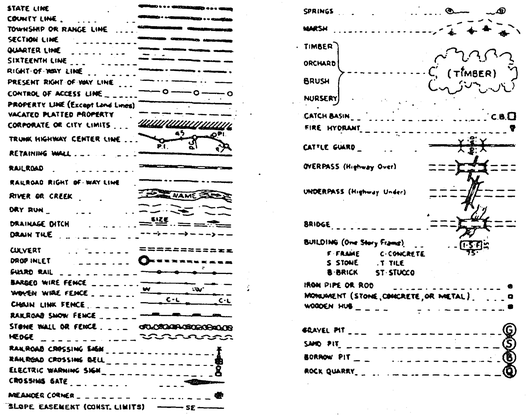
DRAWING

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER 07349

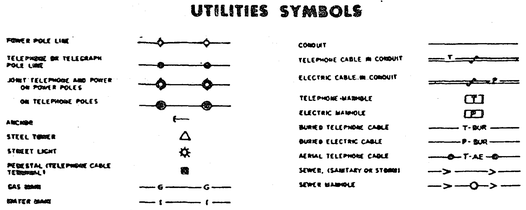
DRAWING NUMBER
23-144

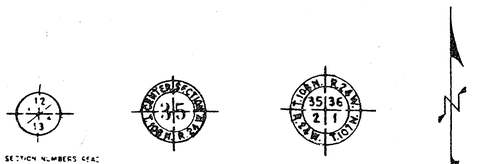
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER 07349

## PLANS SYMBOLS




## UTILITIES SYMBOLS



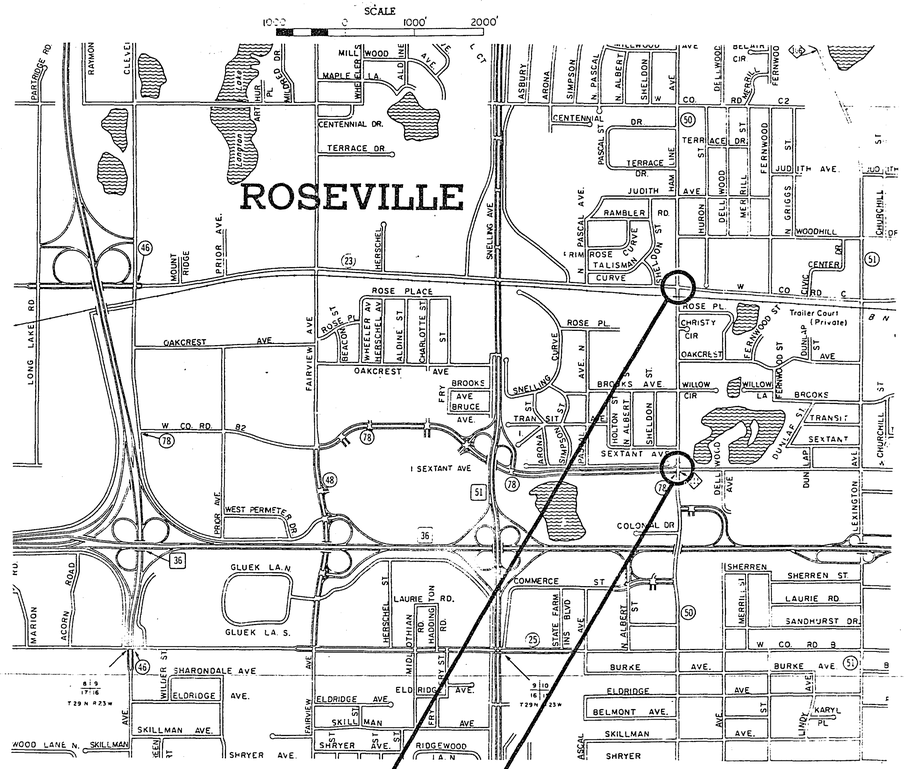




### PIT DATA

PIT NO. _____ Located in _____
Dead Haul _____

PIT NO. _____ Located in _____
Dead Haul _____

THE 1963 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.




**SYSTEM A**
**HAMLINE AVE. & COUNTY RD. B2**

**SYSTEM B**
**HAMLINE AVE. & COUNTY RD. C**

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: JPH
DATE: 1-26-90

# RAMSEY COUNTY
## DEPARTMENT OF PUBLIC WORKS

**CONSTRUCTION PLAN FOR TRAFFIC CONTROL SIGNAL SYSTEMS**
**LOCATED AT :**

**HAMLINE AVE. & COUNTY RD. B2 ..... SYSTEM A**

**HAMLINE AVE. & COUNTY RD. C ..... SYSTEM B**

# S.A.P. NO. 62-650-03

INDEX


| SHEET NO. | DESCRIPTION |
|---|---|
| 1 | TITLE |
| 2-3 | DETAILS |
| 4-6 | SYSTEM A |
| 7-9 | SYSTEM B |
| 10-11 | UTILITIES |


DESIGN SQUAD R. Ulrich DATE 7/21/88
DRAWN BY _____ DATE _____
CHECKED BY _____ DATE _____

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 8/4/88 REG. NO. 12703 ENGR. Paul Kirkhuff

RECOMMENDED FOR APPROVAL DES TRAFFIC ENGR. DATE 7/26/88
RECOMMENDED FOR APPROVAL _____ ENGR. DATE 7/26/88
RECOMMENDED FOR APPROVAL DPA MAINT. ENGR. DATE 7/26/88
RECOMMENDED FOR APPROVAL RHPLKF CONST. ENGR. DATE 7/27/88
RECOMMENDED FOR APPROVAL DLR DESIGN ENGR. DATE 7/28/88
RECOMMENDED FOR APPROVAL JAB SYSTEM ENGR. DATE 8-1-88
APPROVED Myron Swanson COMMISSIONER ENGR. DATE 8-5-88

RECOMMENDED FOR APPROVAL Kenneth W. Haider COUNTY ENGINEER DATE 8/5/88
APPROVED Harold A. Ingard CHAIR OF THE RAMSEY COUNTY BOARD DATE 8/9/88
APPROVED Glen D. Hafdahl CITY OF ROSEVILLE DATE 8/16/88
APPROVED _____ DATE _____

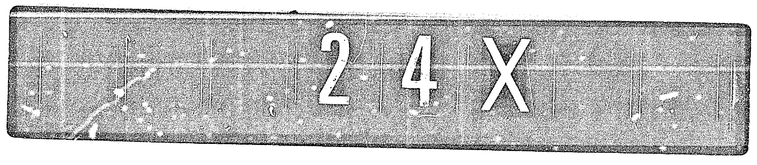
MINNESOTA DEPARTMENT OF TRANSPORTATION
RECOMMENDED FOR APPROVAL Julie Skallman STATE AID PLANS & SPEC ENGR. DATE 8/29/88
RECOMMENDED FOR APPROVAL Robert M. Jones DISTRICT STATE AID ENGINEER DATE 8/17/88
RECOMMENDED FOR APPROVAL Glen C. Carlson MN/DOT TRAFFIC ENGINEER DATE 8/29/88
DH for L.G. Eilts
APPROVED Gordon M. Fay STATE AID ENGINEER DATE 8/30/88

| PLAN REVISIONS | | |
|---|---|---|
| DATE | SHEET NO. | BY |
| | | |
| | | |
| | | |
| | | |

S.A.P. No. 62-650-03 **Sheet No. 1 of 11 Sheets**

23-144

NUMBER
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER 07349




23-144 Hamline Avenue & Co Rd B2
Hamline Avenue & Co Rd C 1-11

DRAWING
PLAN HOLD CORPORATION
REDRAWN BY NU
DRAWING NUMBER
23-144
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REDRAWN BY NUMBER 07564
DRAWING NUMBER
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REDRAWN BY NUMBER 07564
NUMBER
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REDRAWN BY NUMBER 07564

