BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

DOCKET NO. 10A-409R

IN THE MATTER OF THE CITY OF FOUNTAIN FOR AUTHORITY TO CREATE ALTERNATIVE AT-GRADE, ROADWAY RAILROAD CROSSINGS FOR DUCKWOOD ROAD AND TO CLOSE THE EXISTING MESA ROAD RAILROAD CROSSINGS

STIPULATION AND SETTLEMENT AGREEMENT
APPLICANT, UPRR AND CDOT

Applicant City of Fountain ("Fountain"), Intervenor Union Pacific Railroad Company ("Union Pacific" or "UPRR") and Intervenor, Colorado Department of Transportation ("CDOT"), by and through their respective counsel, hereby enter into this Stipulation and Settlement Agreement ("Stipulation") and in consideration of all of the terms and conditions set forth herein, hereby agree and stipulate as follows:

1. The application commencing this action was filed with the Colorado Public Utilities Commission by Fountain on May 24, 2010. In the Application Fountain seeks, inter alia, to close the Union Pacific railroad public crossing at Mesa Road in Fountain, Colorado and to open a new public road crossing at Duckwood Road in Fountain, Colorado across the two Union Pacific tracks at that location. The proposed closing of Mesa Road is contingent upon the approval to open the new public road crossing at Duckwood Road.
2. On July 13, 2010, Union Pacific filed its *Entry of Appearance* and *Notice of Intervention* objecting to the Application in this docket. On July 13, 2010, the

Burlington Northern Santa Fe Railroad ("BNSF") filed its *Entry of Appearance* and *Notice of Intervention Objecting to the Application* related to the Mesa Road alterations in this docket.

3. The Commission Order Deeming Application Complete and Referring to an ALJ was served on August 3, 2010.
4. Union Pacific filed an *Amended Intervention* on August 13, 2010.
5. Fountain amended their Application on September 2, 2010.
6. Union Pacific filed a *Motion for Partial Summary Judgment on the Pleadings for Failure to State a Claim Upon Which Relief Can be Granted* on December 3, 2010. This Motion was later granted and had the effect of removing any property claims from this docket.
7. On July 5, 2011, CDOT formally filed its *Entry of Appearance* and *Motion to Intervene Out of Time*. Late Intervention was granted by the Commission on July 27, 2011.
8. By Order dated September 21, 2011 Administrative Law Judge Keith J. Kirchubel set this matter for hearing on December 7, 2011. The December hearing date was later vacated in order to allow the parties' time to negotiate settlement of certain issues.
9. Further, on January 6, 2012, BNSF filed its Motion to Dismiss Application as Preempted by Federal Law or in the Alternative to Refer Matter to Surface Transportation Board for Declaratory Order
10. On January 17, 2011, the parties filed a Stipulated Procedural Schedule stipulating, in part, that any further hearing in this matter should occur on June 21, 2012.

11. Fountain, Union Pacific and CDOT are now in Agreement as a partial settlement of this case as follows:

a. That contingent upon approval of the opening of the Duckwood Crossing, the public road crossing of the Union Pacific tracks at Mesa Road (the "UP/Mesa Road Crossing") shall, within 30 days of the opening of the new Duckwood Road railroad crossing, be closed and abolished by Fountain, at Fountain's sole expense, by erecting a Type Three barrier and a drainage swale on the east side of the UP/Mesa Road Crossing and, on the west side of the UP/Mesa Road Crossing, by removing the existing pavement and installing a drainage swale, all as shown on **Exhibit "A"** attached hereto. Union Pacific shall be responsible for removing (at Fountain's expense) all railroad crossing materials, signals and appurtenances located to the west of the Type III Barrier Road Closure east of the Union Pacific/Mesa Road Crossing and west of the BNSF Mesa Road crossing. All materials removed by Union Pacific shall be retained by or disposed of by Union Pacific in its sole discretion, and the reference to "salvage" on the Exhibit shall have no meaning.

b. That the new Duckwood Road railroad crossing shall not be used for any construction activities or other private use prior to the opening of the Duckwood Road crossing to the public. Such opening shall include having all surface work on the crossing completed, all signal work on the crossing completed, the adjoining intersection (US 85 and Duckwood Road) shall be fully completed with all surface and signal improvements installed, including interconnecting the signals at that intersection to the signals at the new Duckwood Road railroad crossing and Duckwood Road shall be open

to the public as a through roadway. If the Duckwood Road crossing is completed with all signal and surface improvements prior to the time of interconnection to the adjoining intersection signals (US 85 and Duckwood Road) and/or prior to the time that Duckwood Road is fully open to the public as a through highway from US 85 to a point east of the new Duckwood Road crossing, then the Duckwood Road railroad crossing shall be barricaded, at Fountain's sole expense, with a Type III barricade on both sides of the Union Pacific track until such time as all improvements are complete, Duckwood Road can be opened as a through roadway, the US 85/Duckwood Road intersection is signalized and interconnected to the signals at the Duckwood Road Railroad crossing and such interconnection is fully operational. The current Union Pacific cost estimates for the automatic flashing light signals with gates and surfacing materials for the Duckwood Road Crossing is attached hereto as **Exhibit "B"**.

c. That prior to the opening of the new Duckwood Road railroad crossing, the berm now existing to the south and west of that crossing shall be removed by Fountain, at Fountain's sole cost and expense, in the locations and to the extent shown on **Exhibit "C"**.

d. That CDOT, Fountain and Union Pacific hereby agree to the appropriateness of the signal timing calculations attached hereto as **Exhibit "D"** and that the advanced preemption timing is equal to 55 seconds.

e. That the configuration of the new Duckwood Road / Union Pacific railroad crossing and the adjoining intersection of US 85 and Duckwood Road shall be as depicted on the plans filed with the Colorado Public Utilities Commission on October 11,

2011 as modified by the plans filed on November 16, 2011 and by replacement Plan Sheet C-10B (**Exhibit "D"**), all of which are attached hereto and **Exhibit "E"**, including Plan Sheets C-1 through C-26, inclusive (the "Plans"). Any and all costs of the new Duckwood Road crossing and any changes to the adjoining intersection of US 85 and Duckwood Road (including all signal systems) reflected on the Plans shall be borne solely by Fountain.

f. That Fountain and Union Pacific , and also, CDOT and Union Pacific hereby agree to enter into seperate interconnection agreements within 90 days after approval of this stipulation and after final approval of the Duckwood Road crossing by the PUC. The purpose of the interconnection agreements shall be to cover the interconnection of the signal system at the new Duckwood Road railroad crossing and the traffic signal system to be placed at the intersection of US 85 and Duckwood Road. The Fountain and Union Pacific agreement will be in effect until such time as CDOT approves and accepts the signals at Duckwood and US 85, including maintenance of such signals. The CDOT and Union Pacific agreement shall be entered into at the same time as the Fountain interconnection agreement, however, the CDOT agreement will remain in place after the Fountain agreement terminates.

g. That Fountain and CDOT agree that the hardware and software specifications described on the attached **Exhibit "F"** will be used as and for signaling and operations equipment.

h. Upon completion of the installation and interconnection of all the hardware and software as contained in **Exhibits "E" and "F"** attached hereto, CDOT and Union

Pacific will perform their own inspection and testing to confirm compliance with **Exhibits "E" and "F"**. Upon acceptance by Union Pacific and confirmation of compliance by CDOT, CDOT will accept future maintenance responsibilities for the US 85 Duckwood Road intersection signals and interconnects as set forth in the attached **Exhibits "E" and "F"**, and subject to the interconnection agreement as described in subparagraph 11 F above.

i. Fountain agrees and understands that it must apply for and be granted a CDOT Access Permit prior to connecting the new Duckwood Road to US 85. Fountain further agrees and understands that prior to connecting the new Duckwood Road to US 85 it must also receive a CDOT "Notice to Proceed" and agree to and follow all terms and conditions contained therein.

j. That Fountain and Union Pacific will enter into a Construction and Maintenance agreement covering the new Duckwood Road railroad crossing within 90 days following final approval of the Duckwood Road crossing by the PUC. Additionally, Fountain or its Contractor will execute a Contractor's Right of Entry agreement with Union Pacific prior to beginning any construction activity relative to the berm removal and will also submit all berm removal plans to Union Pacific and receive approval of plans from Union Pacific prior to beginning any work. All costs associated with berm removal, including, but not limited to, any Contractor's Right of Entry fees, fees for temporary easements, flagging and insurance requirements, shall all be borne solely by Fountain. The easements to be acquired shall be in accordance with the legal descriptions filed by Fountain in this

docket as Applicant Exhibit DKG-27 and Applicant Exhibit DKG-28 on October 17, 2011, unless amended by written agreement between Fountain and Union Pacific.

k. This Stipulation and Agreement only covers the physical attributes of the proposed closure of the UPRR/Mesa Road crossing and the proposed opening of the UPRR/Duckwood Road crossing. This Stipulation and Agreement does not cover any other issues outside of the immediate area of the existing UPRR/Mesa Road crossing and the proposed UPRR/Duckwood Road crossing.

l.. The parties to this Stipulation and Agreement acknowledge that BNSF has raised objections to the Duckwood crossing which remain unresolved. The parties request that the Commission approve this Stipulation and Agreement to govern the issues addressed herein in the event that a crossing is approved at Duckwood as requested by Fountain.

12. As a result of executing this Stipulation and Agreement, and subject to the conditions set forth herein, Union Pacific hereby withdraws any objection that it had pertaining to Fountain's requested closure of the UP/Mesa Road Crossing and also withdraws any objections it had to the new proposed UPRR railroad crossing at Duckwood Road. By so doing, UPRR does not take a position as to the BNSF Motion filed on January 6, 2012. UPRR's Stipulation herein is expressly contingent on the BNSF's objections being fully resolved in a manner that is not in any way objectionable to Union Pacific or that does not in any way require Union Pacific to configure its wayside signal system in a way to which Union Pacific objects. By entering into this Stipulation and Agreement, UPRR expresses no opinion on whether the issues raised by BNSF, in regard to wayside signals and train staging, are capable of resolution.

Furthermore, any proposed wayside signal relocation on the UPRR trackage must be fully approved by UPRR, with no costs of engineering or relocation of the wayside signals being borne by UPRR.

13. If and when all BNSF issues are resolved in such a way that would allow the Duckwood crossing to open, Fountain, Union Pacific and CDOT hereby request that the Commission enter an Order approving the closure of the UP/Mesa Road Crossing and the opening of the Duckwood crossing as set forth in the Application and in this Stipulation and Settlement Agreement, with closure of the UP/Mesa Road crossing contingent upon the opening of the Duckwood crossing.

14. This Stipulation may be enforced only by the parties hereto or their successors. The parties agree to cooperate and otherwise perform this Stipulation in good faith, and shall execute such additional documents or instruments as may be reasonably necessary or required in order to properly carry out and effectuate the terms, provisions and intent of this Stipulation.

15. This Stipulation constitutes a settlement of disputed and compromised claims regarding the proposed closure and is made for settlement purposes only. Each party also agrees that except as expressly provided in this Stipulation, it will take no action in any administrative or judicial proceeding which would have the effect, directly or indirectly of contravening the provisions of this Stipulation, excepting that nothing in this Stipulation shall prevent Union Pacific from appropriately addressing Union Pacific's issues in connection with the BNSF request that signals be moved on the Union Pacific line, even if such position makes further agreement between all parties

to this matter impossible; thus having the effect of nullifying Union Pacific's agreements in this Stipulation and any approvals by the Commission. Furthermore, except as otherwise provided herein, nothing in this Stipulation shall constitute a waiver by any party with respect to any matter not specifically addressed in this Stipulation.

16. This Stipulation shall not become effective until the Commission issues an Order approving the Stipulation, which Order does not contain any modification of the terms and conditions of this Stipulation that is unacceptable to any of the parties to the Stipulation. In the event the Commission modifies this Stipulation in a manner unacceptable to any party hereto, that party may withdraw from the Stipulation and shall so notify the Commission and the other parties to the Stipulation in writing within 10 days of the date of the final Commission Order. In the event a party exercises its right to withdraw from the Stipulation, the Stipulation shall be null and void and have no effect.

17. In the event this Stipulation becomes null and void, or in the event the Commission does not approve this Stipulation, this Stipulation as well as the negotiations undertaken in conjunction with this Stipulation shall not be admissible into evidence in any subsequent proceeding.

18. The parties state that they have reached this Stipulation by means of a negotiated process that is in the public interest, and that the results reflected in this Stipulation are just, reasonable and in the public interest.

19. This Stipulation may be exercised in separate counterparts, including facsimile. The counterparts taken together shall constitute the Stipulation. The parties represent that the signatories to the Stipulation shall have full authority to bind their respective parties to the terms of the Stipulation.

20. The Stipulation shall be governed by and construed in accordance with the laws of the State of Colorado.

Respectfully submitted this 16th day of May, 2012.

APPLICANT:

Lisa Tormoen Hickey, Esq., #15046
Alpern Myers Stuart LLC
14 North Sierra Madre, Suite A
Colorado Springs, CO 80903
lisahickey@coloradolawyers.net
719.471-7955 x 124
719.630-1794 (FAX)
Attorney for Applicant City of Fountain

CITY:

The City of Fountain, a municipal corporation and Colorado home rule city,

By:
Scott Trainor, City Manager

UNION PACIFIC RAILROAD COMPANY:

Kathleen M. Snead, Esq., #9969
1331 Seventeenth St., Suite 406
Denver, CO 80202
303.405.5407
303.405.5413 (FAX)
Attorney for Intervenor
Union Pacific Railroad Company

COLORADO DEPARTMENT OF TRANSPORTATION:

By: Susan A. Delshad

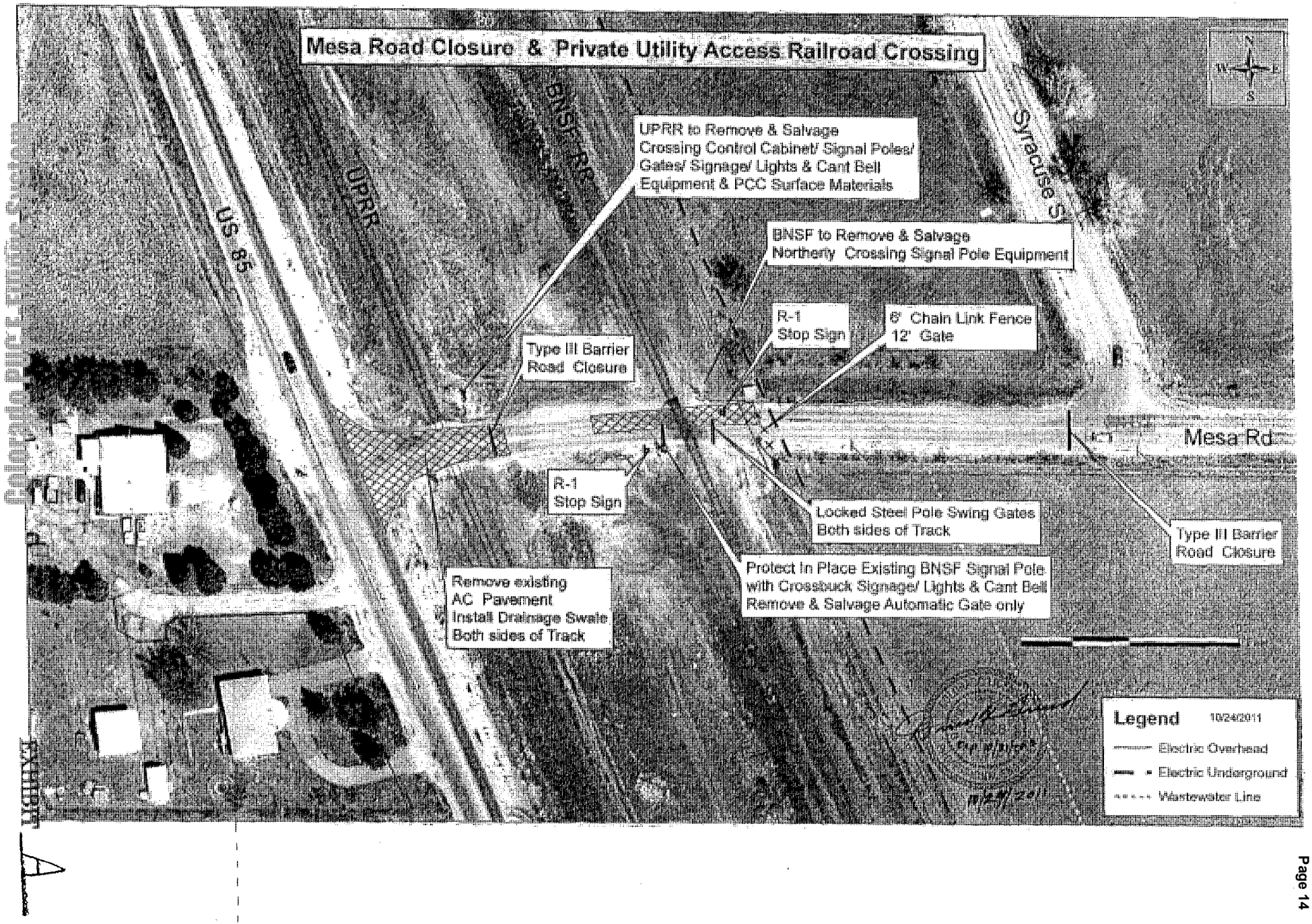
Susan A. Delshad, PE
CDOT Region II Traffic Program Engineer

Approved as to form:

OFFICE OF ATTORNEY GENERAL:

Gregg E. Carson

Gregg Carson #25460
Office of the Attorney General
Attorney for Intervenor Colorado
Department of Transportation
1525 Sherman Street, 7th Floor
Denver, CO 80203
(303) 866-5129



Attachment A
Decision No. R13-0241
Docket No. 10A-409R
Page 14

DATE: 2011-11-04

ESTIMATE OF MATERIAL AND FORCE ACCOUNT WORK
BY THE
UNION PACIFIC RAILROAD

THIS ESTIMATE GOOD FOR 6 MONTHS EXPIRATION DATE IS :2012-05-04

DESCRIPTION OF WORK:
INSTALL AUTOMATIC FLASHING LIGHT CROSSING SIGNALS
WITH GATES AT FOUNTAIN, CO. DUCKWOOD RD, M.P. 86.18
ON THE COLORADO SPRINGS SUB. DOT #253121W
WORK TO BE PERFORMED BY RAILROAD WITH EXPENSE AS BELOW:
SIGNAL - CITY OF FOUNTAIN - 100%
ESTIMATED USING FEDERAL ADDITIVES WITH INDIRECT AND
OVERHEAD CONSTRUCTION COST'S - 167.76%

PID: 71799 AFE: 06916 MP,SUBDIV: 86.18, COLSPRINGS
SERVICE UNIT: 14 CITY: FOUNTAIN STATE: CO

DESCRIPTION	QTY	UNIT	LABOR	MATERIAL	RECOLL	UPRR	TOTAL
ENGINEERING WORK							
ENGINEERING			7117		7117		7117
LABOR ADDITIVE 167.76%			19936		19936		19936
STG-HWY XNG			4821		4821		4821
TOTAL ENGINEERING			31874		31874		31874
SIGNAL WORK							
BILL PREP			900		900		900
CONTRACT				11233	11233		11233
LABOR ADDITIVE 167.76%			112362		112362		112362
MATL STORE EXPENSE				32	32		32
PERSONAL EXPENSES				36150	36150		36150
POLELINE REMOVAL				5000	5000		5000
ROCK/GRAVEL/FILL				2500	2500		2500
SIGNAL			66078	112331	178409		178409
TRANSP/IB/OB/RCIM CONTR				15108	15108		15108
ENVIRONMENTAL - PERMITS				1	1		1
TOTAL SIGNAL			179340	182335	361675		361675
LABOR/MATERIAL EXPENSE			211214	182335			
RECOLLECTIBLE/UPRR EXPENSE					393549	0	
ESTIMATED PROJECT COST							393549

THE ABOVE FIGURES ARE ESTIMATES ONLY AND SUBJECT TO FLUCTUATION. IN THE EVENT OF AN INCREASE OR DECREASE IN THE COST OR QUANTITY OF MATERIAL OR LABOR REQUIRED, UPRR WILL BILL FOR ACTUAL CONSTRUCTION COSTS AT THE CURRENT EFFECTIVE RATE.

Colorado PUC E-Filings System

SIGNAL ESTIMATE EXHIBIT "B"

B, p. 1

FORM 30-1 PAGE 01 MORE

WORK ORDER AUTHORIZATION-DETAIL OF ESTIMATED EXPENDITURES

PROJ NO: 71739
A.F.O. NO: 06916
W.O. NO:
B.I. NO: 108N10
STATE: CO
VAL SEC: 0502V

RAILROAD: UPRR CO.
LOCATION: FOUNTAIN,CO,FOUNTAIN MESA RD
DEPARTMENT: ENGINEERING SERVICES SERVICE UNIT: 14

INSTALL AUTOMATIC FLASHING LIGHT CROSSING SIGNALS
WITH GATES AT FOUNTAIN, CO, DUCKWOOD RD, M.P. 86.18
ON THE COLORADO SPRINGS SUB. DOT #253121P
WORK TO BE PERFORMED BY RAILROAD WITH EXPENSE AS BELOW:
SIGNAL - CITY OF FOUNTAIN - 100%

EXHIBIT B p. 2

FORM 30-1 PAGE 02 MORE

WORK ORDER AUTHORIZATION-DETAIL OF ESTIMATED EXPENDITURES

PROJ NO: 71799
A.W.O. NO: 06916
W.O. NO:
B.I. NO: 10EN10
STATE: CO
VAL SEC: 0502V

RAILROAD: UPRR CO.
LOCATION: FOUNTAIN,CO,FOUNTAIN MESA RD
DEPARTMENT: ENGINEERING SERVICES

SCOPE OF WORK

PROJECT NUMBER	VAL SEC	STATE	M.P. FROM	M.P. TO	SEGMENT	JOINT FACILITY
71799	0502V	CO	85.73	85.73	6716	

EXHIBIT B pg 3

FORM 30-1 PAGE 04 MORE

WORK ORDER AUTHORIZATION-DETAIL OF ESTIMATED EXPENDITURES

PROJ NO: 71799
A.H.O. NO: 06916
W.O. NO:
B.I. NO: 10EN10
STATE: CO
VAL SEC: 0502V

RAILROAD: UPRR CO.
LOCATION: FOUNTAIN,CO,FOUNTAIN MESA RD
DEPARTMENT: ENGINEERING SERVICES

STOCK MATERIAL PLAN

ITEM NUMBER	ITEM DESCRIPTION	UNIT COST	QTY	UM	DIRECT MATL $
02040660	BATTERY,GNB, 5GGJ7, 680 AH.	359.32	13	EA	4671
09010800	CABLE SPLICING KIT, N-2	32.03	5	EA	160
09011240	CABLE TIE, NYLON 1 1/8" MAX. DIA.	0.02	200	EA	4
09011980	CABLE TIE, NYLON 3 1/2" MAX. DIA.	0.18	20	EA	4
09014950	CIRCUIT BRKR,120/240V 20A 2 POLE	14.64	1	EA	15
09015270	CIRCUIT BREAKER, 120V/240V 20A AC	6.46	1	EA	6
09054360	RELAY, GEN.PURPOSE 120V, TAB 856	5.24	1	EA	5
09057650	SOCKET,P-B 27E122 TAB 836A & 856	2.17	1	EA	2
09065700	TAPE, ELECTRICAL PLASTIC	3.76	2	RL	8
09066300	TERMINAL,SPADE,10-12 WIRE,#8 STUD	0.17	10	EA	2
09137100	TERM.LUG 3/16 CABLE-1/4 POST 2412	0.55	30	EA	17
09215100	33466 TERMINAL, RING TONGUE AMP	0.19	44	EA	8
09224750	216-107 TERMINAL,FERRULE,FOR #10	0.05	20	EA	1
09224900	216-104 TERMINAL, FERRULE, W	0.02	50	EA	1
09260350	TERMINAL,#16-14 #8 SPADE	0.07	35	EA	2
09261420	321524-1 TERMINAL,TEST 26-22 A	1.79	4	EA	7
09261570	321527-1 TERMINAL, TEST	1.72	15	EA	26
09401140	ADAPTER, 4 INCH CARLON PLASTIC	2.95	2	EA	6
09409820	BUSHING, 4" PLASTIC, INSULATING	0.82	2	EA	2
09424720	CONDUIT, 4", PVC, TYPE 40	1.90	210	LF	399
09467930	LOCKNUT, 4 INCH, GALVANIZED	5.78	2	EA	12
09844170	GROUND ROD, 5/8 INCH X 8 FEET	8.95	15	EA	134
09846750	GRND.ROD CONN. 4WAY ONESHOT.	5.20	15	EA	78
09904000	WIRE, #2 AWG 3 COND 300 FT.SPOOL	5.87	300	LF	1761
09908640	WIRE,#6 AWG.1 COND,COPPER,SOLID	0.48	375	LF	180
09912200	WIRE #6 AWG 2 CND 500'ROLL SHIELD	2.05	500	LF	1025
09912350	WIRE #6 AWG 2 COND 1000 LF.SHIELD	1.99	5000	LF	9950
09913200	WIRE,#6, 5 COND 500'ROLL SHIELDED	4.00	1000	LF	4000
09913610	WIRE #6 AWG 1 COND COPPER, STRAN	0.77	210	LF	162
09930550	WIRE #10 AWG 1 COND COPPER, STRAN	0.24	1050	LF	252
09932310	WIRE #10 AWG 1 COND COPPER, TWIST	0.55	90	LF	50
09946100	WIRE #14, 7 CND 500' ROLL SHIELDE	1.63	1000	LF	1630
09960090	WIRE #16 AWG 1 COND COPPER, STRAN	0.10	850	LF	85
09976180	WIRE,#22,TW.PR, BELDEN #8761	0.13	20	LF	3
13547570	SHEET METAL SCREW, #10 X 1 INCH	3.50	1	BX	4
13562450	SHEET METAL SCREW,#12 X 3/4"	2.10	2	BX	4
13563150	SHEET METAL SCREW #12 X 1"	3.05	2	BX	6
17061400	PADLOCK,SIGNAL,WITHOUT KEY,AMERIC	15.10	19	EA	287
28033210	CARTON, 39 1/8"L X 23 1/4"W X 17	6.23	1	EA	6
28033230	CARTON, 47 3/8"L X 29 1/2"W X 18"	12.11	1	EA	12

