CONVENTIONAL SYMBOLS

Section Line
Quarter Line
Sixteenth Line
Property Line
R/W Boundary
Existing D.O.T. R/W Line
And Other Road R/W's
Railroad R/W
Private Easement
Temporary Easement — T. E.
Building Removal Easement — B. R. E.
R/W Parcel Number — 3
Access Control
Access Opening — open
Cast Iron Monument or 2"x2" D.O.T. Iron Pipe with Aluminum Cap
3/4" D.O.T. Iron Pin
Other Iron Monument
Concrete or Stone Monument
R/W Boundary Corner

UTILITY SYMBOLS

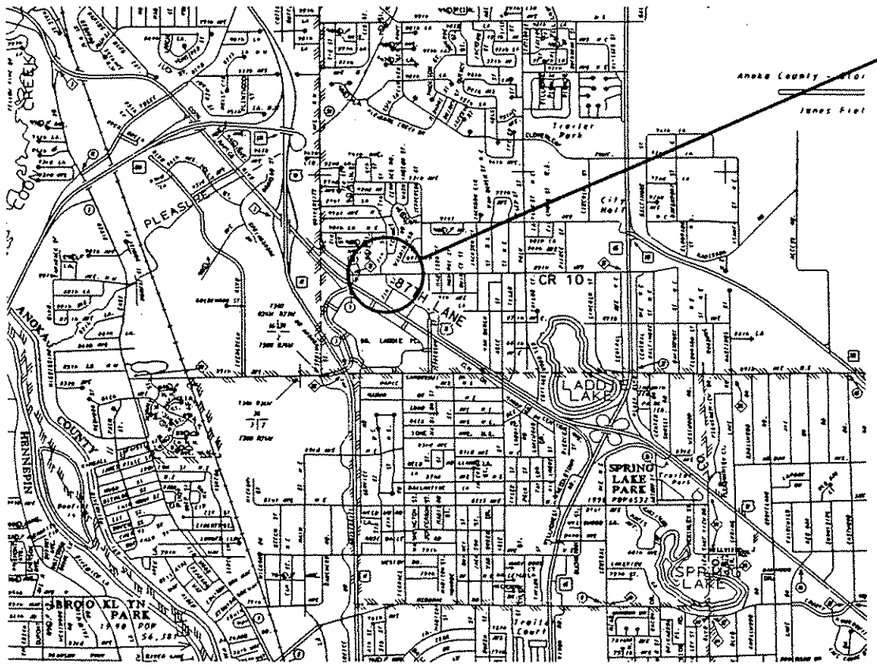
POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER ON POWER POLE
ON TELEPHONE POLES
ANCHOR
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL) — PED.
GAS MAIN — G
WATER MAIN
CONDUIT
TELEPHONE CABLE IN CONDUIT
ELECTRIC CABLE IN CONDUIT — P
TELEPHONE MANHOLE
ELECTRIC MANHOLE — P
BURIED TELEPHONE CABLE — T-BUR
BURIED ELECTRIC CABLE — P-BUR
AERIAL TELEPHONE CABLE — T-AE
SEWER (SANITARY OR STORM)
SEWER MANHOLE

CONSTRUCTION OF FULL TRAFFIC ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM IN THE CITY OF BLAINE, ANOKA COUNTY, MINNESOTA AT COUNTY ROAD 10 AND 87TH LANE

SYMBOLS

- EOS CONNECTION
- EVP DETECTOR DIRECTION
- LUMINAIRE NO.
- SIGNAL BASE NO.
- SIGNAL FACE NO.
- SPLICE

INDEX



PROJECT LOCATION
COUNTY ROAD 10
AT 87TH LANE
C.P. 94-05-10

ANOKA COUNTY
HIGHWAY DEPARTMENT

DESIGN DESIGNATION

COUNTY ROAD 10 (89TH AVENUE)
C.P. 94-05-10

R	NA	ENI8 (20)	NA
ADT (Current Year)	=	Design Speed	35 MPH
ADT (Future Year)	=	Based on	NA Sight Distance
DHV (Design Hr.Vol.)	= NA	Height of eye	NA Height of object NA
D (Directional Distr.)	= 50/50 %	Design Speed not achieved at:	NA
T (Heavy Commercial)	= NA %	Functional Classification	Arterial-High Density
SOIL FACTOR	NA	No. of Traffic Lanes	4
		No. of Parking Lanes	0
		Ton Design	NA

ESTIMATED QUANTITIES

ITEM NO.		UNIT	TOTAL
2565.511	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM	SIGNAL SYSTEM	1 *
0565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM A - CR 10	LUMP SUM	1 **
0565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM B - WASHINGTON ST.	LUMP SUM	1 **

* - FUNDING SPLIT: 25% C.P. 94-05-10, 75% CITY LOCAL FUNDS
** - FUNDING SPLIT: 100% CITY LOCAL FUNDS

SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS AMENDED BY THE JANUARY 2, 1991 SUPPLEMENTAL SPECIFICATION SHALL GOVERN.

Approved _____ DATE _____
CITY OF BLAINE ENGINEER

Approved _____ DATE 6/6 1995
ANOKA COUNTY ENGINEER

Recommended for Approval _____ DATE _____
METRO ASSISTANT DIVISION ENGINEER
STATE AID

Recommended for Approval _____ DATE _____
STATE AID PLANS AND SPECS ENGINEER

Approved _____ DATE _____
STATE AID ENGINEER

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

C.P. 94-05-10

REVISION NO. / DATE / EXPLANATION

SCALE: AS NOTED
DESIGN BY: CJM
PLAN BY: DJK
CHECKED BY: RBB
COMMAND: 511401
RECORD COPY BY: DATE

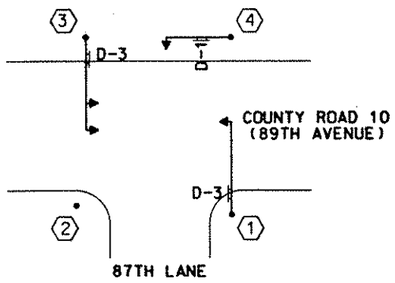
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Ronald B. Bray
RONALD B. BRAY
DATE 05/24/95
REG. NO. 18327

