

Received 9/6/89 DJH

Forster Row

# STATE DEPARTMENT OF HIGHWAYS DIVISION OF HIGHWAYS—STATE OF COLORADO

## PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. MU 0088(12) STATE HIGHWAY NO. 88 ARAPAHOE COUNTY

**PRELIM.**

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.
VIII	COLORADO	MU 0088 (12)	1

AS CONSTRUCTED

NO REVISIONS  REVISED  VOID

REVISIONS		

SCALES OF ORIGINAL DRAWINGS

ON PLAN, 1 IN. = 20 FT.  
ON PROFILE { 1 IN. = 20 FT. HORIZONTAL  
                  1 IN. = 5 FT. VERTICAL

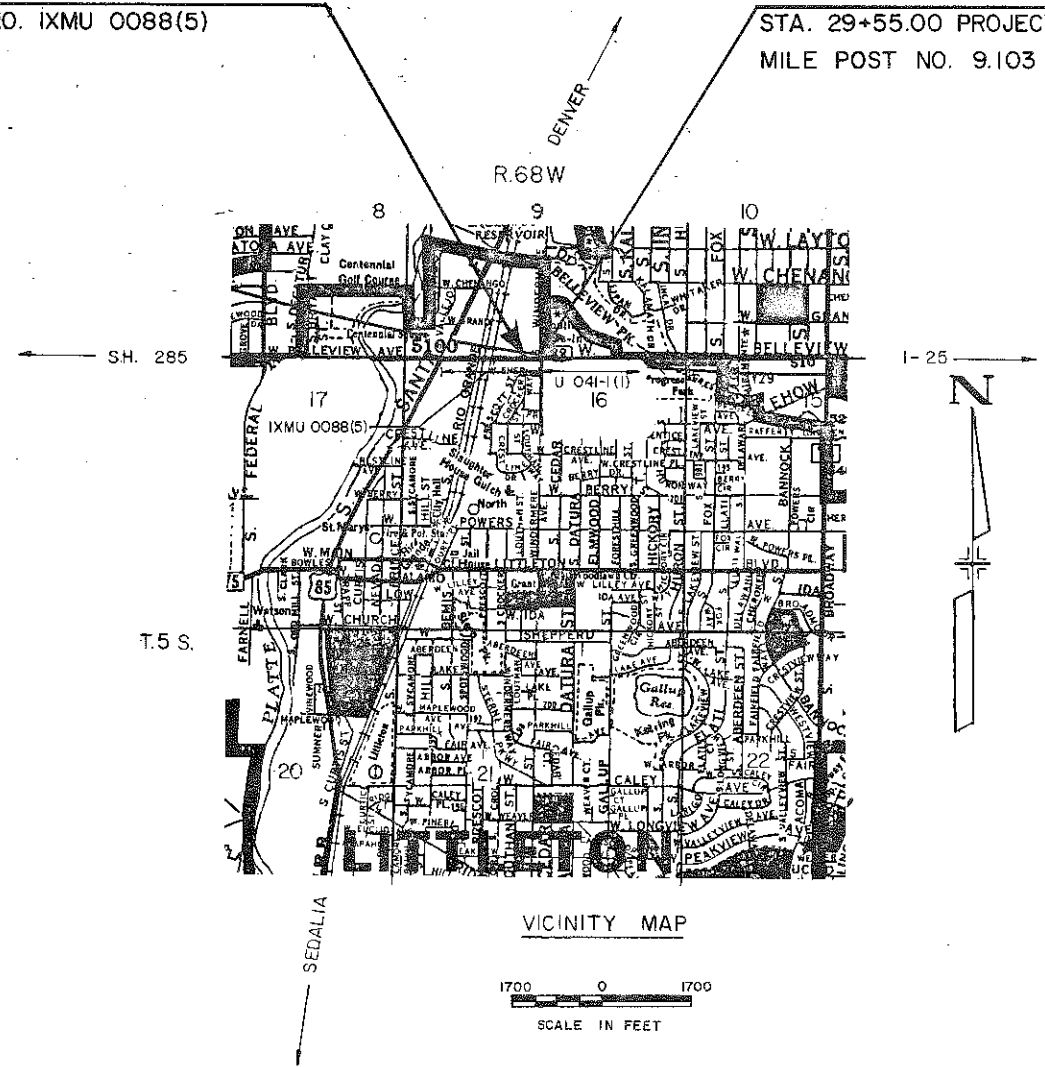
GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD

STA. 27+42.00 BEGIN PROJECT NO. MU 0088 (12) = 1.79' LT. OF  
STA. 27+42.00 PROJECT NO. IXMU 0088(5)  
MILE POST NO. 9.063

STA. 29+55.00 END PROJECT NO. MU 0088 (12) = 0.72' LT. OF  
STA. 29+55.00 PROJECT NO. IXMU 0088(5)  
MILE POST NO. 9.103

SHT. NO.	INDEX OF SHEETS
1	TITLE SHEET
2	STANDARD PLANS LIST
3	TYPICAL SECTION AND GENERAL NOTES
4-5	SUMMARY OF APPROXIMATE QUANTITIES
6	TABULATION OF REMOVALS AND RESETS, STOCKADE FENCE
7	TABULATION OF SIDEWALK, CURB RAMP, CURB & GUTTER, CONCRETE & ASPHALT PAVEMENT AND DRAINAGE, DETAILS FOR RESET WATER SERVICE
8	ALIGNMENT PLAN AND PROFILE BELLEVUE AVE.
9-10	SIGNING, STRIPING, AND SIGNAL PLANS
11	TYPICAL PAVEMENT MARKINGS - CROSSWALKS
12	STANDARD M-608-1 (CURB RAMPS) (SPECIAL THIS PROJECT)

PROJECT LENGTH																													
STATION	LIN. FT.	MILES																											
STA. 27 + 42.00 BEGIN PROJECT NO. MU 0088 (12) = 1.79' LT. OF STA. 27+42.00 PROJECT NO. IXMU 0088 (5) MILE POST NO. 9.063	213.00	0.040																											
STA. 29+55.00 END PROJECT NO. MU 0088 (12) = 0.72' LT. OF STA. 29+55.00 PROJECT NO. IXMU 0088 (5) MILE POST NO. 9.103																													
SUMMARY																													
PROJECT NET AND GROSS LENGTH	213.00	0.040																											
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">MAXIMUM DEGREE OF CURVE</td> <td style="width: 15%;">N/A</td> <td style="width: 15%;"> </td> </tr> <tr> <td>MAXIMUM GRADE</td> <td>2.00%</td> <td> </td> </tr> <tr> <td>MINIMUM S.S.D. HORIZONTAL</td> <td>N/A</td> <td> </td> </tr> <tr> <td>MINIMUM S.S.D. VERTICAL</td> <td>N/A</td> <td> </td> </tr> <tr> <td>MAXIMUM DESIGN SPEED</td> <td>40 M.P.H.</td> <td> </td> </tr> <tr> <td colspan="3">2007 DESIGN TRAFFIC VOLUME</td> </tr> <tr> <td style="padding-left: 20px;">DHV</td> <td>4,500</td> <td> </td> </tr> <tr> <td style="padding-left: 20px;">ADT</td> <td>45,000</td> <td> </td> </tr> <tr> <td style="padding-left: 20px;">% TRUCKS</td> <td>4</td> <td> </td> </tr> </table>			MAXIMUM DEGREE OF CURVE	N/A		MAXIMUM GRADE	2.00%		MINIMUM S.S.D. HORIZONTAL	N/A		MINIMUM S.S.D. VERTICAL	N/A		MAXIMUM DESIGN SPEED	40 M.P.H.		2007 DESIGN TRAFFIC VOLUME			DHV	4,500		ADT	45,000		% TRUCKS	4	
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% TRUCKS	4																												



