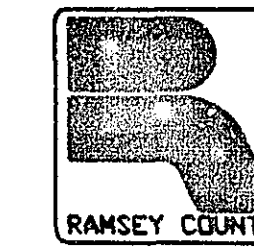


MINNESOTA DEPARTMENT OF TRANSPORTATION



RAMSEY COUNTY

DEPARTMENT OF PUBLIC WORKS
CONSTRUCTION PLAN FOR TRAFFIC CONTROL SIGNAL SYSTEMS,
INTERCONNECT AND RIGHT TURN LANE CONSTRUCTION

S.A.P. No. 62-652-15
S.A.P. No. 167-235-04
S.A.P. No. 167-020-11
S.P. No. 6285-118

VICTORIA ST. & I-694 S. RAMPSYSTEM A
VICTORIA ST. & GRAMSIE RD.SYSTEM B

LOCATED ON T.H. 694 NORTH EXIT RAMP B
FROM 100 m EAST OF VICTORIA ST. (CSAH52)
TO VICTORIA ST.
AND ON VICTORIA ST. FROM THE SOUTH
ENTRANCE RAMP OF T.H. 694 TO GRAMSIE RD.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE
2	ESTIMATED QUANTITIES
3	TYPICAL SECTIONS
4-5	DETAILS AND CHARTS
6	PLAN AND PROFILE
7	CROSS SECTIONS
8-9	TRAFFIC CONTROL PLAN
10-11	SIGNAL DETAILS
12-14	SYSTEM A
15-17	SYSTEM B
18	INTERCONNECT
19	MAST ARM SIGNS
20	STREET LIGHTING
21	SIGNS & PAVEMENT MARKINGS
22-23	UTILITIES

THIS PLAN CONTAINS 23 SHEETS.

DESIGN ENGINEER:
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT
SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE
LAWS OF THE STATE OF MINNESOTA.
Daniel E. Soler REG. NO. 20452 DATE 6/19/97

SIGNAL DESIGN ENGINEER:
I HEREBY CERTIFY THAT THESE SIGNAL PLANS WERE PREPARED BY ME OR UNDER MY
DIRECT SUPERVISION, THAT THIS PLAN CONFORMS TO THE MMUTCD (EXCEPT WHERE A
VARIANCE HAS BEEN GRANTED), AND THAT I AM A DULY REGISTERED PROFESSIONAL
ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Daniel E. Soler REG. NO. 20452 DATE 6/19/97

APPROVED Paul K. K... DATE 6/19/97
RAMSEY COUNTY ENGINEER

APPROVED _____ DATE _____

APPROVED 2/peap DATE 6/19/97
CITY OF SHOREVIEW ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR APPROVAL Kenneth J. ... DATE 6/25/97
FOR METRO DIVISION

RECOMMENDED FOR APPROVAL K. J. ... DATE 7-1-97
STATE TRAFFIC ENGINEER

RECOMMENDED FOR APPROVAL Sam ... DATE 7-7-97
STATE PRE-LETTING ENGINEER

OFFICE OF LAND S. E. ... DATE 7-15-97
MANAGEMENT APPROVAL Asst. Dir. DIRECTOR, LAND MANAGEMENT

APPROVED D. S. ... DATE 7/17/97
FOR STATE DESIGN ENGINEER

for State Design Engineer DATE 6/27/97

for Metro-Ass't Division Engr. STATE AID: REVIEW FOR
COMPLIANCE WITH STATE AID RULES/POLICY. DATE 6/27/97

for State Aid Funding STATE AID ENGINEER DATE 6/27/97

28-177
THIS IS A METRIC PLAN
FOR INFORMATION PURPOSES SOME INPLACE ITEMS MAY
BE DIMENSIONED IN ENGLISH UNITS.



S.A.P. No. 167-235-04
S.A.P. No. 167-020-11
S.P. No. 6285-118 (TH694=393)
S.A.P. No. 62-652-15

CON 47585

Sheet No. 1 of 23 Sheets

PLAN SYMBOLS

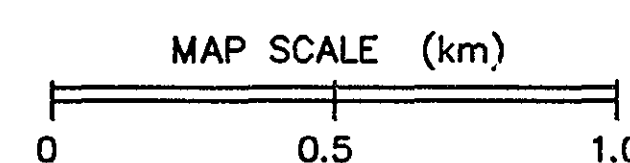
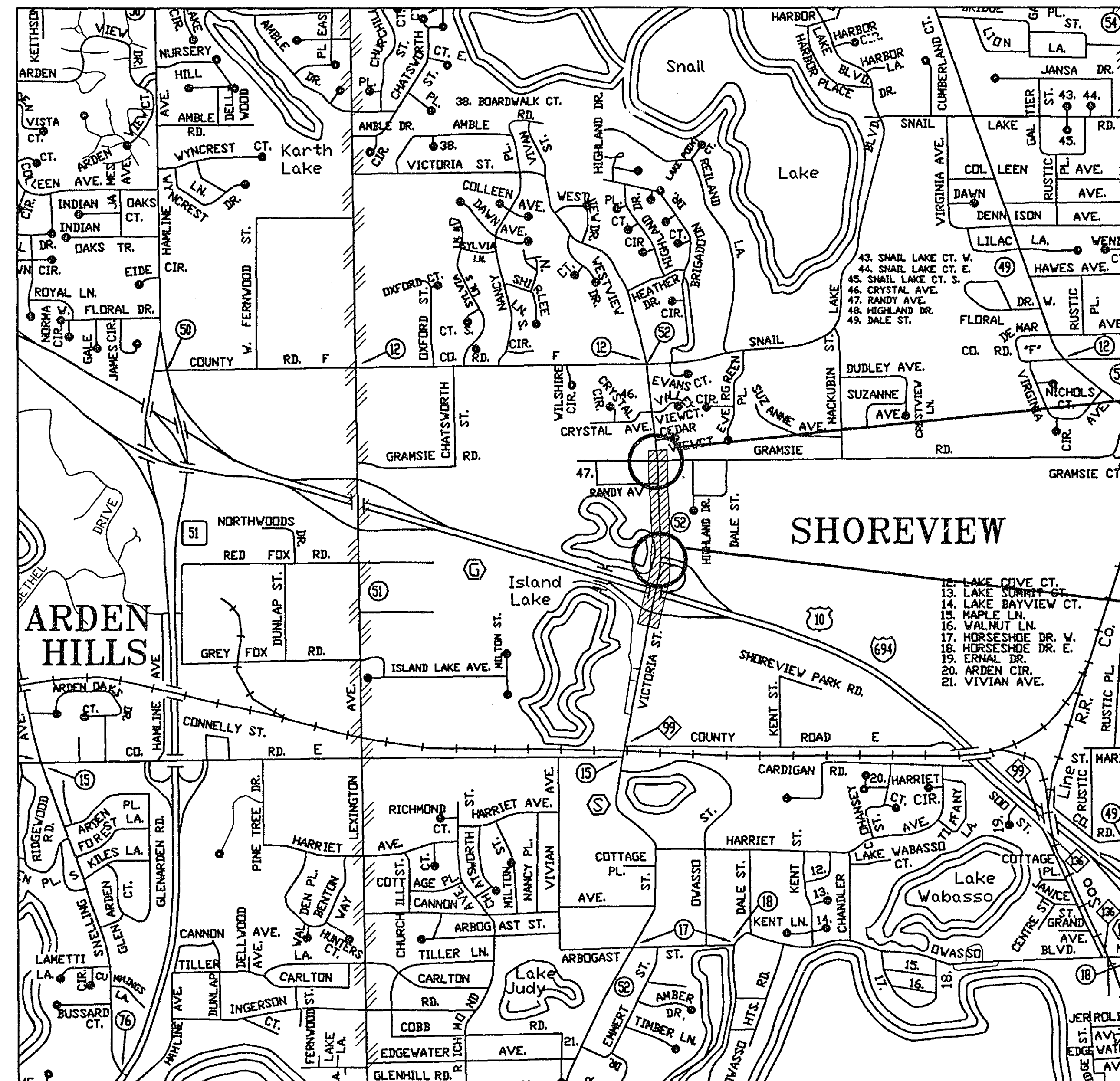
STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
EXISTING RIGHT OF WAY LINE
PROPOSED RIGHT OF WAY LINE
PROPERTY LINE
CORPORATE OR CITY LIMITS
RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY
RIVER OF CREEK
CULVERT
GUARDRAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
STONE WALL
HEDGE
RAILROAD CROSSING SIGN
CROSSING GATE
MEANDER CORNER
SLOPE EASEMENT (CONST. LIMITS)

MARSH
DECIDUOUS TREE
CONIFEROUS TREE
WOODS
CATCH BASIN
BRIDGE
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE OR METAL)
WOODEN HUB

UTILITY SYMBOLS

UTILITY POLE
GUY OR ANCHOR
STREET LIGHT
TELEPHONE PEDESTAL
GAS MAIN
WATER MAIN
TELEPHONE VAULT
ELECTRIC VAULT
BURIED TELEPHONE CABLE
BURIED ELECTRIC CABLE
SEWER (SANITARY OR STORM)
SEWER MANHOLE
GATE VALVE
CONTROLLER CABINET
EXISTING HYDRANT
BURIED TELEPHONE CABLE

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



DESIGN DESIGNATION VICTORIA ST. (CSAH 52)

	STA 7+530 to STA 7+830	STA 7+830 to STA 8+280
PRESENT ADT (1997)	10,600	10,600
PROJECTED ADT (2017)	15,900	15,900
FUNCTIONAL CLASSIFICATION	MINOR ARTERIAL	MINOR ARTERIAL
TRAFFIC LANES	4	3
PARKING LANES	0	0
DESIGN SPEED	60 km/h (40 mph)	60 km/h (40 mph)

BASED ON STOPPING DISTANCE
HEIGHT OF EYE: 1070 mm HEIGHT OF OBJECT: 150 mm

DESIGN DESIGNATION I-694 RAMP EXIT RAMP

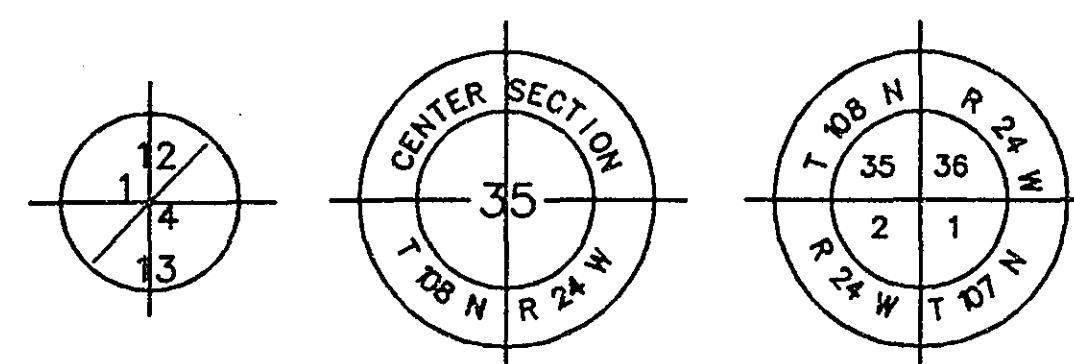
PRESENT ADT (1997)=	3200
PROJECTED ADT (2017)=	4480
DHV=	1400
D (DIRECTIONAL DISTR.)=	100%
T (HEAVY COMMERCIAL)=	5%
ESAL FACTOR=	R-VALUE=15
SOIL FACTOR=	100%
DESIGN SPEED	60 km/h (40 mph)

BASED ON STOPPING DISTANCE
HEIGHT OF EYE: 1070 mm HEIGHT OF OBJECT: 150 mm

-GOVERNING SPECIFICATIONS-

THE 1995 EDITION OF THE MINNESOTA DEPARTMENT
OF TRANSPORTATION "STANDARD SPECIFICATION FOR
CONSTRUCTION" SHALL APPLY.

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



G:\TRAFFIC\SIGPLAN\VICTORIA\385D\TLS 6/4/97

CONSTRUCTION NOTES

WATER, GAS, ELECTRIC, TELEPHONE, SEWER, AND T.V. CABLE LINES SHOWN ON THE DRAWINGS AND CROSS-SECTIONS ARE PLOTTED FROM THE BEST INFORMATION AVAILABLE AT THE TIME OF PLAN PREPARATION, BUT MAY NOT REFLECT ACTUAL LOCATIONS OR ELEVATIONS. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE BEGINNING CONSTRUCTION WHICH MAY BE AFFECTED BY A UTILITY CONFLICT. THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO THE OWNERS OF ALL KNOWN UTILITIES BEFORE STARTING ANY OPERATIONS AFFECTING THOSE PROPERTIES, OR BEGINNING EXCAVATION IN THE VICINITY OF THOSE PROPERTIES. THE CONTRACTORS ATTENTION IS DIRECTED TO SECTION 1307 IN THE STANDARD SPECIFICATIONS.

UTILITY COMPANIES WILL RELOCATE THEIR FACILITIES CONCURRENTLY WITH THE CONSTRUCTION OPERATIONS UNDER THIS CONTRACT. CONTRACTOR SHALL SCHEDULE CONSTRUCTION IN COOPERATION WITH UTILITY RELOCATION.

PROVIDE FOR REMOVAL AND DISPOSAL (OUTSIDE THE CONSTRUCTION ZONE) OF ALL INPLACE STRUCTURES THAT WILL INTERFERE WITH CONSTRUCTION. DISPOSAL OF ITEMS REMOVED UNDER THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.303.

EXCESS EXCAVATED AND UNSUITABLE MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.303 AND 2105.3D

SODDING QUANTITIES ALONG ROADWAY SLOPES ARE BASED ON SODDING LIMITS FROM THE BACK OF THE CURB TO THE CONSTRUCTION LIMITS.

COMPACTION IN GRADING ITEMS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SPEC. 2105.3F2 " QUALITY COMPACTION METHOD".

WHEN EXCAVATING ADJACENT TO INPLACE PAVEMENT, NO MATERIAL SHALL BE REMOVED FROM INSIDE AN APPROXIMATE 2:1 SLOPED LINE DRAWN DOWNWARD AND OUTWARD FROM THE BOTTOM OF THE INPLACE PAVEMENT.

WHEN CONNECTION TO EXISTING BITUMINOUS PAVEMENT IS REQUIRED, THE EDGE OF EXISTING PAVEMENT SHALL BE CUT TO A NEAT LINE PRIOR TO CONSTRUCTING ASPHALT SURFACING.

STABILIZING AGGREGATE SHALL BE APPLIED IF NECESSARY TO ACHIEVE SATISFACTORY SURFACE STABILITY AS DETERMINED BY THE ENGINEER. THE MATERIAL SHALL SATISFY THE REQUIREMENTS OF SECTION 3149.2C AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 2105.3G OF THE STANDARD SPECIFICATIONS.

USE TACK COAT BETWEEN ALL BITUMINOUS LIFTS. COMPACTION OF ALL BITUMINOUS ITEMS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE "ORDINARY COMPACTION METHOD".

ALL USES OF THE WORD "INCIDENTAL" IN THESE CONSTRUCTION DOCUMENTS SHALL BE CONSTRUED TO MEAN INCIDENTAL WORK FOR WHICH NO DIRECT COMPENSATION SHALL BE MADE.

PEDESTRIAN CURB RAMPS SHALL BE INSTALLED IN ALL STREET RADII. THE EXACT LOCATION SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. RAMPS SHALL BE PER STANDARD PLATE M7036 D.

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

QUANTITY NOTES

1. SAWCUT SHALL BE FULL DEPTH
2. FOR DUST CONTROL
3. SALVAGE TOP OF STRUCTURE ONLY. REFER TO STD. PL M4021E FOR ADDITIONAL INFORMATION. USE SALVAGED TOP FOR NEW STRUCTURE AND DISPOSE OF THE REMAINING STRUCTURE AS DIRECTED.
4. USE SALVAGE TOP SEE NOTE 3 ABOVE.
5. OVERALL AREA MEASURED TO BITUMINOUS SURFACE.
6. SIGNAL TIMING PLANS FOR COORDINATION, SEE SPECIAL PROVISIONS.
7. MASTER MONITOR & SOFTWARE FOR COORDINATION, SEE SPECIAL PROVISIONS.

STATEMENT OF ESTIMATED QUANTITIES									
CHART	NOTE	ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATION			
						MN/DOT 6285-118	CSAH 62-652-15	CITY-SHOREVIEW 167-235-04	167-020-11
		2021.501	MOBILIZATION	LUMP SUM	1	0.18	0.60	0.20	0.02
B		2104.501	REMOVE CURB & GUTTER	m	175	37	138	0	0
B		2104.501	REMOVE BITUMINOUS CURB	m	62	57	5	0	0
B		2104.503	REMOVE CONCRETE SIDEWALK	m2	8	0	8	0	0
B		2104.503	REMOVE BITUMINOUS SIDEWALK	m2	40	0	40	0	0
B		2104.503	REMOVE BITUMINOUS PAVEMENT	m2	18	18	0	0	0
B	1.	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	m	86	58	28	0	0
	3.	2104.523	SALVAGE CATCH BASIN	EACH	1	0	1	0	0
D		2105.501	COMMON EXCAVATION (P)	m3	673 (P)	283	390	0	0
D		2105.522	SELECT GRANULAR BORROW (LV)	m3	456	204	252	0	0
		2105.526	SELECT TOPSOIL BORROW (LV)	m3	50	27	23	0	0
	2.	2130.501	WATER	m3	20	9	11	0	0
C		2211.503	AGGREGATE BASE, CLASS 6 (CV) (P)	m3	105 (P)	37	68	0	0
C		2340.508	TYPE 47 WEARING COURSE MIXTURE	t	44	24	20	0	0
C		2340.508	TYPE 41 WEARING COURSE MIXTURE	t	17	0	17	0	0
C		2340.510	TYPE 31 BINDER COUSRE MIXTURE	t	75	36	39	0	0
C		2340.514	TYPE 31 BASE COURSE MIXTURE	t	87	47	40	0	0
		2357.502	BITUMINOUS MATERIAL FOR TACK COAT	L	229	114	115	0	0
		2502.541	100 mm PERFORATED P.E. PIPE DRAIN	m	100	0	100	0	0
		2503.541	375 mm RC PIPE SEWER, DES 3006 CL. II	m	2	0	2	0	0
	4.	2506.502	CONSTRUCT DRAINAGE STRUCTURE, DESIGN LP	EACH	1	0	1	0	0
A		2521.501	100 mm CONCRETE WALK	m2	51	0	51	0	0
A		2531.501	CONCRETE CURB & GUTTER DES. B624	m	113	0	113	0	0
A	5.	0531.602	CONCRETE ENTRANCE NOSE DES 7113	m2	19	0	19	0	0
A		2535.501	BITUMINOUS CURB	m	94	94	0	0	0
		0563.601	TRAFFIC CONTROL	LUMP SUM	1	0.18	0.60	0.20	0.02
		2573.502	SILT FENCE, TYPE HEAVY DUTY	m	216	117	99	0	0
		2575.505	SODDING, TYPE LAWN	m2	1072	650	422	0	0
		2575.532	COMMERCIAL FERT., ANALYSIS 10-20-20	kg	43	26	17	0	0
		2564.531	SIGN PANELS TYPE D	m2	14.9	10.9	4.0	0	0
		2565.511	FULL T. ACT. T. CONTROL SIGNAL SYSTEM A	SIG. SYS.	1	.33	.67	0	0
		2565.511	FULL T. ACT. T. CONTROL SIGNAL SYSTEM B	SIG. SYS.	1	0	.50	.50	0
		0565.601	EMERGENCY VEHICLE PRE-EMPTION SYSTEM A	L. SUM	1	.33	0	0	.67
		0565.601	EMERGENCY VEHICLE PRE-EMPTION SYSTEM B	L. SUM	1	0	0	.50	.50
	6.	0565.601	TRAFFIC CONTROL INTERCONNECTION A	L. SUM	1	0	1	0	0
	7.	0565.601	TRAFFIC CONTROL INTERCONNECTION B	L. SUM	1	0	1	0	0
		0565.602	PVC HANDHOLE (INTERCONNECT)	EACH	5	0	5	0	0
		0565.603	53 mm NON-METALLIC CONDUIT (INTERCONNECT)	m	318	0	318	0	0
		0565.603	6 PAIR #19 (INTERCONNECT)	m	758	0	758	0	0

BASIS FOR ESTIMATED QUANTITIES

- 2211.501 - AGGREGATE BASE - 2242.54 kg PER m3
2340.XXX - BITUMINOUS MIXTURES - 59.67 kg PER 25 mm THICKNESS PER m2
2357.502 - BITUMINOUS MATERIAL FOR TACK COAT ESTIMATED AT 0.23 LITRE PER m2 PER APPLICATION
2575.531 - FERTILIZER 392 kg / ha

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Daniel E. Sater
Date 6/19/97 Reg. No. 20452

S.P. No. 6285-118
S.A.P. No. 167-235-04
S.A.P. No. 167-020-11

S.A.P. No. 62-652-15

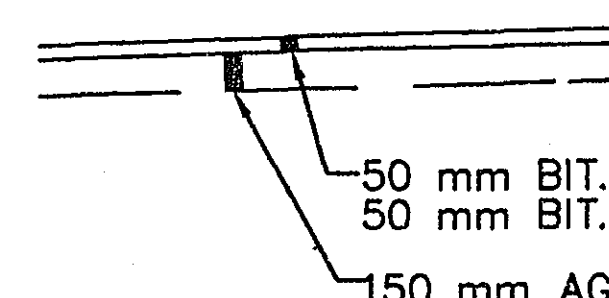
ESTIMATED QUANTITIES

28-177

Sheet No. 2 of 23 Sheets



BITUMINOUS ENTRANCE DETAIL TYPICAL SECTION



50 mm BIT. WEARING COURSE MIXTURE (41WEA50055)
50 mm BIT. BINDER COURSE MIXTURE (31BIB50000)
150 mm AGGREGATE BASE, CLASS 6

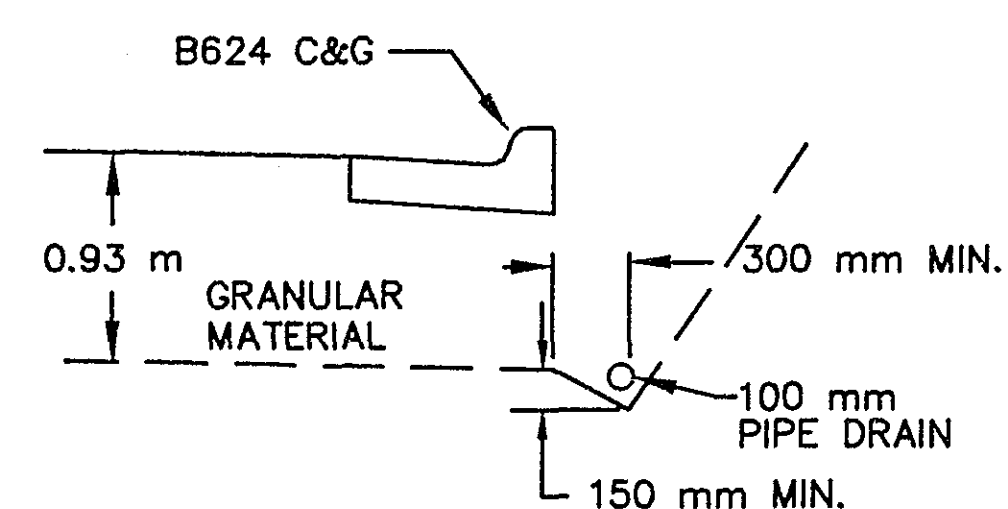
100 mm LONGITUDINAL P.E. PIPE DETAIL (SUBCUT DRAINAGE)

NOTES:

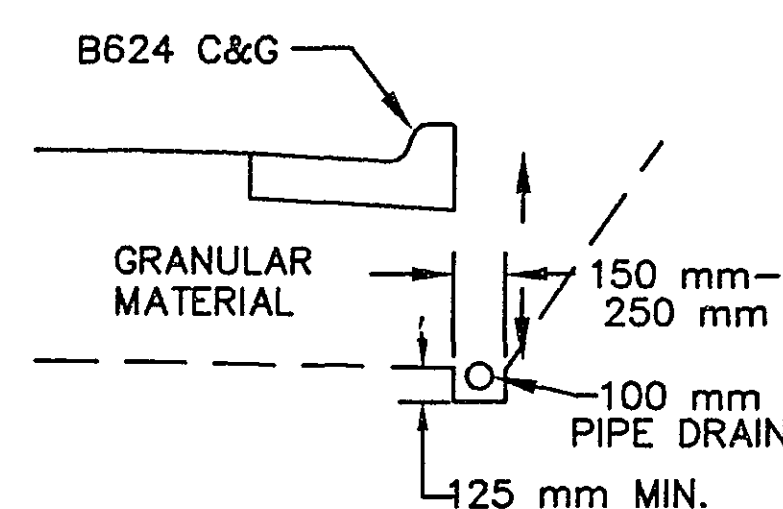
PAYMENT SHALL INCLUDE ALL WORK AND MATERIALS REQUIRED TO CONNECT TO CATCH BASINS.

