

ANOKA COUNTY HIGHWAY DEPARTMENT

CONSTRUCTION PLAN FOR:

BIT. MILL BIT. OVERLAY, STORM
SEWER REPAIR

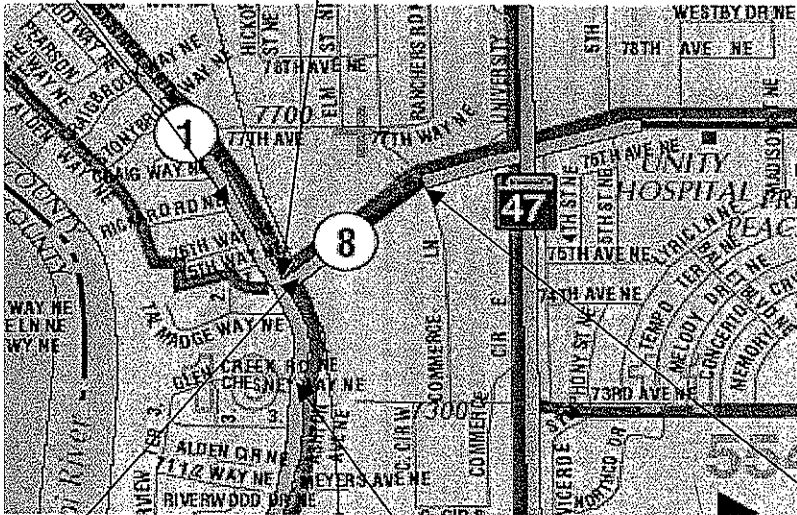
CSAH NO: 8
FROM CSAH 1
TO COMMERCE ST
CSAH NO: 1
FROM GLEN CREEK DR
TO RICHARD ST.

COUNTY PROJECT NO: 05-06-08 WEST

CSAH 8 GROSS LENGTH	1496 FT	0.3 MI
CSAH 1 GROSS LENGTH	1740 FT	0.3 MI
BRIDGES LENGTH	0 FT	0 MI
CSAH 8 RXR EXCEPTION LENGTH	55 FT	0.0 MI
NET LENGTH	3181 FT	0.6 MI

END CSAH 1 STATION 27+40

BEGIN CSAH 8 STATION 10+00



55' R X R EXCEPTION

BEG CSAH 1 STATION 10+00

END CSAH 8 STATION 24+96

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, 2005

Robert J. [Signature]
ANOKA COUNTY ENGINEER

STATEMENT OF ESTIMATED QUANTITIES

TAB NO.	ITEM NO.	ITEM	NOTE NO.	UNIT	TOTAL EST. QUANT.
	2021.501	MOBILIZATION		LUMP SUM	1
	2021.601	R X R PROTECTIVE LIABILITY INSURANCE		LUMP SUM	1
A	2104.501	REMOVE CONCRETE CURB AND GUTTER		LIN FT	260
A	2104.513	SAWING BITUMINOUS PAVEMENT		LIN FT	260
	2232.501	MILL BITUMINOUS SURFACE (1.5")		SQ YD	17585
	2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	1211
	2360.609	TYPE MV3 WEARING COURSE MIXTURE (MWWE35035 E)		TON	1984
A	2360.609	TYPE LV3 WEAR COURSE FOR PATCHING (LVWE35030 E)		TON	26
	2504.602	ADJUST GATE VALVE AND BOX		EACH	9
A	2506.503	RECONSTRUCT DRAINAGE STRUCTURE		LIN FT	10
B	2506.516	CASTING ASSEMBLY		EACH	13
	2506.522	ADJUST FRAME AND RING CASTING (MANHOLE)		EACH	2
A	2506.602	GROUT CATCHBASIN OR MANHOLE		EACH	4
	2531.501	CONCRETE CURB AND GUTTER DESIGN B618		LIN FT	200
	2531.501	CONCRETE CURB AND GUTTER DESIGN B612		LIN FT	60
	2540.602	INSTALL MAIL BOX SUPPORT		EACH	7
	2563.601	TRAFFIC CONTROL		LUMP SUM	1
	2563.602	PORTABLE CHANGEABLE MESSAGE SIGN		UNIT DAY	20
	2564.602	PAVEMENT MESSAGE (LT ARROW) POLY PREFORM		EACH	5
	2564.602	PAVEMENT MESSAGE (RT ARROW) POLY PREFORM		EACH	7
	2564.602	PAVEMENT MESSAGE (STRAIGHT ARROW) POLY PREFORM		EACH	1
	2564.602	PAVEMENT MESSAGE (ONLY) POLY PREFORM		EACH	3
	2564.602	PAVEMENT MESSAGE (R X R CROSSING) POLY PREFORM		EACH	4
	2564.603	4" SOLID LINE WHITE - TEMP LATEX PAINT (TURN LANE LINE)		LIN FT	1900
	2564.603	4" BROKEN LINE WHITE - TEMP LATEX PAINT		LIN FT	1352
	2564.603	4" DOUBLE SOLID YELLOW TEMP LATEX PAINT		LIN FT	3620
	2564.603	4" SOLID LINE WHITE - EPOXY		LIN FT	8472
	2564.603	4" BROKEN LINE WHITE - EPOXY		LIN FT	1274
	2564.603	4" SOLID LINE YELLOW - EPOXY		LIN FT	3320
	2564.603	4" DOUBLE SOLID LINE YELLOW - EPOXY		LIN FT	1748
	2564.603	24" SOLID LINE YELLOW - EPOXY		LIN FT	174
	2564.603	24" SOLID LINE WHITE - POLY PREFORM		LIN FT	204
	2564.604	ZEBRA CROSSWALK - POLY PREFORM		SQ FT	972
	2565.602	LOOP DETECTOR 6'X6'		EACH	11
	2580.603	REMOVABLE LANE TAPE		LIN FT	622

