MINN. PROJ. NO. M5022(5)

MINNESOTA DEPARTMENT OF TRANSPORTATION
RAMSEY COUNTY
DEPARTMENT OF PUBLIC WORKS

CONSTRUCTION PLAN FOR TRAFFIC CONTROL SIGNAL SYSTEMS
LOCATED AT:

WHITE BEAR AVE. & T.H. 36 (N. RAMP)	SYSTEM A
WHITE BEAR AVE. & 11th AVE. (GERVAIS AVE.)	SYSTEM B
WHITE BEAR AVE. & COUNTY RD. C	SYSTEM C
WHITE BEAR AVE. & BEAM AVE.	SYSTEM D
WHITE BEAR AVE. & LYDIA AVE.	SYSTEM E
WHITE BEAR AVE. & WOODLYNN AVE	SYSTEM F
WHITE BEAR AVE. & COUNTY RD. D	SYSTEM G
WHITE BEAR AVE & EDGEWATER AVE.	SYSTEM H

S.P. NO. 62-665-24

PLANS SYMBOLS

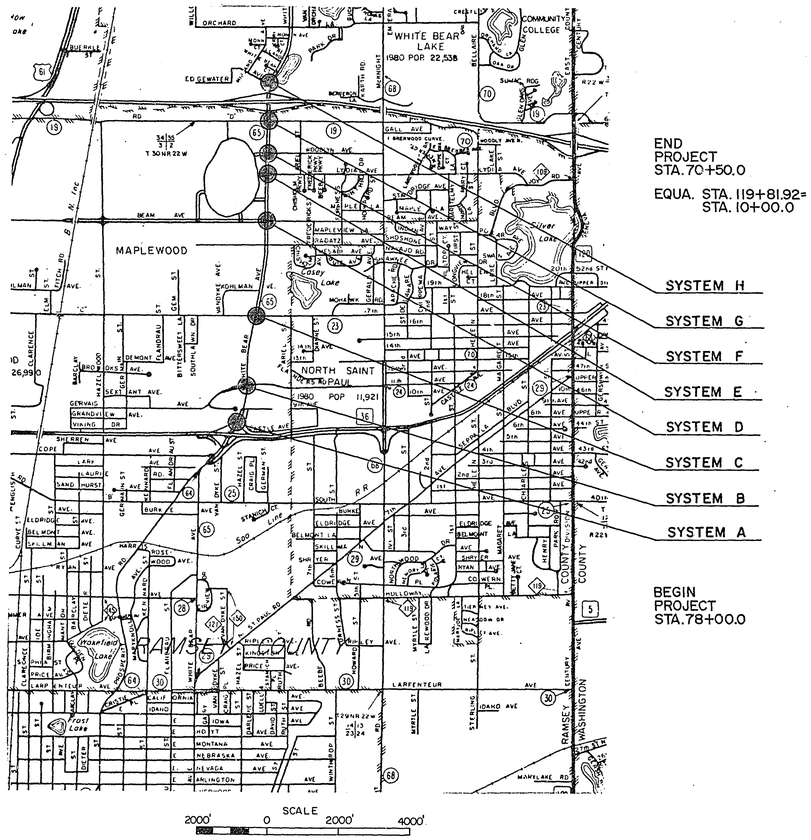
STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT OF WAY LINE
PRESENT RIGHT OF WAY LINE
CONTROL OF ACCESS LINE
PROPERTY LINE (Except Land Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT OF WAY LINE
RIVER OR CREEK
DRY RUN
DRAINAGE DITCH
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER

SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH
NURSERY
CATCH BASIN
FIRE HYDRANT
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame)
F FRAME C CONCRETE
S STONE T TILE
B BRICK ST STUCCO
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE, OR METAL)
WOODEN HUB
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY

UTILITIES SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER ON POWER POLES
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL)
GAS MAIN
WATER MAIN

CONDUIT
TELEPHONE CABLE IN CONDUIT
ELECTRIC CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE
BURIED ELECTRIC CABLE
AERIAL TELEPHONE CABLE
SEWER, (SANITARY OR STORM)
SEWER MANHOLE



END PROJECT STA. 70+50.0

EQUA. STA. 119+81.92 = STA. 10+00.0

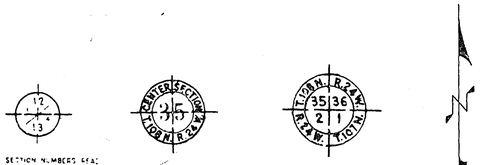
BEGIN PROJECT STA. 78+00.0

NOTE: THIS PROJECT TO BE CONSTRUCTED CONCURRENTLY WITH ROAD IMPROVEMENTS UNDER SEPARATE CONTRACT KNOWN AS S.P. NO. 62-665-20.

INDEX

SHEET NO.	DESCRIPTION
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24	INTERCONNECT
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30-34	SYSTEM F
35-37	SYSTEM G
38-40	SYSTEM H
41-51	INFORMATION

GROSS LENGTH 10231.92 FT. 1.938 MILES
NET LENGTH 10231.92 FT. 1.938 MILES



PIT DATA

PIT NO. ____ Located in ____
Dead Haul ____

PIT NO. ____ Located in ____
Dead Haul ____

SPECIFICATION REFERENCE

THE 1983 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

DESIGN SQUAD R. Weber DATE 6/10/83
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 6-10-83 REG. NO. 12703 ENGR. Paul Kubesh

RECOMMENDED FOR APPROVAL PLK TRAFFIC ENGR. DATE 4-10-83
RECOMMENDED FOR APPROVAL DDJ ENV. ENGR. DATE 7-12-83
RECOMMENDED FOR APPROVAL MDK MAINT. ENGR. DATE 6-14-83
RECOMMENDED FOR APPROVAL DEM CONST. ENGR. DATE 7-12-83
RECOMMENDED FOR APPROVAL LKF DESIGN ENGR. DATE 7-13-83
RECOMMENDED FOR APPROVAL JAP SIGN ENGR. DATE 7-12-83
APPROVED Mark T. Donahue COORDINATOR ENGR. DATE 7-13-83

RECOMMENDED FOR APPROVAL Thomas D. Weltzer COUNTY ENGINEER DATE 10-6-83
APPROVED William J. Schuster CHAIRMAN OF THE RAMSEY COUNTY BOARD DATE 1-23-84
APPROVED Kenneth D. Hunt CITY OF MAPLEWOOD DATE 12/8/83
APPROVED Steven O. Gather CITY OF WHITE BEAR LAKE DATE 11-14-83

MINNESOTA DEPARTMENT OF TRANSPORTATION
RECOMMENDED FOR APPROVAL Ronald D. Hoffman STATE TRAFFIC ENGINEER DATE 5/31/84
RECOMMENDED FOR APPROVAL Delbert O. Olfelt STATE AID PLANS & SPECIFICATION ENGINEER DATE 6-4-84
RECOMMENDED FOR APPROVAL [illegible] DISTRICT STATE AID ENGINEER DATE 2/29/84
APPROVED [illegible] STATE AID ENGINEER DATE 6/5/84

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED ____ DIVISION ADMINISTRATOR DATE ____

PLAN REVISIONS

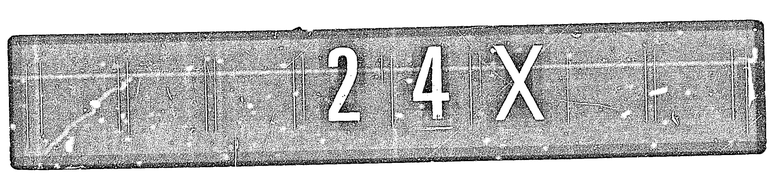
DATE	SHEET NO.	BY
12-1-83	2, 3, 4, 5, 6, 7, 12, 13, 16, 19, 20, 21, 22, 25, 34, 35, 36 - ESTA. 14.17 PK	R.W.W.
12-20-83	3, 4, 5, 13, 14, 15, 38, 39, 40 ADD MINNER LOOPS	R.W.W.
1-9-84	13, 14, 15, 35, 36, 37, 38, 39, 40 REVISE LOOP NO.	R.W.W.
1-20-84	3, 4, 13, 38 S.P. WIRE SIZE	R.W.W.

S.P. NO. 62-665-24 **Sheet No. 1 of 51 Sheets**

23-132

23-132 White Bear Avenue System No. thru H T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater Ave

1-51



23-132

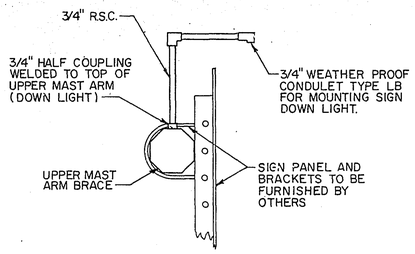
STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	QUANT.
2565.511	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM B	SIGNAL SYSTEM	1
2565.511	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM C	SIGNAL SYSTEM	1
2565.511	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM D	SIGNAL SYSTEM	1
2565.511	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM E	SIGNAL SYSTEM	1
2565.511	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM F	SIGNAL SYSTEM	1
2565.511	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM G	SIGNAL SYSTEM	1
2565.511	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM H	SIGNAL SYSTEM	1
0565.603	3" RIGID STEEL CONDUIT (INTERCONNECT)	L.F.	527 ~~650~~
0565.603	12 PAIR #19 CABLE (INTERCONNECT)	L.F.	10185 ~~10260~~
0565.604	REVISE SIGNAL SYSTEM A	SYSTEM	1
NON PARTICIPATING			
0565.604	EMERGENCY VEHICLE PRE-EMPTION SYSTEM B	SYSTEM	1
0565.604	EMERGENCY VEHICLE PRE-EMPTION SYSTEM C	SYSTEM	1
0565.604	EMERGENCY VEHICLE PRE-EMPTION SYSTEM D	SYSTEM	1
0565.604	EMERGENCY VEHICLE PRE-EMPTION SYSTEM E	SYSTEM	1
0565.604	EMERGENCY VEHICLE PRE-EMPTION SYSTEM F	SYSTEM	1
0565.604	EMERGENCY VEHICLE PRE-EMPTION SYSTEM G	SYSTEM	1

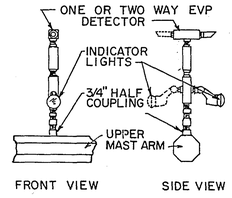
THE FOLLOWING STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY ON THIS PROJECT.

STANDARD PLATES

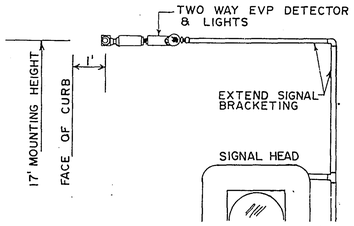
PLATE NO.	TITLE
8110C	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
8111B	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED
8112C	PEDESTAL FOUNDATION
8000H	STANDARD BARRICADES
8003B	BREAKAWAY SIGN SUPPORT (PLASTIC)
8115C	PEDESTRIAN PUSH BUTTON INSTALLATION
8116C	STEEL GUARD POST
8117F	PRECAST CONCRETE HANDHOLE (OR PULLBOX)
0004A	SPECIFICATION REFERENCE TO STANDARD PLATES
8120H	P-80. & P-90 POLE FOUNDATION
8121B	TRANSFORMER BASE WITH POLE BASE PLATE
8122C	PEDESTAL AND PEDESTAL BASE
8123B	POLE AND MAST ARM (LUMINAIRES AND TRAFFIC LIGHTS)
8124C	MAST ARM SIGNAL HEAD MOUNTS
8126C	P-100 POLE FOUNDATION
8130D	SAW CUT LOOP DETECTORS



SIGN DOWN LIGHT MOUNTING DETAIL



EVP DETECTOR & LIGHT MOUNTING DETAIL ON MAST ARM



EVP DETECTOR & LIGHT MOUNTING DETAIL ON SIGNAL BRACKETING

ABBREVIATIONS

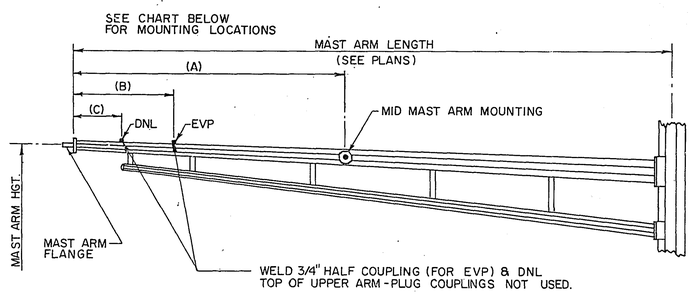
EQUIPMENT & INDICATIONS

RED - RED
YEL - YELLOW
GRN - GREEN
LTA - LEFT TURN ARROW
THA - THRU ARROW
RTA - RIGHT TURN ARROW
TRA - THRU AND RIGHT ARROW
WLK - WALK
NEU - NEUTRAL
DWK - DON'T WALK
SW - SWITCH
SWD - SWITCHED
LUM - LUMINAIRE
P2-1(eg) - PEDESTRIAN INDICATION-"2" PHASE
PB4-2(eg) - PUSH BUTTON -"4" PHASE
2-2(eg) - SIGNAL HEAD -"2" PHASE
D2-4(eg) - DETECTOR - "2" PHASE
H.H. - HANDHOLE
GR.R. - GROUND ROD
SERV. - SERVICE
EVP - EMERGENCY VEHICLE PRE-EMPTION
DNL - DOWNLIGHT
PE.C. - PHOTOELECTRIC CELL
ST. LHT. - STREET LIGHT
CH. - CHECK
S.O.P. - SOURCE OF POWER
EQ.G. - EQUIPMENT GROUND
SPR - SPARE CONDUCTOR

COLOR CODING OF CONDUCTOR

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

MAST ARM DETAILS



MOUNTING LOCATIONS

SYSTEM	POLE NO.	POLE TYPE	(A) MID ARM	(B) EVP	(C) DNL
B	1	P90-A-35	13'	4'	1'
B	2	P90-A-30-T40-8|0	-	4'	-
B	3	P90-A-35	13'	4'	1'
B	4	P90-A-30-T40-8|0	-	4'	-
C	1	P90-A-35-T40-8|0	13'	4'	1'
C	3	P90-A-35-T40-8|0	13'	4'	1'
D	1	P90-A-30	-	4'	-
D	2	P90-A-35-T40-8|0	13'	4'	1'
D	3	P90-A-30	-	4'	-
D	4	P90-A-35-T40-8|0	13'	4'	1'
E	1	P90-A-35-T40-8|0	14'	4'	1'
E	2	P80-A-25	-	4'	-
E	3	P90-A-35-T40-8|0	14'	4'	1'
E	4	P80-A-20	-	4' (P)	-
F	1	P90-A-35-T40-8|0	14'	4'	1'
F	2	P80-A-25	-	4'	-
F	3	P90-A-35-T40-8|0	14'	4'	1'
F	4	P80-A-25	-	4' (P)	1'
G	1	P90-A-35-T40-8|0	13'	4'	1'
G	2	P80-A-25	-	4'	-
G	3	P90-A-35-T40-8|0	13'	4'	1'
G	4	P80-A-25	-	4' (P)	-
H	1	P90-A-35-T40-8|0	14'	4' (P)	1'
H	3	P90-A-35-T40-8|0	14'	4' (P)	1

- NOT REQUIRED
(P) PLUG FOR FUTURE USE.

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R. Weber
DATE: 6-25-86

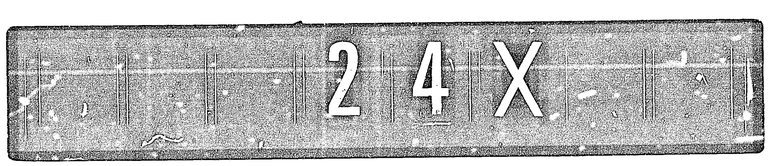
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE 12-5-85 REG. NO 12903

DETAILS & ESTIMATED QUANTITIES

S.P. NO. 62-665-24 SHEET NO. 2. OF 51 SHEETS

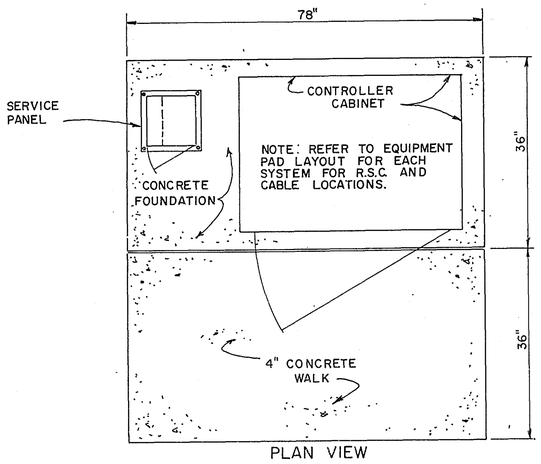
23-132

23-132 White Bear Avenue System Stage H T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater, Ave 1-51



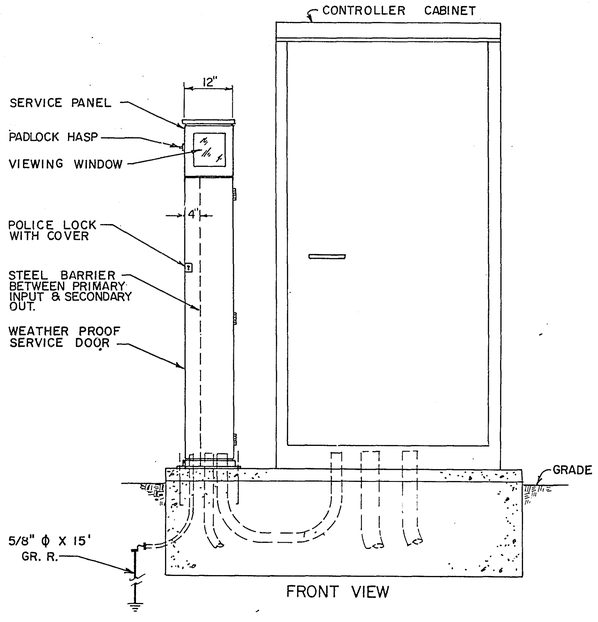
23-132

EQUIPMENT PAD DETAILS
(TYPE X)

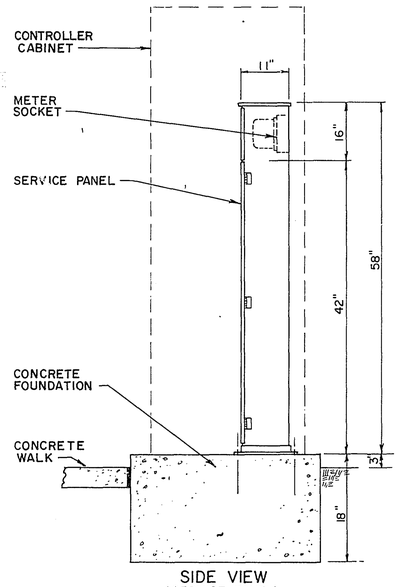


PLAN VIEW

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.

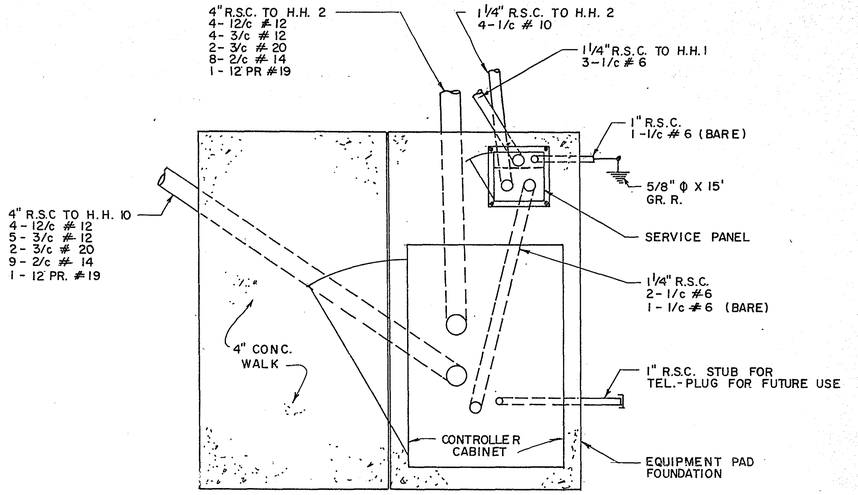


FRONT VIEW



SIDE VIEW
(SERVICE PANEL)

EQUIPMENT PAD LAYOUTS



PLAN VIEW

WHITE BEAR AVE. & 11th AVE. (GERVAIS AVE.)
SYSTEM B

SEE EQUIPMENT PAD DETAILS FOR ADDITIONAL INFORMATION

PLAN VIEW

WHITE BEAR AVE. & COUNTY RD. C
SYSTEM C

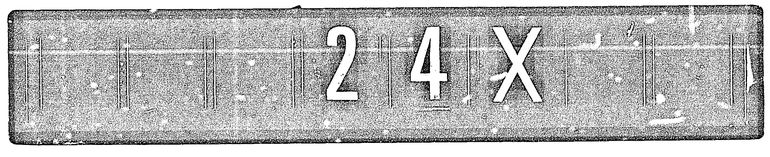
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE 12-5-83 REG. NO 12103

DETAILS

S.P. NO. 62-665-24 SHEET NO. 3 OF 51 SHEETS

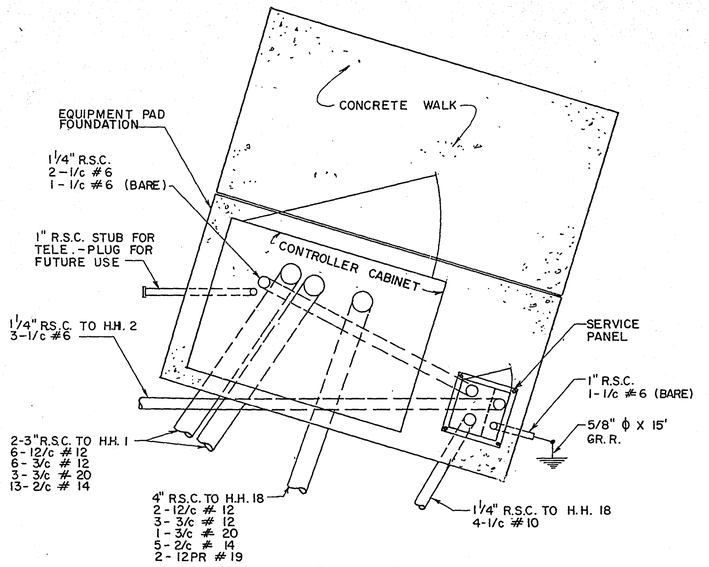
23-132

23-132 White Bear Avenue System A thru H T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater, Rice 1-51



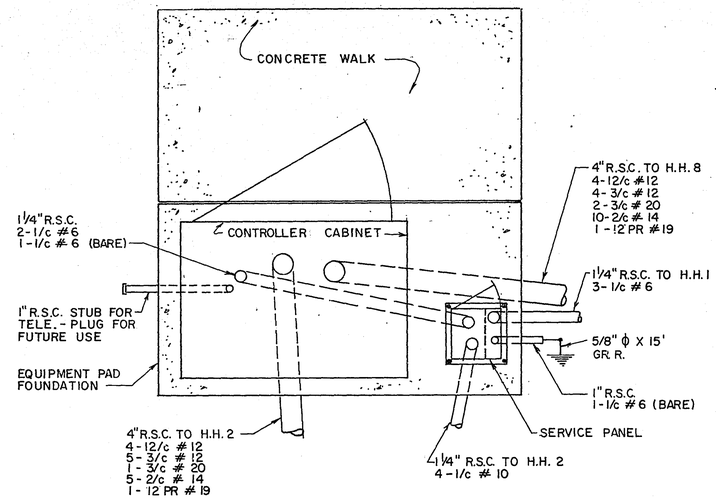
23-132

EQUIPMENT PAD LAYOUTS



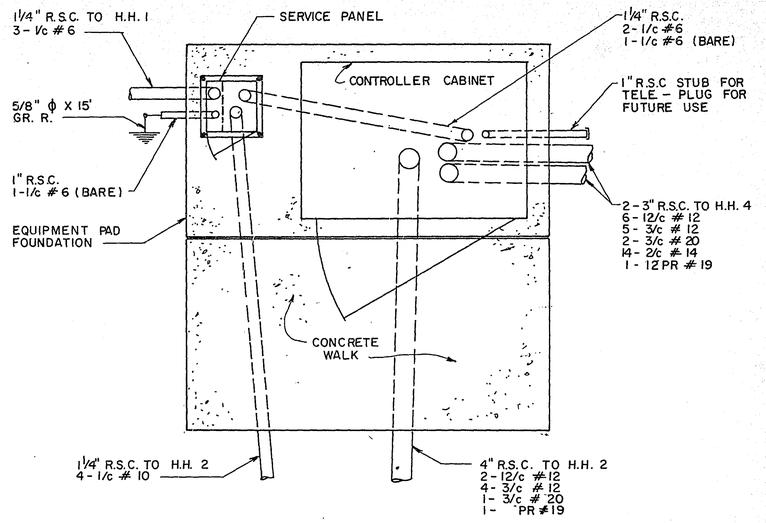
PLAN VIEW

WHITE BEAR AVE. & BEAM AVE.
SYSTEM D



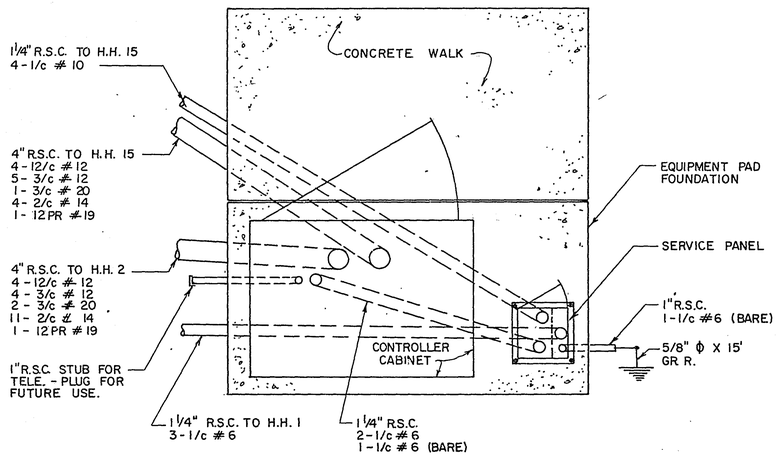
PLAN VIEW

WHITE BEAR AVE. & LYDIA AVE.
SYSTEM E



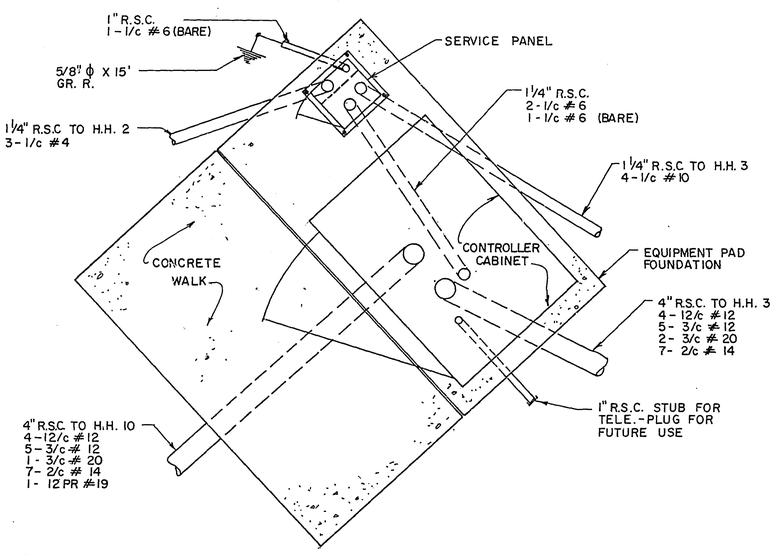
PLAN VIEW

WHITE BEAR AVE. & WOODLYNN AVE.
SYSTEM F



PLAN VIEW

WHITE BEAR AVE. & COUNTY RD. D
SYSTEM G



PLAN VIEW

WHITE BEAR AVE. & EDGEWATER AVE.
SYSTEM H

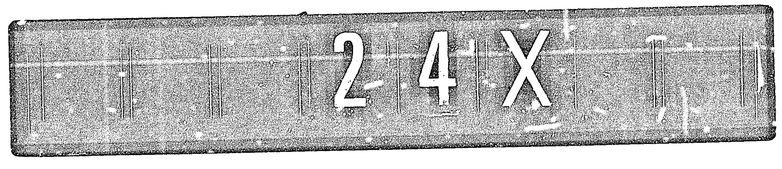
NOTE: SEE EQUIPMENT PAD DETAILS FOR ADDITIONAL INFORMATION

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.
Paul K. Lehl
DATE 12-5-83 REG. NO 12703

DETAILS

S.P. NO. 62-665-24 SHEET NO 4 OF 51 SHEETS

23-132



23-132 White Bear Avenue Systems A thru H T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater Ave 1-51

23-132

WHITE BEAR AVE. & TH. 36 N. RAMP

SYSTEM A

LOCATION CHART		
STATION	LOCATION	DESCRIPTION
WHITE BEAR AVENUE		
80+95	LT. 57'	H.H. 36A
82+22	LT. 51'	H.H. 37A

WHITE BEAR AVE. & 11th AVE. (GERVAIS AVE.)

SYSTEM B

LOCATION CHART		
STATION	LOCATION	DESCRIPTION
WHITE BEAR AVENUE		
87+60	RT. 30'	H.H. 16
88+98	RT. 30'	H.H. 15
89+94	LT. 41'	H.H. 6
89+99	RT. 31'	H.H. 14
90+04	LT. 45'	POLE 3
90+10	RT. 30'	PED. STA.
90+18±	LT. 205'	H.H. 9
90+20	LT. 53'	PED. STA.
90+23±	LT. 110'	H.H. 8
90+24	LT. 69'	H.H. 7
90+25	RT. 45'	POLE 2
90+25	RT. 55'	H.H. 13
91+16±	RT. 100'	H.H. 11
91+19	LT. 54'	POLE 4
91+20	RT. 41'	PED. STA.
91+22±	RT. 192'	H.H. 12
91+32	LT. 43'	PED. STA.
91+35	RT. 34'	POLE 1
91+35	RT. 50'	H.H. 10
91+40	RT. 40'	H.H. 1
91+45	LT. 41'	H.H. 3
91+45	RT. 34'	H.H. 2
91+48	RT. 57'	EQUIP. PAD.
92+41	LT. 41'	H.H. 4
93+97	LT. 41'	H.H. 5

WHITE BEAR AVE. & COUNTY RD. C

SYSTEM C

LOCATION CHART		
STATION	LOCATION	DESCRIPTION
WHITE BEAR AVENUE		
106+86	RT. 29'	H.H. 13
109+20	LT. 46'	POLE 3
109+33	LT. 55'	PED. STA.
109+35	LT. 59'	H.H. 14
109+44	RT. 34'	H.H. 10
109+53	RT. 42'	POLE 2
110+11	LT. 52'	POLE 4
110+30	LT. 51'	H.H. 4
110+30	RT. 42'	PED. STA.
110+34	RT. 44'	H.H. 7
110+41	RT. 34'	POLE 1
110+44	RT. 46'	H.H. 2
110+50	RT. 34'	H.H. 3
110+59	RT. 46'	EQUIP. PAD.
111+15	LT. 42'	H.H. 5
112+83	LT. 42'	H.H. 6
108+85	LT. 40'	H.H. 17
COUNTY ROAD C		
2+76	RT. 29'	H.H. 16
3+44	RT. 29'	H.H. 15
6+28	LT. 27'	H.H. 8
6+50	LT. 29'	H.H. 1
7+16	LT. 29'	H.H. 9

WHITE BEAR AVE. & BEAM AVE.

SYSTEM D

LOCATION CHART		
STATION	LOCATION	DESCRIPTION
WHITE BEAR AVENUE		
22+61	LT. 5'	H.H. 17
22+61	RT. 39'	H.H. 16
25+89±	LT. 138±	H.H. 25
25+90	LT. 45'	POLE 4
25+97	RT. 63'	POLE 3
26+00	LT. 62'	PED. STA.
26+56	LT. 70'	H.H. 20
26+97	RT. 56'	PED. STA.
26+99	LT. 47'	POLE 1
27+05	LT. 46'	H.H. 8
27+10	RT. 44'	POLE 2
27+11	LT. 82'	H.H. 19
27+53	LT. 60'	H.H. 21
27+83	LT. 52'	H.H. 18
27+86	LT. 64'	EQUIP. PAD.
25+13	LT. 6'	H.H. 2
27+81	LT 54'	H.H. 1

WHITE BEAR AVE. & LYDIA AVE.

SYSTEM E

LOCATION CHART		
STATION	LOCATION	DESCRIPTION
WHITE BEAR AVENUE		
38+45	LT. 43'	H.H. 2
38+45	LT. 60'	EQUIP. PAD.
38+55	LT. 43'	POLE 1
38+63	LT. 63'	H.H. 1
38+64	RT. 45'	PED. STA.
38+74±	RT. 54±	H.H. 5
38+76±	LT. 58±	H.H. 3
38+76	LT. 72'	PED. STA.
38+77±	LT. 131'	H.H. 9
38+80	RT. 62'	POLE 4
39+14	LT. 74'	H.H. 12
39+58	LT. 66'	POLE 2
39+70±	RT. 125'	H.H. 18
39+73	LT. 52'	PED. STA.
39+80	RT. 54'	H.H. 17
39+84	RT. 55'	PED. STA.
40+00	RT. 42'	POLE 3

WHITE BEAR AVE. & WOODLYNN AVE.

SYSTEM F

LOCATION CHART		
STATION	LOCATION	DESCRIPTION
WHITE BEAR AVENUE		
44+65	LT. 66'	H.H. 1
44+96	LT. 43'	H.H. 2
44+96	LT. 66'	EQUIP. PAD.
45+07	LT. 43'	POLE 1
45+13	RT. 48'	PED. STA.
45+21	LT. 62'	PED. STA.
45+24	RT. 59'	POLE 4
45+26±	LT. 126'	H.H. 9
46+04	LT. 53'	POLE 2
46+10±	RT. 128'	H.H. 18
46+20	RT. 56'	PED. STA.
46+35	RT. 44'	POLE 3

WHITE BEAR AVE. & COUNTY RD. D

SYSTEM G

LOCATION CHART		
STATION	LOCATION	DESCRIPTION
WHITE BEAR AVENUE		
51+90	RT. 39'	H.H. 7
53+00	RT. 39'	H.H. 6
54+00	RT. 44'	H.H. 5
54+00	LT. 6'	H.H. 8
54+00	LT. 42'	H.H. 9
54+26	LT. 42'	POLE 3
54+38	LT. 55'	PED. STA.
54+41	RT. 54'	POLE 2
54+48	LT. 58'	H.H. 12
54+50±	LT. 135'	H.H. 13
54+50±	LT. 210'	H.H. 14
55+17	RT. 51'	PED. STA.
55+20	LT. 51'	POLE 4
55+24	RT. 54'	H.H. 2
55+28	RT. 52'	H.H. 1
55+28	RT. 44'	POLE 1
55+28	LT. 42'	PED. STA.
55+47	RT. 5'	H.H. 16
55+47	RT. 51'	H.H. 15
55+47	LT. 41'	H.H. 17
55+53	RT. 54'	EQUIP. PAD.
57+24	LT. 41'	H.H. 18
COUNTY ROAD D		
1+38	LT. 28'	H.H. 3
2+28	LT. 28'	H.H. 4

WHITE BEAR AVE. & EDGEWATER AVE.

