

ANOKA COUNTY HIGHWAY DEPARTMENT

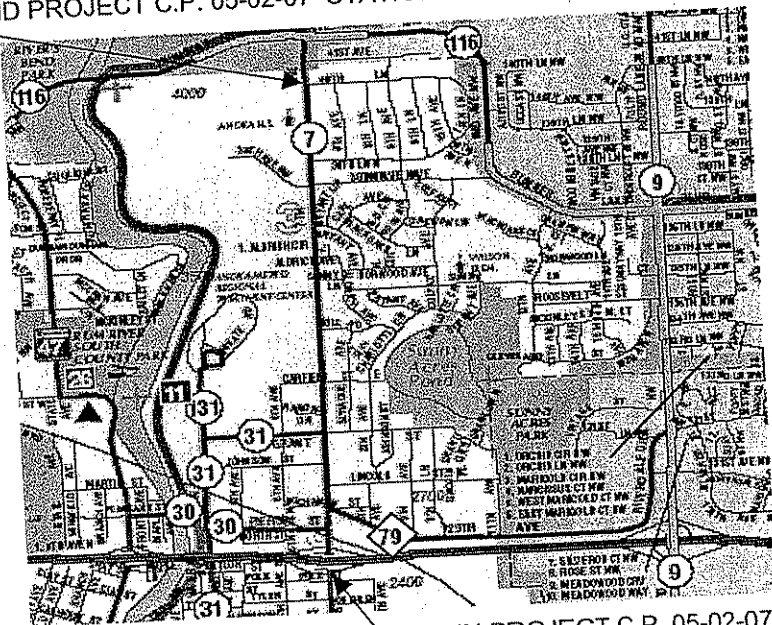
CONSTRUCTION PLAN FOR:

BIT. MILL, BIT. OVERLAY, CONC.
CURB REPAIR, STORM SEWER
REPAIR

CSAH NO: 7
FROM T.H.10 E. BOUND ON-RAMP
TO 40 TH LN
FROM
TO

COUNTY PROJECT NO: 05-02-07
GROSS LENGTH 8180 FT 1.5 MI
BRIDGES LENGTH 0 FT 0 MI
EXCEPTION LENGTH 0 FT 0 MI
NET LENGTH 8180 FT 1.5 MI

END PROJECT C.P. 05-02-07 STATION 91+00



BEGIN PROJECT C.P. 05-02-07 STATION 9+20

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

Andrew J. Witter
ANDREW J. WITTER, P.E.

LIC. NO. 42757 DATE 4/14/05

GOVERNING SPECIFICATIONS:

THE 2000 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MMUTCD, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS - JANUARY 2004."

APPROVED 4/15, 20 05

Robert J. [Signature]
ANOKA COUNTY ENGINEER

STATEMENT OF ESTIMATED QUANTITIES

TAB NO.	ITEM NO.	ITEM	NOTE NO.	UNIT	TOTAL EST. QUANT.
	2013.602	CELLULAR MOBILE TELEPHONE		EACH	2
	2021.501	MOBILIZATION		LUMP SUM	1
A	2104.501	REMOVE CONCRETE CURB AND GUTTER		LIN FT	8465
	2104.507	REMOVE CONCRETE PAVEMENT (PATCH)		SQ YD	48
A	2104.513	SAWING BITUMINOUS PAVEMENT		LIN FT	8465
	2232.501	MILL BITUMINOUS SURFACE (1.5")		SQ YD	46360
	2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	2318
	2360.609	TYPE MV3 WEARING COURSE MIXTURE (MVWE35035 E)		TON	3825
	2360.609	TYPE LV3 WEARING COURSE MIXTURE FOR PATCHING (LVWE35030 E)	(1)	TON	230
	2504.602	ADJUST GATE VALVE AND BOX		EACH	4
	2506.503	RECONSTRUCT DRAINAGE STRUCTURE		LIN FT	38
B	2506.516	CASTING ASSEMBLY		EACH	24
	2506.522	ADJUST FRAME AND RING CASTING (SANITARY)		EACH	7
A	2506.602	GROUT CATCH BASIN OR MAN HOLE		EACH	17
	2531.501	CONCRETE CURB AND GUTTER DESIGN B618		LIN FT	6045
	2531.501	CONCRETE CURB AND GUTTER DESIGN B624		LIN FT	2420
	2531.507	8" DRIVEWAY CONCRETE		SQ YD	27
	2540.602	INSTALL MAIL BOX SUPPORT		EACH	18
	2563.601	TRAFFIC CONTROL		LUMP SUM	1
	2563.602	PORTABLE CHANGEABLE MESSAGE SIGN		UNIT DAY	10
	2564.602	PAVEMENT MESSAGE (LT ARROW) POLY PREFORMED		EACH	9
	2564.603	4" SOLID LINE WHITE - TEMPORARY PAINT (TURN LANE LINE)		LIN FT	700
	2564.603	4" BROKEN LINE WHITE - TEMPORARY PAINT		LIN FT	3272
	2564.603	4" SOLID LINE WHITE - EPOXY		LIN FT	14860
	2564.603	4" BROKEN LINE WHITE - EPOXY		LIN FT	3272
	2564.603	4" SOLID LINE YELLOW - EPOXY		LIN FT	2370
	2564.603	4" DOUBLE SOLID LINE YELLOW - EPOXY		LIN FT	5510
	2564.603	24" SOLID LINE YELLOW - EPOXY		LIN FT	100
	2564.603	24" SOLID LINE WHITE - HEAT FUSED		LIN FT	516
	2564.604	ZEBRA CROSSWALK - HEAT FUSED		SQ FT	3006
	2565.602	LOOP DETECTOR 6'X6'		EACH	13
	2580.603	REMOVABLE LANE TAPE		LIN FT	3096