BASIS OF PLANNED QUANTITIES

2357.502	BITUMINOUS MATERIAL FOR TACK COAT	.05 GAL / SQ YD
2360.609	TYPE LV3 WEAR COURSE FOR PATCHING (LVWE35030 E)	110 LBS / SQ YD / IN THICKNESS
2580.603	REMOVEABLE LANE TAPE	4' AT 50' INTERVALS&LANE LINES

STANDARD DETAIL PLATES

PLATE NO.	DESCRIPTION
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4126F	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

CERTIFIED BY
PROJ. 05-06-08


ANDREW J. WITTER, P.E.

LIC. NO. 42757 DATE 4/14/05
SHEET NO. 2 OF 12 SHEETS

A.

STORM SEWER REPAIRS

STRUCTURE	STATION	LOC	801 CASTING		GROUT CB	SAW BIT. PAVEMENT	REMOVE BIT. PAVEMENT	REMOVE C&G	B618 C&G	B612 C&G	RECONSTRUCT STORM C.B.	COMMENTS
	CSAH 1		EA		EA	LF	SY	LF	LF		FT	
1	12+47	LNB	1			20	9	20	20		1.3	NEEDS RINGS/CASTING/ROUND 11"
2	14+80	LNB										GOOD COND.
3	14+80	LNB	1	MED.		20	9	20		20	0.4	NEEDS RINGS/CASTING/ROUND 11"
4	17+80	LNB	1			20	9	20	20		0.4	NEEDS RINGS/CASTING/ROUND 11"
5	17+90	LNB										GOOD COND.
11	16+60	LSB	1			20	9	20	20		1.0	NEEDS RINGS/CASTING/ROUND 11"
12	15+60	LSB	1			20	9	20	20		0.9	NEEDS TOP/RINGS/CAST/RD 11"
13	15+15	LSB	1			20	9	20	20		0.3	NEEDS RINGS/CASTING/ROUND 11"
14	15+05	LSB	1			20	9	20	20		0.6	NEEDS RINGS/CASTING/ROUND 11"
15	14+20	LSB	1			20	9	20	20		0.4	NEEDS RINGS/CASTING/ROUND 11"
16	12+47	LSB	1			20	9	20	20		0.9	NEEDS RINGS/CASTING/ROUND 11"
17	12+47	LNB	1	MED.		20	9	20		20	1.1	NEEDS RINGS/CASTING/ROUND 11"
6	19+57	LNB	1			20	9	20	20		0.8	NEEDS RINGS/CASTING/ROUND 11"
7	20+65	LSB	1			20	9	20	20		0.5	NEEDS RINGS/CASTING/ROUND 11"
8	19+37	LSB										GOOD COND.
9	19+57	LSB		MED.								GOOD COND.
10	19+57	LNB	1	MED.		20	9	20		20	1.2	NEEDS RINGS/CASTING/ROUND 11"
18	18+70	LNB										GOOD COND.
19	18+70	LNB										GOOD COND.
TOTALS			13			260	117	260	200	60	9.8	

B.

SCHEDULE OF CASTINGS

ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX CASTING	QUANTITY
A	801	810	821B	13

CONSTRUCTION NOTES:

CERTIFIED BY

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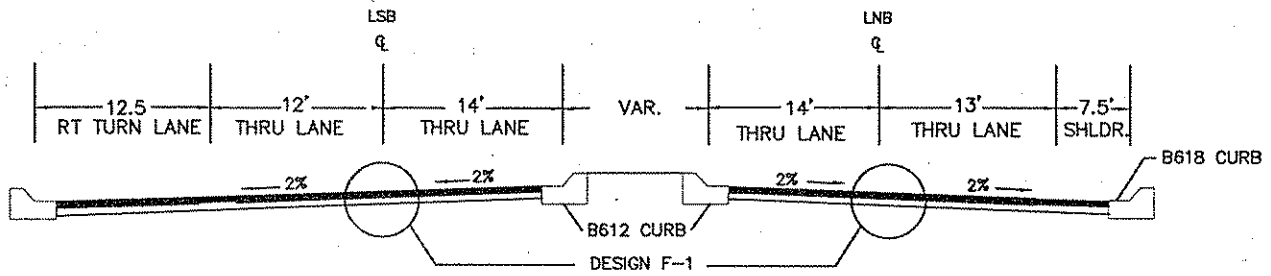
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PROJ. 05-06-08

