AS CONSTRUCTED		
NO REVISIONS 10-14-83	REVISED	VOID

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRV 0931-(3) FMS 0002-(11)	29	

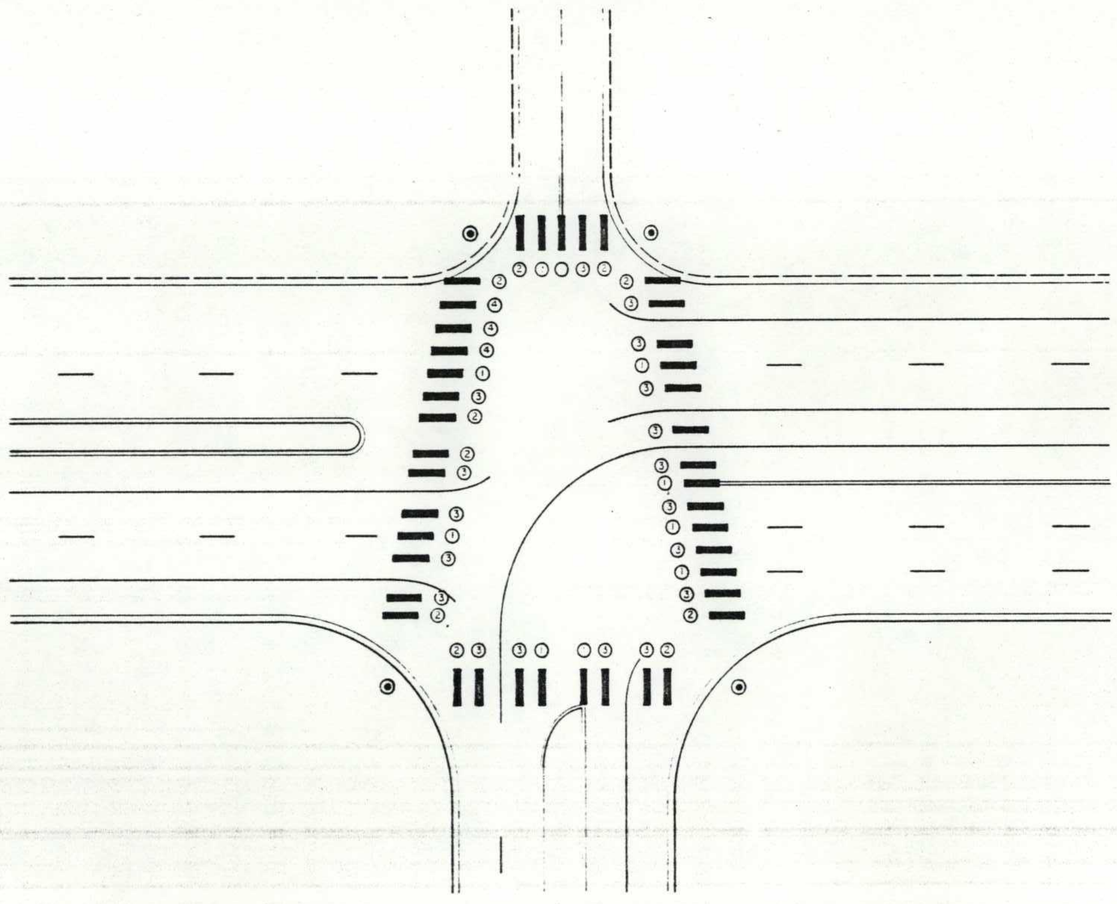
FMS 0004-(11)

TYPICAL PAVEMENT MARKINGS
LONGITUDINAL (CONTINENTAL) TYPE CROSSWALKS

CROSSWALK LINE DETAIL

GENERAL NOTES

Center crosswalks on handicap ramps where such ramps are provided. At signalized intersections having no handicap ramps, center crosswalks on signal poles wherever practical, as shown.



LAYOUT KEY

1. Center on lane line or centerline.
2. Center on extended flow line.
3. Center between adjacent lines.
4. Lines and spaces to approximate adjacent pattern.

TITLE SHEET

See STANDARD SYMBOLS

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS — STATE OF COLORADO

R.E. UNDER FRU 093-1(3) AND PMS 0004(11)
R.O.W. & UTILITIES UNDER FRU 093-1(3)

FEDERAL ROAD REGION NO	DIVISION	COMBINED PROJECT No's.	SHEET NO
VIII	COLORADO	FRU 093-1(3) PMS 0004(11)	1

AS CONSTRUCTED
NO REVISIONS [ ] REVISED 10-14-83 VOID [ ]

PLAN AND PROFILE OF ~~PROPOSED~~ AS CONSTRUCTED

COMBINED FEDERAL AID PROJECT NO'S. FRU 093-1(3) AND PMS 0004(11)

STATE HIGHWAY NO. 93

BOULDER COUNTY

TABULATION OF LENGTH & DESIGN DATA

STATION	PROJECT No. FRU 093-1(3) LIN. FT.		PROJECT No. PMS 0004(11) LIN. FT	
152+30 BEGIN FRU 093-1(3) AND PMS 0004(11) = 152+30 on SU 0084(3)	4,200		4,200	
194+30 END FRU 093-1(3) AND PMS 0004(11) = 194+30 on SU 0084(3)				
TOTAL	4,200		4,200	

SUMMARY

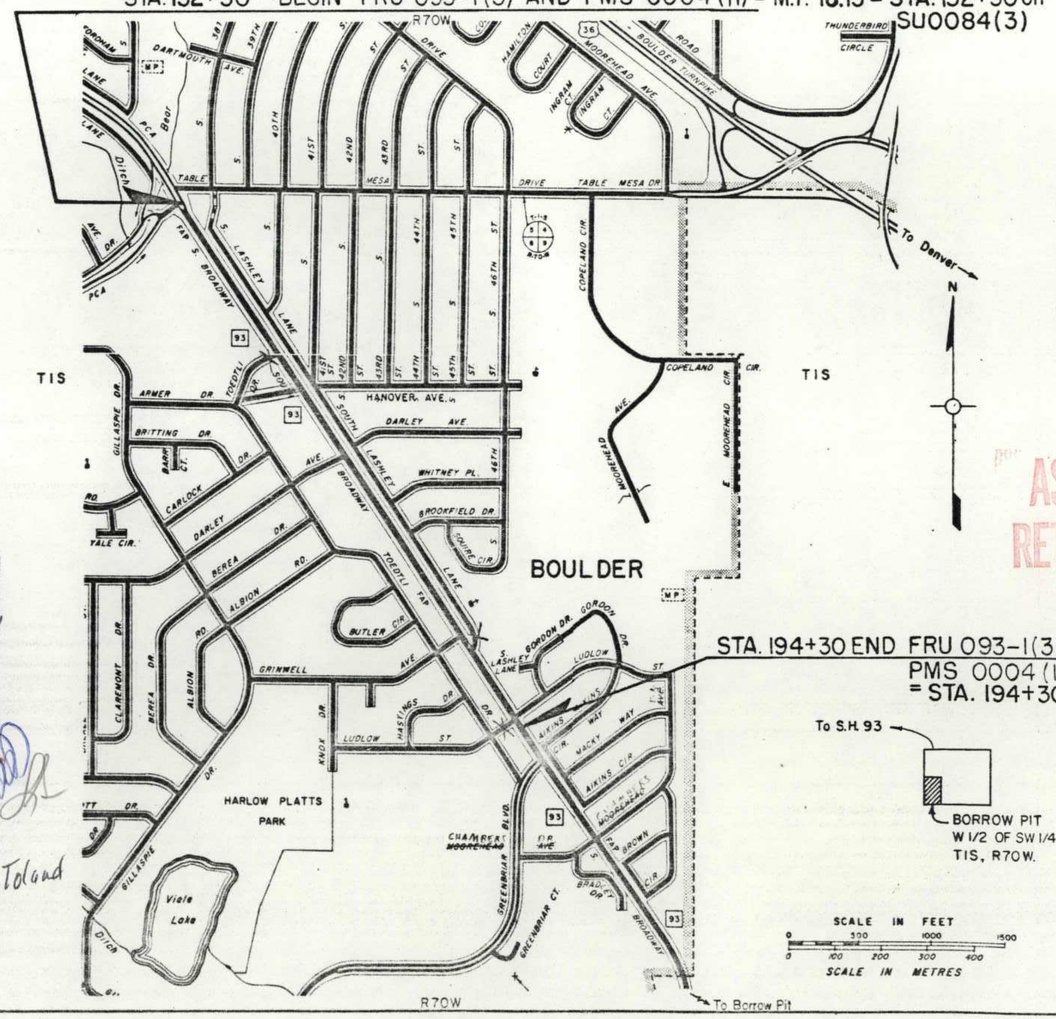
	PROJ. No. FRU 093-1(3)		PROJ. No. PMS 0004(11)	
	LIN. FT.	MILES	LIN. FT.	MILES
ROADWAY (NET LENGTH)	4,200.00	0.795	4,200.00	0.795

	FRU 093-1(3)	PMS 0004(11)
MAXIMUM DEGREE OF CURVE	NONE	NONE
MAXIMUM GRADE	3.14%	3.14%
MINIMUM S.S.D. HORIZONTAL	N.A.	N.A.
MINIMUM S.S.D. VERTICAL	800'	800'
MAXIMUM DESIGN SPEED	70MPH	70MPH

2002 DESIGN TRAFFIC VOLUME { ADT = 31,500 DHV = 3,765

SCALES OF ORIGINAL DRAWINGS
ON PLAN, 1 IN. = 1600 FT.
ON PROFILE { 1 IN. = 1600 FT. HORIZONTAL; 1 IN. = .05 FT. VERTICAL
GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD

STA. 152+30 BEGIN FRU 093-1(3) AND PMS 0004(11) = M.P. 16.15 = STA. 152+30 on SU0084(3)



STA. 194+30 END FRU 093-1(3) AND PMS 0004(11) = M.P. 15.35 = STA. 194+30 on S 0084(1)

To S.H. 93
BORROW PIT
W 1/2 OF SW 1/4 SEC 23
T1S, R70W.

SCALE IN FEET
0 500 1000 1500
0 100 200 300 400
SCALE IN METRES

INDEX OF SHEETS

VOID SHEETS - #7, #19, #20

AS CONSTRUCTED PLANS
RETURN TO DIST. 4 DESIGN

DIVISION OF HIGHWAYS
APPROVED: Donald H. Heidenstatt for E. L. MARCE 10-20-83
CHIEF ENGINEER DATE

AS CONSTRUCTED INFORMATION
CONTRACTOR NATIONAL CONST CO INC.
RESIDENT ENGINEER (Project or Resident) Harold L. Toland
PROJECT STARTED December 13, 1982
PROJECT COMPLETED October 14, 1983
AS CONSTRUCTED PLANS APPROVED J. B. Peterson
Const. Engr. 12-12-83
TITLE DATE

MAR 1984 DESIGN SECTION DIST. 4 D.O.H.

MAR 1984 CONSTR. SEC. DIST. 4 D.O.H.

DIST. IV	FILE	COPY
DIST. ENGR.		
ASST. ENGR.		
CONSTR.		
PRE-CONST.		
ERA		
UTIL		
DESIGN		
ROW		
MATLS		
SEC		
RE-DES		

Toland

T.E.F.

AS CONSTRUCTED		
NO. REVISIONS 10-14-83	REVISED	VOID

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004 (11)	2	

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

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS

STANDARD PLANS LIST

M & S STANDARDS — JANUARY, 1982

D.O.H. FORM NO. 126
REV. FEB., 1977

FRU 093-1(3)

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004 (11)	3	

AS CONSTRUCTED

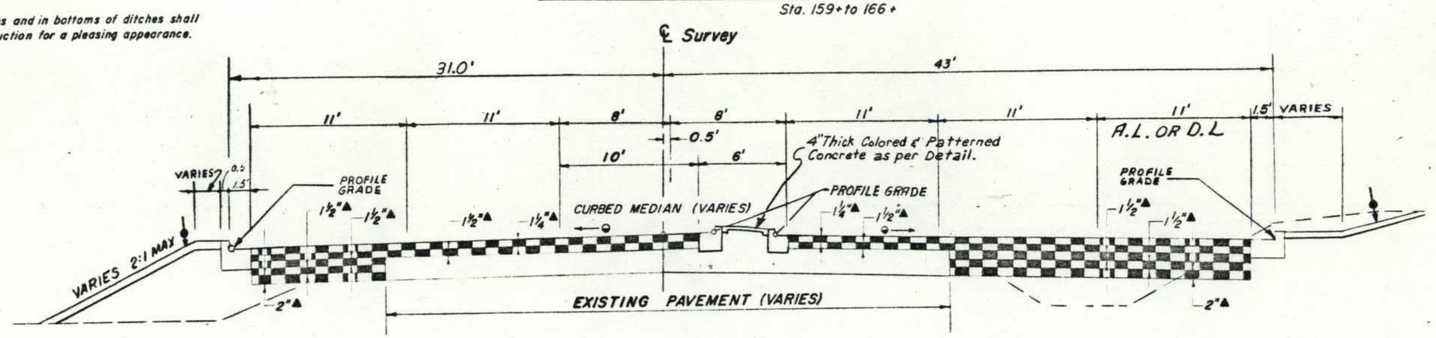
NO REVISIONS ☐ REVISED 10-14-83 VOID ☐

The depth and width of the side ditch shall be varied where necessary in order to provide proper drainage.

Break points on slopes and in bottoms of ditches shall be rounded on construction for a pleasing appearance.

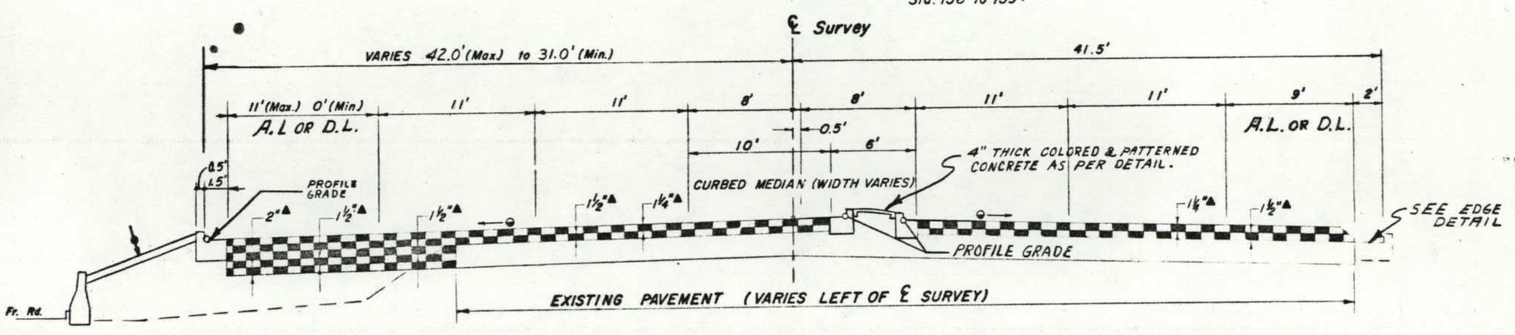
TYPICAL SECTION "C"

Sta. 159+ to 166+



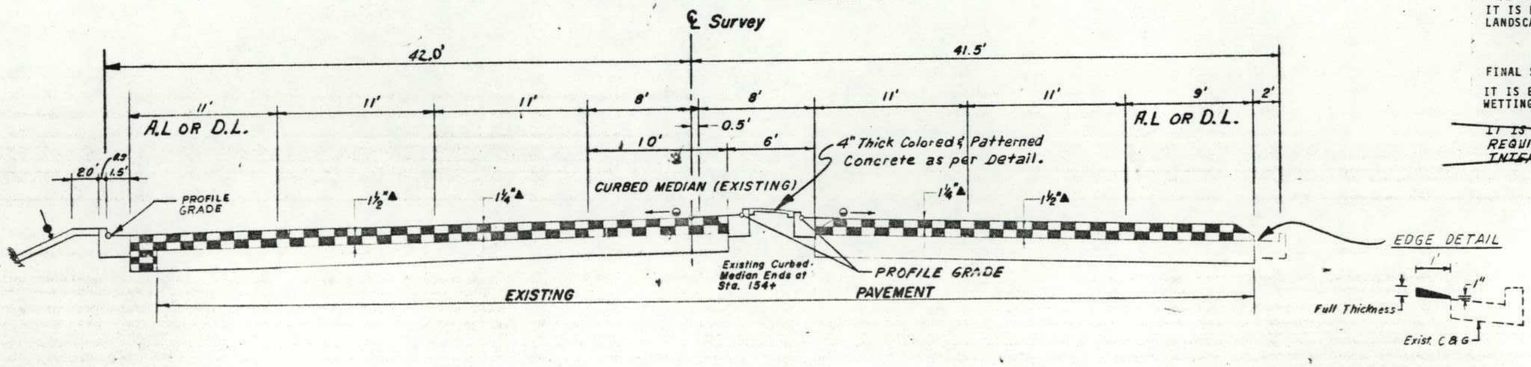
TYPICAL SECTION "B"

Sta. 156 to 159+



TYPICAL SECTION "A"

Sta. 152+ to 156+



▲ *Approximate Thickness*

● *Use existing slope*

Topsoil will be placed to the line shown (4" Thickness).

GENERAL NOTES

PLAN QUANTITIES OF SURFACING MATERIALS ARE BASED ON THE FOLLOWING UNIT WEIGHTS AND RATES OF APPLICATION:

HOT BITUMINOUS PAVEMENT (GRADING EX) AT 110 LBS. PER SQ.YD./INCH.

TACK COAT DILUTED EMUL. ASPH. (CSS-1H) AT 0.1 GAL./SQ.YD. (DILUTED)

DILUTED EMULSIFIED ASPHALT FOR TACK COAT SHALL CONSIST OF 1 PART EMULSIFIED ASPHALT AND 1 PART WATER.

RATES OF APPLICATION SHALL BE AS DIRECTED BY THE ENGINEER AT THE TIME OF APPLICATION. RATES SHOWN ABOVE ARE APPROXIMATE AND ARE SUBJECT TO ADJUSTMENT ON CONSTRUCTION.

DILUTED EMULSIFIED ASPHALT (CSS-1H) SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED AND SHALL CONSIST OF A DILUTION OF EMULSIFIED ASPHALT (CSS-1H) AND WATER, THE PORTIONS OF WHICH SHALL BE 9 PARTS WATER AND 1 PART EMULSIFIED ASPHALT (CSS-1H), BASED ON VOLUME MEASUREMENT. LOCATIONS SHALL BE AS ORDERED.

THE FOLLOWING SHALL BE FURNISHED WITH EACH BITUMINOUS PAVER:

1. A SKI TYPE DEVICE AT LEAST 30 FEET IN LENGTH
2. SHORT SKI OR SHOE

ANY LAYER OF BITUMINOUS PAVEMENT THAT IS TO HAVE A SUCCEEDING LAYER PLACED THEREON SHALL BE COMPLETED FULL WIDTH BEFORE SUCCEEDING LAYER IS PLACED, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

ALL COMPACTION SHALL BE AASHTO T-99.

DEPTH OF MOISTURE-DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:

FULL DEPTH OF ALL EMBANKMENTS

BASES OF CUTS AND FILLS 6 INCHES

FULL WIDTH OF WIDENING

TREATMENT OF BASES OF CUTS AND FILLS WITH MOISTURE AND DENSITY CONTROL WILL BE CONSIDERED AS SUBSIDIARY TO THE EXCAVATION OPERATION AND WILL NOT BE PAID SEPARATELY.

IT IS ESTIMATED THAT 3,000 HOURS OF FLAGGING WILL BE REQUIRED FOR THIS PROJECT.

THE UTILITIES SHOWN ON THE PLANS ARE PLOTTED FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD LOCATING AND VERIFYING ALL UTILITY INFORMATION AND HIS ATTENTION IS DIRECTED TO SUBSECTION 107.18 OF THE STANDARD SPECIFICATIONS.

ALL DIMENSIONS AND RADII ARE TO THE FLOWLINE OF THE CURB AND GUTTER UNLESS OTHERWISE NOTED.

SURVEY MONUMENT BOXES WILL BE FURNISHED BY THE CITY OF BOULDER AT NO COST TO THE CONSTRUCTION. THE UNIT PRICE BID SHOULD NOT REFLECT THE COST OF THE BOX, ONLY THE COST OF THE CONCRETE AND WORKMANSHIP TO DO THIS JOB. THE CONTRACTOR WILL CONTACT THE CITY OF BOULDER ENGINEERING DIVISION 48 HOURS IN ADVANCE FOR SURVEYING NEEDED TO LOCATE AND TIE OUT EXISTING MONUMENT BOXES TO BE PAID FOR AS INSTALL MARKER. IT IS ESTIMATED THAT 3 INSTALL MARKERS WILL BE REQUIRED ON THIS PROJECT.

WASTE MATERIAL SHALL BE DISPOSED OF OFF THE RIGHT OF WAY BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN HIS OWN DISPOSAL SITE FOR ALL UNUSABLE MATERIAL WHICH IS REMOVED.

EXISTING SIGNS, GUARD POSTS AND DELINEATORS WILL BE REMOVED OR RESET BY STATE FORCES AT NO COST TO THE PROJECT.

ALL WORK TO BE DONE ACCORDING TO THE MUTCD MANUAL.

IT IS ESTIMATED THAT 1,050 CUBIC YARDS OF TOPSOIL WILL BE REQUIRED FOR BERM AREAS TO BE LANDSCAPED. TOPSOIL SOURCE IS UNDESIGNATED.

FINAL SIGNING WILL BE DONE BY STATE FORCES.

IT IS ESTIMATED THAT 477 M. GAL. OF WATER WILL BE REQUIRED FOR THE WETTING OF COMPACTION.

~~IT IS ESTIMATED THAT 32 LIN.FT. OF CURB TYPE 6 (SECTION M) WILL BE REQUIRED TO REPLACE THE RAISED ISLAND AT THE HANOVER AVE. INTERSECTION LEFT OF STA. 167+~~

D. O. H. FORM NO. 126
REV. FEB., 1977

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004 (11)	4	

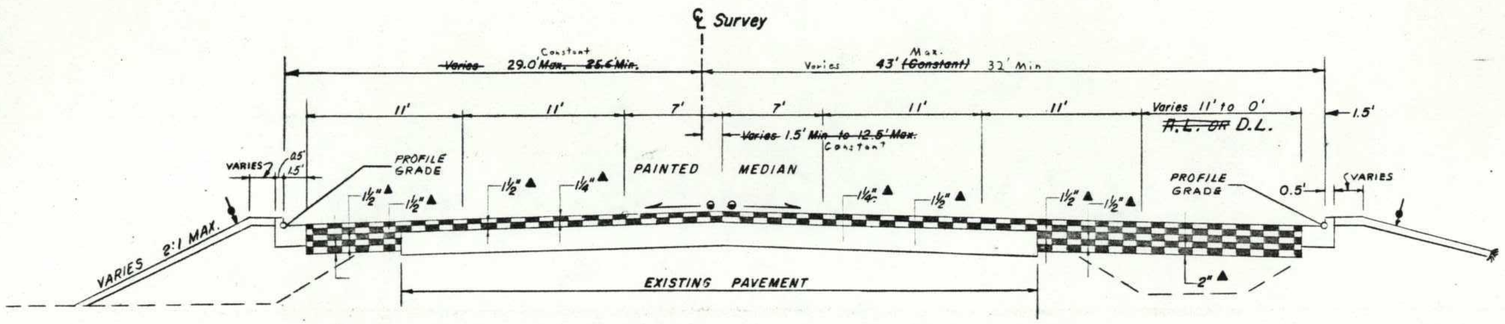
FRU 093-1(3)

AS CONSTRUCTED

NO REVISIONS ☐ REVISED 10-14-83 VOID ☐

TYPICAL SECTION "E"

Sta. 173+ to 181



SEEDING (NATIVE), COMMERCIAL FERTILIZER OF THE TYPE AND RATE LISTED BELOW AND MULCHING WILL BE REQUIRED FOR APPROXIMATELY 2 ACRES FOR ROADWAY WITHIN RIGHT-OF-WAY LIMITS ON ALL DISTURBED AREAS NOT SURFACED. THE FOLLOWING TYPES AND RATES SHALL BE USED:

COMMON NAME	BOTANICAL NAME	LBS. PLS/ACRE	OZ. PLS/ACRE
WESTERN WHEATGRASS	AGROPYRON SMITHII	6	
FAIRWAY WHEATGRASS	AGROPYRON CRISTATUM	5	
SIDEOATS GRAMA	BOUTELOUA CURTIPENDULA	3	
WHITE DUTCH CLOVER	TRIFOLIUM REPENS	1	
SMOOTH BROME	BROMUS INERMIS	5	
CROWNVETCH	CRONILLA VARIA		2
~~*PROSO MILLET~~	~~PANICUM MILIACEUM~~	~~8~~	
*FOR FALL PLANTING SUBSTITUTE: WINTER WHEAT (WICHITA STRAIN)	TIRTICUM AESTIUUM	*12	
	TOTAL	~~28~~ 32 LBS.	2 OZ.

