

OVERSIGHT / NHS	
FHWA Region VIII Oversight	■ No □ Yes
National Highway System	□ No ■ Yes

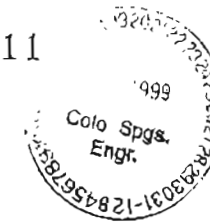
COLORADO DEPARTMENT OF TRANSPORTATION

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NUMBER	SHEET NO.
V.8	COLORADO	STA 115A-011	1
AS CONSTRUCTED			
NO REVISIONS		REVISED	VOID

PLAN AND PROFILE OF PROPOSED AS CONSTRUCTED

P.E. Project: FR-NH(CX) 115-1(4)
P.E. Code: 90044

FEDERAL AID PROJECT NO. STA 115A-011
STATE HIGHWAY NO. 115
EL PASO COUNTY



FINAL CONSTRUCTION

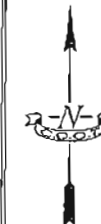
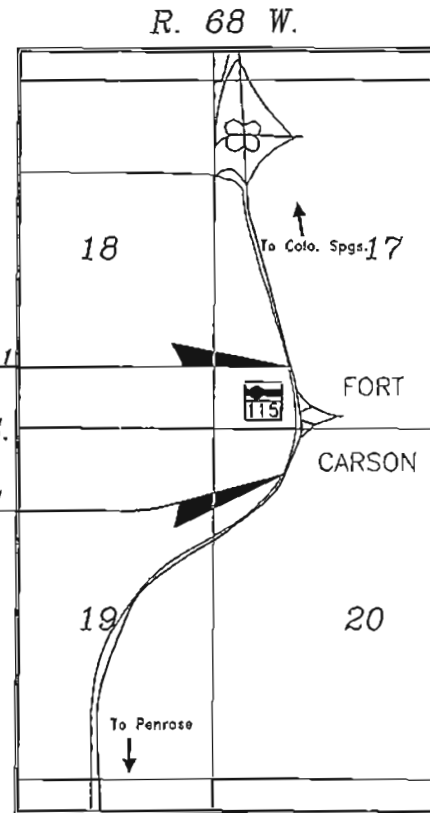
TABULATION OF LENGTH AND DESIGN DATA

STATION TO STATION	ROADWAY
	Linear meters
STA. 1+000 Begin STA 115A-011 = 280+69.89 ON D-AD 16(1) = M.P. 42.124	1200
STA. 2+200 End STA 115A-011 = 320+06.89 ON D-AD 16(1) = M.P. 41.378	
TOTAL	1200

SUMMARY	kilometers
ROADWAY NET & GROSS LENGTH	1.200

DESIGN DATA		
MAXIMUM DEGREE OF CURVE	=	13°07'21"
MAXIMUM GRADE	=	2.267%
MINIMUM SSD VERTICAL	=	>131m
MINIMUM SSD HORIZONTAL	=	>131m
MAXIMUM DESIGN SPEED	=	90 km/h
2016 DESIGN TRAFFIC VOLUME:		
ADT	=	30400
OHV	=	3105
TRUCK %	=	5

SCALES OF ORIGINAL DRAWINGS
ON PLAN Varies



INDEX OF SHEETS

TITLE AND INDEX SHEET	1
STANDARD PLANS LIST	2
TYPICAL SECTIONS AND TYPICAL SECTION NOTES	3-4
GENERAL NOTES	5
SUMMARY OF APPROXIMATE QUANTITIES	6-8
STORMWATER MANAGEMENT PLAN	9
STRUCTURE QUANTITIES TAB, SURFACING PLAN, SUMMARY OF EARTHWORK QUANTITIES AND SEEDING AND MULCHING SUMMARY	10
GEOMETRIC SHEET	11
INTERSECTION SHEET	12
LANE LAYOUT SHEET	13
TRAFFIC SIGNAL PLAN AND TABULATION OF QUANTITIES	14
TABULATION OF SIGNS	15
TRAFFIC SUMMARY SHEET	16
SIGNING AND STRIPING PLAN	17
SURVEY TABULATION SHEET	18
SURVEY CONTROL DIAGRAM	19
EXCAVATION AND BACKFILL FOR STRUCTURES SHEETS	20-21
CROSS SECTION SHEETS	22-28
STRUCTURE CROSS SECTION SHEETS	29-32

NEW AND REVISED STANDARDS
M-107-1 TEMPORARY EROSION CONTROL REVISED 3/24/97

AS CONSTRUCTED INFORMATION

CONTRACTOR: Rocky Mtn. Asphalt Res.	ENGINEER: Ed Hier
(Project or Resident)	9/14/98
PROJECT STARTED:	1/27/99
PROJECT COMPLETED:	D. Poling
AS CONSTRUCTED PLANS:	N.P. Engr. 1/27/99
APPROVED:	TITLE DATE

FINAL CONSTRUCTION

Computer File Information	
Creation Date:	06/09/97 Initials: JPC
Last Modification Date:	06/25/98 Initials: ram
Full Path:	\\proj\96044b\plans\sh_1
Drawing File Name:	Sh_1.dwg
Acad Ver:	R13c4 Scale: NTS Units: Metric

Sheet Revisions	

Colorado Department of Transportation

Region 2
905 Erie Avenue
Pueblo, CO 81002
Phone: (719) 546-5406 FAX: (719) 546-5414

Design Unit Ed Hier

Title and Index Sheet	Project No./Project Location/Project Code
	STA 115A-011
	Fl. Carson Main Gate
	12140
Sheet Number	1

PLAN NUMBER	M STANDARD TITLE	PAGE NUMBER
<input checked="" type="checkbox"/> M-100-1	STANDARD SYMBOLS	1
<input type="checkbox"/> M-107-1	TEMPORARY EROSION CONTROL	2
<input type="checkbox"/> M-203-1	APPROACH ROADS	3
<input checked="" type="checkbox"/> M-203-2	DITCH TYPES	4
<input type="checkbox"/> M-203-10	SUPERELEVATION CROWNED HIGHWAYS	5
<input type="checkbox"/> M-203-11	SUPERELEVATION DIVIDED HIGHWAYS SHOULDER PIVOT	6
<input type="checkbox"/> M-203-12	SUPERELEVATION STREETS	7
<input type="checkbox"/> M-203-13	SUPERELEVATION DIVIDED HIGHWAYS CENTER PIVOT	8
<input type="checkbox"/> M-205-1	EXCAVATION AND BACKFILL FOR STRUCTURES (3 SHEETS)	9
<input type="checkbox"/> M-206-2	EXCAVATION AND BACKFILL FOR BRIDGES	12
<input type="checkbox"/> M-210-1	MAILBOX SUPPORTS (2 SHEETS)	13
<input type="checkbox"/> M-214-1	PLANTING DETAILS	15
<input type="checkbox"/> M-412-1	CONCRETE PAVEMENT JOINTS	16
<input type="checkbox"/> M-412-2	CURBED CONCRETE PAVEMENT JOINTS	17
<input type="checkbox"/> M-504-1	STEEL CRIBBING	18
<input type="checkbox"/> M-506-1	GABIONS AND SLOPE MATTRESS	19
<input type="checkbox"/> M-510-1	STRUCTURAL PLATE CULVERT PIPE H-20 LOADING	20
<input type="checkbox"/> M-601-1	SINGLE CONCRETE BOX CULVERT (2 SHEETS)	21
<input type="checkbox"/> M-601-2	DOUBLE CONCRETE BOX CULVERT (2 SHEETS)	23
<input type="checkbox"/> M-601-3	TRIPLE CONCRETE BOX CULVERT (2 SHEETS)	25
<input type="checkbox"/> M-601-10	HEADWALL FOR PIPE CULVERTS	27
<input type="checkbox"/> M-601-11	TYPE "S" SADDLE HEADWALL FOR PIPE CULVERTS	28
<input type="checkbox"/> M-601-12	HEADWALLS AND CULVERT OUTLET PAVING	29
<input type="checkbox"/> M-601-20	WINGWALLS FOR PIPE OR BOX CULVERTS	30
<input checked="" type="checkbox"/> M-603-1	METAL AND PLASTIC CULVERT PIPE (2 SHEETS)	31
<input type="checkbox"/> M-603-2	REINFORCED CONCRETE PIPE	33
<input type="checkbox"/> M-603-3	PRECAST CONCRETE BOX CULVERT	34
<input checked="" type="checkbox"/> M-603-10	CONCRETE AND METAL END SECTIONS (2 SHEETS)	35
<input type="checkbox"/> M-604-10	INLET, TYPE C	37
<input checked="" type="checkbox"/> M-604-11	INLET, TYPE D	38
<input type="checkbox"/> M-604-12	CURB INLET, TYPE R (2 SHEETS)	39
<input type="checkbox"/> M-604-13	CONCRETE INLET, TYPE 13	41
<input type="checkbox"/> M-604-20	MANHOLES (3 SHEETS)	42
<input type="checkbox"/> M-605-1	SUBSURFACE DRAINS	45
<input type="checkbox"/> M-606-1	GUARDRAIL, TYPE 3, W-BEAM (12 SHEETS)	46
<input type="checkbox"/> M-606-12	GUARDRAIL, TYPE 4, CONCRETE BARRIER (6 SHEETS)	58

PLAN NUMBER	M STANDARD TITLE	PAGE NUMBER
<input type="checkbox"/> M-607-1	WIRE FENCES AND GATES (2 SHEETS)	64
<input type="checkbox"/> M-607-2	CHAIN LINK FENCE (3 SHEETS)	66
<input type="checkbox"/> M-607-3	BARRIER FENCE	69
<input type="checkbox"/> M-607-4	DEER FENCE AND GATE (2 SHEETS)	70
<input type="checkbox"/> M-607-10	PICKET SNOW FENCE	72
<input type="checkbox"/> M-608-1	CURB RAMPS	73
<input checked="" type="checkbox"/> M-609-1	CURBS AND GUTTERS	74
<input type="checkbox"/> M-611-1	CATTLE GUARD (2 SHEETS)	75
<input type="checkbox"/> M-613-1	CONVENTIONAL HIGHWAY LIGHTING (3 SHEETS)	77
<input type="checkbox"/> M-613-2	HIGH MAST LIGHTING (2 SHEETS)	80
<input type="checkbox"/> M-614-1	RUMBLE STRIPS	82
<input type="checkbox"/> M-615-1	EMBANKMENT PROTECTOR, TYPE 3	83
<input type="checkbox"/> M-615-2	EMBANKMENT PROTECTOR, TYPE 5	84
<input type="checkbox"/> M-616-1	INVERTED SIPHON (ALSO USE APPLICABLE M-603)	85
<input type="checkbox"/> M-620-1	FIELD LABORATORY, CLASS 1	86
<input checked="" type="checkbox"/> M-620-2	FIELD LABORATORY, CLASS 2	87
<input type="checkbox"/> M-620-11	FIELD OFFICE, CLASS 1	88
<input type="checkbox"/> M-620-12	FIELD OFFICE, CLASS 2	89
<input type="checkbox"/> M-629-1	SURVEY MONUMENTS (2 SHEETS)	90

PLAN NUMBER	S STANDARD TITLE	PAGE NUMBER
<input checked="" type="checkbox"/> S-612-1	TYPICAL DELINEATOR INSTALLATIONS (5 SHEETS)	93
<input checked="" type="checkbox"/> S-614-1	TYPICAL GROUND SIGN PLACEMENT	98
<input checked="" type="checkbox"/> S-614-2	CLASS I GROUND SIGN INSTALLATIONS	99
<input checked="" type="checkbox"/> S-614-3	CLASS II GROUND SIGN INSTALLATIONS	100
<input checked="" type="checkbox"/> S-614-4	CLASS III SIGNS, SHEET ALUMINUM PANELS (3 SHEETS)	101
<input checked="" type="checkbox"/> S-614-5	BREAK-AWAY SIGN SUPPORT DETAILS FOR GROUND SIGNS (2 SHEETS)	104
<input checked="" type="checkbox"/> S-614-6	CONCRETE FOOTINGS AND SIGN ISLANDS FOR CLASS III SIGNS (2 SHEETS)	106
<input checked="" type="checkbox"/> S-614-10	TYPICAL MARKER ASSEMBLY INSTALLATIONS	108
<input checked="" type="checkbox"/> S-614-11	MILEPOST SIGN AND INSTALLATION	109
<input type="checkbox"/> S-614-12	STRUCTURE NUMBER INSTALLATION (BRIDGE INFORMATION SHEET)	110
<input checked="" type="checkbox"/> S-614-14	FLASHING BEACON AND SIGN INSTALLATION (2 SHEETS)	111
<input checked="" type="checkbox"/> S-614-20	TYPICAL POLE MOUNT SIGN INSTALLATION	113
<input type="checkbox"/> S-614-21	CONCRETE BARRIER SIGN POST INSTALLATIONS	114
<input checked="" type="checkbox"/> S-614-22	TYPICAL MULTI-SIGN INSTALLATIONS	115
<input checked="" type="checkbox"/> S-614-40	TYPICAL TRAFFIC SIGNAL INSTALLATION DETAILS (3 SHEETS)	116
<input checked="" type="checkbox"/> S-627-1	TYPICAL PAVEMENT MARKINGS (4 SHEETS)	119
<input checked="" type="checkbox"/> S-630-1	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION (9 SHEETS)	123
<input checked="" type="checkbox"/> S-630-2	BARRICADES, DRUMS, CONCRETE BARRIERS (TEMP) & VERTICAL PANELS	132
<input checked="" type="checkbox"/> S-630-3	FLASHING BEACON (PORTABLE) DETAILS	133