AS CONSTRUCTED INFORMATION

CONTRACTOR \_\_\_\_\_

ENGINEER \_\_\_\_\_  
(Project or Resident)

PROJECT STARTED \_\_\_\_\_

PROJECT COMPLETED \_\_\_\_\_

AS CONSTRUCTED PLANS APPROVED \_\_\_\_\_

TITLE \_\_\_\_\_ DATE \_\_\_\_\_

AS CONSTRUCTED		
NO. REVISIONS	REVISED	VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	MU 0088(12)	2	

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<input type="checkbox"/> M-203-1	APPROACH ROADS, FLARING, CUT SLOPE TREATMENT, BRIDGE & CREST WIDENING	3
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<input type="checkbox"/> M-203-13	SUPERELEVATION OF CURVES - DIVIDED HIGHWAYS - CENTER PIVOT	8
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<input type="checkbox"/> M-620-2	FIELD LABORATORY - CLASS 2	71
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Plan No.	Title	Page
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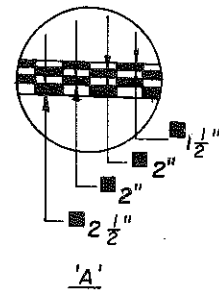
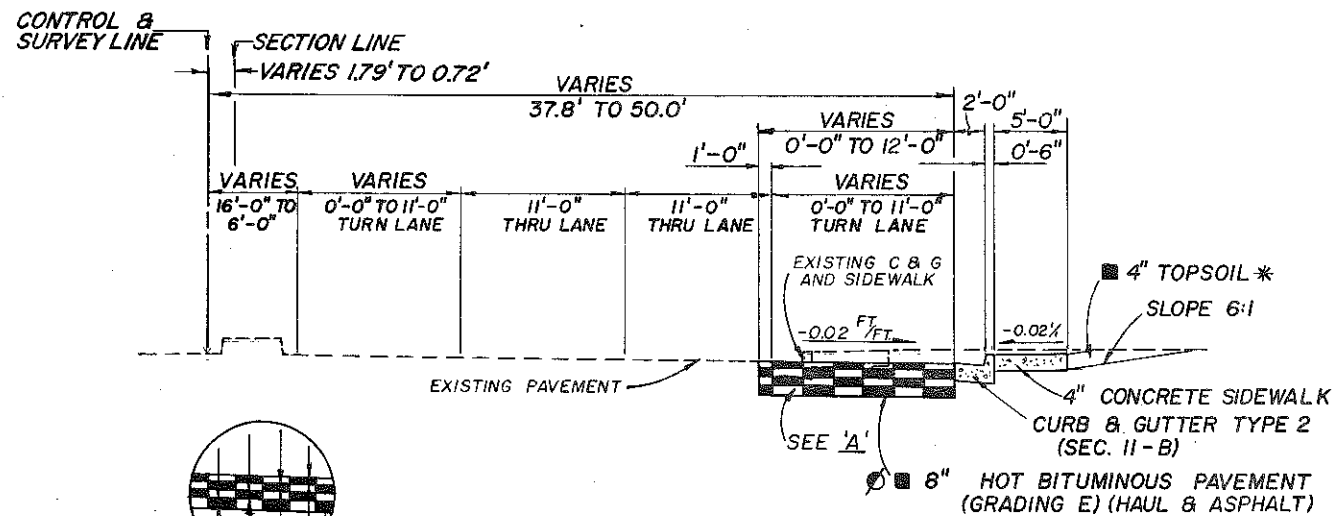
THE STANDARD PLAN SHEETS INDICATED HEREON BY A MARKED BOX ARE TO BE USED TO CONSTRUCT THIS PROJECT.

DEPARTMENT OF HIGHWAYS  
STATE OF COLORADO  
DIVISION OF HIGHWAYS

**STANDARD PLANS LIST**

M & S STANDARDS - JANUARY, 1982

AS CONSTRUCTED		FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.	SHEET TOTALS
NO REVISIONS	REVISED	VOID	VIII	COLO.	MU 0088 (12)	3



TYPICAL SECTION  
 STA. 27+42 TO STA. 29+55

- = APPROXIMATE THICKNESS
- \* REQUIRED TOPSOIL AND SOD TO BE A SUBSIDIARY OF EARTHWORK
- ⊙ MATCHES OR EXCEEDS EXISTING BELLEVUE AVE. STABILIZATION

IT IS SUGGESTED THAT THE CONTRACTOR INITIATE A REQUEST TO PUBLIC SERVICE CO. FOR ANY CONSTRUCTION RELATED TEMPORARY ELECTRICAL POWER SOURCES AS SOON AS POSSIBLE. IN SOME INSTANCES, UP TO 30 DAYS MAY BE REQUIRED TO PROVIDE THE SOURCES. THE REQUEST IS TO BE PROCESSED THROUGH PUBLIC SERVICE COMPANY OF COLORADO - STREET LIGHTING AT (303) 571-2505.

### GENERAL NOTES

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

- HOT BITUMINOUS PAVEMENT (GRADING E) AT 110 LBS. PER SQ. YD./INCH.
- DILUTED EMULSIFIED ASPHALT (SLOW-SETTING) FOR TACK COAT AT 0.10 GAL. PER SQ. YD. (DILUTED) CONSISTING OF ONE PART EMULSIFIED ASPHALT AND ONE PART WATER.
- RATES OF APPLICATION SHALL BE DETERMINED BY THE ENGINEER AT THE TIME OF APPLICATION.

WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. LOCATIONS SHALL BE AS ORDERED. THE COST OF WATER AND APPLICATION WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE WORK.

THE FOLLOWING SHALL BE FURNISHED WITH EACH BITUMINOUS PAYER:

- A SKI TYPE DEVICE AT LEAST 30 FEET IN LENGTH.
- A SHORT SKI OR SHOE.
- 1500 FEET OF CONTROL LINE AND STAKES. THE CONTROL LINE WILL BE REQUIRED FOR ALL LAYERS OR AS DIRECTED BY THE ENGINEER.

A LAYER OF BITUMINOUS PAVEMENT THAT IS TO HAVE A SUCCEEDING LAYER PLACED THEREON SHALL BE COMPLETED FULL WIDTH BEFORE SUCCEEDING LAYER IS PLACED.

WHEN ORDERED BY THE ENGINEER, A TACK COAT OF EMULSIFIED ASPHALT (SLOW-SETTING) IS TO BE APPLIED BETWEEN PAVEMENT COURSES TO IMPROVE BOND. TACK COAT, IF REQUIRED, IS TO BE PAID FOR AS EMULSIFIED ASPHALT (SLOW-SETTING).

UTILITY LINES AS SHOWN ON THE PLAN AND PROFILE SHEET ARE PLOTTED FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR'S ATTENTION IS DIRECTED TO PARAGRAPH 107.18 OF THE STANDARD SPECIFICATIONS CONCERNING UTILITIES. THE CONTRACTOR SHALL CALL 534-6700 FOR UTILITY LOCATIONS 2 WORKING DAYS PRIOR TO ANY DIGGING.

ALL DIMENSIONS, ELEVATIONS, AND RADII ARE TO THE EDGE OF DRIVING LANE (PAN LINE) UNLESS OTHERWISE NOTED.

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

- FULL DEPTH OF ALL EMBANKMENTS.
- BASES OF CUTS AND FILLS 1/2 FOOT. EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED AS SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.

TYPE OF COMPACTION FOR ITEM 203 WILL BE AASHTO T99 UNCLASSIFIED EXCAVATION (COMPLETE IN PLACE) OF 128 CU YD (TAKEN FROM CROSS SECTIONS) WILL BE REQUIRED WITHIN PROJECT LIMITS.