MULCHING MATERIAL: 1 TON PER ACPE HYDRAULICALLY APPLIED WOOD CELLULOSE FIBER MULCH -

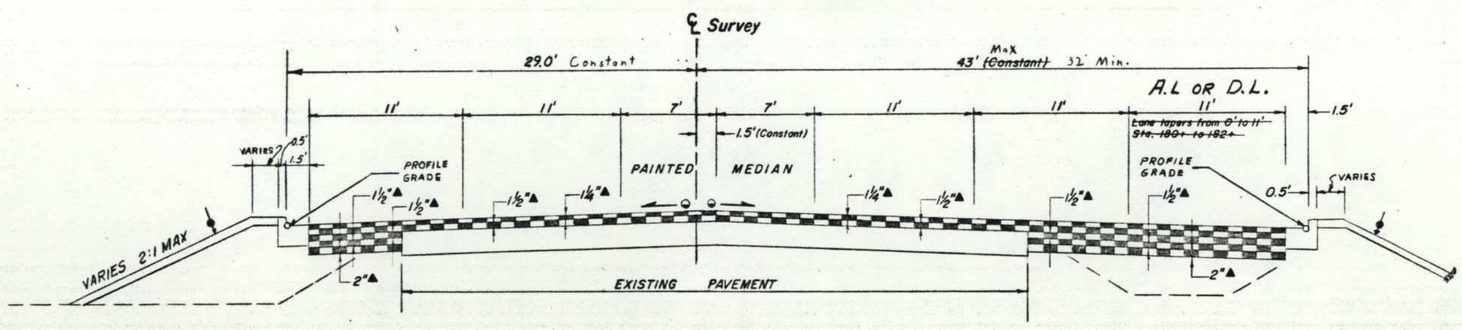
SEED SHALL BE MECHANICALLY DRILLED INTO THE TOPSOIL.

LOCATION	COMMERCIAL FERTILIZER	% AVAIL. N	LBS/ACRE AVAIL. N	% AVAIL. P	LBS/ACRE AVAIL. P	% AVAIL. K	LBS/ACRE AVAIL. K	RATE LBS/ACRE
NATIVE AREA	18-46-0	18	54	46	138			300

	Plan	Final
SEEDING (NATIVE)	57 LBS.	64 lbs
FERTILIZER (AVAILABLE N)	109 LBS.	90 lbs
FERTILIZER (AVAILABLE P)	277 LBS.	230 lbs
MULCHING (HYDRAULIC)	2 TON	2 Ton

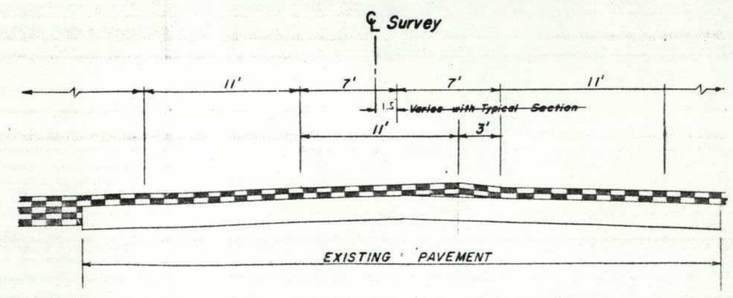
TYPICAL SECTION "D"

Sta. 166+ to 173+
Sta. 181+ to 194+



▲ Approximate Thickness
⊖ Use Existing Slope
Topsoil will be placed to the line shown (4" Thickness).

LEFT TURN LANE



DIVISION OF HIGHWAYS - STATE OF COLORADO
DOH Form No. 113 (Mod.)
REV. MAY 1978

SUMMARY OF ~~APPROXIMATE~~ FINAL QUANTITIES

AS CONSTRUCTED		
NO REVISIONS	REVISED 10-14-85	VOID

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004 (11)	5	

INDEX BOOK	PAGE	SHEET	CONTRACT ITEM NO.	CONTRACT ITEM	UNIT		FRU093-1(3) PLAN ROADWAY	FINAL ROADWAY	PLAN UTILITIES	FINAL Utilities	PLAN PROJECT TOTALS	X FINAL PROJECT TOTALS	PMS 0004(11) PAVEMENT MARKING		PROJECT TOTALS		COMBINED PROJECT TOTALS	AS CONST. PROJECT TOTALS	DIFF. +/-	% PLAN
DOH FORM			201	CLEARING AND GRUBBING	L.S.		1	1			1	1					1	1	0	100
			202	REMOVAL OF STRUCTURE	EACH		7	7			7	7					7	7	0	100
	305		202	REMOVAL OF PIPE	LIN. FT.		786	577			786	577					786	577	-209	73
			202	REMOVAL OF CURB AND GUTTER	LIN. FT.		1,063	1,028			1,063	1,028					1,063	1,028	-35	97
			202	REMOVAL OF CURB, GUTTER AND SIDEWALK	LIN. FT.		252	206			252	206					252	206	-46	82
			202	REMOVAL OF CONCRETE PAVEMENT	SQ. YD.		156	147			156	147					156	147	-9	94
			202	REMOVAL OF ASPHALT MAT	SQ. YD.		120	1,006			120	1,006					120	1,006	+886	838
			203	UNCLASSIFIED EXCAVATION	CU. YD.		1,904	1,435 (Actual Quant. 1,421 Field Quant. Paid)			1,904	1,435					1,904	1,435	-469	75
			203	BORROW	CU. YD.		11,470	7,090 (Actual Quant. 7,104 Field Quant. Paid)			11,470	7,090					11,470	7,090	-4,380	62
			203	COMPACTION (AASHTO T 99)	CU. YD.		11,918	11,262 (Actual Quant. 11,276 Field Quant. Paid)			11,918	11,262					11,918	11,262	-656	94
			204	HAUL	YD. MI.		58,971	38,610 (Actual Quant. 38,615 Field Quant. Paid)			58,971	38,610					58,971	38,610	-20,361	65
			206	STRUCTURE EXCAVATION	CU. YD.		2,558	2,640			2,558	2,640					2,558	2640	+82	103
			206	STRUCTURE BACKFILL (CLASS 1)	CU. YD.		356	350			356	350					356	350	-6	98
			206	STRUCTURE BACKFILL (CLASS 2)	CU. YD.		965	995			965	995					965	995	+30	103
			206	FILTER MATERIAL (CLASS B)	CU. YD.		21	33			21	33					21	33	+12	157
			206	BED COURSE MATERIAL	CU. YD.		134	138			134	138					134	138	+4	103
			207	TOPSOIL (HAUL)	CU. YD.		1,050	1,063			1,050	1,063					1,050	1,063	+13	101
			209	WETTING	M GAL.		477	48			477	48					477	48	-429	10
			210	RESET STRUCTURE	EACH		4	4			4	4					4	4	0	100
			210	RESET MAILBOX STRUCTURE Deleted by Form 105	EACH		2	0			2	0					2	0	-2	0
			210	RESET FIRE HYDRANT	EACH				2	2	2	2					2	2	0	100
			210	RELAY PIPE (6 INCH)	LIN. FT.		23	12			23	12					23	12	-11	52
			210	RELAY PIPE (24 INCH)	LIN. FT.		25	40			25	40					25	40	+15	160
			210	ADJUST MANHOLE	EACH				5	10	5	10					5	10	+5	200
			210	ADJUST VALVE BOX	EACH				12	19	12	19					12	19	+7	158
			212	SEEDING (NATIVE)	LB.		57	64			57	64					57	64	+7	112
			212	FERTILIZER (AVAILABLE N)	LB.		109	90			109	90					109	90	-19	83
			212	FERTILIZER (AVAILABLE P)	LB.		277	230			277	230					277	230	-47	83
			213	MULCHING (HYDRAULIC)	TON		2	2			2	2					2	2	0	100
			403	HOT BITUMINOUS PAVEMENT (PATCHING) (HAUL AND ASPHALT) CMO 4	TON		75	408.27			75	408.27					75	408.27	+333.27	544
			403	HOT BITUMINOUS PAVEMENT (GRADING EX) (HAUL AND ASPHALT) CMO 9206	TON		9637	8,145.65			9637	8,145.65					9637	8,145.65	-1,491.35	85
			411	EMULSIFIED ASPHALT (CSS-1H)	GAL.		3,688	2,659			3,688	2,659					3,688	2,659	-1,029	72
			412	CONCRETE PAVEMENT (6 INCH)	SQ. YD.		204	163			204	163					204	163	-41	80
			412	CONCRETE PAVEMENT (8 INCH)	SQ. YD.		62	98			62	98					62	98	+36	158
			601	CONCRETE CLASS A (MISCELLANEOUS)	CU. YD.		6	2			6	2					6	2	-4	33
			602	REINFORCING STEEL Deleted by Form 105	LB.		25	0			25	0					25	0	-25	0
			604	INLET TYPE C (5 FOOT) CMO 9206	EACH		1	2			1	2					1	2	+1	200
			604	INLET SPECIAL (DOUBLE) (5 FOOT)	EACH		2	4			2	4					2	4	+2	200
			604	INLET TYPE R L 5 (5 FOOT)	EACH		9	10			9	10					9	10	+1	111
			604	INLET TYPE R L 5 (10 FOOT)	EACH		2	2			2	2					2	2	0	100
			604	INLET TYPE R L 10 (5 FOOT)	EACH		4	4			4	4					4	4	0	100
			604	INLET TYPE R L 10 (10 FOOT)	EACH		1	1			1	1					1	1	0	100

DIVISION OF HIGHWAYS - STATE OF COLORADO
DOH Form No. 113 (Rev. 8)
REV. MAY 1978

SUMMARY OF ~~APPROXIMATE~~ FINAL QUANTITIES

AS CONSTRUCTED			
NO REVISIONS	REVISED 10-14-80	VOID	

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. NO'S.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) & PMS 0004(11)	6	

INDEX BOOK	INDEX PAGE	INDEX SHEET	CONTRACT ITEM NO.	CONTRACT ITEM	UNIT		FRU 093-1(3) PLAN ROADWAY	FRU 093-1(3) FINAL ROADWAY	FRU 093-1(3) PLAN UTILITIES	FRU 093-1(3) FINAL UTILITIES	FRU 093-1(3) PLAN PROJECT TOTALS	FRU 093-1(3) FINAL PROJECT TOTALS	PMS 0004(11) PLAN PAVEMENT MARKING	PMS 0004(11) FINAL Pavement Marking	PMS 0004(11) Plan PROJECT TOTALS	Final Project Totals	COMBINED PROJECT TOTALS	AS CONST. PROJECT TOTALS	DIFF. +/-	% PLAN
DOH FORM 305			604	Manhole Slab Base (5 Foot)	Each		4	5			4	5					4	5	+1	125
			604	12 Inch Reinforced Concrete Pipe Sewer	Lin. Ft.		25	74			25	74					25	74	+49	296
			604	15 Inch Reinforced Concrete Pipe Sewer	Lin. Ft.		604	754			604	754					604	754	+150	125
			604	18 Inch Reinforced Concrete Pipe Sewer	Lin. Ft.		1,595	1,464			1,595	1,464					1,595	1,464	-131	92
			604	21 Inch Reinforced Concrete Pipe Sewer	Lin. Ft.		1,031	1,028			1,031	1,028					1,031	1,028	-3	100
		*	606	Guard Rail Type 3 (6-3 Post Spacing) CMO 9206 & 5	Lin. Ft.		775	0			775	0					775	0	-775	0
			606	Guard Rail Type 4 CMO 9206	Lin. Ft.		512	701			512	701					512	701	+189	137
			606	End Anchorage Type 3D FM 105 & CMO 5	Each		3	2			3	2					3	2	-1	67
		***	606	End Anchorage Type 3E FM 105 (Deleted)	Each		3	0			3	0					3	0	-3	0
			608	Concrete Sidewalk CMO 9206	Sq. Yd.		27	493			27	493					27	493	+466	1826
			608	Concrete Curb Ramp	Sq. Yd.		73	117			73	117					73	117	+44	160
			609	Curb and Gutter Type 2 (Section I-B)	Lin. Ft.		2,531	2,588			2,531	2,588					2,531	2,588	+57	102
			609	Curb and Gutter Type 2 (Section II-B)	Lin. Ft.		7,820	7,734			7,820	7,734					7,820	7,734	-86	99
			609	Curb, Gutter and Sidewalk Type 2 (Section MS)	Lin. Ft.		42	68			42	68					42	68	+26	162
		**	609	Gutter Type 2 (4 Foot) Deleted by CMO 1849	Lin. Ft.		126	0			126	0					126	0	-126	0
			609	Curb Type 6 (Section M) FM 105 (Deleted)	Lin. Ft.		32	0			32	0					32	0	-32	0
			610	Median Cover Material (Patterned Concrete)	Sq. Ft.		4,794	5,534			4,794	5,534					4,794	5,534	+740	115
			612	Install Marker	Each		3	1			3	1					3	1	-2	33
			614	Flagging	Hour		3,000	1,527.5			3,000	1,527.5					3,000	1,527.5	-1,472.5	51
			614	Traffic Control Supervisor	Day		100	147.5			100	147.5					100	147.5	+47.5	148
			614	Barricade (Type 3M-B) (Temporary)	Each		2	2			2	2					2	2	0	100
			614	Construction Traffic Sign (Panel Size A)	Each		16	2			16	2					16	2	-14	12
			614	Construction Traffic Sign (Panel Size B)	Each		28	20			28	20					28	20	-8	71
			614	Vertical Panel	Each		100	73			100	73					100	73	-27	73
			614	Vertical Panel (with Light) (Flashing)	Each		30	38			30	38					30	38	+8	127
			614	Traffic Cone	Each		100	100			100	100					100	100	0	100
			620	Field Laboratory (Class 3)	Each		1	1			1	1					1	1	0	100
			620	Sanitary Facility	Each		1	1			1	1					1	1	0	100
			609	Gutter Type 2 (B') CMO 1849	Lin. Ft.		0	+114			0	+114					0	114	+114	0
			210	Reset Chain Link Fence CMO 1849	L.S.		0	+1			0	+1					0	1	+1	0
			210	Relay Sprinkler System CMO 1849	L.S.		0	+1			0	+1					0	1	+1	0
			601	High Early Additive CMO 1849	Cu. Yd.		0	+5			0	+5					0	5	+5	0
			626	Mobilization	L.S.		0.95	0.95			0.95	0.95	0.05	0.05	0.05	0.05	1	1	0	100
			606	End Anchor Type 3E CMO 1849	Each		0	+1			0	+1					0	1	+1	0
			509	Structural Steel (Galvanized) (CMO 1849 & Form 105)	L.S.		0	0			0	0					0	0	0	0
			627	Thermoplastic Pavement Marking CMO 6	Sq. Ft.								9,072	7,057	9,072	7,057	9,072	7,057	-2015	78
			606	Guard Rail Ty 3 (6-3) (weathered) CMO 9206 & 5	Lin. Ft.		0	1,170			0	1,170					0	1,170	+1,170	0
			627	Preformed Plastic Pavement Marking (60 mils) (CMO 6)	Sq. Ft.								0	3,302	0	3,302	0	3,302	+3,302	0
				Force Account																
			F/A01	Minor Contract Revisions	F.A.		0.95	0.95			0.95	0.95	0.05	0	0.05	0	1	0.95	-0.05	95
			F/A02	On the Job Trainee	Each		1	1			1	1					1	1	0	100
			F/A03	Final Signing (By State Forces)	F.A.		1	1			1	1					1	1	0	100
				Right of Way																
				Easements	L.S.		1	1			1						1	1	0	100

TABULATION OF STORM SEWER SYSTEM

AS CONSTRUCTED		
NO REVISION	REVISED	VOID 10-1-83

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004 (11)	7	

FRU 093-1(3)

INDEX BOOK	INDEX PAGE	INDEX SHEET	NOTE NO.	LOCATION	INLET - EACH TYPE R L (PAY) 5 H (PAY) 5	INLET TYPE R L (PAY) 5 H (PAY) 10	INLET TYPE R L (PAY) 10 H (PAY) 5	INLET TYPE R L (PAY) 10 H (PAY) 10	INLET TYPE R L (PAY) 15 H (PAY) 5	INLET TYPE R L (PAY) 15 H (PAY)	INLET TYPE SPECIAL DOUBLE H (PAY) 5	INLET TYPE SPECIAL DOUBLE H (PAY) 10	INLET TYPE C H (PAY) 5	INLET TYPE C H (PAY) 10	INLET TYPE	INLET TYPE	MANHOLE - EACH SLAB BASE H (PAY) 5	MANHOLE SLAB BASE H (PAY)	MANHOLE BOX BASE H (PAY)	MANHOLE BOX BASE H (PAY)	MANHOLE SPECIAL H (PAY)	MANHOLE SPECIAL H (PAY)	H (MEASURED) FEET	ELEVATIONS ▲RIM	ELEVATIONS INVERT	PIPE SEWER LINE FROM LOWER	PIPE SEWER LINE TO UPPER	PIPE SEWER INVERT ELEVATIONS LOWER	PIPE SEWER INVERT ELEVATIONS UPPER	PIPE SEWER (%) GRADE	PIPE SEWER REINFORCED CONCRETE LINEAR FEET 12"	PIPE SEWER 15"	PIPE SEWER 18"	PIPE SEWER 21"	PIPE SEWER BED COURSE MATERIAL	PIPE SEWER "H" PIPE COVER FEET	STRUCTURE EXCAVATION CUBIC YARD	STRUCTURE BACKFILL (CL. 1) CUBIC YARD	STRUCTURE BACKFILL (CL. 2) CUBIC YARD	UNCLASS. EXCAV. EMB. CUBIC YARD	MISCELLANEOUS
			169	169+36.4			1																3.45	37.05	33.6	167A	169	32.5	33.6	0.633			175			7		103	16	43		
			167	167+90.0 Lt.			1																4.01	37.11	33.1	167A	167	32.5	33.1	0.734			83			3		54	8	20		7 Ton H.B.P. Connect 10" Pipe From Parking Lot, Connect To Existing 18" Line @ +96
			167A	167+53			1																3.95	36.45	32.5	165A	167A	30.91	32.5	0.943				♦42		2		27	5	11		
TO BE BUILT BY CITY OF BOULDER			165	165+58			*																3.5	37.0	33.5	166	165	31.7	33.5				≠					* Inlet or Manhole to be				built by City of Boulder
			166	166+12	*																		3.73	35.43	31.7	165A	166	30.91	31.7					℞								● Excluding 59' of 21" RCP which is to be built by City of Boulder.
			165A	165+81													*						4.49	35.40	30.91	163A	165A	29.55	30.91	0.723					●129	6		114	16	39		Connect To Existing 21" Line @ +21
			163	163+90									1										2.0	34.5	32.5	163A	163	31.50	32.5	4.22	25					1		11	2	5		2 Ton H.B.P.
			163A	163+90													1						4.74	34.29	29.55	161	163A	27.3	29.55	0.807					280	11		234	34	83		
			161	161+05.5							1												4.9	32.20	27.3	158	161	25.9	27.3	0.609					231	10		188	28	69		
			158	158+68							1												4.21	30.11	25.9	Existing Inlet	158	25.1	25.9	0.622					130	5		89	16	38		Connect To Existing Inlet
			172	172+30	1																		4.5	39.0	34.5	172A	172	34.0	34.5	1.23			42			2		31	4	10		4 Ton H.B.P
			172A	172+71	1																		4.9	38.9	34.0	172C	172A	32.75	34.0	5.27					25	1		18	2	6		Relay 25 Lin. Ft. of 24" CMP From The West On Darly To Inlet
			172C	172+72.7													1						4.86	37.61	32.75	173	172C	32.5	32.75	1.0					25	1		21	3	7		
			172B	172+80 Lt.	1																		3.83	38.53	34.7	173	172B	32.5	34.7	2.91			78			3		60	7	19		6 Ton H.B.P.
			173	173+03.33		1																	5.72	38.22	32.5	175	173	30.8	32.5	0.811					211	9		274	25	63		
			175	175+18		1																	9.46	40.26	30.8	Existing 24" CMP	175		30.8														Remove 24" End Section From Existing Pipe
			194A	194+21.5 Lt.	1																		3.64	81.14	77.5	194	194A	76.1	77.5	2.469			58			3		33	5	14		5 Ton H.B.P. Remove 83 Lin Ft. & Connect To Existing 18" RCP From the South
			194	194+21.5													1						3.4	79.5	76.1	193	194	75.43	76.1	0.922				74		3		40	8	19		
			193	193+44	1																		3.8	79.23	75.43	190	193	72.75	75.43	0.852				316		13		193	35	85		
			190	190+25	1																		4.0	76.75	72.75	187	190	68.0	72.75	1.755				272		11		170	30	73		
			187A	187+80 Lt.	1																		3.93	72.68	68.75	187	187A	68.0	68.75	0.955			80			3		48	7	19		7 Ton H.B.P.
			187	187+49.5	1																		4.08	72.08	68.0	186	187	66.62	68.0	1.812				77		3		45	8	20		
			186	186+71													1						3.28	69.90	66.62	183	186	59.0	66.62	2.076				367		15		206	40	98		Connect to Existing 15" RCP From the West
			183	183+00	1																		3.44	62.44	59.00	178	183	44.75	59.00	3.219				447		18		401	49	120		
			179	179+00 Lt.				1															3.33	51.73	48.40	178	179	45.75	48.40	3.057			88			4		51	8	21		7 Ton H.B.P.
			178	178+50					1														7.89	49.78	41.89	Existing 24" CMP	178		41.89														Remove 29 Lin. Ft. of 24" CMP
				TOTALS	9	2	4	1			2		1				4														25		604		1595		1031	134		2411	356	882		

▲ Elevation approximate only, actual elevation to be determined during construction. ℞ 72' of 18" RCPS To be built By City of Boulder. ♦ Connect to 128' of RCPS to be built by City of Boulder. ≠ 52' of 15" RCPS to be built by City of Boulder.

NOTE: WORK BY CITY OF BOULDER IS AT NO COST TO THE PROJECT.

