

NOTES:

- 1) SEE SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY FOR LOCATION OF UTILITIES.
- 2) DIRECTIONAL SIGNS TO BE INSTALLED ON MAST ARMS AT ① ② ③ AND ④. SEE SHEET 12 AND SPECIAL PROVISIONS.
- 3) 1 1/2" R.S.C. FROM H.H.11 TO J.B.1 AND JUNCTION BOX 1 TO BE INSTALLED AS PART OF BRIDGE CONSTRUCTION. SEE SPECIAL PROVISIONS.
- 4) LOOP DETECTORS D4-1 AND D4-2 TO BE INSTALLED DURING BRIDGE DECK CONSTRUCTION. SEE DETAIL SHEET 15 AND SPECIAL PROVISIONS.
- 5) LUMINAIRES WITH P.E.C. AND CHECK SWITCH.
- 6) ALL PEDESTRIAN INDICATIONS SHALL BE 12"x12".
- 7) SERVICE CABINET SHALL BE RAMSEY COUNTY STANDARD. SEE DETAIL SHEET 15 AND SPECIAL PROVISIONS.
- 8) 3/4" HALF COUPLING AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PRE-EMPTION EQUIPMENT SHALL BE INSTALLED APPROXIMATELY 2' FROM THE END OF MAST ARM AT POLES ① AND ②.
- 9) CONTRACTOR SHALL INSTALL FOUR (4) REGULATORY SIGNS, TYPE R9-3, ON FLANGED CHANNEL SIGN POSTS. SEE SPECIAL PROVISIONS.

SIGNAL INDICATIONS

FACE	PHASE	FLASH	R	Y	G	GLTA	YLTA
2-1	2	R	12	12	12		
2-2	2	R	12	12	12		
2-3	2	R	12	12	12		
4-1	4	R	12	12	12		
4-2	4	R	12	12	12		
4-3	4	R	12	12	12		
6-1	6&1	R	12	12	12	12	12
6-2	6	R	12	12	12		
6-3	6	R	12	12	12		
6-4	6&1	R	12	12	12	12	12
8-1	8	R	12	12	12		
8-2	8	R	12	12	12		
8-3	8	R	12	12	12		

LOOP DETECTORS

NUMBER	FUNCTION	SIZE	DISTANCE
D1-1	1	4'-6"x6'	-
D2-1	4	6'x6'	180'
D2-2	4	6'x6'	180'
D2-3	2	6'x20'	-
D2-4	3	6'x20'	-
D4-1	1	6'x6'	180'
D4-2	1	6'x6'	180'
D4-3	3	6'x15'	-
D4-4	2	6'x15'	-
D6-1	4	6'x6'	180'
D6-2	4	6'x6'	180'
D6-3	2	6'x20'	-
D8-1	1	6'x6'	180'
D8-2	1	6'x6'	180'
D8-3	3	6'x20'	-
D8-4	2	6'x20'	-
D9-1	5	6'x6'	60'
D9-2	5	6'x6'	60'

FUNCTIONS

- 1) CALL AND EXTEND
- 2) CALL ONLY
- 3) DELAYED CALL ONLY
- 4) EXTENDING 'STRETCH' DETECTOR
- 5) TRAFFIC COUNTING ONLY

SURVEY:	CHECKED BY:	DATE	REVISIONS
DESIGN: M.K.	GVW	11/11/86	PER RAMSEY COUNTY
DRAWN: M.K.			

I HEREBY CERTIFY THAT THIS PLAN 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.
DATE: 3/19/86 REG. NO. 2567