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

COLORADO
DEPARTMENT OF TRANSPORTATION

STANDARD PLANS LIST

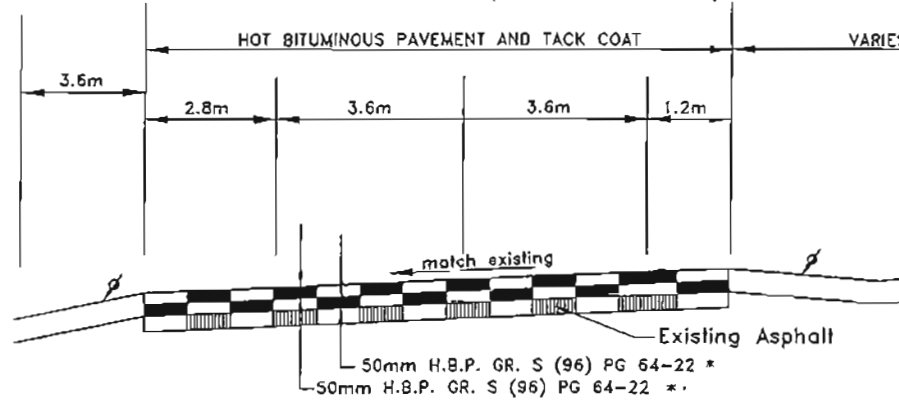
M & S STANDARDS NOVEMBER 1992

Computer File Information		Sheet Revisions		Colorado Department of Transportation		STANDARD PLANS LIST (With Metric Units 1994)		Project No./Project Location/Project Code	
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Last Modification Date:	06/19/98	Initials:	rem			Design Unit	Ed Hier	12140	
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Drawing File Name:	SH_2.DWG							2	
Acad Ver.:	R13c4	Scale:	1:1	Units:	Metric				

MAINLINE TYPICAL SECTION

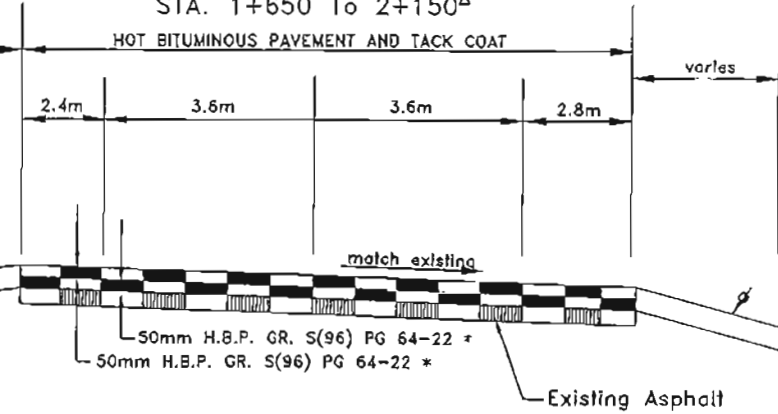
NORTHBOUND LANES

STA. 1+000 To 2+200(S.B. STATIONING)



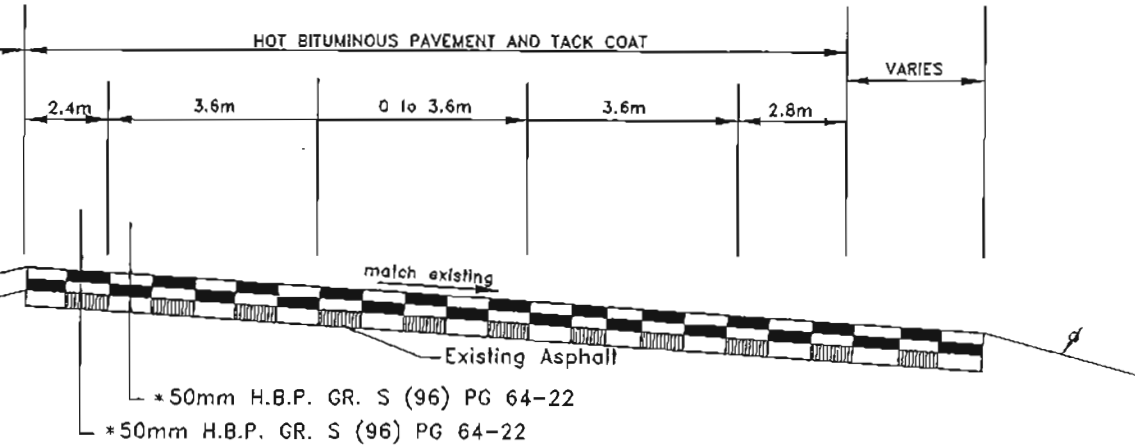
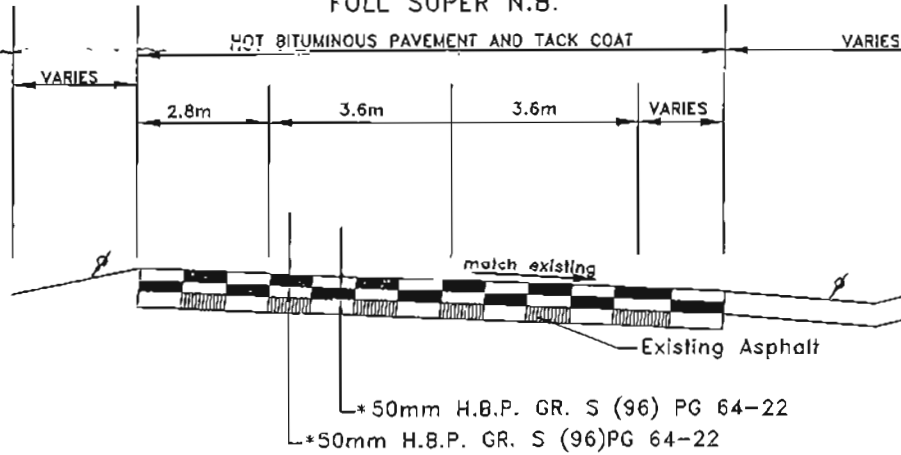
SOUTHBOUND LANES

STA. ^Δ1+050 To 1+150
STA. 1+650 To 2+150^Δ



FULL SUPER N.B.

STA. 1+150 To 1+282 ∞
STA. 1+650 To 2+200 ∞



* APPROXIMATE THICKNESS

∞ See Cross Section Sheets for Full Depth Sections

Computer File Information			
Creation Date:	04/01/98	Initials:	reM
Last Modification Date:	06/25/98	Initials:	rem
Full Path:	\\PROJ\900448\BPLANS\900447SEC		
Drawing File Name:	S00447sec.dwg		
Acad Ver.:	RIJCA	Units:	Metric

Sheet Revisions			

Colorado Department of Transportation

Region 2
305 Erie Avenue
Pueblo, CO 81002
Phone: (719) 546-5406 FAX: (719) 546-5414

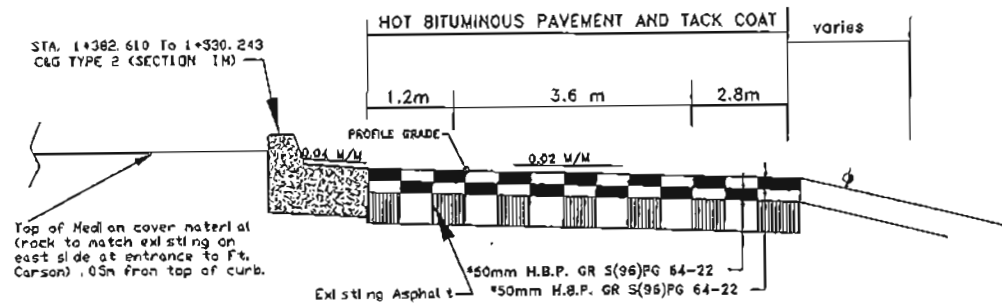
Design Unit Ed Hier

Typical Section

Project No./Project Location/Project Code
STA 115A-011
FT. CARSON MAIN GATE
12140
Sheet Number 3

TYPICAL(SOUTHBOUND CURB SECTION)

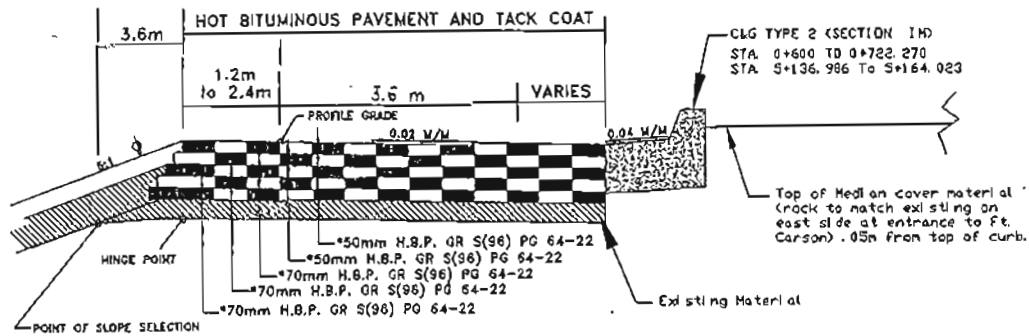
STA. 1+382.610 STA. 1+530.243



* APPROXIMATE THICKNESS

TYPICAL SECTION(DECCEL & ACCEL)

STA. 0+500 TO STA. 0+725
STA. 5+130 TO STA. 5+295



* APPROXIMATE THICKNESS

TYPICAL SECTION NOTES:

THE DEPTH AND WIDTH OF THE SIDE DITCH SHALL BE VARIED WHERE NECESSARY IN ORDER TO PROVIDE PROPER DRAINAGE.

'H'	FILL SLOPES	CUT SLOPES
7.3M OR LESS	6:1	3:1
7.3M TO 12.2M	4:1	3:1
12.2M OR MORE	3:1	3:1
ALL		3:1

BREAK POINTS ON SLOPES AND IN BOTTOMS OF DITCHES SHALL BE ROUNDED DURING CONSTRUCTION FOR A PLEASING APPEARANCE. SEE STANDARDS FOR DETAIL OF CUT SLOPE TREATMENT, FLARING AND WIDENING.

THE CONTRACTOR WILL BE REQUIRED TO PLACE TOPSOIL TO THIS LINE AFTER COMPLETION OF PAVING OPERATIONS (< 2 m WIDTH).

THE APPROACHES TO THE PROJECT WILL BE CONSTRUCTED AS FOLLOWS:

SOUTHBOUND 1+000 to 1+050 and 2+150 to 2+200 HBP GR S (96) PG 64-22

Computer File Information			Sheet Revisions			Colorado Department of Transportation			Project No./Project Location/Project Code			
Creation Date:	04/01/98	Initials: rem	01/01	XXXX	10X	<p>Region 2 305 Erie Avenue Pueblo, CO 81002 Phone: (719) 546-5406 FAX (719) 546-5414</p>	<h1>Typical Section</h1>			STA 115A-011		
Last Modification Date:	06/22/98	Initials: rem								FT. CARSON MAIN GATE		
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Drawing File Name	90044SEC.DWG									Sheet Number		
Acad Ver	R13c4	Not to Scale	Units:	Metric						4		
Design Unit						Ed Hier						

GENERAL NOTES

FOR PRELIMINARY PLAN QUANTITIES OF PAVEMENT STRUCTURE MATERIALS, THE FOLLOWING RATES OF APPLICATION WERE USED

EMULSIFIED ASPHALT(SLOW-SETTING)(UNDILUTED) @ 0.226 L/m²
 HBP (GRADING S)(96) PG 64-22 @ 59.674 kg/m²/25.44mm

RATES OF APPLICATION SHALL BE AS DETERMINED BY THE ENGINEER AT THE TIME OF APPLICATION.

IT IS ESTIMATED THAT 44,885 LITERS OF EMULSIFIED ASPHALT (SLOW-SETTING) WILL BE REQUIRED FOR THIS PROJECT.

THE FOLLOWING SHALL BE FURNISHED WITH BITUMINOUS PAVER:

1. A SKI TYPE DEVICE AT LEAST 9m IN LENGTH.
2. SHORT SKI OR SHOE.

TYPE OF COMPACTION FOR THIS PROJECT WILL BE AASHTO T99. DEPTH OF ALL MOISTURE-DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS: FULL DEPTH OF ALL EMBANKMENTS, BASES OF CUTS AND FILLS SHALL BE 150 mm. COMPACTION OF BASES OF CUTS AND FILLS SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN EMBANKMENT MATERIAL (C.I.P.)

SWEEPING OF DIRT AND GRAVEL FROM MAT TO BE OVERLAYED WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF ITEM 403.

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

TYPE OF COMPACTION FOR THIS PROJECT WILL BE AASHTO T 99

THE MINIMUM THICKNESS OF TOPSOIL SHALL BE 100 mm AND PLACED 2m WIDE. IT IS ESTIMATED THAT 450 CUBIC METERS WILL BE REQUIRED, BASED ON AVERAGE THICKNESS, AND WILL BE OBTAINED FROM A CONTRACTOR SOURCE. TOPSOIL WILL BE PLACED AS FOLLOWS:

SOUTHBOUND WEST SIDE	120
SOUTHBOUND MEDIAN	120
NORTHBOUND MEDIAN	120
NORTHBOUND EAST SIDE	90
TOTAL	450

EXISTING PAVEMENT IS TO BE SAW CUT, TO OBTAIN A VERTICAL CUT AS DIRECTED BY THE ENGINEER.

IT IS ESTIMATED THAT 39 REMOVAL OF DELINEATORS WILL BE REQUIRED ON THIS PROJECT.