TABULATION OF STORM SEWER SYSTEM

AS CONSTRUCTED		
NO REVISION	REVISED 10-14-83	VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-7(3) PMS 0004 (21)	7X	

INDEX BOOK	INDEX PAGE	INDEX SHEET	NOTE NO.	LOCATION	INLET - EACH TYPE R L (PAY) 5	INLET - EACH TYPE R L (PAY) 10	INLET - EACH TYPE R H (PAY) 5	INLET - EACH TYPE R H (PAY) 10	INLET - EACH TYPE Special Double 5	INLET - EACH TYPE C	INLET - EACH TYPE	MANHOLE - EACH SLAB BASE H (PAY) 5	MANHOLE - EACH BOX BASE H (PAY)	MANHOLE - EACH SPECIAL	H (MEASURED) FEET	ELEVATIONS ▲ RIM	ELEVATIONS INVERT	PIPE SEWER LINE FROM LOWER	PIPE SEWER LINE TO UPPER	PIPE SEWER INVERT ELEVATIONS LOWER	PIPE SEWER INVERT ELEVATIONS UPPER	PIPE SEWER (%) GRADE	PIPE SEWER REINFORCED CONCRETE LINEAR FEET 12"	15"	18"	21"	Bed Course Material	PIPE SEWER "H" PIPE COVER FEET	STRUCTURE EXCAVATION CUBIC YARD	STRUCTURE BACKFILL (CL. 1) CUBIC YARD	STRUCTURE BACKFILL (CL. 2) CUBIC YARD	UNCLASS. EXCAV. EMB. CUBIC YARD	MISCELLANEOUS
DOH FORM 305			170	170+05.5								1			3.58	38.11	34.53	169	170	33.70	34.53	1.122	74				3		51	3	9		connected to existing 10" clay tile from parking lot
			169	169+31.5			1								3.65	37.25	33.60	167B	169	32.30	33.60	0.686			190		8		112	17	47		
			167	167+90 Lt			1								4.01	37.11	33.10	167B	167	32.50	33.10	0.723			83		3		54	8	20		
			167A	167+43			1								2.95	36.68	33.73	167B	167A	32.30	33.73	34.000				1	□		□	□	□		connected to existing 10" clay tile from parking lot
			167B	167+42								1			3.88	36.25	32.37	existing 18" RCP	167B	32.30	32.37												connected to existing 18" RCP from City of Bldr. project
																		165A	end pipe	31.19	32.30					*							
city of Boulder			165				*								3.10	38.4	35.04	166	165	33.87	35.04				*								* Built by the City of Boulder
			166		*										3.24	37.11	33.87	165A	166	31.19	33.87					*							
			165A									*			4.22	35.41	31.19	end pipe	165A	30.40	31.19						*						
DOH FORM 305				165+27														161	existing 21" RCP	27.30	30.40	0.731					424	18		362	52	126		connected to existing 21" RCP from City of Bldr. project
			161	161+05.5					1						4.89	32.19	27.30	158	161	25.90	27.30	0.628					223	10		181	27	67		
			158	158+68					1						4.16	30.06	25.90	157	158	25.10	25.90	0.615					130	5		89	16	38		
			157	157+38					1						4.00	29.10	25.10	existing 18" RCP	157	—	25.10												connected to existing 18" RCP connected to 6" plastic roof drain
			172	172+30	1										4.14	39.14	35.00	172A	172	34.00	35.00	2.273			44			2		32	4	10		
			172A	172+71	1										4.82	38.82	34.00	172C	172A	33.86	34.00	0.636					22	1		16	2	5		connected to existing 18" RCP from the west
			172C	172+72.7								1			4.00	37.86	33.86	173	172C	32.50	33.86	7.771					18	1		15	2	5		
			172B	172+80	1										3.81	38.51	34.70	173	172B	32.50	34.70	2.821			78			3		60	7	19		
			173	173+03.33		1									5.76	38.26	32.50	175	173	30.80	32.50	0.806					211	9		274	25	63		
			175	175+18		1									9.47	40.27	30.80	existing 24" CMP	175	-	30.80												connected to existing 24" CMP
			194	194+21.5 Lt	1										3.73	80.92	77.19	193A	194	76.69	77.19	0.481			104			5		59	9	25		
			193	193+44	1										2.83	79.63	76.80	193A	193	76.69	76.80	1.833				6		✡		✡	✡	✡	connected to existing 15" RCP from the west
			193A	193+40								1			2.63	79.47	76.84	190	193A	72.75	76.69	1.259				313		13		191	35	84		connected to existing 18" RCP from the south
			190	190+25	1										4.39	77.14	72.75	187	190	68.00	72.75	1.746				272		11		170	30	73		
			187A	187+80 Lt	1										4.65	73.40	68.75	187	187A	68.00	68.75	0.938			80			3		48	7	19		
			187B	187+50						1					2.38	70.68	68.30	187	187B	68.00	68.30	5.000				6		✡		✡	✡	✡	ditch drain
			187	187+49.5	1										4.41	72.41	68.00	186	187	66.62	68.00	1.792				77		3		45	8	20		
				186+80														186	existing 15" RCP	66.62	66.82	1.667			12			1		5	1	2		connected to existing 15" RCP from the west.
			186	186+71								1			3.93	70.55	66.62	183	186	58.17	66.62	2.315				365		15		205	10	98		
			183	183+00	1										4.36	62.53	58.17	178A	183	43.38	58.17	3.513				421		17		378	46	113		
			179	179+30 Lt			1								4.21	52.61	48.40	178	179	46.03	48.40	2.963			80			4		46	7	19		
			178	178+79											5.48	51.01	46.03	178A	178	43.38	45.80	80.667				3		✡		1*	*	4		
			178A	178+79						1					2.39	45.77	43.38	existing 24" CSP	178A		43.38													removed damaged 24" Corr. Alum. Pipe and replaced with 24" CSP removed from sta 158+. Paid as Relay Pipe (24 inch) 40 L.F.
			154A	154+74 Lt	1										2.92	26.20	23.28	154	154A	22.79	23.28	0.590			83			3		44	4	13		
			154	154+70					1						3.08	25.87	22.79		154		22.79													
				TOTALS	10	2	4	1	4	2		5											74		754	1464	1028	136		2438	350	876		

▲ Elevation approximate only, actual elevation to be determined during construction.

* None required due to the skew of the pipe, thickness of the walls, and 1.5 L.F. outside of the inlet which is paid for under the inlet/MH item.

□ This pipe passes through adjacent walls of MH 167B and Inlet 167A. No Str. Excav., Backfill or Bed Course needed.

✡ This pipe passes through center of Type 4 Guard Rail. Structure Excavation and Backfill needed only for bottom half of the pipe. No Bed Course needed.

D. O. H. FORM NO. 12
REV. FEB., 1977

FRU 093-1(3)

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004 (11)	8	

AS CONSTRUCTED

NO REVISIONS ☐ REVISED 10-14-83 VOID ☐

TABULATION OF REMOVALS FOR CONCRETE CURB AND GUTTER, SIDEWALK

STATION	SIDE	CURB AND GUTTER TYPE 2 SECTION I B LIN. FT. Plan	Final	SECTION II B LIN. FT. Plan	Final	SECTION MS* LIN. FT. Plan	Final	CONCRETE PAVEMENT 6" THICK SQ. YD. Plan	Final					COMMENTS
157+37.2 To 158+75	RT.			137.8	158									
158+87.2 To 158+98.3	RT.			16.0										
159+33 To 159+83	RT.			92.4	83			–	13					
161+35.5	RT.			21.0	–									
161+65.5	RT.			21.0	–									
161+82	RT.							3.1	–					
163+27	RT.							1.9	4					
167+	RT			–	37									
169+73 To 169+77	RT.			–	19	20.0	–							
170+07 To 170+09	RT.			–	18	21.0	–	–	38					
172+30.5	RT.					25.4	30		8					
172+70.5	RT.					24.4	30		36					
186+80	RT.					21.0	10							
187+20	RT.					21.0	10							
187+42 To 188+00	RT.							61.1	7					Conc. Bus Pad.
194+16 To 194+19	RT.			–	3	3.0	–							
154+	RT			–	19									
152+51 To 154+05	MIDDLE	316.0	308											
152+40	LT							–	14					
152+29 To 152+75.5	LT.			60.9										
152+75.5 To 153+18.5	LT.			43.0	210			19.1	–					
153+18.5 To 153+64.5	LT.			46.0										
153+64.5 To 154+09.5	LT.			45.0				20.0	–					
154+09.5 To 154+28	LT.			18.5										
160+64 To 161+14	LT.			50.0	-0-									
161+98 To 162+48	LT.			50.0	69									
166+06 To 166+56	LT.			50.0	39									
166+41 To 167+23	LT.					102.0	126							
166+79 To 167+13	LT.							50.0	27					
167+62 To 168+12	LT.			50.0	56									
167+48 To 167+62	LT.	45.0	-0-											
193+56	LT.					7.0	–							
193+93	LT.					7.0	–							
TOTAL		361.0	308	701.6	711	251.8	206	155.2	147					

* Paid for as Removal of Curb, Gutter and Sidewalk

TABULATION OF REMOVALS

STATION	SIDE	PIPE LIN. FT. Plan	Final	MANHOLE EACH Plan	Final	INLET TYPE SPECIAL EACH Plan	Final	OUTLET OF STORM SEWER EACH Plan	Final			MISCELLANEOUS & COMMENTS
157+37.2 To 159+53	RT.	216.0	216									24" CMP
159+40.0	RT.					1	1					
159+40.0 To 159+53	RT.	13.0	13									9" CMP
161+39	RT.	57.0	56									29"x18" CMP
163+97	RT.	60.0	60									29"x18 CMP
165+09 To 165+37	RT.	28.0	—									18"x11" CMP
167+04	RT.	26.0	—									18" CMP
167+53 To 167+60	RT.	7.0	—									12" RCP
167+53	RT.			1	-0-							Plug End of Pipe
169+61	RT.			1	1							Plug End of Pipe
170+17	RT.			1	1							" "
170+53	RT.			1	1							" "
172+23	RT.			1	1							Plug End of Pipe
172+23 To 172+78	RT.	55.0	55									18" CMP
172+76	RT.	7.0	30									24" RCP
172+72	RT.							1	1			
178+49 To 178+78	RT.	29.0	—									24" CMP
*180+19	RT.											Cotton Woods
186+70 To 187+31	RT.	61.0	61									18" CMP
193+42 To 194+24.2	RT.	83.0	—									18" RCP
193+44	RT.	6.0	6									15" RCP
154+	RT	-0-	7									18" RCP
157+36	RT					-0-	1					
170+15.5	RT	-0-	10									10" Clay Tile
161+60	LT.	50.0	51									18" CMP
166+90	LT.	48.0	—									18" RCP
165+20	LT.	28.0	—									18"x11" CMP
172+56	LT.	12.0	12									20" Iron Pipes
TOTAL		786	577	5	4	1	2	1	1			

* Paid for under Item 201, Clearing and Grubbing.

D. O. H. FORM NO. 12
REV. FEB., 1977

FRU 093-1(3)

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS C004 (11)	9	

AS CONSTRUCTED

NO REVISIONS ____ REVISED 10-14-83 VOID ____

TABULATION OF RESET ITEMS

STATION	SIDE	MAIL BOX EACH Plan	MAIL BOX EACH Final	FIRE HYD. EACH Plan	FIRE HYD. EACH Final	MANHOLE EACH Plan	MANHOLE EACH Final	RESET STRUCTURE EACH Plan	RESET STRUCTURE EACH Final	WATER VALVE EACH Plan	WATER VALVE EACH Final	6" CAST IRON PIPE LIN. FT. Plan	6" CAST IRON PIPE LIN. FT. Final							COMMENTS
157+15	LT.							1	-0-											■ Pull Box
157+45	RT.					-				1	-0-									Adjust Only
158+20	LT.							1	-0-											■ Pull Box
158+90	LT.							1	-0-	0	1									■ Pull Box
161+60	LT.					0	1													
161+82	RT.								·			13●	6							Re-lay
161+40	LT.									0	1									
163+27	RT.											10●	6							Re-lay
163+90	RT.									1	1									Adjust Only
164+37	RT.									1	1									Adjust Only
166+76	RT.	1	—																	
167+10	LT.									1	2									Adjust Only
167+41	LT.									1	1									Adjust Only
169+13	RT.									0	1									
169+50	RT.									1	1									Adjust Only
169+50	RT.			1	1															
169+80	RT.	1	—																	
170+48	RT.					-0-	1													
172+48	RT.					1	1													Adjust Only
172+48	RT.									1	1									Adjust Only
172+50	RT.									1	1									Adjust Only
172+80	RT.			1	1															
174+35	RT.					1	1													Adjust Only
175+58	RT.					1	1													
176+92	RT.					1	1													
178+25	RT.							1	-0-											Elect. Meter
178+89	RT.					1	1													
186+92	RT.									1	1									Adjust Only
193+64	LT.									1	2									Adjust Only
193+65	LT.									1	1									
193+99	LT.									1	1									
152+55	RT							-0-	1											Pull Box
166+50	LT							-0-	1											Pull Box
167+25	LT							-0-	1											Pull Box
173+00	RT							-0-	1											Pull Box
151+50	LT					0	1													Adjust only
152+00	RT					0	1													
152+30	RT					0	1													
166+65	LT									0	1									
152+00	LT									0	1									
166+50	RT									0	1									
TOTAL		2	deleted from list	2	2	5	10	4	4	12	19	23	12							

■ ~~See Details of Reset Pull Box.~~

● ~~See Details, May require an elbow.~~

D. O. H. FORM NO. 126
REV. FEB., 1977

FRU 093-1(3)

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004 (11)	10	

AS CONSTRUCTED
NO REVISIONS ____ REVISED 10-14-83 VOID ____

TABULATION OF CONCRETE CURB & GUTTER AND SIDEWALK

▲ W = 8' CMD 1849

STATION	SIDE	Curb and Gutter Type 2 Section IB Lin. Ft. Final	Section IB Lin. Ft. Plan	Section IIB Lin. Ft. Final	Section IIB Lin. Ft. Plan	Section MS Lin. Ft. Final	Section MS Lin. Ft. Plan	Gutter Type 2 ▲ W=4' 8' Lin. Ft. Final	Gutter Type 2 ▲ W=4' 8' Lin. Ft. Plan	Concrete Pavement 6" Thick Sq. Yd. Final	Concrete Pavement 6" Thick Sq. Yd. Plan	Concrete Pavement 8" Thick Sq. Yd. Final	Concrete Pavement 8" Thick Sq. Yd. Plan	Concrete Sidewalk W=4' Sq. Yd. Final	Concrete Sidewalk W=4' Sq. Yd. Plan	Curb Ramps Type 3A Sq. Yd. Final	Curb Ramps Type 3A Sq. Yd. Plan
152+29 to 152+40.3	Lt.															9	5.6
152+29 to 161+35	Lt.			948	1000.3												
152+51 to 159+01	Middle	1311	1308.0														
152+75.5 to 153+18.5	Lt.									31	19.1						
153+64.5 to 154+09.5	Lt.									20	20.0						
157+37.2 to 158+64	Rt.			143	126.8												
158+72 to 158+75	Rt.			—	3.0												
158+76 to 159+01	Rt.									12	16.7						
158+87.2 to 158+98.3	Rt.															—	5.6
159+01 to 159+33	Rt.							30	32.0								
159+33 to 159+58	Rt.									18	16.7			10	-0-		
159+33 to 160+96.3	Rt.			176	177.6												
159+35.7 to 159+46.8	Rt.															—	5.6
159+70 to 165+72	Middle	1214	1222.9														
161+04.3 to 161+35.5	Rt.			22	51.3												
161+05.5 to 161+35.5	Rt.									16	23.7						
161+20.4 to 161+31.6	Rt.															—	5.6
161+35.5 to 161+65.5	Rt.							27	30.0								
161+65.5 to 161+95.5	Rt.									17	23.7						
161+65.5 to 165+21	Rt.			364	375.6												
161+69.5 to 161+80.6	Rt.															—	5.6
161+85 to 166+64.5	Lt.			605	625.5												
*165+21 to 167+11	Rt.				*												
*165+21 to 167+11	Rt.																*
164+65 to 165+24	Rt											60	-0-	44	-0-		
166+41 to 167+00	Lt.			54	60.0												
166+79 to 167+13	Lt.					68	42.0			27	50.0			31	27.0		
167+00 to 167+23	Lt.																
167+11 to 167+51.5	Rt.			68	40.5												
167+18.5 to 167+88.5	Lt.			146	176.6											25	-0-
166+	Lt															24	-0-
167+ (Hanover & Lodley Island)	Lt	63	-0-	36	0									22	0	14	-0-
167+62.8 to 169+34.9	Rt			171	172.1												
167+99.8 to 172+75.2	Lt.			475	475.4												
168+00	Lt.							29	29.0								
169+46.2 to 169+74.2	Rt.			37	45.3												
169+49.2 to 169+74.2	Rt.									5	16.7						
169+60.4 to 169+71.5	Rt.													7	0	8	5.6

STATION	SIDE	Curb and Gutter Type 2 Section IB Lin. Ft. Final	Section IB Lin. Ft. Plan	Section IIB Lin. Ft. Final	Section IIB Lin. Ft. Plan	Section MS Lin. Ft. Final	Section MS Lin. Ft. Plan	Gutter Type 2 W=4' 8' Lin. Ft. Final	Gutter Type 2 W=4' 8' Lin. Ft. Plan	Concrete Pavement 6" Thick Sq. Yd. Final	Concrete Pavement 6" Thick Sq. Yd. Plan	Concrete Pavement 8" Thick Sq. Yd. Final	Concrete Pavement 8" Thick Sq. Yd. Plan	Concrete Sidewalk W=4' Sq. Yd. Final	Concrete Sidewalk W=4' Sq. Yd. Plan	Curb Ramps Type 3A Sq. Yd. Final	Curb Ramps Type 3A Sq. Yd. Plan
169+74.2 to 170+09	Rt.							28	34.8								
170+09 to 170+34	Rt.									17	16.7						
170+09 to 172+30.5	Rt.			226	253.1												
170+11.7 to 170+22.8	Rt.													5	0	5	5.6
172+16.7 to 172+27.8	Rt.													5	0	10	5.6
172+30.5	Rt.			2	3.0												
172+70.5 to 172+98.5	Rt.			13	42.3												
172+70.5	Rt.			7	3.0												
172+73.2 to 172+84.3	Rt.													15	-0-	11	5.6
173+03														1	0		
172+81.5 to 178+98.5	Lt.			641	617.0												
173+04.8 to 175+13.2	Rt.			210	208.4												
175+19.5 to 178+48.5	Rt.			354	329.0												
175+18														1	0		
178+59.8 to 182+98.5	Rt			405	438.7												
179+09.8 to 187+78.5	Lt.			857	868.7												
183+04.8 to 186+80	Rt			388	392.5												
186+66.2 to 186+77.3	Rt.															—	5.6
187+20 to 187+48	Rt.			38	45.3												
187+22.7 to 187+33.8	Rt.															—	5.6
■187+50 to 188+08	Rt													42	0		
187+54.3 to 188+14.3	Rt.											38	61.1				
187+54.3 to 190+23.5	Rt			265	269.2												
187+84.8 to 193+56	Lt.			559	582.5												
190+29.8 to 193+42.5	Rt			313	312.7												
193+46.1 to 193+55	Lt.															—	5.6
193+48.8 to 194+19	Rt.			62	70.2												
193+92 to 194+20	Lt.			18	45.3												
193+93 to 194+01.9	Lt.															11	5.6
194+26.3 to 194+29.3	Lt			120	3.0												
193+95 to 194+48	Lt													22	0		
■175+20 to 177+50 (w = 10')	Rt													269	-0-		
152+40 to 153+00	Lt													12	-0-		
163+75	Rt													4	0		
152+50	Rt													3	0		
154+72	Rt			11	-0-												
TOTAL		2588	2530.9	7734	7819.9	68	42.0	114	125.8	163	203.3	98	61.1	■493	27.0	117	72.8

* STA. 165+21 TO 167+11 CURB & GUTTER, TYPE 2 AND CURB RAMP, TYPE 3A TO BE BUILT BY CITY OF BOULDER AT NO COST TO THE PROJECT. ■ 361 Sq Yd added CMD No 9206

REV. FEB., 1977

FRU 093-1(3)

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004 (11)	11	

AS CONSTRUCTED

NO REVISIONS ☐ REVISED 10-14-83 VOID ☐

SURFACE COURSE PLAN

STATION TO STATION	SOURCE	HOT BITUMINOUS PAVEMENT QUANTITY-TONS: BOTTOM LAYER GRADING EX		MIDDLE LAYER GRADING EX		TOP LAYER GRADING EX	
152+30 ~ 152+54	UNDESIGNATED	1		18		15	
152+54 ~ 154+28		3		119		100	
154+28 ~ 155+35		7		73		61	
155+35 ~ 156+89		57		105		88	
156+89 ~ 158+69		110		114		95	
158+69 ~ 159+01		60		22		18	
159+01 ~ 159+67		75		48		40	
159+67 ~ 161+25		162		102		85	
161+25 ~ 165+72		410		267		223	
165+72 ~ 167+67		173		126		105	
167+67 ~ 173+00		446		338		281	
173+00 ~ 177+00		310		247		206	
177+00 ~ 181+00		310		247		206	
181+00 ~ 185+00		330		253		211	
185+00 ~ 187+30		176		146		122	
187+30 ~ 194+30		578		443		369	
ROADWAY APPROACHES:							
159+01 ~ 159+33 RT.				7		6	
161+35.5 ~ 161+65.5 RT.				8		6	
*167+49 ~ 167+61 LT						1	
161+24.8 ~ 161+95 LT.				5		4	
166+06 ~ 168+27 LT.				83		69	
169+49.2 ~ 170+34 RT.				11		9	
172+05.5 ~ 172+95.5 RT.				12		10	
186+55 ~ 187+45 RT.				12		10	
193+31 ~ 194+17 LT.				11		9	
APPROACHES TO PROJECT:							
150+80 to 152+30				111		93	
194+30 to 196+30		83		127		106	
SUB-TOTAL		3291		3055		2548	
LEVELING COURSE				705			
FROM TABULATION OF STORM SEWER SYSTEM		38					
TOTAL						9637	

*FOR 2" THICK LAYER ON THE ISLAND OF HANOVER INTERSECTION

□ Bottom Layer Includes 3 Lifts Totalling 5 Inches.

It is Estimated that 75 Tons of HBP (Patching) will be Required as Directed.

STABILIZATION BASED ON THE FOLLOWING:

WIDENED AREAS:

18^k E.D.L.A. (20 YEAR)	168
REGIONAL FACTOR	1.5
SERVICEABILITY INDEX	2.5
STRENGTH COEFFICIENTS:	
BITUMINOUS PAVEMENT	0.44
BORROW	R = 37

OVERLAY AREAS - DEFLECTION ANALYSIS:

18^k E.D.L.A. (20 YEAR)	168
CRITICAL FACTOR	1.75
STRENGTH COEFFICIENTS:	
BITUMINOUS PAVEMENT	0.44
EXISTING PAVEMENT	0.30

SUMMARY OF EARTHWORK QUANTITIES

INDEX BOOK	PAGE	SHEET		PROJECT TOTALS Plan	Final
Earthwork Computer Run.					
			UNCLASSIFIED EXCAVATION	CU. YD	
			ROADWAY (COMPUTER)	1,904	1,435
			TOTAL	1,904	1,435
			BORROW		
			FOR ROADWAY EMBANKMENT	11,470	7,090
			TOTAL	11,470	7,090
			COMPACTION (AASHTO T99)		
			EMBANKMENT (NET)	10,288	9,632
			BASE OF CUTS AND FILLS	1,630	1,630
			TOTAL	11,918	11,262
			HAUL	YD. MI.	
			FROM MASS DIAGRAM	58,971	38,610
			TOTAL	58,971	38,610
			ROADWAY QUANTITIES BALANCE (FOR INFORMATION ONLY)	CU. YD	
			EXCAVATION UNCLASSIFIED	1,904	
			Ø BORROW	11,470	
			TOTAL	13,374	
			EMBANKMENT NET ROADWAY (FROM COMPUTER)	10,288	
			TOTAL	10,288	
			EMBANKMENT X FACTOR (1.3) ROADWAY (FROM COMPUTER)	13,374	
			TOTAL	13,374	

Ø Minimum "R" Value = 37

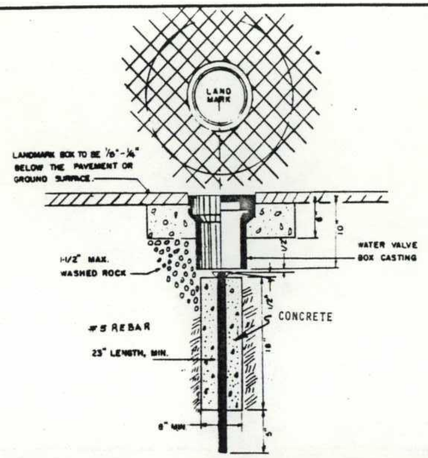
DIVISION OF HIGHWAYS STATE OF COLORADO
D. O. H. FORM NO. 126
REV. FEB., 1977

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004(11)	12	

AS CONSTRUCTED

NO REVISIONS ☐ REVISED 12-14-23 VOID ☐

FRU 093-1(3)



THIS MONUMENT TO BE INSTALLED AT ALL STREET AND INTERSECTIONS AS CALLED FOR BY COLORADO STATE LAW AND/OR AT LOCATIONS CALLED FOR BY THE CITY ENGINEER.

CITY OF BOULDER WILL STOCK MONUMENT BOX. THEY MAY BE OBTAINED FROM CITY STORES UPON PRESENTING A REQUISITION FROM THE CITY ENGINEER'S OFFICE AT NO COST TO CONTRACTOR.