# ABBREVIATIONS

| | |
|---|---|
| YEL | - YELLOW |
| GRN | - GREEN |
| WLK | - WALK |
| NEU | - NEUTRAL |
| DWK | - DON'T WALK |
| LUM | - LUMINAIRE |
| DNL | - DOWNLIGHT |
| SW | - SWITCH |
| SWD | - SWITCHED |
| CH.SW. | - CHECK SWITCH |
| H.H. | - HANDHOLE |
| J.B. | - JUNCTION BOX |
| GR.R. | - GROUND ROD |
| SERV. | - SERVICE |
| —●— | - SPLICE |
| THA | - THRU ARROW |
| LTA | - LEFT TURN ARROW |
| RTA | - RIGHT TURN ARROW |
| TRA | - THRU AND RIGHT ARROW |
| RTHA (EG) | - THRU ARROW - RED |
| GLTA (EG) | - LEFT TURN ARROW - GREEN |
| YRTA (EG) | - RIGHT TURN ARROW - YELLOW |
| P1-1 (EG) | - PEDESTRIAN INDICATIONS - PHASE "1" |
| PB2-2 (EG) | - PUSH BUTTON - PHASE "2" |
| 3-2 (EG) | - SIGNAL HEADS - PHASE "3" |
| D1-2 | - DETECTOR - PHASE "1" |
| P.E.C. | - PHOTOELECTRIC CELL |
| ST.LHT. | - STREET LIGHT |
| S.O.P. | - SOURCE OF POWER |
| EQG | - EQUIPMENT GROUND |
| SPR | - SPARE CONDUCTORS |
| R.S.C. | - RIGID STEEL CONDUIT |
| N.M.C. | - NON METALLIC CONDUIT |
| E.V.P. | - EMERGENCY VEHICLE PRE-EMPTION |
| —⊖— | - EQG CONNECTION |
| TDW | - TELEPHONE DROP WIRE |

| | |
|---|---|
| F&I | - FURNISH AND INSTALL |
| R&S | - REMOVE AND SALVAGE |
| FL | - FLASH/FLASHING |
| 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 |
| CLR. | - CLEAR |
| BR.GR. | - BARE GROUND |

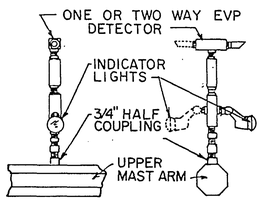
| | |
|---|---|
| H.P.S. | - HIGH PRESSURE SODIUM |
| ⇉ | - EVP DETECTOR DIRECTION |
| (3) | - SIGNAL BASE NO. |
| (1-1) | - SIGNAL FACE NO. |
| (4) | - LUMINAIRE NO. |

## STANDARD PLATES

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.

| | PLATE NO. | DESCRIPTION |
|---|---|---|
| * | 0004 A | SPECIFICATION REFERENCE TO STANDARD PLATES |
| * | 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 H | POLE FOUNDATION (P-80 & P-90) |
| * | 8121 B | TRANSFORMER BASE WITH POLE BASE PLATE |
| | 8222 C | PEDESTAL AND PEDESTAL BASE |
| * | 8123 B | POLE AND MAST ARM (LUMINAIRE AND TRAFFIC LIGHTS) |
| * | 8124 D | MAST ARM SIGNAL HEAD MOUNTS |
| | 8126 C | P-100 POLE FOUNDATION |
| * | 8130 D | SAW CUT LOOP DETECTORS |

* STANDARD PLATES APPLICABLE TO THIS PROJECT.




EVP DETECTOR & LIGHT MOUNTING DETAIL ON MAST ARM

## STATEMENT OF ESTIMATED QUANTITIES

| ITEM NO. | ITEM | UNIT | ESTIMATED QUANTITY | PARTICIPATION (%) C.S.A.H. | COUNTY R & B | CITY |
|---|---|---|---|---|---|---|
| 2565.511 | FULL T ACT T CONTROL SIGNAL SYSTEM A | SIG SYS | 1 | 75 | 25 | - |
| 2565.511 | FULL T ACT T CONTROL SIGNAL SYSTEM B | SIG SYS | 1 | 100 | - | - |
| 0565.604 | EMERGENCY VEHICLE PRE-EMPTION SYSTEM A | SYSTEM | 1 | - | - | 100 |
| 0565.604 | EMERGENCY VEHICLE PRE-EMPTION SYSTEM B | SYSTEM | 1 | - | - | 100 |

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.
Paul Hill
Date 8/4/89 Reg. No. 12703

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: JPH
DATE: 1-26-90

## ESTIMATED QUANTITIES

S.A.P. No 62-650-03 Sheet No. 2 of 11 Sheets

23-144

24X

23-144 Hamline Avenue & Co Rd B2
Hamline Avenue & Co Rd C 1-11

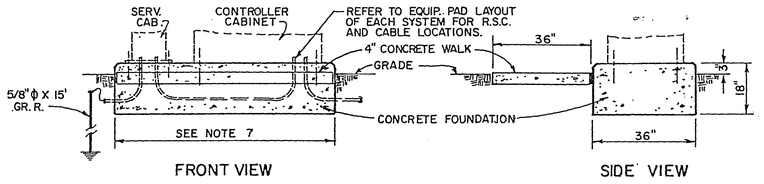
DRAWING NUMBER 23-144

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER 670541

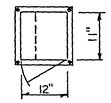
# EQUIPMENT PAD FOUNDATION

NOTES:

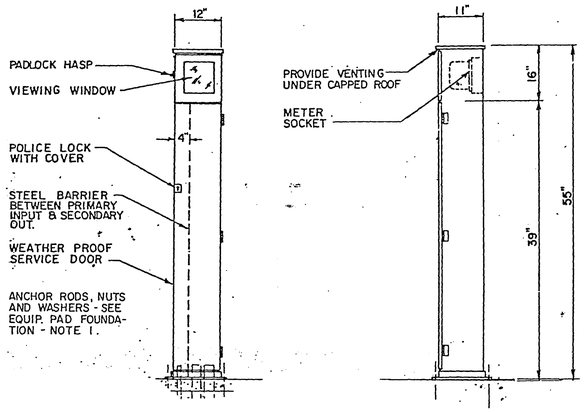
1. ANCHOR RODS, NUTS AND WASHERS PER MN/DOT 3385 OR APPROVED EQUAL SET AS RECOMMENDED BY CABINET MANUFACTURER (NUMBER, SIZE AND LENGTH OF ANCHOR RODS) SHALL BE AS REQUIRED BY THE CABINET (MANUFACTURER.)
2. UPPER PART OF FOUNDATION SHALL BE BEVELED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER IN THE FIELD.
3. 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. (SUPPORTING MEMBERS, ETC.)
4. CONCRETE MIX 3A32 OR EQUAL SHALL BE USED FOR FOUNDATION AND CONCRETE WALK.
5. CONDUITS WHICH HAVE BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT BE INSTALLED BELOW THE CONCRETE.
6. EXACT LOCATIONS OF CONDUIT WITHIN THE PAD SHALL BE AS DETERMINED BY THE ENGINEER IN THE FIELD.
7. REFER TO EQUIPMENT PAD LAYOUT OF EACH SYSTEM FOR FOUNDATION SIZE, CONDUIT PLACEMENT AND EQUIPMENT TO BE INSTALLED.