IT IS ESTIMATED THAT 101 DELINEATOR (TYPE I) AND 26 DELINEATOR (TYPE II) WILL BE REQUIRED AND INSTALLED FOR THIS PROJECT. SEE STANDARD S-612-1 STEEL POSTS SHALL BE USED FOR DELINEATORS

REFLECTORS:

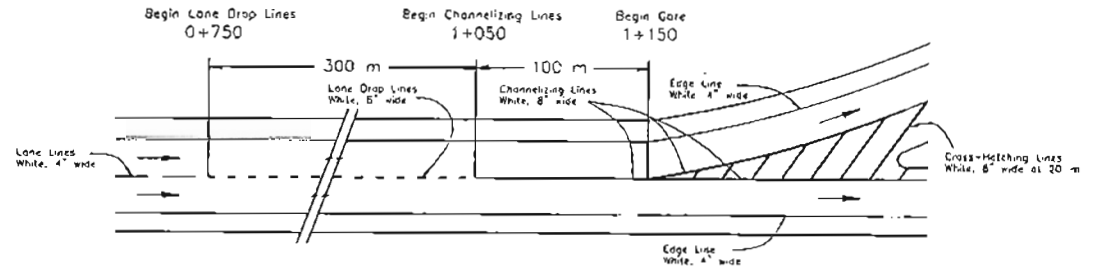
CRYSTAL	62
YELLOW	79
RED	12

IT IS ESTIMATED THAT 25 METERS OF REMOVAL OF CURB AND GUTTER WILL BE REQUIRED FOR THIS PROJECT

IT IS ESTIMATED THAT 335 METERS OF CURB AND GUTTER TYPE 2(SECTION IM) WILL BE REQUIRED FOR MEDIAN ISLAND BETWEEN THE NORTHBOUND AND SOUTHBOUND LANES AND THE NORTHBOUND ON RAMP ISLAND

IT IS ESTIMATED THAT 40 HOURS OF BLADING IN THE 150 HORSEPOWER RANGE FOR SHAPING DITCHES WILL BE REQUIRED FOR THIS PROJECT. TOPSOIL, EMBANKMENT MATERIAL (CIP) AND GRADING FOR SOUTHBOUND DECELERATION AND ACCELERATION AREAS ARE NOT TO BE INCLUDED IN BLADING HOURS.

IT IS ESTIMATED THAT 1000 SQ. METERS (50 MM THICK) OF MEDIAN COVER MATERIAL (STONE) WILL BE REQUIRED FOR THIS PROJECT TO BE PLACED IN THE ISLAND BETWEEN THE SOUTHBOUND OFF RAMP AND SOUTHBOUND THROUGH LANE. QUANTITY TO BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO PLACEMENT. IN ADDITION TO SPECIFICATION CONFORMANCE, THIS ROCK SHALL MATCH THE EXISTING ROCK IN THE EXISTING ISLANDS, NORTHBOUND OFF AND ON RAMP AT THE FORT CARSON ENTRANCE



DETAIL OF GORE TRANSITION STRIPING

Sta 0+750 to 1+150

Computer File Information				Sheet Revisions				Colorado Department of Transportation				Project No./Project Location/Project Code	
Creation Date	05/29/98	Initials	rem	mm/yy	xxxx	Design Unit	Ed Hler	Region 2 905 Erie Avenue Pueblo CO 81002 Phone: (719) 546-5406 FAX (719) 546-5414		STA 115A-011			
Last Modification Date	06/29/98	Initials	rem					DOT		Fl. Carson Main Gate			
Full Path	\\Proj\90044b\plans\gennote.dwg							DESIGN & CONSTRUCTION		12140			
Drawing File Name:	GENNOTE.DWG							General Notes		Sheet Number 5			
Acad Ver.: R13c4	Scale:	N/S	Units:	Metric				General Notes		Sheet Number 5			

SUMMARY OF APPROXIMATE QUANTITIES

AS CONSTRUCTED	C D O T	FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.
NO REVISIONS <u>1/22/99</u> REVISED <input type="text"/> VOID <input type="text"/>	XIII	COLO.		STA 115A-011	6

INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY												PROJECT TOTALS	
						PLAN	AS CONST.	PLAN	AS CONST.										
BOOK	PAGE	SHEET																	
			202	REMOVAL OF DELINEATOR	EACH	39	39											39	39
			202	REMOVAL OF CURB	M	25	24.8										25	24.8	
			202	REMOVAL OF ASPHALT MAT	M2	2438	2868.4										2438	2868.4	
			202	REMOVAL OF PAVEMENT MARKING	M2	10	33.7										10	33.7	
			202	REMOVAL OF GROUND SIGN	EACH	37	33										37	33	
			203	EMBANKMENT MATERIAL (COMPLETE IN PLACE)	M3	2250	4647										2250	4647	
			203	BLADING	HR	10	41.0										10	41.0	
			207	TOPSOIL	M3	150	0										150	0	
			208	EROSION BALES (VEED FREE)	EACH	33	51.0										33	51.0	
			210	RESET GROUND SIGN	EACH	2	3										2	3	
			212	SEEDING (NATIVE)	HA	142	2.49										142	2.49	
			212	MULCHING (VEED FREE)	HA	100	2.49										100	2.49	
			213	MULCH TACKIFIER	KG	170	419.88										170	419.88	
			403	HOT BITUMINOUS PAVEMENT (GRAADING S)(ASPHALT) (96)(PG 64-22)	T	9770	9579.36										9770	9579.36	
			411	EMULSIFIED ASPHALT (SLOW-SETTING)	L	11000	16974.0										11000	16974.0	
			603	600 MM CORRUGATED STEEL PIPE	M	60	92.0										60	92	
			603	1200 MM CORRUGATED STEEL PIPE	M	155	21.2										155	21.2	
			603	1200 MM EQUIVALENT CORRUGATED STEEL PIPE ARCH	M	20	23.0										20	23	
			603	600 MM STEEL END SECTION	EACH	2	2										2	2	
			603	1200 MM STEEL END SECTION	EACH	1	1										1	1	
			603	1200 MM EQUIVALENT ARCH STEEL END SECTION	EACH	4	4										4	4	
			604	INLET TYPE D (2 M)	EACH	2	2										2	2	
			609	CURB AND GUTTER TYPE 2 (SECTION I-W)	M	335	345										335	345	
			610	MEDIAN COVER MATERIAL (STONE)	M2	1000	1057.7										1000	1057.7	
			612	DELINEATOR (TYPE I)	EACH	101	118										101	118	
			612	DELINEATOR (TYPE II)	EACH	26	16										26	16	
			613	50 MM ELECTRICAL CONDUIT	M	550	398										550	398	
			613	75 MM ELECTRICAL CONDUIT (JACKED)	M	30	100.0										30	100	
			613	75 MM ELECTRICAL CONDUIT (JACKED)	M	110	85.0										110	85	
			613	LUMINAIRE HIGH PRESSURE SODIUM (400 WATT)	EACH	2	2										2	2	
			614	SIGN PANEL (CLASS I)	M2	90	11.3										90	11.3	
			614	SIGN PANEL (CLASS II)	M2	90	9.0										90	9.0	

DELETED

SUMMARY OF APPROXIMATE QUANTITIES

AS CONSTRUCTED
 NO REVISIONS 1/27/99 REVISED VOID

C.F. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.
VIII	COLO.	STA 115A-011	7

INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY												PROJECT TOTALS	
						PLAN	AS CONST.	PLAN	AS CONST.										
			614	SIGN PANEL (CLASS III)	M2	21.3	18.8											21.3	18.8
			614	STEEL SIGN POST (U-3)	M	4.2	5.4											4.2	5.4
			614	STEEL SIGN POST (V 200X27)	M	12	12											12	12
			614	STEEL SIGN POST (50 MM ROUND)	M	76.7	75.6											76.7	75.6
			614	STEEL SIGN POST (65 MM ROUND)(SLIPBASE)	M	60.4	50.0											60.4	50.0
			614	CONCRETE FOOTING (TYPE 3)	EACH	2	Z											2	Z
			614	TRAFFIC SIGNAL FACE (300-300-300)	EACH	8	8											8	8
			614	TRAFFIC SIGNAL VEHICLE DETECTOR (MICRO WAVE TYPE)	EACH	2	Z											2	Z
			614	TRAFFIC SIGNAL-LIGHT POLE STEEL (1 MAST ARM) (INSTALL ONLY)	EACH	2	Z											2	Z
			614	TRAFFIC SIGNAL POLE STEEL (1 MAST ARM) (INSTALL ONLY)	EACH	1	1											1	1
			614	TRAFFIC SIGNAL CONTROLLER (TYPE 170)	EACH	1	1											1	1
			620	FIELD LABORATORY (CLASS 1)	EACH	1	0											1	0
			620	SANITARY FACILITY	EACH	1	1											1	1
			625	CONSTRUCTION SURVEYING	L S	1	1											1	1
			626	MOBILIZATION	L S	1	1											1	1
			627	PAVEMENT MARKING PAINT	L	28	269.0											28	269.0
			627	EPOXY PAVEMENT MARKING	L	200	430.0											200	430.0
			627	PREFORMED PLASTIC PAVEMENT MARKING (TYPE A)	M2	100	0											100	0
			630	FLAGGING	HOUR	100	535											100	535
			630	TRAFFIC CONTROL SUPERVISOR	DAY	28	34											28	34
			630	TRAFFIC CONTROL INSPECTION	DAY	10	13											10	13
			630	FLASHING BEACON (PORTABLE)	EACH	2	Z											2	Z
			630	BARRICADE (TYPE 3 H-A) (TEMPORARY)	EACH	5	5											5	5
			630	DIRECTIONAL BARRICADE	EACH	20	20											20	20
			630	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE B)	EACH	36	32											36	32
			630	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE C)	EACH	8	8											8	8
			630	CONSTRUCTION TRAFFIC SIGN (SPECIAL)	M2	20.7	25.8											20.7	25.8
			630	ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL (C TYPE)	EACH	2	1											2	1
			630	DRUM CHANNELIZING DEVICE	EACH	200	150											200	150
			630	DRUM CHANNELIZING DEVICE (WITH LIGHT) (FLASHING)	EACH	5	10											5	10
			630	DRUM CHANNELIZING DEVICE (WITH LIGHT) (STEADY BURN)	EACH	10	0											10	0

DELETED

DELETED

DELETED

1-AUG-99 11:27:51 AM C:\TEMP\K11381.DXF

SUMMARY OF APPROXIMATE QUANTITIES

AS CONSTRUCTED	C D O T	FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.
NO REVISIONS <u>1/22/99</u> REVISED <input type="text"/> VOID <input type="text"/>		VIII	COLO.	STA 115A-011	8

INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY												PROJECT TOTALS		
						PLAN	AS CONST.	PLAN	AS CONST.											
			600	TRAFFIC CONE FORCE ACCOUNT =====	EACH	200	200												200	200
			700	F/A MINOR CONTRACT REVISIONS	F A	1	0												1	0
			700	F/A DJT PILOT	F A	1	0												1	0
			700	F/A QUALITY INCENTIVE PAYMENT	F A	1	1												1	1
			700	F/A ESB PROGRAM	F A	1	0												1	0
			700	F/A SMOOTHNESS INCENTIVE PAYMENT	F A	1	1												1	1
			700	F/A EROSION CONTROL	F A	1	0												1	0
			700	F/A EXCAVATION & BACKFILL UNSTABLE MATERIAL	F A	1	0												1	0
			700	F/A POWER SOURCE CONNECTION	F A	1	1												1	1
			700	F/A SIGNAL POLE REIMBURSEMENT	F A	1	0												1	0
			20%	REMOVAL OF ASPHALT MAT (PLANING) CMO NO. 3	MZ	0	4878.8												0	4878.8
			900	ADDED ITEM (LUMP SUM)/CMO NO. 1, 2, 3 Temp Signal Install		0	1												0	1
			610	MEDIAN COVER MATERIAL (BITUMINOUS) CMO # 4	T	0	140.73												0	140.73

DELETED

NATIVE SEEDING

Soil preparation*, fertilizer*, seeding and mulching will be required for an estimated 1.6 hectares of disturbed area within the right-of-way limits which are not surfaced. The following types and rates shall be used:

COMMON NAME	BOTANICAL NAME	kgs pls/ha
Thickspike wheatgrass	Elymus lanceolatus spp. dasyachyum	4.5
Blue grama	Bouteloua gracilis v. Moench	1.1
Western wheatgrass	Pascopyrum smithii v. Arriba	5.6
Sideoats grama	Bouteloua curtipendula v. Vaughn	3.9
Galleta	Hilaria jamesii v. Viva	0.6
Switchgrass	Panicum virgatum v. Nebr 28	1.1
Plains coreopsis	Coreopsis tinctoria	0.3
Blue flax	Linum lewisii	1.1
Scarlet globemallow	Sphaeralcea coccinea	0.3
Blanket flower	Gallardia aristata	1.1
TOTAL		19.6

SEEDING APPLICATION: Drill seed 6.25 mm to 12.5 mm into the topsoil. In areas not accessible to a drill hand broadcast at double the above rate and rake 6.25 mm to 12.5 mm into the topsoil.

MULCHING APPLICATION: 3.4 metric tons of certified weed free hay per hectare mechanically crimped into the topsoil in combination with an organic mulch tackifier per special provision 213.

Notes:

Disturbed surfaces shall be left in a roughened condition at all times.

Placement of topsoil, seeding and mulching will not be done in a single operation, but shall be completed after each construction phase. It is estimated that two mobilizations for topsoil, seeding and mulching shall be required and shall be included in the price of the work.

When disturbed area exceeds limits referenced in the standard special provision 208, during the summer when seeding is not allowed, apply 3.4 metric tons of certified weed free hay per hectare mechanically crimped into the soil. It is estimated that two mobilizations will be required and shall be included in the price of the work.

FOR INFORMATION ONLY

FERTILIZER	AVAILABLE (%)	kgs/ha
Nitrogen	18	30
Phosphorus	46	77
Potassium	0	0
Nitrogen		31 kgs
Phosphorus		79 kgs
Soil preparation		1.02 ha

PROJECT TOTALS:

PAY ITEM	DESCRIPTION	UNIT	QUANTITY
208	EROSION BALES (WEED FREE)	EACH	93**
212	SEEDING (NATIVE)	ha	1.02
213	MULCHING (WEED FREE HAY)	ha	1.02
213	MULCH TACKIFIER	kgs	172
700	EROSION CONTROL	FA	1

**Placed at Type D and culvert inlets at STA 1+266.755, 1+269.763 and 1+461.50, others placed as directed by the Engineer.

Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		Stormwater Management Plan		Project No./Code	
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Drawing File Name:								Sheet Subset:		Subset Sheets:	1 of 1
Acad Ver.	R13	Scale:		Units:	metric	Sheet Scale:	1: 1	Region 2		Sheet Number 9	



905 1/2 Erie Avenue
Pueblo, CO 81001
Phone: (719) 546-5406 FAX: (719) 546-5414

SEEDING AND MULCHING SUMMARY

LOCATION	SQ. M.
SOUTHBOUND WEST SIDE	2400
MEDIAN	6008
NORTHBOUND EAST SIDE	1800
TOTAL	10208 = 1.02 HA

SEEDING AND MULCHING TO BE 2 METERS WIDE ADJACENT TO OVERLAY; MEDIAN TO BE FULL WIDTH ADJACENT FULL DEPTH HBP

SUMMARY OF EARTHWORK QUANTITIES

EMBANKMENT MATERIAL (CIP)	CU. M.
SOUTH BOUND RAMP WIDENING	1884
1+269.76 600MM PIPE EXTENSION	32
1+080 TO 1+289.70 MEDIAN DITCH REGRADE	336
	2252
ROADWAY QUANTITY BALANCE (FOR INFORMATION ONLY)	
EXCAVATION	
ADDITIONAL EXCAVATION FROM CONTRACTOR'S SOURCE	2702
EMBANKMENT	2252
EMBANKMENT X FACTOR (1.20)	2702

STRUCTURE QUANTITIES

LOCATION	CULVERT PIPE			END SECTION	INLETS TYPE D (2M) EA	NOTES
	CSP	CSP	ARCH			
	600MM METER	1200MM METER	1200MM METER			
1+461.5 TO 1+526	63					
1+269.76 TO 1+275.87	5					
1+461.5		15.5		1	1	H=1.65
1+269.76			10	2	1	ARCH H=1.44
1+266.755			10	2		ARCH H=1.34
1+526				1		
1+275.87				1		
TOTALS	68	15.5	20	7	2	

SURFACING PLAN

LOCATION	ITEM 202 REMOVAL OF ASPHALT MAT SQ. METERS	HOT BITUMINOUS PAVEMENT (HBP) (GR S) (96) (PG 64-22)				
		ITEM 403 BOTTOM LAYER 70 mm = 2.73 in (METRIC TONS)	ITEM 403 MID LAYERS 70 mm = 2.73 in (METRIC TONS)	ITEM 403 MID LAYERS 70 mm = 2.73 in (METRIC TONS)	ITEM 403 LAYER 50 mm = 1.98 in (METRIC TONS)	ITEM 403 TOP LAYERS 50 mm = 1.98 in (METRIC TONS)
SOUTHBOUND						
1+282 TO 1+650 NEW	2134*	577	577	577	412	412
MEDIAN NEW	494*					
1+000 TO 2+200 OVERLAY					1411	1411
NORTHBOUND						
1+000 TO 2+200						
ENTRANCE TO FORT CARSON					1661	1661
EXIT FROM FORT CARSON						455
IRREGULARITIES						316
TOTAL	2628					300
						9770

* FOR INFORMATION ONLY 203mm = 8 in THICK

REMOVAL OF ASPHALT SHALL INCLUDE SAW CUTTING EDGES TO A NEET LINE AT ALL EXTERIOR EDGES.

ALL MATERIALS CONTRACTOR'S SOURCE

STABILIZATION BASED ON THE FOLLOWING:

18K ESAL (20 YEAR)	2,313,000
RELIABILITY	95%
OVERALL DEVIATION	0.44
RES. MOD. OF EXIST. SUB-GRADE	3,230
REQ. STR. NUMBER	5.31

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Colorado Department of Transportation



Region 2
905 Eric Avenue
Pueblo, CO 81002
Phone: (719) 546-5406 FAX: (719) 546-5414

Design Unit

Ed Hier

Tab Sheet

Project No./Project Location/Project Code

STA. 115A-011

Fl. Carson Main Gate

12140

Sheet Number 10

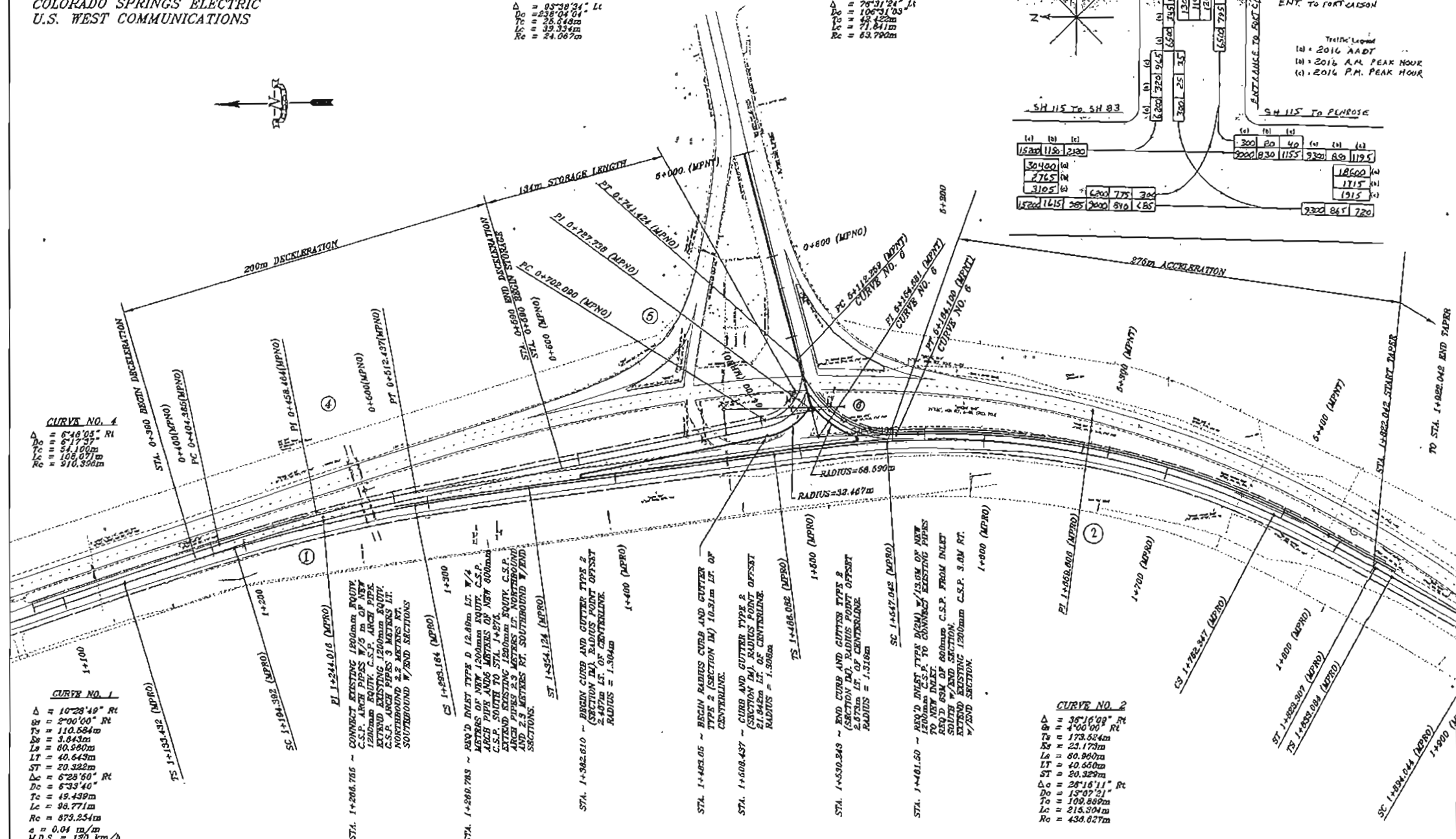
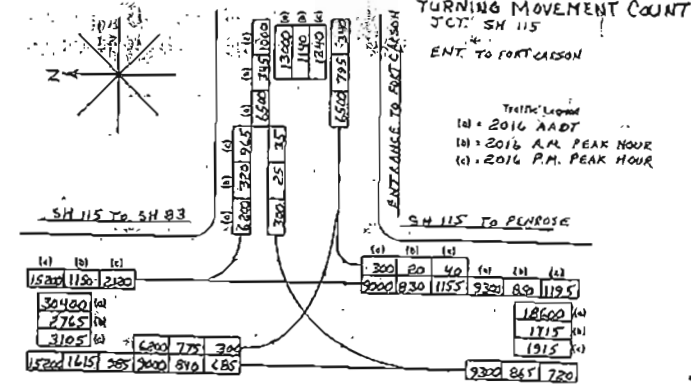
UTILITIES
COLORADO SPRINGS ELECTRIC
U.S. WEST COMMUNICATIONS

CURVE NO. 5

$\Delta = 85^{\circ}38'34''$ Lt
 $D_0 = 238.04$ ft
 $T_0 = 38.848$ m
 $L_0 = 39.354$ m
 $R_0 = 24.067$ m

CURVE NO. 6

$\Delta = 78^{\circ}31'24''$ Lt
 $D_0 = 196.73$ ft
 $T_0 = 27.822$ m
 $L_0 = 27.841$ m
 $R_0 = 63.799$ m



CURVE NO. 1
 $\Delta = 10^{\circ}28'48''$ Rt
 $B_0 = 2^{\circ}00'00''$ Rt
 $T_0 = 110.584$ m
 $E_0 = 3.843$ m
 $L_0 = 60.980$ m
 $L_1 = 40.649$ m
 $ST = 20.322$ m
 $\Delta_0 = 8^{\circ}28'50''$ Rt
 $D_0 = 6^{\circ}33'40''$ Rt
 $T_0 = 49.439$ m
 $L_0 = 98.771$ m
 $R_0 = 879.254$ m
 $a = 0.04$ 1/m
 M.D.S. = 180 Km/h

Computer File Information

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Last Modification Date:	06/25/98	Initials:	rem
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Units:	Metric		

Sheet Revisions

Rev	By	Description	Date
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Colorado Department of Transportation

Region 2
 905 Erie Avenue
 Pueblo, CO 81002
 Phone: (719) 546-5406 FAX: (719) 546-5414

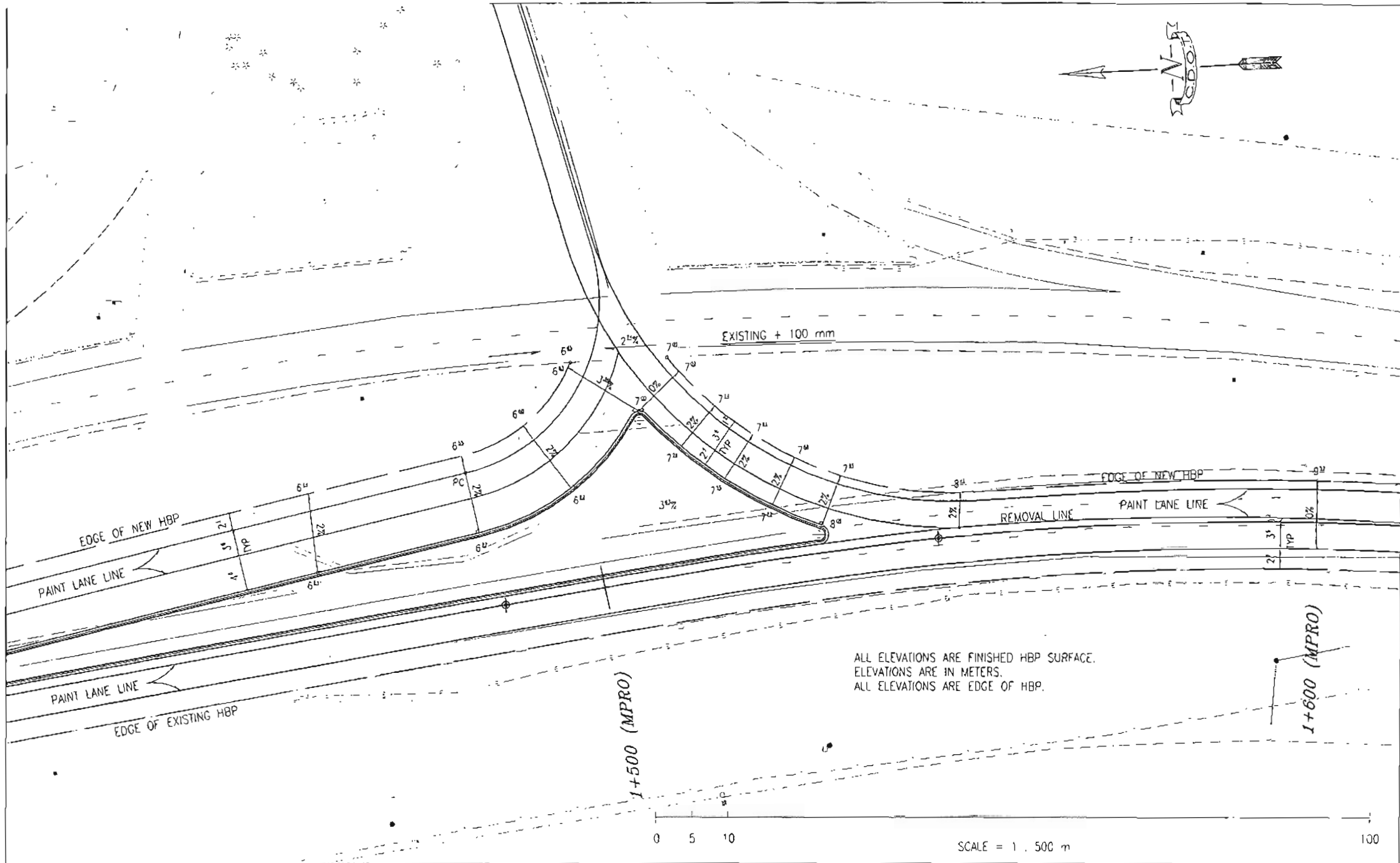
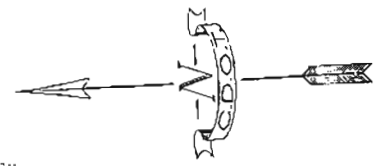
Design Unit: Ed Hier

Geometric Sheet

Project No./Project Location/Project Code

STA 115A-011
 FT. CARSON MAIN GATE
 12140

Sheet Number: 11




ALL ELEVATIONS ARE FINISHED HBP SURFACE.
 ELEVATIONS ARE IN METERS.
 ALL ELEVATIONS ARE EDGE OF HBP.