ALL MONUMENTS SHALL BE SET WITHIN A PERIOD NOT TO EXCEED SIXTY DAYS AFTER THE COMPLETION OF THE STREETS. IN THE EVENT THAT THIS IS NOT DONE, THE CITY WILL CONTRACT THE WORK TO REGISTERED LAND SURVEYOR AND BILL THE RESPONSIBLE PARTY.

DETAIL OF SURVEY MONUMENT

SCHEDULE OF CONSTRUCTION TRAFFIC SIGNS

SIGN CODE	LEGEND	DIMENSIONS	PANEL SIZE A	B	C	QUANTITY ~~REQUIRED~~
48W 20-1	ROAD/CONST/(DIST)	48" x 48"		4 ~~8~~		
48W 20-7a	FLAGGER SYMBOL	48" x 48"		2 ~~4~~		
36W 20-50	BE/PREPARED/TO/STOP	36" x 36"	2 ~~4~~			
48W 4-2(R)	RIGHT LANE TRANSITION	48" x 48"		2 ~~4~~		
48W 4-2(L)	LEFT LANE TRANSITION	48" x 48"		3 ~~4~~		
*48W 20-5( )	LANE/CLOSED/(DIST)	48" x 48"		4		
24R 3-2	NO LEFT TURN SYMBOL	24" x 24"	0 ~~6~~			
48R 11-2	ROAD/CLOSED	48" x 30"		2		
36W 20-~~1~~	ROAD/CONST/AHEAD	36" x 36"	0 ~~6~~			
60G 20-2	END/CONSTRUCTION	60" x 24"		2		
48W 20-3	ROAD CLOSED/DIVERTED	48" x 48"		1 ~~0~~		
VERTICAL PANEL						~~180~~ 73
VERTICAL PANEL (LIGHT)(F)						~~30~~ 38
BARRICADE (3M-8)(TEMP)						2
TRAFFIC CONE		28"				100

*W 20-5( ) ADVANCE WARNING SIGNS TO BE FURNISHED WITH INTERCHANGEABLE PLAQUES READING "RIGHT", "LEFT" AND "CENTER" AT NO ADDITIONAL EXPENSE.

GUARD RAIL TABULATION

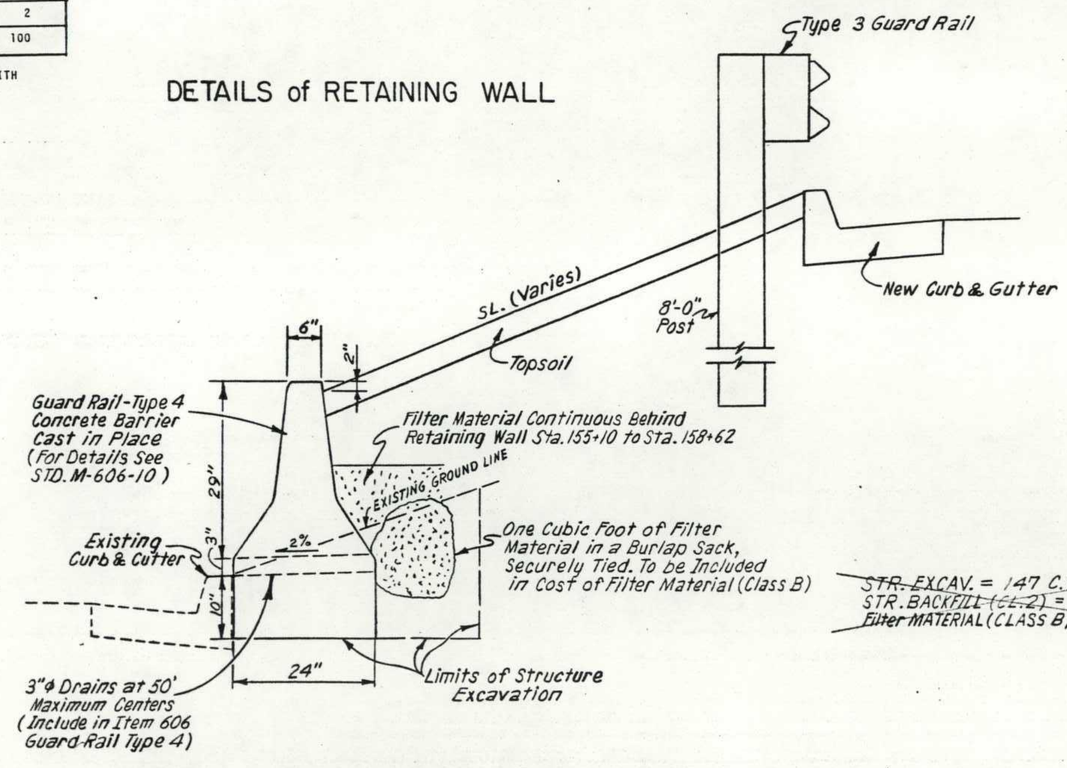
STATION	SIDE	GUARD RAIL TYPE 3 ● LIN. FT. Plan	Final	END ANCHORS GALVANIZED TYPE 3 D EACH Plan	Final	TYPE 3 E EACH Plan	Final
▲154+60 To 159+85■	LT.	≠525	525	1	1	1	0
■176+~~95~~ 40 To ~~178+20~~ 179+65▲	RT.	125	425	1	1	1	1
▲~~177+47~~ 176+90 To ~~178+72~~ 179+09■	LT.	♦125	220	1	0	1	0
TOTAL		775	1170	3	2	3	1

▲ TYPE 3 D END ANCHOR
■ TYPE 3 E END ANCHOR
≠ REQUIRES 8'-0" POSTS

♦ ~~LAST 50'~~ MIDDLE 200' OF GUARD RAIL REQUIRES 8'-0" POSTS

● GUARD RAIL WILL BE MADE OF ~~GALVANIZED~~ WEATHERING STEEL Refer to CMO 5

DETAILS of RETAINING WALL



~~STR. EXCAV. = 147 C.Y.~~
STR. BACKFILL ~~(CL. 2)~~ = 83 C.Y.
~~Filter~~ MATERIAL (CLASS B) = ~~21 C.Y.~~

FINAL QUANTITIES

STATION	SIDE	STR EX	STR BKFL (Cl 2)	FILTER MAT. (Class B)
154+60 to 158+87	Lt	139	72	22
178+65 to 179+07	Rt	17	6	—
175+60 to 178+00 ♦	Lt	46	41	11
TOTAL		202	119	33

TYPE 4 GUARD RAIL
(RETAINING WALL)

STATION	SIDE	GUARD RAIL TYPE 4 CONCRETE BARRIER (CAST IN PLACE) LIN. FT. Plan	FINAL LIN. FT.
154+60 To ~~159+12~~ 158+87	LT.	⊕ 452	427
178+~~75~~ 65 To ~~178+75~~ 179+07	RT.	60	40
♦175+60 TO 178+00	LT	0	234
TOTAL		512	701

⊕ INCLUDES 1-12' END SECTION
♦ Added CMO 9206

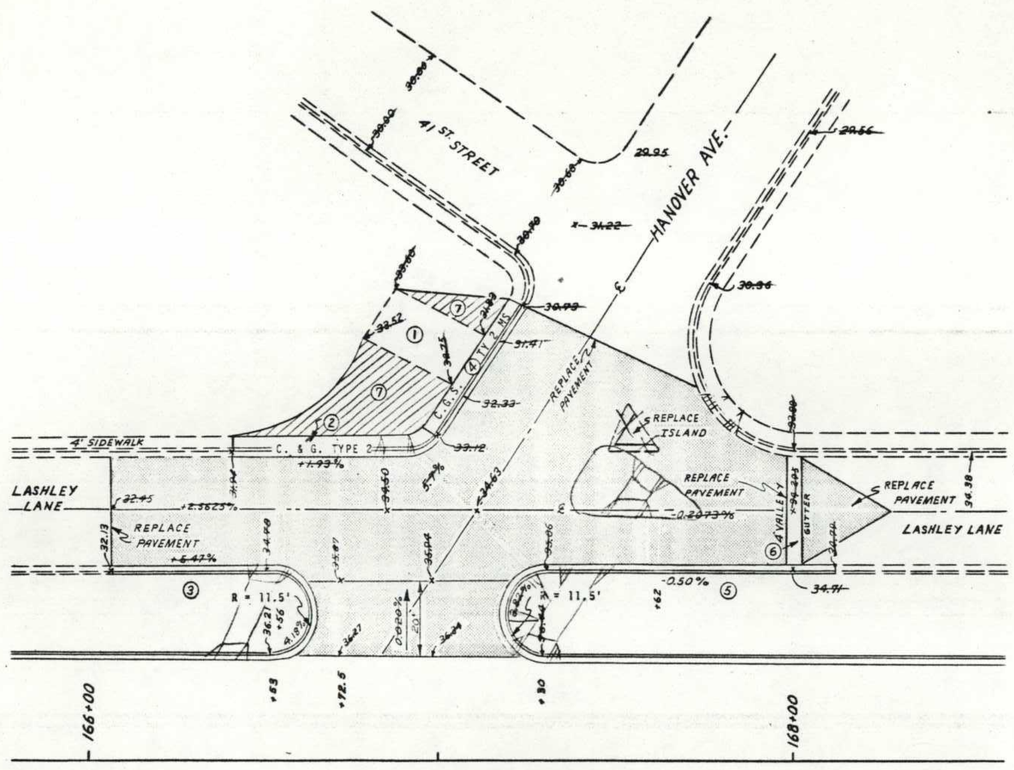
D. O. H. FORM NO. 126
REV. FEB., 1977

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004 (11)	13	

AS CONSTRUCTED
NO REVISIONS ☐ REVISED 10-14-83 VOID ☐

FRU 093-1(3)

HANOVER INTERSECTION
LT. SIDE



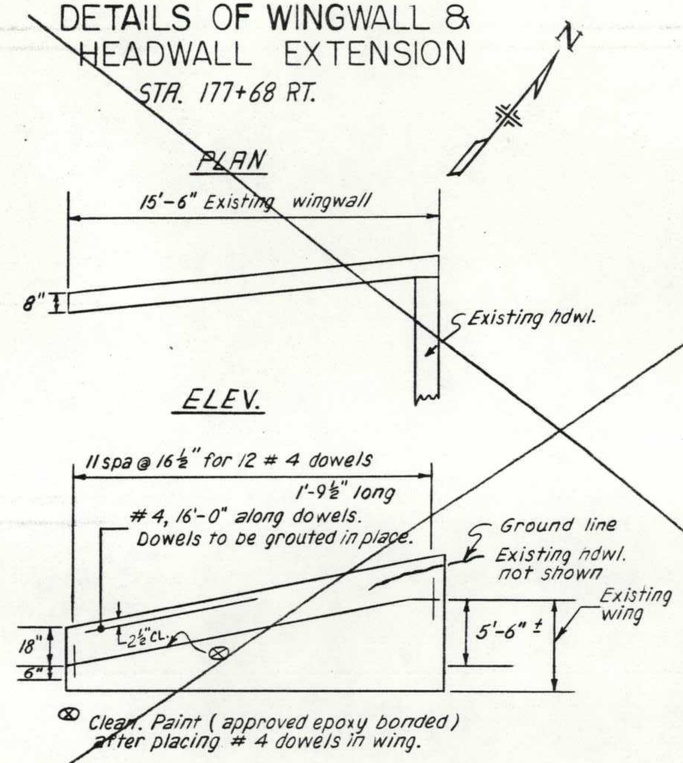
ORIGINAL SCALE
1 IN. = 20 FT.

① REMOVE AND REPLACE DRIVEWAY.
② REMOVE AND REPLACE C. & G., SIDEWALK.
③ REMOVE AND REPLACE C. & G.
*④ REMOVE AND REPLACE C.G. & SIDEWALK.
⑤ REMOVE AND REPLACE C. & G.
⑥ NEW VALLEY GUTTER.
⑦ GRADE.

*STANDARD M-609-A, CURB AND GUTTER (TYPE 2)(4" MOUNTABLE WITH SIDEWALK)
(SPECIAL THIS PROJECT) (SECTION M S)

IT IS ESTIMATED 120 SQ. YDS. OF REMOVAL OF ASPHALT MAT WILL BE REQUIRED FOR ABOVE INTERSECTION.

DETAILS OF WINGWALL & HEADWALL EXTENSION
STA. 177+68 RT.

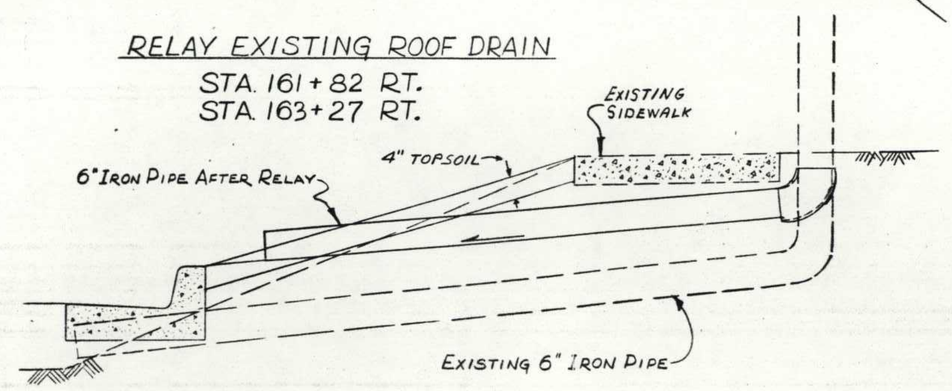


QUANTITIES FOR WING

601	Concrete Class A (Misc.)	6 Cu.Yd.
602	Reinforcing Steel	25 LBS.

NOTE:
Cleaning wing surface, drilling holes, grouting, epoxy, etc. to be included in item 601.

RELAY EXISTING ROOF DRAIN
STA. 161+82 RT.
STA. 163+27 RT.



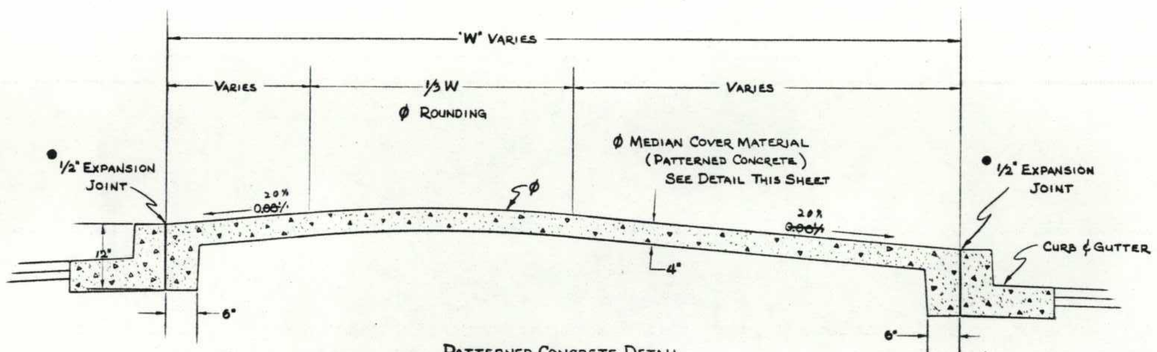
FRU 093-1(3)

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004(11)	14	

AS CONSTRUCTED
NO REVISIONS ☐ REVISED 10-14-93 VOID ☐

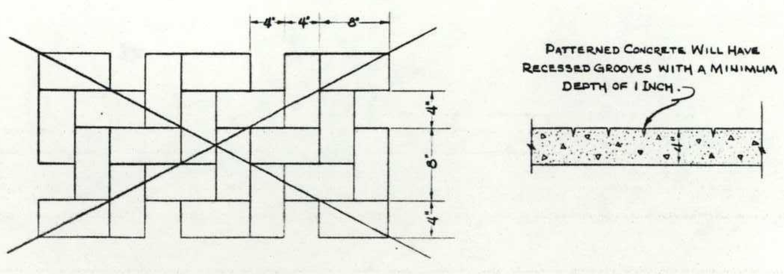
MEDIAN COVER MATERIAL

STATION	SIDE	PLAN PATTERNED CONCRETE Sq. Ft.	FINAL PATTERNED CONCRETE Sq. Ft.
152 + 52.5 TO 158 + 99.5	MEDIAN	2,989	3054
159 + 68.5 TO 165 + 70.5	MEDIAN	1,805	1800
HANOVER ST.	ISLANDS	-0-	680
TOTAL		4,794	5534



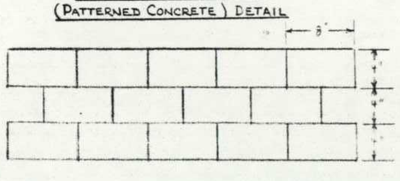
PATTERNED CONCRETE DETAIL

• To be Included in the Cost of Item 610, Median Cover Material (Patterned Concrete)

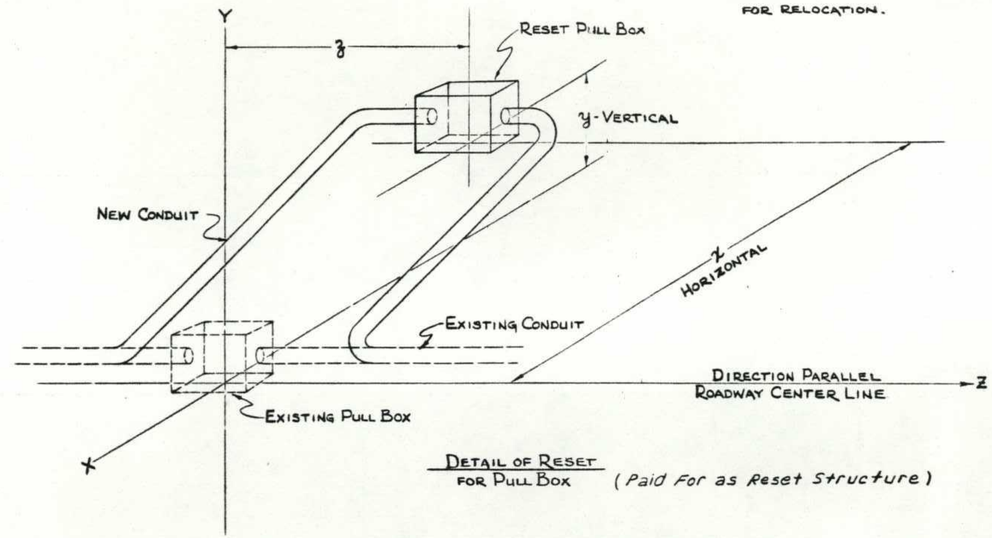


PATTERNED CONCRETE WILL HAVE RECESSED GROOVES WITH A MINIMUM DEPTH OF 1 INCH.

MEDIAN COVER MATERIAL (PATTERNED CONCRETE) DETAIL



NOTE: COST OF RESETTING PULL BOX INCLUDES CONDUIT AND ALL INCIDENTALS FOR RELOCATION.



DETAIL OF RESET FOR PULL BOX (Paid For as Reset Structure)

* DESIGN DATA OF PULL BOX RESET

STATION	SIDE	EXISTING OFF SET	RESET x	RESET y	RESET z	TOP ELEV.
157 + 15	LT.	22'	23.0'	-0.6'	0'	5428.2'
158 + 20	LT.	43'	1.3'	4.6'	0'	5429.2'
158 + 90	LT.	47'	0'	3.6'	0	5428.6'

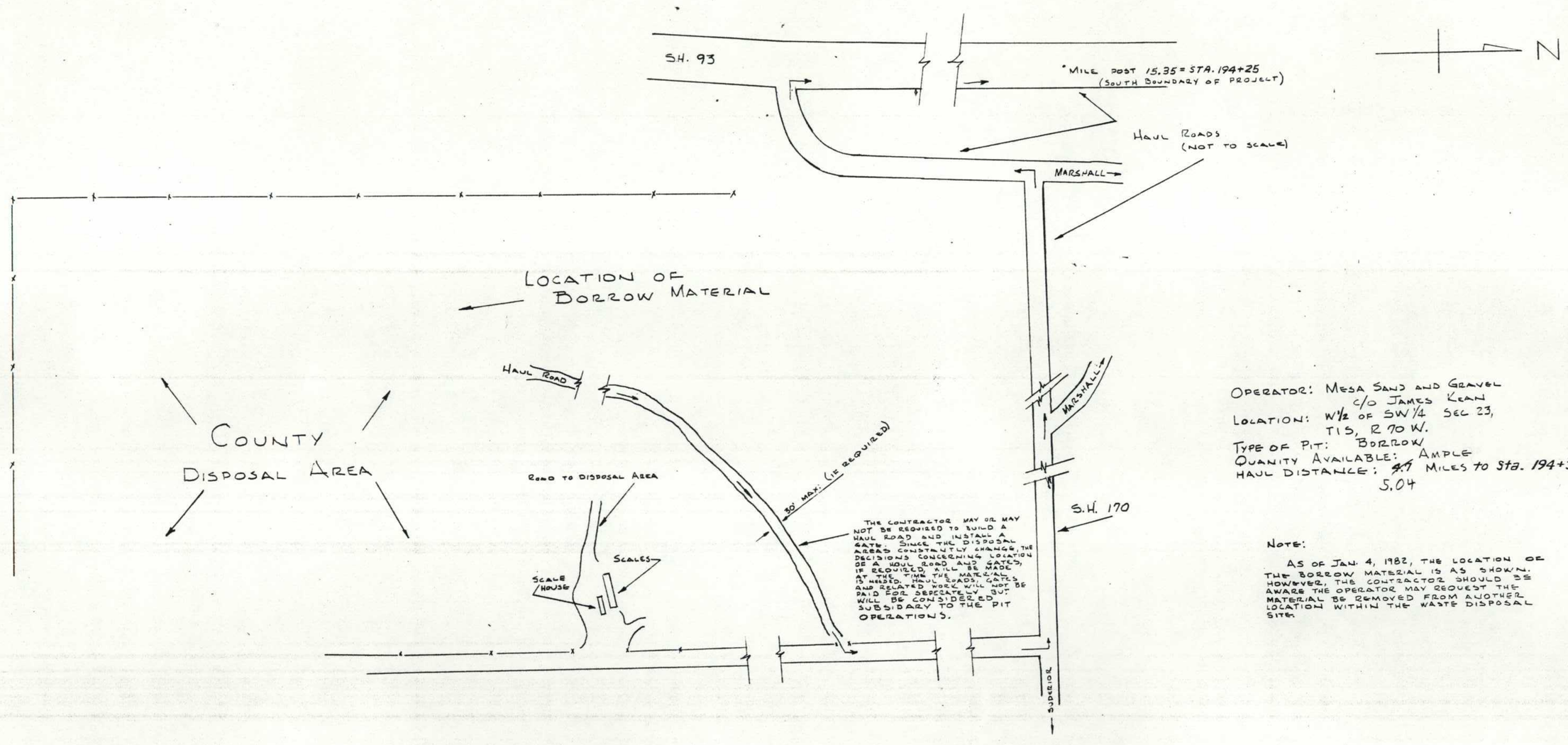
* ALL DIMENSIONS ARE APPROXIMATE.

FRU 093-1(3)

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.
VIII	COLORADO	FRU 093-1(3) PMB 0004(11)	15

AS CONSTRUCTED				
NO REVISIONS		REVISED	10-14-83	VOID

BORROW PIT SKETCH



OPERATOR: MESA SAND AND GRAVEL
c/o JAMES KEAN

LOCATION: W½ OF SW¼ SEC 23, T1S, R70W.

TYPE OF PIT: BORROW

QUANITY AVAILABLE: AMPLE

HAUL DISTANCE: ~~4.7~~ 5.04 MILES to Sta. 194+30

NOTE:

AS OF JAN. 4, 1982, THE LOCATION OF THE BORROW MATERIAL IS AS SHOWN. HOWEVER, THE CONTRACTOR SHOULD BE AWARE THE OPERATOR MAY REQUEST THE MATERIAL BE REMOVED FROM ANOTHER LOCATION WITHIN THE WASTE DISPOSAL SITE.