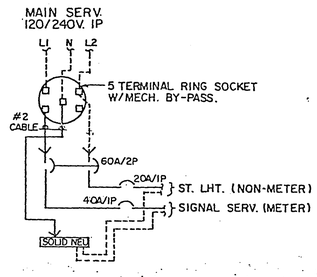

# SERVICE CABINET DETAILS




PLAN VIEW

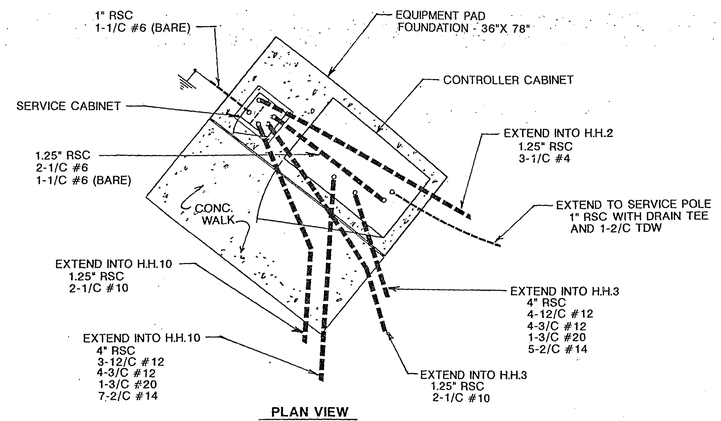



FRONT VIEW SIDE VIEW



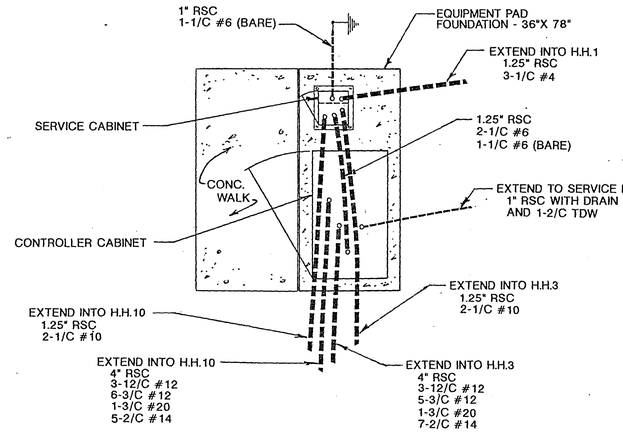

SERVICE CABINET WIRING DIAGRAM

## HAMLINE AVE. & COUNTY ROAD B2
## SYSTEM A




PLAN VIEW

## HAMLINE AVE. & COUNTY ROAD C
## SYSTEM B




PLAN VIEW

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.

Date 8/4/11 Reg. No. 12703

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: JPH
DATE: 1-26-90

# EQUIPMENT PAD DETAILS

S.A.P. No 62-650-03 Sheet No. 3 of 11 Sheets

23-144

24X

23-144 Hamline Avenue & Co Rd B2
Hamline Avenue & Co Rd C
1-11

DRAWING

PLAN HOLD CORPORATION REORDER BY NO.

DRAWING NUMBER 23-144

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA REORDER BY NUMBER ABOVE

DRAWING NUMBER

V • IRVINE, CALIFORNIA

; NUMBER

## NOTES:

1. POLE AND DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGINEER PRIOR TO INSTALLATION.
2. THE COUNTY SHALL FURNISH TO THE CONTRACTOR EVP DETECTORS AND ASSOCIATED CONTROL EQUIPMENT (SEE SPECIAL PROVISIONS).
3. A 3/4 INCH HALF COUPLING SHALL BE FURNISHED APPROX. 2 FT. AND 4 FT. FROM END OF THE MAST ON EACH POLE PER MN/DOT 2565.2H
4. ALL PEDESTRIAN INDICATIONS SHALL BE 12"X12".
5. HANDHOLES 15-11-3-6 ARE INPLACE WITH 3" RSC BETWEEN AND HANDHOLES 11-12 AND 15-16 ARE INPLACE WITH 1.25"RSC BETWEEN. USE INPLACE. H.H.6 HAS HD COVER.
6. ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS EXCEPT SIGNALS FACES 2-3,4-3,6-3 AND 8-3.
7. EACH LUMINAIRE SHALL HAVE A PHOTO ELECTRIC CELL AND STREET LIGHT CHECK SWITCH.

### SIGNAL INDICATION CHART

| FACE | PHASE | INDICATION SIZE R | Y | G | ←Y | ←G |
|---|---|---|---|---|---|---|
| 2-1 | 2 | 12" | 12" | 12" | – | – |
| 2-2 | 2 | 12" | 12" | 12" | – | – |
| 2-3 | 2 | 12" | 12" | 12" | – | – |
| 4-1 | 4 | 12" | 12" | 12" | – | – |
| 4-2 | 4 | 12" | 12" | 12" | – | – |
| 4-3 | 4 | 12" | 12" | 12" | – | – |
| 8-1 | 8 | 12" | 12" | 12" | – | – |
| 8-2 | 8 | 12" | 12" | 12" | – | – |
| 8-3 | 8 | 12" | 12" | 12" | – | – |
| 6-1 | 6 | 12" | 12" | 12" | – | – |
| 6-2 | 1 and 6 | 12" | 12" | 12" | 12" | 12" |
| 6-3 | 1 and 6 | 12" | 12" | 12" | 12" | 12" |

FLASH MODE = ALL RED

### VEHICLE DETECTION

| NO | SIZE | OPERATION | LOC |
|---|---|---|---|
| D1-1 | 6'X20' | C (TD) | 25' |
| D1-2 | 6'X6' | E | SEE PLAN |
| D2-1 | 6'X6' | C&E | 200' |
| D4-1 | 2-6'X6' | C&E | 200' |
| D4-2 | 2-6'X6' | C&E | 70' |
| D4-3 | 2-6'X6' | C | 0' |
| D6-1 | 6'X6' | C&E | 200' |
| D6-2 | 6'X6' | C&E | 200' |
| D8-1 | 6'X6' | C&E | 200' |
| D8-2 | 2-6'X6' | C&E | 70' |
| D8-3 | 2-6'X6' | C | 0' |

LOC = DISTANCE FROM STOP LINE TO DETECTOR

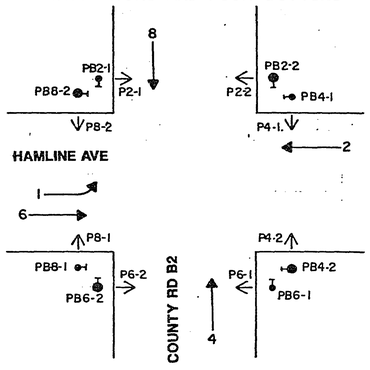
C&E = CALL & EXTEND

C = CALL ONLY

E = EXTEND ONLY

(TD) = TIME DELAY

### CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




### SIGNAL HEAD PHASING

HEADS 6-2 and 6-3

R, Y, G, ←Y, ←G → Ø 6

R, Y, G, ←Y, ←G → Ø 1

(4) P80-A-15
ONE WAY SIGNAL - OVERHEAD
TYPE 20C - POLE MOUNTED 270°
1 - PEDESTRIAN PUSH BUTTON AT 270°
EXTEND INTO H.H. 11
3" RSC
3-12/C #12
3-3/C #12

(1) P80-A-20-T40-10
LUMINAIRE - 200 WATT HPS AT 350°
ONE WAY SIGNAL - OVERHEAD
TYPE 20C - POLE MOUNTED 270°
1 - PEDESTRIAN PUSH BUTTON AT 270°
EXTEND INTO H.H. 3
3" RSC
2-12/C #12
2-3/C #12
2-1/C #10

SCALE IN FEET
0 10 20 30 40 50 100

### LEGEND OF SYMBOLS

- SIGNAL BASE No. (5) (4-2)
- SIGNAL FACE No.
- CONTROLLER AND CABINET
- CONTROLLER AND CABINET-INPLACE
- HANDHOLE
- HANDHOLE-INPLACE
- RIGID STEEL CONDUIT (R.S.C.)
- RIGID STEEL CONDUIT (R.S.C.)-INPLACE
- SIGNAL FACE
- SIGNAL FACE WITH BACKGROUND SHIELD
- SIGNAL FACE-INPLACE
- PEDESTRIAN INDICATIONS
- PEDESTRIAN INDICATIONS-INPLACE
- PEDESTRIAN PUSH BUTTON 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-INPLACE
- MAST ARM AND LUMINAIRE
- MAST ARM AND LUMINAIRE-INPLACE
- WOOD POLE
- WOOD POLE-INPLACE
- SOURCE OF POWER
- EMERGENCY VEHICLE PRE-EMPTION DETECTOR LOCATION

