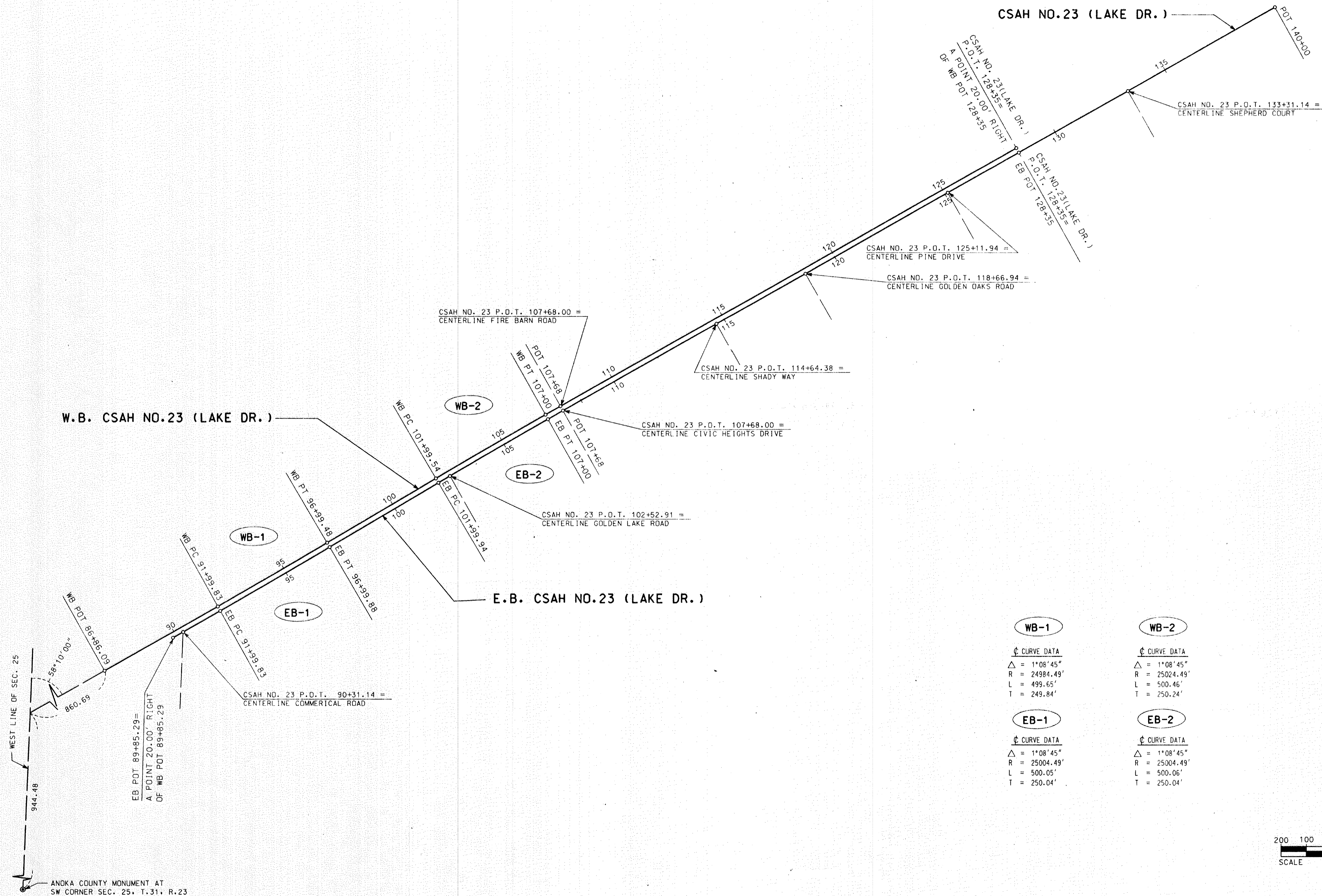
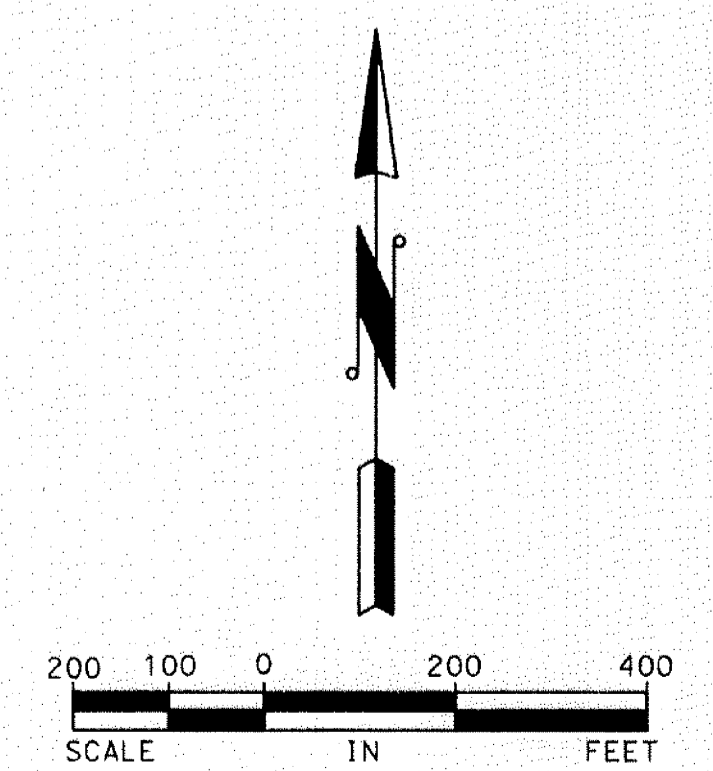


CSAH NO. 23
LAKE DRIVE



WB-1	WB-2
$\Delta = 1^\circ 08' 45''$	$\Delta = 1^\circ 08' 45''$
$R = 24984.49'$	$R = 25024.49'$
$L = 499.65'$	$L = 500.46'$
$T = 249.84'$	$T = 250.24'$

EB-1	EB-2
$\Delta = 1^\circ 08' 45''$	$\Delta = 1^\circ 08' 45''$
$R = 25004.49'$	$R = 25004.49'$
$L = 500.05'$	$L = 500.06'$
$T = 250.04'$	$T = 250.04'$



OSM <small>Ort Schelen Mayeron & Associates, Inc. Engineers - Surveyors - Planners 2021 East Hennepin Avenue - Minneapolis, MN 55413 - 612-351-8600</small>	ALIGNMENT SHEET CITY IMPROVEMENT NO. 1991-1 CIRCLE PINES, MINNESOTA	<small>DESIGNED BY: R.C. CHECKED BY: D.E.A. RECORD COPY BY: DATE</small>	<small>SCALE: 1" = 200' PLAN BY: CADD DESIGN BY: R.C. CHECKED BY: COMM. NO.: 4873.0 D.E.A. RECORD COPY BY: DATE</small>
PLAN NO. 2		DATE: 2-22-91 REG. NO. 18377	

