PLAN SYMBOLS
SYMBOL DESIGNATION: TECHNICAL MANUAL 292.620

- EQG CONNECTION
- EVP DETECTOR DIRECTION
- LUMINAIRE NO.
- SIGNAL BASE NO.
- SIGN FACE NO.
- SPLICE
- HAND HOLE **INPLACE**
- CONDUIT **INPLACE**
- CONDUIT **F&I**
- HAND HOLE **F&I**

MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR FULL-TRAFFIC-ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM

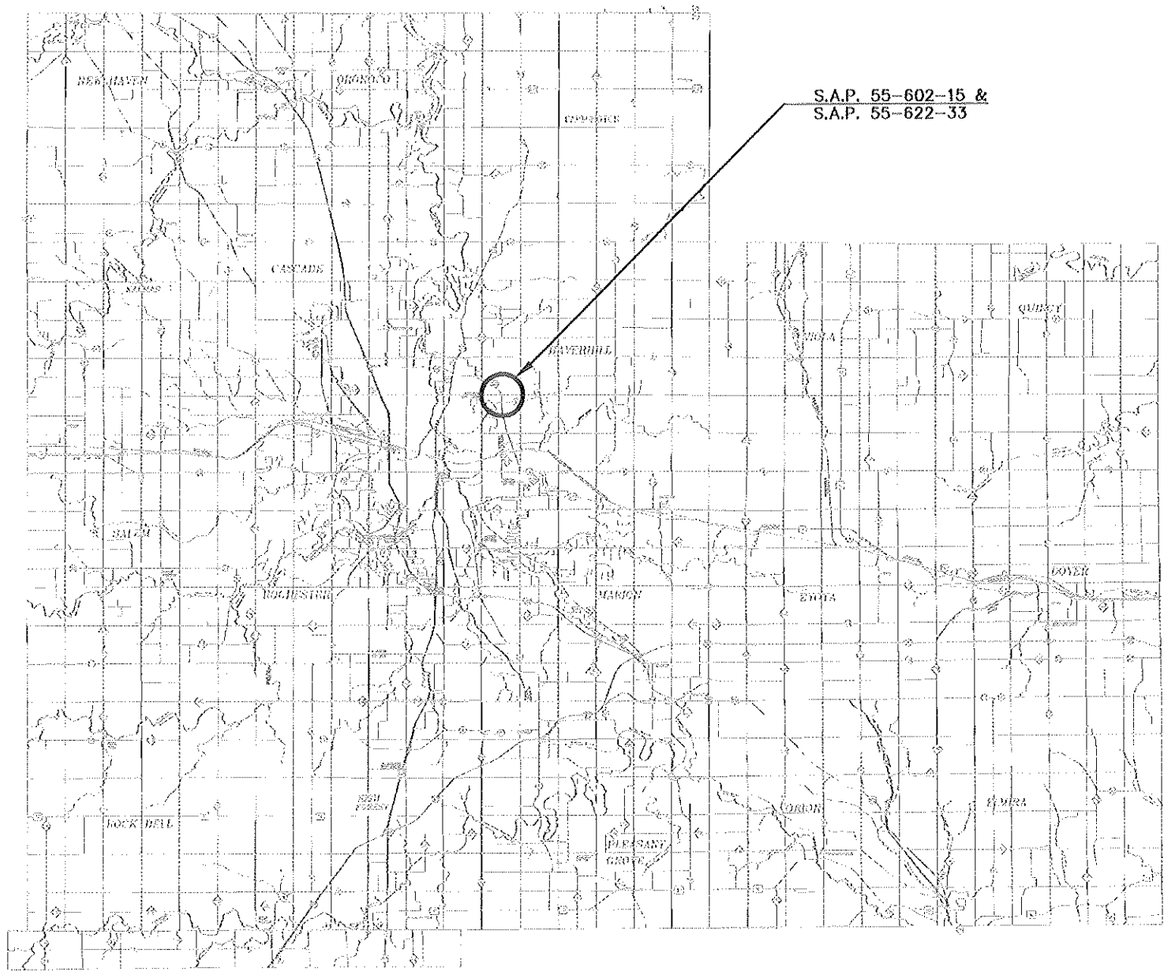
LOCATED ON C.S.A.H.2 AT THE INTERSECTION OF C.S.A.H.22

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

STANDARD PLATES

	PLATE NO.	DESCRIPTION
➡	M8110 D	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
➡	M8111 C	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED)
➡	M8112 C	PEDESTAL FOUNDATION
	8113 C	MAGNETIC VEHICLE DETECTOR INSTALLATION
➡	M8114 A	P.V.C. HANDHOLE/PULLBOX
➡	M8115 D	PEDESTRIAN PUSH BUTTON INSTALLATION
➡	M8118 C	SERVICE EQUIPMENT AND POLE, TRAFFIC CONTROL SIGNALS
➡	M8119 C	GROUND MOUNTED CABINET FOUNDATION
	M8120 K	POLE FOUNDATION (PA85)
➡	M8121 D	TRANSFORMER BASE WITH POLE BASE PLATE
➡	M8122 C	PEDESTAL & PEDESTAL BASE
➡	M8123 D	POLE AND MAST ARM (LUMINAIRE AND TRAFFIC LIGHTS)
➡	M8124 E	MAST ARM SIGNAL HEAD MOUNTS
➡	M8126 F	POLE FOUNDATION (PA90 AND PA100)
➡	M8130 D	SAW CUT LOOP DETECTORS

➡ = APPLICABLE TO THIS PROJECT



SCALES

PLAN 0 10 1:250-FULL SIZE 1:500-HALF SIZE

INDEX MAP 0 100 1:500-FULL SIZE 1:1000-HALF SIZE

STATEMENT OF ESTIMATED QUANTITIES

NOTES	MnDOT SPEC. REF.	ITEM	UNITS	S.A.P. 55-602-15 PARTICIPATING	S.A.P. 55-622-33 PARTICIPATING	TOTAL QUANTITY ESTIMATED
	2565.511	FULL T ACT T CONTROL SIGNAL SYSTEM	SIG SYS	0.5	0.5	1

MINN. PROJ. NO. .....

GOVERNING SPECIFICATIONS

THE 1995 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

INDEX

SHEET NO. 1	TITLE SHEET
SHEET NO. 2-5	DETAILS
SHEET NO. 6	INTERSECTION LAYOUT
SHEET NO. 7	MATCH LINES
SHEET NO. 8-9	WIRING DIAGRAM

THIS PLAN CONTAINS 9 SHEETS.

DESIGN DESIGNATION (CSAH 2)

ADT (Current Year) = 4400(1997) Design Speed 40 MPH
ADT (Future Year) = 6600(2017) Based on STOPPING Sight Distance
DHV (Design Hr. Vol.) = ... Height of eye 3.5 Height of object 0.5
D (Directional Distr.) = ... Design Speed not achieved at: .....
T (Heavy Commercial) = ... STA. ..... TO STA. ..... MPH .....
SOIL FACTOR = ... STA. ..... TO STA. ..... MPH .....
TON DESIGN .....
SHOULDER WIDTH 10'
NO. OF TRAFFIC LANES 4 NO. OF PARKING LANES NONE
FUNCTIONAL CLASSIFICATION: EAST OF CSAH 22 : MAJOR COLLECTOR
WEST OF CSAH 22 : MINOR ARTERIAL

DESIGN DESIGNATION (CSAH22)

ADT (Current Year) = 10700(1997) Design Speed 45 MPH
ADT (Future Year) = 16000(2017) Based on STOPPING Sight Distance
DHV (Design Hr. Vol.) = ... Height of eye 3.5 Height of object 0.5
D (Directional Distr.) = ... Design Speed not achieved at: .....
T (Heavy Commercial) = ... STA. ..... TO STA. ..... MPH .....
SOIL FACTOR = ... STA. ..... TO STA. ..... MPH .....
TON DESIGN .....
SHOULDER WIDTH .....
NO. OF TRAFFIC LANES 4
NO. OF PARKING LANES NONE
FUNCTIONAL CLASSIFICATION: PRINCIPAL ARTERIAL

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 4/24/97 REG. NO. 17290 ENGR. Allan S. Klugman

COUNTY OLMSTED

Approved 5/5 1997 Michael Hanson OLMSTED COUNTY ENGINEER

Recommended for Approval ..... 5/9/97 DISTRICT STATE AID ENGINEER

Recommended for Approval ..... 19 .....