50 mm MIN. GRANULAR AT ALL POINTS BELOW PIPE

100 mm PERFORATED P.E. PIPE DRAIN WITH 3733 TYPE 1 GEOTEXTILE WRAP SHALL BE INSTALLED PER SPEC. REFERENCE NO 2502.



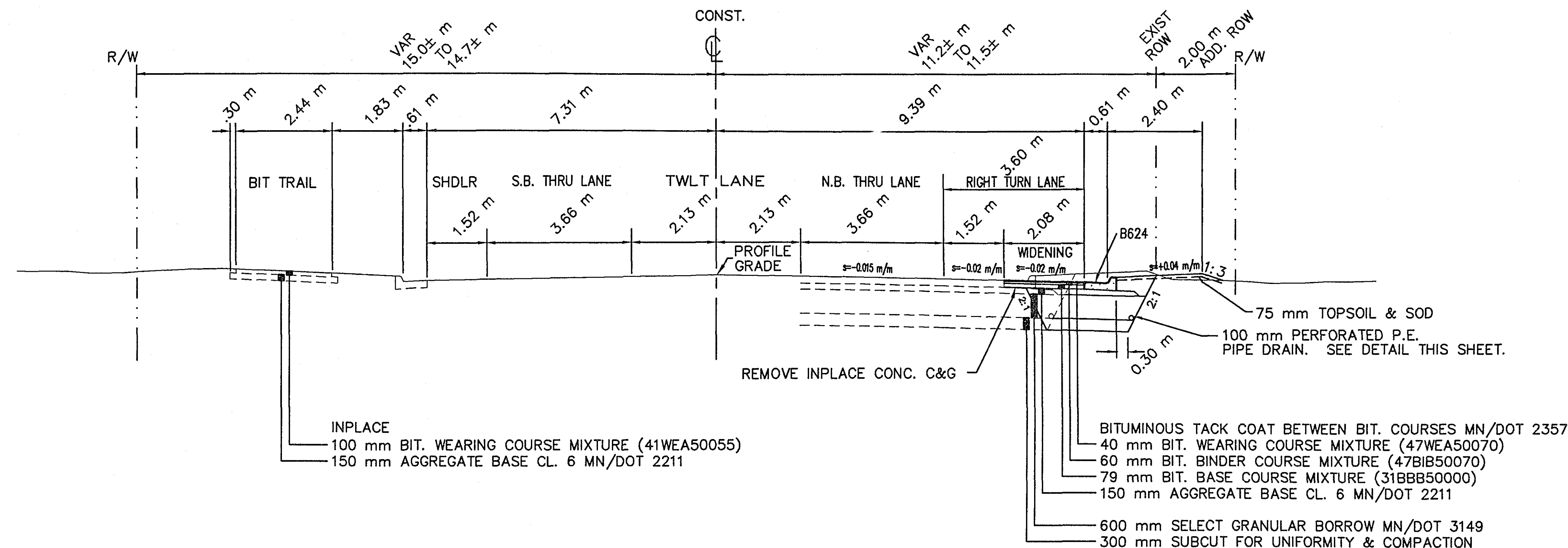
OPTION NO. 1



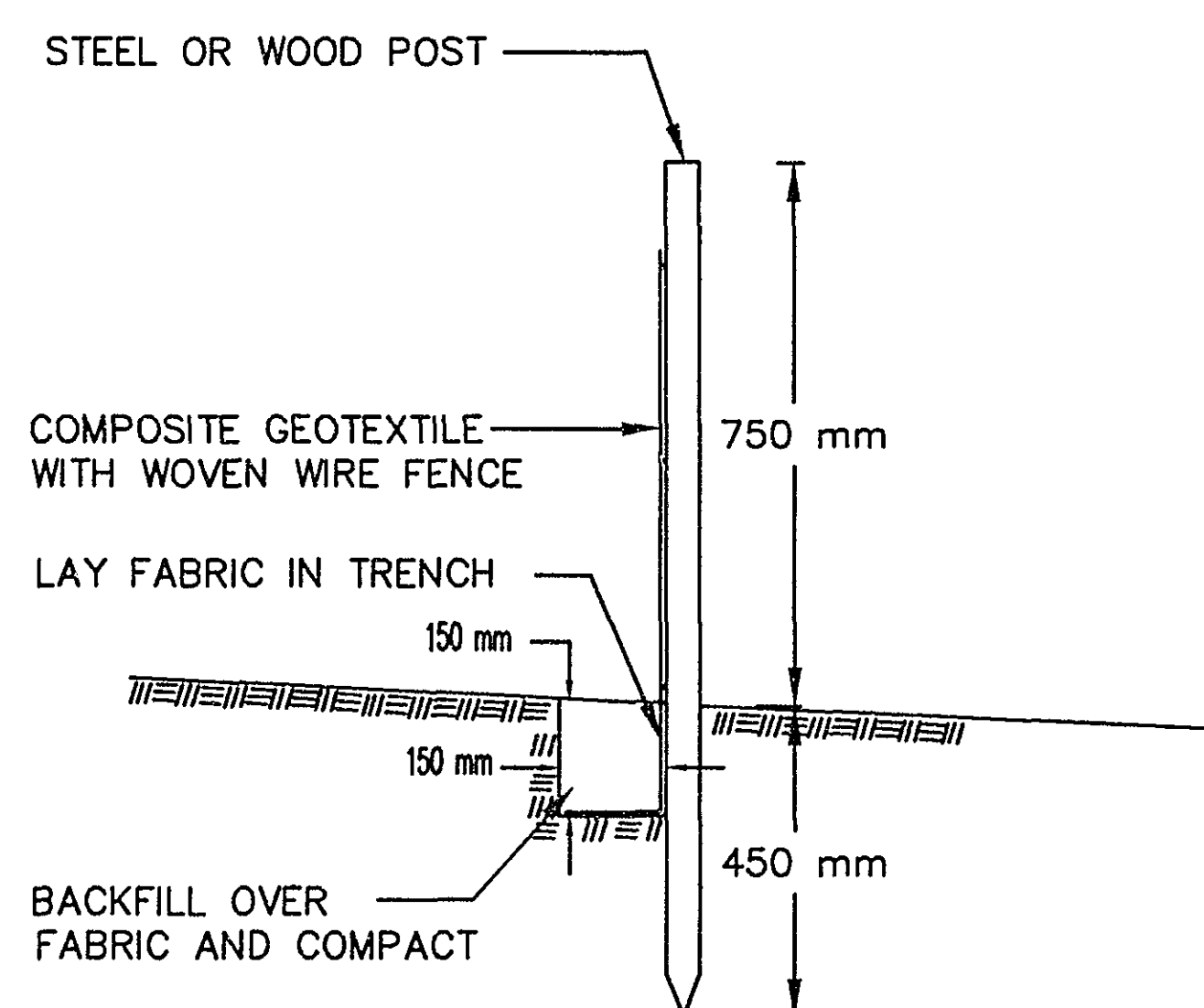
OPTION NO. 2

100 mm PE PERFORATED PIPE			
DRAIN FROM STRUC./STA.	DRAIN FROM STRUC./STA.	METER	
		LT	RT
VICTORIA			
8+080	8+180	0	100
SUBTOTALS		0	100
TOTAL			100

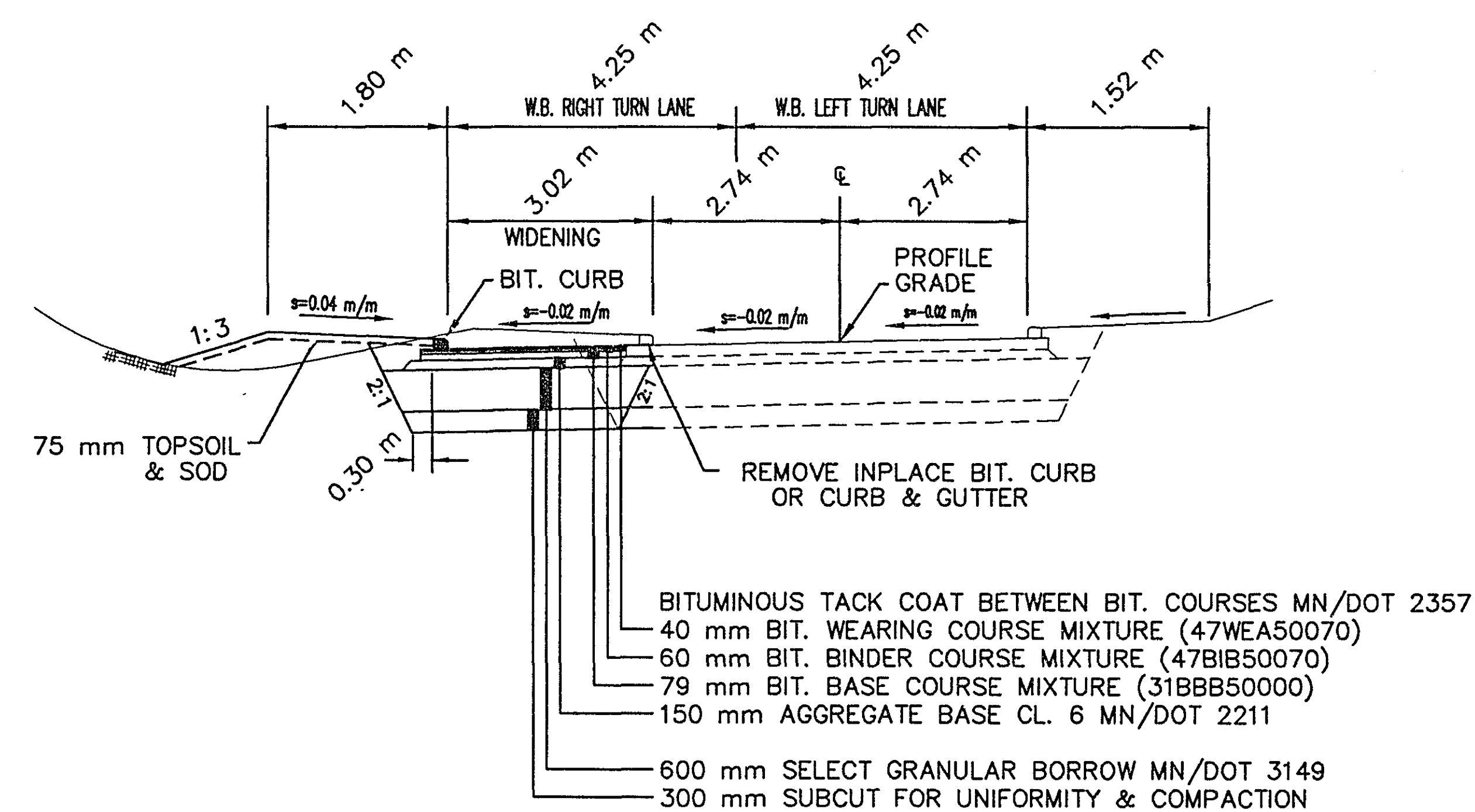
* DRAINS TO STRUCTURE AT STA. 8+107.2 RT. 10.5 m



VICTORIA ST.
STA. 8+090 TO STA. 8+180



HEAVY DUTY SILT
FENCE INSTALLATION



RAMP B
I-694 W.B. OFF RAMP AT VICTORIA ST.

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Daniel E. Selzer
Date 6/14/97 Reg. No. 20452

S.P. No. 6285-118

S.A.P. No. 62-652-15

DETAILS
TYPICAL SECTIONS

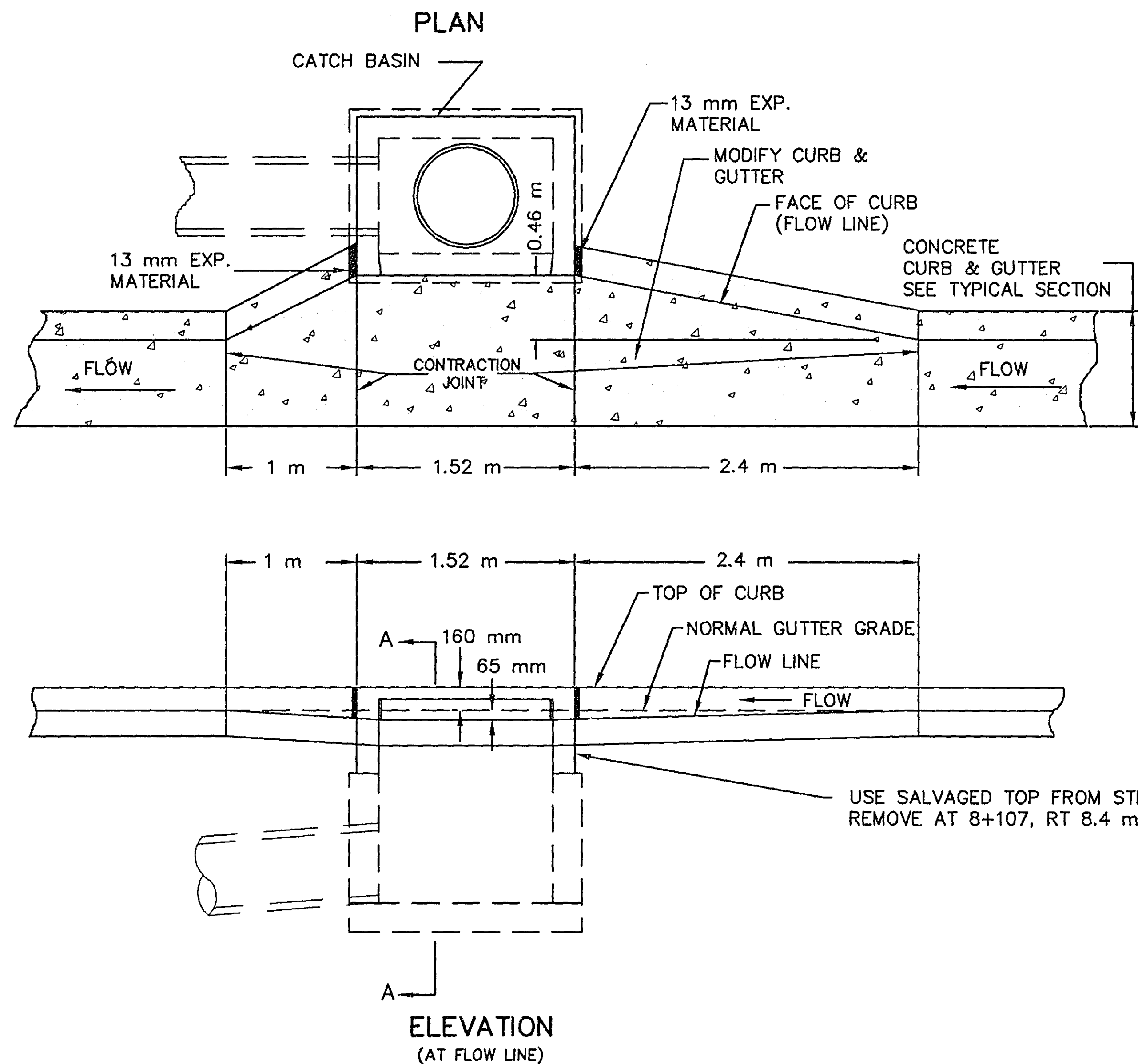
Sheet No. 3 of 23 Sheets



STANDARD PLATES		
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT		
PLATE NO.	DESCRIPTION	
* M3000L	REINFORCED CONCRETE PIPE	
* M3006G	GASKET JOINT FOR R.C. PIPE	
* M4021E	PRECAST CURB OPENING CATCH BASIN	
* M7035J	CONCRETE WALK & CURB RETURNS AT ENTRANCES	
* M7036D	PEDESTRIAN CURB RAMP	
* M7100G	CONCRETE CURB AND GUTTERS (DESIGN B & DESIGN V)	
* M7113A	CONCRETE APPROACH NOSE DETAIL	
* M7065C	BITUMINOUS CURB	
* M8000I	STANDARD BARRICADE	
* M8110D	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)	
* M8111C	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED)	
* M8112C	PEDESTAL FOUNDATION	
* 8113C	MAGNETIC VEHICLE DETECTOR INSTALLATION	
* M8114A	P.V.C. HANDHOLE / PULLBOX	
* M8115D	PEDESTRIAN PUSH BUTTON INSTALLATION	
* 8117F	PRECAST CONCRETE HANDHOLE	
* M8118C	SERVICE EQUIPMENT & POLE, TRAFFIC CONTROL SIGNALS	
* M8119C	GROUND MOUNTED CABINET FOUNDATION	
* M8120K	POLE FOUNDATION (PA85)	
* M8121D	TRANSFORMER BASE WITH POLE BASE PLATE	
* M8122C	PEDESTAL AND PEDESTAL BASE	
* M8123D	POLE AND MAST ARM (LUMINAIRE AND TRAFFIC LIGHTS)	
* M8124E	MAST ARM SIGNAL HEAD MOUNTS	
* M8126F	POLE FOUNDATION (PA90M AND PA100M)	
* M8130D	SAW CUT LOOP DETECTORS	

* STANDARD PLATES APPLICABLE TO THIS PROJECT

DRAINAGE STRUCTURE – DESIGN LP



NOTES

1. USE SALVAGED TOP FROM STRUCTURE REMOVED AT 8+107, RT 8.4 m.
2. CATCH BASIN – DESIGN LP – SEE MN/DOT STD. PL. NO. M4021E.
3. TOP OF CATCH BASIN SHALL BE INSTALLED AT SAME SLOPE AS BLVD. GRADES AND TOP OF CURB GRADE EACH SIDE OF STRUCTURE.
4. ELEVATION OF STRUCTURE IS COMPUTED AT LOCATION SHOWN IN SEC. A-A AT C. OF C.B. OPENING.

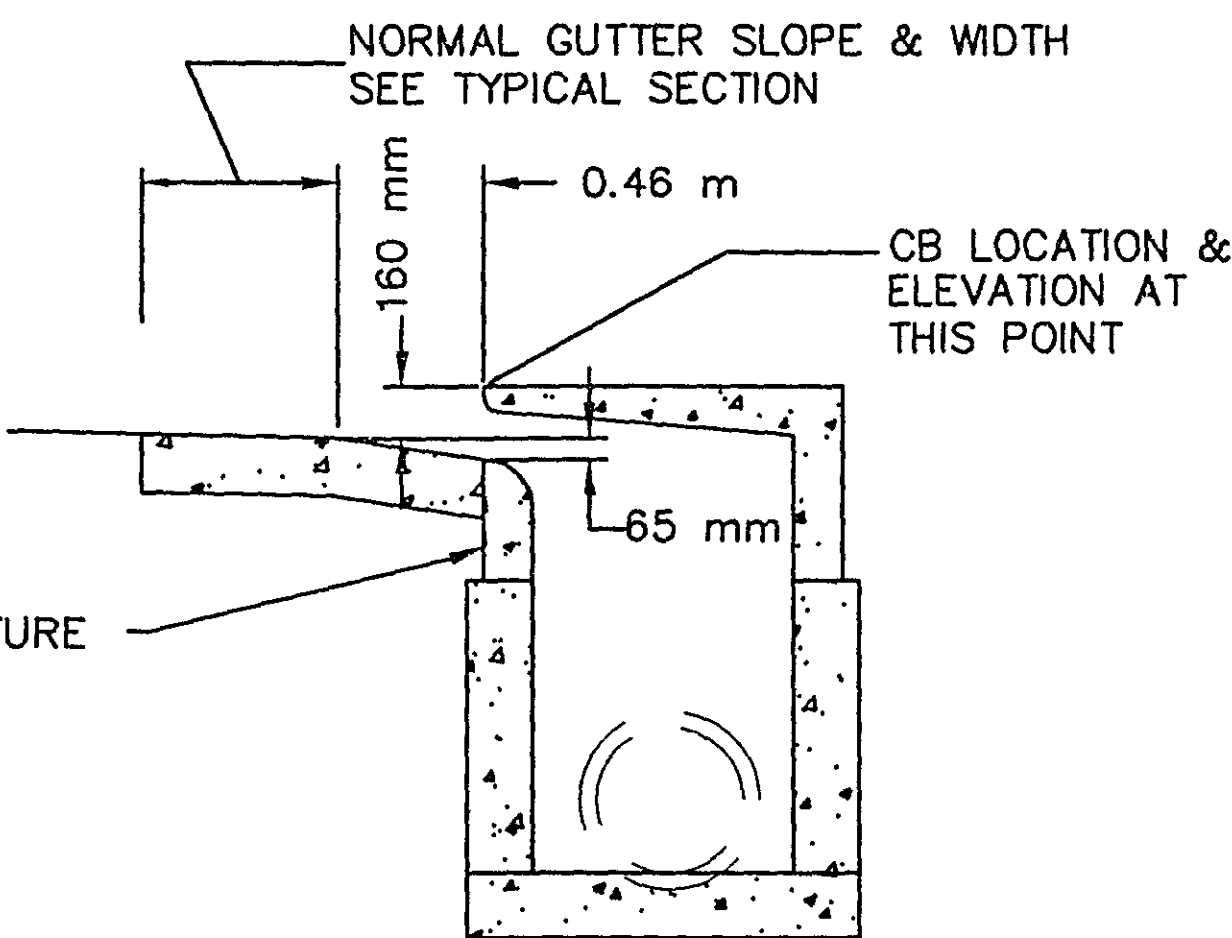


CHART A

CURBS, WALKS AND MISC.								
ALIGNMENT	STA. – STA	LOCATION RT/LT	CURBS		WALKS		MISC	
			CONC C&G DESIGN B624 (m)	BITUMINOUS CURB (m)	100 mm CONCRETE WALK (m ²)	(m ²)	CONCRETE MEDIAN (m ²)	PED. RAMP
VICTORIA ST.	7+775	LT & RT			12.0		19	2
VICTORIA ST.	8+096 – 8+181	RT	93.3					
VICTORIA ST.	8+178	LT	7.6		12.7			1
VICTORIA ST.	8+178	RT			9.0			1
VICTORIA ST.	8+197	LT	6.2		8.3			1
VICTORIA ST.	8+197	RT	6.2		9.2			1
RAMP B	0+011 – 0+105	LT		94				
PROJECT TOTAL			113.1	94	51.2		19	6

COMMON METRIC UNITS AND CONVERSIONS

QUANTITY	FROM ENGLISH	TO METRIC UNITS	MULTIPLY BY
LENGTH	MILE	km = kilometer	1.609344
	FOOT	m = meter	0.3048
	INCH	mm = millimeter	25.4
AREA	ACRE	ha = hectare	0.4046856
	SQUARE YARD	m2 = square meter	0.8361273
VOLUME	GALLON	L = liter	3.7831
	CUBIC YARD	m3 = cubic meter	0.764554
MASS	POUND	kg = kilogram	0.453592
	TON	t = metric ton	0.907184
QUANTITY	FROM METRIC	TO ENGLISH UNITS	MULTIPLY BY
LENGTH	km = kilometer	MILE	0.621371
	m = meter	FOOT	3.2808398
	mm = millimeter	INCH	0.03937
AREA	ha = hectare	ACRE	2.471
	m2 = square meter	SQUARE YARD	1.195990
VOLUME	L = liter	GALLON	0.2641728
	m3 = cubic meter	CUBIC YARD	1.3079521
MASS	kg = kilogram	POUND	2.2046244
	t = metric ton	TON	1.1023122

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Daniel E. Soler
Date 6/18/97 Reg. No. 20452

S.P. No. 6285-118
S.A.P. No. 167-235-04
S.A.P. No. 167-020-11

S.A.P. No. 62-652-15

CHARTS & DETAILS

28-177

Sheet No. 4 of 23 Sheets

CHART B

MISCELLANEOUS REMOVAL AND SAWING								
ALIGNMENT	STA. - STA	LOCATION RT/LT	REMOVE					SAWING
			BITUMINOUS PAVEMENT (m ²)	CONCRETE C & G (m)	CONCRETE WALK (m ²)	BITUMINOUS WALK (m ²)	BITUMINOUS CURB (m)	BITUMINOUS PAVEMENT (m)
VICTORIA ST.	7+775	LT & RT		14.9	8		5	
VICTORIA ST.	8+096 - 8+181	LT & RT		111.1		34		25
VICTORIA ST.	8+197	LT & RT		12.1		6		3
RAMP B	0+011 - 0+105	LT	18.0	37.0			57	58
PROJECT TOTAL			18.0	175.1	8	40	62	86

BITUMINOUS PAVEMENT SAWING QUANTITIES INCLUDE BITUMINOUS PATH.

CHART C

AGGREGATE AND BITUMINOUS SUMMARY								
ALIGNMENT	STA. - STA	LOCATION LT/RT	AGGREGATE		BITUMINOUS			
			BASE CLASS 6		TYPE 31 BASE	TYPE 31 BINDER (ii)	TYPE 41 WEAR (**)	TYPE 47 WEAR
			(m ³)		METRIC TON	METRIC TON	METRIC TON	METRIC TON
VICTORIA ST.	7+775	LT & RT	1.6					
VICTORIA ST.	8+096 - 8+181	RT	60.8		39.8	39.4	9.2	20.3
VICTORIA ST.	8+178	LT & RT	2.7				6.7	
VICTORIA ST.	8+197	LT & RT	2.6				0.6	
RAMP B	0+011 - 0+105	LT	37.2		46.8	35.5		23.8
PROJECT TOTAL			104.9		86.6	74.9	16.5	44.1

AGGREGATE BASE CLASS 6 INCLUDES AGGREGATE BASE UNDER CONCRETE AND BITUMINOUS WALKS.
(**) DENOTES BIT. PATH OR ENTRANCE MATERIAL.
(ii) INCLUDES 9.2 METRIC TONS FOR ENTRANCES.

