

ANOKA COUNTY HIGHWAY DEPARTMENT

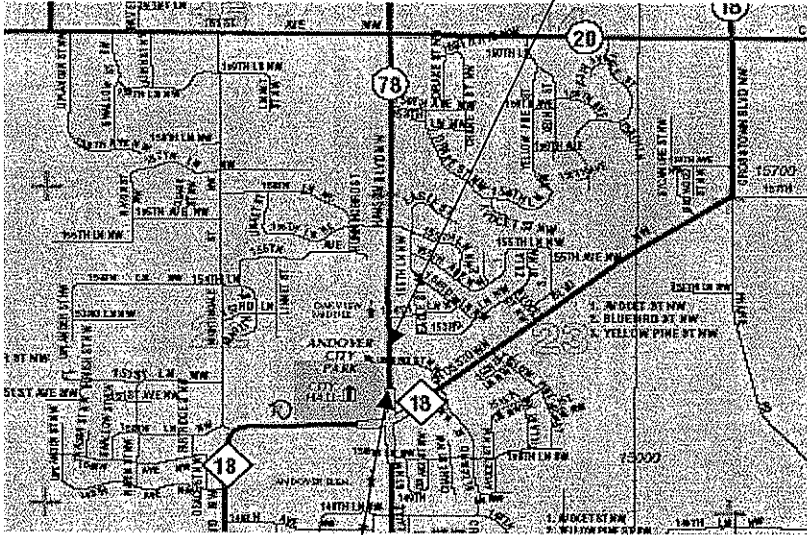
CONSTRUCTION PLAN FOR:

FULL DEPTH CONSTRUCTION
BIT. MILL, BIT. OVERLAY,
CONCRETE CURB AND GUTTER

CSAH NO: 78
 FROM NORTH OF CSAH 18
 TO NORTH OF BLUEBIRD
 FROM
 TO

COUNTY PROJECT NO: 05-14-78
 GROSS LENGTH 622 FT 0.1 MI
 BRIDGES LENGTH FT 0.00 MI
 EXCEPTION LENGTH FT 0.00 MI
 NET LENGTH 622 FT 0.1 MI

END PROJECT 05-14-78 STATION 16+22



BEGIN PROJECT 05-14-78 STATION 10+00

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 LIC. NO. 42757 DATE 4/14/05
 ANDREW J. WITTER, P.E.

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

[Signature]
 ANOKA COUNTY ENGINEER

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	NOTE NO.	UNIT	TOTAL EST. QUANT.
2021.501	MOBILIZATION		LUMP SUM	1
2104.501	REMOVE CURB		LIN FT	71
2104.503	REMOVE CONCRETE		SQ YD	21
2104.503	REMOVE BITUMINOUS		SQ YD	1198
2104.511	SAW CONCRETE		LIN FT	695
2104.513	SAW BITUMINOUS FULL DEPTH		LIN FT	1469
2123.503	BLADE HOURS		HOURL	8
2123.521	PNEUMATIC-TIRED ROLLER		HOURL	8
2130.501	WATER		M-GAL	8
2211.501	AGGREGATE BASE CLASS 5		TON	353
2221.609	AGGREGATE SHOULDERING CLASS 7B		TON	27
2232.501	MILL BITUMINOUS SURFACE		SQ YD	2297
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	196
2360.609	TYPE MV3 WEARING COURSE MIXTURE (WEAR) (MVWE35035 B)		TON	341
2360.609	TYPE LV3 NON-WEARING COURSE MIXTURE (BINDER) (LVNW35030 B)		TON	83
2360.609	TYPE LV3 NON-WEARING COURSE (BASE) (LVNW35030 B)		TON	83
2360.609	TYPE LV3 NON-WEARING COURSE (PATCHING) (LVNW35030 B)		TON	101
2531.501	CONCRETE CURB AND GUTTER DESIGN B418		LIN FT	970
2531.501	CONCRETE WALK 4"		SQ FT	2960
2531.503	CONCRETE ISLAND NOSE		EACH	1
2563.601	TRAFFIC CONTROL		LUMP SUM	1
2563.602	PORTABLE CHANGEABLE MESSAGE SIGN		UNIT DAY	10
2564.603	4" SOLID LINE WHITE - EPOXY		LIN FT	1060
2564.603	4" SOLID LINE YELLOW - EPOXY		LIN FT	1025
2564.603	4" DOUBLE SOLID LINE YELLOW		LIN FT	816
2565.602	LOOP DETECTOR 6' X 6'		EACH	1
2580.603	REMOVABLE LANE TAPE		LIN FT	80

