

DRAWING

DRAWING NUMBER
23-149

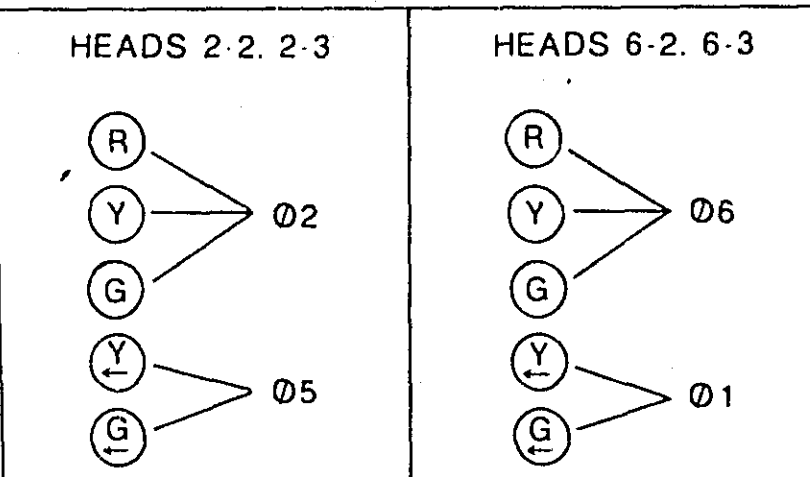
DRAWING NUMBER

NUMBER

LEGEND OF SYMBOLS

SIGNAL BASE NO.	4-2
SIGNAL FACE NO.	4-2
CONTROLLER AND CABINET	
CONTROLLER AND CABINET - INPLACE	
HANDHOLE	
HANDHOLE - INPLACE	
CONDUIT	
CONDUIT - INPLACE	
SIGNAL FACE	
SIGNAL FACE WITH BACKGROUND SHIELD	
SIGNAL FACE - INPLACE	
PEDESTRIAN INDICATION	
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 PER-EMPTION DETECTOR	

SIGNAL HEAD PHASING



2" N.M.C. (Interconnect) TO H.H.32 (SEE SHEET 16)
1-12pr.#19 (Interconnect)

BEAM AVENUE (45 MPH)

MATCH LINE E
(STA 148+00)
SEE SHEET 16

SIGNAL INDICATION CHART

FACE	PHASE	R	Y	G	YLTA	GLTA
2-1	2	12	12	12		
2-2	2 AND 5	12	12	12	12	12
2-3	2 AND 5	12	12	12	12	12
2-4	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	1 AND 6	12	12	12	12	12
6-3	1 AND 6	12	12	12	12	12
6-4	6	12	12	12		
8-1	8	12	12	12		
8-2	8	12	12	12		
8-3	8	12	12	12		

NOTES:
1) FLASH MODE= ALL RED
2) ALL SIZES ARE IN INCHES.

VEHICLE DETECTION			
NO	SIZE	OPERATION	LOC
D1-1	2'-6" x 15'	1.4	0'
D1-2	6' x 25'	3	80'
D2-1	6' x 6'	1	260'
D2-2	6' x 6'	1	260'
D4-3	2'-6" x 15'	1.4	0'
D5-1	2'-6" x 15'	1.4	0'
D5-2	6' x 25'	3	80'
D6-1	6' x 6'	1	260'
D6-2	6' x 6'	1	260'
D8-1	6' x 6'	1	130'
D8-2	6' x 6'	1	65'
D8-3	6' x 15'	1.4	0'
D1	6' x 6'	5	See plan
D2	6' x 6'	5	See plan
D3	6' x 6'	5	See plan

OPERATIONS
1 = CALL & EXTEND
2 = CALL ONLY
3 = EXTEND ONLY
4 = TIME DELAY
5 = COUNT

NOTE: LOC = DISTANCE FROM STOP BAR TO DETECTOR

PEDESTRIAN PUSH BUTTON STATION (4" R.S.C.)
1-PEDESTRIAN PUSH BUTTON AND SIGN
EXTEND INTO H.H. 7:
1 1/4" R.S.C.
1-3/c#12

2 TYPE P80-A-20
P80 POLE FOUNDATION
ONE WAY SIGNALS-OVERHEAD
TYPE 20C-POLE MOUNTED 270°
1-PEDESTRIAN PUSH BUTTON AND SIGN AT 270°
EXTEND INTO H.H.2:
3" R.S.C.
2-12/c#12
2-3/c#12

PEDESTRIAN PUSH BUTTON STATION (4" R.S.C.)
1-PEDESTRIAN PUSH BUTTON AND SIGN
EXTEND INTO H.H.10:
1 1/4" R.S.C.
1-3/c#12

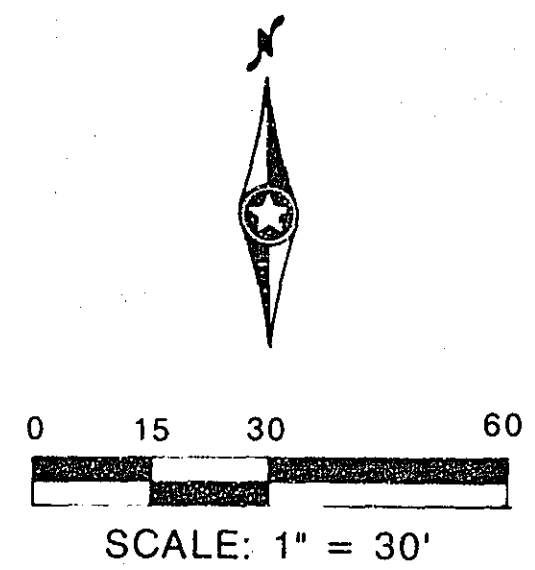
3 TYPE P100-A-35-T40-10
P100 POLE FOUNDATION
2-ONE WAY SIGNALS-OVERHEAD
TYPE 20C-POLE MOUNTED 270°
LUMINAIRE-200 WATT H.P.S. AT 350°
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD
1-PEDESTRIAN PUSH BUTTON AND SIGN AT 270°
EXTEND INTO H.H.6:
3" R.S.C.
2-12/c#12
4-3/c#12
2-1/c#10
1-3/c#20

4 TYPE P80-A-15
P80 POLE FOUNDATION
ONE WAY SIGNALS-OVERHEAD
TYPE 20C-POLE MOUNTED 270°
2-PEDESTRIAN PUSH BUTTONS AND SIGNS AT 90° AND 180°
EXTEND INTO H.H.14:
3" R.S.C.
2-12/c#12
1-3/c#12