WHERE THE EXISTING ASPHALT PAVEMENT IS TO BE WIDENED OR REMOVED TO PLACE CURB AND GUTTER, IT SHALL BE CUT TO A NEAT WORK LINE WITH A PAVEMENT CUTTING SAW OR OTHER METHOD APPROVED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED SUBSIDIARY TO REMOVAL OF ASPHALT MAT.

CLEARING AND GRUBBING AND ANY TREE TRIMMING REQUIRED FOR CONSTRUCTION WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

## SUMMARY OF APPROXIMATE QUANTITIES

AS CONSTRUCTED			FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.
NO REVISIONS <input type="checkbox"/>	REVISED <input type="checkbox"/>	VOID <input type="checkbox"/>	VIII	COLO.	MU 0088 (12)	4

INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	PLAN ROADWAY	AS CONST. ROADWAY							PROJECT TOTALS		DIFF. +/-	% PLAN
BOOK	PAGE	SHEET												PLAN	AS CONST.		
			202	REMOVAL OF STRUCTURE	EACH	2								2			
			202	REMOVAL OF PIPE	LIN. FT.	6								6			
			202	REMOVAL OF GUARD POST	EACH	5								5			
			202	REMOVAL OF WALL	LIN. FT.	54								54			
			202	REMOVAL OF SIDEWALK	SQ. YD.	106								106			
			202	REMOVAL OF CURB	LIN. FT.	11								11			
			202	REMOVAL OF CURB AND GUTTER	LIN. FT.	236								236			
			202	REMOVAL OF CONCRETE PAVEMENT	SQ. YD.	74								74			
			202	REMOVAL OF ASPHALT MAT	SQ. YD.	138								138			
			202	REMOVAL OF CONCRETE FOOTING	EACH	1								1			
			202	PLUG CULVERT	EACH	2								2			
			203	UNCLASSIFIED EXCAVATION (COMPLETE IN PLACE)	CU. YD.	128								128			
			206	STRUCTURE EXCAVATION	CU. YD.	20								20			
			206	STRUCTURE BACKFILL (CLASS 1)	CU. YD.	4								4			
			206	STRUCTURE BACKFILL (CLASS 2)	CU. YD.	11								11			
			210	RESET WATER SERVICE	EACH	1								1			
			210	RESET TRAFFIC SIGNAL POLE	EACH	1								1			
			403	HOT BITUMINOUS PAVEMENT (PATCHING) (HAUL AND ASPHALT)	TON	32								32			
			403	HOT BITUMINOUS PAVEMENT (GRADING E) (HAUL AND ASPHALT)	TON	129								129			
			411	EMULSIFIED ASPHALT (SLOW-SETTING)	GAL.	44								44			
			412	CONCRETE PAVEMENT (6 INCH)	SQ. YD.	22								22			

## SUMMARY OF APPROXIMATE QUANTITIES

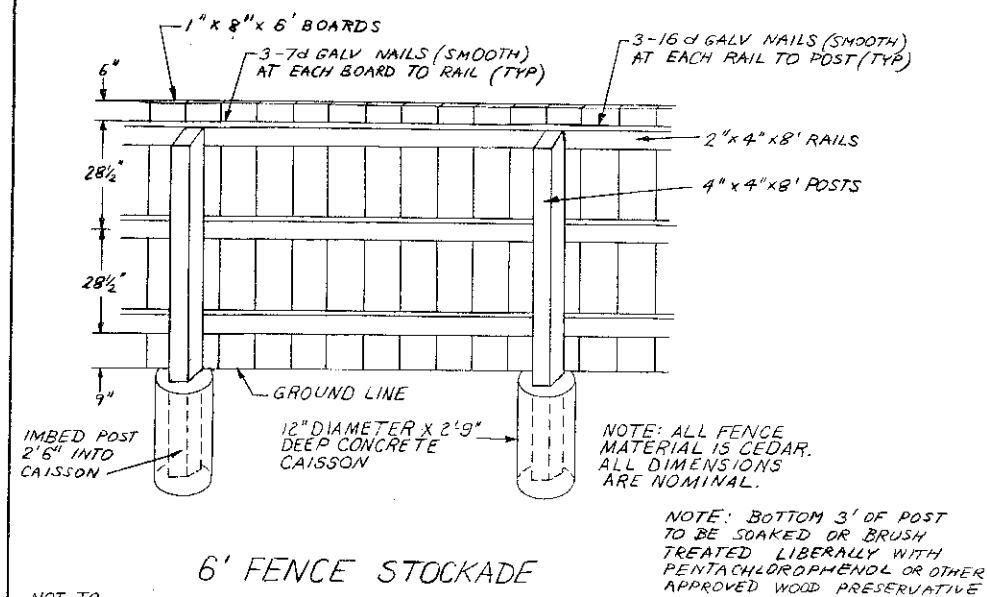
AS CONSTRUCTED			FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.
NO REVISIONS	REVISED	VOID	VIII	COLD.	MU 0088 (12)	5

INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	PLAN ROADWAY	AS CONST. ROADWAY	PROJECT TOTALS					
BOOK	PAGE	SHEET						PLAN	AS CONST.	DIFF. +/-	* PLAN		
			603	18 INCH REINFORCED CONCRETE PIPE	LIN. FT.	40			40				
			604	INLET TYPE R L5 (5 FOOT)	EACH	1			1				
			604	MANHOLE SLAB BASE (5 FOOT)	EACH	1			1				
			607	FENCE STOCKADE	LIN. FT.	60			60				
			608	CONCRETE SIDEWALK	SQ. YD.	94			94				
			608	CONCRETE CURB RAMP	SQ. YD.	10			10				
			609	CURB AND GUTTER TYPE 2 (SECTION II-B)	LIN. FT.	201			201				
			613	2 INCH ELECTRICAL CONDUIT	LIN. FT.	180			180				
			613	3 INCH ELECTRICAL CONDUIT	LIN. FT.	400			400				
			614	FLAGGING	HOUR	280			280				
			614	TRAFFIC CONTROL SUPERVISOR	DAY	20			20				
			614	UNIFORMED TRAFFIC CONTROL	HOUR	12			12				
			614	LOOP DETECTOR WIRE	LIN. FT.	1,900			1,900				
			614	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE A)	EACH	4			4				
			614	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE B)	EACH	17			17				
			614	VERTICAL PANEL	EACH	20			20				
			614	VERTICAL PANEL (WITH LIGHT) (FLASHING)	EACH	10			10				
			614	ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL (C TYPE)	EACH	1			1				
			614	TRAFFIC CONE	EACH	40			40				
			626	MOBILIZATION	L.S.	1			1				
				<u>FORCE ACCOUNT</u>									
			700	F/A MINOR CONTRACT REVISIONS	F.A.	1			1				
			700	F/A MODIFY EXISTING SPRINKLER SYSTEM	F.A.	1			1				
			700	F/A POT HOLE UTILITIES	F.A.	1			1				
				<u>RIGHT OF WAY</u>									
				RIGHT OF WAY ENTIRE PROJECT	L.S.	1			1				

AS CONSTRUCTED			FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.	SHEET TOTALS
NO REVISIONS	REVISED	VOID	VIII	COLO.	MU 0089 (12)	6	