CHART D

EARTHWORK SUMMARY	
VICTORIA ST	
COMMON EXCAVATION:	
399 m3 (EV) - ① 9 m3 (EV) =	390 m3 (EV)
390 m3 (EV) X 1.2 =	468 m3 (LV)
EMBANKMENT:	
70 m3 (CV) X 1.3 =	-91 m3 (LV)
EXCESS COMMON EXCAVATION =	377 m3 (LV)
SELECT GRANULAR BORROW:	
168 m3 (CV) X 1.5 =	252 m3 (LV)
① PAVEMENT REMOVAL:	
93 m2 (EV) @ .10 m THICK =	9 m3
RAMP B (I-694 W.B. OFF AT VICTORIA ST	
COMMON EXCAVATION:	
289 m3 (EV) - ① 6 m3 (EV) =	283 m3 (EV)
283 m3 (EV) X 1.2 =	340 m3 (LV)
EMBANKMENT:	
64 m3 (CV) X 1.3 =	-83 m3 (LV)
EXCESS COMMON EXCAVATION =	257 m3 (LV)
SELECT GRANULAR BORROW:	
136 m3 (CV) X 1.5 =	204 m3 (LV)
① PAVEMENT REMOVAL:	
35 m2 (EV) @ .18 m THICK =	6 m3
PROJECT TOTALS	
COMMON EXCAVATION:	673 m3 (EV)
SELECT GRANULAR BORROW:	456 m3 (LV)

EXCESS COMMON EXCAVATION SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE COST FOR DISPOSAL SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND NO ADDITIONAL COMPENSATION WILL BE PAID OUTSIDE THE PRICE BID FOR COMMON EXCAVATION.

① DENOTES VOLUME OF PAVEMENT REMOVAL

CHARTS

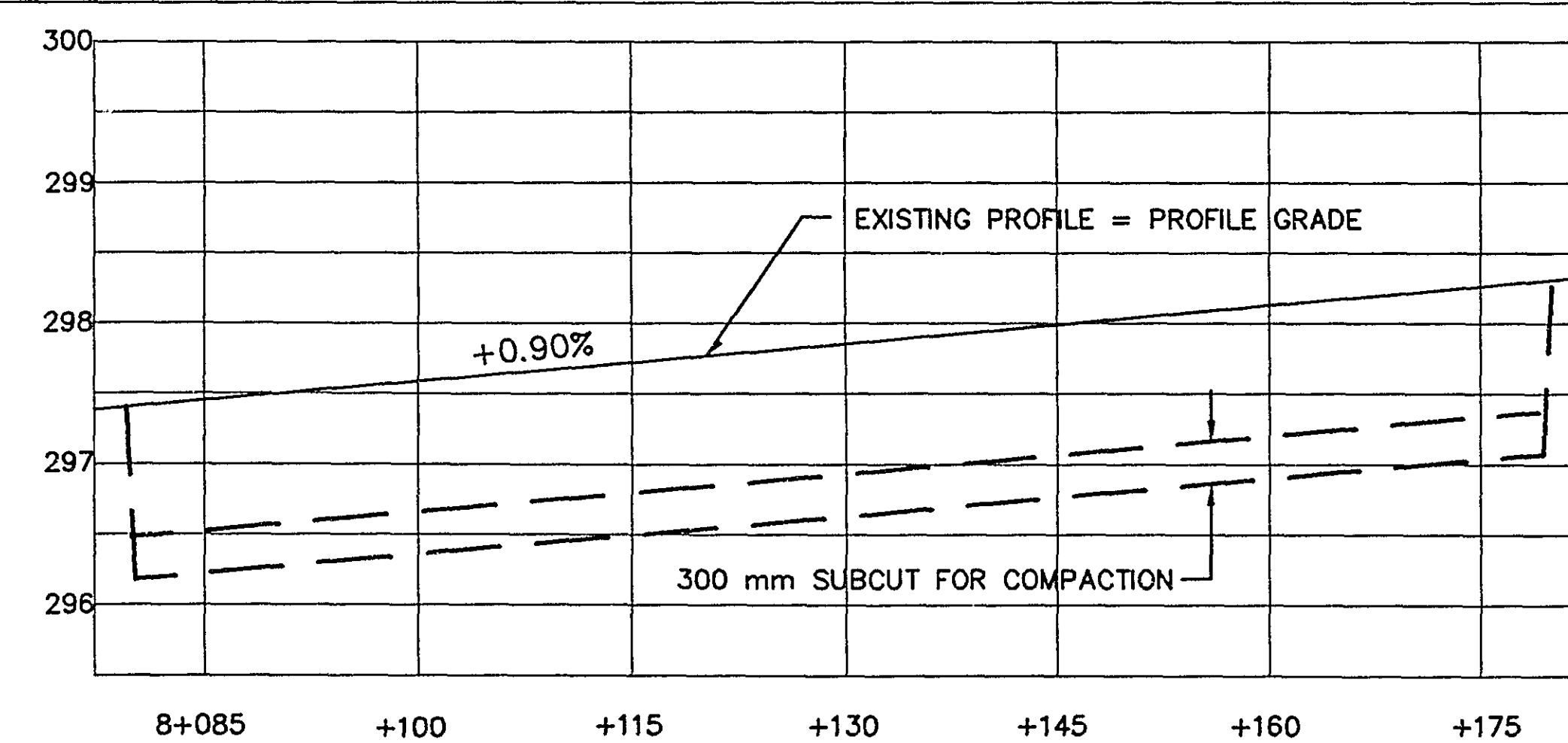
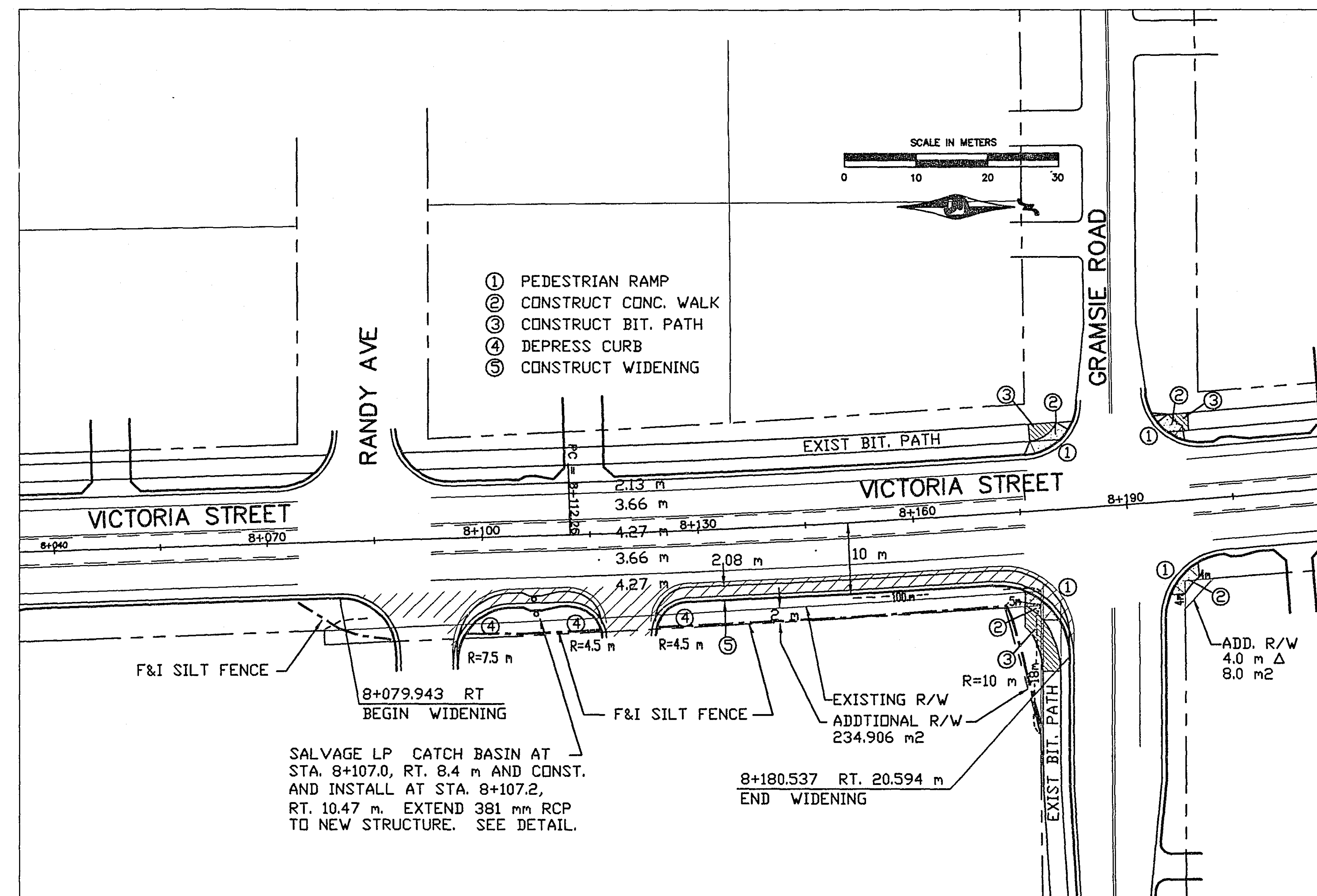
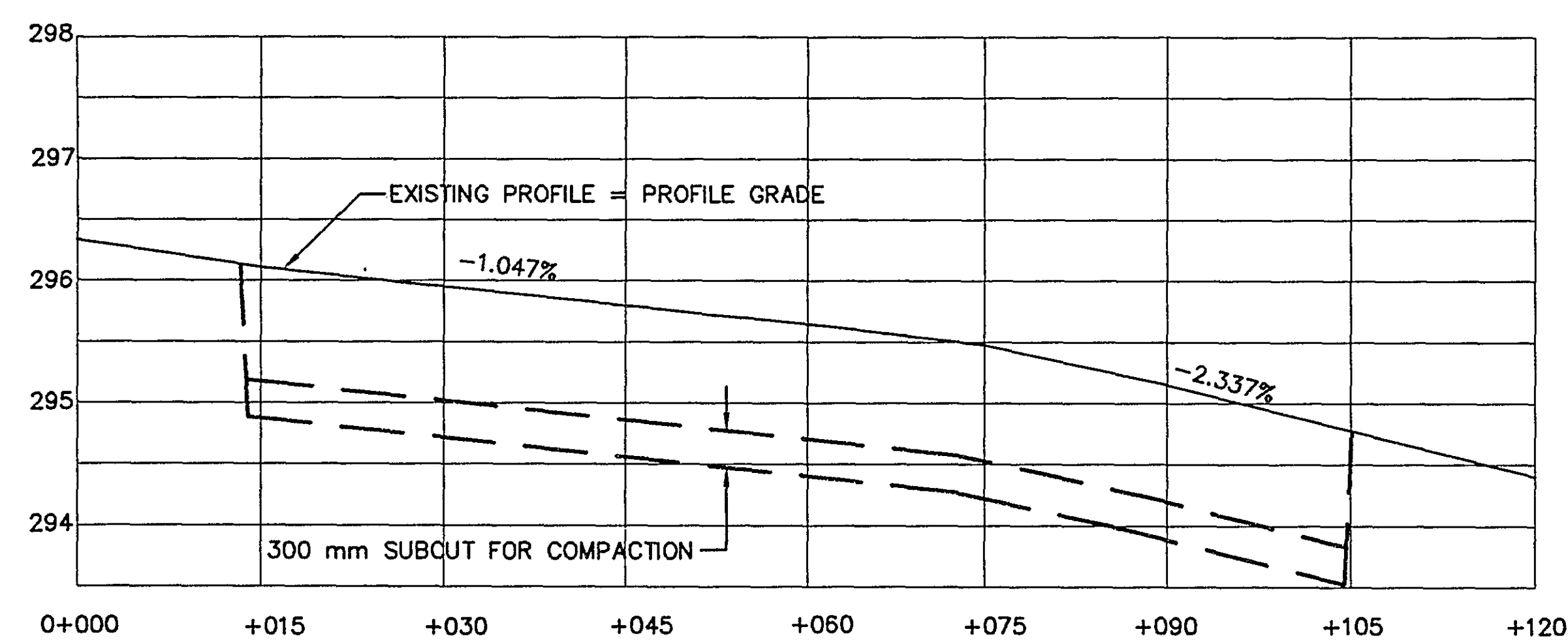
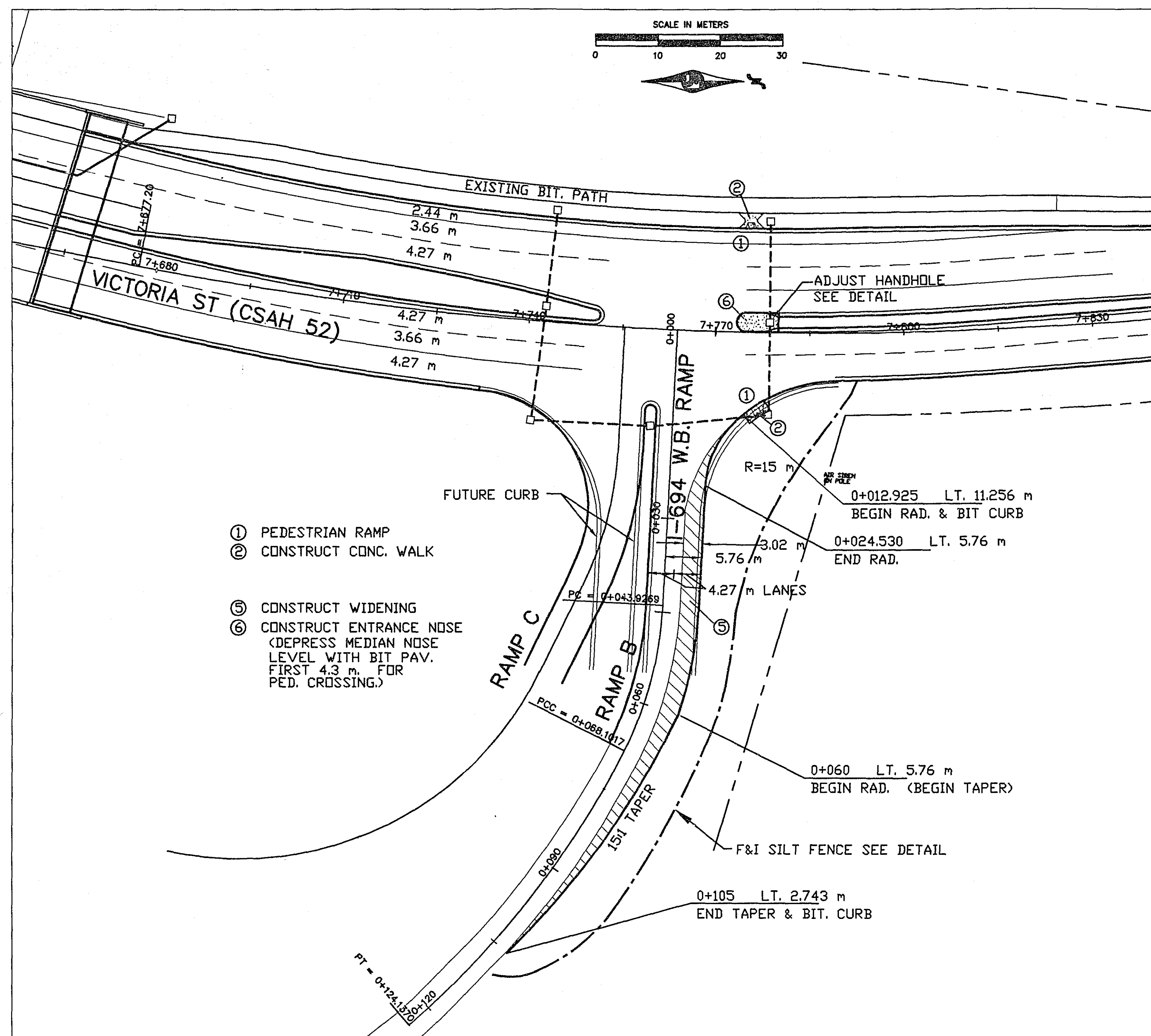
S.P. No. 6285-118

S.A.P. No. 62-652-15

Sheet No. 5 of 23 Sheets

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Daniel E. Solu
Date 6/19/97 Reg. No. 20452





NOTE:

THE RIGHT OF WAY AND EASEMENTS SHOWN ON THE CONSTRUCTION SHEETS GIVE A GRAPHICAL LOCATION WITH RESPECT TO THE GEOMETRIC DESIGN AND MAP DATA. THE EXACT RIGHT OF WAY, EASEMENTS AND BOUNDARY CORNERS ARE LOCATED BY REFERENCE TO THE RIGHT OF WAY PLATS AND ARE IDENTIFIED ON THE RIGHT OF WAY MAP, WHICH SHALL BE USED FOR STAKING PURPOSES.

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S.P. No. 6285-118

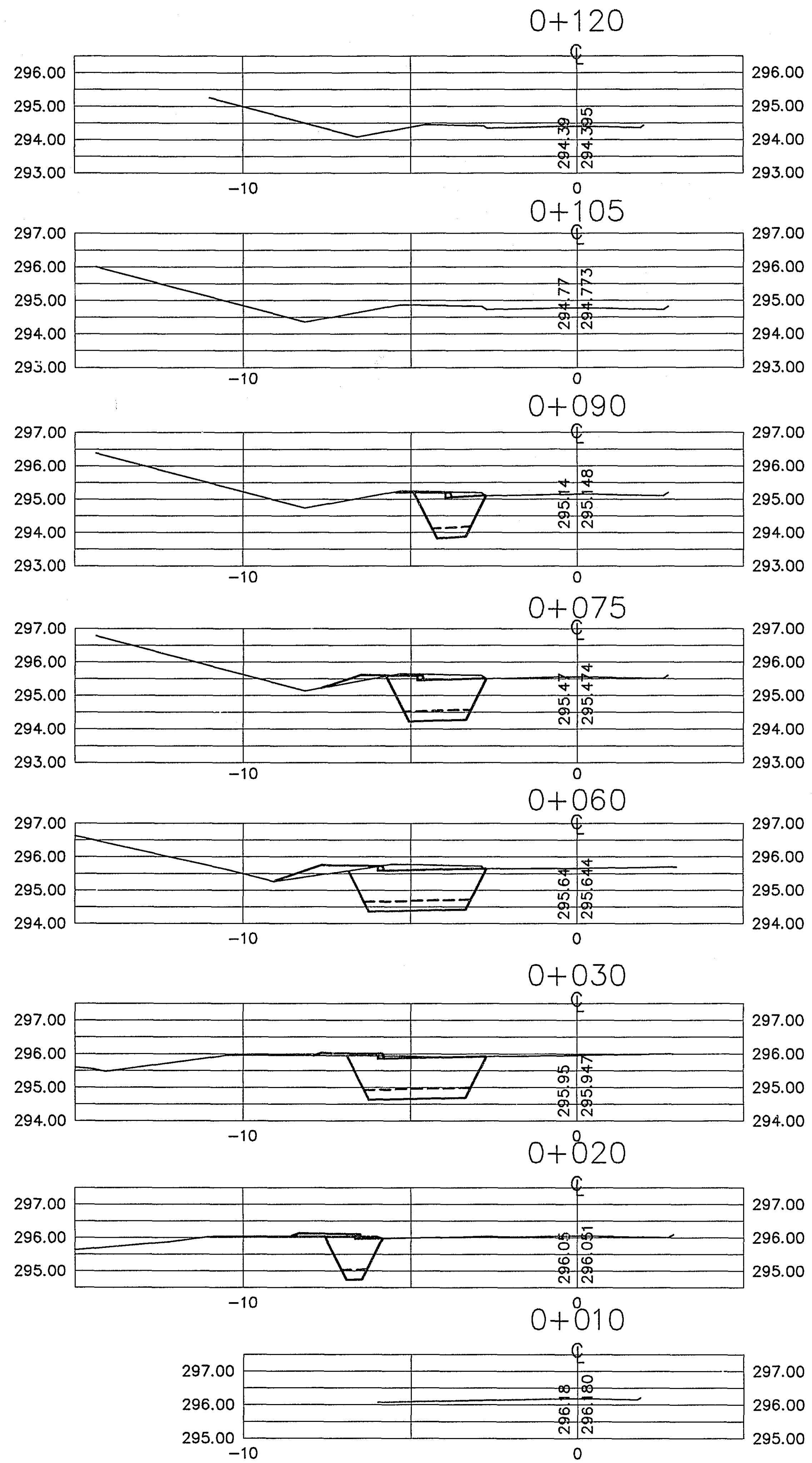
S.A.P. No. 62-652-15

VICTORIA STREET
1-694 to GRAMSIE ROAD
CONSTRUCTION PLAN & PROFILE

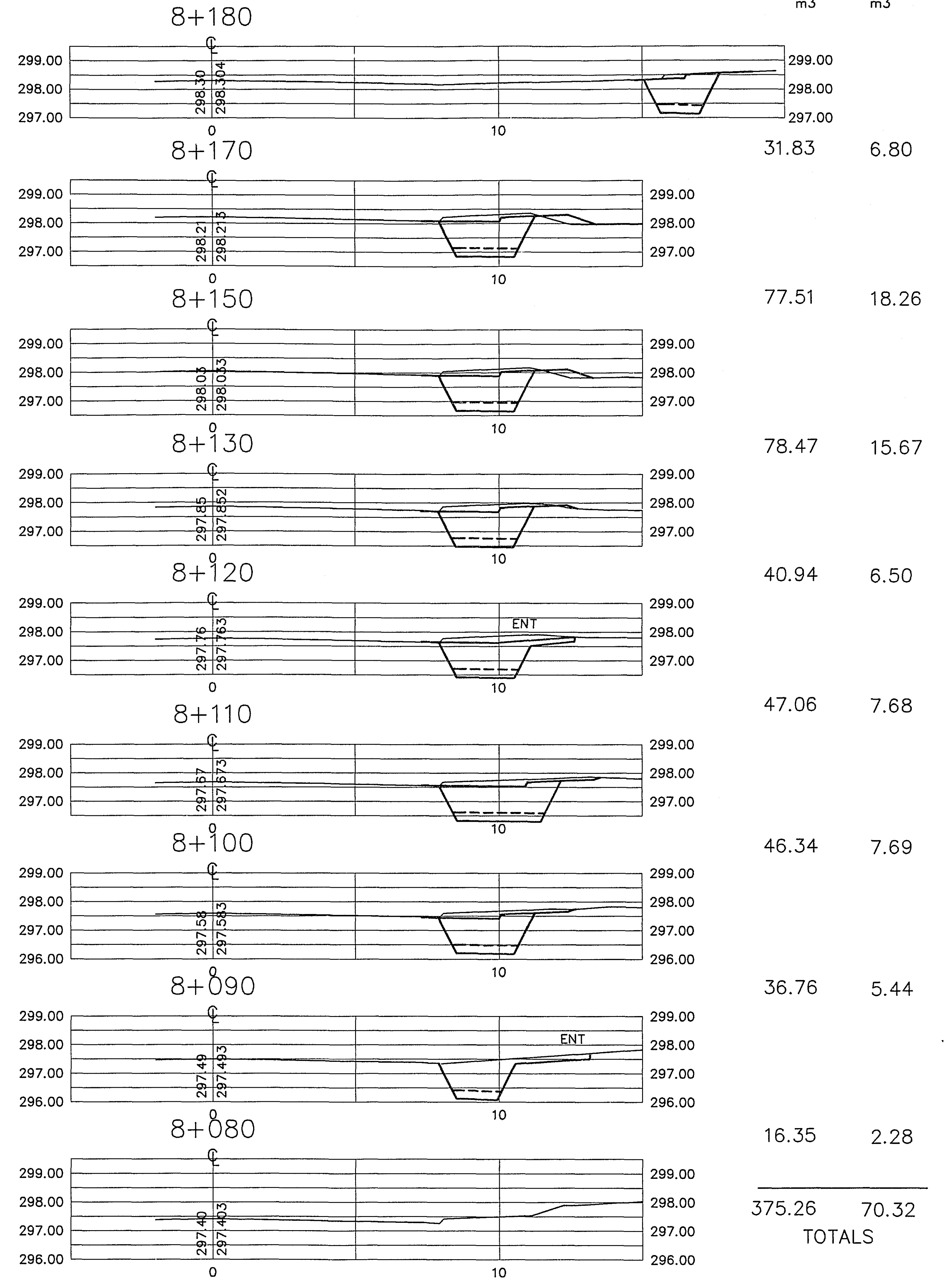
Sheet No. 6 of 23 Sheets



F:\TRAFFIC\SIGPLAN\VICTORIA\585PP.dwg 6/4/97



EXCAVATION m3	EMBANKMENT m3
0.00	0.00
15.87	2.23
40.21	6.88
59.57	13.77
136.91	33.50
29.30	6.58
7.15	0.60
289.01	63.56
TOTALS	



EXCAVATION m3	EMBANKMENT m3
31.83	6.80
77.51	18.26
78.47	15.67
40.94	6.50
47.06	7.68
46.34	7.69
36.76	5.44
16.35	2.28
375.26	70.32
TOTALS	

RAMP B
(I-694 W.B. OFF RAMP)

VICTORIA ST.