SYSTEM H

LOCATION CHART		
STATION	LOCATION	DESCRIPTION
WHITE BEAR AVENUE		
63+96	RT. 42'	H.H. 16
65+20	LT. 70'	H.H. 1
65+55	RT. 40'	H.H. 15
66+33	RT. 44'	H.H. 14
66+35	LT. 60'	H.H. 2
66+39	LT. 5'	H.H. 13
66+40±	LT. 190±	H.H. 5
66+43	LT. 55'	H.H. 10
66+44	RT. 52'	POLE 4
66+60	LT. 71'	EQUIP. PAD.
66+61	LT. 43'	POLE 1
66+75	LT. 51'	PED. STA.
66+75	LT. 58'	H.H. 3
66+80±	LT. 100±	H.H. 4
67+20	RT. 50'	PED. STA.
67+34	RT. 50'	H.H. 17
67+40	RT. 42'	POLE 3
67+45	LT. 49'	POLE 2
67+66	RT. 5'	H.H. 7
67+66	LT. 41'	H.H. 6
69+10	LT. 41'	H.H. 8
70+00	LT. 44'	H.H. 9

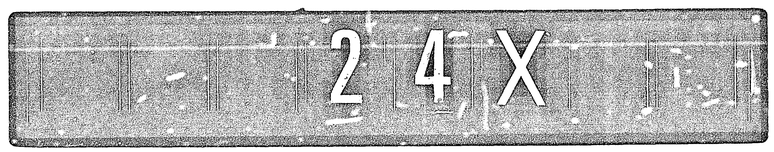
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE 12-17-13 REG. NO. 12743

LOCATION CHARTS

S.P. NO. 62-665-24 SHEET NO. 5 OF 51 SHEETS

23-132



23-132 White Bear Avenue Systems A thru H T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater Ave

1-51

23-132

(2) A100-B-30 INPLACE - RELOCATE AS DIRECTED.
CONSTRUCT P100 POLE FOUNDATION.
ONE WAY SIGNAL (OVERHEAD) - INPLACE - USE INPLACE.
TYPE 10C POLE MTD. 315°- INPLACE - REVISE TO 45° POLE MTD..
ONE WAY EVP DETECTOR & LIGHT - INPLACE - USE INPLACE.
2 - PEDESTRIAN PUSH BUTTONS - INPLACE - USE INPLACE.
4 - STEEL GUARD POSTS - INPLACE - REMOVE AND SALVAGE.
EXTEND IN TO H.H. 33 - 3" R.S.C.

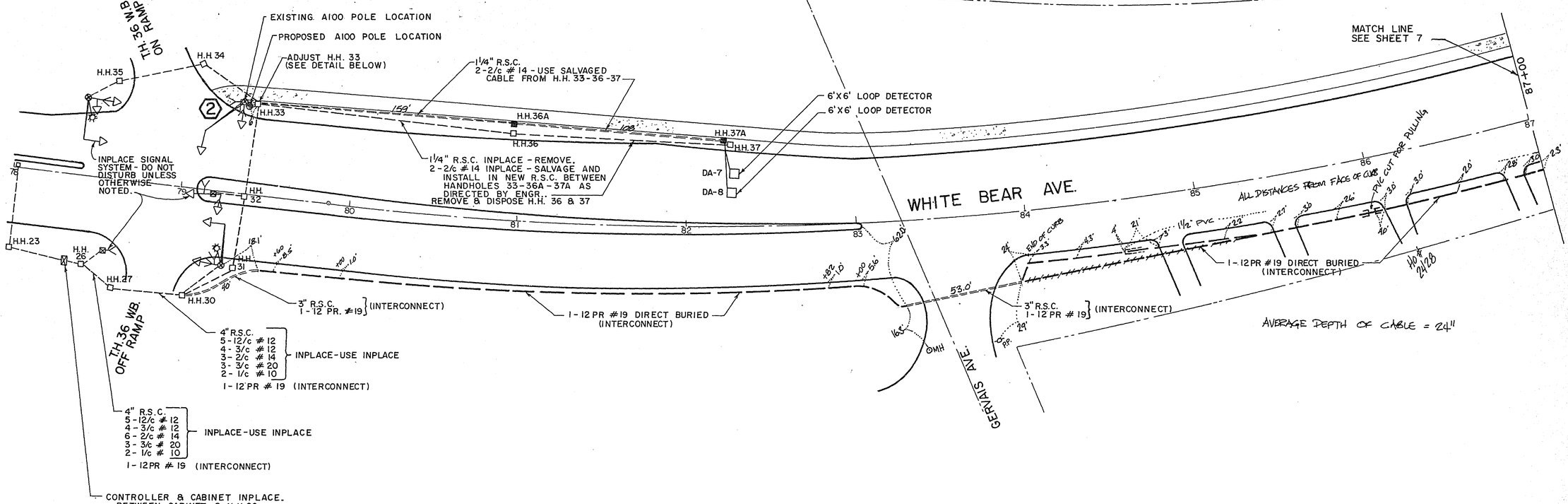
1 - 12/c #12
2 - 3/c # 12
1 - 3/c # 20
} INPLACE - REMOVE & REINSTALL

REMOVE A100 POLE FOUNDATION AS DIRECTED.

0 15 30 45 60 75
SCALE IN FEET

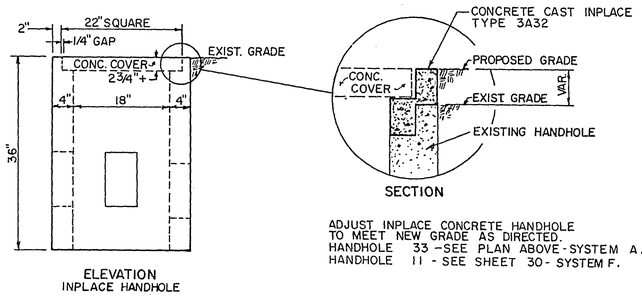
NOTES:

1. LOOP DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGR. PRIOR TO INSTALLATION



LEGEND OF SYMBOLS

- SIGNAL BASE No. — (5)
- SIGNAL FACE No. — (42)
- 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 — <#>



ADJUST INPLACE CONCRETE HANDHOLE TO MEET NEW GRADE AS DIRECTED.
HANDHOLE 33 - SEE PLAN ABOVE - SYSTEM A.
HANDHOLE 11 - SEE SHEET 30 - SYSTEM F.

CONCRETE HANDHOLE ADJUSTMENT DETAIL

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: RWeber
DATE: 6-24-83

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.
Paul K. Kimball
DATE 12-5-83 REG. NO 12103

INTERSECTION LAYOUT
WHITE BEAR AVE. & TH 36 N. RAMP

SYSTEM A

S.P. NO. 62-665-24 SHEET NO. 6 OF 51 SHEETS

23-132

24X

23-132 White Bear Avenue System A Thru H T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater, Nibe 1-51

23-132

LEGEND OF SYMBOLS

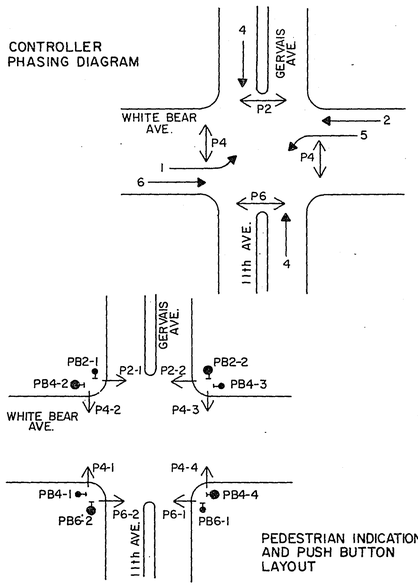
SIGNAL BASE No. (5)
SIGNAL FACE No. (4-2)
CONTROLLER AND CABINET
CONTROLLER AND CABINET-INPLACE
HANDHOLE
HANDHOLE-INPLACE
RIGID STEEL CONDUIT (R.S.C.)
RIGID STEEL CONDUIT (R.S.C.)-INPLACE
SIGNAL FACE
SIGNAL FACE WITH BACKGROUND SHIELD
SIGNAL FACE-INPLACE
PEDESTRIAN INDICATIONS
PEDESTRIAN INDICATIONS-INPLACE
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

VEHICLE DETECTION

NUMBER	SIZE	OPERATION
DI-1	6'X40'25	E. ONLY
DI-2	6'X28'40	C. & E. (TD)
D2-1	6'X6'	C. & E.
D2-2	6'X6'	C. & E.
D2-3	2-6'X8'	C. ONLY
D4-1	3-6'X6'	C. & E.
D4-2	3-6'X6'	C. & E.
D4-3	6'X6'	C. & E.
D4-4	3-6'X6'	C. & E.
D4-5	3-6'X6'	C. & E.
D4-6	6'X6'	C. & E.
D5-1	6'X30'25	E. ONLY
D5-2	6'X25'40	C. & E. (TD)
D6-1	6'X6'	C. & E.
D6-2	6'X6'	C. & E.
D6-3	2-6'X8'	C. ONLY

C.= CALL
E.= EXTEND
(TD) = TIME DELAYED

CONTROLLER PHASING DIAGRAM



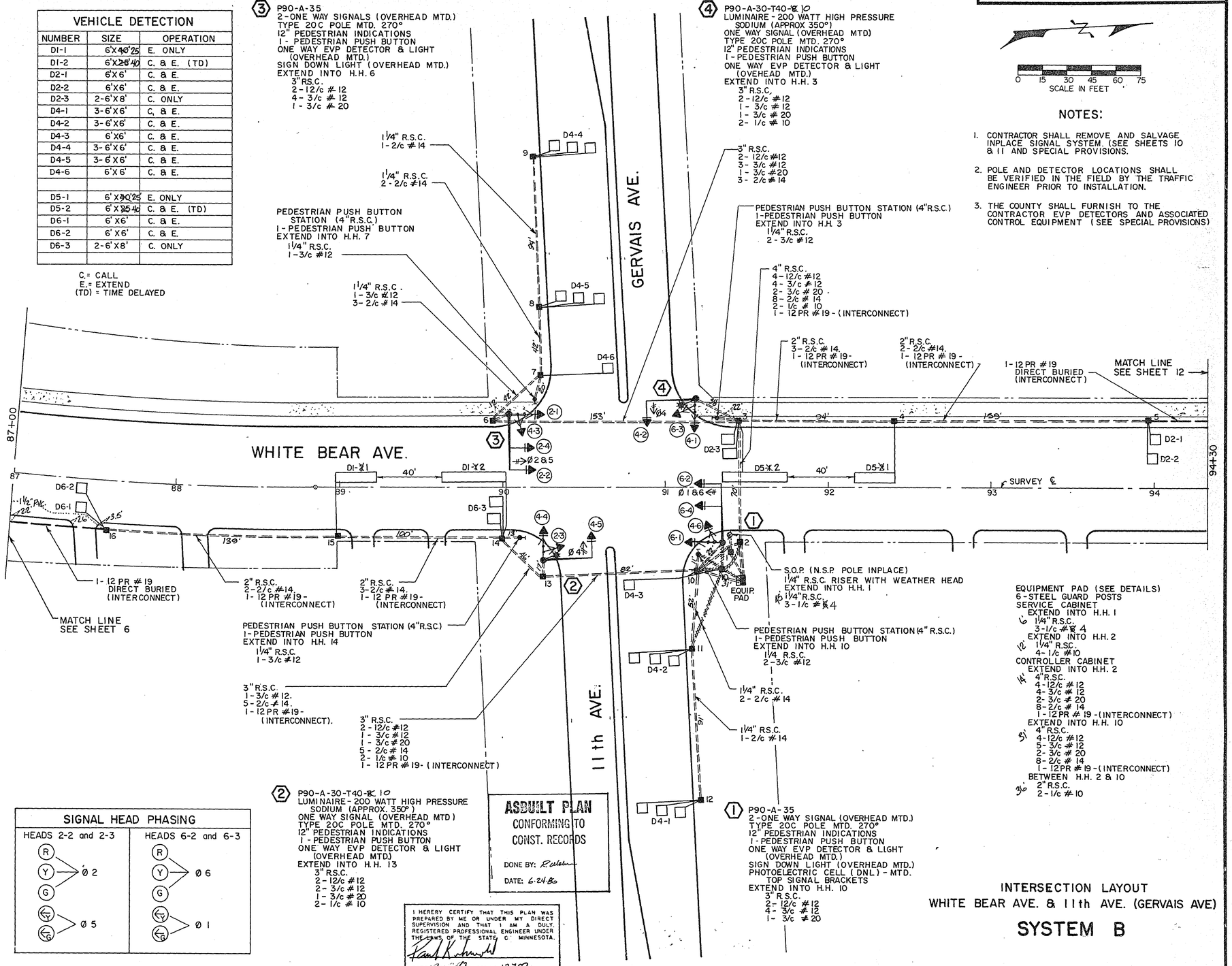
PEDESTRIAN INDICATION AND PUSH BUTTON LAYOUT

SIGNAL INDICATION CHART

FACE	PHASE	FLASH	INDICATION SIZE R	Y	G	←Y	←G
2-1	2	R	12"	12"	12"	–	–
2-2	2 and 5	R	12"	12"	12"	12"	12"
2-3	2 and 5	R	12"	12"	12"	12"	12"
2-4	2	R	12"	12"	12"	–	–
4-1	4	R	12"	12"	12"	–	–
4-2	4	R	12"	12"	12"	–	–
4-3	4	R	12"	12"	12"	–	–
4-4	4	R	12"	12"	12"	–	–
4-5	4	R	12"	12"	12"	–	–
4-6	4	R	12"	12"	12"	–	–
6-1	6	R	12"	12"	12"	–	–
6-2	6 and 1	R	12"	12"	12"	12"	12"
6-3	6 and 1	R	12"	12"	12"	12"	12"
6-4	6	R	12"	12"	12"	–	–

SIGNAL HEAD PHASING

HEADS 2-2 and 2-3	HEADS 6-2 and 6-3
R, Y, G → Ø 2	R, Y, G → Ø 6
←Y, ←G → Ø 5	←Y, ←G → Ø 1



③ P90-A-35
2-ONE WAY SIGNALS (OVERHEAD MTD.)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSH BUTTON
ONE WAY EVP DETECTOR & LIGHT (OVERHEAD MTD.)
SIGN DOWN LIGHT (OVERHEAD MTD.)
EXTEND INTO H.H. 6
3" R.S.C.
2-12/c #12
4-3/c #12
1-3/c #20

1¼" R.S.C.
1-2/c #14

1¼" R.S.C.
2-2/c #14

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

1¼" R.S.C.
1-3/c #12
3-2/c #14

④ P90-A-30-T40-℄10
LUMINAIRE-200 WATT HIGH PRESSURE SODIUM (APPROX 350°)
ONE WAY SIGNAL (OVERHEAD MTD)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSH BUTTON
ONE WAY EVP DETECTOR & LIGHT (OVEHEAD MTD.)
EXTEND INTO H.H. 3
3" R.S.C.
2-12/c #12
1-3/c #12
1-3/c #20
2-1/c #10

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

PEDESTRIAN PUSH BUTTON STATION (4" R.S.C.)
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H. 3
1¼" R.S.C.
2-3/c #12

4" R.S.C.
4-12/c #12
4-3/c #12
2-3/c #20
8-2/c #14
2-1/c #10
1-12 PR #19-(INTERCONNECT)

2" R.S.C.
3-2/c #14.
1-12 PR #19-
(INTERCONNECT)

2" R.S.C.
2-2/c #14.
1-12 PR #19-
(INTERCONNECT)

1-12 PR #19
DIRECT BURIED
(INTERCONNECT)

1-12 PR #19
DIRECT BURIED
(INTERCONNECT)

2" R.S.C.
2-2/c #14.
1-12 PR #19-
(INTERCONNECT)

2" R.S.C.
3-2/c #14.
1-12 PR #19-
(INTERCONNECT)

PEDESTRIAN PUSH BUTTON STATION (4" R.S.C.)
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H. 14
1¼" R.S.C.
1-3/c #12

3" R.S.C.
1-3/c #12.
5-2/c #14.
1-12 PR #19-
(INTERCONNECT).

3" R.S.C.
2-12/c #12
1-3/c #12
1-3/c #20
5-2/c #14
2-1/c #10
1-12 PR #19-(INTERCONNECT)

S.O.P (N.S.P. POLE INPLACE)
1¼" R.S.C. RISER WITH WEATHER HEAD
EXTEND INTO H.H. 1
1¼" R.S.C.
3-1/c #℄4

PEDESTRIAN PUSH BUTTON STATION (4" R.S.C.)
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H. 10
1¼ R.S.C.
2-3/c #12

1¼" R.S.C.
2-2/c #14

1¼" R.S.C.
1-2/c #14

EQUIPMENT PAD (SEE DETAILS)
6-STEEL GUARD POSTS
SERVICE CABINET
EXTEND INTO H.H. 1
6 1¼" R.S.C.
3-1/c #℄4
EXTEND INTO H.H. 2
12 1¼" R.S.C.
4-1/c #10
CONTROLLER CABINET
EXTEND INTO H.H. 2
14 4" R.S.C.
4-12/c #12
4-3/c #12
2-3/c #20
8-2/c #14
1-12 PR #19-(INTERCONNECT)
EXTEND INTO H.H. 10
9 4" R.S.C.
4-12/c #12
5-3/c #12
2-3/c #20
8-2/c #14
1-12 PR #19-(INTERCONNECT)
BETWEEN H.H. 2 & 10
36 2" R.S.C.
2-1/c #10

② P90-A-30-T40-℄10
LUMINAIRE-200 WATT HIGH PRESSURE SODIUM (APPROX. 350°)
ONE WAY SIGNAL (OVERHEAD MTD)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSH BUTTON
ONE WAY EVP DETECTOR & LIGHT (OVERHEAD MTD)
EXTEND INTO H.H. 13
3" R.S.C.
2-12/c #12
2-3/c #12
1-3/c #20
2-1/c #10

① P90-A-35
2-ONE WAY SIGNAL (OVERHEAD MTD.)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSH BUTTON
ONE WAY EVP DETECTOR & LIGHT (OVERHEAD MTD.)
SIGN DOWN LIGHT (OVERHEAD MTD.)
PHOTOELECTRIC CELL (DNL)-MTD. TOP SIGNAL BRACKETS
EXTEND INTO H.H. 10
3" R.S.C.
2-12/c #12
4-3/c #12
1-3/c #20

0 15 30 45 60 75
SCALE IN FEET

NOTES:

1. CONTRACTOR SHALL REMOVE AND SALVAGE INPLACE SIGNAL SYSTEM. (SEE SHEETS 10 & 11 AND SPECIAL PROVISIONS.
2. POLE AND DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGINEER PRIOR TO INSTALLATION.
3. THE COUNTY SHALL FURNISH TO THE CONTRACTOR EVP DETECTORS AND ASSOCIATED CONTROL EQUIPMENT (SEE SPECIAL PROVISIONS)

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: Rulem
DATE: 6-24-80

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.
Paul Kahnert
DATE 12-5-13 REG. NO. 12703

INTERSECTION LAYOUT
WHITE BEAR AVE. & 11th AVE. (GERVAIS AVE)

SYSTEM B

S.P. NO. 62-665-24 SHEET NO. 7 OF 51 SHEETS

23-132



23-132 White Bear Avenue System B Thru H
T.H. 36, 11th Ave. Co. Rd. 84 Beam, Lydia,
1-51

23-132

CONTROLLER CABINET

SIGNAL SERVICE — 1

4 — RED 6-1, YEL 6-1, GRN 6-1, NEU 6-1, RED 4-6, YEL 4-6, GRN 4-6, NEU 4-6, P4-4, WLK P4-4, DWK P4-4, EQG

8 — 6-3 RED, 6-3 YEL, 6-3 GRN, 6-3 NEU, 6-3 YEL LTA, 6-3 GRN LTA, EVP LHT, P2-2 NEU, P2-2 WLK, P2-2 DWK, EVP LHT, EQG

5 — RED 6-2, YEL 6-2, GRN 6-2, NEU 6-2, 6-4, YEL LTA 6-2, GRN LTA 6-2, RED 6-4, NEU EVP LHT, YEL 6-4, GRN 6-4, EVP LHT, EQG

9 — 4-1 RED, 4-1 YEL, 4-1 GRN, 4-1 NEU, 4-2 RED, 4-2 YEL, 4-2 GRN, P4-3, 4-2 NEU, P4-3 WLK, P4-3 DWK, EQG

6 — RED 2-3, YEL 2-3, GRN 2-3, NEU 2-3, YEL LTA 2-3, GRN LTA 2-3, NEU P6-2, EVP LHT, WLK P6-2, DWK P6-2, EVP LHT, EQG

10 — 2-1 RED, 2-1 YEL, 2-1 GRN, 2-1 NEU, 4-3 RED, 4-3 YEL, 4-3 GRN, P4-2, 4-3 NEU, P4-2 WLK, P4-2 DWK, EQG

7 — RED 4-4, YEL 4-4, GRN 4-4, NEU 4-4, RED 4-5, YEL 4-5, GRN 4-5, NEU 4-5, P4-1, WLK P4-1, DWK P4-1, EQG

11 — 2-2 RED, 2-2 YEL, 2-2 GRN, 2-4, 2-2 NEU, 2-2 YEL LTA, 2-2 GRN LTA, 2-4 RED, EVP LHT NEU, 2-4 YEL, 2-4 GRN, EVP LHT, EQG

12 — DNL, NEU, PEC

13 — DNL, NEU

14 — DNL, NEU

15 — WLK P6-1, NEU P6-1, DWK P6-1

16 — WLK P2-1, NEU P2-1, DWK P2-1

27 — DI-X2

28 — D6-3

29 — D6-1

30 — D6-2

31 — DI-X1

32 — D4-1

17 — EVP DETECTOR Ø1&6

18 — EVP DETECTOR Ø4

19 — EVP DETECTOR Ø4

20 — EVP DETECTOR Ø2&5

33 — D4-2

34 — D4-3

36 — D4-4

37 — D4-5

38 — D4-6

PB4-4 NEU PB6-1 — 21

PB6-2 NEU PB4-1 — 22

PB2-2 NEU PB4-3 — 23

PB4-2 NEU PB2-1 — 24

INTERCONNECT SYSTEM C 0939 — 25

INTERCONNECT SYSTEM A 0939 — 26

D2-1 — 39

D2-2 — 40

D5-X1 — 41

D5-X2 — 42

D2-3 — 43

SOP — H.H.1 SOP

SERVICE CABINET & METER

1 — SIGNAL SERVICE (METERED)

2 — ST. LIGHT SERVICE (UNMETERED)

3 — ST. LIGHT SERVICE (UNMETERED)

S.O.P. 120/240V SERVICE

3, 2 — TO H.H. 2 SEE SHEET 9

FROM H.H. 2 SEE SHEET 9

TO H.H. 2 SEE SHEET 9

INTERCONNECT SYSTEM A 0951 — 26 — CONTROLLER CABINET AT T.H. 36 N. RAMP & WHITE BEAR AVE. SEE SHEET 6

PED. PUSH BUTTON STA. PB6-1 — 21, 21

H.H.10 — 2, 21; 21, 4, 5, 12, 13, 15, 17, 18, 2, 6, 7, 22, 27, 28, 26, 29, 30, 31, 32, 33, 34

H.H.11 — 32, 33 — D4-2

H.H.12 — 32 — D4-1

D4-3

H.H.26 — 26

H.H.27 — 26

H.H.30 — 26

INPLACE HANDHOLES AT T.H.36 N. RAMP & WHITE BEAR AVE. - SYSTEM A SEE SHEET 6

(1)

PB4-4 — 21

P4-4 (4-6) (6-1) — 4

EVP LHT (6-4) (6-2) — 5

AC+SW, NEU, AC+ — 12 — PE.C (DNL)

DNL — 13

P6-1 — 15

EVP DETECTOR Ø1 & 6 — 17

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, 2-1/C#10

R, WH, 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.

(2)

EVP DETECTOR Ø4 — 18

ST. LHT. PE.C — 2 — BLK AC+, WH AC−, R AC+, BL AC+SW; ST. LHT. CH. SW.; LUM.

EVP LHT P6-2 (2-3) — 6

P4-1 (4-5) (4-4) — 7

PB6-2 — 22

H.H.13 — 18, 2, 6, 7, 22; 22, 22; 27, 28, 26, 29, 30, 31

PEDESTRIAN PUSH BUTTON STA. PB4-1 — 22

H.H.14 — 22, 27, 28, 26, 29, 30, 31

DI-X2

D6-3

D6-1

D6-2

DI-X1

H.H.16 — 30, 29, 26

H.H.15 — 31, 30, 29, 26

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R.Ruleau
DATE: 6-24-86

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.
Paul Ruhnwald
DATE 12-5-83 REG. NO. 12703

FIELD WIRING DIAGRAM
WHITE BEAR AVE. & 11th AVE. (GERVAIS AVE.)
SYSTEM B

S.P. NO. 62-665-24 — SHEET NO. 8 OF 51 SHEETS

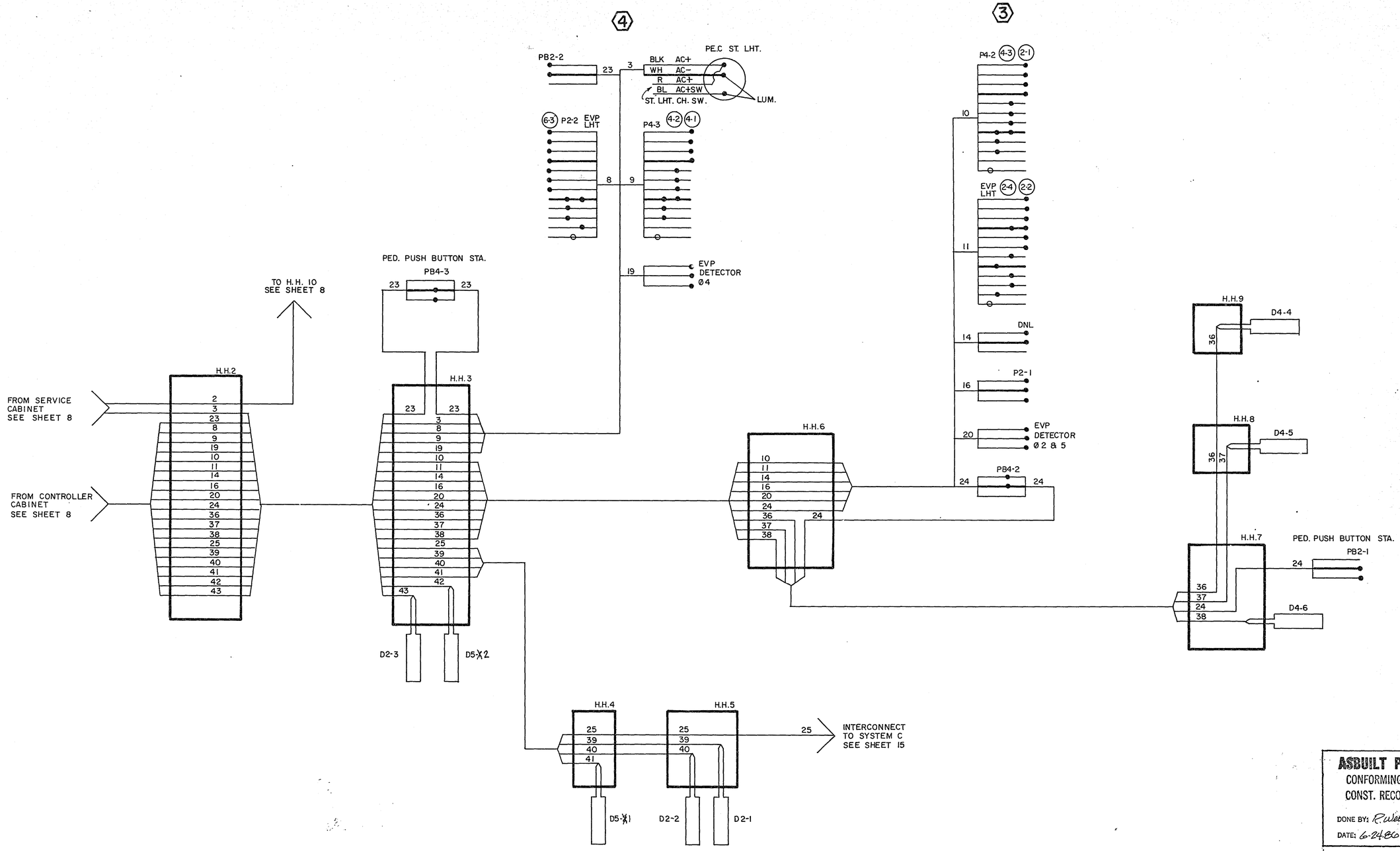
23-132

2 4 X

23-132 White Bear Avenue System B thru H T.H. 36, 11th Ave. Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater, Rice

1-51

23-132



ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R. Ulsher
DATE: 6-24-86

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.
Paul Rehwoldt
DATE 12-5-83 REG. NO 12703

FIELD WIRING DIAGRAM
WHITE BEAR AVE. & 11th AVE. (GERVAIS AVE.)

SYSTEM B

S.P. NO. 62-665-24 SHEET NO. 9 OF 51 SHEETS

23-132

24X

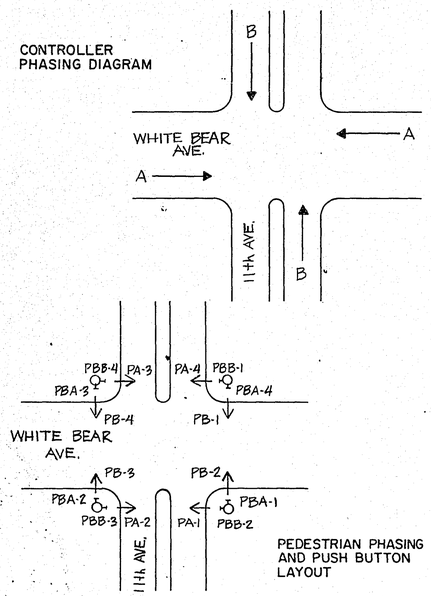
23-132 White Bear Avenue System B thru H
T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater Blvd
1-51

23-132

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

CONTROLLER PHASING DIAGRAM

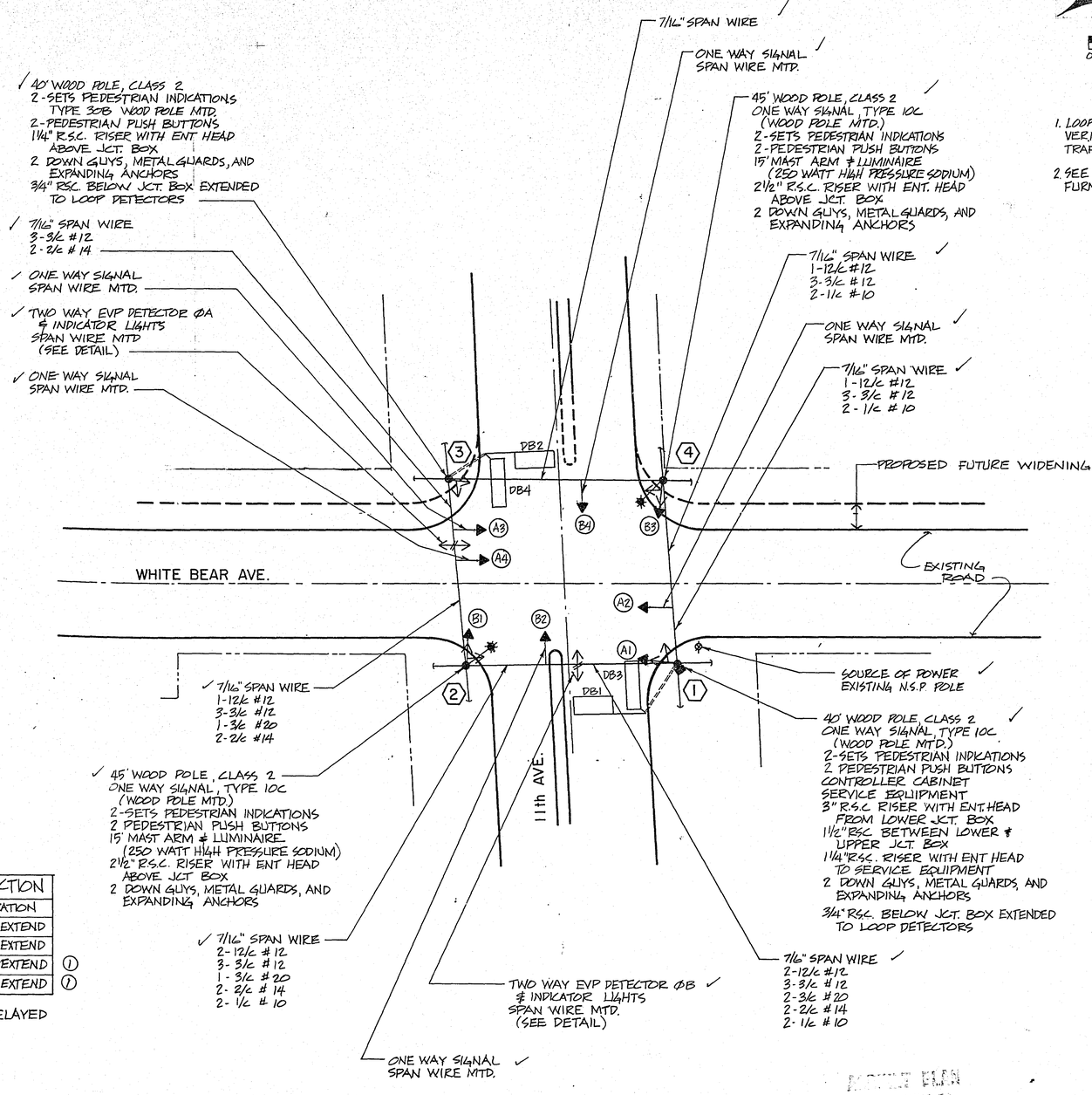


PEDESTRIAN PHASING AND PUSH BUTTON LAYOUT

SIGNAL INDICATION CHART								
FACE	PHASE	FLASH	INDICATION SIZE					
			R	Y	G	←	↑	→
A1	A	Y	12"	12"	12"	-	-	-
A2	A	Y	12"	12"	12"	-	-	-
A3	A	Y	12"	12"	12"	-	-	-
A4	A	Y	12"	12"	12"	-	-	-
B1	B	R	12"	12"	12"	-	-	-
B2	B	R	12"	12"	12"	-	-	-
B3	B	R	12"	12"	12"	-	-	-
B4	B	R	12"	12"	12"	-	-	-

VEHICLE DETECTION			
NUMBER	SIZE	OPERATION	
DB1	8'x18'	CALL & EXTEND	
DB2	8'x18'	CALL & EXTEND	
DB3	6'x25'	CALL & EXTEND	(1)
DB4	6'x25'	CALL & EXTEND	(1)

(1) TIME DELAYED



0 15 30 45 60 75
SCALE IN FEET

NOTES:

1. LOOP DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGR. PRIOR TO INSTALLATION.
2. SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED EQUIPMENT.

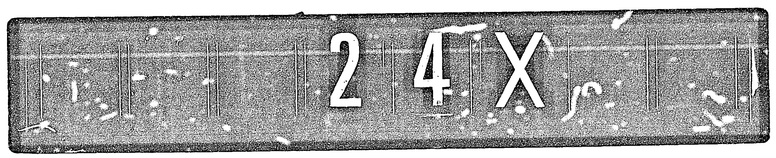
INTERSECTION LAYOUT
WHITE BEAR AVE. & 11th AVE.