ESTIMATED QUANTITIES					
Spec. No.	Item	Unit	County	City	Total
			100%	100%	
2021.501	Mobilization	Lump Sum	1		1
2101.501	Clearing	Acre	0.1		0.1
2101.506	Grubbing	Acre	0.1		0.1
2104.503	Remove Concrete Median	Sq.Ft.	1680		1680
2104.505	Remove Bituminous Pavement	Sq.Yd.	5950		5950
2104.523	Salvage 88" Span RCP-A Apron	Each	2		2
2105.501	Common Excavation (P)	Cu.Yd.	4625		4625
2105.505	Muck Excavation (P)	Cu.Yd.	500		500
2105.507	Subgrade Excavation (P)	Cu.Yd.	4000		4000
2105.522	Select Granular Borrow (L.V.) 115% (P)	Cu.Yd.	1000		1000
2105.523	Common Borrow (L.V.) 130%	Cu.Yd.	4300		4300
0105.609	Geotextile Fabric	Sq.Yd.	950		950
2211.501	Agg. Base P.I. Cl. 5(100% Crushed)(C.V.)(P)	Cu.Yd.	2950		2950
2232.501	Mill Bituminous Surface (1 1/2")	Sq.Yd.	1600		1600
2331.508	Type 41 Wearing Course	Tons	2450		2450
2331.510	Type 31 Binder Course	Tons	1250		1250
2331.512	Type 31, Leveling Course Mixture	Ton	400		400
2331.514	Type 31 Base Course	Tons	1900		1900
2331.516	Type 31, Shouldering Mixture	Ton	650		650
2357.502	Bituminous Tack Coat	Gal.	2000		2000
2412.511	7'X 7' R.C. Box Culvert (2' Overfill)	Lin.Ft.	42		42
2412.512	7'X 7' R.C. End Section, Type 1	Each	2		2
2451.507	Granular Bedding	Cu.Yd.	30		30
2501.511	18" C.M. Pipe Culvert (14 Gage)	L.F.		35	35
2501.515	18" C.M. Pipe Apron	Each		4	4
2501.573	Install 88" Span RCP-A Apron	Each	2		2
2503.521	88" Span RCP-A sewer, Class II	L.F.	16		16
0503.601	Traffic Control	Lump Sum	1		1
0504.602	Adjust Gate Valve	Each	1		1
2506.522	Adjust Frame and Ring Casting (Manhole)	Each	3		3
2521.508	4" Concrete Walk (Ped. Ramps)	Sq.Ft.		168	168
2531.501	Conc. Curb & Gutter (Design B6-18)	Lin.Ft.	450		450
2531.503	Concrete Median	Sq.Yd.	3907		3907
2557.501	F & I 5' High Chain Link Fence	L.F.	48		48
2565.511	Mod. Traffic Actuated Control Signal	Lump Sum	1		1
	System "A"				
2565.511	Traffic Actuated Control Signal	Lump Sum		1	1
	System "B"				
2573.501	Bale	Each	40		40
2573.502	Silt Fence, Heavy Duty	L.F.	520		520
2575.501	Seeding	Acre	3.9		3.9
2575.505	Sodding, Lawn Type	Sq.Yd.	4500		4500

STANDARD PLATES	
PLATE NO.	DESCRIPTION
0005A	SPECIFICATION REFERENCE TO STANDARD PLATES (1989)
3014J	REINFORCED CONCRETE PIPE ARCH DETAIL
3040F	CORRUGATED METAL PIPE CULVERT
3123I	METAL APRON FOR C.S. PIPE
3124B	METAL APRON CONNECTION
3145E	CONCRETE PIPE TIES (A)
3221C	CORRUGATED STEEL PIPE COUPLING BEND
4108E	MANHOLE ADJUSTING RINGS
7100F	CONCRETE CURB AND GUTTERS (DESIGN B)
7102H	CONCRETE CURB AND GUTTERS (DESIGN D)
8000I	STANDARD BARRICADES
9102C	SODDING AT PIPE CULVERT ENDS
9322I	CHAIN LINK FENCE

(A) USE FOR CONNECTION OF 7 X 7 BOX CULVERT CAST IN PLACE TO PRE-CAST 7 X 7 BOX CULVERT AT STATION 106+38. MINIMUM OF 4 PER SIDE.

EARTHWORK TABULATION					
LOCATION	SUBCUT	COMMON EXC.		MUCK	EMBANK.
		COMMON	TOPSOIL		
STA-STA	CU.YD.	CU.YD.	CU.YD.	CU.YD.	REGULAR
92+00-94+00				500	
91+50-95+00	447	0	67		101
95+00-101+00	869	0	225		837
101+00-105+00	469	0	194		1628
105+00-109+00	377	463	124		1522
109+00-114+00	361	486	210		685
114+00-120+00	419	698	226		672
120+00-125+00	319	46	129		375
125+00-130+00	266	393	176		431
130+00-135+00	323	93	121		455
135+00-138+35	152	0	47		9
92+00-138+35		925			
TOTALS	① 4002	② 3104	1519	500	6715

- ① INCLUDES 823 C.Y. TO BE REPLACED BY SELECT GRANULAR BORROW (92+00-97+00)
- ② INCLUDES SALVAGING 925 CU. YD. OF BITUMINOUS STABILIZED SUBGRADE TO BE USED IN SUBGRADE AS SHOWN ON TYPICAL SECTION ON SHEET 4.

CURB & GUTTER, SIDEWALK AND CONC. MEDIAN REMOVAL								
STATION - STATION	LOCATION	CURB & GUTTER ①			SIDEWALK			CONCRETE MEDIAN REMOVAL
		REMOVAL	CONSTRUCTION	REMOVAL	CONSTRUCTION			
		LIN.FT	TYPE	LIN.FT	THICKNESS	SO.FT	SO.YD	
91+50 TO 94+00								1680
107+00 TO 107+50	LT.		B618 80		4"	28		
107+85 TO 108+35	LT.		B618 80		4"	28		
124+55 TO 124+96	LT.		B618 65		4"	28		
124+40 TO 124+90	RT.		B618 80		4"	28		
125+28 TO 125+68	LT.		B618 65		4"	28		
125+34 TO 125+84	RT.		B618 80		4"	28		
TOTAL			450			168		

① PROVIDE HANDICAP ACCESS THRU CURB AND TRANSITIONS AT END OF CURB.

NOTES:

- SEE REMOVAL ON SHEET NO. 8
- INCLUDES 500 L.F. SAWING (STATION 92+00 TO 97+00 RT.) BITUMINOUS PAVEMENT @ 4.5"
- SEE EARTHWORK TABULATION ON THIS SHEET.
- INCLUDES SALVAGE OF BITUMINOUS STABILIZED SUBGRADE AND TOPSOIL. SEE EXISTING TYPICAL ON SHEET NO. 4.
- COMMON BORROW SHALL BE A GRANULAR MATERIAL NOT INCLUDING MUCK, VEGETATION, PEAT OR PLASTIC SOILS
- COMPUTED AT THE RATE OF .05 GALLONS PER SQUARE YARD PER COURSE
- SEE NOTE (A) ON THE STANDARD PLATE TABULATION. SEE CULVERT CROSS-SECTION SHEET NO. 20.
- SEE SHEETS NO. 8 AND 9 FOR TABULATION
- SEE TABULATION ON THIS SHEET
- SEE SHEETS NO. 18 AND 19 FOR EXISTING SIGNAL SYSTEM FOR INFORMATION ONLY.