1.25" RSC 124' 1-2/C #14

3" RSC, INPLACE. EXTEND 3" INTO H.H. 10
3-12/C #12
4-3/C #12
1-3/C #20
7-2/C #14

1.25" RSC 40' 2-2/C #14

1.25" RSC INPLACE 43' 2-2/C #14

PEDESTRIAN PUSH BUTTON STATION (4" RSC)
1 - PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H. 11
1.25" RSC
1-3/C #12

REMOVE AND SALVAGE INPLACE LIGHTING UNIT AND FOUNDATION. DISCONNECT INPLACE CABLES AND MAKE SUITABLE UNDERGROUND SPLICE. WORK TO BE INCIDENTAL TO SYSTEM A.

S.O.P. - INPLACE WOOD POLE
1.25" RSC RISER WITH WEATHER HEAD
EXTEND INTO H.H. 1
1.25" RSC
3-1/C #4

TELE. SERVICE
SEE EQUIP. PAD

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

1.25" RSC 85' 3-1/C #4

3" RSC, INPLACE 77'
2-12/C #12
3-3/C #12
1-3/C #20
3-2/C #14
2-1/C #10

1.25" RSC 100' 2-2/C #14

EQUIP. PAD

SEXTANT AVE

HAMLINE AVE

76 77 78 79 80 81 82 83

H.H.14 H.H.13 H.H.12 H.H.11 H.H.10 H.H.9 H.H.8 H.H.7 H.H.6 H.H.5 H.H.4 H.H.3 H.H.2 H.H.1

D8-1 D8-2 D8-3 D1-2 D2-1 D1-1 D6-1 D6-2 D4-3 D4-2 D4-1

Ø 2&6 Ø 4&8

H.H.17 H.H.16 H.H.15

1.25" RSC 122' 2-2/C #14

1.25" RSC 76' 2-2/C #14

REMOVE 10 FT OF EXISTING MEDIAN WITH CONCRETE CURB AND GUTTER AND CONCRETE WALK. INSTALL NEW CURB AND GUTTER (B6-24) AND CONCRETE WALK AT NOSE AND PATCH BITUMINOUS SURFACE TO MATCH EXISTING DEPTH. WORK TO BE INCIDENTAL TO CONSTRUCTION OF SYSTEM A.

3" RSC, INPLACE 70'
2-12/C #12
2-3/C #12
1-3/C #20
3-2/C #14

EASEMENT

PEDESTRIAN PUSH BUTTON STATION (4" RSC)
1 - PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H. 15
1.25" RSC
1-3/C #12

COUNTY RD B2

PEDESTRIAN PUSH BUTTON STATION (4" RSC)
1 - PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H. 7
1.25" RSC
1-3/C #12

3" RSC 20'
2-12/C #12
3-3/C #12
1-3/C #20
3-2/C #14
2-1/C #10

1.25" RSC 71' 2-2/C #14

1.25" RSC 130' 1-2/C #14

(3) P80-A-25
ONE WAY SIGNAL - OVERHEAD
TYPE 20C - POLE MOUNTED 270°
1 - PEDESTRIAN PUSH BUTTON AT 270°
TWO-WAY EVP DETECTOR AND LIGHT - OVERHEAD
EXTEND INTO H.H. 15
3" RSC
2-12/C #12
3-3/C #12
1-3/C #20

(2) P90-A-20-T40-10
LUMINAIRE - 200 WATT HPS AT 350°
ONE WAY SIGNAL - OVERHEAD
TYPE 20C - POLE MOUNTED 270°
1 - PEDESTRIAN PUSH BUTTON AT 270°
TWO-WAY EVP DETECTOR AND LIGHT - OVERHEAD
EXTEND INTO H.H. 7
3" RSC
2-12/C #12
4-3/C #12
1-3/C #20
2-1/C #10

**EQUIPMENT PAD - SEE DETAILS**

CONTROLLER CABINET
EXTEND TO SERVICE POLE
1" RSC WITH DRAIN TEE AND
1-2/C TELEPHONE DROP WIRE
EXTEND INTO H.H.3
4" RSC
4-12/C #12
4-3/C #12
1-3/C #20
5-2/C #14
EXTEND INTO H.H.10
4" RSC
3-12/C #12
4-3/C #12
1-3/C #20
7-2/C #14

SERVICE CABINET
EXTEND INTO H.H. 2
1.25" RSC
3-1/C #4
EXTEND INTO H.H.3
1.25" RSC
4-1/C #10
EXTEND INTO H.H.10
1.25" RSC

BETWEEN SERVICE AND CONTROLLER CABINET
1.25" RSC
2-1/C #6
1-1/C #6 (BARE)

BETWEEN H.H. 3 AND 10
3" RSC.

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: JPH
DATE: 1-26-90

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.
Date 5/4/89 Reg. No. 12703

**INTERSECTION LAYOUT**
**HAMLINE AVE & COUNTY RD B2**

**SYSTEM A**

S.A.P. No 62-650-03 Sheet No. 4 of 11 Sheets

23-144

2-4 X

23-144 Hamline Avenue & Co Rd B2
Hamline Avenue & Co Rd C 1-11

DRAWING

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER

DRAWING NUMBER
23-144

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER

DRAWING NUMBER

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER

NUMBER

• IRVINE, CALIFORNIA
REORDER BY NUMBER

# CONTROLLER CABINET

| | | | | |
|---|---|---|---|---|
| | | SIGNAL SERVICE | | 1 |
| | RED 4-1 | 4-3 RED | | |
| | YEL 4-1 | 4-3 YEL | | |
| | GRN 4-1 | 4-3 GRN | | |
| | NEU 4-1 | 4-3 NEU | | |
| | RED 4-2 | 2-1 RED | | |
| 4 | YEL 4-2 | 2-1 YEL | | 8 |
| | GRN 4-2 | 2-1 GRN | | |
| | NEU 4-2,P4-1 | P2-1,2-1 NEU | | |
| | WLK P4-1 | P2-1 WLK | | |
| | DWK P4-1 | P2-1 DWK | | |
| | EQG | EQG | | |
| | RED 6-3 | 2-2 RED | | |
| | YEL 6-3 | 2-2 YEL | | |
| | GRN 6-3 | 2-2 GRN | | |
| | NEU 6-3 | 2-3,2-2 NEU | | |
| | YEL LTA 6-3 | 2-3 RED | | |
| 5 | GRN LTA 6-3 | 2-3 YEL | | 9 |
| | | 2-3 GRN | | |
| | NEU P2-2 | P6-2 NEU | | |
| | WLK P2-2 | P6-2 WLK | | |
| | DWK P2-2 | P6-2 DWK | | |
| | EQG | EQG | | |
| | RED 6-1 | 8-1 RED | | |
| | YEL 6-1 | 8-1 YEL | | |
| | GRN 6-1 | 8-1 GRN | | |
| | NEU 6-1 | 8-1 NEU | | |
| | | 8-2 RED | | |
| 6 | | 8-2 YEL | | 10 |
| | | 8-2 GRN | | |
| | NEU P6-1 | P8-1,8-2 NEU | | |
| | WLK P6-1 | P8-1 WLK | | |
| | DWK P6-1 | P8-1 DWK | | |
| | EQG | EQG | | |
| | RED 6-2 | | | |
| | YEL 6-2 | | | |
| | GRN 6-2 | | | |
| | NEU 6-2 | | | |
| | YEL LTA 6-2 | P4-2 WLK | | |
| 7 | GRN LTA 6-2 | P4-2 NEU | | 15 |
| | | P4-2 DWK | | |
| | NEU B-3 | | | |
| | RED B-3 | P8-2 WLK | | |
| | YEL B-3 | P8-2 NEU | | 16 |
| | RED B-3 | P8-2 DWK | | |
| | EQG | | | |
| | | PB2-2 | | |
| | | NEU | | 17 |
| | | PB4-1 | | |
| | EVP | PB6-1 | | |
| 11 | LHT | NEU | | 18 |
| | Ø 2&6 | PB4-2 | | |
| | EVP | PB2-1 | | |
| 12 | LHT | NEU | | 19 |
| | Ø 4&8 | PB8-2 | | |
| | EVP | PB6-2 | | |
| 13 | DET | NEU | | 20 |
| | Ø 2&6 | PB8-1 | | |
| | EVP | | | |
| 14 | DET | TELEPHONE SERVICE | | 21 |
| | Ø 4&8 | | | |
| 22 | D2-1 | D8-2 | | 28 |
| 23 | D2-2 FUTURE | D1-1 | | 29 |
| 24 | D4-1 | D1-2 | | 30 |
| 25 | D4-2 | D6-1 | | 31 |
| 26 | D4-3 | D6-2 | | 32 |
| 27 | D8-1 | D8-3 | | 33 |