TABULATION OF REMOVALS AND RESETS

STATION	SIDE	REMOVAL OF PIPE	REMOVAL OF SIDEWALK	REMOVAL OF CONCRETE PAVEMENT	REMOVAL OF ASPHALT MAT	REMOVAL OF CURB AND GUTTER	REMOVAL OF CURB	REMOVAL OF STRUCTURE	REMOVAL OF GUARD POST	REMOVAL OF WALL	REMOVAL OF CONCRETE FOOTING	PLUG CULVERT	RESET WATER SERVICE	REMARKS
		LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	LIN. FT.	LIN. FT.	EACH	EACH	LIN. FT.	EACH	EACH	EACH	
27+38 to 28+33	RT.		51											
27+42 to 29+55	RT.					236								
28+13	AT RT.												1	See Details
28+22	RT.							11						
28+22 to 28+72	RT.				126									
28+27 to 28+72	RT.			22										
28+66 to 29+52.50	RT.		55											
28+72 to 28+97	RT.			52										Includes Saw Cut
28+97 to 29+10.50	RT.				12									
29+14 to 29+46	RT.									54				1.0' Timber
29+34	RT.							1						INLET TYPE RS
29+44	SOB RT.										1			Pole Base
29+46	SOB RT.							1						Pull Box
29+48	RT.								5					5" Ø Steel
29+62	RT.											1		
29+65	RT.	6												18 INCH R.C.P.
PROJECT TOTALS		6	106	74	138	236	11	2	5	54	1	2	1	



NOT TO SCALE

**GENERAL METER NOTES**

- Location of the meter to be established by Customer Services Section, Ph. 628-6000.
- All settings must be inspected by Customer Services Section before backfilling.
- If the street or ground is not at official grade at the time of installation of the meter, the owner must raise or lower the meter vault when the final grade is established. **The owner is defined as the Contractor.**
- Leaded joints and galvanized piping shall not be allowed inside the meter vaults.
- A bypass is to be installed unless otherwise specified by Customer Services Section.
- The service line through and on both sides of the meter pit must be of the same material.
- No connections shall be made in the meter pit. Sprinkler connections must be made more than five feet (5') from the meter pit on the downstream side.
- Gate Valves:
  - All gate valves under 3" for use with copper pipe shall be all bronze, with non-rising stems and solid wedge disc, manufactured in accordance with A.S.T.M. Spec. 8 62 and Federal Spec. W.M.-V-54 Class A, 125 psi W.S.P., 200 psi W.O.G. or curb stops in accordance with AWWA C800 and MS-23 of the Material Specifications.
  - All gate valves 3" and larger for use with ductile iron shall conform with Section MS-6.
- All Dresser (or approved equal) couplings shall have the pipe stop removed.
- All valves 4" diameter and larger shall be supported by adjustable steel supports, and 1/2" diameter and larger meters shall be supported by concrete blocks with steel shims, if needed.
- Manhole rings and covers:
  - 24" manhole rings and covers shall be "City of Denver, Colorado Standard" Pattern, 24" lid wt. - Approx. 165#, 24" Ring wt. - Approx. 240#.
  - 36" x 24" double manhole ring and cover:  
The 36" cover shall have an auxiliary 24" opening and cover.  
Approx. wt. of 36" cover = 250#, Approx. wt. of 24" cover = 165#. Approx. wt. of 36" ring = 280#.
- Other meter settings:  
Settings of meters other than shown and detailed herein shall be considered as non-standard and shall require prior approval of proposed piping layout, meter setting and structural design of vault for each separate installation.
- Backflow prevention devices may be required in conformance with Section 6.11.
- A floor drain shall be placed near the meter installation.

**DENVER WATER DEPARTMENT**

**GENERAL NOTES**

SCALE: NONE      DATE: FEBRUARY 1982

DRN. App. V.      TR.      CK.

APP. *[Signature]*      DR. 127 NO. 32

SHEET 42 OF 66  
REVISED 10-1-85

AS CONSTRUCTED			FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.	SHEET TOTALS
NO REVISIONS	REVISED	VOID	VII	COLO.	MU 0088(12)	7	

**TABULATION OF SIDEWALK, CURB RAMP, CURB & GUTTER, CONCRETE & ASPHALT PAVEMENT AND DRAINAGE**

STATION	SIDE	CONCRETE SIDEWALK	CONCRETE CURB RAMP	CURB & GUTTER TYPE 2 (SECTION II-B)	6 INCH CONCRETE PAVEMENT	HOT BITUMINOUS PAVEMENT (GR. E) (H.&A.)	18 INCH REINFORCED CONC. PIPE	INLET TYPE R L 5 (5 FOOT)	MANHOLE SLAB BASE (5 FOOT)	REMARKS / MISCELLANEOUS
		SQ. YD.	SQ. YD.	LIN. FT.	SQ. YD.	TON	LIN. FT.	EACH	EACH	
27+42 to 29+55	RT.			201						
27+42 to 29+56	RT.					*129				LIQUID EMULSIFIED ASPHALT (Slow-Setting) - 44 Gal.
27+38 to 28+33	RT.	52								
27+58.5 to 28+17										60 LIN. FT. - 6' STOCKADE FENCE (SEE DETAIL)
28+27 to 28+12	RT.				22					
29+23.5	RT.									
29+42	RT.		10							TYPE 3A
29+23.5 to 29+65	RT.						40			STR. EXC. - 20 CY. STR. BKFL. - (CL. 1) - 4 CY., (CL. 2) - 11 CY.
28+66 to 29+52	RT.	42								
29+65	RT.									
<b>PROJECT TOTALS</b>		<b>94</b>	<b>10</b>	<b>201</b>	<b>22</b>	<b>129</b>	<b>40</b>	<b>1</b>	<b>1</b>	

**DENVER WATER DEPARTMENT**

**OUTSIDE SETTING FOR 5/8" x 3/4", 3/4" & 1" METERS**

SCALE: NONE      DATE: APRIL 1977

DRN. A. J. F.      TR.      CK. R. M. S.

APP. *[Signature]*      DR. 127 NO. 35

SHEET 44 OF 66  
REVISED 10-1-85  
PREVIOUS REVISION 2-1-82

**DETAILS FOR RESET WATER SERVICE**

**DENVER WATER DEPARTMENT**

**SERVICE LINE, STOP BOX AND OUTSIDE METER INSTALLATION**

SCALE: NONE      DATE: APRIL 1977

DRN. A. J. F.      TR.      CK. R. M. S.

APP. *[Signature]*      DR. 127 NO. 35

SHEET 43 OF 66 SHEETS

▲ Contractor's Source  
\* Includes Quantity for correcting Irregularities.

NOTE: It is estimated that 32 tons of H.B.P. (Patching) (H.&A.) will be required at pipe trenches across existing pavement and miscellaneous areas as directed by the Engineer.

New Curb and Gutter to be installed prior to Removal of existing Curb and Gutter.

• 27+58.5 (53.0' Rt. E) to 27+71 (58.0' Rt. E) to 28+17 (58.0' Rt. E)



DATE OF SURVEY  
 DATE OF DESIGN  
 DATE OF PERMITS  
 DATE OF BIDDING  
 DATE OF CONSTRUCTION

AS CONSTRUCTED		FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.	SHEET TOTALS
NO REVISIONS	REVISED	VOID	VIII	COLO.	MU 0088(12)	9

**TABULATION OF SIGNING AND SIGNAL QUANTITIES**

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
210	RES TRAF SIG. POLE	EACH	1
613	2 IN ELEC CONDUIT	LN. FT.	180
613	3 IN ELEC CONDUIT	LN. FT.	400
614	LOOP DETECTOR WIRE	LN. FT.	1900
614	CONST TRAF SIGN (A)	EACH	4
614	CONST TRAF SIGN (B)	EACH	17
614	VERTICAL PANEL	EACH	20
614	VERTICAL PANEL (LIGHT)(F)	EACH	10
614	FLASH ARROW PANEL (C TYPE)	EACH	1
614	TRAFFIC CONE	EACH	40
627	PLASTIC PVMT MKG (60 ML)	SQ. FT.	340
			440

● RESET TRAFFIC SIGNAL POLE SHALL BE A TRAFFIC SIGNAL LIGHT POLE WITH 1 MAST ARM.

**SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES**

SIGN CODE	LEGEND	DIMENSIONS	PANEL SIZE			OTHERS
			A	B	C	
48W20-1	ROAD / CONST / (DIST)	48" X 48"	5			
* 48W20-5 ( )	/LANE / CLOSED (DIST)	48" X 48"	3			
48W4-2 ( )	TRANSITION SYMBOL	48" X 48"	3			
48W20-7a	FLAGGER SYMBOL	48" X 48"	4			
60G20-2	END CONSTRUCTION	60" X 24"	2			
24R3-2	NO LEFT TURN SYMBOL	24" X 24"	1			
48R6-1(L)	ONE WAY ARROW	48" X 12"	2			
SPECIAL	NO / EXIT	24" X 24"	1			
<b>PROJECT TOTALS</b>			<b>4</b>	<b>17</b>		
VERTICAL PANEL						20
VERTICAL PANEL (LIGHT)(F)						10
FLASH ARROW PANEL (C TYPE)						1
TRAFFIC CONE						40

**NOTES:**

- EXACT LOCATION OF SIGNAL POLE TO BE DETERMINED BY ON SITE INSPECTION BY THE CITY OF LITTLETON.
- BOLT PATTERN ON FOOTING SHALL MATCH BOLT PATTERN ON SIGNAL POLE. FOOTING SHALL MATCH CURRENT CITY OF LITTLETON SPECIFICATIONS.
- ALL FINAL WIRING FOR SIGNAL SHALL BE DONE BY THE CONTRACTOR.
- SIGNAL PHASING TO REMAIN THE SAME.
- LOOP DETECTOR WIRE SHALL BE DUCT TYPE.
- ALL SIGNAL EQUIPMENT, SIGNING, AND STRIPING NOT SHOWN IS TO REMAIN IN PLACE.
- ▲ ALL PERMANENT PAVEMENT MARKINGS ARE SHOWN FOR INFORMATION ONLY. WORK TO BE DONE BY OTHERS (CITY OF LITTLETON) AT NO ADDITIONAL COST TO THE PROJECT.
- FOR STREET LIGHT LUMINAIRES - TWO (2) NUMBER 12 AGW COPPER TW INSULATED BUILDING WIRES SHALL BE INSTALLED BY THE CONTRACTOR FROM THE END OF THE LUMINAIRE ARM, THROUGH THE POLE WITH APPROXIMATELY 20 FEET OF EXTRA WIRING COILED IN THE BASE OF THE POLE.
- ELECTRICAL CONDUIT MAY BE OPEN-TRENCH INSTALLED ON THIS PROJECT.

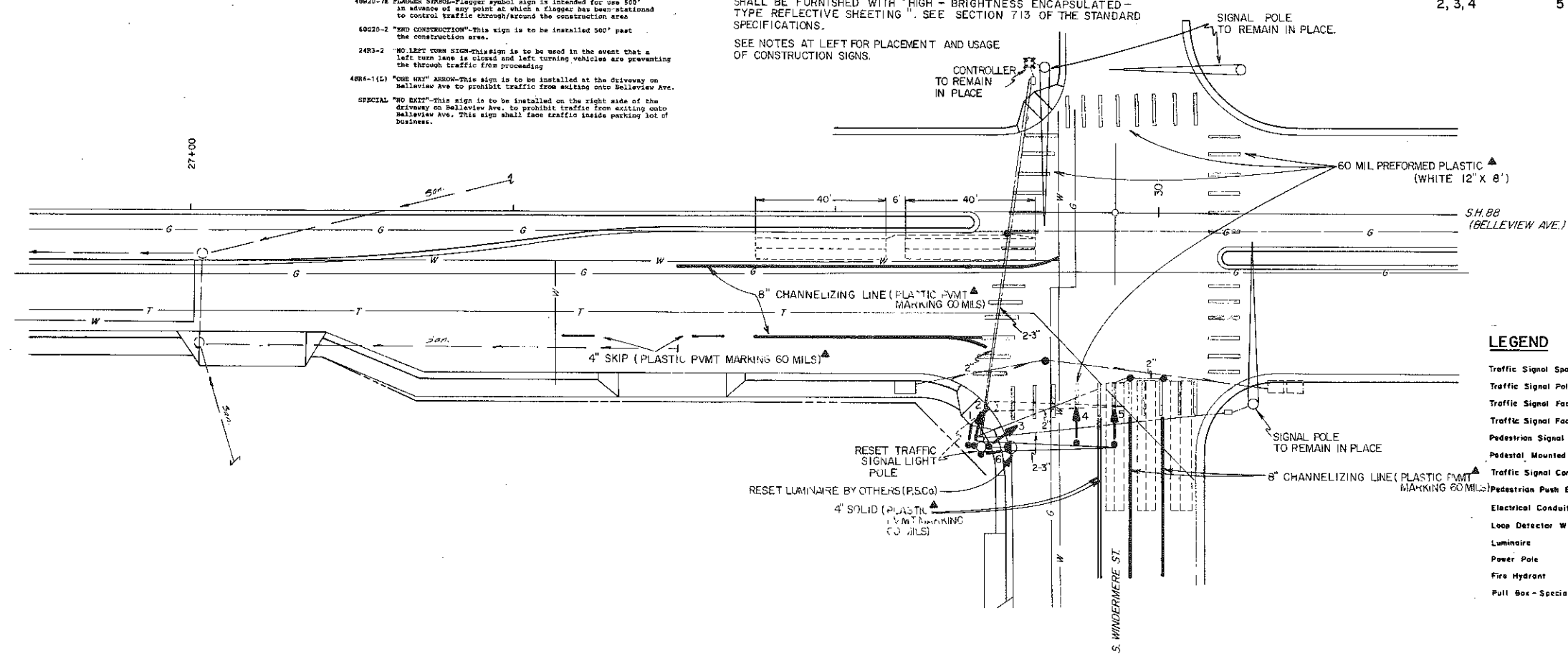
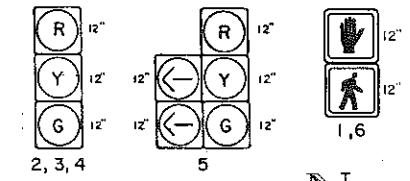
48W20-1 "ROAD CONSTRUCTION (DIST)"-This sign shall be used to warn people that road construction is ahead.  
 48W20-5( ) "LANE CLOSED (DIST)"-This sign shall be used to warn people that the appropriate lane is closed ahead.  
 48W4-2( ) "TRANSITION SYMBOL"-This sign shall be used with the 48W20-5( )  
 48W20-7a "FLAGGER SYMBOL"-Flagger symbol sign is intended for use 300' in advance of any point at which a flagger has been stationed to control traffic through/around the construction area.  
 60G20-2 "END CONSTRUCTION"-This sign is to be installed 500' past the construction area.  
 24R3-2 "NO LEFT TURN SIGN"-This sign is to be used in the event that a left turn lane is closed and left turning vehicles are preventing the through traffic from proceeding.  
 48R6-1(L) "ONE WAY ARROW"-This sign is to be installed at the driveway on Bellevue Ave to prohibit traffic from exiting onto Bellevue Ave.  
 SPECIAL "NO EXIT"-This sign is to be installed on the right side of the driveway on Bellevue Ave. to prohibit traffic from exiting onto Bellevue Ave. This sign shall face traffic inside parking lot of business.