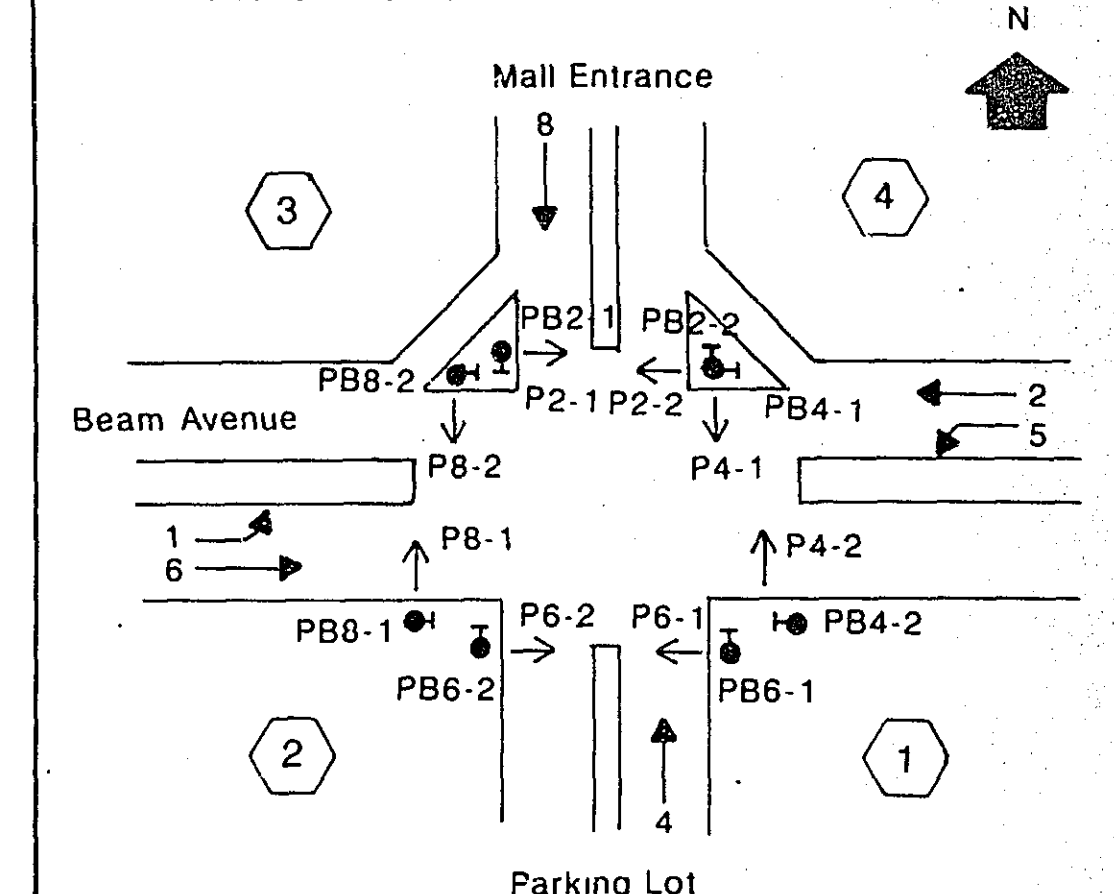
A EQUIPMENT PAD-SEE DETAILS
SERVICE CABINET
EXTEND INTO H.H.15:
1 1/4" R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
1 1/4" R.S.C.
2-1/c#10
EXTEND INTO H.H.10:
1 1/4" R.S.C.
2-1/c#10
CONTROLLER AND CABINET
ARTERIAL MASTER CONTROLLER
(Interconnect-See special provisions)
EXTEND TO TELEPHONE BOX
1"R.S.C. WITH DRAIN TEE AND
2-2/c TELEPHONE DROP WIRE
EXTEND INTO H.H.1:
4" R.S.C.
4-12/c#12
4-3/c#12
11-2/c#14
1-3/c#20
1-12pr.#19 (Interconnect)
EXTEND INTO H.H.10:
4" R.S.C.
4-12/c#12
4-3/c#12
4-2/c#14
1-3/c#20
BETWEEN SERVICE AND CONTROLLER CABINET
1 1/4" R.S.C.
2-1/c#6
1-1/c#6 (BARE)

NOTES:

- POLE AND DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGINEER PRIOR TO INSTALLATION.
- A 3/4 INCH HALF COUPLING SHALL BE FURNISHED APPROX. 2 FEET AND 4 FEET FROM END OF MAST ARM ON EACH POLE PER Mn/DOT 383.1.2C.
- A MID ARM MOUNT SHALL BE FURNISHED AND INSTALLED 17 FEET FROM THE END OF MAST ARM AT POLE ① AND 14 FEET AT POLE ③.
- ALL PEDESTRIAN INDICATIONS SHALL BE 12"x12".
- ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS EXCEPT SIGNAL FACES 2-3, 4-3, 6-3 AND 8-3.
- EACH LUMINAIRE WITH P.E.C. AND STREET LIGHT CHECK SWITCH.
- ALL HANDHOLES SHALL BE CONCRETE HANDHOLES WITH TYPE "C" COVERS.
- SEE SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY FOR LOCATION OF UTILITIES.
- CONTRACTOR SHALL INSTALL PEDESTRIAN CURB RAMPS WHERE SHOWN IN THE PLANS. SEE SPECIAL PROVISIONS.
- (Interconnect) DENOTES ITEM TO BE PAID FOR UNDER SEPARATE PAY ITEM. SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