BASIS OF PLANNED QUANTITIES

2211.501	AGGREGATE BASE CLASS 5	CU YDS * 1.8 = TONS
2221.609	AGGREGATE SHOULDERING CLASS 7B	CU YDS * 1.8 = TONS
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	.05 GAL / SQ YD
2360.609	TYPE MV3 WEAR MIXTURE (WEAR) (MVWE35035 B)	110 LBS / SQYD / 2" THICKNESS
2360.609	TYPE LV3 NON-WEAR MIXTURE (BINDER) (LVNW35030 B)	110 LBS / SQYD / 3" THICKNESS
2360.609	TYPE LV3 NON-WEAR MIXTURE (BASE) (LVNW35030 B)	110 LBS / SQYD / 3" THICKNESS
2360.609	TYPE LV3 NON-WEAR MIXTURE (PATCHING) (LVNW35030 B)	110 LBS / SQYD / 6" THICKNESS
2580.603	REMOVABLE LANE TAPE	4' AT 50' INTERVALS

STANDARD DETAIL PLATES

PLATE NO.	DESCRIPTION
7100G	CONCRETE CURB AND GUTTER
7109C	CONCRETE ISLAND NOSE
8000I	STANDARD BARRICADES

CERTIFIED BY

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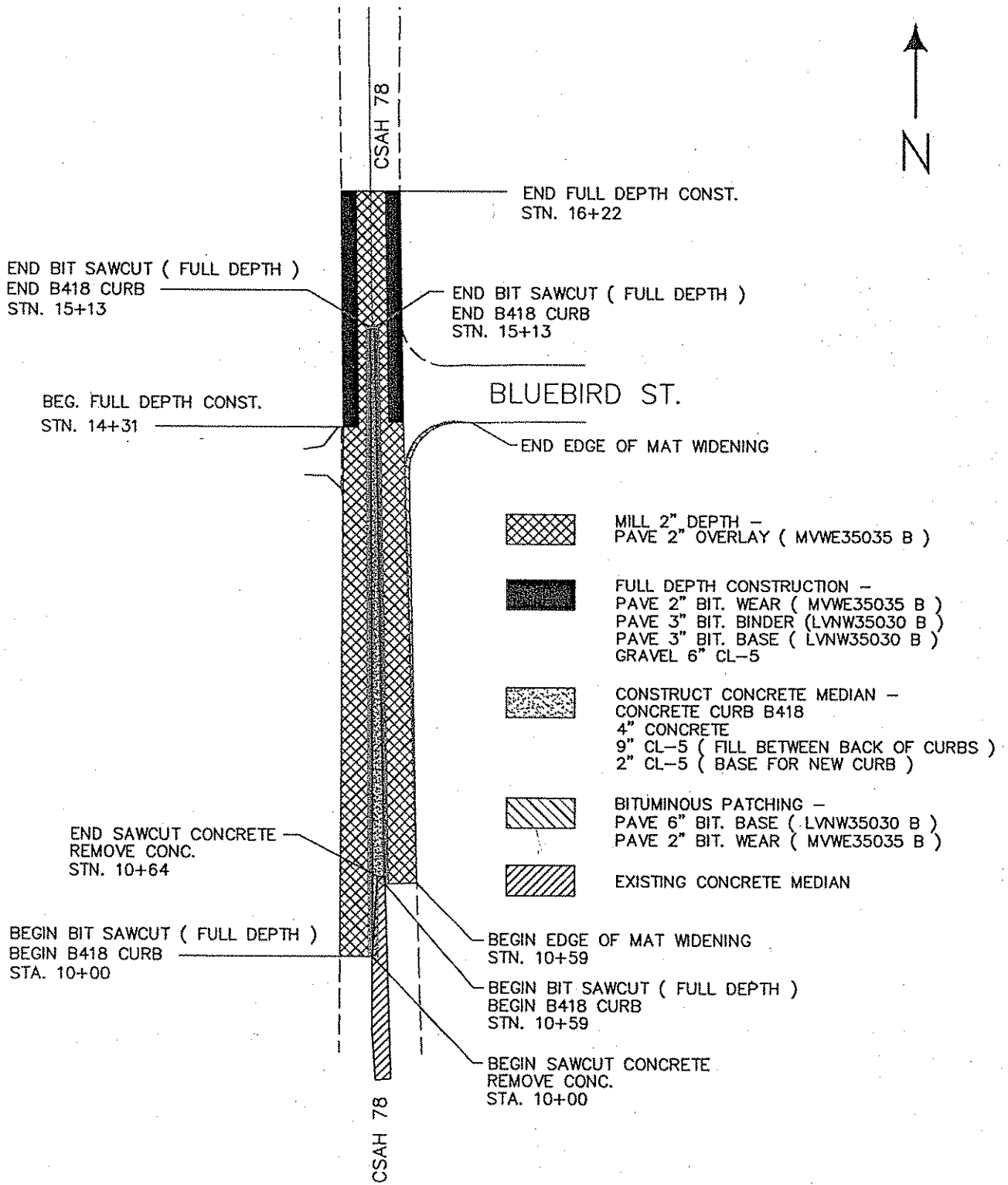
LIC. NO. 42757 DATE 4/14/05