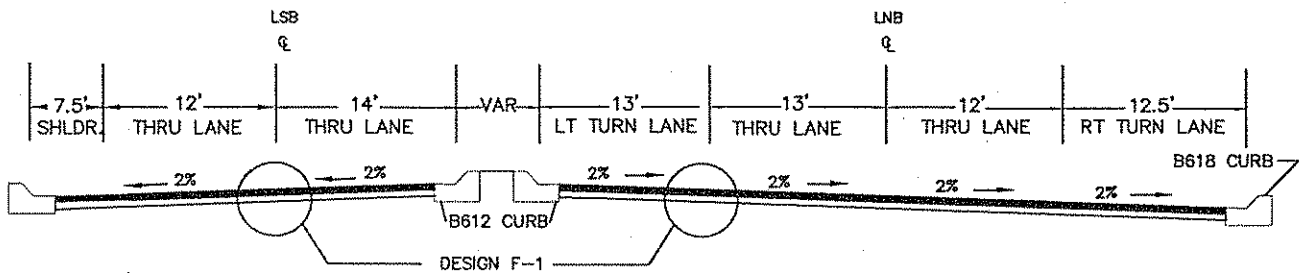
SHEET NO. 3 OF 12 SHEETS

TYPICAL SECTIONS

CSAH 1 TYP. A
STA. 10+00 - 14+00

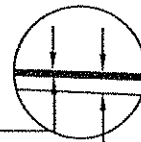


CSAH 1 TYP. B
STA. 14+00 - 18+50



DESIGN F-1

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



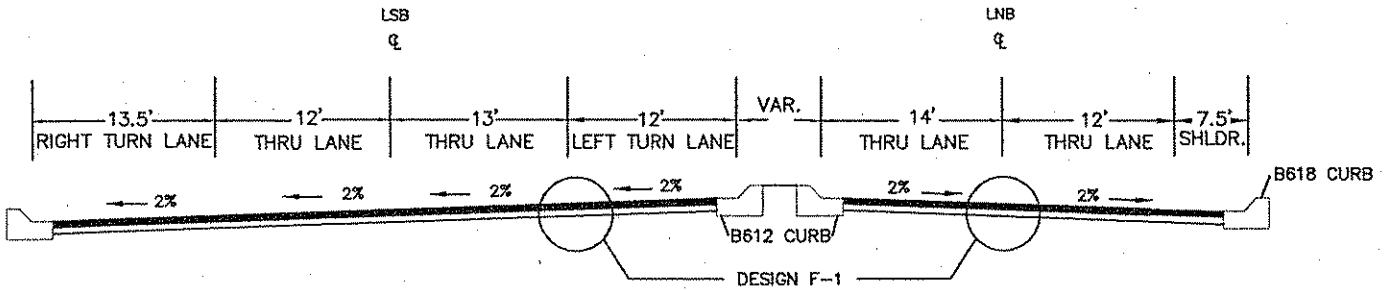
NOTE: NOT TO SCALE

CERTIFIED BY Andy J. Witter
ANDY J. WITTER, P.E.
C.P. 05-06-08

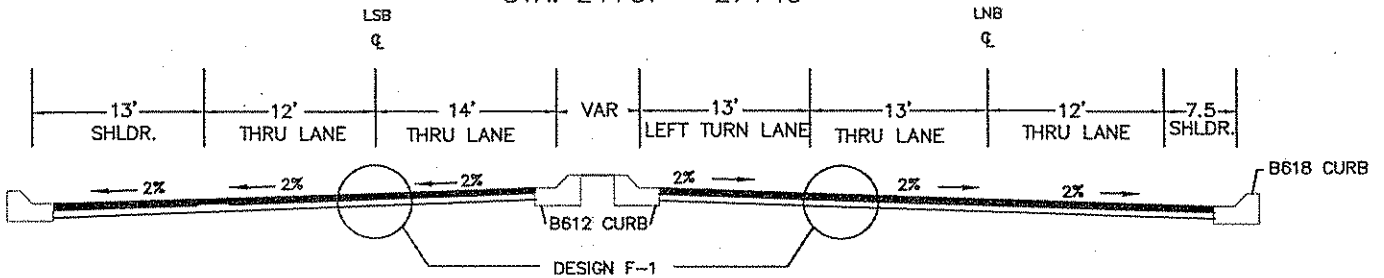
LIC. NO. 42757 DATE 4/14/05
SHEET NO. 4 OF 12 SHEETS