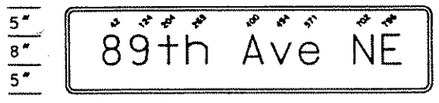
TITLE SHEET
COUNTY ROAD 10 (89TH AVE NE)
AND 87TH LANE
C.P. 94-05-10
BLAINE, MINNESOTA

Orr Schelen Mayeron & Associates, Inc.
Engineers • Architects • Planners • Surveyors
900 Park Place Center • 5775 Wayzata Boulevard
Minneapolis, MN 55416-1223 • 612-546-3775

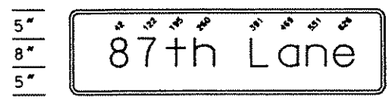
PLAN NO. 1

SIGN PANEL LAYOUT

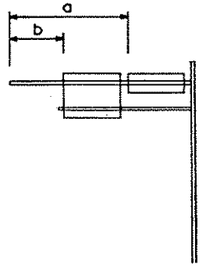




92" X 18", 3" R, 1.0" B, D-1
LINE 1 81.60 : 8"-6" E MOD



72" X 18", 3" R, 1.0" B, D-2
LINE 1 63.52 : 8"-6" E MOD

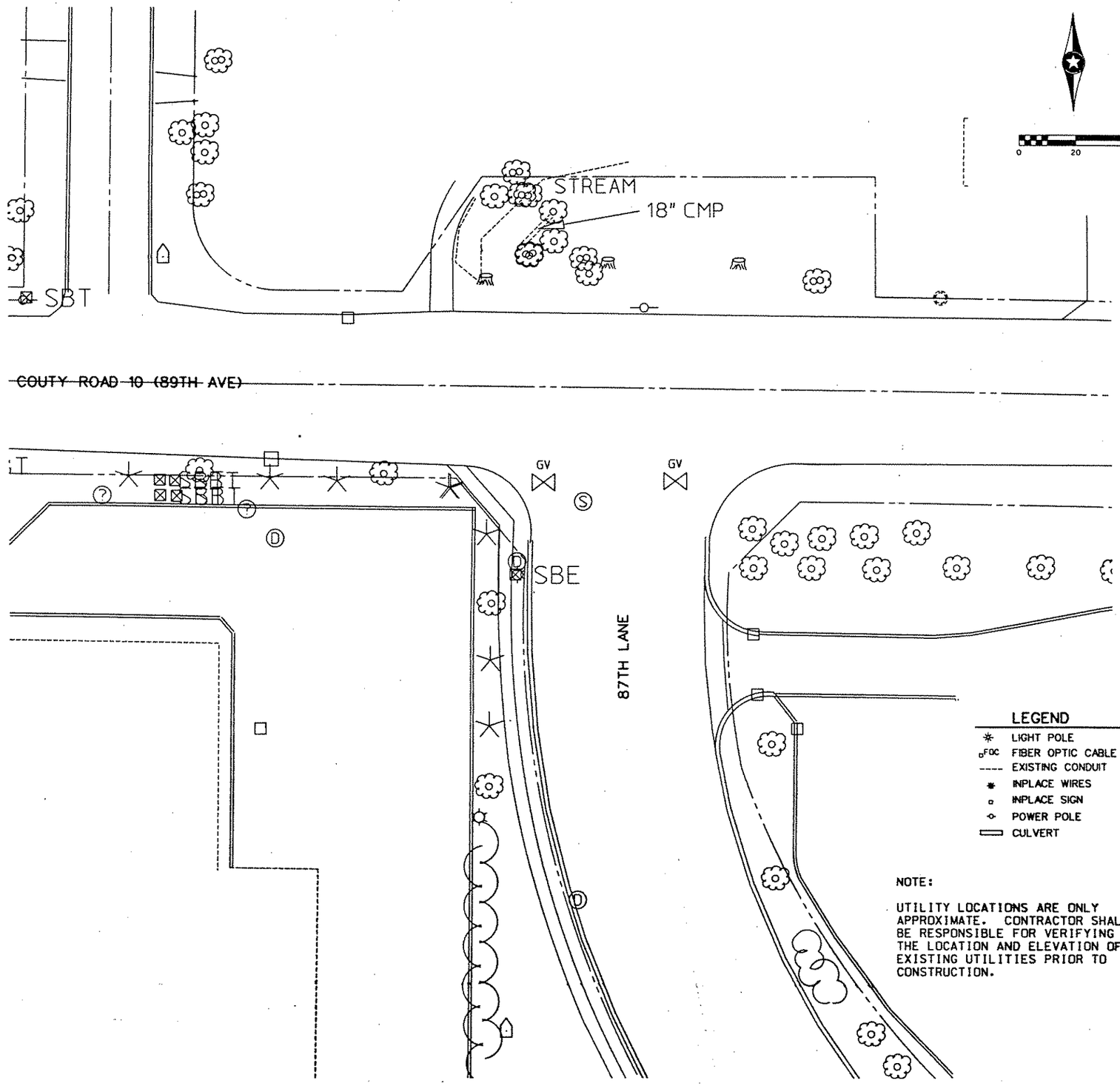


TYPE D SIGNS

Sign Panel	Size	No. Req.	No. Posts per Sign	Post Spacing	Sq. Ft. per Sign	Pole No.	Location on Mastarm ① a	Location on Mastarm ① b
D-1	90"x18"	1	3	45"	11.25	4	4.5	
D-2	72"x18"	2	3	45"	9.00	1	16.0	
						3	16.0	

GENERAL NOTES

1. Color - White legend and border on green background, fully reflectorized.
2. Corners extending beyond the border shall not be trimmed.
3. See Standard Signs Manual for arrow and overlay details.
4. For structural details, Type D Signs, see Standard Signs Manual, page 105A & B.
5. For type D Stringer and panel - Joint Detail, see Standard Signs Manual.