BASIS OF PLANNED QUANTITIES

2357.502	BITUMINOUS MATERIAL FOR TACK COAT	.05 GAL / SQ YD
2360.609	TYPE MV3 WEARING COURSE MIXTURE (MVWE35035 E)	110 LBS/SQ YD/ IN THICKNESS
2580.603	REMOVABLE LANE TAPE	4' AT 50' INTERVALS FOR SKIPS

(1) BASED ON CONCRETE PATCH AND CURB REPLACEMENT / CRACK FILLING AFTER MILLING (20 TONS)

STANDARD DETAIL PLATES

PLATE NO	DESCRIPTION
4010	CONCRETE SHOT CONE AND ADJUSTING RING
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4126F	CATCH BASIN FRAME CASTING
R-3067	NEENAH CATCH BASIN FRAME CASTING
4149C	GRATE CASTING FOR CATCH BASIN
4161F	CURB BOX CASTING FOR CATCH BASIN
7100G	CONCRETE CURB AND GUTTER (DESIGN B)
7111J	INSTALLATION OF CATCH BASIN CASTING
8000I	STANDARD BARRICADES

A. STORM SEWER REPAIRS												
STRUCTURE	STATION	LT/RT	801 CASTING	R-3067 CASTING	GROUT CB	SAW BIT. PAVEMENT	REMOVE BIT. PAVEMENT	REMOVE C&G	B618 C&G	B824 C&G	RECONSTRUCT STORM C.B.	COMMENTS
			EA	EA	EA	LF	SY	LF	LF	LF	FT	
1	1203	RT	1			28	9	20		20	0.9	NEEDS RINGS/CASTING/ROUND 11"
38	1203	LT			1							REGROUT RINGS
2	1222	RT	1			28	9	20		20	0.6	NEEDS RINGS/CASTING/ROUND 11"
51	1222	MED LT	1			28	9	20		20	0.3	NEEDS RINGS/CASTING/ROUND 11"
40	1364	MED RT			1							REGROUT RINGS
50	1364	MED LT			1							GROUT NEW INV.
3	1390	RT	1			28	9	20		20	0.6	NEEDS RINGS/CASTING/ROUND 11"
36	1390	LT			1							REGROUT RINGS
48	1695	MED LT			1							GROUT NEW INV.
42	1706	MED RT	1			28	9	20		20	2.6	BLOCK REBUILD 11" ROUND
47	1706	MED LT			1							GROUT NEW INV.
4	1718	RT	1			28	9	20		20	2.1	BLOCK REBUILD 11" ROUND
43	1718	MED RT	1			28	9	20		20	2.6	BLOCK REBUILD 11" ROUND
46	1718	MED LT	1			28	9	20		20	3.3	TOTAL REBUILD 11" ROUND CAST.
5	1754	RT	1			28	9	20		20	2.5	TOTAL REBUILD 4" ROUND CAST.
44	2075	MED RT	1			28	9	20		20	1	NEEDS RINGS/CASTING/ROUND 11"
45	2075	MED LT	1			28	9	20		20	0.7	NEEDS RINGS/CASTING/ROUND 11"
6	2085	RT			1							REGROUT RINGS
33	2085	LT			1							REGROUT RINGS
7	2892	RT			1							REGROUT RINGS
32	2892	LT		1		28	9	20	20		2	TOTAL REBUILD 18" RECT. CAST.
31	4160	LT	1			28	9	20	20		2.1	TOTAL REBUILD 11" ROUND CAST.
8	4895	RT		1		28	9	20	20		0.5	NEEDS RINGS/CASTING/RECT. 18"
27	4895	LT			1			20				REGROUT RINGS
26A	5240	LT		1		28	9	20	20		0.8	NEEDS RINGS/CASTING/RECT. 18"
9	5585	RT			1							REGROUT RINGS
26	5604	LT		1		28	9	20	20		3.8	TOTAL REBUILD 18" RECT. CAST.
10	5880	RT			1							REGROUT RINGS
25	5880	LT	1			28	9	20	20		1	NEEDS RINGS/CASTING/ROUND 11"
24	6260	LT			1							REGROUT RINGS
11	6720	RT		1		28	9	20	20		0.5	NEEDS RINGS/CASTING/RECT. 18"
23	6720	LT			1							REGROUT RINGS
12	7408	RT		1		28	9	20	20		2	TOTAL REBUILD 18" RECT. CAST.
22	7408	LT		1		28	9	20	20		2	TOTAL REBUILD 18" RECT. CAST.
13	7510	RT		1		28	9	20	20		0.5	NEEDS RINGS/CASTING/RECT. 18"
21	7510	LT		1		28	9	20	20		1	NEEDS RINGS/CASTING/RECT. 18"
20	7880	LT			1							GROUT NEW INV.
19	7920	LT		1		28	9	20	20		4.4	TOTAL REBUILD 18" RECT. CAST.
18	8220	LT			1							REGROUT RINGS / INV.
17	8500	LT			1							REGROUT RINGS / INV.
16	8825	LT		1		28	9	20	20		0.2	NEEDS RINGS/CASTING/RECT. 18"
	TOTALS		13	11	17	672	216	500	260	220	38	