SYSTEM B

FOR INFORMATION ONLY
(INPLACE SYSTEM - REMOVE & SALVAGE)

S.P. NO. 62-665-24 SHEET NO. 10 OF 51 SHEETS

23-132



23-132 White Bear Avenue System A thru H
T.H. 36, @ 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd B & St. Edmunders Rd
1-51

23-132

CONDUCTOR COLOR CODING

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

- R, W, BLK — 3/c #20, 3/c #12
- BLK or RED, WH — 2-1/c #6, 2-1/c #10
- BLK, CLEAR — 2/c #14

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

CONTROLLER CABINET

1
- RED B1
- YEL B1
- GRN B1
- NEU B1, B2
- RED B2
- YEL B2
- GRN B2
- NEU EVP LHT
- EVP LHT
- EQG

2
- RED A3
- YEL A3
- GRN A3
- NEU A3, A4
- RED A4
- YEL A4
- GRN A4
- NEU EVP LHT
- EVP LHT
- EQG

3
- RED B3
- YEL B3
- GRN B3
- NEU B3, B4
- RED B4
- YEL B4
- GRN B4
- NEU A2
- RED A2
- YEL A2
- GRN A2
- EQG

14 DB2
15 DB4
16 DB3
17 DB1

SIGNAL SERVICE 18

4
- A1 RED
- A1 YEL
- A1 GRN
- PA-1 NEU
- PA-1 WLK
- PA-1 DWK
- PB-2 NEU
- PB-2 WLK
- PB-2 DWK
- EQG

EVP CABLE ø B 5

EVP CABLE ø A 6

- PA2, PA-3 WLK
- PA-2, PA-3 NEU
- PA-2 PA-3 DWK 7

- PB-3, PB-4 WLK
- PB-3, PB-4 NEU
- PB-3, PB-4 DWK 8

- PBA-2, PBA-3 NEU
- PBB-3, PBB-4 9

- PBA-4 NEU
- PBB-1 10

- PA-4 WLK
- PA-4 NEU
- PA-4 DWK 11

- PB-1 WLK
- PB-1 NEU
- PB-1 DWK 12

- PBA-1 NEU
- PBB-2 13

(2) LUMINAIRE

20A — B1 — 1E

5A EVP CABLE ø B — EVP LHT — B2 — 1A 1B 1C 1D

7A PA-2 7B — PB-3 — 8A 8B — PBB-3 PBA-2 9A 9B

A4 — 2A 2B

EVP LHT. A3 — 2C — 6A EVP CABLE ø A

(3)

7C PA-3 — 8C PB-4 — 9C PBB-4 PBA-3

DB2 — DB4 — WOOD POLE 3

WOOD POLE 2

SERVICE EQUIP — SIGNAL SERVICE — ST. LHT SERVICE — GR ROD

WOOD POLE 1

DB1 DB3

(1) — PB-2 PA-1 A1 — 4A

PBB-2 PBA-1 — 13A

WOOD POLE 4

A2 — 3A 3B

(4) — B3 — 3C 3D

PBB-1 PBA-4 — 10A

PA-4 — 11A

PB-1 — 12A

LUMINAIRE — 19A

B4 — 3E

FOR INFORMATION ONLY
(INPLACE SYSTEM-REMOVE & SALVAGE)

FIELD WIRING DIAGRAM
WHITE BEAR AVE. & 11th AVE.
SYSTEM B

S.P. NO. 62-665-24 — SHEET NO. 11 OF 51 SHEETS

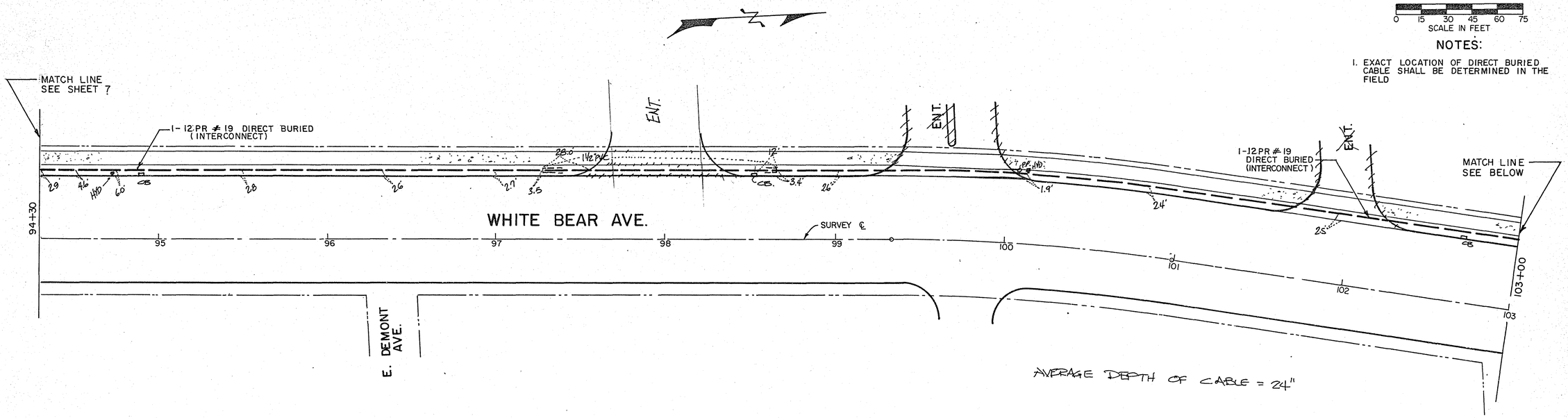
23-132

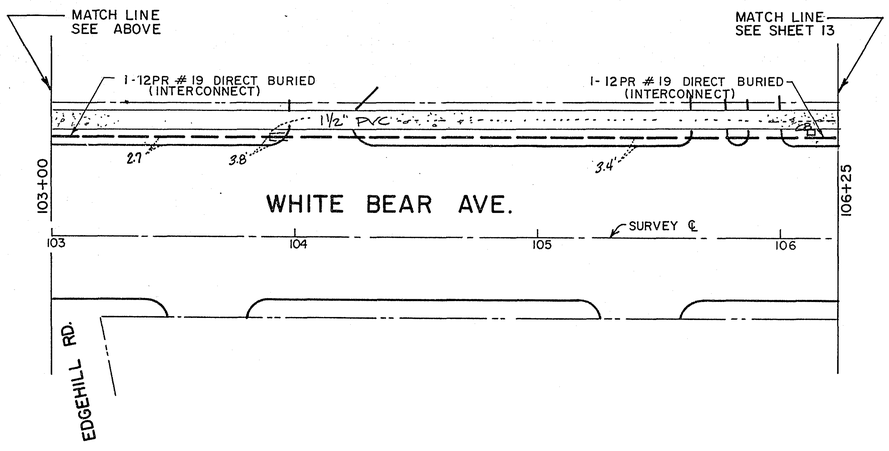
24X

23-132 White Bear Avenue System B thru H T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater, Abe

1-51

23-132





0 15 30 45 60 75
SCALE IN FEET

NOTES:

1. EXACT LOCATION OF DIRECT BURIED CABLE SHALL BE DETERMINED IN THE FIELD

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: R. Ullestad
DATE: 6-24-80

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.
Paul Burkhardt
DATE 12-6-83 REG. NO 12903

INTERCONNECT LAYOUT

WHITE BEAR AVE.

BETWEEN 11th AVE. (GERVAIS AVE.) & COUNTY RD. C

S.P. NO. 62-665-24 SHEET NO. 12 OF 51 SHEETS

23-132

24X

23-132 White Bear Avenue System A thru H
T.H. 36, 11th Ave, Co Rd C, Beam, Lydia,
Woodlynn, Co Rd B & Edgewater, Abe
1-51

23-132

LEGEND OF SYMBOLS

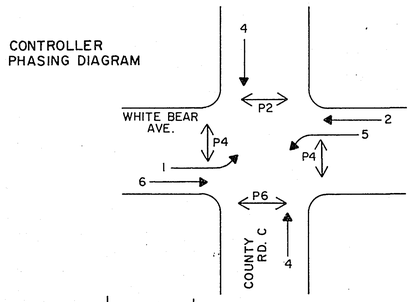
SIGNAL BASE No. (5) (4-2)
SIGNAL FACE No.
CONTROLLER AND CABINET
CONTROLLER AND CABINET-INPLACE
HANDHOLE
HANDHOLE-INPLACE
RIGID STEEL CONDUIT (R.S.C.)
RIGID STEEL CONDUIT (R.S.C.)-INPLACE
SIGNAL FACE
SIGNAL FACE WITH BACKGROUND SHIELD
SIGNAL FACE - INPLACE
PEDESTRIAN INDICATIONS
PEDESTRIAN INDICATIONS-INPLACE
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 <#>

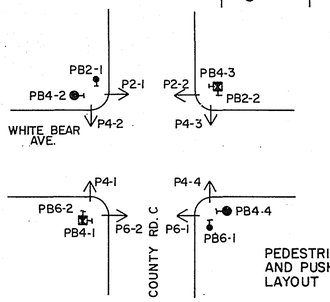
VEHICLE DETECTION

NUMBER	SIZE	OPERATION
DI-1	6'X 40'25	E. ONLY
DI-2	6'X 25'40'	C. & E. (TD)
D2-1	6'X 6'	C. & E.
D2-2	6'X 6'	C. & E.
D2-3	2-6'X 8'	C. ONLY
D4-1	2-6'X 6'	C. & E.
D4-2	2-6'X 6'	C. & E.
D4-7	2-6'X 20	C. & E. (TD)
D4-4	2-6'X 6'	C. & E.
D4-5	2-6'X 6'	C. & E.
D4-8	2-6'X 20'	C. & E. (TD)
D5-1	6'X 40'25	E. ONLY
D5-2	6'X 25'40	C. & E. (TD)
D6-1	6'X 6'	C. & E.
D6-2	6'X 6'	C. & E.
D6-3	2-6'X 8'	C. ONLY
DC-5	6'X 6'	COUNT
DC-6	6'X 6'	COUNT
DC-7	6'X 6'	COUNT
DC-8	6'X 6'	COUNT

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

CONTROLLER PHASING DIAGRAM





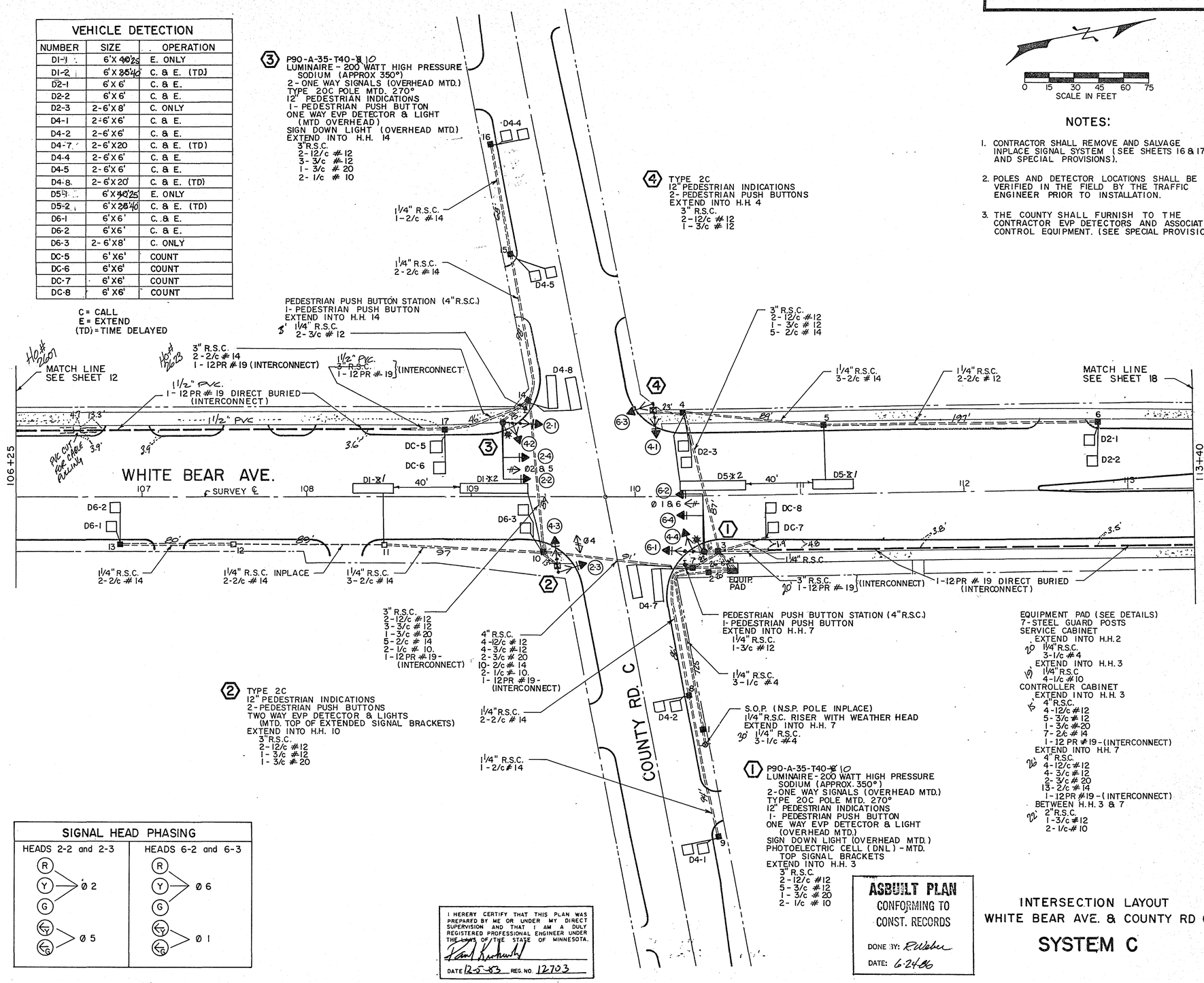
PEDESTRIAN INDICATION AND PUSH BUTTON LAYOUT

SIGNAL INDICATION CHART

FACE	PHASE	FLASH	INDICATION SIZE R	Y	G	←Y	←G
2-1	2	R	12"	12"	12"	–	–
2-2	2 and 5	R	12"	12"	12"	12"	12"
2-3	2 and 5	R	12"	12"	12"	12"	12"
2-4	2	R	12"	12"	12"	–	–
4-1	4	R	12"	12"	12"	–	–
4-2	4	R	12"	12"	12"	–	–
4-3	4	R	12"	12"	12"	–	–
4-4	4	R	12"	12"	12"	–	–
6-1	6	R	12"	12"	12"	–	–
6-2	6 and 1	R	12"	12"	12"	12"	12"
6-3	6 and 1	R	12"	12"	12"	12"	12"
6-4	6	R	12"	12"	12"	–	–

SIGNAL HEAD PHASING

HEADS 2-2 and 2-3	HEADS 6-2 and 6-3
R, Y, G → Ø 2	R, Y, G → Ø 6
←Y, ←G → Ø 5	←Y, ←G → Ø 1



NOTES:

1. CONTRACTOR SHALL REMOVE AND SALVAGE INPLACE SIGNAL SYSTEM (SEE SHEETS 16 & 17 AND SPECIAL PROVISIONS).
2. POLES AND DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGINEER PRIOR TO INSTALLATION.
3. THE COUNTY SHALL FURNISH TO THE CONTRACTOR EVP DETECTORS AND ASSOCIATED CONTROL EQUIPMENT. (SEE SPECIAL PROVISIONS).

0 15 30 45 60 75
SCALE IN FEET

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 12-5-83 REG. NO. 12703

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R. Weber
DATE: 6-24-86

INTERSECTION LAYOUT
WHITE BEAR AVE. & COUNTY RD C
SYSTEM C

S. P. NO. 62-665-24 SHEET NO. 13 OF 51 SHEETS

23-132

24X

23-132 White Bear Avenue System C Arthur H T.H. 36, 11th Ave Co Rd C Beam, Sylvia, Woodlawn Co Rd C & Shoreview, Ryan Rd & Co Rd C

1-51

23-132

CONTROLLER CABINET

		SIGNAL SERVICE	1
4	RED 6-1	2-3 RED	
	YEL 6-1	2-3 YEL	
	GRN 6-1	2-3 GRN	
	NEU 6-1	2-3 NEU	
	RED 4-4	2-3 YEL LTA	
	YEL 4-4	2-3 GRN LTA	8
	GRN 4-4		
	NEU 4-4, P4-4	P6-2 NEU	
	WLK P4-4	P6-2 WLK	
	DWK P4-4	P6-2 DWK	
	EQG	EQG	
5	RED 6-2	4-3 RED	
	YEL 6-2	4-3 YEL	
	GRN 6-2	4-3 GRN	
	NEU 6-2, 6-4	4-3 NEU	
	YEL LTA 6-2		
	GRN LTA 6-2		9
	RED 6-4		
	NEU EVP LHT	EVP LHT, P4-1 NEU	
	YEL 6-4	P4-1 WLK	
	GRN 6-4	P4-1 DWK	
	EVP LHT	EVP LHT	
	EQG	EQG	
6	RED 6-3	2-1 RED	
	YEL 6-3	2-1 YEL	
	GRN 6-3	2-1 GRN	
	NEU 6-3	2-1 NEU	
	YEL LTA 6-3	4-2 RED	
	GRN LTA 6-3	4-2 YEL	10
		4-2 GRN	
	NEU P2-2	P4-2, 4-2 NEU	
	WLK P2-2	P4-2 WLK	
	DWK P2-2	P4-2 DWK	
	EQG	EQG	
7	RED 4-1	2-2 RED	
	YEL 4-1	2-2 YEL	
	GRN 4-1	2-2 GRN	
	NEU 4-1	2-4, 2-2 NEU	
		2-2 YEL LTA	
		2-2 GRN LTA	11
		2-4 RED	
	NEU P4-3	EVP LHT NEU	
	WLK P4-3	2-4 YEL	
	DWK P4-3	2-4 GRN	
	EQG	EVP LHT	
		EQG	
12	DNL	PB4-4	
	NEU	NEU	20
	PEC	PB6-1	
13	DNL	PB2-2	
	NEU	NEU	21
		PB4-3	
14	DNL	PB6-2	
	NEU	NEU	22
		PB4-1	
	WLK P6-1	PB4-2	
15	NEU P6-1	NEU	23
	DWK P6-1	PB2-1	
	WLK P2-1		
16	NEU P2-1	INTERCONNECT SYSTEM D 24X	24
	DWK P2-1		
		INTERCONNECT SYSTEM B 24X2	25
26	D2-1		
27	D2-2	D4-5	32
28	D5-X1	D4-8	33
29	D5-X2	D6-1	34
30	D2-3	D6-2	35
31	D4-4	D1-X1	36
42	DC-7	DC-5	44
43	DC-8		

17	EVP DETECTOR Ø1&6	PB4-4	20
18	EVP DETECTOR Ø4	PB2-2	21
19	EVP DETECTOR Ø2&5	PB6-2	22
		PB4-2	23
		DI-X2	37
		D6-3	38
		D4-1	39
		D4-2	40
		D4-7	41
		DC-6	45

S.O.P. — H.H.1 (S.O.P.) — H.H.2 (S.O.P.)

SERVICE CABINET & METER

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

TO H.H. 7 SEE SHEET 15

(1)

6-1 (4-4) P4-4 — EVP LHT (6-4) (6-2)

DNL 13 — 12 AC+SW, NEU, AC+ — PE.C. (DNL)

P6-1 15 — 2 BLK AC+, WH AC−, R AC+, BL AC+SW — ST. LHT. PE.C. — LUM.
ST. LHT. CH. SW.

EVP DETECTOR Ø1&6 17

PB4-4 20 — 20

H.H.3

3, 2, 4, 5, 12, 13, 15, 17, 20 — 20 — 20, 3 → TO H.H. 7 SEE SHEET 15

21, 6, 7, 26, 27, 28, 29, 30, 24, 42, 43 → DC-8, DC-7

TO H.H. 7 SEE SHEET 15

H.H.4

21, 6, 7, 26, 27, 28, 29, 30 → D2-3, D5X2

H.H.5: 26, 27, 28 → D5-X1, D2-2, D2-1

H.H.6: 26, 27

(4)

PB4-3, PB2-2 — 21
P2-2 (6-3) — 6
P4-3 (4-1) — 7

H.H. 24 — H.H. 24 — H.H. 24 — H.H. 24 → INTERCONNECT TO SYSTEM D SEE SHEET 22

INPLACE HANDHOLES AT WHITE BEAR AVE. AND RADATZ AVE. SEE SHEET 18.

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, 2-1/C#10

R, WH, 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.

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R. Weber
DATE: 6-24-86

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.
Paul Reinhardt
DATE 12-5-85 REG. NO. 12703

FIELD WIRING DIAGRAM
WHITE BEAR AVE. & COUNTY RD. C

SYSTEM C

S.P. NO. 62-665-24 — SHEET NO. 14 OF 51 SHEETS

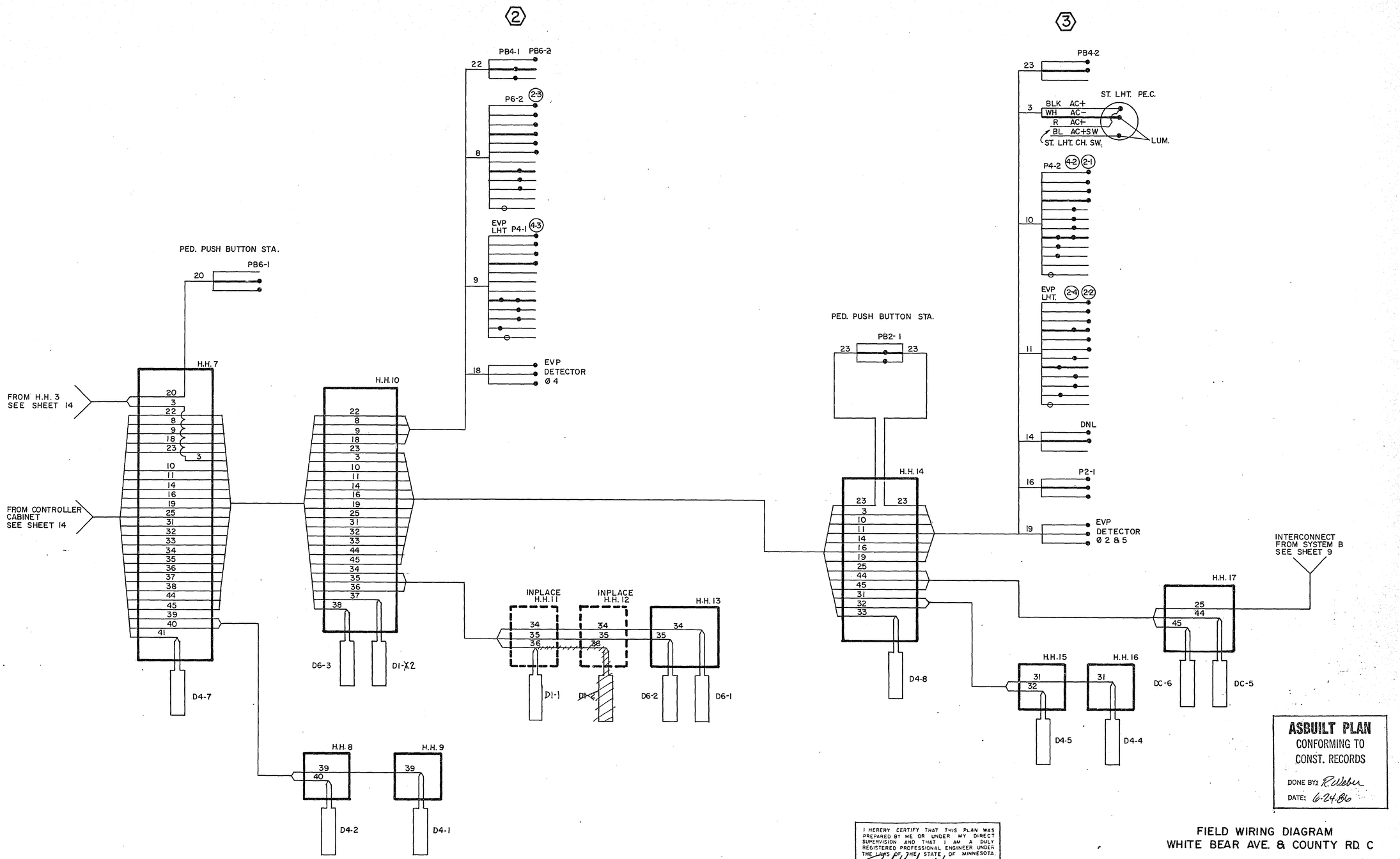
23-132

24X

23-132 White Bear Avenue System C thru H
T.H. 36, 11th Ave, Co Rd C, Beam, Lydia,
Woodlynn, Co Rd D & Eckenwater, Inc

1-51

23-132



ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: R. Weber
DATE: 6-24-86

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.
Paul Rutherford
DATE 12-5-83 REG. NO. 12703

FIELD WIRING DIAGRAM
WHITE BEAR AVE. & COUNTY RD C

SYSTEM C

S.P. NO. 62-665-24 SHEET NO. 15 OF 51 SHEETS

23-132

24X

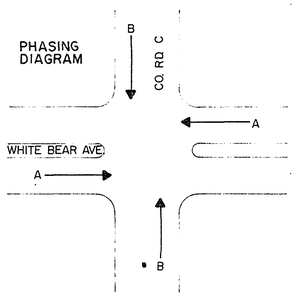
23-132 White Bear Avenue System A Sheet #1
T.H. 36, 11th Ave, Co Rd C, Beam, Sylvia,
Woodbury, Co Rd D & Edgewater, H.B.2

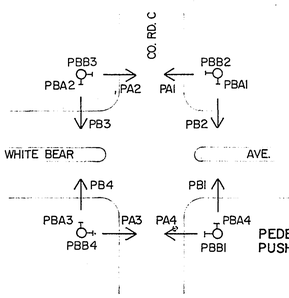
1-51

23-132

LEGEND OF SYMBOLS	
	CONTROLLER
	PEDESTAL
	HANDHOLE, (PULLBOX)
	RIGID STEEL CONDUIT (R.S.C.)
	SIGNAL FACE
	PEDESTRIAN INDICATION
	SOURCE OF POWER (S.O.P)
	HANDHOLE (PULLBOX) INPLACE
	RIGID STEEL CONDUIT (R.S.C) INPLACE
	WOOD POLE

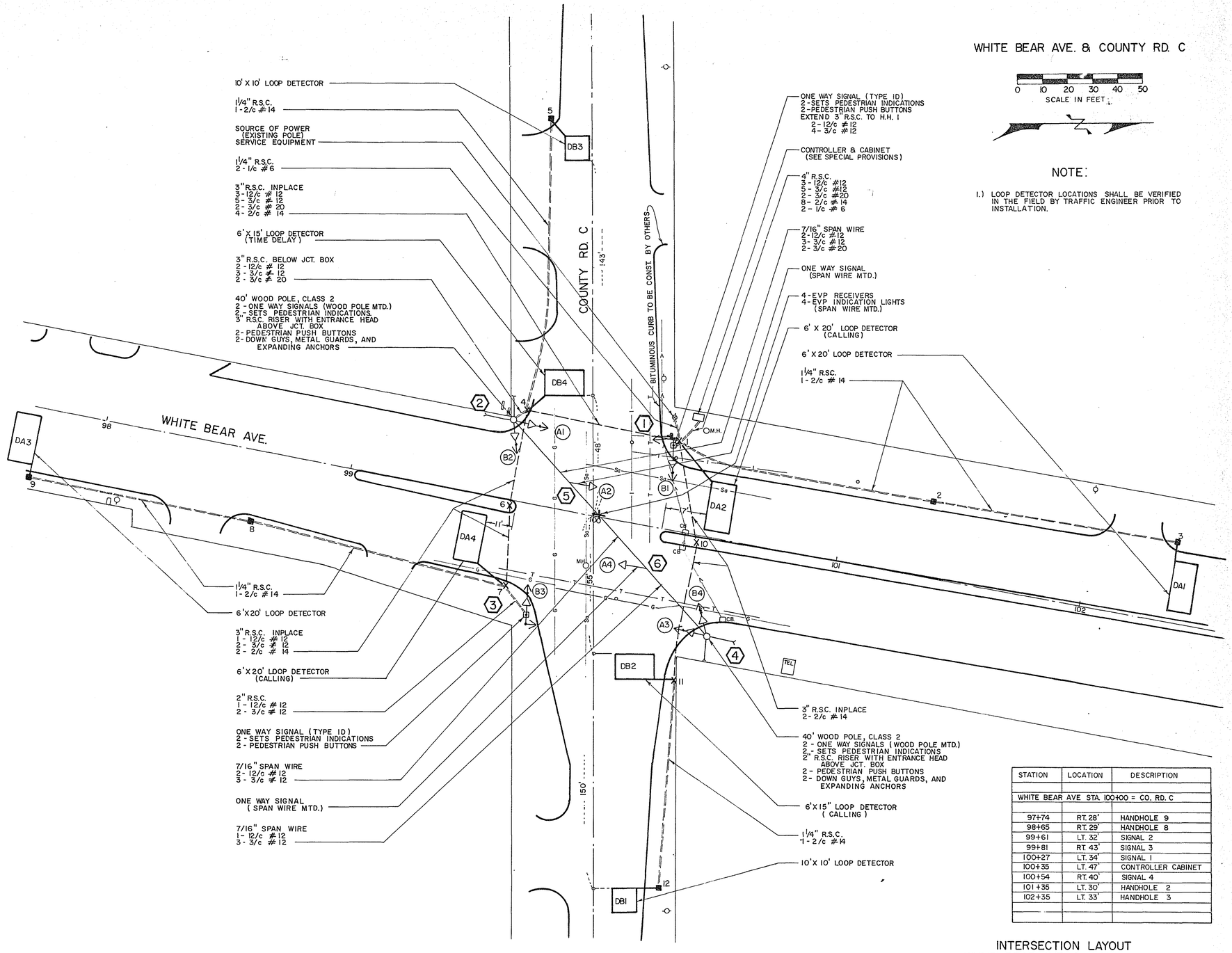
PHASING DIAGRAM





PEDESTRIAN PHASING & PUSH BUTTON LAYOUT

FACE	PHASE	FLASH	INDICATION SIZE					
			R	Y	G	←	↑	→
A1	A	R	12"	12"	12"	-	-	-
A2	A	R	12"	12"	12"	-	-	-
A3	A	R	12"	12"	12"	-	-	-
A4	A	R	12"	12"	12"	-	-	-
B1	B	R	12"	12"	12"	-	-	-
B2	B	R	12"	12"	12"	-	-	-
B3	B	R	12"	12"	12"	-	-	-
B4	B	R	12"	12"	12"	-	-	-



WHITE BEAR AVE. & COUNTY RD. C

0 10 20 30 40 50
SCALE IN FEET

NOTE:

1.) LOOP DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY TRAFFIC ENGINEER PRIOR TO INSTALLATION.

STATION	LOCATION	DESCRIPTION
WHITE BEAR AVE STA. 100+00 = CO. RD. C		
97+74	RT. 28'	HANDHOLE 9
98+65	RT. 29'	HANDHOLE 8
99+61	LT. 32'	SIGNAL 2
99+81	RT. 43'	SIGNAL 3
100+27	LT. 34'	SIGNAL 1
100+35	LT. 47'	CONTROLLER CABINET
100+54	RT. 40'	SIGNAL 4
101+35	LT. 30'	HANDHOLE 2
102+35	LT. 33'	HANDHOLE 3

FOR INFORMATION ONLY
(INPLACE SYSTEM - REMOVE & SALVAGE)

INTERSECTION LAYOUT
WHITE BEAR AVE. & COUNTY RD. C
SYSTEM C

S.P. NO. 62-665-24 SHEET NO. 16 OF 51 SHEETS

23-132



23-132 White Bear Avenue System C Thru H T.H. 36 @ 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd D to Edgewater, Rice

1-51

23-132

CONTROLLER CABINET

SIGNAL SERVICE BLK WH 1
DA1 BLK WH 2
DB1 BLK WH 3
DB2 BLK WH 4
B1,B3 RED R
B1,B3 YEL O
B1,B3 GRN BL
B1,B3 NEU WH
PA1,PA3 WLK R/BLK
PA1,PA3 DWK O/BLK
PB2,PB4,PA1,PA3 NEU BL/BLK
PB2,PB4 WLK WH/BLK
PB2,PB4 DWK BLK
EQG BLK/WH
G/BLK
G
5
PBB4 BLK
NEU WH
PBB2 R
6
PBA3 BLK
NEU WH
PBA1 R
7
DA4 BLK WH 8
DA3 BLK WH 9
DB3 BLK WH 10
A1,A3 RED R
A1,A3 YEL O
A1,A3 GRN BL
A1,A3 NEU WH
B2,B4 RED R/BLK
B2,B4 YEL O/BLK
B2,B4 GRN BL/BLK
PB1,PB3,B2,B4 NEU WH/BLK
PB1,PB3 WLK BLK
PB1,PB3 DWK BLK/WH
EQG G
11
16 BLK WH DA2
17 BLK WH DB4
R RED A2,A4
O YEL A2,A4
BL GRN A2,A4
WH NEU A2,A4
R/BLK
O/BLK
18 BL/BLK EVP LHT
WH/BLK NEU
BLK EVP LHT
BLK/WH
G/BLK
G
PA2,PA4 WLK BLK
PA2,PA4 NEU WH
PA2,PA4 DWK R
12
PBB1 BLK
NEU WH
PBB3 R
13
PBA4 BLK
NEU WH
PBA2 R
14
19 BLK WH R EVP RECIEVER
EVP RECIEVER BLK WH R 15

1,2,3,4,5,6,7,8,9,10
11,12,13,14,15,16,17,18,19

S.O.P.
1A
SIG. SERV.
GR. ROD

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

DA1 DA2 DA3 DA4 DB1 DB2 DB3 DB4

PB2 PA1 (B1) 5C 5D
PBB2 6C 6D
PBA1 7C 7D
PB4 PA3 (B3) 5N 6N 7N
PB3 (B2) (A1) 11E 11F
PA2 12E 12F
PBB3 13E 13F
PBA2 14E 14F
PB1 (B4) (A3) 11G
PA4 12G
PBB1 13G
PBA4 14G
(A4) 18J
EVP LHT EVP LHT 18H 18G
EVP RECEIVER 15E 19E
(A2) 18F 18E

FOR INFORMATION ONLY
(INPLACE SYSTEM- REMOVE & SALVAGE)

FIELD WIRING DIAGRAM
WHITE BEAR AVE. & COUNTY RD. C
SYSTEM C

S.P. NO. 62-665-24 SHEET NO. 17 OF 51 SHEETS

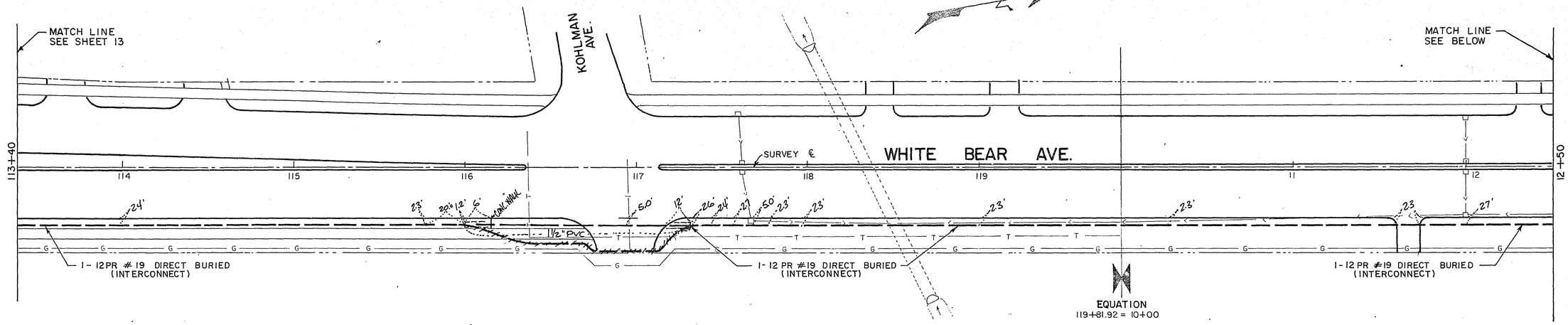
23-132

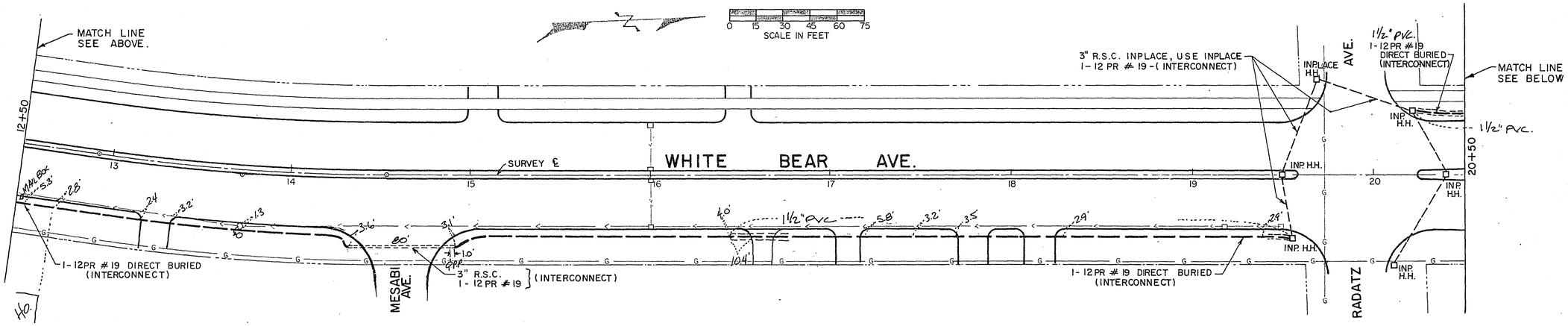
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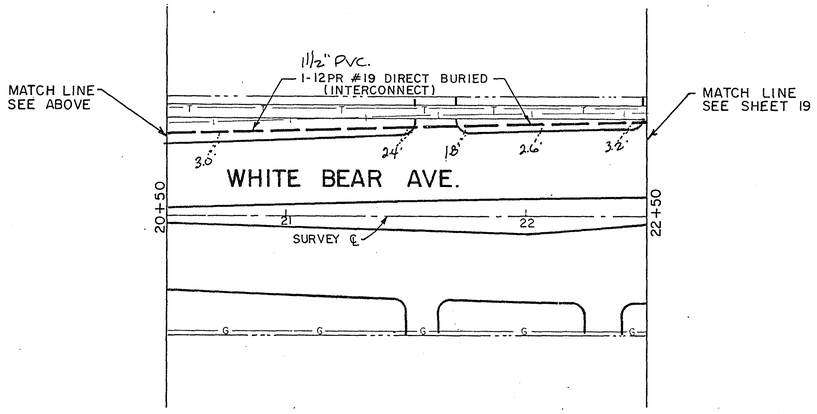
23-132 White Bear Avenue System C from H
T.H. 36, 11th Ave, Co Rd C, Beam, Lydia,
Woodlynn, Co Rd B & Edgewater, Nbr

1-51

23-132







NOTE: EXACT LOCATION OF DIRECT BURIED CABLE SHALL BE DETERMINED IN THE FIELD.