METER ADDRESS 1910 BEAM AVENUE

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

SEH
ENGINEERS ■ ARCHITECTS ■ PLANNERS

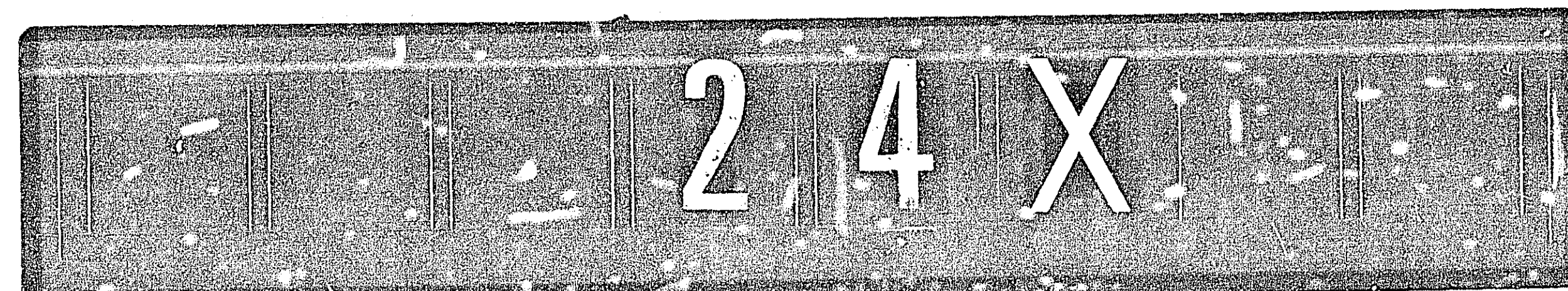
RAMSEY COUNTY, MINNESOTA
CITY OF MAPLEWOOD
S.A.P. 62-619-14

TRAFFIC SIGNAL SYSTEM "A"
INTERSECTION LAYOUT
BEAM AVENUE AT MALL ENTRANCE

FILE NO.
90045

DATE
2/16/90

19



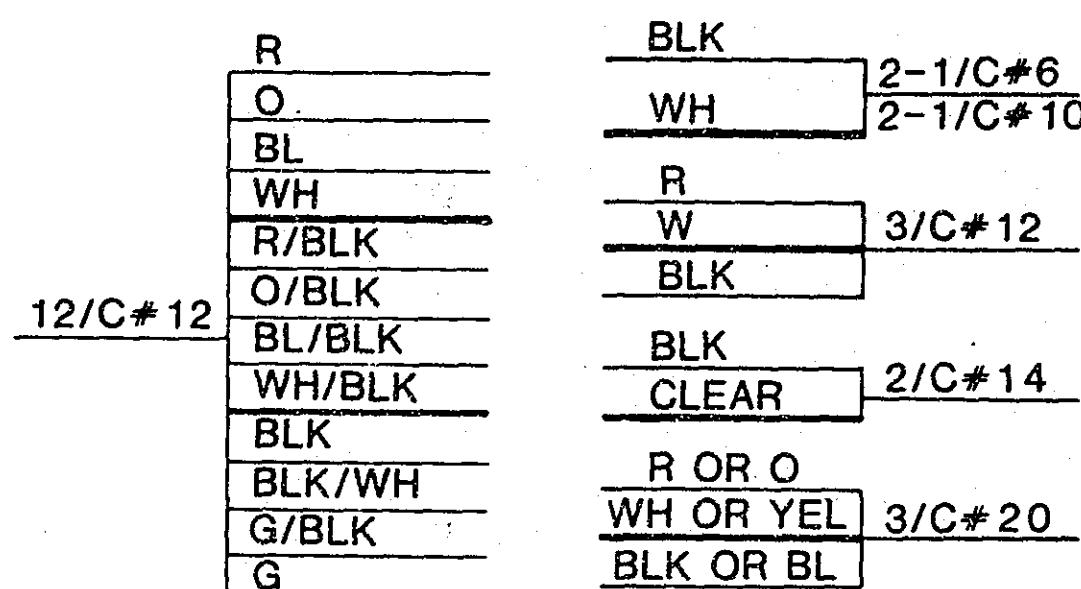
23-149 Beam Ave @ South Mall Entrance
Beam Ave @ South Mall Entrance & Maplewood

1/19, 7/19, 8/19,
9/19, 12/19, 1/19, 1/19

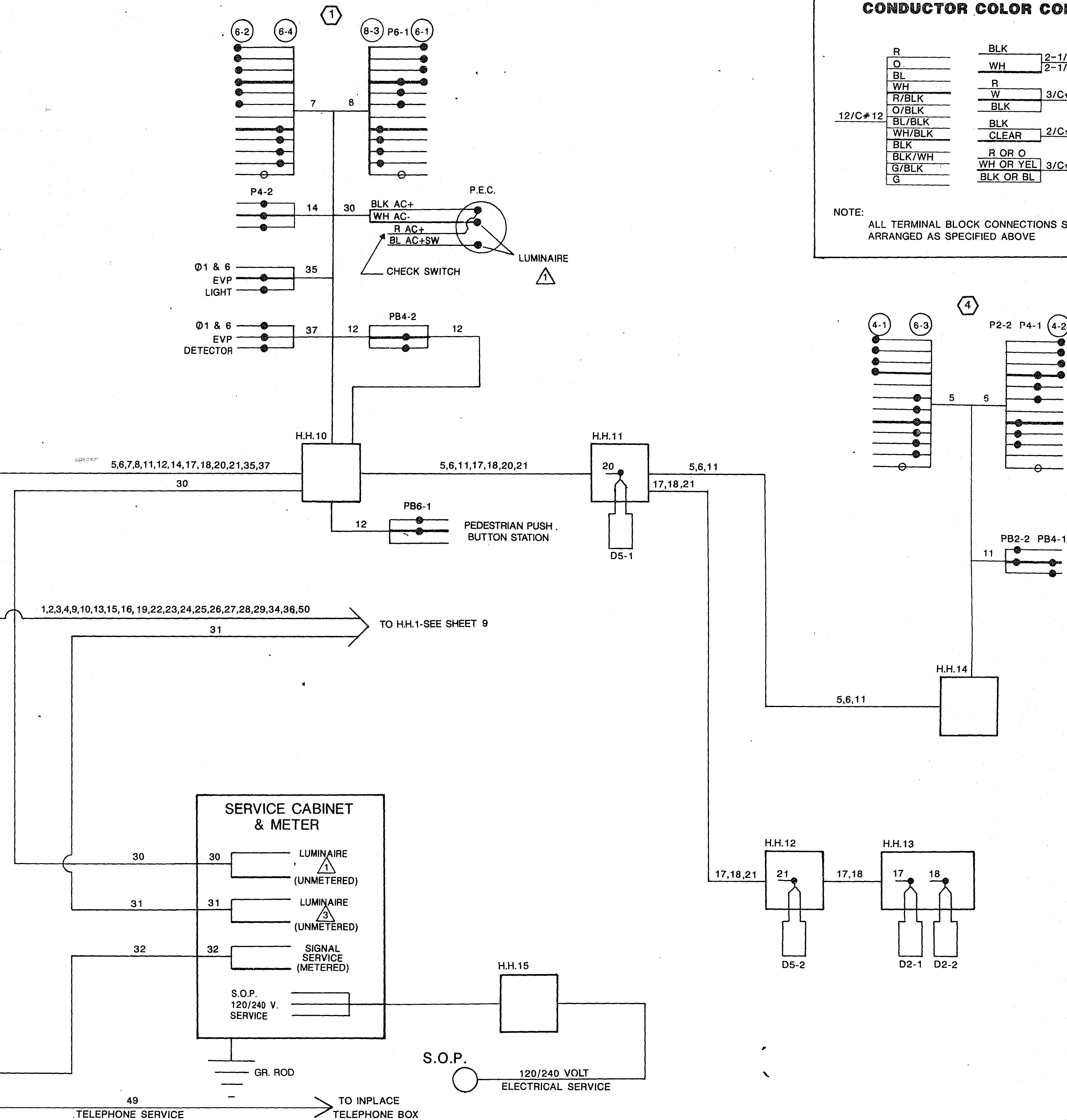
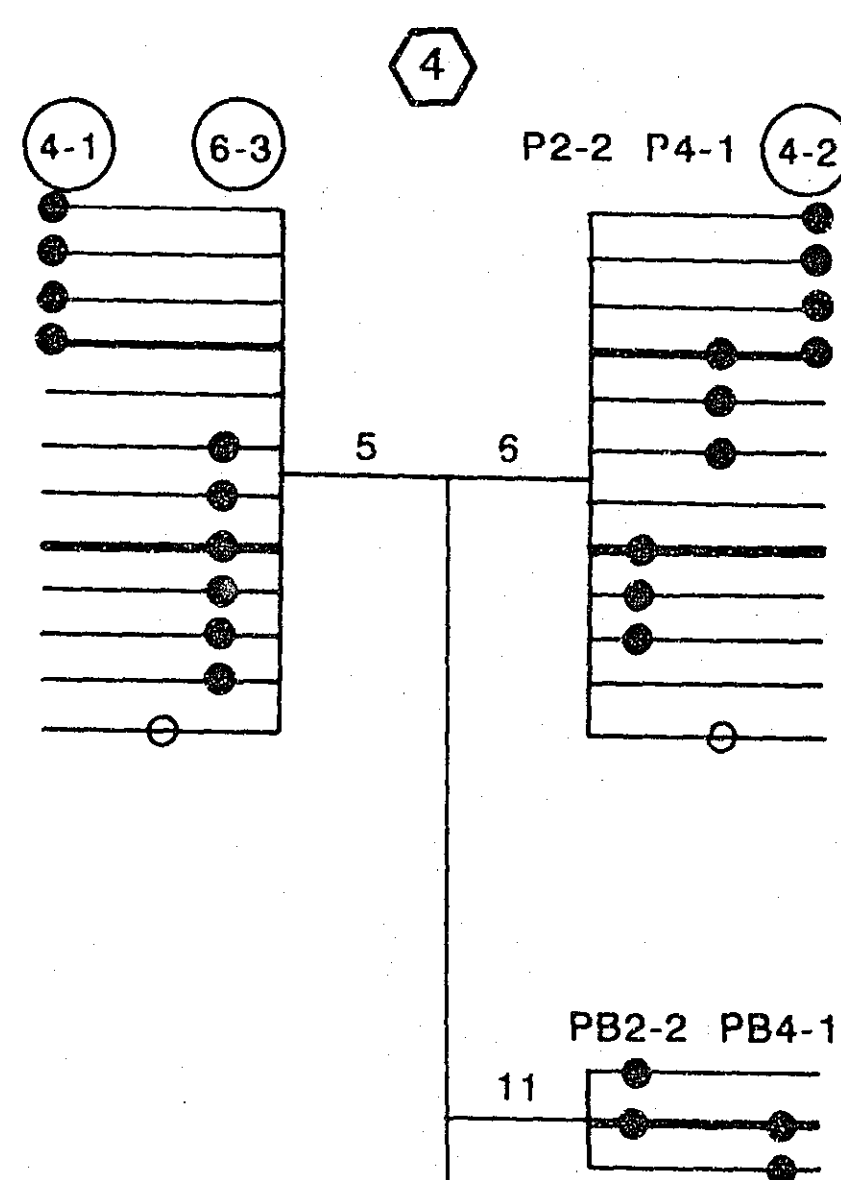
NUMBER