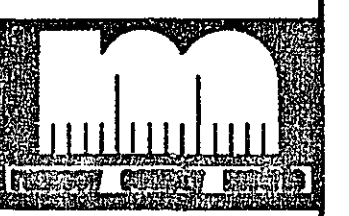
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Daniel E. Soler
Date 6/19/97 Reg. No. 20452

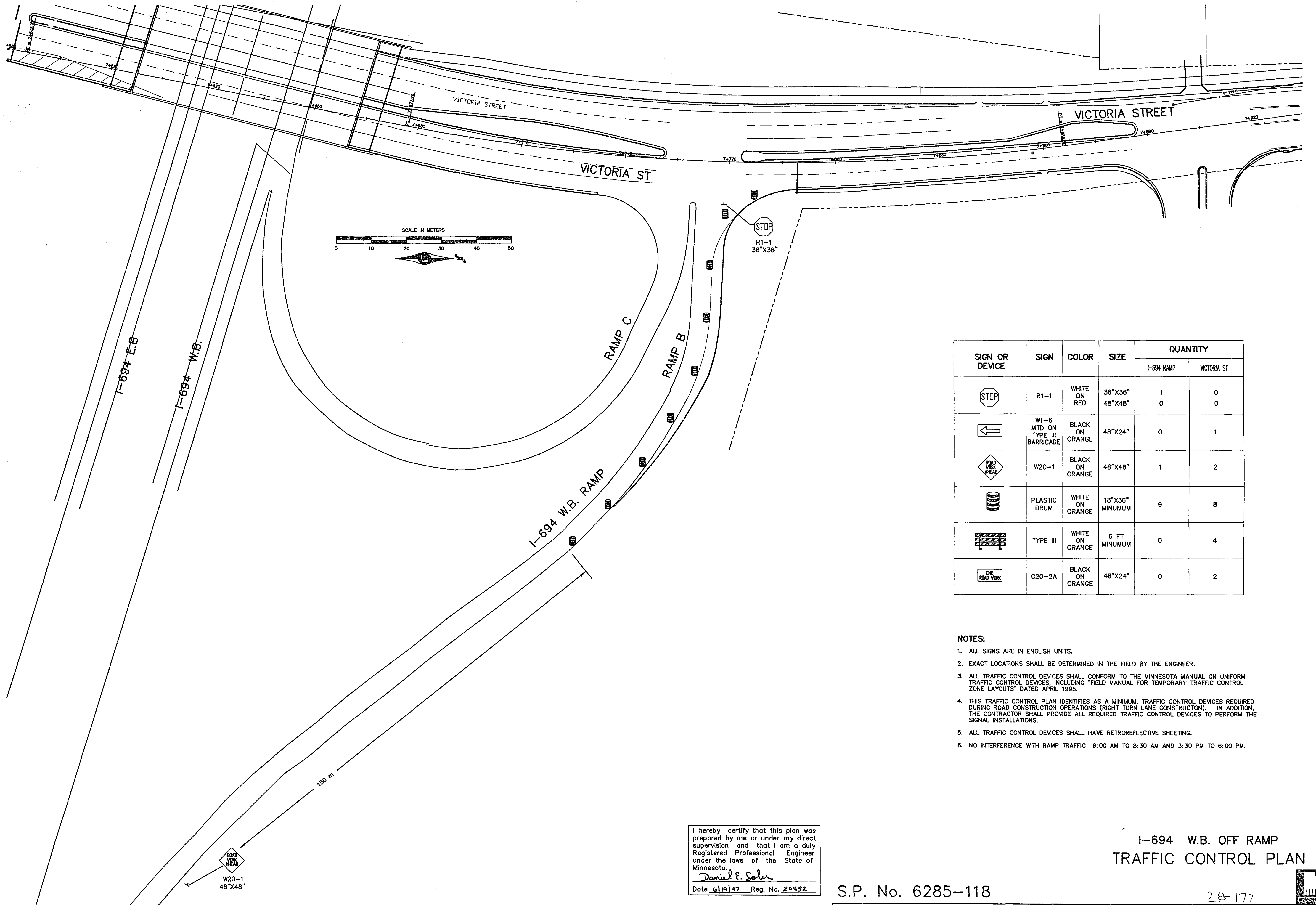
S.P. No. 6285-118

S.A.P. No. 62-652-15

RAMP B
VICTORIA STREET
CROSS SECTIONS
28-177

Sheet No. 7 of 23 Sheets





SIGN OR DEVICE	SIGN	COLOR	SIZE	QUANTITY	
				I-694 RAMP	VICTORIA ST
	R1-1	WHITE ON RED	36"X36" 48"X48"	1 0	0 0
	W1-6 MTD ON TYPE III BARRICADE	BLACK ON ORANGE	48"X24"	0	1
	W20-1	BLACK ON ORANGE	48"X48"	1	2
	PLASTIC DRUM	WHITE ON ORANGE	18"X36" MINIMUM	9	8
	TYPE III	WHITE ON ORANGE	6 FT MINIMUM	0	4
	G20-2A	BLACK ON ORANGE	48"X24"	0	2

- NOTES:
- ALL SIGNS ARE IN ENGLISH UNITS.
 - EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS" DATED APRIL 1995.
 - THIS TRAFFIC CONTROL PLAN IDENTIFIES AS A MINIMUM, TRAFFIC CONTROL DEVICES REQUIRED DURING ROAD CONSTRUCTION OPERATIONS (RIGHT TURN LANE CONSTRUCTION). IN ADDITION, THE CONTRACTOR SHALL PROVIDE ALL REQUIRED TRAFFIC CONTROL DEVICES TO PERFORM THE SIGNAL INSTALLATIONS.
 - ALL TRAFFIC CONTROL DEVICES SHALL HAVE RETROREFLECTIVE SHEETING.
 - NO INTERFERENCE WITH RAMP TRAFFIC 6:00 AM TO 8:30 AM AND 3:30 PM TO 6:00 PM.

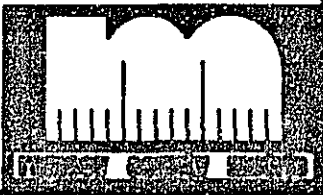
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Daniel E. Soler
Date 6/19/97 Reg. No. 20952

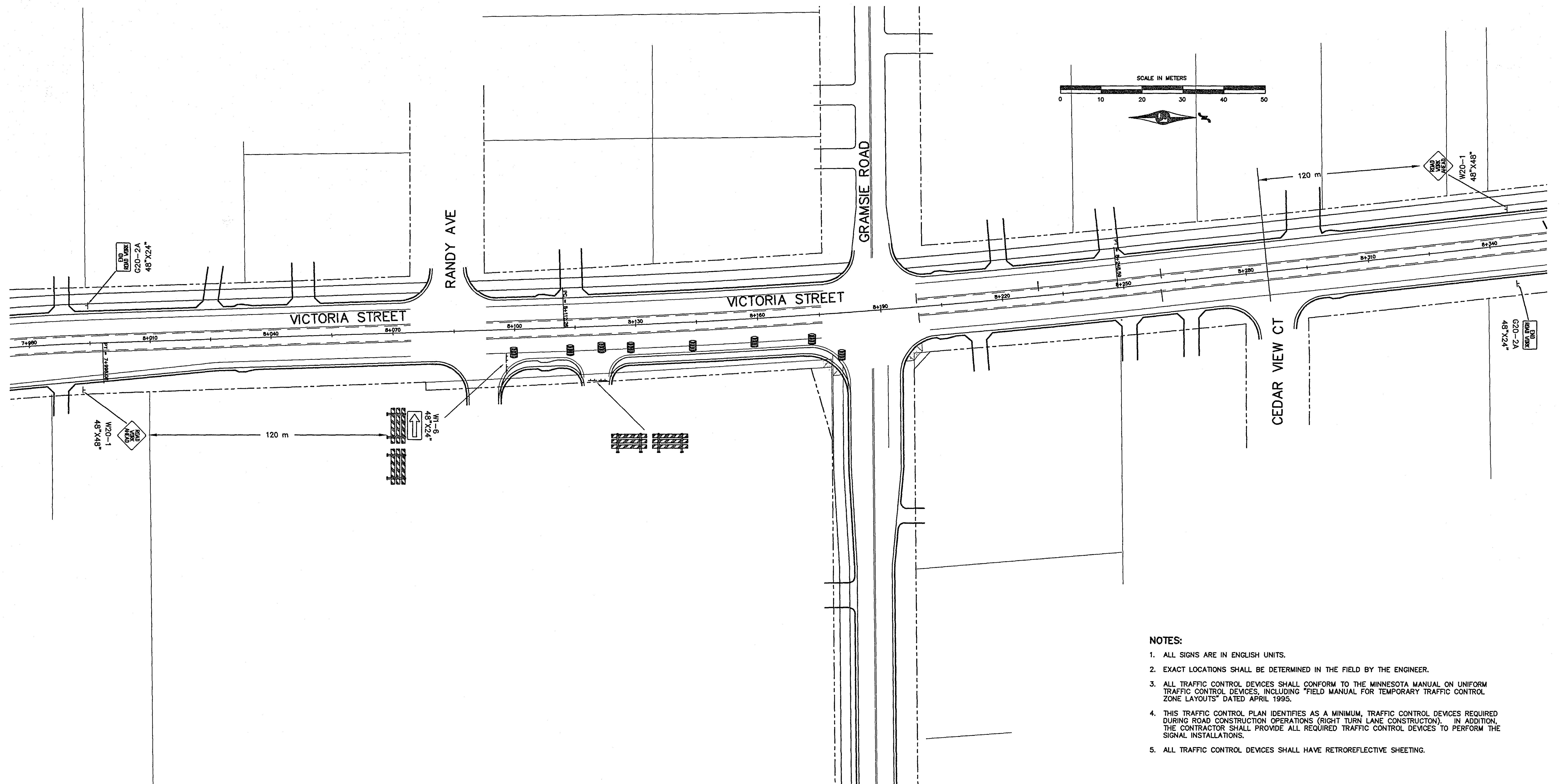
I-694 W.B. OFF RAMP
TRAFFIC CONTROL PLAN

S.P. No. 6285-118

S.A.P. No. 62-652-15

Sheet No. 8 of 23 Sheets





NOTES:

1. ALL SIGNS ARE IN ENGLISH UNITS.
2. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS" DATED APRIL 1995.
4. THIS TRAFFIC CONTROL PLAN IDENTIFIES AS A MINIMUM, TRAFFIC CONTROL DEVICES REQUIRED DURING ROAD CONSTRUCTION OPERATIONS (RIGHT TURN LANE CONSTRUCTION). IN ADDITION, THE CONTRACTOR SHALL PROVIDE ALL REQUIRED TRAFFIC CONTROL DEVICES TO PERFORM THE SIGNAL INSTALLATIONS.
5. ALL TRAFFIC CONTROL DEVICES SHALL HAVE RETROREFLECTIVE SHEETING.

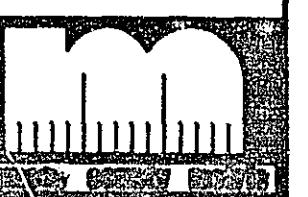
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Daniel E. Sohn
 Date 6/19/97 Reg. No. 20452

**VICTORIA STREET
TRAFFIC CONROL PLAN**

S.P. No. 6285-118

S.A.P. No. 62-652-15

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 Sheet No. 9 of 23 Sheets



3-1 (e.g.)	-SIGNAL HEAD, PHASE "3", NO. "1"
BL	-BLUE
BLK	-BLACK
BLK/WH	-BLACK WITH WHITE TRACER
BL/BLK	-BLUE WITH WHITE TRACER
BR. GR.	-BARE GROUND
CH. SW.	-CHECK SWITCH
CLR	-CLEAR
D2-1 (e.g.)	-DETECTOR, PHASE "2", NO. "1"
DNL	-DOWNLIGHT
DWK	-DON'T WALK
EQG	-EQUIPMENT GROUND
EVP	-EMERGENCY VEHICLE PRE-EMPTION
F&I	-FURNISH AND INSTALL
FL	-FLASH/FLASHING
G	-GREEN
GLTA	-GREEN LEFT TURN ARROW
GRN	-GREEN
GRTA	-GREEN RIGHT TURN ARROW
GR.R.	-GROUND ROD
GTHA	-GREEN THROUGH ARROW
G/BLK	-GREEN WITH BLACK TRACER
HPS	-HIGH PRESSURE SODIUM
H.H.	-HANDHOLE
IMC	-INTERMEDIATE METAL CONDUIT
J.B.	-JUNCTION BOX
LTA	-LEFT TURN ARROW
LUM	-LUMINAIRE
MV	-MERCURY VAPOR
NEU	-NEUTRAL
NMC	-NON-METALLIC CONDUIT
O	-ORANGE
O/BLK	-ORANGE WITH BLACK TRACER
PT-1 (e.g.)	-PEDESTRIAN INDICATION, PHASE "1", NO. "1"
PB	-PUSH BUTTON
PB2-1 (e.g.)	-PUSH BUTTON, PHASE "2", NO. "1"
PED	-PEDESTRIAN
P.E.C.	-PHOTOELECTRIC CELL
R	-RED
R&S	-REMOVE AND SALVAGE
RSC	-RIGID STEEL CONDUIT
RTA	-RIGHT TURN ARROW
R/BLK	-REN WITH BLACK TRACER
SPR	-SPARE
STA	-STATION
ST. LHT.	-STREET LIGHT
SW	-SWITCH
SWD	-SWITCHED
S.O.P.	-SOURCE OF POWER
TDW	-TELEPHONE DROP WIRE
WH	-WHITE
WH/BLK	-WHITE WITH BLACK TRACER
WLK	-WALK
YEL	-YELLOW
YLTA	-YELLOW LEFT TURN ARROW
YRTA	-YELLOW RIGHT TURN ARROW
YTHA	-YELLOW THROUGH ARROW

NMC LOOP DETECTOR DETAIL

The diagram illustrates the installation of a Non-Metallic Conduit (NMC) loop detector. It includes a plan view and a section A-A. The plan view shows a rectangular loop trench in the pavement, with a tee conduit leading to a handhole. The section A-A shows the vertical profile of the loop trench, the tee conduit, and the handhole. The NMC is continuous from the tee to the inside of the handhole. The loop trench is 102 mm minimum to 152 mm maximum wide and 152 mm minimum deep. The NMC is 20 mm diameter. The loop size varies according to the plan. The NMC is continuous from the tee to the inside of the handhole. The loop trench is in the existing pavement. The tee conduit is in the concrete curb and gutter. The handhole is in the concrete curb and gutter. The NMC is continuous from the tee to the inside of the handhole. The loop trench is 102 mm minimum to 152 mm maximum wide and 152 mm minimum deep. The NMC is 20 mm diameter. The loop size varies according to the plan. The NMC is continuous from the tee to the inside of the handhole. The loop trench is in the existing pavement. The tee conduit is in the concrete curb and gutter. The handhole is in the concrete curb and gutter. The NMC is continuous from the tee to the inside of the handhole.

NOTES:

1. SEE SPECIAL PROVISIONS FOR REQUIRED CONDUCTORS, SPLICE KITS AND ACCEPTANCE PARAMETERS.
2. THE NON-METALLIC CONDUIT (NMC) AND FITTINGS SHALL BE SCHEDULE 40 HEAVY WALL RIGID POLYVINYL CHORIDE (PVC), SEE SPEC. 3803
3. ALL SLACK MUST BE REMOVED FROM LOOP DETECTOR CONDUCTORS WITHIN THE NMC.
4. LOOP DETECTOR CONDUCTORS (1/C #14) SHALL BE TWISTED THREE TURNS PER FOOT FROM THE NMC TEE CONDULET TO THE HANDHOLE.
5. ATTACH A FERROUS METAL ITEM TO THE INTERIOR OF THE TEE CONDULET COVER.
6. ALL CONDUIT SHALL SLOPE TO THE HANDOLE FOR DRAINAGE.
7. CONDUIT TO THE HANDHOLE MAY BE PLACED WITHIN THE SAME TRENCH.
8. NO SPLICES ALLOWED IN CONDUIT OR TEE CONDULET.
9. NUMBER OF TURNS OF LOOP WIRE IN EACH LOOP SHALL BE 4 UNLESS OTHERWISE DIRECTED.

PLAN VIEW

SEE PLAN FOR LOOP SIZE

102 mm MIN. 152 mm MAX.

TOP OF PAVEMENT

152 mm MIN. DEPTH OR AS DIRECTED BY ENGINEER

CONCRETE CURB & GUTTER

HANDHOLE

NMC SHALL BE CONTINUOUS FROM TEE TO INSIDE OF HANDHOLE (LENGTH AS REQUIRED)

LOOP TRENCH IN EXISTING PAVEMENT.

THE FOLLOWING NOTES SHALL APPLY WHERE PVC LOOPS ARE INSTALLED IN EXISTING PAVEMENT.

1. ACHIEVE A MINIMUM 50 mm VERTICAL EDGE ON ALL CUTS.
2. AN AIR COMPRESSOR UNIT IS REQUIRED FOR REMOVING ALL LOOSE MATERIAL FROM THE LOOP TRENCH PRIOR TO TACK COAT.
3. BOTTOM AND EDGES OF LOOP TRENCH SHALL BE THOROUGHLY COVERED WITH TACK.
(EMULSIFIED ASPHALT – MN/DOT SPEC. 2357.2A)
4. USE TYPE 41 WEARING COURSE FOR LOOP TRENCH BACKFILL. (TYPE 41WEA50055X OR Y)
5. DO NOT USE PETROLEUM DISTILLATES AS A RELEASE AGENT.
6. COMPACTION SHALL BE OBTAINED BY THE ORDINARY COMPACTION METHOD. A MINIMUM OF TWO LIFTS SHALL BE USED TO EXCLUDE DAMAGE TO PVC.
7. CREATE AN OVERFILL OF 6 to 12 mm OVER EXISTING PAVEMENT SURFACE.
8. APPLY A COAT OF TACK OVER THE FINAL ROADWAY SURFACE. IF UNDER TRAFFIC, SPRINKLE WITH SAND TO PREVENT TRACKING AND SPRAYING.

Diagram illustrating the upper mast arm assembly components:

- ONE OR TWO WAY EVP DETECTOR
- INDICATOR LIGHTS
- 21 mm HALF COUPLING
- UPPER MAST ARM

REMOVE EXIST. C&G AND CONC WALK
CONSTRUCT MEDIAN NOSE MN/DOT STD.
PLATE NO. M7113A

TOP OF EXIST. MEDIAN
TOP OF EXIST. HANDHOLE
F& I NEW CONC. COVER
6 mm
300 mm MIN.
100 mm
457 mm SQ.
EXIST. H.H.
102 mm
10:1
TOP OF EXIST. BIT. OR CONC. SURFACE

REMOVE TOP OF EXIST. HANDHOLE

ADJUSTMENT OF THE HANDHOLE WILL BE INCIDENTAL WORK TO SIGNAL SYSTEM "A"