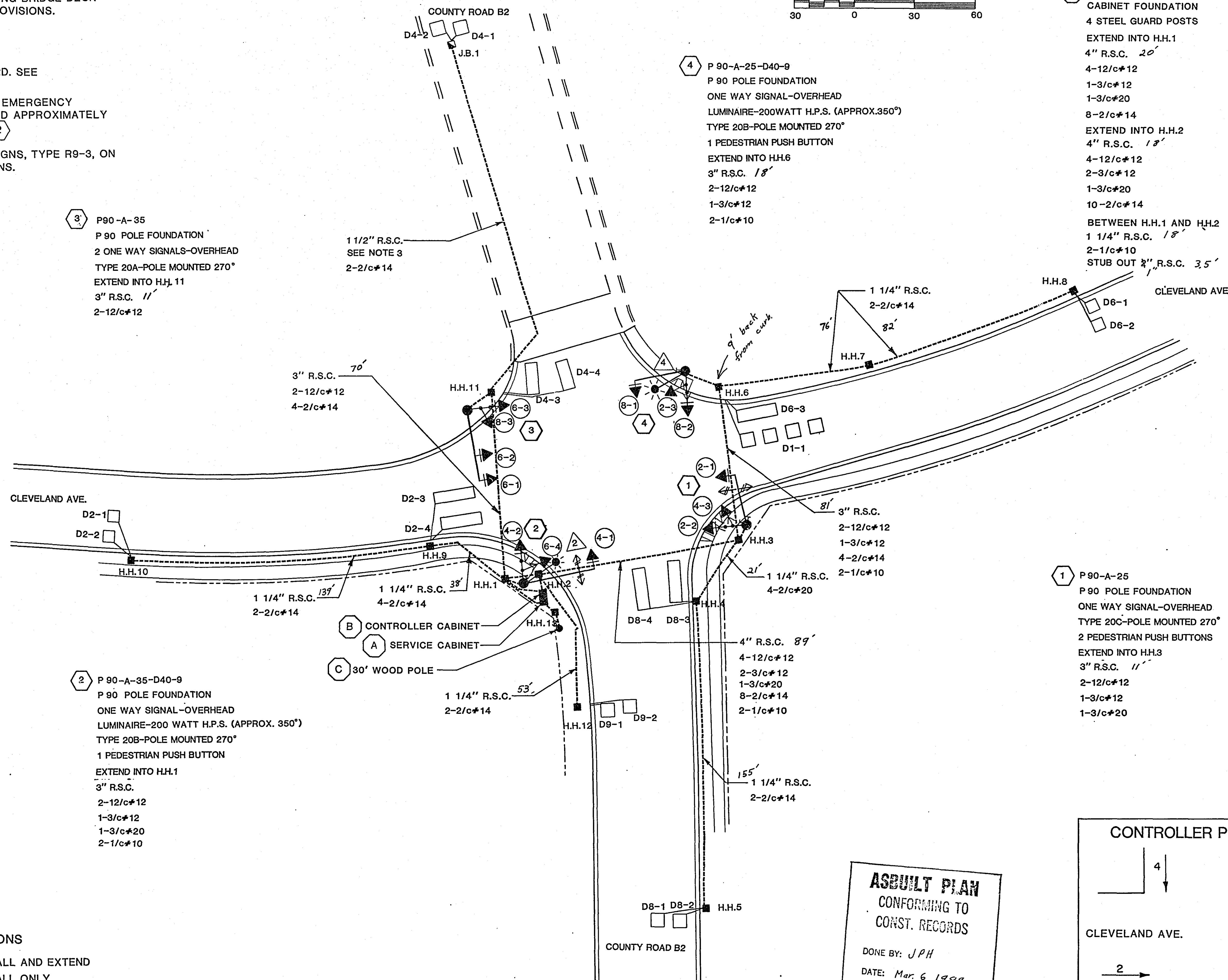
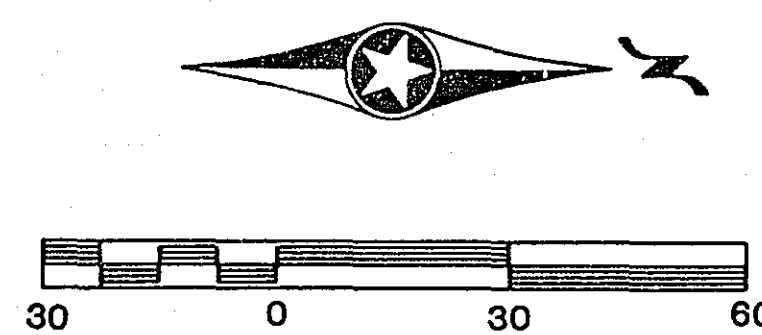


SHORT - ELLIOTT - HENDRICKSON, INC.
Saint Paul, Minnesota • Chippewa Falls, Wisconsin

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: JPH
DATE: Mar. 6, 1989

SIGNAL SYSTEM
INTERSECTION LAYOUT

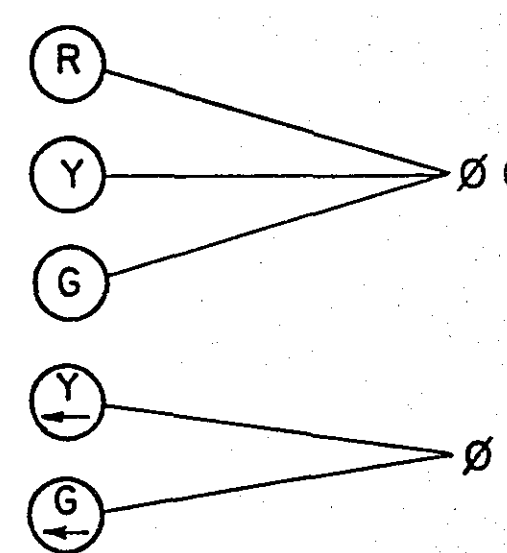
COUNTY ROAD B2 AND CLEVELAND AVE.