NOTE:

UTILITY LOCATIONS ARE ONLY APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

C.P. 94-05-10

REVISION NO. | DATE | EXPLANATION

SCALE: AS NOTED | DESIGN BY: CJM | PLAN BY: CMK | CHECKED BY: RBB | COMM.NO.: 811409 | RECORD COPY BY: | DATE

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

Ronald B. Bray

RONALD B. BRAY | 18327

DATE 05/24/95

SIGNING AND UTILITIES SHEET
COUNTY ROAD 10 (89TH AVE NE)
AND 87TH LANE
C.P. 94-05-10
BLAINE, MINNESOTA

Orr Schelen Mayeron & Associates, Inc.
Engineers ▪ Architects ▪ Planners ▪ Surveyors
500 Park Place Center ▪ 5775 Wayzata Boulevard
Minneapolis, MN 55416-1288 ▪ 612-560-5775

PLAN NO. 2

LOOP DETECTORS			
NUMBER	SIZE	FUNCTION	LOCATION
D1-1	2-6'X 6'	1/10	20'& 50'
D1-2	2-6'X 6'	1/10	5'& 35'
D2-1	6'X 6'	1	260'
D2-2	6'X 6'	4	5'
D2-3	6'X 6'	6	5'
D6-1	6'X 6'	1	260'
D6-2	6'X 6'	4	5'
D8-1	6'X 6'	3/8	220'
D8-2	6'X 6'	3/8	220'
D8-3	2-6'X 6'	1	5'& 20'
D8-4	2-6'X 6'	7	5'& 20'

LOCATION=DISTANCE FROM STOP LINE TO DETECTOR

FUNCTIONS:
1 - CALL AND EXTEND
2 - CALL ONLY
3 - EXTEND ONLY
4 - CALL ONLY DENS
5 - DLY CALL ONLY
6 - DLY CALL ONLY DENSITY
7 - DLY CALL IMMED EXTEND
8 - CARRY OVER
9 - ADVISORY
10 - EXTEND Ø6

NOTES:
1) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
2) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
3) EACH LUMINAIRE SHALL HAVE A PEC AND CHECK SWITCH.
4) SEE SHEET NO. 5 AND SPECIAL PROVISIONS FOR SERVICE CABINET DETAILS.
5) DIRECTIONAL SIGNS (TYPE D) TO BE FURNISHED AND INSTALLED ON MAST ARMS AT POLES 1, 3 AND 4 AND SHALL BE CONSIDERED INCIDENTAL.
6) SEE SPECIAL PROVISIONS FOR HANDHOLE TYPE.
7) SEE SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY FOR LOCATION OF UTILITIES.
8) ALL PEDESTRIAN INDICATIONS SHALL BE 12" X 12".
9) ALL SIGNAL FACES SHALL BE 12 INCH 3 SECTION R-Y-G, EXCEPT FACES (6-3) (6-4) WHICH SHALL BE 12 INCH 5 SECTION R-Y-G-YLTA-GLTA.
10) ALL VEHICLE SIGNAL INDICATIONS AND PEDESTRIAN INDICATIONS SHALL USE GLASS LENSES.
11) CONCRETE PED RAMPS AND SIDEWALKS SHALL BE CONSIDERD AT LOCATIONS SHOWN ON PLAN AND SHALL BE CONSIDERED INCIDENTAL TO THE SIGNAL SYSTEM CONSTRUCTION.

LEGEND
- LIGHT POLE
- HANDHOLE IN PLACE
- FOC FIBER OPTIC CABLE
- PROPOSED HANDHOLE
- EXISTING CONDUIT
- INPLACE WIRES
- INPLACE SIGN
- POWER POLE
- CONCRETE PED RAMPS AND SIDEWALK

N

0 20 40

(3) TYPE PA90-A30
PA90 POLE FOUNDATION
2-ONEWAY SIGNALS OVERHEAD
(0' AND 12' FROM END OF MAST ARM)
ONEWAY EVP DETECTOR AND LIGHT
(6' FROM END OF MAST ARM)
R10-12 (24" X 30") MOUNTED
FROM END OF MAST ARM
TYPE10B - AT 0°
TYPE 10A - AT 270°
1-PEDESTRIAN PUSH BUTTON
EXTEND TO HH 9
3" RSC
2-12/C #12
2-3/C #12
1-3/C #20

(4) TYPE PA90-A20
PA90 POLE FOUNDATION
ONEWAY SIGNAL OVERHEAD
ONEWAY EVP DETECTOR AND LIGHT
(6' FROM END OF MASTARM)
TYPE 10A - AT 0°
TYPE 10B - AT 270°
1-PEDESTRIAN PUSH BUTTONS
EXTEND TO HH 10
3" RSC
2-12/C #12
2-3/C #12
1-3/C #20

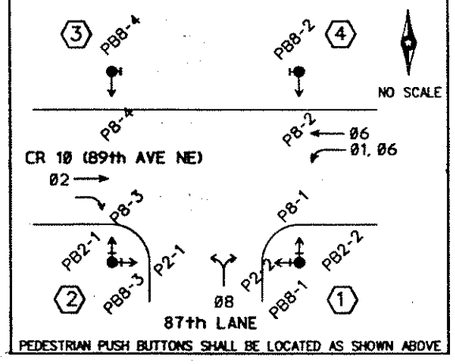
(2) PA90-D40-9 (DAVIT AT 280°)
PA90 POLE FOUNDATION
TYPE 10C - AT 0°
LUMINAIRE 250 WATT HPS
2-PEDESTRIAN PUSH BUTTONS
EXTEND INTO HH 5
3" RSC
1-12/C #12
2-3/C #12
1-3/C #12(LUM)

(1) TYPE PA90-A30-D40-9 (DAVIT AT 350°)
PA90 POLE FOUNDATION
ONEWAY SIGNAL OVERHEAD
ONEWAY EVP DETECTOR AND LIGHT
(6' FROM END OF MASTARM)
TYPE 10C - AT 270°
LUMINAIRE 250 WATT HPS
2-PEDESTRIAN PUSH BUTTONS
EXTEND TO HH 1
3" RSC
2-12/C #12
2-3/C #12
1-3/C #12 (LUM)
1-3/C #20