EXHIBIT B, p. 4

FORM 30-1 PAGE 05 MORE

WORK ORDER AUTHORIZATION-DETAIL OF ESTIMATED EXPENDITURES

PROJ NO: 71799
A.N.O. NO: 06916
W.O. NO:
B.I. NO: 10EN10
STATE: CO
VAL SEC: 0502V

RAILROAD: UPRR CO,
LOCATION: FOUNTAIN,CO,FOUNTAIN MESA SD
DEPARTMENT: ENGINEERING SERVICES

29041880 PALLET, 48 X 40 INCH 2/WAY	9.89	2 EA	20
33013860 OAKUM, TREATED FLSHER SPUN	6.46	5 LB	32
350-0020 PLASTER OF PARIS, HDAP 10308	3.01	2 BX	6
393007L0 SIGN, -2 TRACKS- MP STD PAGE 403,	18.21	4 EA	73
39140220 SIGN, HIGHWAY CROSSING,STANDARD	50.00	2 EA	100
52001370 SURGE PROTECTOR SP20-2A TAB 585	71.28	2 EA	143
52003630 POWER CABLE, CABIN TO GENERATOR -	105.01	1 EA	105
52005690 BOND WIRE,7 STRANDS 500 LF. ROLL	0.86	200 LF	172
52005700 BOND WIRE,7 STRANDS 100 LF. ROLL	0.87	700 LF	609
52016830 WIRE DUCT, 2X3	8.68	8 EA	69
52016940 WIRE DUCT, 3X3	10.23	7 EA	72
52017510 WIRE DUCT COVER 2"X6'	1.89	8 EA	15
52017620 WIRE DUCT COVER 3"X6'	2.70	6 EA	17
52019530 ENCLOSURE,SHUNT,POLE MOUNTED.24X2	181.81	6 EA	1091
52019560 EQUALIZER, H.D. TAB 583	9.31	17 EA	158
52021550 FOUNDATION,4',STEEL,FOR FLSHR/OAT	328.65	4 EA	1315
52025270 HOUSE, 6X6, W/TIE, W/CLIMATE CONT	7996.68	1 EA	7997
52027350 CLIP BOARD - FOR SIGNAL PRINTS	8.02	1 EA	8
52027410 STEP BOX	16.32	1 EA	16
52028420 LIGHTNING ARRESTOR,CLR-COMM TAB 3	7.00	40 EA	280
52029780 LIGHTNING ARR,HD TAB 582 W/O BASE	10.03	12 EA	120
52030010 LIGHTNING ARRESTOR CONN,STRIP	6.58	4 EA	26
52039210 RECTIFIER,20EC,12V,TAB575	279.03	1 EA	279
52039390 RECTIFIER, 40RC, 12V. TAB577	384.83	1 EA	385
52042650 POST, MOUNTING, FOR SHUNT HOUSING	19.50	12 EA	234
52058650 TERMINAL, #6 - 5 WIRE - RING TYPE	0.16	55 EA	9
52070010 TERMINAL,#12-10 WIRE,RING TONGUE	0.22	450 EA	99
52071600 TERMINAL,#20-16 WIRE,RING TONGUE	0.09	150 EA	14
52072280 TERMINAL BLOCK, SIGNAL 2 POST BAK	4.45	52 EA	231
52072740 TERMINL BLOCK,SIGNAL 12 POST 6 UN	15.86	1 EA	16
52072960 TERMINAL BLOCK, SIGNAL 12 POST	15.35	12 EA	184
52074570 TEST LINK, 1" CENTER TO CENTER	1.51	22 EA	34
52074580 TEST LINK, 2-3/8" CENTER TO CENTE	1.89	1 EA	2
52079550 WIRE TAG, PLASTIC - WHITE	0.14	100 EA	14
52079560 MARKING PEN(FOR WHITE TAG)	1.95	1 EA	2
52108120 LED FL/GATE ASSY,2 WAY LIGHTS	6703.54	4 EA	26814
52109370 GATE ARM, ADJ,16-32'	428.26	4 EA	1713
52122140 HIGH WIND BRACKET 5"OR 4"	65.70	4 EA	263
52136380 SHEAR BOLT,74GSZN-1,NEG	5.48	4 EA	22
52136480 SHEAR PIN,74GS2H-2,NEG	4.73	4 EA	19
52200300 EVENT ANALYZER RECORDER (SEAR111)	1931.43	1 EA	1931
52207150 GRD XING PREDICTR GCP 4000 6TX.MA	14863.07	1 EA	14863
52214260 DUMMY LOAD, 4000 PT. TAB 644	38.61	2 EA	77
52231000 COUPLER,BI,DIR.62664- 86HZ TAB627	852.63	2 EA	1705
52258380 NBS, TAB 640, 62775-8621	491.25	6 EA	2948
52263600 SURGE ARRESTOR,METER LOOP,	30.87	1 EA	31

EXHIBIT B, p. 5

FORM 30-1 PAGE 06 MORE

WORK ORDER AUTHORIZATION-DETAIL OF ESTIMATED EXPENDITURES

PROJ NO: 71799
A.W.O. NO: 06916
W.O. NO:
B.I. NO: 10EM10
STATE: CO
VAL SEC: 0502V

RAILROAD: UPRR CO.
LOCATION: FOUNTAIN,CO,FOUNTAIN MESA RD
DEPARTMENT: ENGINEERING SERVICES

52261690 SURGE PANEL - TAB 619	122.55	4 EA	490
52264040 SURGE PANEL - TAB 618	183.54	1 EA	184
52267200 TRANSCEIVER MODULE, FOR GCP 4000	2771.75	6 EA	16631
52276150 SS XING CONTROLLER MODULE FOR GCP	1565.14	2 EA	3130
52745830 RELAY, TAB 884, NEUTRAL, A62-277	299.20	3 EA	898
52773800 RELAY BRACKET,HOLDS 2 B1 RELAYS.	81.98	2 EA	164
52776370 RELAY PLUGBOARD,GRS B1,TAB 900	30.67	3 EA	92
52777970 FLAG TERMINAL, FOR GRS, 14-10	2.17	45 EA	98
52778110 FLAG TERMINAL, FOR GRS, 20-16	1.58	45 EA	71
52779280 RELAY TEST TERM,GRS B1	6.42	3 EA	19
53311490 EXTRACTOR FOR "B"TERMINALS P3-308	9.13	1 EA	9
53311510 TEST NUT WRENCH, GRS HP3-320	33.01	1 EA	33
51648010 INSULATING CAP & SHIELD ASSY.	2.34	4 EA	9
51903460 EPD 120/240TDFL SURGE PROTECTOR	276.21	1 EA	276
51954300 180429-000 ROOTLMO KIT	50.58	18 EA	910
TOTAL			112,334

EXHIBIT B-p 6

AREMA UNIT STATEMENT OF RAILROAD HIGHWAY GRADE CROSSING SIGNALS
ESTIMATED MAINTENANCE COSTS

BUILDING AMERICA®

FOR PID #71799

BY THE UNION PACIFIC RAILROAD

STREET	DUCKWOOD RD.
TOWN	FOUNTAIN, CO.
MILEPOST	86.18
SUBDIVISION	COLORADO SPRINGS
AAR/DOT NO.	253121W
WORK ORDER#	6918

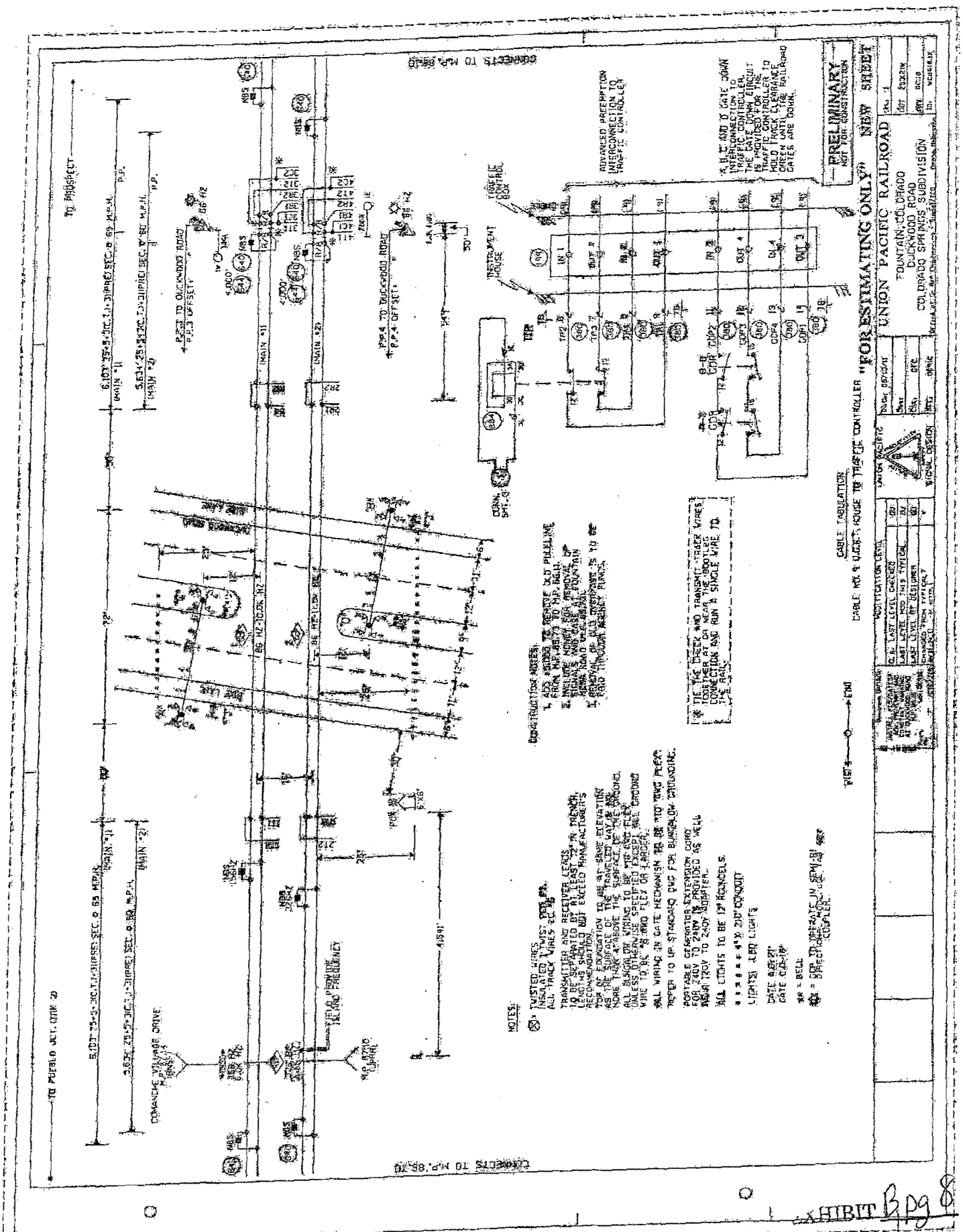
DESCRIPTION	UNIT VALUE	QUANTITY	UNITS
NON-CODED TRK. CIRCUIT, (Standalone AFTAC or Ring 10)	2	0	0
SUPERIMPOSED CIRCUIT(AFTAC) / DETECTION LOOP	2	0	0
HIGHWAY GRADE CROSSING SIGNAL (ONE PAIR OF FLASHING LIGHTS)	2	4	8
ADDITIONAL PAIR OF LIGHTS	1	4	4
GATE MECHANISM, AUTOMATIC WITH ARM UP TO 26 FT	8	4	32
GATE MECHANISM, AUTOMATIC WITH ARM OVER 26 FT	10	0	0
GCP/HXP (Constant warning device, per track circuit)	15	4	60
EXIT GATE MANAGEMENT SYSTEM RACK*	10	0	0
MOVEMENT DETECTOR (PMD)	6	0	0
MOVEMENT DETECTOR (STANDBY UNIT)	3	0	0
RADIO DATA LINK, PER UNIT	1	0	0
PREEMPTION CIRCUIT	2	0	0
DATA RECORDER	1	0	0
REMOTE MONITORING DEVICE*	2	1	2
BONDED RAIL JOINTS (per mile, each rail, single bonded)	1	0	0
BATTERY AND CHARGER (per set)	1	2	2

TOTAL UNIT COUNT	108
PAVEMENT RESTORATION COSTS	(Actual)
Annual Maintenance Cost at $170/Unit	$18,360

*UP supplied Unit Value

November 4, 2011

EXHIBIT B, p. 7


UNION PACIFIC RAILROAD
FOUNTAIN-COLORADO
DUCKWOOD ROAD
COLORADO SPRINGS SUBDIVISION
"FORESTMATING ONLY" NEW SHEET
PRELIMINARY
NOT FOR CONSTRUCTION
TO PUEBLO JCT. (CONN 2)
TO MIDDLE CREEK
COMANCHE VILLAGE DRIVE
DUCKWOOD ROAD
INSTRUMENT HOUSE
TRAFFIC CONTROL BOX
ADVANCED PREEMPTION INTERCONNECTION TO TRAFFIC CONTROLLER
CABLE TABULATION
NOTES:
EXHIBIT B pg 8

DATE: 2011-12-01

ESTIMATE OF MATERIAL AND FORCE ACCOUNT WORK
BY THE
UNION PACIFIC RAILROAD

THIS ESTIMATE GOOD FOR 6 MONTHS EXPIRATION DATE IS :2012-05-31

DESCRIPTION OF WORK:
2011 RECOLLECTIBLE PROGRAM
COLORADO SPRINGS SUBDIVISION
MP 86.18 DUCKWOOD ROAD DOT 253-121W
RELOCATE CROSSING FROM MP 85.73 TO MP 86.18
PROJECT TO BE FUNDED 100% BY THE CITY OF FOUNTAIN COLORADO

PID: 71798 AWO: 06914 MP,SUBDIV: 85.73, COLSPRINGS
SERVICE UNIT: 14 CITY: FOUNTAIN STATE: CO

DESCRIPTION	QTY	UNIT	LABOR	MATERIAL	RECOLL	UPRR	TOTAL
ENGINEERING WORK							
ENGINEERING			10000		10000		10000
LABOR ADDITIVE 204%			20400		20400		20400
TOTAL ENGINEERING			30400		30400		30400
SIGNAL WORK							
LABOR ADDITIVE 204%			465		465		465
SALES TAX				2	2		2
SIGNAL			228	59	287		287
TOTAL SIGNAL			693	61	754		754
TRACK & SURFACE WORK							
BACKHOE DUMP TRUCK				10000	10000		10000
BALAST	4.00	CL	1623	2979	4602		4602
BILL PREP				900	900		900
ENVIRONMENTAL - PERMITS				10	10		10
FOREIGN FREIGHT				838	838		838
HOME LINE FREIGHT				900	900		900
LABOR ADDITIVE 204%			21402		21402		21402
MATL STORE EXPENSE				606	606		606
OTM			1179	6034	7213		7213
RDXING	176.00	TF	2957	38721	41678		41678
SALES TAX				2228	2228		2228
SWTIE	130.00	EA	4537	7757	12294		12294
TRACK-RETIRE			587		587		587
TRK-SURF,LIN			4524		4524		4524
WELD				254	254		254
XTIE		EA	857		857		857
TOTAL TRACK & SURFACE			37666	71227	108893		108893

LABOR/MATERIAL EXPENSE	68759	71288	
RECOLLECTIBLE/UPRR EXPENSE		140047	0
ESTIMATED PROJECT COST			140047
EXISTING REUSEABLE MATERIAL CREDIT		0	
SALVAGE NONUSEABLE MATERIAL CREDIT		0	
RECOLLECTIBLE LESS CREDITS			

THE ABOVE FIGURES ARE ESTIMATES ONLY AND SUBJECT TO FLUCTUATION. IN THE EVENT OF AN INCREASE OR DECREASE IN THE COST OR QUANTITY OF MATERIAL OR LABOR REQUIRED, UPRR WILL BILL FOR ACTUAL CONSTRUCTION COSTS AT THE CURRENT EFFECTIVE RATE.

EXHIBIT B pg 9

FORM 30-1 PAGE 01 MORE
WORK ORDER AUTHORIZATION-DETAIL OF ESTIMATED EXPENDITURES

PROJ NO: 71798
A.W.O. NO: 06914
W.O. NO:
B.I. NO: 10EN10
STATE: CO
VAL SEC: 0502V

RAILROAD: UPRR CO.
LOCATION: FOUNTAIN,CO,FOUNTAIN MESA RD
DEPARTMENT: ENGINEERING SERVICES SERVICE UNIT: 14

2011 RECOLLECTIBLE PROGRAM

COLORADO SPRINGS SUBDIVISION

MP 86.18 DUCKWOOD ROAD DOT 253-121W

RELOCATE CROSSING FROM MP 85.73 TO MP 86.18

PROJECT TO BE FUNDED 100% BY THE CITY OF FOUNTAIN COLORADO

FEDERAL LABOR RATE OF 204.59%

EXHIBIT B, pg 10

FORM 30-1 PAGE 02 MORE
WORK ORDER AUTHORIZATION-DETAIL OF ESTIMATED EXPENDITURES

PROJ NO: 71798
A.W.O. NO: 06914
W.O. NO:
B.I. NO: 10EN10
STATE: CO
VAL SEC: 0502V

RAILROAD: UPRR CO.
LOCATION: FOUNTAIN,CO,FOUNTAIN MESA RD
DEPARTMENT: ENGINEERING SERVICES

SCOPE OF WORK

PROJECT NUMBER	VAL SEC	STATE	M.P. FROM	M.P. TO	SEGMENT	JOINT FACILITY
71798	0502V	CO	85.73	86.18	4716	
71798	0502V	CO	86.18	86.18	4719	

PROJECT NUMBER 71798

M.P. FROM	M.P. TO	TRACK TYPE	SEGMENT NUMBER	NUMBER OF XTIES	NUMBER OF TNS OF SWTIES	TNS OF BALAST	TRACK FEET	LINE
85.73	86.18	NO 1	4716	0	0	190	0	0
86.18	86.18	NO 2	4719	0	0	190	0	0

EXHIBIT R 09 11

FORM 30-1 PAGE 04 MORE
WORK ORDER AUTHORIZATION-DETAIL OF ESTIMATED EXPENDITURES

PROJ NO: 71798
A.W.O. NO: 06914
W.O. NO:
B.I. NO: 10EN10
STATE: CO
VAL SEC: 0502V

RAILROAD: UPRR CO.
LOCATION: FOUNTAIN,CO,FOUNTAIN MESA RD
DEPARTMENT: ENGINEERING SERVICES

STOCK MATERIAL PLAN

ITEM NUMBER	ITEM DESCRIPTION	UNIT COST	QTY	UM	DIRECT MATL $
09874890	STAPLE, COPPERWELD 3/8 X 1 3/4 X	0.24	10	EA	2
13054000	TIMBER SPIKE, TORXHEAD 3/4" X 12"	1.83	396	EA	725
50210000	SWITCH TIE 7" X 9" X 10'	59.67	130	EA	7757
50361010	ECL2055 GALV RH E-CLIP PANDROL	2.45	520	EA	1274
50386210	WOOD SCREW SPIKE 15/16 X 6-1/2	1.66	1040	EA	1726
50390200	TIE PLATE 7.75 X.16, 6" BASE E-CL	11.67	260	EA	3034
52005690	BOND WIRE,7 STRANDS 500 LF. ROLL	0.86	10	LF	9
52005700	BOND WIRE,7 STRANDS 100 LF. ROLL	0.87	10	LF	9
52007040	WEB WELD BOND WIRE TK.CIRC.CONN.	3.98	10	EA	40
54002000	ASPHALT, CROSSING FILL	90.00	132	TN	11880
54013010	131-141# CONC XING 8'L (10' WOODT	1187.15	22	ST	26117
55255300	FIELD WELD KIT, 136# ONE SHOT	58.79	4	EA	235
55264570	PACKING SAND, PRE-MIXED (PER SACK	22.35	0	CA	18
55264930	REFRACTORY PASTE	1.84	1	EA	2
56207660	BALLAST, CLASS 1 "D"	7.84	380	TN	2979
	TOTAL				55,807
	MATL STORE EXP				606
	SALES TAX				2,232

EXHIBIT B, pg 12

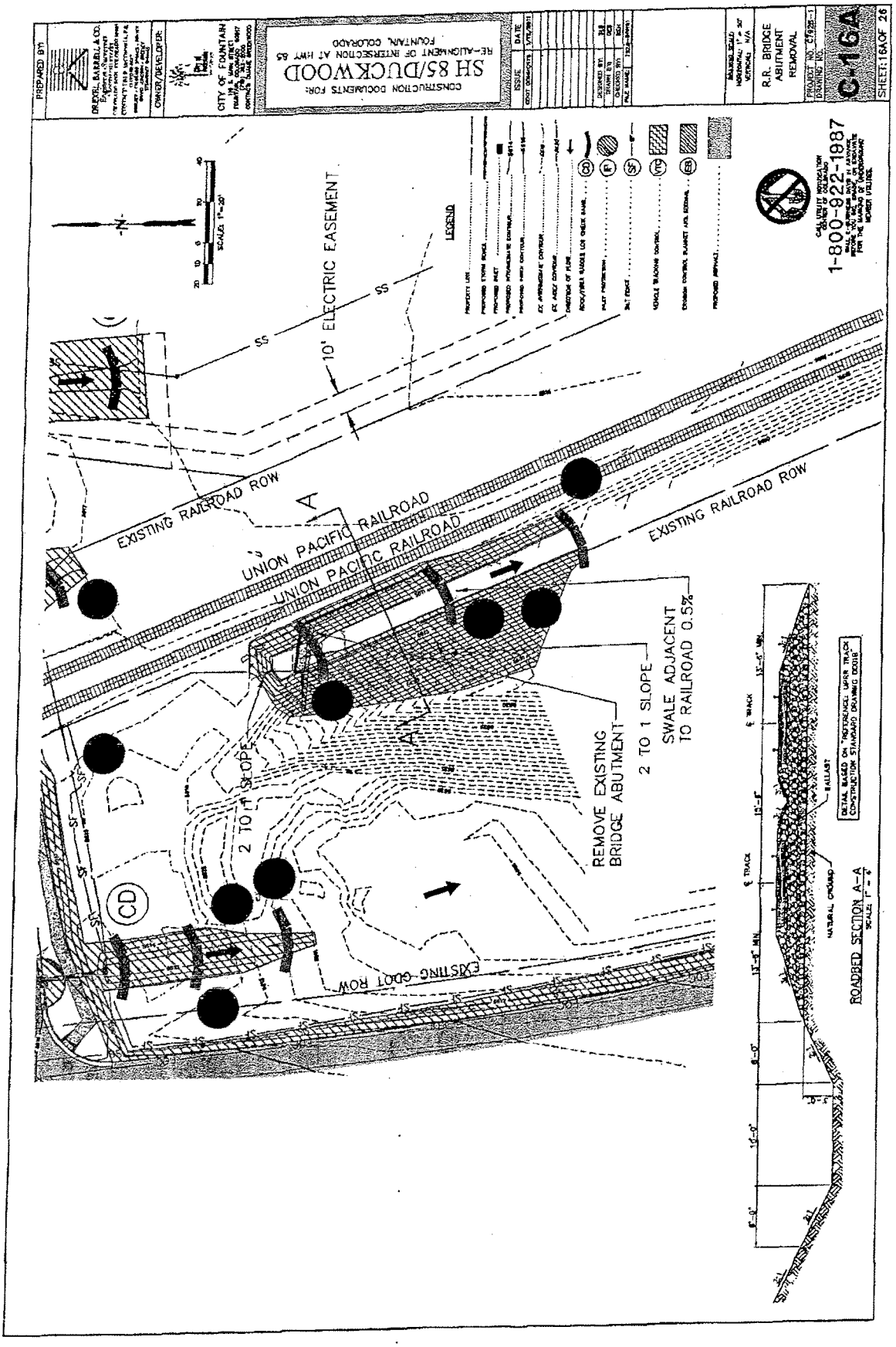
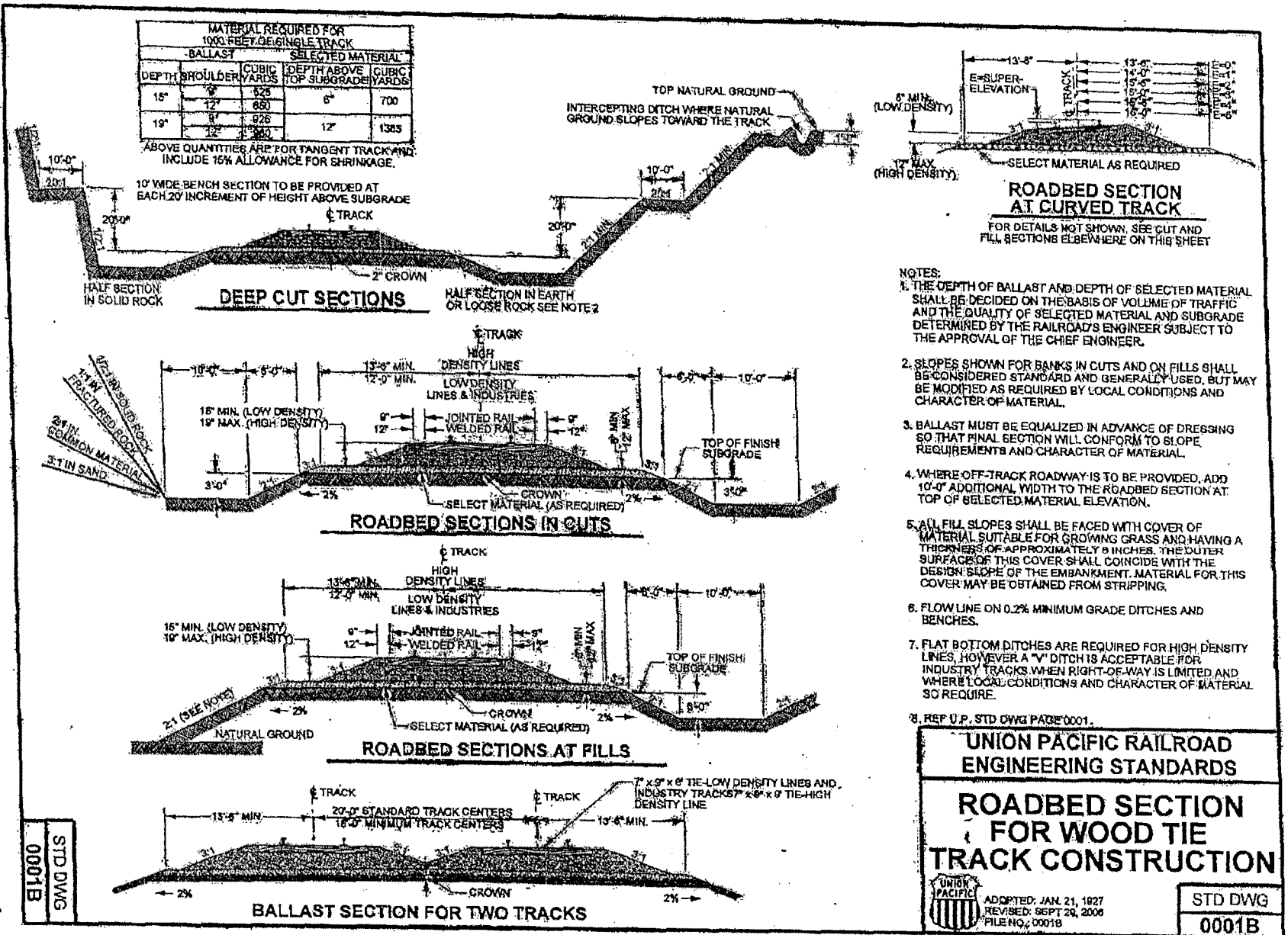

SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO
R.R. BRIDGE ABUTMENT REMOVAL
C-16A
1-800-922-1987
10' ELECTRIC EASEMENT
EXISTING RAILROAD ROW
UNION PACIFIC RAILROAD
REMOVE EXISTING BRIDGE ABUTMENT
2 TO 1 SLOPE
SWALE ADJACENT TO RAILROAD 0.5%
EXISTING CDOT ROW
ROADBED SECTION A-A

EXHIBIT C p.1



NOTES:

1. THE DEPTH OF BALLAST AND DEPTH OF SELECTED MATERIAL SHALL BE DECIDED ON THE BASIS OF VOLUME OF TRAFFIC AND THE QUALITY OF SELECTED MATERIAL AND SUBGRADE DETERMINED BY THE RAILROAD'S ENGINEER SUBJECT TO THE APPROVAL OF THE CHIEF ENGINEER.
2. SLOPES SHOWN FOR BANKS IN CUTS AND ON FILLS SHALL BE CONSIDERED STANDARD AND GENERALLY USED, BUT MAY BE MODIFIED AS REQUIRED BY LOCAL CONDITIONS AND CHARACTER OF MATERIAL.
3. BALLAST MUST BE EQUALIZED IN ADVANCE OF DRESSING SO THAT FINAL SECTION WILL CONFORM TO SLOPE REQUIREMENTS AND CHARACTER OF MATERIAL.
4. WHERE OFF-TRACK ROADWAY IS TO BE PROVIDED, ADD 10'-0" ADDITIONAL WIDTH TO THE ROADBED SECTION AT TOP OF SELECTED MATERIAL ELEVATION.
5. ALL FILL SLOPES SHALL BE FACED WITH COVER OF MATERIAL SUITABLE FOR GROWING GRASS AND HAVING A THICKNESS OF APPROXIMATELY 8 INCHES. THE OUTER SURFACE OF THIS COVER SHALL COINCIDE WITH THE DESIGN SLOPE OF THE EMBANKMENT. MATERIAL FOR THIS COVER MAY BE OBTAINED FROM STRIPPING.
6. FLOW LINE ON 0.2% MINIMUM GRADE DITCHES AND BENCHES.
7. FLAT BOTTOM DITCHES ARE REQUIRED FOR HIGH DENSITY LINES, HOWEVER A "V" DITCH IS ACCEPTABLE FOR INDUSTRY TRACKS WHEN RIGHT-OF-WAY IS LIMITED AND WHERE LOCAL CONDITIONS AND CHARACTER OF MATERIAL SO REQUIRE.
8. REF U.P. STD DWG PAGE 0001.