- AVERAGE DEPTH OF CABLE = 24"
- LOCATIONS FROM FACE OF CURB

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 12-5-83 REG. NO 12703

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: R Ackerlund
DATE: 6-24-86

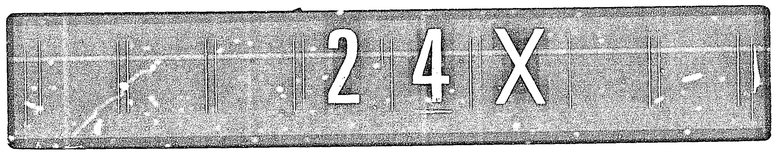
INTERCONNECT LAYOUT

WHITE BEAR AVE.
BETWEEN COUNTY RD. C AND BEAM AVE.

S.P. NO. 62-665-24

SHEET NO. 18 OF. 51 SHEETS

23-132



23-132 White Bear Avenue System Area H
T. 31, R. 22 Hwy Co. Rd C, Beam, Lydia,
Woodbury, Co. Rd B & Edgewater Blvd

1-51

23-132

LEGEND OF SYMBOLS

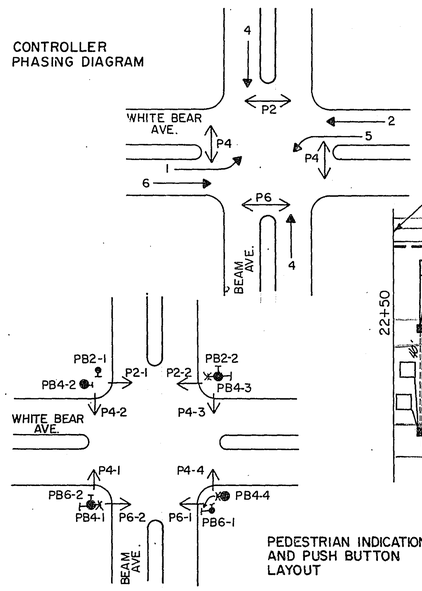
SIGNAL BASE No. (5) (4-2)
SIGNAL FACE No.
CONTROLLER AND CABINET
CONTROLLER AND CABINET-INPLACE
HANDHOLE
HANDHOLE-INPLACE
RIGID STEEL CONDUIT (R.S.C.)
RIGID STEEL CONDUIT (R.S.C.)-INPLACE
SIGNAL FACE
SIGNAL FACE WITH BACKGROUND SHIELD
SIGNAL FACE-INPLACE
PEDESTRIAN INDICATIONS
PEDESTRIAN INDICATIONS-INPLACE
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

VEHICLE DETECTION

NUMBER	SIZE	OPERATION
DI-1	6'X 40'25	E. ONLY
DI-2	6'X 25'40	C. & E. (TD)
D2-1	6'X6'	C. & E.
D2-2	6'X6'	C. & E.
D4-1	2-6'X6'	C. & E.
D4-2	2-6'X6'	C. & E.
D4-3	2-6'X20'15	C. & E.
D4-4	3-6'X6'	C. & E.
D4-5	3-6'X6'	C. & E.
D4-6	2-6'X20'	C. & E.
D5-1	6'X40'25	E. ONLY
D5-2	6'X25'40	C. & E. (TD)
D6-1	6'X6'	C. & E.
D6-2	6'X6'	C. & E.
DC-1	6'X6'	COUNT ONLY
DC-2	6'X6'	COUNT ONLY
DC-3	6'X6'	COUNT ONLY
DC-4	6'X6'	COUNT ONLY

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

CONTROLLER PHASING DIAGRAM

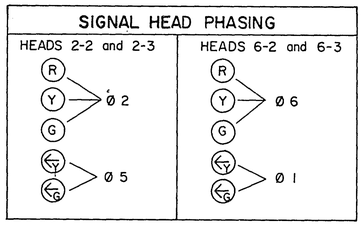


PEDESTRIAN INDICATION AND PUSH BUTTON LAYOUT

SIGNAL INDICATION CHART

FACE	PHASE	FLASH	INDICATION SIZE R	Y	G	←Y	←G
2-1	2	R	12"	12"	12"	–	–
2-2	2 and 5	R	12"	12"	12"	12"	12"
2-3	2 and 5	R	12"	12"	12"	12"	12"
2-4	2	R	12"	12"	12"	–	–
4-1	4	R	12"	12"	12"	–	–
4-2	4	R	12"	12"	12"	–	–
4-3	4	R	12"	12"	12"	–	–
4-4	4	R	12"	12"	12"	–	–
4-5	4	R	12"	12"	12"	–	–
4-6	4	R	12"	12"	12"	–	–
6-1	6	R	12"	12"	12"	–	–
6-2	6 and 1	R	12"	12"	12"	12"	12"
6-3	6 and 1	R	12"	12"	12"	12"	12"
6-4	6	R	12"	12"	12"	–	–

SIGNAL HEAD PHASING



(4) P90-A-35-T40-8 10
LUMINAIRE-200 WATT HIGH PRESSURE SODIUM (APPROX 350°)
2-ONE WAY SIGNALS (OVERHEAD MTD.)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSH BUTTON
ONE WAY EVP DETECTOR & LIGHT (OVERHEAD MTD.)
SIGN DOWN LIGHT (OVERHEAD MTD.)
3-STEEL GUARD POSTS
EXTEND INTO H.H. 10
10 3"R.S.C.
2-12/c #12
2-3/c #12
1-3/c #20
2-1/c #10

(1) P90-A-30
ONE WAY SIGNAL (OVERHEAD)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
2-PEDESTRIAN PUSH BUTTONS
ONE WAY EVP DETECTOR & LIGHT (OVERHEAD MTD.)
PHOTOELECTRIC CELL (DNL) (MTD. TOP SIGNAL BRACKETS)
3-STEEL GUARD POSTS
EXTEND INTO H.H. 8
3"R.S.C
2-12/c #12
2-3/c #12
1-3/c #20

(3) P90-A-30
ONE WAY SIGNAL (OVERHEAD)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
2-PEDESTRIAN PUSH BUTTONS
ONE WAY EVP DETECTOR & LIGHT (OVERHEAD MTD.)
EXTEND INTO H.H. 13
3"R.S.C.
2-12/c #12
1-3/c #12
1-3/c #20

(2) P90-A-35-T40-8 10
LUMINAIRE 200 WATT HIGH PRESSURE SODIUM (APPROX. 350°)
2-ONE WAY SIGNAL (OVERHEAD)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
~~1-PEDESTRIAN PUSH BUTTON~~
ONE WAY EVP DETECTOR & LIGHT (OVERHEAD MTD.)
SIGN DOWN LIGHT (OVERHEAD MTD.)
EXTEND INTO H.H. 6
3"R.S.C.
2-12/c #12
3-3/c #12
1-3/c #20
2-1/c #10

0 15 30 45 60 75
SCALE IN FEET

NOTES:

1. CONTRACTOR SHALL REMOVE AND SALVAGE INPLACE SIGNAL SYSTEM. (SEE SHEETS 22 & 23 AND SPECIAL PROVISIONS).
2. POLES AND DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGINEER PRIOR TO INSTALLATION.
3. THE COUNTY SHALL FURNISH TO THE CONTRACTOR EVP DETECTORS AND ASSOCIATED CONTROL EQUIPMENT. (SEE SPECIAL PROVISIONS).
4. HANDHOLE 25 SHALL BE INSTALLED OVER EXISTING R.S.C. - R.S.C. SHALL BE EXTENDED INTO H.H. AS DIRECTED BY 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.
DATE 12-5-83 REG. NO. 12703

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R. Uden
DATE: 6-24-86

INTERSECTION LAYOUT
WHITE BEAR AVE & BEAM AVE.
SYSTEM D

S.P. NO. 62-665-24 SHEET NO. 19 OF 51 SHEETS

23-132

24X

23-132 White Bear Avenue System D Hwy H T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater Ave 1-51

23-132

CONTROLLER CABINET

SIGNAL SERVICE — 1

4
- RED 6-3
- YEL 6-3
- GRN 6-3
- NEU 6-3
- YEL LTA 6-3
- GRN LTA 6-3
- NEU EVP LHT, P2-2
- WLK P2-2
- DWK P2-2
- EVP LHT
- EQG

8
- 2-3 RED
- 2-3 YEL
- 2-3 GRN
- 2-3 NEU
- 2-3 YEL LTA
- 2-3 GRN LTA
- P6-2, EVP LHT NEU
- P6-2 WLK
- P6-2 DWK
- EVP LHT
- EQG

5
- RED 4-1
- YEL 4-1
- GRN 4-1
- NEU 4-1
- RED 4-2
- YEL 4-2
- GRN 4-2
- NEU 4-2, P4-3
- WLK P4-3
- DWK P4-3
- EQG

9
- 4-4 RED
- 4-4 YEL
- 4-4 GRN
- 4-4 NEU
- 4-5 RED
- 4-5 YEL
- 4-5 GRN
- P4-1, 4-5 NEU
- P4-1 WLK
- P4-1 DWK
- EQG

6
- RED 6-1
- YEL 6-1
- GRN 6-1
- NEU 6-1
- RED 4-6
- YEL 4-6
- GRN 4-6
- NEU 4-6, P4-4
- WLK P4-4
- DWK P4-4
- EQG

10
- 2-1 RED
- 2-1 YEL
- 2-1 GRN
- 2-1 NEU
- 4-3 RED
- 4-3 YEL
- 4-3 GRN
- P4-2, 4-3 NEU
- P4-2 WLK
- P4-2 DWK
- EQG

7
- RED 6-2
- YEL 6-2
- GRN 6-2
- NEU 6-2, 6-4
- YEL LTA 6-2
- GRN LTA 6-2
- RED 6-4
- NEU EVP LHT
- YEL 6-4
- GRN 6-4
- EVP LHT
- EQG

11
- 2-2 RED
- 2-2 YEL
- 2-2 GRN
- 2-4, 2-2 NEU
- 2-2 YEL LTA
- 2-2 GRN LTA
- 2-4 RED
- EVP LHT NEU
- 2-4 YEL
- 2-4 GRN
- EVP LHT
- EQG

12
- DNL
- NEU
- PEC

21
- PB4-3 NEU
- PB2-2 NEU

13
- DNL
- NEU

17
- EVP DETECTOR Ø 4

22
- PB4-4 NEU
- PB6-1 NEU

14
- DNL
- NEU

18
- EVP DETECTOR Ø 1 & 6

23
- PB4-1 NEU
- PB6-2 NEU

15
- WLK P6-1
- NEU P6-1
- DWK P6-1

19
- EVP DETECTOR Ø 2 & 5

45
- PB4-2 NEU
- PB2-1 NEU

16
- WLK P2-1
- NEU P2-1
- DWK P2-1

20
- EVP DETECTOR Ø 4

25
- INTERCONNECT SYSTEM E 3598

24
- INTERCONNECT SYSTEM C 3598

26
- D4-1

33
- DC-1

40
- D4-6

27
- D4-2

34
- DC-2

41
- D4-5

28
- D4-3

35
- D6-1

42
- D4-4

29
- D5-X2

36
- D6-2

43
- D2-1

30
- D5-X1

37
- DI-X2

44
- D2-2

31
- DC-3

38
- DI-X1

32
- DC-4

TO H.H. 18 SEE SHEET 21

S.O.P. — H.H.21 S.O.P.

SERVICE CABINET & METER

1 — SIGNAL SERVICE (METERED)

2 — ST. LIGHT SERVICE (UNMETERED)

3 — ST. LIGHT SERVICE (UNMETERED)

S.O.P. 120/240V. SERVICE

3 — TO H.H. 18 SEE SHEET 21

2 — FROM H.H. 18 SEE SHEET 21

① — PB2-2, PB4-3

21

EVP LHT P2-2 (6-3)

4

P4-3 (4-2) (4-1)

5

17 — EVP DETECTOR Ø 4

12 — PE.C. (DNL): AC+SW, NEU, AC+

H.H.8: 21, 4, 5, 17, 12

H.H.1: 2, 21, 4, 5, 17, 12, 22, 6, 7, 15, 13, 18, 26, 27, 28, 29, 30, 23, 8, 9, 20, 31, 32, 33, 34, 35, 36, 37, 38

INPLACE H.H.4: 21, 4, 5, 17, 12, 2, 22, 6, 7, 15, 13, 18, 26, 27, 28, 29, 30, 23, 8, 9, 20, 31, 32, 33, 34, 35, 36, 37, 38

INPLACE H.H.5: 2, 22, 6, 7, 15, 13, 18, 26, 27, 28, 29, 30 — 35,36 — D5-X1, D5-X2

TO H.H. 9 SEE SHEET 21

PED. PUSH BUTTON STA. P844 — PB6-1: 22, 22

INPLACE H.H.6: 2, 22, 2, 22, 6, 7, 15, 13, 18, 26, 27, 28 — 35,36 — D4-3, D4-2

TO H.H.13 SEE SHEET 21

② — ST. LHT. PE.C: BLK AC+, WH AC−, R AC+, BL AC+SW; ST. LHT. CH. SW.; LUM.

22 — PB4-4

P4-4 (4-6) (6-1)

6

EVP LHT (6-4) (6-2)

7

P6-1

15

DNL

13

18 — EVP DETECTOR Ø 1 & 6

INPLACE H.H.7: 26 — D4-1

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, 2-1/C#10
- R, WH, 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.

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R. Weber
DATE: 6-24-88

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.
Paul Kelly
DATE 12-5-83 REG. NO. 12703

FIELD WIRING DIAGRAM
WHITE BEAR AVE. & BEAM AVE.

SYSTEM D

S.P. NO. 62-665-24 — SHEET NO. 20 OF 51 SHEETS

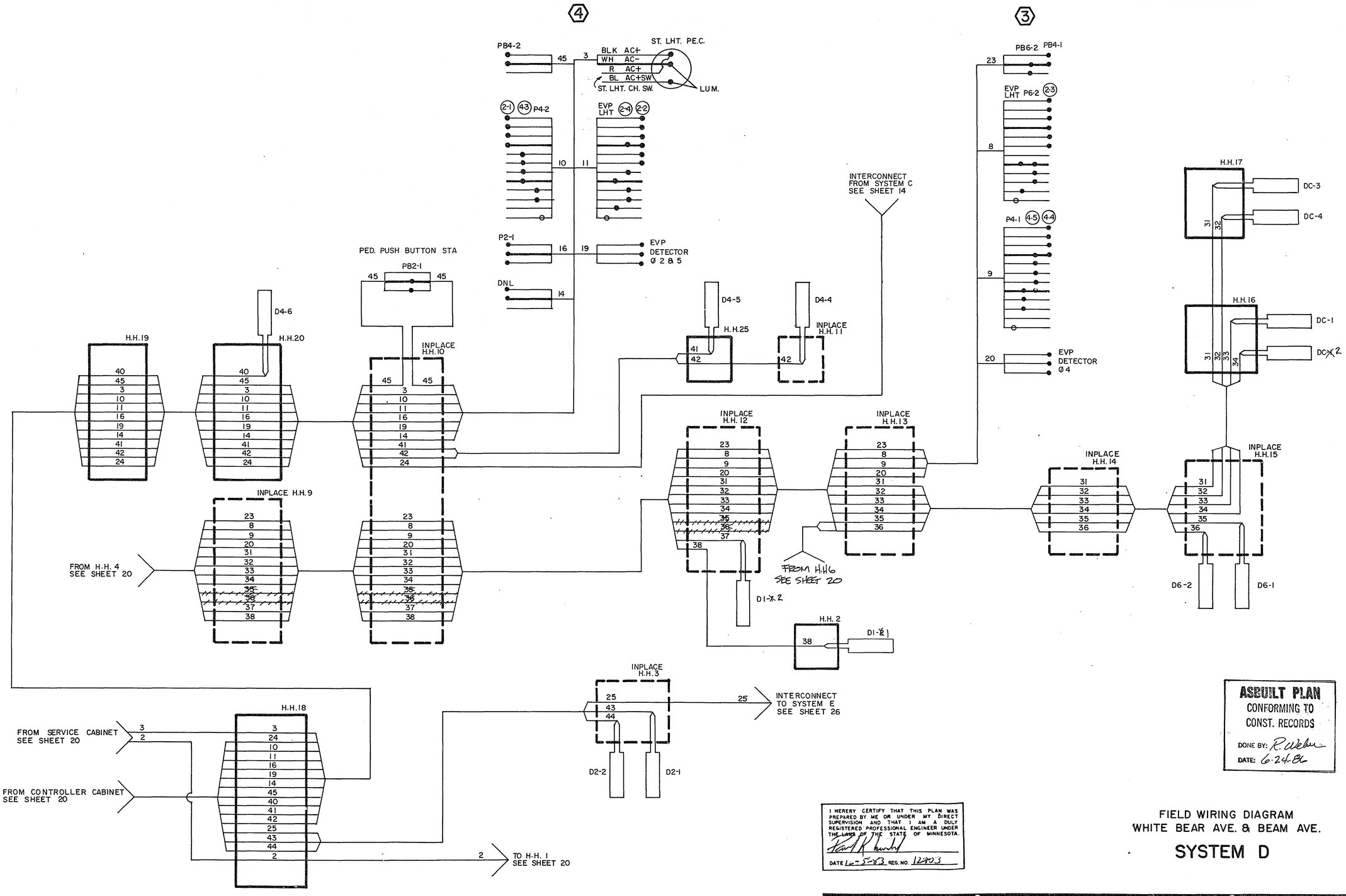
23-132

23-132 White Bear Avenue System D Thru H T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater Ave

1-51

24X

23-132



ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R. Aiken
DATE: 6-24-82

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 6-3-82 REG. NO. 12993

FIELD WIRING DIAGRAM
WHITE BEAR AVE. & BEAM AVE.

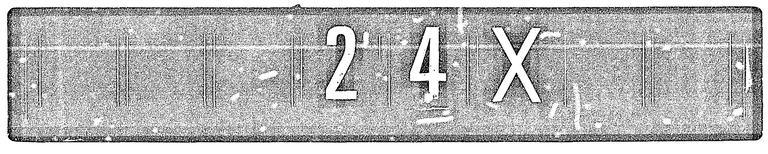
SYSTEM D

S.P. NO. 62-665-24 SHEET NO. 21 OF 51 SHEETS

23-132

23-132 White Bear Avenue Systems A thru H
T.H. 36, 11th Ave, Co Rd C, Beam, Sylvia, Woodlynn, Co Rd D & 4th Edgewater, Abe

1-51

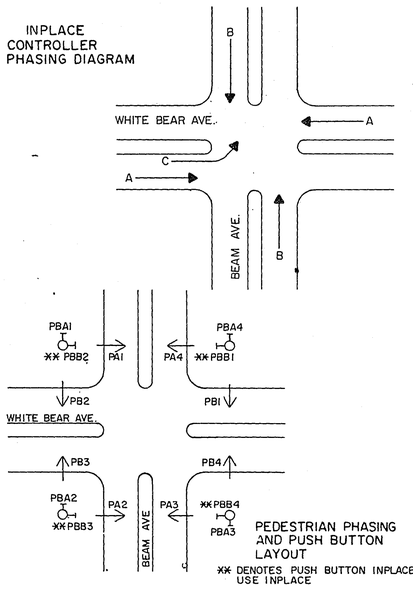


23-132

LEGEND OF SYMBOLS

- SIGNAL BASE No. — (5)
- SIGNAL FACE No. — (A2)
- 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 — (#)

INPLACE CONTROLLER PHASING DIAGRAM



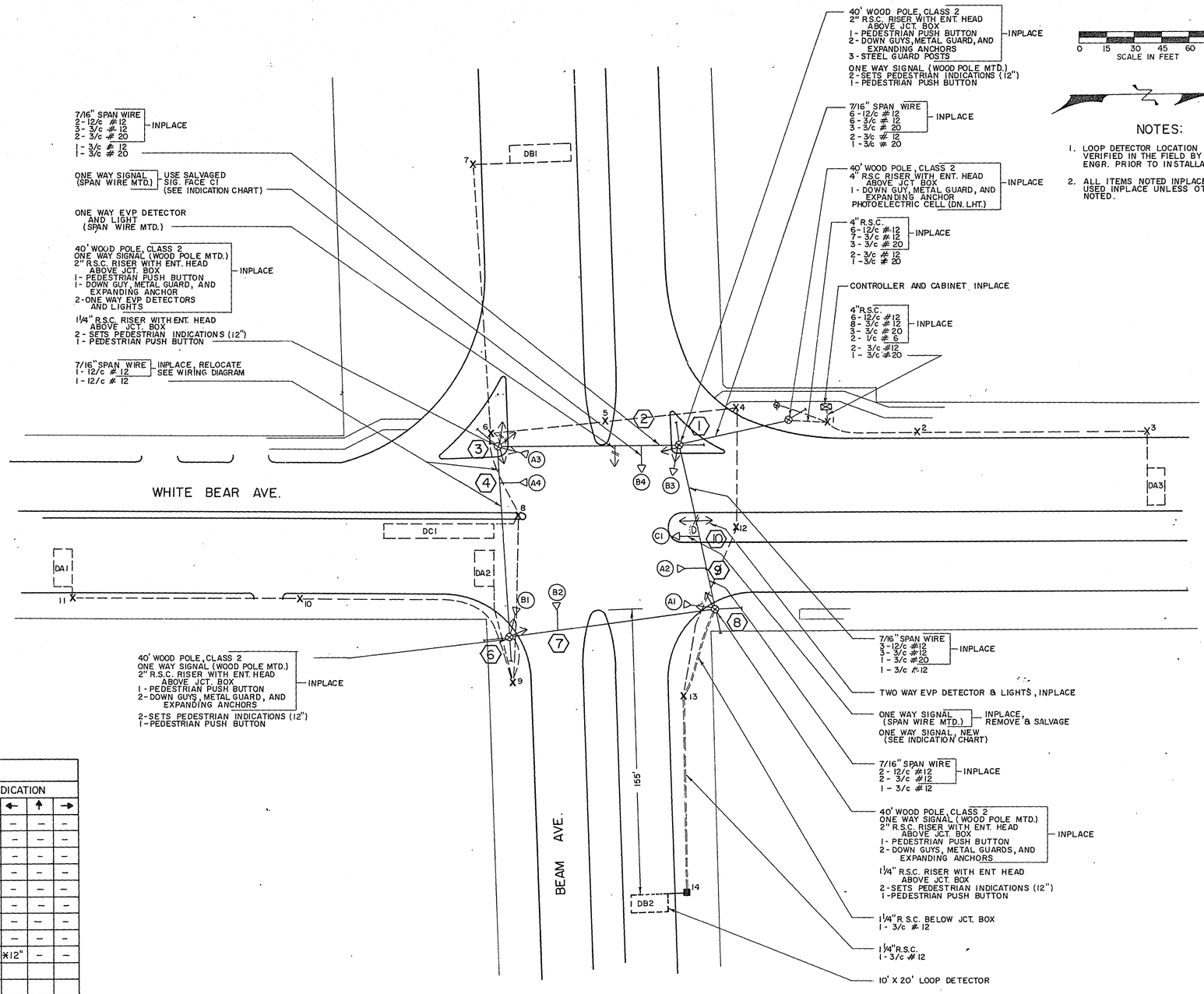
PEDESTRIAN PHASING AND PUSH BUTTON LAYOUT

** DENOTES PUSH BUTTON INPLACE, USE INPLACE

SIGNAL INDICATION CHART														
FACE	PHASE	FLASH	INPLACE INDICATION						REVISED INDICATION					
			R	Y	G	←	↑	→	R	Y	G	←	↑	→
A1	A	Y	12"	12"	12"	–	–	–	12"	12"	12"	–	–	–
A2	A	Y	12"	12"	12"	–	–	–	12"	12"	12"	–	–	–
A3	A	Y	12"	12"	12"	–	–	–	12"	12"	12"	–	–	–
A4	A	Y	12"	12"	12"	–	–	–	12"	12"	12"	–	–	–
B1	B	R	12"	12"	12"	–	–	–	12"	12"	12"	–	–	–
B2	B	R	12"	12"	12"	–	–	–	12"	12"	12"	–	–	–
B3	B	R	–	–	–	–	–	–	12"	12"	12"	–	–	–
B4	B	R	–	–	–	–	–	–	†12"	†12"	†12"	–	–	–
C1	C	R	12"	12"	–	12"	–	–	*12"	*12"	–	*12"	–	–

* SPECIAL SIGNAL FACE (SEE SPECIAL PROVISION)

† USE SALVAGED SIGNAL FACE C1



NOTES:

1. LOOP DETECTOR LOCATION SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGR. PRIOR TO INSTALLATION.
2. ALL ITEMS NOTED INPLACE SHALL BE USED INPLACE UNLESS OTHERWISE NOTED.

FOR INFORMATION ONLY
(INPLACE SYSTEM - REMOVE & SALVAGE)

INTERSECTION LAYOUT
WHITE BEAR AVE. & BEAM AVE.
SYSTEM D

S.P. NO. 62-665-24 SHEET NO. 22 OF 51 SHEETS

23-132

23-132 White Bear Avenue Systems A thru H T.H. 36, 11th Ave. Co Rd 9 Beam, Lydia, Woodlynn, Co Rd 2 & Edgewater Ave 1-51



23-132

CONTROLLER CABINET

SIGNAL BLK 1
SIGNAL WH

PEC BLK
NEU WH 2
DNL R

8 BLK WH R DA3
DA1 BLK WH R 3
9 BLK WH R DC1
DA2 BLK WH R 4
10 BLK WH R ØB1

R WLK PA1
O DWK PA1
BL NEU A4
WH RED A4
R/BLK YEL A4
O/BLK GRN A4
BL/BLK NEU PA1 PB2
WH/BLK WLK PB2
BLK DWK PB2
BLK/WH
G/BLK
G EQG

11

BI RED R
BI YEL O
BI GRN BL
B2 BI NEU WH
B2 RED R/BLK
B2 YEL O/BLK
B2 GRN BL/BLK
NEU WH/BLK
PBB3 BLK
PBA2 BLK/WH
G/BLK
EQG G
5

R RED A3
O YEL A3
BL GRN A3
WH NEU A3 B4
R/BLK RED B4
O/BLK YEL B4
BL/BLK GRN B4
WH/BLK NEU
BLK PBB2
BLK/WH PBA1
G/BLK
12 G EQG

AI RED R
AI YEL O
AI GRN BL
A2 AI NEU WH
A2 RED R/BLK
A2 YEL O/BLK
A2 GRN BL/BLK
NEU WH/BLK
PBB4 BLK
PBA3 BLK/WH
G/BLK
EQG G
6

R RED B3
O YEL B3
BL GRN B3
WH NEU B3 PBI PA4
R/BLK WLK PBI
O/BLK DWK PBI
BL/BLK WLK PA4
WH/BLK NEU
BLK PBBI
BLK/WH PBA4
G/BLK DWK PA4
13 G EQG

CI RED R
CI YEL O
CI LTA BL
CI NEU WH
PA2,PA3 WLK R/BLK
PA2,PA3 DWK O/BLK
PB3,PB4 WLK BL/BLK
PB3,PB4 NEU WH/BLK
PA2,PA3 DNL BLK
PB3,PB4 DWK BLK/WH
G/BLK
EQG G
7

20 BLK WH R EVP DETECTOR Ø B
DB2 BLK WH R 21
19 BLK WH R Ø B EVP LHT. NEU
Ø A EVP LHT BLK WH NEU R 15
18 BLK WH R EVP DETECTOR Ø B
EVP DETECTOR WH Ø A R 14
17 BLK WH R EVP DETECTOR Ø B
16 BLK WH R Ø B EVP LHT. NEU

8 9 10 11 12 13

1A 2A 3A 4A 5A 6A 7A 21A 15A 14A
1B 2B 3B 4B 5B 6B 7B 21B 15B 14B
18
H.H.1

DA1 3G 3F 3E H.H.11 H.H.10
DA2 3D 3C 4C H.H.9
DB1 10E H.H.7
DC1 9E H.H.8
10C 10D 9D 9C H.H.6
DA3 8E 8D 8C H.H.3 H.H.2
DB2 21E 21D 21C H.H.14 H.H.13

(A4) R O BL WH R/BLK O/BLK BL/BLK WH/BLK BLK BLK/WH G/BLK G — 11E
PA1 PB2 — 11D 11C
(A3) PBA1 PB2 — 12E
* (B4) — 12D 12C
PBI PA4 (B3) PBA4 PBB1 — 13C

16C BLK WH R Ø B EVP LIGHT
17C BLK WH R Ø B EVP DETECTOR
18C BLK WH R Ø B EVP DETECTOR
19C BLK WH R EVP LIGHT Ø B
20C BLK WH R EVP DETECTOR Ø B

PA2 PB3 — 7G 5E
PBA2 PBB3 (B1) — 6
(B2) — 5C 5D — 7
PB4 PA3 — 7F 7E — 8
PBB4 (A1) — 6E — 8
(A2) — 6C 6D — 9
DNL (C1) — 7C 7D — 10

P.E. CELL (DN LIGHT) AC+ BLK, NEU WH, AC+SW R — 2C
S.O.P. SIGNAL SERVICE 1C GR. ROD

15C BLK WH R EVP LHT. Ø A
14C BLK WH R EVP DETECTOR Ø A

8B 8A
9B 9A
10B 10A
11B 11A
12B 12A
13B 13A
20B 20A
19B 19A
18B 18A
17B 17A
16B 16A
H.H.1

REVISED
FIELD WIRING DIAGRAM
WHITE BEAR AVE & BEAM AVE
SYSTEM D

■ NEW FIELD CONNECTION BY CONTRACTOR
NEW CABLE
PULL EXISTING CABLE #11 BACK TO SIGNAL (3) AND EXTEND NEW CABLE AS SHOWN.

FOR INFORMATION ONLY
(INPLACE SYSTEM - REMOVE & SALVAGE)

S.P. NO. 62-665-24 SHEET NO. 23 OF 51 SHEETS

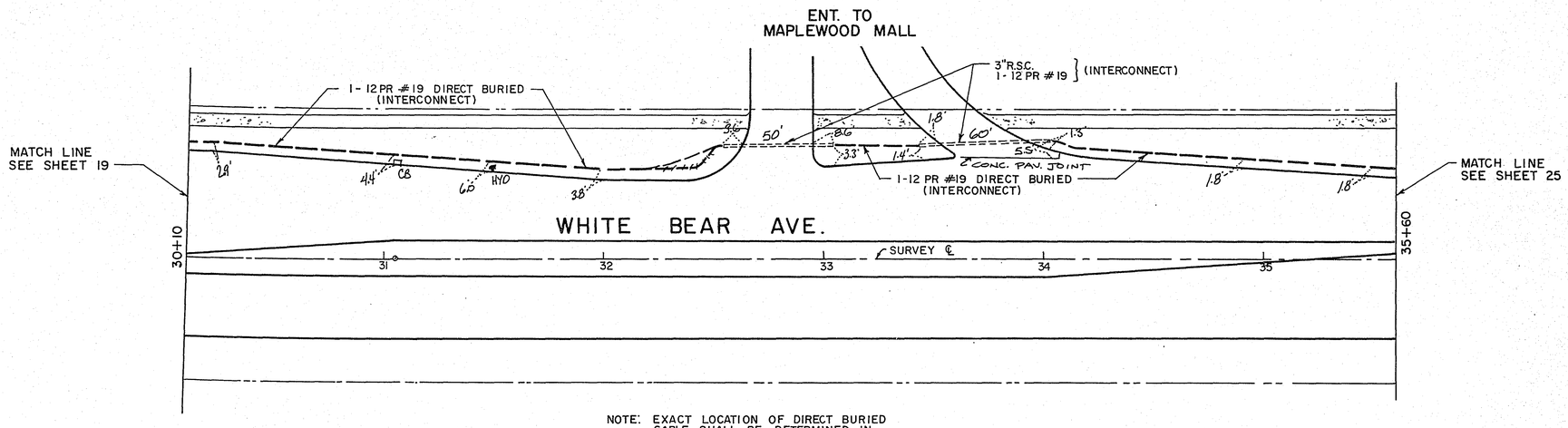
23-132

23-132 White Bear Avenue System D Area H T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater, Afton 1-51

24X

23-132

0 15 30 45 60 75
SCALE IN FEET



NOTE: EXACT LOCATION OF DIRECT BURIED CABLE SHALL BE DETERMINED IN THE FIELD.

AVERAGE DEPTH OF CABLE = 24"

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: R. Weber
DATE: 6-24-86

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.
Paul Kubinski
DATE 12-5-83 REG. NO. 12703

INTERCONNECT LAYOUT

WHITE BEAR AVE.

BETWEEN BEAM AVE. AND LYDIA AVE.

