in the cost for earthwork item(s). No separate payment will be made for dust control associated with the site construction.
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. Properly graded rubble may be used in some locations as specified and verified by the Geotechnical Engineer.
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), Geocoir 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. The Contractor shall perform such independent investigation as he deems necessary to satisfy himself as to the subsurface groundwater conditions and unstable soil conditions to be encountered throughout the construction. Contractor shall coordinate the dewatering system with El Paso County when associated with public facilities.
18. No fill shall be placed, spread or rolled while it is frozen, thawing or during unfavorable weather conditions. When the work is interrupted by heavy rain, fill operations shall not be resumed until a representative of the Geotechnical Engineer indicates that the moisture content and density of the previously placed fill are as specified. Fill surfaces may be scarified and recompacted after rainfall if necessary, to obtain proper moisture density relation.
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 .
22. Proposed Construction Schedule:
    Begin Construction: pending
    End Construction: pending
    Total Site Area = 37.5 Acres
23. Area to be disturbed = 17.5 Acres (est.).
    Existing 100-year runoff coefficient = 0.25
    Proposed 100-year runoff coefficient = 0.25
    Existing Hydrologic Soil Groups: B/C
24. Site is currently undeveloped and covered with native grasses on mild to moderate to steep slopes (1%-4%).
25. Site is located in the Sand Creek Drainage Basin.

INSTALLATION NOTES

1. PORTABLE TOILETS SHALL BE PLACED A MINIMUM OF 10 FEET BEHIND ALL CURBS, SIDEWALKS, AND OTHER IMPERVIOUS AREAS; 50 FEET FROM STORM INLETS, AND 100 FEET FROM WATERWAYS.
2. PORTABLE TOILETS IN THE RIGHT–OF–WAY ARE REQUIRED TO BE PLACED ON MOBILE TRAILERS AND MUST BE ANCHORED OR WEIGHTED DOWN. PORTABLE TOILETS MAY BE INSTALLED IN ACCORDANCE WITH NOTE #1 IN STAGING AREAS/YARDS.
3. ALL PORTABLE TOILETS MUST BE GROUPED TOGETHER.
4. PORTABLE TOILETS SHALL BE SECURELY ANCHORED TO THE GROUND USING U–SHAPED REBAR STAKES, OR OTHER EFFECTIVE ANCHORING.
5. ANCHORING SHALL BE POSITIONED ON AT LEAST TWO OPPOSING (DIAGONAL) CORNERS.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. PORTABLE TOILETS SHALL BE SERVICED AT THE NECESSARY INTERVALS TO ELIMINATE THE POSSIBILITY OF OVERFLOW.
3. WHEN THE PORTABLE TOILETS ARE REMOVED, ANY DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE TOILETS MUST BE PERMANENTLY STABILIZED.