UNION PACIFIC RAILROAD ENGINEERING STANDARDS

ROADBED SECTION FOR WOOD TIE TRACK CONSTRUCTION

ADOPTED: JAN. 21, 1927
REVISED: SEPT 29, 2006
FILE NO.: 00018

STD DWG 0001B

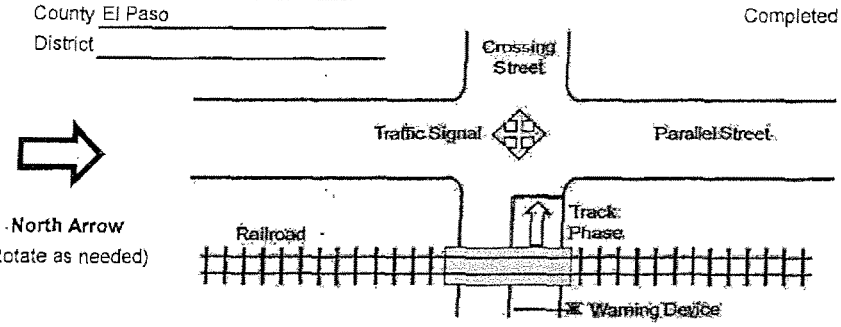
STD DWG 0001B

EXHIBIT Cipi 2

CAMPBELL TECHNOLOGY CORPORATION
GUIDE FOR DETERMINING TIME REQUIRMENTS FOR
TRAFFIC SIGNAL PREEMPTION AT HIGHWAY-RAIL GRADE CROSSINGS

City City of Fountain
County El Paso
District

Date 12/6/2011
Completed by CTC- Hollingsworth



Parallel Street Name
US 85

Crossing Street Name
Duckwood Rd

Railroad UPRR MP 86.18
DOT No. Pending PUC Approval

Railroad Contact Kelly Abaray
Phone 303-405-5036

Enter values in non-shaded boxes. Shaded boxes are calculated.

SECTION 1: RIGHT-OF-WAY TRANSFER TIME CALCULATION

Preempt verification and response time

			Remarks
1. Programmed preempt delay time (sec)	1.	1.0	
2. Controller response time to preempt (sec)	2.	0.1	Controller type: 170
3. Preempt verification and response time (sec): add lines 1 and 2	3.	1.1	

Worst-case conflicting vehicle time

			Remarks
4. Worst-case conflicting vehicle phase number(s)	4.	2	
5. Minimum green time during right-of-way transfer (sec)	5.	0.0	
6. Other green time during right-of-way transfer (sec)	6.	0.0	
7. Yellow change time (sec)	7.	4.0	
8. Red clearance time (sec)	8.	2.0	
9. Worst-case conflicting vehicle time (sec): add lines 5 through 8	9.	6.0	

Worst-case conflicting pedestrian time

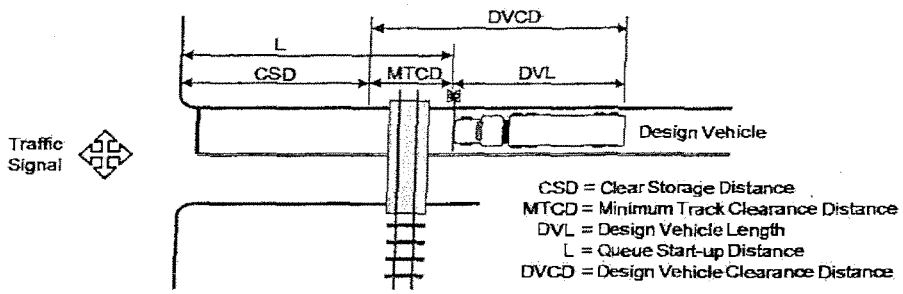
			Remarks
10. Worst-case conflicting pedestrian phase number(s)	10.	2	
11. Minimum walk time during right-of-way transfer (sec)	11.	0.0	
12. Pedestrian change time during right-of-way transfer (sec)	12.	0.0	
13. Vehicle yellow change time, if not included on line 12 (sec)	13.	4.0	
14. Vehicle red clearance time, if not included on line 12 (sec)	14.	2.0	
15. Worst-case conflicting pedestrian time (sec): add lines 11 through 14	15.	6.0	

Worst-case conflicting vehicle or pedestrian time

16. Worst-case conflicting vehicle or pedestrian time(sec): maximum of lines 9 and 15	16.	6.0
17. Right-of-way transfer time (sec): add lines 3 and 16	17.	7.1

EXHIBIT D p.1

SECTION 2: QUEUE CLEARANCE TIME CALCULATION



			Remarks
18. Clear storage distance (CSD, feet)	18.	132	Per City of Fountain
19. Minimum track clearance distance (MTCD, feet)	19.	46	Per City of Fountain
20. Des Veh - WB 50+15' overhang per CRS 42-4-504.	20.	70	Design vehicle type: Tractor-Trailer
21. Average grade over crossing (%)	21.	0.0%	See instructions if L>400'

22. Queue start-up distance (L, feet): add lines 18 and 19 ..... 22. 178

23. Time required for design vehicle to start moving (sec): calculated as 2+(L/20) ..... 23. 32.9 — Remarks

24. Design vehicle clearance distance (DVCD, feet): add lines 19 and 20 ..... 24. 116

25. Time for design vehicle to accelerate through the DVCD (sec) ..... 25. 14.7 From Fig. 2 and Table 2

26. **Queue clearance time (sec): add lines 23 and 25** 26. 47.6

SECTION 3: MAXIMUM PREEMPTION TIME CALCULATION

			Remarks
27. Right-of-way transfer time (sec): line 17	27.	7.1	
28. Queue clearance time (sec): line 26	28.	47.6	
29. Desired minimum separation time (ST, sec)	29.	4.0	Minimum of 4 sec

30. **Maximum preemption time (sec): add lines 27 through 29** 30. 58.7

SECTION 4: SUFFICIENT WARNING TIME CHECK

			Remarks
31. Required minimum time (MT, sec), per regulations	31.	20	
32. Wide crossing clearance time (CT, sec): verify w/ railroad	32.	2	round up (MTCD-35)/10
33. Additional CT (sec): from railroad or public agency	33.		

34. **Minimum warning time provided by railroad (MWT, sec): add lines 31 thru 33** 34. 22.0

35. **Minimum amount of advance preemption time needed from railroad (sec): subtract line 34 from line 30, round up to nearest full second; enter zero (0) if less than zero** 35. 37

If the value on line 35 is greater than zero, this is the minimum advance preemption time that should be requested from the railroad. Alternatively, the maximum preemption time (line 30) may be decreased after performing an engineering study to investigate the possibility of reducing the values on lines 1, 5, 6, 7, 8, 11, 12, 13 and 14.

Remarks: The worst-case conflicting pedestrian phase is the NB ped crossing. Crosswalk length = 97'.
97/3.5 fps - (4 sec of Yellow + 2 sec of Red) = 22 sec. Add 22 sec to (2+L/20) = 32.9 = Queue Start Up Time (Line 23).
The Colorado State Law requires any vehicle receiving a green light to yield to any pedestrian legally in the crosswalk. Crosswalk length provided by the City of Fountain.

EXHIBIT D, p. 2

SECTION 5: VEHICLE-GATE INTERACTION CHECK (OPTIONAL)

36. Right-of-way transfer time (sec): line 17 ..... 36. 7.1
37. Time required for design vehicle to start moving (sec): line 23 ..... 37. 32.9
38. Time required for design vehicle to accelerate through DVL (on line 20, sec) ..... 38. 11.3 From Fig. 2 and Table 2

39. Time required for design vehicle to clear descending gate (sec): add lines 36 through 38 ..... 39. 51.3
Remarks

40. Duration of flashing lights before gate descent start (sec): get from railroad 40. 3.0
Remarks

41. Full gate descent time (sec): get from railroad 41. 10.0

42. Distance from center of gate support to design vehicle (ft) ..... 42. 7.0 See Figure 4

43. Proportion of non-interaction gate descent time ..... 43. 0.26 From Figure 5

44. Non-interaction gate descent time (sec): multiply lines 41 and 43 ..... 44. 2.6

45. Time available for design vehicle to clear descending gate (sec): add lines 40 and 44 ..... 45. 5.6

46. Advance preemption time (APT) required to avoid design vehicle-gate interaction (sec):
subtract line 45 from line 39, round up to nearest full second, enter zero (0) if less than zero 46. 46

Use Vehicle Gate Interaction ? No
Is Gate Down Circuit Present ? Yes

SECTION 6: TRACK CLEARANCE GREEN TIME CALCULATION

Preempt Trap Check (Use if gate-down circuit not present)

47. Advance preemption time (APT) to be provided (sec) ..... 47. 0 NA Enter APT from line 35 or line 46
48. Multiplier for maximum APT due to train deceleration ..... 48. 1.00 NA See Instructions for details.

49. Maximum APT (sec): multiply line 47 and 48 ..... 49. 0.0 NA Remarks
50. Time from start of flashing lights until gate is horizontal (sec) ..... 50. 0.0 NA

51. Gates down after start of preemption (sec): add lines 49 and 50 ..... 51. 0.0 NA

52. Preempt verification and response time (sec): line 3 ..... 52. 0.0 NA Remarks
53. Best-case conflicting vehicle or pedestrian time (sec): usually zero (0) ..... 53. 0.0 NA

54. Minimum right-of-way transfer time (sec): add lines 52 and 53 ..... 54. 0.0 NA

55. Minimum track clearance green time (sec): subtract line 54 from line 51 ..... 55. 0 NA

CLEARING OF CLEAR STORAGE DISTANCE (OPTIONAL)

56. Time required for design vehicle to start moving (sec): line 23 ..... 56. 32.9

57. Design vehicle clearance distance (DVCD,feet): line 24 ..... 57. 116 Remarks
58. Portion of CSD to clear during track clearance green (feet) 58. 132

59. Design vehicle relocation distance (DVRD,feet): add lines 57and 58 ..... 59. 248

60. Time required for design vehicle to accelerate through DVRD (sec) ..... 60. 21.9 From Fig. 2 and Table 2

61. Time to clear portion of clear storage distance (sec): add lines 56 and 60 ..... 61. 55

62. Track clearance green interval (seconds): maximum of lines 26, 55, or 61, round up to full second 62. 55

EXHIBIT D.P.3

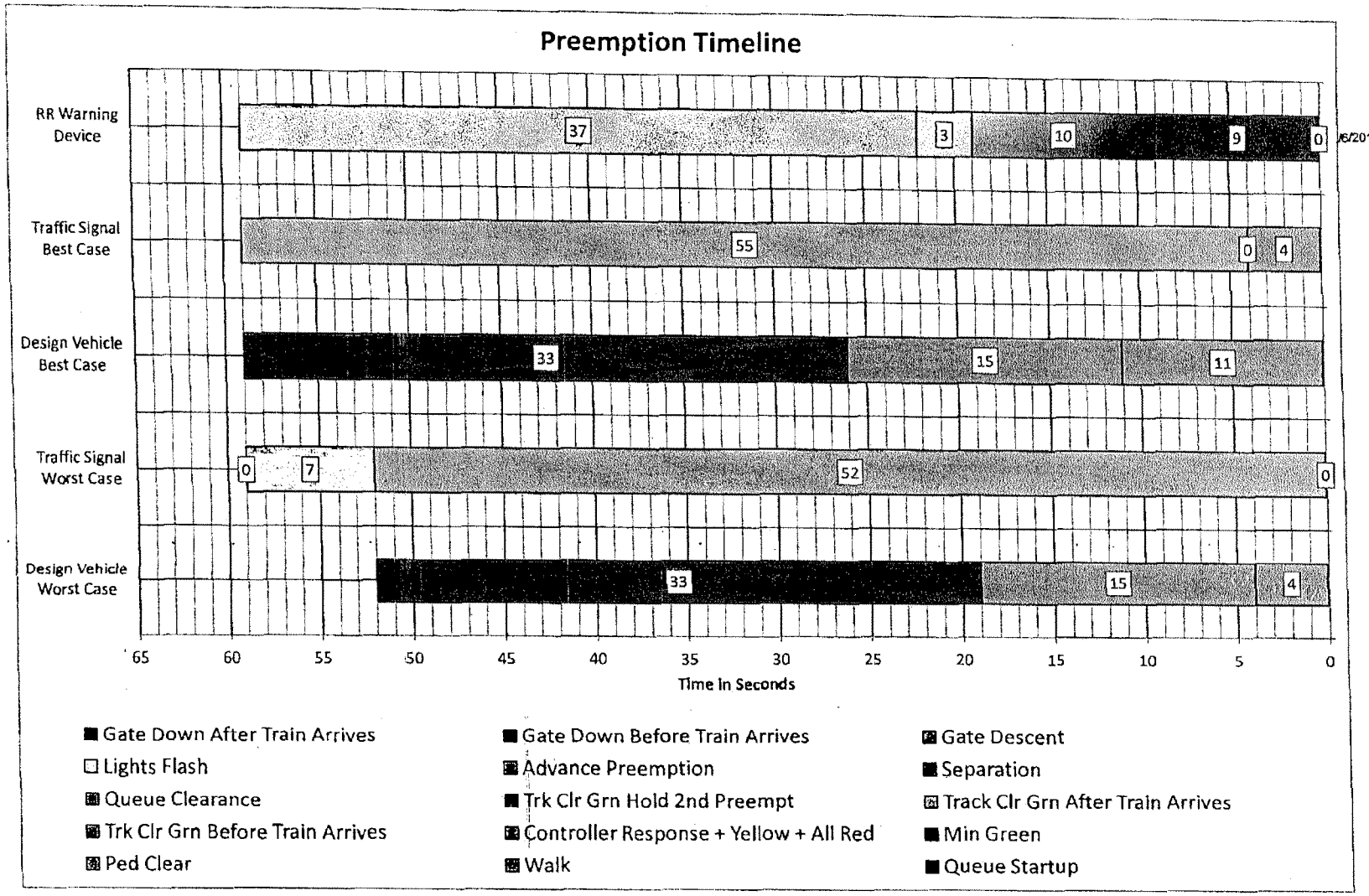

Preemption Timeline
RR Warning Device
Traffic Signal Best Case
Design Vehicle Best Case
Traffic Signal Worst Case
Design Vehicle Worst Case
37
3
10
9
0
55
0
4
33
15
11
0
7
52
0
33
15
4
65
60
55
50
45
40
35
30
25
20
15
10
5
0
Time in Seconds
Gate Down After Train Arrives
Gate Down Before Train Arrives
Gate Descent
Lights Flash
Advance Preemption
Separation
Queue Clearance
Trk Clr Grn Hold 2nd Preempt
Track Clr Grn After Train Arrives
Trk Clr Grn Before Train Arrives
Controller Response + Yellow + All Red
Min Green
Ped Clear
Walk
Queue Startup

EXHIBIT D-4

CONSTRUCTION DOCUMENTS
FOR

S.H. 85/DUCKWOOD ROAD IMPROVEMENTS

FOUNTAIN, COUNTY OF EL PASO, STATE OF COLORADO.
JANUARY 2011

AGENCY CONTACTS

CITY ENGINEER: CITY OF FOUNTAIN
CONTACT: DUANE GREENWOOD
116 SOUTH MAIN STREET
FOUNTAIN, CO 80817
(719) 322-2036

TRANSPORTATION: COLORADO DEPARTMENT OF TRANSPORTATION
CONTACT: CARL BUFORD
REGION 2 - ACCESS
P.O. BOX 536
905 ERIE AVENUE
PUEBLO, CO 81002
(719) 546-5403

RAILROAD: UNION PACIFIC RAILROAD
CONTACT: KELLY ABARAY
MANAGER OF INDUSTRIAL AND PUBLIC PROJECTS ENGINEERING
1440 W. 92nd AVENUE
DENVER, CO 80221
(303) 994-4099

RAILROAD: BURLINGTON NORTHERN SANTA FE RAILWAY
CONTACT: ANDY AMPARAN
MANAGER PUBLIC PROJECTS
(913) 551-4864
(913) 515-7862 (CELL)

ELECTRIC: CITY OF FOUNTAIN ELECTRIC DEPARTMENT
CONTACT: JERRY EARLY
116 SOUTH MAIN STREET
FOUNTAIN, CO 80817
(719) 382-5088

GAS: BLACK HILLS ENERGY
CONTACT: GEORGE PETERSON
7060 ALEGRE STREET
FOUNTAIN, CO 80817
(719) 393-6632

TELEPHONE: QWEST
CONTACT: SALLY KLEIN
7925 INDUSTRY ROAD
COLORADO SPRINGS, CO 80939
(719) 536-4328

SANITARY SEWER: FOUNTAIN SANITATION DISTRICT
CONTACT: JIM HECKMAN
901 S. SANTA FE AVENUE
FOUNTAIN, CO. 81817
(719) 382-5303

BENCHMARK:

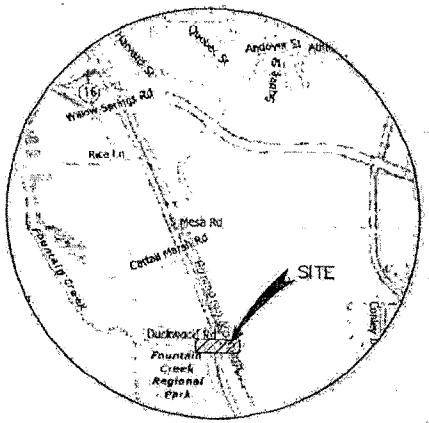
COLORADO DEPARTMENT OF HIGHWAYS CONTROL MONUMENT, MILE POST 130.37. ELEVATION 5606.82

PREPARED BY:

Drexel, Barrell & Co.
Engineers · Surveyors
3 SOUTH 7TH STREET
COLORADO SPRINGS, COLORADO 80905
(719) 260-0887
CONTACT:
TIM D. McCONNELL, P.E.

PREPARED FOR:

CITY OF FOUNTAIN
116 S. MAIN STREET
FOUNTAIN, COLORADO 80817
(719) 322-2000
CONTACT:
DUANE GREENWOOD



VICINITY MAP
SCALE: N.T.S.

SHEET INDEX

ACCESS PERMIT NUMBER -

THIS DESIGN IS IN FULL COMPLIANCE WITH SECTION 4 OF THE STATE HIGHWAY ACCESS CODE, 2 CCR 601-1 EXCEPT FO RTHE FOLLOWING APPROVED DESIGN WAIVERS:

CITY OF FOUNTAIN APPROVAL

David R. Gruwell
Public Works Director
12/19/2011

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

REVISION DESCRIPTIONS	DATE
CDOT COMMENTS	1-12-2011
CITY COMMENTS	4-14-2011
CITY COMMENTS	9-2-2011
CITY COMMENTS	11-11-2011
FINAL P/ CALCS	12-9-2011

COLORADO REGISTERED
TIM D. McCONNELL
33797
12-15-11
PROFESSIONAL ENGINEER

C7928-1
SHEET 1 OF 26

EXHIBIT E p. 1

Attachment A
Decision No. R13-0241
Docket No. 10A-409R
Page 33

GENERAL CONSTRUCTION NOTES:

1. ALL CONSTRUCTION SHALL MEET THE STANDARDS & SPECIFICATIONS OF THE CITY OF FOUNTAIN PUBLIC UTILITY DESIGN AND CONSTRUCTION SPECIFICATIONS.
2. ALL CONSTRUCTION SITE TRAFFIC CONTROL SHALL CONFORM TO SECTION 630 OF THE CITY OF FOUNTAIN MUNICIPAL CODE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD LOCATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE ACCOMING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO:
4. EXISTING CONTROL DATA PROVIDED BY OWNER GENERALLY CONSISTS FIELD DATA COLLECTION IN FEBRUARY 2003.
5. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THOSE APPROVED PLANS AND ONE (1) COPY OF THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES
6. COLORADO SPRINGS ENGINEERING DIVISION STANDARD SPECIFICATIONS
7. CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
8. CITY OF FOUNTAIN PUBLIC UTILITY DESIGN AND CONSTRUCTION SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM
9. STATIONING IS AT CENTERLINE UNLESS OTHERWISE NOTED. ALL ELEVATIONS ARE AT FLOW LINE UNLESS OTHERWISE NOTED. ALL DIMENSIONS ARE FROM FACE OF CURB UNLESS OTHERWISE NOTED.
10. PROPOSED CONTOURS SHOWN ARE FINISHED TO GRADE
11. LENGTHS SHOWN FOR STORM SEWER PIPES ARE TO CENTER OF MANHOLE
12. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, DEBRIS, WASTE, AND OTHER UNSUITABLE FILL MATERIAL FOUND WITHIN THE LIMITS OF EXCAVATION
13. WATER INTO EXISTING GRADES AT 3:1 MAX CUT AND FILL SLOPES
14. THE EROSION CONTROL MEASURES OUTLINED ON THIS PLAN ARE THE RESPONSIBILITY OF THE CONTRACTOR TO MONITOR AND REPLACE, REGRADE, AND REBUILD AS NECESSARY UNTIL VEGETATION IS REESTABLISHED
15. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED IN A MANNER THAT WILL PROTECT ADJACENT PROPERTIES AND PUBLIC FACILITIES FROM THE ADVERSE EFFECTS OF EROSION AND SEDIMENTATION AS A RESULT OF CONSTRUCTION AND EARTHWORK ACTIVITIES WITHIN THE PROJECT SITE
16. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS DETERMINED BY SITE CONDITIONS
17. THE CONTRACTOR WILL TAKE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES FROM DAMAGE DUE TO THIS OPERATION. ANY DAMAGE TO THE UTILITIES WILL BE REPAIRED AT THE CONTRACTORS EXPENSE, AND ANY SERVICE DISRUPTION WILL BE SETTLED BY THE CONTRACTOR
18. ALL BACKFILL, SUB-BASE, AND/OR BASE COURSE MATERIAL SHALL BE COMPACTED PER CITY OF FOUNTAIN AND CDOT STANDARDS AND SPECIFICATIONS
19. PEDESTRIAN RAMPS SHALL BE INSTALLED AT ALL INTERSECTIONS AND CURB RETURNS AND CONFORM TO THE CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
20. ALL FINISHED GRADES SHALL HAVE A MINIMUM 0.5% SLOPE TO PROVIDE POSITIVE DRAINAGE
21. WHERE PROPOSED SLOPES CONFLICT WITH EXISTING GRADES, NOTIFY ELEVATIONS SHALL GOVERN
22. CONTRACTOR SHALL OBTAIN ALL WITHDRAW PERMITS PRIOR TO BEGINNING WORK
23. ELECTRONIC FILE OF SITE GRADING IS AVAILABLE FROM ENGINEER FOR CONSTRUCTION STAKING PURPOSES
24. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH CITY OF FOUNTAIN, TODD ALISBAH 719-382-0041 AND ALL UTILITIES INVOLVED IN THE PROJECT AREA, AT LEAST 48 HOURS PRIOR TO WORK BEING ON SITE
25. CONTRACTOR SHALL COMPLY WITH ALL CONDITIONS OF APPROVED 404 PERMIT (IF APPLICABLE). CONTRACTOR SHALL HAVE COPIES OF ALL REQUIRED PERMITS AT JOB SITE AT ALL TIMES
26. PROVIDE 10 FOOT TRANSITION FROM RAMP CURB TO VERTICAL CURB ON EACH SIDE OF STORM INLETS
27. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ACTUAL CONSTRUCTION. FOR INFORMATION CONTACT, UTILITY NOTIFICATION CENTER OF COLORADO AT 1-800-922-1987
28. THE CITY OF FOUNTAIN SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO START OF WORK
29. NO WORK SHALL COMMENCE UNTIL THE INSTALLING CONTRACTOR HAS AN APPROVED SET OF PLANS FROM THE CITY AND CURRENT SPECIFICATIONS IN HIS POSSESSION. THE ENGINEER'S APPROVAL WILL BE FOR GENERAL CONFORMITY TO THE PLANS AND WILL NOT CONSTITUTE BLANKET APPROVAL OF ALL DIMENSIONS, QUANTITIES, AND DETAILS OF THE MATERIAL OR EQUIPMENT SHOWN, NOR SHALL SUCH APPROVAL RELIEVE THE CONTRACTOR OR CONSULTING ENGINEER OF THEIR RESPONSIBILITY FOR PROPER CONFORMITY TO THE DRAWINGS.
30. STREETS SHALL NOT BE PAVED UNTIL WATER PIT LOCATIONS OR STOP BOXES HAVE BEEN VERIFIED IN THE FIELD. NO PAVING PERMITS SHALL BE ISSUED UNTIL A RELEASE, AS GIVEN BY THE CITY OF FOUNTAIN, HAS BEEN OBTAINED.
31. CONTRACTOR SHALL VERIFY HORIZONTAL & VERTICAL LOCATION OF ALL EXISTING CONDITIONS AND SHALL NOTIFY ENGINEER IF CONDITION IS NOT AS SHOWN AND ALL CONFLICTS SHALL BE RESOLVED PRIOR TO START OF CONSTRUCTION.
32. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH THE LATEST VERSION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND THE CONTRACTOR IS DIRECTED TO PAY PARTICULAR ATTENTION TO THE SECTION OF CONSTRUCTION ZONE TRAFFIC.
33. CONSTRUCTION SHALL COMMENCE WITHIN 180 DAYS OF THE APPROVAL DATE SHOWN ON THE PLANS OR THE PLANS MUST BE RESUBMITTED FOR REVIEW AND APPROVAL. IF CONSTRUCTION ON BIG MAIN INSTALLATION IS DELAYED FOR MORE THAN 180 DAYS, PLANS MUST BE RESUBMITTED FOR REVIEW AND APPROVAL.
34. THE WORK SHALL BE SURVEYED AND STAKED UNDER THE SUPERVISION OF A LICENSED LAND SURVEYOR IN ACCORDANCE WITH THE APPROVED PLANS.
35. BUILDING, CONSTRUCTION, EXCAVATION, OR OTHER WASTE MATERIALS SHALL NOT BE PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC RIGHT OF WAY, UNLESS IN ACCORDANCE WITH THE CITY OF FOUNTAIN CURRENT ORDINANCES. PERMITS MAY BE REQUIRED BY THE CITY IF DEEMED NECESSARY, BASED ON SPECIFIC CIRCUMSTANCES.
36. VEHICLE TRACKING OF SOILS OFF-SITE SHALL BE MINIMIZED. LOCATION OF VTE SHALL BE APPROVED BY THE CITY ENGINEER
37. ALL WASTES COMPOSED OF REMAINING MATERIALS MUST BE REMOVED FROM THE SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS
38. CONSTRUCTION WORK ACTIVITY IS PERMITTED ONLY WITHIN THE SPECIFIED HOURS:
    - Monday - Friday 7:00 A.M. – 7:00 P.M.
    - Saturday 8:00 A.M. – 5:00 P.M.
    - Sunday 9:00 A.M. – 4:00 P.M.
    - NO LANE CLOSURE ON S.H. 85 BETWEEN 12:00 A.M. – 9:00 P.M. (< 0.25 MILE)
    - 8:00 A.M. – 9:00 P.M. (BETWEEN 0.25 MILE & 1.0 MILE)