ROSEVILLE, MINNESOTA
S.A.P.-160-219-08FILE NO.:
85021
DATE:
3/19/8613
45

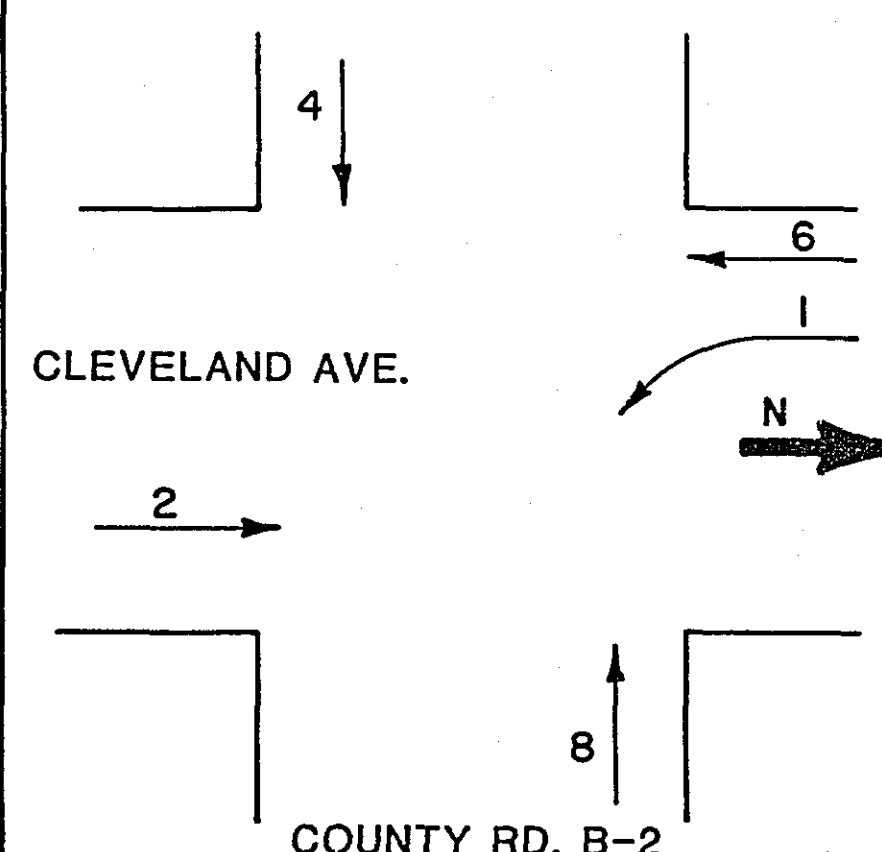
- ④ P 90-A-25-D40-9
P 90 POLE FOUNDATION
ONE WAY SIGNAL-OVERHEAD
LUMINAIRE-200WATT H.P.S. (APPROX.350")
TYPE 20B-POLE MOUNTED 270"
1 PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H.6
3" R.S.C. 18'
2-12/c#12
1-3/c#20
2-1/c#10
- ⑤ P 90-A-35
P 90 POLE FOUNDATION
2 ONE WAY SIGNALS-OVERHEAD
TYPE 20A-POLE MOUNTED 270"
EXTEND INTO H.H.11
3" R.S.C. 11'
2-12/c#12
- ⑥ P 90-A-35-D40-9
P 90 POLE FOUNDATION
ONE WAY SIGNAL-OVERHEAD
LUMINAIRE-200 WATT H.P.S. (APPROX. 350")
TYPE 20B-POLE MOUNTED 270"
1 PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H.1
3" R.S.C.
2-12/c#12
- ⑦ P 90-A-25
P 90 POLE FOUNDATION
ONE WAY SIGNAL-OVERHEAD
TYPE 20C-POLE MOUNTED 270"
2 PEDESTRIAN PUSH BUTTONS
EXTEND INTO H.H.3
3" R.S.C. 11'
2-12/c#12
1-3/c#12
1-3/c#20
- ⑧ CONTROLLER AND CABINET
CABINET FOUNDATION
4 STEEL GUARD POSTS
EXTEND INTO H.H.1
4" R.S.C. 20'
4-12/c#12
1-3/c#12
1-3/c#20
8-2/c#14
EXTEND INTO H.H.2
4" R.S.C. 18'
4-12/c#12
2-3/c#12
1-3/c#20
10-2/c#14
BETWEEN H.H.1 AND H.H.2
1 1/4" R.S.C. 18'
2-1/c#10
STUB OUT 3" R.S.C. 3.5'
- ⑨ SIGNAL SERVICE CABINET
EXTEND INTO H.H.13
1 1/4" R.S.C.
2-1/c#6
1-1/c#6 Br. Gr.
BETWEEN CONTROLLER CABINET
AND SERVICE CABINET
METERED SIGNAL SERVICE
1 1/4" R.S.C.
2-1/c#6 Br. Gr.
EXTEND INTO H.H.1
UNMETERED STREET LIGHTING SERVICE
1 1/4" R.S.C.
4-1/c#10
(SEE NOTE 7)
- ⑩ 30' WOOD POLE (S.O.P.)
1 1/4" R.S.C. RISER AND WEATHERHEAD
2-1/c#6
1-1/c#6 Br. Gr.
EXTEND INTO H.H.13
1 1/4" R.S.C.
2-1/c#6
1-1/c#6 Br. Gr.