TYPICAL SECTIONS

CSAH 1 TYP. C
STA. 18+50 - 24+37

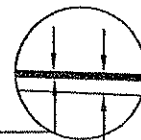


CSAH 1 TYP. D
STA. 24+37 - 27+40



DESIGN F-1

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



NOTE: NOT TO SCALE

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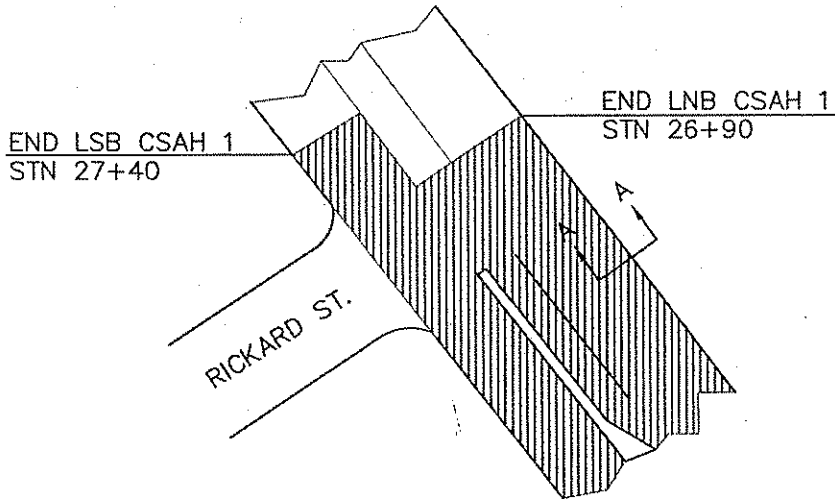
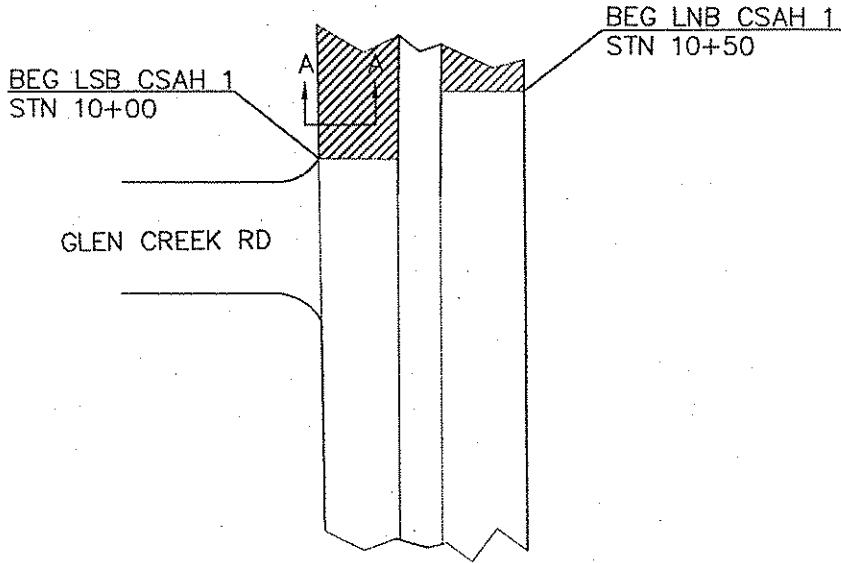
Andy J. Witter
ANDY J. WITTER, P.E.

C.P. 05-06-08

LIC. NO. 42757 DATE 4/14/05

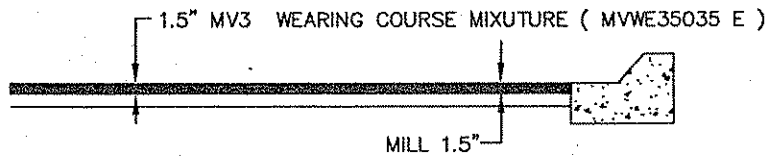
SHEET NO. 5 OF 12 SHEETS

TRANSITION DETAILS



MILL DETAILS A - A

MILL AS DIRECTED BY THE ENGINEER



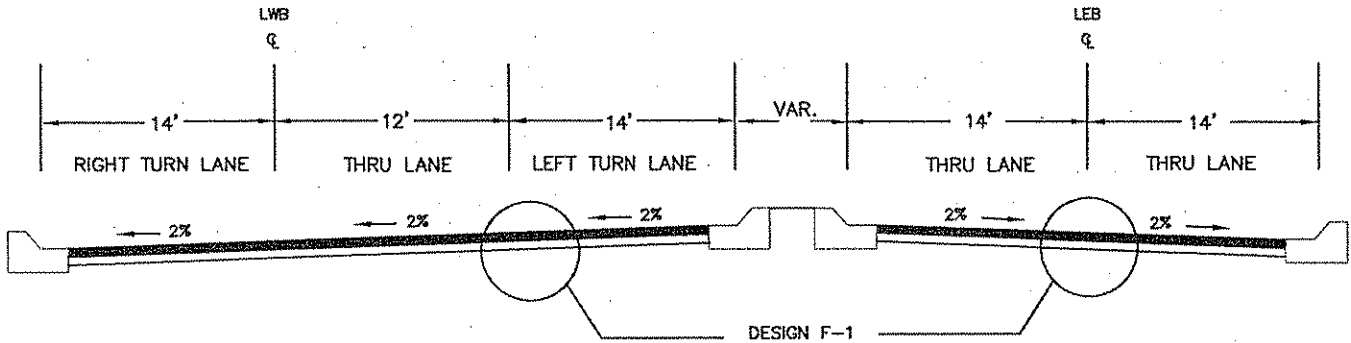
NOTE: NOT TO SCALE

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ANDREW J. WITTER, P.E.
 C.P. 05-06-08

