

## ABBREVIATIONS

3-1 (e.g.) -SIGNAL HEAD, PHASE "3", NO. "1"  
BL -BLUE  
BLK -BLACK  
BLK/WH -BLACK WITH WHITE TRACER  
BL/BLK -BLUE WITH WHITE TRACER  
BR. GR. -BARE GROUND

CH. SW. -CHECK SWITCH  
CLR -CLEAR  
D2-1 (e.g.) -DETECTOR, PHASE "2", NO. "1"  
DNL -DOWNLIGHT  
DWK -DON'T WALK  
EQG -EQUIPMENT GROUND  
EVP -EMERGENCY VEHICLE  
PRE-EMPTION

F&I -FURNISH AND INSTALL  
FL -FLASH/FLASHING  
G -GREEN  
CLTA -GREEN LEFT TURN ARROW  
GRN -GREEN  
GRTA -GREEN RIGHT TURN ARROW  
GR.R. -GROUND ROD  
GTHA -GREEN THROUGH ARROW  
G/BLK -GREEN WITH BLACK TRACER  
HPS -HIGH PRESSURE SODIUM  
H.H. -HANDHOLE

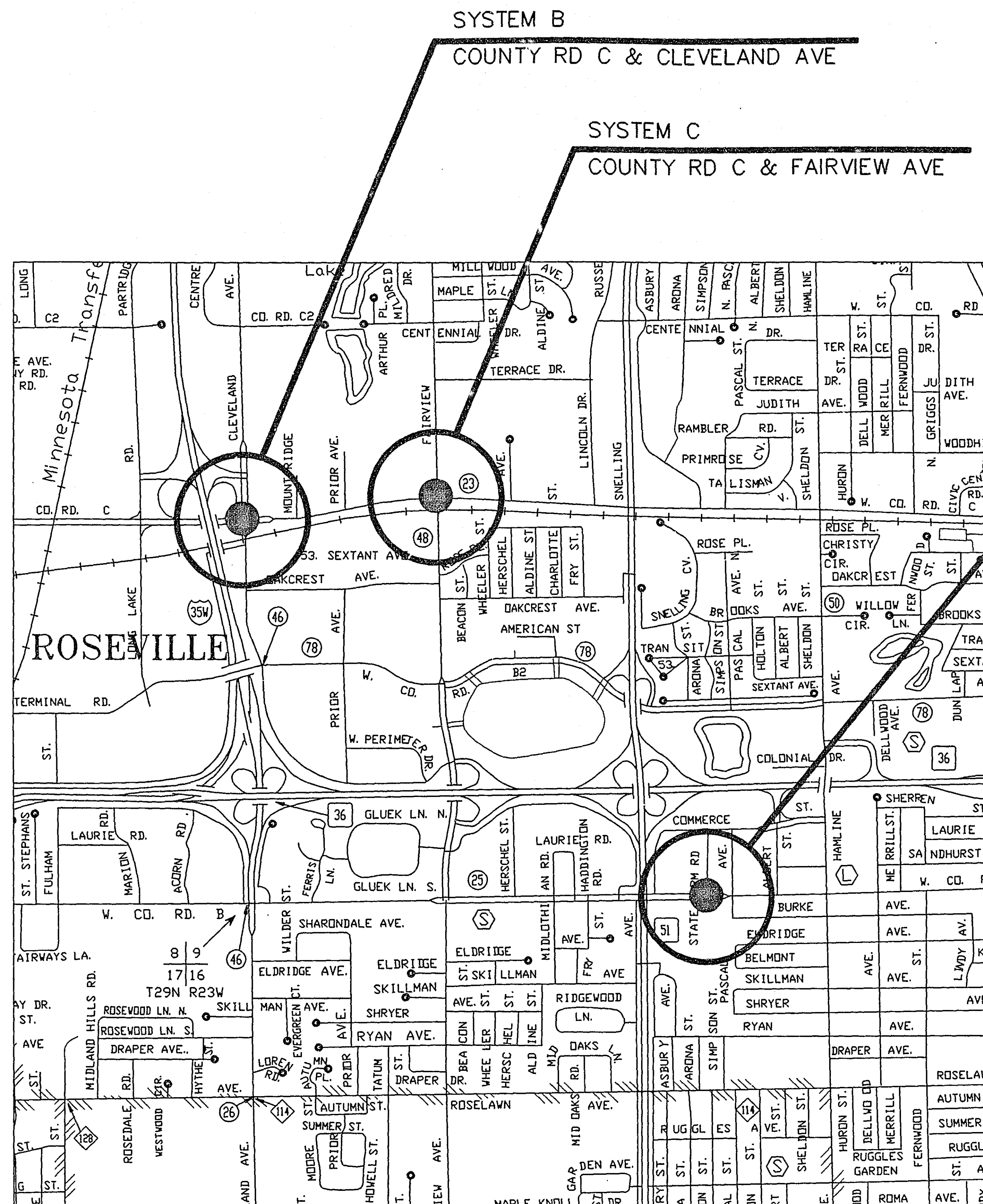
IMC -INTERMEDIATE METAL CONDUIT  
J.B. -JUNCTION BOX  
LTA -LEFT TURN ARROW  
LUM -LUMINAIRE  
MV -MERCURY VAPOR  
NEU -NEUTRAL  
NMC -NON-METALLIC CONDUIT  
O -ORANGE  
O/BLK -ORANGE WITH BLACK TRACER  
P1-1 (e.g.) -PEDESTRIAN INDICATION,  
PHASE "1", NO. "1"

PB -PUSH BUTTON  
PB2-1 (e.g.) -PUSH BUTTON, PHASE "2", NO. "1"  
PED -PEDESTRIAN  
P.E.C. -PHOTOELECTRIC CELL  
R -RED  
R&S -REMOVE AND SALVAGE  
RSC -RIGID STEEL CONDUIT  
RTA -RIGHT TURN ARROW  
R/BLK -REN WITH BLACK TRACER

SPR -SPARE  
STA -STATION  
ST. LHT. -STREET LIGHT  
SW -SWITCH  
SWD -SWITCHED  
S.O.P. -SOURCE OF POWER  
TDW -TELEPHONE DROP WIRE

WH -WHITE  
WH/BLK -WHITE WITH BLACK TRACER  
WLK -WALK  
YEL -YELLOW  
YLTA -YELLOW LEFT TURN ARROW  
YRTA -YELLOW RIGHT TURN ARROW  
YTHA -YELLOW THROUGH ARROW

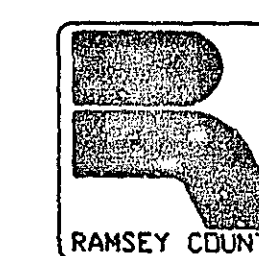
FOR PLANS AND UTILITIES SYMBOLS SEE  
MN/DOT TECHNICAL MANUAL.



SYSTEM B  
COUNTY RD C & CLEVELAND AVE

SYSTEM C  
COUNTY RD C & FAIRVIEW AVE

SYSTEM A  
COUNTY RD B & STATE FARM RD



## RAMSEY COUNTY

DEPARTMENT OF PUBLIC WORKS  
CONSTRUCTION PLAN FOR TRAFFIC CONTROL SIGNAL SYSTEM

S.A.P. No. 62-625-24  
COUNTY ROAD B & STATE FARM RD.....SYSTEM A

S.A.P. No. 160-020-12  
COUNTY ROAD C & CLEVELAND AVE.....SYSTEM B  
COUNTY ROAD C & FAIRVIEW AVE.....SYSTEM C

## INDEX

| SHEET NO. | DESCRIPTION                    |
|-----------|--------------------------------|
| 1         | TITLE                          |
| 2-3       | ESTIMATED QUANTITIES & DETAILS |
| 4-9       | SYSTEM A                       |
| 10        | MAST ARM SIGNS (SYS A)         |
| 11-13     | SYSTEM B                       |
| 14-16     | SYSTEM C                       |

DESIGN SQUAD R. M. M. DATE 7/24/96

DRAWN BY \_\_\_\_\_ DATE \_\_\_\_\_

CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

## RAMSEY COUNTY

RECOMMENDED FOR APPROVAL RHP DATE 8-5-96  
CONST. ENGR.

RECOMMENDED FOR APPROVAL Kochy Jankela DATE 8-7-96  
DESIGN ENGR.

RECOMMENDED FOR APPROVAL Tony V. V. DATE 8-5-96  
ENVR.

RECOMMENDED FOR APPROVAL Daniel J. Schmitt DATE 8-7-96  
MAINT. ENGR.

RECOMMENDED FOR APPROVAL Daniel J. Schmitt DATE 8-5-96  
PLANNER

RECOMMENDED FOR APPROVAL Daniel J. Schmitt DATE 8-7-96  
R.O.W. ENGR.

RECOMMENDED FOR APPROVAL Daniel J. Schmitt DATE 8-5-96  
TRAFFIC ENGR.

RECOMMENDED M. J. J. DATE 8-5-96  
SPECIAL PROJECTS ENGR.

RECOMMENDED J. J. J. DATE 8-5-96  
PROGRAM ENGR.

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.

Daniel E. Soler REG. NO. 20452 DATE 8-7-96

RECOMMENDED FOR APPROVAL P. M. M. DATE 8/8/96  
COUNTY ENGINEER

APPROVED Hal N. N. DATE 12/10/96  
CHAIR OF THE RAMSEY COUNTY BOARD

APPROVED Karl P. K. DATE 10-9-96  
CITY OF ROSEVILLE

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
CITY OF \_\_\_\_\_

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
CITY OF \_\_\_\_\_

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
CITY OF \_\_\_\_\_

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
CITY OF \_\_\_\_\_

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
CITY OF \_\_\_\_\_

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
CITY OF \_\_\_\_\_

## DESIGN DESIGNATION

### -GOVERNING SPECIFICATIONS-

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT  
OF TRANSPORTATION "STANDARD SPECIFICATION FOR  
CONSTRUCTION" AS AMENDED BY THE "SUPPLEMENTAL  
SPECIFICATIONS" DATED MAY 2, 1994 SHALL APPLY.

THE TRAFFIC CONTROL DEVICES AND SIGNING SHALL  
CONFORM TO THE MMUTCD, INCLUDING FIELD MANUAL  
FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS,  
DATED APRIL, 1995.

|                           | C.S.A.H. 25<br>COUNTY RD B | C.S.A.H. 23<br>COUNTY RD C | C.S.A.H. 46<br>CLEVELAND AVE | C.S.A.H. 48<br>FAIRVIEW AVE |
|---------------------------|----------------------------|----------------------------|------------------------------|-----------------------------|
| PRESENT ADT (1996)        | 12,000                     | 16,900                     | 7,250                        | 15,600                      |
| PROJECTED ADT (2016)      | 14,500                     | 20,300                     | 10,875                       | 18,800                      |
| FUNCTIONAL CLASSIFICATION | HIGH DENSITY<br>ARTERIAL   | HIGH DENSITY<br>ARTERIAL   | LOW DENSITY<br>ARTERIAL      | HIGH DENSITY<br>ARTERIAL    |
| TRAFFIC LANES             | 4                          | 4                          | 4                            | 4                           |
| PARKING LANES             | 0                          | 0                          | 0                            | 0                           |
| DESIGN SPEED              | 35                         | 45                         | 40                           | 40                          |

## PLAN REVISIONS

| DATE | SHEET NO. & DESCRIPTION | BY |
|------|-------------------------|----|
|      |                         |    |
|      |                         |    |
|      |                         |    |
|      |                         |    |

## MINNESOTA DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_

RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_  
METRO-ASST DIVISION ENGR.-STATE AID

APPROVED J. J. J. DATE 10/17 DATE 1996  
STATE AID ENGINEER

S.A.P. No. 160-020-12

S.A.P. No. 62-625-24

Sheet No. 1 of 16 Sheets

| STANDARD PLATES                                                                                            |             |                                                   |
|------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------|
| THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT |             |                                                   |
| PLATE NO.                                                                                                  | DESCRIPTION |                                                   |
|                                                                                                            | 7035 J      | CONCRETE WALK & CURB RETURNS AT ENTRANCES         |
|                                                                                                            | 7036 D      | PEDESTRIAN CURB RAMP                              |
|                                                                                                            |             |                                                   |
|                                                                                                            | 7100 G      | CONCRETE CURB AND GUTTERS (DESIGN B & DESIGN V)   |
|                                                                                                            | 7103 C      | PRECAST CONCRETE CURB                             |
|                                                                                                            |             |                                                   |
|                                                                                                            |             |                                                   |
| *                                                                                                          | 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 & POLE, TRAFFIC CONTROL SIGNALS |
|                                                                                                            | 8119 C      | GROUND MOUNTED CABINET FOUNDATION                 |
|                                                                                                            | 8120 K      | POLE FOUNDATION (PA85)                            |
|                                                                                                            | 8121 D      | TRANSFORMER BASE WITH POLE BASE PLATE (PA85)      |
|                                                                                                            | 8222 C      | PEDESTAL AND PEDESTAL BASE                        |
|                                                                                                            | 8123 D      | POLE AND MAST ARM                                 |
| *                                                                                                          | 8124 D      | MAST ARM SIGNAL HEAD MOUNTS                       |
|                                                                                                            | 8126 F      | POLE FOUNDATION (PA90 AND PA100)                  |
| *                                                                                                          | 8130 D      | SAW CUT LOOP DETECTORS                            |

\* STANDARD PLATES APPLICABLE TO THIS PROJECT

NOTES:

AREA PROPERTY OWNERS, OWN AND MAINTAIN UNDER-GROUND SPRINKLER SYSTEMS ADJACENT TO EXISTING ROADWAYS AND ENTRANCES. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS TO MINIMIZE DAMAGE THERETO AND SHALL INFORM PROPERTY OWNERS WHEN HIS OPERATIONS WILL AFFECT THEIR SPRINKLER SYSTEMS. THE CONTRACTOR SHALL REPAIR ANY DAMAGED SPRINKLER SYSTEMS CAUSED BY HIS WORK. ALL COSTS SHALL BE INCIDENTAL WORK AND NO DIRECT COMPENSATION WILL BE MADE.

| STATEMENT OF ESTIMATED QUANTITIES |                                        |         |                          |                         |                         |       |
|-----------------------------------|----------------------------------------|---------|--------------------------|-------------------------|-------------------------|-------|
| ITEM NO.                          | ITEM                                   | UNIT    | TOTAL ESTIMATED QUANTITY | PARTICIPATION (%)       |                         |       |
|                                   |                                        |         |                          | RAMSEY CO.<br>62-625-24 | ROSEVILLE<br>160-020-12 | LOCAL |
| 2564.531                          | F&I SIGN PANELS TYPE D                 | SQ. FT. | 45                       | 100                     | 0                       | 0     |
|                                   |                                        |         |                          |                         |                         |       |
| 0565.601                          | EMERGENCY VEHICLE PRE-EMPTION SYSTEM A | L. SUM  | 1                        | 0                       | 50                      | 50    |
|                                   |                                        |         |                          |                         |                         |       |
| 0565.601                          | EMERGENCY VEHICLE PRE-EMPTION SYSTEM B | L. SUM  | 1                        | 0                       | 100                     | 0     |
|                                   |                                        |         |                          |                         |                         |       |
| 0565.601                          | EMERGENCY VEHICLE PRE-EMPTION SYSTEM C | L. SUM  | 1                        | 0                       | 100                     | 0     |
|                                   |                                        |         |                          |                         |                         |       |
| 0565.604                          | REVISE SIGNAL SYSTEM A                 | SYSTEM  | 1                        | 50                      | 0                       | 50    |
|                                   |                                        |         |                          |                         |                         |       |
|                                   |                                        |         |                          |                         |                         |       |
|                                   |                                        |         |                          |                         |                         |       |
|                                   |                                        |         |                          |                         |                         |       |
|                                   |                                        |         |                          |                         |                         |       |
|                                   |                                        |         |                          |                         |                         |       |
|                                   |                                        |         |                          |                         |                         |       |
|                                   |                                        |         |                          |                         |                         |       |

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.  
*Daniel E. Soler*  
Date 8-7-96 Reg. No. 20452