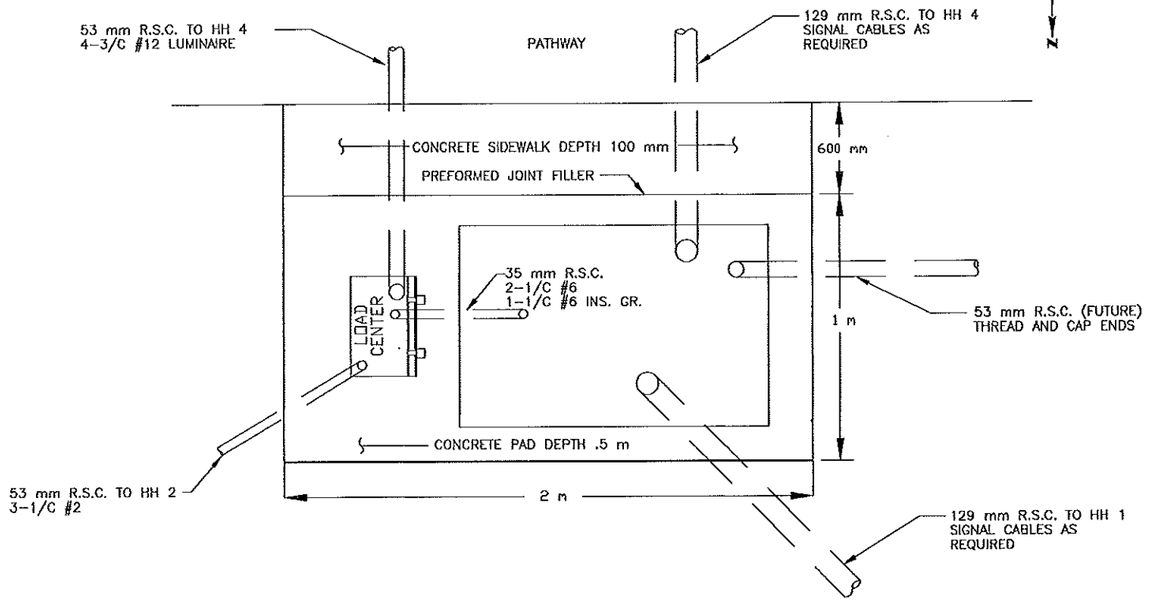
Recommended for Approval ..... 19 .....

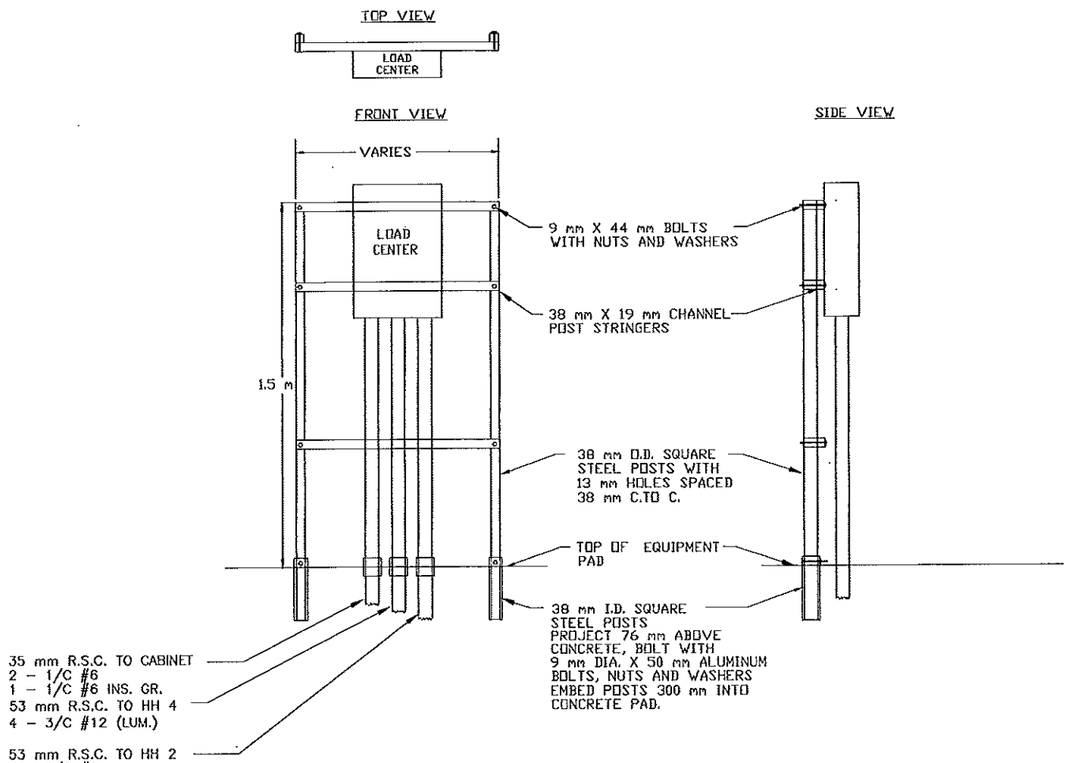
TB Approved 6-6 1997 FOR STATE AID DIVISION

STATE AID PROJ. NO. 55-602-15 & 55-622-33 SHEET NO. 1 OF 9 SHEETS

NOT DRAWN TO SCALE

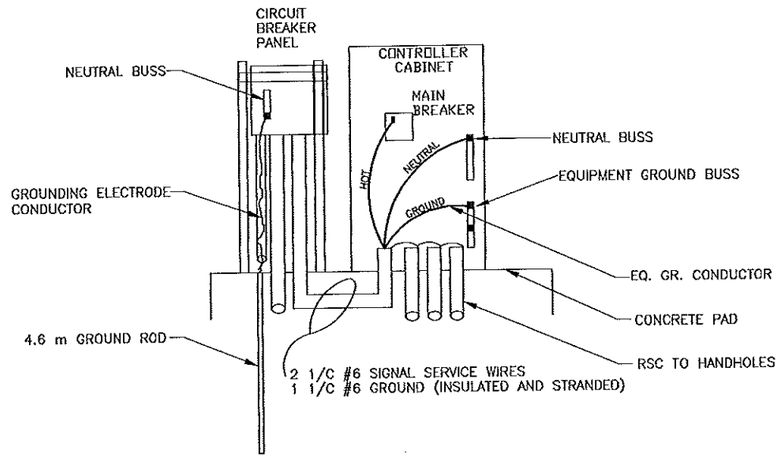
EQUIPMENT PAD LAYOUT DETAIL





PAD MOUNTED LOAD CENTER
MOUNTING BRACKET ASSEMBLY
NOT DRAWN TO SCALE

GROUND ROD WIRING DETAIL FOR PAD WITH RACK MOUNTED SERVICE EQUIPMENT



NOTES:

WHEN RACK MOUNTED SERVICE EQUIPMENT AND CONTROLLER CABINET ARE BOTH ON THE SAME PAD, THE GROUNDING ELECTRODE (4.6 m GROUND ROD) SHALL BE LOCATED RIGHT UNDER THE SERVICE EQUIPMENT RACK.

A GROUNDING ELECTRODE CONDUCTOR (#6 BARE) SHALL RUN FROM THE NEUTRAL BUSS IN THE CIRCUIT BREAKER PANEL THROUGH A 25 mm CONDUIT TO THE GROUND ROD. THE CONDUIT SHALL TERMINATE APPROXIMATELY 50 mm ABOVE THE GROUND ROD.

2--1/C #6 SIGNAL SERVICE WIRES AND 1--1/C #6 INSULATED AND STRANDED GROUND WIRE SHALL RUN FROM THE ENCLOSED CIRCUIT BREAKER TO THE CONTROLLER CABINET THROUGH A SEPARATE RSC.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE CONNECTED TO THE EQUIPMENT GROUND BUSS IN THE CONTROLLER CABINET. THE NEUTRAL WIRE OF THE SIGNAL SERVICE WIRES SHALL GO TO THE NEUTRAL BUSS OF THE CONTROLLER CABINET.

A #6 BARE EQUIPMENT GROUNDING CONDUCTOR SHALL BE CONNECTED FROM THE EQUIPMENT GROUND BUSS TO EACH CONDUIT GROUND BUSHING LUG IN THE CONTROLLER CABINET.

Westwood
Westwood Professional Services, Inc
14160 West Trunk Hwy. 5
Eden Prairie, MN 55344
612 937-5150

DRAWN BY: RBG	CHECKED: ASK DATE: 3/28/97	REVISED BY:	AS BUILT BY:

DETAIL LAYOUT

C.S.A.H. 2 AT C.S.A.H. 22

IN ROCHESTER, OLMSTED COUNTY

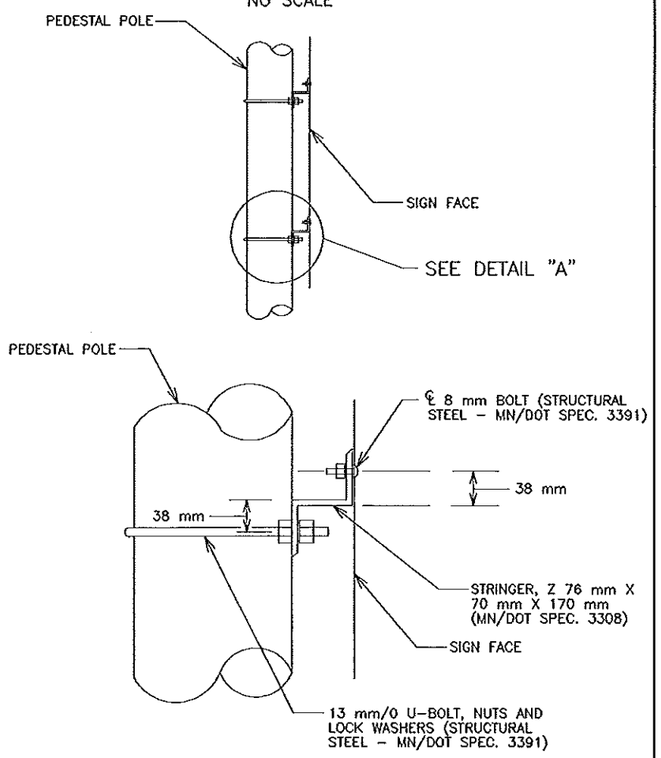
CERTIFIED BY: Allan S. Klugman PROFESSIONAL ENGINEER REG. NO. 17290 DATE 6/4/97