\* ALL W20-5 ADVANCE WARNING SIGNS SHALL BE PROVIDED WITH EXCHANGEABLE PLAQUES READING "RIGHT", "LEFT", AND "CENTER" AT NO ADDITIONAL COST.

ALL CONSTRUCTION WARNING SIGNS PROVIDED ON THIS PROJECT SHALL BE FURNISHED WITH "HIGH - BRIGHTNESS ENCAPSULATED - TYPE REFLECTIVE SHEETING". SEE SECTION 713 OF THE STANDARD SPECIFICATIONS.

SEE NOTES AT LEFT FOR PLACEMENT AND USAGE OF CONSTRUCTION SIGNS.

**SIGNAL HEADS**



**LEGEND**

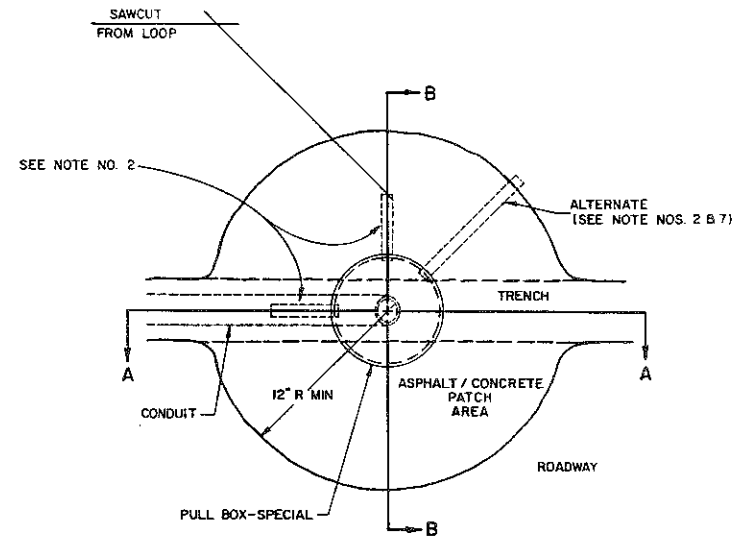
- Traffic Signal Span Wire Pole
- Traffic Signal Pole with Mast Arm
- Traffic Signal Face
- Traffic Signal Face with Backplate
- Pedestrian Signal Face
- Pedestal Mounted Signal
- Traffic Signal Controller and Cabinet
- Pedestrian Push Button
- Electrical Conduit with Pull Box
- Loop Detector Wire
- Luminaire
- Power Pole
- Fire Hydrant
- Pull Box - Special

LITTLETON DIST. 140000

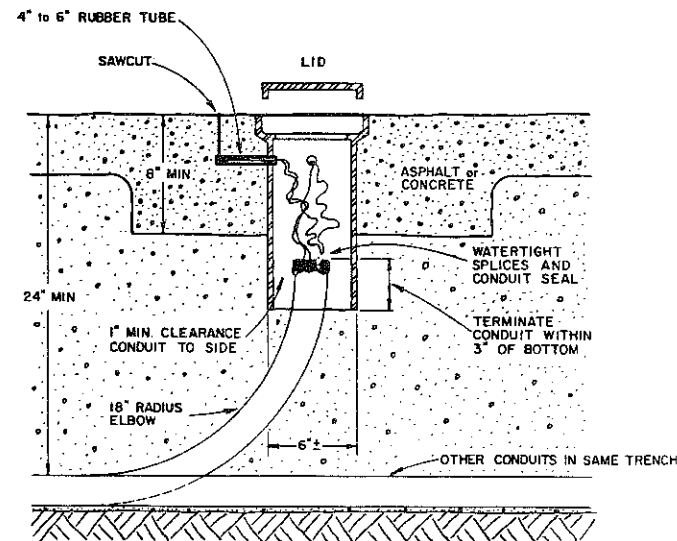
## PULL BOX-SPECIAL

FOR LOOP DETECTOR WIRE

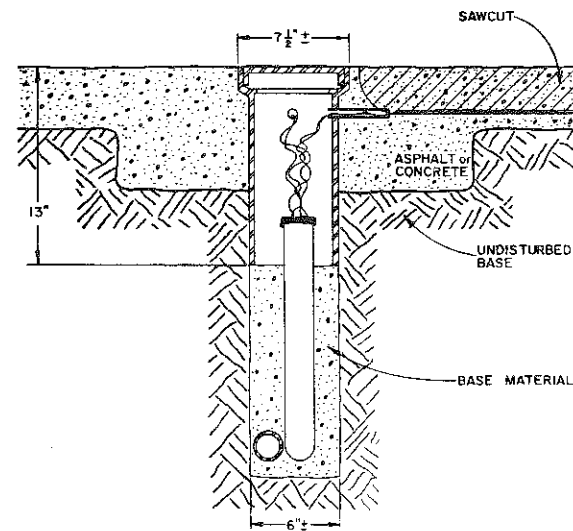
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	MU0088(12)	10	
AS CONSTRUCTED				
NO REVISIONS	<input type="checkbox"/>	REVISED	<input type="checkbox"/>	VOID



**TOP VIEW**



**SECTION A-A**



**SECTION B-B**

**GENERAL NOTES:**

1. Pull Box-Special shall be a Water Valve Stem Type pull box made of cast iron or steel. The pull box shall have capability of accepting riser rings for future overlays. The lid shall have the word "TRAFFIC" printed on it.
2. Pull boxes shall have  $\frac{3}{4}$ " to 1" diameter holes drilled or torched 3" from top to accept a 4" to 6" rubber tube ( $\frac{3}{4}$ " garden hose). The number of holes shall be as per plans or as directed by the engineer.
3. Care shall be taken during backfill compaction to prevent collapse of the tubes.
4. 2' minimum slack of both feed and loop wires is to be provided so that all testing and splicing can be done outside of the pull box.
5. Pull box lid is to be sealed water tight by caulking.
6. Pull box is to be located in an area of the street not heavily traveled if possible and centered a minimum of 12" from the concrete gutter pan.
7. If hot asphalt is not available a concrete ring (12" minimum radius and 8" minimum depth) may be allowed by the engineer. If concrete is allowed the rubber tube must be extended beyond the concrete to asphalt joint.
8. All work listed above for installation of pull boxes shall not be paid for separately, but shall be included in the price of the conduit.

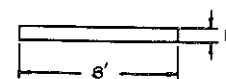
AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

FEDERAL ROAD DISTRICT NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	MU 0088(12)	//	