ESTIMATED QUANTITIES AND DETAILS

S.A.P. No. 160-020-12

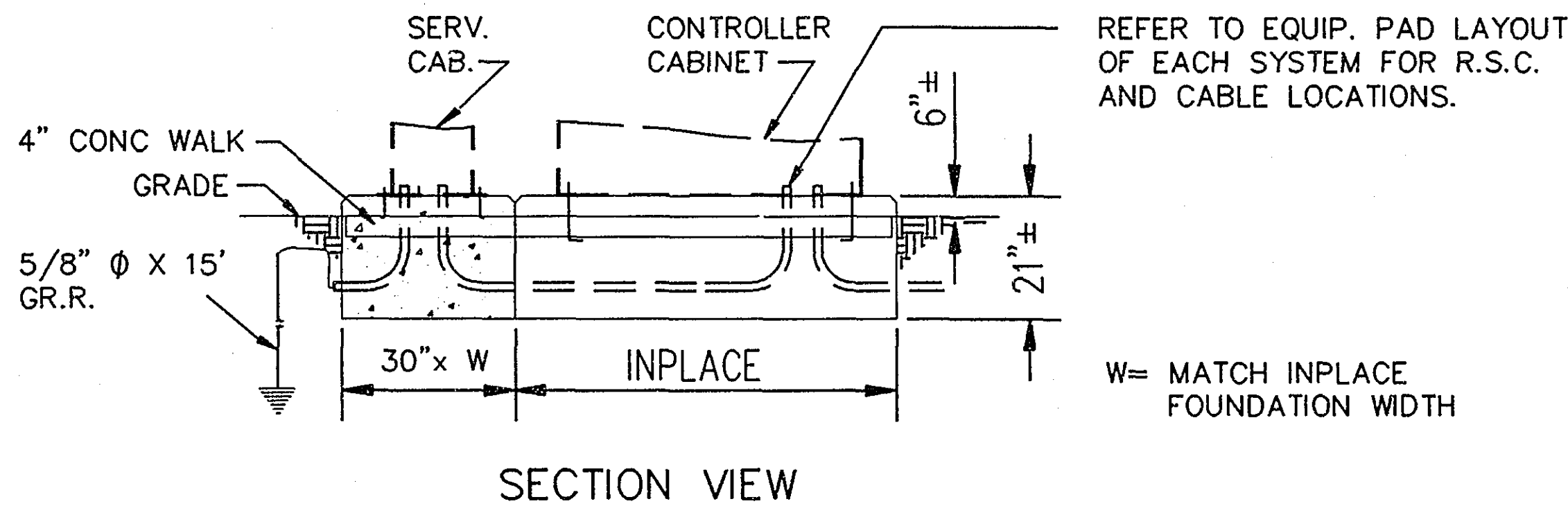
28-179

S.A.P. No. 62-625-24

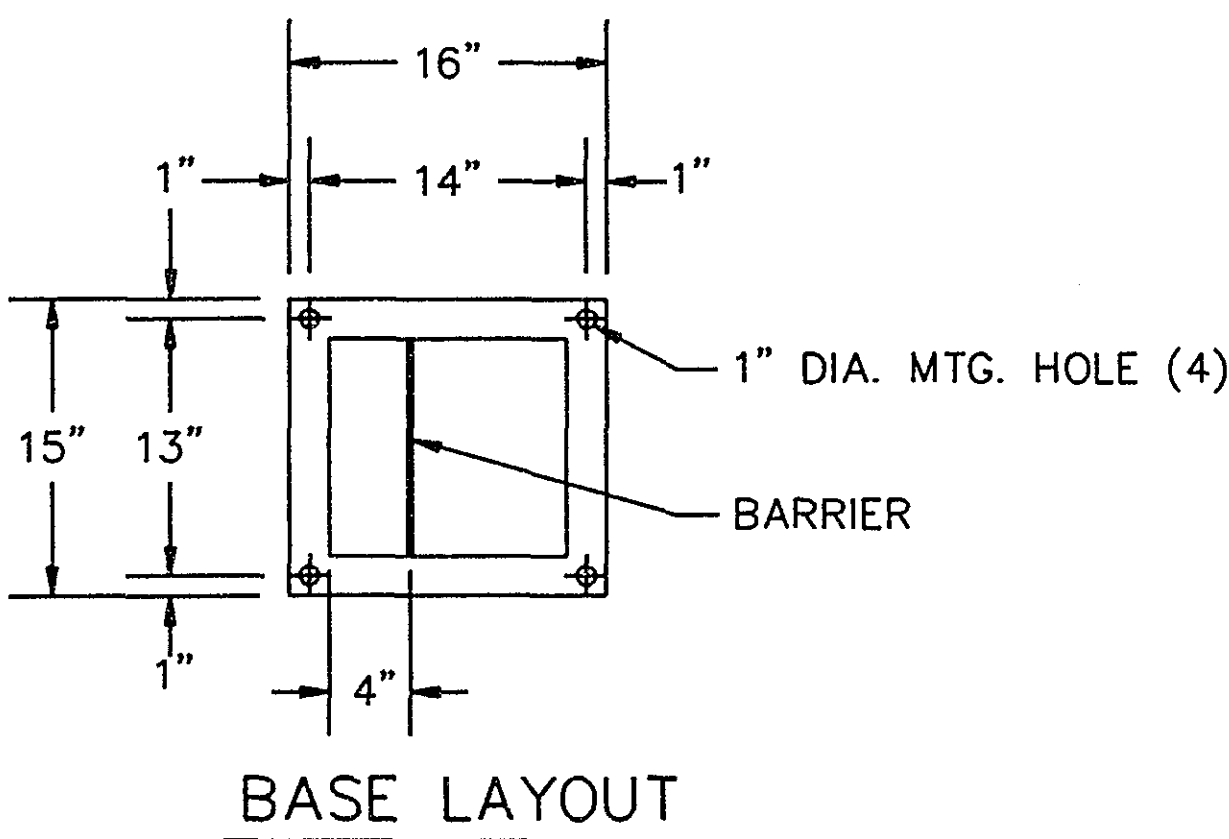
# SERVICE PAD FOUNDATION

## NOTES:

- ANCHOR RODS, NUTS AND WASHERS PER MN/DOT 3385 OR APPROVED EQUAL SET AS RECOMMENDED BY CABINET MANUFACTURER (NUMBER, SIZE AND LENGTH OF ANCHOR RODS) SHALL BE AS REQUIRED BY THE CABINET (MANUFACTURER).
- UPPER PART OF FOUNDATION SHALL BE BEVELED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER IN THE FIELD.
- TOP OF CONDUITS SHALL BE THREADED AND CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED). CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE CONCRETE AND SHALL BE LOCATED INSIDE THE CABINET WHERE DIRECTED BY THE ENGINEER BUT SHALL NOT INTERFERE WITH CABINET FUNCTIONS.
- CONCRETE MIX 3A32 OR EQUAL SHALL BE USED FOR FOUNDATION AND CONCRETE WALK.
- CONDUITS WHICH HAVE BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT BE INSTALLED BELOW THE CONCRETE.
- EXACT LOCATIONS OF CONDUIT WITHIN THE PAD SHALL BE AS DETERMINED BY THE ENGINEER IN THE FIELD.
- REFER TO EQUIPMENT PAD LAYOUT OF EACH SYSTEM FOR FOUNDATION SIZE, CONDUIT PLACEMENT AND EQUIPMENT TO BE INSTALLED.



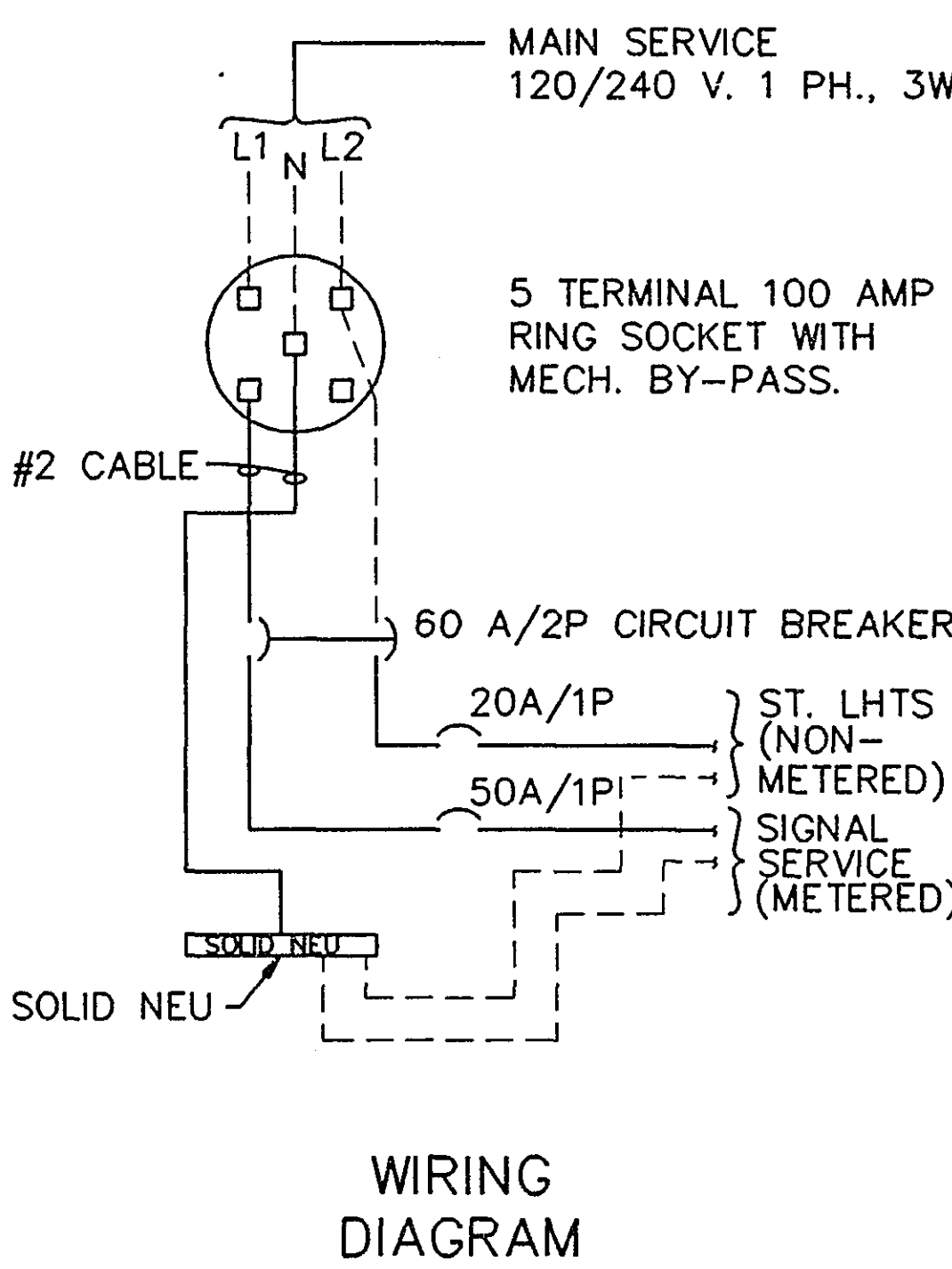
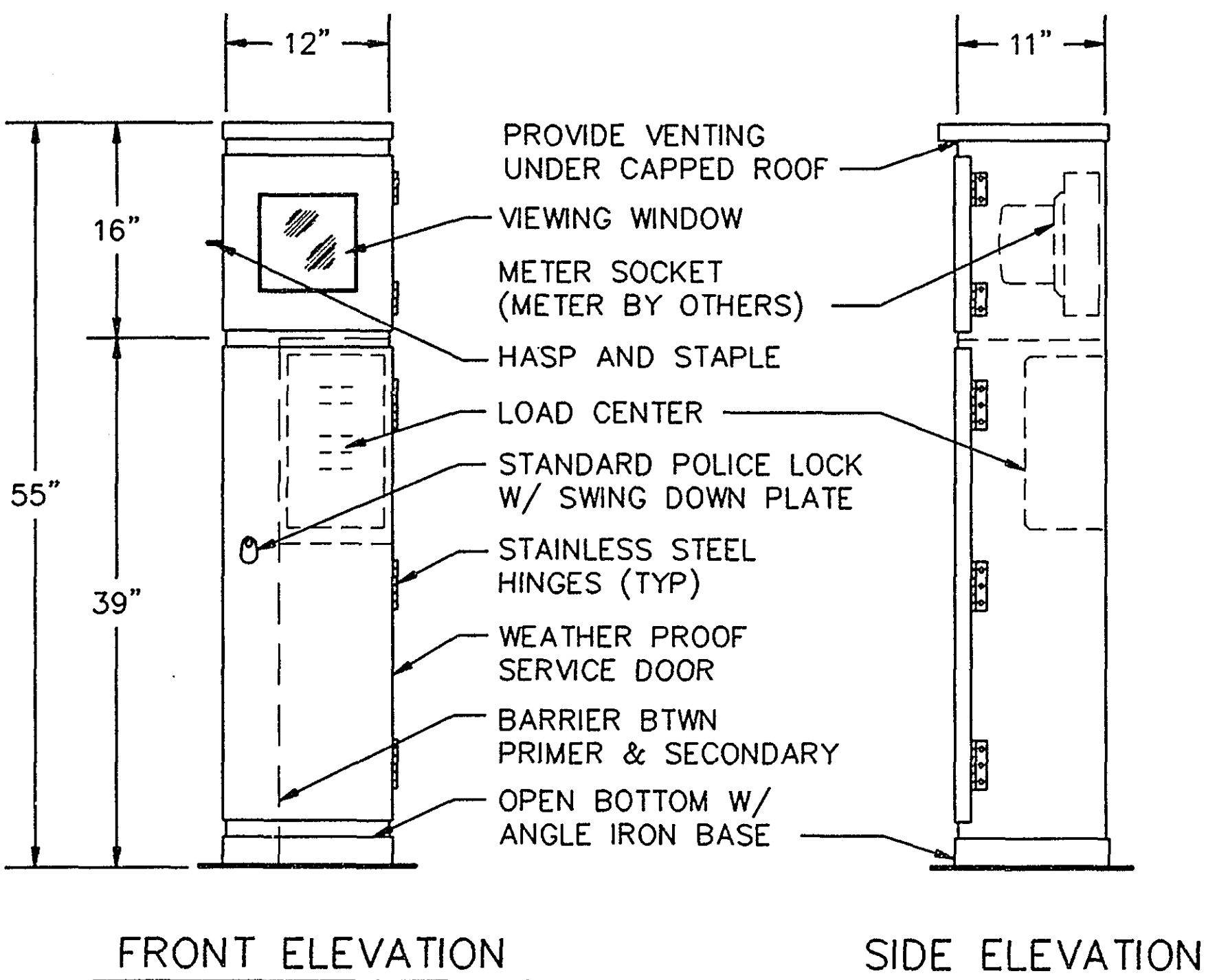
## SERVICE CABINET DETAILS



## NOTES:

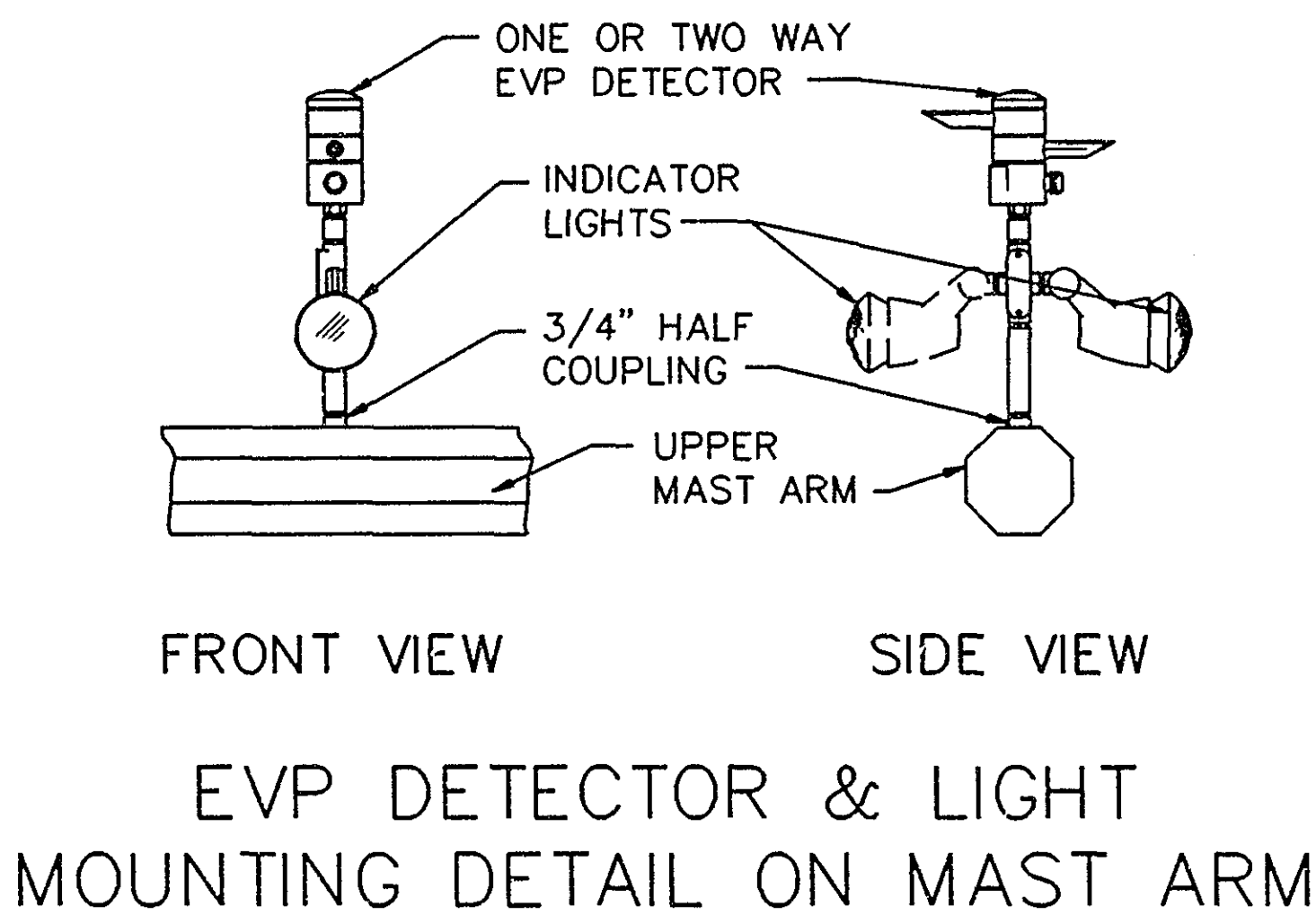
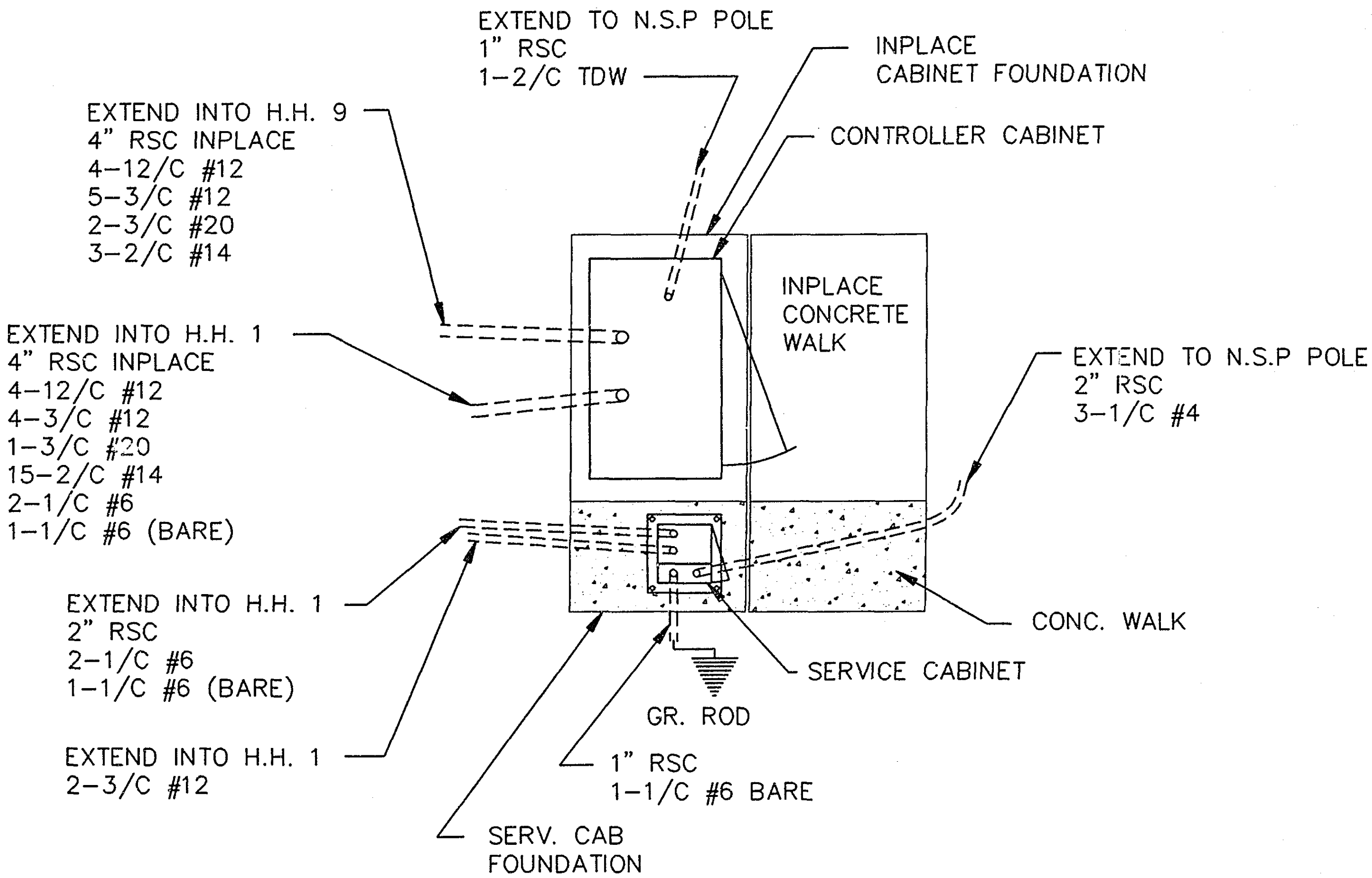
- PEDESTAL SHALL BE FABRICATED FROM 0.125 INCH ALUMINUM WITH WELDED SEAMS FOR USE AS AN OUTDOOR WEATHER PROOF SERVICE.
- DOOR OPENINGS SHALL BE SEALED WITH NEOPRENE GASKET.
- ALL HINGES, HINGE PINS AND LOCKS SHALL BE MADE FROM NON-CORRODING MATERIALS.
- THE VIEWING WINDOW SHALL BE LEXAN MATERIAL - 7" X 7" MIN.
- THE PEDESTAL CABINET SHALL BE PROTECTED INSIDE AND OUT WITH A ANODIC COATING. SEE SPECIAL PROVISIONS.