S.A.P. 55-602-15, 55-622-33 Sheet No. 2 of 9 Sheets

96343 6343TFT3.DWG

FLASHER SIGN MOUNTING DETAILS–SIDE ELEVATION

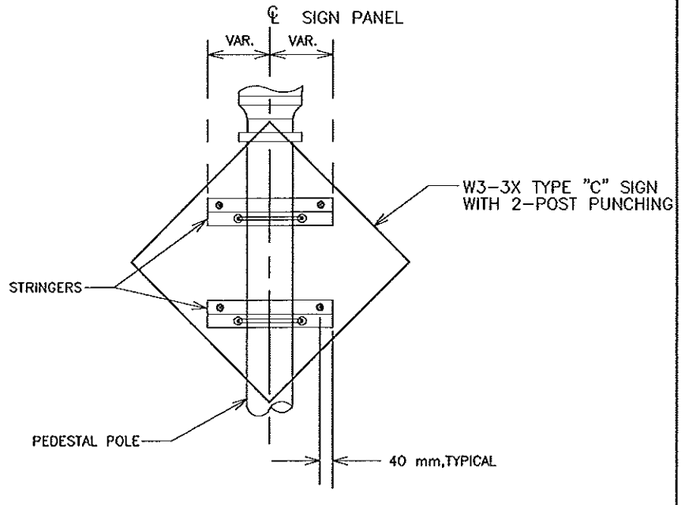
NO SCALE



DETAIL "A"

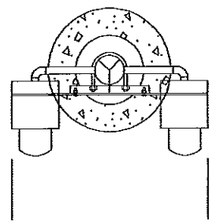
FLASHER SIGN MOUNTING DETAILS–FRONT ELEVATION

NO SCALE



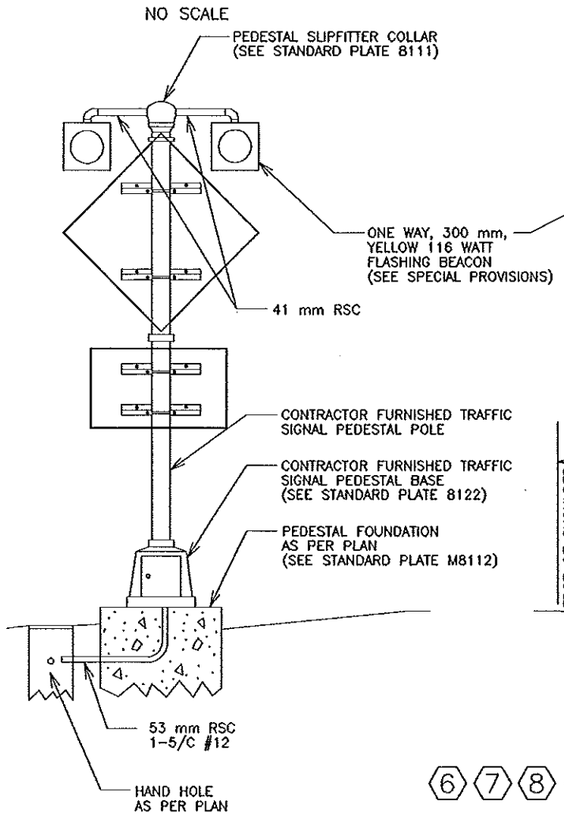
FLASHER–TOP VIEW

NO SCALE



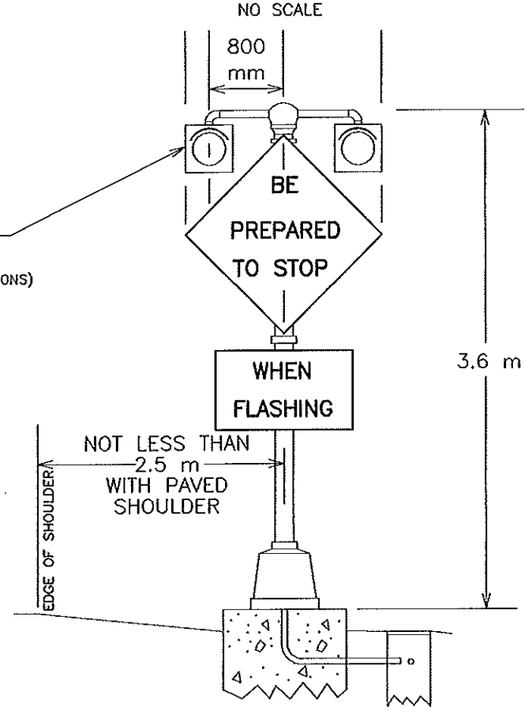
FLASHER–BACK VIEW

NO SCALE



FLASHER–FRONT VIEW

NO SCALE



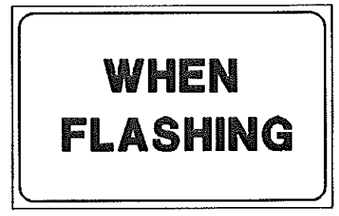
FLASHER SIGNING

NO SCALE



48 INCH X 48 INCH (W3–X3)
(1200 mm X 1200 mm)

NO SCALE



48 INCH X 30 INCH (W3–X2)
(1200 mm X 750 mm)

⑥⑦⑧⑨

SIGN NOTES:

SEE MN/DOT STANDARD SIGNS MANUAL FOR SIGN DETAILS

FOUR OF EACH SIGN IS REQUIRED

ALL SIGNS SHALL HAVE BLACK LETTERING AND BORDERS ON A YELLOW BACKGROUND.

ADVANCE WARNING FLASHERS SHALL BE INCIDENTIAL TO SIGNAL SYSTEM – SEE SPECIAL PROVISIONS

Westwood
Westwood Professional Services, Inc
14180 West Truck Hwy. 5
Eden Prairie, MN 55344
612 937–5150

DRAWN BY: RBC	CHECKED: ASK DATE: 3/26/97	REVISED BY:	AS BUILT BY:

ADVANCE WARNING FLASHER DETAILS

C.S.A.H. 2 AT C.S.A.H. 22

IN ROCHESTER, OLMSTED COUNTY

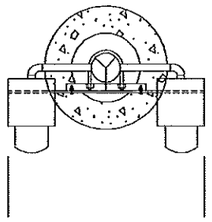
CERTIFIED BY: Allan S. Klugman PROFESSIONAL ENGINEER REG. NO. 17290 DATE 6/4/97