SODDING, HAYBALES & SILT FENCE					
STATION	LOCATION	DESCRIPTION:	SOD SO.YD.	BALES EACH	SILT FENCE LIN.FT.
93+10-95+50	RT	Protect Wetland			250
98+00-99+30	LT	Protect Ditch			130
98+00-99+30	RT	Protect Ditch			100
99+50-99+80	LT	Protect Ditch			40
100+10	LT	Ditch Bottom		7	
109+00-111+00	LT	Ditch Bottom		33	
98+40-99+20	RT	Culvert - Slope	250		
99+10-101+00	LT	Slope, Culvert, Ditch	800		
101+50-102+10	RT	Radius	150		
106+00-107+50	LT	Radius, Culvert	900		
106+00-107+40	RT	Radius, Culvert	800		
107+85-108+80	LT	Radius, Corner	500		
124+00-124+94	LT	Radius, Corner	350		
124+20-124+90	RT	Radius, Corner	350		
125+28-126+30	LT	Radius, Corner	200		
125+34-125+90	RT	Radius, Corner	200		
TOTALS			4500	40	520

SHOULDER / RIGHT TURN LANE TABULATION			
SHOULDER		RIGHT TURN LANE	
2331, TYPE 31 SHOULDER		2331, TYPE 41 WEAR	
STA. TO STA.	RT. OR LT.	STA. TO STA.	RT. OR LT.
91+50 TO 97+15	RT.	107+00 TO 112+70	LT.
108+30 TO 110+60	RT.	124+50 TO 130+14	LT.
91+50 TO 107+00	LT.	97+15 TO 108+30	RT.
112+70 TO 124+50	LT.	110+60 TO 126+00	RT.
130+14 TO 138+35	LT.	128+30 TO 134+00	RT.
126+00 TO 128+30	RT.		
134+00 TO 138+35	RT.		

EXPLANATION
 REVISION NO. DATE
 SCALE: 1" = 50' HOR. 1" = 10' VERT.
 DESIGN BY: P.L.S.H. R.B.B.
 CHECKED BY: COMM. NO. 4673
 RECORD COPY BY: DATE
 I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF IT COMplies WITH THE LAWS OF THE STATE OF MINNESOTA.
 Ronald B. Beier
 REGISTERED PROFESSIONAL ENGINEER
 NO. 18327
 DATE: 2-22-91

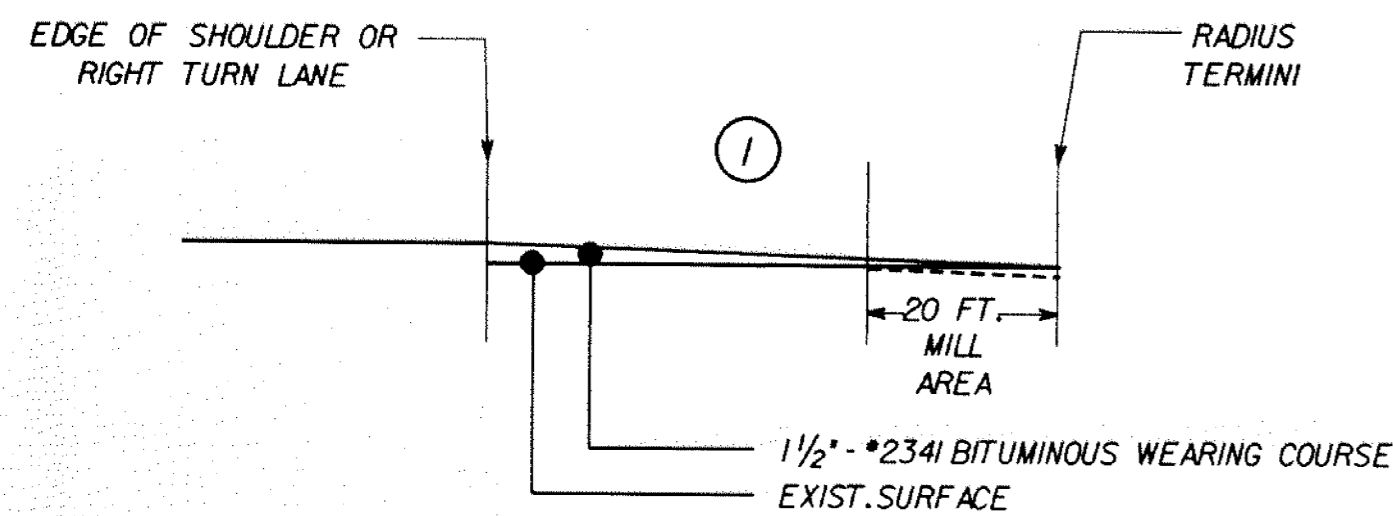
ESTIMATED QUANTITIES
 S.A.P. 02-623-09
 CITY IMP. NO. 1991-01
 CIRCLE PINES, MINNESOTA

Orr Schelen
 Mayeron &
 Associates, Inc.
 Engineers - Surveyors - Planners
 2021 East Hennepin Avenue - Minneapolis, MN 55413 - 612-331-9690