ANCHOR RODS, NUTS & WASHERS - SEE EQUIPMENT PAD NOTE No. 1.



# EQUIPMENT PAD LAYOUT SYSTEM A

COUNTY RD B & STATE FARM RD



## DETAILS

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 8-7-96 Reg. No. 20452

S.A.P. No. 160--020-12

S.A.P. No. 62-625-24

Sheet No. 3 of 16 Sheets

REVISED

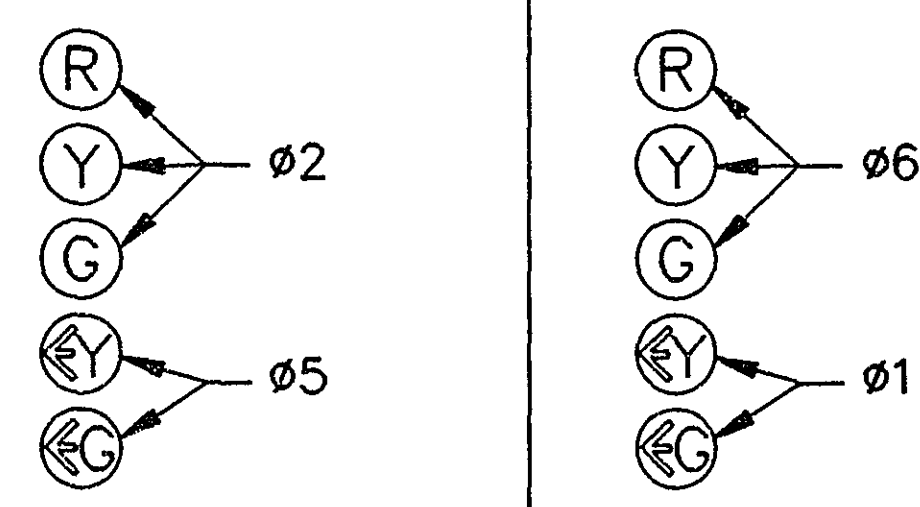
## SIGNAL INDICATION CHART

| FACE | PHASE | INDICATION SIZE |     |     |     |     |
|------|-------|-----------------|-----|-----|-----|-----|
|      |       | R               | Y   | G   | Y   | G   |
| F&I  | 2-1   | 2               | 12" | 12" | 12" | 12" |
| F&I  | 2-2   | 2 and 5         | 12" | 12" | 12" | 12" |
| F&I  | 2-3   | 2 and 5         | 12" | 12" | 12" | 12" |
| F&I  | 2-4   | 2               | 12" | 12" | 12" | 12" |
| F&I  | 4-1   | 4               | 12" | 12" | 12" | 12" |
| F&I  | 4-2   | 4               | 12" | 12" | 12" | 12" |
| F&I  | 4-3   | 4               | 12" | 12" | 12" | 12" |
| F&I  | 6-1   | 6               | 12" | 12" | 12" | 12" |
| F&I  | 6-2   | 1 and 6         | 12" | 12" | 12" | 12" |
| F&I  | 6-3   | 1 and 6         | 12" | 12" | 12" | 12" |
| F&I  | 6-4   | 6               | 12" | 12" | 12" | 12" |
| F&I  | 8-1   | 8               | 12" | 12" | 12" | 12" |
| F&I  | 8-2   | 8               | 12" | 12" | 12" | 12" |
| F&I  | 8-3   | 8               | 12" | 12" | 12" | 12" |

REVISED

## SIGNAL HEAD PHASING

HEADS 2-2 and 2-3 HEADS 6-2 and 6-3



SIGNING

- R&S ALL INPLACE OVERHEAD SIGNING ON MAST
- ARM POLES 1,2,3 & 4.
- F&I OVERHEAD TYPE D SIGNS, SEE SHEET 10. (SEPARATE PAY ITEM)
- F&I OVERHEAD TYPE R10-12 (36" X 48") SIGNS
- ON MAST ARM POLES 2 & 4.
- R&S INPLACE PEDESTRIAN PUSH BUTTON SIGNS
- F&I NEW SIGNS TYPE R10-4b (9"x12")
- WITH SYMBOL MESSAGE.

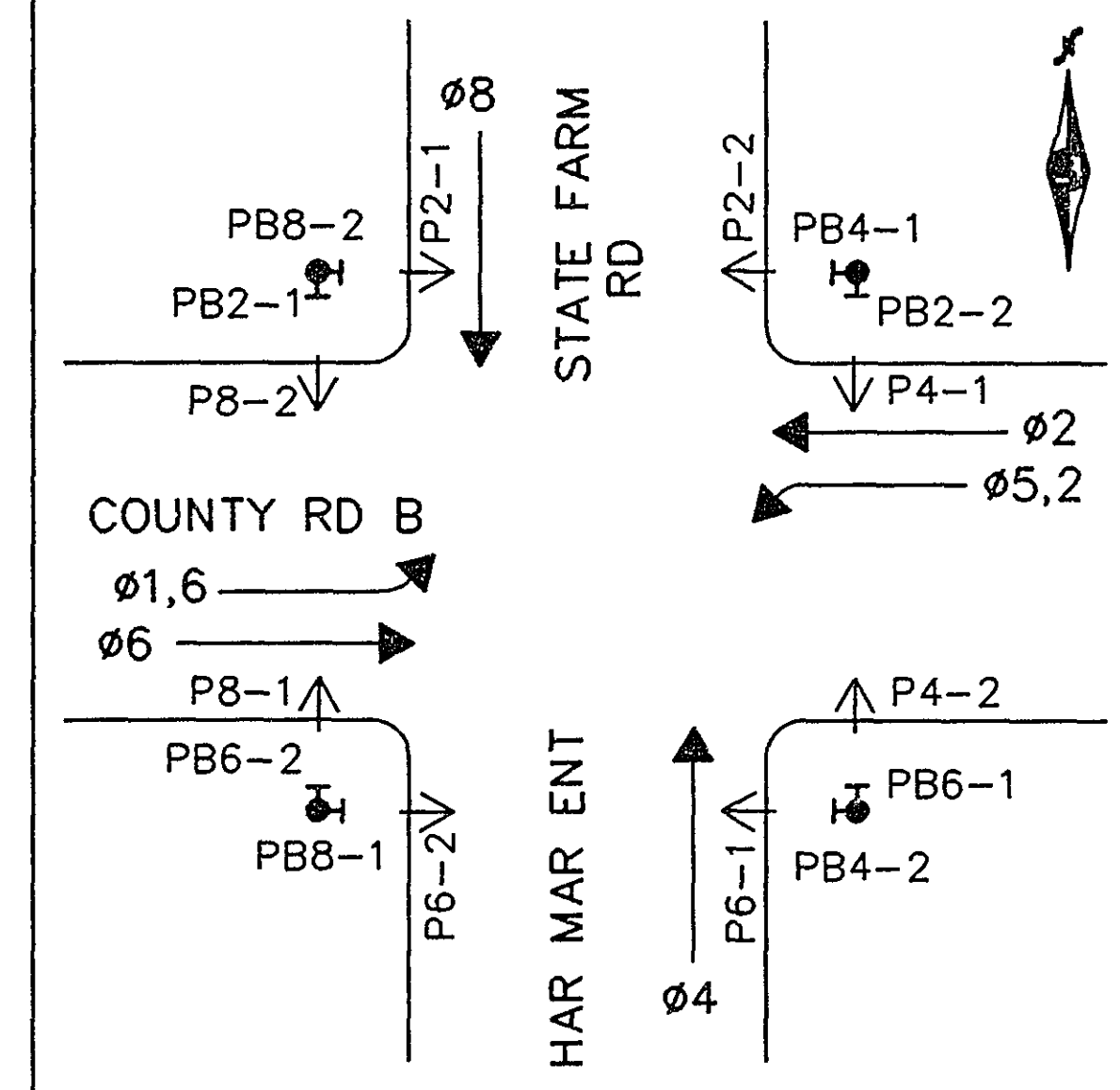
REVISED

## SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- PHASES 1, AND 5 ARE PROTECTED/PERMISSIVE LEFT TURNS.
- PHASES 1, 4, 5, & 8 ARE NON-LOCK DETECTION.
- PHASES 2 AND 6 ARE LOCK DETECTION.
- PHASES 2 AND 6 ARE ON VEHICLE RECALL.

REVISED

## CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



REVISED

## VEHICLE DETECTION

| NO.      | SIZE     | FUNCTION | LOCATION |
|----------|----------|----------|----------|
| F&I D1-1 | 2-6'X15' | C&E (TD) | 0'       |
| F&I D1-2 | 6'X25'   | C&E      | 80'      |
| F&I D2-1 | 6'X6'    | C&E      | 205'     |
| F&I D2-2 | 6'X6'    | C&E      | 205'     |
| F&I D4-1 | 2-6'X6'  | E        | 80'      |
| F&I D4-3 | 6'X15'   | C&E      | 0'       |
| F&I D4-4 | 6'X15'   | C&E (TD) | 0'       |
| F&I D5-1 | 2-6'X15' | C&E (TD) | 0'       |
| F&I D5-2 | 6'X25'   | C&E      | 80'      |
| F&I D6-1 | 6'X6'    | C&E      | 205'     |
| F&I D6-2 | 6'X6'    | C&E      | 205'     |
| F&I D8-1 | 2-6'X6'  | E        | 80'      |
| F&I D8-3 | 6'X15'   | C&E      | 0'       |
| F&I D8-4 | 6'X15'   | C&E (TD) | 0'       |
| F&I D1   | 6'X6'    | COUNT    | SEE PLAN |
| F&I D2   | 6'X6'    | COUNT    | SEE PLAN |
| F&I D3   | 6'X6'    | COUNT    | SEE PLAN |
| F&I D4   | 6'X6'    | COUNT    | SEE PLAN |

C&E = CALL & EXTEND  
C = CALL ONLY  
E = EXTEND ONLY  
(TD) = TIME DELAYED

4

- A100-A-30 INPLACE
- 2-ONE-WAY SIGNALS OVERHEAD INPLACE, R&S
- 2-ONE WAY SIGNALS - OVERHEAD
- TYPE 10C - POLE MOUNTED INPLACE, R&S
- TYPE 20C - POLE MOUNTED 225'
- 2-PEDESTRIAN PUSH BUTTONS INPLACE, R&S
- ONE WAY EVP DETECTOR & LIGHT
- OVERHEAD MOUNTED
- EXTEND INTO H.H. 10
- 3" RSC INPLACE
- 2-12/C #12
- 4-3/C #12
- 1-3/C #20

- 3" RSC INPLACE
- 2-12/C #12
- 3-3/C #12
- 1-3/C #20
- 3-2/C #14

- PEDESTRIAN PUSH BUTTON
- STATION (4" RSC)
- 2-PEDESTRIAN PUSH BUTTONS
- EXTEND INTO H.H.10
- 1.25" RSC
- 1-3/C #12

- 1.25" RSC
- 3-2/C #14

- PEDESTRIAN PUSH BUTTON
- STATION (4" RSC)
- 2-PEDESTRIAN PUSH BUTTONS
- EXTEND INTO H.H.6
- 1.25" RSC
- 1-3/C #12

- 3" RSC INPLACE
- 2-12/C #12
- 2-3/C #12
- 6-2/C #14

3

- A100-A-20-T30-15, INPLACE- REVISE
- TO A100-A-20-T40-10
- LUMINAIRE INPLACE- R&S
- LUMINAIRE-200 WATT HPS AT 350'
- ONE WAY SIGNAL-OVERHEAD, R&S
- ONE WAY SIGNAL-OVERHEAD
- 2-PEDESTRIAN PUSH BUTTONS, INPLACE -R&S
- TYPE 10C - POLE MOUNTED, INPLACE- R&S
- TYPE 20C-POLE MOUNTED AT 225'
- EXTEND INTO H.H. 6
- 3" RSC INPLACE
- 2-12/C #12
- 2-3/C #12
- 1-3/C #20

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.

*Dan E. Sch*

Date 8-7-96 Reg. No. 20452

1

- A100-A-20-T30-15, INPLACE- REVISE
- TO A100-A-20-T40-10
- LUMINAIRE INPLACE- R&S
- LUMINAIRE-200 WATT HPS AT 350'
- ONE WAY SIGNAL-OVERHEAD, R&S
- ONE WAY SIGNAL-OVERHEAD
- 2-PEDESTRIAN PUSH BUTTONS, INPLACE -R&S
- TYPE 10C - POLE MOUNTED, INPLACE- R&S
- TYPE 20C-POLE MOUNTED AT 225'
- TWO WAY EVP DETECTOR & LIGHT
- OVERHEAD MOUNTED
- EXTEND INTO H.H. 1
- 3" RSC INPLACE
- 2-12/C #12
- 4-3/C #12
- 1-3/C #20

- S.O.P. - (SERVICE EQUIP. INPLACE), R&S
- RSC RISER & WEATHER HEAD, R&S
- F&I 2" RSC RISER & WEATHER HEAD
- EXTEND INTO SERVICE CABINET
- 2" RSC
- 3-1/C #4

- 4" RSC INPLACE
- 4-12/C #12
- 5-3/C #12
- 1-3/C #20
- 13-2/C #14

- PEDESTRIAN PUSH BUTTON
- STATION (4" RSC)
- 2-PEDESTRIAN PUSH BUTTONS
- EXTEND INTO H.H.1
- 1.25" RSC
- 1-3/C #12

- 1.25" RSC INPLACE
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

- 1.25" RSC
- 2-2/C #14

SCALE IN FEET

NOTES:

- ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE USED INPLACE UNLESS OTHERWISE NOTED WITH A ▶. ▶ = WORK TO BE DONE THIS SHEET ONLY).
- ALL PEDESTRIAN INDICATIONS SHALL BE 12"x12" WITH SYMBOL MESSAGE. THE DONT WALK SYMBOL SHALL BE ILLUMINATED WITH PORTLAND ORANGE LED'S. SEE SPECIAL PROVISIONS.
- ALL SIGNAL FACES SHALL HAVE BACK-GROUND SHIELDS EXCEPT SIGNAL FACES 2-3, 4-3, 6-3 AND 8-3.
- EACH LUMINAIRE SHALL HAVE A PHOTO ELECTRIC CELL AND STREET LIGHT CHECK SWITCH.
- HANDHOLES 1 THRU 10 ARE INPLACE. HANDHOLES 4 & 8 HAVE METAL FRAME AND COVERS. F&I HANDHOLES 11,12,13,14, 15 AND 16.
- REMOVE AND SALVAGE INPLACE DOWN LIGHTS MOUNTED OVERHEAD ON POLES 2 & 4 (2 TOTAL).