• IRVINE, CALIFORNIA

CONDUCTOR COLOR CODING



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

G. Glen Vian Weimer

Date *3/21/80* Reg. No. *9089*



RAMSEY COUNTY, MINNESOTA
CITY OF MAPLEWOOD
S.A.P. 62-619-14

TRAFFIC SIGNAL SYSTEM "A"
FIELD WIRING DIAGRAM
BEAM AVENUE AT MALL ENTRANCE

FILE NO. 90045	8
DATE 2/16/90	1

23-149

23-149 Beam Ave @ South Mall Entrance
Beam Ave @ Southlawn Rd & Hoyalwood

2 4 X

DRAWING

DRAWING NUMBER
23-149

DRAWING NUMBER

NUMBER

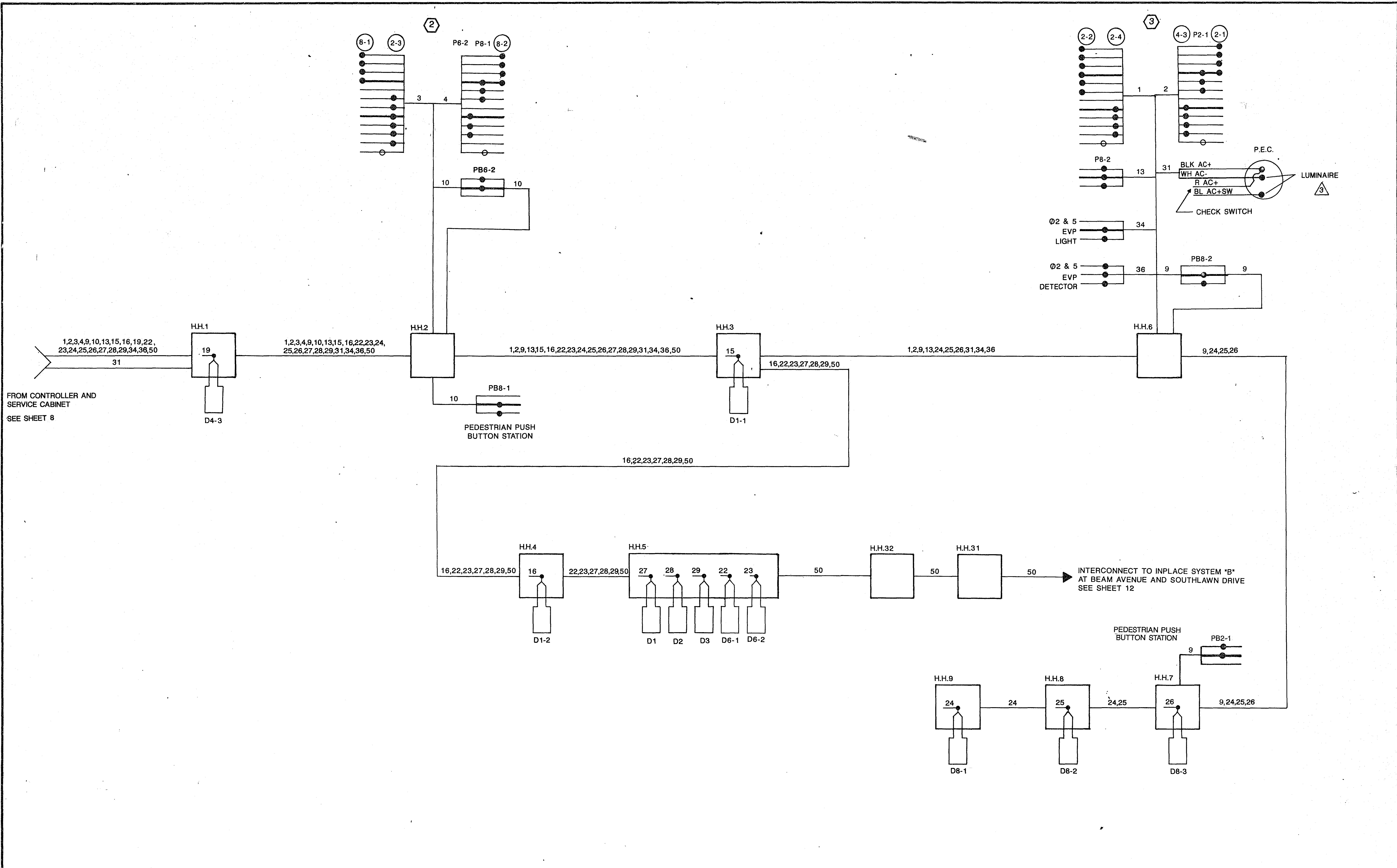
PLAN HOLD CORPORATION
REGISTERED BY MAP
REGISTERED BY MAP

PLAN HOLD CORPORATION
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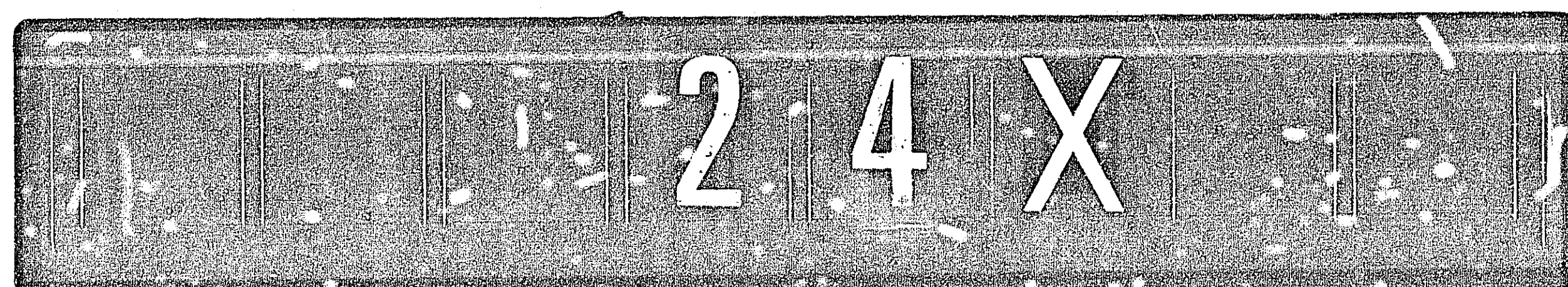
BASE	OVERLAY	DRG. NO.



1 JMG 4/91 RECORD DRAWING					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. <i>John Van Wagoner</i> Date 2/13/90 Reg No. 9089					ENGINEERS & ARCHITECTS & PLANNERS		RAMSEY COUNTY, MINNESOTA CITY OF MAPLEWOOD S.A.P. 62-619-14		TRAFFIC SIGNAL SYSTEM "A" FIELD WIRING DIAGRAM BEAM AVENUE AT MALL ENTRANCE		FILE NO. 90045 DATE 2/16/90	9 19
NO.	BY	DATE	REVISIONS	ITEM	DESIGN	CHECKED											

23-149 Beam Ave @ South Mall Entrance
Beam Ave @ Southlawn Dr & Highland

1/19, 7/19, 8/19,
9/19, 12/19, 1/19 & 1/19



LEGEND OF SYMBOLS

SIGNAL BASE NO.	1
SIGNAL FACE NO.	2
CONTROLLER AND CABINET - IN PLACE	3
HANDHOLE - IN PLACE	4
CONDUIT - IN PLACE	5
SIGNAL FACE	6
SIGNAL FACE WITH BACKGROUND SHIELD	7
SIGNAL FACE - IN PLACE	8
PEDESTRIAN INDICATION	9
PEDESTRIAN INDICATIONS - IN PLACE	10
PEDESTRIAN PUSH BUTTON ON PEDESTAL OR POLE	11
PEDESTRIAN PUSH BUTTON STATION	12
TRAFFIC SIGNAL PEDESTAL - IN PLACE	13
TRAFFIC SIGNAL POLE AND MAST ARM	14
TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE	15
MAST ARM AND LUMINAIRE	16
MAST ARM AND LUMINAIRE - IN PLACE	17
WOOD POLE	18
WOOD POLE - IN PLACE	19
SOURCE OF POWER	20
EMERGENCY VEHICLE PER-EMPTION DETECTOR	21

- (A) EQUIPMENT PAD-SEE DETAILS**
 SERVICE CABINET
 EXTEND INTO H.H.19:
 1 1/4" R.S.C.