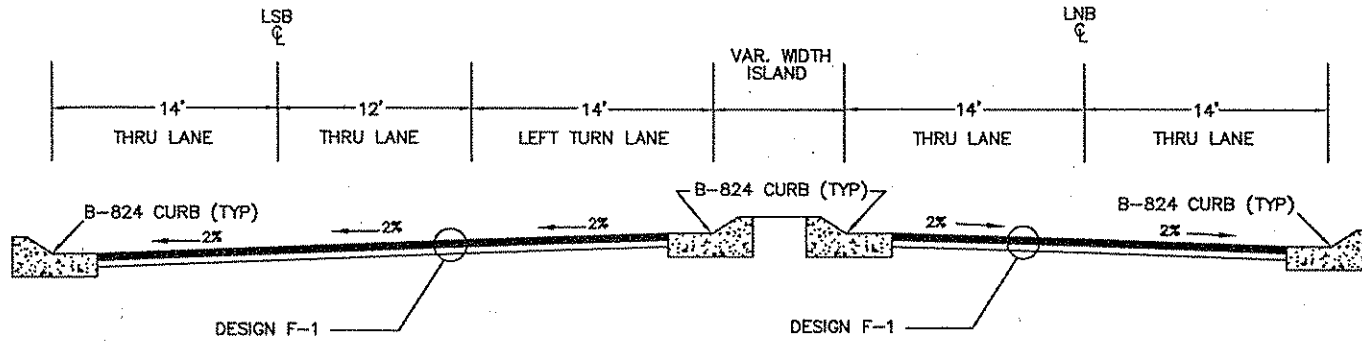
B. SCHEDULE OF CASTINGS				
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX CASTING	QUANTITY
A	801	810	821B	13
B (2)	R-3067	TYPE R		11

CONSTRUCTION NOTES:
(1) ASSEMBLY "B" IS A NEENA R-3067 OR EQUIVALENT
NEENAH CATCH BASIN AND FRAME (R-3067)