SIGNAL HEAD PHASING

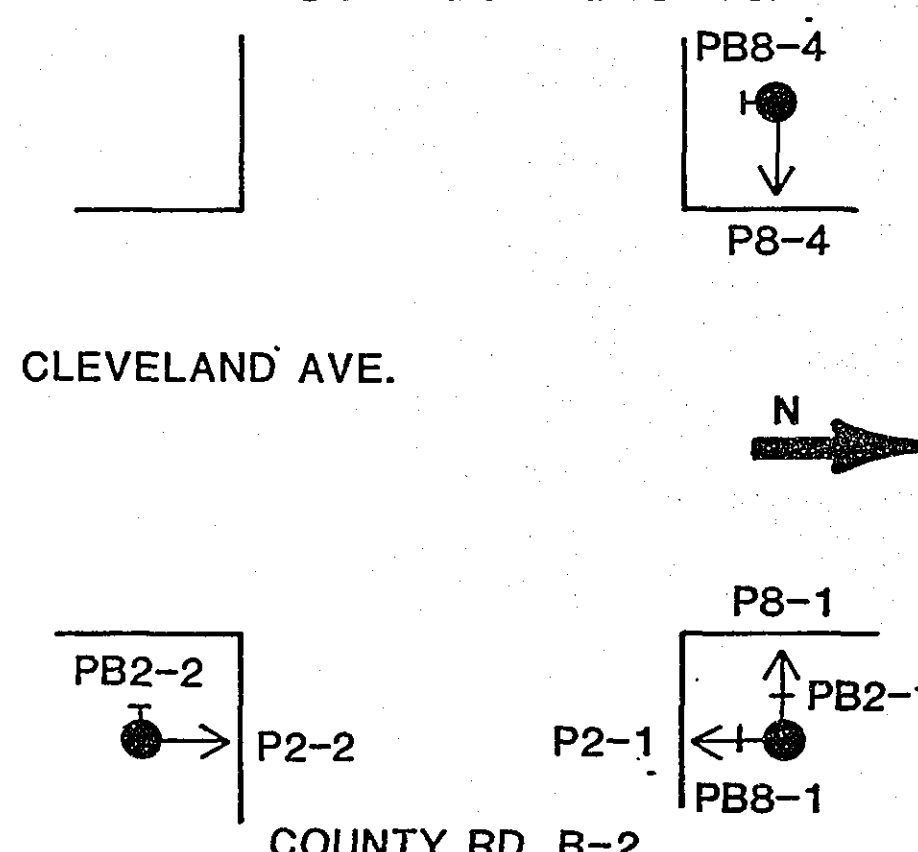
HEADS 6-1 AND 6-4



CONTROLLER PHASING



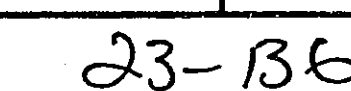
PEDESTRIAN PHASING



23-136 Signal System Intersection Layout
SAP 160-219-08 Co. Rd B2 + Cleveland Ave

13/45, 14/45
15/45

24X



23-136 signal system Intersection Layout 13/45, 14/45
SAP 160-219-08 Co. Rd B2 & Cleveland Ave 15/45

2 4 X

CONDUCTOR COLOR CODING

R	BLK	2-1/C#6
O	WH	2-1/C#10
BL	R	
WH	W	3/C#12
R/BLK	BLK	
O/BLK	BLK	
BL/BLK	CLEAR	2/C#14
WH/BLK		
BLK	R OR O	
BLK/WH	WH OR YEL	3/C#20
G/BLK	BLK OR BL	
G		