STANDARD CURBS AND GUTTERS

STANDARD M-609-A

(JANUARY, 1980)

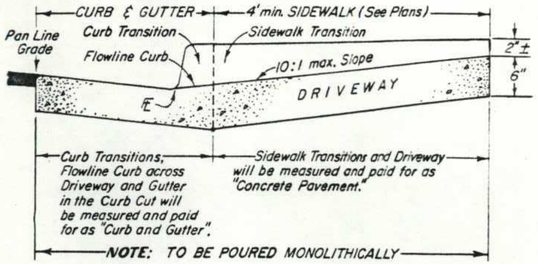
(SPECIAL THIS PROJECT) FRU 093-1(3)

FED. ROAD REG. NO	DIVISION	COMBINED PROJ. No's.	SHEET NO.
VIII	COLO	FRU 093-1(3) PMS 0004(11)	16

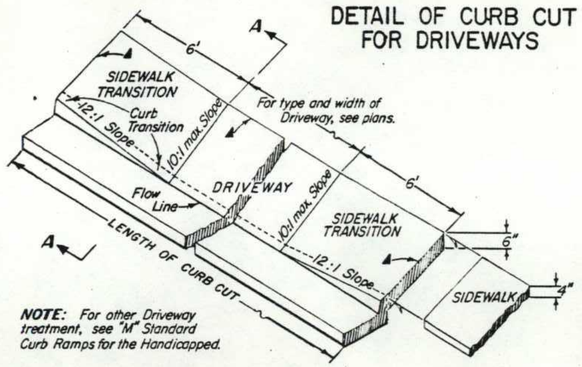
REVISIONS			
R-1	3-6-80	Tooled Joint in Concrete Sidewalk.	T.A.L.

AS CONSTRUCTED			
NO REVISIONS	10-14-83	REVISED	VOID

CONCRETE PAVEMENT (DRIVEWAYS) SECTION A-A

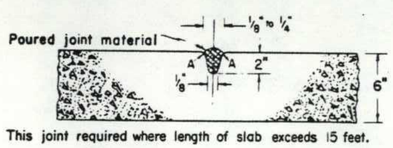


DETAIL OF CURB CUT FOR DRIVEWAYS



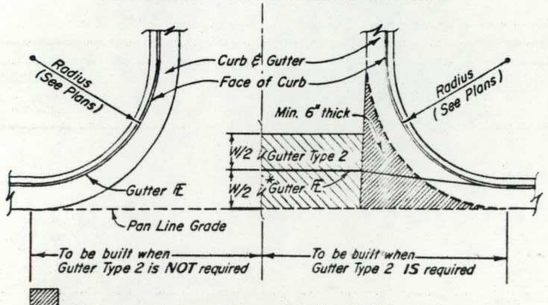
NOTE: For other Driveway treatment, see "M" Standard Curb Ramps for the Handicapped.

TRANSVERSE CONTRACTION JOINT FOR CONCRETE PAVEMENT (DRIVEWAYS)



This joint required where length of slab exceeds 15 feet.

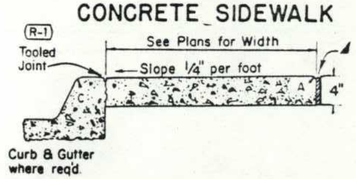
CONSTRUCTION OF CONCRETE GUTTERS AT INTERSECTIONS



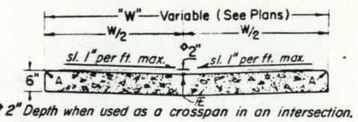
This area shall be poured monolithically with Curb and Gutter and paid for as "Concrete Pavement."

* Flow Line location will be established by W/2 shown on plans.

CONCRETE SIDEWALK

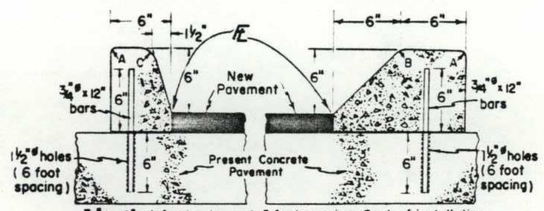


GUTTER Type 2



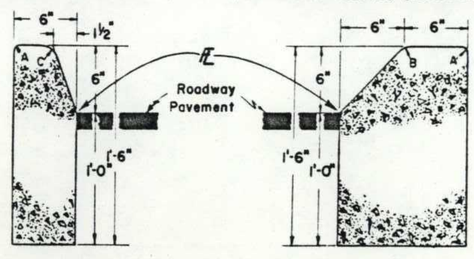
◇ 2" Depth when used as a crosspan in an intersection.

CURB Type 4 (6" Barrier) (Section B) — CURB Type 4 (6" Mountable) (Section M)

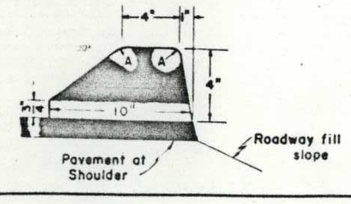


3/4"ø x 12" reinforcing bars at 6 foot spacing. Cost of installation to be included in unit price bid for Curb. Bars to be grouted in 1 1/2"ø holes in present concrete. Grout to consist of 2 parts clean sand and 1 part cement.

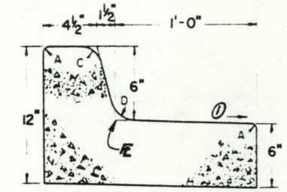
CURB Type 2 (6" Barrier) (Section B) — CURB Type 2 (6" Mountable) (Section M)



CURB Type 6 (4" Mountable) (Section M)

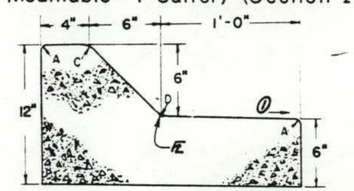


CURB AND GUTTER Type 2 (6" Barrier - 1' Gutter) (Section IB)

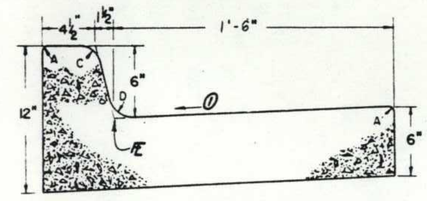


LEGEND FOR RADII	
A	= 1/8"
B	= 1"
C	= 1 1/2"
D	= 1 1/2" to 2"

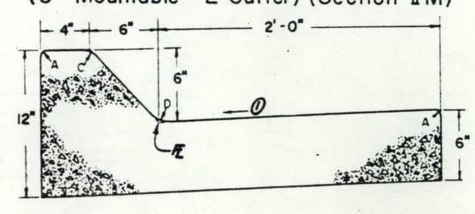
CURB AND GUTTER Type 2 (6" Mountable - 1' Gutter) (Section IM)



CURB AND GUTTER Type 2 (6" Barrier - 2' Gutter) (Section IIB)



CURB AND GUTTER Type 2 (6" Mountable - 2' Gutter) (Section IIM)



GENERAL NOTES

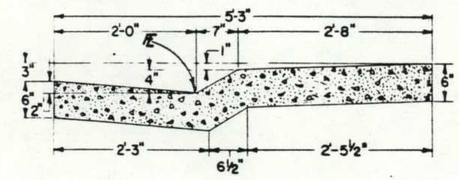
All work shall be done in accordance with the Standard Specifications applicable to the project.

On Curves 3 degrees and sharper, Curbs and/or Gutters are to be placed on the Arc of the Curve unless otherwise noted on plans. A maximum chord length of 10 feet may be used when the degree of curve is less than 3 degrees.

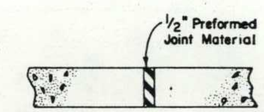
Expansion Joints shall be installed when abutting concrete or a fixed structure. Expansion Joint material shall be 1/2" thick and shall extend the full depth of contact surface.

Concrete shall be Class A or B.

CURB AND GUTTER (Type 2) (4" Mountable with Sidewalk) (Section MS)



SIDEWALK EXPANSION JOINT



Note: Expansion Joints shall be placed in the Sidewalk at intervals of not more than 100 ft.

GENERAL NOTES (Continued)

Gutter Cross Slopes shall be 1/2"/ft. when draining away from Curb and 1"/ft. when draining toward Curb.

Profile Grade of Curbs and Gutters shall be located at the Flow Line.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS

CURBS AND GUTTERS

Designed by ew
Made by ew
Checked by CRS

Approved by [signature]
Staff Design Engr.
Date: July 1, 1969

INITIAL	DATE
BY	
BY	
BY	
BY	
BY	

RADO DEPARTMENT OF HIGHWAYS
C. D. H. 126
1969

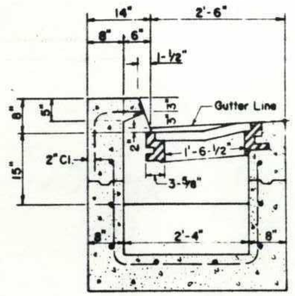
(SPECIAL THIS PROJECT)

FEDERAL ROAD REGION NO	DIVISION	COMBINED PROJ. NO'S.	SHEET NO	TOTAL SHEETS
XIII	COLORADO	FRU 093-1 (3) PMS 0004 (11)	17	

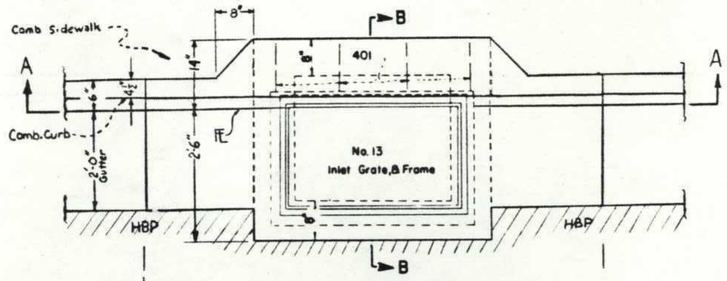
AS CONSTRUCTED

NO REVISIONS 10-14-83 REVISED VOID

FRU 093-1(3)

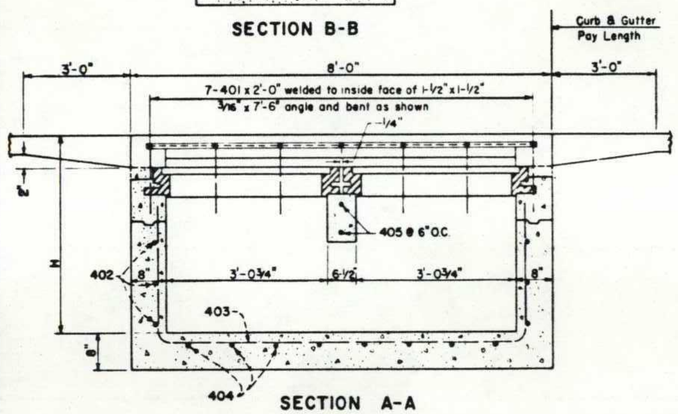


SECTION B-B



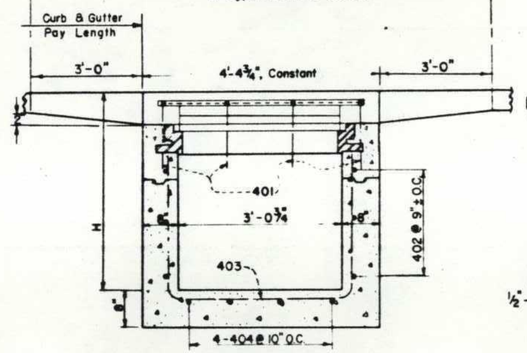
PLAN - (For Comb. Curb, Gutter & Sidewalk or Type 2 Curb & Gutter)

NO. 13 GRATING & FRAMES
Approx Weight 680 lbs.

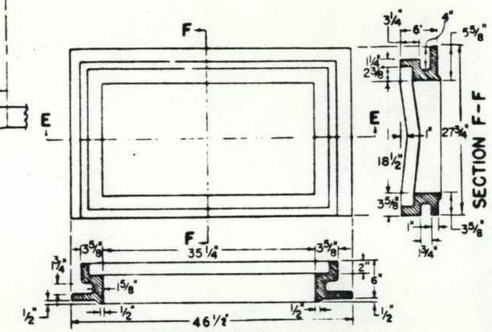


SECTION A-A

DOUBLE INLET
TYPE 3



SECTION A-A (For Comb Curb, Gutter, & Sidewalk or Type 2 Curb & Gutter)



SECTION E-E

QUANTITIES

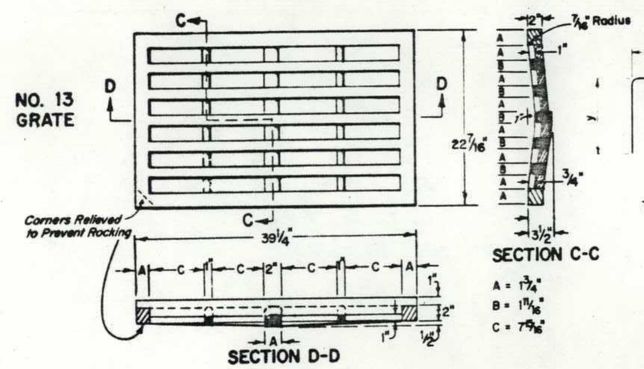
H	NO. OF 402 BARS REQ'D.	TYPE 3 INLET CLASS A CONCRETE ℣ CU. YD.	TYPE 3 INLET REINFORCING STEEL θ LB.	TYPE 3 DOUBLE INLET CLASS A CONCRETE ℣ CU. YD.	TYPE 3 DOUBLE INLET REINFORCING STEEL θ LB.
3'-0"	3	1.30	64.29	2.20	110.77
3'-6"	4	1.47	78.35	2.51	132.47
4'-0"	4	1.64	82.40	2.82	139.22
4'-6"	5	1.81	96.46	3.13	160.92
5'-0"	6	1.98	110.51	3.44	182.63
5'-6"	6	2.15	114.56	3.75	189.38
6'-0"	7	2.32	128.62	4.06	211.08
6'-6"	8	2.49	142.68	4.37	232.78
7'-0"	8	2.66	146.73	4.68	239.53
7'-6"	9	2.83	160.79	4.99	261.24
8'-0"	10	3.00	174.85	5.30	282.94
8'-6"	10	3.17	178.90	5.61	289.69
9'-0"	11	3.34	192.96	5.92	311.39
9'-6"	12	3.51	207.02	6.23	333.10
10'-0"	12	3.68	211.07	6.54	339.84

θ Includes 1% for overrun.
℣ Includes volume occupied by pipes.

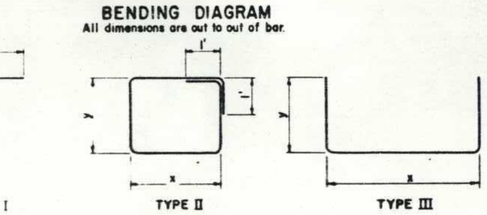
BAR LIST FOR H = 3'-0"

MARK	TYPE	NO. REQ'D.	TYPE 3 INLET DIMENSIONS x	TYPE 3 INLET DIMENSIONS y	LENGTH	NO. REQ'D.	TYPE 3 DOUBLE INLET DIMENSIONS x	TYPE 3 DOUBLE INLET DIMENSIONS y	LENGTH
401	I	4	1'-0"	1'-0"	2'-0"	7	1'-0"	1'-0"	2'-0"
402	II	3	3'-7 1/4"	2'-10 1/2"	14'-11 1/2"	3	7'-2 1/2"	2'-10 1/2"	22'-2"
403	III	2	3'-5 3/4"	* 2'-0 1/2"	7'-6 3/4"	2	7'-1"	* 2'-0 1/2"	11'-2"
404	III	4	2'-9"	* 2'-1"	6'-11"	8	2'-9"	* 2'-1"	6'-11"
405	STR.					2			3'-0"

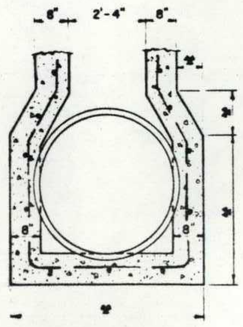
* Add 6" to this dimension for each 6" increase in "H" above 3'-0".



BENDING DIAGRAM
All dimensions are out to out of bar.

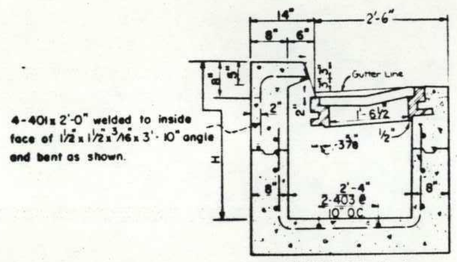


DETAILS OF INLET ALTERATION
For Larger Size or Skewed Pipes



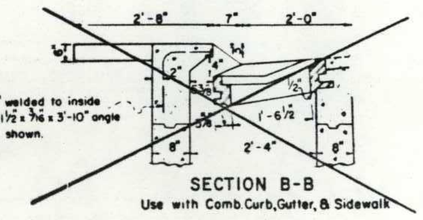
NOTE:
Vary steel shape and quantity as required.

* Variable - to suit pipe size or skew angle.



4-401 x 2'-0" welded to inside face of 1 1/2" x 1 1/2" x 3/16" x 3'-10" angle and bent as shown.

SECTION B-B
Use with Type 2 Curb & Gutter



4-401 x 2'-0" welded to inside face of 1 1/2" x 1 1/2" x 3/16" x 3'-10" angle and bent as shown.

SECTION B-B
Use with Comb. Curb, Gutter, & Sidewalk

INLET TYPE 3

No. 13 Grate and Frame to be used with Type 3 Inlet

NOTE: Use steps for all inlets with H = 3'-6" or more. Start 2'-0" below gutter line and space on 16" centers.

Details of Steps on Standard M-604-2A

GENERAL NOTES

All work shall be done in accordance with the Standard Specifications applicable to the project.

All concrete shall be class A or B.
All concrete walls shall be formed on both sides
All exposed concrete corners shall be beveled to a 1" face
All reinforcing bars shall be tagged with bar designation and station number.
All dimensions not shown as clear are to ℄ of bar.
All gratings, rings and covers shall be cast iron.
Since pipe entries into the inlet are varible, the dimensions shown are typical. Actual dimensions and quantities for concrete and reinforcement shall be as required in the work.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS

CONCRETE INLETS
TYPES 3 & 3 DOUBLE

~~STANDARD M-604-4A~~

DIVISION OF HIGHWAYS STATE OF COLORADO
S.H. FORM NO. 1241
APRIL 1977

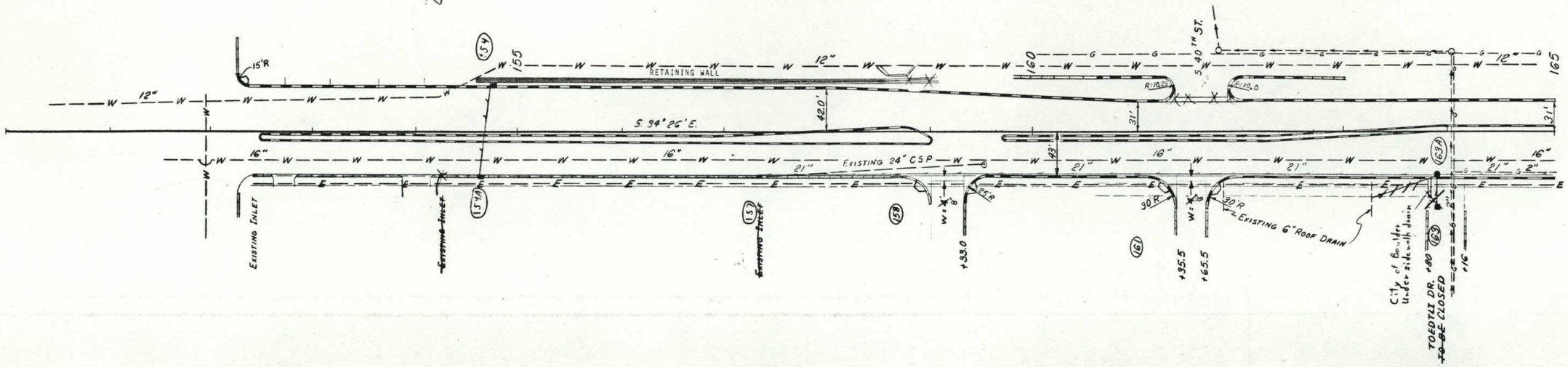
AS CONSTRUCTED			
NO REVISIONS		REVISED 10-17-83	VOID

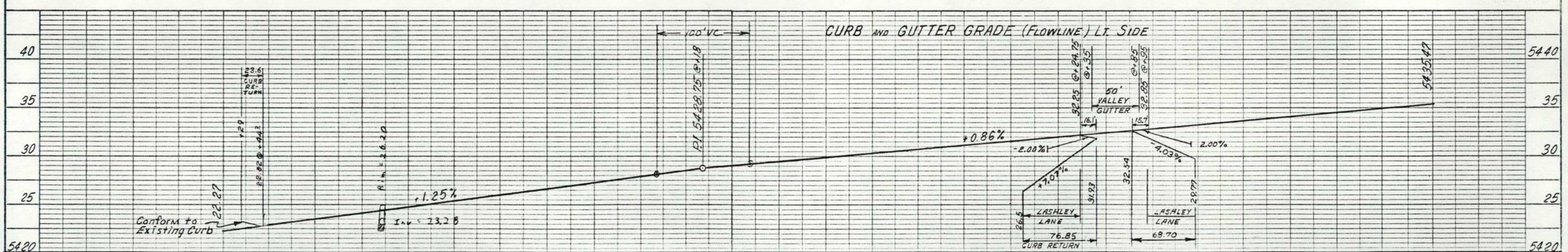
FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004 (11)	18	

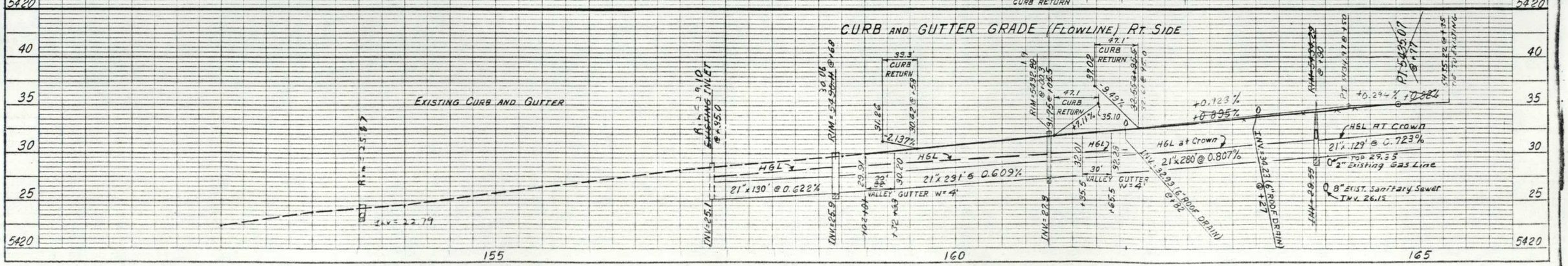
FRU 093-1(3)

CURB AND GUTTER, DRAINAGE

NOTE:
FOR OTHER UTILITIES SEE PLAN & PROFILE, ROW AND UTILITIES SHEETS.