TYPICAL SECTIONS

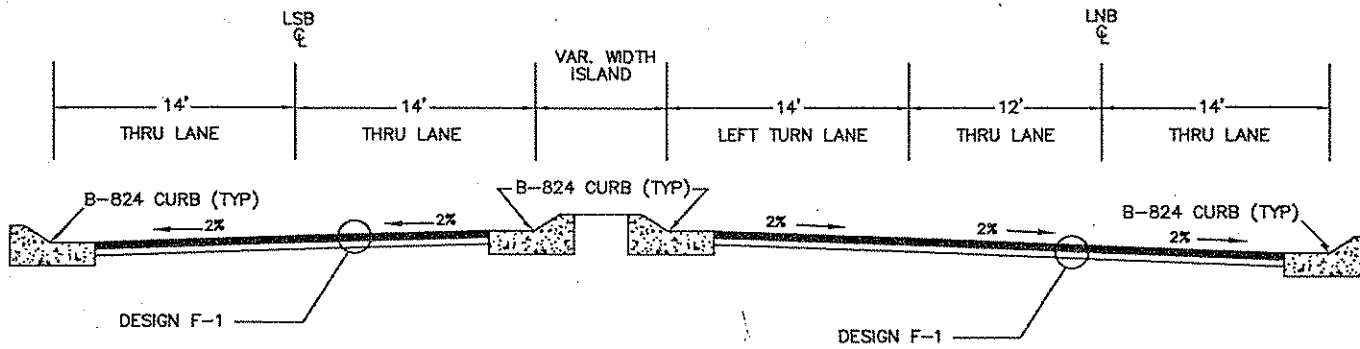
CSAH 7

STA 9+20 - STA 11+50
 STA 20+70 - STA 23+05

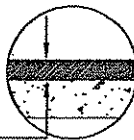


CSAH 7

STA 11+50 - STA 20+70



DESIGN F-1

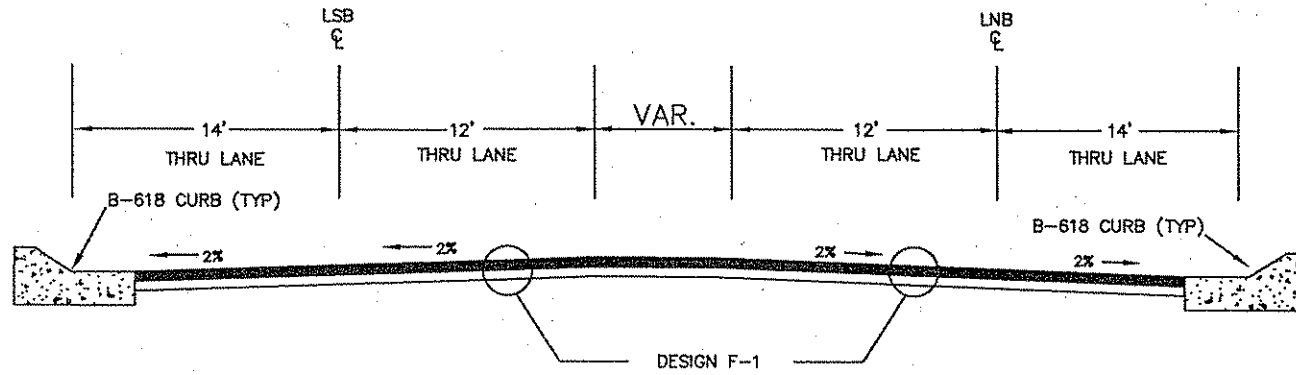


MILL 1.5" OF INPLACE BITUMINOUS
 PAVE 1.5" TYPE MV3 WEARING COURSE (MVWE35035 E)