NOTE:
ALL TERMINAL BLOCK CONNECTIONS SHALL BE
ARRANGED AS SPECIFIED ABOVE

CONDUCTOR COLOR CODE

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

ABBREVIATIONS

EQUIPMENT AND INDICATIONS

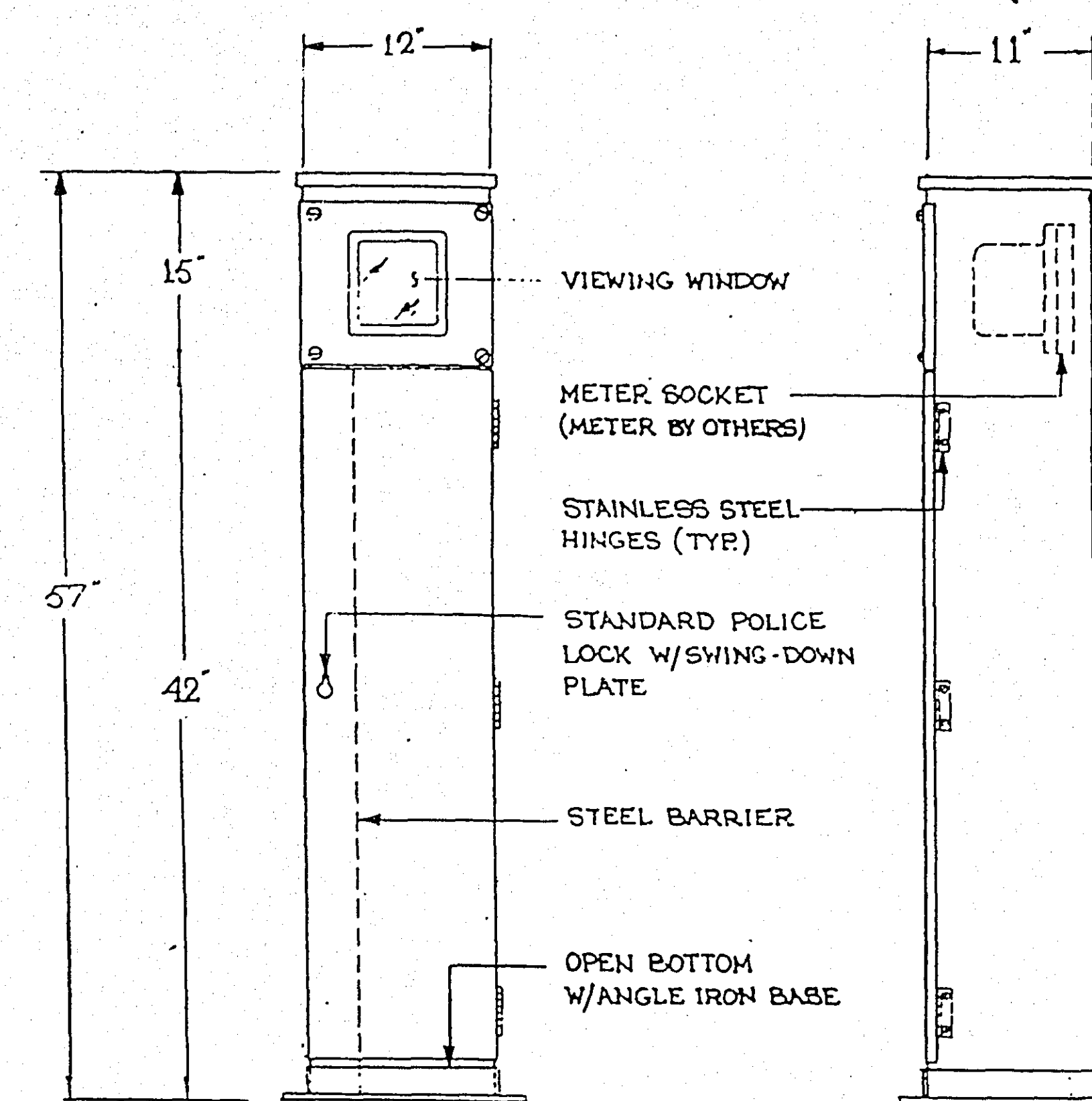
RED-RED
YEL-YELLOW
GRN-GREEN
WLK-WALK
NEU-NEUTRAL
DWK-DON'T WALK
LUM-LUMINAIRE
DNL-DOWNLIGHT
H.H.-HANDHOLE
EQG-EQUIPMENT GROUND
R.S.C.-RIGID STEEL CONDUIT
GLTA-GREEN LEFT TURN ARROW
YRTA-YELLOW RIGHT TURN ARROW
D2-1(eg)-DETECTOR-PHASE*2
GR.R-GROUND ROD
SER-SERVICE
PAI-PEDESTRAIN INDICATIONS
2-1(eg)-SIGNAL HEADS-PHASE*2
SPR-SPARE CONDUCTORS
N.M.C.-NON METALLIC CONDUIT
E.V.P.-EMERGENCY VEHICLE PRE-EMPTION
J.B.-JUNCTION BOX
W.P.-WOOD POLE
P.E.C.-PHOTOELECTRIC CELL

LEGEND

CONTROLLER AND SERVICE EQPT. NO'S.	Ⓐ
SIGNAL BASE NO.	①
SIGNAL FACE NO.	Ⓢ
LUMINAIRE NO.	Ⓐ
CONTROLLER AND CABINET	■
CONTROLLER AND CABINET-IN PLACE	□
HANDHOLE	■
HANDHOLE-IN PLACE	□
RIGID STEEL CONDUIT (R.S.C.)	---
RIGID STEEL CONDUIT (R.S.C.)-IN PLACE	---
SIGNAL FACE WITH BACKGROUND SHIELD	→
SIGNAL FACE W/O BACKGROUND SHIELD	→
SIGNAL FACE-IN PLACE	→
PEDESTRIAN INDICATIONS	→
PEDESTRIAN INDICATIONS-IN PLACE	→
PEDESTRIAN PUSH BUTTON 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 WA. LINE	---
CENTER LINE	---
EDGE OF ROADWAY	---
SHOULDER LINE	---
CURB LINE	---
STOP BAR	---
JUNCTION BOX	■
EMERGENCY VEHICLE PRE-EMPTION DETECTOR	→