CAST NEW MEDIAN PERIMETER OF H.H. CONC. SHALL BE TYPE 3A32

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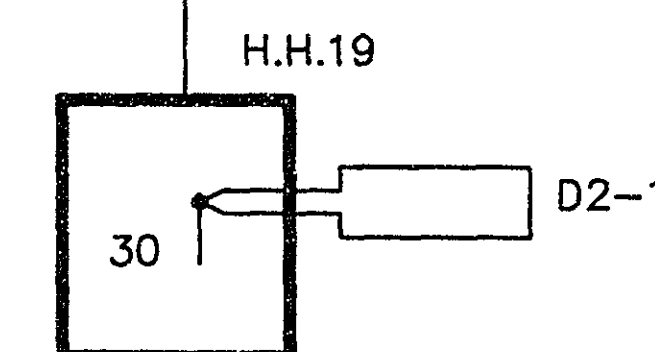
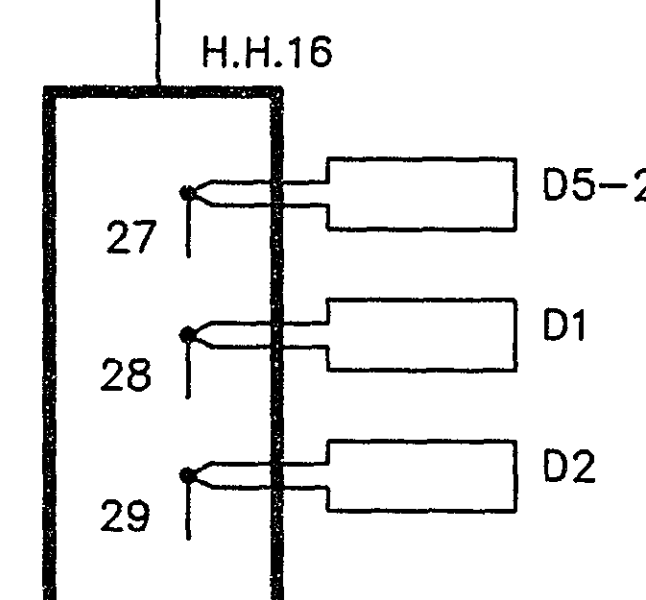
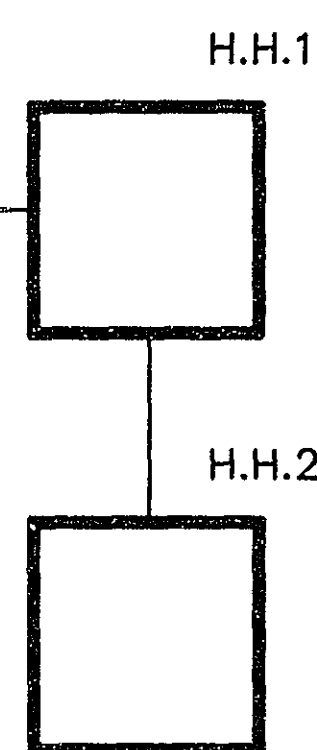
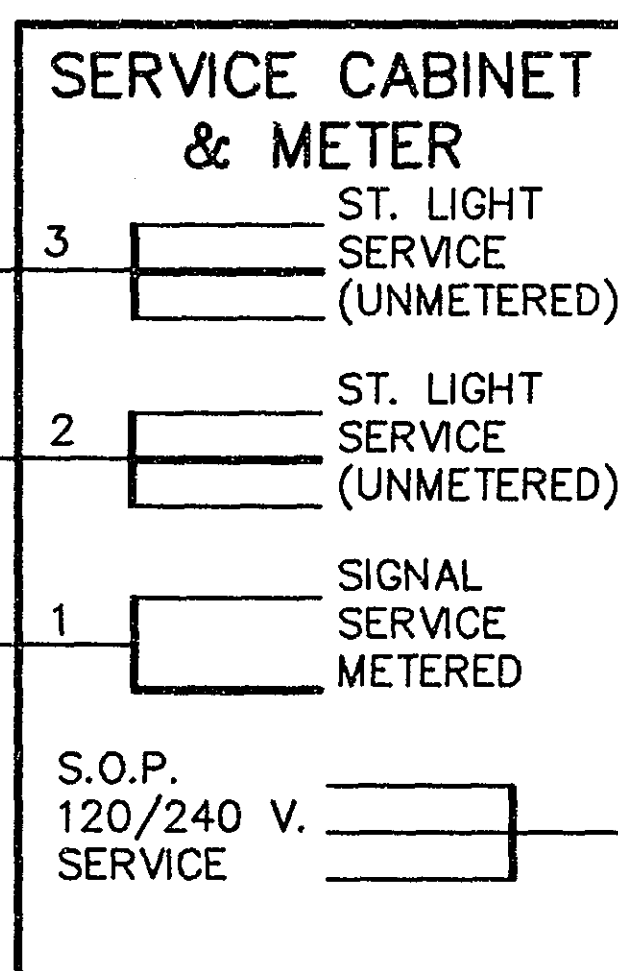
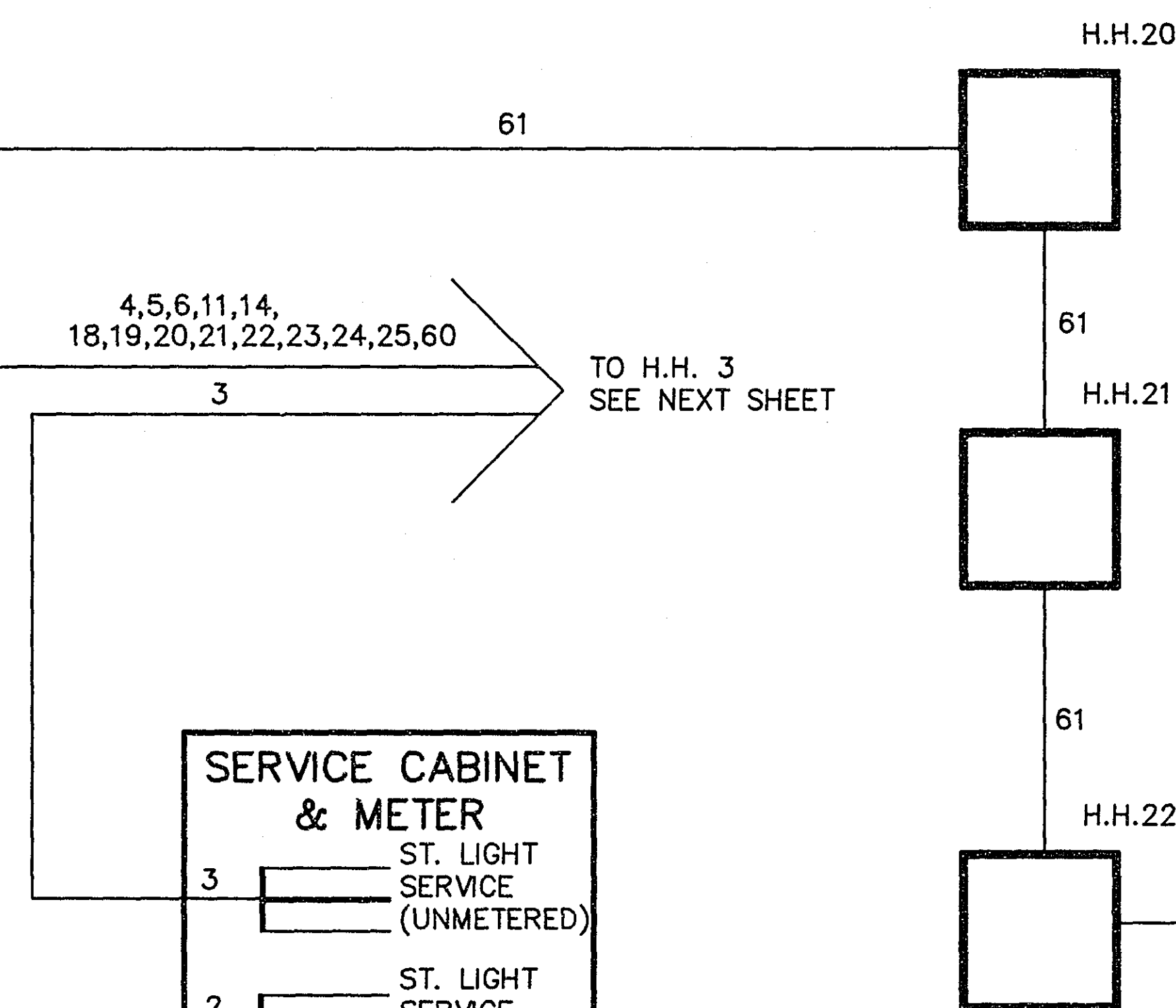
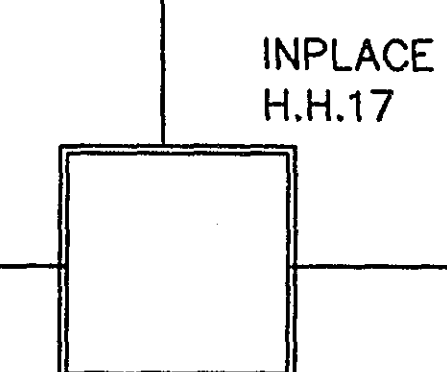
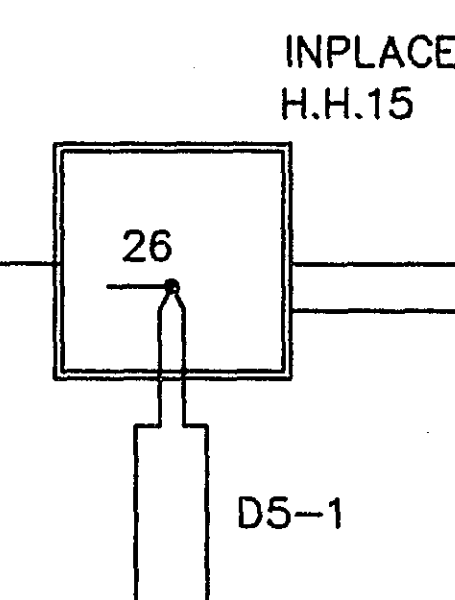
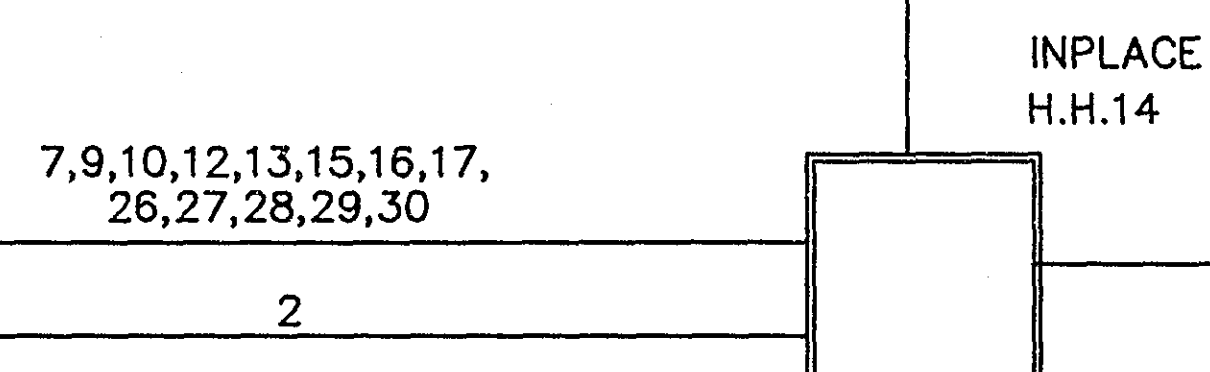
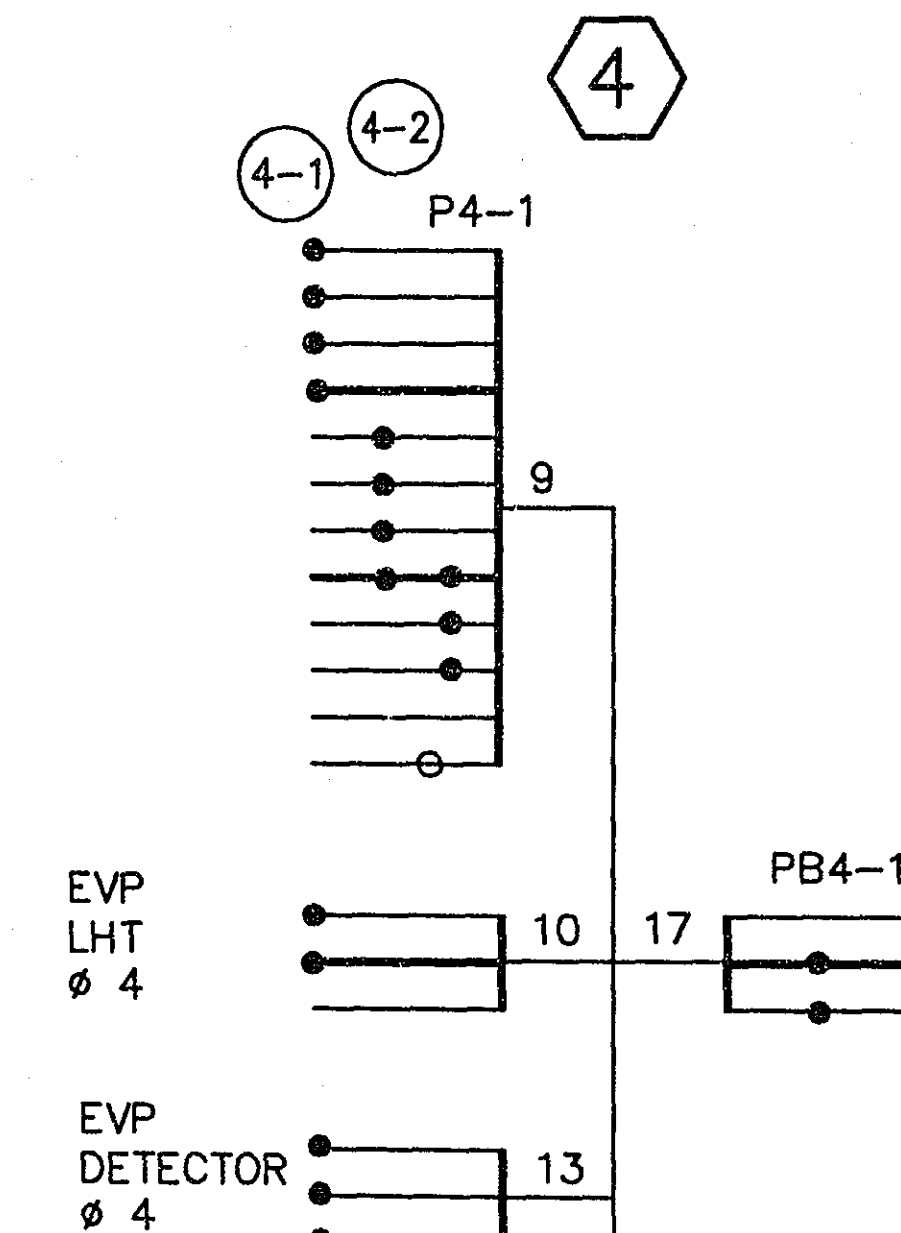
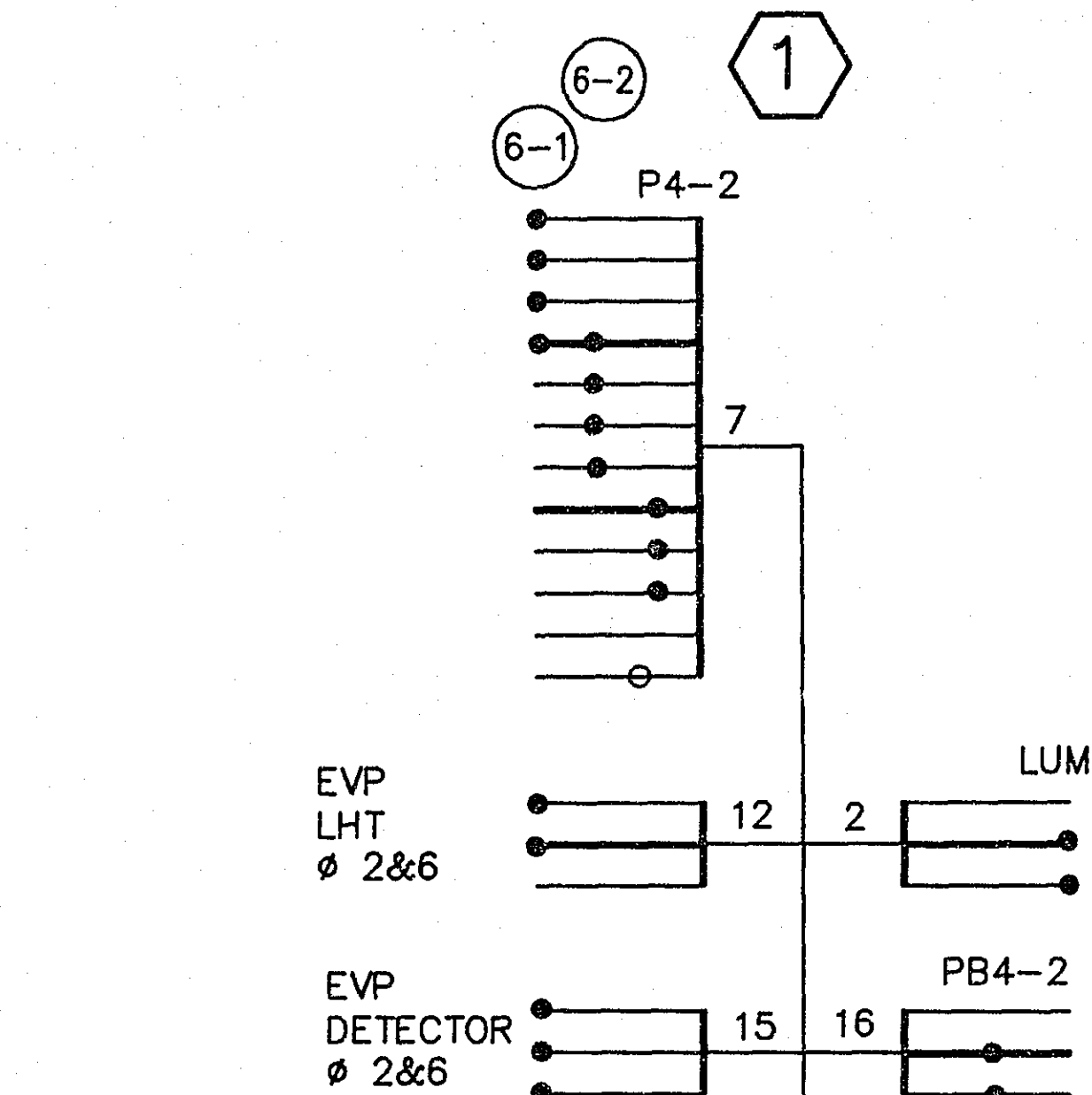
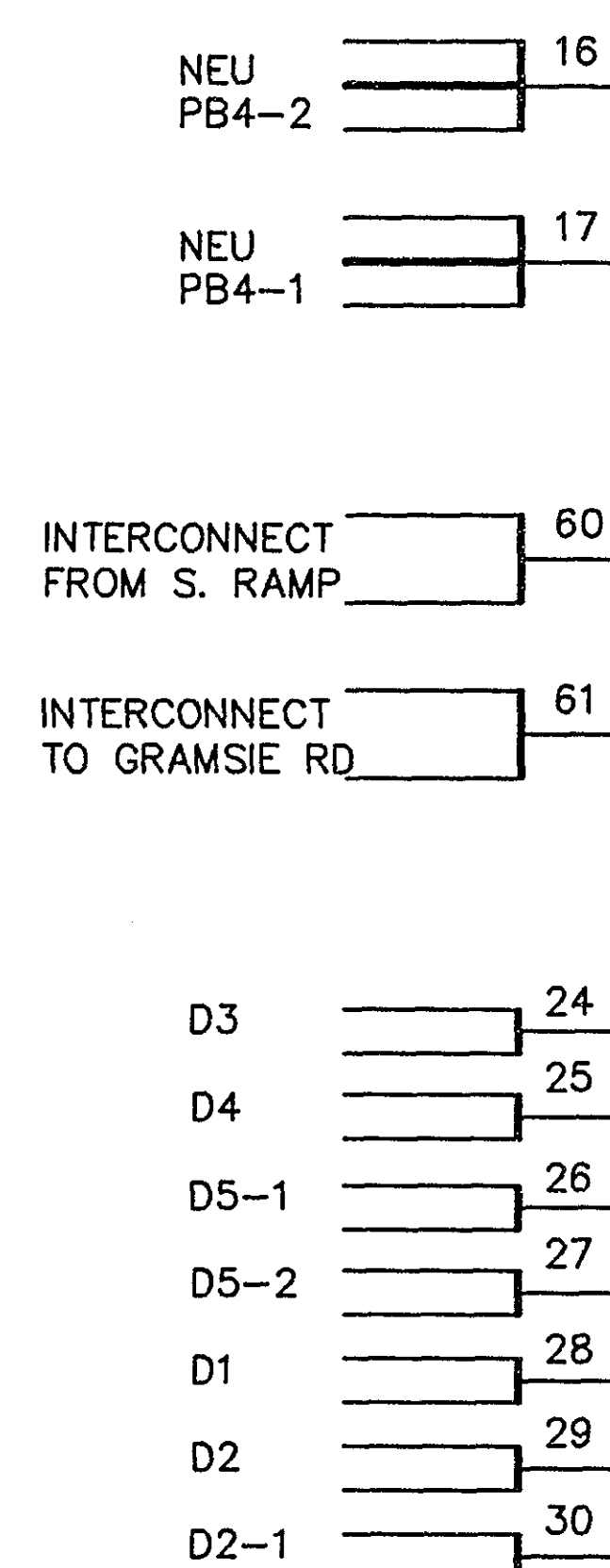
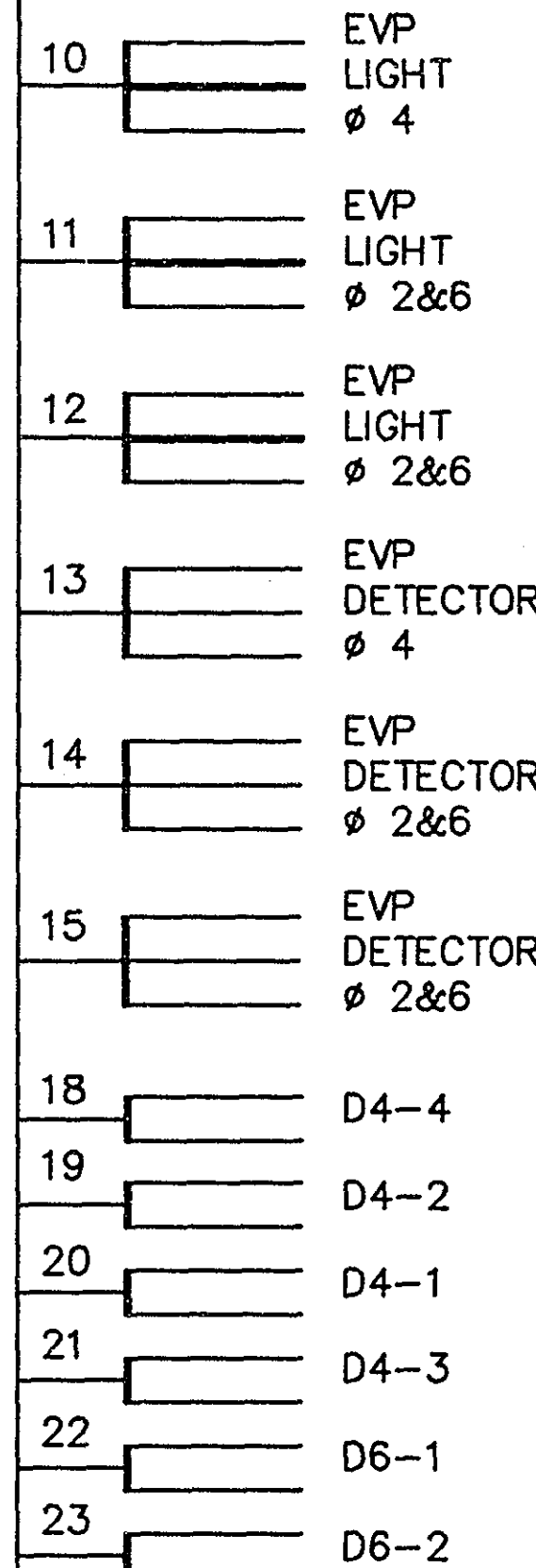
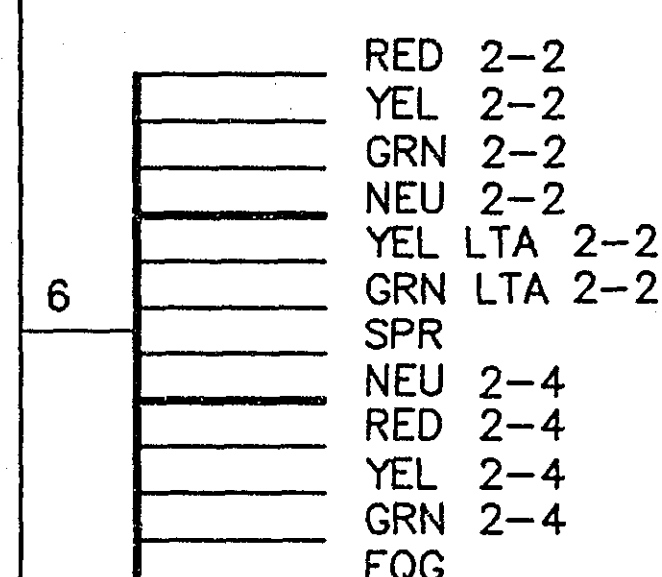
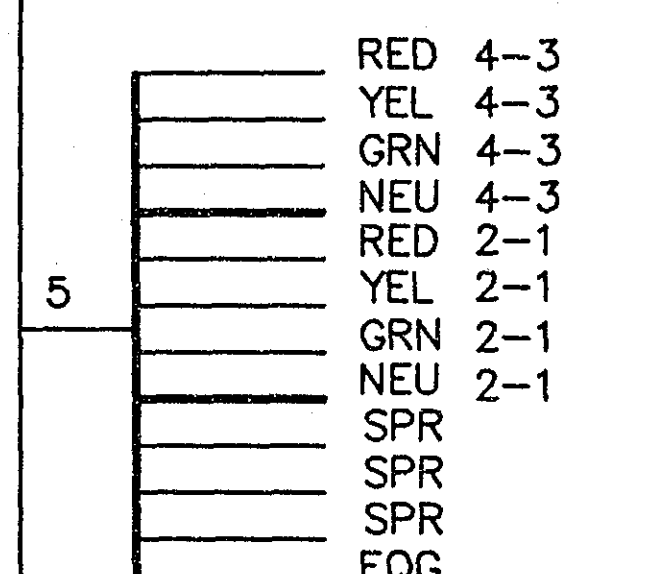
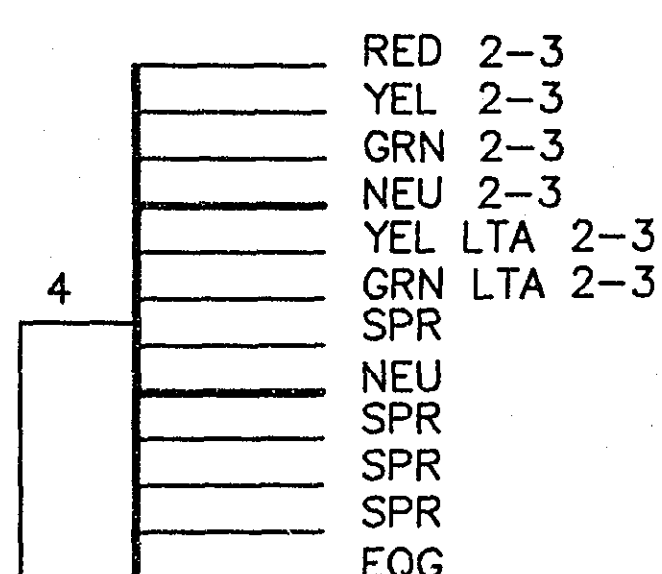
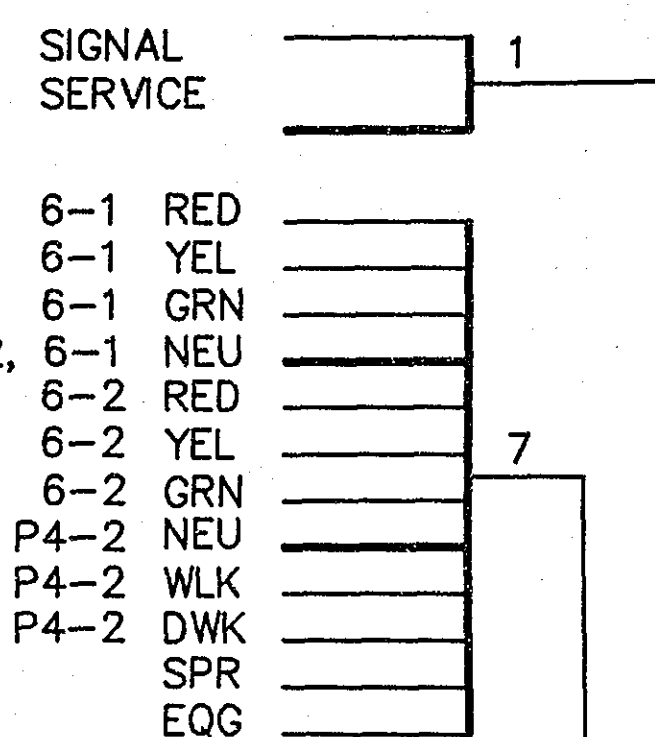
Daniel F. Soler

Date 6/17/97 Reg. No. 20452

28-177

Sheet No. 10 of 23 Sheets

CONTROLLER CABINET



TO H.H. xxx AT VICTORIA ST & GRAMSIE RD

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.