S.A.P. 55–602–15, 55–622–33 Sheet No. 3 of 9 Sheets

96349 6343TFF62VG

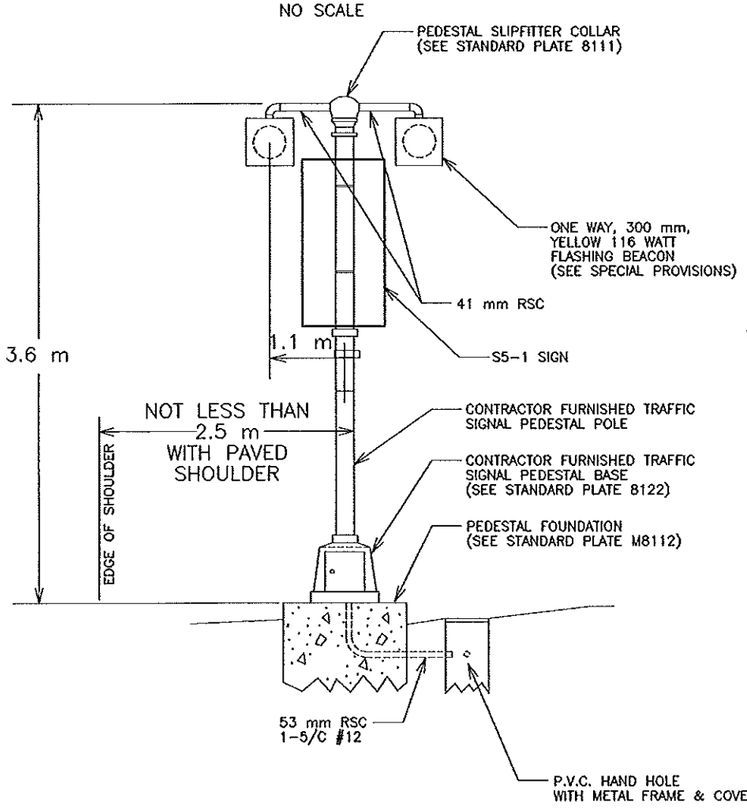
FLASHER–TOP VIEW

NO SCALE



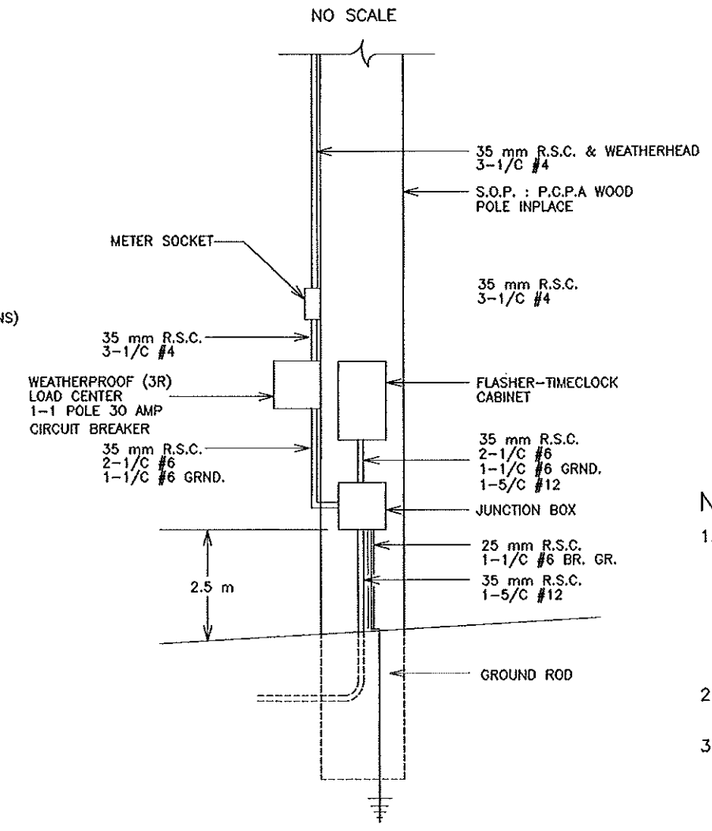
FLASHER–FRONT VIEW

NO SCALE



POLE MOUNTED SERVICE EQUIPMENT AND CABINET–FRONT VIEW

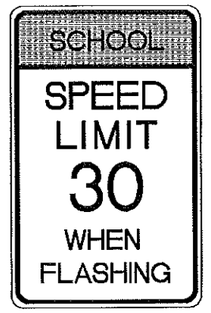
NO SCALE



FLASHER SIGNING

NO SCALE

24 INCH X 48 INCH (S5-1)
(600 mm X 1200 mm)



NOTES:

1.) CONTRACTOR SHALL FURNISH AND INSTALL TWO SCHOOL FLASHER ASSEMBLIES:
- ASSEMBLY NO. 1 SHALL BE LOCATED ON THE NORTH SIDE OF C.S.A.H. 2, APPROXIMATELY 910 m EAST OF C.S.A.H. 22 ℄. ASSEMBLY NO. WILL BE APPROXIMATELY 15 m FROM S.O.P. NO. 1.
- ASSEMBLY NO. 2 SHALL BE LOCATED ON THE SOUTH SIDE OF C.S.A.H. 2, APPROXIMATELY 90 m EAST OF C.S.A.H. 22 ℄. ASSEMBLY NO. WILL BE APPROXIMATELY 10 m FROM S.O.P. NO. 2.

2.) FLASHER–TIMECLOCK CABINET SHALL BE APPROXIMATELY 350 mm X 310 mm X 180 mm WITH SOLID STATE TWO CIRCUIT FLASHER AND SOLID STATE TIMECLOCK.

3.) SCHOOL FLASHER ASSEMBLY SHALL BE INCIDENTIAL TO SIGNAL SYSTEM – SEE SPECIAL PROVISIONS.

minnesota department of transportation

DRAWN BY: RBC	CHECKED: ASK DATE: 4/24/97	REVISED BY:	AS BUILT BY:

SCHOOL FLASHER ASSEMBLY DETAILS

C.S.A.H. 2 AT C.S.A.H. 22

IN ROCHESTER, OLMSTED COUNTY

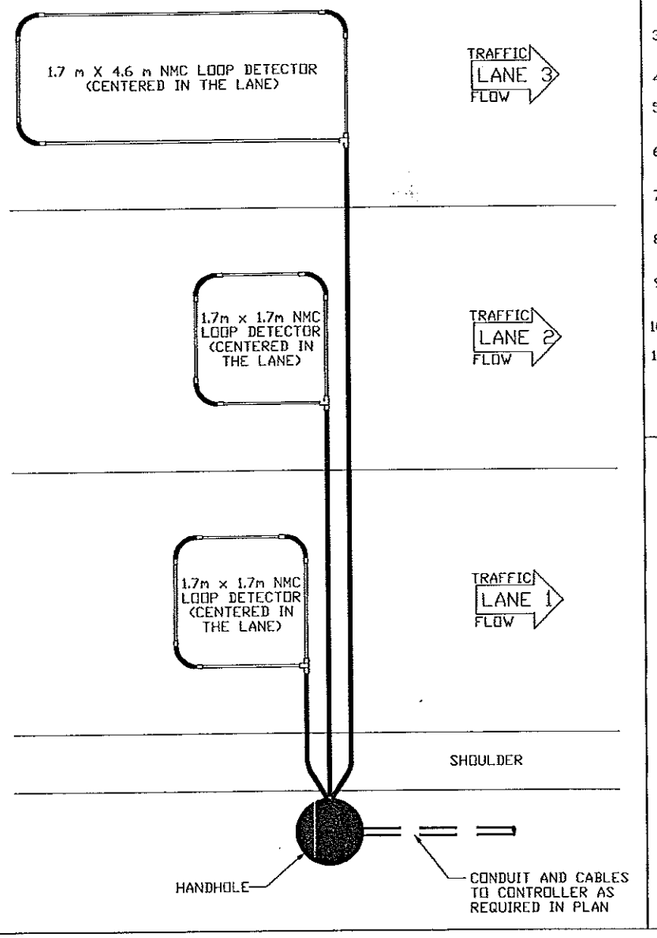
CERTIFIED BY: Allan S. Klugman PROFESSIONAL ENGINEER REG. NO. 17290 DATE 6/4/97

Westwood
Westwood Professional Services, Inc
14160 West Truck Hwy. 5
Eden Prairie, MN 55344
612 937-5150

S.A.P. 55-602-15, 55-622-33 Sheet No. 4 of 9 Sheets

96343 6343FFF2.DWG

TYPICAL NMC LOOP DETECTOR LAYOUT



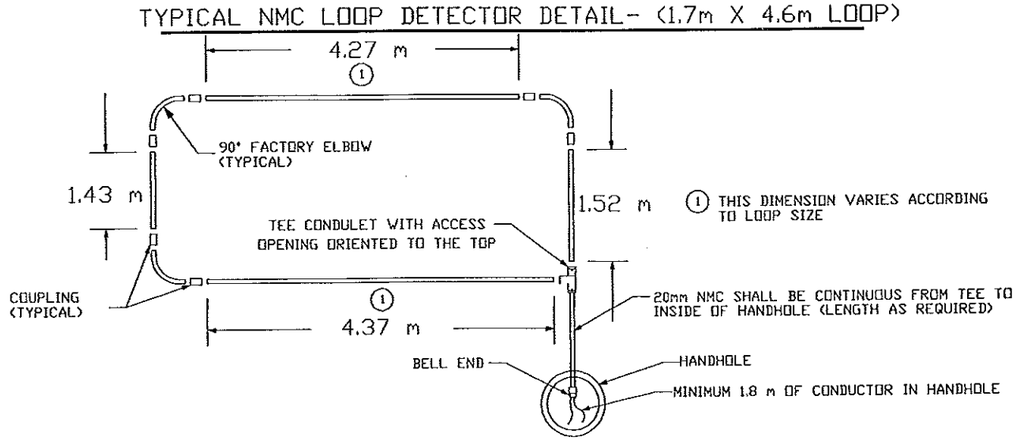
GENERAL NOTES:

1. SEE SPECIAL PROVISIONS FOR REQUIRED SPLICE KITS.
2. THE 20 mm NON-METALLIC CONDUIT (NMC) AND FITTINGS SHALL BE SCHEDULE 40 HEAVY WALL RIGID POLYVINYL CHLORIDE (PVC). SEE SPEC. 3803.
3. THREE CORNERS OF EACH LOOP DETECTOR SHALL BE A 90° FACTORY ELBOW (150 mm RADIUS). THE FOURTH SHALL BE A NMC TEE CONDULET.
4. APPROVED PVC PRIMER AND CEMENT SHALL BE USED FOR THE PVC JOINTS.
5. ALL SLACK MUST BE REMOVED FROM LOOP DETECTOR CONDUCTORS WITHIN THE NMC.
6. THE LOOP DETECTOR CONDUCTORS (1/C#14) SHALL BE TWISTED THREE TURNS PER FOOT FROM THE NMC TEE CONDULET TO THE HANDHOLE.
7. ATTACH A FERROUS METAL ITEM TO THE INTERIOR OF THE TEE CONDULET COVER.
8. EACH LOOP DETECTOR CONDUIT TO THE HANDHOLE SHALL BE SLOPED TOWARDS THE HANDHOLE.
9. LOOP DETECTOR CONDUITS TO THE HANDHOLE MAY BE PLACED WITHIN THE SAME TRENCH.
10. THE LOOP DETECTOR CONDUCTORS SHALL END IN THE HANDHOLE.
11. NO SPLICES ALLOWED IN CONDUIT OR TEE CONDULET.