(A) CONTROLLER AND CABINET
CONTROLLER CABINET TO HH 1
4" RSC
4-12/C #12
4-3/C #12
4-2/C #14
2-3/C #20
CONTROLLER CABINET TO HH 2
4" RSC
3-12/C #12
4-3/C #12
1-3/C #20
7-2/C #14
CONTROLLER CABINET TO HH 13
1 1/4 RSC
3-1/C #6
STUBOUT 3" RSC FOR FUTURE USE

(B) SERVICE CABINET FOUNDATION
SERVICE CABINET TO SOP
STUB OUT 2" RSC FOR SERVICE BY OTHERS.
SERVICE CABINET TO HH 13 (SERVICE)
1 1/4" RSC
3-1/C #6
SERVICE CABINET TO HH 1 (LIGHTING)
1 1/4" RSC
2-3/C #12 (LUM)

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

C.P. 94-05-10

INTERSECTION LAYOUT
COUNTY ROAD 10 (89TH AVE NE)
AND 87TH LANE
C.P. 94-05-10
BLAINE, MINNESOTA

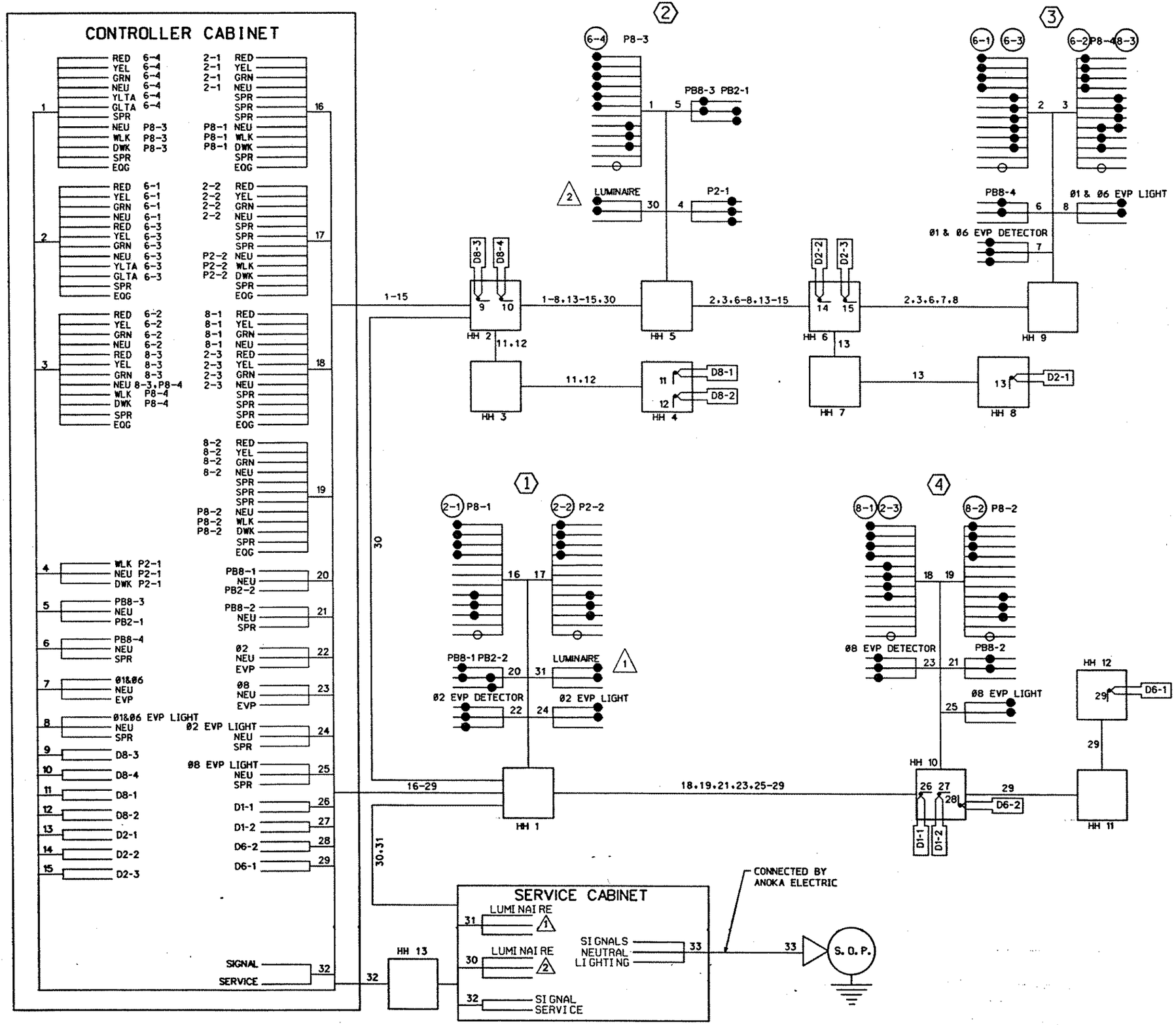
SCALE: AS NOTED
PLAN BY: CJK
CHECKED BY: RBB
DESIGN BY: CJM
COMM.NO.: 511409
RECORD COPY BY: DATE

REVISION NO. DATE | EXPLANATION

I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT 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.
RONALD B. BRAY 05/24/95 LIC. NO. 18327

Orr Schelen Mayeron & Associates, Inc.
Engineers ▪ Architects ▪ Planners ▪ Surveyors
900 Park Place Center ▪ 5775 Wayzata Boulevard
Minneapolis, MN 55416-1228 ▪ 612-566-8778