S.P. NO. 62-665-24 SHEET NO. 24 OF 51 SHEETS

23-132

23-132 White Bear Avenue System A thru H
T.H. 36, 11th Ave, Co Rd C, Beam, Lydia,
Woodlynn, Co Rd D & Edgewater Ave

1-51

24X

23-132

LEGEND OF SYMBOLS

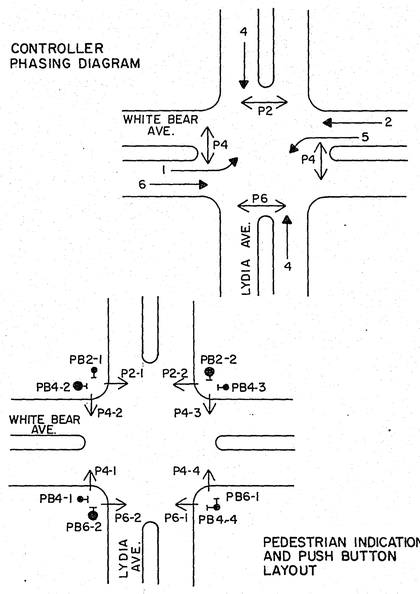
SIGNAL BASE No. (5)
SIGNAL FACE No. (4-2)
CONTROLLER AND CABINET
CONTROLLER AND CABINET-INPLACE
HANDHOLE
HANDHOLE-INPLACE
RIGID STEEL CONDUIT (R.S.C.)
RIGID STEEL CONDUIT (R.S.C.)-INPLACE
SIGNAL FACE
SIGNAL FACE WITH BACKGROUND SHIELD
SIGNAL FACE-INPLACE
PEDESTRIAN INDICATIONS
PEDESTRIAN INDICATIONS-INPLACE
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 (#)

VEHICLE DETECTION

NUMBER	SIZE	OPERATION
D1-1	6'X40'25	E. ONLY
D1-2	6'X28'40	C. & E. (TD)
D2-1	6'X6'	C. & E.
D2-2	6'X6'	C. & E.
D4-1	2-6'X6'	C. & E.
D4-2	2-6'X6'	C. & E.
D4-3	2-6'X28'14	C. & E.
D4-4	2-6'X6'	C. & E.
D4-5	2-6'X6'	C. & E.
D4-6	2-6'X20'	C. & E.
D5-1	6'X40'25	E. ONLY
D5-2	6'X28'40	C. & E. (TD)
D6-1	6'X6'	C. & E
D6-2	6'X6'	C. & E.
D6-3	INPLACE	C. ONLY

C. = CALL
E. = EXTEND
(TD) = TIME DELAYED

CONTROLLER PHASING DIAGRAM



PEDESTRIAN INDICATION AND PUSH BUTTON LAYOUT

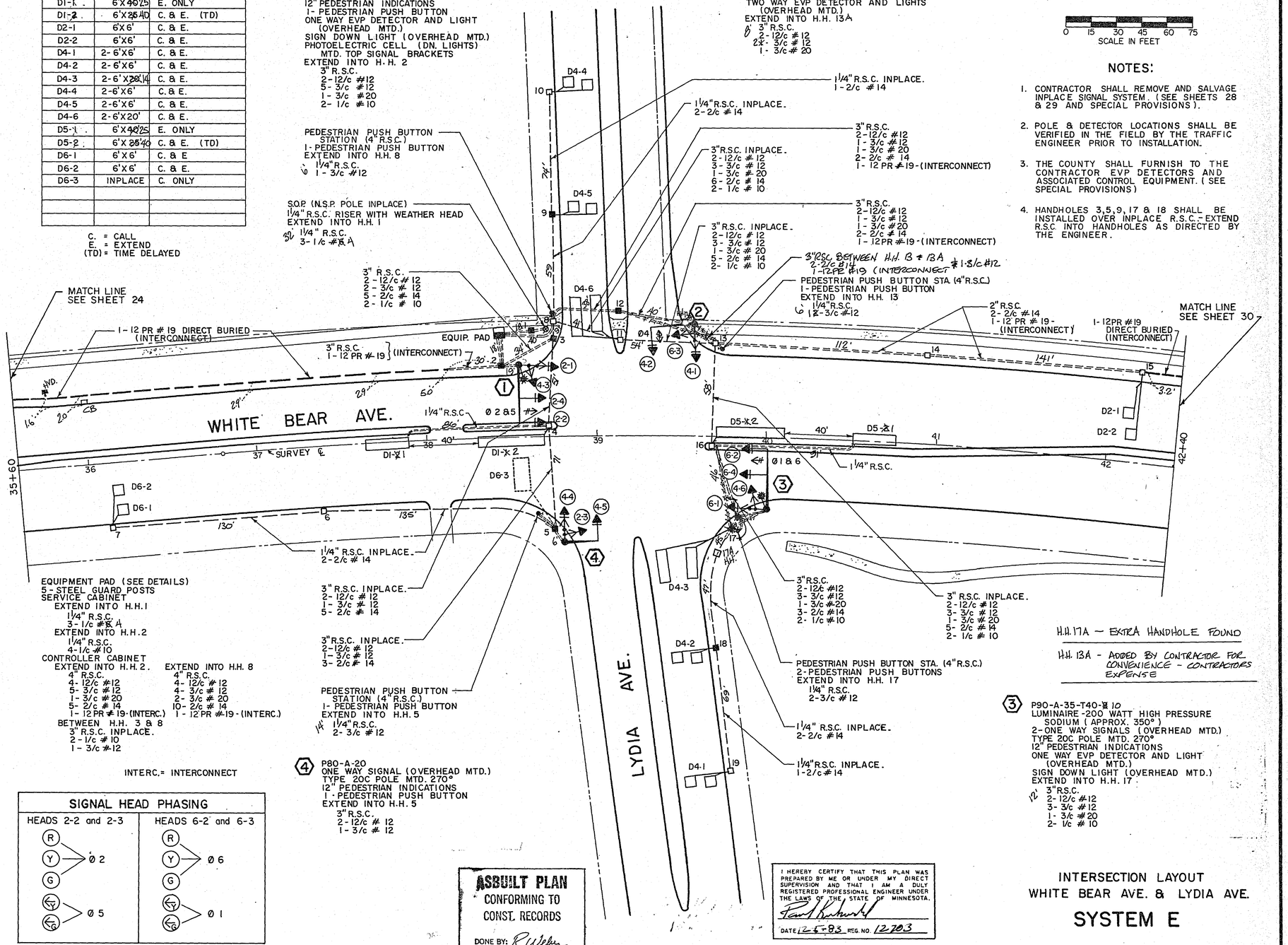
SIGNAL INDICATION CHART

FACE	PHASE	FLASH	INDICATION SIZE R	Y	G	←Y	←G
2-1	2	R	12"	12"	12"	–	–
2-2	2 and 5	R	12"	12"	12"	12"	12"
2-3	2 and 5	R	12"	12"	12"	12"	12"
2-4	2	R	12"	12"	12"	–	–
4-1	4	R	12"	12"	12"	–	–
4-2	4	R	12"	12"	12"	–	–
4-3	4	R	12"	12"	12"	–	–
4-4	4	R	12"	12"	12"	–	–
4-5	4	R	12"	12"	12"	–	–
4-6	4	R	12"	12"	12"	–	–
6-1	6	R	12"	12"	12"	–	–
6-2	6 and 1	R	12"	12"	12"	12"	12"
6-3	6 and 1	R	12"	12"	12"	12"	12"
6-4	6	R	12"	12"	12"	–	–

SIGNAL HEAD PHASING

(1) P90-A-35-T40-X10
LUMINAIRE - 200 WATT HIGH PRESSURE SODIUM (APPROX 350°)
2-ONE WAY SIGNALS (OVERHEAD MTD.)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSH BUTTON
ONE WAY EVP DETECTOR AND LIGHT (OVERHEAD MTD.)
SIGN DOWN LIGHT (OVERHEAD MTD.)
PHOTOELECTRIC CELL (DN. LIGHTS)
MTD. TOP SIGNAL BRACKETS
EXTEND INTO H.H. 2
3" R.S.C.
2-12/c #12
5-3/c #12
1-3/c #20
2-1/c #10

(2) P80-A-25
ONE WAY SIGNAL (OVERHEAD MTD.)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSH BUTTON
TWO WAY EVP DETECTOR AND LIGHTS (OVERHEAD MTD.)
EXTEND INTO H.H. 13A
3" R.S.C.
2-12/c #12
2-3/c #12
1-3/c #20



(3) P90-A-35-T40-X10
LUMINAIRE-200 WATT HIGH PRESSURE SODIUM (APPROX. 350°)
2-ONE WAY SIGNALS (OVERHEAD MTD.)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
ONE WAY EVP DETECTOR AND LIGHT (OVERHEAD MTD.)
SIGN DOWN LIGHT (OVERHEAD MTD.)
EXTEND INTO H.H. 17
3" R.S.C.
2-12/c #12
3-3/c #12
1-3/c #20
2-1/c #10

(4) P80-A-20
ONE WAY SIGNAL (OVERHEAD MTD.)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H. 5
3" R.S.C.
2-12/c #12
1-3/c #12

0 15 30 45 60 75
SCALE IN FEET

NOTES:

1. CONTRACTOR SHALL REMOVE AND SALVAGE INPLACE SIGNAL SYSTEM. (SEE SHEETS 28 & 29 AND SPECIAL PROVISIONS).
2. POLE & DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGINEER PRIOR TO INSTALLATION.
3. THE COUNTY SHALL FURNISH TO THE CONTRACTOR EVP DETECTORS AND ASSOCIATED CONTROL EQUIPMENT. (SEE SPECIAL PROVISIONS)
4. HANDHOLES 3,5,9,17 & 18 SHALL BE INSTALLED OVER INPLACE R.S.C.-EXTEND R.S.C. INTO HANDHOLES AS DIRECTED BY THE ENGINEER.

H.H. 17A – EXTRA HANDHOLE FOUND

H.H. 13A - ADDED BY CONTRACTOR FOR CONVENIENCE - CONTRACTORS EXPENSE

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R. Weber
DATE: 6-24-86

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.
Paul Kurkowski
DATE 12-5-83 REG. NO. 12203

INTERSECTION LAYOUT
WHITE BEAR AVE. & LYDIA AVE.

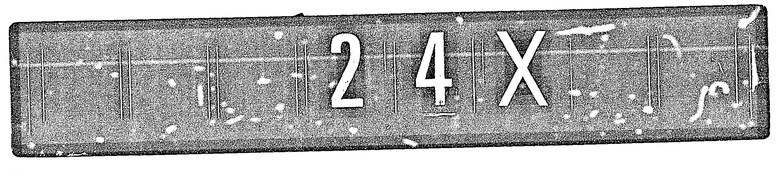
SYSTEM E

S.P. NO. 62-665-24 SHEET NO 25 OF 51 SHEETS

23-132

23-132 White Bear Avenue System A thru H
T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodbury, Co Rd D & Edgewater, Abe

1-51



23-132

CONTROLLER CABINET

	SIGNAL SERVICE	1	
4	RED 2-1 YEL 2-1 GRN 2-1 NEU 2-1 RED 4-3 YEL 4-3 GRN 4-3 NEU 4-3, P4-2 WLK P4-2 DWK P4-2 EQG	8	6-3 RED 6-3 YEL 6-3 GRN 6-3 NEU 6-3 YEL LTA 6-3 GRN LTA EVP LHT, P2-2 NEU P2-2 WLK P2-2 DWK EVP LHT EQG
5	RED 2-2 YEL 2-2 GRN 2-2 NEU 2-2, 2-4 YEL LTA 2-2 GRN LTA 2-2 RED 2-4 NEU EVP LHT YEL 2-4 GRN 2-4 EVP LHT EQG	9	4-1 RED 4-1 YEL 4-1 GRN 4-1 NEU 4-2 RED 4-2 YEL 4-2 GRN P4-3, 4-2 NEU P4-3 WLK P4-3 DWK EQG
6	RED 2-3 YEL 2-3 GRN 2-3 NEU 2-3 YEL LTA 2-3 GRN LTA 2-3 NEU P6-2 WLK P6-2 DWK P6-2 EVP LHT EQG	10	6-1 RED 6-1 YEL 6-1 GRN 6-1 NEU 4-6 RED 4-6 YEL 4-6 GRN P4-4, 4-6 NEU P4-4 WLK P4-4 DWK EQG
7	RED 4-4 YEL 4-4 GRN 4-4 NEU 4-4 RED 4-5 YEL 4-5 GRN 4-5 NEU 4-5, P4-1 WLK P4-1 DWK P4-1 EQG	11	6-2 RED 6-2 YEL 6-2 GRN 6-4, 6-2 NEU 6-2 YEL LTA 6-2 GRN LTA 6-4 RED EVP LHT NEU 6-4 YEL 6-4 GRN EVP LHT EQG
12	DNL NEU PEC	20	PB4-2 NEU PB2-1
13	DNL NEU	21	PB6-2 NEU PB4-1
14	DNL NEU	22	PB2-2 NEU PB4-3
15	WLK P2-1 NEU P2-1 DWK P2-1	23	PB6-1 NEU PB4-4
16	WLK P6-1 NEU P6-1 DWK P6-1	24	INTERCONNECT SYSTEM F 3176
		25	INTERCONNECT SYSTEM D 4996
26	D6-1		
27	D6-2		
28	D6-3		
29	DI-X2		
30	DI-X1		
17	EVP DETECTOR Ø2&5	31	D2-1
18	EVP DETECTOR Ø4	32	D2-2
19	EVP DETECTOR Ø1&6	33	D4-1
		34	D2-2
		35	D4-3
		36	D5-X2
		37	D5-X1
		38	D4-6
		39	D4-4
		40	D4-5

S.O.P. — H.H. 1 S.O.P.

SERVICE CABINET & METER

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

(1)

2-1 4-3 P4-2 — EVP LHT 2-4 2-2

P2-1 15 12 — PEC. (DNL) AC+SW, NEU, AC+

DNL 13 — BLK AC+, WH AC−, R AC+, BL AC+SW — ST. LHT PEC. — LUM. — ST. LHT. CH SW

EVP DETECTOR Ø2&5 — 17

20 — PB4-2 — 20

H.H.2: 3, 2, 4, 5, 12, 13, 15, 17, 20, 20, 20, 3, 21, 6, 7, 26, 27, 28, 29, 30, 25

H.H.3: 20, 3, 21, 6, 7, 26, 27, 28, 29, 30

INPLACE H.H.4: 21, 6, 7, 26, 27, 28, 29, 30 — DI-X1, DI-X2

H.H.5: 21, 21, 6, 7, 26, 27, 28 — INPLACE D6-3

INPLACE H.H.6: 26, 27

INPLACE H.H.7: 26, 27 — D6-2, D6-1

TO H.H. 8 SEE SHEET 27

25 INTERCONNECT FROM SYSTEM D SEE SHEET 21

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, 2-1/C#10

R, WH, 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.

(4)

PB6-2: 21 — P6-2 (2-3): 6 — P4-1 (4-5, 4-4): 7

PED. PUSH BUTTON STA.

PB4-1: 21, 21

TO H.H. 8 SEE SHEET 27

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.
Paul Kuhnhenn
DATE 12-5-83 REG. NO. 12703

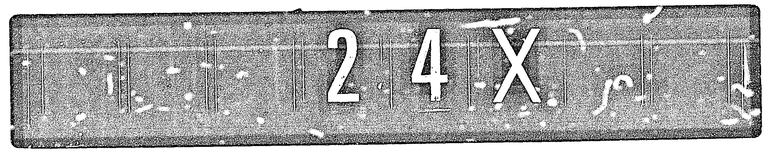
ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R. Weber
DATE: 6-24-86

FIELD WIRING DIAGRAM
WHITE BEAR AVE. & LYDIA AVE.
SYSTEM E

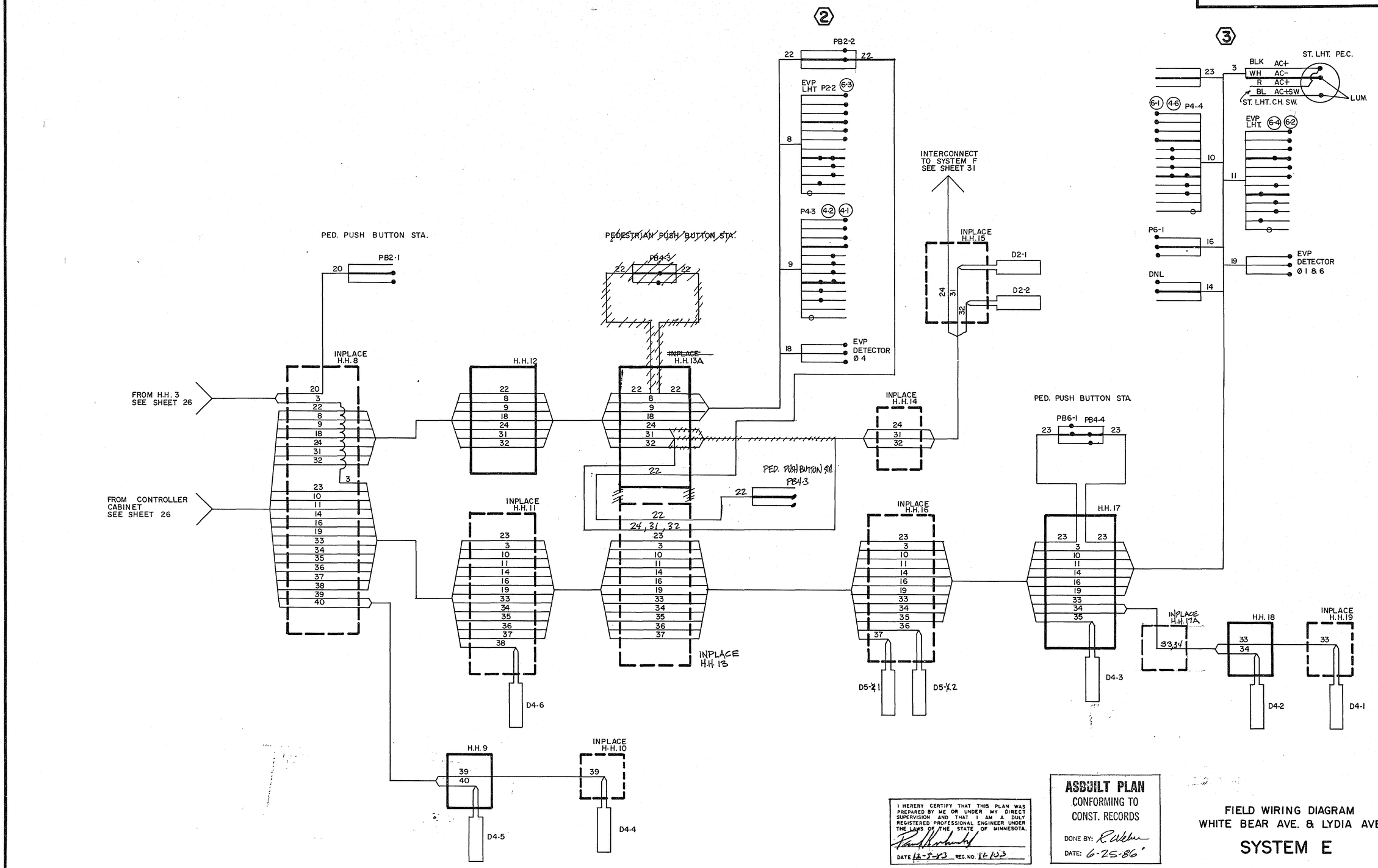
S.P. NO. 62-665-24 — SHEET NO. 26 OF 51 SHEETS

23-132

23-132 White Bear Avenue System A thru H T.H. 36, @ Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd B & Eikenwater, Ave — 1-51



23-132



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 12-5-85 REG. NO. 12103

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R Ulehla
DATE: 6-25-86

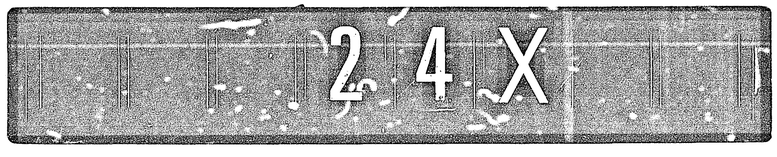
FIELD WIRING DIAGRAM
WHITE BEAR AVE. & LYDIA AVE.

SYSTEM E

S.P. NO. 62-665-24 SHEET NO. 27 OF 51 SHEETS

23-132

23-132 White Bear Avenue System A thru H
T.H. 36, 11th Ave, Co Rd C, Beam, Lydia,
Woodlawn, Co Rd D & Edgewater, Rice
1-51

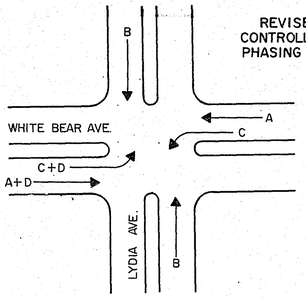


23-132

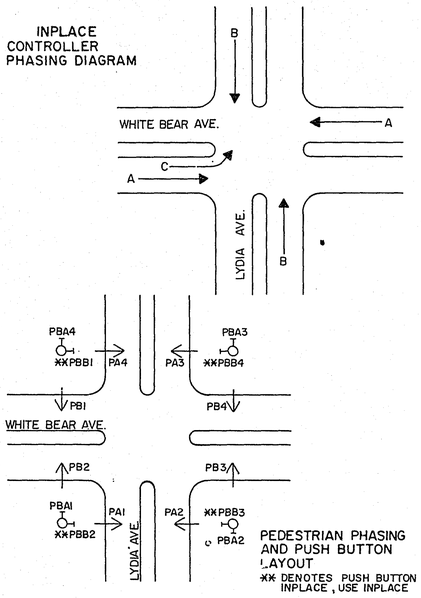
LEGEND OF SYMBOLS

SIGNAL BASE No. 5
SIGNAL FACE No. A2
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

REVISED CONTROLLER PHASING DIAGRAM



INPLACE CONTROLLER PHASING DIAGRAM



PEDESTRIAN PHASING AND PUSH BUTTON LAYOUT
** DENOTES PUSH BUTTON INPLACE, USE INPLACE

INPLACE
SIGNAL INDICATION CHART

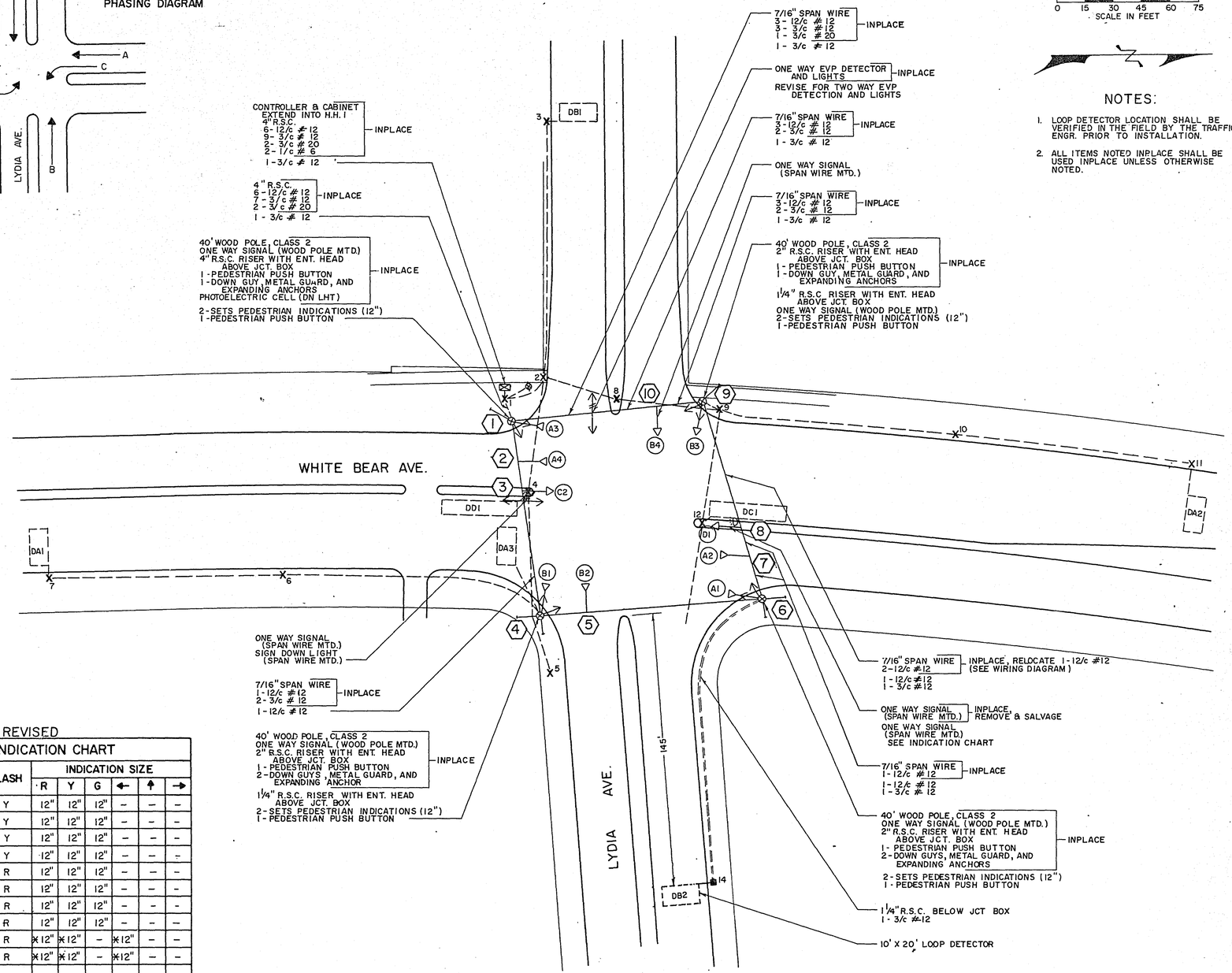
FACE	PHASE	FLASH	INDICATION SIZE R	Y	G	←	↑	→
A1	A	Y	12"	12"	12"	-	-	-
A2	A	Y	12"	12"	12"	-	-	-
A3	A	Y	12"	12"	12"	-	-	-
A4	A	Y	12"	12"	12"	-	-	-
B1	B	R	12"	12"	12"	-	-	-
B2	B	R	12"	12"	12"	-	-	-
C1	C	R	12"	12"	-	12"	-	-

RETURN SALVAGED SIGNAL FACE C1 TO RAMSEY COUNTY

REVISED
SIGNAL INDICATION CHART

FACE	PHASE	FLASH	INDICATION SIZE R	Y	G	←	↑	→
A1	A+D	Y	12"	12"	12"	-	-	-
A1	A+D	Y	12"	12"	12"	-	-	-
A3	A	Y	12"	12"	12"	-	-	-
A4	A	Y	12"	12"	12"	-	-	-
B1	B	R	12"	12"	12"	-	-	-
B2	B	R	12"	12"	12"	-	-	-
B3	B	R	12"	12"	12"	-	-	-
B4	B	R	12"	12"	12"	-	-	-
D1	C+D	R	*12"	*12"	-	*12"	-	-
C2	C	R	*12"	*12"	-	*12"	-	-

*: SPECIAL SIGNAL FACE (SEE SPECIAL PROVISIONS



0 15 30 45 60 75
SCALE IN FEET

NOTES:

1. LOOP DETECTOR LOCATION SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGR. PRIOR TO INSTALLATION.
2. ALL ITEMS NOTED INPLACE SHALL BE USED INPLACE UNLESS OTHERWISE NOTED.

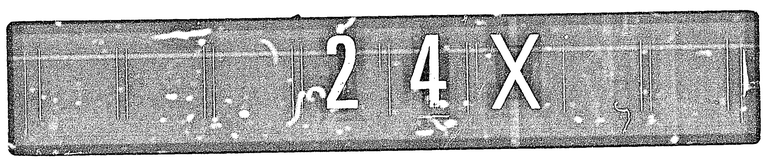
FOR INFORMATION ONLY
(INPLACE SYSTEM - REMOVE & SALVAGE)

INTERSECTION LAYOUT
WHITE BEAR AVE. & LYDIA AVE.
SYSTEM E

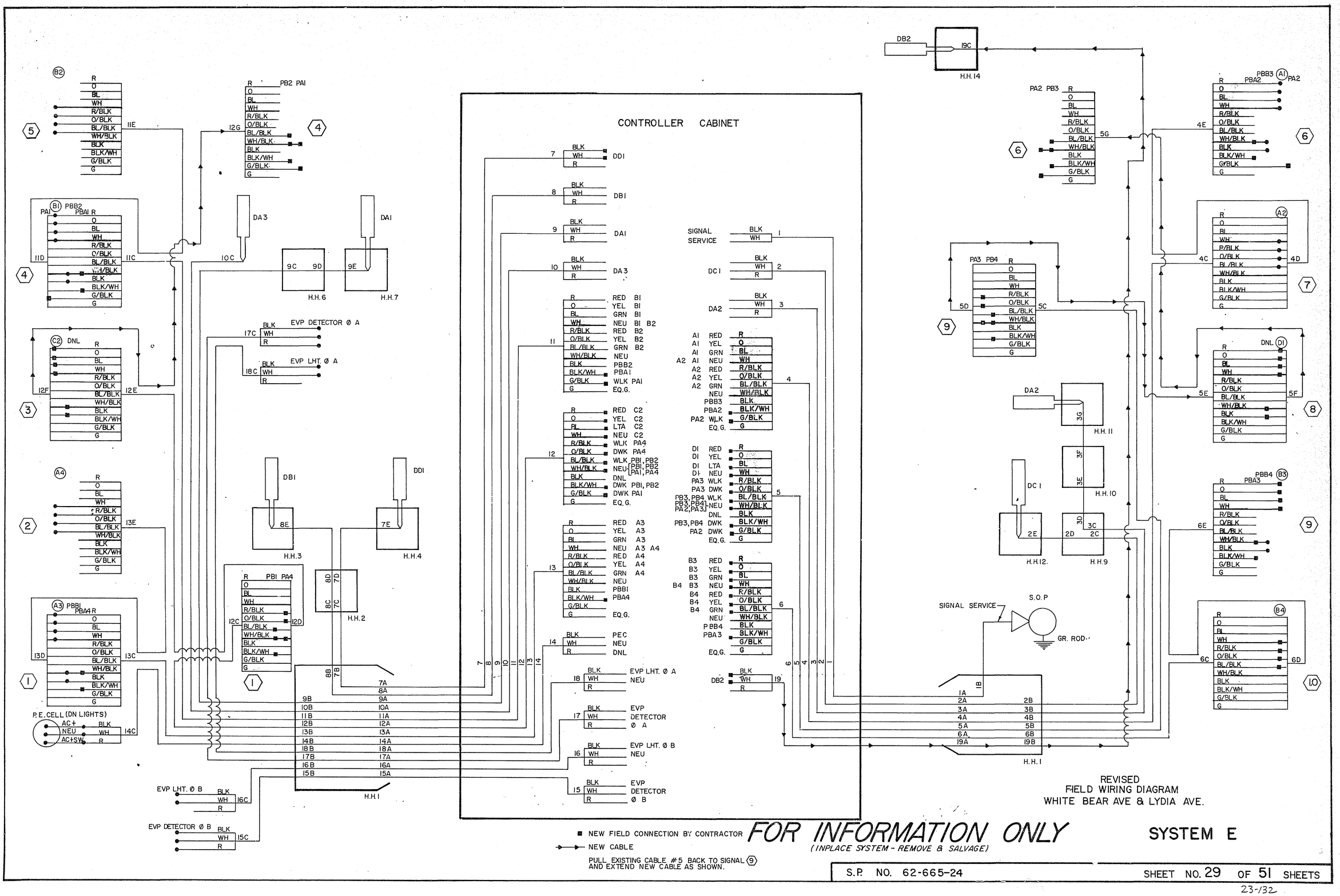
S.P. NO. 62-665-24 SHEET NO. 28 OF 51 SHEETS

23-132

23-132 White Bear Avenue System A Thru H
T.H. 36 @ 11th Ave, Co Rd C, Bean, Lydia,
Woodlynn, Co Rd D & Edgewater Rds 1-51



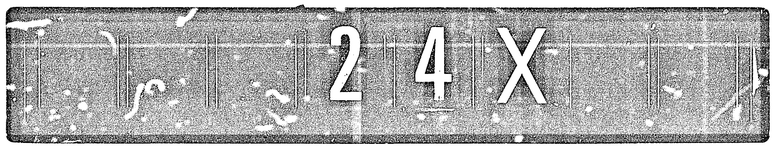
23-132



23-132

23-132 White Bear Avenue System A Thru H
T.H. 36, 11th Ave, Co Rd C, Beam, Lydia,
Woodlynn, Co Rd D & Edgewater Ave

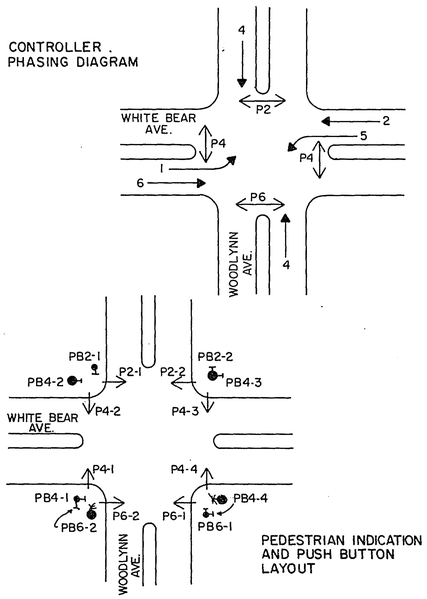
1-51



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 (#)

CONTROLLER . PHASING DIAGRAM



PEDESTRIAN INDICATION AND PUSH BUTTON LAYOUT

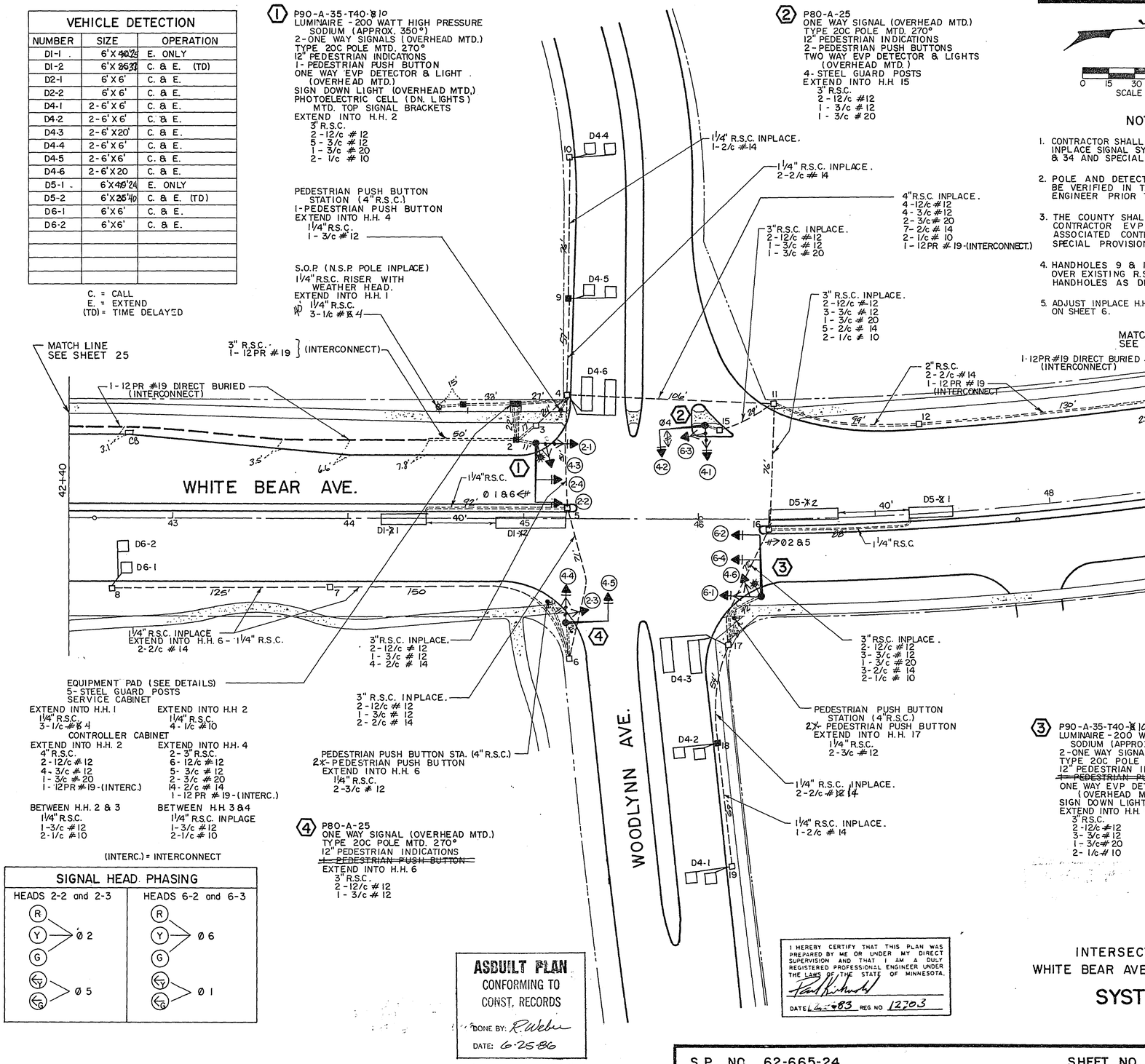
VEHICLE DETECTION		
NUMBER	SIZE	OPERATION
DI-1	6'X40'	E. ONLY
DI-2	6'X26'	C. & E. (TD)
D2-1	6'X6'	C. & E.
D2-2	6'X6'	C. & E.
D4-1	2-6'X6'	C. & E.
D4-2	2-6'X6'	C. & E.
D4-3	2-6'X20'	C. & E.
D4-4	2-6'X6'	C. & E.
D4-5	2-6'X6'	C. & E.
D4-6	2-6'X20	C. & E.
D5-1	6'X40'	E. ONLY
D5-2	6'X26'	C. & E. (TD)
D6-1	6'X6'	C. & E.
D6-2	6'X6'	C. & E.