LOOP DETECTOR TURNS IN BITUMINOUS OR CONCRETE PAVEMENT

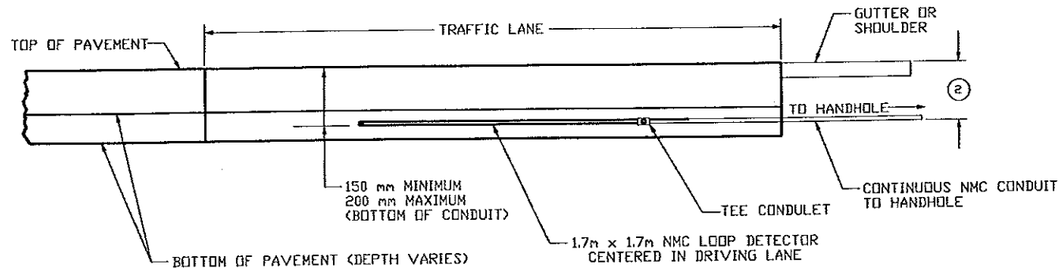
SIZE OF LOOP DETECTOR	1.7 X 1.7	1.7 X 3	1.7 X 4.6	1.7 X 6.1
NUMBER OF LOOP DETECTOR TURNS	4 TURNS	4 TURNS	4 TURNS	4 TURNS

TYPICAL NMC LOOP DETECTOR DETAIL- (1.7m X 4.6m LOOP)

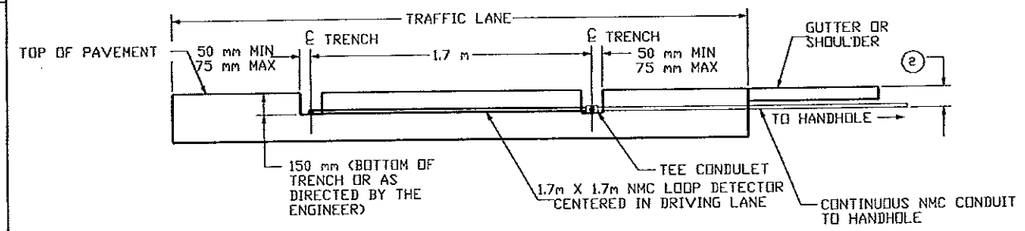


TYPICAL NMC LOOP DETECTOR INSTALLATION

NEW BITUMINOUS OR CONCRETE PAVEMENT



INPLACE BITUMINOUS PAVEMENT



(2) VARIABLE DEPTH-MAINTAIN DRAINAGE TO HANDHOLE

NOTES:

1. USE THE ACTUAL LOOP DETECTOR TO BE PLACED FOR MARKING THE PAVEMENT FOR MILLING LOCATION.
2. MILL PAST THE CENTER OF THE CONDUIT TO BE PLACED.
3. ACHIEVE A MINIMUM 50mm VERTICAL EDGE ON ALL CUTS.
4. AN AIR COMPRESSOR UNIT (50 HP) IS REQUIRED FOR REMOVING ALL LOOSE MATERIAL FROM TRENCH PRIOR TO TACK APPLICATION.
5. BOTTOM AND EDGES OF MILLED AREA SHALL BE THOROUGHLY COVERED WITH TACK. (EMULSIFIED ASPHALT-SEE SPEC. 2357.2A)
6. USE TYPE 41 WEARING COURSE (TYPE 41WEA50055X OR Y)
7. DO NOT USE PETROLEUM DISTILLATES AS A RELEASE AGENT. REFER TO MN/DOT TECHNICAL MEMORANDUM NO. 94-16-MRE-05 DATED 3/10/94 FOR ADDITIONAL INFORMATION.
8. COMPACTION SHALL BE OBTAINED BY THE ORDINARY COMPACTION METHOD. A MINIMUM OF TWO LIFTS SHALL BE USED. DETERMINE LIFT DEPTHS SUCH THAT THERE IS NO DAMAGE TO CONDUIT. ENSURE BITUMINOUS PLACEMENT ADJACENT TO SIDES OF CONDUIT.
9. CREATE AN OVERFILL OF 6mm - 12mm OVER EXISTING PAVEMENT SURFACE.
10. APPLY A COAT OF TACK OVER THE FINAL ROADWAY SURFACE. IF UNDER TRAFFIC, SPRINKLE WITH SAND TO PREVENT TRACKING AND SPRAYING.

minnesota metric

DRAWN BY: RKW	CHECKED: ASK DATE: 2/3/97	REVISED BY:	AS BUILT BY:

LOOP DETECTOR DETAILS

C.S.A.H. 2 AT C.S.A.H. 22

IN ROCHESTER, OLMSTED COUNTY

Westwood
Westwood Professional Services, Inc
14180 West Truck Hwy. 5
Eden Prairie, MN 55344
612 937-5150

CERTIFIED BY: Allan S. Klugman PROFESSIONAL ENGINEER REG. NO. 17290 DATE 4/24/97

S.A.P. 55-602-15, 55-622-33 Sheet No. 5 of 9 Sheets

96342 63457RFSLDWG

LOOP DETECTORS

NUMBER	SIZE (METERS)	FUNCTION	LOCATION
D1-1	2-1.7 X 1.7	1	11,15
D1-2	3-1.7 X 1.7	1	0,3,7 *
D2-1	1.7 X 1.7	1	145 *
D2-2	1.7 X 1.7	1	145 *
D3-1	1.7 X 4.6	2	16
D4-1	1.7 X 1.7	3	76
D4-2	1.7 X 1.7	3	76
D4-3	1.7 X 1.7,4.0 X 1.7	2	0,4
D4-4	2-1.7 X 1.7	1	0,4
D4-5	2-1.7 X 1.7	1	0,4
D4-6	2-1.7 X 1.7	1	0,4
D5-1	2-1.7 X 1.7	1	11,15
D5-2	2-1.7 X 1.7	1	2,6 *
D6-1	1.7 X 1.7	1	122
D6-2	1.7 X 1.7	1	122
D7-1	1.7 X 4.6	2	16
D8-1	1.7 X 1.7	3	91
D8-2	1.7 X 1.7	3	91
D8-3	1.7 X 1.7,4.6 X 1.7	2	0,4
D8-4	2-1.7 X 1.7	1	0,4
D8-5	2-1.7 X 1.7	1	0,4
D8-6	2-1.7 X 1.7	1	0,4

LOCATION = DISTANCE FROM STOP LINE TO DETECTOR IN METERS

LOOP DETECTOR FUNCTION

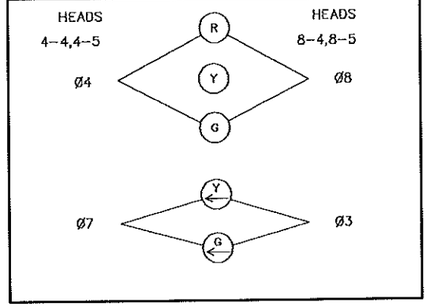
1.) CALL AND EXTEND

2.) DELAY CALL - IMMEDIATE EXTEND

3.) EXTEND ONLY

* INPLACE N.M.C. EMBEDDED LOOP, USE INPLACE.

SIGNAL HEAD PHASING



SIGNAL FACES

ALL INDICATIONS SHALL BE 300mm

FACE	R LED	Y	G	RLTA LED	YLTA	GLTA
1-1				←	←	←
1-2				←	←	←
2-1	●	●	●			
2-2	●	●	●			
2-3	●	●	●			
4-1	●	●	●			
4-2	●	●	●			
4-3	●	●	●			
4-4	●	●	●		←	←
4-5	●	●	●		←	←
5-1				←	←	←
5-2				←	←	←
6-1	●	●	●			
6-2	●	●	●			
6-3	●	●	●			
8-1	●	●	●			
8-2	●	●	●			
8-3	●	●	●			
8-4	●	●	●		←	←
8-5	●	●	●		←	←

(A) EQUIPMENT PAD (SEE DETAIL) CONTROLLER AND CABINET LOAD CENTER - PAD MOUNTED 1-53mm R.S.C. STUB OUT FOR FUTURE USE (THREAD AND CAP ENDS)

CABINET TO HH 1:
129mm R.S.C.
6 - 12/C #12
8 - 3/C #12
11 - 2/C #14
2 - 3/C #20
2 - 5/C #12

CABINET TO HH 4:
129mm R.S.C.
6 - 12/C #12
4 - 3/C #12
11 - 2/C #14
2 - 3/C #20
2 - 5/C #12

LOAD CENTER TO HH 4:
53mm R.S.C.
4 - 3/C #12 (LUM.)

LOAD CENTER TO HH 2:
53mm R.S.C.
3 - 1/C #2

LOAD CENTER TO CABINET
35mm R.S.C.
2 - 1/C #6
1 - 1/C #6 INS. GR.