PLAN
NOTE BOOK
No.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
BY
DATE

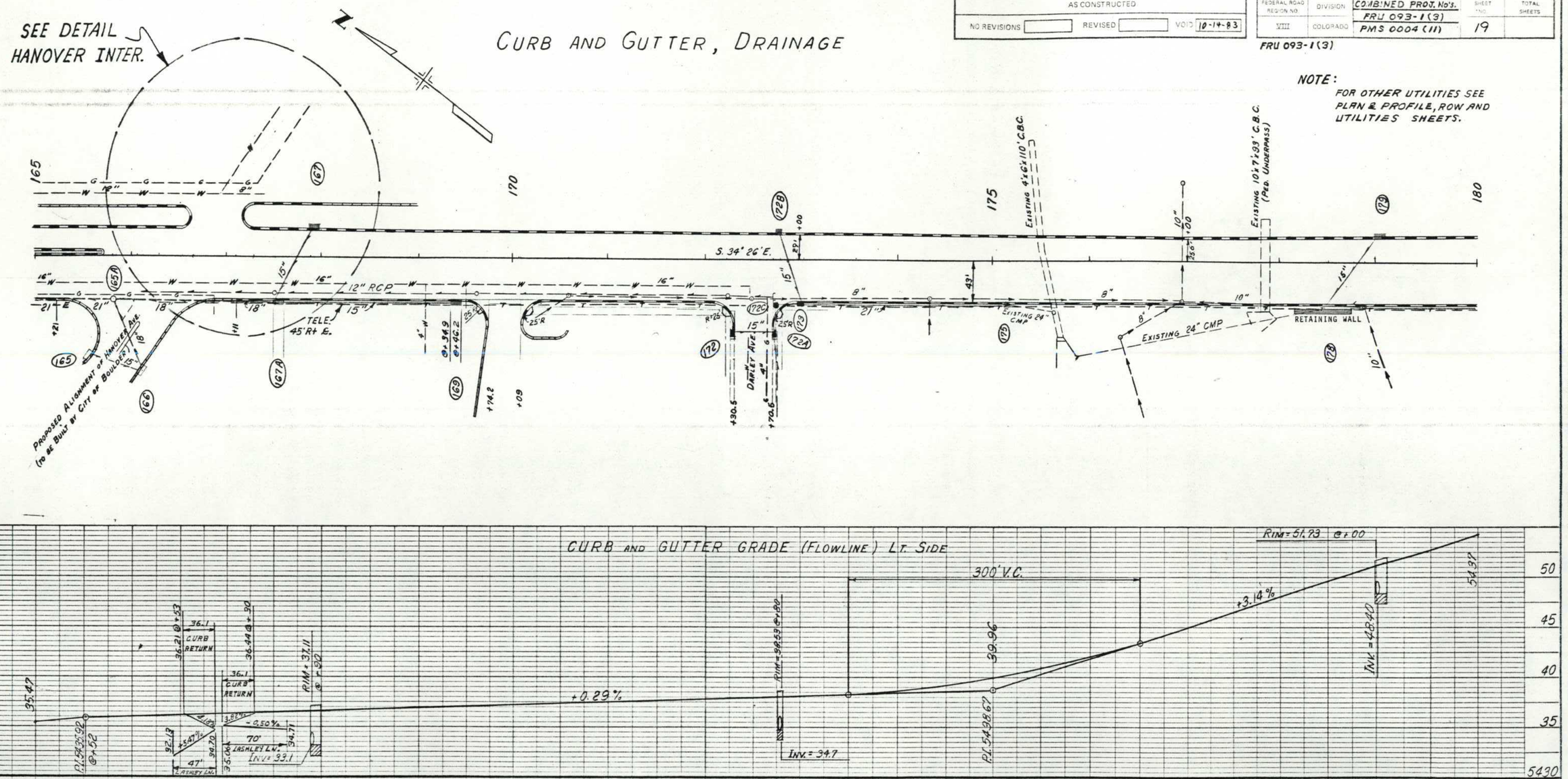
PROFILE
NOTE BOOK
No.
SURVEYED
PLOTTED
GRADES CHECKED
R.W.'s NOTED
STRUCTURE NOTATIONS CHECKED
BY
DATE

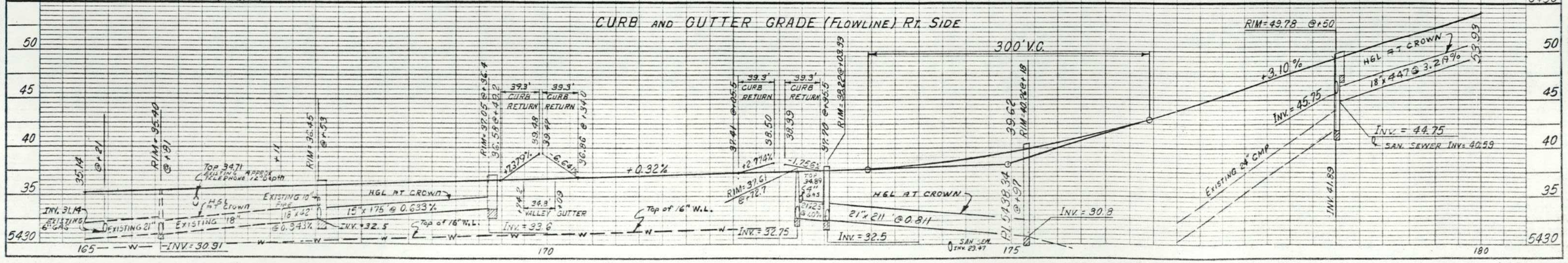
AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID 10-14-83

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3)	19	
		PMS 0004 (11)		

FRU 093-1(3)

CURB AND GUTTER, DRAINAGE



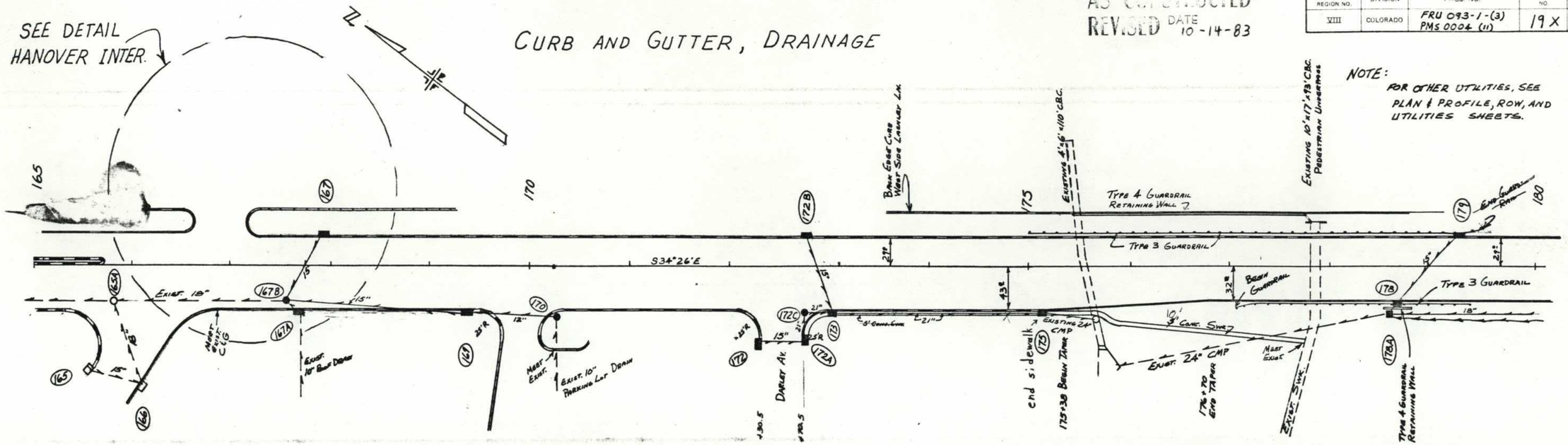


DIVISION OF HIGHWAYS STATE OF COLORADO
STANDARD FORM NO. 134
JANUARY 1972

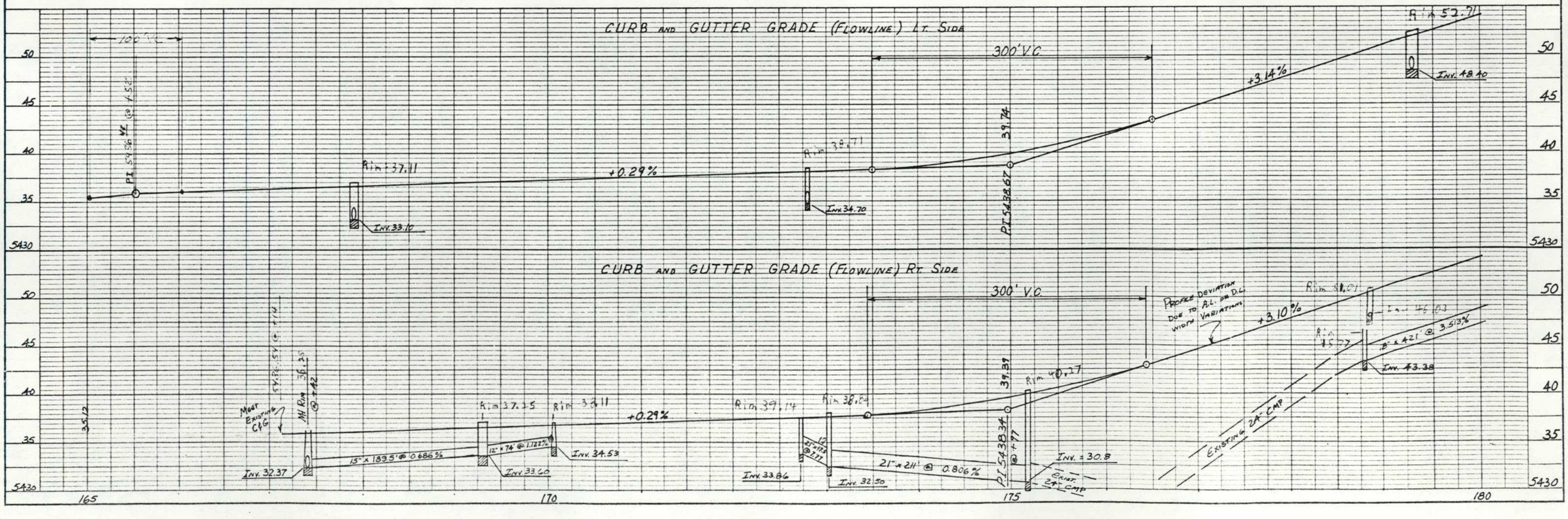
AS CONSTRUCTED
REVISED DATE 10-14-83

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1-(3) PMS 0004 (11)	19 X	

CURB AND GUTTER, DRAINAGE



NOTE:
FOR OTHER UTILITIES, SEE PLAN & PROFILE, ROW, AND UTILITIES SHEETS.



PROFILE	
SURVEYED	
PLOTTED	
GRADES CHECKED	
B.M. & STATIONS CHECKED	
NOTE BOOK	
No.	STRUCTURE NOTATIONS CHECKED

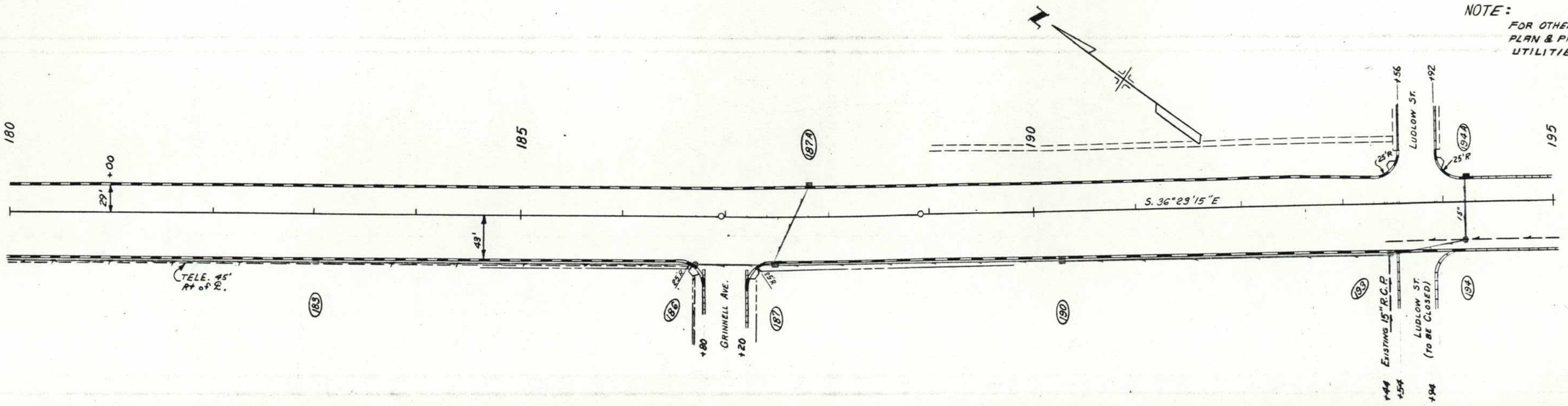
AS CONSTRUCTED			
NO REVISIONS	REVISED	VOID 10-14-83	

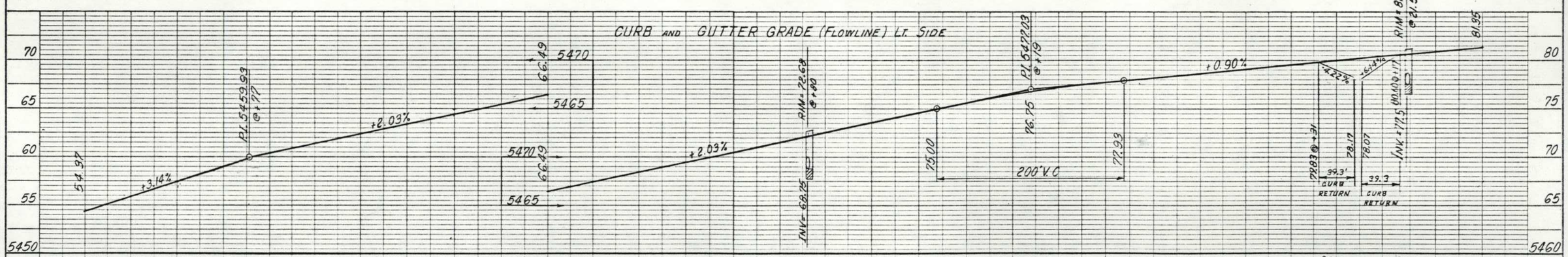
FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	FRU 093-1(3) PMS 0004 (11)	20	

FRU 093-1(3)

CURB AND GUTTER, DRAINAGE

NOTE:
FOR OTHER UTILITIES SEE PLAN & PROFILE, ROW AND UTILITIES SHEETS.





PLAN
NOTE BOOK
No.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
BY
DATE

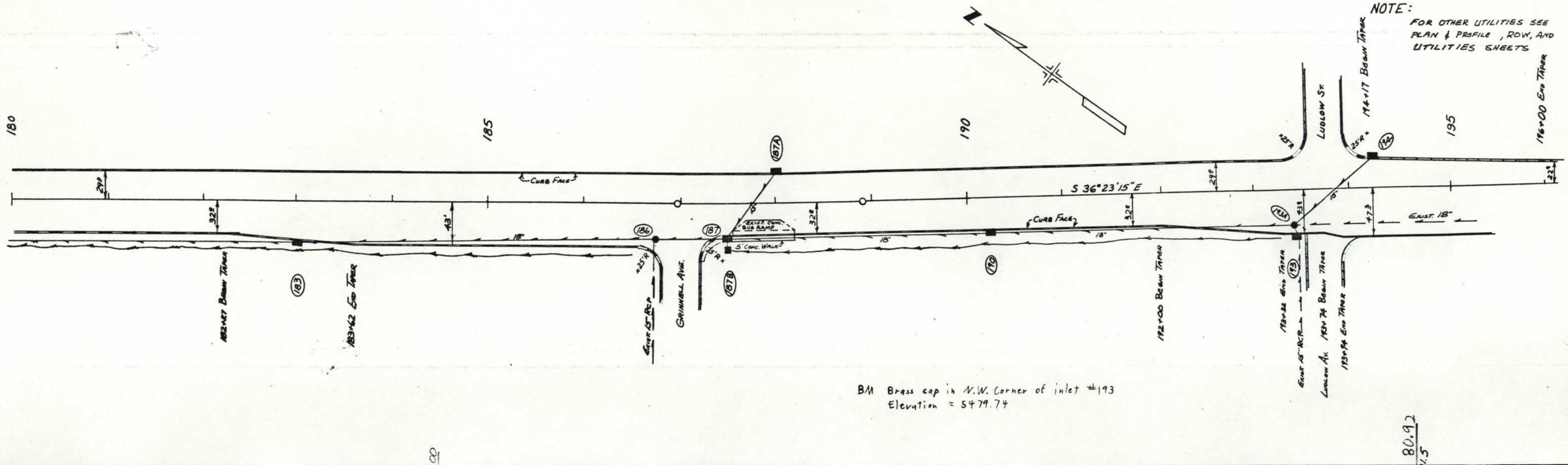
PROFILE
NOTE BOOK
No.
SURVEYED
PLOTTED
GRADES CHECKED
B.M.'s NOTED
STRUCTURE NOTATIONS CHECKED
BY
DATE

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004(11)	20X	

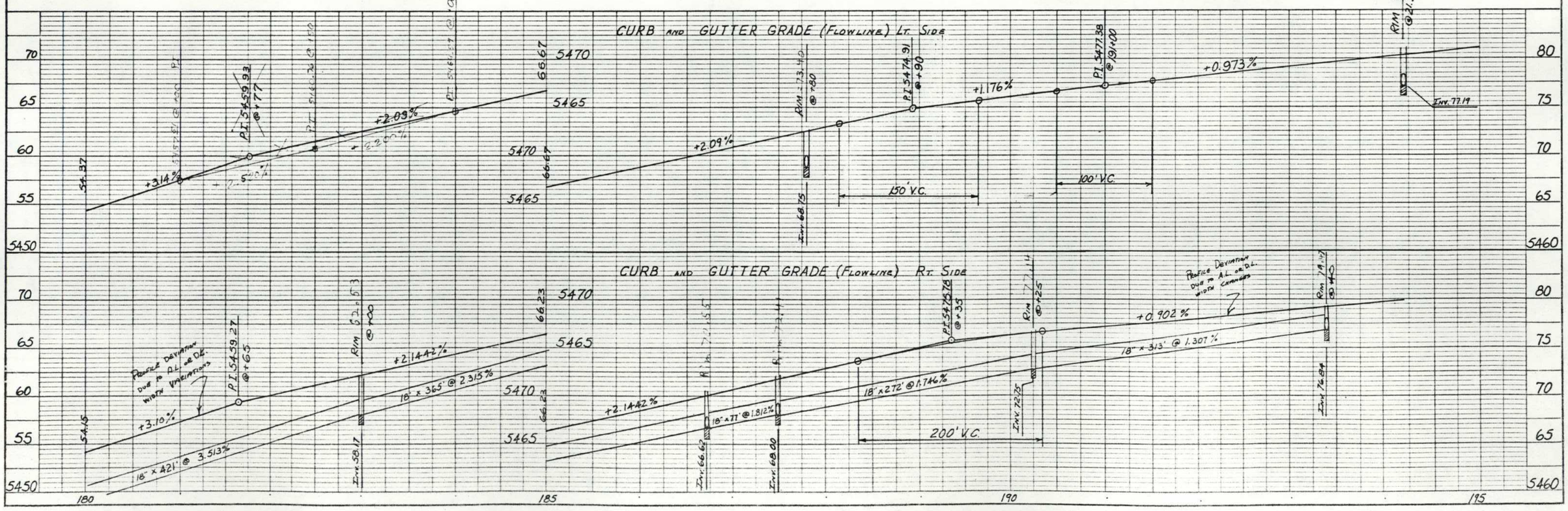
AS CONSTRUCTED
REVISED DATE 10-14-83

CURB AND GUTTER, DRAINAGE

NOTE:
FOR OTHER UTILITIES SEE PLAN & PROFILE, ROW, AND UTILITIES SHEETS



BM Brass cap in N.W. Corner of inlet #193
Elevation = 5479.74



DIVISION OF HIGHWAYS - STATE OF COLORADO
D.O.H. FORM NO. 1344
APRIL 1973

PLAN & PROFILE, ROW AND UTILITIES

NE¼ SEC. 8
T.1 S., R.70 W.

AS CONSTRUCTED			
NO REVISIONS		REVISED 10-14-83	VOID

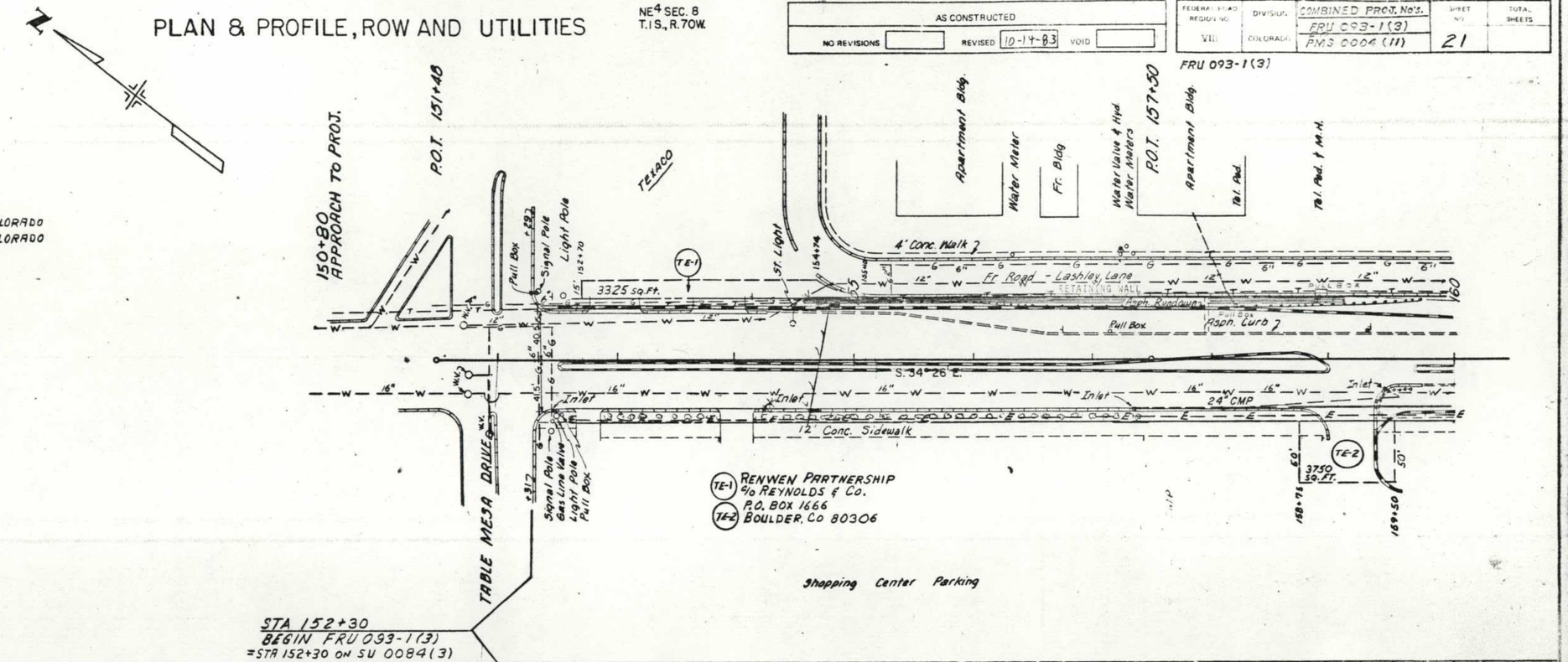
FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004 (11)	21	

FRU 093-1(3)

NOTE BOOK Nos.

29072	32149
32051	33482

UTILITY	OWNERS
SANITARY SEWER	CITY OF BOULDER
STORM SEWER	CITY OF BOULDER
WATER LINE	CITY OF BOULDER
TELE. CONDUIT	MOUNTAIN BELL
ELEC. TRANS. LINES	PUBLIC SERVICE OF COLORADO
GAS MAIN	PUBLIC SERVICE OF COLORADO



PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RI OF WAY CHECKED
DATE
BY

PROFILE
SURVEYED
PLOTTED
NOTE-BOOK
GRADES CHECKED
R. W. L. NOTED
LEVELS AND STATIONS CHECKED
DATE
BY

Form No. 653

DIVISION OF HIGHWAYS STATE OF COLORADO
D.O.H. FORM NO. 1341
APRIL 1977

PLAN & PROFILE, ROW AND UTILITIES

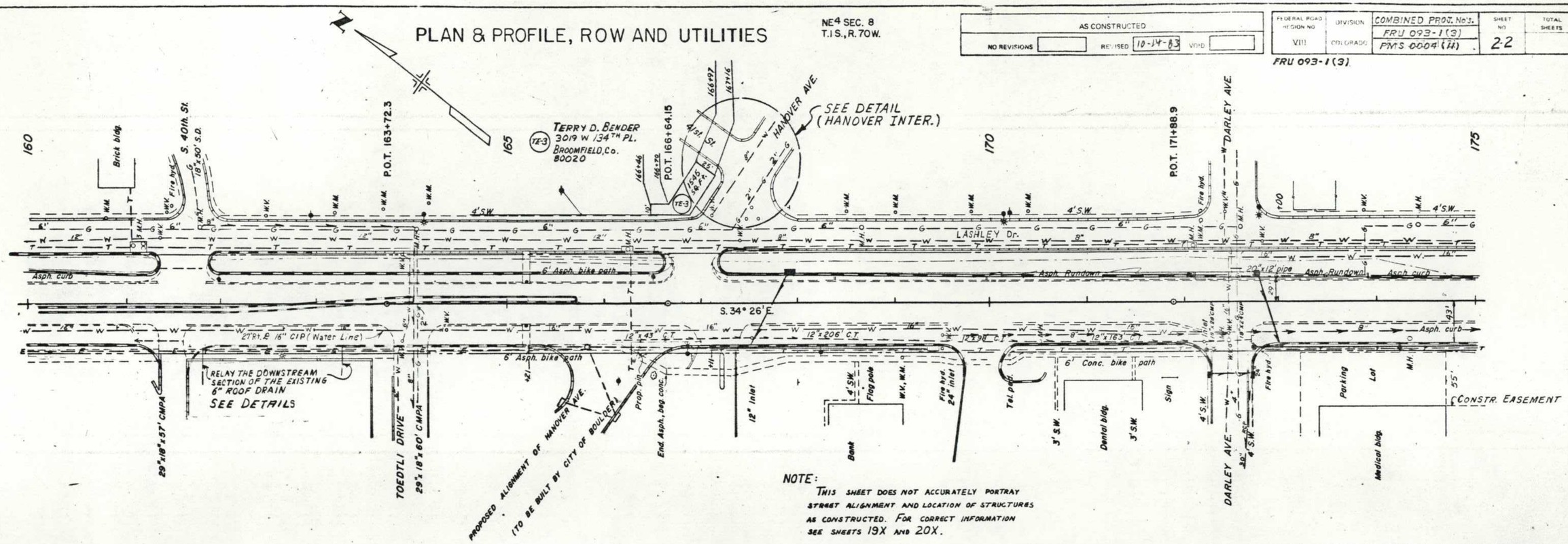
NE4 SEC. 8
T.1 S., R.70 W.