TELEPHONE SERVICE

**S.O.P.**

120/240 VAC

H.H.1

H.H.2

**SERVICE CABINET & METER**

1 SIGNAL SERVICE (METERED)

2 ST. LIGHT SERVICE (UNMETERED)

3 ST. LIGHT SERVICE (UNMETERED)

S.O.P 120/240 SERVICE

GR.R.

TO H.H. 10
SEE SHEET 6

①

P4-1 (4-2) (4-1)

P2-2 (6-3)

2 BLK AC+ / WH AC- / R AC+ / BL AC+SW — ST LHT CH SW — ST. LHT. PE.C. — LUM

PB2-2 17 17

INPLACE H.H.3

2,3

4,5,6,7,11,13,15,17,18, 22,23,24,25,26

H.H.5

D2-1 22

D2-2 FUTURE 23

COIL CABLE # 23 FOR FUTURE USE. WATER PROOF TERMINAL END OF CABLE.

22,23

H.H.4

22,23

INPLACE H.H.6

3,6,7,11,13,15,18, 24,25,26

3,6,7,11,13,15,18, 24,25,26

H.H.7

26

24,25

H.H.8

25

D4-2

D4-3

PED PUSH BUTTON STA PB4-1 17

PED PUSH BUTTON STA PB6-1 18

②

P6-1 (6-1)

(8-3) (6-2)

3 BLK AC+ / WH AC- / R AC+ / BL AC+SW — ST LHT CH SW — ST. LHT. PE.C. — LUM

11 EVP LHT Ø 2&6

13 EVP DET Ø 2&6

P4-2 15

PB4-2 18 18

H.H.9

24

D4-1

24

H.H.8

## CONDUCTOR COLOR CODING

12/C #12

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

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

AS-BUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: JPH
DATE: 1-26-90

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.
Date 8/4/89 Reg. No. 12703

**FIELD WIRING DIAGRAM**
**HAMLINE AVE & COUNTY RD B2**

**SYSTEM A**

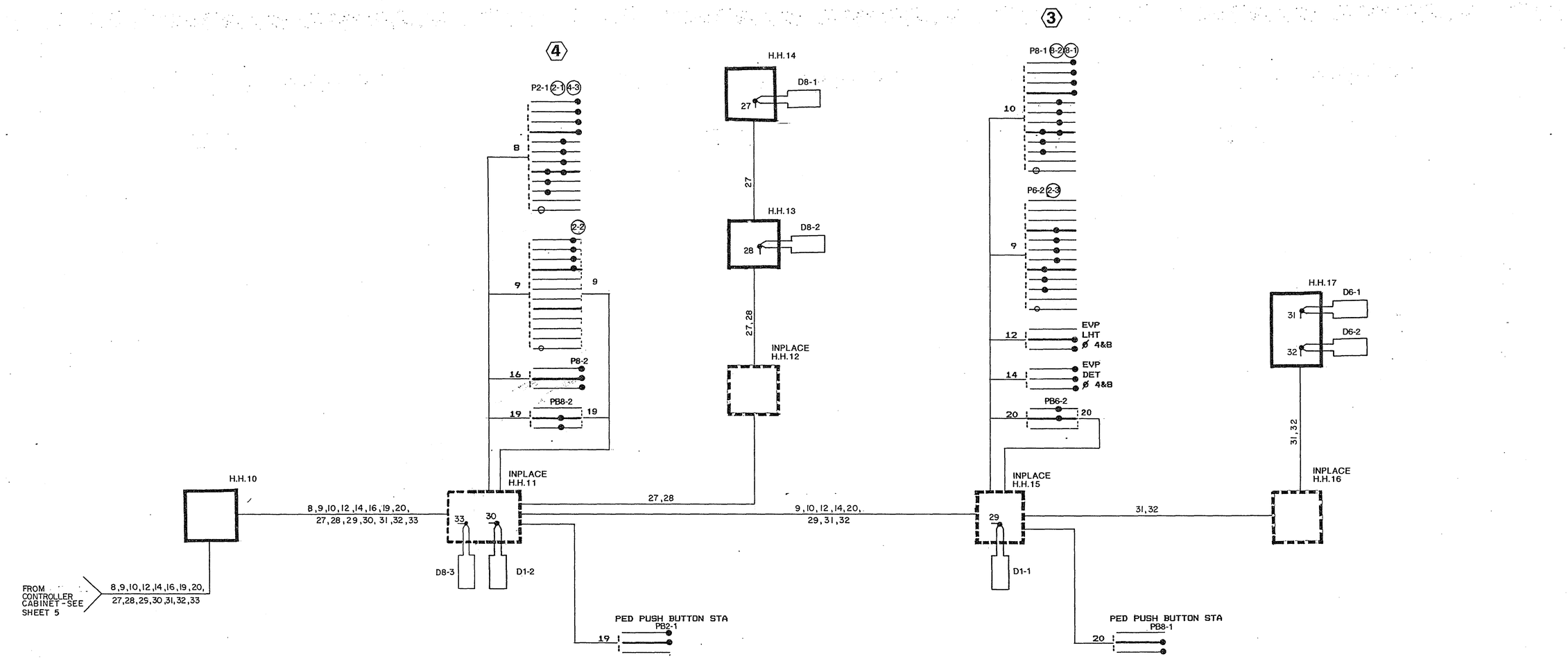
**S.A.P. No 62-650-03** **Sheet No. 5 of 11 Sheets**

23-144

24X

23-144 Hamline Avenue & Co Rd B2
Hamline Avenue & Co Rd C 1-11

DRAWING
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER 07544
DRAWING NUMBER
23-144
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER 07544
DRAWING NUMBER
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER 07544
NUMBER
• IRVINE, CALIFORNIA
REORDER BY NUMBER 07544




ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: JPH
DATE: 1-26-90

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Date 5/4/89 Reg. No. 17703

**FIELD WIRING DIAGRAM**
**HAMLINE AVE & COUNTY RD B2**

**SYSTEM A**

**S.A.P. No 62-650-03** **Sheet No. 6 of 11 Sheets**

23-144

24X

23-144 Hamline Avenue & Co Rd B2
Hamline Avenue & Co Rd C 1-11

## NOTES:

1. POLE AND DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGINEER PRIOR TO INSTALLATION.
2. THE COUNTY SHALL FURNISH TO THE CONTRACTOR EVP DETECTORS AND ASSOCIATED CONTROL EQUIPMENT (SEE SPECIAL PROVISIONS).
3. A 3/4 INCH HALF COUPLING SHALL BE FURNISHED APPROX. 2 FT. AND 4 FT. FROM END OF THE MAST ON EACH POLE PER MN/DOT 2565.2H
4. ALL PEDESTRIAN INDICATIONS SHALL BE 12"X12".
5. HANDHOLES 11-3-6-9 ARE INPLACE WITH 3" RSC BETWEEN. USE INPLACE.
6. ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS EXCEPT SIGNALS FACES 2-3,4-3,6-3 AND 8-3.
7. EACH LUMINAIRE SHALL HAVE A PHOTO ELECTRIC CELL AND STREET LIGHT CHECK SWITCH.
8. HANDHOLES 14 AND 15 ARE SPECIAL HANDHOLES. SEE SPECIAL PROVISIONS.
9. SWING-AWAY HINGES SHALL BE FURNISHED AND INSTALLED ON MAST ARM POLES 1 AND 3.
10. RELOCATE INPACE HANDHOLES 3,6,9 AND 11 TO 8 FT ± BEHIND CURB AND EXTEND EXISTING R.S.C. AS DIRECTED BY THE ENGR. WORK TO BE INCIDENTAL TO SYSTEM "B".

## VEHICLE DETECTION

| NO | SIZE | OPERATION | LOC |
|---|---|---|---|
| D2-1 | 6'X6' | C&E | 200' |
| D2-2 | 6'X6' | C&E | 200' |
| D2-3 | 2-6'X6' | C | 0' |
| D4-1 | 6'X6' | C&E | 260' |
| D4-2 | 6'X6' | C&E | 260' |
| D4-3 | 2-6'X6' | C | 0' |
| D6-1 | 6'X6' | C&E | 200' |
| D6-2 | 6'X6' | C&E | 200' |
| D6-3 | 2-2'X6' | C | 0' |
| D8-1 | 6'X6' | C&E | 260' |
| D8-2 | 6'X6' | C&E | 260' |
| D8-3 | 2-6'X6' | C | 0' |

LOC = DISTANCE FROM STOP LINE TO DETECTOR

C&E = CALL & EXTEND

C = CALL ONLY

E = EXTEND ONLY

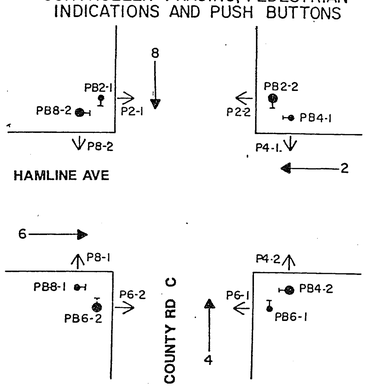
(TD) = TIME DELAY

## SIGNAL INDICATION CHART

| FACE | PHASE | INDICATION SIZE R | Y | G |
|---|---|---|---|---|
| 2-1 | 2 | 12" | 12" | 12" |
| 2-2 | 2 | 12" | 12" | 12" |
| 2-3 | 2 | 12" | 12" | 12" |
| 4-1 | 4 | 12" | 12" | 12" |
| 4-2 | 4 | 12" | 12" | 12" |
| 4-3 | 4 | 12" | 12" | 12" |
| 6-1 | 6 | 12" | 12" | 12" |
| 6-2 | 6 | 12" | 12" | 12" |
| 6-3 | 6 | 12" | 12" | 12" |
| 8-1 | 8 | 12" | 12" | 12" |
| 8-2 | 8 | 12" | 12" | 12" |
| 8-3 | 8 | 12" | 12" | 12" |

FLASH MODE = ALL RED

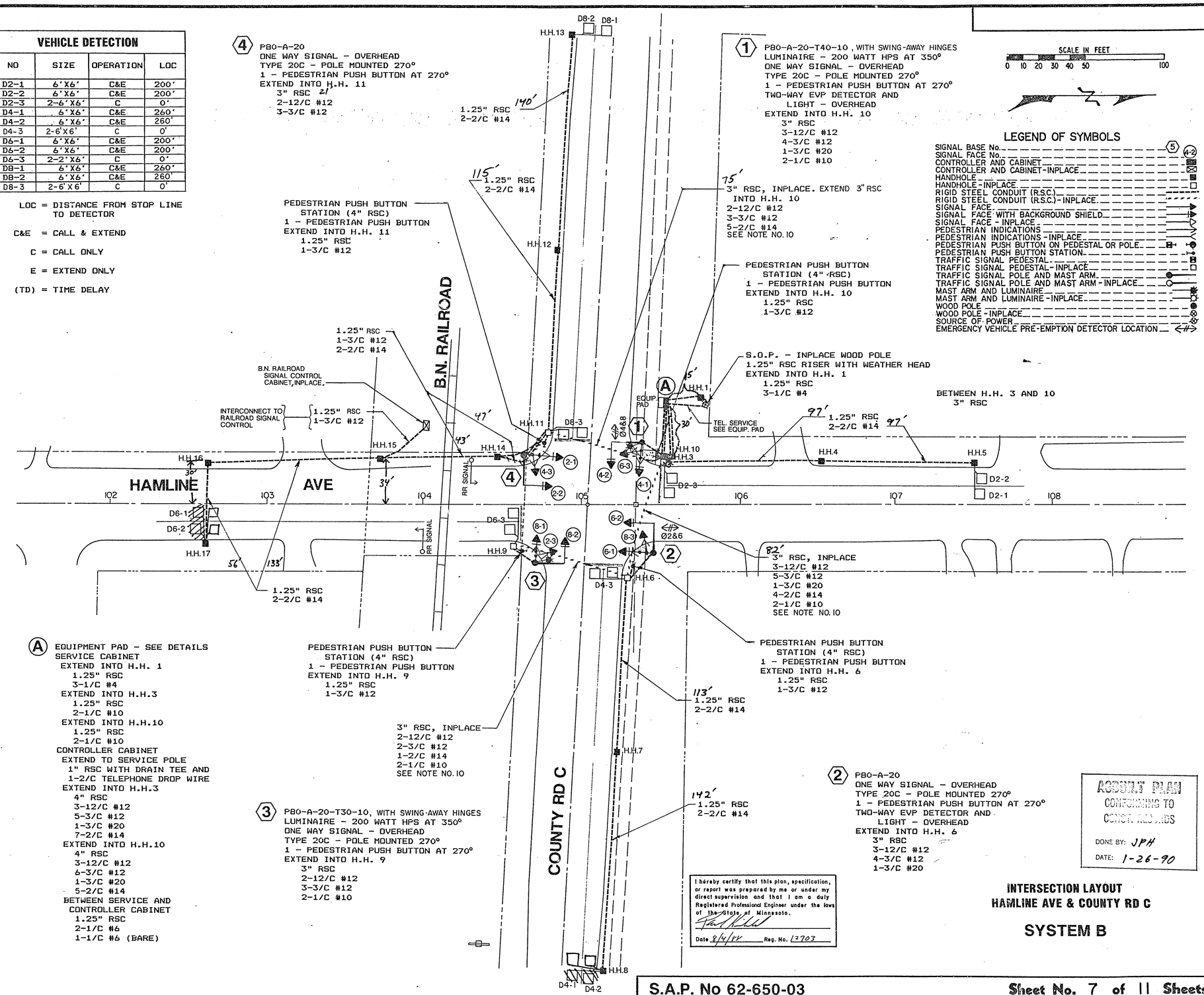
### CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS




(A) EQUIPMENT PAD - SEE DETAILS
SERVICE CABINET
EXTEND INTO H.H. 1
1.25" RSC
3-1/C #4
EXTEND INTO H.H.3
1.25" RSC
2-1/C #10
EXTEND INTO H.H.10
1.25" RSC
2-1/C #10
CONTROLLER CABINET
EXTEND TO SERVICE POLE
1" RSC WITH DRAIN TEE AND
1-2/C TELEPHONE DROP WIRE
EXTEND INTO H.H.3
4" RSC
3-12/C #12
5-3/C #12
1-3/C #20
7-2/C #14
EXTEND INTO H.H.10
4" RSC
3-12/C #12
6-3/C #12
1-3/C #20
5-2/C #14
BETWEEN SERVICE AND
CONTROLLER CABINET
1.25" RSC
2-1/C #6
1-1/C #6 (BARE)

(3) PB0-A-20-T30-10, WITH SWING-AWAY HINGES
LUMINAIRE - 200 WATT HPS AT 350°
ONE WAY SIGNAL - OVERHEAD
TYPE 20C - POLE MOUNTED 270°
1 - PEDESTRIAN PUSH BUTTON AT 270°
EXTEND INTO H.H. 9
3" RSC
2-12/C #12
3-3/C #12
2-1/C #10

(4) PB0-A-20
ONE WAY SIGNAL - OVERHEAD
TYPE 20C - POLE MOUNTED 270°
1 - PEDESTRIAN PUSH BUTTON AT 270°
EXTEND INTO H.H. 11
3" RSC 21'
2-12/C #12
3-3/C #12




SCALE IN FEET
0 10 20 30 40 50 100

### LEGEND OF SYMBOLS

SIGNAL BASE No. (5)
SIGNAL FACE No. (4-2)
CONTROLLER AND CABINET
CONTROLLER AND CABINET-INPLACE
HANDHOLE
HANDHOLE-INPLACE
RIGID STEEL CONDUIT (R.S.C.)
RIGID STEEL CONDUIT (R.S.C.)-INPLACE
SIGNAL FACE
SIGNAL FACE WITH BACKGROUND SHIELD
SIGNAL FACE - INPLACE
PEDESTRIAN INDICATIONS
PEDESTRIAN INDICATIONS-INPLACE
PEDESTRIAN PUSH BUTTON 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-INPLACE
MAST ARM AND LUMINAIRE
MAST ARM AND LUMINAIRE-INPLACE
WOOD POLE
WOOD POLE-INPLACE
SOURCE OF POWER
EMERGENCY VEHICLE PRE-EMPTION DETECTOR LOCATION

(2) PB0-A-20
ONE WAY SIGNAL - OVERHEAD
TYPE 20C - POLE MOUNTED 270°
1 - PEDESTRIAN PUSH BUTTON AT 270°
TWO-WAY EVP DETECTOR AND
LIGHT - OVERHEAD
EXTEND INTO H.H. 6
3" RSC
3-12/C #12
4-3/C #12
1-3/C #20

AS-BUILT PLAN
CONFORMING TO
CONSTR. RECORDS
DONE BY: JPH
DATE: 1-26-90

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.
Date 9/4/89 Reg. No. 13703

**INTERSECTION LAYOUT**
**HAMLINE AVE & COUNTY RD C**

**SYSTEM B**

**S.A.P. No 62-650-03** **Sheet No. 7 of 11 Sheets**

23-144

24X

23-144 Hamline Avenue & Co Rd B2
Hamline Avenue & Co Rd C 1-11

DRAWING

DRAWING NUMBER 23-144

PLAN HOLD DISPOSITION • IRVINE, CALIFORNIA

REORDER BY NUMBER FROM

# CONTROLLER CABINET

| | | | |
|---|---|---|---|
| | | SIGNAL SERVICE | 1 |
| | RED 4-1 | 6-1 RED | |
| | YEL 4-1 | 6-1 YEL | |
| | GRN 4-1 | 6-1 GRN | |
| | NEU 4-1 | 6-1 NEU | |
| | RED 4-2 | 6-2 RED | |
| 4 | YEL 4-2 | 6-2 YEL | 7 |
| | GRN 4-2 | 6-2 GRN | |
| | NEU 4-2,P4-1 | P6-1,6-2 NEU | |
| | WLK P4-1 | P6-1 WLK | |
| | DWK P4-1 | P6-1 DWK | |
| | EOG | EOG | |
| | RED 6-3 | 8-3 RED | |
| | YEL 6-3 | 8-3 YEL | |
| | GRN 6-3 | 8-3 GRN | |
| | NEU 6-3 | 8-3 NEU | |
| | RED 4-3 | 2-3 RED | |
| 5 | YEL 4-3 | 2-3 YEL | 8 |
| | GRN 4-3 | 2-3 GRN | |
| | NEU 4-3 | 2-3 NEU | |
| | EOG | EOG | |
| | RED 2-1 | 8-1 RED | |
| | YEL 2-1 | 8-1 YEL | |
| | GRN 2-1 | 8-1 GRN | |
| | NEU 2-1 | 8-1 NEU | |
| | RED 2-2 | 8-2 RED | |
| 6 | YEL 2-2 | 8-2 YEL | 9 |
| | GRN 2-2 | 8-2 GRN | |
| | NEU 2-2,P2-1 | P8-1,8-2 NEU | |
| | WLK P2-1 | P8-1 WLK | |
| | DWK P2-1 | P8-1 DWK | |
| | EOG | EOG | |
| | WLK P2-2 | P4-2 WLK | |
| 10 | NEU P2-2 | P4-2 NEU | 12 |
| | DWK P2-2 | P4-2 DWK | |
| | WLK P8-2 | P6-2 WLK | |
| 11 | NEU P8-2 | P6-2 NEU | 13 |
| | DWK P8-2 | P6-2 DWK | |
| | EVP | PB2-2 | |
| 14 | LHT Ø 4&8 | NEU PB4-1 | 18 |
| | EVP | | |
| 15 | LHT Ø 2&6 | PB6-1 NEU PB4-2 | 19 |
| | EVP | PB2-1 | |
| 16 | DET Ø 4&8 | NEU PB8-2 | 20 |
| | EVP | PB6-2 | |
| 17 | DET Ø 2&6 | NEU PB8-1 | 21 |
| 22 | RAILROAD INTERCONNECT | TELEPHONE SERVICE | 23 |
| 24 | D8-1 | D4-1 | 29 |
| 25 | D8-2 | D4-2 | 30 |
| 26 | D2-1 | D6-1 | 31 |
| 27 | D2-2 | D6-2 | 32 |
| 28 | D2-3 | D6-3 | 33 |
| 34 | D8-3 | D4-3 | 35 |

TELEPHONE SERVICE

S.O.P.

120/240 VAC

H.H.1

## SERVICE CABINET & METER

1 SIGNAL SERVICE (METERED)
2 ST. LIGHT SERVICE (UNMETERED)
3 ST. LIGHT SERVICE (UNMETERED)
S.O.P 120/240 SERVICE

GR.R.