STREET NOTES:

1. ALL ROADWAY CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE TO THE CITY OF FOUNTAIN STANDARDS AND SPECIFICATIONS TO INCLUDE CURB AND GUTTER, SIDEWALK, ASPHALT PAVEMENT, AND PEDESTRIAN RAMPS. REFER TO THE CITY COLORADO SPRINGS ENGINEERING DIVISION STANDARD SPECIFICATIONS, AND THE CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
2. STREET DETAILS ON DESIGN STANDARDS SHALL BE IN ACCORDANCE WITH THE CITY OF FOUNTAIN STREET DESIGN STANDARDS DATED MARCH 2005.
3. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE CITY OF FOUNTAIN. THE CITY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO CITY STANDARDS AND SPECIFICATIONS.
4. THE CONTRACTOR SHALL NOTIFY THE CITY OF FOUNTAIN, A MINIMUM OF 48 HOURS AND A MAXIMUM OF 96 HOURS PRIOR TO STARTING CONSTRUCTION
5. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE PLANS (APPROVED BY THE CITY) AND ONE (1) COPY OF THE RELATIVE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AT THE JOB SITE AT ALL TIMES.
6. ALL HOT MIX ASPHALT (HMA) PAVING SHALL MEET THE REQUIREMENTS OF THE "PIKES PEAK REGION ASPHALT PAVING SPECIFICATIONS DATED APRIL 1, 2008"
7. PAVING SHALL NOT START UNTIL ALL SOILS REPORT AND PAVEMENTS DESIGN IS APPROVED BY THE CITY ENGINEER, AND SUBGRADE COMPACTION TESTS ARE TAKEN AND APPROVED BY THE CITY INSPECTOR.
8. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES REGARDING THE RELOCATION OF ELECTRIC, TELEPHONE BOXES, AND POWER POLES, ETC.
9. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AS NECESSARY UTILIZING THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
10. CONTRACTOR SHALL NOTIFY THE CITY OF FOUNTAIN 48 HOURS PRIOR TO PRODUCTION.
11. ALL NEW AND REPLACEMENT REGULATORY, WARNING AND GUIDE SIGNS SHALL BE DIAMOND GRADE HIP REFLECTIVE SHEETING OR EQUIVALENT WITH TYPE IV BACKGROUND RETROREFLECTIVE SHEETING TO MEET OR EXCEED ASTM D4956-04 TYPE IV.
12. ALL NEW AND REPLACEMENT CITY STREET NAME SIGNS 9"x3 SHALL HAVE MINIMUM 6-INCH HEIGHT LETTERING ALONG WITH CITY LOGO. STREET NAME SIGNS SHALL BE SINGLE FACED AND MOUNTED BACK TO BACK ON SIGN POST AS NEEDED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
13. ALL NEW AND REPLACEMENT STOP SIGNS R1-1 SHALL BE SIZED IN ACCORDANCE WITH MUTCD STANDARDS HAVING A MINIMUM LOCAL CONVENTIONAL ROADWAY SIZE OF 30"X30". ALL INDUSTRIAL, COLLECTOR, ARTERIAL, AND EXPRESSWAY ROADS SHALL HAVE A MINIMUM SIZE OF 36"X36". THE BACK SIDE OF STOP SIGNS SHOULD BE PAINTED OR SHEETED SOLID RED.

SILT FENCE

1. SILT FENCES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
2. WHERE JOINTS ARE NECESSARY, SILT FENCE SHALL BE SPLICED TOGETHER ONLY AT SUPPORT POST AND SECURELY SEALED.
3. METAL POSTS SHALL BE 1" STUDDED ROLLED "T" TYPE WITH MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT. WOOD POSTS SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION DIMENSION OF 2 INCHES.
4. THE FILTER MATERIAL SHALL BE FASTENED SECURELY TO METAL OR WOOD POSTS USING WIRE TIES, OR TO WOOD POSTS WITH 3/4 INCH LONG #8 HEAVY DUTY STAPLES. THE SILT FENCE GEOTEXTILE SHALL NOT BE STAPLED TO EXISTING TREES
5. ALONG THE TOE OF FILL, INSTALL THE SILT FENCE ALONG A LEVEL CONTOUR AND PROVIDE AN AREA BEHIND THE FENCE FOR RUNOFF TO POND AND SEDIMENT TO SETTLE. A MINIMUM DISTANCE OF 5 FEET FROM THE TOE OF THE FILL IS RECOMMENDED.
6. THE HEIGHT OF THE SILT FENCE FROM THE GROUND SURFACE SHALL BE A MINIMUM OF 24 INCHES AND SHALL NOT EXCEED 36 INCHES.
7. CONTRACTOR MUST INSPECT SILT FENCES IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL. DAMAGED, COLLAPSED, UNENTRENCHED OR INEFFECTIVE SILT FENCES SHALL BE PROMPTLY REPAIRED OR REPLACED.
8. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT REACHES HALF THE EXPOSED ORDINARY HEIGHT.
9. SILT FENCES SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED AS APPROVED BY THE CITY.

GRADING/EROSION CONTROL NOTES

1. ALL GRADING, EROSION CONTROL AND STORMWATER QUALITY SHALL COMPLY WITH SECTIONS 12.04 050 AND 12.10 OF THE CITY OF FOUNTAIN MUNICIPAL CODE.
2. ALL FILL AREAS SHALL BE COMPACTED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS
3. SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN THIRTY ONE (31) CALENDAR DAYS AFTER FINAL GRADING, OR FINAL EARTH DISTURBANCE HAS BEEN COMPLETED. DISTURBED AREAS AND STOCKPILES WHICH ARE NOT AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS SHALL ALSO BE MULCHED WITHIN 21 DAYS AFTER INTERIM GRADING. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL ALSO BE SEEDED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND BMPS SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED.
4. EROSION CONTROL SHALL CONSIST OF SILT FENCES AND HAY BALES AS SHOWN ON THE DRAWING, AND TOPSOIL WITH GRASS SEED WHICH WILL BE WATERED UNTIL VEGETATION HAS BEEN REESTABLISHED.
5. EROSION CONTROL BALES OR SILT FENCE SHALL BE PLACED AT THE TOE AND DRAINAGE OUTFALL POINTS OF ALL SLOPES 4:1 OR STEEPER, TO PREVENT SILTATION ON STREETS. REFER TO STORM WATER MANAGEMENT PLAN FOR DETAIL AND LOCATION OF EROSION CONTROL MEASURES.
6. CONTRACTOR SHALL COMPLY WITH ALL LOCAL, COUNTY AND STATE REGULATIONS PERTAINING TO GRADING, DUST AND EROSION.
7. NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED WHEREVER POSSIBLE. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATIONS AND FOR THE SHORTEST PRACTICAL PERIOD OF TIME.
8. TOPSOIL SHALL BE STOCKPILED TO THE EXTENT PRACTICABLE ON THE SITE FOR USE ON AREAS TO BE REVEGETATED. ANY AND ALL STOCKPILES SHALL BE LOCATED AND PROTECTED FROM EROSIVE ELEMENTS.
9. AT ALL TIMES THE PROPERTY SHALL BE MAINTAINED AND/OR WATERED TO PREVENT WIND-CAUSED EROSION. EARTHWORK OPERATIONS SHALL BE CEASED/HALTED WHEN TOXIC DUST STOCHASTICALLY IMPACTS ADJACENT PROPERTY. IF EARTHWORK IS COMPLETE OR DISCONTINUED AND DUST FROM THE SITE CONTINUES TO CREATE PROBLEMS, THE OWNER/DEVELOPER SHALL IMMEDIATELY INSTITUTE MITIGATIVE MEASURES AND SHALL CORRECT DAMAGE TO ADJACENT PROPERTY.
10. ALL PERSONS ENGAGED IN EARTH DISTURBANCE SHALL IMPLEMENT AND MAINTAIN ACCEPTABLE SOIL EROSION AND SEDIMENT CONTROL MEASURES INCLUDING BMPS IN CONFORMANCE WITH THE EROSION CONTROL TECHNICAL STANDARDS OF THE MANUAL AND IN ACCORDANCE WITH THE EROSION AND STORMWATER QUALITY CONTROL PLAN APPROVED BY THE CITY OF FOUNTAIN, IF REQUIRED.
11. ALL EARTH DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY REDUCE ACCELERATED SOIL EROSION.
12. ALL EARTH DISTURBANCE SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED IN SUCH A MANNER SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME.
13. ALL EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF-SITE WATERS.
14. SUSPENDED SEDIMENT CAUSED BY ACCELERATED SOIL EROSION SHALL BE MINIMIZED IN RUNOFF WATER BEFORE IT LEAVES THE SITE
15. TEMPORARY SOIL EROSION CONTROL FACILITIES SHALL BE REMOVED AND EARTH DISTURBANCE AREAS GRADED AND STABILIZED WITH PERMANENT SOIL EROSION CONTROL MEASURES PURSUANT TO THE STANDARDS AND SPECIFICATIONS PRESCRIBED BY THE MANUAL AND IN ACCORDANCE WITH THE APPROVED EROSION CONTROL FEATURES SHOWN ON THE EROSION AND STORMWATER CONTROL PLANS APPROVED BY THE CITY OF FOUNTAIN, IF REQUIRED.
16. ANY STREET OR DRAINAGE FACILITY WHICH HAS HAD EROSION SEDIMENT DEPOSITED IN IT DUE TO CONSTRUCTION, GRADING, OR OTHER DEVELOPMENT ACTIVITIES SHALL BE CLEANED IMMEDIATELY AT THE EXPENSE OF THE CONTRACTOR, DEVELOPER, HOMEBUILDER, OR WHOEVER IS RESPONSIBLE FOR THE CONSTRUCTION, GRADING, OR LAND DEVELOPMENT ACTIVITY IF THE FACILITY IS NOT CLEANED IMMEDIATELY OR WITHIN A REASONABLE PERIOD OF TIME AFTER NOTIFICATION BY THE CITY, THE CITY MAY PERFORM THE WORK OR HAVE THE WORK DONE AND BILL THE RESPONSIBLE PARTY.

EX. POW
EX. LOT LINE
EX. EASEMENT
EX. FENCE
EX. OVERHEAD POWER AND ELECTRIC — OHP —
EX. UTILITY WATER LINE — W —
EX. UTILITY POLE
EX. GUIDE WIRE
EX. SIGN
EX. LIGHT
EX. MAJOR CONTOUR — 5515 —
EX. MINOR CONTOUR — 5512 —
SPOT ELEVATION 5512.65
PAVEMENT REMOVAL
PROPOSED SIGN
PROPOSED OVERHEAD ELECTRIC — OHE —
PROPOSED UTILITY POLE
PROPOSED GUIDE WIRE

STORM SEWER NOTES:

1. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE PLANS (APPROVED BY THE CITY) AND ONE (1) COPY OF THE COLORADO SPRINGS ENGINEERING DIVISION STANDARD SPECIFICATIONS AT THE JOB SITE AT ALL TIMES.
2. ALL RCP STORM SEWER SHALL BE PRECAST CLASS III REINFORCED CONCRETE PIPE WITH CLASS C BEDDING UNLESS NOTED OTHERWISE ON PLANS.
3. ALL 48 INCH ULTRAFLOW AND SMALLER SHALL BE 16 GAUGE, 24 INCHES SHALL BE 14 GAUGE, ULTRAFLOW SHALL BE CLASS C BEDDING TO 18 INCHES TO TOP OF PIPE.
4. TYPE C STORM INLETS SHALL HAVE CLOSE-MESH GRATES.
5. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS.
6. CONCRETE WASH WATER SHALL NOT BE ALLOWED TO RUNOFF TO STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
7. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORM WATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE DESIGNED TO LIMIT THE DISCHARGE TO A NON-EROSIVE VELOCITY.
8. NO PERSON SHALL CAUSE, PERMIT, OR CONTRIBUTE TO THE DISCHARGE INTO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) OWNED BY THE CITY OF FOUNTAIN TO BE IN VIOLATION OF THE COLORADO DISCHARGE PERMIT SYSTEM MUNICIPAL STORMWATER DISCHARGE PERMIT.
9. THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, AND SAND THAT MAY ACCUMULATE IN THE STORM SEWER OR OTHER DRAINAGE CONVEYANCE SYSTEM AND STORMWATER APERTURES AS A RESULT OF THE CONSTRUCTION ACTIVITY.
10. NO PERSON SHALL CAUSE THE PLACEMENT OF STORMWATER FLOW IN THE FLOW LINE OF THE CURB AND GUTTER.
11. INDIVIDUALS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (PUBLIC LAW 92-500 AS AMENDED, 33 USC 1344), REGULATIONS PROMULGATED, CERTIFICATIONS OR PERMITS ISSUED IN ADDITION TO THE REQUIREMENTS INCLUDED IN THIS MANUAL. IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS, THE MORE RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
12. ALL STORM SEWER FACILITIES SHALL BE CLEANED AND VIDEO CAMERA/DVD INSPECTED AT DEVELOPER/CONTRACTOR EXPENSE PRIOR TO CITY ACCEPTANCE.

SIGNING AND STRIPING NOTES:

1. PLACEMENT OF ALL NEW, RESET AND RELOCATED SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
2. PRIOR TO STRIPING, THE CONTRACTOR SHALL PREPARE THE PAVEMENT SURFACE FOR PROPER ADHESION
3. REMOVAL OF STRIPING SHALL BE DONE TO 100 PERCENT, BY HYDROBLASTING AND/OR GRINDING AND DEBRIS SHALL BE PROPERLY REMOVED BY THE CONTRACTOR.
4. ALL LANE STRIPES SHALL BE APPLIED WITH EPOXY PAVEMENT MARKING (MINIMUM OF 15 MILS). EXISTING STRIPING MUST BE REMOVED AND REPLACED (FULL LENGTH, FULL WIDTH) IF NOT COMPARABLE
5. ALL WORDS, ARROWS, AND SYMBOL MARKINGS WITHIN THE RIGHT-OF-WAY SHALL BE 90 MILS IN STANDARD PREFORMED PAVEMENT MARKING FOR PREFORMED PLASTIC INLAID IN HOT ASPHALT. ALL LETTERS, ARROWS, AND SYMBOLS SHALL BE IN CONFORMANCE WITH THE "STANDARD ALPHABET FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" ADOPTED BY THE FEDERAL HIGHWAY ADMINISTRATION (ARROWS = 15.5 "SD" FT., ONLY = 22.3 SD. FT., 80 MILS). ARROWS AND SYMBOL MARKINGS SHALL BE INLAID IN HOT ASPHALT.
6. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLANS THROUGHOUT THE CONSTRUCTION PROCESS TO BE APPROVED BY THE CITY OF FOUNTAIN, CDOT
7. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
8. SIGNS AND PAVEMENT MARKING IN S.H. 85 SHALL BE INSTALLED PER CDOT M & S STANDARDS AND SPECIAL PROVISIONS.

DETAIL NOTES

STANDARD PEDESTRIAN RAMP

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. CONTRACTOR IS TO OBTAIN REQUIRED CONCRETE PERMITS PRIOR TO CONSTRUCTION.
3. INSPECTION IS REQUIRED 10 NOTES THE CITY OF FOUNTAIN AT LEAST 24 HOURS PRIOR TO PLACEMENT OF ANY CONCRETE.
4. PEDESTRIAN RAMPS WITH 24 INCH DETECTABLE WARNING AREA SHALL BE 4080 PSI, PLAIN CONCRETE, WITH A BROOM FINISH.
5. RAMP LOCATION AND LENGTH MAY REQUIRE MODIFICATION TO MAINTAIN THE 12:1 MAXIMUM RUNNING SLOPE DUE TO TRANSITION STREET GRADES AND/OR HIGHWAYS.
6. WHERE THE 5' TOP IS NOT FLARED, SIDES OF PEDESTRIAN RAMP ARE CONTIGUOUS WITH A PEDESTRIAN OR HARD SURFACE AREA. THE FLARE WIDTH SHALL BE INCREASED TO 6 FEET MINIMUM AND THE MAXIMUM FLARE SLOPE SHALL NOT EXCEED 10:1.
7. PEDESTRIAN WALKWAY AND/OR LOCATION OF EXISTING OR FUTURE PEDESTRIAN RAMPS ON OPPOSITE CORNERS SHALL BE REVIEWED BEFORE CONSTRUCTING NEW RAMPS. NEW RAMPS SHALL ALIGN WITH EXISTING RAMPS AND PEDESTRIAN CROSSWALKS.
8. AT MARKED PEDESTRIAN CROSSINGS, THE BOTTOM OF THE RAMPS EXCLUSIVE OF THE FLARE SIDES SHALL BE TOTALLY CONTAINED WITHIN THE CROSSWALK.
9. DETECTABLE WARNING AREA SHALL BE PREFABRICATED TRUNCATED-DOME SURFACED CONCRETE PAVERS OR THE PRE-CAST PANELS FROM THE CITY'S APPROVED PRODUCTS LIST.

UTILITY NOTES

1. ALL WATER AND SANITARY SEWER MATERIALS AND CONSTRUCTION SHALL CONFORM TO CITY OF FOUNTAIN AND FOUNTAIN SANITATION DISTRICT STANDARDS AND SPECIFICATIONS, LATEST EDITION THEREOF.
2. CONTRACTOR SHALL PROTECT ALL ADJACENT IMPROVEMENTS (BUILDINGS, PARKING LOTS, LANDSCAPE AREAS, ETC...) FROM DAMAGE AND EROSION. ALL DISTURBED AREAS OFF-SITE SHALL BE RESTORED TO A MINIMUM OF PRIOR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS TO COMPLETE THE PROPOSED WORK AND SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
4. THE CONTRACTOR ASSUMES RESPONSIBILITY FOR THE PROTECTION OF ALL UTILITIES DURING THE WORK. PRIOR TO ANY EXCAVATION, CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 1 (800) 922-1987 AT LEAST TWO WORKING DAYS PRIOR TO DIGGING.
5. PAVING CONTRACTOR SHALL ADJUST ALL VALVE BOXES AND MANHOLE COVERS TO FIT FINAL GRADES INDICATED ON THESE PLANS. CONTRACTOR SHALL COORDINATE UTILITY ADJUSTMENT WITH RESPECTIVE UTILITY AGENCIES.
6. CONTRACTOR SHALL COORDINATE DRY UTILITY LOCATIONS WITH PROVIDER AGENCY.
7. ALL EXISTING UTILITY LINE LOCATIONS SHALL BE VERIFIED BY THE CONTRACTOR AND THE ENGINEER NOTIFIED PRIOR TO CONSTRUCTION. IT IS THE PLANS INTENT TO SHOW ALL EXISTING UTILITIES, HOWEVER IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT ALL EXISTING UTILITIES, WHETHER SHOWN ON THESE PLANS OR NOT, HAVE BEEN PROPERLY LOCATED.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

PREPARED BY:

DREXEL, BARRELL & CO.
Engineers - Surveyors
1 SOUTH 7TH STREET
COLORADO SPRINGS, COLORADO 80905
CONTACT: TIM D. MACCONNELL, P.E.
(719)260-0887
REGISTERED ENGINEERING, SURVEYING, PLANNING & LANDSCAPE ARCHITECTURAL FIRM IN COLORADO SPRINGS, LAS CRUCES, DENVER & LAFAYETTE

OWNER/DEVELOPER:

CITY OF FOUNTAIN
116 S. MAIN STREET
FOUNTAIN, COLORADO 80817
(719) 273-2600
CONTACT: BLAINE SPEED/TODD

CONSTRUCTION DOCUMENTS FOR:
SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO

ISSUE	DATE
CDOT COMMENTS	1/12/2011

DESIGNED BY: BLS
DRAWN BY: GFS
CHECKED BY: TDM
FILE NAME: 7925-NOTES
DATE: 12/15/2011

COLORADO REGISTERED PROFESSIONAL ENGINEER TIMOTHY D. MACCONNELL 33797 12-15-11

DRAWING SCALE(S):
HORIZONTAL: N/A
VERTICAL: N/A

NOTES AND LEGEND

PROJECT NO. C7925-1
DRAWING NO.
C-2
SHEET: 2 OF 26

EXHIBIT E p. 2

Attachment A
Decision No. R13-0241
Docket No. 10A-409R
Page 34

DESCRIPTION	UNIT	TOTALS	
		QUANTITY	AS CONST
Saw Cut Asphalt	LF	1840	
Remove Asphalt	SY	1626	
Remove Curb and Gutter	LF	74	
Remove Signs	EA	5	
Remove wire fence	LF	210	
Clearing and Grubbing	LS	1	
Mesa Road Closure	LS	1	
Railroad Bridge Abutment Demolition and Regrading	LS	1	
East of Proposed RR Crossing Import Embankment	SY	5000	
East of HWY 85 Import Embankment	SY	1750	
East of HWY 85 Excavation	SY	300	
West of HWY 85 Import Embankment	SY	1900	
West of HWY 85 Excavation	SY	100	
Construct Hot Bituminous Pavement, complete in-place (4")	TON	1,601	
Construct Hot Bituminous Pavement, complete in-place (5")	TON	617	
Aggregate Base Course, Class 5 (12")	CY	3,443	
Removal of Asphalt (Planning)	SY	8981	
Hot Bituminous Pavement, (Overlay)	TON	1105	
CDOT Curb and Gutter Type 2(Section MB)	LF	2,209	
Modified Curb Type 2 (Section B) 10" Barrier	LF	1,264	
4' Shoulder	SF	7,418	
6' Curb openings	EA	1	
8' wide Concrete Sidewalk	SY	605	
Handicap Ramp	EA	5	
Detectable Warning Panels	EA	7	
Patterned Median	SF	2438	
Driveway Apron with Curb Cut	EA	1	
UPPR Preliminary Engineering	LS	1	
UPPR Crossing Work (preformed by UPPR)	LS	1	
Traffic Control	LS	1	
Epoxy Pavement Marking (white)	SF	3,011	
Epoxy Pavement Marking (yellow)	SF	711	
Preformed Thermoplastic Pavement Marking (word symbol)	SF	242	
Preformed Thermoplastic Pavement Marking (stop bar)(cross walk)	SF	1,322	
Traffic and Pedestrain Signage (VIP, Type 4)	SF	254	
Large Rock Boulders or Existing Sandstone Blocks (to close existing Duckwood Rd access)	EA	6	
Install 18" RCP, including fittings, bedding, and compaction, complete in-place	LF	147	
18" CSP Concrete Encased Slotted Drain	LF	74	
Install 24" ELLIPTICAL RCP, including fittings, bedding, and compaction, complete in-place	LF	91	
Install 5' Type "R" inlet complete in-place	EA	3	
Install 5' double sided inlet	EA	1	
Special Inlet, Neenah R-3067 Type C Grate	EA	2	
Sidewalk chase	EA	2	
Install 18" RCP FES	EA	1	
Install 24" ELLIPTICAL RCP FES	EA	2	
Remove Utility poles	EA	7	
Set Utility poles	EA	6	
Overhead electrical	LF	624	
Underground Electric in Conduits	LF	405	
2-inch Electrical Conduit(3-2" Conduits per Signal Bored)	LF	340	
Interconnect Relay Wiring	LF	115	
Traffic Signal Assembly (See note below)	EA	4	
Traffic Signal Control Cabinet, Assembly and Appurtenances	EA	1	
Preemption Circuitry control card, battery backup, Electrical Power surge protection, Cabinet electrical ground rod			
Silt Fence	LF	3,020	
Inlet Protection	LF	6	
Rock/Fiber Woodle Log Check dams	EA	14	
Vehicle Tracking Control	EA	2	
Native seeding-Erosion control blanket	LS	1	

Traffic Signal Assembly to include Signal Heads, Pole, Mast arm, Video Detection and Opticom Detector as shown per Traffic Signal Plan.