PROJ. 05-14-78

SHEET NO. 2 OF 7 SHEETS

TYPICAL SECTIONS

CSAH 78 MEDIAN EXTENSION



NOTE: NOT TO SCALE

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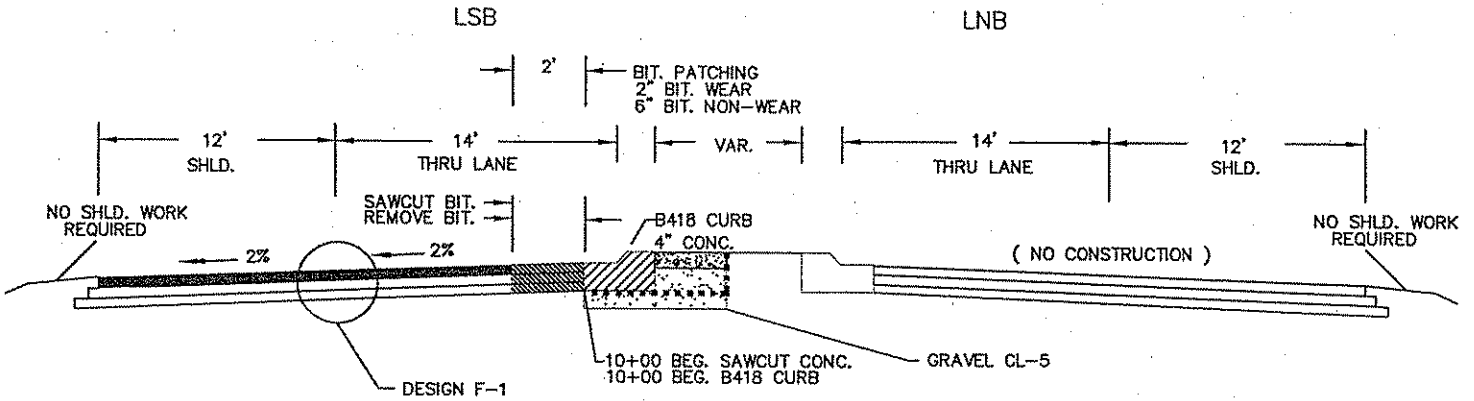
C.P. 05-14-78