C. = CALL
E. = EXTEND
(TD) = TIME DELAYED

SIGNAL INDICATION CHART								
FACE	PHASE	FLASH	INDICATION SIZE					
			R	Y	G	←Y	←G	
2-1	2	R	12"	12"	12"	–	–	
2-2	2 and 5	R	12"	12"	12"	12"	12"	
2-3	2 and 5	R	12"	12"	12"	12"	12"	
2-4	2	R	12"	12"	12"	–	–	
4-1	4	R	12"	12"	12"	–	–	
4-2	4	R	12"	12"	12"	–	–	
4-3	4	R	12"	12"	12"	–	–	
4-4	4	R	12"	12"	12"	–	–	
4-5	4	R	12"	12"	12"	–	–	
4-6	4	R	12"	12"	12"	–	–	
6-1	6	R	12"	12"	12"	–	–	
6-2	6 and 1	R	12"	12"	12"	12"	12"	
6-3	6 and 1	R	12"	12"	12"	12"	12"	
6-4	6	R	12"	12"	12"	–	–	

SIGNAL HEAD PHASING

(INTERC.) = INTERCONNECT



NOTES:

1. CONTRACTOR SHALL REMOVE AND SALVAGE INPLACE SIGNAL SYSTEM. (SEE SHEETS 33 & 34 AND SPECIAL PROVISIONS).
2. POLE AND DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGINEER PRIOR TO INSTALLATION.
3. THE COUNTY SHALL FURNISH TO THE CONTRACTOR EVP DETECTORS AND ASSOCIATED CONTROL EQUIPMENT. (SEE SPECIAL PROVISIONS.
4. HANDHOLES 9 & 18 SHALL BE INSTALLED OVER EXISTING R.S.C. - EXTEND R.S.C. INTO HANDHOLES AS DIRECTED BY THE ENGR.
5. ADJUST INPLACE H.H. 11 TO GRADE - SEE DETAIL ON SHEET 6.

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R. Weber
DATE: 6-25-86

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.
Paul Kirkwold
DATE 6-25-86 REG NO 12703

INTERSECTION LAYOUT
WHITE BEAR AVE & WOODLYNN AVE.
SYSTEM F

S.P. NO. 62-665-24

SHEET NO. 30 OF 51 SHEETS

23-132

23-132 White Bear Avenue - System F thru H T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd B & Edgewater, Nbr 1-51



23-132

CONTROLLER CABINET

SIGNAL SERVICE — 1

4
- RED 2-1
- YEL 2-1
- GRN 2-1
- NEU 2-1
- RED 4-3
- YEL 4-3
- GRN 4-3
- NEU 4-3, P4-2
- WLK P4-2
- DWK P4-2
- EQG

5
- RED 2-2
- YEL 2-2
- GRN 2-2
- NEU 2-2, 2-4
- YEL LTA 2-2
- GRN LTA 2-2
- RED 2-4
- NEU EVP LHT
- YEL 2-4
- GRN 2-4
- EVP LHT
- EQG

6
- RED 2-3
- YEL 2-3
- GRN 2-3
- NEU 2-3
- YEL LTA 2-3
- GRN LTA 2-3
- NEU P6-2
- WLK P6-2
- DWK P6-2
- EVP LHT
- EQG

7
- RED 4-4
- YEL 4-4
- GRN 4-4
- NEU 4-4
- RED 4-5
- YEL 4-5
- GRN 4-5
- NEU 4-5, P4-1
- WLK P4-1
- DWK P4-1
- EQG

12
- DNL
- NEU
- PEC

13
- DNL
- NEU

14
- DNL
- NEU

15
- WLK P2-1
- NEU P2-1
- DWK P2-1

16
- WLK P6-1
- NEU P6-1
- DWK P6-1

26 — D6-1

27 — D6-2

28 — D1-X2

29 — D1-X1

30 — D4-1

8
- 6-3 RED
- 6-3 YEL
- 6-3 GRN
- 6-3 NEU
- 6-3 YEL LTA
- 6-3 GRN LTA
- EVP LHT, P2-2 NEU
- P2-2 WLK
- P2-2 DWK
- EVP LHT
- EQG

9
- 4-1 RED
- 4-1 YEL
- 4-1 GRN
- 4-1 NEU
- 4-2 RED
- 4-2 YEL
- 4-2 GRN
- P4-3, 4-2 NEU
- P4-3 WLK
- P4-3 DWK
- EQG

10
- 6-1 RED
- 6-1 YEL
- 6-1 GRN
- 6-1 NEU
- 4-6 RED
- 4-6 YEL
- 4-6 GRN
- P4-4, 4-6 NEU
- P4-4 WLK
- P4-4 DWK
- EQG

11
- 6-2 RED
- 6-2 YEL
- 6-2 GRN
- 6-4, 6-2 NEU
- 6-2 YEL LTA
- 6-2 GRN LTA
- 6-4 RED
- EVP LHT NEU
- 6-4 YEL
- 6-4 GRN
- EVP LHT
- EQG

20
- PB4-2
- NEU
- PB2-1

21
- PB6-2
- NEU
- PB4-1

22
- PB2-2
- NEU
- PB4-3

23
- PB4-4
- NEU
- PB6-1

24 — INTERCONNECT SYSTEM E (To 29)

25 — INTERCONNECT SYSTEM G (To 30)

17 — EVP DETECTOR Ø 1 & 6

18 — EVP DETECTOR Ø 4

19 — EVP DETECTOR Ø 2 & 5

31 — D4-2

32 — D4-3

33 — D5-X2

34 — D5-X1

35 — D2-1

36 — D2-2

37 — D4-4

38 — D4-5

39 — D4-6

S.O.P. — H.H.1 — S.O.P.

SERVICE CABINET & METER
1. SIGNAL SERVICE (METERED)
2. ST. LIGHT SERVICE (UNMETERED)
3. ST. LIGHT SERVICE (UNMETERED)

S.O.P. 120/240V. SERVICE

①

2-1 4-3 P4-2 — 4 5 — EVP LHT 2-4 2-2

P2-1 — 15 12 — AC+SW, NEU, AC+ — PEC. (DNL)

DNL — 13 — 2 — BLK AC+, WH AC−, R AC+, BL AC+SW — ST. LHT. PEC. — ST. LHT. CH. SW. — LUM.

EVP DETECTOR Ø 1 & 6 — 17

PB4-2 — 20 20

H.H.2 — 3 2 4 5 12 13 15 17 20 24 — 20

INTERCONNECT FROM SYSTEM E SEE SHEET 27

PED. PUSH BUTTON STA. PB2-1 — 20

INPLACE H.H.3 — 20 3

H.H.4 — 20 3 21 6 7 26 27 28 29 3 22 8 9 18 23 10 11 14 16 19 30 31 32 33 34 25 35 36 37 38 39

INPLACE H.H.5 — 21 6 7 26 27 28 29 — D1-X1, D1-X2

TO H.H. 11 SEE SHEET 32

H.H.9 — 37 38 — D4-5

INPLACE H.H. 10 — 37 — D4-4

D4-6

PED. PUSH BUTTON STA. PB6-2 PB4-1 — 21 21

INPLACE H.H.6 — 21 21 6 7 26 27

INPLACE H.H.7 — 26 27

INPLACE H.H.8 — 26 27 — D6-2, D6-1

④

PB6-2 — 21
P6-2 (2-3) — 6
P4-1 (4-5) (4-4) — 7

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, 2-1/C#10
- R, WH, 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.

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.
Paul Hoffman
DATE 12-5-83 REG. NO. 12703

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R Weber
DATE: 6-25-86

FIELD WIRING DIAGRAM
WHITE BEAR AVE. & WOODLYNN AVE.

SYSTEM F

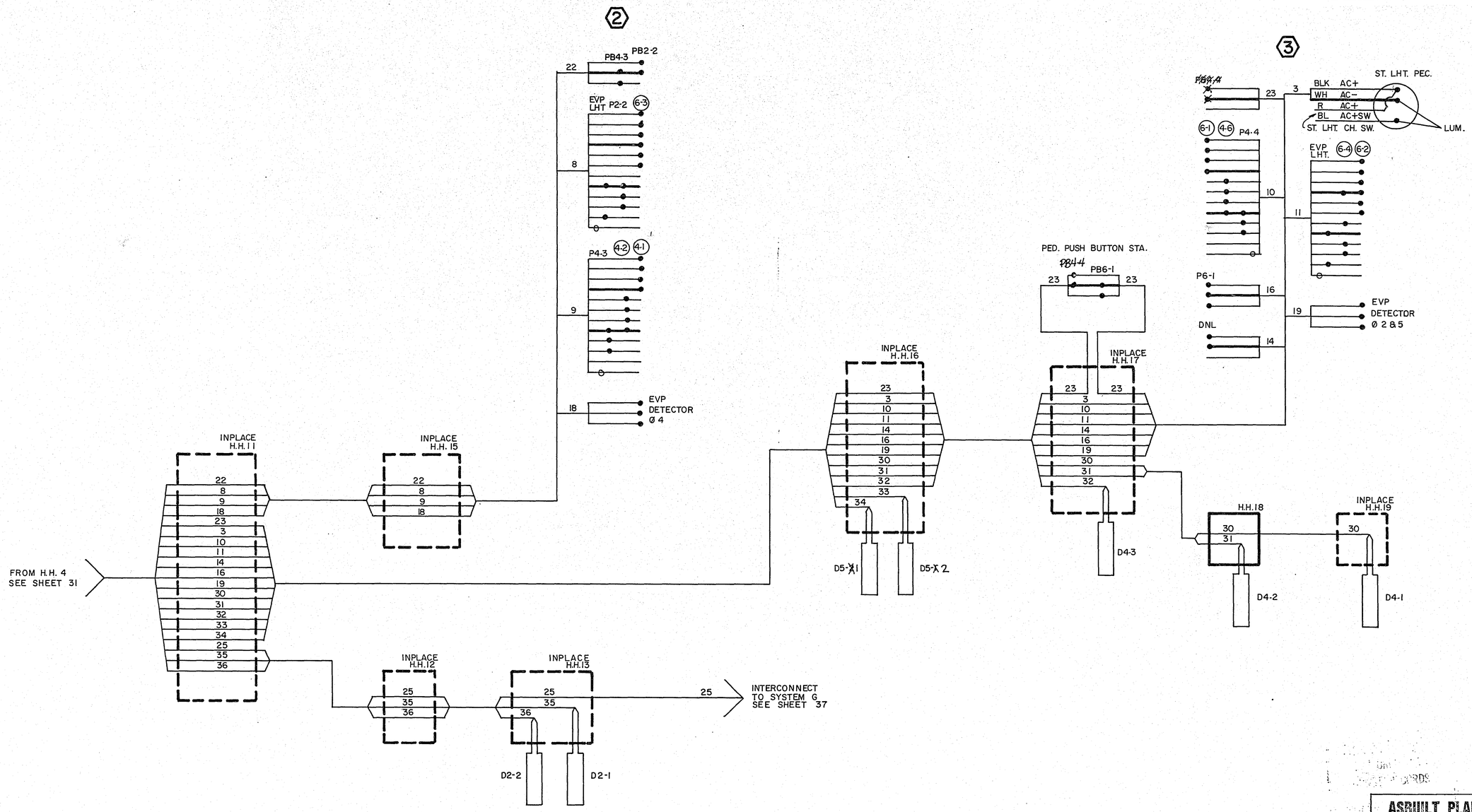
S.P. NO. 62-665-24 — SHEET NO. 31 OF 51 SHEETS

23-132

23-132 White Bear Avenue System A thru H T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater Ave — 1-51

24X

23-132



ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R Weber
DATE: 6-25-86

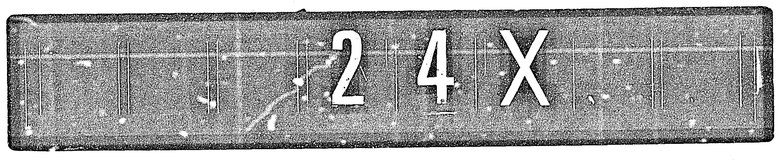
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Paul Rutherford
DATE 12-5-85 REG. NO. 12703

FIELD WIRING DIAGRAM
WHITE BEAR AVE. & WOODLYNN AVE.
SYSTEM F

S.P. NO. 62-665-24 SHEET NO 32 OF 51 SHEETS

23-132

23-132 White Bear Avenue System A thru H
T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd B & Edgewater Ave
1-51

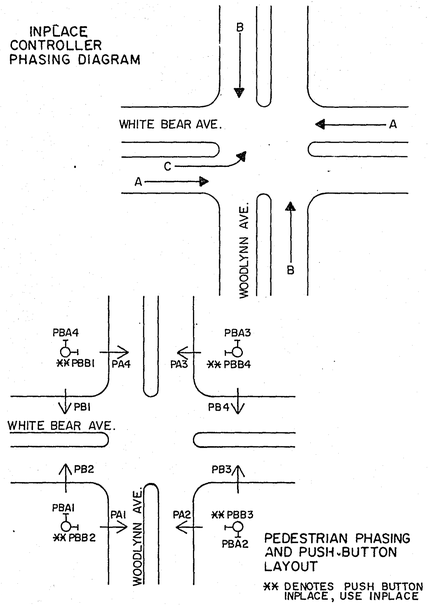


23-132

LEGEND OF SYMBOLS

SIGNAL BASE No. (5)
SIGNAL FACE No. (A2)
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 (#)

INPLACE CONTROLLER PHASING DIAGRAM



PEDESTRIAN PHASING AND PUSH-BUTTON LAYOUT

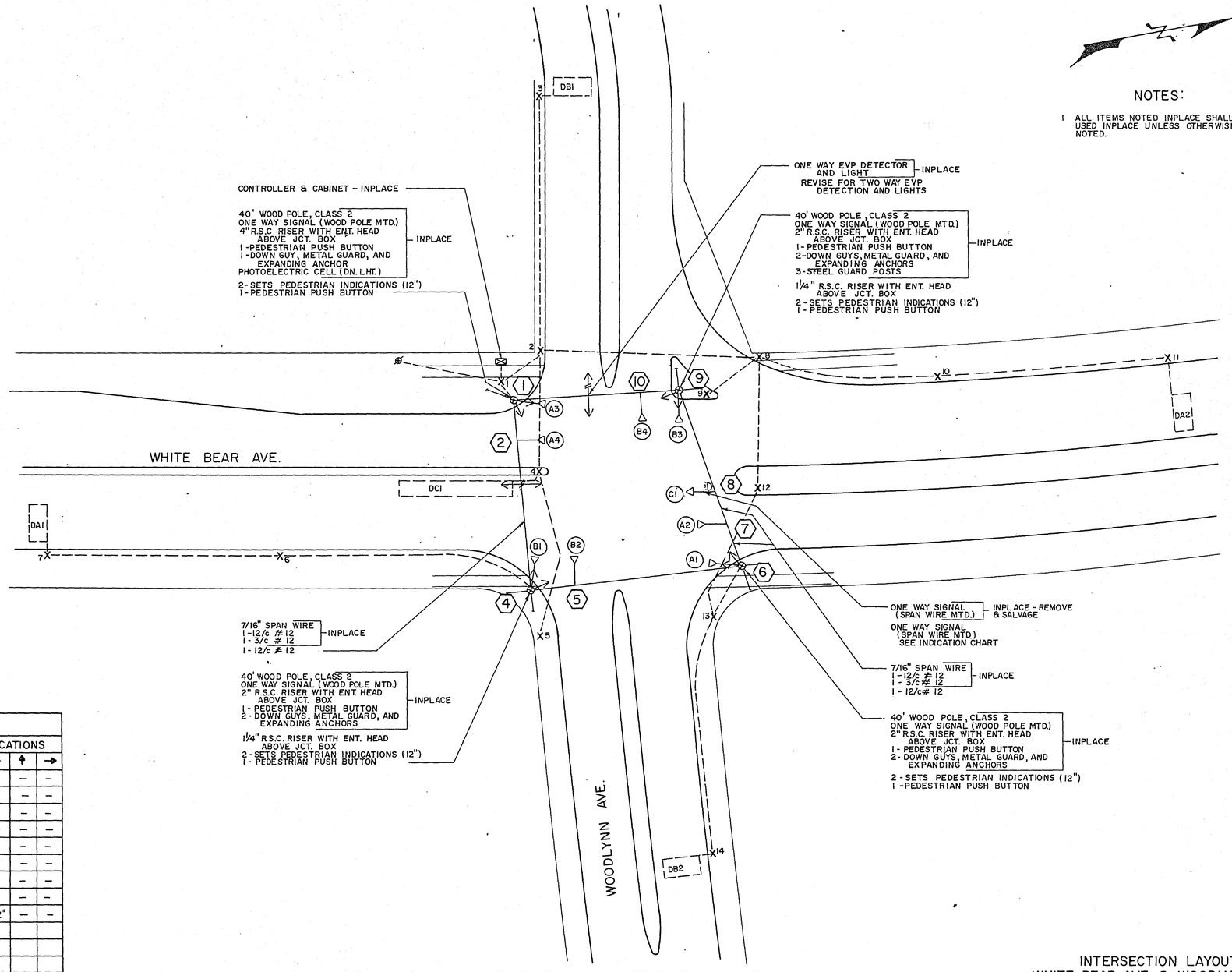
** DENOTES PUSH BUTTON INPLACE, USE INPLACE

SIGNAL INDICATION CHART

FACE	PHASE	FLASH	INPLACE INDICATIONS						REVISED INDICATIONS					
			R	Y	G	←	↑	→	R	Y	G	←	↑	→
A1	A	Y	12"	12"	12"	–	–	–	12"	12"	12"	–	–	–
A2	A	Y	12"	12"	12"	–	–	–	12"	12"	12"	–	–	–
A3	A	Y	12"	12"	12"	–	–	–	12"	12"	12"	–	–	–
A4	A	Y	12"	12"	12"	–	–	–	12"	12"	12"	–	–	–
B1	B	R	12"	12"	12"	–	–	–	12"	12"	12"	–	–	–
B2	B	R	12"	12"	12"	–	–	–	12"	12"	12"	–	–	–
B3	B	R	12"	12"	12"	–	–	–	12"	12"	12"	–	–	–
B4	B	R	12"	12"	12"	–	–	–	12"	12"	12"	–	–	–
C1	C	R	12"	12"	–	12"	–	–	*12"	*12"	–	*12"	–	–

RETURN SALVAGED SIGNAL FACE C1 TO RAMSEY COUNTY

* SPECIAL SIGNAL FACE (SEE SPECIAL PROVISIONS)



FOR INFORMATION ONLY
(INPLACE SYSTEM - REMOVE & SALVAGE)

INTERSECTION LAYOUT
WHITE BEAR AVE. & WOODLYNN AVE.
SYSTEM F

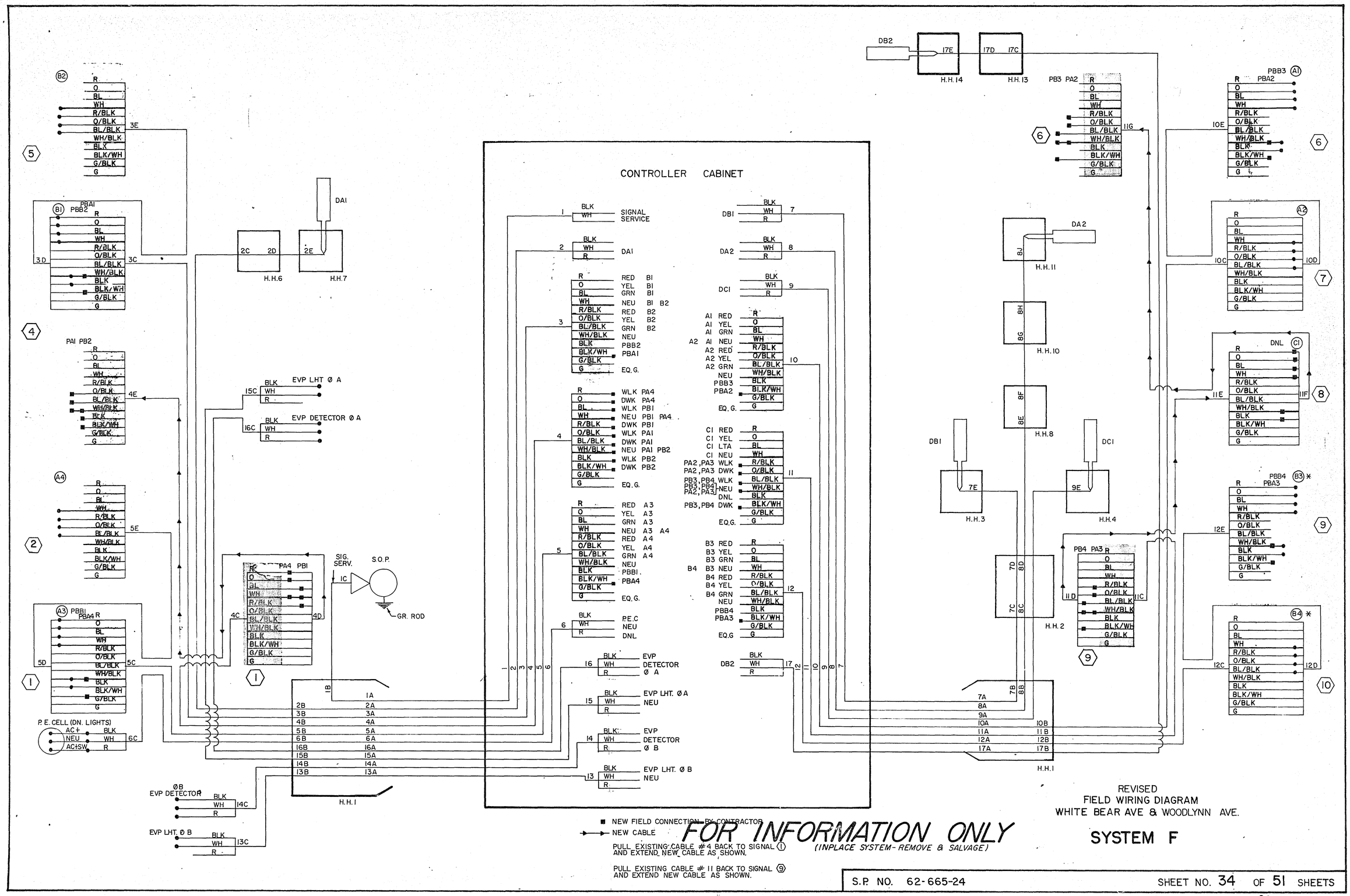
S.P. NO. 62-665-24 SHEET NO. 33 OF 51 SHEETS

23-132

23-132 White Bear Avenue System A thru H
T. 30, R. 22 Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater, Rose
1-51



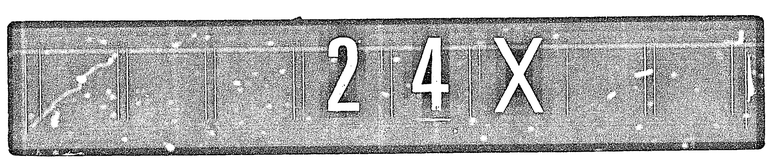
23-132



23-132

23-132 White Bear Avenue System A thru H
T.H. 36, 11th Ave, Co Rd C, Beam, Lydia,
Woodlynn, Co Rd B & Edgewater, Rose

1-51



23-132

LEGEND OF SYMBOLS

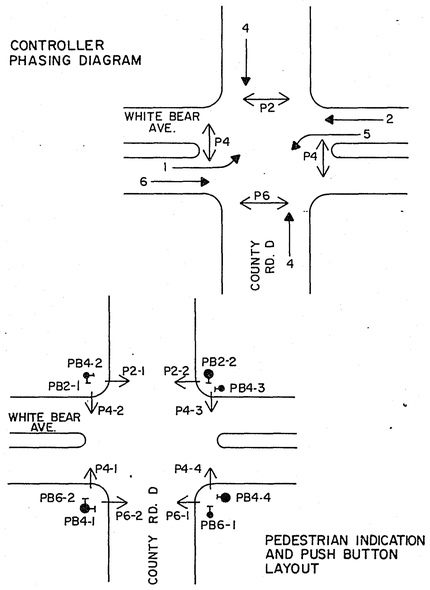
SIGNAL BASE No. ⑤
SIGNAL FACE No. 4-2
CONTROLLER AND CABINET
CONTROLLER AND CABINET-INPLACE
HANDHOLE
HANDHOLE-INPLACE
RIGID STEEL CONDUIT (R.S.C.)
RIGID STEEL CONDUIT (R.S.C.)-INPLACE
SIGNAL FACE
SIGNAL FACE WITH BACKGROUND SHIELD
SIGNAL FACE - INPLACE
PEDESTRIAN INDICATIONS
PEDESTRIAN INDICATIONS-INPLACE
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

VEHICLE DETECTION

NUMBER	SIZE	OPERATION
D1-1	6'X40'/6'	E. ONLY
D1-2	6'X 25'/40'	C. & E. (TD)
D2-1	6'X6'	C. & E.
D2-2	6'X6'	C. & E.
D4-1	2-6'X6'	C. & E
D4-2	2-6'X6'	C. & E.
D4-7	2-6'X20'	C. & E. (TD)
D4-4	2-6'X6'	C. & E.
D4-5	2-6'X6'	C. & E.
D4-8	2-6'X20'	C. & E. (TD)
D5-1	6'X40'/25'	E. ONLY
D5-2	6'X25'/40'	C. & E. (TD)
D6-1	6'X6'	C. & E.
D6-2	6'X6'	C. & E.
D6-3	2-6'X8'	C. ONLY

C. = CALL
E. = EXTEND
(TD) = TIME DELAYED

CONTROLLER PHASING DIAGRAM



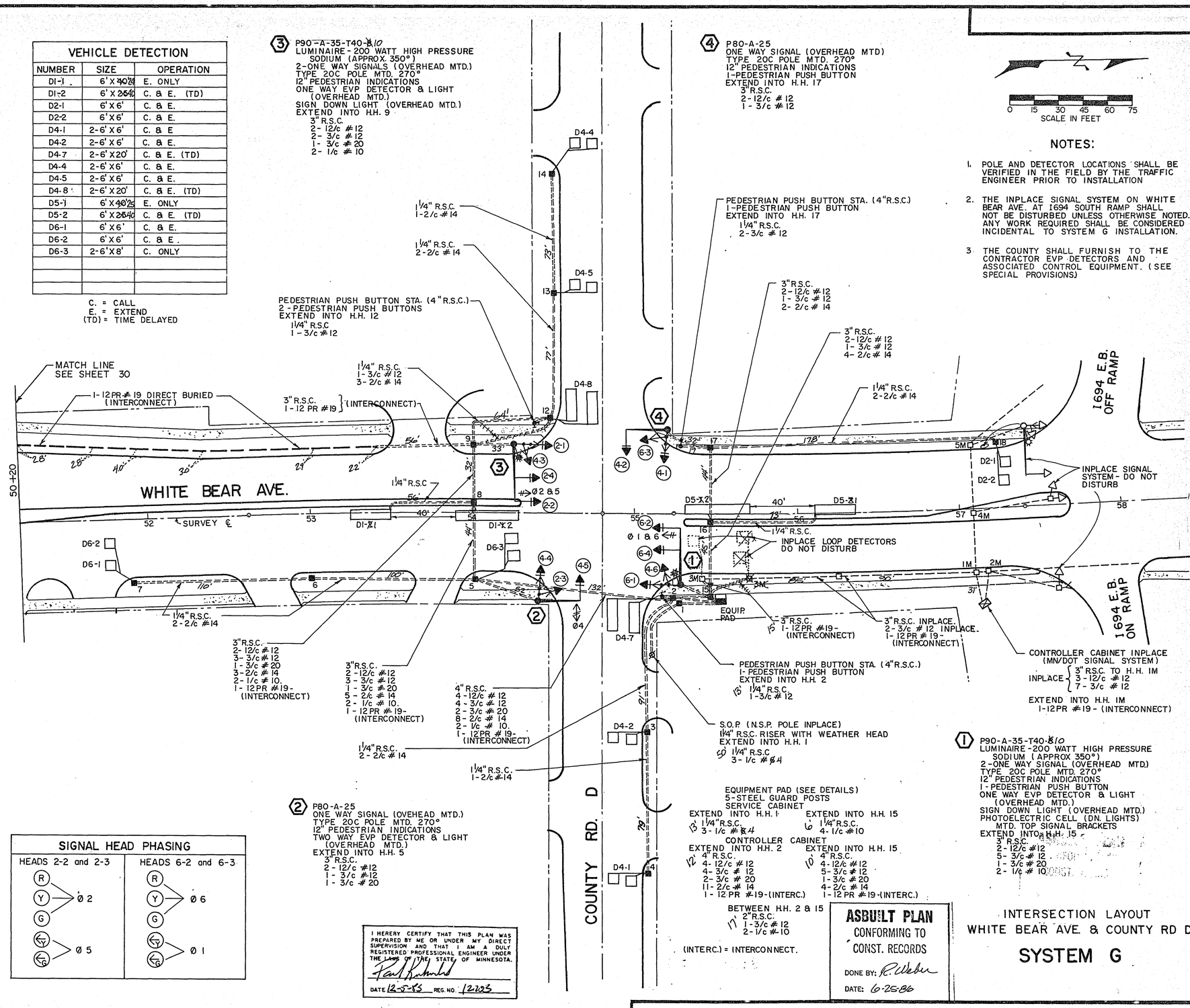
PEDESTRIAN INDICATION AND PUSH BUTTON LAYOUT

SIGNAL INDICATION CHART

FACE	PHASE	FLASH	INDICATION SIZE R	Y	G	←Y	←G
2-1	2	R	12"	12"	12"	–	–
2-2	2 and 5	R	12"	12"	12"	12"	12"
2-3	2 and 5	R	12"	12"	12"	12"	12"
2-4	2	R	12"	12"	12"	–	–
4-1	4	R	12"	12"	12"	–	–
4-2	4	R	12"	12"	12"	–	–
4-3	4	R	12"	12"	12"	–	–
4-4	4	R	12"	12"	12"	–	–
4-5	4	R	12"	12"	12"	–	–
4-6	4	R	12"	12"	12"	–	–
6-1	6	R	12"	12"	12"	–	–
6-2	6 and 1	R	12"	12"	12"	12"	12"
6-3	6 and 1	R	12"	12"	12"	12"	12"
6-4	6	R	12"	12"	12"	–	–

SIGNAL HEAD PHASING

HEADS 2-2 and 2-3: R, Y, G, ←Y, ←G → Ø2, Ø5
HEADS 6-2 and 6-3: R, Y, G, ←Y, ←G → Ø6, Ø1



③ P90-A-35-T40-X10
LUMINAIRE-200 WATT HIGH PRESSURE SODIUM (APPROX. 350°)
2-ONE WAY SIGNALS (OVERHEAD MTD.)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
ONE WAY EVP DETECTOR & LIGHT (OVERHEAD MTD.)
SIGN DOWN LIGHT (OVERHEAD MTD.)
EXTEND INTO H.H. 9
3" R.S.C. 2-12/c #12 2-3/c #12 1-3/c #20 2-1/c #10

② P80-A-25
ONE WAY SIGNAL (OVEHEAD MTD.)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
TWO WAY EVP DETECTOR & LIGHT (OVERHEAD MTD.)
EXTEND INTO H.H. 5
3" R.S.C. 2-12/c #12 1-3/c #12 1-3/c #20

④ P80-A-25
ONE WAY SIGNAL (OVERHEAD MTD)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H. 17
3" R.S.C. 2-12/c #12 1-3/c #12

① P90-A-35-T40-X10
LUMINAIRE-200 WATT HIGH PRESSURE SODIUM (APPROX. 350°)
2-ONE WAY SIGNAL (OVERHEAD MTD.)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSH BUTTON
ONE WAY EVP DETECTOR & LIGHT (OVERHEAD MTD.)
SIGN DOWN LIGHT (OVERHEAD MTD.)
PHOTOELECTRIC CELL (DN. LIGHTS)
MTD. TOP SIGNAL BRACKETS
EXTEND INTO H.H. 15
3" R.S.C. 2-12/c #12 5-3/c #12 1-3/c #20 2-1/c #10

0 15 30 45 60 75
SCALE IN FEET

NOTES:

1. POLE AND DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGINEER PRIOR TO INSTALLATION
2. THE INPLACE SIGNAL SYSTEM ON WHITE BEAR AVE. AT 1694 SOUTH RAMP SHALL NOT BE DISTURBED UNLESS OTHERWISE NOTED. ANY WORK REQUIRED SHALL BE CONSIDERED INCIDENTAL TO SYSTEM G INSTALLATION.
3. THE COUNTY SHALL FURNISH TO THE CONTRACTOR EVP DETECTORS AND ASSOCIATED CONTROL EQUIPMENT. (SEE SPECIAL PROVISIONS)

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.
Paul Kutschke
DATE 12-5-85 REG. NO. 12023

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R. Weber
DATE: 6-25-86

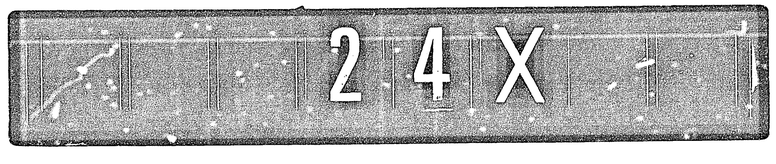
INTERSECTION LAYOUT
WHITE BEAR AVE. & COUNTY RD D
SYSTEM G

S.P. NO. 62-665-24 SHEET NO 35 OF 51 SHEETS

23-132

23-132 White Bear Avenue System A thru H
T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd B & Edgewater, Abe

1-51



23-132

CONTROLLER CABINET

SIGNAL SERVICE → 1

4:
RED 6-1
YEL 6-1
GRN 6-1
NEU 6-1
RED 4-6
YEL 4-6
GRN 4-6
NEU 4-6, P4-4
WLK P4-4
DWK P4-4
EQG

8:
2-3 RED
2-3 YEL
2-3 GRN
2-3 NEU
2-3 YEL LTA
2-3 GRN LTA
EVP LHT, P6-2 NEU
P6-2 WLK
P6-2 DWK
EVP LHT
EQG

5:
RED 6-2
YEL 6-2
GRN 6-2
NEU 6-2, 6-4
YEL LTA 6-2
GRN LTA 6-2
RED 6-4
NEU EVP LHT
YEL 6-4
GRN 6-4
EVP LHT
EQG

9:
4-4 RED
4-4 YEL
4-4 GRN
4-4 NEU
4-5 RED
4-5 YEL
4-5 GRN
P4-1, 4-5 NEU
P4-1 WLK
P4-1 DWK
EQG

6:
RED 6-3
YEL 6-3
GRN 6-3
NEU 6-3
YEL LTA 6-3
GRN LTA 6-3
NEU P2-2
WLK P2-2
DWK P2-2
EVP LHT
EQG

10:
2-1 RED
2-1 YEL
2-1 GRN
2-1 NEU
4-3 RED
4-3 YEL
4-3 GRN
P4-2, 4-3 NEU
P4-2 WLK
P4-2 DWK
EQG

7:
RED 4-1
YEL 4-1
GRN 4-1
NEU 4-1
RED 4-2
YEL 4-2
GRN 4-2
NEU 4-2, P4-3
WLK P4-3
DWK P4-3
EQG

11:
2-2 RED
2-2 YEL
2-2 GRN
2-4, 2-2 NEU
2-2 YEL LTA
2-2 GRN LTA
2-4 RED
EVP LHT NEU
2-4 YEL
2-4 GRN
EVP LHT
EQG

12: DNL, NEU, PEC
PB4-4 NEU PB6-1 → 20

13: DNL, NEU
PB2-2 NEU PB4-3 → 21

14: DNL, NEU
PB4-1 NEU PB6-2 → 22

15: WLK P6-1, NEU P6-1, DWK P6-1
PB2-1 NEU PB4-2 → 23

16: WLK P2-1, NEU P2-1, DWK P2-1
INTERCONNECT SYSTEM S. RAMP 1694 0035 → 24

INTERCONNECT SYSTEM F 1H26 → 25

17: EVP DETECTOR Ø1&6
18: EVP DETECTOR Ø4
19: EVP DETECTOR Ø2&5

26: D2-1
27: D2-2
28: D5-X2
29: D5-X1
30: D4-4

31: D4-5
32: D4-8
33: D1-X2
34: D1-X1
35: D6-1

D6-2 → 36
D6-3 → 37
D4-1 → 38
D4-2 → 39
D4-7 → 40

S.O.P. — H.H. 1 SOP

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

① 6-1 4-6 P4-4 — EVP LHT 6-4 6-2

P6-1: 15 AC+SW, NEU, AC+ — PEC. (DNL.) 12
DNL 13 — BLK AC+, WH. AC-, R AC+, BL AC+SW — ST. LHT PE.C. — ST. LHT. CH. SW. — LUM. 2
EVP DETECTOR Ø1&6 17
PB4-4 20 20

H.H. 15: 3 2 4 5 12 13 15 17 20 20 20 3 → TO H.H. 2 SEE SHEET 37
21 6 7 26 27 28 29 24

H.H. 16: 21 6 7 26 27 28 29 — D5-X1, D5-X2
H.H. 17: 21 21 6 7 26 27
H.H. 18: 26 27 — D2-2, D2-1

④ PB2-2 21; P2-2 6-3 6; P4-3 4-2 4-1 7

PB4-3 21 21

INPLACE H.H. 3M 24 — INPLACE H.H. 1M 24 → D31G INTERCONNECT TO INPLACE CONTROLLER CABINET AT WHITE BEAR AVE. & 1694 S. RAMP SEE SHEET 35

TO H.H. 2 SEE SHEET 37

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, 2-1/C#10
R, WH, 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.