 3-1/c#6
 EXTEND INTO H.H.1:
 1 1/4" R.S.C.
 2-1/c#10
 EXTEND INTO H.H.13:
 1 1/4" R.S.C.
 2-1/c#10
 CONTROLLER AND CABINET
 EXTEND INTO H.H.1:
 4" R.S.C.
 4-12/c#12
 4-3/c#12
 10-2/c#14
 1-3/c#20
 EXTEND INTO H.H.13:
 4" R.S.C.
 4-12/c#12
 5-3/c#12
 6-2/c#14
 2-3/c#20
 1-12 pr.#19 (Interconnect)
 BETWEEN SERVICE AND CONTROLLER CABINET
 1 1/4" R.S.C.
 2-1/c#6
 1-1/c#6 (BARE)

- (3) TYPE P100-A-35-T40-10**
 P100 POLE FOUNDATION
 2-ONE WAY SIGNALS-OVERHEAD
 TYPE 20C-POLE MOUNTED 270°
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD
 LUMINAIRE-200 WATT H.P.S. AT 350°
 1-PEDESTRIAN PUSH BUTTON AND SIGN AT 270°
 EXTEND INTO H.H.9:
 3" R.S.C.
 2-12/c#12
 4-3/c#12
 2-1/c#10
 1-3/c#20

- (4) TYPE P80-A-20**
 P80 POLE FOUNDATION
 ONE WAY SIGNAL-OVERHEAD
 TYPE 20C-POLE MOUNTED 270°
 TWO WAY EVP DETECTOR AND LIGHT-OVERHEAD
 1-PEDESTRIAN PUSH BUTTON AND SIGN AT 270°
 EXTEND INTO H.H.18:
 3" R.S.C.
 2-12/c#12
 3-3/c#12
 1-3/c#20

NOTES

- POLE AND DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGINEER PRIOR TO INSTALLATION.
- A 3/4" I.D. HALF COUPLING SHALL BE FURNISHED APPROX. 2 FEET AND 4 FEET FROM END OF MAST ARM ON EACH POLE PER Mn/DOT 3831.2C.
- A MID ARM MOUNT SHALL BE FURNISHED AND INSTALLED 14 FEET FROM THE END OF MAST ARM AT POLES (1) AND (3).
- ALL PEDESTRIAN INDICATIONS SHALL BE 12"x12".
- ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS EXCEPT SIGNAL FACES 2-3, 4-3, 6-3 AND 8-3.
- EACH LUMINAIRE WITH P.E.C. AND STREET LIGHT CHECK SWITCH.
- ALL HANDHOLES SHALL BE CONCRETE HANDHOLES WITH TYPE "C" COVERS.
- SEE SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY FOR LOCATION OF UTILITIES.
- CONTRACTOR SHALL INSTALL PEDESTRIAN CURB RAMPS WHERE SHOWN IN THE PLANS. SEE SPECIAL PROVISIONS.
- (Interconnect) DENOTES ITEM TO BE PAID FOR UNDER SEPARATE PAY ITEM. SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- CONTRACTOR SHALL REMOVE EXISTING HANDHOLES (6 TOTAL) AND SHALL ABANDON INPLACE R.S.C. AS DIRECTED BY ENGINEER.