LIST OF DETAILS

COLORADO DEPARTMENT OF TRANSPORTATION
STANDARD PLAN LIST
M & S STANDARDS

PLAN NO.	TITLE
M-601-10	HEADWALLS FOR PIPE (SHEET 1 OF 1)
M-603-2	REINFORCED CONCRETE PIPE (SHEET 1 OF 1)
M-603-10	CONCRETE AND METAL END SECTIONS (SHEET 1 OF 2)
M-604-12	CURB INLET TYPE R (SHEET 1 OF 2)
M-608-1	CURB RAMPS (SHEET 1 OF 4)
M-609-1	CURB, GUTTERS, AND SIDEWALK (SHEETS 1, 2, 3 OF 4)
S-614-40A	ALTERNATE TRAFFIC SIGNAL INSTALLATION DETAILS (SHEETS 1 TO 5)

COLORADO SPRINGS STANDARD DETAILS

DETAIL NO.	TITLE
D-88	PEDESTRIAN RAMP DETAILS FOR DETECTABLE PAVERS
D-90	PEDESTRIAN RAMP DETAIL
D-218	CURB OPENING/STANDARD INLET DETAIL (SHEETS 1 & 2)

MISCELLANEOUS DETAILS

PATTERNED CONCRETE MEDIAN PAVING DETAIL
FIBER ROLLS/GRAVEL BAG CHECK DAM
SILT FENCE
VEHICLE TRACKING CONTROL
BLOCK & GRAVEL BAG CURB INLET PROTECTION
5' CONCRETE WALK
SLOTTED DRAIN CULVERT DETAIL

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

PREPARED BY:
DREXEL, BARRELL & CO.
Engineers - Surveyors
2 SOUTH 7TH STREET
COLORADO SPRINGS, COLORADO 80905
CONTACT: TIM D. McCONNELL, P.E.
(719) 260-0887
DENVER - COLORADO SPRINGS - FT. COLLINS
GRAND JUNCTION - GREELEY
STEAMBOAT SPRINGS

OWNER/DEVELOPER:
City of Fountain
CITY OF FOUNTAIN
116 S. MAIN STREET
FOUNTAIN, COLORADO 80817
(719) 382-8000
CONTACT: DUANE GREENWOOD

CONSTRUCTION DOCUMENTS FOR:
SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO

ISSUE	DATE
CDOT COMMENTS	1/12/2011
CITY COMMENTS	4/14/2011
CITY COMMENTS	11/11/2011

DESIGNED BY:	SLS
DRAWN BY:	GLS
CHECKED BY:	KEH
FILE NAME:	L42-C3.dgn

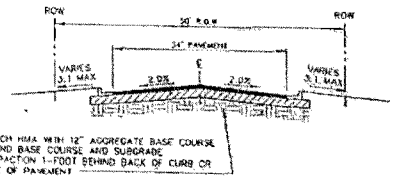
COLORADO REGISTERED
TIM D. McCONNELL
33797
12-15-11
PROFESSIONAL ENGINEER

HORIZONTAL: 1"=20'
VERTICAL: N/A

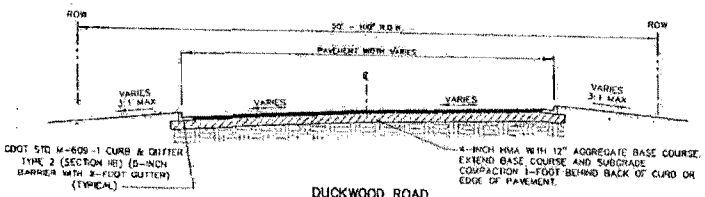
SUMMARY OF QUANTITIES/LIST STANDARD DETAIL

PROJECT NO. C7928-1
DRAWING NO.
C-3
SHEET: 3 OF 26

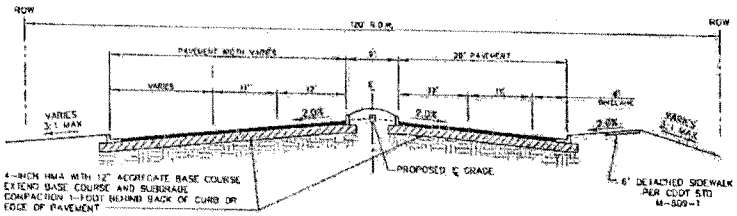
EXHIBIT E p. 3



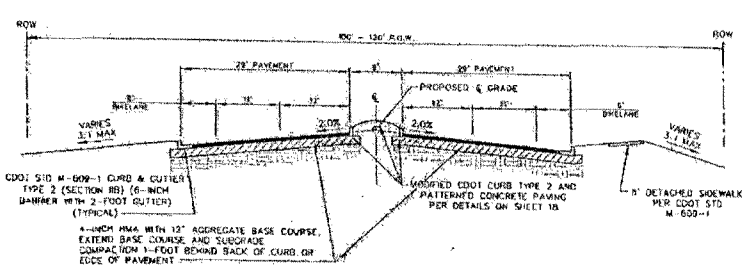
DUCKWOOD ROAD
STATION 5+42 TO 7+38.95



DUCKWOOD ROAD
STATION 7+39.95 TO 9+72



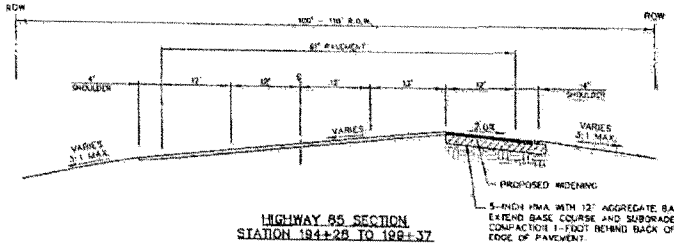
DUCKWOOD ROAD
STATION 10+26 TO 11+83



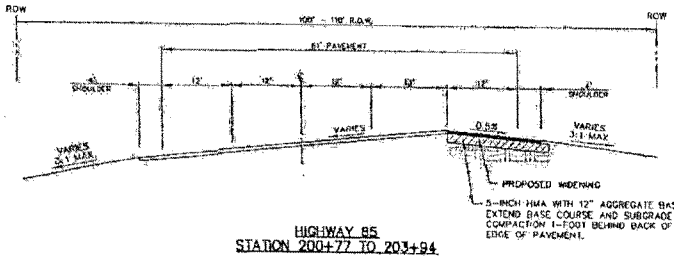
DUCKWOOD ROAD
STATION 11+83 TO 17+20

1. DUCKWOOD ROAD TO HAVE 6" MINIMUM DEPTH OF HMA AND 12" MINIMUM AGGREGATE BASE COURSE. HWY 85 TO HAVE 5" MINIMUM DEPTH OF HMA AND 12" MINIMUM DEPTH OF AGGREGATE BASE COURSE.

2. PAVEMENT ROAD BASE AND SUB-GRADE COMPACTION/STABILIZATION MUST EXTEND A MINIMUM OF 12-INCHES BEYOND THE BACK OF CURB AND/OR EDGE OF PAVEMENT



HIGHWAY 85 SECTION
STATION 194+28 TO 198+37



HIGHWAY 85
STATION 200+77 TO 203+94

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

PREPARED BY:
DRIXEL BARRELL & CO.
Engineers • Surveyors
OWNER/DEVELOPER:
CITY OF FOUNTAIN
CONSTRUCTION DOCUMENTS FOR:
SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO

ISSUE	DATE
CDOT COMMENTS	1/12/2011

DESIGNED BY:	SLS
DRAWN BY:	DCS
CHECKED BY:	KEH
FILE NAME:	

COLORADO REGISTERED TIM D. McCONNELL 33797 12-15-11 PROFESSIONAL ENGINEER

HORIZONTAL: GENERALIZED
VERTICAL: N/A

TYPICAL SECTIONS

PROJECT NO. C7938-1
DRAWING NO.
C-4
SHEET: 4 OF 26

EXHIBIT E 4.4

Attachment A
Decision No. R13-0241
Docket No. 10A-409R
Page 36

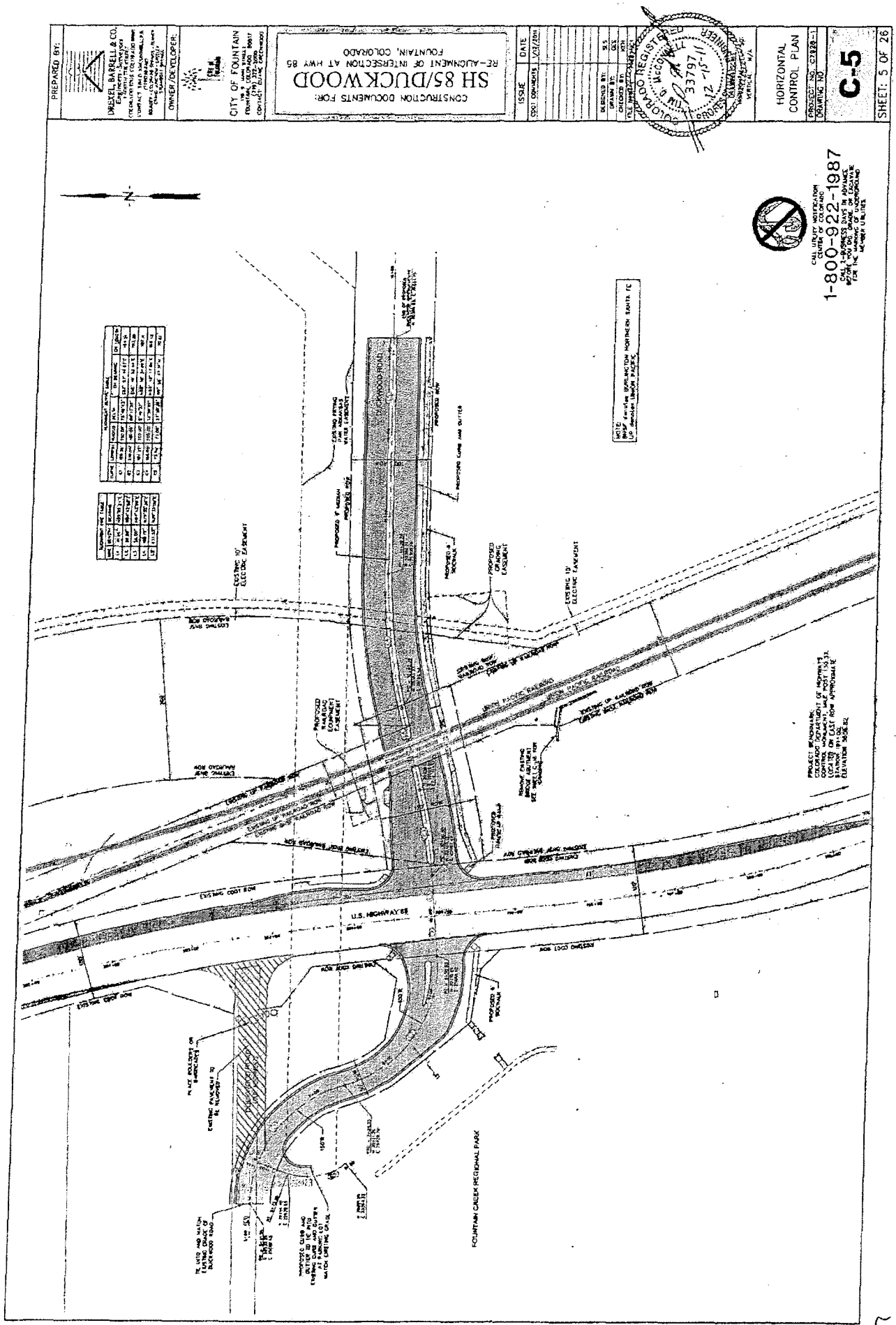

CONSTRUCTION DOCUMENTS FOR:
SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO
PREPARED BY:
DRESSEL, BARRELL & CO.
OWNER/DEVELOPER:
CITY OF FOUNTAIN
ISSUE
DATE
HORIZONTAL CONTROL PLAN
PROJECT NO. 07328-1
DRAWING NO.
C-5
SHEET: 5 OF 26
1-800-922-1987
CALL UTILITY NOTIFICATION CENTER OF COLORADO
DUCKWOOD ROAD
U.S. HIGHWAY 85
EXISTING 10' ELECTRIC EASEMENT
PROPOSED GRADING EASEMENT
PROPOSED 8' SIDEWALK
EXISTING RIGHT OF WAY
PROPOSED CURB AND GUTTER
FOUNTAIN CREEK REGIONAL PARK
UNION PACIFIC RAILROAD

EXHIBIT E p.5

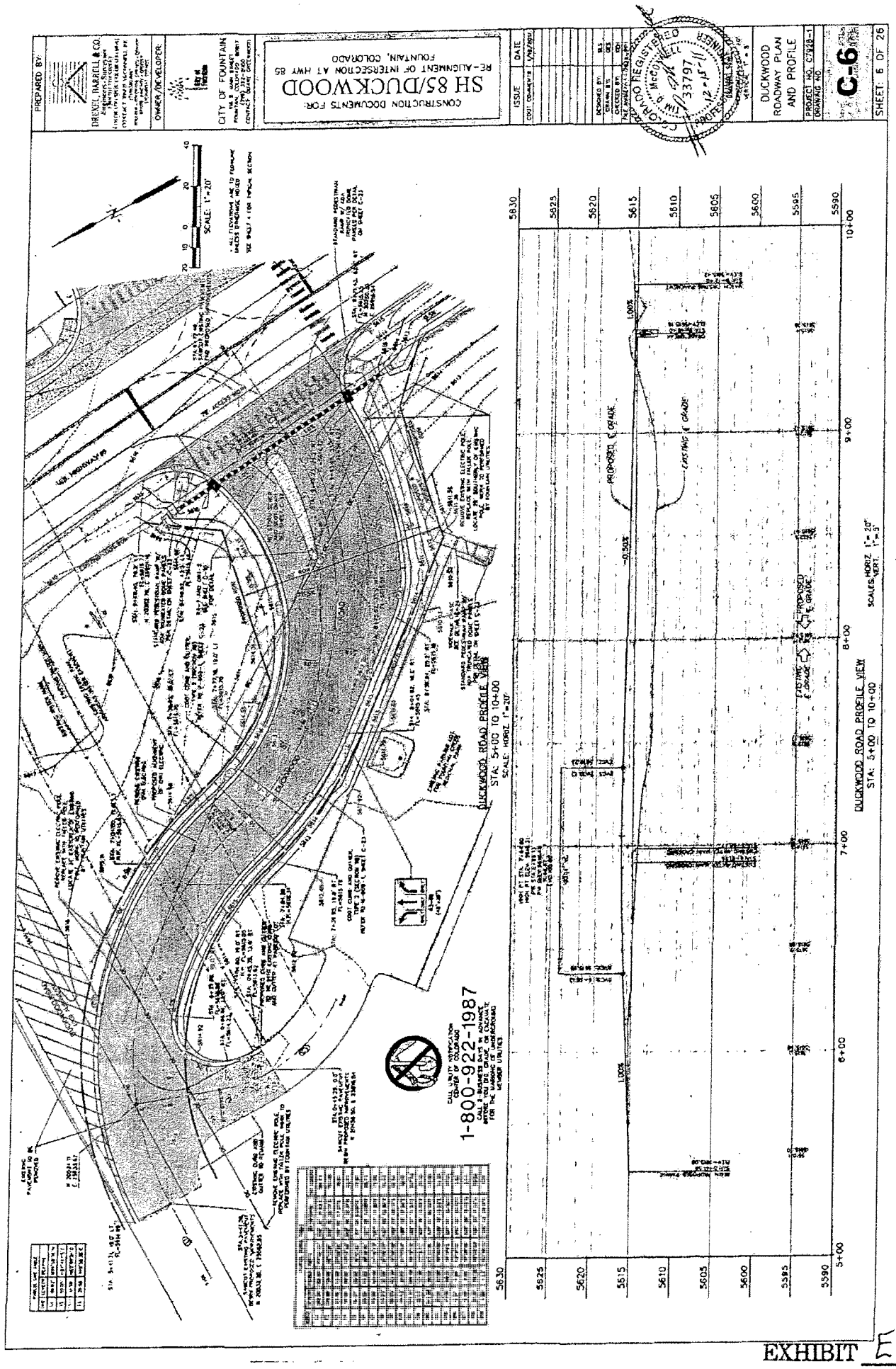

PREPARED BY:
DRENTEL BARRELL & CO.
OWNER/DEVELOPER:
CITY OF FOUNTAIN
CONSTRUCTION DOCUMENTS FOR:
SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO
ISSUE
DATE
DESIGNED BY: BLS
DRAWN BY: DES
CHECKED BY: TDH
DATE ISSUED: 7/30/2010
PROJECT MANAGER: TDH
DUCKWOOD
ROADWAY PLAN
AND PROFILE
PROJECT NO. C7928-1
DRAWING NO.
C-6
SHEET: 6 OF 26
SCALE: 1"=20'
DUCKWOOD ROAD PROFILE VIEW
STA: 5+00 TO 10+00
SCALE: HORZ. 1"=20'
VERT. 1"=5'
PROPOSED ℄ GRADE
EXISTING ℄ GRADE
-0.50%
1.00%
1-800-922-1987
CALL UTILITY NOTIFICATION CENTER OF COLORADO
CALL 2 BUSINESS DAYS IN ADVANCE
BEFORE YOU DIG, GRADE OR EXCAVATE
FOR THE MARKING OF UNDERGROUND
MEMBER UTILITIES

EXHIBIT E, p. 6

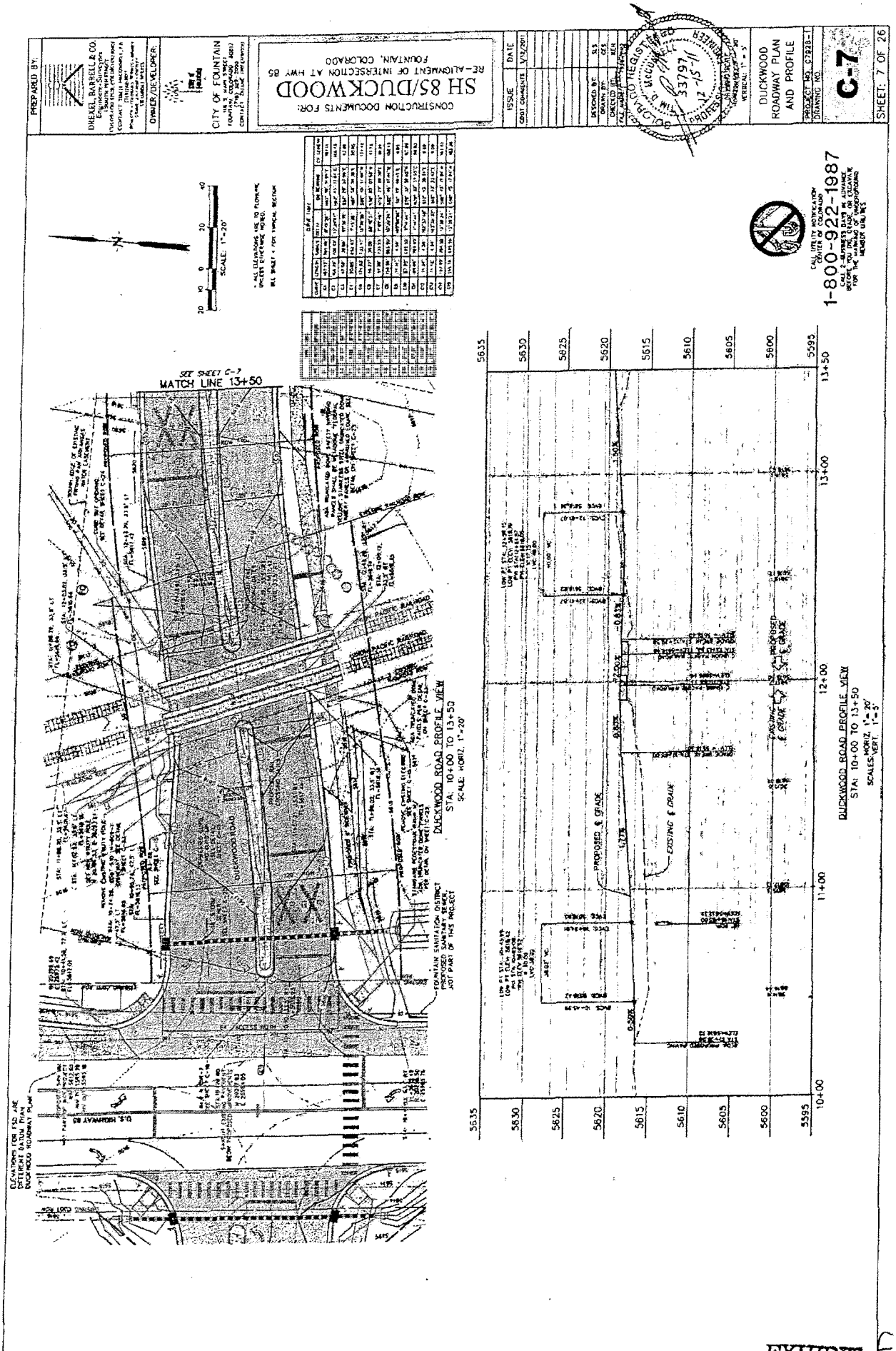
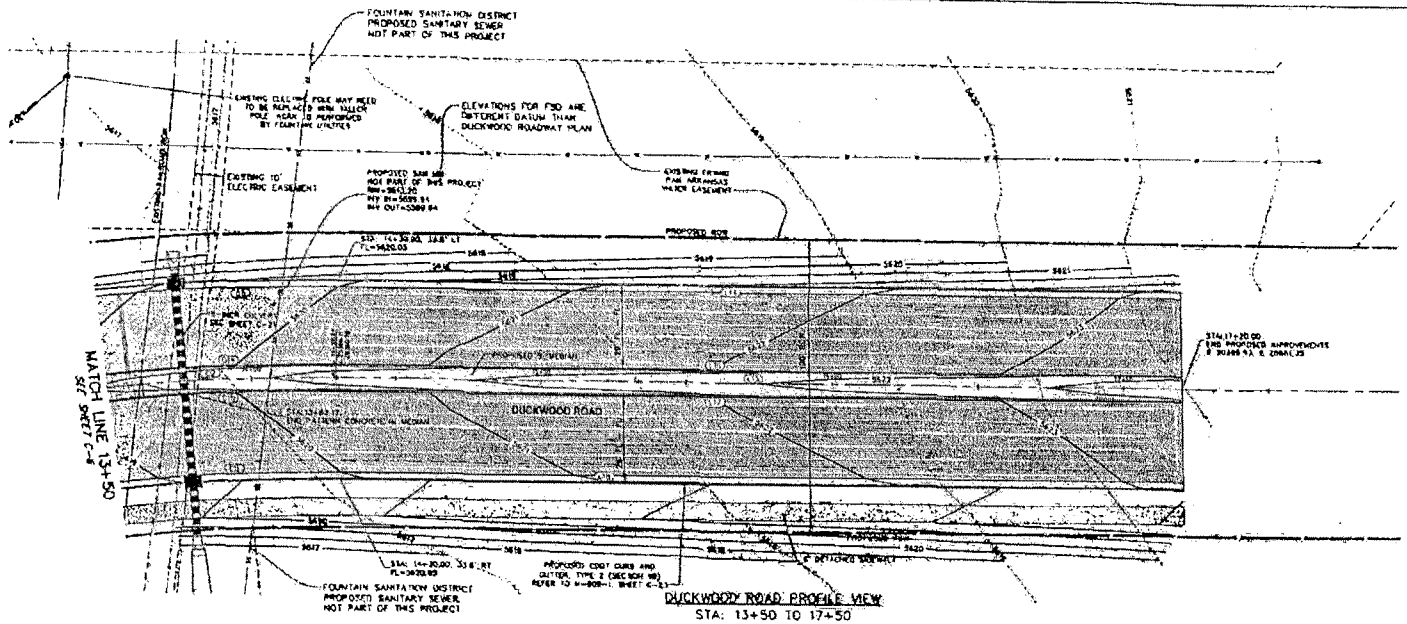
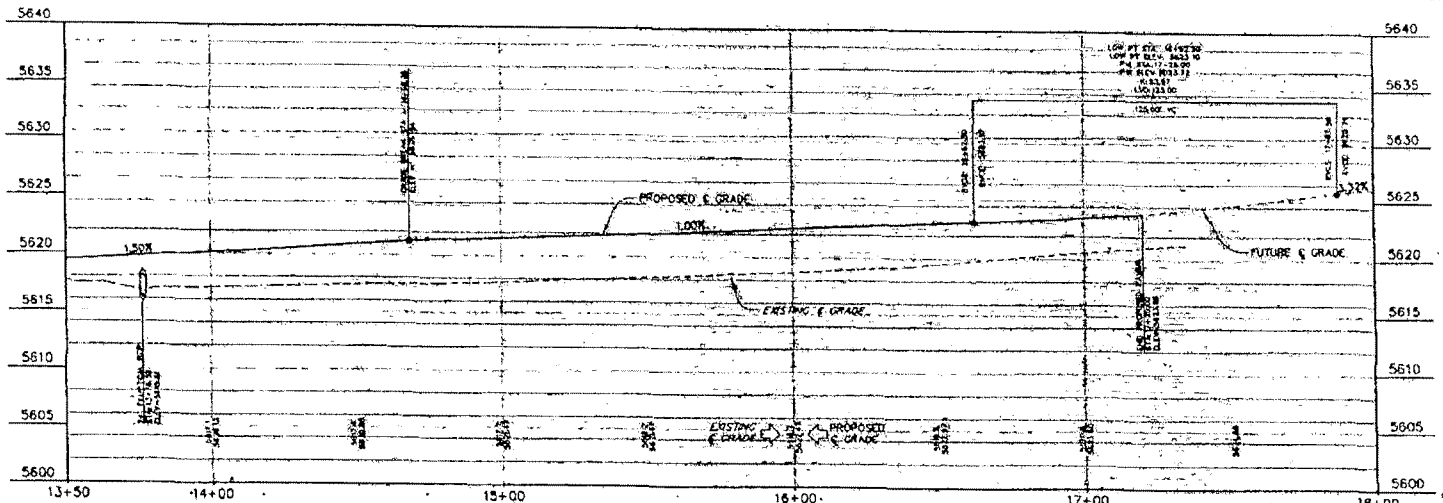

CONSTRUCTION DOCUMENTS FOR:
SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO
PREPARED BY:
DREXEL, BARRELL & CO.
OWNER/DEVELOPER:
CITY OF FOUNTAIN
ISSUE
DATE
DESIGNED BY:
DRAWN BY:
CHECKED BY:
FIELD WORK PERFORMED:
DUCKWOOD ROADWAY PLAN AND PROFILE
PROJECT NO. 07928-1
DRAWING NO.
C-7
SHEET: 7 OF 26
1-800-922-1987
SEE SHEET C-7
MATCH LINE 13+50
DUCKWOOD ROAD PROFILE VIEW
STA: 10+00 TO 13+50
SCALE: HORIZ. 1"=20'
VERT. 1"=5'
PROPOSED & GRADE
EXISTING & GRADE
U.S. HIGHWAY 85
FOUNTAIN SANITATION DISTRICT
PROPOSED SANITARY SEWER
NOT PART OF THIS PROJECT

EXHIBIT E p.7



DUCKWOOD ROAD PROFILE VIEW
STA: 13+50 TO 17+50
SCALE: HORIZ. 1"=20'



DUCKWOOD ROAD PROFILE VIEW
STA: 13+50 TO 17+50
SCALES: HORIZ. 1" = 20'
VERT. 1" = 5'

ALL ELEVATIONS ARE TO FLOWLINE UNLESS OTHERWISE NOTED

SEE SHEET 4 FOR TYPICAL SECTION

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

PREPARED BY:
DREXEL, BARRELL & CO.
Engineers - Surveyors

OWNER/DEVELOPER:
CITY OF FOUNTAIN
116 S. MAIN STREET
FOUNTAIN, COLORADO 80817
(719) 322-2000
CONTACT: DUANE DICKINSON

CONSTRUCTION DOCUMENTS FOR:
SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO

ISSUE	DATE
CDOT COMMENTS	1/12/2011

DESIGNED BY: BLS
DRAWN BY: GES
CHECKED BY: TDM
FILE NAME: C7928-1

COLORADO REGISTERED
TIM D. McCORMICK
33797
12-15-11
PROFESSIONAL ENGINEER

HORIZONTAL 1" = 20'
VERTICAL 1" = 5'