David F. Sohn

Date 6/19/97 Reg. No. 20452

S.P. No. 6285-118

S.A.P. No. 167-020-11

S.A.P. No. 62-652-15

FIELD WIRING DIAGRAM

VICTORIA STREET & I-694 N. RAMP

SYSTEM A

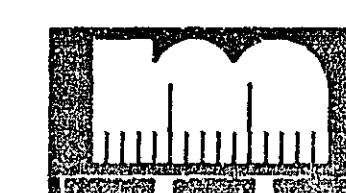
28-177

Sheet No. 13 of 23 Sheets

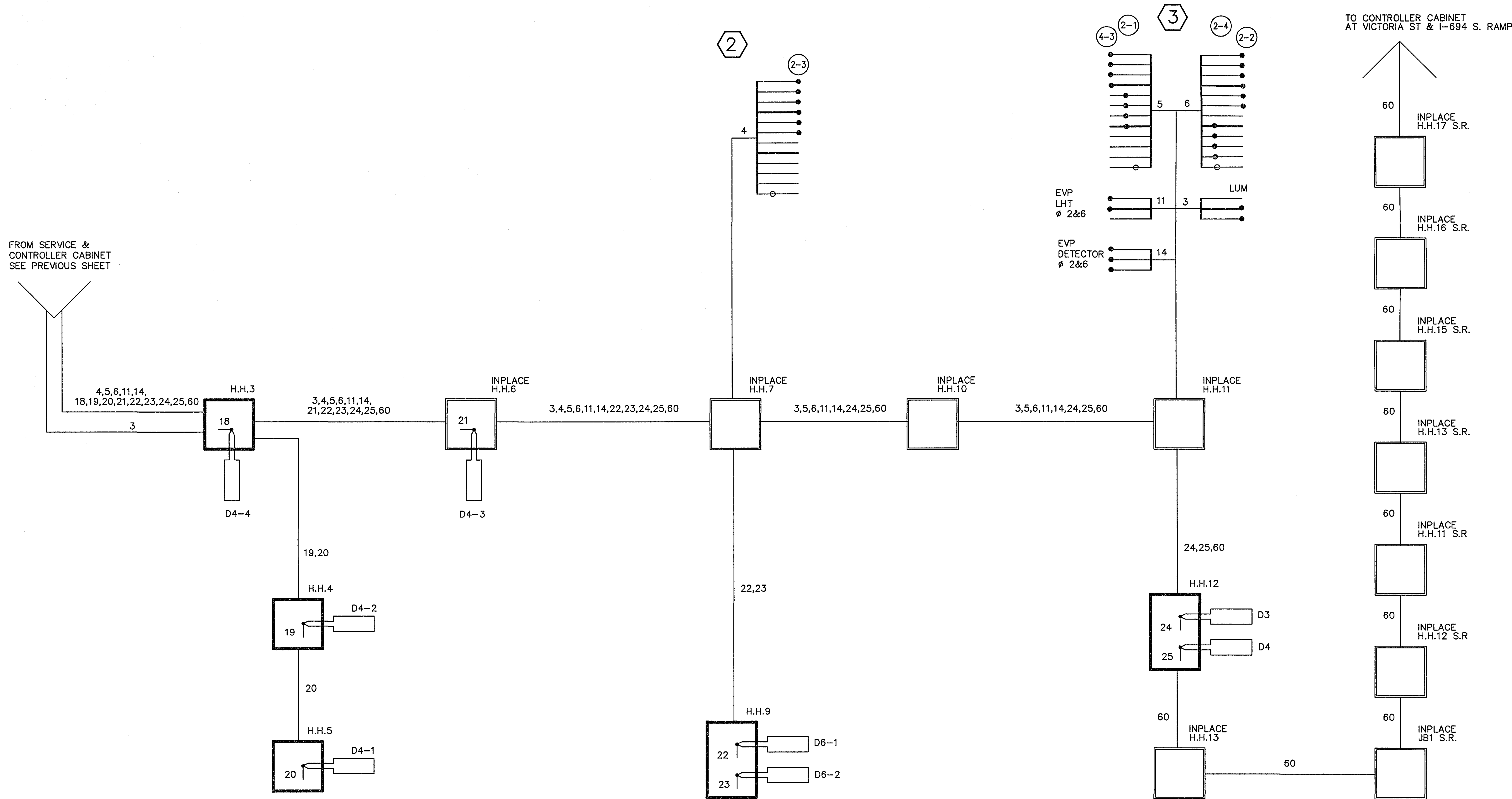
CONDUCTOR COLOR CODING

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

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



FROM SERVICE &
CONTROLLER CABINET
SEE PREVIOUS SHEET



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Daniel F. Sohn
Date 6/19/97 Reg. No. 20452

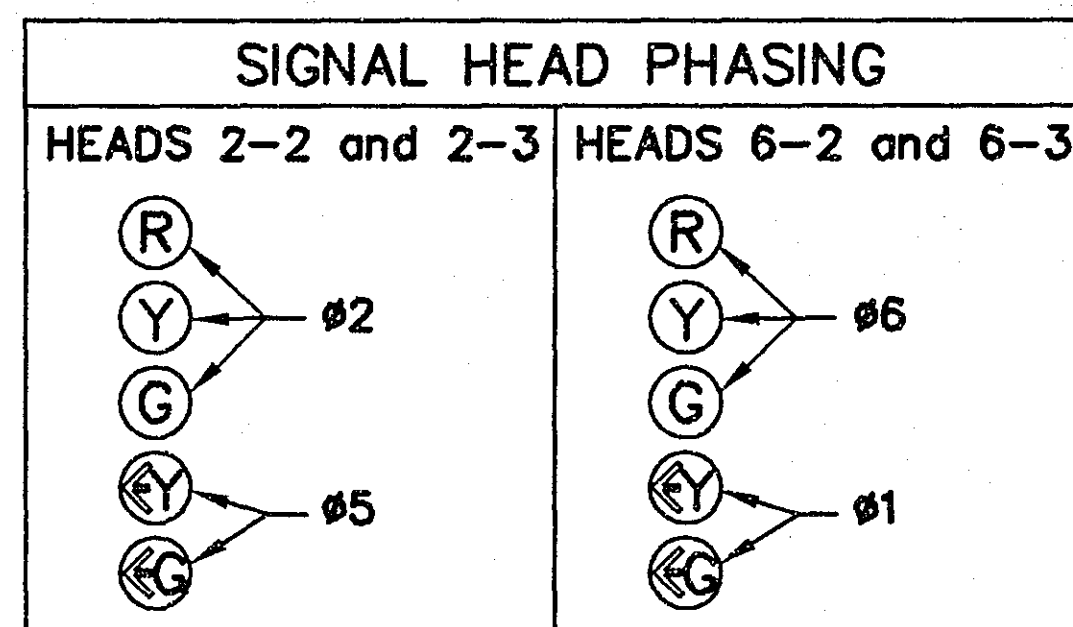
FIELD WIRING DIAGRAM
VICTORIA STREET & I-694 N. RAMP
SYSTEM A

S.P. No. 6285-118
S.A.P. No. 167-020-11
S.A.P. No. 62-652-15

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Sheet No. 14 of 23 Sheets



SIGNAL INDICATION CHART					
FACE	PHASE	INDICATION	SIZE 300mm		
2-1	2	Y	Y	Y	Y
2-2	2 and 5	Y	Y	Y	Y
2-3	2 and 5	Y	Y	Y	Y
4-1	4	Y	Y	Y	Y
4-2	4	Y	Y	Y	Y
4-3	4	Y	Y	Y	Y
6-1	6	Y	Y	Y	Y
6-2	1 and 6	Y	Y	Y	Y
6-3	1 and 6	Y	Y	Y	Y
8-1	8	Y	Y	Y	Y
8-2	8	Y	Y	Y	Y
8-3	8	Y	Y	Y	Y



SIGNING

F&I OVERHEAD TYPE D SIGNS, SEE SHEET 19 (SEPARATE PAY ITEM)

F&I OVERHEAD TYPE R10-12 (914x1219 mm) SIGNS ON MAST ARM POLES 1 & 3.

F&I PEDESTRIAN PUSH BUTTON SIGNS, TYPE R10-4b (229x305 mm) WITH SYMBOL MESSAGE SEE SHEET 21 FOR ADDITIONAL SIGNING WORK.

SIGNAL SYSTEM OPERATION

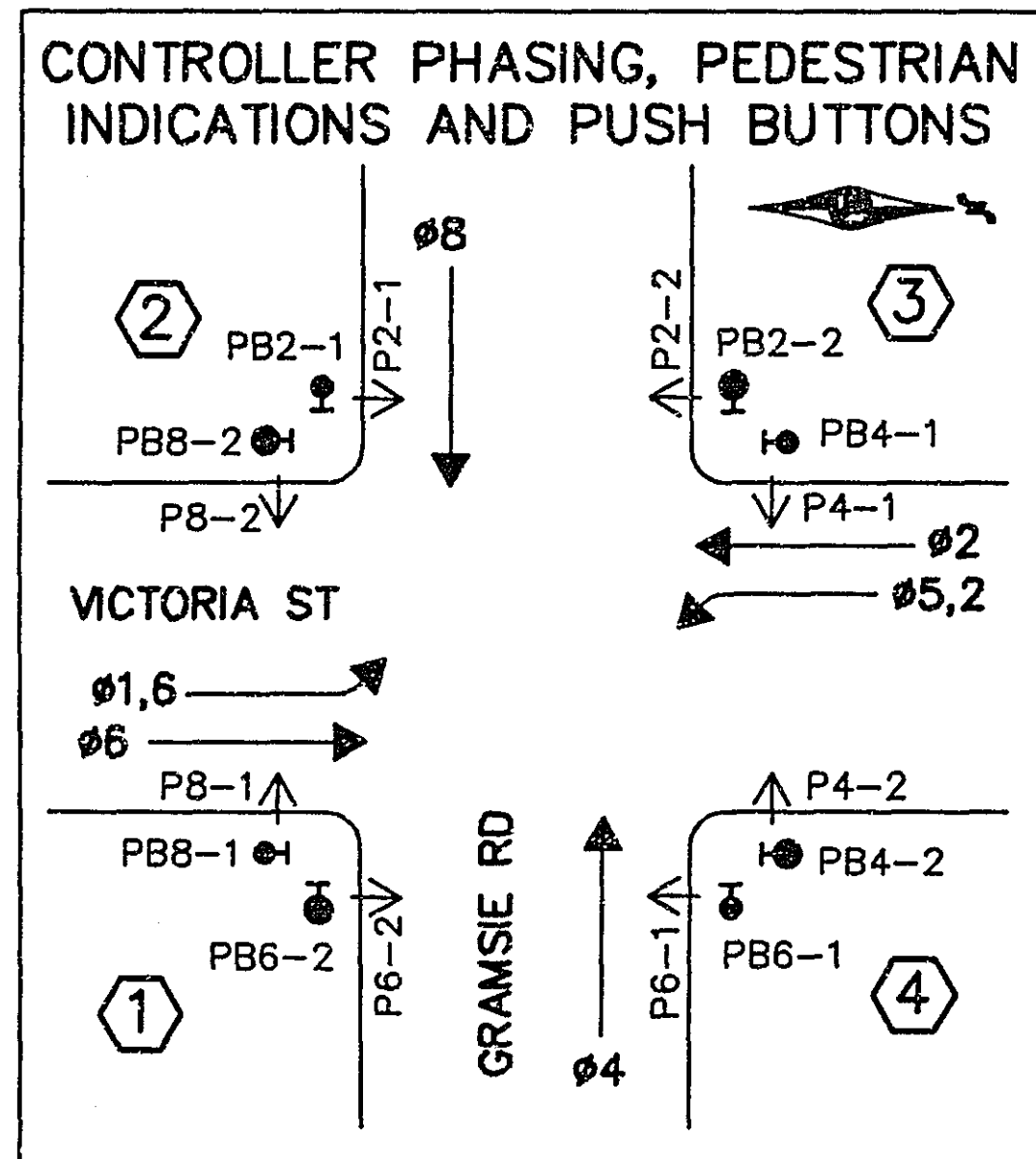
THE SIGNAL SYSTEM FLASH MODE IS ALL RED.

PHASES 1 AND 5 ARE PROTECTED/PERMISSIVE LEFT TURNS.

PHASES 1,4,5 AND 8 ARE NON-LOCK DETECTION.

PHASES 2 AND 6 ARE LOCK DETECTION.

PHASES 2 AND 6 ARE ON VEHICLE RECALL.

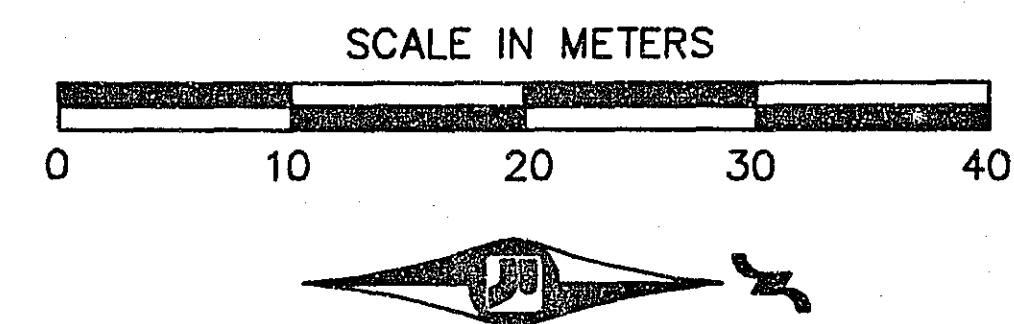


VEHICLE DETECTION			
NO.	SIZE (m)	FUNCTION	LOC (m)
D1-1	2-1.7 x 4.6	C&E (TD)	0, 8
D1-2	1.7 x 1.7	C&E	25
D2-1	1.7 x 1.7	C&E	80
D4-1	1.7 x 1.7	C&E	50
D4-2	2-1.7 x 1.7	C&E	22
D4-3	1.7 x 4.6	C&E	0
D4-4	1.7 x 4.6	C&E (TD)	0
D5-1	2-1.7 x 4.6	C&E (TD)	0, 8
D5-2	1.7 x 1.7	C&E	25
D6-1	1.7 x 1.7	C&E	80
D8-1	1.7 x 1.7	C&E	22
D8-3	1.7 x 4.6	C&E	0
D1	1.7 x 1.7	COUNT	SEE PLAN
D3	1.7 x 1.7	COUNT	SEE PLAN

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

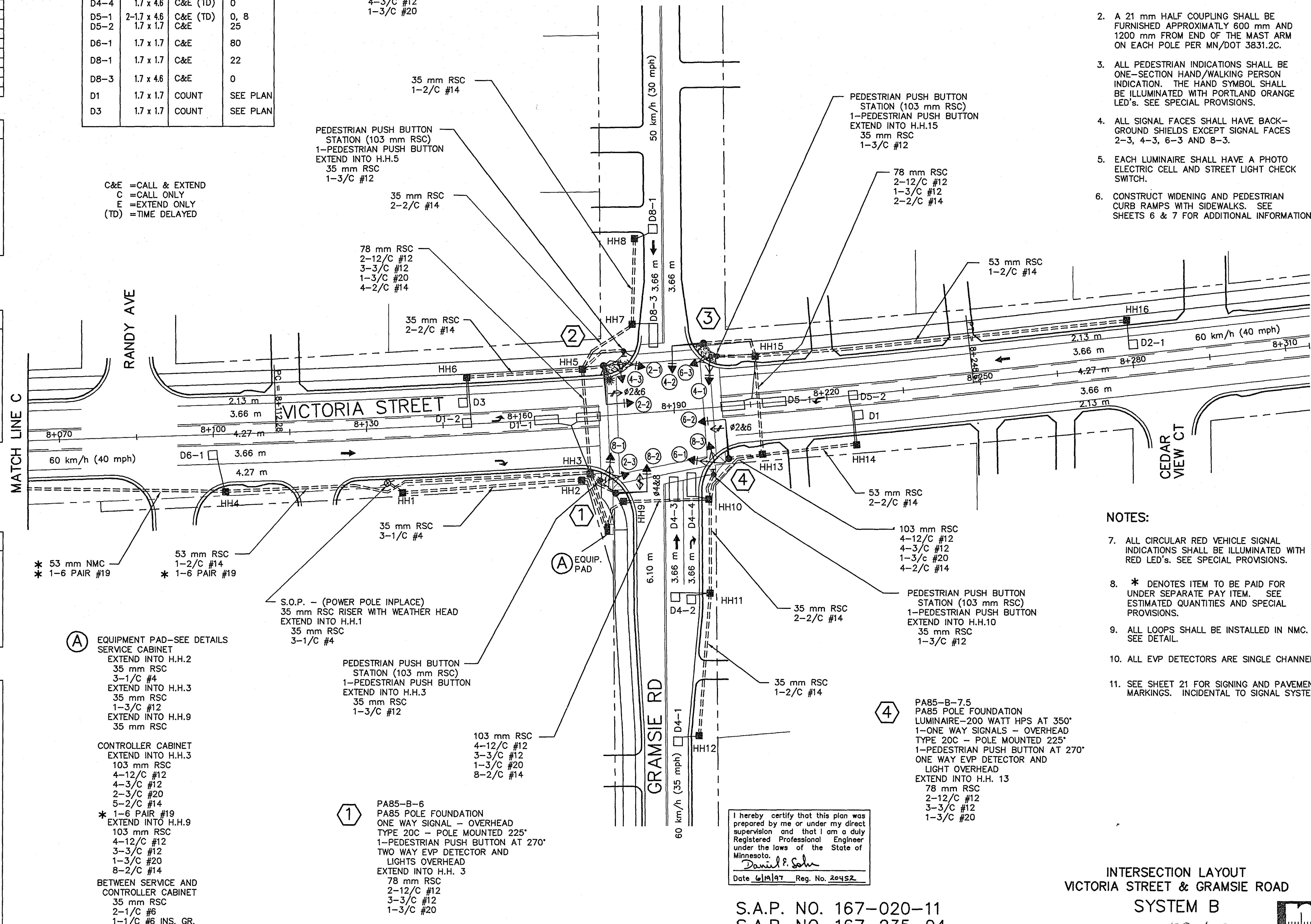
② PA85-B-7.5-T12-3
PA90 POLE FOUNDATION
LUMINAIRE-200 WATT HPS AT 350'
2-ONE WAY SIGNALS - OVERHEAD
TYPE 20C - POLE MOUNTED 225'
1-PEDESTRIAN PUSH BUTTON AT 270'
ONE WAY EVP DETECTOR AND
LIGHT OVERHEAD
EXTEND INTO H.H. 5
78 mm RSC
2-12/C #12
4-3/C #12
1-3/C #20

③ PA85-B-6
PA85 POLE FOUNDATION
ONE WAY SIGNAL - OVERHEAD
TYPE 20C - POLE MOUNTED 225'
1-PEDESTRIAN PUSH BUTTON AT 270'
EXTEND INTO H.H. 15
78 mm RSC
2-12/C #12
2-3/C #12



NOTES:

- POLE AND DETECTOR LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE TRAFFIC ENGINEER PRIOR TO INSTALLATION.
- A 21 mm HALF COUPLING SHALL BE FURNISHED APPROXIMATELY 600 mm AND 1200 mm FROM END OF THE MAST ARM ON EACH POLE PER MN/DOT 3831.2C.
- ALL PEDESTRIAN INDICATIONS SHALL BE ONE-SECTION HAND/WALKING PERSON INDICATION. THE HAND SYMBOL SHALL BE ILLUMINATED WITH PORTLAND ORANGE LED'S. SEE SPECIAL PROVISIONS.
- ALL SIGNAL FACES SHALL HAVE BACK-GROUND SHIELDS EXCEPT SIGNAL FACES 2-3, 4-3, 6-3 AND 8-3.
- EACH LUMINAIRE SHALL HAVE A PHOTO ELECTRIC CELL AND STREET LIGHT CHECK SWITCH.
- CONSTRUCT WIDENING AND PEDESTRIAN CURB RAMPS WITH SIDEWALKS. SEE SHEETS 6 & 7 FOR ADDITIONAL INFORMATION.



NOTES:

- ALL CIRCULAR RED VEHICLE SIGNAL INDICATIONS SHALL BE ILLUMINATED WITH RED LED'S. SEE SPECIAL PROVISIONS.
- * DENOTES ITEM TO BE PAID FOR UNDER SEPARATE PAY ITEM. SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- ALL LOOPS SHALL BE INSTALLED IN NMC. SEE DETAIL.
- ALL EVP DETECTORS ARE SINGLE CHANNEL.
- SEE SHEET 21 FOR SIGNING AND PAVEMENT MARKINGS. INCIDENTAL TO SIGNAL SYSTEM.

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

Daniel P. Solm
Date 6/19/97 Reg. No. 20452

S.A.P. NO. 167-020-11
S.A.P. NO. 167-235-04

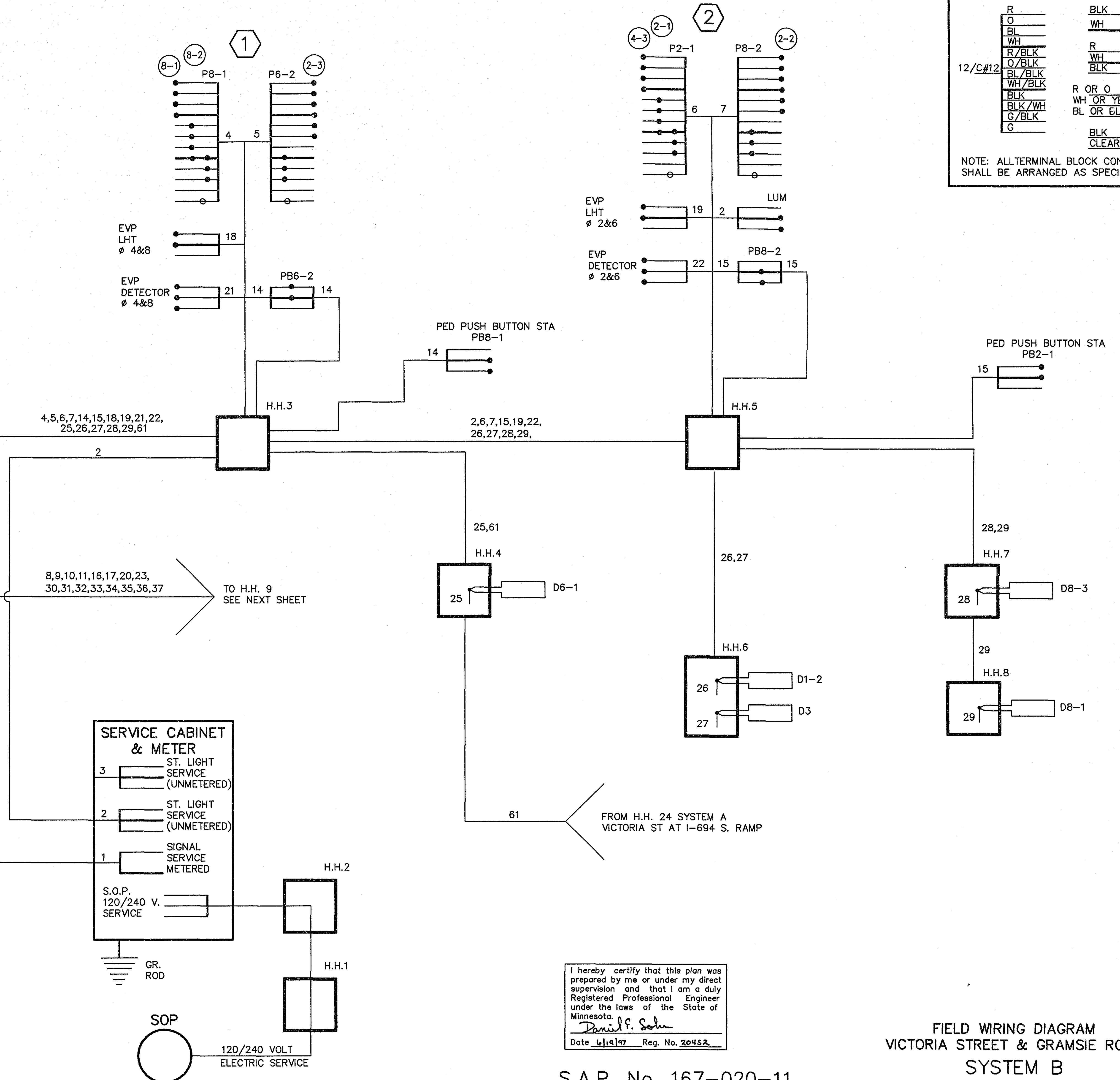
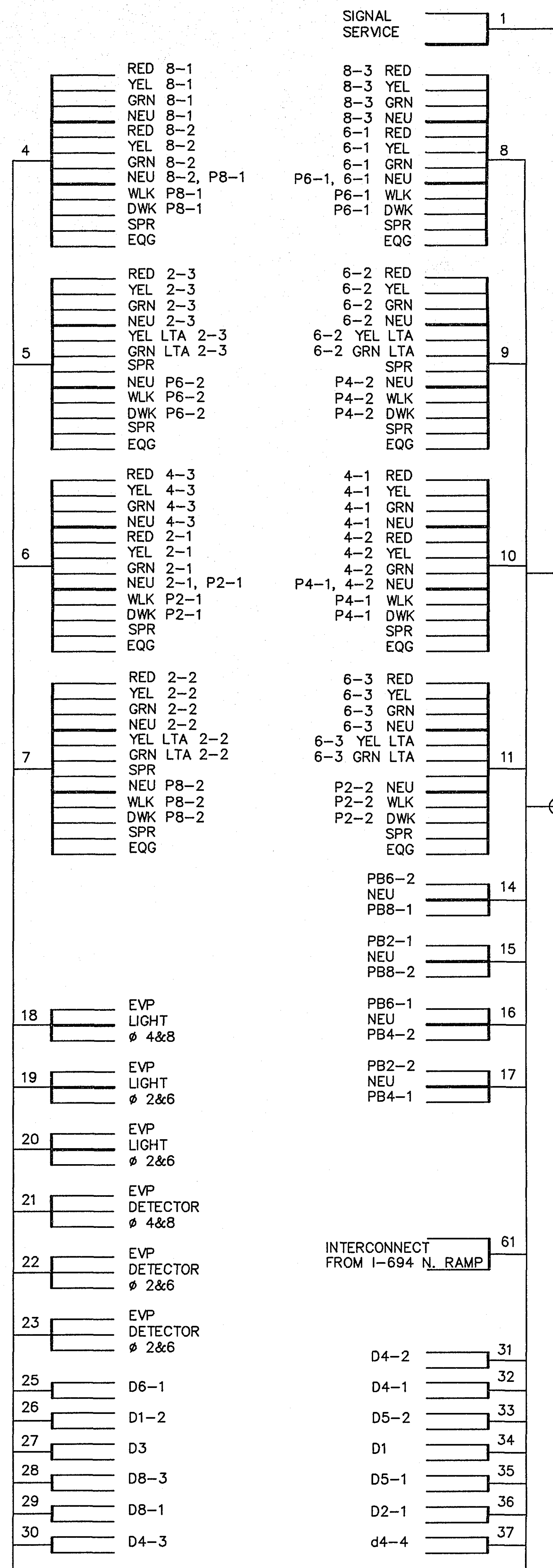
S.A.P. NO. 62-652-15