NOTES:

- REMOVE AND SALVAGE ALL CONTROL CABLE AND F&I NEW.
- WELD NEW 1.5" DIA HALF COUPLING FOR REVISED SIGNAL HEAD MOUNTING ON POLE 1,2 & 3. PLUG UNUSED MOUNTINGS.
- PAINT REVISED SIGNAL SYSTEM (SEE SPECIAL PROVISIONS).
- SEE SHEETS 7 & 8 FOR EXISTING SIGNAL SYSTEM.
- ALL RED VEHICLE INDICATIONS SHALL BE ILLUMINATED WITH RED LED'S. SEE SPECIAL PROVISIONS.
- TEMPORARY ALL RED FLASHING OPERATION DURING REVISION WORK. SEE SPECIAL PROVISIONS.

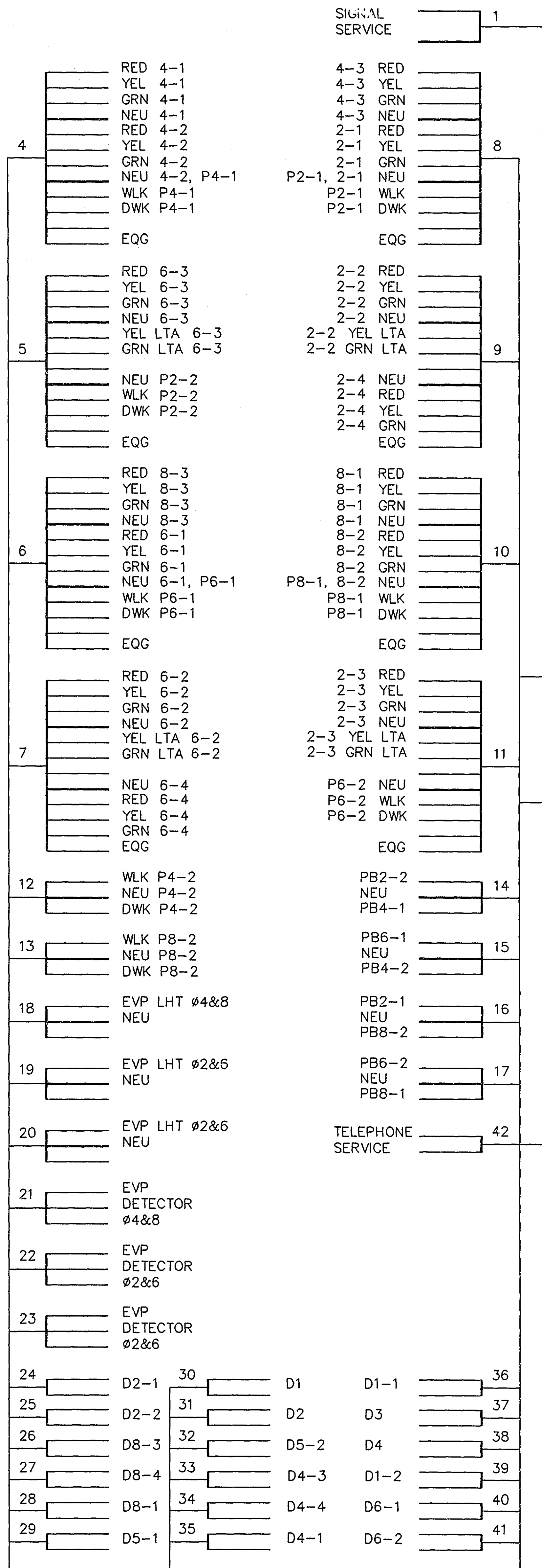
REVISED  
INTERSECTION LAYOUT  
COUNTY ROAD B & STATE FARM RD.  
SYSTEM A

S.A.P. No. 160-020-12

S.A.P. No. 62-625-24

Sheet No. 4 of 16 Sheets

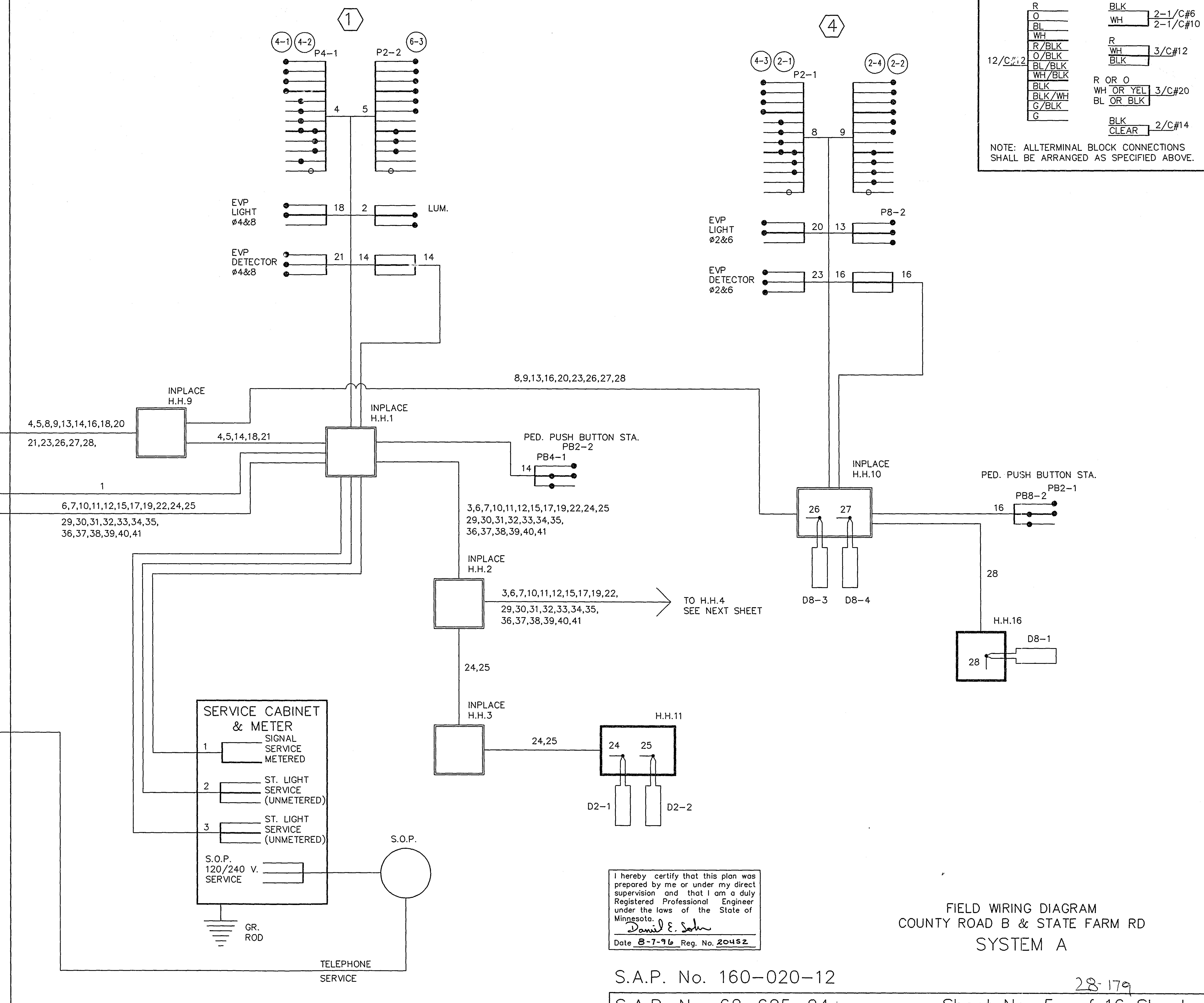
# CONTROLLER CABINET



## CONDUCTOR COLOR CODING

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

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



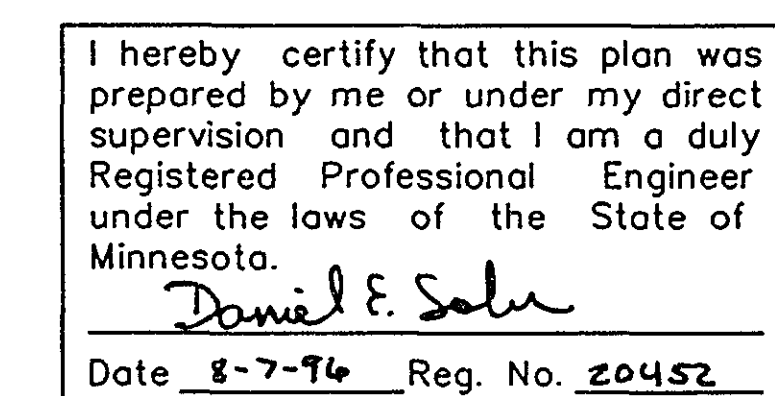
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.  
*Daniel E. Sohn*  
 Date 8-7-96 Reg. No. 20452

FIELD WIRING DIAGRAM  
 COUNTY ROAD B & STATE FARM RD  
 SYSTEM A

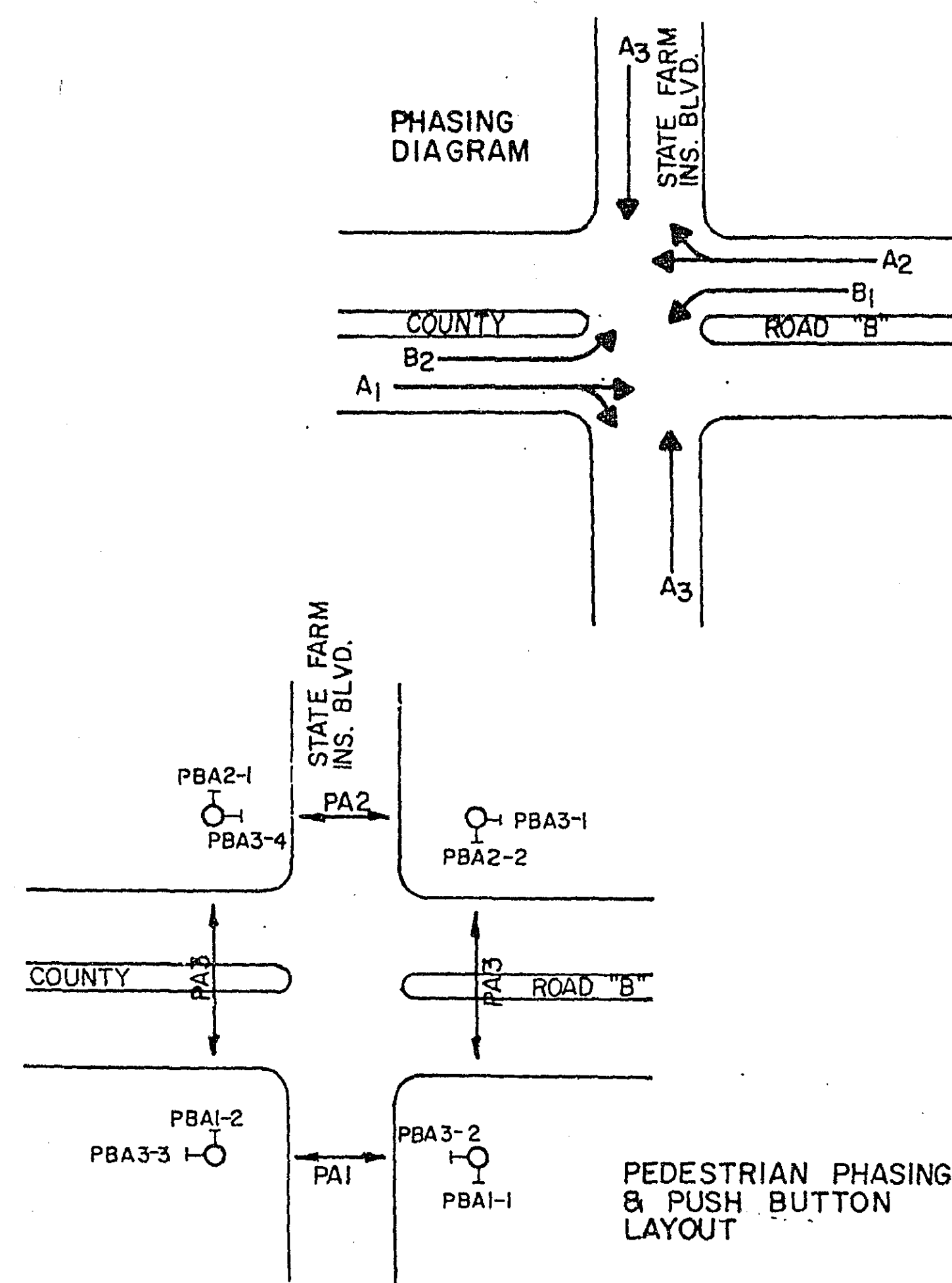
S.A.P. No. 160-020-12

S.A.P. No. 62-625-24

28-179  
 Sheet No. 5 of 16 Sheets

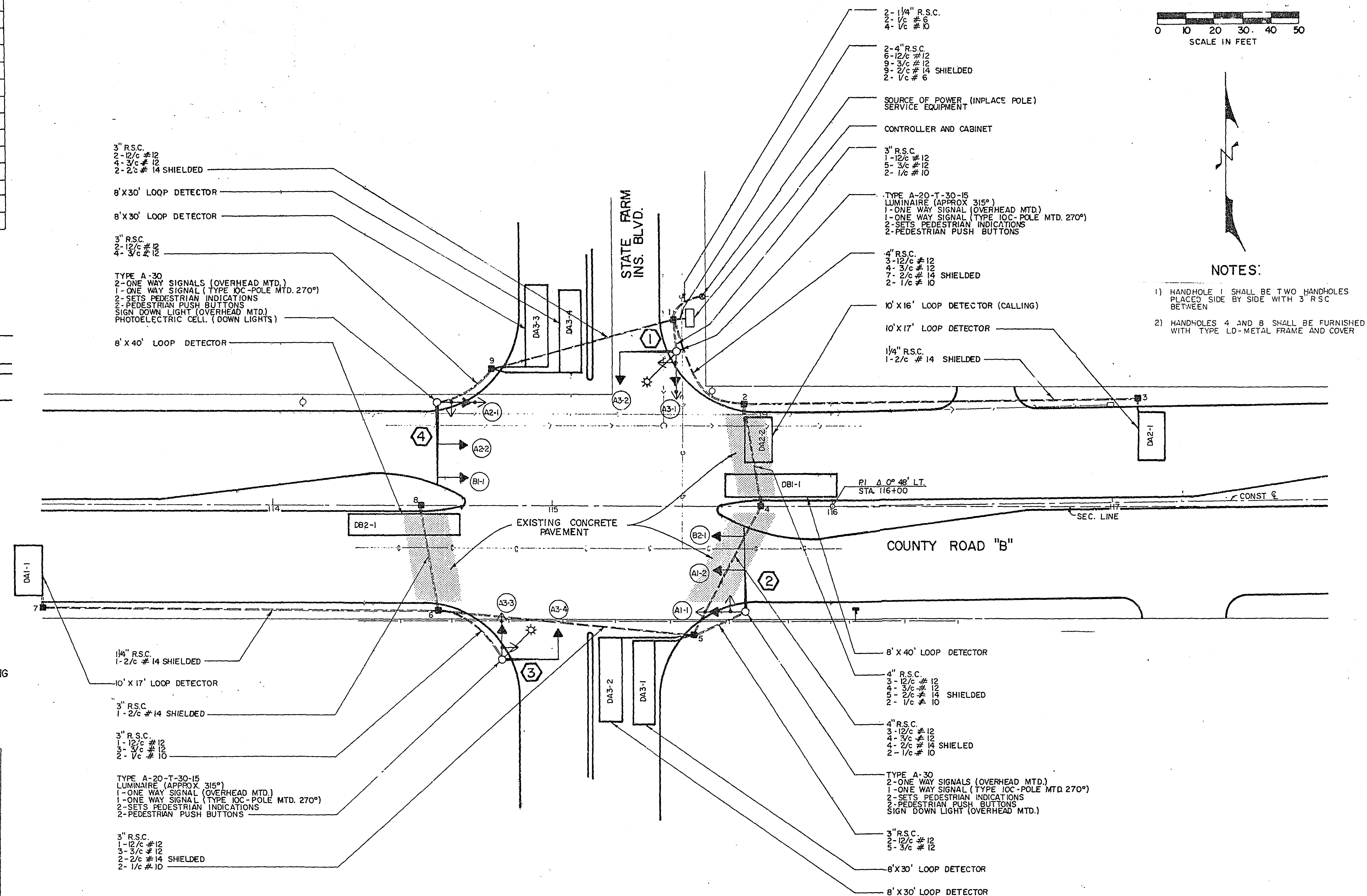


| LEGEND OF SYMBOLS |                                    |
|-------------------|------------------------------------|
|                   | CONTROLLER                         |
|                   | PEDESTAL                           |
|                   | HANDHOLE (PULLBOX)                 |
|                   | RIGID STEEL CONDUIT (R.S.C.)       |
|                   | MAST ARM & POLE                    |
|                   | SIGNAL FACE                        |
|                   | SIGNAL FACE WITH BACKGROUND SHIELD |
|                   | MAST ARM & LUMINAIRE               |
|                   | PEDESTRIAN INDICATION              |
|                   | SOURCE OF POWER (S.O.P.)           |



| FACE  | PHASE | FLASH | INDICATION SIZE |     |     |     |   |   |
|-------|-------|-------|-----------------|-----|-----|-----|---|---|
|       |       |       | R               | Y   | G   | ←   | ↑ | → |
| A1-1  | A1    | R     | 12"             | 12" | 12" | —   | — | — |
| A1-2  | A1    | R     | 12"             | 12" | 12" | —   | — | — |
| A2-1  | A2    | R     | 12"             | 12" | 12" | —   | — | — |
| A2-2  | A2    | R     | 12"             | 12" | 12" | —   | — | — |
| A3-1  | A3    | R     | 12"             | 12" | 12" | —   | — | — |
| A3-2  | A3    | R     | 12"             | 12" | 12" | —   | — | — |
| A3-3  | A3    | R     | 12"             | 12" | 12" | —   | — | — |
| A3-4  | A3    | R     | 12"             | 12" | 12" | —   | — | — |
| *B1-1 | B1    | R     | 12"             | 12" | —   | 12" | — | — |
| *B2-1 | B2    | R     | 12"             | 12" | —   | 12" | — | — |