PLAN NO. 3



REVISION NO. / DATE / EXPLANATION

SCALE: AS NOTED
PLAN BY: CMK
DESIGN BY: CJH
CHECKED BY: RBB
COMM.NO.: 511409
RECORD COPY BY: DATE

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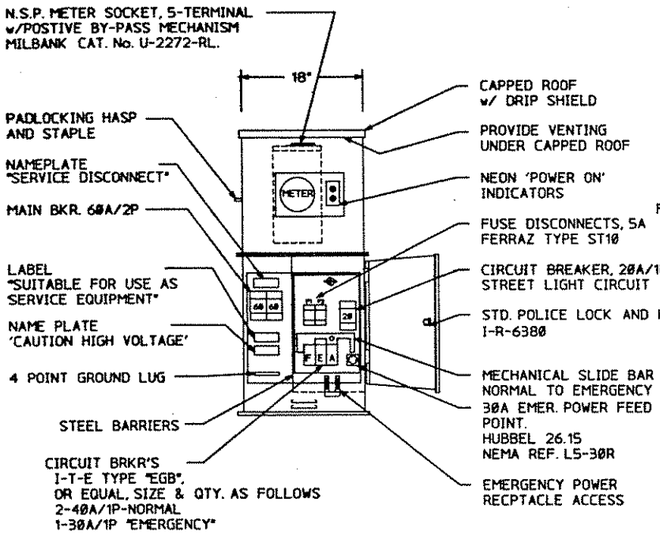
RONALD B. BRAY 16327
DATE 05/24/95

WIRING DIAGRAM
COUNTY ROAD 10 (89TH AVE NE) AND 87TH LANE
C.P. 94-05-10
BLAINE, MINNESOTA

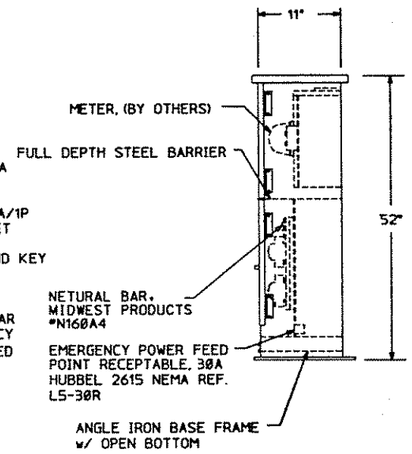
Orr Schelen Mayeron & Associates, Inc.
Engineers • Architects • Planners • Surveyors
300 Park Place Center • 5775 Wayzata Boulevard
Minneapolis, MN 55416-1228 • 612-590-5775

PLAN NO. 4

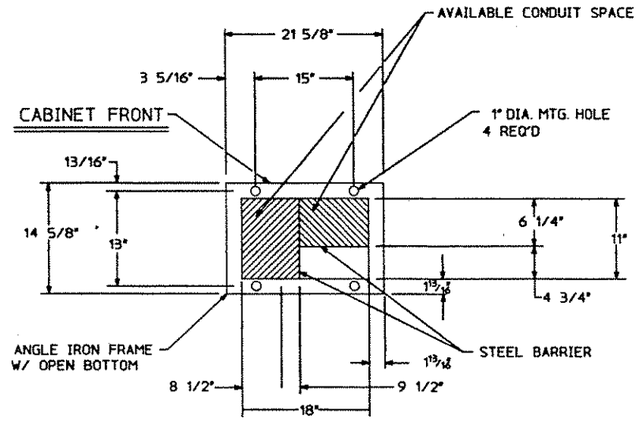
SIGNAL SERVICE CABINET



FRONT ELEV.

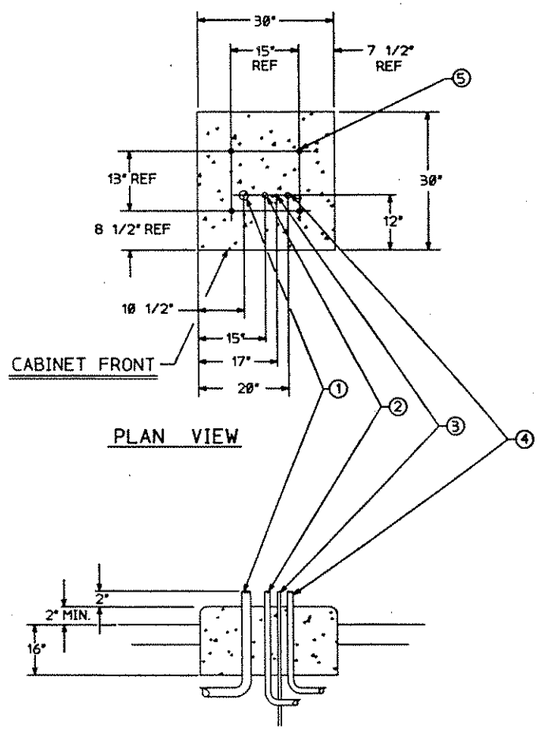


RIGHT SIDE ELEV.



BASE VIEW

SERVICE CABINET FOUNDATION

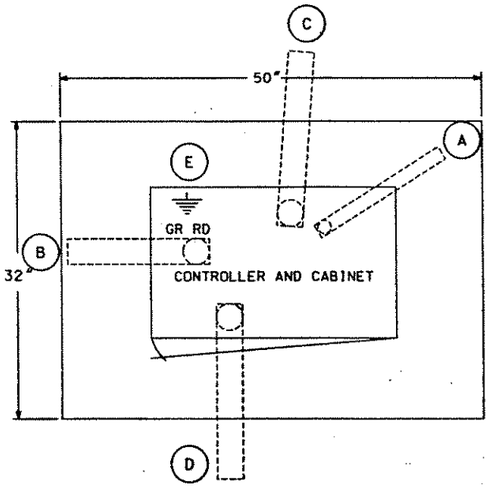


ELEV. VIEW

① 2" RSC FROM SOURCE OF POWER (VIA HANDHOLE 14)
② 1¼" RSC TO CONTROLLER CABINET (VIA HANDHOLE 13)
③ GROUNDING ROD
④ 1¼" RSC TO HANDHOLE 1 (STREET LIGHTING)
⑤ ANCHOR BOLT LOCATIONS (4 REQUIRED)