LIC. NO. 42757 DATE 4/14/05

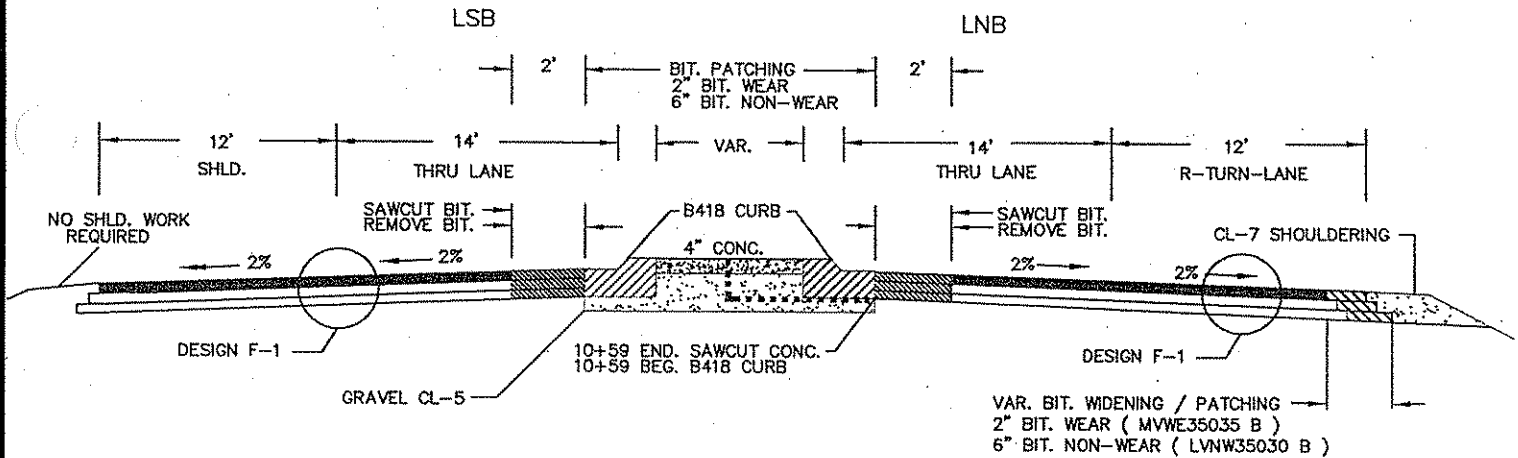
SHEET NO. 3 OF 7 SHEETS

TYPICAL SECTIONS

CSAH 78
STA. 10+00 - 10+59

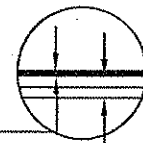


CSAH 78
STA. 10+59 - 14+31



DESIGN F-1

MILL 2" OF INPLACE BITUMINOUS
PAVE 2" TYPE MV3 WEARING COURSE (MVWE35035 B)
EXISTING BITUMINOUS



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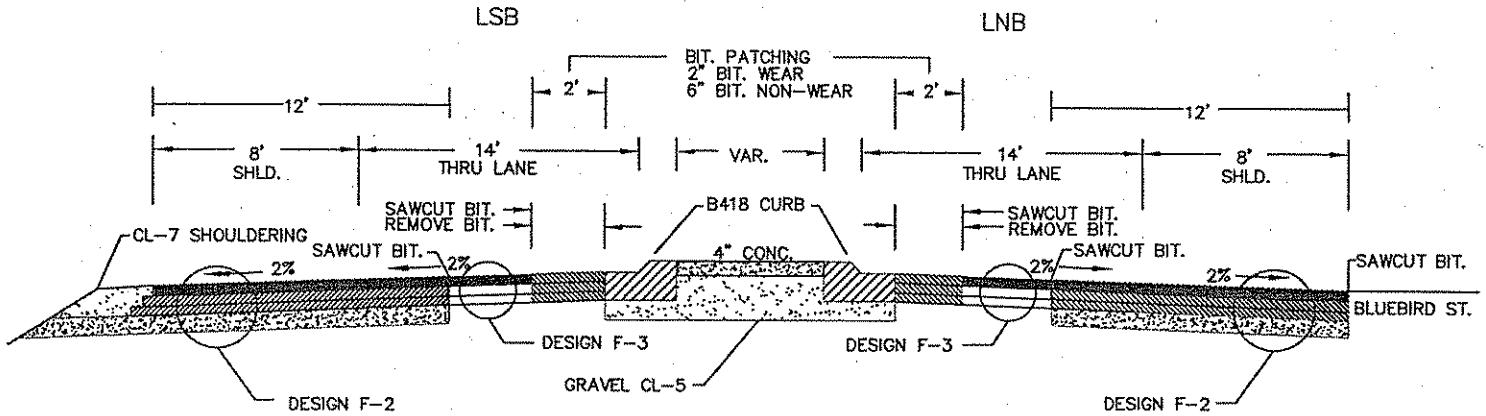