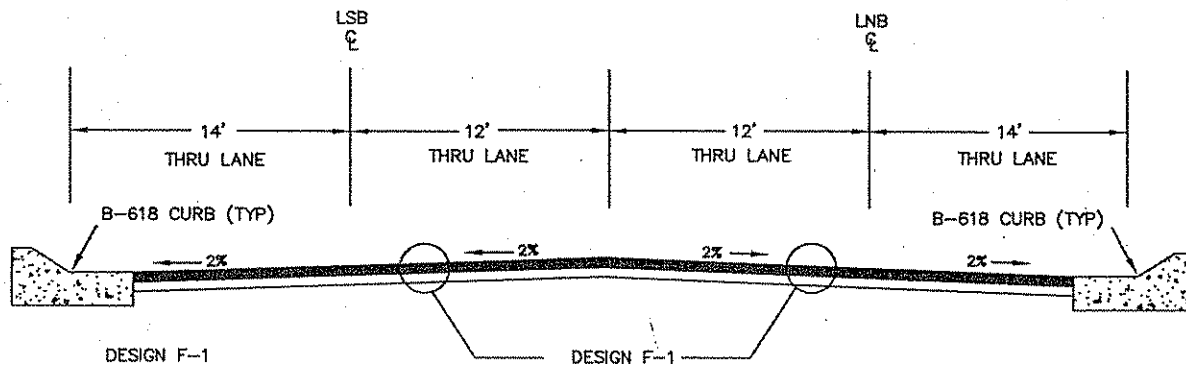
NOTE: NOT TO SCALE

TYPICAL SECTIONS

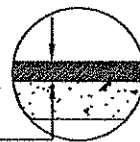
CSAH 7
STA 23+05 - STA 25+20



CSAH 7
STA 25+20 - STA 91+00



DESIGN F-1

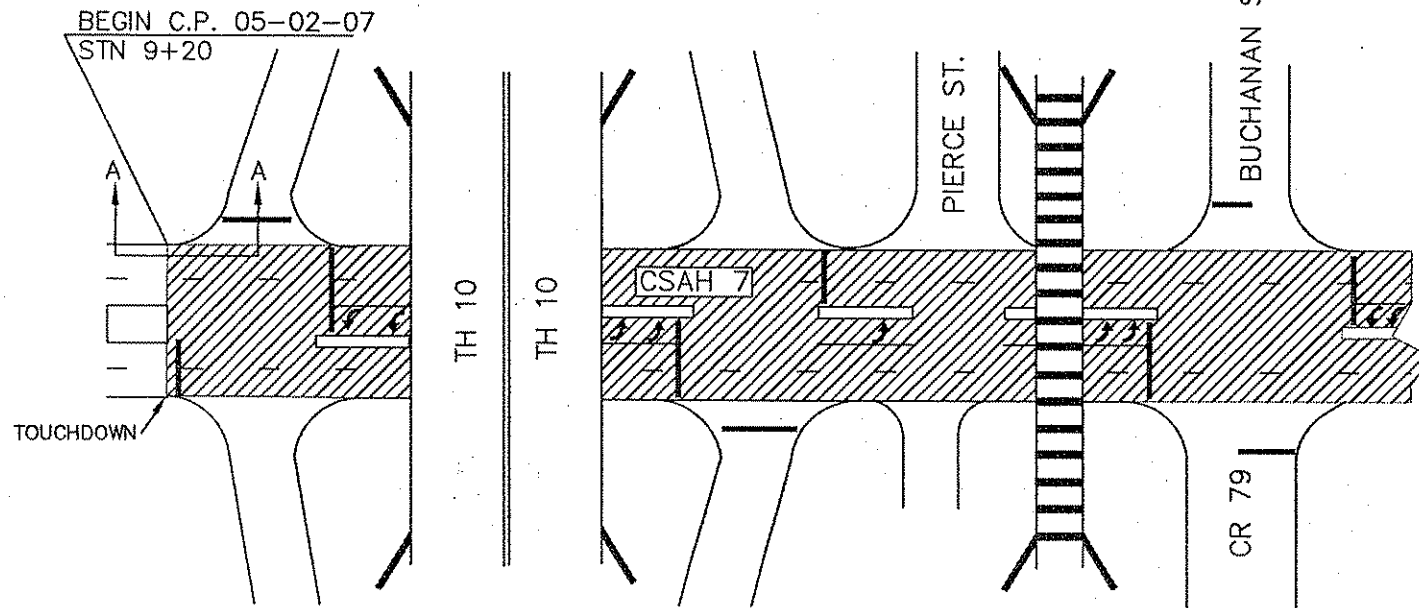


MILL 1.5" OF INPLACE BITUMINOUS
PAVE 1.5" TYPE MV3 WEARING COURSE (MVWE35035 E)

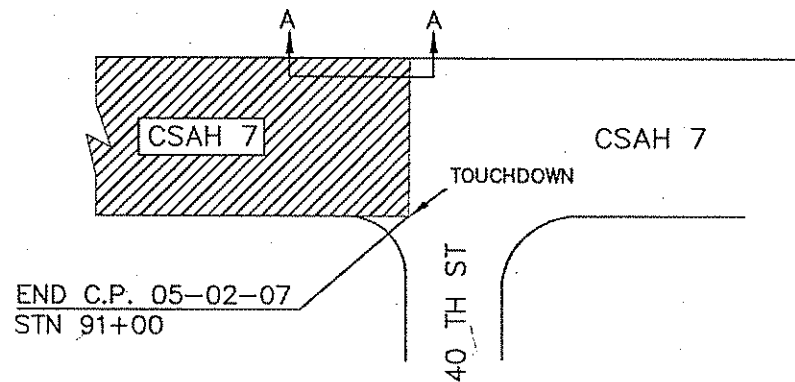
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TYPICAL SECTIONS