# TYPICAL PAVEMENT MARKINGS LONGITUDINAL (CONTINENTAL) TYPE CROSSWALKS

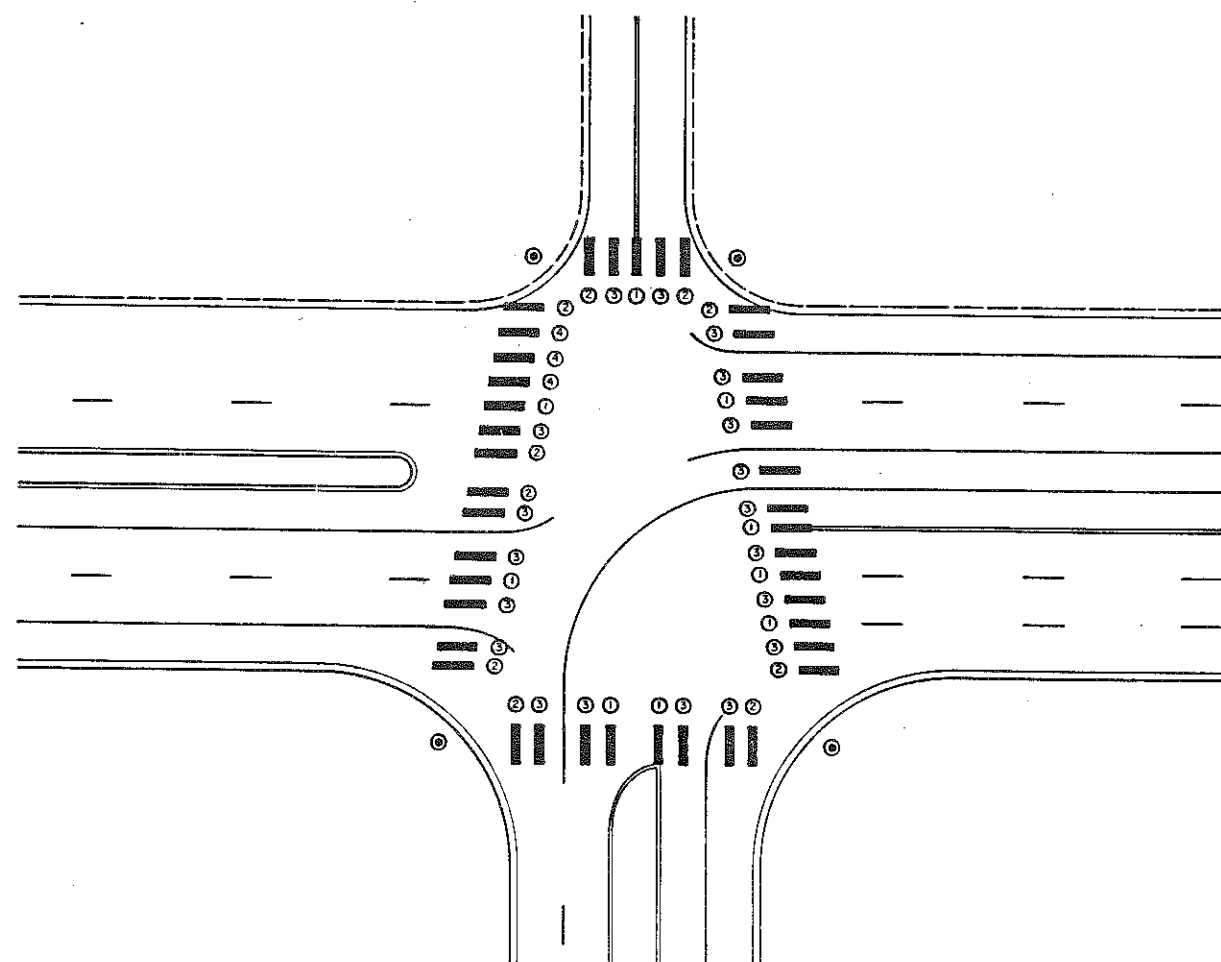
(BY CITY FORCES AT NO COST TO PROJECT)

### 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.

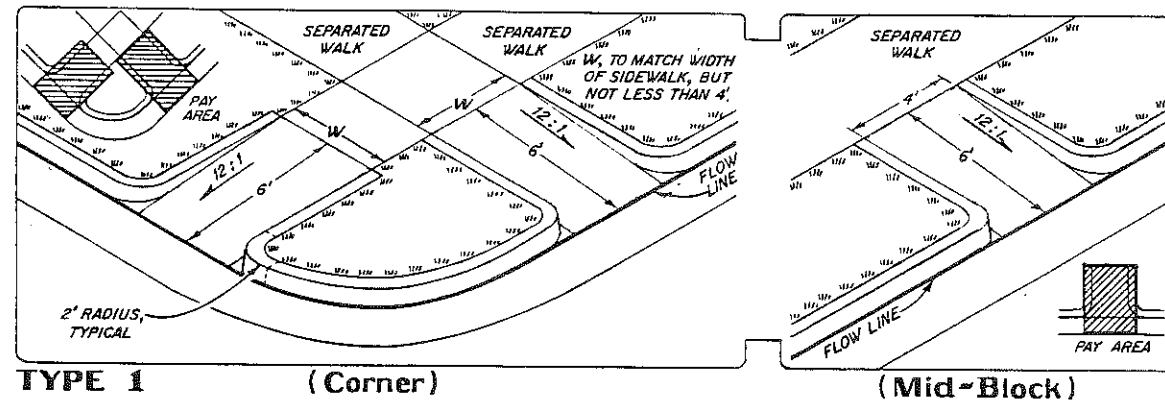
# STANDARD M-608-1

(JANUARY, 1982)