CONSTRUCTION NOTES

ENCLOSURE SHALL BE FABRICATED FROM #12 GA. ALL WELDED COLD ROLLED STEEL FOR OUTDOOR WEATHER PROOF SERVICE. DOORS TO BE GASKETED, ALL HINGES, PINS AND LOCKS TO BE OF NON CORRODING CONSTRUCTION. CABINET TO BE PRIMED INSIDE AND OUT WITH RUST INHIBITTING PRIMER. FINISH PER MN/DOT #3527



SEE INTERSECTION LAYOUT FOR CONDUIT & CABLE INFORMATION

CONCRETE FOUNDATION
32" X 50" X 18" DEEP

CONTROLLER CABINET PAD LAYOUT

NO SCALE

(A) 1¼" R.S.C. FOR SERVICE CONNECTION TO HH 13
(B) 4" R.S.C. TO HH 2
(C) 4" R.S.C. TO HH 1
(D) 3" R.S.C. STUBOUT, THREAD & CAP BOTH ENDS. (FOR FUTURE INTERCONNECT).
(E) ⅝" DIA X 15' GROUND ROD

REVISION NO.	DATE	EXPLANATION

SCALE: AS NOTED
DESIGN BY: CJM
PLAN BY: CJM
CHECKED BY: RBB
COMM NO.: 511409
RECORD COPY BY: DATE

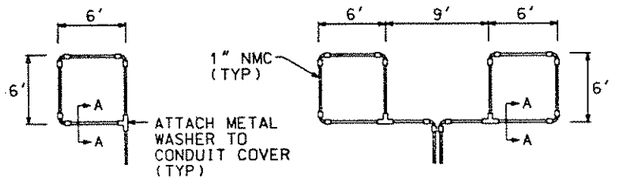
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
RONALD B. BRAY
DATE: 05/24/95
LIC. NO. 18327

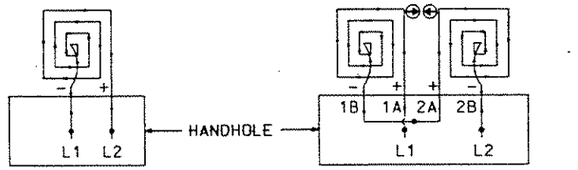
SERVICE EQUIP. AND CONTROLLER PAD
COUNTY ROAD 10 (69TH AVE NE)
AND 87TH LANE
C.P. 94-05-10
BLAINE, MINNESOTA

Orr Schelen Mayeron & Associates, Inc.
Engineers ■ Architects ■ Planners ■ Surveyors
600 Park Place Center ■ 6775 Wayzata Boulevard
Minneapolis, MN 55416-1283 ■ 612-546-5775

PLAN NO. 5

C.P. 94-05-10





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

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

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

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

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 POLYETHLENE (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.

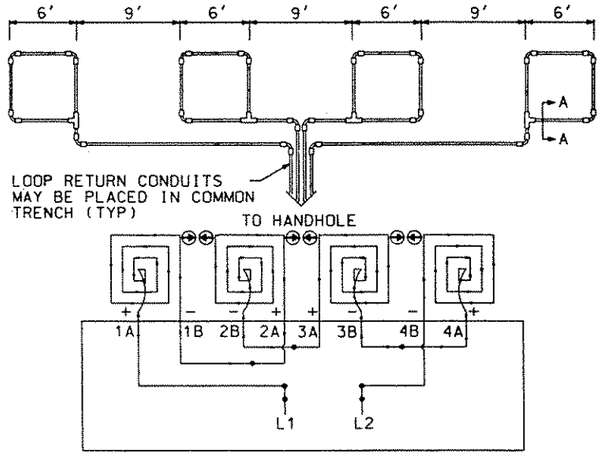
7) LOOPS 6'x 15' AND LARGER SHALL HAVE (2) TURNS.

STANDARD PLATES

THESE STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY:

PLATE NO.	DESCRIPTION
* 8110 C	TRAFFIC SIGNAL BRACKETING – POLE MOUNTED
8111 B	TRAFFIC SIGNAL BRACKETING – PEDESTAL MOUNTED
8112 C	PEDESTAL FOUNDATION
8113 C	MAGNETIC VEHICLE DETECTOR INSTALLATION
* 8115 C	PEDESTRIAN PUSH BUTTON INSTALLATION
* 8117 F	PRECAST CONCRETE HANDHOLE
8118 C	SERVICE EQUIPMENT AND POLE
* 8119 C	GROUND MOUNTED CABINET FOUNDATION
* 8120 J	PA85 AND PA90 POLE FOUNDATION
* 8121 C	TRANSFORMER BASE WITH POLE BASE
8122 C	PEDESTAL AND PEDESTAL BASE
* 8123 C	POLE AND MAST ARM
* 8124 D	SIGNAL HEAD MOUNTS
8126 E	PA100 POLE FOUNDATION
* 8001 B	SPECIFIC CONSTRUCTION REFERENCE TO STANDARD PLATES
* 8002 B	SPECIFIC PROVISIONS REFERENCE TO STANDARD PLATES
3224 B	CORRUGATIONS CONNECTION COUPLING BAND
3035 C	CONCRETE WASHED AND PCC BARRIER TURNS AND ENTRANCES
* 7080 B	CONCRETE CURB AND GUTTER TURNS AT ENTRANCES
7080 B	CONCRETE CURB AND GUTTER TRANSITIONS
* 7036 D	PEDERTRIAN CURB RAMP

* – APPLIES TO THIS PROJECT
* – APPLIES TO THIS PROJECT



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

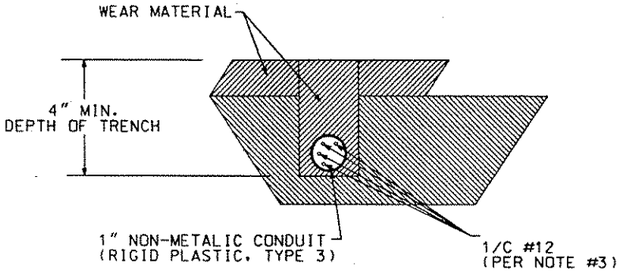
L1 TO 1A
1B TO 2A
2B TO 3A
3B TO 4A
4B TO L2

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)