PLAN NO. 3

STREET APPROACH PAVING DETAIL

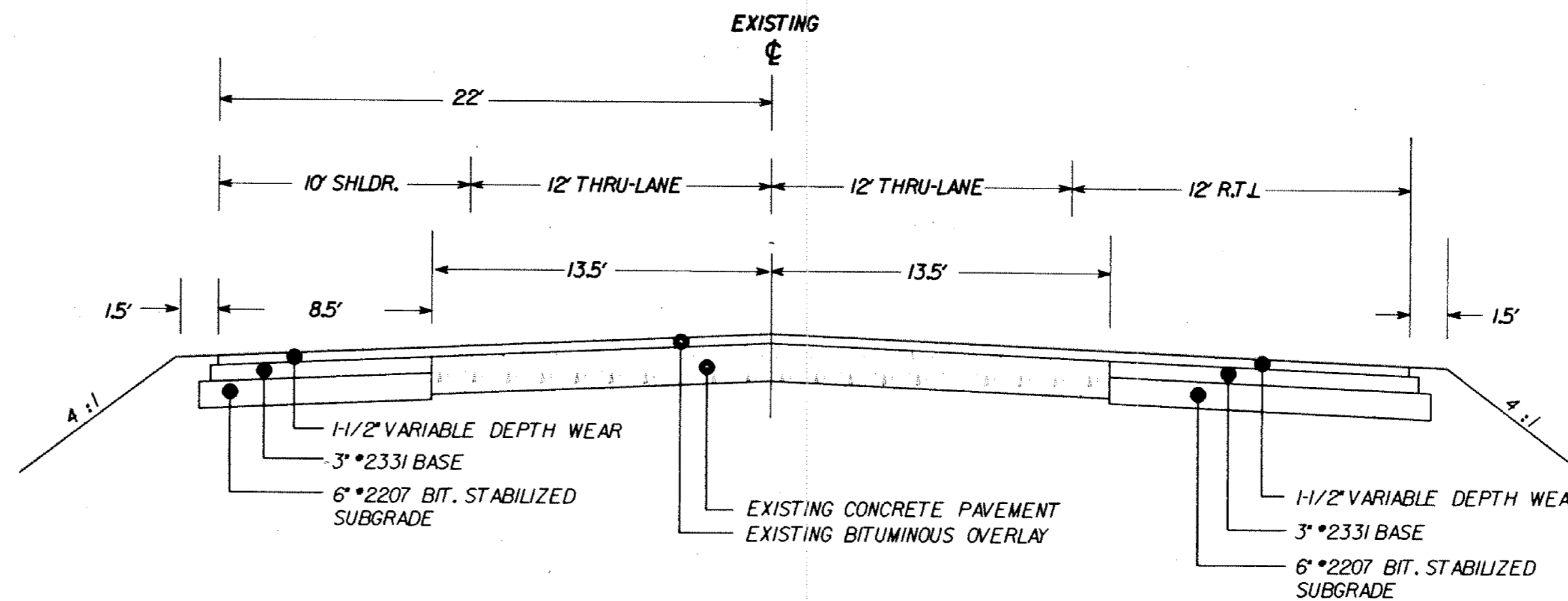
(NO SCALE)



① TRANSITION FROM 1-1/2" TYPICAL TO 0" THICKNESS

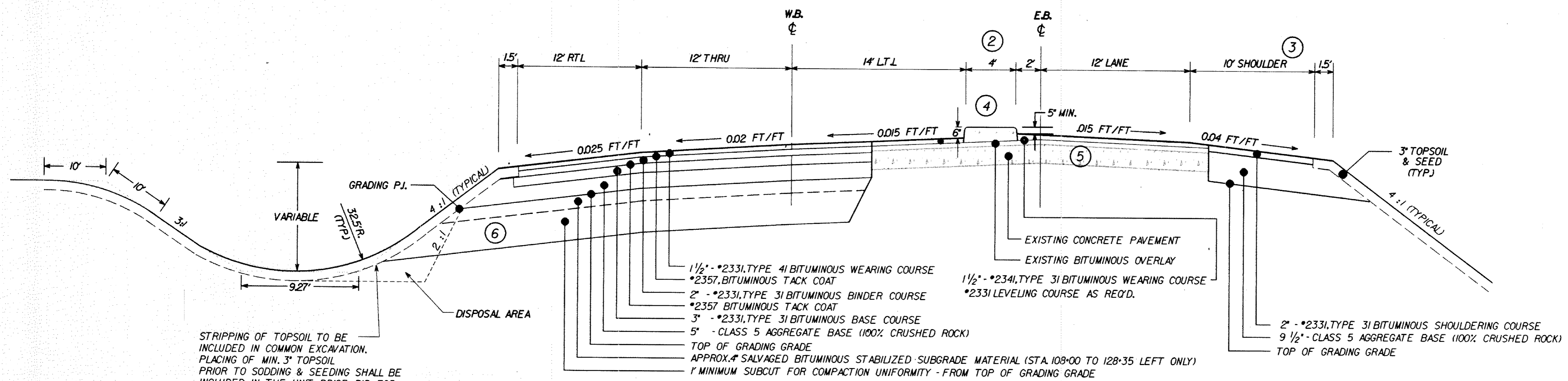
EXISTING TYPICAL SECTION

(NO SCALE)



PROPOSED TYPICAL SECTION ①

(NO SCALE)



STRIPPING OF TOPSOIL TO BE INCLUDED IN COMMON EXCAVATION. PLACING OF MIN. 3" TOPSOIL PRIOR TO SODDING & SEEDING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SODDING OR SEEDING.

- ① SEE PLAN SHEET NOS. 10 TO 13 FOR WIDENING AREAS
SEE SHEET NO. 8 FOR REMOVAL AREAS
- ② VARIES FROM 4' TO 16'
- ③ REPRESENTS NEW SHOULDER SURFACING IN REMOVAL AND WIDENING AREAS
- ④ MAXIMUM SLOPE = 0.04 FT/FT

- ⑤ CENTERLINE OF EXISTING CONCRETE VARIES IN RESPECT TO E.B. CENTERLINE FROM STA. 91+50 TO 107+00
- ⑥ PROVIDE 2 FT. SUB-CUT FROM STA. 92+00 TO 96+00 RT. AND BACKFILL WITH SELECT GRANULAR BORROW. TRANSITION TO 1 FT. AT STA. 97+00. REMOVE ANY UNSUITABLE SOILS IN THIS AREA TO A DEPTH OF 6 FT. BELOW TOP OF GRADING GRADE. PLACE GEOTEXTILE FABRIC FROM STA. 92+00 TO 96+00 AT BOTTOM OF 2 FT. SUB-CUT.

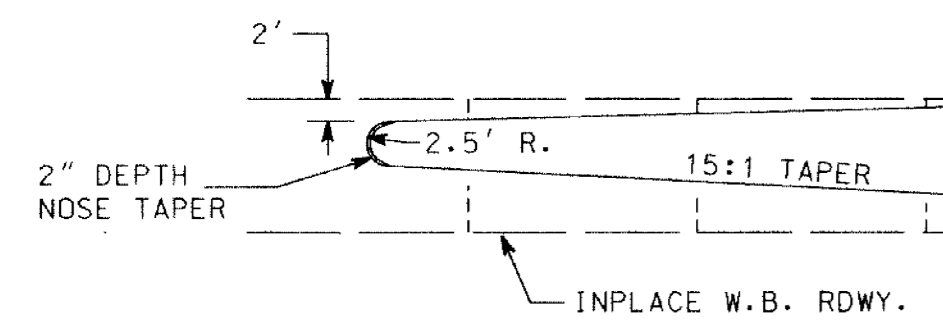
REVISION NO.	DATE	EXPLANATION

SCALE: 1" = 50' HOR. 1" = 10' VERT.
 DESIGN BY: P.S.H.
 CHECKED BY: R.B.B.
 COMM. NO.: 4673
 RECORD COPY BY: DATE
 RONALD B. BRAY
 2-22-91