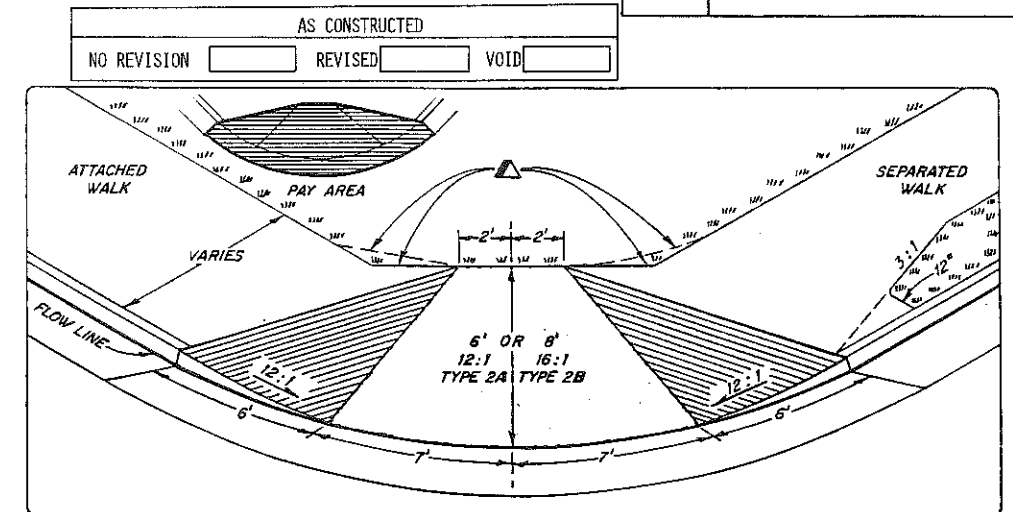
SPECIAL THIS PROJECT

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	MU0088(12)	12	

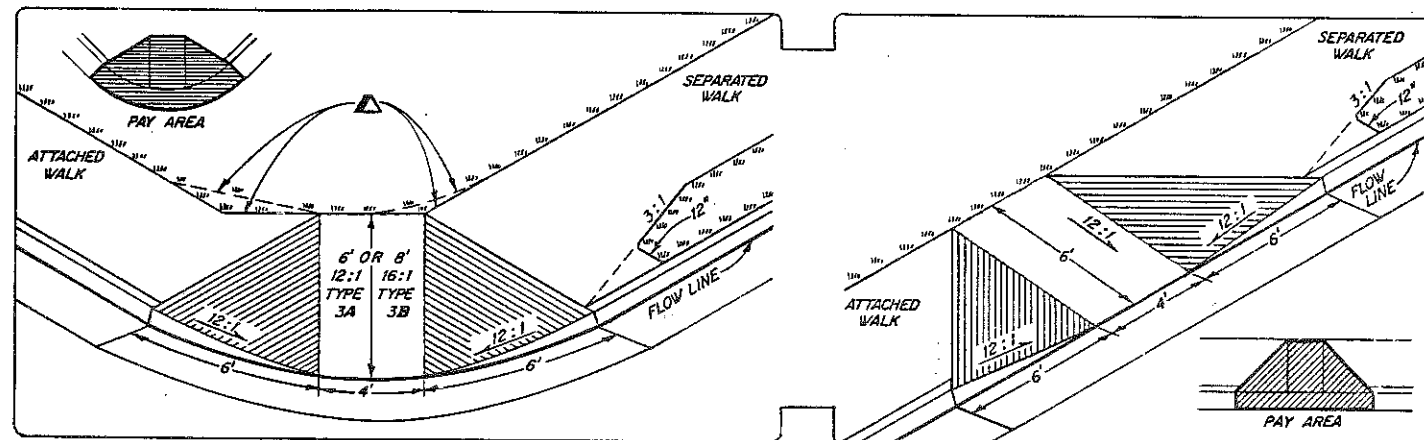
REVISIONS	



- RAMP SURFACES SHALL RECEIVE A ROUGH BROOM FINISH.
- WING SURFACES TEXTURED BY TILING GROOVES 1/8" WIDE x 3/16" DEEP AT 1/2" SPACING.
- GRASS OR GRAVEL AREA ADJACENT TO RAMP, WING OR WALK THAT IS NOT APPROPRIATE FOR WHEELCHAIR TRAFFIC.
- DESIGN FOR BACK OF WALK NEAR RAMP AREA WILL BE AS SHOWN ON PLANS OR AS DIRECTED.

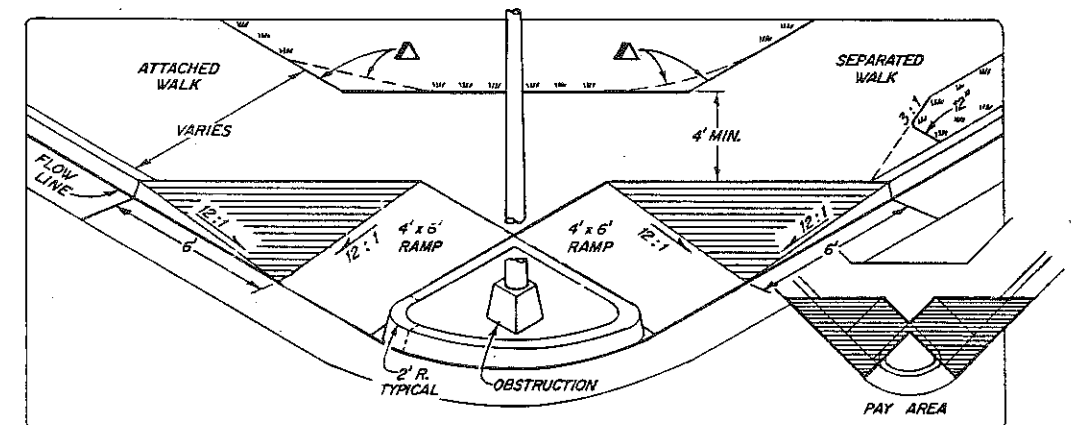


**TYPE 2A (6' Ramp)**  
**TYPE 2B (8' Ramp)** (Corner)

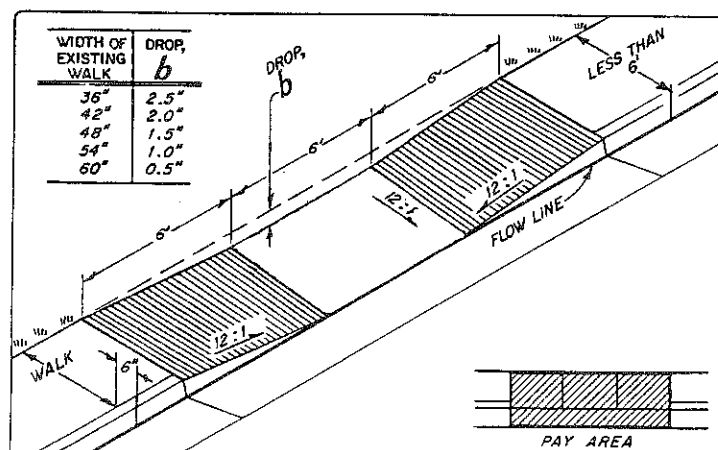


**TYPE 3A (6' Ramp)**  
**TYPE 3B (8' Ramp)** (Corner)

(Mid-Block)



**TYPE 4** (Corner)



**TYPE 5** (Mid-Block)

## GENERAL NOTES

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS APPLICABLE TO THE PROJECT. RAMP AND WING SLOPES SHALL NOT BE STEEPER THAN 12:1; DIMENSIONS SHOWN SHALL BE MODIFIED AS NECESSARY TO MEET THIS REQUIREMENT.

CONCRETE SHALL BE CLASS A OR B.

NORMAL GUTTER FLOW LINE AND PROFILE SHALL BE MAINTAINED THROUGH THE RAMP AREA.

IF POSSIBLE, DRAINAGE STRUCTURES SHALL NOT BE PLACED IN LINE WITH RAMPS. LOCATION OF THE RAMP SHALL TAKE PRECEDENCE OVER LOCATION OF THE DRAINAGE STRUCTURE, EXCEPT WHERE EXISTING STRUCTURES ARE BEING UTILIZED IN THE NEW CONSTRUCTION.

THE TYPE OF RAMP SHALL BE AS SHOWN ON THE PROJECT PLANS. IN GENERAL, THE RAMPS ARE INTENDED TO BE USED AS FOLLOWS:

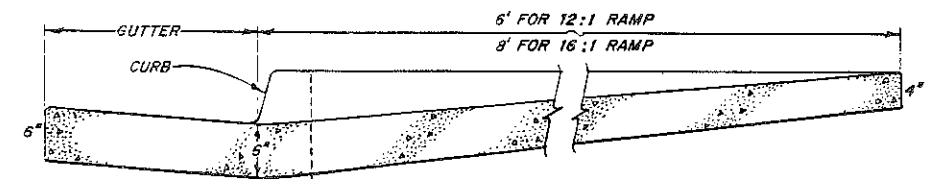
**TYPE 1** RAMP IS FOR USE IN AREAS WHERE THE SIDEWALK IS SET BACK FROM THE STREET, AND WHEELCHAIR ACCESS FROM THE SIDE OF THE RAMP IS NOT LIKELY TO OCCUR BECAUSE THE APPROACH AREA IS COVERED BY LAWN OR GRAVEL OR AN OBSTRUCTION IS PRESENT. TYPE 1 CAN BE USED ANYWHERE IN THE BLOCK.

**TYPE 2** RAMP IS FOR GENERAL USE AT INTERSECTIONS, ESPECIALLY WHERE PEDESTRIANS ARE ALLOWED TO CROSS DIAGONALLY.

**TYPE 3** RAMP IS FOR USE WHERE THE SIDEWALK EXTENDS TO THE CURB OR CAN BE EASILY TRANSITIONED TO PERMIT WHEELCHAIR ACCESS TO THE RAMP FROM THE SIDE. TYPE 3 CAN BE USED ANYWHERE IN THE BLOCK, AS WELL AS AT INTERSECTIONS AS AN ALTERNATE TO TYPE 2.

**TYPE 4** RAMP IS FOR USE WHERE WHEELCHAIR ACCESS CAN OCCUR FROM ONLY ONE SIDE.

**TYPE 5** RAMP IS FOR USE WHERE AN EXISTING SIDEWALK INCLUDING THE CURB IS LESS THAN 6' AND WIDENING IS NOT FEASIBLE.



**TYPICAL RAMP SECTION**

DEPARTMENT OF HIGHWAYS  
STATE OF COLORADO  
DIVISION OF HIGHWAYS

## CURB RAMPS

Designed by TAI  
Made by JRB  
Checked by MP

Approved by [Signature]  
STAFF DESIGN ENGINEER (Mech)  
Date: Jan 28, 1982