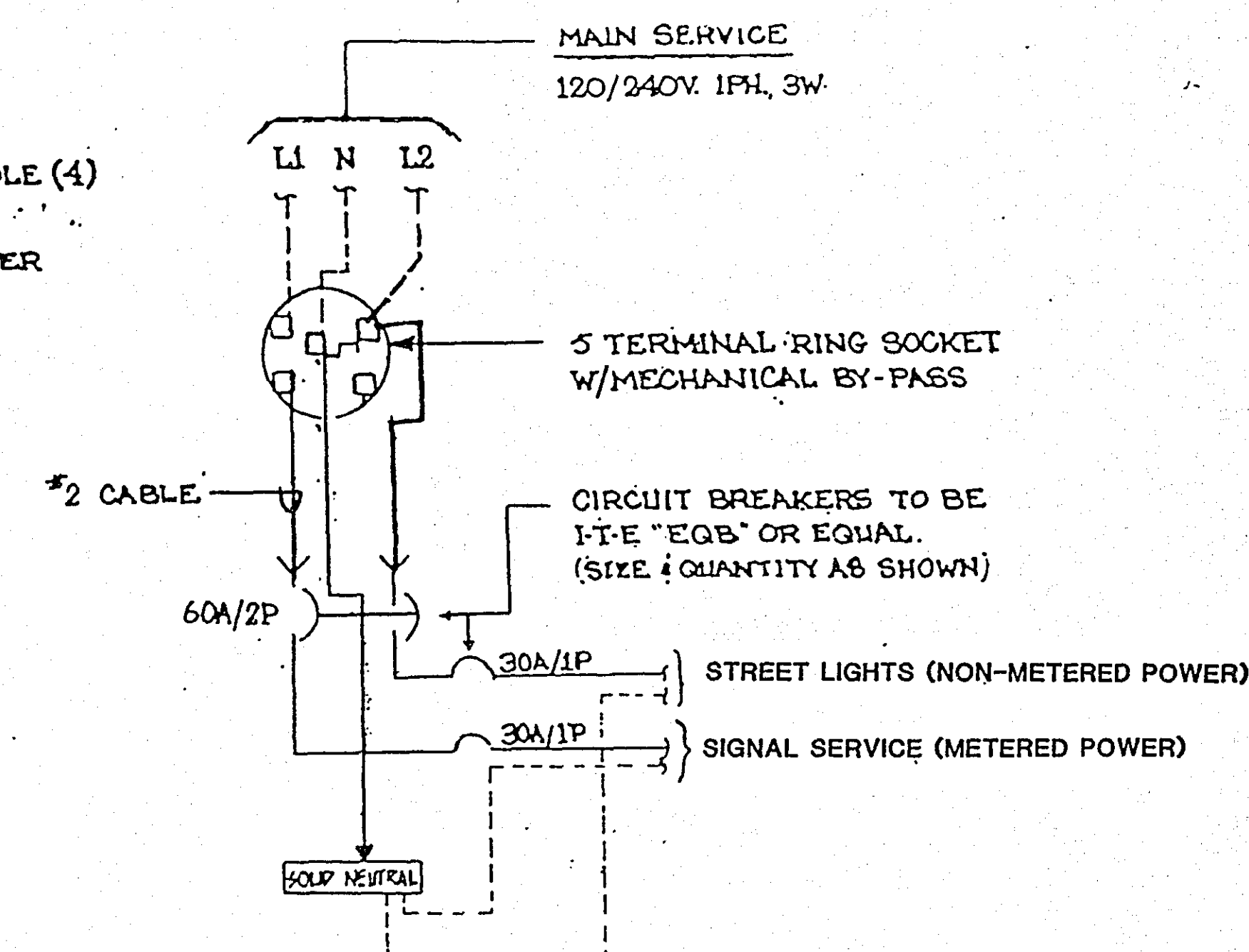
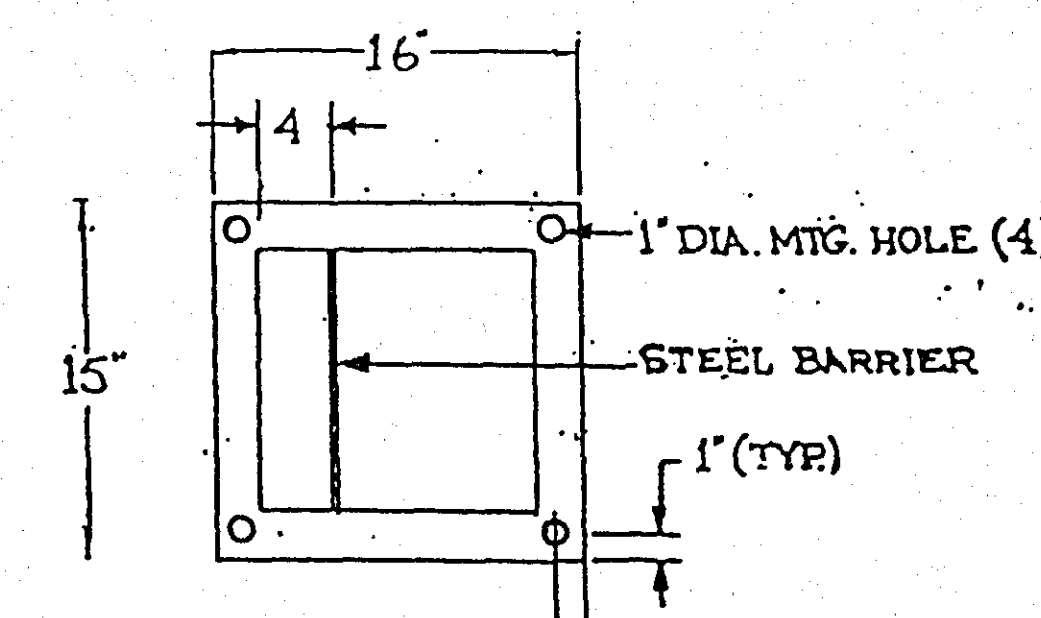