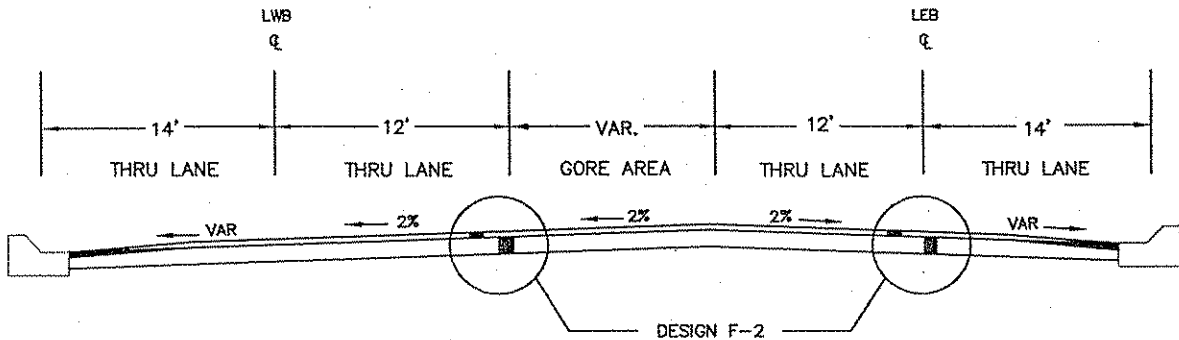
LIC. NO. 42757 DATE 4/14/05
 SHEET NO. 6 OF 12 SHEETS

TYPICAL SECTIONS

CSAH 8 TYP. A
STA. 10+00 TO STA. 11+70

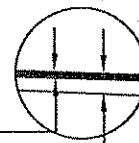


CSAH 8 TYP. B
STA. 11+70 TO STA. 15+92



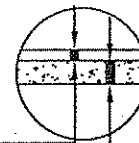
DESIGN F-1

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



DESIGN F-2

PAVE 1.5" MV3 WEAR (MVWE35035 E)
EXISTING BITUMINOUS
*(6" WIDE X 1.5" DEPTH EDGE MILL AT LIP OF CURB)



- NOTE 1. SHOULDER CURB ENDS AT STA. 12+70 AND BEGINS AGAIN AT STA. 14+40
2. R X R EXCEPTION BEG. AT STA. 13+05 AND ENDS AT STA. 13+60