(B) S.O.P. INPLACE WOOD POLE F & I METER SOCKET AND DISCONNECT (WOOD POLE MOUNTED)
53mm R.S.C. RISER AND WEATHERHEAD ABOVE METER SOCKET WITH 3 - 1/C #2
DISCONNECT TO HH 2:
53mm R.S.C.
3 - 1/C #2

(1) PA100 POLE FOUNDATION
TYPE PA100-A-12.2-D-12.2-3.6(DAVIT AT 350°)
1-TYPE R9-3A SIGN FACING POLE 2
2-ONE WAY SIGNALS OVERHEAD AT 0m AND 3.4m
1-TYPE 20B POLE MOUNTED AT 270°
1-PEDESTRIAN PUSH BUTTON & SIGN(R10-4C) LT.
1-"CROSS TO CENTER" SIGN (4"x6")
LUMINAIRE-250 WATT H.P.S. WITH PEC
EXTEND INTO HH 1:
78mm R.S.C.
3 - 12/C #12
3 - 3/C #12
1 - 3/C #20 (E.V.P.)
1 - 3/C #12 (LUM.)

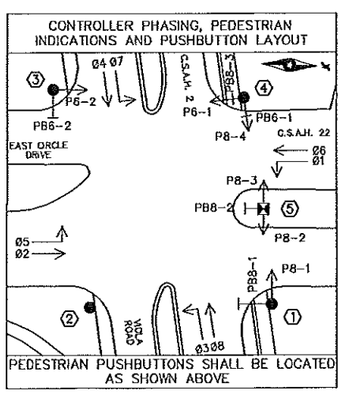
(2) PA100 POLE FOUNDATION
TYPE PA100-A-12.2-D-12.2-3.6 (DAVIT AT 350°)
1-TYPE R10-12 SIGN (36"x48") MAST ARM MOUNTED AT 300mm
2-TYPE R9-3A SIGN FACING POLES 1 AND 3
3-ONE WAY SIGNALS OVERHEAD AT 0m, 3.4m AND 7m
1-TYPE 20A POLE MOUNTED AT 270°
LUMINAIRE-250 WATT H.P.S. WITH PEC
EXTEND INTO HH 5:
78mm R.S.C.
3 - 12/C #12
2 - 3/C #12
1 - 3/C #20 (E.V.P.)
1 - 3/C #12 (LUM.)

(3) PA100 POLE FOUNDATION
TYPE PA100-A-15.2-D-12.2-3.6 (DAVIT AT 350°)
1-TYPE R9-3A SIGN FACING POLE 2
3-ONE WAY SIGNALS OVERHEAD AT 0m, 3.4m AND 7m
1-TYPE 20B POLE MOUNTED AT 270°
1-PEDESTRIAN PUSH BUTTON AND SIGN (R10-4C)RT.
LUMINAIRE-250 WATT H.P.S. WITH PEC
EXTEND INTO HH 9:
78mm R.S.C.
3 - 12/C #12
2 - 3/C #12
1 - 3/C #20 (E.V.P.)
1 - 3/C #12 (LUM.)

(4) PA100 POLE FOUNDATION
TYPE PA100-A-12.2-D-12.2-3.6 (DAVIT AT 350°)
1-TYPE R10-12 SIGN (36"x48") MAST ARM MOUNTED AT 300mm
3-ONE WAY SIGNALS OVERHEAD AT 0m, 3.4m AND 7m
1-TYPE 10C POLE MOUNTED AT 270°
2 PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4C)1 LT. & 1 RT.
1-"CROSS TO CENTER" SIGN (4"x6")
LUMINAIRE-250 WATT H.P.S. WITH PEC
EXTEND INTO HH 12:
78mm R.S.C.
2 - 12/C #12
4 - 3/C #12
1 - 3/C #20 (E.V.P.)
1 - 3/C #12 (LUM.)

(5) PEDESTAL FOUNDATION
3m PEDESTAL POLE AND BASE
1-TYPE 8C
1-PEDESTRIAN PUSH BUTTON AND SIGN (R10-4C)DH.
2-"WAIT HERE" SIGNS (4"x6")
EXTEND INTO HH 16:
53mm R.S.C.
1 - 12/C #12
3 - 3/C #12

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSHBUTTON LAYOUT



PEDESTRIAN PUSHBUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE. PHASES 1 AND 5 ARE PROTECTED LEFT TURN PHASES. PHASES 3 AND 7 ARE PROTECTED - PERMITTED LEFT TURN PHASES.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.
- AWF FLASHERS FLASH ALTERNATIVELY (WIG-WAG)

NOTES:

1. SEE SPECIAL PROVISIONS FOR AGENCY FURNISHED MATERIALS.
2. EXACT LOCATIONS OF SIGNAL POLES, HANDHOLES, EQUIPMENT PAD AND DETECTOR LOOPS SHALL BE DETERMINED BY AGENCY PERSONNEL.
3. EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
4. RED CIRCULAR AND RED LEFT TURN ARROW INDICATIONS SHALL BE LED. SEE SPECIAL PROVISIONS.
5. ALL YELLOW AND GREEN INDICATIONS SHALL HAVE GLASS LENSES.
6. ALL PEDESTRIAN INDICATIONS SHALL BE 300mm x 300mm WITH WALK AND DON'T WALK MESSAGES. PEDESTRIAN INDICATIONS SHALL BE 2-SECTION WITH WORD MESSAGES.
7. A 21mm HALF COUPLING, 21mm PIPE NIPPLE AND CONDUIT OUTLET BODY FOR FUTURE E.V.P. DETECTOR AND LIGHT SHALL BE FURNISHED AND INSTALLED APPROXIMATELY 1.8m FROM THE END OF EACH MAST ARM. A 1-3/C #20 CABLE SHALL BE WIRED DIRECT TO CONDUIT OUTLET BODY CONTINUOUS WITHOUT SPLICES FROM THE SIGNAL CABINET. 2-1/C #14 CONDUCTORS SHALL BE WIRED FROM THE CONDUIT OUTLET BODY TO THE TERMINAL BLOCK IN THE SIGNAL BASE FOR FUTURE EVP LIGHT.
8. ALL NEW HANDHOLES SHALL BE P.V.C. HANDHOLES WITH METAL FRAMES AND COVERS.
9. ALL OVERHEAD SIGNS WILL BE FURNISHED AND INSTALLED BY OTHERS.
10. ALL PAVEMENT MARKINGS & PEDESTRIAN RAMPS ARE BY OTHERS.
11. LOOP DETECTOR D4-1, D4-3, D4-4, D8-1, D8-3 & D8-4 SHALL BE INSTALLED IN NMC. SEE SHEET 5 AND SPECIAL PROVISIONS. ALL OTHERS SHALL BE SAWCUT.
12. CONTRACTOR TO SALVAGE EXISTING FLASHER SYSTEM AND LUMINAIRES AT THE INTERSECTION. SEE SPECIAL PROVISIONS.
13. CONTRACTOR SHALL FURNISH & INSTALL TWO SCHOOL ZONE FLASHER ASSEMBLIES. SEE SHEET 4 AND SPECIAL PROVISIONS.
14. R.O.W. IS NOT SHOWN. ALL WORK IS WITHIN R.O.W..

DRAWN BY: RKM	CHECKED: ASK DATE: 4/24/97	REVISED BY:	AS BUILT BY:

INTERSECTION LAYOUT

C.S.A.H. 2 AT C.S.A.H. 22

IN ROCHESTER, OLMSTED COUNTY

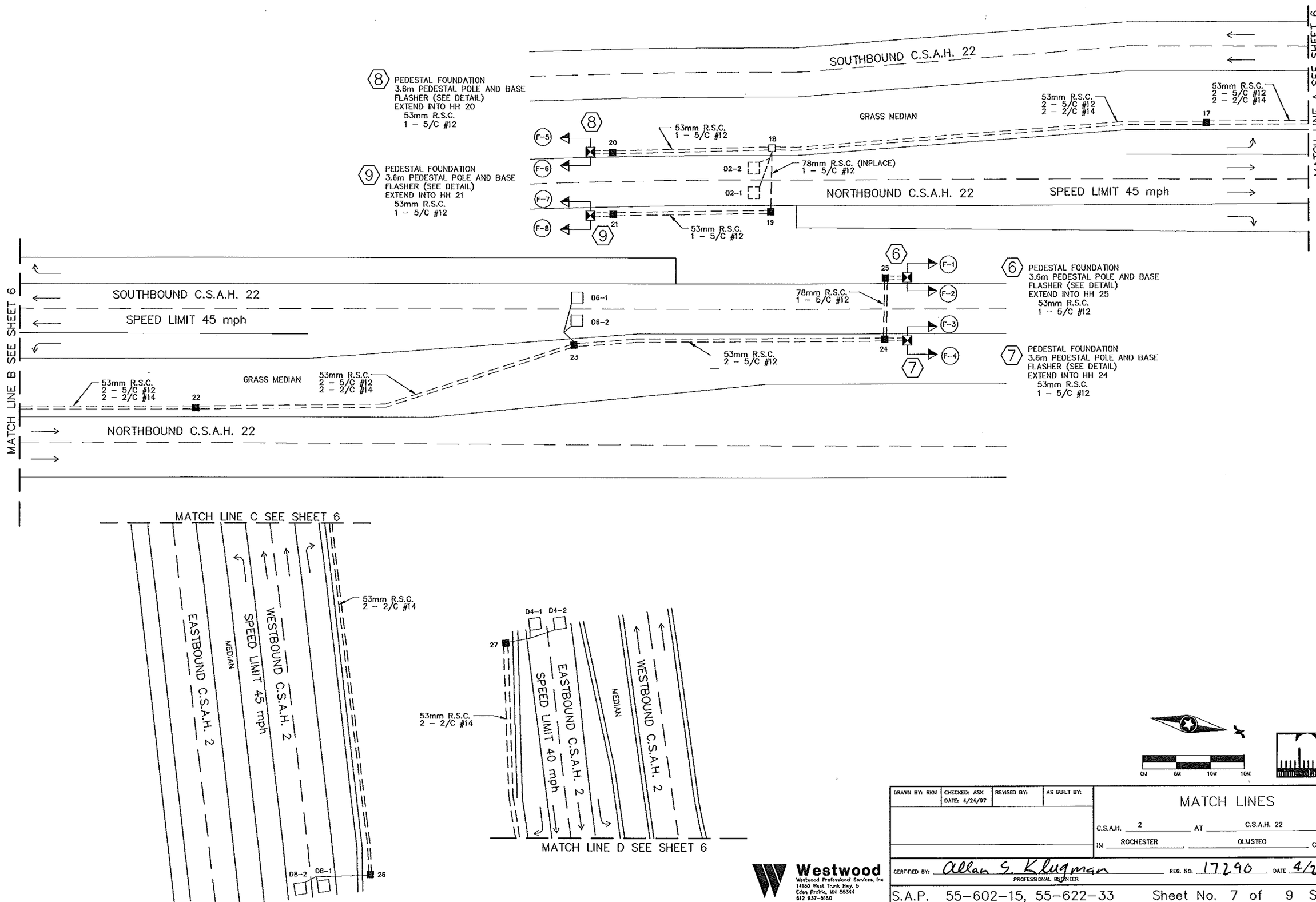
CERTIFIED BY: Allan S. Klugman PROFESSIONAL ENGINEER REG. NO. 17290 DATE 6/4/97