INTERSECTION LAYOUT
VICTORIA STREET & GRAMSIE ROAD
SYSTEM B

SHEET NO. 15 OF 23 SHEETS

METER ADDRESS: 3950 VICTORIA STREET
RAMSEY COUNTY INTERSECTION I.D. No. TRF 609

CONTROLLER CABINET



CONDUCTOR COLOR CODING

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

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

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Daniel F. Schu

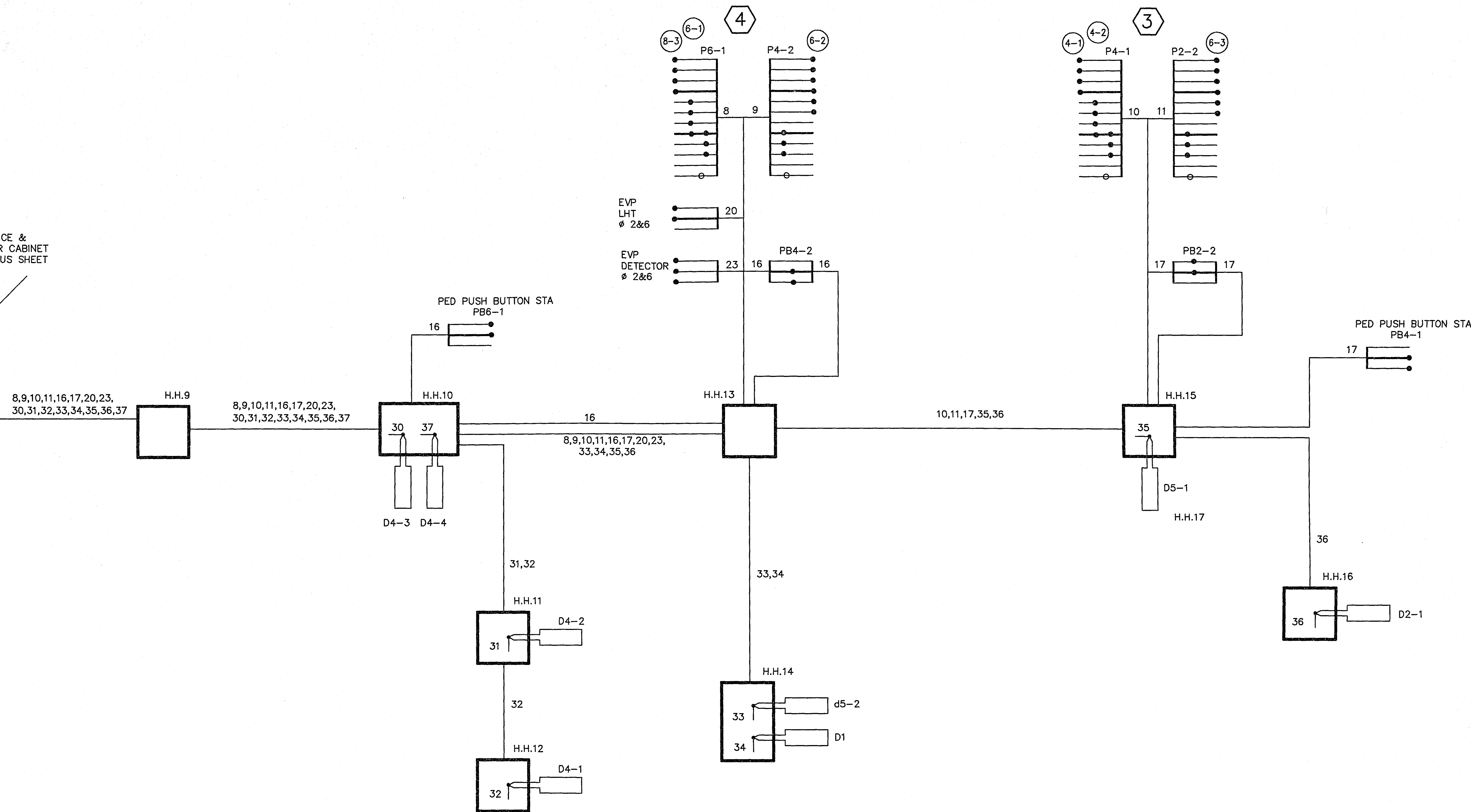
Date 6/19/97 Reg. No. 20452

FIELD WIRING DIAGRAM
VICTORIA STREET & GRAMSIE ROAD
SYSTEM B

S.A.P. No. 167-020-11
S.A.P. No. 167-235-04
S.A.P. No. 62-652-15

Sheet No. 16 of 23 Sheets

FROM SERVICE &
CONTROLLER CABINET
SEE PREVIOUS SHEET



I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Daniel E. Soler
Date 4/19/97 Reg. No. 20452

FIELD WIRING DIAGRAM
VICTORIA STREET & GRAMSIE ROAD
SYSTEM B

S.A.P. No. 167-020-11
S.A.P. No. 167-235-04
S.A.P. No. 62-652-15

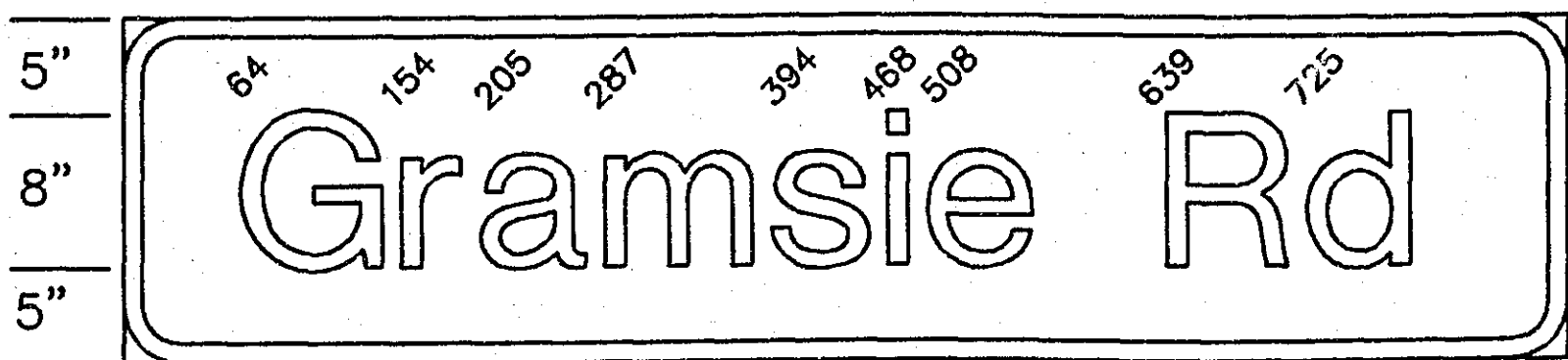
28-177
Sheet No. 17 of 23 Sheets





D-4, D-5 & D-6
84" X 18"
3" R., 1" B

LINE 1 = 68.9" : 8"-6" "E" MOD.

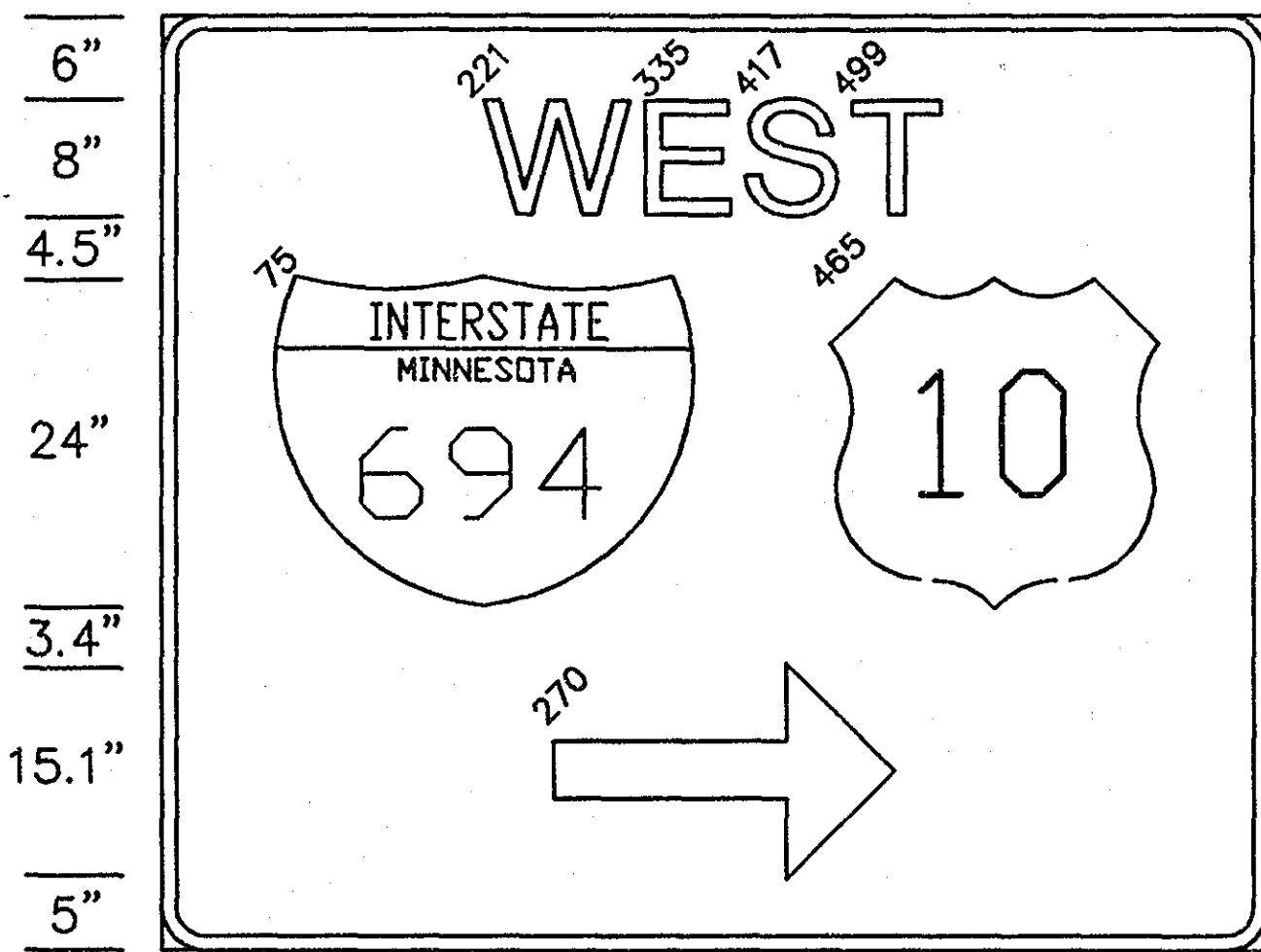


D-7 & D-8
84" X 18"
3" R., 1" B

LINE 1 = 71.2" : 8"-6" "E" MOD.

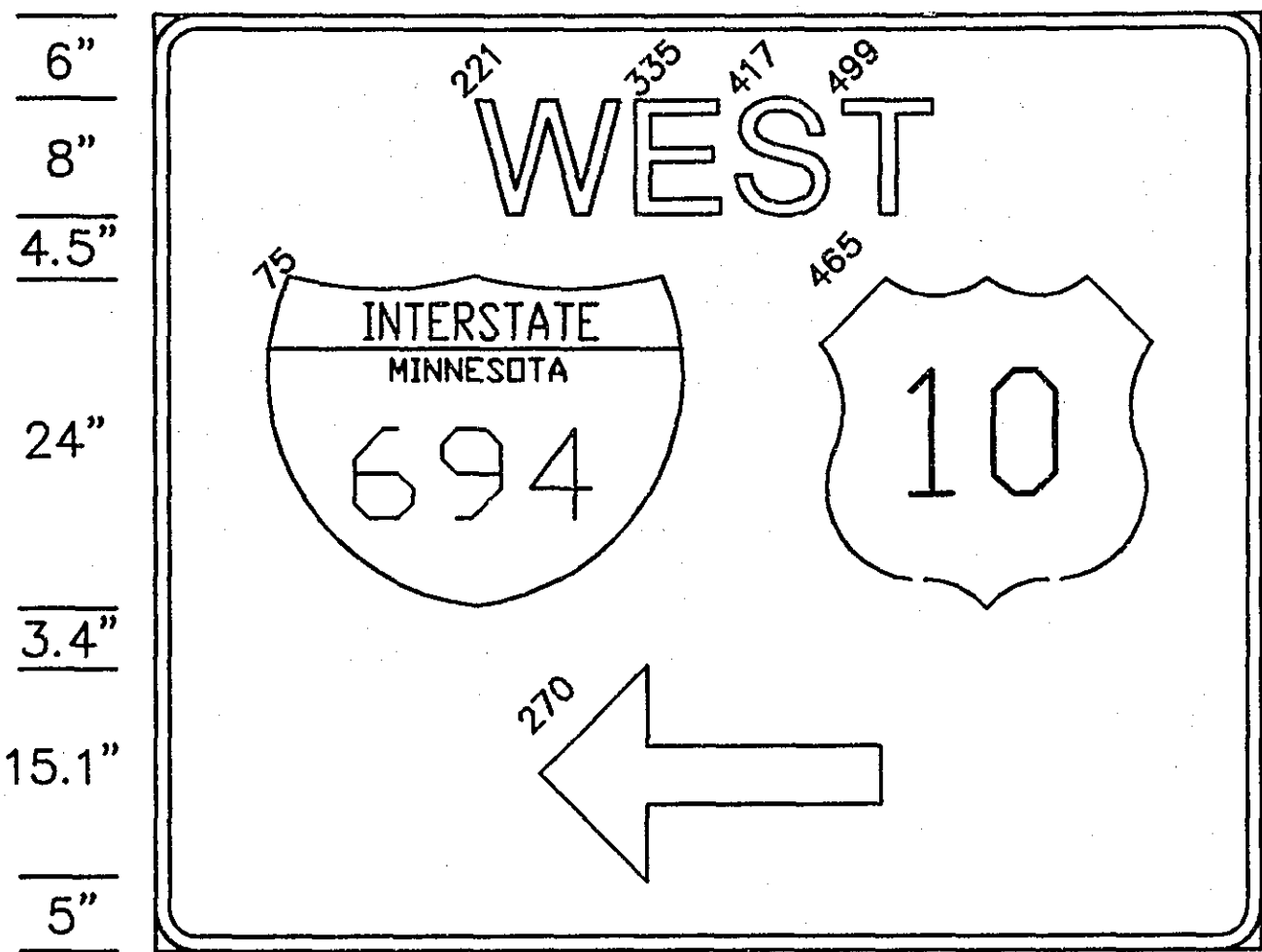
TYPE "D" SIGNS - SIGNALS								
SIGN PANEL	SIZE	QUANTITY REQUIRED	BRACKETS PER SIGN	BRACKET SPACING	SQUARE FEET PER SIGN	a	b	MAST ARM POLE NUMBER
D-1	78" X 66"	1	2	54"	35.75		15'	(A)1
D-2	78" X 66"	1	2	54"	35.75		7'	(A)3
D-3	78" X 66"	1	2	54"	35.75		19'	(A)3
D-4	84" X 18"	1	2	54"	10.50		17'	(A)4
D-5	84" X 18"	1	2	54"	10.50		5'	(B)1
D-6	84" X 18"	1	2	54"	10.50		5'	(B)3
D-7	84" X 18"	1	2	54"	10.50		10'	(B)2
D-8	84" X 18"	1	2	54"	10.50		10'	(B)4

TOTAL 159.75 SQ.FT.



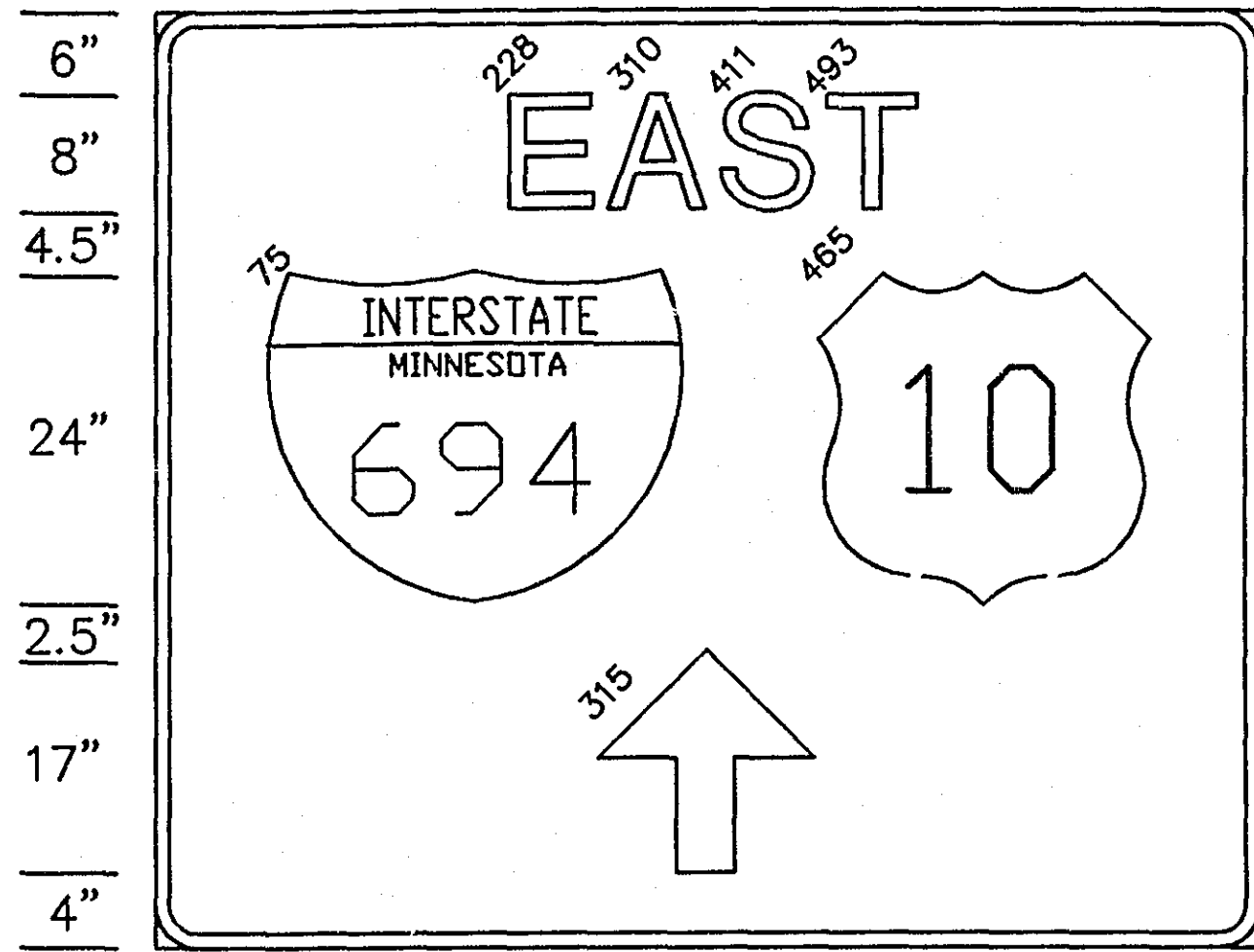
D-1
78" X 66", 9"R., 1.0"B.

LINE 1= 33.8" : 8" "E" MOD.
LINE 2= 30"X24" O.L.-10" NUM.,24"X24" O.L.-10" NUM.
LINE 3= 15-24 ARROW - 0'



D-2
78" X 66", 9"R., 1.0"B.

LINE 1= 33.8" : 8" "E" MOD.
LINE 2= 30"X24" O.L.-10" NUM.,24"X24" O.L.-10" NUM.
LINE 3= 15-24 ARROW - 180'

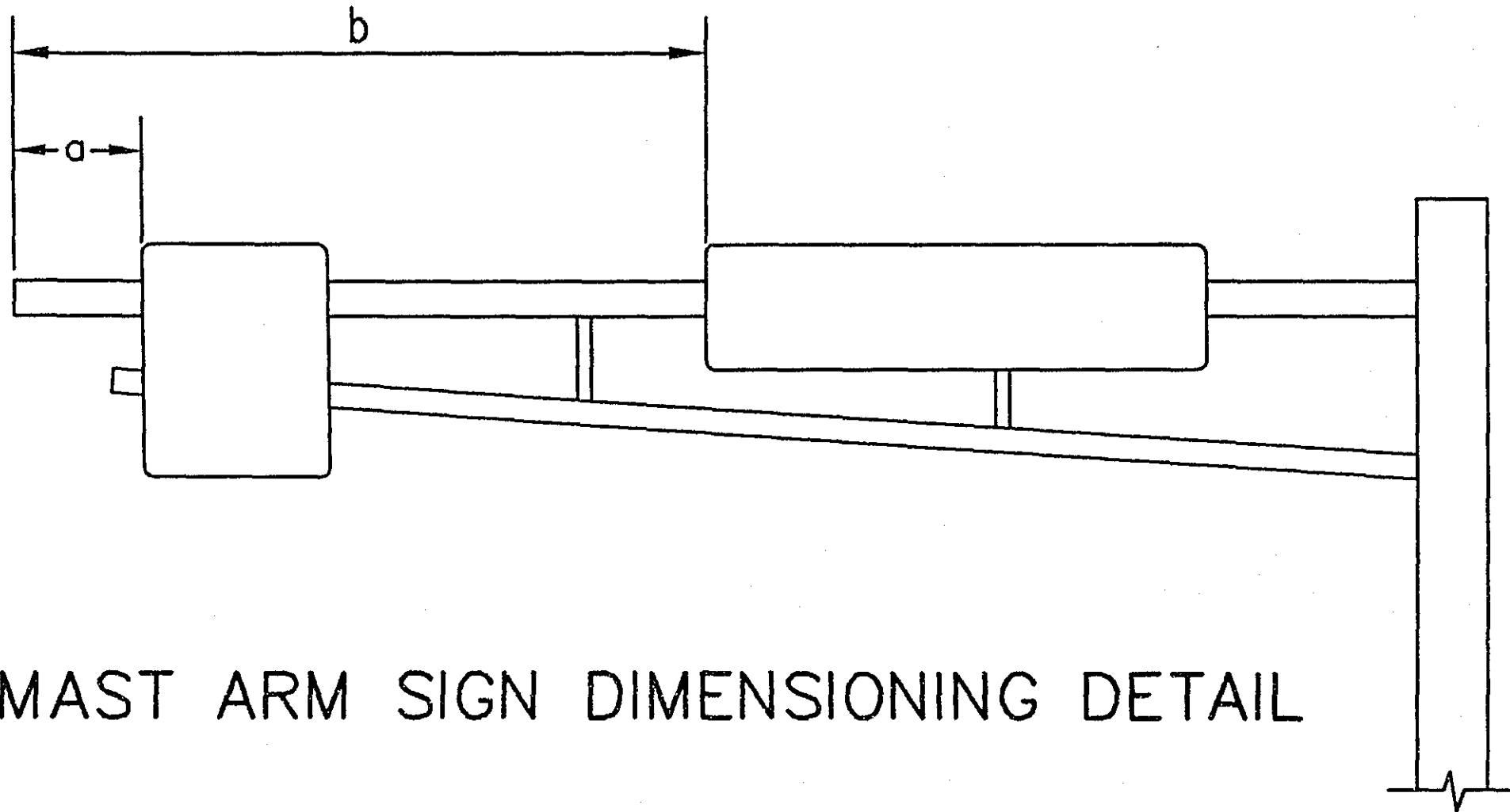


D-3
78" X 66", 9"R., 1.0"B.