NOTE: NOT TO SCALE

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LIC. NO. 42757 DATE 4/14/05

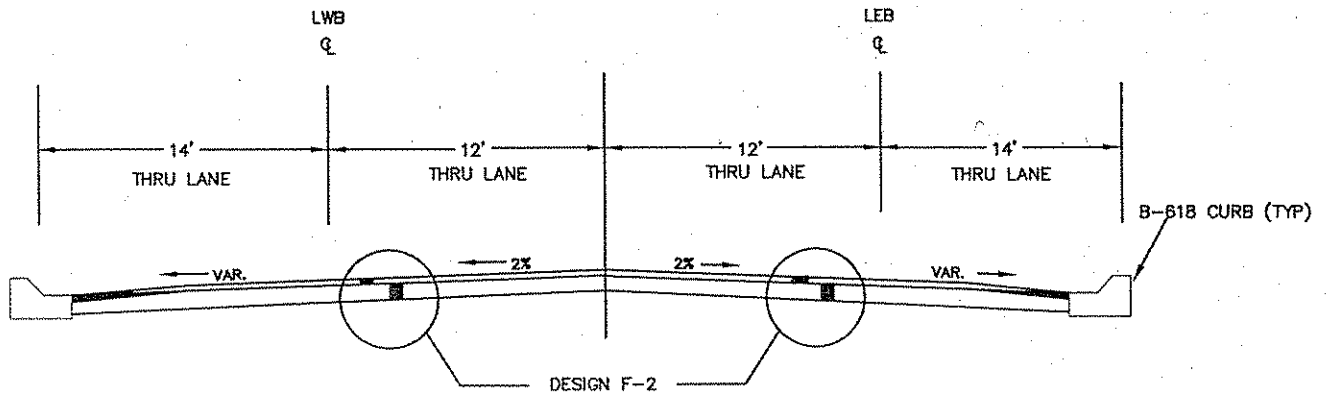
C.P. 05-06-08

SHEET NO. 7 OF 12 SHEETS

TYPICAL SECTIONS

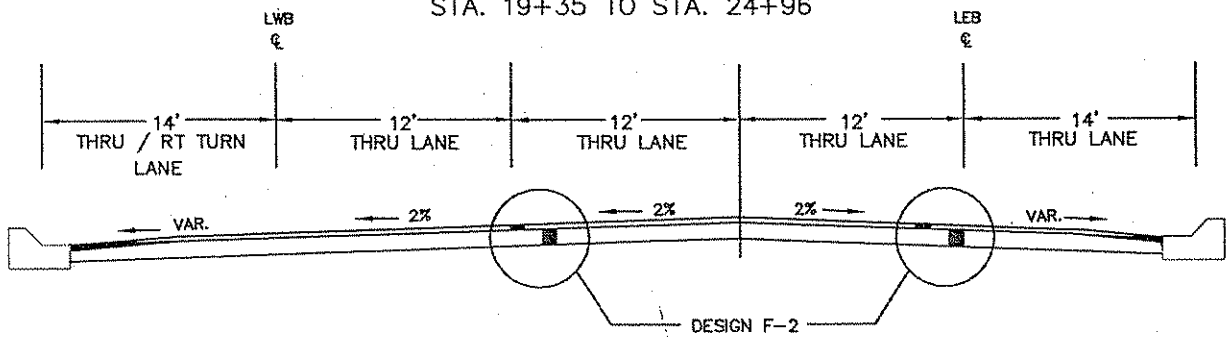
TYP. C

STA. 15+92 TO STA. 19+35

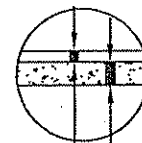


TYP. D

STA. 19+35 TO STA. 24+96



DESIGN F-2



PAVE 1.5" MV3 WEAR (MVWE35035 E)
 EXISTING BITUMINOUS
 * (6" WIDE X 1.5" DEPTH EDGE MILL AT LIP OF CURB)

NOTE: NOT TO SCALE

CERTIFIED BY

Andy J. Witter
 ANDY J. WITTER, P.E.

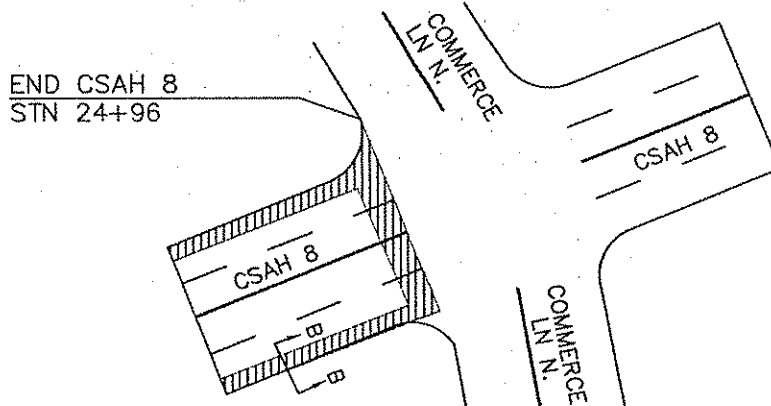
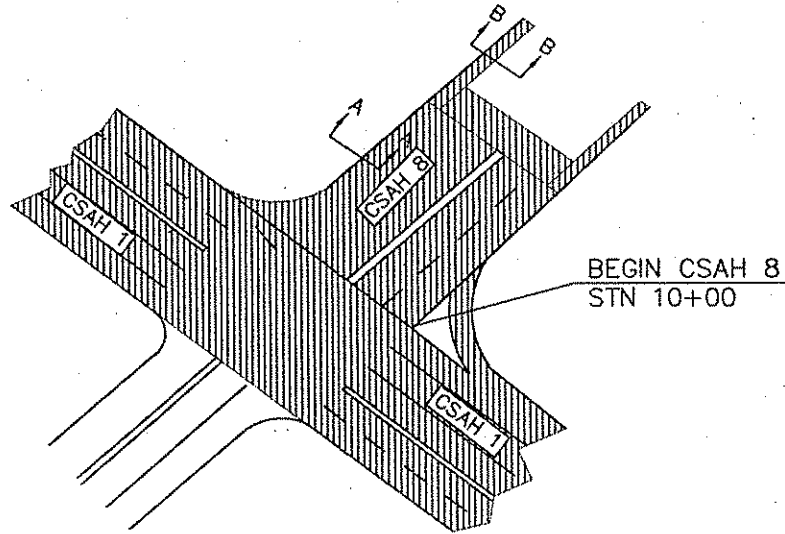
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DATE 4/14/05