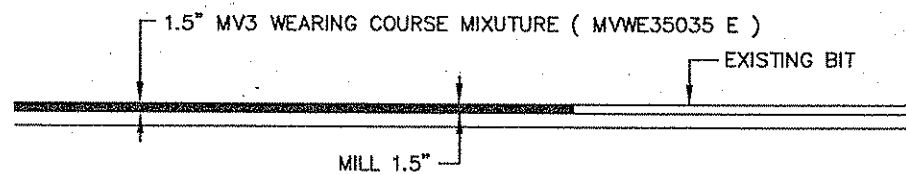
BEGIN TRANSITION DETAIL



END TRANSITION DETAIL



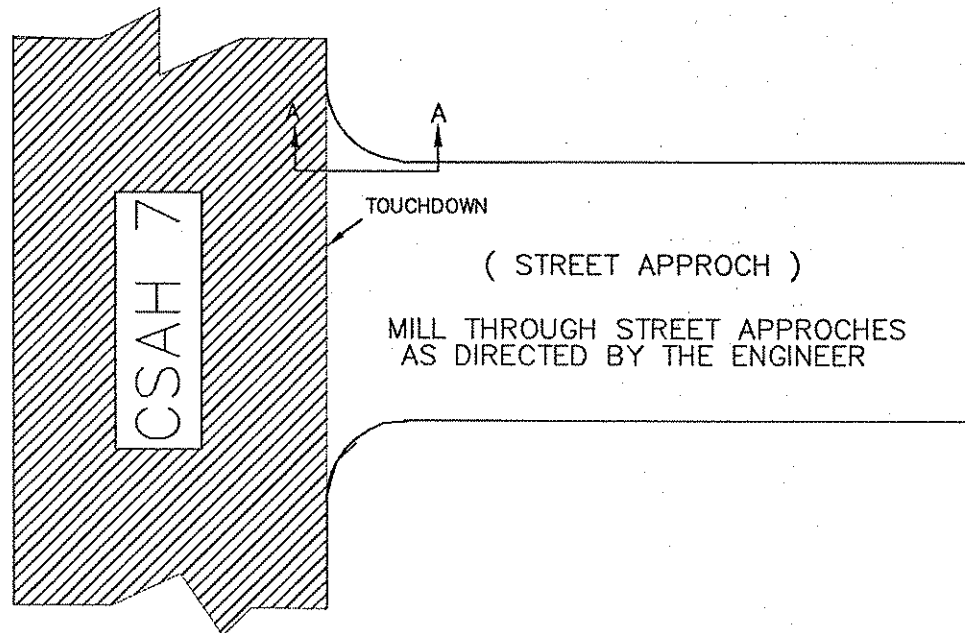
MILL DETAILS A - A MILL AS DIRECTED BY THE ENGINEER



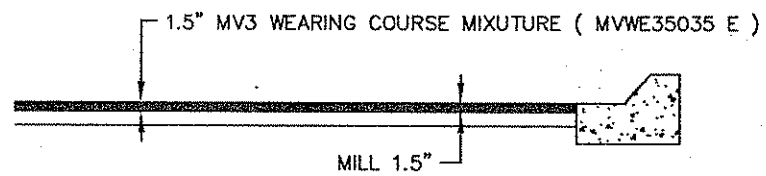
NOTE: NOT TO SCALE

TYPICAL SECTIONS

JOINT DETAILS STREET APPROACHES

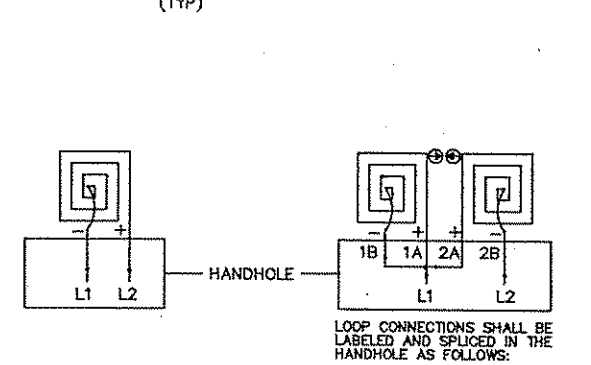
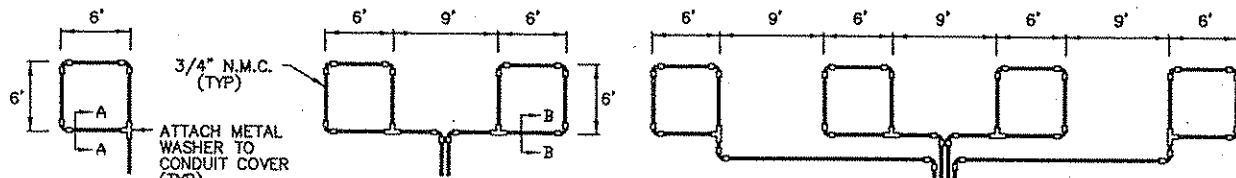