LINE 1= 32.5" : 8" "E" MOD.
LINE 2= 30"X24" O.L.-10" NUM.,24"X24" O.L.-10" NUM.
LINE 3= 6-17 ARROW - 90'

OVERLAYS				
CODE NO.	QUANTITY REQUIRED	SIZE (IN)	LEGEND	SQ.FT. PER OVERLAY
M1-1	3	30 X 24	INTERSTATE 694	5.00
M1-4A	3	24 X 24	US HIGHWAY 10	4.00

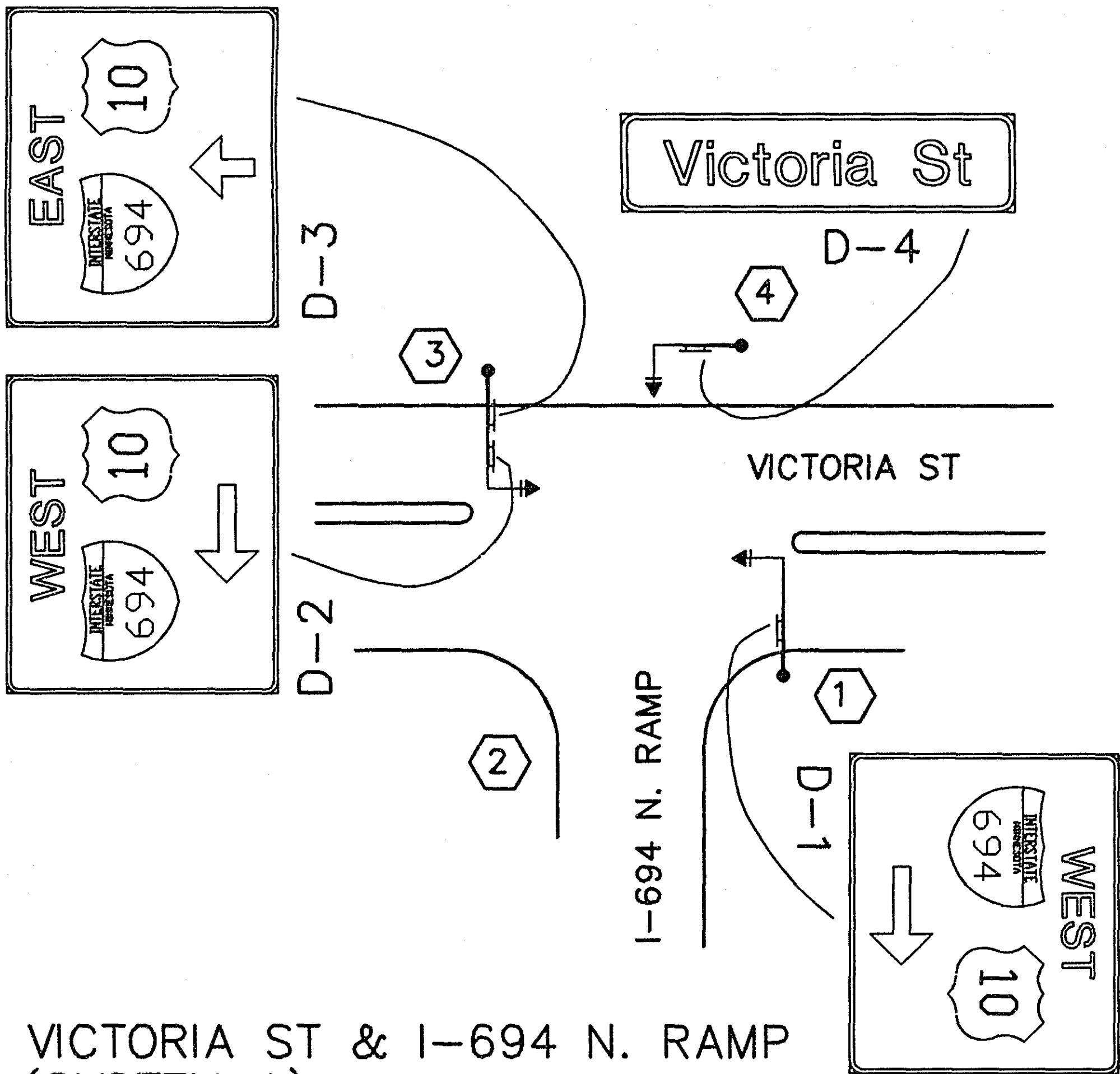
(A) - SYSTEM A
(B) - SYSTEM B



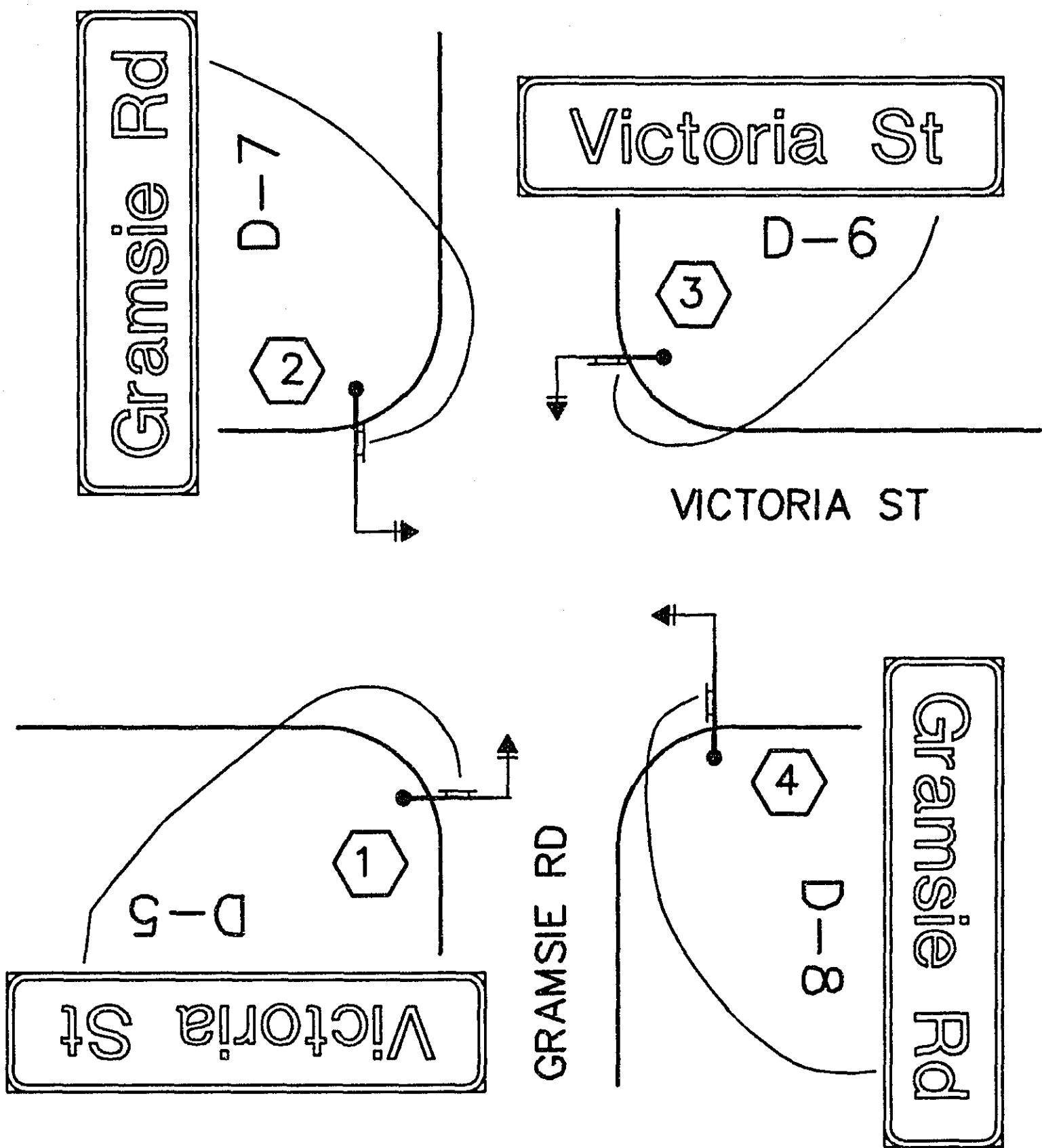
MAST ARM SIGN DIMENSIONING DETAIL

NOTES:

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



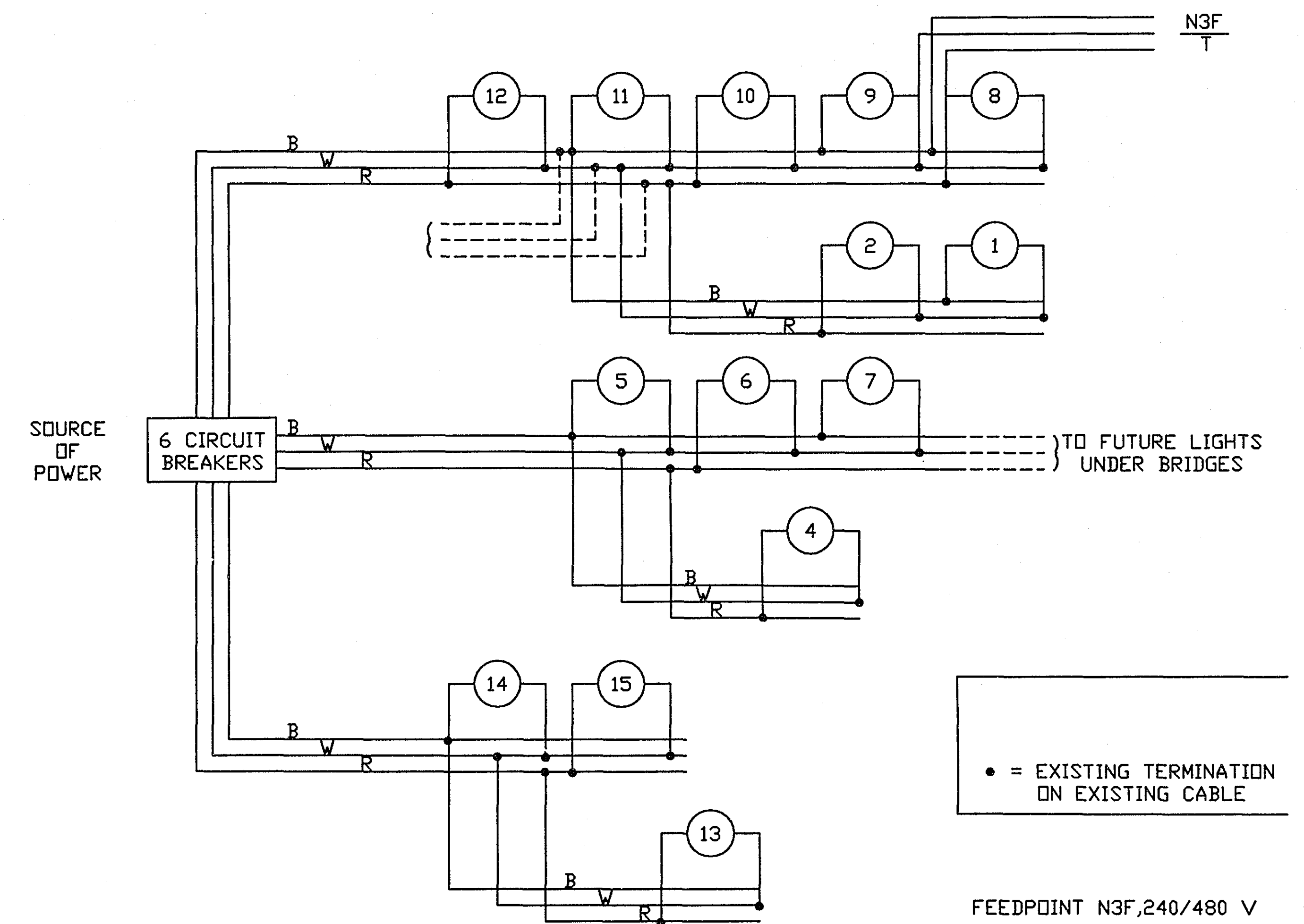
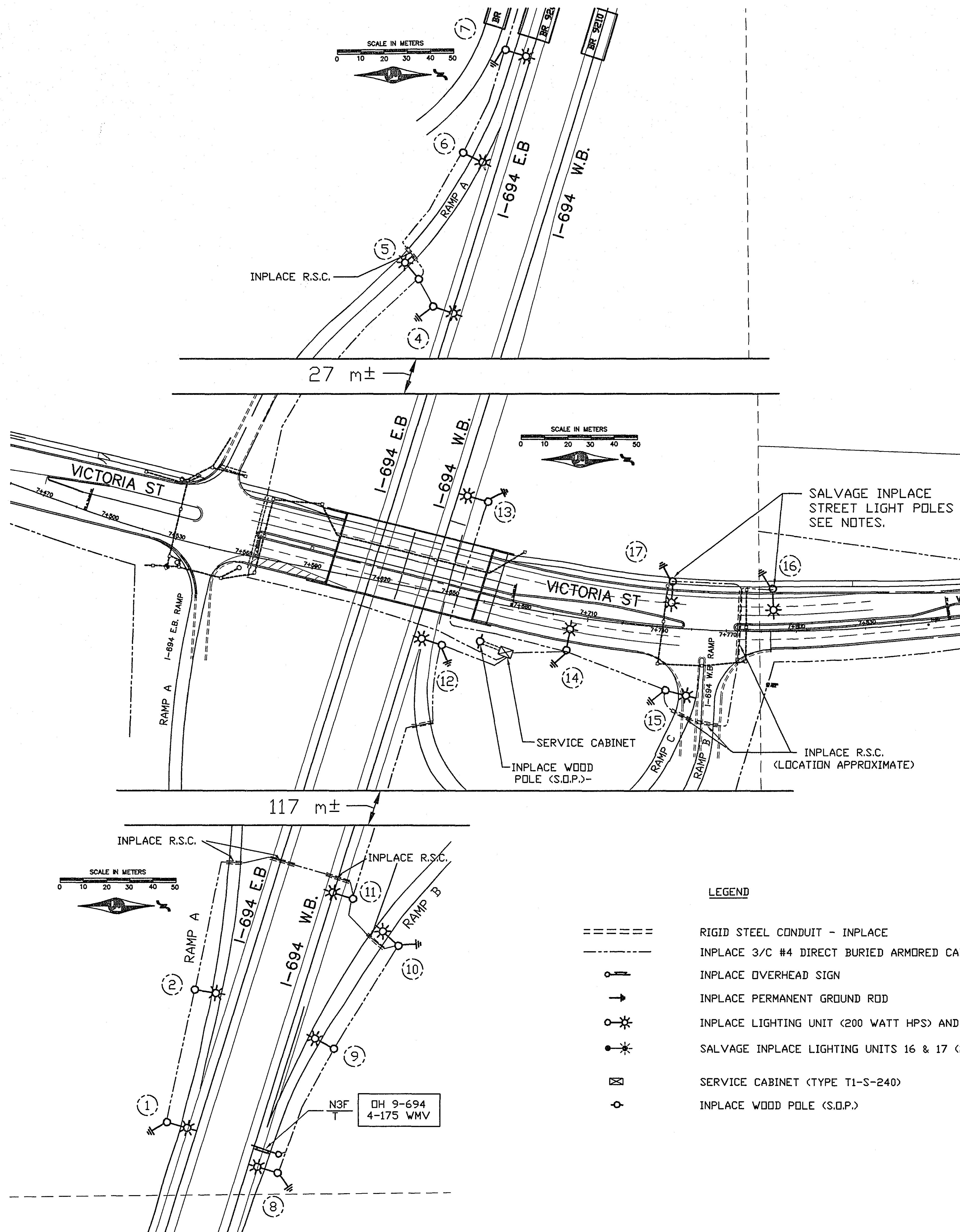
VICTORIA ST & I-694 N. RAMP
(SYSTEM A)



VICTORIA ST & GRAMSIE RD
(SYSTEM B)

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Date 6/19/87 Reg. No. 20452

MAST ARM SIGNS
SYSTEM A AND SYSTEM B
THIS SHEET IS IN ENGLISH UNITS



SHEET TOTAL
14 - 200 WATT HIGH PRESSURE SODIUM LIGHTING UNITS.
4 - 175 WATT MERCURY VAPOR SIGN LIGHTS.

NOTES:

- POLES (16) & (17)
INPLACE - SALVAGE 40 FT. STREET LIGHT POLE
9 FT. MAST ARM
200 WATT HPS LUMINAIRE
INPLACE - REMOVE STREET LIGHT POLE FOUNDATION
GROUND ROD
INPLACE 3/C #4 DIRECT BURIED ARMORED CABLE
REMOVE BACK TO POLE 15 AND DISCONNECT FROM POLE 15. SEE SPECIAL PROVISIONS.
- SALVAGED MATERIALS SHALL BE DELIVERED TO MN/DOT ELECTRICAL SERVICES SECTION, FORT SNELLING.
- REMOVE & DISPOSE OF INPLACE FOUNDATIONS PER MN/DOT 2104.3C3
- ALL STREET LIGHTS SHALL REMAIN IN OPERATION AT ALL TIMES.
- ALL STREET LIGHTING WORK SHALL BE CONSIDERED AS INCIDENTAL TO FULL-TRAFFIC-ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM "A"

LEGEND

- ===== RIGID STEEL CONDUIT - INPLACE
- INPLACE 3/C #4 DIRECT BURIED ARMORED CABLE
- INPLACE OVERHEAD SIGN
- INPLACE PERMANENT GROUND ROD
- ⊙ INPLACE LIGHTING UNIT (200 WATT HPS) AND FOUNDATION
- ⊙ INPLACE LIGHTING UNIT (200 WATT HPS), REMOVE INPLACE FOUNDATIONS
- ☒ SERVICE CABINET (TYPE T1-S-240)
- INPLACE WOOD POLE (S.O.P.)

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Daniel E. Solm
Date 6/19/97 Reg. No. 20452

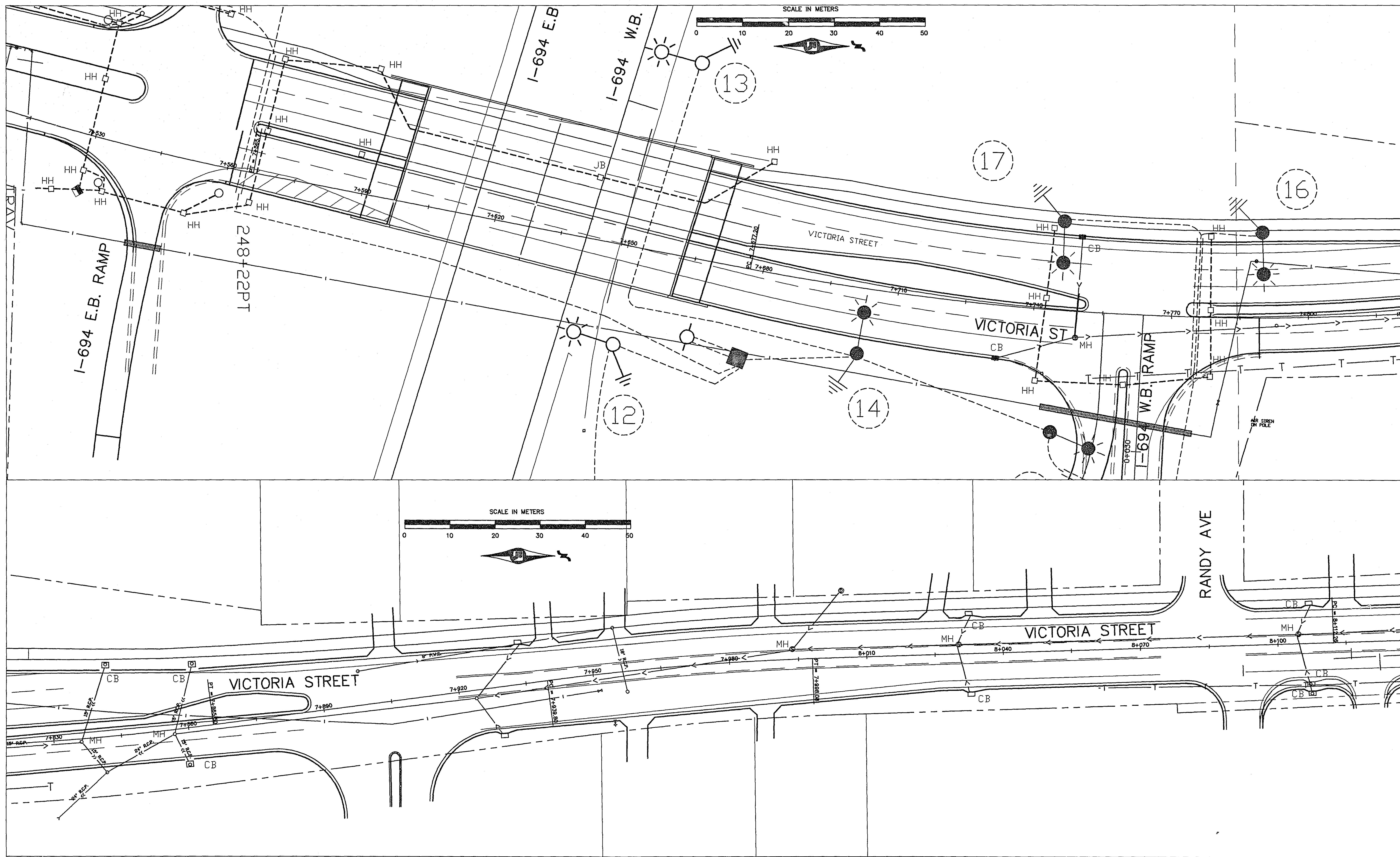
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S.A.P. No. 62-652-15

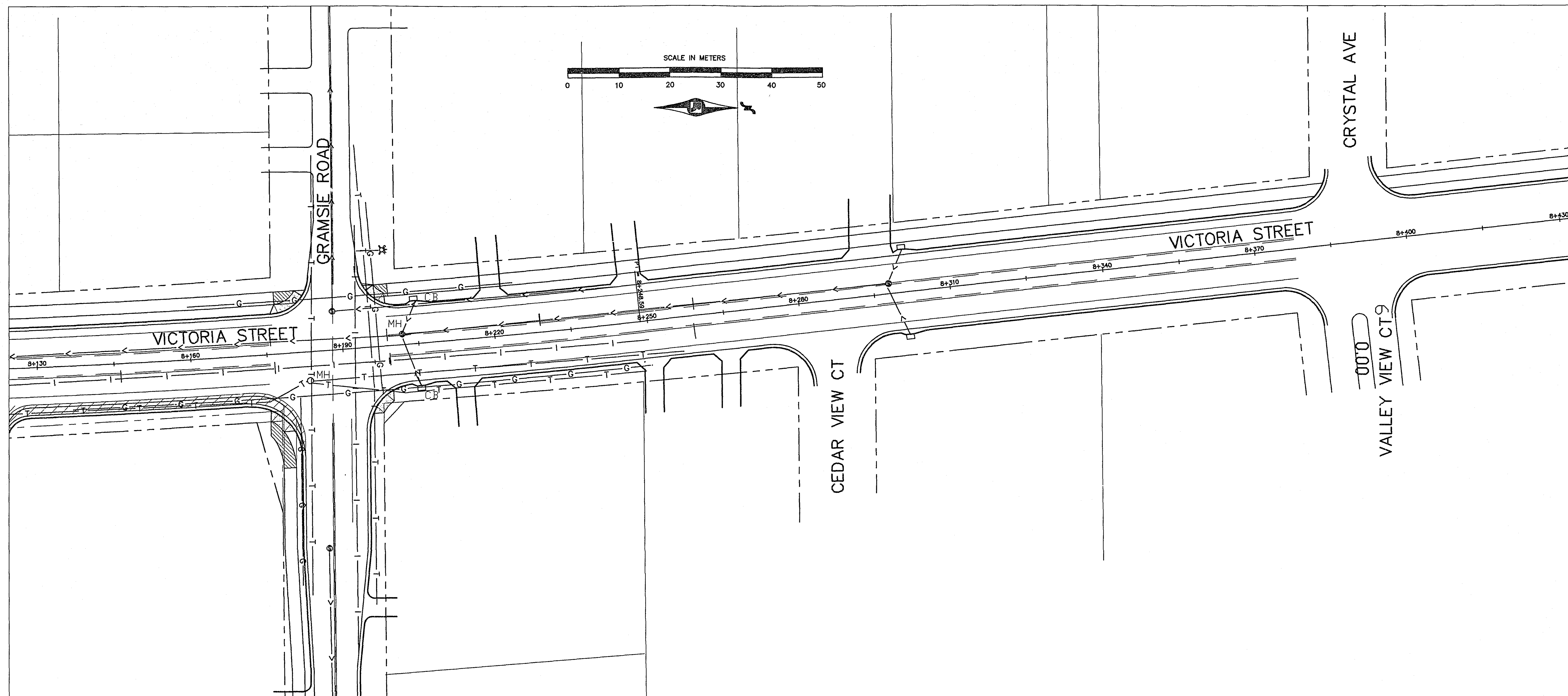
VICTORIA ST. & I-694
STREET LIGHT REVISIONS

28-177
Sheet No. 20 of 23 Sheets



F:\TRAFFIC\SIGPLAN\VICTORIA\565UTL.dwg 6/4/97





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Daniel E. Sohn

Date 6/19/97 Reg. No. 20452

S.P. No. 6285-118
 S.A.P. No. 167-235-04
 S.A.P. No. 167-020-11
 S.A.P. No. 62-652-15

VICTORIA STREET
 I-694 to GRAMSIE ROAD
 UTILITIES

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 Sheet No. 23 of 23 Sheets