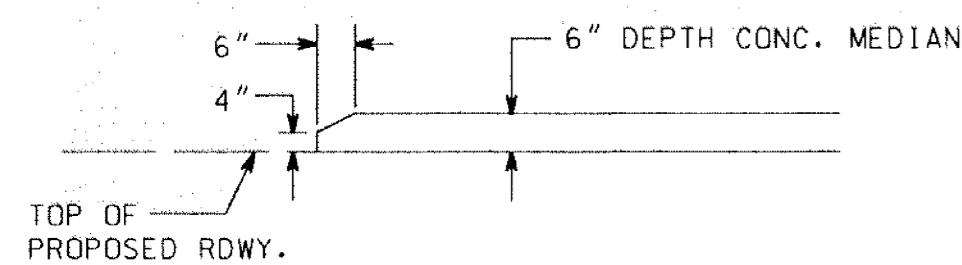
TYPICAL SECTIONS
 IMPROVEMENT NO. 1991-1
 S.A.P. 02-623-09
 CITY OF CIRCLE PINES, ANOKA COUNTY

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 Mayeron &
 Associates, Inc.
 Engineers & Planners
 2021 East Hennepin Avenue • Minneapolis, MN 55413 • 612-331-8660

**MEDIAN NOSE DETAIL
STA. 133+00**

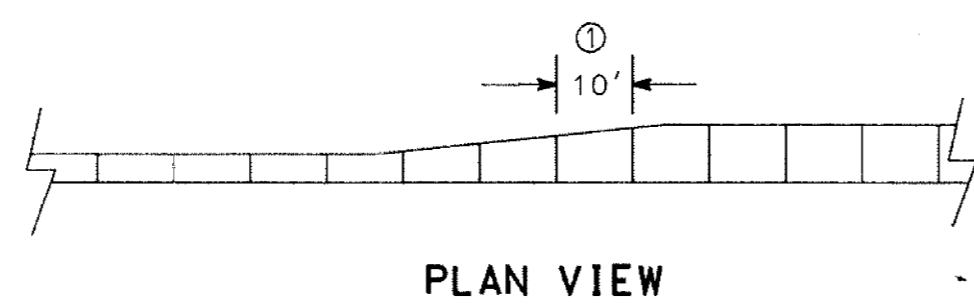


PLAN VIEW

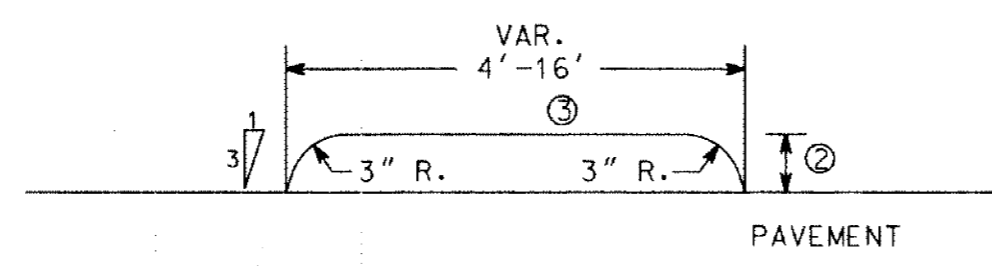


PROFILE VIEW

CONCRETE MEDIAN DETAILS

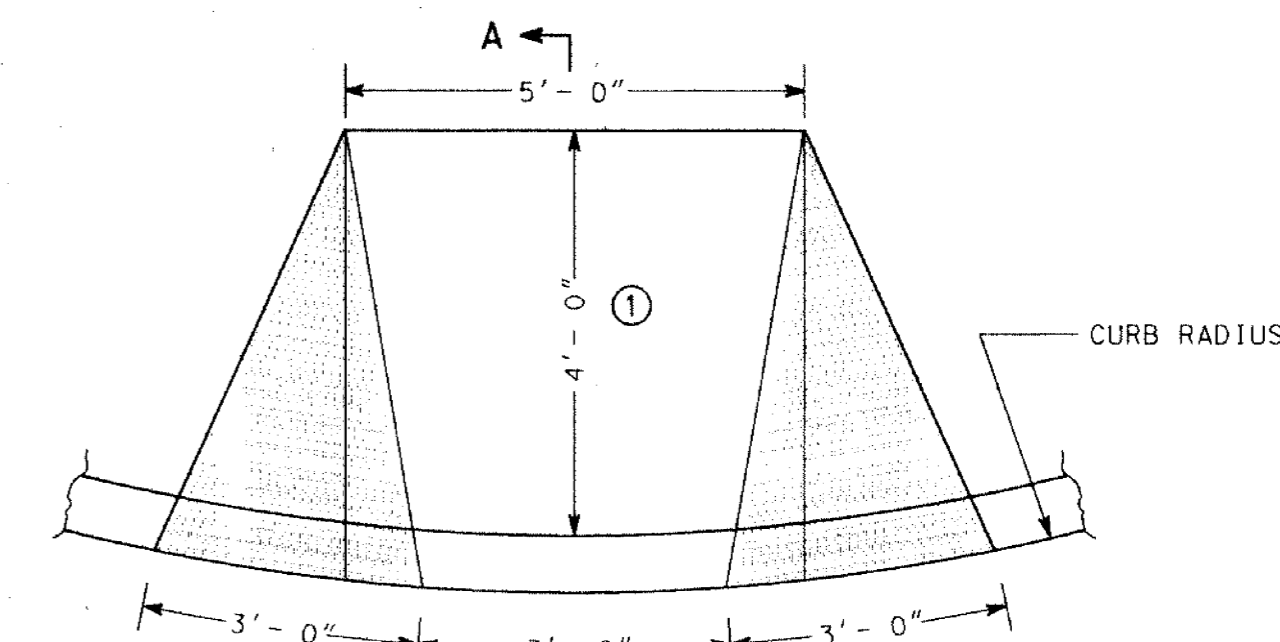


PLAN VIEW

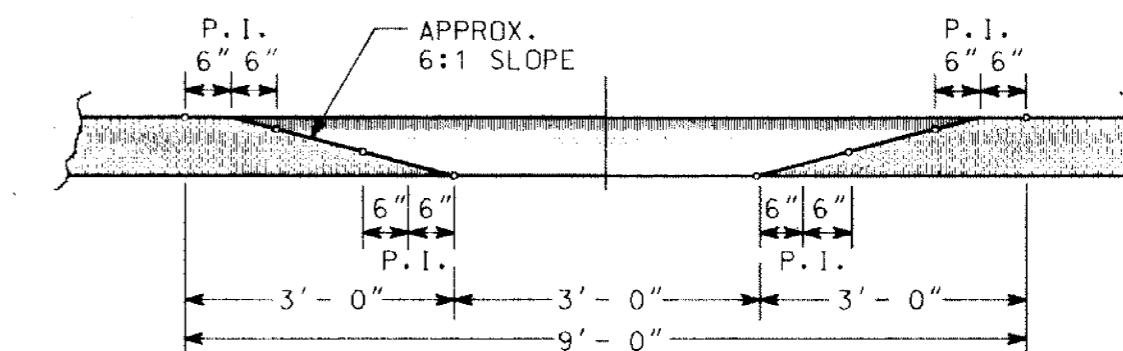


X-SECTION VIEW

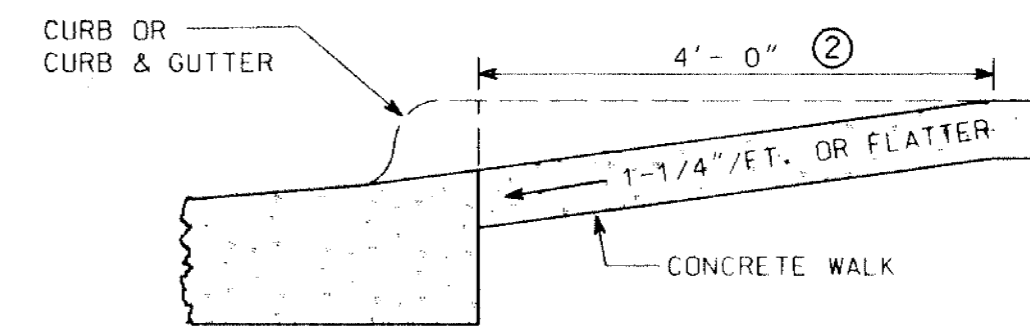
- ① PROVIDE JOINTS AT 10' INTERVALS AND 1" FELT EXPANSION JOINTS AT 100' INTERVALS - INCIDENTAL TO MEDIAN CONSTRUCTION
- ② SEE TYPICAL SECTION SHEET NO.4
- ③ TELSPAR SIGN BASES TO BE PROVIDED BY ANOKA CO. HIGHWAY DEPT. AND INSTALLED AS DIRECTED BY THE ENGINEER - INCIDENTAL.