MILL DETAILS A - A MILL AS DIRECTED BY THE ENGINEER



NOTE: NOT TO SCALE

SIGNAL LOOP DETAIL

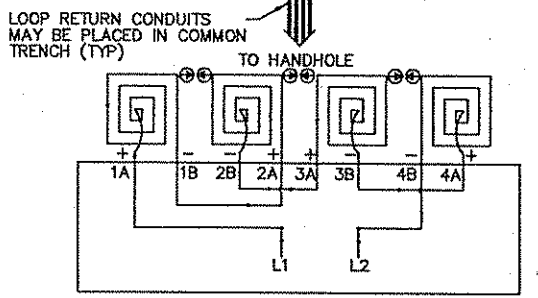


**LOOP DETECTOR
DETAIL 'A'**
(LOOP PHASING FOR
SINGLE CONNECTION)

LOOP CONNECTIONS SHALL BE
LABELED AND SPLICED IN THE
HANDHOLE AS FOLLOWS:

- L1 TO 1A
- 1B TO 2A
- 2B TO L2

**LOOP DETECTOR
DETAIL 'B'**
(LOOP PHASING FOR
SERIES CONNECTION)

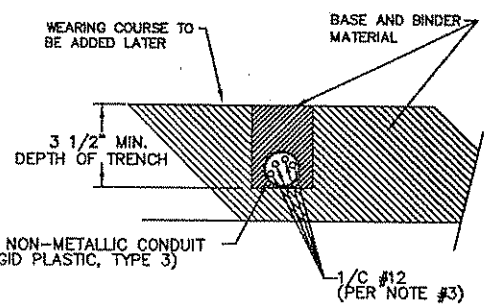


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED
IN THE HANDHOLE AS FOLLOWS:

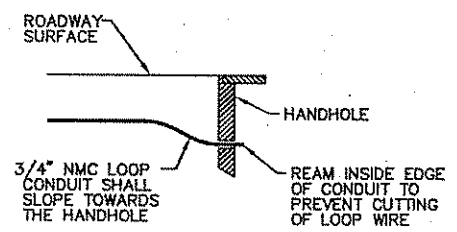
- L1 TO 1A
- 1B TO 2A
- 2B TO 3A
- 3B TO 4A
- 4B TO L2

SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE.
ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE
(1A, 1B, ECT)

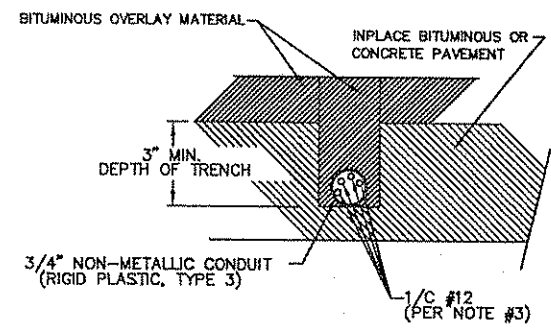
**LOOP DETECTOR
DETAIL 'C'**
(LOOP PHASING FOR
SERIES CONNECTION)



SECTION A-A
DETAIL FOR LOOP INSTALLATION
IN NEW ROADWAY



DRAINAGE DETAIL



SECTION B-B
DETAIL FOR LOOP INSTALLATION
IN EXISTING ROADWAY

LOOP DETECTOR WIRING

- 1) ALL CORNERS SHALL BE 90° CONDUIT BENDS.
- 2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
- 3) LOOP DETECTOR WIRES SHALL BE #12 AWG CROSSED LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.
- 4) LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF (5) TURNS PER FOOT THROUGH THE CONDUIT TO THE HANDHOLE.
- 5) NMC DESIGNATES NON-METALLIC CONDUIT (SPEC. 3803)
- 6) LOOPS 6' x 6' THRU 6' x 14' SHALL HAVE (4) TURNS.
- 7) LOOPS 6' x 15' AND LARGER SHALL HAVE (2) TURNS.

NOTE: NOT TO SCALE

SIGNAL LOOP DETAIL

STANDARD PLATES

THESE STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY:

PLATE NO.	DESCRIPTION
7035 I	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
7036 E	PEDESTRIAN CURB RAMP
7100 G	CONCRETE CURB AND GUTTER (DESIGN B)
8110 D	TRAFFIC SIGNAL BRACKETING -- POLE MOUNTED
8111 C	TRAFFIC SIGNAL BRACKETING -- PEDESTAL MOUNTED
8112 C	PEDESTAL FOUNDATION
8114 A	PVC HANDHOLE/PULLBOX
8115 D	PEDESTRIAN PUSH BUTTON INSTALLATION
8118 C	SERVICE EQUIPMENT AND POLE--TRAFFIC CONTROL SIGNALS
8119 C	GROUND MOUNTED CABINET FOUNDATION
8120 K	PAB5 POLE FOUNDATION
8121 D	TRANSFORMER BASE AND POLE BASE PLATE
8122 C	PEDESTAL AND PEDESTAL BASE
8123 E	POLE AND MAST ARM
8124 E	MAST ARM SIGNAL HEAD MOUNTS
8126 F	PAB0 AND PAB00 POLE FOUNDATION