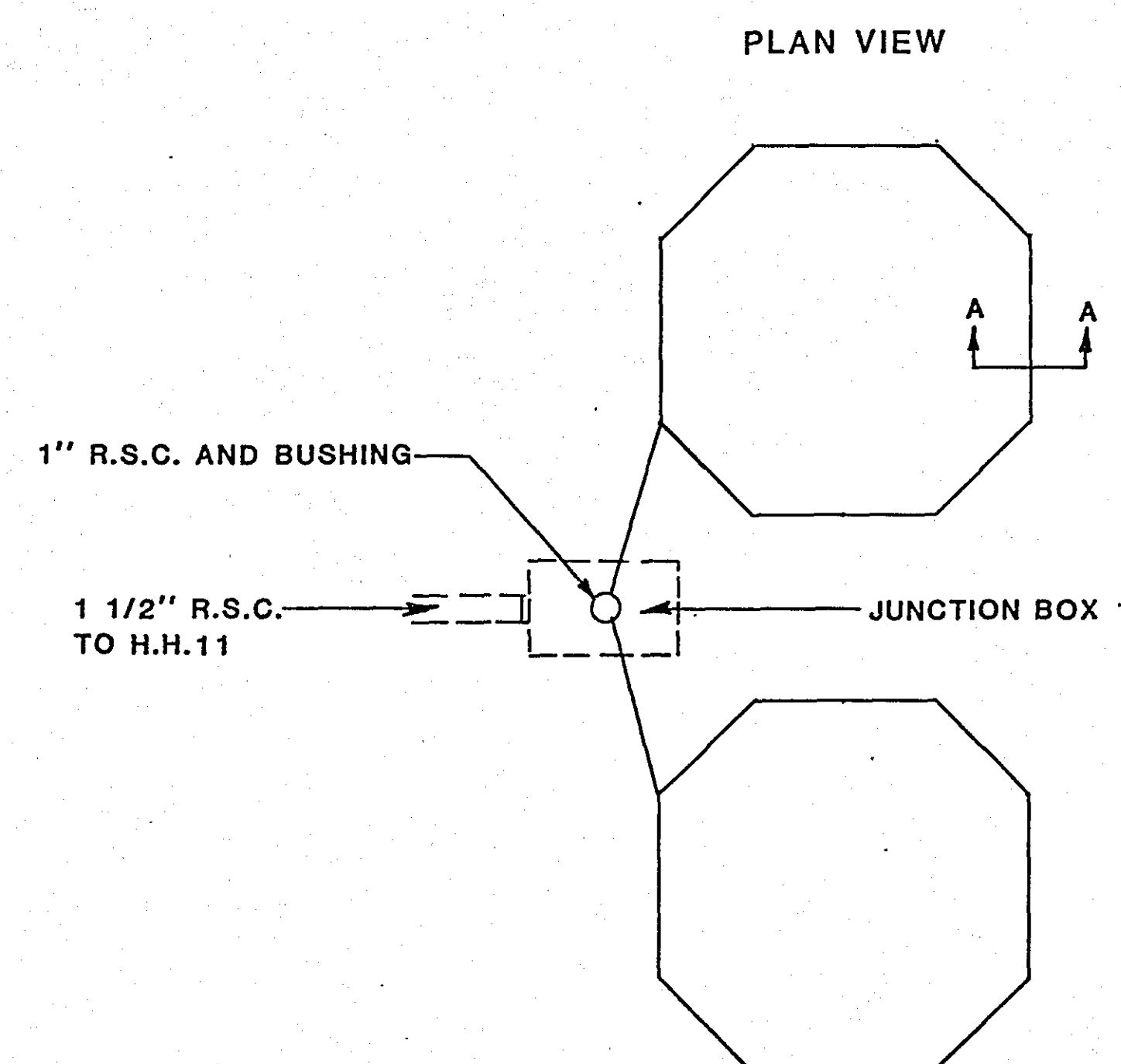
NOTE: SYMBOLS PERTAIN TO SHEETS 13 AND 14 ONLY.