0 5 10 SCALE = 1 : 500 m 100

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Last Modification Date	06/22/98 Initials: REM
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Sheet Revisions	

Colorado Department of Transportation

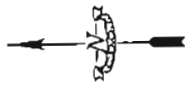






Region 2
 905 Erie Avenue
 Pueblo, CO 81002
 Phone: (719) 546-5406 FAX: (719) 546-5474

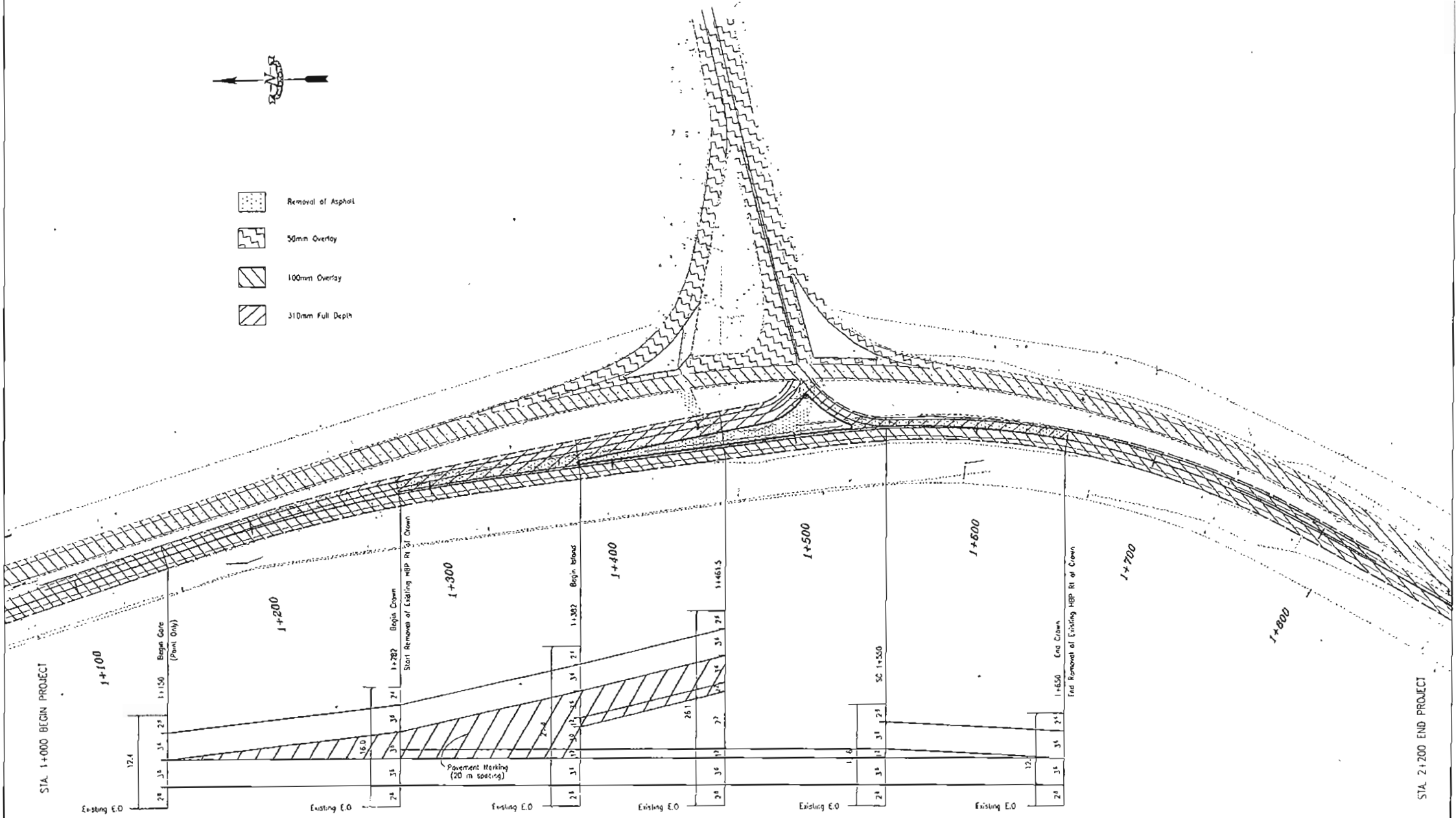
Design Unit Ed Hier

Intersection Sheet

Project No./Project Location/Project Code	
STA 115A-011	
Fl. Carson Main Gate	
12140	
Sheet Number	12



-  Removal of Asphalt
-  50mm Overlay
-  100mm Overlay
-  310mm Full Depth



Computer File Information	
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Last Modification Date:	06/26/98 Initials: rem
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Sheet Revisions	

Colorado Department of Transportation



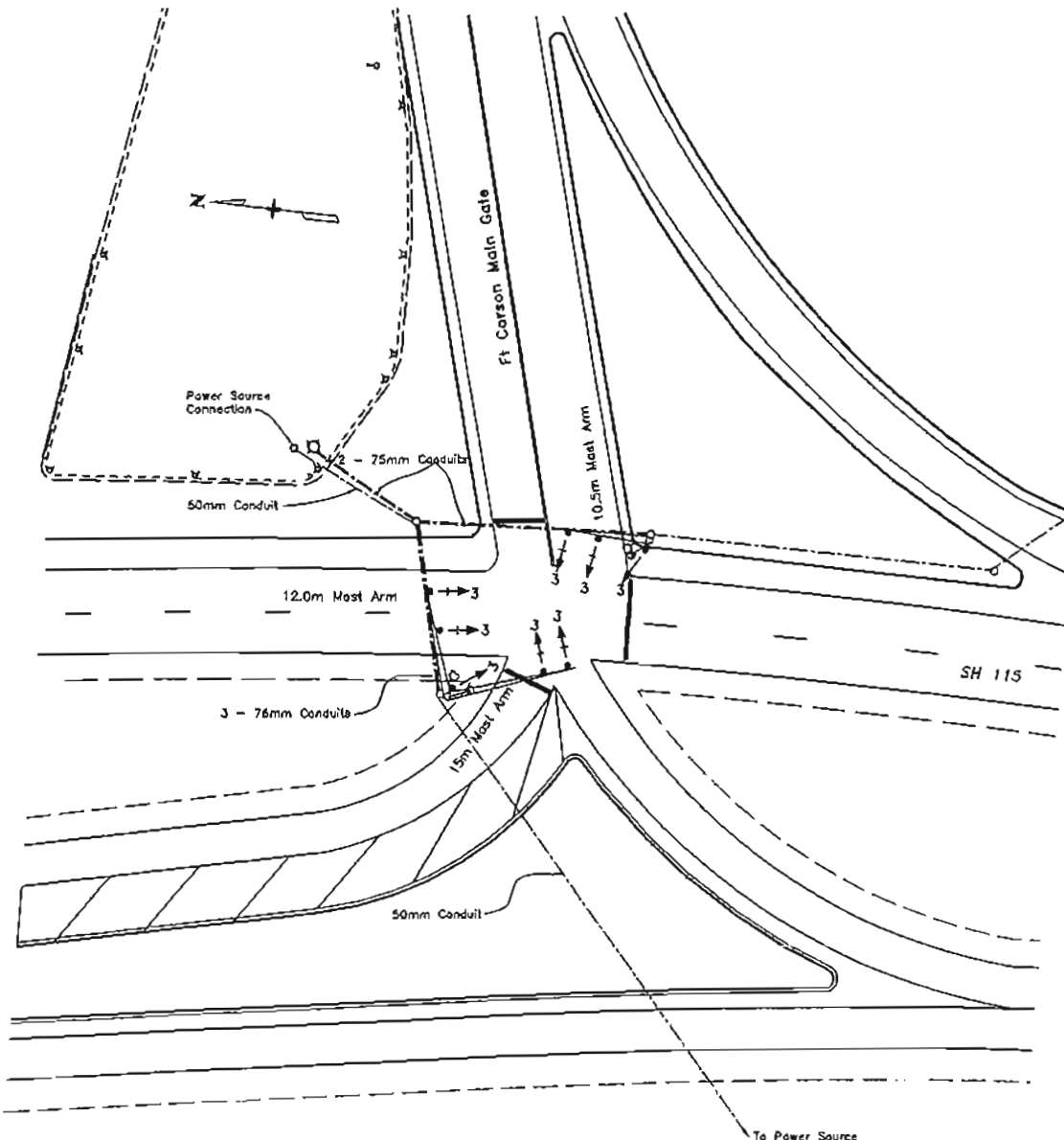
Region 2
905 Erie Avenue
Pueblo, CO 81002
Phone: (719) 546-5406 FAX: (719) 546-5414

Design Unit Ed Hier

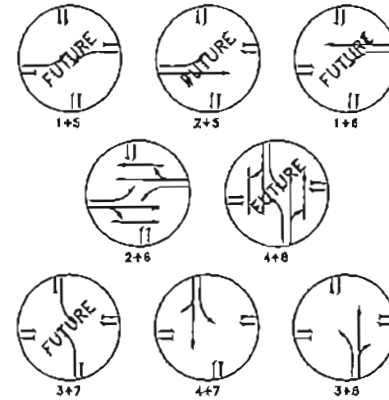
Lane Layout Sheet

Project No./Project Location/Project Code	
STA 115A-011	
FT. CARSON MAIN GATE	
12140	
Sheet Number	13

SH 115 & FT CARSON MAIN GATE - COLORADO SPRINGS -



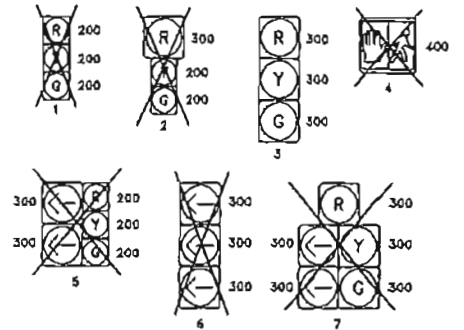
PHASING



NOTES

1. Controller shall be a Type 170. Controller cabinet shall be a Model 332.
2. The Controller shall include an Uninterrupted Power Source (On-Line Power's "Signal Saver LED" or approved equal). It shall also include a Conflict Monitor Tester (IDC, Model NT-180 or approved equal).
3. Luminaires shall be 47,000 Lumen, 400 Watts HPS with cut-off lenses.
4. All signal poles, heads and backplates shall be painted black. Signal heads and backplates shall be aluminum. Backplates shall be lowered.
5. All signal lenses shall be LED type.
6. Pull boxes shall be concrete composite.
7. 19 Conductor wire shall be pulled to the base of each pole.

FACES



TABULATION OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
613	50MM ELEC COND	M	550
613	75MM ELEC COND(JACKED)	M	110
613	75MM ELEC COND	M	30
613	LUMINAIRE HPS (400W)	EA	2
614	TRAF SIG (300-300-300)	EA	8
614	DETECTOR (MICRO WAVE)	EA	2
614	INSTALL SIG POLE S (1)	EA	1
614	INSTALL SIG-LIGHT POLE S (1)	EA	2
614	CONTROLLER (TY 170)	EA	1

LEGEND

- Traffic Signal Pole with Mast Arm.....
- Traffic Signal Span Wire Pole.....
- Pedestal Pole.....
- Traffic Signal Face.....
- Traffic Signal Face with Backplate.....
- Pedestrian Signal Face.....
- Controller and Cabinet.....
- Electrical Conduit and Pull Box.....
- Pull Box-Special.....
- Vehicle Loop Detector.....
- Pedestrian Push Button.....
- Luminaire.....
- Micro Loop Detector.....
- Microwave Detector.....