- (2) TYPE P80-A-20**
 P80 POLE FOUNDATION
 ONE WAY SIGNAL - OVERHEAD
 TYPE 20C-POLE MOUNTED 270°
 1-PEDESTRIAN PUSH BUTTON AND SIGN AT 270°
 EXTEND INTO H.H. 5:
 3" R.S.C.
 2-12/c#12
 2-3/c#12

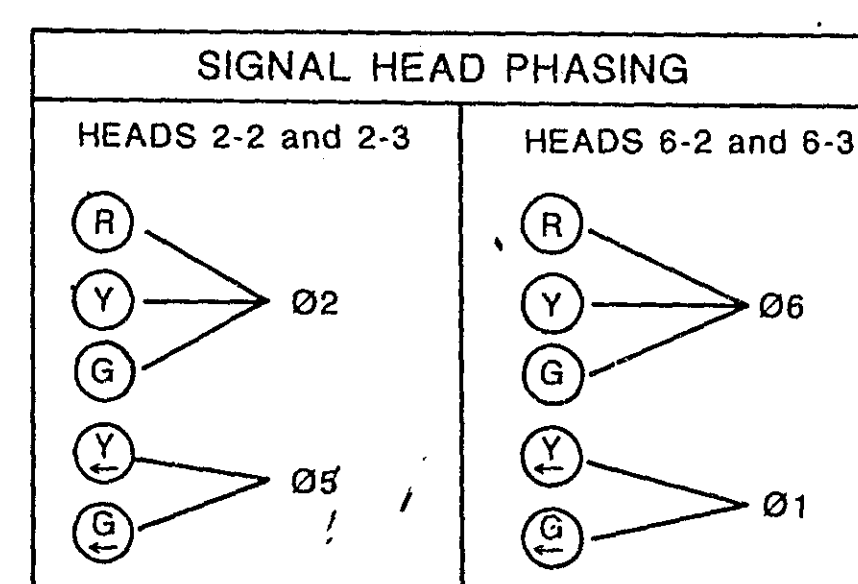
SIGNAL INDICATION CHART

FACE	PHASE	R	Y	G	YLTA	GLTA
2-1	2	12	12	12		
2-2	2 AND 5	12	12	12	12	12
2-3	2 AND 5	12	12	12	12	12
2-4	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	1 AND 6	12	12	12	12	12
6-3	1 AND 6	12	12	12	12	12
6-4	6	12	12	12		
8-1	8	12	12	12		
8-2	8	12	12	12		
8-3	8	12	12	12		

- NOTES:
 1) FLASH MODE= ALL RED
 2) ALL SIZES ARE IN INCHES.

NO.	SIZE	OPERATION	LOC
D1-1	2'-6"x15"	1, 4	0'
D1-2	6"x25"	3	80'
D2-1	6"x6"	1	260'
D2-2	6"x6"	1	260'
D4-1	2'-6"x6"	1	165'
D4-2	2'-6"x6"	1	70'
D4-3	2'-6"x15"	1, 4	0'
D5-1	2'-6"x15"	1, 4	0'
D5-2	6"x25"	3	80'
D6-1	6"x6"	1	260'
D6-2	6"x6"	1	260'
D8-1	2'-6"x6"	1	155'
D8-2	2'-6"x6"	1	70'
D8-3	2'-6"x15"	1, 4	0'
D1	6"x6"	5	SEE PLAN
D2	6"x6"	5	SEE PLAN

- OPERATIONS:
 1=CALL & EXTEND
 2=CALL ONLY
 3=EXTEND ONLY
 4=TIME DELAY
 5=COUNT
- NOTE:
 LOCATION=DISTANCE FROM STOP BAR TO DETECTOR.



- PEDESTRIAN PUSH BUTTON STATION (4" R.S.C.)
 1-PEDESTRIAN PUSH BUTTON AND SIGN
 EXTEND INTO H.H.5:
 1 1/4" R.S.C.
 1-3/c#12

- 4" R.S.C.
 4-12/c#12
 4-3/c#12
 7-2/c#14
 2-1/c#10
 1-3/c#20

- EQUIPMENT PAD
 SEE (A)