3 → TO H.H. 3 SEE SHEET NO. 9

7,8,9,12,13,15,17,19,21, 26,27,28,29,30,33 → TO H.H. 3 SEE SHEET NO. 9

2 → 4,5,6,10,11,14,16,18,20, 22,24,25,31,32,34

H.H.10

5,6,11,20, 22,24,25,31,32,34

## 1

P4-1 (4-2) (4-1)

4

2 BLK AC+
WH AC-
R AC+
BL AC+SW
ST LHT CH SW

ST.LHT. PEC → LUM

P2-2

10

14 EVP LHT Ø 4&8

16 EVP DET Ø 4&8

(6-3)

5 5

PB2-2

18 18

PED PUSH BUTTON STA

PB4-1

18

## 4

(4-3)

5

P2-1 (2-2) (2-1)

6

P8-2

11

PB8-2

20 20

INPLACE H.H.11

22,31,32

34

24,25

D8-3

PED PUSH BUTTON STA

PB2-1

20

H.H.12

24,25

H.H.13

24 25

D8-1 D8-2

H.H.16

31,32

H.H.17

31 D6-1

32 D6-2

31,32

H.H.15

22 → INTERCONNECT TO RAILROAD SIGNAL CABINET

22,31,32

H.H.14

## CONDUCTOR COLOR CODING

12/C #12: R, O, BL, WH, R/BLK, O/BLK, BL/BLK, WH/BLK, BLK, BLK/WH, G/BLK, G

BLK WH 2-1/C #6

BLK R WH 3/C #12

BLK CLEAR 2/C #14

R OR O WH OR YEL BL OR BLK 3/C #20

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

ACCOUNT PLAN CONFORMING TO CO. SY. RECORDS
DONE BY: JPH
DATE: 1-26-90

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.
Paul Kell
Date 5/4/88 Reg. No. 12703

**FIELD WIRING DIAGRAM**
**HAMLINE AVE & COUNTY RD C**

**SYSTEM B**

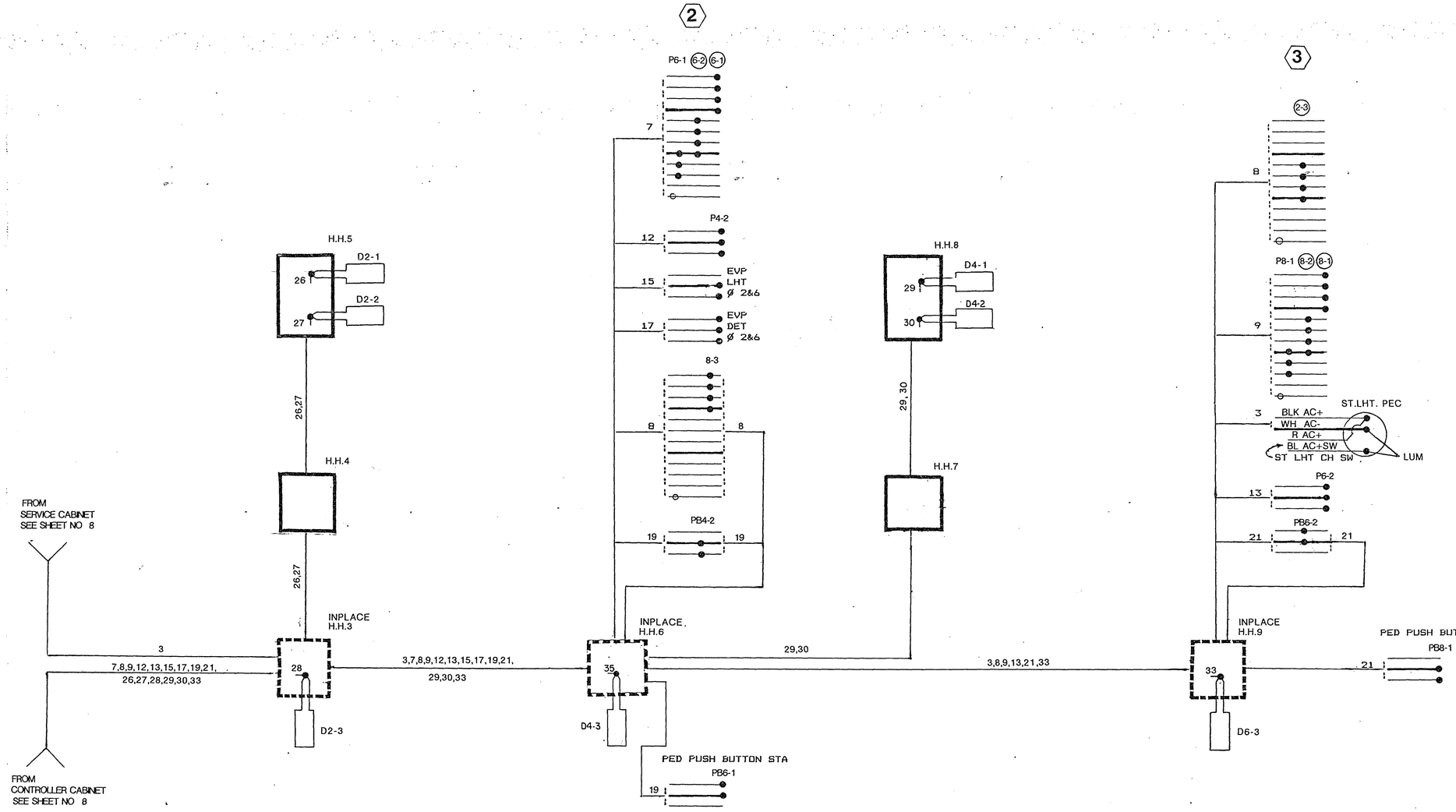
S.A.P. No 62-650-03 — Sheet No. 8 of 11 Sheets

23-144

23-144 Hamline Avenue & Co Rd B2
Hamline Avenue & Co Rd C 1-11

24 X

DRAWING NUMBER
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
RECORDED BY NUMBER ABOVE
PLAN HOLD CORPORATION
RECORDED BY N




AS-BUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: JPH
DATE: 1-26-90

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**FIELD WIRING DIAGRAM**
**HAMLINE AVE & COUNTY RD C**

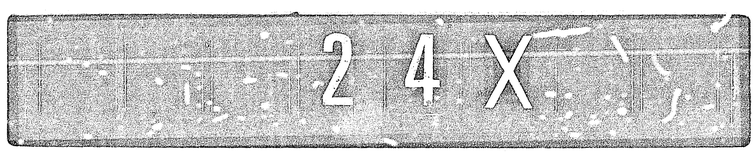
**SYSTEM B**

**S.A.P. No 62-650-03** **Sheet No. 9 of 11 Sheets**

23-144

DRAWING NUMBER
23-144
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
RECORDED BY NUMBER ABOVE
NUMBER
• IRVINE, CALIFORNIA
RECORDED BY

23-144 Hamline Avenue & Co Rd B2
Hamline Avenue & Co Rd C 1-11



DRAWING

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER 075AR

DRAWING NUMBER
23-144

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER 075AR

DRAWING NUMBER

N • IRVINE, CALIFORNIA
NUMBER 075AR

SCALE IN FEET
0 10 20 30 40 50 100

ORN ST. LHT

CB

MH

HH

P.P.

ST. LHT.

ELEC MH

6"HP

12"HP

Sa

G

V

T

I

P

CONC. WALK

HAMLINE AVE

SEXTANT AVE

76 77 78 79 80 81 82 83

33' 49.5' 43' 33' 38'

EASEMENT

20'

SD

230/80

210/80

BIT. PATH

COUNTY RD B2

ASBUILT PLAN
CONFORMING TO
CO. RD. RECORDS
DONE BY: JPH
DATE: 1-26-90

HAMLINE AVE & COUNTY RD B2

UTILITIES

S.A.P. No 62-650-03

Sheet No. 10 of 11 Sheets

23-144

23-144 Hamline Avenue & Co Rd B2
Hamline Avenue & Co Rd C 1-11

24X

DRAWING

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER NUMBER

DRAWING NUMBER

23-144

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DRAWING NUMBER

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER NUMBER

NUMBER

• • IRVINE, CALIFORNIA
MBR-R704R

SCALE IN FEET
0 10 20 30 40 50 100

B.N. RAILROAD

HAMLINE AVE

COUNTY RD C

CONTROL CAB.

ELEC BOX

50'

40'

33'

43'

102 103 104 105 106 107 108

AS-BUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: JPH
DATE: 1-26-90

UTILITIES

HAMLINE AVE & COUNTY RD C

S.A.P. No 62-650-03 Sheet No. 11 of 11 Sheets

23-144

23-144 Hamline Avenue & Co Rd B2
Hamline Avenue & Co Rd C 1-11

24X