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Last Modification Date:	7/1/98
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Scale in Meters:	0 10 20 30

Index of Revisions	

Colorado Department of Transportation

4201 E. Arkansas
 Denver, CO 80222
 Phone: 757-9435 FAX: 757-9219

Staff Traffic

As Constructed	
No Revisions:	1/27/99
Revised:	
Void:	

Traffic Signal Plan	
Designer:	JN
Detailer:	JF
Sheet Subset:	

Project No./Code	
	STA 115A-011
	12140
	Sheet Number 14

SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES

TABULATION OF SIGNING QUANTITIES

ITEM NO.	ITEM	UNIT	PROJECT TOTALS
202	REM GROUND SIGN	EA	37
210	RES GROUND SIGN	EA	2
614	SIGN PANEL (CL I)	M2	9.8
614	SIGN PANEL (CL II)	M2	9.8
614	SIGN PANEL (CL III)	M2	21.3
614	STEEL SIGN POST (50 MM ROUND)	M	76.7
614	STEEL SIGN POST (65 MM ROUND) (SUBBASE)	M	66.4
614	STEEL SIGN POST (W 200X27)	M	12.0
614	STEEL SIGN POST (U-3)	M	8.2
614	CONC FOOTING (TY 3)	M	2
627	PVMT MKG PAINT	L	30.0
627	EPOXY PVMT MKG	L	380
627	PLASTIC PVMT MKG (TY A)	M2	138
630	CONST TRAF SIGN (B)	EA	36
630	CONST TRAF SIGN (C)	EA	8
630	CONST TRAF SIGN (SPECIAL)	M2	20.1
630	FLASHING BEACON (PORTABLE)	EA	2
630	FLASHING ARROW PANEL (C TYPE)	EA	2
630	DRUM CHANNELIZING DEVICE	EA	200
630	DRUM DEVICE (LT)(F)	EA	5
630	TRAFFIC CONE	EA	300
630	BARRICADE (3M-A)(TEMP)	EA	5
630	DIRECTIONAL BARRICADE	EA	20
630	DRUM DEVICE (LTXS)	EA	10

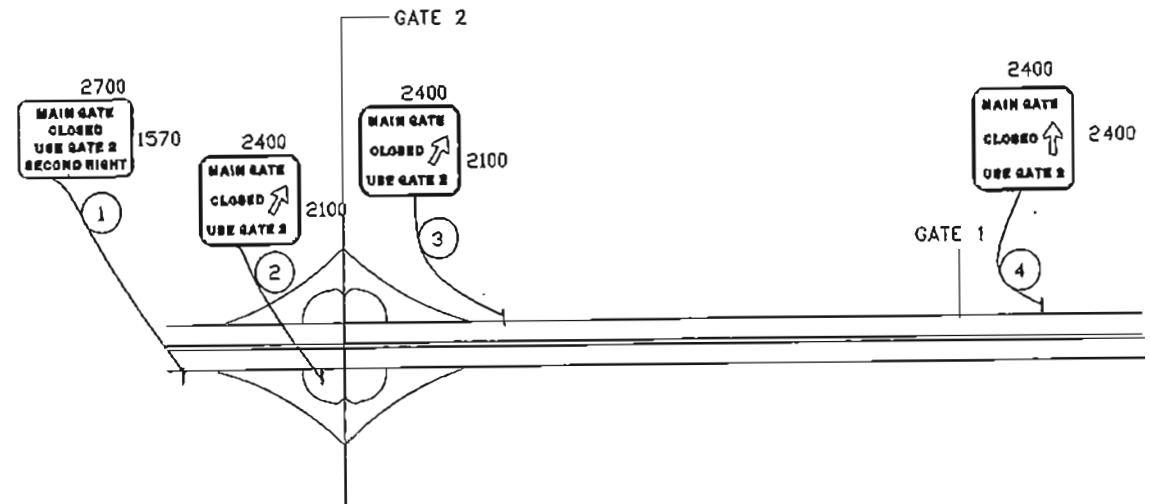
SIGNS							
SIGN CODE	LEGEND	DIMENSIONS	PANEL SIZE				SPECIAL
			A	B	C	SPECIAL	
R2-1	SPEED/UNIT/40	900x1200		4			
R52-4	BEGIN/FINES/DOUBLED	1200x1500		4			
R52-5	END/FINES/DOUBLED	1200x1500		4			
W4-2R	RIGHT LANE TRANSITION	1200 DIAMOND		2			
W4-2L	LEFT LANE TRANSITION	1200 DIAMOND		2			
W20-1	ROAD/WORK/(DIST.)*	1200 DIAMOND		10			
W20-SR	RIGHT LANE/CLOSED/AHEAD	1200 DIAMOND		2			
W20-SL	LEFT LANE/CLOSED/AHEAD	1200 DIAMOND		2			
W20-7A	FLAGGER SYMBOL	1200 DIAMOND		6			
W20-7B	BE/PREPARED/TO STOP	1200 DIAMOND		6			
G20-10	THANK YOU/....	1200x1200		2			
SPECIAL	MAIN GATE/CLOSED/.....	VARIES				+	
SIGN TOTALS			36	8	4		

OTHER DEVICES			
ITEM	UNITS	QUANTITY	
FLASHING BEACON (PORTABLE)	EA	2	
FLASHING ARROW PANEL (C TYPE)	EA	2	
DRUM CHANNELIZING DEVICE	EA	200	
DRUM (FLASHING)	EA	5	
TRAFFIC CONE	EA	300	
BARRICADE (3M-A)(TEMP)	EA	5	
DIRECTIONAL BARRICADE	EA	20	
DRUM (STEADY)	EA	10	

SEE CASE V AND XI OF STANDARD S-630-1 FOR TYPICAL PLACEMENT OF CONSTRUCTION TRAFFIC CONTROL DEVICES.

IT IS ESTIMATED THAT 15.1 50 METERS OF CONSTRUCTION TRAFFIC SIGN(SPECIAL) WILL BE REQUIRED FOR THIS PROJECT.

* FLUORESCENT SHEETING, SEE PROJECT SPECIAL PROVISION 614 AND 630 RETROREFLECTIVE SHEETING

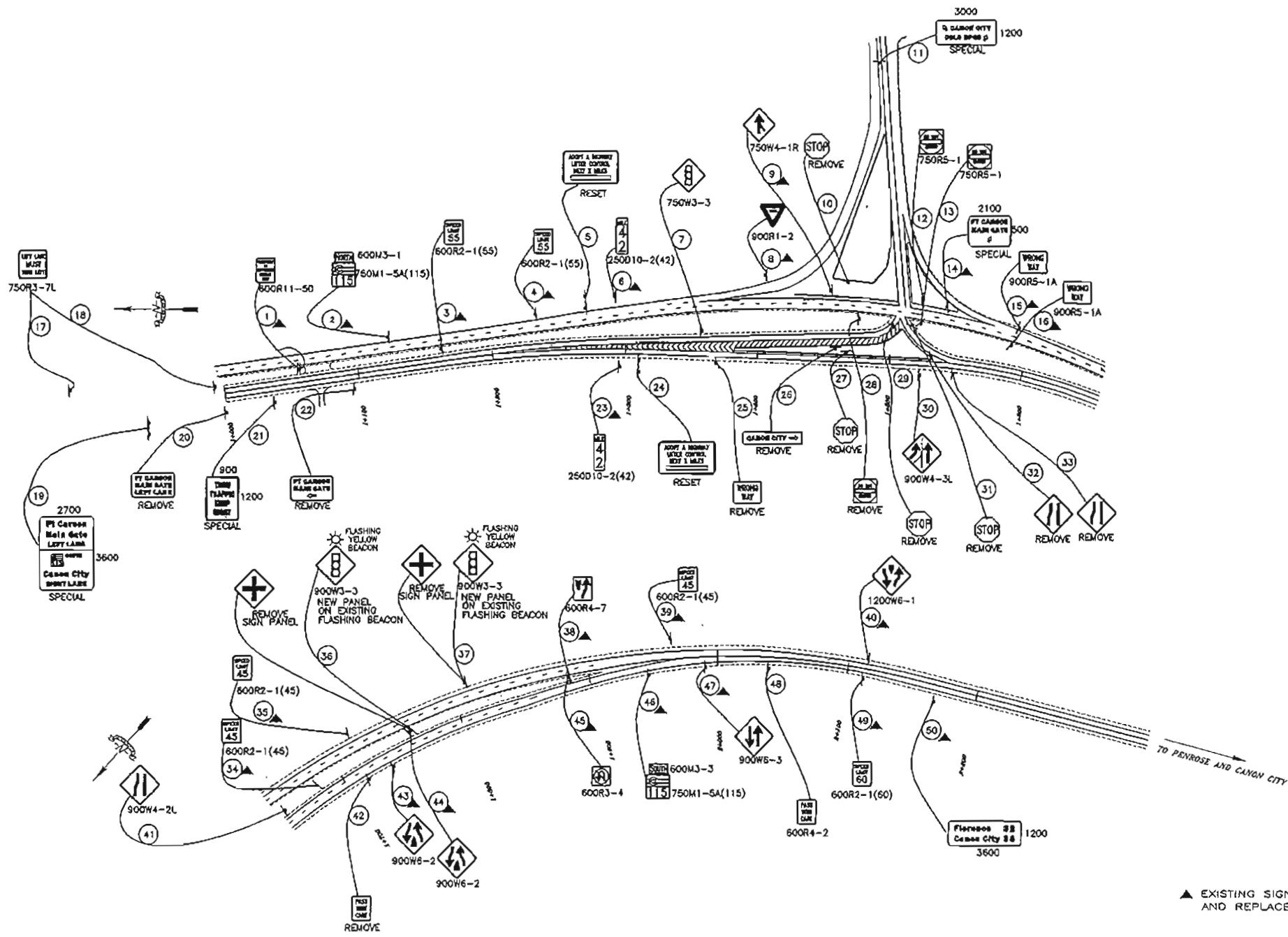


IT IS ESTIMATED THAT 250 LITERS OF WHITE AND 130 LITERS OF YELLOW EPOXY PAVEMENT MARKING WILL BE REQUIRED FOR PERMANENT MARKINGS.

IT IS ESTIMATED THAT 30 LITERS OF YELLOW PAVEMENT MARKING PAINT WILL BE REQUIRED FOR TEMPORARY PAVEMENT MARKINGS.

IT IS ESTIMATED THAT 138 METERS SQUARED OF TYPE A PVMT MKG WILL BE REQUIRED FOR PERMANENT CHANNELIZING AND CENTER LINES.


Computer File Information		Index of Revisions		Colorado Department of Transportation		As Constructed		Summary Sheet		Project No./Code		
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Last Modification Date:	07/01/98	Initials:	JOF									
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Drawing File Name:	CONSTSUM.dwg					Staff Traffic	Void:		Detailer:	JOF	Numbers	
								Sheet Subst:		Subset Sheet Number:		Sheet Number 16



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Index of Revisions	

Colorado Department of Transportation

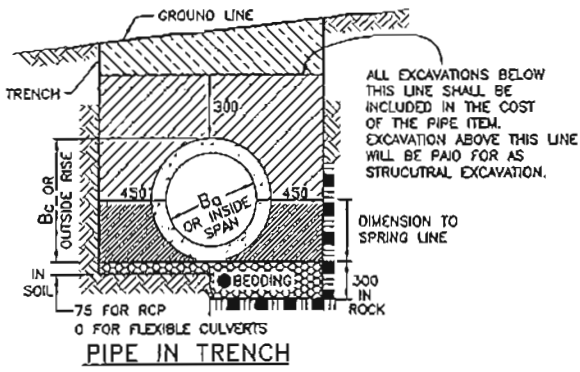


4201 E. Arkansas
 Denver, CO 80222
 Phone: 757-9435 FAX: 757-9219

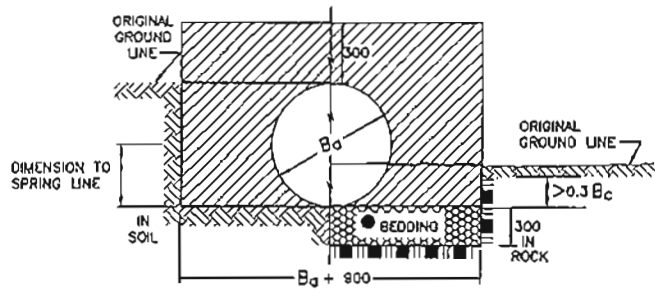
Staff Traffic

As Constructed		Signing and Striping Plan	
No Revisions:	1/27/99	Designer:	JN
Revised:		Detailer:	JF
Yield:		Structure Numbers:	
		Subset Sheet Number:	

Project No./Code	
	STA 115A - 011
	12140
	Sheet Number 17



PIPE IN TRENCH



CIRCULAR PIPE (ORIGINAL GROUND LINE BETWEEN 0.3 B_c AND B_c + 300)

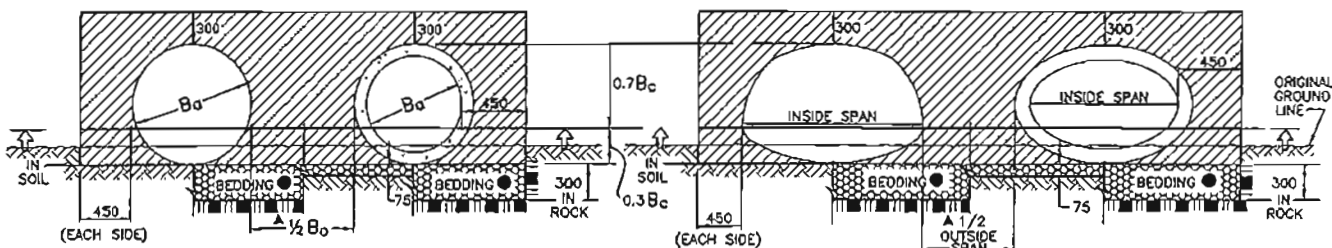
● BEDDING MATERIAL FOR RIGID PIPE IN SOIL SHALL BE 75 mm THICKNESS OF LOOSE STRUCTURE BACKFILL CLASS 1 OR 2 (NO BEDDING REQUIRED FOR FLEXIBLE PIPE IN SOIL).
 BEDDING MATERIAL FOR RIGID OR FLEXIBLE PIPE IN ROCK SHALL BE 300 mm THICKNESS LOOSE STRUCTURE BACKFILL CLASS 1.

GENERAL NOTES

1. EXCAVATION AND BACKFILL PATTERNS DIFFERENT FROM THOSE INDICATED ON THESE SHEETS WILL BE SHOWN ELSEWHERE ON THE PLANS.
2. EXCAVATION FOR CHANNEL CHANGE OR CHANNEL IMPROVEMENT WILL BE EITHER UNCLASSIFIED EXCAVATION OR MUCK EXCAVATION AND WILL BE NOTED ON THE PLANS. EXCAVATION FROM THE CHANNEL FLOWLINE TO THE DEPTH REQUIRED FOR THE NEW STRUCTURE AND INCIDENTAL CHANNEL EXCAVATION WILL BE PAID FOR AS STRUCTURE EXCAVATION.
3. STRUCTURE FOOTINGS WHICH ARE LOCATED IN ROCK SHALL BE POURED OUT TO UNDISTURBED ROCK WITHOUT FORMING, ALL IN CONFORMANCE WITH 601.09.
4. STRUCTURAL PLATE CULVERTS WILL BE AS SHOWN IN THE PLANS.
5. FOR THIN WALLED PIPES IT IS ASSUMED THAT $B_A = B_C$.