METER ADDRESS 1540 BEAM AVENUE

RAMSEY COUNTY, MINNESOTA
 CITY OF MAPLEWOOD

TRAFFIC SIGNAL SYSTEM "C"
 INTERSECTION LAYOUT
 BEAM AVENUE AT HAZELWOOD STREET

FILE NO.
 90044
 DATE
 2/16/90

19

23-149 Beam Ave @ South Mall Entrance
 Beam Ave @ South Mall Rn & Hazelwood

1/19, 7/19, 8/19
 9/19, 12/19, 14/19, 15/19

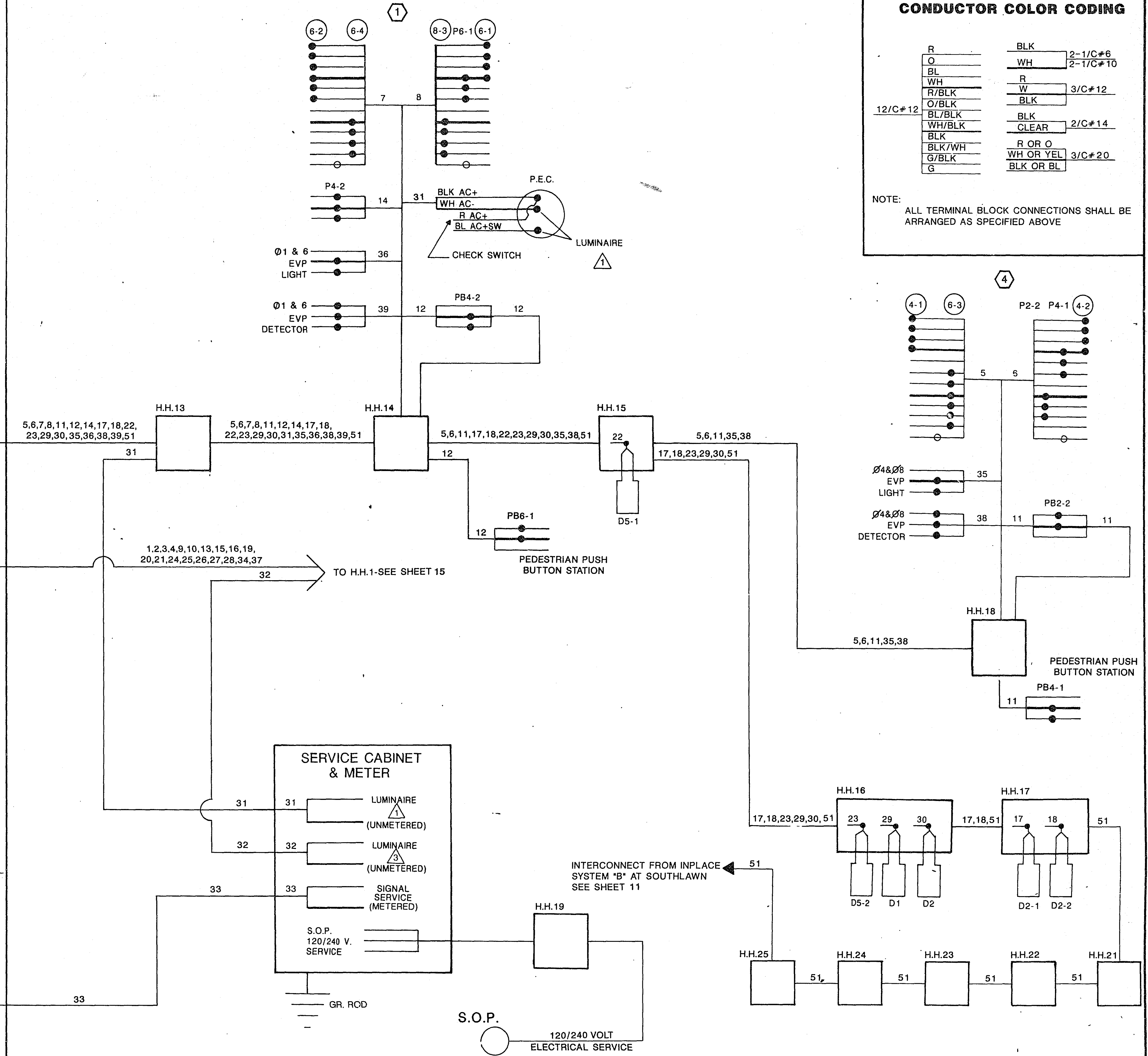
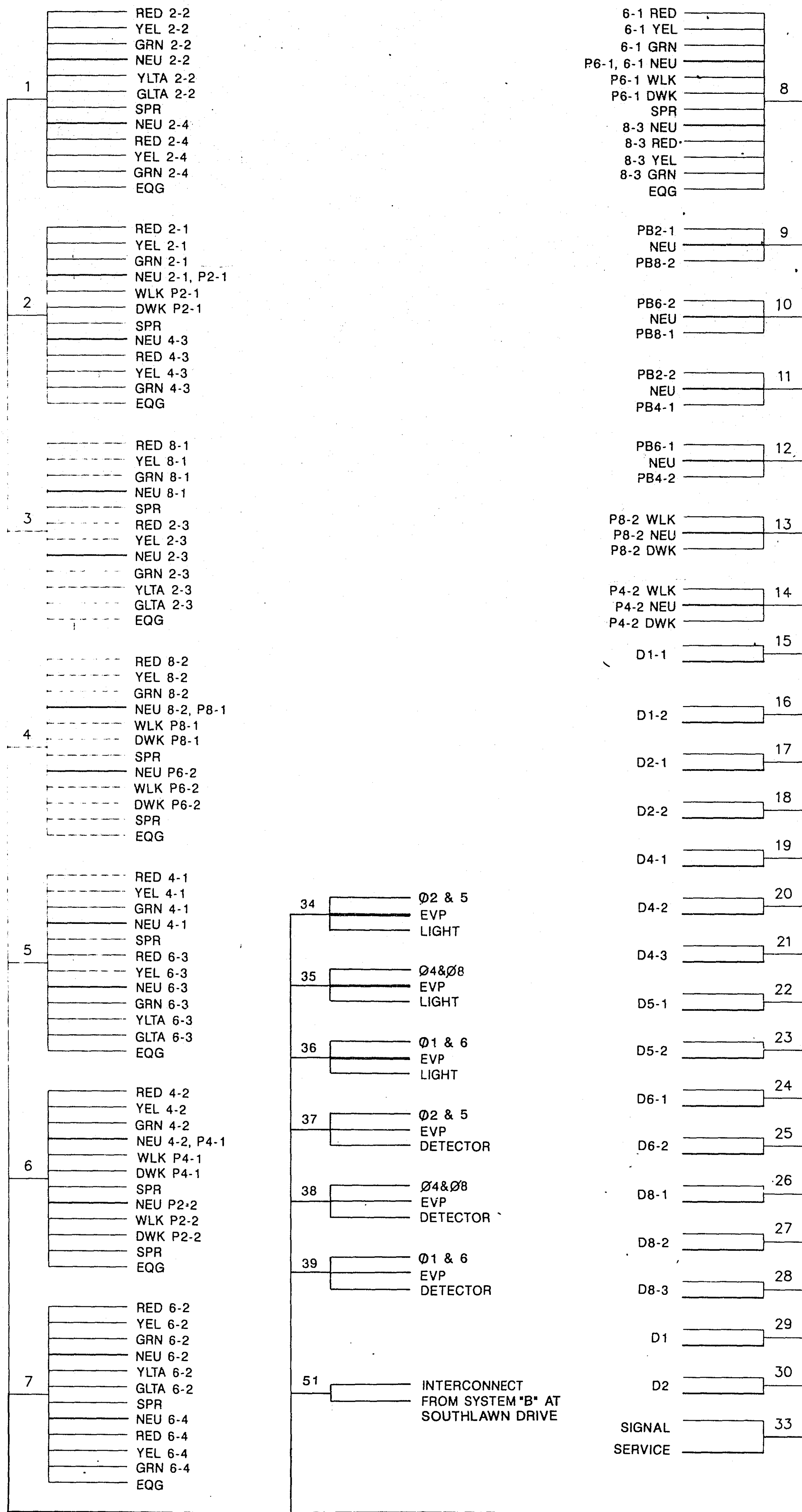
24X

CONTROLLER CABINET

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	BLK	
WH/BLK	CLEAR	2/C#14
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