AS CONSTRUCTED			
NO REVISIONS		REVISED 10-14-83	VOID

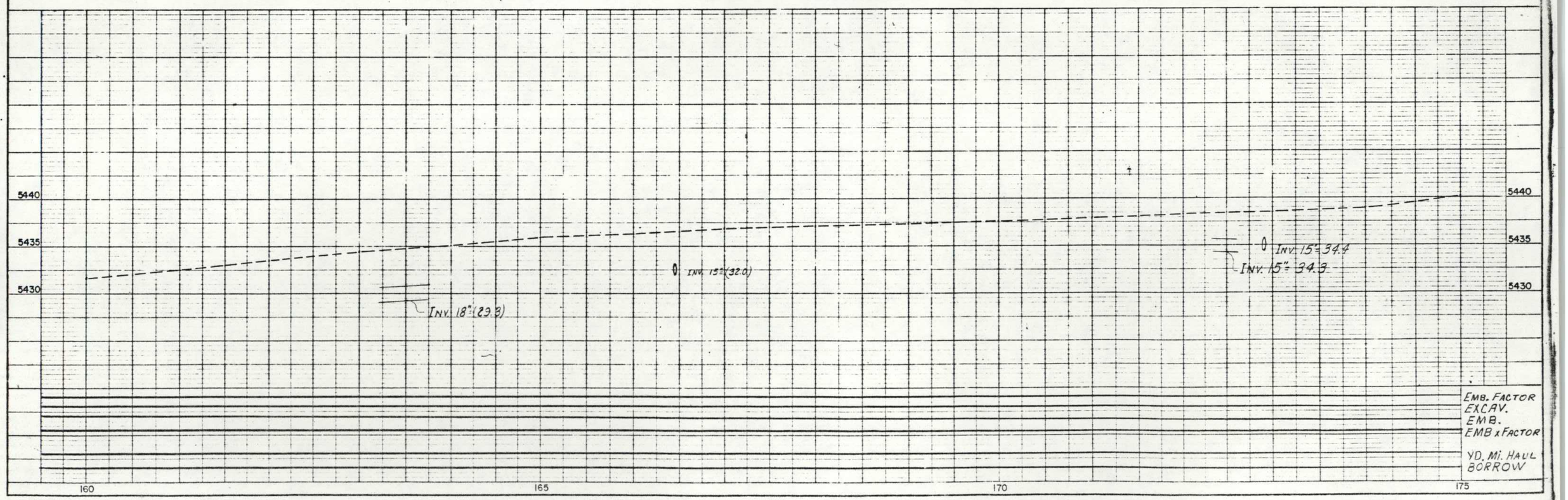
FEDERAL ROAD REGION NO	DIVISION	COMBINED PROJ. No's.	SHEET NO	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004(11)	2-2	

FRU 093-1(3)

NOTE BOOK Nos.	
29072	32149
32051	33482



NOTE:
THIS SHEET DOES NOT ACCURATELY PORTRAY STREET ALIGNMENT AND LOCATION OF STRUCTURES AS CONSTRUCTED. FOR CORRECT INFORMATION SEE SHEETS 19X AND 20X.



PROFILE — SURVEYED: PLOTTED: NOTE-BOOK: GRADES CHECKED: STRUCTURE-LOCATIONS CHECKED: No. 652

PLAN — SURVEYED: PLOTTED: ALIGNMENT CHECKED: BY OF WAY CHECKED:

FORM

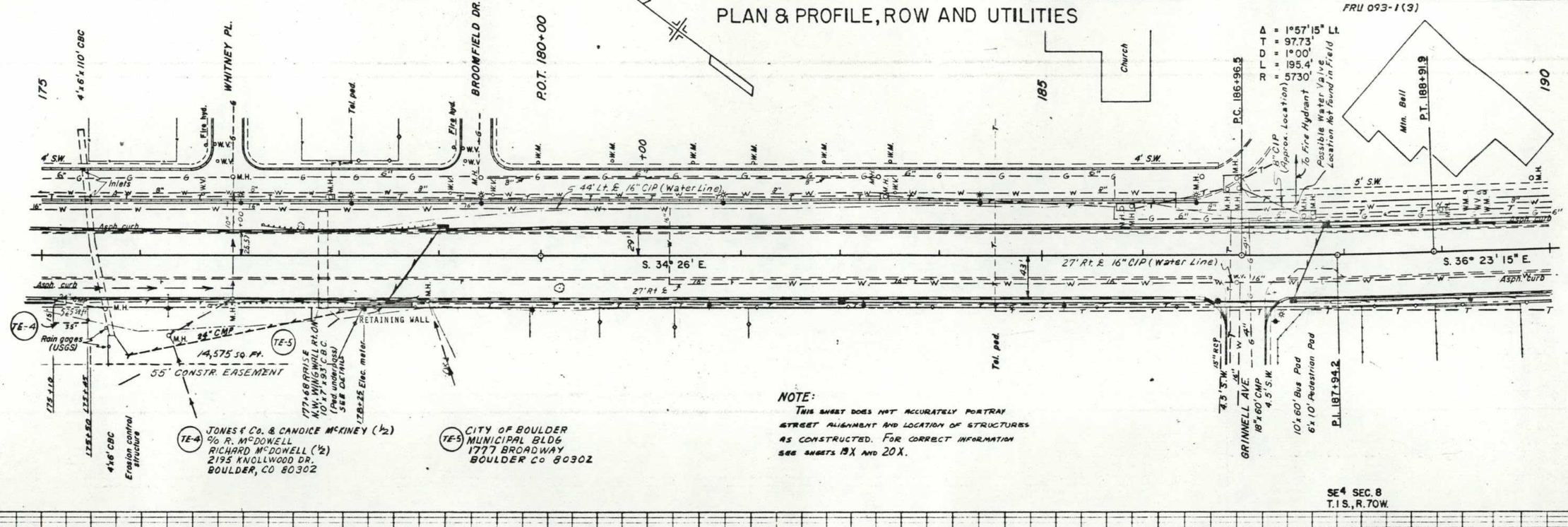
D.O.H. FORM NO. 134-1
APRIL 1977

AS CONSTRUCTED			
NO REVISIONS		REVISED 10-14-83	VOID

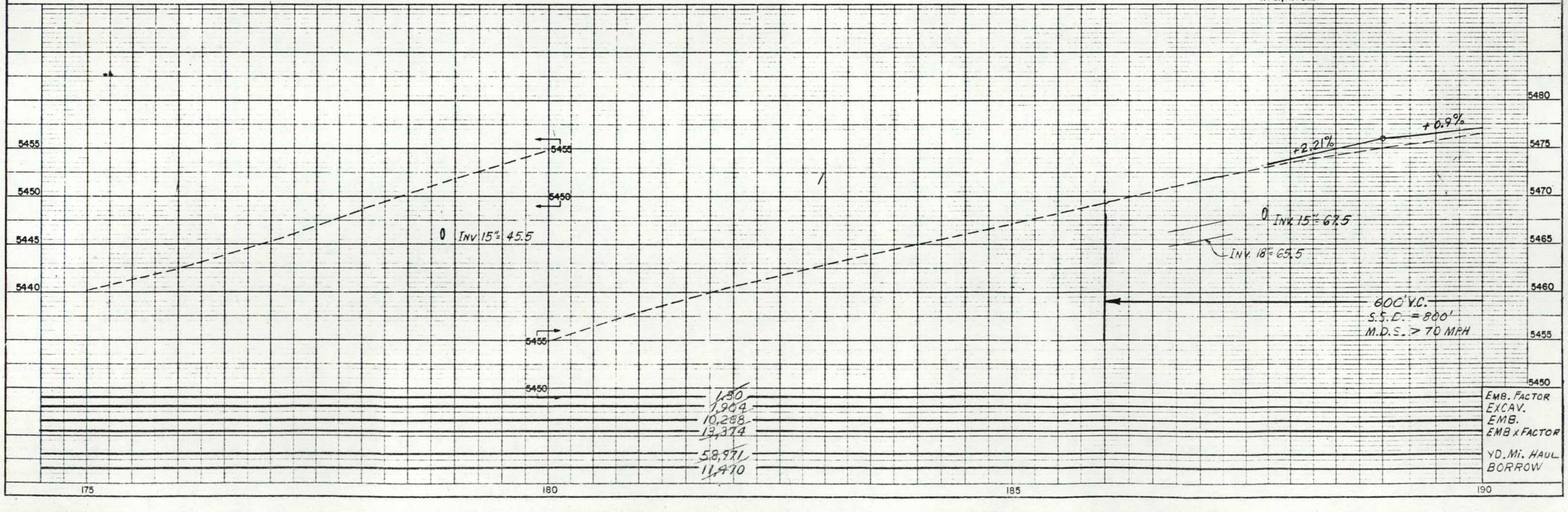
FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004(011)	23	

FRU 093-1(3)

PLAN & PROFILE, ROW AND UTILITIES



NOTE:
THIS SHEET DOES NOT ACCURATELY PORTRAY STREET ALIGNMENT AND LOCATION OF STRUCTURES AS CONSTRUCTED. FOR CORRECT INFORMATION SEE SHEETS 19X AND 20X.



NOTE BOOK Nos
29072 32149
32051 33982

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
NOTE BOOK
B.M.'s NOTED
STRUCTURE NOTATIONS CHECKED

Form No. 653

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS-STATE OF COLORADO
D H FORM NO. 1344
APRIL 1977

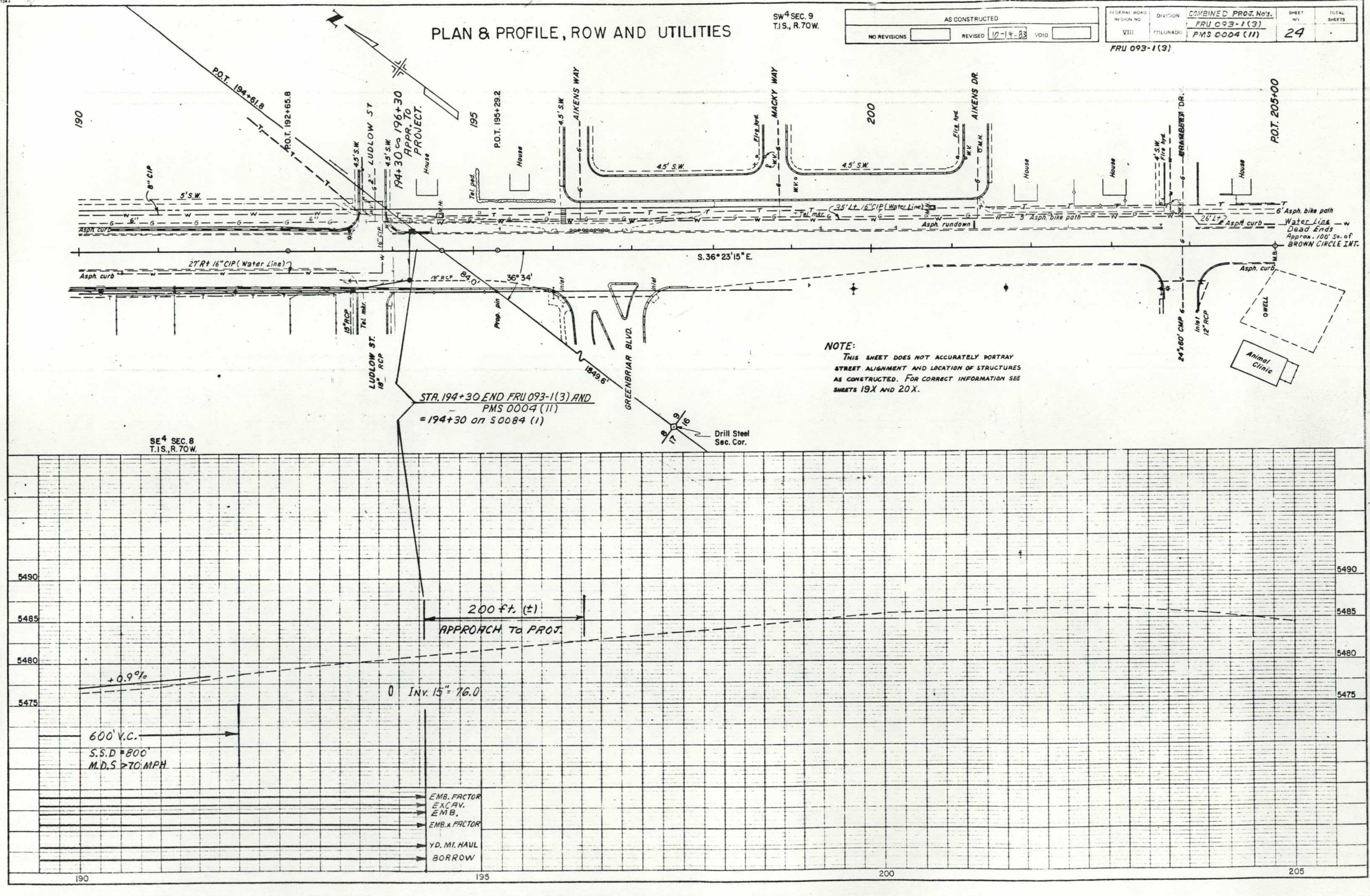
PLAN & PROFILE, ROW AND UTILITIES

SW4 SEC. 9
T.1S., R.70W.

AS CONSTRUCTED			
NO REVISIONS		REVISED 10-14-83	VOID

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004 (11)	24	

FRU 093-1(3)



PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
AT OF WAY CHECKED
NO. No.

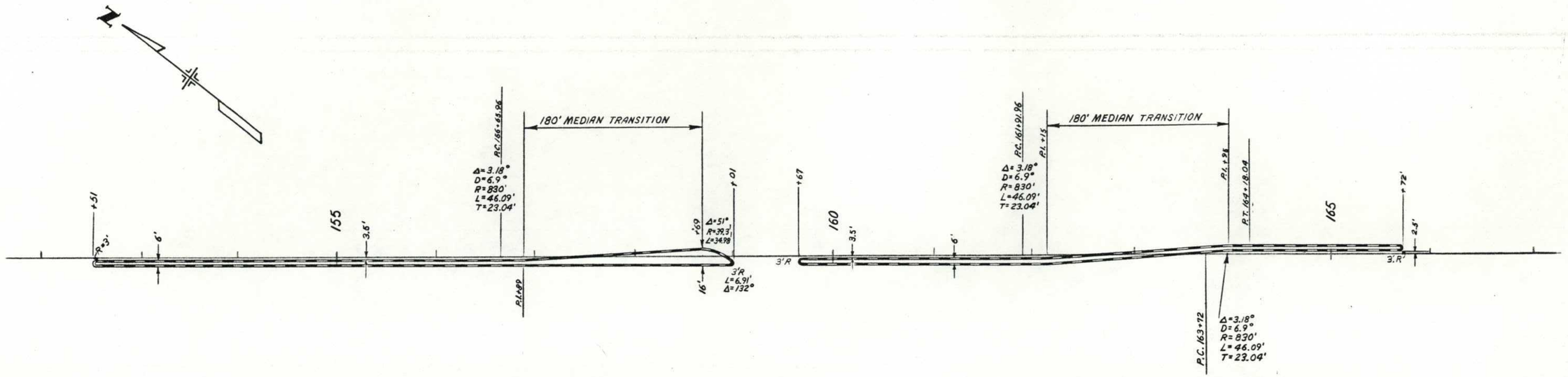
PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
NOTE-BOOK
P. M.'s NOTED
STRUCTURE LOCATIONS CHECKED
Form No. 653

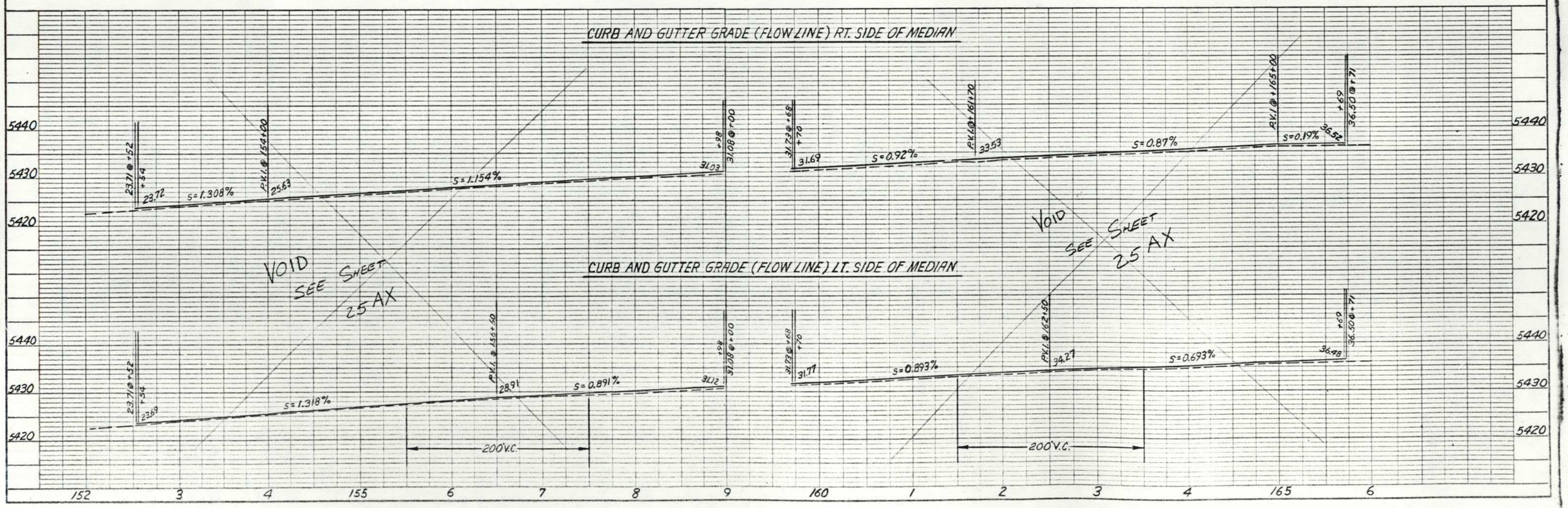
29072 32149
32051 33482

AS CONSTRUCTED			
NO REVISIONS		REVISED 10-14-83	VOID

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004 (11)	25	

FRU 093-1(3)





PLAN
NOTE BOOK No.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
BY
DATE

PROFILE
NOTE BOOK No.
SURVEYED
PLOTTED
GRADES CHECKED
B.M.'s NOTED
STRUCTURE INVENTORIES CHECKED
BY
DATE

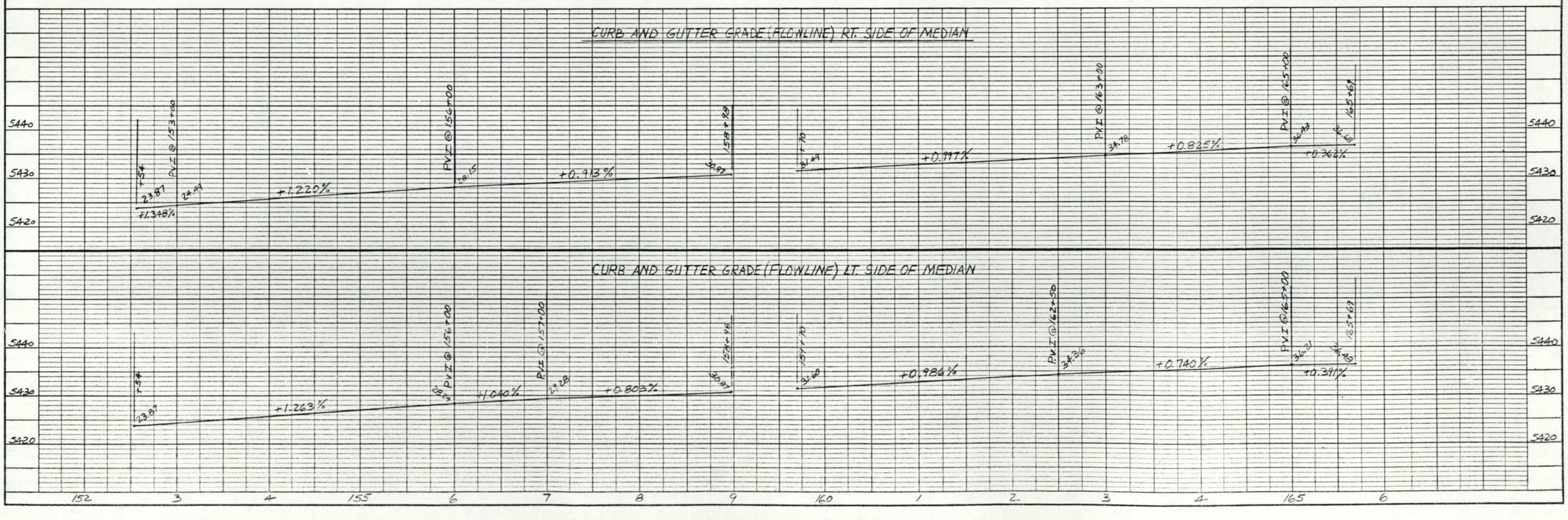
DIVISION OF HIGHWAYS STATE OF COLORADO
S.O.H. FORM NO. 1341
APRIL 1977

AS CONSTRUCTED		
NO REVISIONS	REVISED 10-14-83	VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004 (11)	25AX	

PLAN			
NOTE BOOK No.	SURVEYED		DATE
	PLOTTED		
	ALIGNMENT CHECKED		
	BL OF MAT CHECKED		

PROFILE			
NOTE BOOK No.	SURVEYED		DATE
	PLOTTED		
	GRADES CHECKED		
	BRIDGE CHECKED		
	STRUCTURE NOTATIONS CHECKED		



CROSS SECTIONS OF CROSS CULVERTS

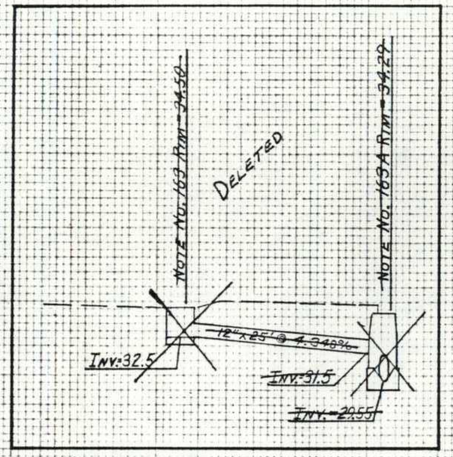
AS CONSTRUCTED
NO REVISIONS ____ REVISED 10-17-83 VOID ____

COMBINED PROJ. No's.
FRU 093-1(3)
PMS 0004 (11)

26

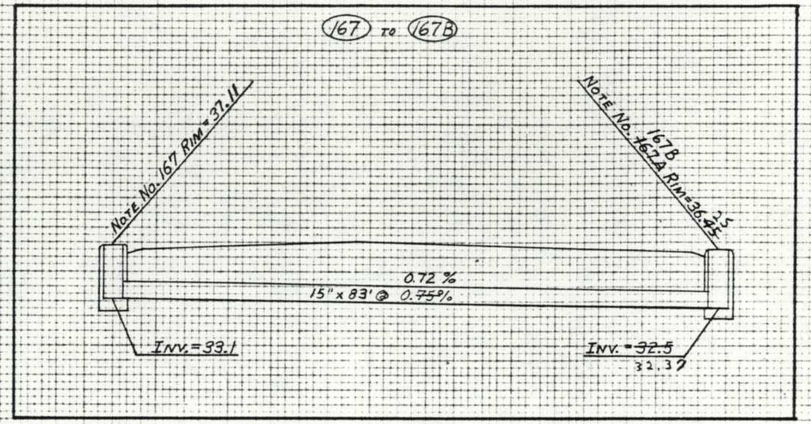
FRU 093-1(3)

~~STA. 163+90 RT.~~ DELETED
TOEDTLI DR.
(TO BE CLOSED)



~~STR. BACKFILL~~
~~CL. 1 .07x21 = 1.47 Cu. Yds.~~
~~CL. 2 .22x21 = 4.61 Cu. Yds.~~
~~BEDDING~~
~~0.4x21 = 0.84 Cu. Yds.~~
~~STR. EXCAV.~~
~~$\frac{3.3\times(1+3)\times 21}{27}$ = 10.3 Cu. Yds.~~

STA. 167+~~53~~ 90 RT. TO 167+~~90~~ 42 LT.