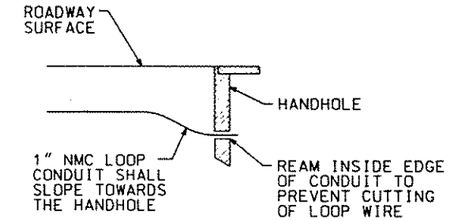
LEGEND OF SYMBOLS

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 BACKROUND SHIELD
SIGNAL FACE W/O BACKROUND 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 LUMMINAIRE
STREET LIGHT POLE AND LUMMINAIRE – IN PLACE
MAST ARM AND LUMMINAIRE
MAST ARM AND LUMMINAIRE – 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

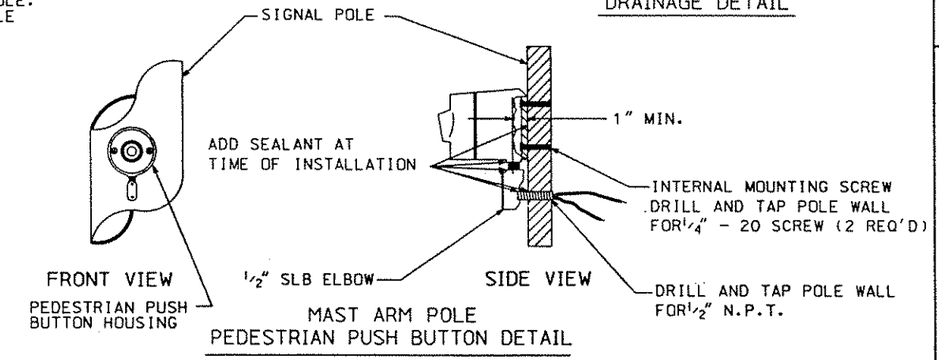


SECTION A-A

DETAIL FOR LOOP INSTALLATION
IN EXISTING ROADWAY



DRAINAGE DETAIL



MAST ARM POLE
PEDESTRIAN PUSH BUTTON DETAIL

ABBREVIATIONS

3-1(EG)	SIGNAL HEAD PHASE "3" – NO. "1"	O	ORANGE
BL	BLUE	O/BLK	ORANGE WITH BLACK TRACER
BL/BLK	BLUE WITH BLACK TRACER	P1-(EG)	PEDESTRIAN INDICATION PHASE "2"-NO."1"
BLK	BLACK	PB	PUSH BUTTON
BLK/WH	BLACK WITH WHITE TRACER	PB-2(EG)	PUSH BUTTON PHASE "2"-NO. "1"
BR. GR.	BARE GROUND	PEC	PHOTOELECTRIC CELL
CH. SW.	CHECK SWITCH	PED	PEDRESTIAN
CLR	CLEAR	R	RED
D2-1(EG)	DETECTOR PHASE "2" – NO. "1"	R&S	REMOVE AND SALVAGE
DWK	DON'T WALK	R/BLK	RED WITH BLACK TRACER
EQG	EQUIPMENT GROUND	RLTA	RED LEFT TURN ARROW
EVP	EMERGENCY VEHICLE PRE-EMPTION	RRTA	RED RIGHT TURN ARROW
F&I	FURNISH AND INSTALL	RSC	RIGID STEEL CONDUIT
FL	FLASH/FLASHING	SOP	SOURCE OF POWER
G	GREEN	SPR	SPARE
G/BLK	GREEN WITH BLACK TRACER	ST. LHT.	STREET LIGHT
GLTA	GREEN LEFT TURN ARROW	STA	STATION
GRN	GREEN	SW	SWITCH
GR. R.	GROUND ROD	SWD	SWITCHED
GRTA	GREEN RIGHT TURN ARROW	TDW	TELEPHONE DROP WIRE
GTHA	GREEN THRU ARROW	WH	WHITE
HH	HANDHOLE	WH/BLK	WHITE WITH BLACK TRACER
HPS	HIGH PRESSURE SODIUM	WLK	WALK
JB	JUNCTION BOX	YEL	YELLOW
LUM	LUMINAIRE	YLTA	YELLOW LEFT TURN ARROW
NEU	NEUTRAL	YRTA	YELLOW RIGHT TURN ARROW
NMC	NONMETALLIC CONDUIT	YTHA	YELLOW THRU ARROW

C.P. 94-05-10

REVISION NO. / DATE / EXPLANATION

SCALE: AS NOTED
PLAN BY: CWK
DESIGN BY: CJM
CHECKED BY: RBB
CONAL NO.: 511409
RECORD COPY BY: DATE

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.
RONALD B. BRAY
DATE: 05/24/95 LIC. NO. 18327

MISC. DETAILS
COUNTY ROAD 10 (89TH AVE NE)
AND 87TH LANE
C.P. 94-05-10
BLAINE, MINNESOTA

Orr Schelen Mayeron & Associates, Inc.
Engineers ■ Architects ■ Planners ■ Surveyors
300 Park Place Center ■ 5775 Wayzata Boulevard
Minneapolis, MN 55416-1228 ■ 612-595-5775

PLAN NO. 6

LOOP DETECTORS			
NUMBER	SIZE	FUNCTION	LOCATION
D1-1	2-6' X 6'	5/8/10	5'
D1-2	2-6' X 6'	3	AS SHOWN
D2-1	6' X 6'	1	120'
D2-2	6' X 6'	1	120'
D4-1	6' X 6'	3/8	120'
D4-2	2-6' X 6'	7	5'
D4-3	2-6' X 6'	1	5'
D4-4	6' X 6'	7	AS SHOWN
D5-1	2-6' X 6'	5/8/11	5'
D5-2	2-6' X 6'	3	AS SHOWN
D6-1	6' X 6'	1	120'
D6-2	6' X 6'	1	120'
D8-1	6' X 6'	3/8	120'
D8-2	2-6' X 6'	7	5'
D8-3	6' X 6'	7	AS SHOWN