PLAN VIEW OF RAMP



ELEVATION OF RAMP

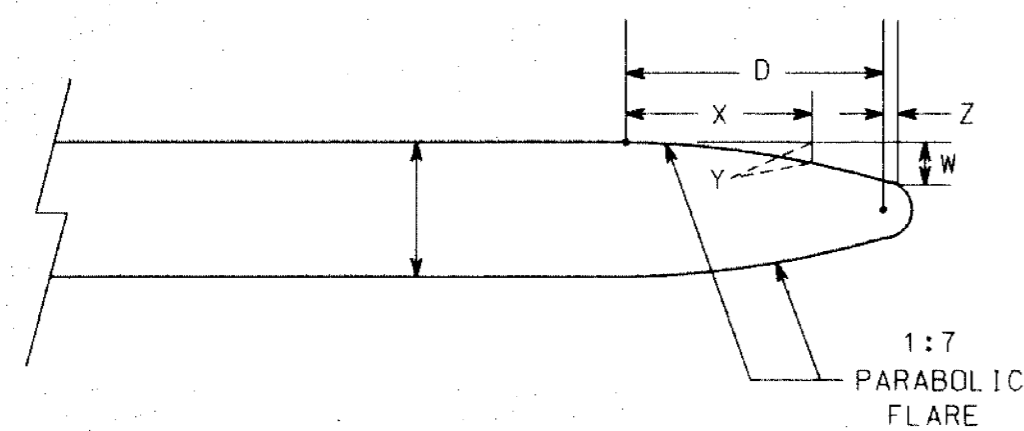


SECTION A-A

NOTE:

- THE CURB & GUTTER TRANSITION WILL BE PAID FOR AS LINEAL FEET OF CONCRETE CURB & GUTTER. THE RAMP AREA WILL BE PAID FOR AS SQUARE FEET OF CONCRETE WALK. SURFACE TREATMENT WILL BE CONSIDERED INCIDENTAL.
- ① SURFACE TREATMENT - THIS TREATMENT SHALL CONSIST OF AN AGGREGATE SURFACE FINISH. THE AGGREGATE SHALL MEET THE REQUIREMENTS OF SPEC. 3137 CA-70 MODIFIED TO 100% PASSING THE 1/2" SIEVE. IMMEDIATELY PRIOR TO PLACING THE COARSE AGGREGATE, THE SURFACE SHALL BE COATED WITH AN APPROVED EPOXIE BONDING AGENT.
- ② 4'-0" DIMENSIONS MAY BE INCREASED TO PROVIDE A FLATTER SLOPE.

**PEDESTRIAN CURB RAMP
FOR THE HANDICAPPED
NO SCALE**



PLAN VIEW

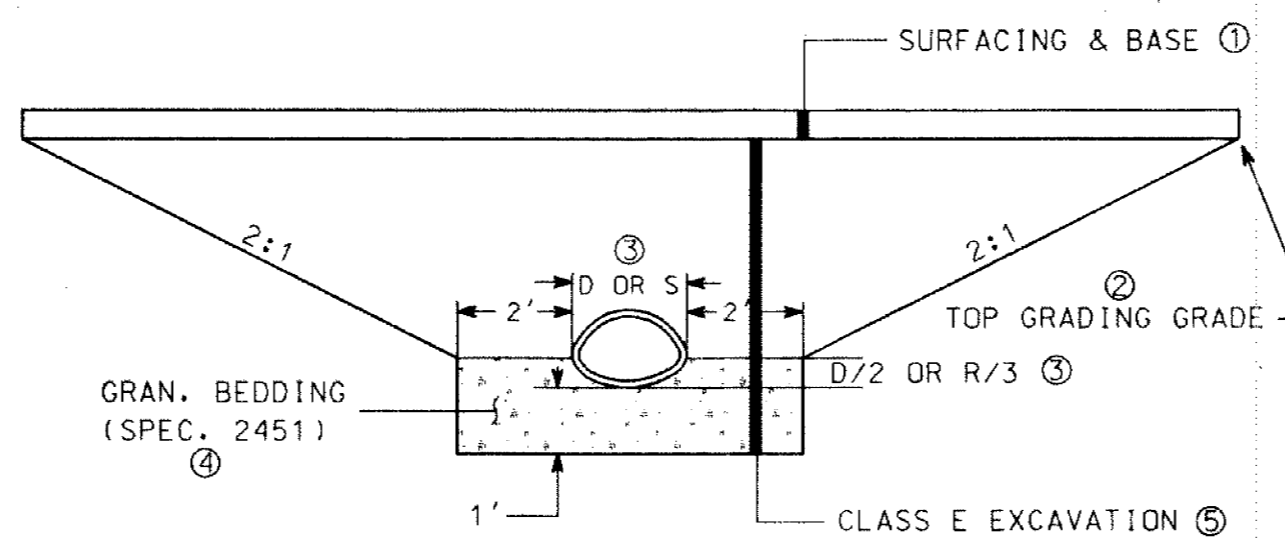
$Y = \frac{X^2}{49W}$ = OFFSET TO FLARE AT DISTANCE "X"