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R. Weber
DATE: 6-25-86

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.
Paul Rubinstein
DATE 12-5-83 REG. NO. 12703

FIELD WIRING DIAGRAM
WHITE BEAR AVE. & COUNTY RD. D
SYSTEM G

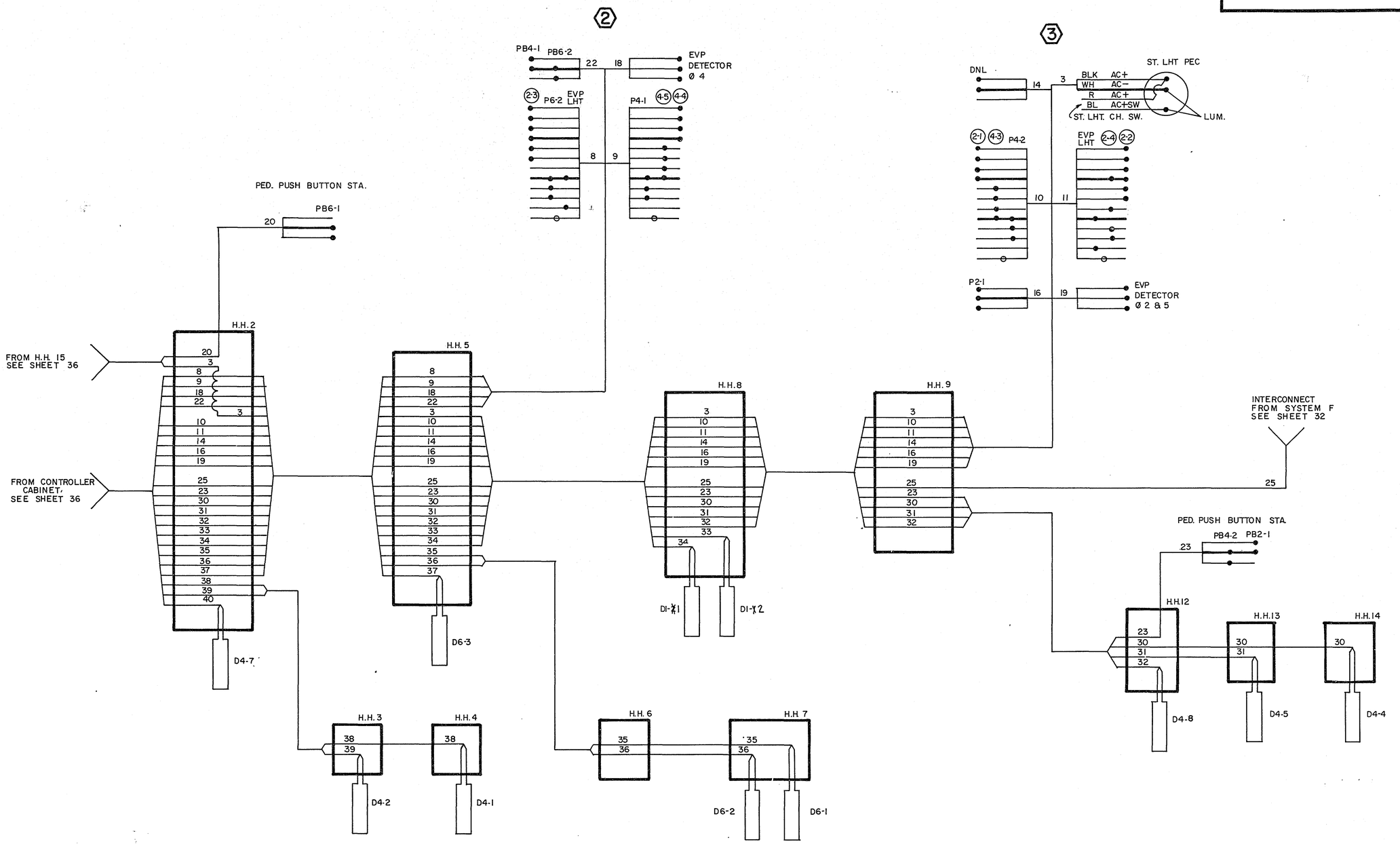
S.P. NO. 62-665-24 — SHEET NO 36 OF 51 SHEETS

23-132

23-132 White Bear Avenue System A thru H T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater Ave 1-51

24X

23-132



ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R. Weber
DATE: 6-25-86

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.
Paul Kimball
DATE 12-5-85 REG. NO. 12123

FIELD WIRING DIAGRAM
WHITE BEAR AVE & COUNTY RD. D
SYSTEM G

S.P. NO. 62-665-24 SHEET NO. 37 OF 51 SHEETS

23-132

23-132 White Bear Avenue Systems A thru H
T.H. 36, 11th Ave, Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater, Rice

1-51

24-X

23-132

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 <#>

VEHICLE DETECTION

NUMBER	SIZE	OPERATION
DI-1	6'X40'25	E. ONLY
DI-2	2-6'X25'14'	C. & E. (TD)
D2-1	6'X6'	C. & E.
D2-2	6'X6'	C. & E.
D2-3	2-6'X8'	C. ONLY
D4-7	6'X30'	C. & E. (TD)
D4-2	2-6'X6'	C. & E.
D4-3	2-6'X6'	C. & E.
D5-1	6'X20'	E. ONLY
D5-2	6'X20'	C. & E. (TD)
D6-1	6'X6'	C. & E.
D6-2	6'X6'	C. & E.
DC-9	6'X6'	COUNT
DC-10	6'X6'	COUNT

C. = CALL
E. = EXTEND
(TD) = TIME DELAYED

EQUIPMENT PAD (SEE DETAILS)
6-STEEL GUARD POSTS
SERVICE CABINET
EXTEND INTO H.H. 2
1¼"R.S.C.
3-1/c #4
EXTEND INTO H.H. 3
1¼"R.S.C.
4-1/c #10
CONTROLLER CABINET
EXTEND INTO H.H. 3
4"R.S.C.
4-12/c #12
5-3/c #12
1-3/c #20
7-2/c #14
EXTEND INTO H.H. 10
4"R.S.C.
4-12/c #12
5-3/c #12
1-3/c #20
7-2/c #14
1-12PR #19-(INTERCONNECT)
BETWEEN H.H. 3 & 10
2"R.S.C.
2-1/c #10

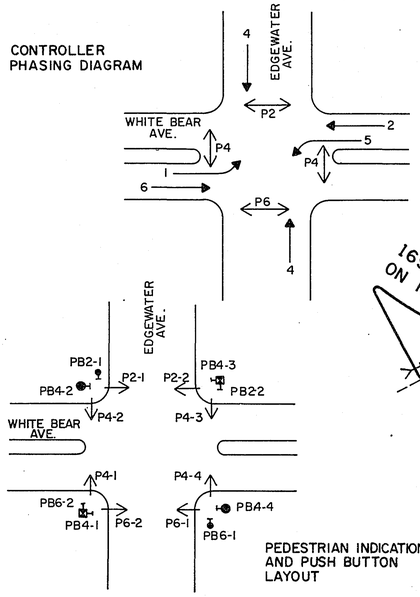
(1) P90-A-35-T40-X10
LUMINAIRE-200 WATT HIGH PRESSURE SODIUM (APPROX 350°)
2-ONE WAY SIGNALS (OVERHEAD MTD.)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSH BUTTON
SIGN DOWN LIGHT (OVERHEAD MTD.)
PHOTOELECTRIC CELL (DNL) MTD.
TOP SIGNAL BRACKETS
CONDUIT OUTLET BODY MTD. ON EXTENDED SIGNAL BRACKETING FOR FUTURE EVP
EXTEND INTO H.H. 3
3"R.S.C.
2-12/c #12
4-3/c #12
2-3/c #20
2-1/c #10

0 15 30 45 60 75
SCALE IN FEET

NOTES:

1. 3/c #20 CABLES SHALL BE INSTALLED TO CONDUIT OUTLET BODY ON EACH MAST ARM POLE FOR FUTURE EVP DETECTORS
2. POLE AND DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGINEER PRIOR TO INSTALLATION.
3. THE INPLACE SIGNAL SYSTEM ON WHITE BEAR AVE AT 1694 NORTH RAMP SHALL NOT BE DISTURBED UNLESS OTHERWISE NOTED. ANY WORK REQUIRED SHALL BE CONSIDERED INCIDENTAL TO SYSTEM H INSTALLATION.

CONTROLLER PHASING DIAGRAM



PEDESTRIAN INDICATION AND PUSH BUTTON LAYOUT

CONTROLLER CABINET INPLACE (MN/DOT SIGNAL SYSTEM)
INPLACE { 2-3" R.S.C.; 5-12/c #12; 10-3/c #12; 2-1/c #6; 2-25PR #19
EXTEND INTO H.H. 1M
1-12 PR #19 (INTERCONNECT)

S.O.P. (N.S.P. POLE INPLACE)
1¼" R.S.C. RISER WITH WEATHER HEAD
EXTEND INTO H.H. 1
3-1/c #4

3"R.S.C. 1-12PR #19 (INTERCONNECT)
1¼"R.S.C. 3-1/c #4
1-12 PR #19 DIRECT BURIED (INTERCONNECT)
3"R.S.C. MN/DOT 1-12 PR #19 (INTERCONNECT) 1-2/c #14 - BY MN/DOT

1694 W.B. ON RAMP
WHITE BEAR AVE.
EDGEWATER AVE.
WHITE BEAR COURT
MN/DOT INSTALLED
INPLACE SIGNAL SYSTEM - DO NOT DISTURB
INPLACE LOOP DETECTORS - DO NOT DISTURB
1694 W.B. OFF RAMP

DC-9
DC-10
DI-1
DI-2
D1-1
D2-1
D2-2
D2-3
D4-2
D4-3
D4-7
D5-1
D5-2
D6-1
D6-2

1¼" R.S.C. 2-2/c #14

PEDESTRIAN PUSH BUTTON STATION (4"R.S.C.)
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H. 3
1¼"R.S.C.
2-3/c #12

(2) TYPE 2C
12" PEDESTRIAN INDICATIONS
2-PEDESTRIAN PUSH BUTTONS
EXTEND INTO H.H. 6
3" R.S.C.
2-12/c #12
1-3/c #12

4"R.S.C.
4-12/c #12
5-3/c #12
1-3/c #20
5-2/c #14
2-1/c #10

4"R.S.C.
4-12/c #12
5-3/c #12
1-3/c #20
3-2/c #14
2-1/c #10

PEDESTRIAN PUSH BUTTON STA. (4"R.S.C.)
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H. 17
1¼" R.S.C.
2-3/c #12

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

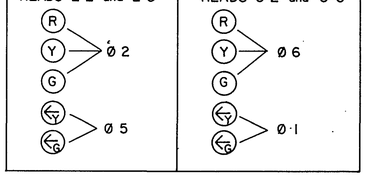
(4) TYPE 2C
12" PEDESTRIAN INDICATIONS
2-PEDESTRIAN PUSH BUTTONS
EXTEND INTO H.H. 14
3" R.S.C.
2-12/c #12
1-3/c #12

(3) P90-A-35-T40-X10
LUMINAIRE-200 WATT HIGH PRESSURE SODIUM (APPROX 350°)
TWO WAY SIGNAL (OVERHEAD MTD.)
ONE WAY SIGNAL (OVERHEAD MTD.)
TYPE 20C POLE MTD. 270°
12" PEDESTRIAN INDICATIONS
1-PEDESTRIAN PUSH BUTTON
SIGN DOWN LIGHT (OVERHEAD MTD.)
EXTEND INTO H.H. 17
3"R.S.C.
2-12/c #12
4-3/c #12
1-3/c #20
2-1/c #10

SIGNAL INDICATION CHART

FACE	PHASE	FLASH	INDICATION SIZE R	Y	G	←Y	←G
2-1	2	R	12"	12"	12"	–	–
2-2	2 and 5	R	12"	12"	12"	12"	12"
2-3	2 and 5	R	12"	12"	12"	12"	12"
2-4	2	R	12"	12"	12"	–	–
4-1	4	R	12"	12"	12"	–	–
4-2	4	R	12"	12"	12"	–	–
4-3	4	R	12"	12"	12"	–	–
4-4	4	R	12"	12"	12"	–	–
4-5	4	R	12"	12"	12"	–	–
6-1	6	R	12"	12"	12"	–	–
6-2	6 and 1	R	12"	12"	12"	12"	12"
6-3	6 and 1	R	12"	12"	12"	12"	12"
6-4	6	R	12"	12"	12"	–	–

SIGNAL HEAD PHASING



ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R. Weber
DATE: 6-25-86

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 12-5-85 REG. NO 12703

INTERSECTION LAYOUT
WHITE BEAR AVE. & EDGEWATER AVE.
SYSTEM H

S.P. NO. 62-665-24 SHEET NO. 38 OF 51 SHEETS

23-132

23-132 White Bear Avenue System A thru H
T.H. 36, 11th Ave, Co Rd C, Beam, Sylvia, Woodlynn, Co Rd D & Edgewater Ave

1-51



23-132

CONTROLLER CABINET

SIGNAL SERVICE — 1

4:
RED 2-1
YEL 2-1
GRN 2-1
NEU 2-1
RED 4-5
YEL 4-5
GRN 4-5
NEU 4-5, P4-2
WLK P4-2
DWK P4-2
EQG

5:
RED 2-2
YEL 2-2
GRN 2-2
NEU 2-2, 2-4
YEL LTA 2-2
GRN LTA 2-2
RED 2-4
NEU
YEL 2-4
GRN 2-4
EQG

6:
RED 6-3
YEL 6-3
GRN 6-3
NEU 6-3
YEL LTA 6-3
GRN LTA 6-3
NEU P2-2
WLK P2-2
DWK P2-2
EQG

7:
RED 4-4
YEL 4-4
GRN 4-4
NEU 4-4
NEU P4-3
WLK P4-3
DWK P4-3
EQG

12:
DNL
NEU
PEC

13:
DNL
NEU

14:
DNL
NEU

15:
WLK P2-1
NEU P2-1
DWK P2-1

16:
WLK P6-1
NEU P6-1
DWK P6-1

17:
WLK P4-4
NEU P4-4
DWK P4-4

27: D2-1
28: D2-2
29: D5-X2
30: D5-X1

8:
2-3 RED
2-3 YEL
2-3 GRN
2-3 NEU
2-3 YEL LTA
2-3 GRN LTA
P6-2 NEU
P6-2 WLK
P6-2 DWK
EQG

9:
4-1 RED
4-1 YEL
4-1 GRN
4-1 NEU
P4-1 NEU
P4-1 WLK
P4-1 DWK
EQG

10:
6-1 RED
6-1 YEL
6-1 GRN
6-1 NEU
4-3 RED
4-3 YEL
4-3 GRN
4-2, 4-3 NEU
4-2 RED
4-2 YEL
4-2 GRN
EQG

11:
6-2 RED
6-2 YEL
6-2 GRN
6-4, 6-2 NEU
6-2 YEL LTA
6-2 GRN LTA
6-4 RED
NEU
6-4 YEL
6-4 GRN
EQG

21:
PB4-2 NEU
PB2-1

22:
PB2-2 NEU
PB4-3

23:
PB6-2 NEU
PB4-1

24:
PB4-4 NEU
PB6-1

25: INTERCONNECT SYSTEM 1694 N. RAMP (2613)

18: EVP DETECTOR CABLE
19: EVP DETECTOR CABLE
20: EVP DETECTOR CABLE

31: D2-3
32: D4-3
33: D4-2
34: D4-7

35: D6-1
36: D6-2
37: D1-X2
38: D1-X1
39: DC-9
40: DC-10

S.O.P. — H.H. 1 (SOP) — H.H. 2 (SOP)

SERVICE CABINET & METER

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

PED. PUSH BUTTON STA.
PB2-1: 21, 21

TO H.H. 10 SEE SHEET 40

H.H. 3:
3
2
21, 21
15
4
5
12
13
18
19
22
6
7
27
28
29
30
31
32
33

TO H.H. 10 SEE SHEET 40

H.H. 4: 32, 33 — D4-2
H.H. 5: 32 — D4-3

①

PB4-2 21 15 P2-1
(2-1) (4-5) P4-2 4 5 (2-4) (2-2)
DNL 13 12 AC+SW, NEU, AC+ — PEC (DNL)
EVP CABLE 18 — 2 — BLK AC+, WH AC−, R AC+, BL AC+SW — ST. LHT. PEC — ST. LHT. CH. SW. — LUM.
EVP CABLE 19

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, 2-1/C#10
R, WH, 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.

②

PB4-3 PB2-2
22
P2-2 (6-3)
6
P4-3 (4-4)
7

H.H. 6:
22
6
7
27
28
29
30
31
D2-3

H.H. 8: 27, 28 — D2-2
H.H. 9: 27, 28 — D2-1

H.H. 7:
29
30
D5-X1
D5-X2

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R. Weber
DATE: 6-25-96

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.
Paul Reinhardt
DATE 12-5-83 REG. NO. 12703

FIELD WIRING DIAGRAM
WHITE BEAR AVE. & EDGEWATER AVE.
SYSTEM H

S.P. NO. 62-665-24 — SHEET NO. 39 OF 51 SHEETS

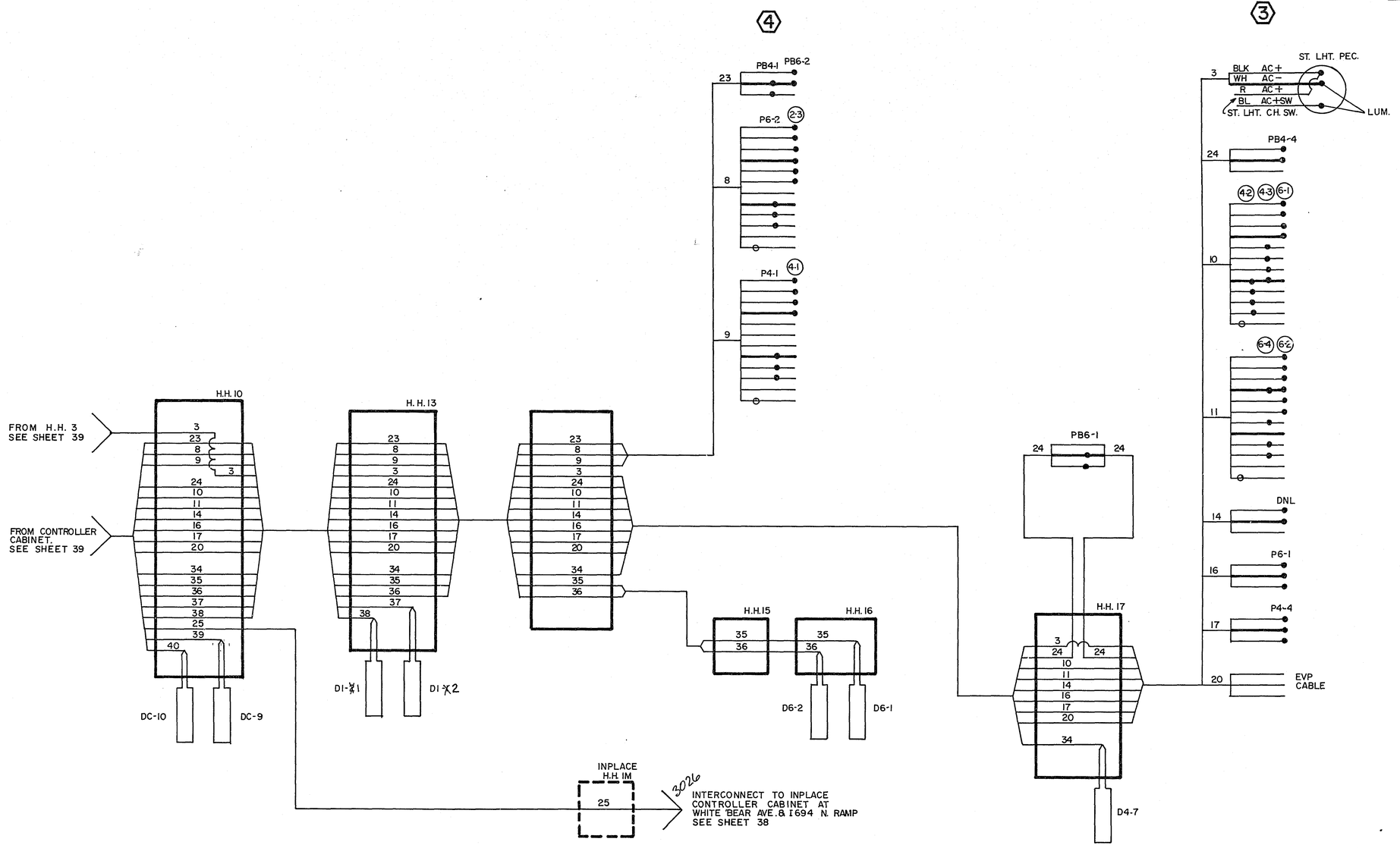
23-132

23-132 White Bear Avenue System A thru H
T.H. 36, 11th Ave. Co Rd C, Beam, Sylvia, Woodlynn, Co Rd B & Edgewater, Tibbe

1-51



23-132



ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: R. Weber
DATE: 6-25-86

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.
Frank Rutkowski
DATE 12-5-83 REG. NO. 12703

FIELD WIRING DIAGRAM
WHITE BEAR AVE. & EDGEWATER AVE.
SYSTEM H

S.P. NO. 62-665-24 SHEET NO. 40 OF 51 SHEETS

23-132

23-132 White Bear Avenue System A thru H
T.H. 36 @ Hwy. Co Rd C, Beam, Lydia, Woodlynn, Co Rd D & Edgewater, Ave
1-51

24X

TOPOGRAPHY	PLOTTED BY	DATE	CHECKED BY	DATE
UTILITIES	PLOTTED BY	DATE	CHECKED BY	DATE
PROFILE	PLOTTED BY	DATE	CHECKED BY	DATE

SCALE IN FEET 0 10 20 30 40 50 100

S.B. PAVING ℄
PI 81+73.43 P.O.S.T. LT. 20'
Δ 12° 22' 46" LT.
D 2° 46' 53"
T 223.404'
L 445.07'
R 2059.91'

SURVEY ℄
PI 84+44.20
Δ 26° 56' LT.
D 3°
T 257.34
L 897.78
R 1909.86

T.H. 36 W.B. RAMP

79+35 LT. 55'

AP 101

P.C. LT. 20' STA. 79+50.03

P.C. 79+86.86

50 R

C.B. 102

INPLACE RIGID STEEL CONDUIT, CONTROL CABLE & HANDHOLES. DO NOT DISTURB - ADJUSTMENTS BY OTHERS.

BEGIN TAPER (RT. TURN LANE) STA. 81+80

81+73.43 P.O.S.T. LT. 64'

CONC. WALK

VAR. 25.5

B618 C.&G.

BIT. OVERLAY

S.B. PAVING ℄

BIT. WIDENING SEE CROSS SEC. & TYP.

25.5

20'

CONC. S5 CURB

SURVEY ℄

PAVING ℄ P.I.

CONC. MEDIAN

WHITE BEAR AVE.

END TAPER STA. 83+00

P.C.C. 83+95.10 = 24' LT. 84+00

R/W

CONSTRUCTION LIMITS

2" PINE

C.B. 104

B618 C.&G. - REMOVE

CONST. CONC. PAV.

EXIST. CONC. PAV.

BIT. WIDENING

BIT. OVERLAY SEE NOTE ②

BEGIN CONC. PAV. STA. 84+00

C.B. 103

B618 C.&G.

M.H.

MATCH LINE 87+00

119° 37' 43"

104.06

SURVEY ℄ P.I.

GERVAIS AVE.

T.H. 36 W.B. OFF RAMP

BEGIN PROJECT STA. 79+10

NOTES:

DENOTES 4" CONCRETE WALK CONST.

① CONSTRUCT PEDESTRIAN CURB RAMP AS PER MN/DOT STD. PLT. 7036 - SEE DETAIL SHEET 14 FOR PLACEMENT.

② STA. 83+75 to STA. 84+00 LT. - MILL EXISTING BIT. SURFACE 0" to 0.08" FOR OVERLAY TO MATCH INPLACE CONC. SURFACE

C.B. 104 — C.B. 103
929.20
929.00
929.88
68 L.F. -15" R.C.P. at 1.%

EXISTING PROFILE at SURVEY ℄
USE EXISTING GRADES

C.B. 102
APE 101
932.4±
932.95
48 L.F. -15" R.C.P. PLUS APRON at 1%

C.B. 104
929.00

945 940 935 930 925 920

78 79 80 81 82 83 84 85 86 87

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DATE REG NO

FOR INFORMATION ONLY
(UTILITIES & CONSTRUCTION)

S.P. NO. 62-665-24

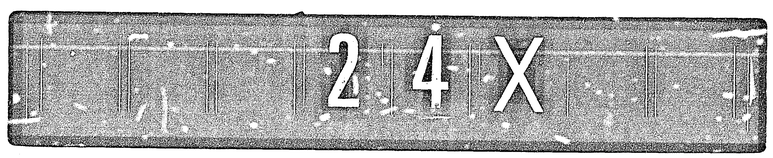
SHEET NO. 41 OF 51 SHEETS

23-132

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23-132 White Bear Avenue System A thru H
T.H. 36, 11th Ave. Co Rd C, Beam, Sylvia, Woodlynn, Co Rd J & Edgewater Ave

1-51



TOPOGRAPHY	PLOTTED BY	DATE	CHECKED BY	DATE
UTILITIES	PLOTTED BY	DATE	CHECKED BY	DATE
PROFILE	PLOTTED BY	DATE	CHECKED BY	DATE

SCALE IN FEET
0 10 20 30 40 50 100

MATCH LINE 87+00

PT. 88+84.64

55' R.

SAW CUT

REMOVE BIT.

CLOSE ENT.

PROP. R/W

CONST. LIMITS

R/W

EXIST. R/W

B618 C.&G.

GV

C.B.4 REMOVE

M.H. 106

C.B. 105

REMOVE B624 C.&G.

SAW CUT BIT.

GERVAIS AVE.

B624 C.&G.

35' R.

CONSTRUCTION LIMITS

PROPOSED R/W

4" CONCRETE WALK

CONST. CONC. PAV.

REMOVE B618 C.&G.

EXIST. CONC. PAV.

C.B. 108

C.B. 107

WHITE BEAR AVE.

SURVEY ℄

87 88 89 90 91 92 93 94 95 96

MATCH LINE 96+00

INPLACE SIGNAL SYSTEM SEE TRAFFIC CONTROL SHEET 31

M.H. 1

M.H. 8

CB 2

CB 5

C.B.

BIT. CURB

ELEVENTH AVE.

NOTES:

DENOTES 4" CONCRETE WALK CONST.

① CONSTRUCT PEDESTRIAN CURB RAMP AS PER MN/DOT STD. PLT. 7036 - SEE DETAIL SHEET 14 FOR PLACEMENT.

③ TRANSITION B618 C.&G. TO MATCH EXISTING B624 C.&G. - PAYMENT TO BE MADE AS B624

C.B. 108

C.B. 107

919.20

919.40

920.08

68 L.F. - 15" R.C.P. at 1%

EXISTING PROFILE at SURVEY ℄
USE EXISTING GRADES

400 L.F. - 15" R.C.P. at 1.48%

C.B. 105

M.H. 106

923.08

922.88

922.54

34 L.F. - 18" R.C.P. at 1%

919.78±

EXISTING 18" R.C.P.

C.B. 108

919.20

935 930 925 920 915

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 REG. NO.

FOR INFORMATION ONLY
(UTILITIES & CONSTRUCTION)

S.P. NO. 62-665-24

SHEET NO. 42 OF 51 SHEETS

23-132

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23-132 White Bear Avenue System #A Thru H
T.H. 36, 11th Ave, Co Rd C, Beam, Tydia, Woodlynn, Co Rd B & Edgewater, Rice

1-51

24X

TOPOGRAPHY	PLOTTED BY	DATE	CHECKED BY	DATE
UTILITIES	PLOTTED BY	DATE	CHECKED BY	DATE
PROFILE	PLOTTED BY	DATE	CHECKED BY	DATE

SCALE IN FEET
0 10 20 30 40 50 100

PROPOSED ENT. TO MAPLE RIDGE SHOPPING CENTER
PROP. ENT. TO SHOPPING CENTER
GRADE DITCH AS DIRECTED BY ENGR.
REMOVE C.M. PIPE & OUTLET STRUCTURE
EXTEND EXIST. 88" SPAN R.C.P. A. PLACE RIPRAP AT OUTLET. SEE DETAIL SHEET 13
2599 BLDG
2603 BLDG.
WOODS
DITCH
C.B. 118
CONST. BIT CURB
CONSTRUCTION LIMITS
PROPOSED R/W
4" CONCRETE WALK
EXISTING R/W
REMOVE B618 C.B.G.
B618 C.B.G.
C.B. 110
CONST. CONC. PAV.
EXIST. CONC. PAV.
WHITE BEAR AVE.
SURVEY ℄
MATCH LINE 96+00
MATCH LINE 105+00
M.H. 9
M.H. 10
M.H. 11
M.H. 18
M.H. 19
C.B. 109
C.B. 115
C.B. 116
C.B. 15
AP. 113
88" SPAN R.C.P. A.
24" R.C.P.
TEL. BOX
SIGN
CONST. LIMITS
PROP. R/W
EXIST. R/W
MAPLE
LOCUST
E. DEMONT AVE.
CONNOR AVE.
EDGEHILL RD.
BLDG.
P.C. 99+32.56
P.I. 100+15.56
Δ 8° 17' RT.
D 5°
T 83.00'
L 165.70'
R 1145.48'
P.T. 100+98.26

NOTES:

DENOTES 4" CONCRETE WALK CONST.

① CONSTRUCT PEDESTRIAN CURB RAMP AS PER MN/DOT STD. PLT. 7036 - SEE DETAIL SHEET 14 FOR PLACEMENT.

C.B. 110 — C.B. 109: 917.11 — 917.31 — 917.99; 68 L.F. - 15" R.C.P. at 1%

EXISTING PROFILE at SURVEY ℄ USE EXISTING GRADES.

363 L.F. - 15" R.C.P. at 0.52%

231 L.F. - 8" R.C.P. at 0.52%

M.H. 111: 915.91 — 915.71

165 L.F. - 8" R.C.P. at 0.52%

M.H. 112: 914.84 — 910.16

EXISTING 88" SPAN R.C.P. ARCH EXTEND PIPE - SEE DETAIL SHEET

C.B. 116: 915.47 — 915.27

347 L.F. - 15" R.C.P. at 1.16%

M.H. 117

AP. 113: 910.0± — 910.16

24 L.F. - 18" R.C.P. PLUS APRON at 0.52%

C.B. 118: 915.45 — 910.0±

30 L.F. - 18" R.C.P. PLUS APRON at 0.60 %

EXIST. 24" R.C.P.

13 L.F. - 24" R.C.P. at 1%

917.0±

915.27

10 L.F. - 18" R.C.P. at 1%

915.15

30 L.F. - 15" R.C.P. at 1%

910.22

930 925 920 915 910

96 97 98 99 100 101 102 103 104 105

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DATE REG NO

FOR INFORMATION ONLY
(UTILITIES & CONSTRUCTION)

S.P. NO. 62-665-24 SHEET NO. 43 OF 51 SHEETS

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23-132 White Bear Avenue System A thru H T.H. 36, 11-49 Ave. Co Rd C, Beam, Jylia, Woodlynn, Co Rd J & Edgewater, Tibe

1-51

24X

TOPOGRAPHY	PLOTTED BY	DATE	CHECKED BY	DATE
UTILITIES	PLOTTED BY	DATE	CHECKED BY	DATE
PROFILE	PLOTTED BY	DATE	CHECKED BY	DATE

S.B. PAVING ℄
P.I. 109+81.92 LT. 24'
Δ 0° 53' 45" LT.
D 0° 45'
T 59.72'
L 119.44'
R 7639.44'

SCALE IN FEET
0 10 20 30 40 50 100

S.B. PAVING ℄
P.I. 112+75 LT. 24'
Δ 1° 25' 55.5" RT.
D 0° 45'
T 95.48'
L 190.95'
R 7639.44'

GA.
2599 HO.
2607 HO.
2623 BLDG.
BLDG. 2625 2627
2635 STA.
BLDG. 2665
HO.
HO.
BLDG.
SCHOOL

COUNTY ROAD C

SURVEY ℄ STA. 109+81.92 = STA. 5+00 CO. RD. C.
P.I. Δ=0° 53' 45" LT.

MATCH LINE 105+00
MATCH LINE 4+15
MATCH LINE 5+80
MATCH LINE 114+00

WHITE BEAR AVE

NOTES:
DENOTES 4" CONCRETE WALK CONST.
① CONSTRUCT PEDESTRIAN CURB RAMP AS PER MN/DOT STD. PLT. 7036 - SEE DETAIL SHEET 14 FOR PLACEMENT.