LIC. NO. 42757 DATE 4/14/05

SHEET NO. 4 OF 7 SHEETS

TYPICAL SECTIONS

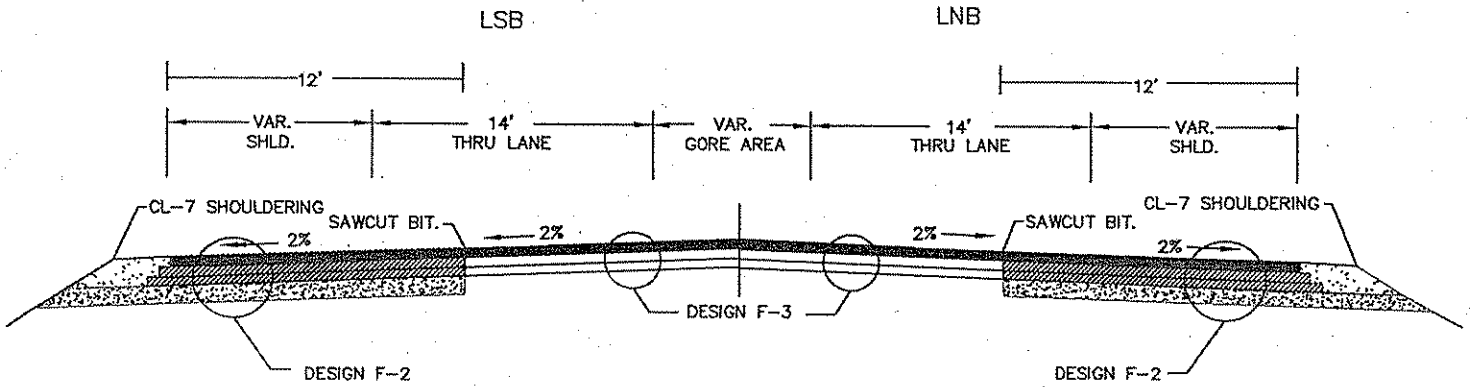
CSAH 78

STA. 14+31 - 15+13



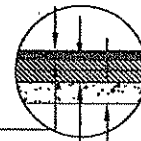
CSAH 78

STA. 15+13 - 16+22



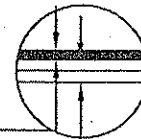
DESIGN F-2

- MILL 2" OF INPLACE BITUMINOUS
- PAVE 2" TYPE MV3 WEARING COURSE (MVWE35035 B)
- PAVE 6" TYPE LV3 NON-WEAR COURSE (LVNW35030 B)
- GRAVEL 6" CL-5