\* SEE SPECIAL PROVISIONS  
(SPECIAL SIGNAL FACES)



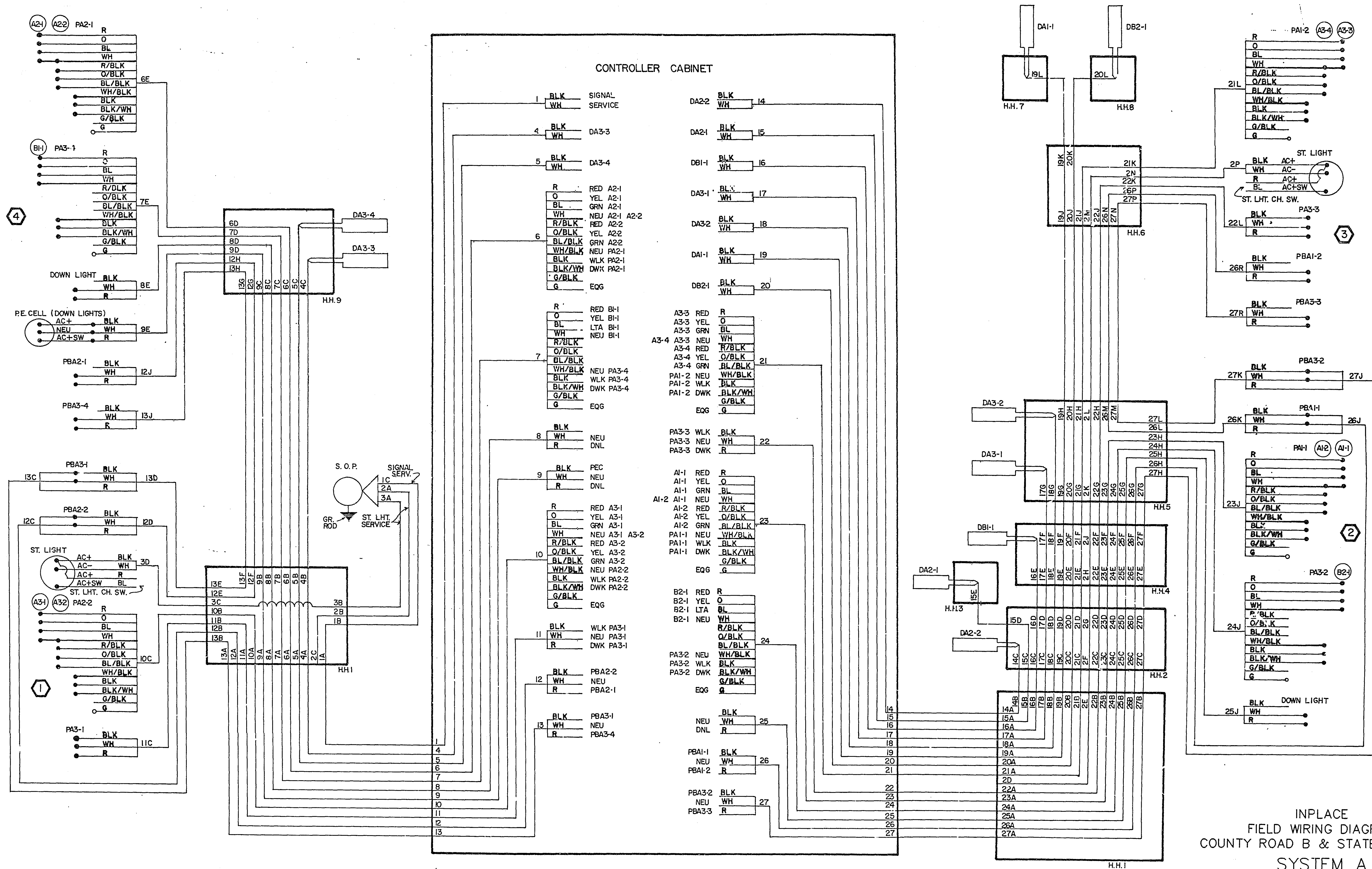
0 10 20 30 40 50  
SCALE IN FEET

#### NOTES:

- HANDHOLE 1 SHALL BE TWO HANDHOLES PLACED SIDE BY SIDE WITH 3" R.S.C. BETWEEN
- HANDHOLES 4 AND 8 SHALL BE FURNISHED WITH TYPE LD-METAL FRAME AND COVER

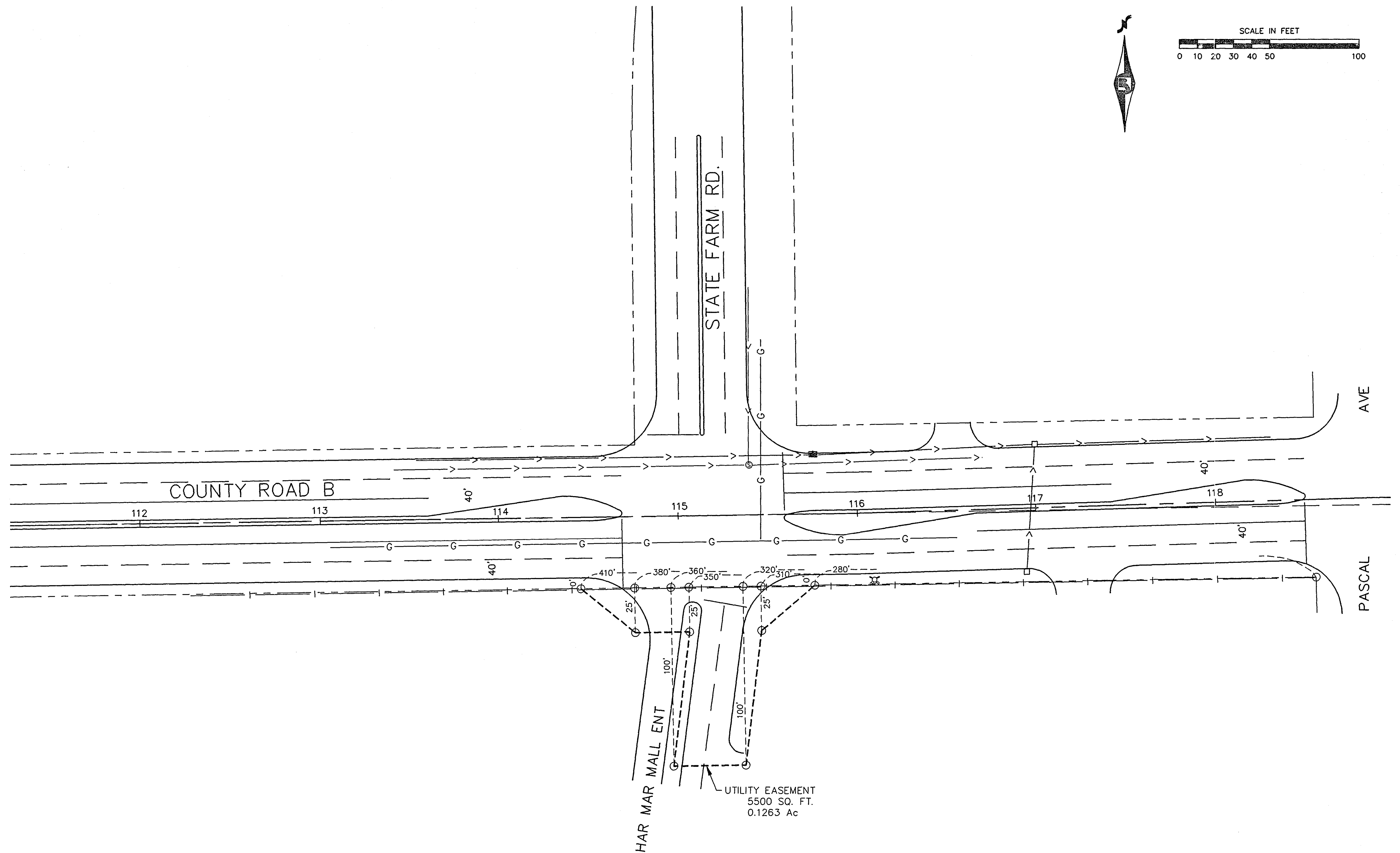
INPLACE  
INTERSECTION LAYOUT  
COUNTY ROAD B & STATE FARM RD  
SYSTEM A

28-179  
FOR INFORMATION ONLY



INPLACE  
FIELD WIRING DIAGRAM  
COUNTY ROAD B & STATE FARM RD  
SYSTEM A

FOR INFORMATION ONLY <sup>28-179</sup>



UTILITIES  
COUNTY ROAD B & STATE FARM RD.

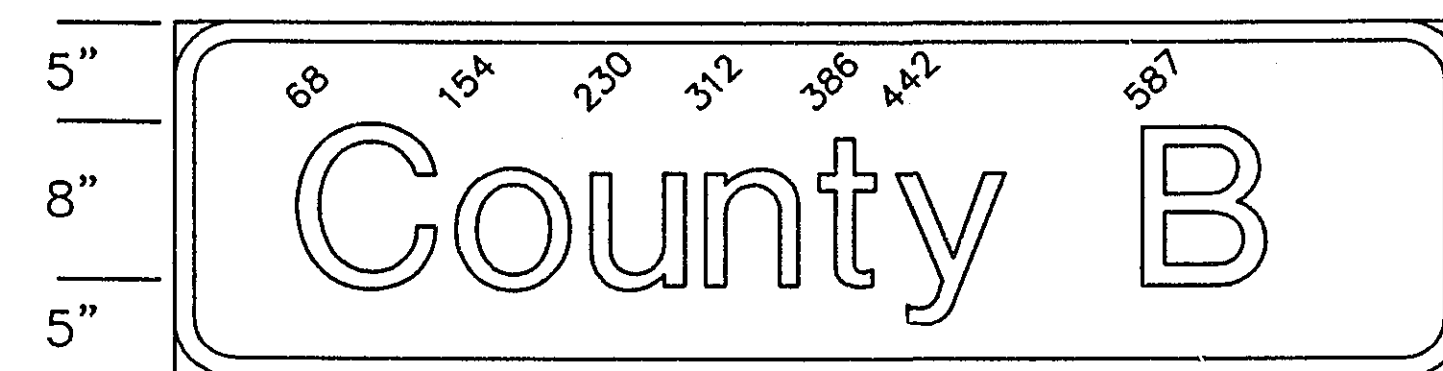
SYSTEM A

S.A.P. No. 160-020-12

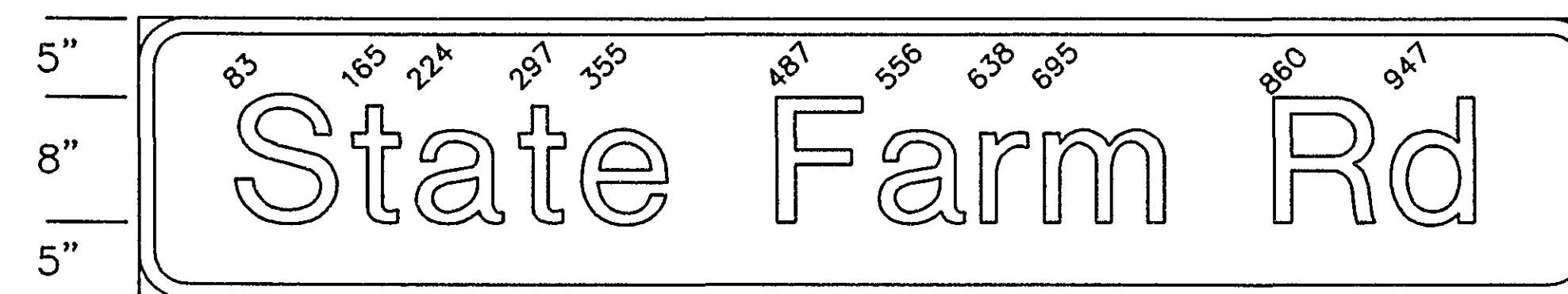
**FOR INFORMATION ONLY** 28-179

S.A.P. No. 62-625-24

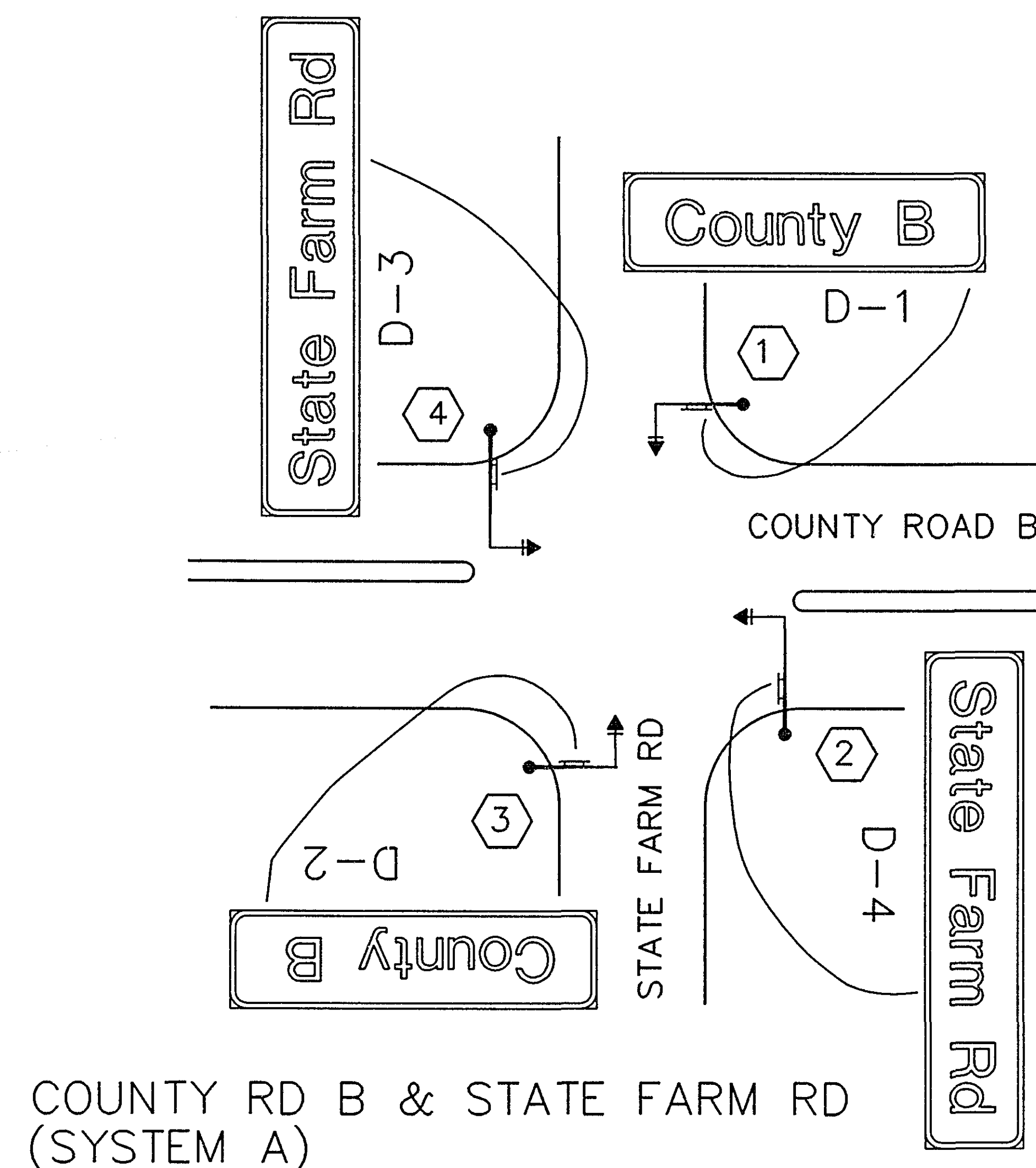
Sheet No. 9 of 16 Sheets



D-1 & D-2  
72" X 18", 3.0 R. 1.0 B  
LINE 1 = 58.35" : 8"-6" "E" MOD.



D-3 & D-4  
108" X 18", 3.0 R. 1.0 B  
LINE 1 = 91.44" : 8"-6" "E" MOD.