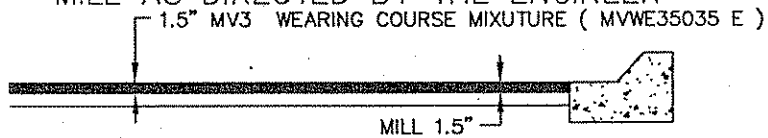
C.P. 05-06-08

SHEET NO. 8 OF 12 SHEETS

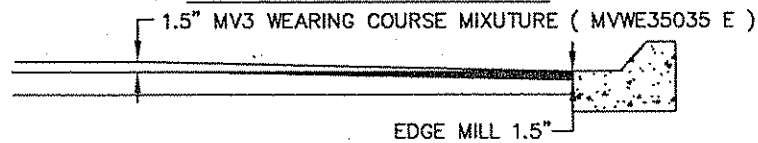
TRANSITION DETAILS



MILL DETAILS A - A MILL AS DIRECTED BY THE ENGINEER



MILL DETAILS B - B

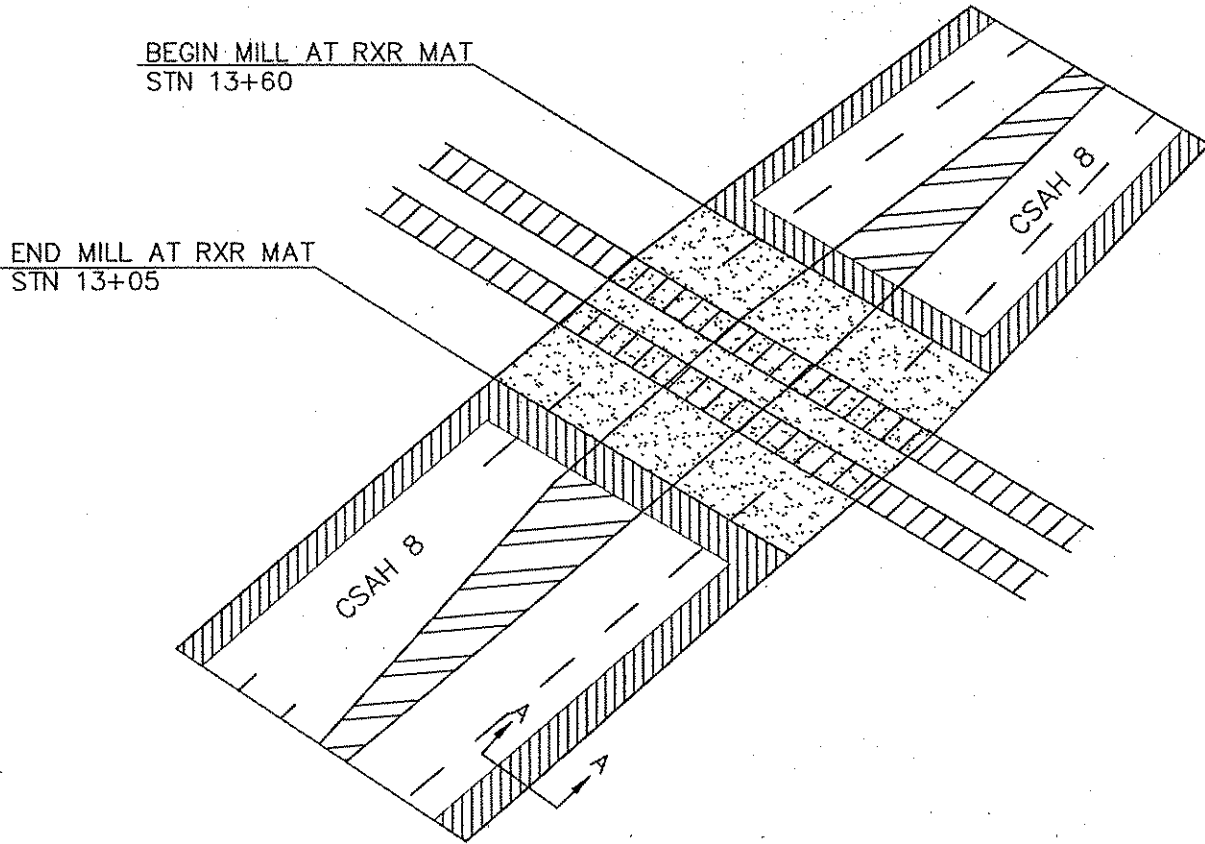


NOTE: NOT TO SCALE

CERTIFIED BY *Andrew J. Witter*
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 C.P. 05-06-08

LIC. NO. 42757 DATE 4/14/05
 SHEET NO. 9 OF 12 SHEETS

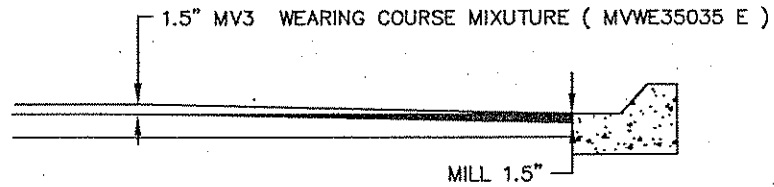
RXR DETAILS



NOTE : SHOULDER CURB ENDS AT STA. 12+70 AND BEGINS AGAIN AT STA. 14+40


MILL DETAILS A - A

MILL AS DIRECTED BY THE ENGINEER



NOTE: NOT TO SCALE

CERTIFIED BY

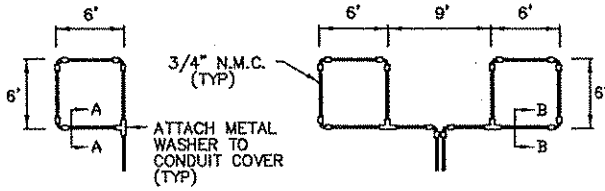

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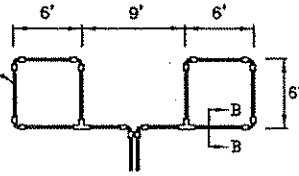
C.P. 05-06-08