Westwood Professional Services, Inc
14180 West Trunk Hwy. 5
Eden Prairie, MN 55344
612 937-5150

S.A.P. 55-602-15, 55-622-33 Sheet No. 6 of 9 Sheets

C:\RANDY\DWG\96343\6343TFF1 6-4-97 9:08:01 am EST

96343 6343TFF1.DWG



Westwood
Westwood Professional Services, Inc
14180 West Trunk Hwy. 5
Eden Prairie, MN 55344
612 937-5150

DRAWN BY: RKM	CHECKED: ASK DATE: 4/24/97	REVISED BY:	AS BUILT BY:

MATCH LINES

C.S.A.H. 2 AT C.S.A.H. 22

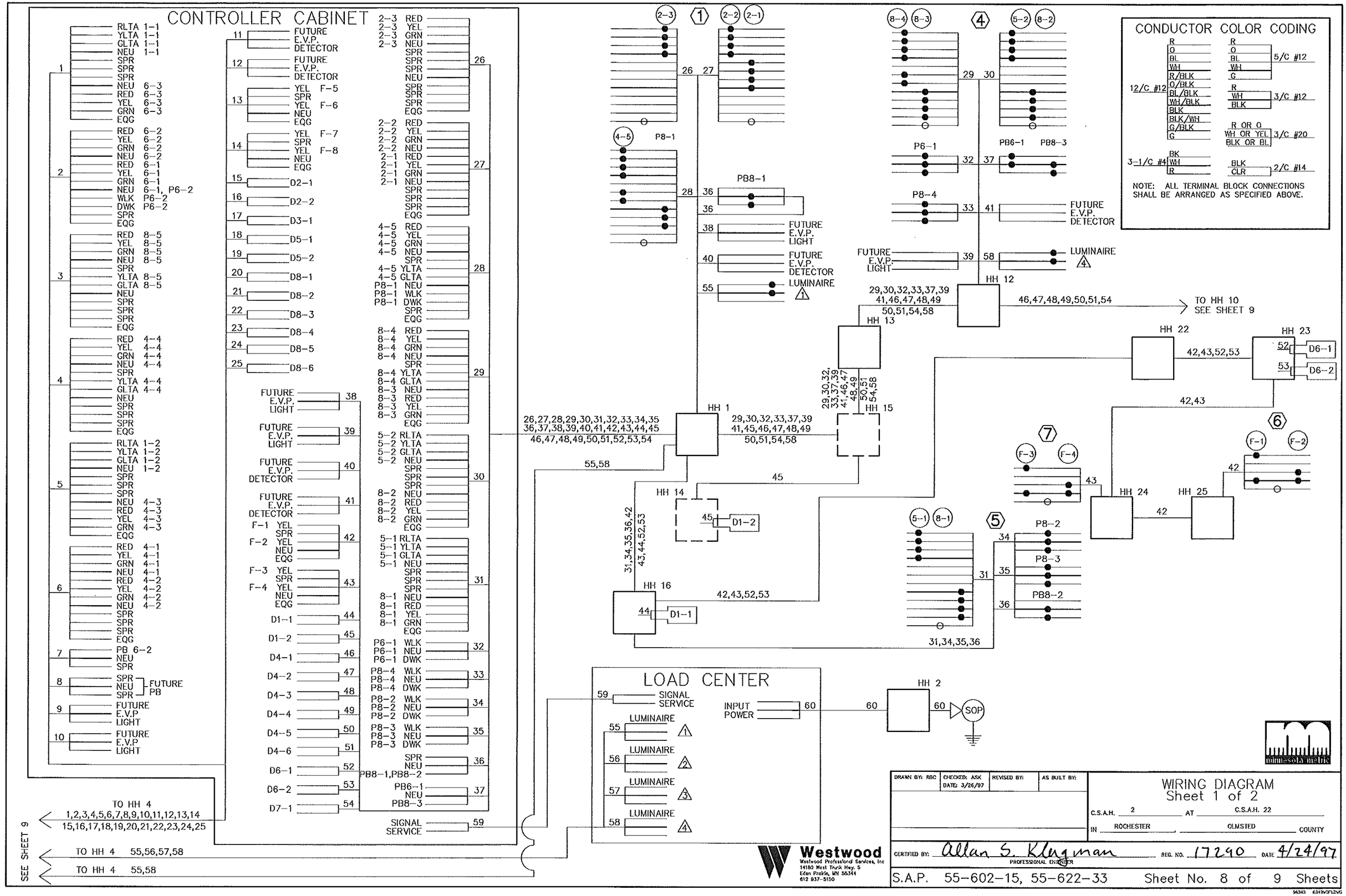
IN ROCHESTER, OLMSTED COUNTY

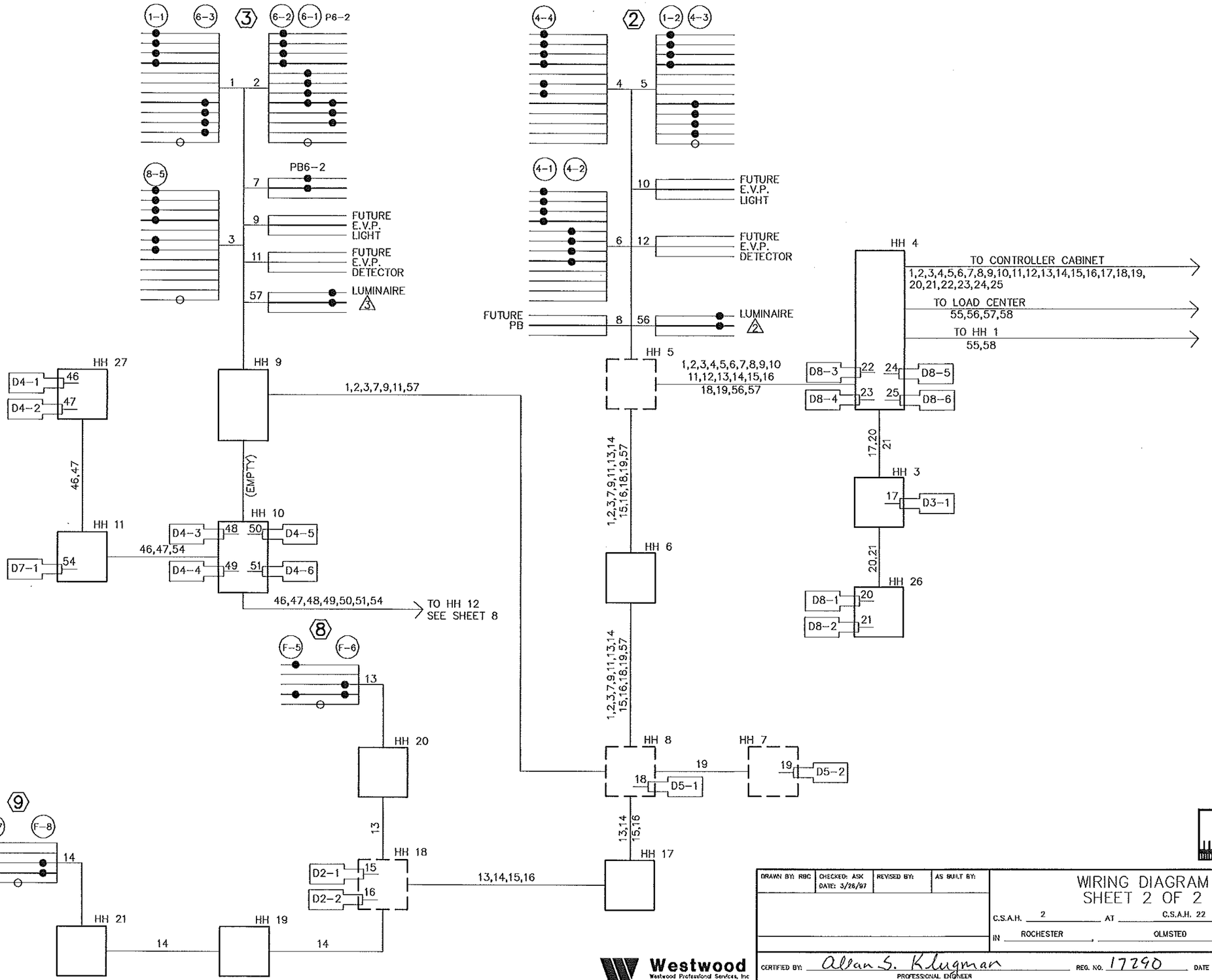
CERTIFIED BY: Allan S. Klugman PROFESSIONAL ENGINEER REG. NO. 17290 DATE 4/24/97