* -- APPLIES TO THIS PROJECT

CONDUCTOR COLOR CODE

R	RED
O	ORANGE
BL	BLUE
WH	WHITE
R/BLK	RED WITH BLACK TRACER
O/BLK	ORANGE WITH BLACK TRACER
BL/BLK	BLUE WITH BLACK TRACER
WH/BLK	WHITE WITH BLACK TRACER
BLK	BLACK
BLK/WH	BLACK WITH WHITE TRACER
G/BLK	GREEN WITH BLACK TRACER
G	GREEN

LEGEND OF SYMBOLS

CONTROLLER AND SERVICE EQUIP. NO's	
SIGNAL BASE NO.	
SIGNAL FACE NO.	
LUMINAIRE NO.	
CONTROLLER AND CABINET	
CONTROLLER AND CABINET - IN PLACE	
HANDHOLE	
HANDHOLE - IN PLACE	
RIGID STEEL CONDUIT (RSC)	
RIGID STEEL CONDUIT (RSC) - IN PLACE	
SIGNAL FACE WITH BACKGROUND SHIELD	
SIGNAL FACE W/O BACKGROUND SHIELD	
SIGNAL FACE - IN PLACE	
PEDESTRIAN INDICATORS	
PEDESTRIAN INDICATORS - IN PLACE	
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE	
PEDESTRIAN PUSH BUTTON STATION	
TRAFFIC SIGNAL PEDESTAL	
TRAFFIC SIGNAL PEDESTAL - INPLACE	
TRAFFIC SIGNAL POLE AND MAST ARM	
TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE	
STREET LIGHT POLE AND LUMINAIRE	
STREET LIGHT POLE AND LUMINAIRE - IN PLACE	
MAST ARM AND LUMINAIRE	
MAST ARM AND LUMINAIRE - INPLACE	
WOOD POLE	
WOOD POLE - IN PLACE	
SOURCE OF POWER	
RAILROAD SIGNAL - IN PLACE	
RIGHT OF WAY LINE	
CENTERLINE	
EDGE OF ROADWAY	
SHOULDERLINE	
CURB LINE	
STOP BAR	
EMERGENCY VEHICLE PREEMPTION DETECTOR	

ABBREVIATIONS

3-1(EG)	SIGNAL HEAD PHASE "3" - NO. "1"	P2-1(EG)	RED INDICATION PHASE "2" - NO. "1"
BR. GR.	BARE GROUND	P3	PUSH BUTTON
CH. SW.	CHECK SWITCH	PB2-1(EG)	PUSH BUTTON PHASE "2" - NO. "1"
CLR	CLEAR	PEC	PHOTOELECTRIC CELL
D2-1(EG)	DETECTOR PHASE "2" - NO. "1"	PED	PEDESTRIAN
DVK	DON'T WALK	R	RED
EGG	EQUIPMENT GROUND	R&S	REMOVE AND SALVAGE
EVP	EMERGENCY VEHICLE PRE-EMPTION	RLTA	RED LEFT TURN ARROW
F&I	FURNISH AND INSTALL	RRTA	RED RIGHT TURN ARROW
FL	FLASH/FLASHING	RSC	RIGID STEEL CONDUIT
G	GREEN	SOP	SOURCE OF POWER
GLTA	GREEN LEFT TURN ARROW	SPR	SPARE
GRN	GREEN	ST. LHT	STREET LIGHT
GR. R	GROUND ROD	STA	STATION
GRTA	GREEN RIGHT TURN ARROW	SW	SWITCH
GTHA	GREEN THRU ARROW	SWD	SWITCHED
HH	HANDHOLE	S&R	SALVAGE AND REINSTALL
HPS	HIGH PRESSURE SODIUM	TDW	TELEPHONE DROP WIRE
JB	JUNCTION BOX	VLK	WALK
LUM	LUMINAIRE	YEL	YELLOW
NEU	NEUTRAL	YLTA	YELLOW LEFT TURN ARROW
NMC	NONMETALLIC CONDUIT	YRTA	YELLOW RIGHT TURN ARROW
		YTHA	YELLOW THRU ARROW