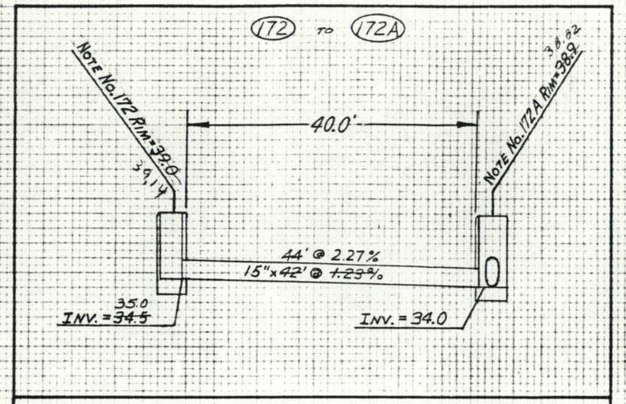


STR. BACKFILL
CL. 1 ~~.09x79 = 7.11~~ 8 Cu. Yds.
CL. 2 ~~.25x79 = 19.75~~ 20 Cu. Yds.

BEDDING
~~.04x79 = 3.16~~ Cu. Yds.

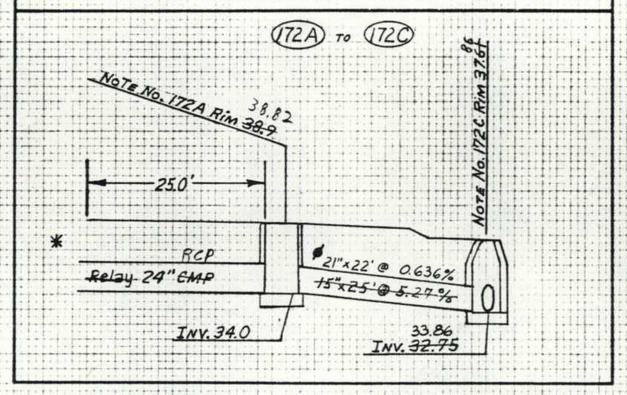
STR. EXCAV.
$\frac{4.3\times(1.25+3)\times 79}{27}$ = ~~53.5~~ 54 Cu. Yds.

STA. 172+30 RT. TO 172+71 RT.
DARLY AVE.



STR. BACKFILL
CL. 1 .09x38 = ~~3.42~~ 4 Cu. Yds.
CL. 2 .25x38 = ~~9.5~~ 10 Cu. Yds.
BEDDING
.04x38 = ~~1.52~~ 2 Cu. Yds.
STR. EXCAV.
$\frac{5.15\times(1.25+3)\times 38}{27}$ = ~~30.80~~ 32 Cu. Yds.

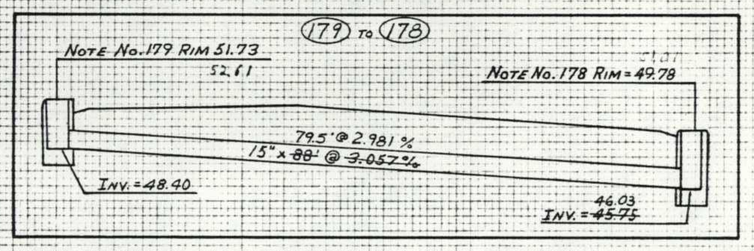
STA. 172+71 RT. TO 172+72.7 RT.



* STR. BACKFILL
CL. 1 .14x23 = 3.22 Cu. Yds.
CL. 2 .32x23 = 7.36 Cu. Yds.
BEDDING
.05x23 = 1.15 Cu. Yds.
STR. EXCAV.
$\frac{5.15\times(2+3)\times 23}{27}$ = 21.94 Cu. Yds.

* STR. BACKFILL
CL. 1 .09x21 = 1.89 Cu. Yds.
CL. 2 .25x21 = 5.25 Cu. Yds.
BEDDING .04x21 = 0.84 Cu. Yds.
STR. EXCAV.
$\frac{5.2\times(1.25+3)\times 21}{27}$ = ~~17.2~~ 16 Cu. Yds.

STA. 178+50 RT. TO 179+00 LT.

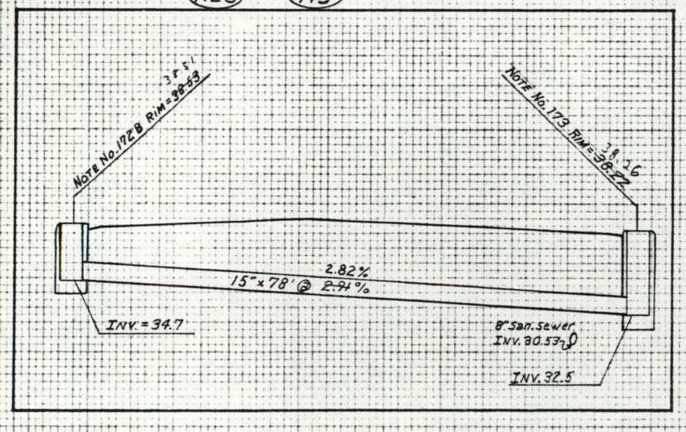


STR. BACKFILL
CL. 1 .09x~~84~~ = ~~7.56~~ 7 Cu. Yds.
CL. 2 .25x~~84~~ = ~~21.00~~ 19 Cu. Yds.

BEDDING
.04x~~84~~ = ~~3.36~~ 4 Cu. Yds.

STR. EXCAV.
$\frac{3.85\times(1.25+3)\times 84}{27}$ = ~~50.9~~ 46 Cu. Yds.

STA. 172+80 LT. TO 173+03.33 RT.

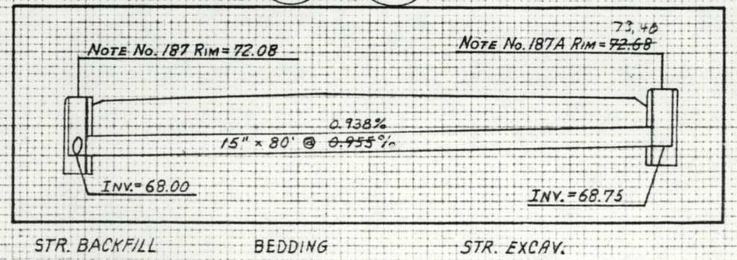


STR. BACKFILL
CL. 1 .09x74 = ~~6.66~~ 7 Cu. Yds.
CL. 2 .25x74 = ~~18.5~~ 19 Cu. Yds.

BEDDING
.04x74 = ~~2.96~~ 3 Cu. Yds.

STR. EXCAV.
$\frac{5.1\times(1.25+3)\times 74}{27}$ = ~~59.1~~ 60 Cu. Yds.

STA. 187+49.5 RT. TO 187+80 LT.

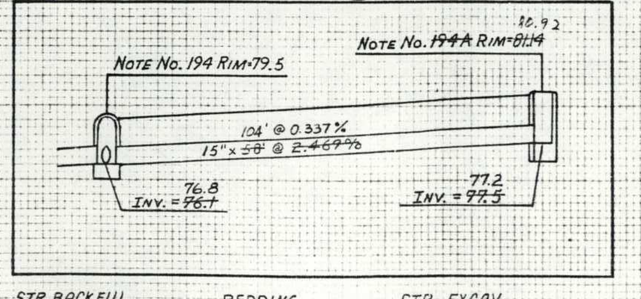


STR. BACKFILL
CL. 1 .09x76 = 6.84 Cu. Yds.
CL. 2 .25x76 = 19.00 Cu. Yds.

BEDDING
.04x76 = 3.04 Cu. Yds.

STR. EXCAV.
$\frac{4\times(1.25+3)\times 76}{27}$ = 47.85 Cu. Yds.

STA. 194+21.5 LT. TO 194+~~21.5~~ 40 RT.



STR. BACKFILL
CL. 1. .09x~~54~~ = ~~4.86~~ 5 Cu. Yds.
CL. 2. .25x~~54~~ = ~~13.50~~ 13 Cu. Yds.

BEDDING
.04x~~54~~ = ~~2.16~~ 2 Cu. Yds.

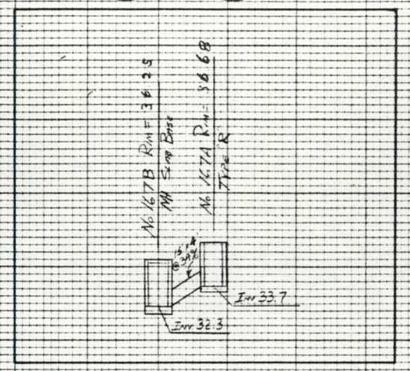
STR. EXCAV.
$\frac{3.85\times(1.25+3)\times 54}{27}$ = ~~32.73~~ 33 Cu. Yds.

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS - STATE OF COLORADO
D.O.H. FORM NO. 210
MAY 1977

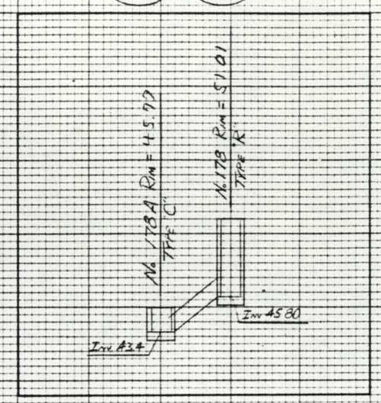
AS CONSTRUCTED			
NO REVISIONS		REVISED 10-14-83	VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FR 023-1(3) PMS 0004-(11)	26AX	

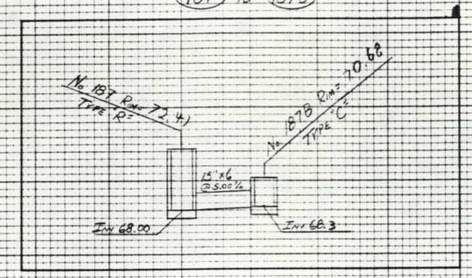
STA 167+43 Rt
(167B) to (167A)



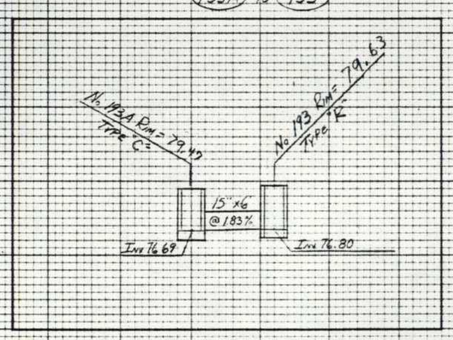
STA 178+79 Rt
(178A) to (178)



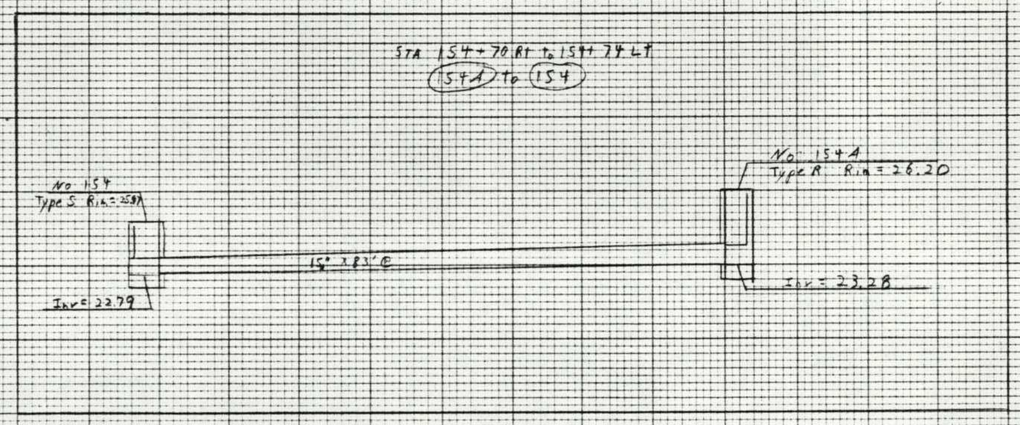
STA 187+50 Rt
(187) to (187B)



STA 193+42 Rt
(193A) to (193)



STA 154+70 Rt to 154+74 Lt
(154A) to (154)



FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	TRACED		
	AREAS		
	AREAS CHECKED		
NO.			

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	TRACED		
	AREAS		
	AREAS CHECKED		
NO.			

PLATE 3 FULL CROSS SECTION
CHARLES BRUNING COMPANY
MADE IN U.S.A.

REV. FEB., 1977

FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FPU 093-1(3)	27	
		PMS 0004 (11)		

AS CONSTRUCTED

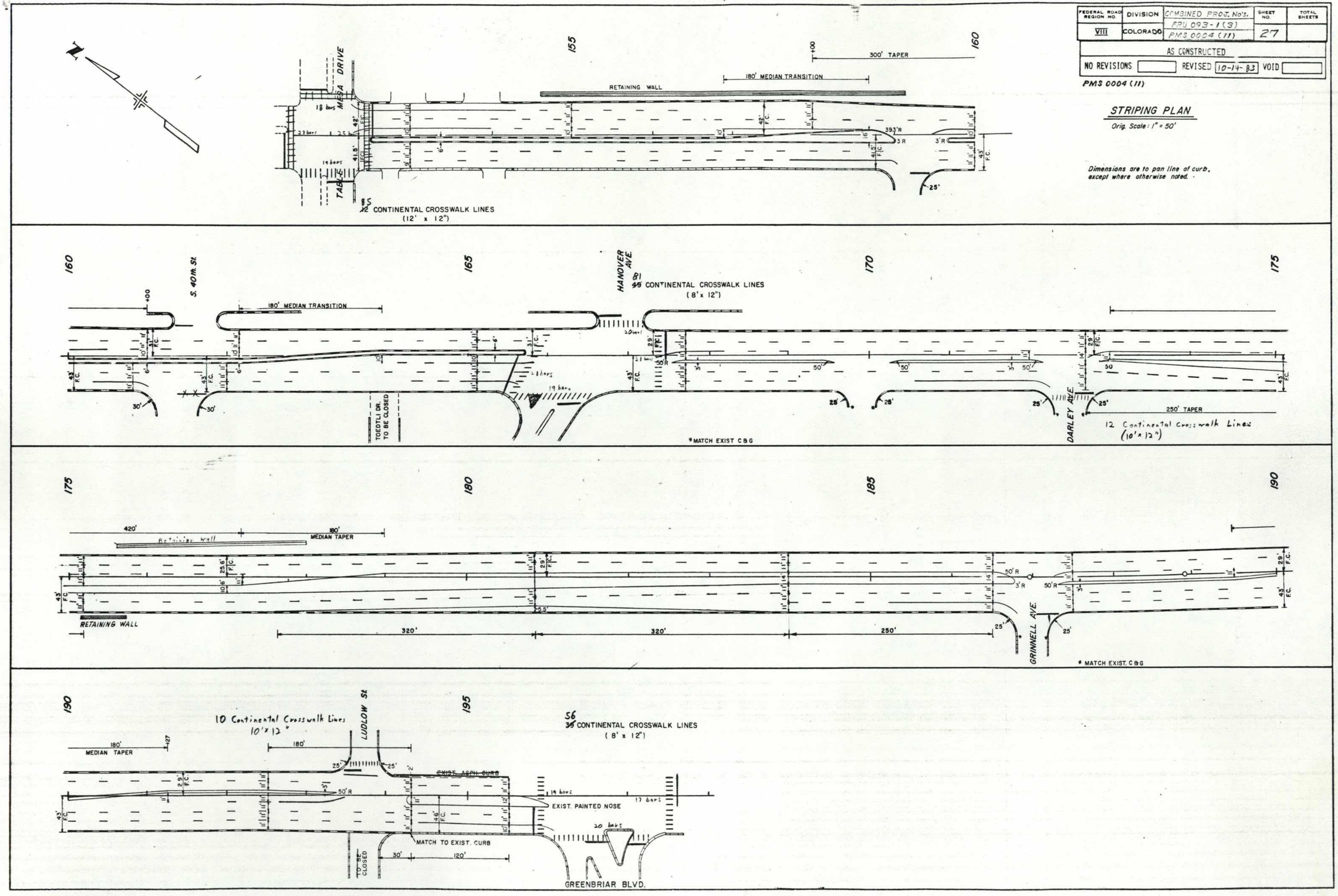
NO REVISIONS ☐ REVISED 10-14-83 VOID ☐

PMS 0004 (11)

STRIPING PLAN

Orig. Scale: 1" = 50'

Dimensions are to pan line of curb, except where otherwise noted.



DOT-FORM 126
JULY 1976

FINAL TABULATION OF PAVEMENT MARKINGS

AS CONSTRUCTED			
NO REVISIONS		REVISED 10-14-83	VOID

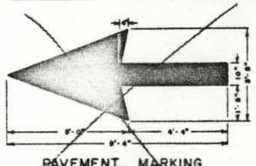
FEDERAL ROAD REGION NO.	DIVISION	COMBINED PROJ. No's.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	FRU 093-1(3) PMS 0004 (11)	28	

PMS 0004 (11)

STATION	LOCATION	PAVEMENT MARKING LINES (Linear Feet)										
		EDGE		LANE	CENTER		CHANNELIZING		CROSSHATCH		CROSS-WALK □	STOP □
		WHITE SOLID 4 INCH	~~YELLOW SOLID 4 INCH~~	WHITE BROKEN 5 INCH	~~Double~~ YELLOW SOLID 5 INCH	~~YELLOW BROKEN 5 INCH~~	WHITE SOLID 10 INCH	~~YELLOW SOLID 10 INCH~~	~~WHITE SOLID 10 INCH~~	~~YELLOW SOLID 10 INCH~~	WHITE SOLID 12 INCH	WHITE SOLID 24 INCH
152+35 TO 166+45	SH 93 NB. & SB.		660	~~2820~~								
167+60 TO 195+50	SH 93 NB. & SB.		1370	~~5580~~								
152+25 TO 154+30	RT. TURN NB.						~~205~~	179				
154+30 TO 156+30	RT. TURN NB.		60	~~200~~								
152+25 TO 154+00	LT. TURN NB.						~~175~~	147				
154+00 TO 155+60	LT. TURN NB.		40	~~160~~								
159+45 TO 160+50	LT. TURN NB.						~~105~~	105				
160+50 TO 161+35	LT. TURN NB.		20	~~85~~								
167+40 TO 168+20	LT. TURN NB.						~~80~~	61				
168+20 TO 169+00	LT. TURN NB.		90	~~80~~								
170+65 TO 172+00	ACCEL LANE NB.			~~135~~								
172+70 TO 174+45	LT. TURN NB.						~~175~~	178				
174+45 TO 175+90	LT. TURN NB.		30	~~145~~								
187+25 TO 188+35	LT. TURN NB.						~~110~~	107				
188+35 TO 189+20	LT. TURN NB.		20	~~85~~								
167+55 TO 169+55	MEDIAN				~~800~~	1022						
170+25 TO 172+20	MEDIAN				~~780~~							
172+85 TO 186+80	MEDIAN				~~5580~~	2793						
187+30 TO 193+30	MEDIAN				~~2400~~	1235						
194+25 TO 196+00	MEDIAN				~~700~~	385						
164+80 TO 165+50	LT. TURN SB.		20	~~70~~								
165+50 TO 166+75	LT. TURN SB.						~~125~~	93				
192+00 TO 192+70	LT. TURN SB.		20	~~70~~								
192+70 TO 193+50	LT. TURN SB.						~~80~~	80				
152+35 TO 154+00	ACCEL. LANE SB.		30	~~165~~								
156+65 TO 157+80	RT. TURN SB.		30	~~115~~								
157+80 TO 159+10	RT. TURN SB.						~~130~~	129				
159+60 TO 160+25	RT. TURN SB.		20	~~65~~								
160+25 TO 170+00	RT. TURN SB.						~~75~~	89				
161+90 TO 162+80	ACCEL LANE SB.		20	~~90~~								
165+00 TO 165+80	RT. TURN SB.		20	~~80~~								
165+80 TO 166+75	RT. TURN SB.						~~95~~	79				
167+60 TO 169+10	ACCEL. LANE SB.		50	~~150~~								
170+50 TO 172+25	RT. TURN SB.						~~175~~	177				
177+65 TO 182+65	RT. EDGE TAPER SB.	~~0~~ 800										
184+00 TO 185+25	RT. TURN SB.		80	~~125~~								
185+25 TO 186+80	RT. TURN SB.						~~155~~	158				
187+60 TO 194+35	ACCEL-DECEL SB.		20	~~675~~								
194+35 TO 196+10	RT. TURN SB.						~~175~~	152				
159+30	SIDEROAD RT.											~~25~~ 14
161+50	S. 40TH ST.											~~70~~ 27
172+60	DARLEY AVE.								120			~~25~~ 18
187+20	GRINNEL AVE.											~~30~~ 19
193+60	LUDLOW AVE.								100			~~60~~ 16
	TABLE MESA DR.								1020	~~583~~		119 157
	HANOVER AVE.								648	~~392~~		131
	GREENBRIAR BLVD.								448	~~312~~		101
PROJECT TOTALS (Lin. Ft.) *		-0-		2600	5435		1734				2336	483
PROJECT TOTALS (Sq. Ft.)		-0-		1083	4529		1445				2336	966
PROJECT TOTALS (LIN. FT.) PLAN		500	—	10895	10260	—	1860	—	—	—	1287	329
PROJECT TOTALS (SQ. FT.) PLAN		167	—	1135	4275	—	1550	—	—	—	1287	658

*Measured Lin. Ft. of actual Pavement Marking

STATION	LOCATION	PAVEMENT MARKING LINES (Linear Feet)										
		EDGE		LANE	CENTER		CHANNELIZING		CROSSHATCH		CROSS-WALK	STOP
		WHITE SOLID 4 INCH	YELLOW SOLID 4 INCH	WHITE BROKEN 5 INCH	YELLOW SOLID 5 INCH	YELLOW BROKEN 5 INCH	WHITE SOLID 10 INCH	YELLOW SOLID 10 INCH	WHITE SOLID 10 INCH	YELLOW SOLID 10 INCH	WHITE SOLID 12 INCH	WHITE SOLID 24 INCH



PAVEMENT MARKING ARROW DETAIL

NOTE:
FOR DETAILS OF PAVEMENT MARKING LINES AND LINE PLACEMENT, SEE STANDARD S-627-1

□ Crosswalk and Stop lines placed in Preformed Plastic Pavement Marking (60 mils) CMO #6

SUMMARY OF PAVEMENT MARKING QUANTITIES			
COLOR	~~PAINT (GAL.)~~	THERMOPLASTIC (SQ. FT.)	Preformed (SQ. FT.)
YELLOW	—	~~4275~~ 4529	—
WHITE	—	~~4797~~ 2528	3302
TOTAL	—	~~9072~~ 7057	3302