W = OFFSET TO FLARE AT DISTANCE "D" = 0.307695M

D = LENGTH OF FLARE = 7W

Z = DISTANCE BETWEEN RAD. PT. AND FLARE TO CURVE = $\frac{(M-2W)}{7}$

TYPICAL ϕ CULVERT TREATMENT



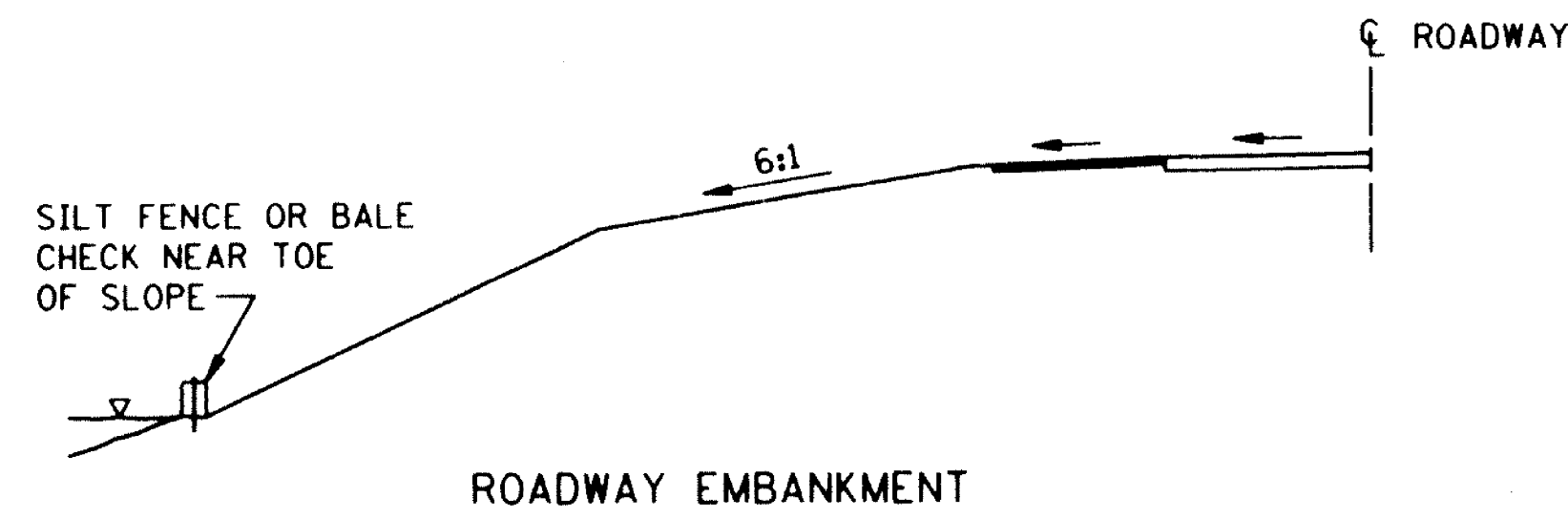
NOTES:

- ① SEE TYPICAL SECTIONS FOR TYPE OF SURFACING & BASE.
- ② TOP GRADING GRADE DEFINED AS THE BOTTOM OF THE BITUMINOUS BASE, CONCRETE, OR AGGREGATE BASE CL-S, WHICHEVER APPLIES.
- ③ D = OUTSIDE DIAMETER OF ROUND PIPE
R = OUTSIDE RISE OF PIPE-ARCH
S = OUTSIDE SPAN OF PIPE-ARCH
- ④ CONSTRUCT IN ACCORDANCE WITH CL. B BEDDING (SPEC. 2451.302). EXCAVATION FOR TEMPLATING IS INCIDENTAL WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
- ⑤ CLASS E EXCAVATION TO BE INCIDENTAL

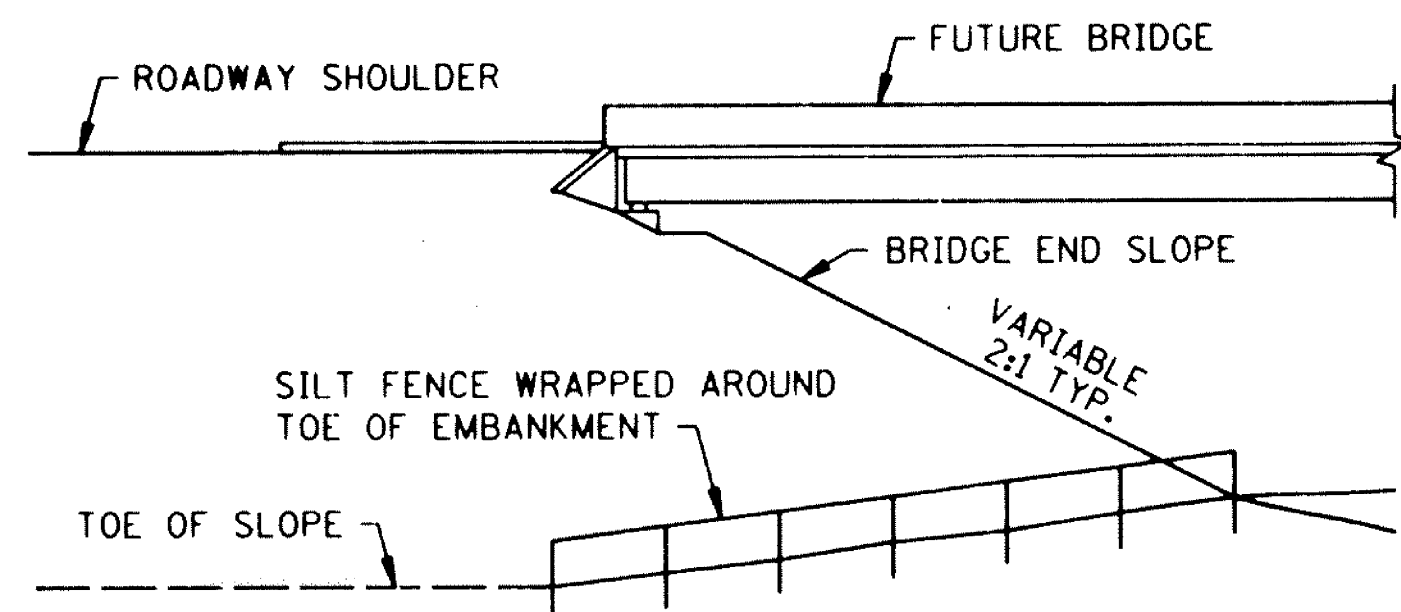
EXPLANATION	REVISION NO. DATE	SCALE: 1" = 10' VERT. 1" = 50' CURB	DESIGN BY: R. B. B.	CHECKED BY: R. B. B.	COMMD. NO: 4673	RECORD COPY BY: DATE

DETAILS
S.A.P. 02-623-09
CITY IMP. NO. 1991-01
CIRCLE PINES • MINNESOTA

Orr Schelen
Mayeron &
Associates, Inc.
Engineers • Surveyors • Planners
2021 East Hennepin Avenue • Minneapolis, MN 55413 • 612-331-8660