SHEET NO. 10 OF 12 SHEETS

SIGNAL LOOP DETAIL



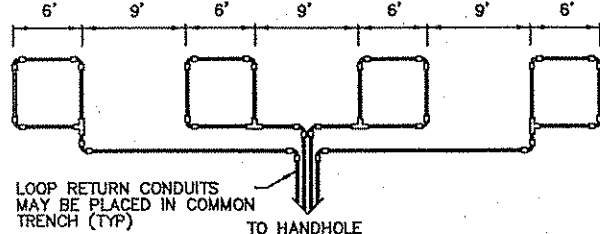
**LOOP DETECTOR
DETAIL 'A'**
(LOOP PHASING FOR
SINGLE CONNECTION)



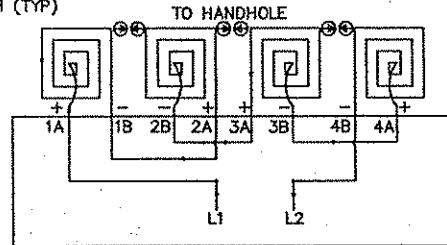
LOOP CONNECTIONS SHALL BE
LABELED AND SPLICED IN THE
HANDHOLE AS FOLLOWS:

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

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



LOOP RETURN CONDUITS
MAY BE PLACED IN COMMON
TRENCH (TYP)

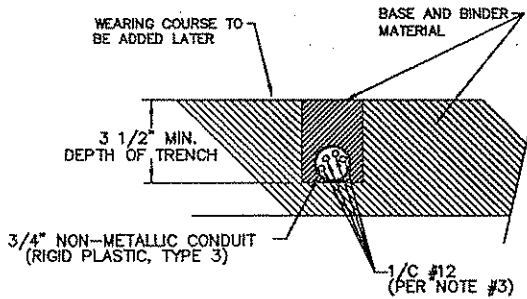


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED
IN THE HANDHOLE AS FOLLOWS:

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

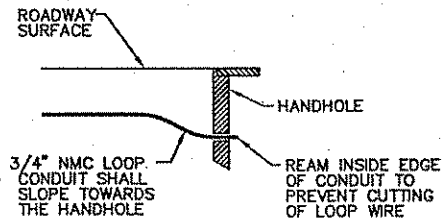
SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE.
ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE
(1A, 1B, ECT)

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

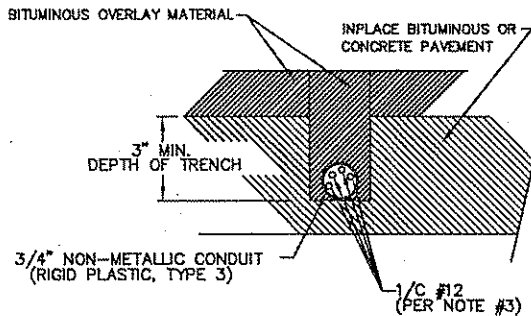


SECTION A-A

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 (XLPE). 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

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C.P. 05-06-08

LIC. NO. 42757

DATE 4/14/05

SHEET NO. 11 OF 12 SHEETS

SIGNAL LOOP DETAIL

STANDARD PLATES	
THESE STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY:	
PLATE NO.	DESCRIPTION
7035 L	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	PA85 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
8128 F	PA80 AND PA100 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-(KEG)	SIGNAL HEAD PHASE '3' - NO. '1'	P2-(KEG)	PED INDICATION PHASE '2' - NO. '1'
BR. GR.	BARE GROUND	PB	PUSH BUTTON
CH. SW.	CHECK SWITCH	PB2-(KEG)	PUSH BUTTON PHASE '2' - NO. '1'
CLR	CLEAR	PEC	PHOTOELECTRIC CELL
D2-(KEG)	DETECTOR PHASE '2' - NO. '1'	PEB	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	SDP	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	WLK	WALK
LUM	LUMINAIRE	YEL	YELLOW
NEU	NEUTRAL	YLTA	YELLOW LEFT TURN ARROW
NMC	NONMETALLIC CONDUIT	YRTA	YELLOW RIGHT TURN ARROW
		YTHA	YELLOW THRU ARROW

CERTIFIED BY


ANDREW J. WITTER, P.E.

LIC. NO. 42757

DATE 4/14/05

C.P. 05-06-08

SHEET NO. 12 OF 12 SHEETS