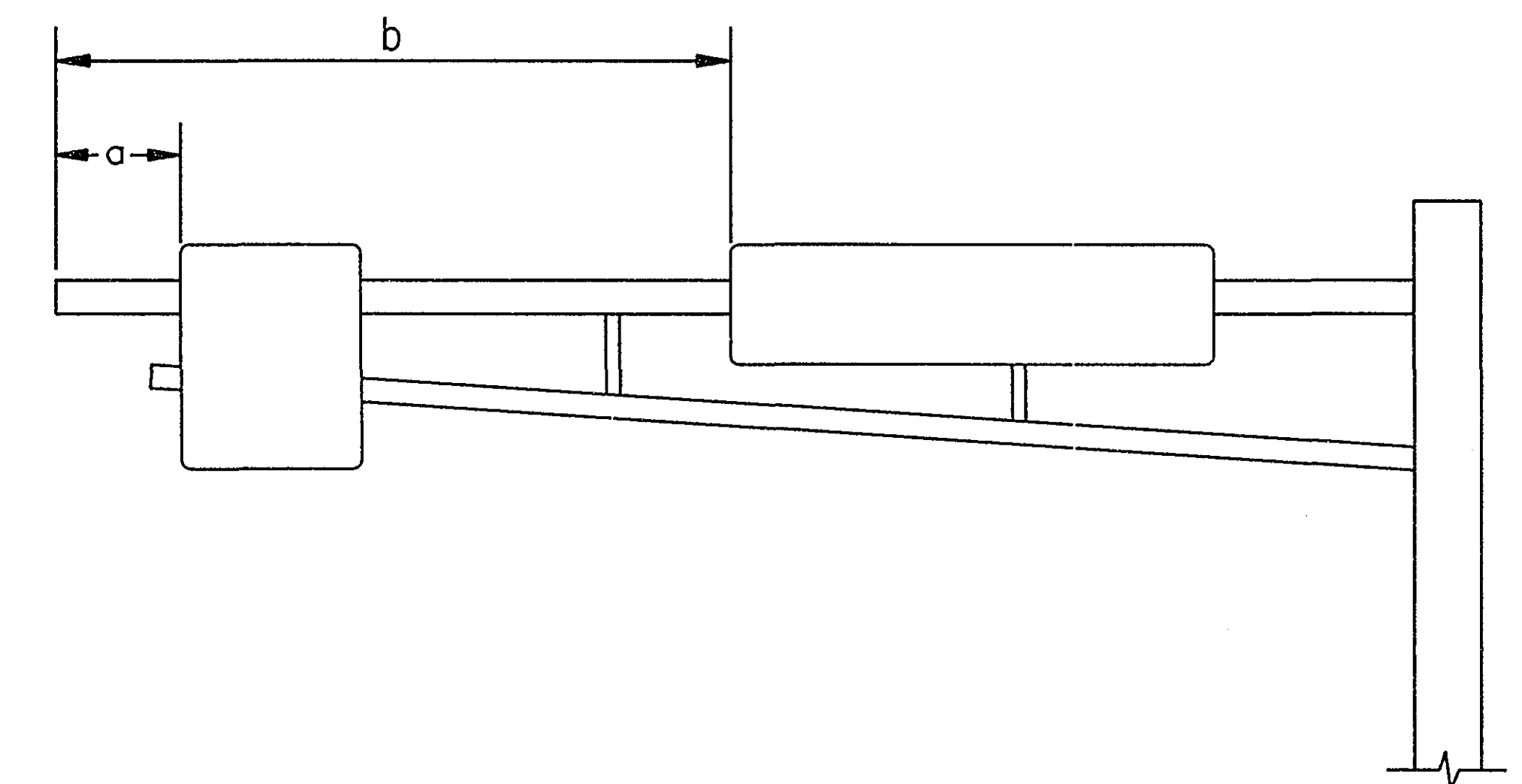


COUNTY RD B & STATE FARM RD  
(SYSTEM A)

| TYPE "D" SIGNS - SIGNALS |            |                   |                   |                 |                     |   |     |                      |
|--------------------------|------------|-------------------|-------------------|-----------------|---------------------|---|-----|----------------------|
| SIGN PANEL               | SIZE       | QUANTITY REQUIRED | BRACKETS PER SIGN | BRACKET SPACING | SQUARE FT. PER SIGN | a | b   | MAST ARM POLE NUMBER |
| D-1                      | 72" x 18"  | 1                 | 2                 | 42"             | 9                   |   | 37' | (A)①                 |
| D-2                      | 72" x 18"  | 1                 | 2                 | 42"             | 9                   |   | 31' | (A)③                 |
| D-3                      | 108" x 18" | 1                 | 3                 | 39"             | 13.5                |   | 8'  | (A)②                 |
| D-4                      | 108" x 18" | 1                 | 3                 | 39"             | 13.5                |   | 8'  | (A)④                 |
|                          |            |                   |                   |                 |                     |   |     |                      |
|                          |            |                   |                   |                 |                     |   |     |                      |
|                          |            |                   |                   |                 |                     |   |     |                      |
|                          |            |                   |                   |                 |                     |   |     |                      |
|                          |            |                   |                   |                 |                     |   |     |                      |
|                          |            |                   |                   |                 |                     |   |     |                      |
|                          |            |                   |                   |                 |                     |   |     |                      |

TOTAL 45

(A) - SYSTEM A



MAST ARM SIGN DIMENSIONING DETAIL

### NOTES:

- COLOR - WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED WITH PRISMATIC LENS REFLECTIVE SHEETING.
- CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
- BOARDERS SHALL BE 1".
- SEE STANDARD SIGN MANUAL FOR ARROW DETAILS
- FOR STRUCTURAL DETAILS, TYPE "D" SIGNS SEE STANDARD SIGNS MANUAL, PAGE 105.
- FOR TYPE "D" STRINGER AND PANEL - JOINT DETAIL, SEE STANDARD SIGNS MANUAL, PAGE 105.
- LETTERING STYLE SHALL BE HIGHWAY GOTHIC CONFORMING TO MN/DOT STANDARDS.

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.  
*Daniel E. Solu*  
Date 8-7-96 Reg. No. 20452

MAST ARM SIGNS  
SYSTEM A 28-179

| SIGNAL INDICATION CHART |       |                 |     |     |     |     |
|-------------------------|-------|-----------------|-----|-----|-----|-----|
| FACE                    | PHASE | INDICATION SIZE |     |     |     |     |
|                         |       | R               | Y   | G   | ←R  | ←Y  |
| 1-1                     | 1     |                 |     |     | 12" | 12" |
| 2-1                     | 2     | 12"             | 12" | 12" |     |     |
| 2-2                     | 2     | 12"             | 12" | 12" |     |     |
| 3-1                     | 3     |                 |     |     | 12" | 12" |
| 4-1                     | 4     | 12"             | 12" | 12" |     |     |
| 4-2                     | 4     | 12"             | 12" | 12" |     |     |
| 5-1                     | 5     |                 |     |     | 12" | 12" |
| 6-1                     | 6     | 12"             | 12" | 12" |     |     |
| 6-2                     | 6     | 12"             | 12" | 12" |     |     |
| 7-1                     | 7     |                 |     |     | 12" | 12" |
| * 8-1                   | 8     | 12"             | 12" | 12" |     |     |
| 8-2                     | 8     | 12"             | 12" | 12" |     |     |

\* SPECIAL SIGNAL FACE

| VEHICLE DETECTION |          |          |          |
|-------------------|----------|----------|----------|
| NO.               | SIZE     | FUNCTION | LOCATION |
| D1-1              | 8'x40'   | C&E      | 0'       |
| D2-1              | 10'x20'  | C&E      | 180'     |
| D2-3              | 10'x20'  | C        | 0        |
| D3-1              | 2-6'x15' | C&E      | 0', 25'  |
| D4-1              | 10'x20'  | C&E      | 135'     |
| D4-3              | 10'x20'  | C        | 0'       |
| D5-1              | 8'x40'   | C&E      | 0'       |
| D6-1              | 10'x20'  | C&E      | 145'     |
| D6-3              | 10'x20'  | C        | 0'       |
| D7-1              | 2-6'x15' | C&E      | 0', 25'  |
| D8-1              | 2-6'x6'  | C&E      | 170'     |
| D8-3              | 2-6'x6'  | C        | 0'       |

NMC

NMC

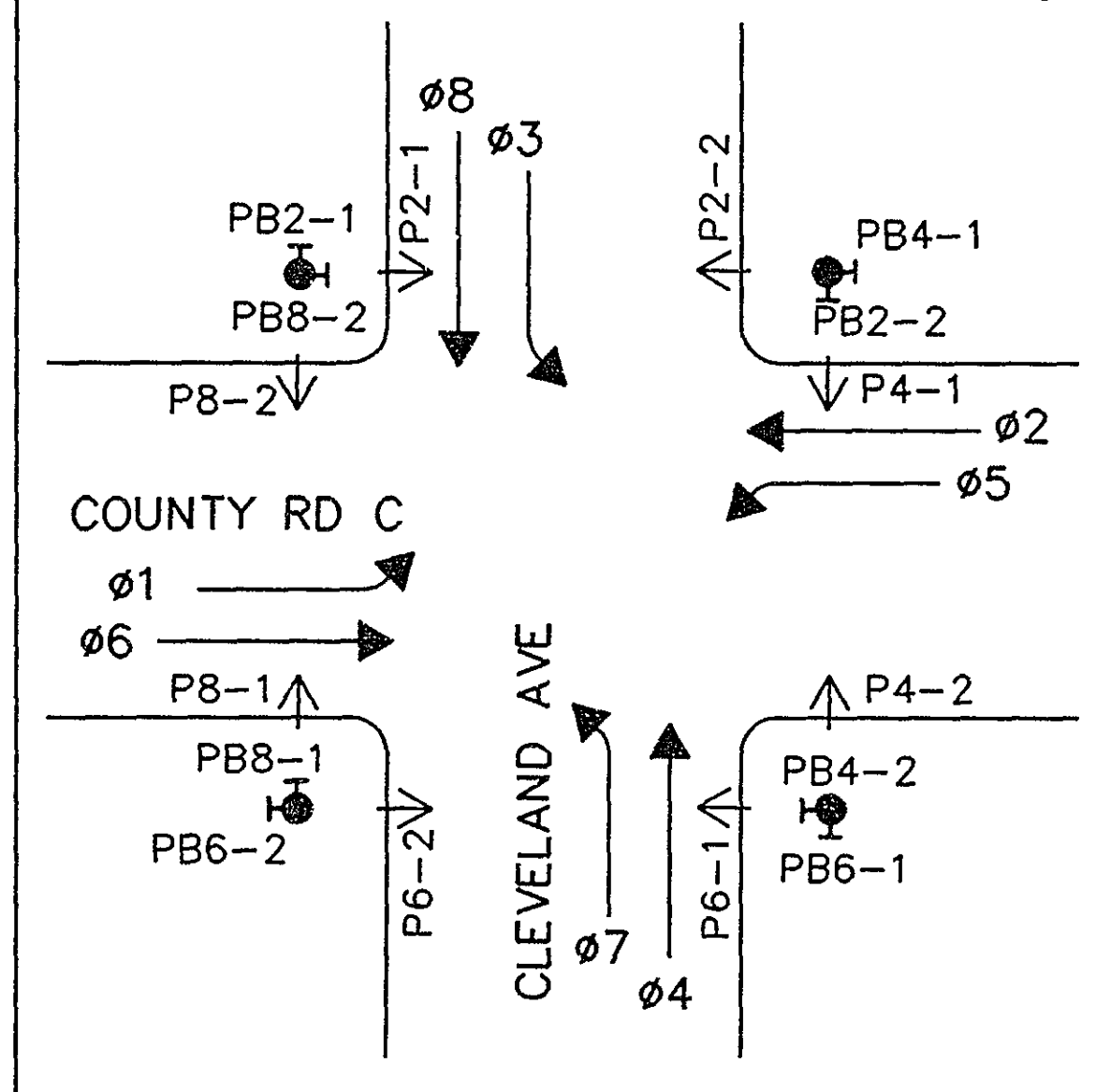
NMC

C&E = CALL & EXTEND  
C = CALL ONLY  
E = EXTEND ONLY  
(TD) = TIME DELAYED  
NMC = NON METALLIC CONDUIT

### SIGNAL SYSTEM OPERATION

THE SIGNAL SYSTEM FLASH MODE IS ALL RED.  
PHASES 1,3,5 & 7 ARE PROTECTED LEFT TURNS.  
PHASES 2 & 6 ARE ON VEHICLE RECALL.  
ALL PHASES ARE LOCK DETECTION.

### CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



- 2 TYPE A-35-T30-15  
LUMINAIRE-200 WATT HPS AT 315'  
2-ONE WAY SIGNALS - OVERHEAD  
TYPE 10C - POLE MOUNTED 270'  
2-PEDESTRIAN PUSH BUTTONS  
SIGN DOWN LIGHT (OVERHEAD MTD)  
ONE WAY EVP DETECTOR AND  
LIGHT OVERHEAD (OVERHEAD MTD)  
EXTEND INTO H.H. 4  
3" RSC  
3-12/C #12  
7-3/C #12  
1-3/C #20  
2-1/C #10

- 3 TYPE A-35  
2-ONE WAY SIGNALS - OVERHEAD  
TYPE 10C - POLE MOUNTED 270'  
2-PEDESTRIAN PUSH BUTTONS  
SIGN DOWN LIGHT (OVERHEAD MTD)  
ONE WAY EVP DETECTOR AND  
LIGHT OVERHEAD (OVERHEAD MTD)  
EXTEND INTO H.H. 8  
3" RSC  
2-12/C #12  
3-3/C #12  
1-3/C #20

- 3" RSC  
2-12/C #12  
3-3/C #12  
3-2/C #14  
1-3/C #20

- 3" RSC  
2-12/C #12  
3-3/C #12  
3-2/C #14  
1-3/C #20

- 1.25" RSC  
1-2/C #14

- 3" RSC  
1-2/C #14

- 3" RSC  
1-2/C #14

- 1.25" RSC  
1-2/C #14

- 4 TYPE A-35-T30-15  
LUMINAIRE-200 WATT HPS AT 315'  
2-ONE WAY SIGNALS - OVERHEAD  
TYPE 10C - POLE MOUNTED 270'  
2-PEDESTRIAN PUSH BUTTONS  
SIGN DOWN LIGHT (OVERHEAD MTD)  
ONE WAY EVP DETECTOR AND  
LIGHT OVERHEAD (OVERHEAD MTD)  
EXTEND INTO H.H. 10  
3" RSC  
2-12/C #12  
3-3/C #12  
1-3/C #20  
1-3/C #20  
2-1/C #10