DUCKWOOD ROADWAY PLAN AND PROFILE

PROJECT NO. C7928-1
DRAWING NO.
C-8
SHEET: 8 OF 26

EXHIBIT Exh. 8

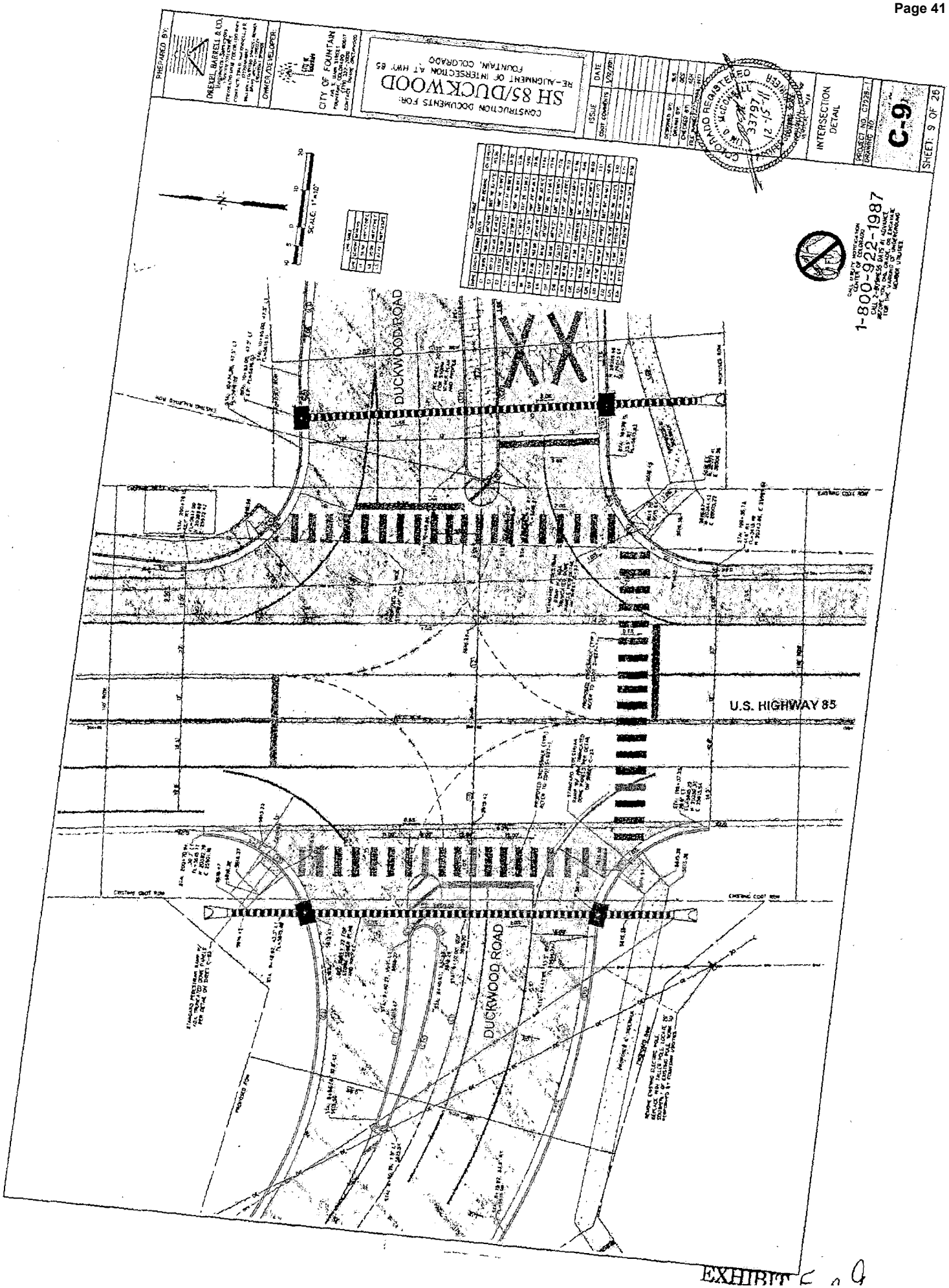

CONSTRUCTION DOCUMENTS FOR:
SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY. 85
FOUNTAIN, COLORADO
PREPARED BY:
DIKEOU BARRELL & CO.
CITY OF FOUNTAIN
OWNER/DEVELOPER:
DATE
ISSUE
CDOT COMMENTS
INTERSECTION DETAIL
PROJECT NO. C7228
DRAWING NO.
C-9
SHEET 9 OF 26
SCALE: 1"=40'
DUCKWOOD ROAD
U.S. HIGHWAY 85
DUCKWOOD ROAD
1-800-922-1987

EXHIBIT C.9

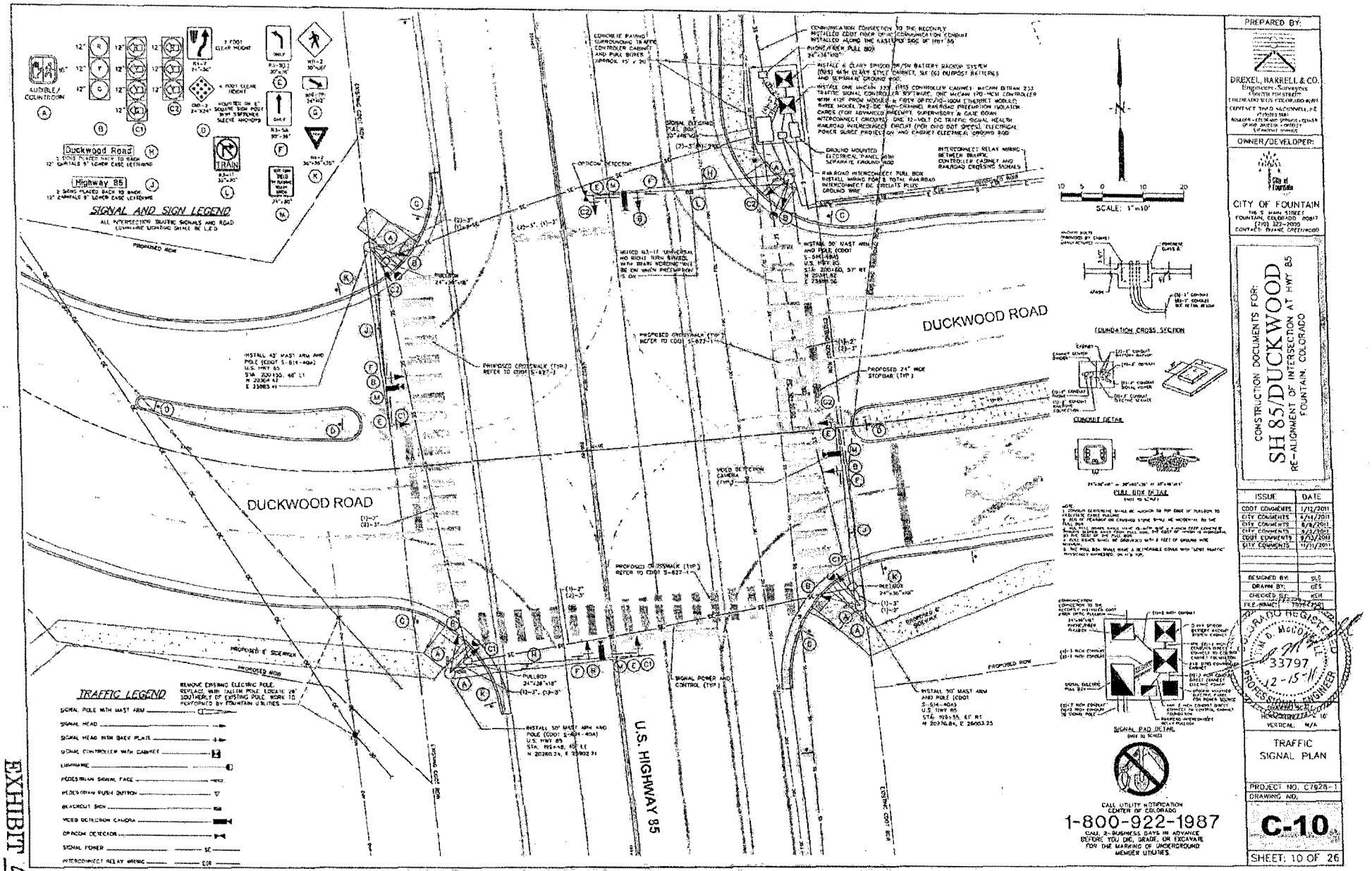


EXHIBIT E pg. 10

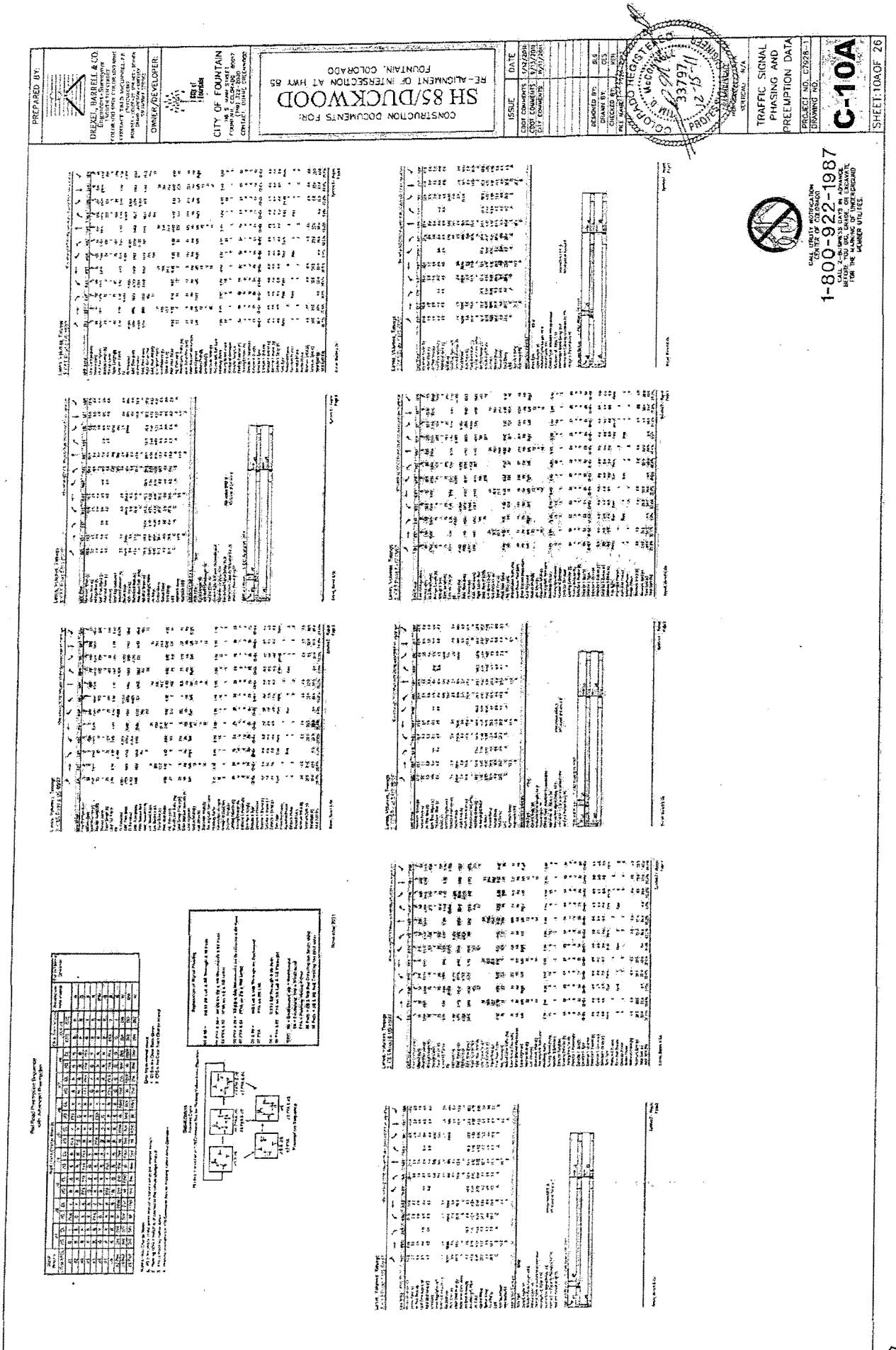


EXHIBIT E, p. 11

EXHIBIT E p.12

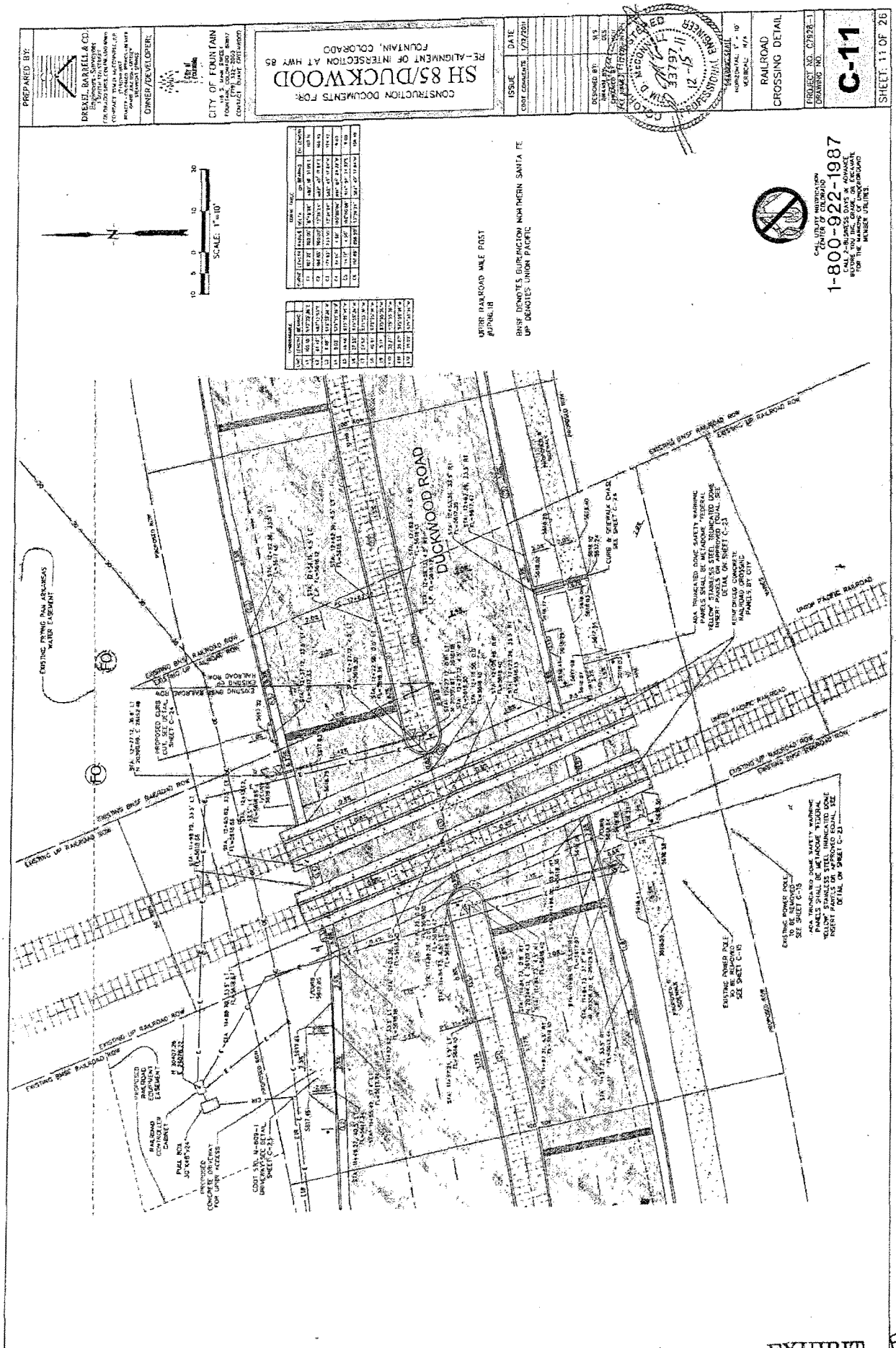
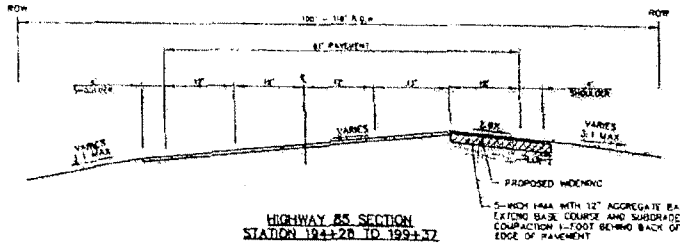
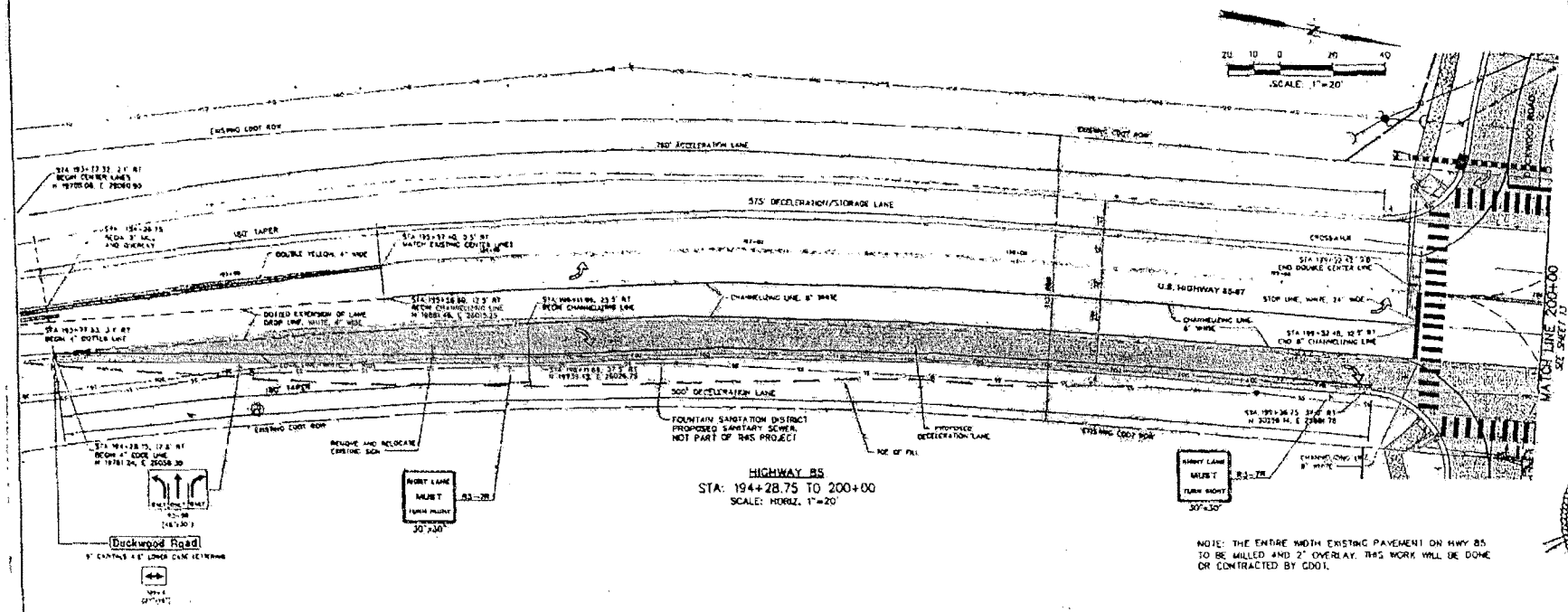


EXHIBIT E, p. 13



HIGHWAY 85 SECTION
STATION 194+28 TO 199+37



HIGHWAY 85
STA: 194+28.75 TO 200+00
SCALE: HORIZ. 1"=20'

SCALE: 1"=20'

NOTE: THE ENTIRE WIDTH EXISTING PAVEMENT ON HWY 85 TO BE MILLED AND 2" OVERLAY. THIS WORK WILL BE DONE OR CONTRACTED BY CDOT.

PROPOSED AUXILIARY TURN LANES - NRA - SOMPH

US 85	NORTH BOUND RIGHT TURN ACCEL LANE	NORTH BOUND LEFT TURN DECEL LANE	SOUTH BOUND RIGHT TURN ACCEL LANE
ACCEL/DECEL	500'	500'	750'
LANE WIDTH	12'	12'	12'
STORAGE	N/A	75'	N/A
TAPER (15:1)	180'	180'	180'
TOTAL LENGTH	500'	575'	750'

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

PREPARED BY:
DREXEL, BARRELL & CO.
Engineers - Surveyors
STRUCTURAL ENGINEERS
CIVIL ENGINEERS
LANDSCAPE ARCHITECTS
SURVEYORS
TRANSPORTATION ENGINEERS
ENVIRONMENTAL SCIENTISTS
WATER RESOURCE ENGINEERS
U.S. ARMY CORPS

OWNER/DEVELOPER:
CITY OF FOUNTAIN
116 S. MAIN STREET
FOUNTAIN, COLORADO 80817
(719) 382-5090
CONTACT: DUANE GREENWOOD

CONSTRUCTION DOCUMENTS FOR:
SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO

ISSUE	DATE
CDOT COMMENTS	1/12/2011
CITY COMMENTS	8/8/2011

DESIGNED BY:	SAS
DRAWN BY:	SCS
CHECKED BY:	MCH
QA/QC BY:	TDM
HORIZONTAL:	1"=20'
VERTICAL:	N/A

COLORADO REGISTERED
TIM D. McCONNELL
33797
12-15-11
PROFESSIONAL ENGINEER

HWY 85
WIDENING PLAN

PROJECT NO. C7926-1
DRAWING NO.
C-12
SHEET: 12 OF 26

EXHIBIT E p.14

Attachment A
Decision No. R13-0241
Docket No. 10A-409R
Page 46

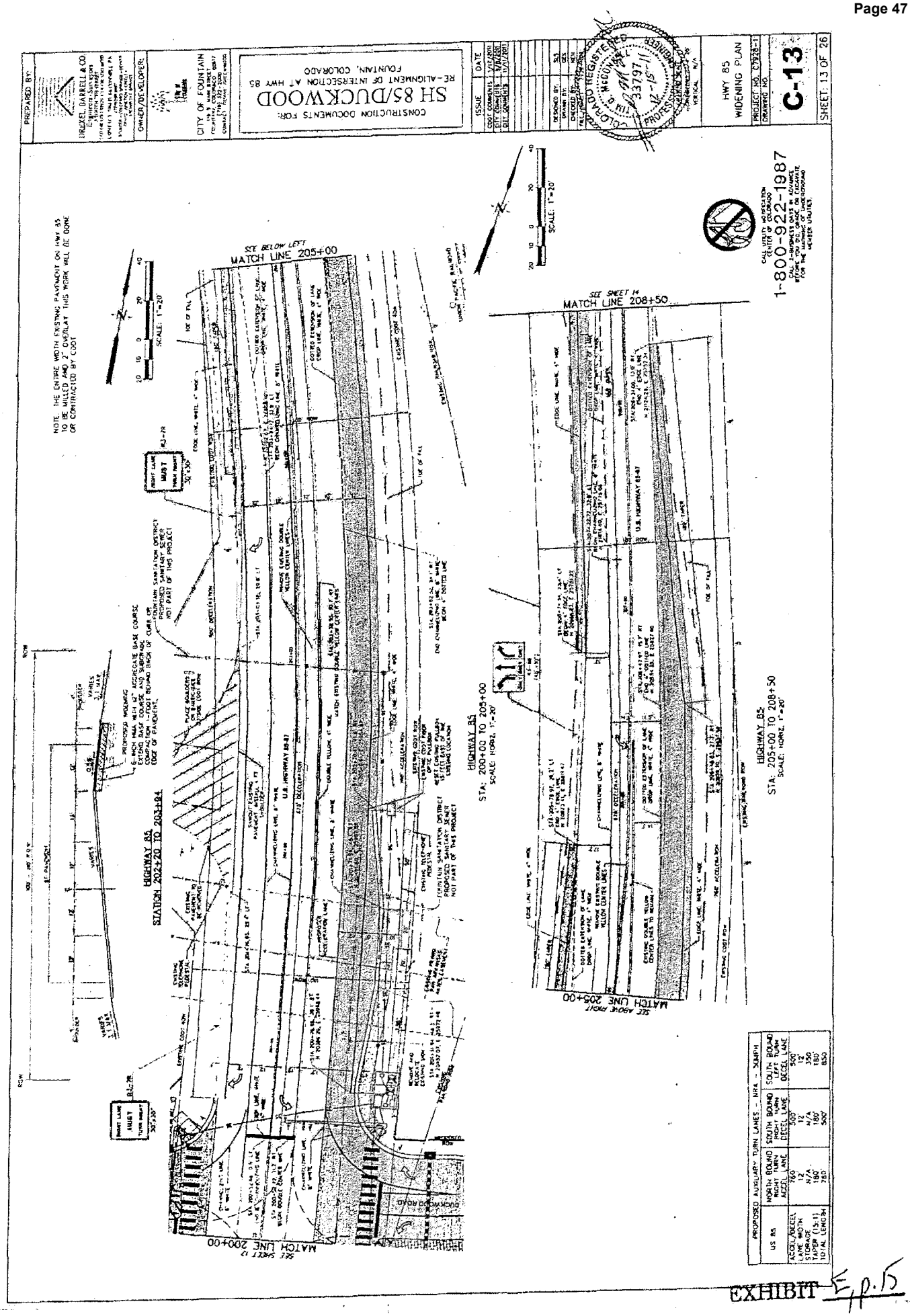


EXHIBIT Ep.15

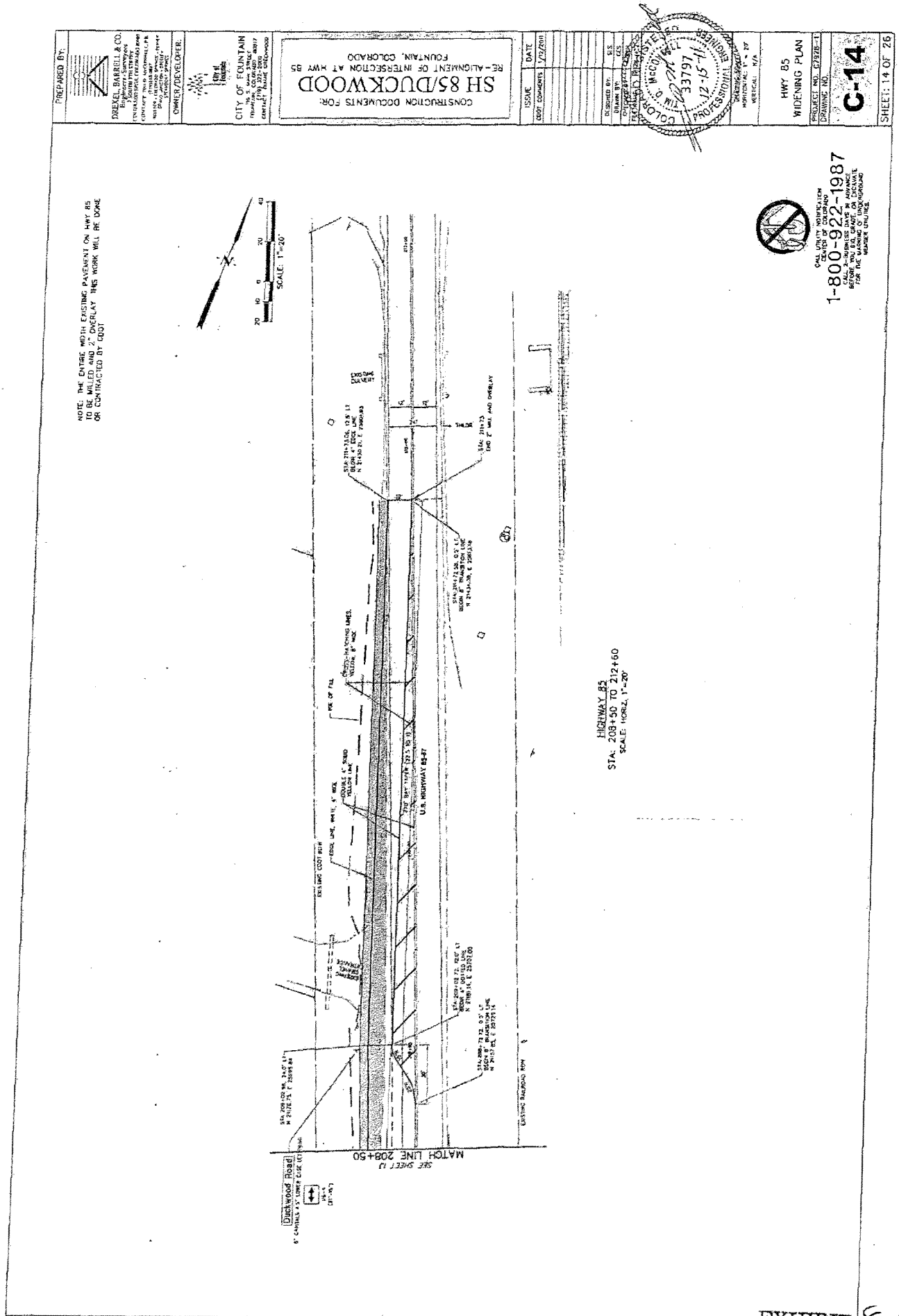


EXHIBIT E, p. 16

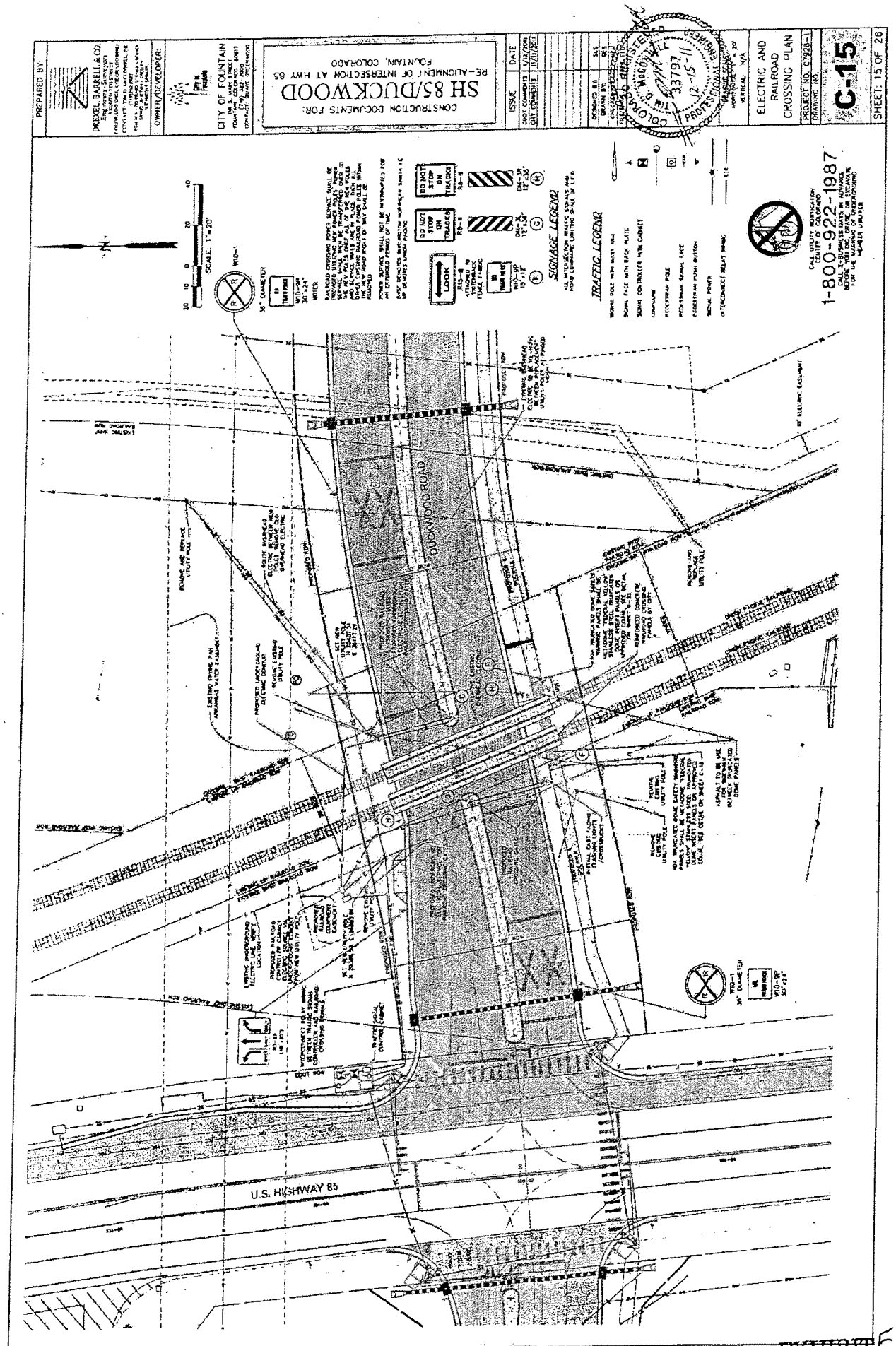


EXHIBIT E, pp. 17

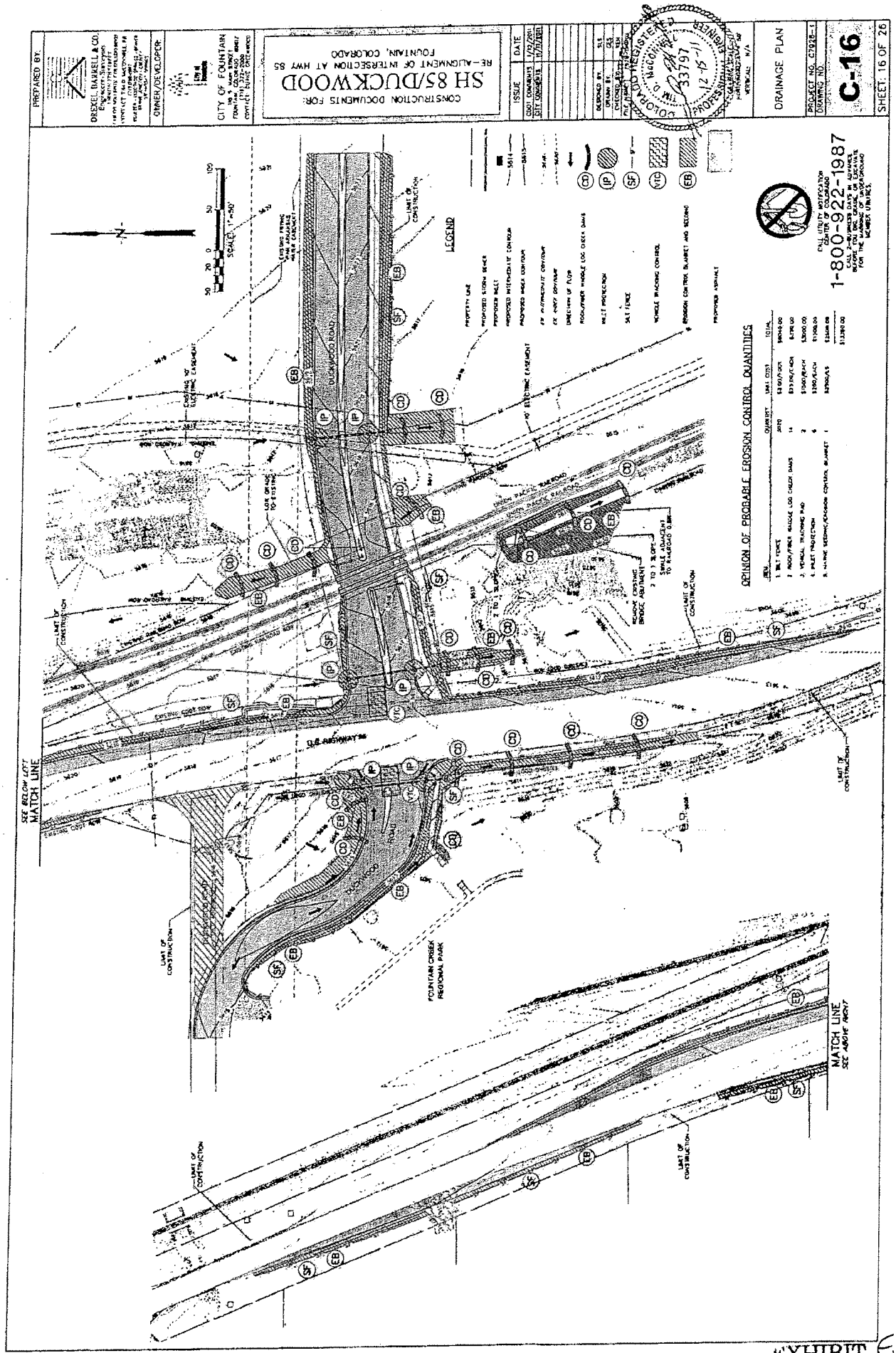


EXHIBIT E, 10.18

EXHIBIT E p.19

1. SITE DESCRIPTION

ADDITIONAL INFORMATION FOR PERMITTED PROJECTS. FOR INFORMATION ONLY TO FULFILL THE CDPS-SCP (COLORADO DISCHARGE PERMIT – STORMWATER CONSTRUCTION PERMIT)

A. PROJECT SITE DESCRIPTION: RE-ALIGNMENT OF DUCKWOOD ROAD, PROPOSED INTERSECTION WITH HWY 85, WIDENING HWY 85 FOR TURN/ACCEL/DECEL LANES, NEW RAILROAD CROSSING AT DUCKWOOD ROAD.

B. PROPOSED SEQUENCING FOR MAJOR ACTIVITIES: INSTALL BMPS, CLEAR AND GRUB, SITE DEMOLITION, GRADING, UTILITY INSTALLATIONS, RAILROAD CROSSING CONSTRUCTION, PROPOSED ROADWAY, INSTALL LANDSCAPING, SIGNAGE AND STRIPING, FINALIZE CONSTRUCTION AND REMOVE TEMPORARY BMPS

C. ACRES OF DISTURBANCE:

TOTAL AREA OF CONSTRUCTION SITE: 6.7 AC)
TOTAL AREA OF DISTURBANCE: 6.7 AC)
ACREAGE OF SEEDING: 2.6 AC

D. EXISTING SOIL DATA: BANKARD SANDY LOAM, WELL TO SOMEWHAT EXCESSIVELY DRAINED; LOW TO VERY LOW RUNOFF; RAPID TO VERY RAPID PERMEABILITY

E. EXISTING VEGETATION, INCLUDING PERCENT COVER: GRASS AND WEEDS 100%
DATE OF SURVEY: FEBRUARY 2008

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: NO CONCENTRATED FLOWS OR A STORM SYSTEM
2. NAMES OF RECEIVING WATER(S) ON SITE AND THE ULTIMATE RECEIVING WATER: FOUNTAIN CREEK
3. DISTANCE ULTIMATE RECEIVING WATER IS FROM PROJECT: 1/2 MILE
4. DOES THE RECEIVING WATER HAVE AN APPROVED TMDL: YES, TMDL ID: #30758

H. ALLOWABLE NON-STORMWATER DISCHARGES:

1. GROUNDWATER AND STORMWATER DEWATERING: DISCHARGE 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: NO
2. STREAM IMPACTS: NO
3. THREATENED AND ENDANGERED SPECIES: N/A

2. SITE MAP COMPONENTS

PRE-CONSTRUCTION
A. CONSTRUCTION SITE BOUNDARIES
B. ALL AREAS OF GROUND SURFACE DISTURBANCE
C. AREAS OF CUT AND FILL
D. LOCATION OF ALL STRUCTURAL BMPS AS APPLICABLE IN THE SWMP
E. LOCATION OF NON-STRUCTURAL BMPS AS APPLICABLE IN THE SWMP
F. PROTECTION OF TREES, SHRUBS, CULTURAL RESOURCES AND MATURE VEGETATION

3. SWMP ADMINISTRATOR FOR DESIGN: TIM D. McCONNELL, PE, PROJECT ENGINEER

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 SWMP, INCLUDING THE TITLE AND CONTACT INFORMATION. THE ACTIVITIES AND RESPONSIBILITIES OF THE ADMINISTRATOR SHALL ADDRESS ALL ASPECTS OF THE PROJECTS SWMP.)

B. POTENTIAL POLLUTANT SOURCES
EVALUATE, IDENTIFY AND DESCRIBE ALL POTENTIAL SOURCES OF POLLUTANTS AT THE SITE IN ACCORDANCE WITH SUBSECTION 103.25 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.

C. BEST MANAGEMENT PRACTICES (BMPS) FOR STORMWATER POLLUTION PREVENTION

PHASED BMP IMPLEMENTATION

DURING DESIGN: FIELDS ARE MARKED WHEN USED IN THE SWMP. DURING CONSTRUCTION: THE ECS SHALL UPDATE THE CHECKED BOXES TO MATCH SITE CONDITIONS, CLEARLY DESCRIBE THE RELATIONSHIP BETWEEN THE PHASES OF CONSTRUCTION AND THE IMPLEMENTATION OF BMP CONTROLS, ADD A NARRATIVE TO THE TABLE OR TO THE SITE MAP DESCRIBING WHY THE BMPS ARE BEING USED IN SPECIFIC LOCATIONS

STRUCTURAL BMP PRACTICES FOR EROSION AND SEDIMENT CONTROL; PRACTICES MAY INCLUDE, BUT ARE NOT LIMITED TO:

BMP	Type of Control	BMP As Designed	In Use On Site	First Construction Activities	During Construction	Interim/Final Stabilization
Earth Berm/Diversion	Erosion					
Check Dams	Sediment			X	X	
Silt Fence	Sediment			X	X	
Erosion Logs	Sediment			X	X	
Temporary Sediment Trap/Basin	Sediment					
Permanent Sediment Trap/Basin	Sediment					
Embankment Protector	Erosion				X	X
Inlet Protection	Erosion				X	
Outlet Protection	Erosion				X	
Concrete Washouts	Construction				X	
Stabilized Construction Entrance	Construction			X	X	
Dewatering	Sediment				X	
Temporary Stream Crossing	Erosion					
Other						

SILT FENCE – LOCATED DOWN SLOPE OF AREAS OF DISTURBANCE TO CAPTURE SEDIMENT.

CONCRETE WASHOUTS – REQUIRED FOR THE CURB AND GUTTER, INLETS, SLOTTED DRAIN AND CONCRETE SIDEWALK. LOCATED PER CONTRACTOR.

PREPARED BY:
DREXEL, BARRELL & CO.
ENGINEERS • SURVEYORS
3 SOUTH 7TH STREET
COLORADO SPRINGS, COLORADO 80905
CONTACT: TIM D. McCONNELL, P.E.
(719) 635-2981
ENGINEER • CIVIL DESIGN • SURVEY
CIVIL • MUNICIPAL • UTILITY
STORMWATER • SPECIAL DISTRICTS

OWNER/DEVELOPER:
CITY OF FOUNTAIN
116 S. MAIN STREET
FOUNTAIN, COLORADO 80817
(719) 322-2050
CONTACT: DUANE GREENWOOD

CONSTRUCTION DOCUMENTS FOR:
SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO

ISSUE	DATE
CDOT COMMENTS	1/12/2011

DESIGNED BY: MLS
DRAWN BY: CDS
CHECKED BY: TDM
FILE NAME: 7928-SWMP

COLORADO REGISTERED
TIM D. McCONNELL
33797
12-15-11
PROFESSIONAL ENGINEER

DRAWING SCALE:
HORIZONTAL: 1"=
VERTICAL:

SWMP

PROJECT NO. C7928-1
DRAWING NO.
C-17
SHEET: 17 OF 26

EXHIBIT E p. 20

NON-STRUCTURAL BMP PRACTICES FOR EROSION AND SEDIMENT CONTROL: PRACTICES MAY INCLUDE, BUT ARE NOT LIMITED TO:

BMP	Type Of Control	BMP As Designed	In Use On Site	First Construction Activities	During Construction	Interim/Final Stabilization
Surface Roughening/Grading Techniques	Erosion				X	X
Seeding Permanent	Erosion				X	X
Seeding Temporary	Erosion				X	X
Mulch/Mulch Tackifier	Erosion					
Soil Binder	Erosion					
Soil Retention Blanket	Erosion				X	X
Vegetative Buffer Strips	Erosion			X	X	X
Protection of Trees	Erosion					
Preservation of Mature Vegetation	Erosion					
Other						

- EROSION CONTROL DEVICES ARE USED TO LIMIT THE AMOUNT OF EROSION 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 SITE MAP.
- BMP INSTALLATION DETAILS AND GENERAL NARRATIVES ARE IN THE SWMP NOTEBOOK.

D. OFFSITE DRAINAGE (RUN ON WATER)
1. DESCRIBE AND RECORD BMPS ON THE SWMP SITE MAP THAT HAVE BEEN IMPLEMENTED TO ADDRESS RUN-ON WATER IN ACCORDANCE WITH SUBSECTION 208.03.

E. STABILIZED CONSTRUCTION ENTRANCE/VEHICLE TRACKING CONTROL
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 THE 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 BMPS AS APPROVED.
3. PERIMETER CONTROL SHALL BE IN ACCORDANCE WITH SUBSECTION 208.04.

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

A. MATERIALS HANDLING AND SPILL PREVENTION
B. STOCKPILE MANAGEMENT
C. GRADING AND SLOPE STABILIZATION
D. SURFACE ROUGHENING
E. VEHICLE TRACKING
F. TEMPORARY STABILIZATION
G. CONCRETE WASHOUT
1. CONCRETE WASHOUT WATER OR WASTE FROM FIELD LABORATORIES AND PAVING EQUIPMENT SHALL BE CONTAINED IN ACCORDANCE WITH SUBSECTION 208.05.
H. SAW CUTTING
I. NEW INLET/CULVERT PROTECTION
J. STREET CLEANING

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 (E)

8. RECORD KEEPING
A. RECORDS SHALL BE 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 2.5 ACRES OF DISTURBED AREA WITHIN THE CONSTRUCTION LIMITS (INCLUDES CDOT'S ROW) WHICH ARE NOT SURFACED. THE FOLLOWING TYPES AND RATES SHALL BE USED:

COMMON NAME	BOTANICAL NAME	POUNDS PLS/ACRE
BUFFALOGRASS	TEXOKA	2.08
BLUE GRAMMA	HACHITA	2.08
WESTERN WHEATGRASS	ARRIBA	2.08
SIDEOATS GRAMMA	VAUGHN	2.08
THICKSPIKE WHEATGRASS	CRITANA	1.04
STREAMBANK WHEATGRASS	SODAR	0.58
BLUE FLAX	LINUM PERENNE	0.58
Total		10.4

PREPARED BY:
DREXEL, BARRELL & CO.
ENGINEERS • SURVEYORS
3 SOUTH 7TH STREET
COLORADO SPRINGS, COLORADO 80905
CONSULTANT TIM G. MCCONNELL, P.E. (TIM@DBCO.NET)
DENVER • COLORADO SPRINGS • DENVER
GRAND JUNCTION • LONGLEY
STEAMBOAT SPRINGS

OWNER/DEVELOPER:
CITY OF FOUNTAIN
116 S MAIN STREET
FOUNTAIN, COLORADO 80817
(719) 322-2000
CONTACT: DUANE CREEKMORE

CONSTRUCTION DOCUMENTS FOR:
SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO

ISSUE	DATE
CDOT COMMENTS	1/12/2011
DESIGNED BY:	SLS
DRAWN BY:	GRS
CHECKED BY:	KEH
FILE NAME: 27928_SWMP	

COLORADO REGISTERED
TIM G. McCONNELL
33797
12-15-11
PROFESSIONAL ENGINEER

SWMP

PROJECT NO. C7928-11
DRAWING NO.
C-18
SHEET: 18 OF 26

EXHIBIT E, p. 21

Attachment A
Decision No. R13-0241
Docket No. 10A-409R
Page 53

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 SOIL.

C. MULCHING APPLICATION: APPLY 1 ½ TONS OF CERTIFIED WEED FREE HAY PER ACRE MECHANICALLY CRIMPED 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:

1. REFER TO THE SOIL PREPARATION SPECIFICATION FOR THE APPLIED FERTILIZER.

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.
2. AREAS WHERE SEED HAS NOT GERMINATED AFTER ONE SEASON SHALL BE EVALUATED BY THE ENGINEER AND CDOT LANDSCAPE ARCHITECT. AREAS THAT HAVE NOT GERMINATED SHALL HAVE SEED, MULCH AND MULCH TACKIFIER (OR BLANKET) APPLIED. WORK SHALL BE PAID FOR BY THE APPROPRIATE BID ITEM.
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 208.061.

11. TABULATION OF STORMWATER QUANTITIES

Pay Item	Description	Unit	Quantity
208	Silt Fence	LF	3,020
208	Check Dam	Each	14
208	Concrete Wash Out Structure	Each	1
208	Storm Drain Inlet Protection	Each	6
208	Stabilized Construction Entrance	Each	2
208	Sediment Removal and Disposal	Hour	24
208	Erosion Control Supervisor	Hour	24
212	Seeding (Native)	Acre	2.6
213	Mulching (Weed Free Hay)	Acre	2.6
216	Soil Retention Blanket (Spec)	Sy	1710

1. BMP MAINTENANCE SHALL BE PAID FOR AS: INCLUDED IN THE COST OF THE EROSION CONTROL DEVICE]
2. IT IS ESTIMATED THAT ONE CONCRETE WASHOUT STRUCTURES WILL BE REQUIRED ON THE PROJECT. ONE CONCRETE WASHOUT STRUCTURE SHALL BE USED FOR THE FIELD LABORATORIES.
3. IT IS ESTIMATED THAT TWO STABILIZED CONSTRUCTION ENTRANCE(S) WILL BE REQUIRED AS DIRECTED TO MINIMIZE VEHICLE TRACKING CONTROL. CONTRACTOR TO LOCATE BMP ON THE SWMP MAP.
4. MAINTENANCE OF SEEDED AREAS SHALL BE PAID FOR AS: INCLUDED IN THE PRICE OF THE WORK

PREPARED BY:
DREXEL, BARRELL & CO.
Engineers • Surveyors
OWNER/DEVELOPER:
CITY OF FOUNTAIN
CONSTRUCTION DOCUMENTS FOR:
SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO

ISSUE	DATE
CDOT COMMENTS	1/12/2011

DESIGNED BY: SLS
DRAWN BY: GES
CHECKED BY: KEH

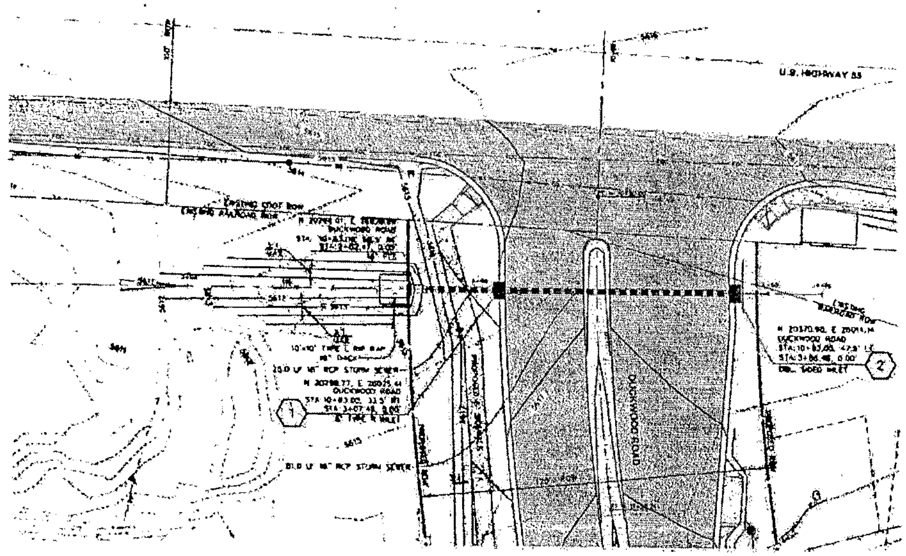
COLORADO REGISTERED PROFESSIONAL ENGINEER
TIM D. McCONNELL
33797
12-15-11

SWMP

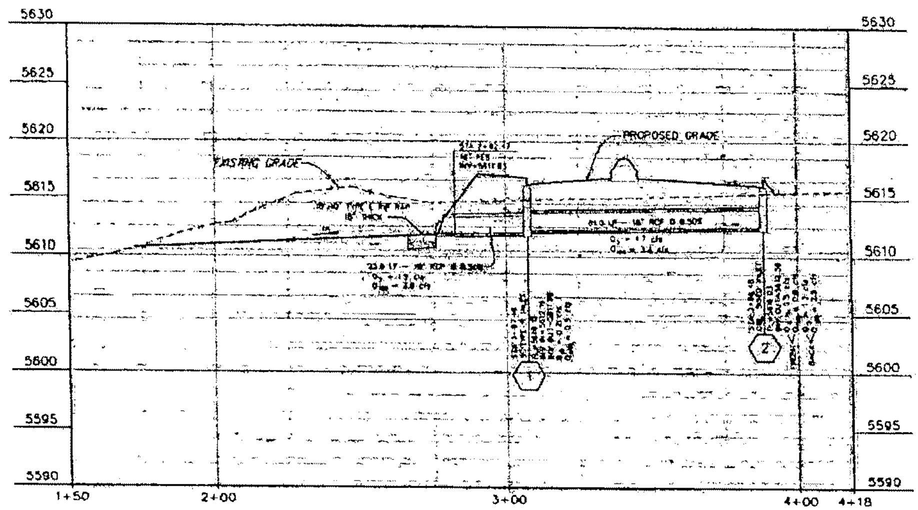
PROJECT NO. C7928-1
DRAWING NO.
C-19
SHEET: 19 OF 26

EXHIBIT E, p. 22

Attachment A
Decision No. R13-0241
Docket No. 10A-409R
Page 54



STORM SEWER PLAN VIEW
SCALE: HORIZ. 1"= 20'



STORM SEWER PROFILE VIEW
SCALES: HORIZ. 1"= 20'
VERT. 1"= 5'

PREPARED BY:

DREXEL, BARRELL & CO.
Engineers • Surveyors

OWNER/DEVELOPER:

CITY OF FOUNTAIN

CONSTRUCTION DOCUMENTS FOR:
SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO

ISSUE	DATE
CDOT COMMENTS	1/12/2011

HORIZONTAL: 1" = 20'
VERTICAL: 1" = 5'

STORM SEWER PLAN AND PROFILE

PROJECT NO. C7926-1

DRAWING NO.