LEGEND

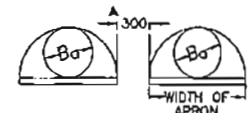
- STRUCTURE EXCAVATION LIMITS
 - COMPACTED STRUCTURE BACKFILL CLASS 1 OR 2 AS SHOWN ON PLANS.
 - COMPACTED STRUCTURE BACKFILL CLASS 1 REQUIRED
 - EMBANKMENT MATERIAL
 - EARTH
 - ROCK
 - BEDDING
 - CONCRETE
- ↑ = WHEN FLOW LINE OF CULVERT IS LESS THAN 0.3 B_c BELOW THE ORIGINAL GROUND LINE, EMBANKMENT SHALL BE BUILT UP TO 0.3 B_c ABOVE THE FLOW LINE AND TRENCH EXCAVATED TO BOTTOM OF PIPE OR AS SHOWN.



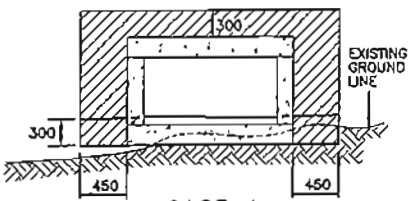
CIRCULAR PIPE IN FILL

ELLIPTICAL OR ARCH PIPE IN FILL

▲ WHEN TWO OR MORE CONDUITS ARE LAID SIDE BY SIDE, THEY SHALL BE PLACED SO THAT THE ADJACENT PIPES WILL BE 1/2 OUTSIDE DIAMETER OR 1/2 OUTSIDE SPAN OR 900 mm APART WHICHEVER IS LESS. MINIMUM SPACING SHALL BE 300 mm BETWEEN OUTSIDE WALLS OF PIPE OR END SECTION.

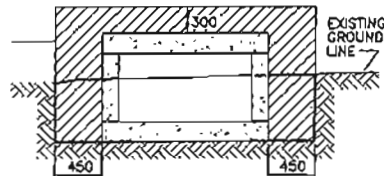


CONDUIT WITH END SECTIONS



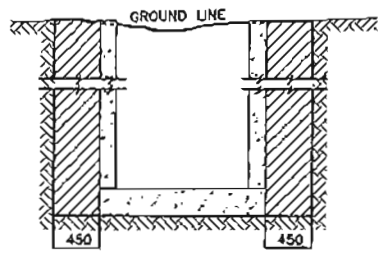
CASE 1

USED WHEN THE EXISTING GROUND LINE IS LESS THEN 300 mm ABOVE THE BOTTOM OF THE BOX CULVERT. THE EMBANKMENT SHALL BE BUILT UP TO 300 mm ABOVE THE BOTTOM OF THE BOX CULVERT. THIS EMBANKMENT WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE WORK.

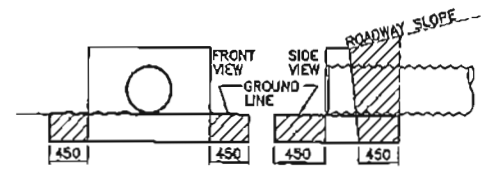


CASE 2

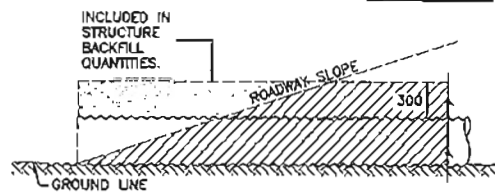
USED WHEN THE EXISTING GROUND LINE IS MORE THEN 300 mm ABOVE THE BOTTOM OF THE BOX CULVERT.



DROP INLETS, DIVISION BOXES



HEADWALL



END OF PIPE

CONCRETE BOX CULVERT

IN BOTH CASES, THE TRENCH (OUTLINED BY THE THICK SOLID LINE) SHALL THEN BE EXCAVATED TO ACCOMMODATE CONSTRUCTION OF THE BOX CULVERT.

Colorado Department of Transportation
 Staff Design: STANDARDS ENGINEER
 4201 E. Arkansas
 Denver, Colorado 80222
 Phone: (303) 757-9083 FAX: (303) 757-9868

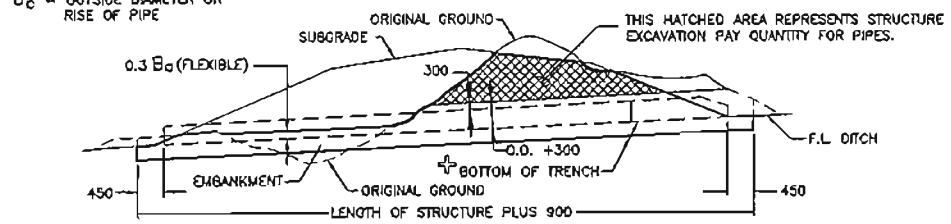
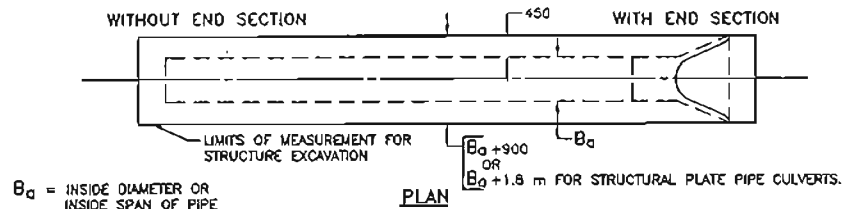
DESIGN DETAIL COLLECTION

Computer File Information	
Creation Date:	02/09/98 Initials: LTA
Last Modification Date:	02/20/98 Initials: LTA
Full Path:	Design Standards\Metric Project Details
Drawing File Name:	0206-1A.dwg

Index of Revisions	
As Constructed	
No Revisions:	1/27/99
Revised:	
Void:	

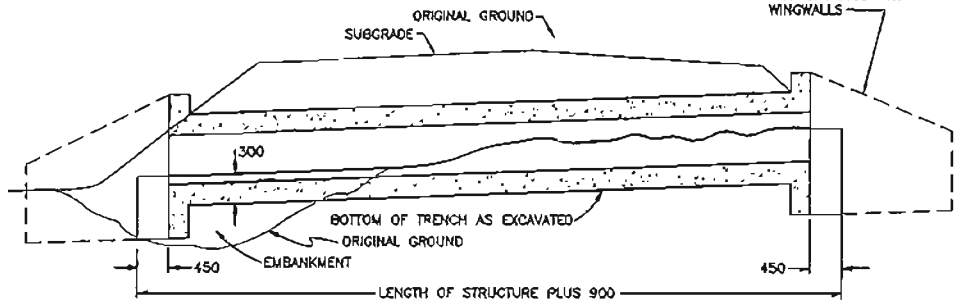
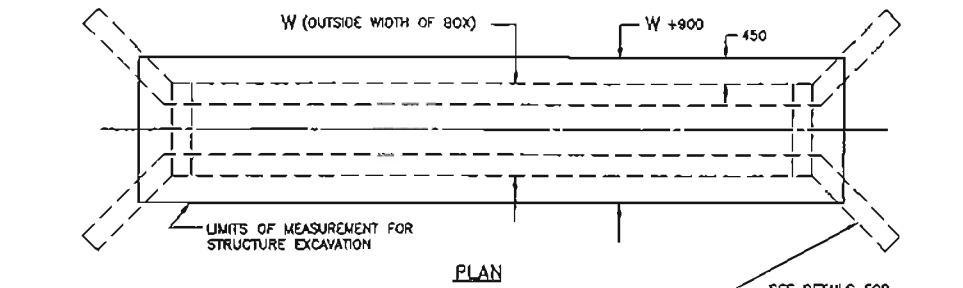
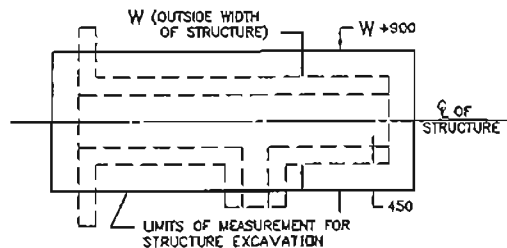
Excavation and Backfill for Structures	
Designer:	Bill Schiebel
Detailer:	Louis Avgeris

Project No./Code	
STA	115A-011
	12140

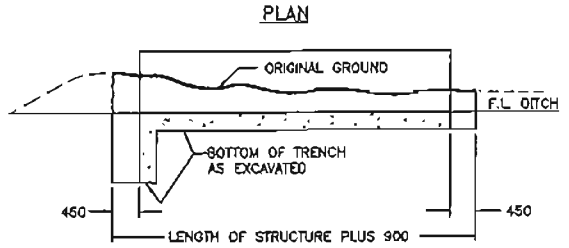


PROFILE
 FOR APPLICABLE LIMITS OF STRUCTURE EXCAVATION, SEE BEDDING DETAILS ON SHEET 1 OF THESE DETAILS.
 STRUCTURAL EXCAVATION UP TO 300 mm ABOVE THE TOP OF THE PIPE SHALL BE INCLUDED IN THE COST OF THE PIPE PAY ITEM.

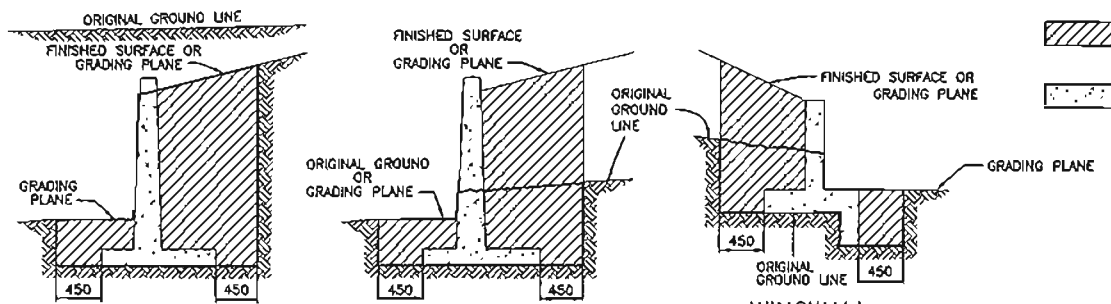
STRUCTURE EXCAVATION MEASUREMENT FOR PIPE CULVERTS



STRUCTURE EXCAVATION MEASUREMENT FOR CONCRETE BOX CULVERTS



STRUCTURE EXCAVATION MEASUREMENT FOR DIVISION BOXES



RETAINING WALL IN CUT & IN PARTIAL CUT

WINGWALL

- LEGEND**
- STRUCTURE EXCAVATION LIMITS
 - COMPACTED STRUCTURE BACKFILL CLASS 1 OR 2 AS SHOWN ON PLANS.
 - CONCRETE

Computer File Information	
Creation Date:	02/09/98 Initials: LTA
Last Modification Date:	02/20/98 Initials: LTA
Full Path:	Design Standards\Metric Project Details
Drawing File Name:	0206-18.dwg

Index of Revisions	

As Constructed
No Revisions: 1/27/99
Revised:
Void:

Excavation and Backfill for Structures	
Designer: Bill Schlabell	Structure Numbers
Detailer: Louis Avgeris	

Project No./Code	STA 115A-011
	12140



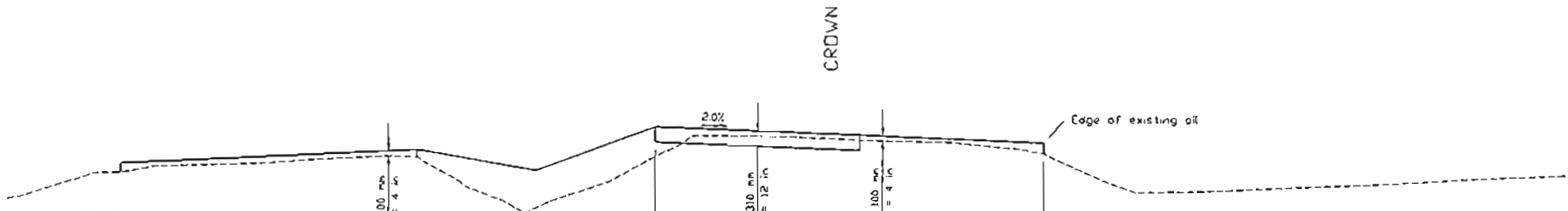
EXISTING SH 115

AS CONSTRUCTED

NO REVISIONS 2/2/99 REVISED VOID

FED. ROAD REGION	DIVISION	PROJECT NUMBER	SHEET NO.
VIII	COLORADO	STA 115A-011	23

DATUM = 1804



PROP. ELEV.	PROP. OFFSET	EXIST. ELEV.	EXIST. OFFSET
		1804.98	-35.00
		1804.92	-34.50
		1804.99	-31.48
		1805.00	-31.32
		1805.03	-30.12
		1805.12	-29.17
		1805.12	-29.11
		1805.15	-27.64
		1805.18	-24.76
		1805.22	-23.43
		1805.23	-23.03
		1805.32	-19.42
		1805.31	-19.20
		1805.20	-19.01
		1804.80	-16.51
		1804.68	-16.27
		1804.40	-14.70
		1804.14	-13.78
		1804.38	-12.76
		1804.80	-10.24
1805.90	8.4	1805.39	-8.09
		1805.49	-7.59
		1805.72	-6.45
		1805.72	-5.90
		1805.70	-3.28
		1805.65	-1.17
1805.73	0.00	1805.62	0.20
		1805.58	3.40
		1805.55	4.34
		1805.44	6.71
	7.6	1805.39	7.42
		1804.81	10.01
		1804.57	11.39
		1804.58	13.66
		1804.67	17.77
		1804.74	21.73
		1804.86	25.67
		1804.88	27.03
		1804.92	29.08
		1804.96	29.10