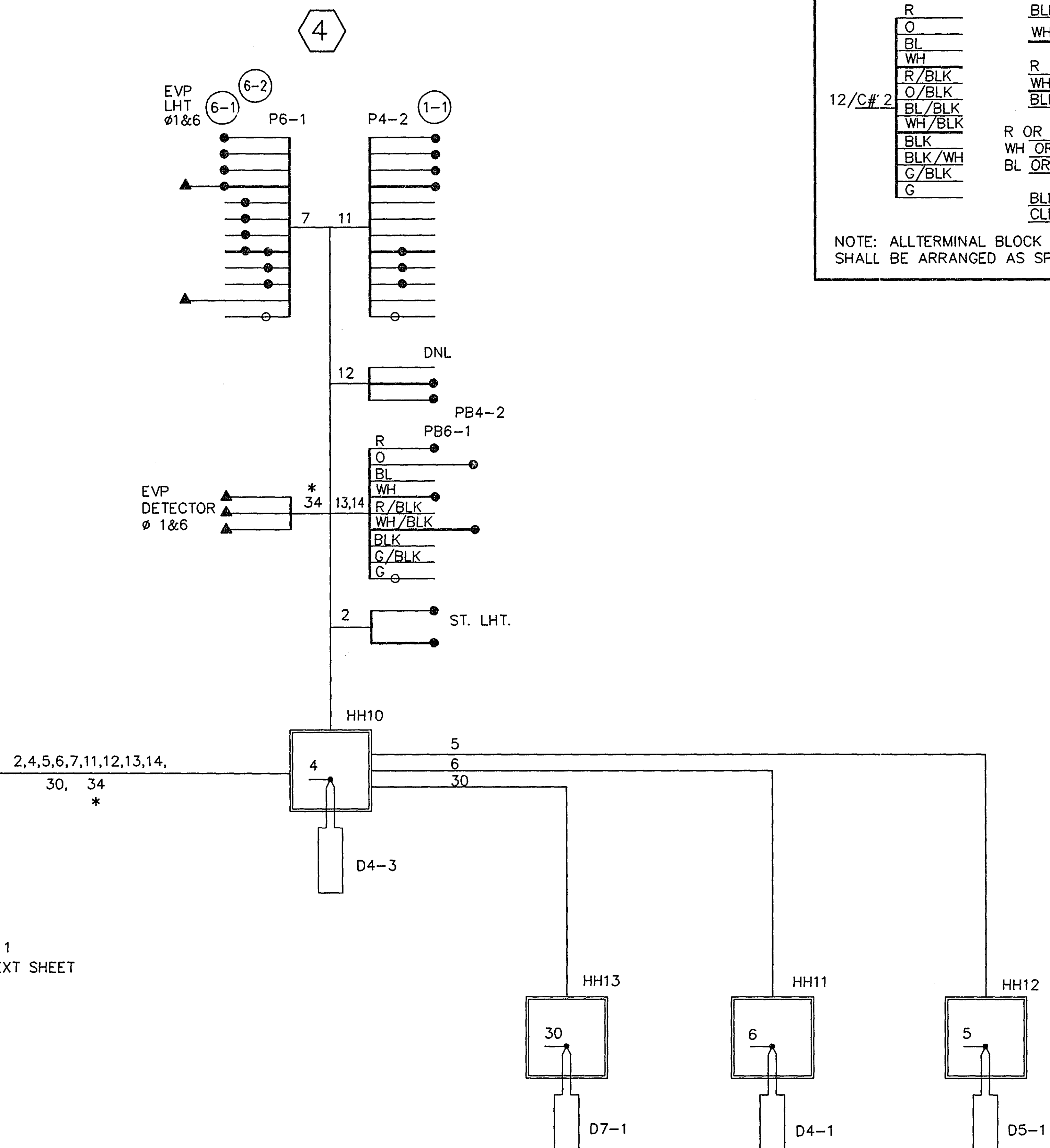
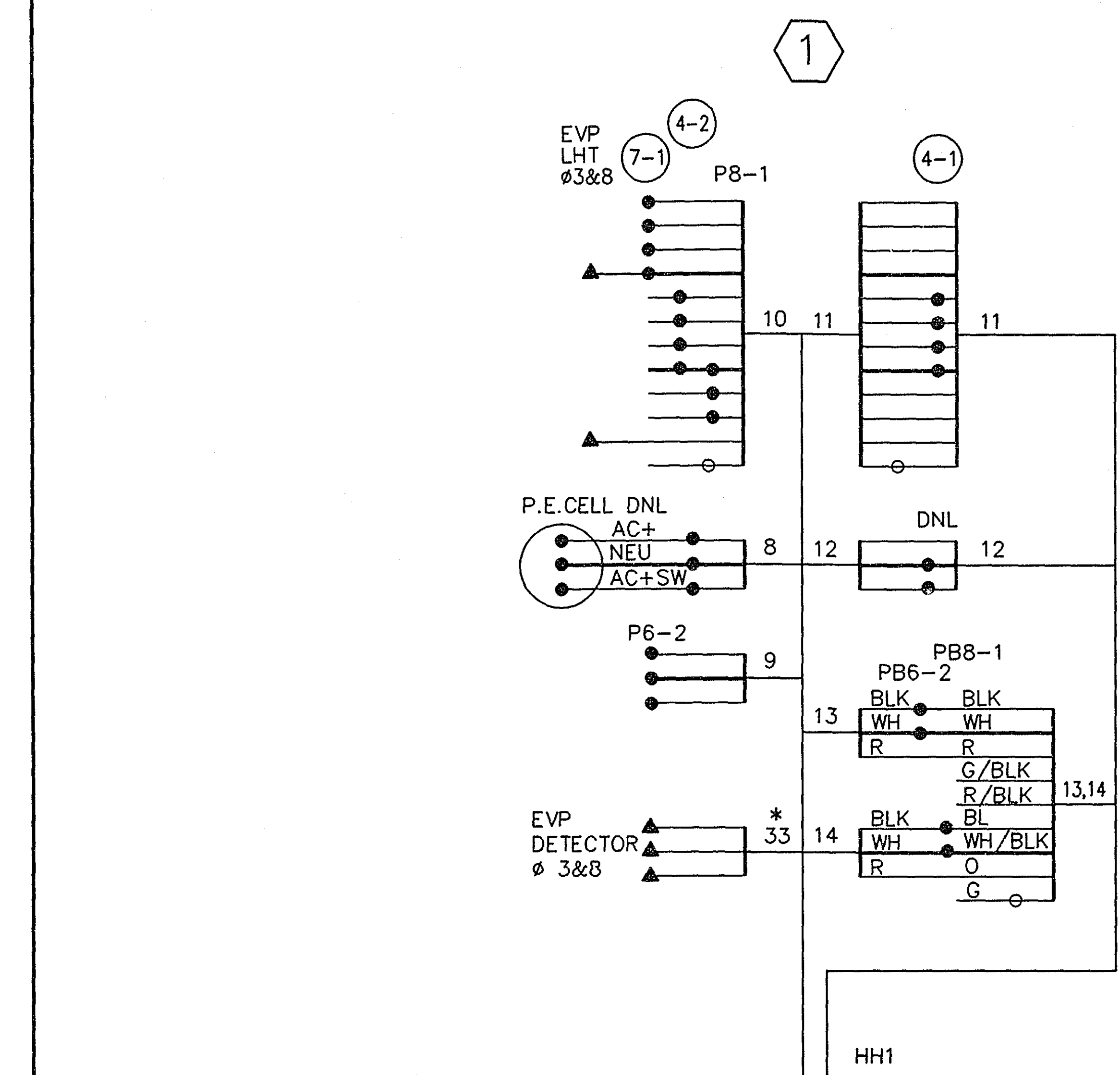
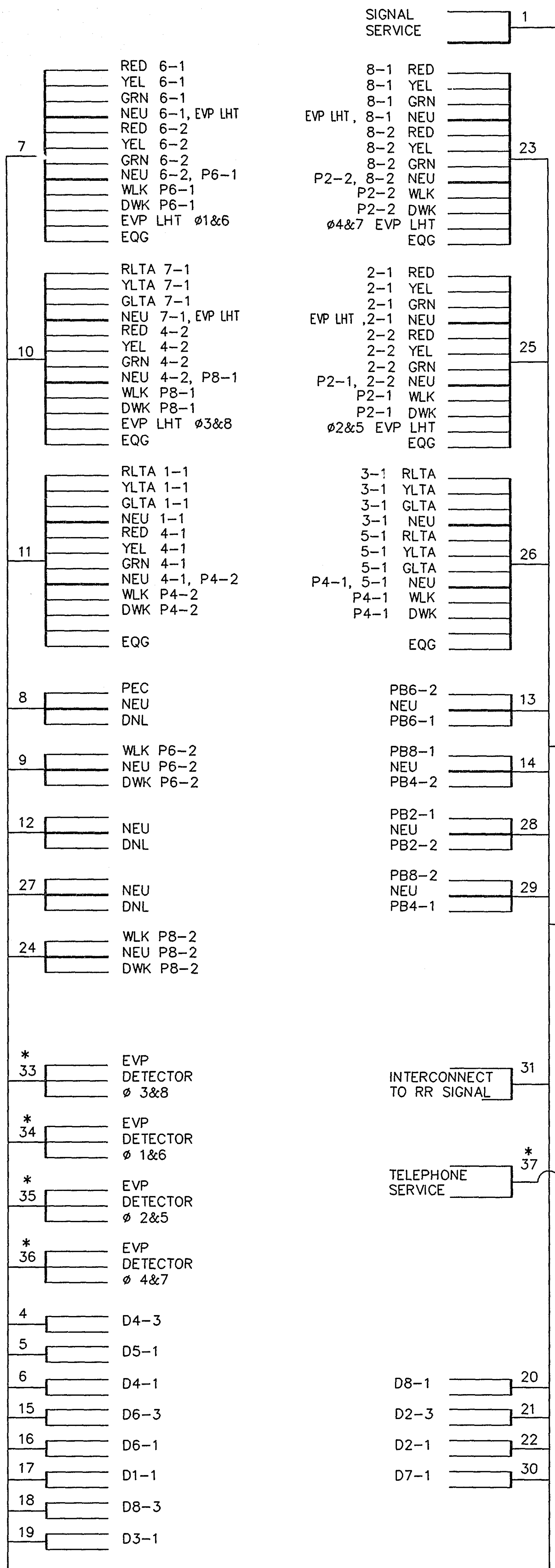
### INTERSECTION LAYOUT COUNTY ROAD C & CLEVELAND AVE SYSTEM B

28-179

S.A.P. No. 160-020-12

Sheet No. 11 of 16 Sheets

# CONTROLLER CABINET



## CONDUCTOR COLOR CODING

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

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

NOTES:

ALL CABLES ARE INPLACE UNLESS OTHERWISE INDICATED.

\* DENOTES NEW CABLE

▲ DENOTES NEW CONNECTION

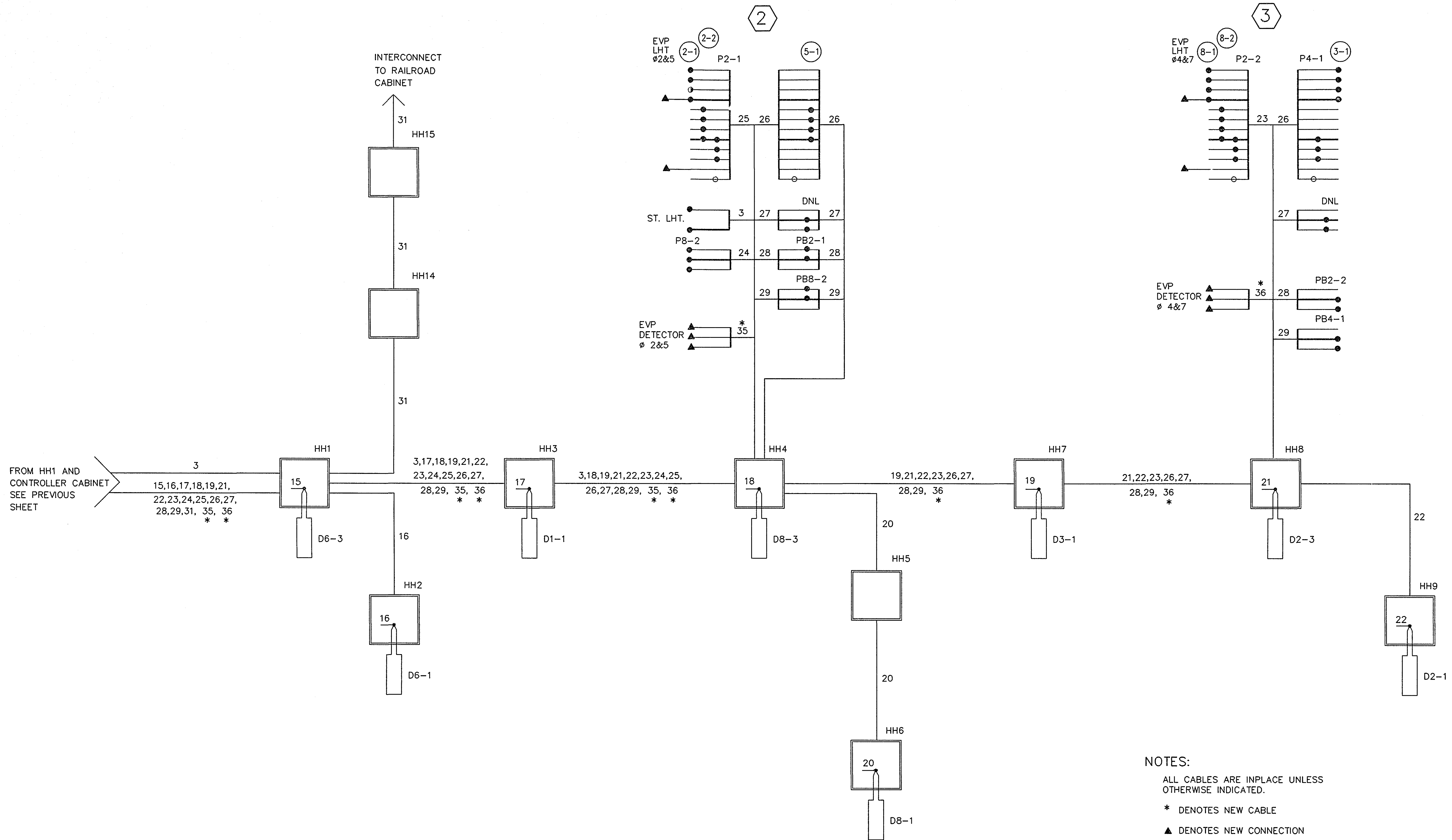
▽ RELABLE AS DIRECTED

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.

*Daniel E. Schu*

Date 8-7-96 Reg. No. 20452

REVISED  
FIELD WIRING DIAGRAM  
COUNTY RAOD C & CLEVELAND AVENUE  
SYSTEM B



NOTES:

ALL CABLES ARE INPLACE UNLESS OTHERWISE INDICATED.

\* DENOTES NEW CABLE

▲ DENOTES NEW CONNECTION

▽ RELABLE AS DIRECTED

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.

*Daniel E. Soler*

Date 8-7-96 Reg. No. 20452

REVISED  
FIELD WIRING DIAGRAM  
COUNTY ROAD C & CLEVELAND AVENUE  
SYSTEM B

| SIGNAL INDICATION CHART |       |                 |     |     |     |     |
|-------------------------|-------|-----------------|-----|-----|-----|-----|
| FACE                    | PHASE | INDICATION SIZE |     |     |     |     |
|                         |       | R               | Y   | G   | ◀R▶ | ◀Y▶ |
| 1-1                     | 1     |                 |     |     | 12" | 12" |
| 2-1                     | 2     | 12"             | 12" | 12" |     |     |
| 2-2                     | 2     | 12"             | 12" | 12" |     |     |
| 3-1                     | 3     |                 |     |     | 12" | 12" |
| 4-1                     | 4     | 12"             | 12" | 12" |     |     |
| 4-2                     | 4     | 12"             | 12" | 12" |     |     |
| 5-1                     | 5     |                 |     |     | 12" | 12" |
| 6-1                     | 6     | 12"             | 12" | 12" |     |     |
| 6-2                     | 6     | 12"             | 12" | 12" |     |     |
| 7-1                     | 7     |                 |     |     | 12" | 12" |
| 8-1                     | 8     | 12"             | 12" | 12" |     |     |
| 8-2                     | 8     | 12"             | 12" | 12" |     |     |

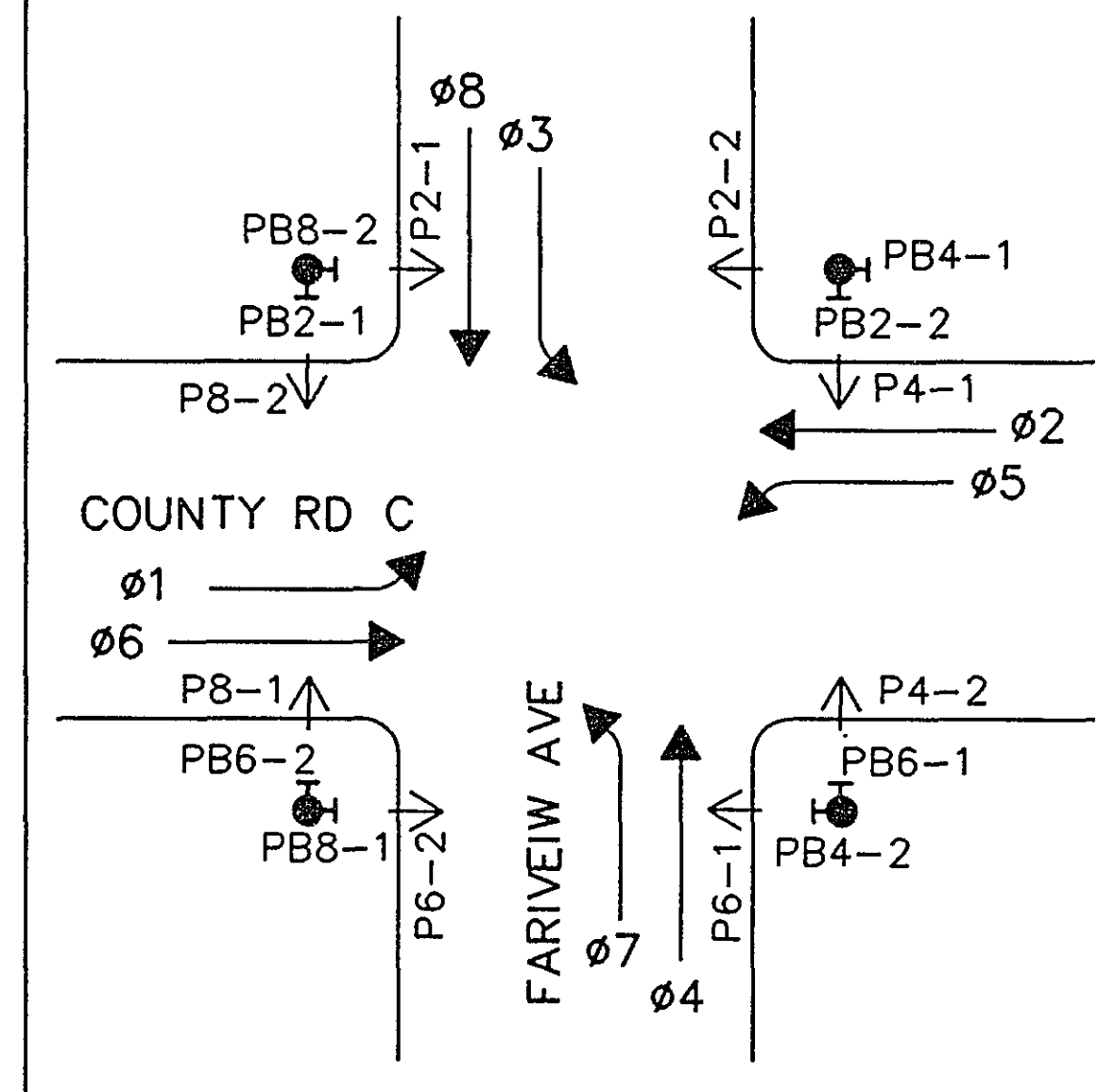
| VEHICLE DETECTION |          |          |          |
|-------------------|----------|----------|----------|
| NO.               | SIZE     | FUNCTION | LOCATION |
| D1-1              | 8'X40'   | C&E      | 0'       |
| D2-1              | 10'X20'  | C&E      | 285'     |
| D2-3              | 10'X20'  | C        | 0        |
| D3-1              | 2-6'X15' | C&E      | 0', 25'  |
| D4-1              | 10'X20'  | C&E      | 300'     |
| D4-3              | 10'X20'  | C        | 0'       |
| D5-1              | 8'X40'   | C&E      | 0'       |
| D6-1              | 10'X20'  | C&E      | 285'     |
| D6-3              | 10'X20'  | C        | 0'       |
| D7-1              | 8'X30'   | C&E      | 0', 25'  |
| D8-1              | 2-6'X6'  | C&E      | 290'     |
| D8-3              | 2-6'X6'  | C        | 0'       |

C&E = CALL & EXTEND  
C = CALL ONLY  
E = EXTEND ONLY  
(TD) = TIME DELAYED

#### SIGNAL SYSTEM OPERATION

THE SIGNAL SYSTEM FLASH MODE IS ALL RED.  
PHASES 1,3,5 & 7 ARE PROTECTED LEFT TURNS.  
PHASES 2 & 6 ARE ON VEHICLE RECALL.  
ALL PHASES ARE LOCK DETECTION.

#### CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



- ④ TYPE A-35  
2-ONE WAY SIGNALS - OVERHEAD  
TYPE 10B - POLE MOUNTED 225'  
TYPE 30A - POLE MOUNTED 45'  
2-PEDESTRIAN PUSH BUTTONS  
SIGN DOWN LIGHT (OVERHEAD MTD)  
ONE WAY EVP DETECTOR AND  
LIGHT OVERHEAD (OVERHEAD MTD)  
EXTEND INTO H.H. 10  
3" RSC  
2-12/C #12  
3-3/C #12  
3-2/C #14  
3-3/C #12  
▶ F&I 1-3/C #20

- 3" RSC  
2-12/C #12  
3-3/C #12  
4-2/C #14  
▶ F&I 1-3/C #20

- 3" RSC  
2-12/C #12  
3-3/C #12  
3-2/C #14  
▶ F&I 1-3/C #20

- 3" RSC  
1-2/C #14

- 3" RSC  
2-12/C #12  
4-3/C #12  
1-2/C #14  
2-1/C #10  
▶ F&I 1-3/C #20

- EXTEND INTO  
RR CABINET  
1.25" RSC  
1-3/C #12

- ③ TYPE A-35-T30-15  
LUMINAIRE-200 WATT HPS AT 315'  
2-ONE WAY SIGNALS - OVERHEAD  
TYPE 10C - POLE MOUNTED 270'  
2-PEDESTRIAN PUSH BUTTONS  
SIGN DOWN LIGHT (OVERHEAD MTD)  
ONE WAY EVP DETECTOR AND  
LIGHT OVERHEAD (OVERHEAD MTD)  
EXTEND INTO H.H. 7  
3" RSC  
2-12/C #12  
3-3/C #12  
1-3/C #20  
2-1/C #10  
▶ F&I

- ① TYPE A-35-T30-15  
LUMINAIRE-200 WATT HPS AT 315'  
2-ONE WAY SIGNALS - OVERHEAD  
TYPE 10C - POLE MOUNTED 270'  
2-PEDESTRIAN PUSH BUTTONS  
SIGN DOWN LIGHT (OVERHEAD MTD)  
ONE WAY EVP DETECTOR AND  
LIGHT OVERHEAD (OVERHEAD MTD)  
EXTEND INTO H.H. 1  
3" RSC  
3-12/C #12  
7-3/C #12  
▶ F&I 1-3/C #20  
2-1/C #10

- S.O.P. - (NSP TRANSFORMER)  
EXTEND INTO SERVICE CABINET  
2" RSC  
3-1/C #4

- 4" RSC  
3-12/C #12  
6-3/C #12  
5-2/C #14  
2-1/C #10  
▶ F&I 2-3/C #20

- 1.25" RSC  
1-2/C #14

- 4" RSC  
3-12/C #12  
6-3/C #12  
4-2/C #14  
2-1/C #10  
▶ F&I 2-3/C #20

- 3" RSC  
2-12/C #12  
4-3/C #12  
2-2/C #14  
2-1/C #10  
▶ F&I 1-3/C #20

- 1.25" RSC  
1-2/C #14

- ② TYPE A-35  
2-ONE WAY SIGNALS - OVERHEAD  
TYPE 10B - POLE MOUNTED 180'  
TYPE 30A - POLE MOUNTED 90'  
2-PEDESTRIAN PUSH BUTTONS  
SIGN DOWN LIGHT (OVERHEAD MTD)  
PHOTOELECTRIC CELL (DNL)  
ONE WAY EVP DETECTOR AND  
LIGHT OVERHEAD (OVERHEAD MTD)  
EXTEND INTO H.H. 4  
3" RSC  
3-12/C #12  
8-3/C #12  
▶ F&I 1-3/C #20

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.  
*Daniel E. Schu*  
Date 8-7-96 Reg. No. 20452

SCALE IN FEET  
0 10 20 30 40 50 100

#### NOTES:

- THE COUNTY SHALL FURNISH TO THE CONTRACTOR CONTROLLER CABINET AND ASSOCIATED CONTROL EQUIPMENT. (SEE SPECIAL PROVISIONS).
- ALL PEDESTRIAN INDICATIONS ARE 12"x12"
- EACH LUMINAIRE HAS A PHOTO ELECTRIC CELL AND STREET LIGHT CHECK SWITCH.
- HANDHOLE 1 IS TWO HANDHOLES PLACED SIDE BY SIDE WITH 4" RSC BETWEEN.
- ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE USED INPLACE UNLESS OTHERWISE NOTED WITH A ▶ = WORK TO BE DONE THIS SHEET ONLY).
- ALL ITEMS ARE INPLACE AND SHALL BE USED INPLACE UNLESS OTHERWISE SPECIFIED AS FOLLOWS:  
- R&S (REMOVE AND SALVAGE)  
- F&I (FURNISH AND INSTALL)
- TEMPORARY ALL RED FLASHING OPERATION DURING REVISION WORK. SEE SPECIAL PROVISIONS.

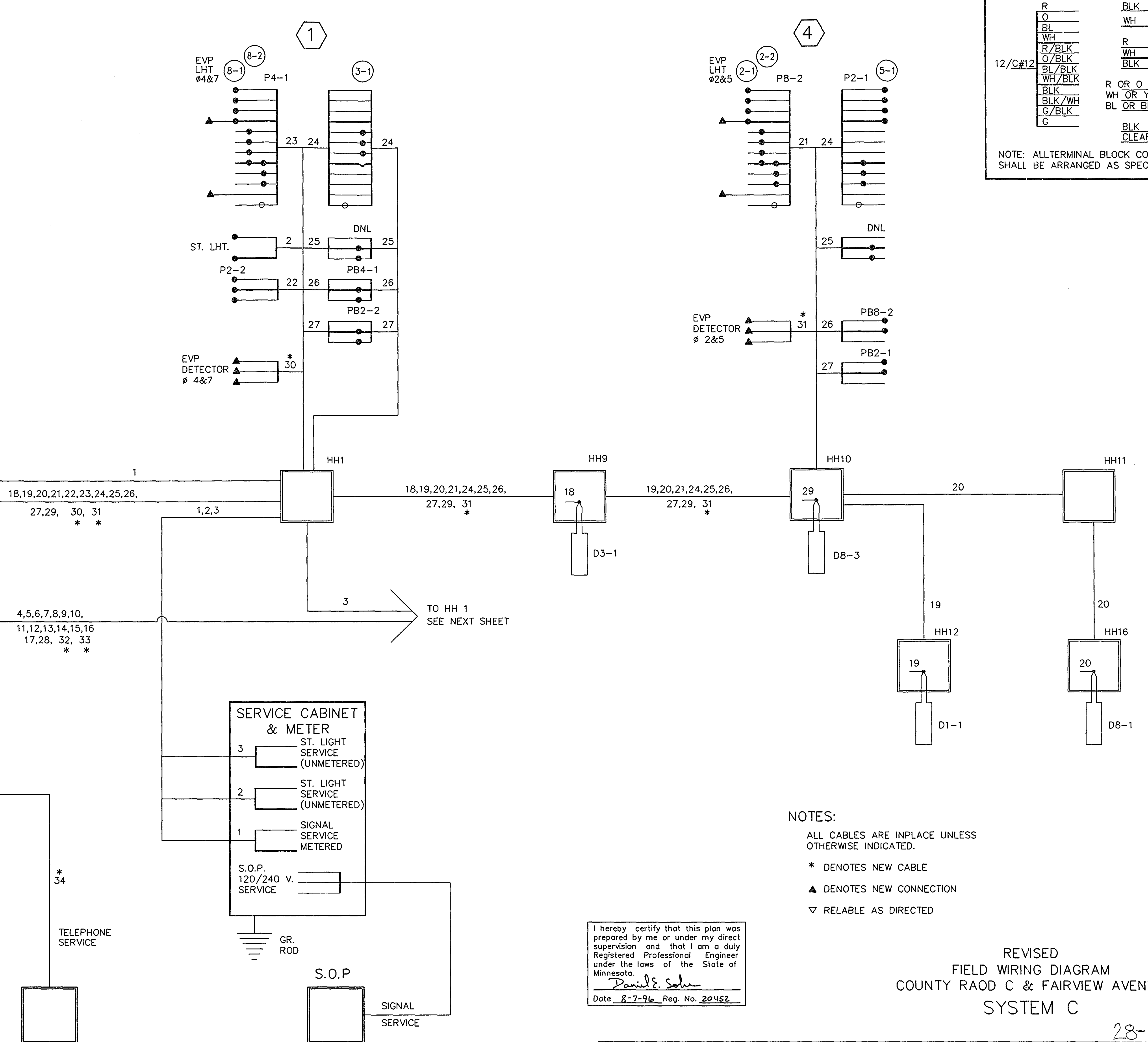
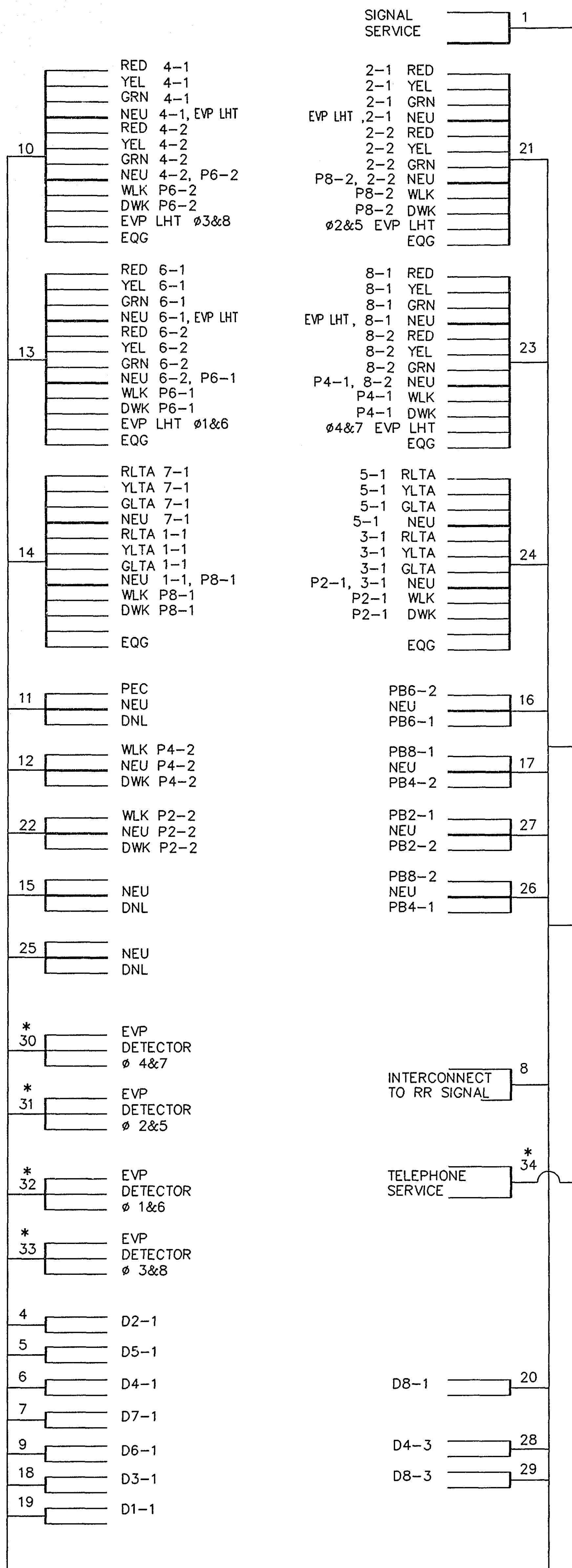
INTERSECTION LAYOUT  
COUNTY ROAD C & FARVIEW AVENUE  
SYSTEM C

S.A.P. No. 160-020-12

Sheet No. 14 of 16 Sheets

28-179

# CONTROLLER CABINET



### CONDUCTOR COLOR CODING

Diagram of a 12/C#12 guitar neck showing fret positions for R, O, BL, WH, and G strings. The fret numbers are: R (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12), O (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12), BL (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12), WH (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12), and G (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12). The fret numbers are written in a stylized font.

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

NOTES:

ALL CABLES ARE INPLACE UNLESS OTHERWISE INDICATED.

\* DENOTES NEW CABLE

▲ DENOTES NEW CONNECTION

▽ RELABLE AS DIRECTED

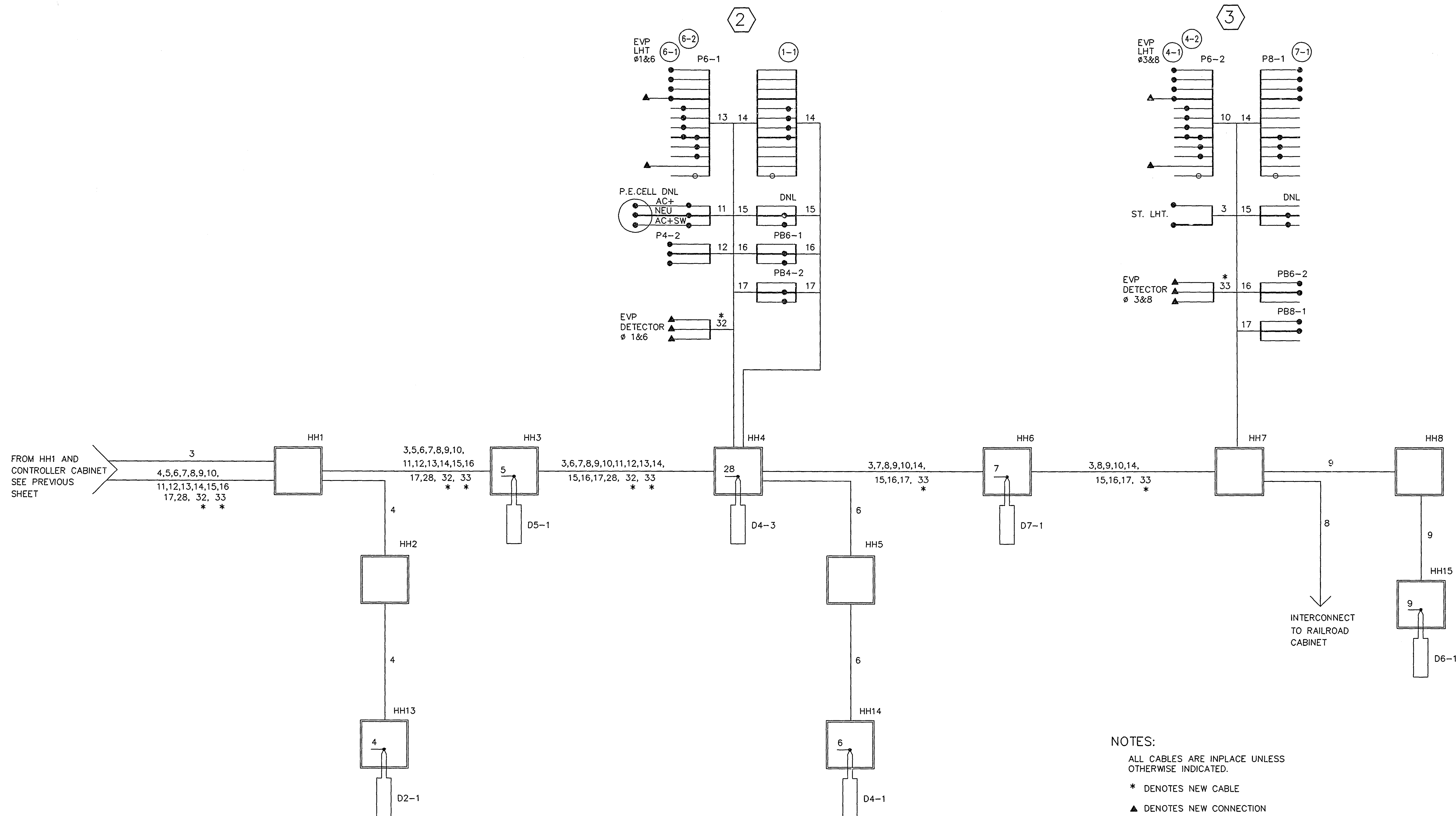
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Daniel E. Sohn

Date 8-7-96 Reg. No. 20452

REVISED  
FIELD WIRING DIAGRAM  
COUNTY ROAD C & FAIRVIEW AVENUE  
SYSTEM C

28-170



NOTES:

ALL CABLES ARE INPLACE UNLESS OTHERWISE INDICATED.

\* DENOTES NEW CABLE

▲ DENOTES NEW CONNECTION

▽ RELABLE AS DIRECTED

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.  
*Daniel C. Schu*  
 Date 8-7-96 Reg. No. 20482

REVISED  
 FIELD WIRING DIAGRAM  
 COUNTY ROAD C & FAIRVIEW AVENUE  
 SYSTEM C