RAMSEY COUNTY SERVICE CABINET



NOTE:

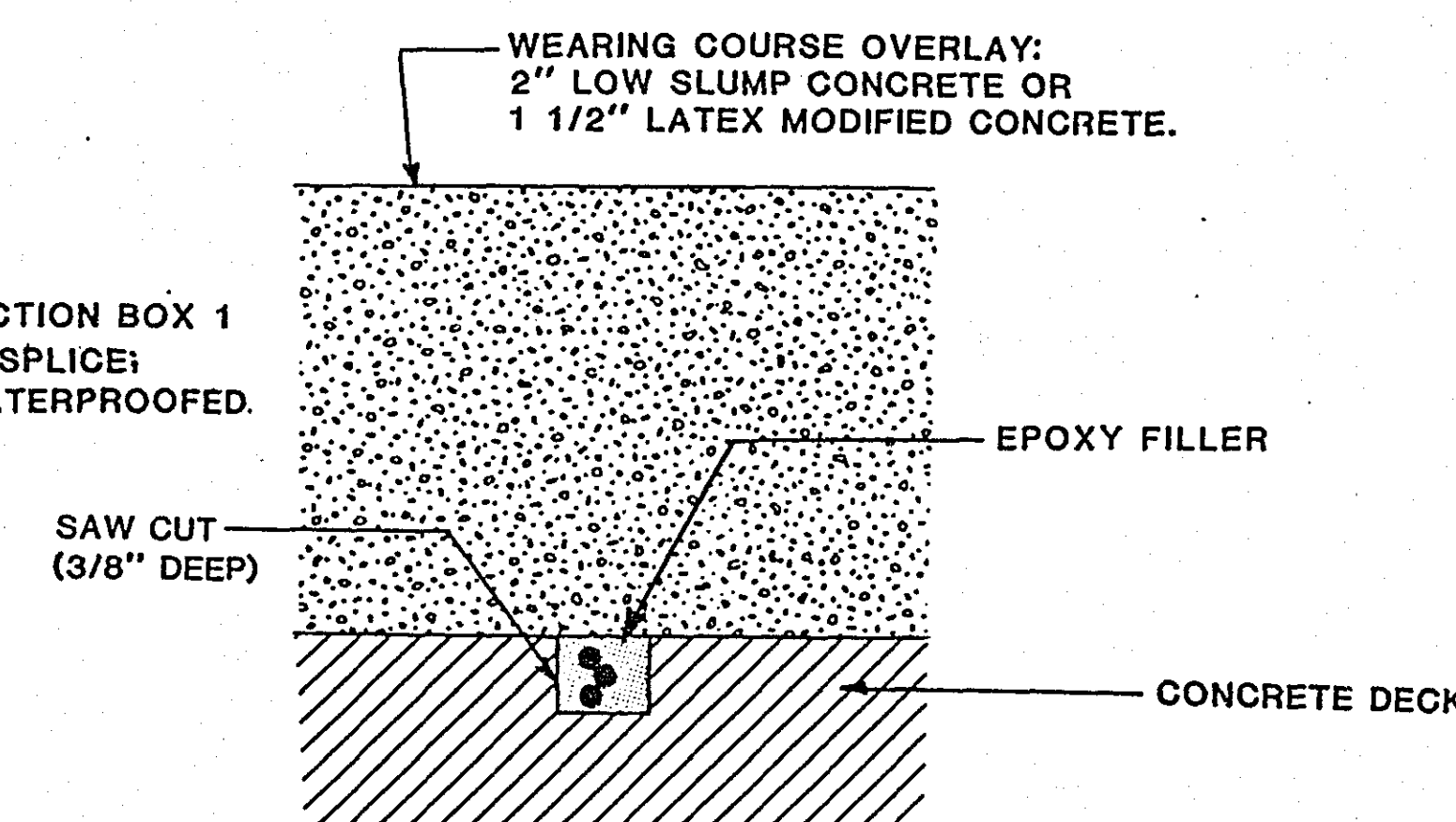
ENCLOSURE SHALL BE FABRICATED FROM 12 GA. C.R. ALL WELDED
AND FORMED STEEL FOR OUTDOOR WEATHERPROOF SERVICE. DOOR
OPENINGS SHALL BE SEALED WITH NEOPRENE GASKETING, AND
ALL HINGES, HINGE PINS, AND LOCKS SHALL BE OF NON-CORRODING
CONSTRUCTION. THE CABINET SHALL BE PAINTED INSIDE AND OUTSIDE
WITH ONE SHOP COAT OF CORROSION INHIBITING RED IRON
OXIDE PRIMER PAINT. THE FINISH COAT OF PAINT WILL BE DARK
GREEN-OVEN BAKED ENAMEL, TRANSCLOSURE GREEN.

LOOP DETECTOR D4-1 AND D4-2
(NOT TO SCALE)

NOTE:
CONNECT WIRES IN JUNCTION BOX 1
USING WESTERN UNION SPLICE;
SOLDERED, TAPED & WATERPROOFED.

NOTE:
1" R.S.C. FROM DECK TO J.B. 1, J.B. 1, AND
1 1/2" R.S.C. FROM J.B. 1 TO H.H. 11 TO BE
INSTALLED AS PART OF BRIDGE CONTRACT.
REMAINDER OF LOOP DETECTORS D4-1 AND D4-2 SHALL
BE INSTALLED AS PART OF THE SIGNAL SYSTEM
PRIOR TO PLACEMENT OF WEARING COURSE OVERLAY.

SECTION VIEW A-A (TYPICAL)



NOTE:
LOOP WIRES SHALL BE 1/c#16 TEFLON IN
CONFORMANCE WITH Mn/DOT 2565.2D3d: BRIDGE
DECK LOOP DETECTOR CONDUCTORS.

SURVEY:	CHECKED BY:	DATE	REVISIONS	1. HEREBY CERTIFY THAT THIS PLAN 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. DATE: 3/11/86 REG. NO. 1287	SHORT - ELLIOTT - HENDRICKSON, INC. Saint Paul, Minnesota • Chippewa Falls, Wisconsin	SIGNAL SYSTEM DETAILS COUNTY ROAD B2 AND CLEVELAND AVE.	ROSEVILLE, MINNESOTA S.A.P.-160-219-08	FILE NO.: 85021 DATE: 11/11/85	15 45
---------	-------------	------	-----------	--	--	---	---	---	----------

23-136

23-136 Signal System Intersection Layout
SAP 160-219-08 Co. Rd B2 + Cleveland Ave
13/45, 14/45
15/45

24X