INPLACE SIGNAL SYSTEM SEE TRAFFIC CONTROL SHEET 32

N.B. PAVING ℄
P.I. 112+05.76 RT. 15.5'
Δ 0° 53' 45" LT.
D 0° 45'
T 59.72'
L 119.44'
R 7639.44'

C.B. 119
C.B. 120
MH. 132
920.40
919.70
919.50
68 L.F. - 15" R.C.P. at 1%
SEE COUNTY RD. C PLAN FOR ADDITIONAL INFORMATION
922.93
P.I. 106+85 EL. 926.49
927.89
P.I. 110+75 EL. 928.39
928.13
P.I. 112+35 EL. 927.56
EXISTING PROFILE at SURVEY ℄ USE EXISTING GRADES TO STA. 108+45
C.B. 133
C.B. 134
+1.0%
-0.52%
-0.31%
PROFILE GRADE = TOP OF CONC. PAV. AT S.B. PAVING ℄
923.25
923.13
922.93
923.13
923.55
12 L.F. - 15" R.C.P. at 1%
42 L.F. - 15" R.C.P. at 1%
VC = 100'
M = 0.190'
ADJUST GRADES TO MATCH EXIST. CONC.
TRANSITION N.B. PAV. TO MATCH EXISTING CROWN
TRANSITION S.B. PAV. TO MATCH EXISTING CROWN

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 REG. NO.

FOR INFORMATION ONLY
(UTILITIES & CONSTRUCTION)

S.P. NO. 62-665-24 SHEET NO. 44 OF 51 SHEETS

23-132

23-132 White Bear Avenue System Arthur H to T.H. 36, 11th Ave. Co Rd C, Beam, Sylvia, Woodlynn, Co Rd D & Edgewater, Ave

1-51

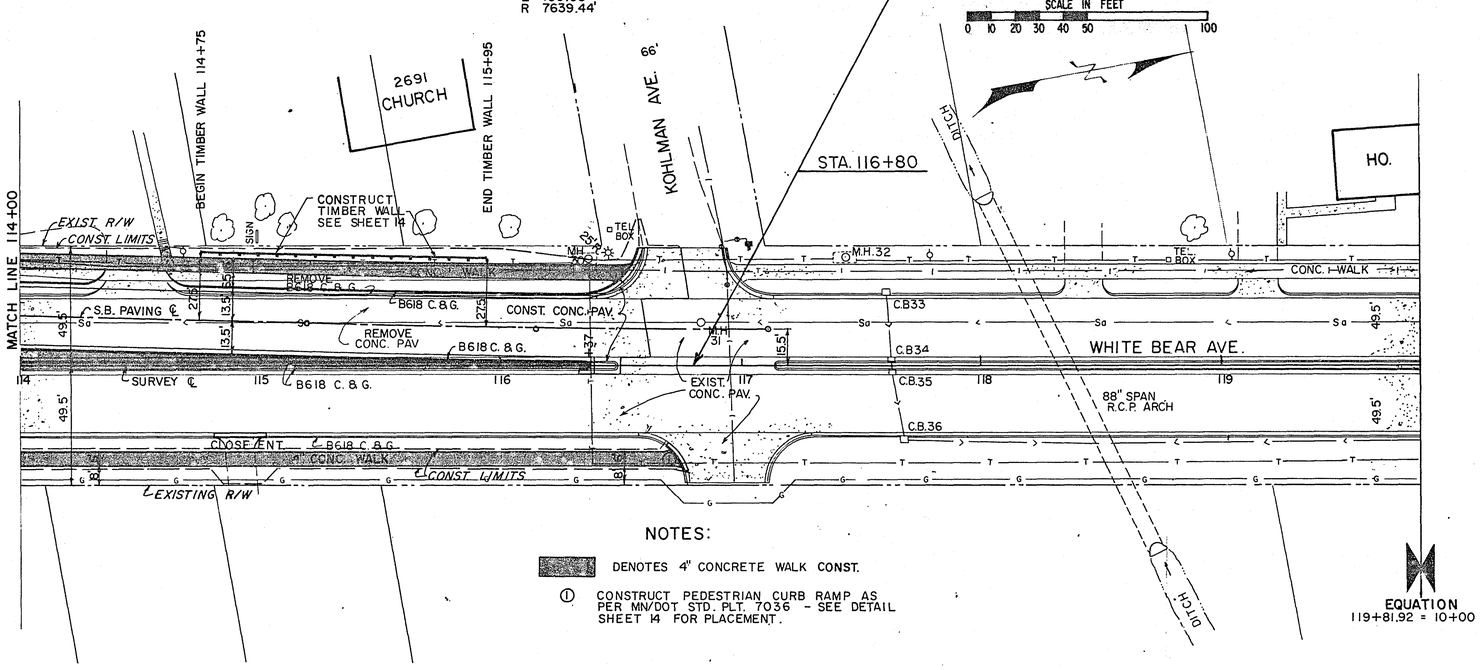
24X

TOPOGRAPHY	PLOTTED BY	DATE	CHECKED BY	DATE
UTILITIES	PLOTTED BY	DATE	CHECKED BY	DATE
PROFILE	PLOTTED BY	DATE	CHECKED BY	DATE

S.B. PAVING ℄
P.I. 116+15 LT. 15.5'
Δ 1° 25' 55.5" LT.
D 0° 45'
T 95.48'
L 190.95'
R 7639.44'

BEGIN EXCEPTION

SCALE IN FEET
0 10 20 30 40 50 100

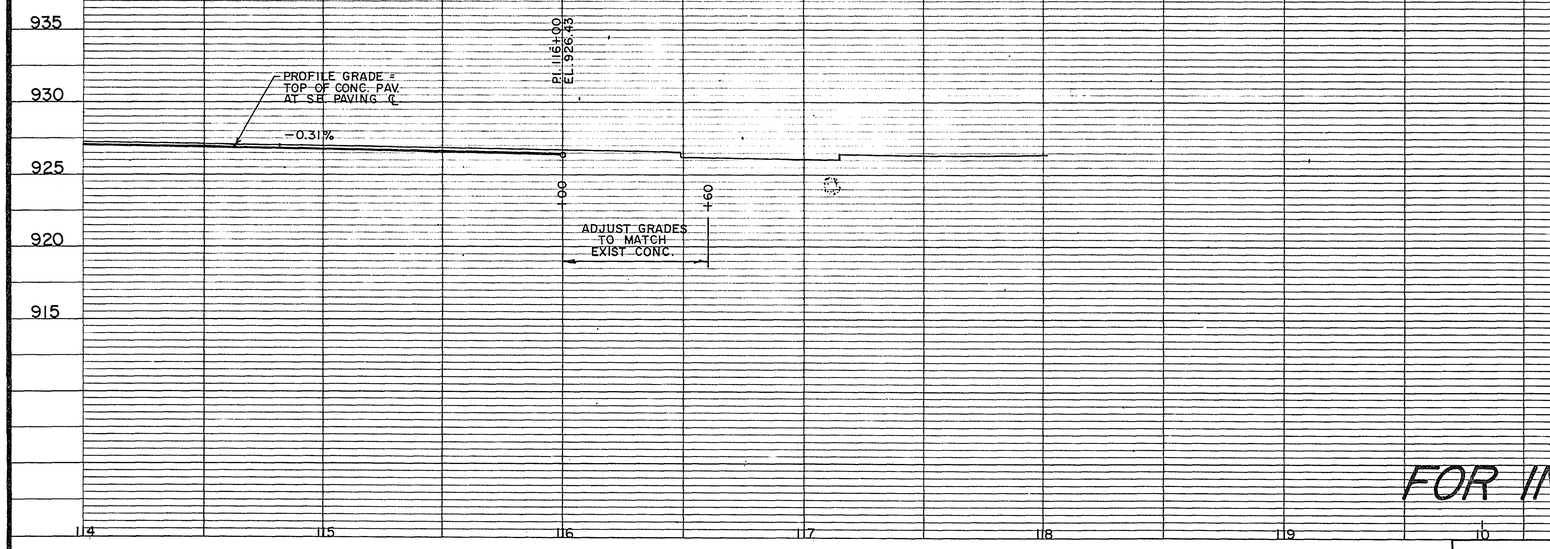


NOTES:

▬ DENOTES 4" CONCRETE WALK CONST.

① CONSTRUCT PEDESTRIAN CURB RAMP AS PER MN/DOT STD. PLT. 7036 - SEE DETAIL SHEET 14 FOR PLACEMENT.

EQUATION
119+81.92 = 10+00



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 REG NO.

FOR INFORMATION ONLY
(UTILITIES & CONSTRUCTION)

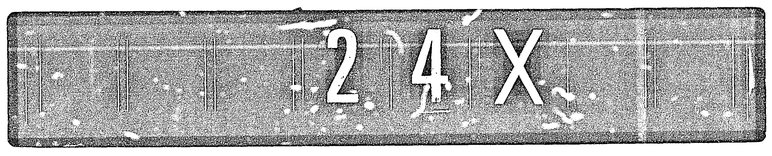
S.P. NO. 62-665-24 SHEET NO. 45 OF 51 SHEETS

23-132

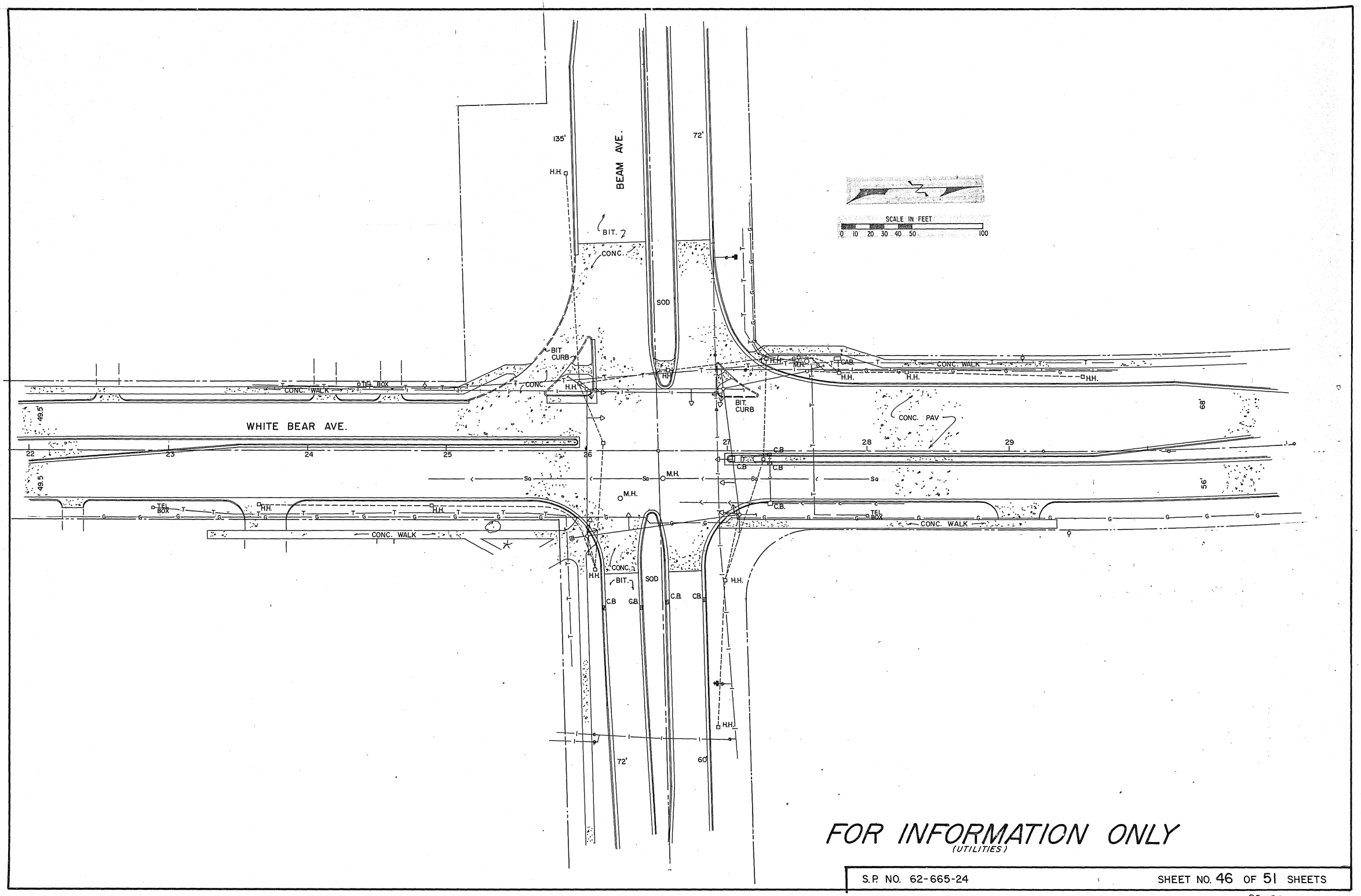
23-132

23-132 White Bear Avenue System #A Thru H
T.H. 36 @ 11th Ave, Co Rd C, Beam, Tydia,
Woodlynn, Co Rd B & Eckerwater, Rice

1-51



23-132



FOR INFORMATION ONLY
(UTILITIES)

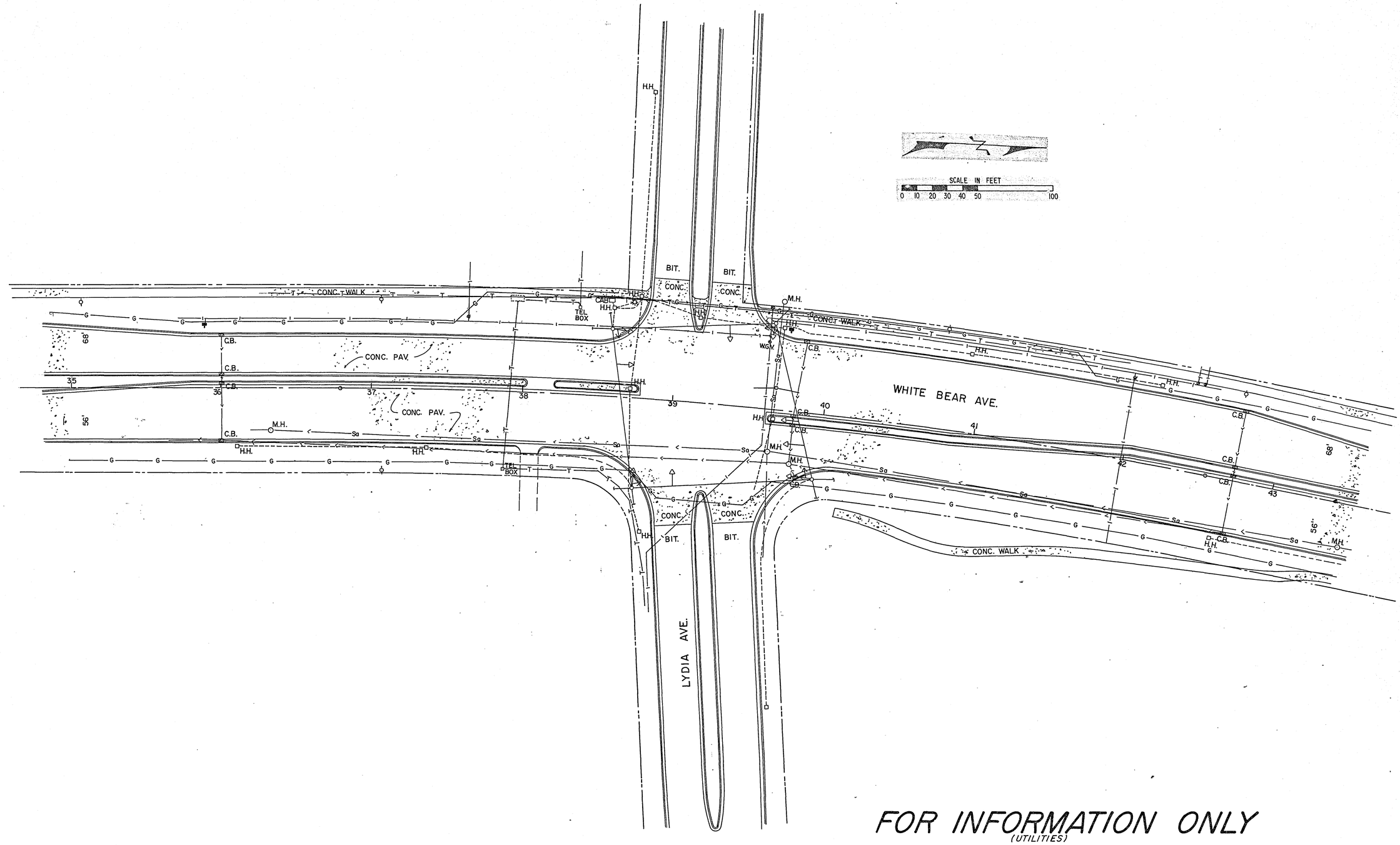
S.P. NO. 62-665-24 SHEET NO. 46 OF 51 SHEETS

23-132

23-132 White Bear Avenue System A.P. No. 4
T.H. 36 @
Woodbury, Co. Rd. 2 & Eikenwater, Rte
11.74 Acres, Co. Rd. 1, Beam, Lydia,
1-51

24X

23-132



FOR INFORMATION ONLY
(UTILITIES)

S. P. NO. 62-665-24 SHEET NO. 47 OF 51 SHEETS

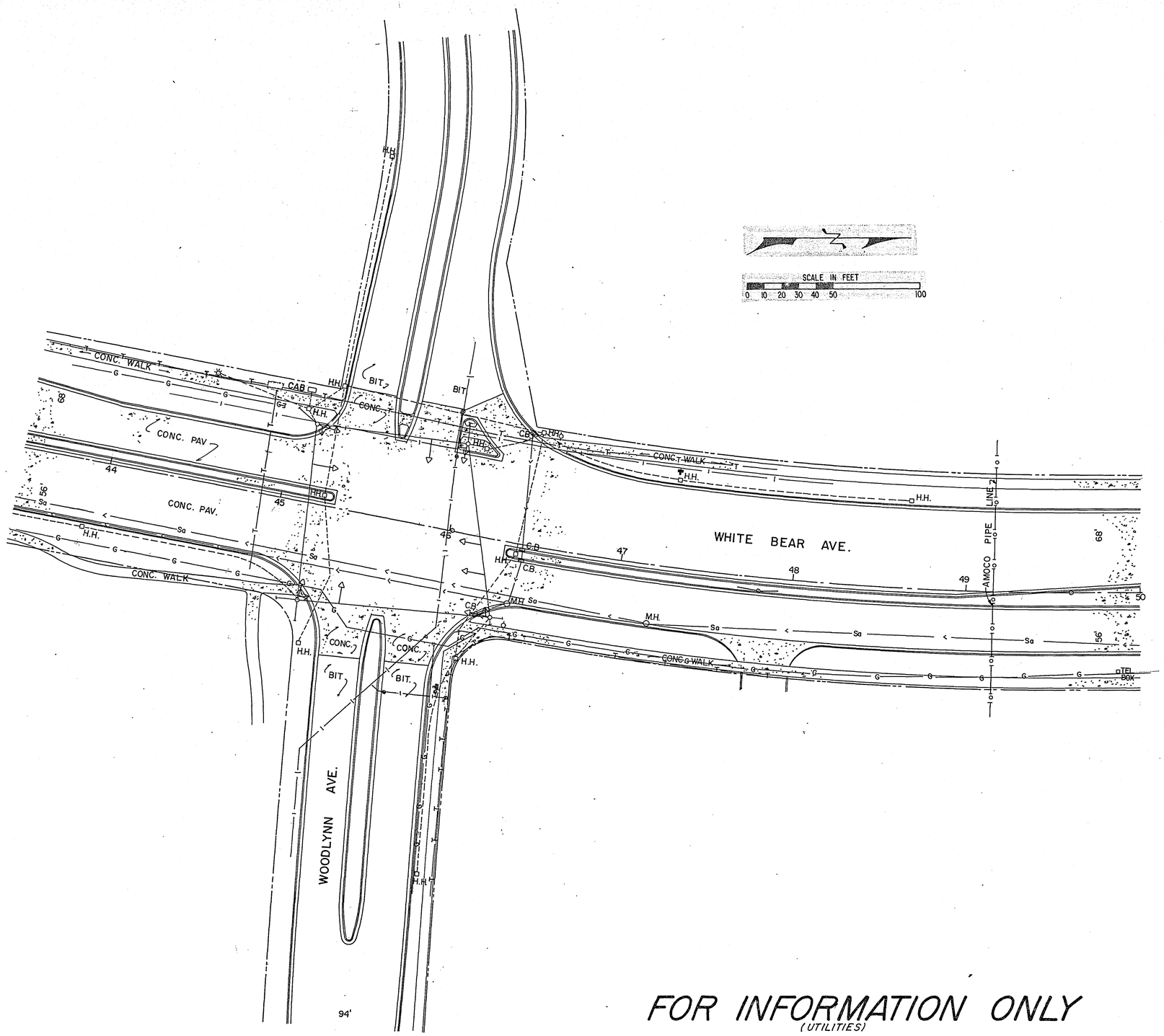
23-132

23-132 White Bear Avenue System A Area H
T.H. 36, 11th Ave, Co Rd C, Beam, Lydia,
Woodlynn, Co Rd J & Edgewater, Ave

1-51



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FOR INFORMATION ONLY
(UTILITIES)

S.P. NO. 62-665-24 SHEET NO. 48 OF 51 SHEETS

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23-132 White Bear Avenue System A thru H
T.H. 36, 11th Ave, Co Rd C, Beam, Lydia,
Woodlynn, Co Rd B & Edgewater, Rose

1-51

24X

	PLOTTED BY	DATE	CHECKED BY	DATE
TOPOGRAPHY				
UTILITIES				
PROFILE				

SCALE IN FEET
0 10 20 30 40 50 100

END EXCEPTION

STA. 50+00

CONC. WALK
B618 C & G
EXIST. CONC. PAV.
+80 END TAPER
56'
WHITE BEAR AVE.
B618 C & G
B618 C & G.
EXIST. CONC. PAV
REMOVE
CONC. WALK
REMOVE
SURVEY ℄
CONST. CONC. PAV.
+00 BEGIN TAPER
B618 C & G.
EXIST. CONC. PAV
B618 C & G
M.H.
CONC. WALK
SIGN
SIGN
R/W
CONST. LIMITS
MATCH LINE 0+70
SEE SHEET 30
P.C. 52+61.75
P.I. 53+30.47
Δ 2° 03' 41" RT.
D 1° 30'
T 68.72'
L 137.43'
R 3819.71'
P.T. 53+99.18
COUNTY ROAD D
43'
43'
TEL. BOX
P.C. 55+23.97
P.O.T. 54+80.34 = STA. 0+00 CO. RD. D
P.I. 56+32.71
Δ 3° 15' 41" LT.
D 1° 30'
T 108.74'
L 217.43'
R 3819.72'
P.T. 57+41.40
I 694 E.B. OFF RAMP
I 694 E.B. ON RAMP
BEGIN TIMBER WALL LT. 58+92
MATCH LINE 59+00
CONST. LIMITS
R/W
B624 C & G.
EXIST. CONC. PAV.
REMOVE
REMOVE, CONC. WALK
B624 C & G
INPLACE RIGID STEEL CONDUIT, CONTROL CABLES & HANDHOLES FOR SIGNAL SYSTEM. DO NOT DISTURB - ADJUSTMENTS BY OTHERS
EXIST. CONC. PAV.
B624 C & G
BIT. CURB
CONST. LIMITS
SIGN
GRADE AREA AS DIRECTED BY ENGR.
EXIST. CAB. & P.P. TO BE RELOCATED BY OTHERS
C.B.54
C.B.55
C.B.56
C.B.58
C.B.140
C.B.141
C.B.142
C.B.143
C.B.144
C.B.145
C.B.52
C.B.51
C.B.62
C.B.63
C.B.67
C.B.68
M.H.53
M.H.57
M.H.143
M.H.CO.
AP 63
AP 64
AP 66
AP 69

NOTES:

DENOTES 4" CONCRETE WALK CONST.

① CONSTRUCT PEDESTRIAN CURB RAMP AS PER MN/DOT STD. PLT 7036 — SEE DETAIL SHEET 14 FOR PLACEMENT

C.B.142 C.B.52 M.H.143 C.B.144 C.B.145
943.34
8 L.F. - 15" R.C.P. at 1%
943.26
943.43
17 L.F. - 15" R.C.P. at 1%
943.73
30 L.F. - 15" R.C.P. at 1%
944.26
53 L.F. - 15" R.C.P. at 1%

EXISTING PROFILE at RT. GUTTER
USE EXISTING GRADES

C.B.140 C.B.141 C.B.56
943.24
7 L.F. = 15" R.C.P. at 1%
942.97
943.17
942.7 ±
27 L.F. - 15" R.C.P. at 1%

AP 63 C.B. 68
936.0 ±
8 L.F. - 18" R.C.P. PLUS INSTALL APRON
EXIST. 18" R.C.P. & APRON (SALVAGE APRON)

C.B. 67 AP 66
936.5 ±
EXIST 18" R.C.P. & APRON (SALVAGE APRON)
8 L.F. - 18" R.C.P. PLUS INSTALL APRON

C.B. 62
AP 64
937.2 ±
6 L.F. - 24" R.C.P. PLUS INSTALL APRON
EXIST. 24" R.C.P. & APRON (SALVAGE APRON)

955 950 945 940 935

50 51 52 53 54 55 56 57 58 59

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 REG NO

FOR INFORMATION ONLY
(UTILITIES & CONSTRUCTION)

S.P. NO. 62-665-24

SHEET NO. 49 OF 51 SHEETS

23-132

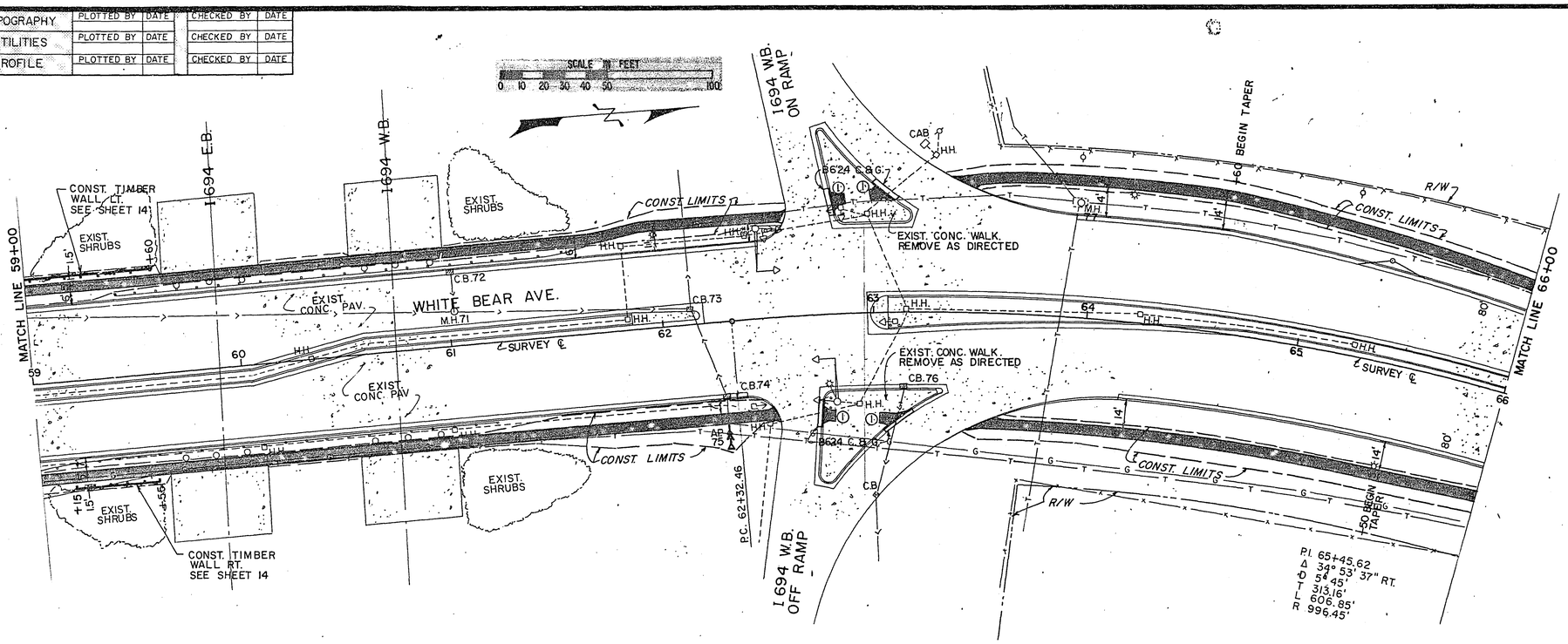
23-132

23-132 White Bear Avenue System Area Hwy H
T.H. 36, 11th Ave, Co Rd C, Beam, Tylia,
Woodlawn, Co Rd F & Edgewater, Tibe

1-51

24X

TOPOGRAPHY	PLOTTED BY	DATE	CHECKED BY	DATE
UTILITIES	PLOTTED BY	DATE	CHECKED BY	DATE
PROFILE	PLOTTED BY	DATE	CHECKED BY	DATE



NOTES:

DENOTES 4" CONCRETE WALK CONST.

① CONSTRUCT PEDESTRIAN CURB RAMP AS PER MN/DOT STD. PLT. 7036 - SEE DETAIL SHEET 14 FOR PLACEMENT.

945 940 935 930

39 60 61 62 63 64 65 66

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 REG NO

FOR INFORMATION ONLY
(UTILITIES & CONSTRUCTION)

S.P. NO. 62-665-24

SHEET NO. 50 OF 51 SHEETS

23-132

23-132

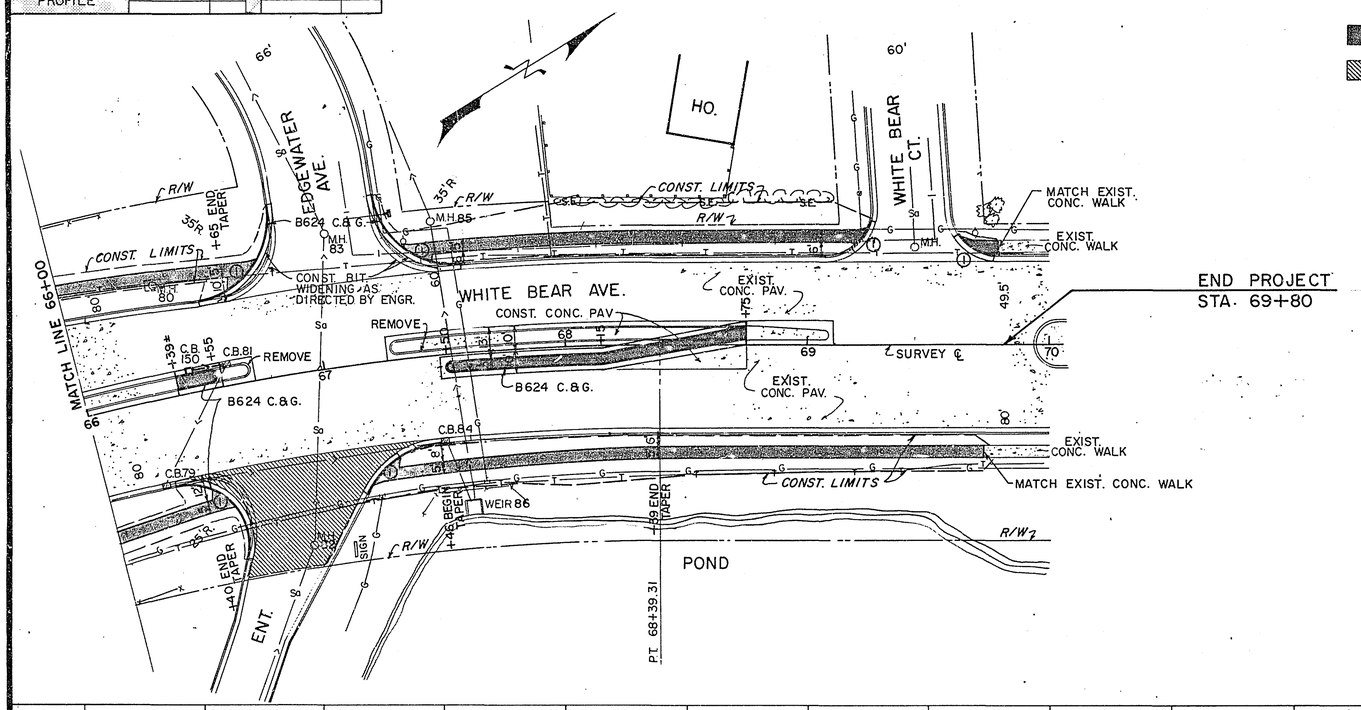
23-132 White Bear Avenue System #A Route #1
T.H. 36 to 11th Ave. Co. Rd. C, Beam, Lydia, Woodlynn, Co. Rd. B & Eckenwater Ave.

1-51

24X

TOPOGRAPHY	PLOTTED BY	DATE	CHECKED BY	DATE
UTILITIES	PLOTTED BY	DATE	CHECKED BY	DATE
PROFILE	PLOTTED BY	DATE	CHECKED BY	DATE

SCALE IN FEET
0 10 20 30 40 50 100

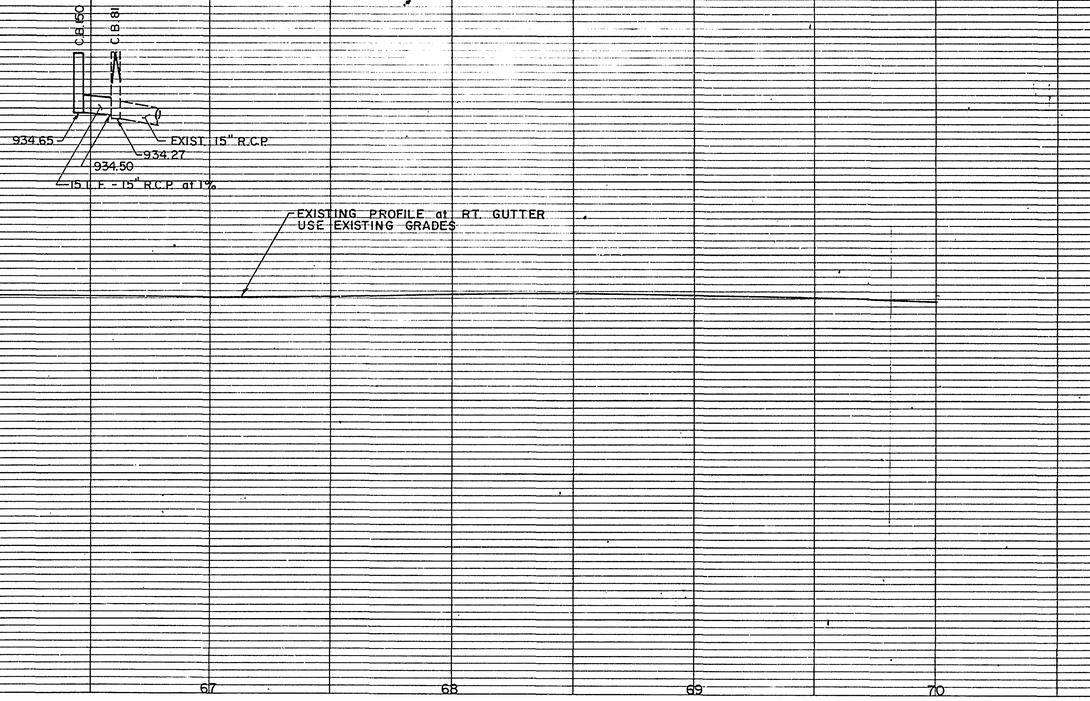


NOTES:

DENOTES 4" CONCRETE WALK CONST.

DENOTES RECONSTRUCTION OF EXISTING BIT. SURFACE. USE BITUMINOUS ENT. SECTION & PROVIDE 1" SUBCUT.

① CONSTRUCT PEDESTRIAN CURB RAMP AS PER MN/DOT STD. PLT. 7036 — SEE DETAIL SHEET 14 FOR PLACEMENT.



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 _____ REG NO. _____

FOR INFORMATION ONLY
(UTILITIES & CONSTRUCTION)

S.P. NO. 62-665-24 SHEET NO. 51 OF 51 SHEETS

23-132

23-132

23-132 White Bear Avenue System A thru H
T.H. 36, 11th Ave, Co Rd C, Beam, Lydia,
Woodlynn, Co Rd F & Edgewater, Tobe

1-51