S.A.P. 55-602-15, 55-622-33 Sheet No. 7 of 9 Sheets

96343 6343TFF4.DWG

C:\RANDY\DWG\96343\6343TFF4 (7+47?X?@ ?G?


CONTROLLER CABINET
1
RLTA 1-1
YLTA 1-1
GLTA 1-1
NEU 1-1
SPR
SPR
SPR
NEU 6-3
RED 6-3
YEL 6-3
GRN 6-3
EQG
2
RED 6-2
YEL 6-2
GRN 6-2
NEU 6-2
RED 6-1
YEL 6-1
GRN 6-1
NEU 6-1, P6-2
WLK P6-2
DWK P6-2
SPR
EQG
3
RED 8-5
YEL 8-5
GRN 8-5
NEU 8-5
SPR
YLTA 8-5
GLTA 8-5
NEU
SPR
SPR
SPR
EQG
4
RED 4-4
YEL 4-4
GRN 4-4
NEU 4-4
SPR
YLTA 4-4
GLTA 4-4
NEU
SPR
SPR
SPR
EQG
5
RLTA 1-2
YLTA 1-2
GLTA 1-2
NEU 1-2
SPR
SPR
SPR
NEU 4-3
RED 4-3
YEL 4-3
GRN 4-3
EQG
6
RED 4-1
YEL 4-1
GRN 4-1
NEU 4-1
RED 4-2
YEL 4-2
GRN 4-2
NEU 4-2
SPR
SPR
SPR
EQG
7
PB 6-2
NEU
SPR
8
SPR
NEU
SPR
FUTURE PB
9
FUTURE
E.V.P
LIGHT
10
FUTURE
E.V.P
LIGHT
11
FUTURE
E.V.P.
DETECTOR
12
FUTURE
E.V.P.
DETECTOR
13
YEL F-5
SPR
YEL F-6
NEU
EQG
14
YEL F-7
SPR
YEL F-8
NEU
EQG
15
D2-1
16
D2-2
17
D3-1
18
D5-1
19
D5-2
20
D8-1
21
D8-2
22
D8-3
23
D8-4
24
D8-5
25
D8-6
FUTURE E.V.P. LIGHT 38
FUTURE E.V.P. LIGHT 39
FUTURE E.V.P. DETECTOR 40
FUTURE E.V.P. DETECTOR 41
F-1 YEL
SPR
F-2 YEL
NEU
EQG 42
F-3 YEL
SPR
F-4 YEL
NEU
EQG 43
D1-1 44
D1-2 45
D4-1 46
D4-2 47
D4-3 48
D4-4 49
D4-5 50
D4-6 51
D6-1 52
D6-2 53
D7-1 54
2-3 RED
2-3 YEL
2-3 GRN
2-3 NEU
SPR
SPR
SPR
NEU
SPR
SPR
SPR
EQG 26
2-2 RED
2-2 YEL
2-2 GRN
2-2 NEU
2-1 RED
2-1 YEL
2-1 GRN
2-1 NEU
SPR
SPR
SPR
EQG 27
4-5 RED
4-5 YEL
4-5 GRN
4-5 NEU
SPR
4-5 YLTA
4-5 GLTA
P8-1 NEU
P8-1 WLK
P8-1 DWK
SPR
EQG 28
8-4 RED
8-4 YEL
8-4 GRN
8-4 NEU
SPR
8-4 YLTA
8-4 GLTA
8-3 NEU
8-3 RED
8-3 YEL
8-3 GRN
EQG 29
5-2 RLTA
5-2 YLTA
5-2 GLTA
5-2 NEU
SPR
SPR
SPR
8-2 NEU
8-2 RED
8-2 YEL
8-2 GRN
EQG 30
5-1 RLTA
5-1 YLTA
5-1 GLTA
5-1 NEU
SPR
SPR
SPR
8-1 NEU
8-1 RED
8-1 YEL
8-1 GRN
EQG 31
P6-1 WLK
P6-1 NEU
P6-1 DWK 32
P8-4 WLK
P8-4 NEU
P8-4 DWK 33
P8-2 WLK
P8-2 NEU
P8-2 DWK 34
P8-3 WLK
P8-3 NEU
P8-3 DWK 35
SPR
NEU
PB8-1,PB8-2 36
PB6-1
NEU
PB8-3 37
SIGNAL SERVICE 59
TO HH 4
1,2,3,4,5,6,7,8,9,10,11,12,13,14
15,16,17,18,19,20,21,22,23,24,25
SEE SHEET 9
TO HH 4 55,56,57,58
TO HH 4 55,58
2-3
1
2-2
2-1
26
27
4-5
P8-1
28
36
PB8-1
36
38
FUTURE
E.V.P.
LIGHT
40
FUTURE
E.V.P.
DETECTOR
55
LUMINAIRE
1
HH 1
26,27,28,29,30,31,32,33,34,35
36,37,38,39,40,41,42,43,44,45
46,47,48,49,50,51,52,53,54
55,58
29,30,32,33,37,39
41,45,46,47,48,49
50,51,54,58
HH 15
29,30,32,
33,37,39
41,46,47
48,49
50,51
54,58
45
HH 14
45
D1-2
31,34,35,36,42
43,44,52,53
HH 16
44
D1-1
42,43,52,53
31,34,35,36
8-4
8-3
4
5-2
8-2
29
30
P6-1
32
37
PB6-1
PB8-3
P8-4
33
41
FUTURE
E.V.P.
DETECTOR
FUTURE
E.V.P.
LIGHT
39
58
LUMINAIRE
4
HH 12
29,30,32,33,37,39
41,46,47,48,49
50,51,54,58
46,47,48,49,50,51,54
TO HH 10
SEE SHEET 9
HH 13
HH 22
42,43,52,53
HH 23
52
D6-1
53
D6-2
42,43
6
F-1
F-2
42
7
F-3
F-4
43
HH 24
HH 25
42
5-1
8-1
5
P8-2
34
P8-3
35
PB8-2
36
31
LOAD CENTER
59
SIGNAL SERVICE
INPUT POWER
60
LUMINAIRE
55
1
LUMINAIRE
56
2
LUMINAIRE
57
3
LUMINAIRE
58
4
HH 2
60
60
SOP
CONDUCTOR COLOR CODING
12/C #12
R
O
BL
WH
R/BLK
O/BLK
BL/BLK
WH/BLK
BLK
BLK/WH
G/BLK
G
5/C #12
3/C #12
R OR O
WH OR YEL
BLK OR BL
3/C #20
3-1/C #4
BK
WH
R
BLK
CLR
2/C #14
NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.
minnesota metric
DRAWN BY: RBC
CHECKED: ASK
DATE: 3/26/97
REVISED BY:
AS BUILT BY:
WIRING DIAGRAM
Sheet 1 of 2
C.S.A.H. 2 AT C.S.A.H. 22
IN ROCHESTER, OLMSTED COUNTY
CERTIFIED BY: Allan S. Klugman
PROFESSIONAL ENGINEER
REG. NO. 17290
DATE 4/24/97
S.A.P. 55-602-15, 55-622-33
Sheet No. 8 of 9 Sheets
Westwood
Westwood Professional Services, Inc
14180 West Trunk Hwy. 5
Eden Prairie, MN 55344
612 937-5150



DRAWN BY: RBC	CHECKED: ASK DATE: 3/26/97	REVISED BY:	AS BUILT BY:

WIRING DIAGRAM SHEET 2 OF 2

C.S.A.H. 2 AT C.S.A.H. 22

IN ROCHESTER, OLMSTED COUNTY

CERTIFIED BY: Allan S. Klugman PROFESSIONAL ENGINEER REG. NO. 17290 DATE 6/4/97

S.A.P. 55-602-15, 55-622-33 Sheet No. 9 of 9 Sheets

Westwood
Westwood Professional Services, Inc
14160 West Trunk Hwy. 5
Eden Prairie, MN 55344
612 937-5150

minnesota metric

96343 6343VSF22VG