C-20

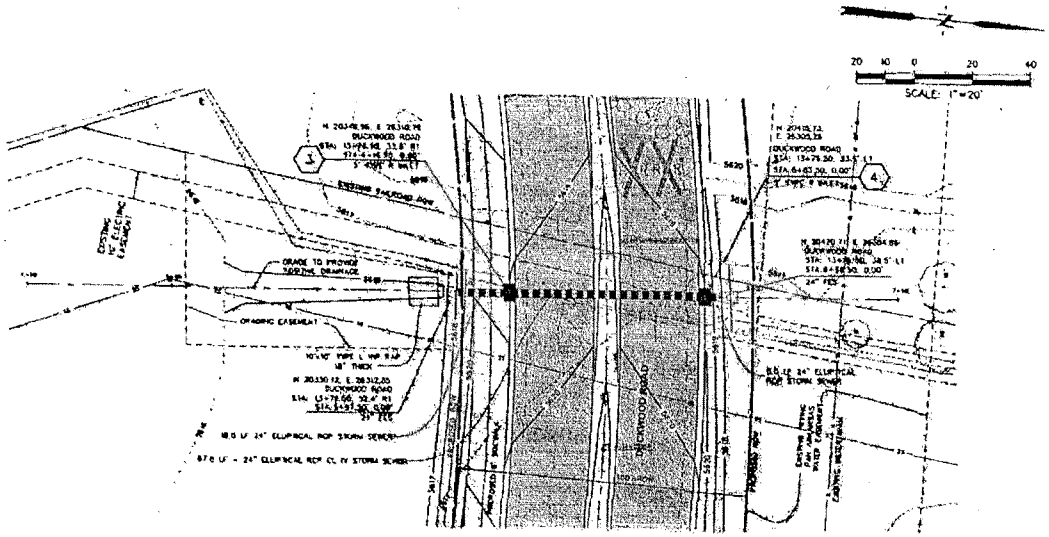
SHEET: 20 OF 26

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

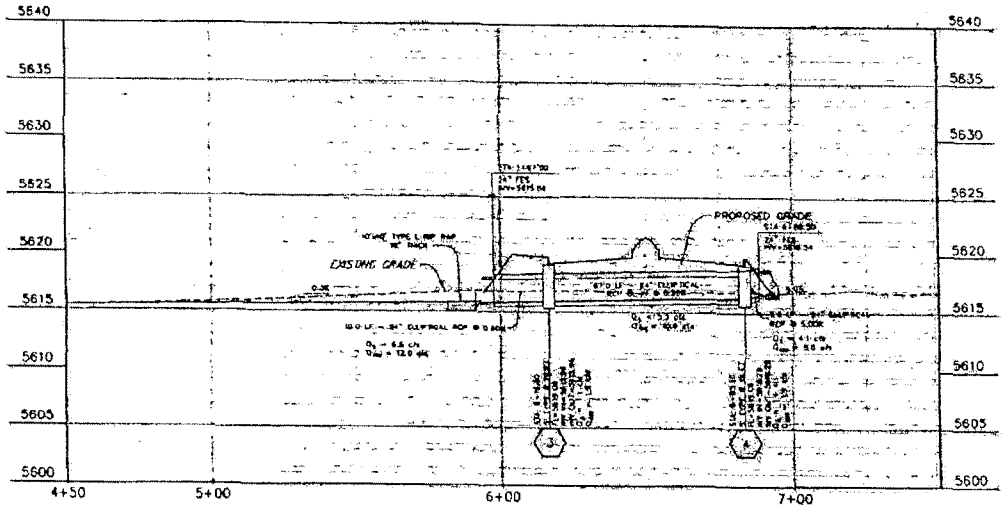
COLORADO REGISTERED PROFESSIONAL ENGINEER 33797 12-15-11

EXHIBIT E p.23

Attachment A
Decision No. R13-0241
Docket No. 10A-409R
Page 55



EAST DUCKWOOD CULVERT PLAN VIEW
SCALE: HORIZ. 1" = 20'



EAST DUCKWOOD CULVERT PROFILE VIEW
SCALES: HORIZ. 1" = 20'
VERT. 1" = 5'

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

PREPARED BY:
DREXEL, BARRELL & CO.
Engineers - Surveyors
CONTACT: TIMOTHY MACDONNELL, P.E.

OWNER/DEVELOPER:
CITY OF FOUNTAIN
CONTACT: DUANE CRECHWOOD

CONSTRUCTION DOCUMENTS FOR:
SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO

ISSUE	DATE
CDOT COMMENTS	1/13/2011

DESIGNED BY:	SLS
DRAWN BY:	SKS
CHECKED BY:	KSH
FILE NUMBER:	SDU

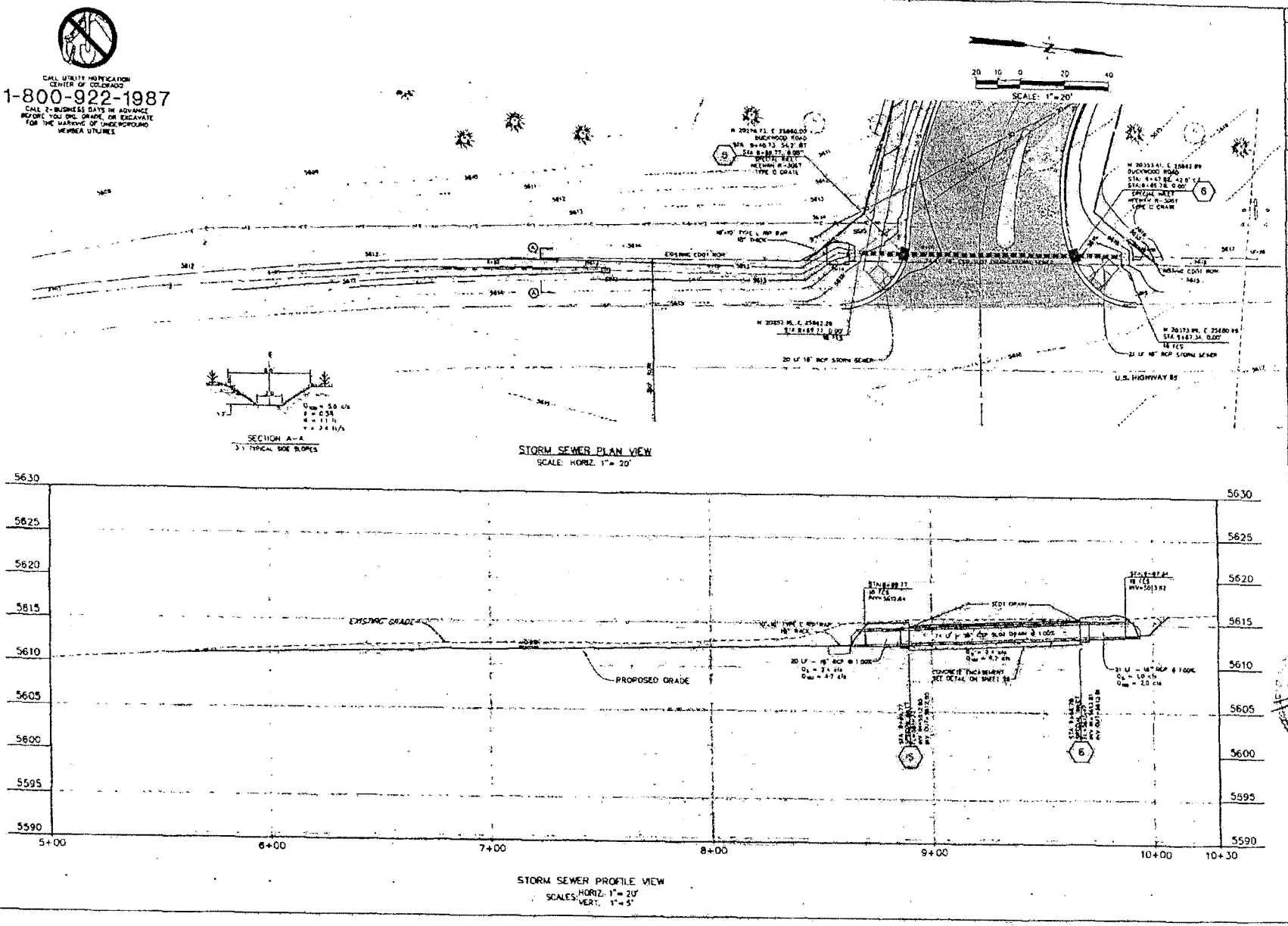
COLORADO REGISTERED
TIMOTHY D. MACDONNELL
33797
12-15-11
PROFESSIONAL ENGINEER

EAST DUCKWOOD CULVERT PLAN & PROFILE

PROJECT NO. C7928-1
DRAWING NO.
C-21
SHEET: 21 OF 26

EXHIBIT E pg. 22

Attachment A
Decision No. R13-0241
Docket No. 10A-409R
Page 56



PREPARED BY:

DREXEL, BARRELL & CO.
ENGINEERS - SURVEYORS

OWNER/DEVELOPER:

CITY OF FOUNTAIN

CONSTRUCTION DOCUMENTS FOR:

SH 85/DUCKWOOD

RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO

ISSUE	DATE
CDOT COMMENTS	1/12/2011

DESIGNED BY: SLS
DRAWN BY: CES
CHECKED BY: JMC
APPROVED BY: JMC

JAMES M. McCONNELL
33797
12-15-11
PROFESSIONAL ENGINEER

HORIZONTAL 1" = 20'
VERTICAL 1" = 5'

STORM SEWER PLAN AND PROFILE

PROJECT NO. C7828-1
DRAWING NO.

C-22

SHEET: 22 OF 26

EXHIBIT E, p.25

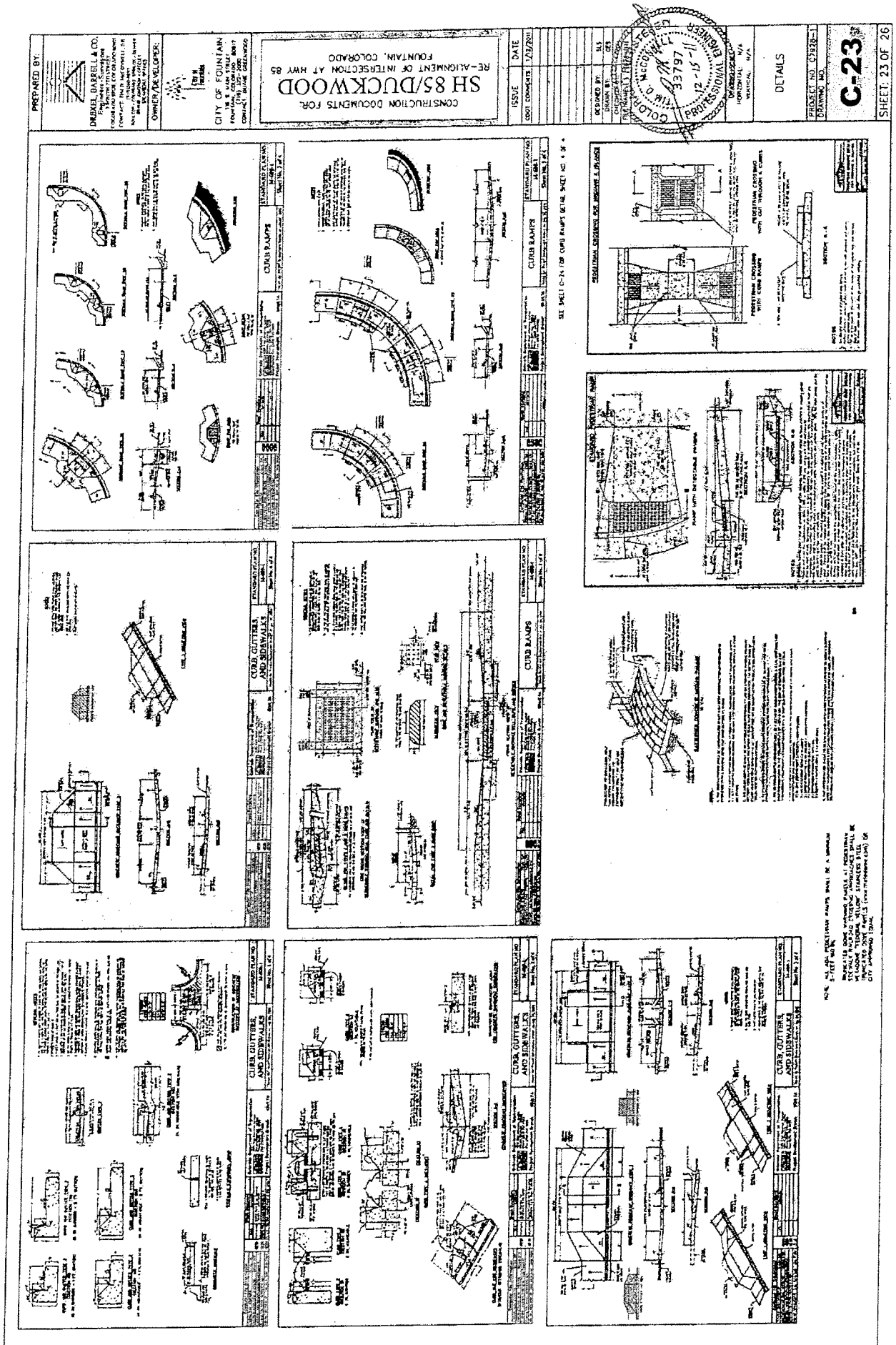
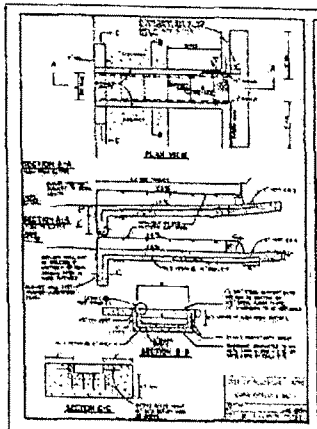
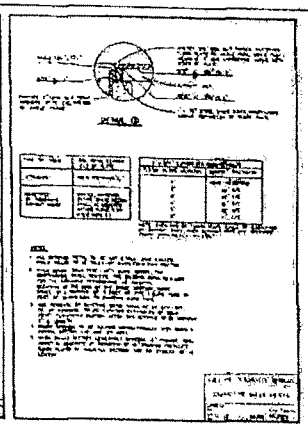
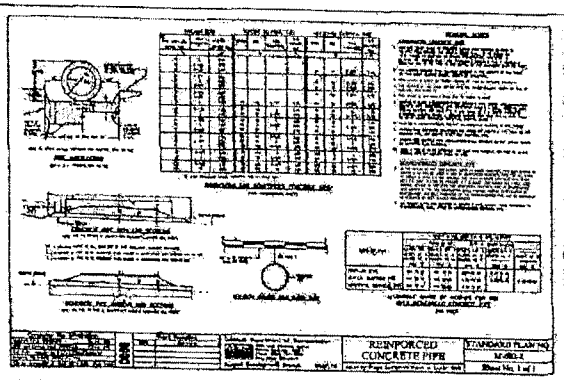
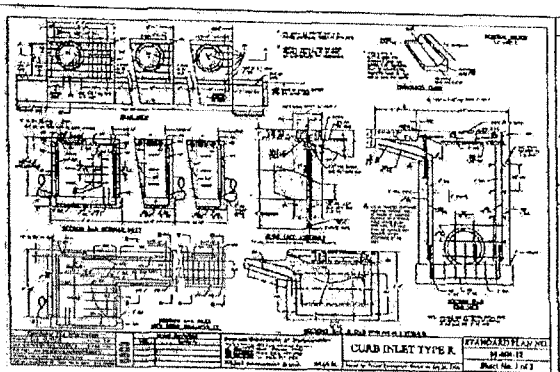


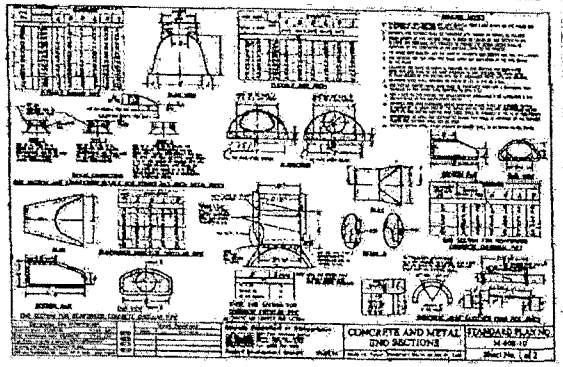
EXHIBIT E p.26

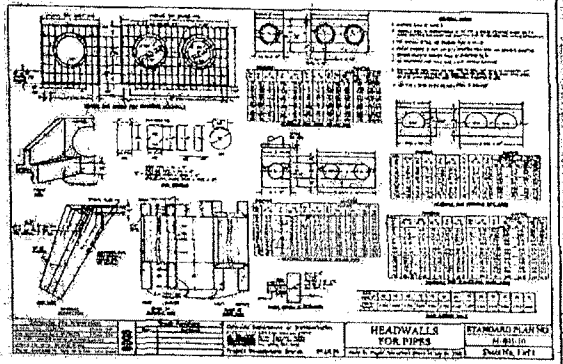


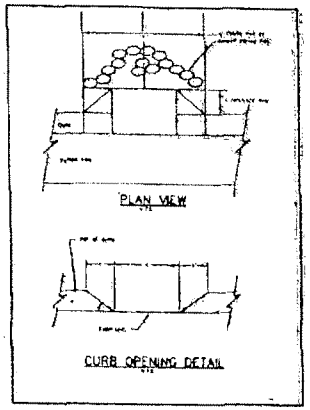


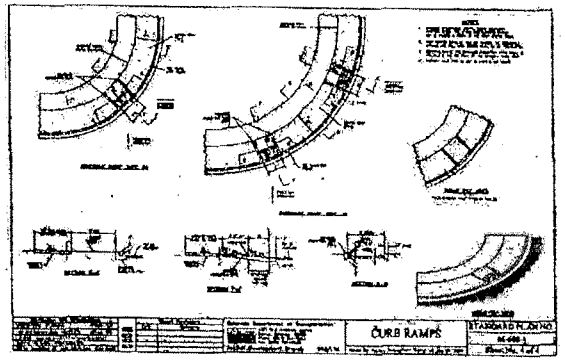






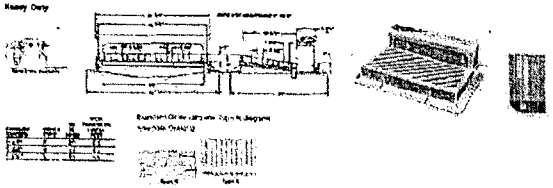






R-3067
Combination Inlet: Frame, Grate, Curb Box

Heavy Duty



PREPARED BY:

DRIXEL, BARRELL & CO.
Engineers - Surveyors
CONTACT: TODD MACDONALD, P.E.

OWNER/DEVELOPER:

CITY OF FOUNTAIN
CONTACT: DUANE GOETZWOOD

CONSTRUCTION DOCUMENTS FOR:

SH 85/DUCKWOOD

RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO

ISSUE	DATE
CDOT COMMENTS	1/13/2011

DESIGNED BY:	SLB
DRAWN BY:	CLS
CHECKED BY:	KSH
FILE (PATH):	P:\07926-1\

COLORADO REGISTERED
TIM D. MCCONNELL
33797
12-15-11
PROFESSIONAL ENGINEER

VERTICAL: N/A

DETAILS

PROJECT NO. C7926-1
DRAWING NO.

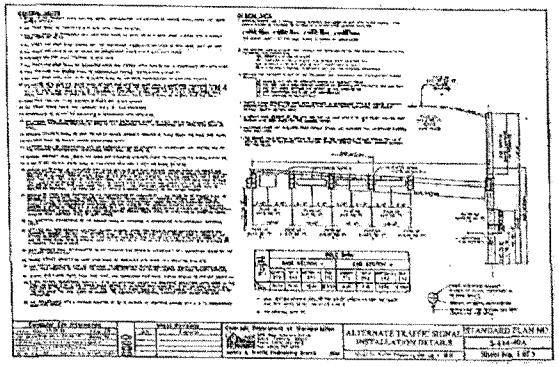
C-24

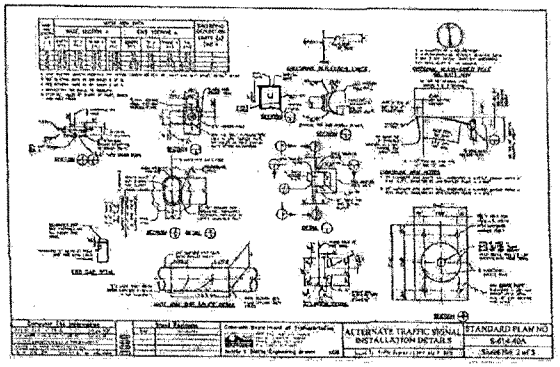
SHEET: 24 OF 26

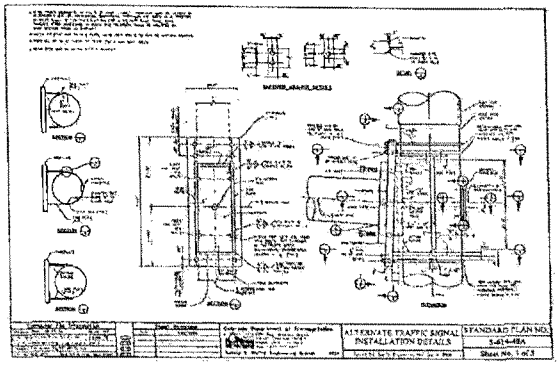
CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

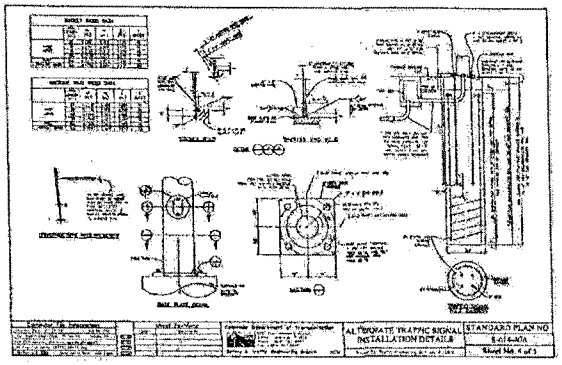
EXHIBIT E p. 27

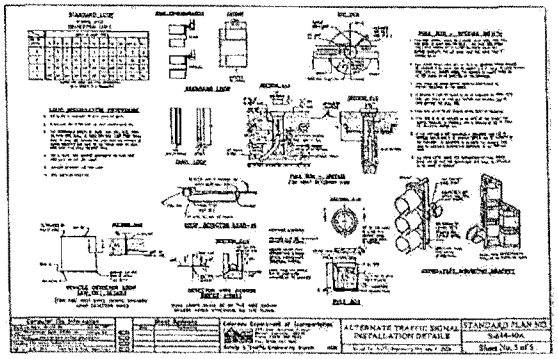
Attachment A
Decision No. R13-0241
Docket No. 10A-409R
Page 59











CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

PREPARED BY:
DREXEL, BARRELL & CO.
Engineers - Surveyors
1 NORTH TEJON STREET
COLORADO SPRINGS, COLORADO 80903
CONTACT: TIM D. MCCONNELL, P.E.
(719) 228-6647
80 SOUTH 27TH AVENUE - SUITE 201
BRIGHTON, COLORADO 80601
(303) 659-2313

OWNER/DEVELOPER:
CITY OF FOUNTAIN
116 S. MAIN STREET
FOUNTAIN, COLORADO 80817
(719) 322-2000
CONTACT: BRIAN MAYBEE

CONSTRUCTION DOCUMENTS FOR:
SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO

ISSUE	DATE
CDOT COMMENTS	1/12/2011

DESIGNED BY: MLS
DRAWN BY: CES
CHECKED BY: TDM
FILE NAME: C7928-PRO

COLORADO REGISTERED
TIM D. MCCONNELL
33797
12-15-11
PROFESSIONAL ENGINEER

HORIZONTAL: N/A
VERTICAL: N/A

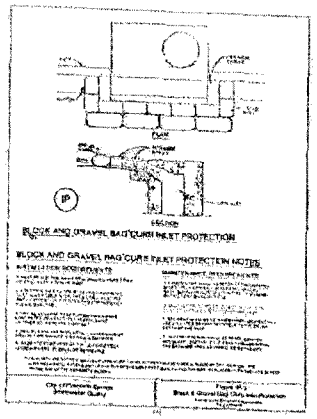
DETAILS

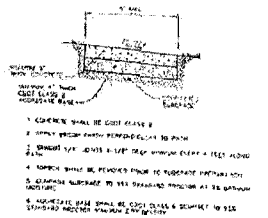
PROJECT NO. C7928-1
DRAWING NO.
C-25
SHEET: 25 OF 26

EXHIBIT E p.28

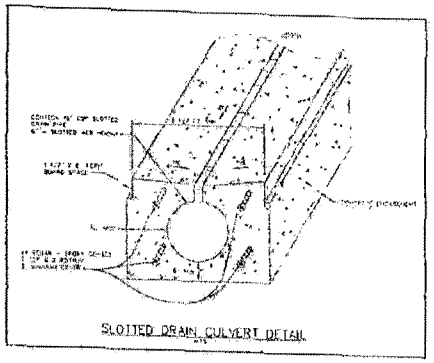
Attachment A
Decision No. R13-0241
Docket No. 10A-409R
Page 60

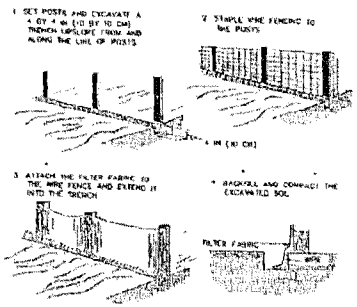
FIBER ROLLS/GRAVEL BAG CHECK DAM (CD)
NO SCALE



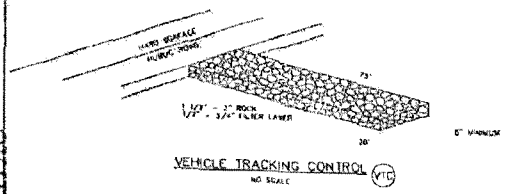


6' CONCRETE WALK
NO SCALE





SILT FENCE (SF)
NO SCALE



VEHICLE TRACKING CONTROL (VTC)
NO SCALE

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

PREPARED BY:
DREXEL, BARRELL & CO.
Engineers - Surveyors
3 SOUTH CASCADE
COLORADO SPRINGS, COLORADO 80903
(719) 633-2868
CONTACT: TYLER D. MCCONNELL, P.E.

OWNER/DEVELOPER:
CITY OF FOUNTAIN
116 S. MAIN STREET
FOUNTAIN, COLORADO 80817
(719) 322-3008
CONTACT: JUSTINE GREENWOOD

CONSTRUCTION DOCUMENTS FOR:
SH 85/DUCKWOOD
RE-ALIGNMENT OF INTERSECTION AT HWY 85
FOUNTAIN, COLORADO

ISSUE	DATE
CDOT COMMENTS	1/12/2011

DESIGNED BY: BLS
DRAWN BY: CES
CHECKED BY: TDM
FILE NAME:
HORIZONTAL: 1"=10'
VERTICAL: N/A

COLORADO REGISTERED
TYLER D. McCONNELL
33797
12-15-11
PROFESSIONAL ENGINEER

DETAILS

PROJECT NO. C7926-1
DRAWING NO.
C-26
SHEET: 26 OF 26

EXHIBIT E p. 29

Attachment A
Decision No. R13-0241
Docket No. 10A-409R
Page 61

EXHIBIT F
Software and hardware details – Fountain and CDOT

Item 1: City and CDOT agree to use 412F Prom Module including 128KB memory and a front panel laptop computer cable interface (C40) rather than manual jumper selection toggle switches.

Item 2: Flashing Yellow Arrow signal will be controlled by utilizing the BiTran 233 Firmware

- CDOT is requesting the Wapiti W4KIS HC11 to be replaced by MC 233. MC 233 is the McCain BiTran firmware (chip) in the local 170 controller. CDOT needs the City of Fountain to provide CDOT two spare MC 233 chips as well. The MC 233 has all the necessary logic to implement the Gate Down, Health Circuit and Flashing Yellow arrow as well as the normal railroad preemption and signal operations. This would allow the proper functionality and maintenance purposes.

- CDOT also needs licenses for 10 QuicLoad installs. QuicLoad is the McCain BiTran software that is only an upload /download program that communicates locally via a cable connected to the PC and the 170E controller directly.

- CDOT requires 2 cables ($70 each) for connecting the laptops to 170E controller. The cables are to be left in the intersection cabinet for the purpose of on street connectivity.

Item 3: The parties shall use Model 242-DC Railroad Preemption Isolator Cards for interconnection between the CDOT Traffic Signal Controller and the UPRR Crossing Signal Controller, as specified on Plan Sheet C-10.

EXHIBIT F