LOCATION=DISTANCE FROM STOP LINE TO DETECTOR

FUNCTIONS:
1 - CALL AND EXTEND
2 - CALL ONLY
3 - EXTEND ONLY
4 - CALL ONLY DENS
5 - DLY CALL ONLY
6 - DLY CALL ONLY DENSITY
7 - DLY CALL IMMED EXTEND
8 - CARRY OVER
9 - ADVISORY
10 - CALL DURING Ø 2 YELLOW
11 - CALL DURING Ø 6 YELLOW

NOTES:
1) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
2) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
3) EACH LUMINAIRE SHALL HAVE A PEC AND CHECK SWITCH.
4) SEE SHEET NO. 5 AND SPECIAL PROVISIONS FOR SERVICE CABINET DETAILS.
5) DIRECTIONAL SIGNS (TYPE D) TO BE FURNISHED AND INSTALLED ON MAST ARMS AT POLES 1,2,3 AND 4 SHALL BE CONSIDERED INCIDENTAL.
6) SEE SPECIAL PROVISIONS FOR HANDHOLE TYPE.
7) SEE SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY FOR LOCATION OF UTILITIES.
8) ALL PEDESTRIAN INDICATIONS SHALL BE 12" X 12".
9) ALL SIGNAL FACES SHALL BE 12 INCH 3 SECTION R-Y-G, EXCEPT FACES (2-3) (2-4) (6-3) (6-4) WHICH SHALL BE 12 INCH 5 SECTION R-Y-G-YLTA-GLTA.
10) ALL VEHICLE SIGNAL INDICATIONS SHALL USE GLASS LENSES.
11) CONCRETE PED RAMPS SHALL BE CONSIDERED INCIDENTAL TO SIGNAL SYSTEM CONSTRUCTION. SEE SPECIAL PROVISIONS.
12) CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING ALL INPLACE CONDUITS. PAYMENT FOR SUCH IS CONSIDERED INCITENTAL.
13) PAVEMENT MARKINGS (CROSSWALKS AND STOP BARS) SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AND SHALL BE CONSIDERED INCIDENTAL TO THE SIGNAL SYSTEM CONSTRUCTION (SEE SHEET 6 FOR DETAILS AND SPECIAL PROVISIONS).
*14) FURNISH AND INSTALL ONEWAY EVP DETECTOR AND LIGHT ON ALL MAST ARMS. MAKE CONNECTION TO EXISTING 3/C #12 ANS 3/C #20 WIRE PROVIDED IN EACH MAST ARM POLE BASE.

0 20 40

(3) TYPE PA100-A45-D40-9 (DAVIT AT 350°)
PA100 POLE FOUNDATION
*ONEWAY EVP DETECTOR AND LIGHT
(6' FROM END OF MAST ARM)
2-ONEWAY SIGNALS OVERHEAD
(0' AND 18' FROM END OF MAST ARM)
R10-12 SIGN (24x30) MOUNTED 3' FROM END OF MAST ARM
TYPE 10B - AT 0°
TYPE 10B - AT 180°
TYPE 10B - AT 270°
LUMINAIRE 250 WATT HPS
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND TO HH 7
3" RSC
2-12/C #12
4-3/C #12
1-3/C #12 (LUM)
1-3/C #20

(4) TYPE PA90-A30
PA90 POLE FOUNDATION
*ONEWAY EVP DETECTOR AND LIGHT
(6' FROM END OF MAST ARM)
ONEWAY SIGNAL OVERHEAD
TYPE 10B - AT 0°
TYPE 10B - AT 270°
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND INTO HH 11
3" RSC
2-12/C #12
2-3/C #12
1-3/C #20

(2) TYPE PA90-A25
PA90 POLE FOUNDATION
* ONEWAY EVP DETECTOR AND LIGHT
(6' FROM END OF MAST ARM)
ONEWAY SIGNAL OVERHEAD
TYPE 10B - AT 0°
TYPE 10B - AT 270°
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND INTO HH 3
3" RSC
2-12/C #12
2-3/C #12
1-3/C #20

(A) CONTROLLER AND CABINET
CONTROLLER CABINET TO HH 1
4" RSC
4-12/C #12
6-3/C #12
7-2/C #14
2-3/C #20
CONTROLLER CABINET TO HH 14
4" RSC
4-12/C #12
6-3/C #12
8-2/C #14
2-3/C #20
CONTROLLER CABINET TO HH 15
1¼" RSC
3-1/C #6
STUBOUT 3" RSC FOR FUTURE USE

(B) SERVICE CABINET FOUNDATION
SERVICE CABINET TO S.O.P.
2" RSC
3-1/C #6
SERVICE CABINET TO HH 15 (SERVICE)
1¼" RSC
3-1/C #6
SERVICE CABINET TO HH 1 (LIGHTING)
1¼" RSC
2-3/C #12 (LUM)

(1) TYPE PA100-A50-D40-9 (DAVIT AT 350°)
PA100 POLE FOUNDATION
*ONEWAY EVP DETECTOR AND LIGHT
(6' FROM END OF MAST ARM)
2-ONEWAY SIGNALS OVERHEAD
(0' AND 18' FROM END OF MAST ARM)
R10-12 SIGN (24x30) MOUNTED 3' FROM END OF MAST ARM
TYPE 10B - AT 0°
TYPE 10B - AT 270°
LUMINAIRE 250 WATT HPS
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND TO HH 14
3" RSC
2-12/C #12
4-3/C #12
1-3/C #12 (LUM)
1-3/C #20

S.O.P. INPLACE GROUND MOUNTED TRANSFORMER
2" RSC
3-1/C #6

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS
RAINBOW VILLAGE ENTRANCE
NO SCALE
87TH LANE
WASHINGTON STREET
PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

LEGEND
- LIGHT POLE
- HANDHOLE IN PLACE
- FIBER OPTIC CABLE
- PROPOSED HANDHOLE
- EXISTING CONDUIT
- INPLACE WIRES
- INPLACE SIGN
- POWER POLE
- CONCRETE PED RAMPS

* INDICATES REVISIONS TO EXISTING SIGNAL SYSTEM.

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EVP INSTALLATION
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PLAN NO. 7