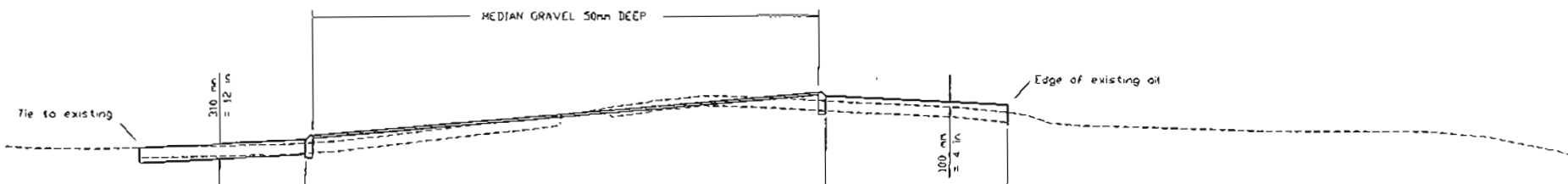
STATION 1+282.000

Begin Crown Section Ahead

EXISTING SH 115

1 m

DATUM = 1806



PROP. ELEV.		1807.00	1807.86	1807.83								
PROP. OFFSET		22.70	-1.20	-0.00	-6.40							
EXIST. ELEV.	1806.97 1806.84	1806.89 1806.96	1807.32 1807.39	1807.51 1807.66 1807.74 1807.78	1807.83 1807.86 1807.86 1807.83	1807.75 1807.72 1807.71	1807.64 1807.58	1807.52 1807.43 1807.31 1807.27 1807.26	1807.23	1807.15	1807.15 1807.05	1806.77 1806.68
EXIST. OFFSET	-35.00 -34.12	-23.87 -21.37	-15.01 -13.58	-11.77 -9.98 -8.64 -8.41	-7.05 -6.47 -5.29 -3.34	-0.79 0.11 0.87	4.05 5.39	6.64 7.45 8.20 9.22 9.50	11.76	17.28	23.87 26.27	29.14 30.00

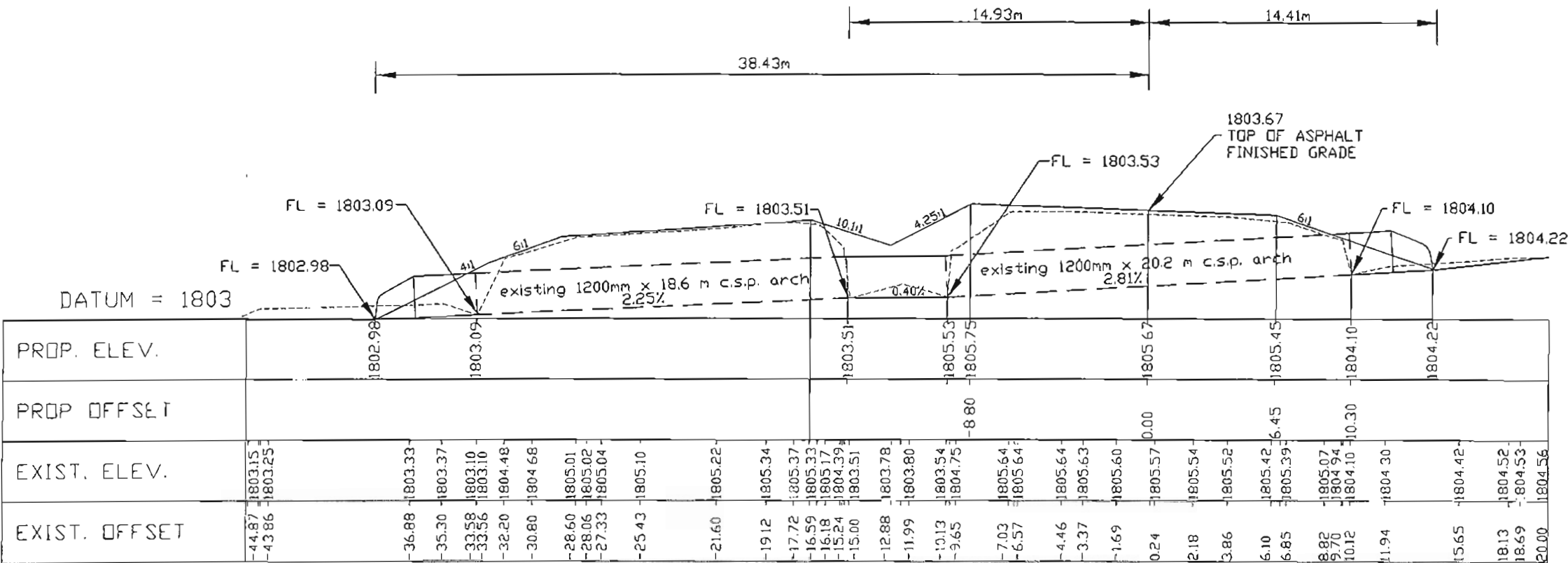
STATION 1+508.437

DATUM = 1809

PROP. ELEV.	
PROP. OFFSET	
EXIST. ELEV.	1809.37 1809.53 1809.63 1809.80 1810.22 1810.28 1810.29 1810.13 1810.13 1810.02 1809.94 1809.76 1809.44 1809.60 1809.82 1810.04 1810.14 1810.37 1810.59 1810.60 1810.63 1810.52 1810.43 1810.29 1810.24 1810.16 1810.06 1809.58 1809.58 1809.51 1816.12 1816.77 1817.07 1817.09 1817.16
EXIST. OFFSET	-35.00 -33.01 -32.16 -30.88 -29.03 -28.64 -25.86 -22.27 -22.22 -18.28 -17.35 -16.65 -14.67 -13.44 -11.74 -9.56 -8.41 -7.32 -6.05 -5.67 -4.87 -2.49 -0.08 3.05 4.18 6.06 6.40 7.99 8.87 9.74 22.63 23.78 27.19 27.47 29.81

STATION 1+650.000
End Crown Section

STRUCTURE CROSS SECTION

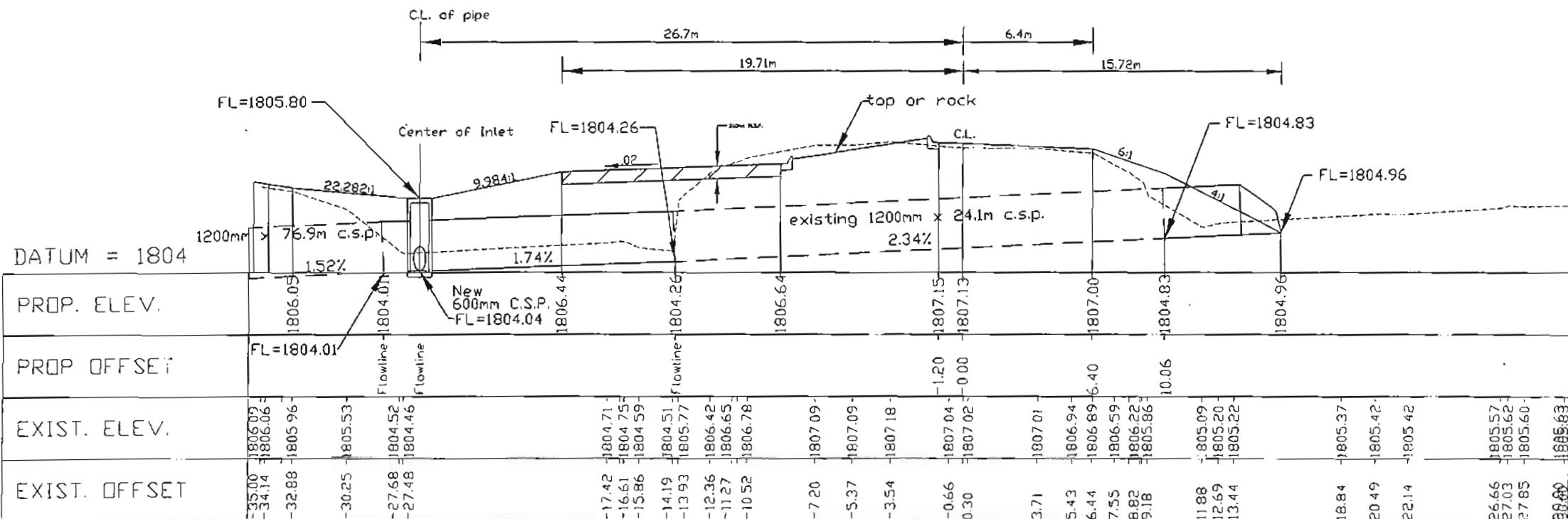
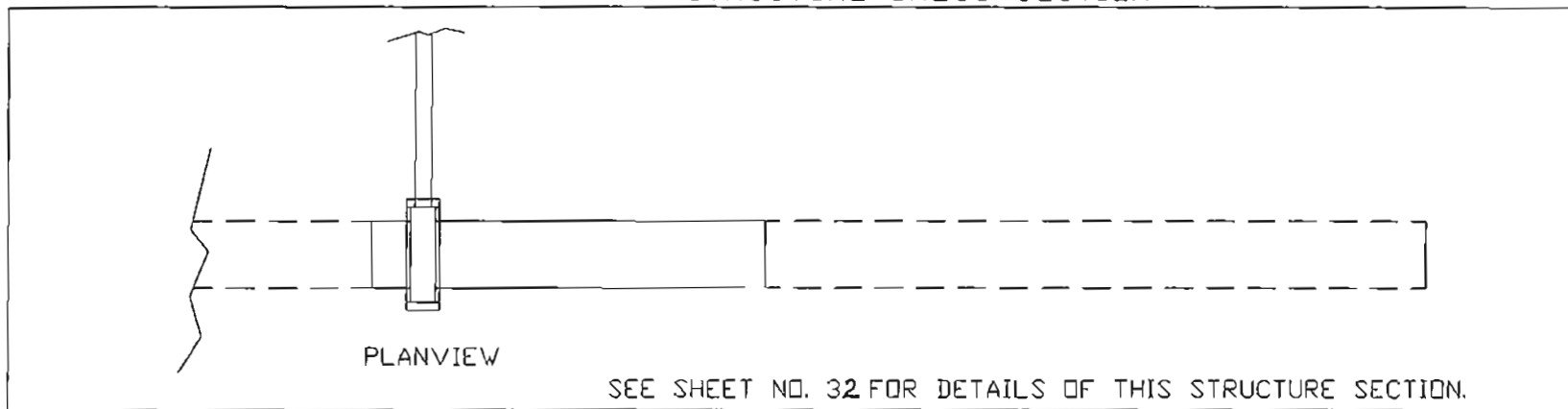


STATION 1+266.755 (SKEW 96° LT.)

Extend existing 1200mm Equivalent C.S.P. Arch pipe 3 meters Lt. Northbound and 2 meters Rt. Southbound w/end sections.

Connect the two existing 1200mm C.S.P. arch with 5 meters of new 1200mm Equivalent C.S.P. Arch pipe Lt.

STRUCTURE CROSS SECTION

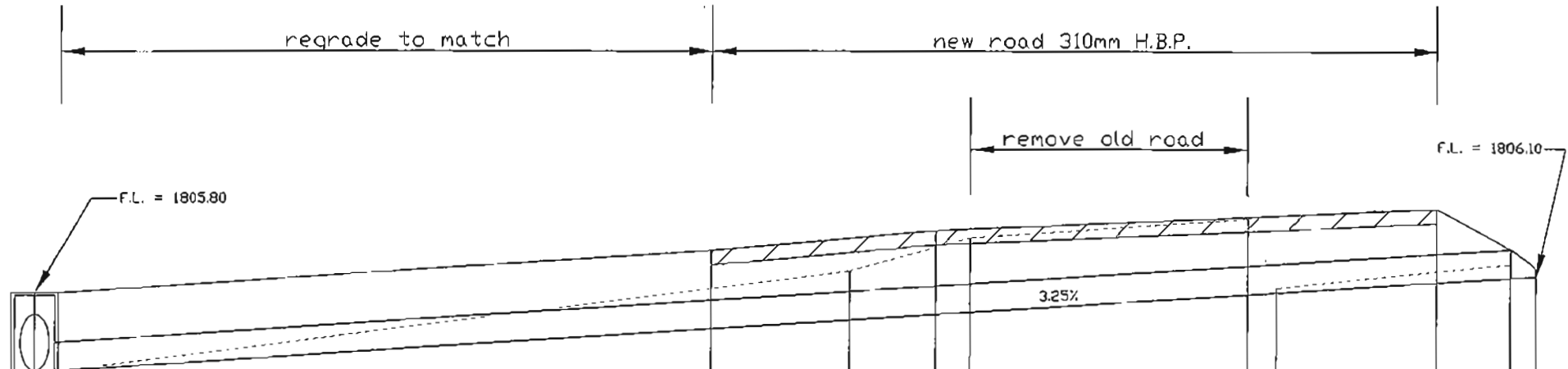


STATION 1+461.500

Extend existing 1200mm C.S.P. 3.8 meters Rt. w/end section.

Extend existing 1200mm C.S.P. 11.5 m Lt. w/Type D Inlet 26.7m Lt.
Place 1200mm C.S.P. from Inlet Type D 1m Lt. to existing 1200mm C.S.P.

STRUCTURE CROSS SECTION



DATUM 1804	1804.04								
PROP. ELEV.	1805.00	1806.58	1807.00		1807.46				
PROP DISTANCE	flowline -0.00	27.80	37.30		58.85			62.00	
EXIST. ELEV.			1806.15	1806.85		1807.25	1805.80		
EXIST. OFFSET	-1.00		33.70	38.90		50.80	52.00		

Section 26.7 meters Lt of Sta. 1+461.50.

Req'd 62.3m of new 600mm C.S.P. w/end section.