PT

COLORADO SPRINGS

PORTABLE TOILET

APPROVED: _____ CITY ENGINEER

ISSUED:	REVISED:	DRAWING NO.
2/19/19	6/17/19	900–P7M

Standard Notes for El Paso County Grading and Erosion Control Plans

Revised 7/02/19

1. Stormwater discharges from construction sites shall not cause or threaten to cause pollution, contamination, or degradation of State Waters. All work and earth disturbance shall be done in a manner that minimizes pollution of any on-site or off-site waters, including wetlands.
2. 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.
3. A separate Stormwater Management Plan (SMWP) for this project shall be completed and an Erosion and Stormwater Quality Control Permit (ESQCP) issued prior to commencing construction. Management of the SWMP during construction is the responsibility of the designated Qualified Stormwater Manager or Certified Erosion Control Inspector. The SWMP shall be located on site at all times during construction and shall be kept up to date with work progress and changes in the field.
4. Once the ESQCP is approved and a "Notice to Proceed" has been issued, the contractor may install the initial stage erosion and sediment control measures as indicated on the approved GEC. A Preconstruction Meeting between the contractor, engineer, and El Paso County will be held prior to any construction. It is the responsibility of the applicant to coordinate the meeting time and place with County staff.
5. Control measures must be installed prior to commencement of activities that could contribute pollutants to stormwater. Control measures for all slopes, channels, ditches, and disturbed land areas shall be installed immediately upon completion of the disturbance.
6. All temporary sediment and erosion control measures shall be maintained and remain in effective operating condition until permanent soil erosion control measures are implemented and final stabilization is established. All persons engaged in land disturbance activities shall assess the adequacy of control measures at the site and identify if changes to those control measures are needed to ensure the continued effective performance of the control measures. All changes to temporary sediment and erosion control measures must be incorporated into the Stormwater Management Plan.
7. Temporary stabilization shall be implemented on disturbed areas and stockpiles where ground disturbing construction activity has permanently ceased or temporarily ceased for longer than 14 days.
8. Final stabilization must be implemented at all applicable construction sites. Final stabilization is achieved when all ground disturbing activities are complete and all disturbed areas either have a uniform vegetative cover with individual plant density of 70 percent of pre-disturbance levels established or equivalent permanent alternative stabilization method is implemented. All temporary sediment and erosion control measures shall be removed upon final stabilization and before permit closure.
9. All permanent stormwater management facilities shall be installed as designed in the approved plans. Any proposed changes that affect the design or function of permanent stormwater management structures must be approved by the ECM Administrator prior to implementation.
10. Earth disturbances shall be conducted in such a manner so as to effectively minimize accelerated soil erosion and resulting sediment. All disturbances shall be designed, constructed, and completed so that the exposed area of any disturbed land shall be limited to the shortest practical period of time. Pre-existing vegetation shall be protected and maintained within 50 horizontal feet of a waters of the state unless shown to be infeasible and specifically requested and approved.
11. Compaction of soil must be prevented in areas designated for infiltration control measures or where final stabilization will be achieved by vegetative cover. Areas designated for infiltration control measures shall also be protected from sedimentation during construction until final stabilization is achieved. If compaction prevention is not feasible due to site constraints, all areas designated for infiltration and vegetation control measures must be loosened prior to installation of the control measure(s).
12. Any temporary or permanent facility designed and constructed for the conveyance of stormwater around, through, or from the earth disturbance area shall be a stabilized conveyance designed to minimize erosion and the discharge of sediment off site.
13. Concrete wash water shall be contained and disposed of in accordance with the SWMP. No wash water shall be discharged to or allowed to enter State Waters, including any surface or subsurface storm drainage system or facilities. Concrete washouts shall not be located in an area where shallow groundwater may be present, or within 50 feet of a surface water body, creek or stream.
14. During dewatering operations of uncontaminated ground water may be discharged on site, but shall not leave the site in the form of surface runoff unless an approved State dewatering permit is in place.
15. Erosion control blanketing or other protective covering shall be used on slopes steeper than 3:1.
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. No construction debris, tree slash, building material wastes or unused building materials shall be buried, dumped, or discharged at the site.
17. Waste materials shall not be temporarily placed or stored in the street, alley, or other public way, unless in accordance with an approved Traffic Control Plan. Control measures may be required by El Paso County Engineering if deemed necessary, based on specific conditions and circumstances.
18. Tracking of soils and construction debris off-site shall be minimized. Materials tracked off-site shall be cleaned up and properly disposed of immediately.
19. The owner/developer shall be responsible for the removal of all construction debris, dirt, trash, rock, sediment, soil, and sand that may accumulate in roads, storm drains and other drainage conveyance systems and stormwater appurtenances as a result of site development.
20. The quantity of materials stored on the project site shall be limited, as much as practical, to that quantity required to perform the work in an orderly sequence. All materials stored on-site shall be stored in a neat, orderly manner, in their original containers, with original manufacturer's labels.
21. No chemical(s) having the potential to be released in stormwater are to be stored or used onsite unless permission for the use of such chemical(s) is granted in writing by the ECM Administrator. In granting approval for the use of such chemical(s), special conditions and monitoring may be required.
22. Bulk storage of allowed petroleum products or other allowed liquid chemicals in excess of 55 gallons shall require adequate secondary containment protection to contain all spills onsite and to prevent any spilled materials from entering State Waters, any surface or subsurface storm drainage system or other facilities.
23. No person shall cause the impediment of stormwater flow in the curb and gutter or ditch except with approved sediment control measures.
24. Owner/developer and their agents shall comply with the "Colorado Water Quality Control Act" (Title 25, Article 8, CRS), and the "Clean Water Act" (33 USC 1344), in addition to the requirements of the Land Development Code, DCM Volume II and the ECM Appendix I. All appropriate permits must be obtained by the contractor prior to construction (1041, NPDES, Floodplain, 404, fugitive dust, etc.). In the event of conflicts between these requirements and other laws, rules, or regulations of other Federal, State, local, or County agencies, the most restrictive laws, rules, or regulations shall apply.
25. All construction traffic must enter/exit the site only at approved construction access points.
26. Prior to construction the permittee shall verify the location of existing utilities.
27. A water source shall be available on site during earthwork operations and shall be utilized as required to minimize dust from earthwork equipment and wind.
28. The soils report for this site has been prepared by _____ and shall be considered a part of these plans.
29. At least ten (10) days prior to the anticipated start of construction, for projects that will disturb one (1) acre or more, the owner or operator of construction activity shall submit a permit application for stormwater discharge to the Colorado Department of Public Health and Environment, Water Quality Division. The application contains certification of completion of a stormwater management plan (SWMP), of which this Grading and Erosion Control Plan may be a part. For information or application materials contact:

    Colorado Department of Public Health and Environment
    Water Quality Control Division
    WQCD – Permits
    4300 Cherry Creek Drive South
    Denver, CO 80246-1530
    Attn: Permits Unit

Place these notes on page 2 of this plan set.

COLORADO SPRINGS

Kiowa Engineering Corporation — Celebrating 30 years
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

Sheet Revisions

No Revisions:

Revised:

Void:

ROCK ISLAND TRAIL
Sand Creek to Constitution Avenue
STORMWATER MANAGEMENT DETAILS

Designer: RNW
Detailer: RNW
Date: 1/30/2020

Kiowa Proj. No. 16028
TAP M240–162
SubAcct No.20391
Sheet Number S6

16028swmp plans.dwg/Jan 09, 2020