DESIGN F-3

- MILL 2" OF INPLACE BITUMINOUS
- PAVE 2" TYPE MV3 WEARING COURSE (MVWE35035 B)
- EXISTING BITUMINOUS



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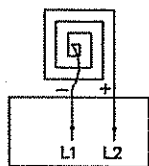
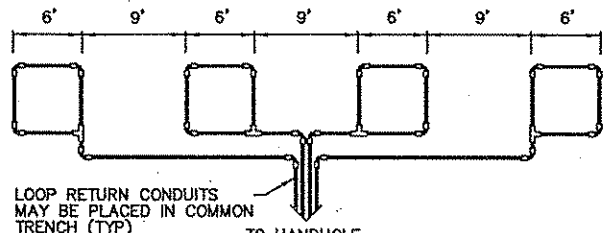
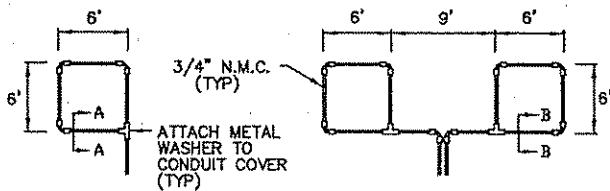
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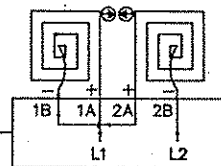
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SHEET NO. 5 OF 7 SHEETS

SIGNAL LOOP DETAIL



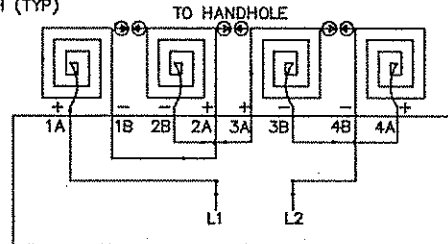
**LOOP DETECTOR
DETAIL 'A'**
(LOOP PHASING FOR
SINGLE CONNECTION)



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)

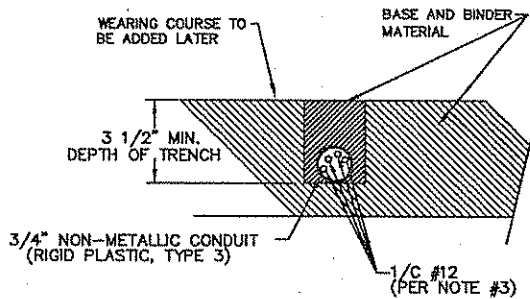


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED
IN THE HANDHOLE AS FOLLOWS:

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

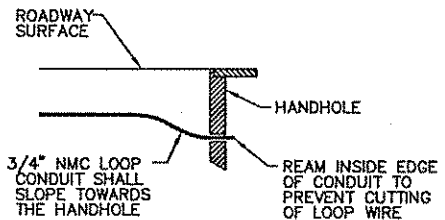
SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE.
ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE
(1A, 1B, ECT)

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

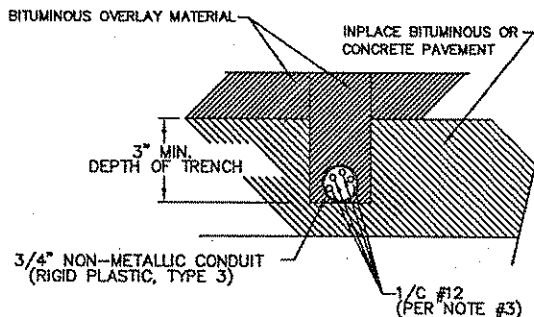


SECTION A-A

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 (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

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C.P. 05-14-78

LIC. NO. 42757 DATE 4/14/05

SHEET NO. 6 OF 7 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	PAS5 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	PAS0 AND PAS100 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 - IN PLACE	⊙
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 - IN PLACE	⊙
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)	PED INDICATION PHASE '2' - NO. '1'
BR. GR.	BARE GROUND	PB	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
DWK	DON'T WALK	R	RED
EQG	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	SV	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

NOTE: NOT TO SCALE

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SHEET NO. 7 OF 7 SHEETS