DRAWING

NUMBER 23-149

NUMBER

NUMBER

NO.	BY	DATE	REVISIONS	ITEM	DESIGN	CHECKED

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 2/1/19 Reg No. 9089



RAMSEY COUNTY, MINNESOTA
CITY OF MAPLEWOOD

TRAFFIC SIGNAL SYSTEM "C"
FIELD WIRING DIAGRAM
BEAM AVENUE AT HAZELWOOD STREET

FILE NO. 90044	14
DATE 2/16/90	19

23-149 Beam Ave @ South Mall Entrance
Beam Ave @ Southlawn Dr & Hazelwood

1/19, 7/19, 8/19,
9/19, 12/19, 1/19, 12/19

24X

23-149

DRAWING

PLAN HOLD CORPORATION
REGISTERED PROFESSIONAL ENGINEER
REGISTERED PROFESSIONAL ARCHITECT
REGISTERED PROFESSIONAL PLANNER
REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT
REGISTERED PROFESSIONAL SURVEYOR
REGISTERED PROFESSIONAL CIVIL ENGINEER
REGISTERED PROFESSIONAL ELECTRICAL ENGINEER
REGISTERED PROFESSIONAL MECHANICAL ENGINEER
REGISTERED PROFESSIONAL CHEMICAL ENGINEER
REGISTERED PROFESSIONAL INDUSTRIAL ENGINEER
REGISTERED PROFESSIONAL AERONAUTICAL ENGINEER
REGISTERED PROFESSIONAL AGRICULTURAL ENGINEER
REGISTERED PROFESSIONAL METALLURGICAL ENGINEER
REGISTERED PROFESSIONAL MINING ENGINEER
REGISTERED PROFESSIONAL PETROLEUM ENGINEER
REGISTERED PROFESSIONAL RAILROAD ENGINEER
REGISTERED PROFESSIONAL TELECOMMUNICATIONS ENGINEER
REGISTERED PROFESSIONAL TRANSPORTATION ENGINEER
REGISTERED PROFESSIONAL WATER RESOURCES ENGINEER
REGISTERED PROFESSIONAL WIND ENGINEER
REGISTERED PROFESSIONAL X-RAY ENGINEER
REGISTERED PROFESSIONAL YACHT ENGINEER
REGISTERED PROFESSIONAL ZOOLOGICAL ENGINEER

BASE OVERLAY DRG NO.

DRAWING NUMBER
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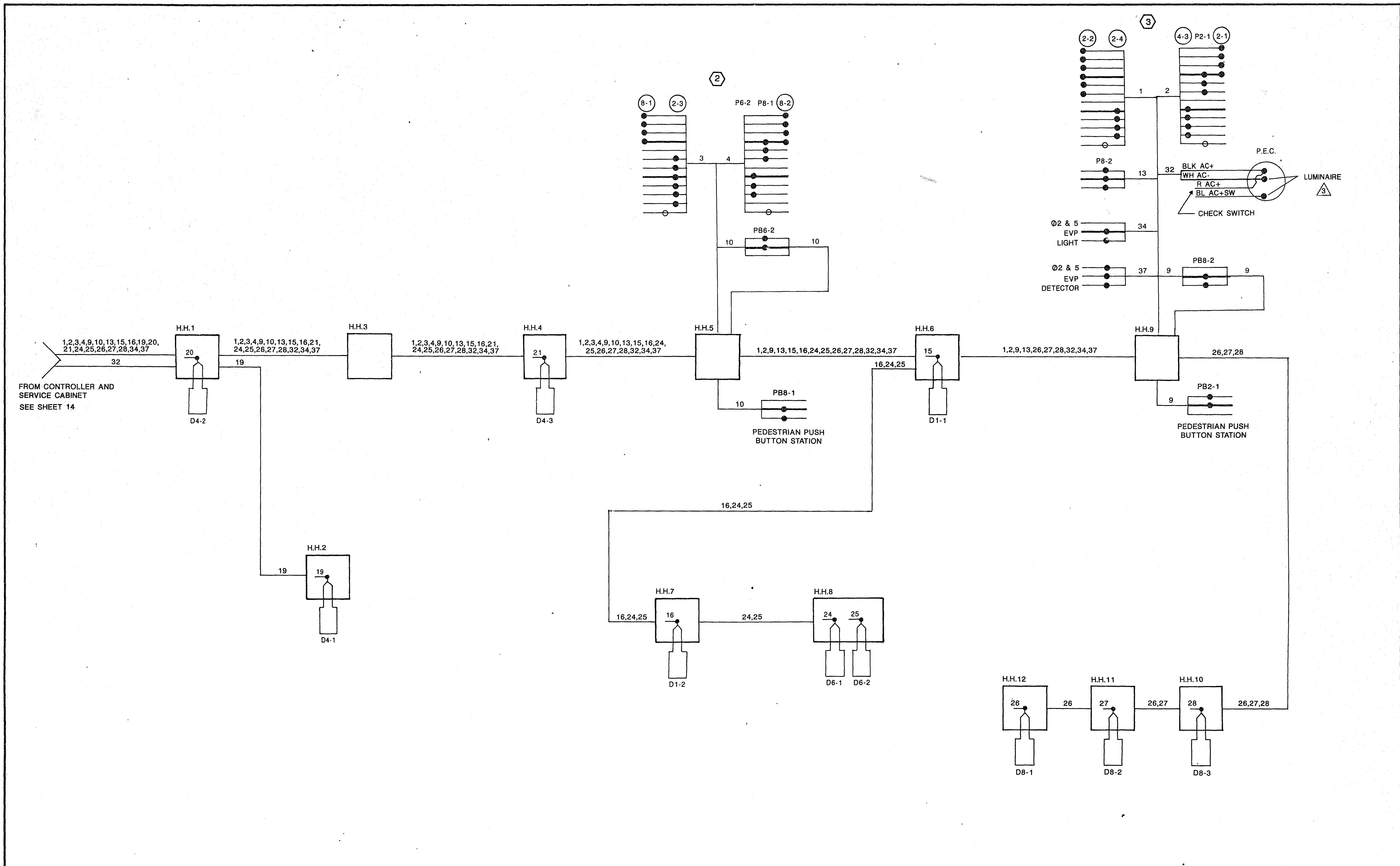
PLAN HOLD CORPORATION
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REGISTERED PROFESSIONAL RAILROAD ENGINEER
REGISTERED PROFESSIONAL TELECOMMUNICATIONS ENGINEER
REGISTERED PROFESSIONAL TRANSPORTATION ENGINEER
REGISTERED PROFESSIONAL WATER RESOURCES ENGINEER
REGISTERED PROFESSIONAL WIND ENGINEER
REGISTERED PROFESSIONAL X-RAY ENGINEER
REGISTERED PROFESSIONAL YACHT ENGINEER
REGISTERED PROFESSIONAL ZOOLOGICAL ENGINEER



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.					ES&H ENGINEERS • ARCHITECTS • PLANNERS		RAMSEY COUNTY, MINNESOTA CITY OF MAPLEWOOD		TRAFFIC SIGNAL SYSTEM "C" FIELD WIRING DIAGRAM BEAM AVENUE AT HAZELWOOD STREET		FILE NO. 90044	15
Date: 2/16/90 Reg No. 9089											DATE 2/16/90	19

23-149 Beam Ave @ South Mall Entrance
Beam Ave @ Southdown Rd & Hazelwood
1/19, 7/19, 8/19,
9/19, 12/19, 14/19, 15/19

24X