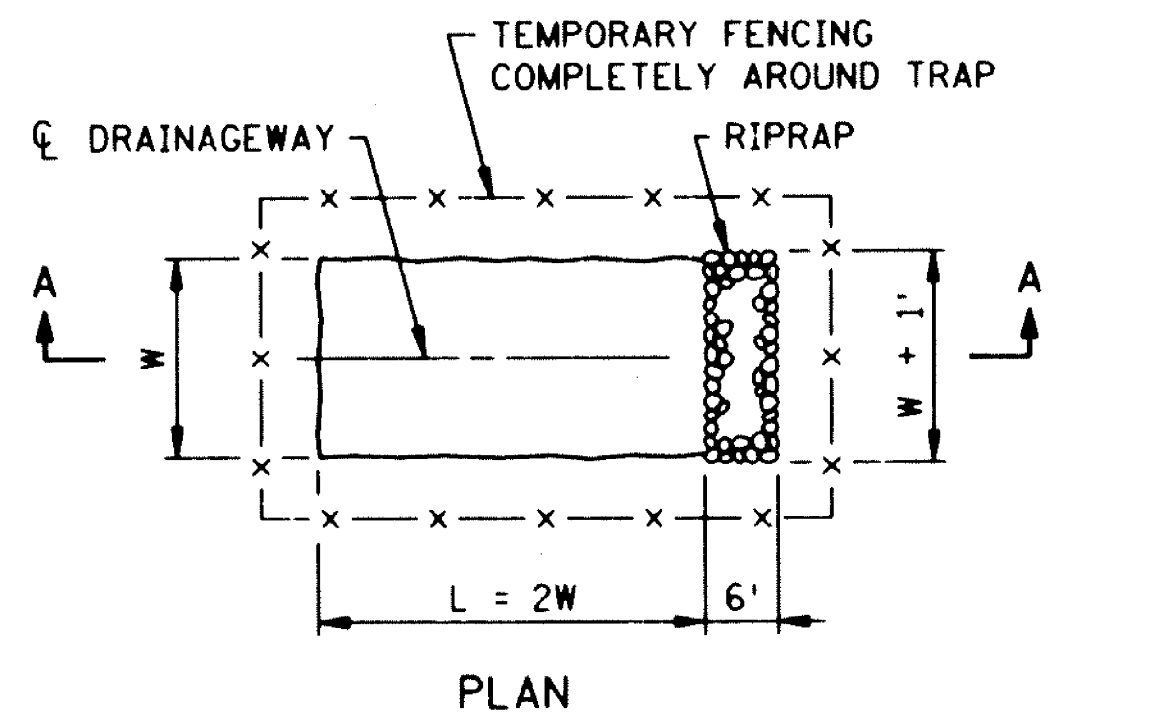


ROADWAY EMBANKMENT

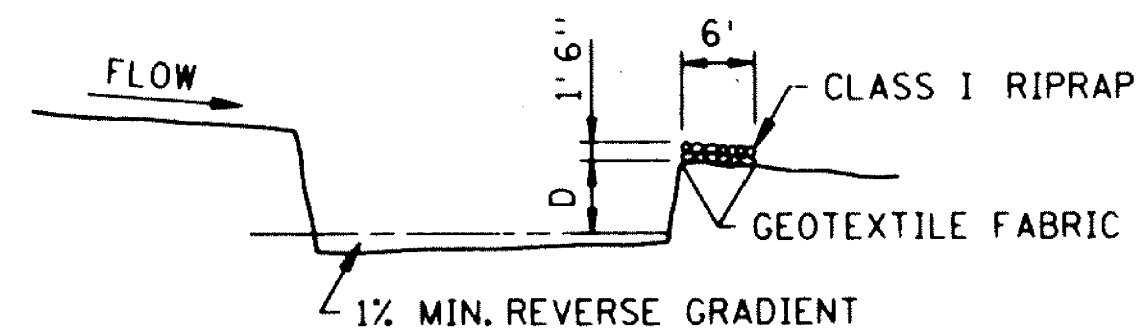


BRIDGE ABUTMENT

SILT FENCE OR BALE CHECK TO PROTECT ADJACENT CRITICAL AREAS



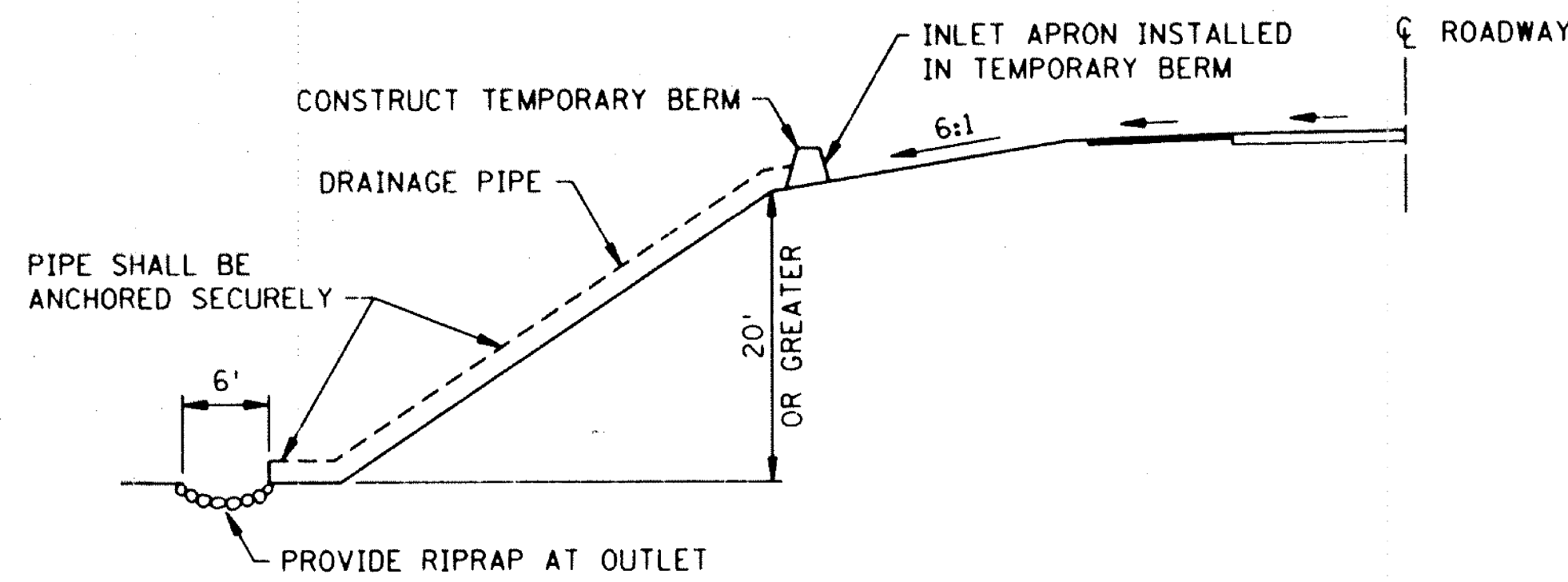
PLAN



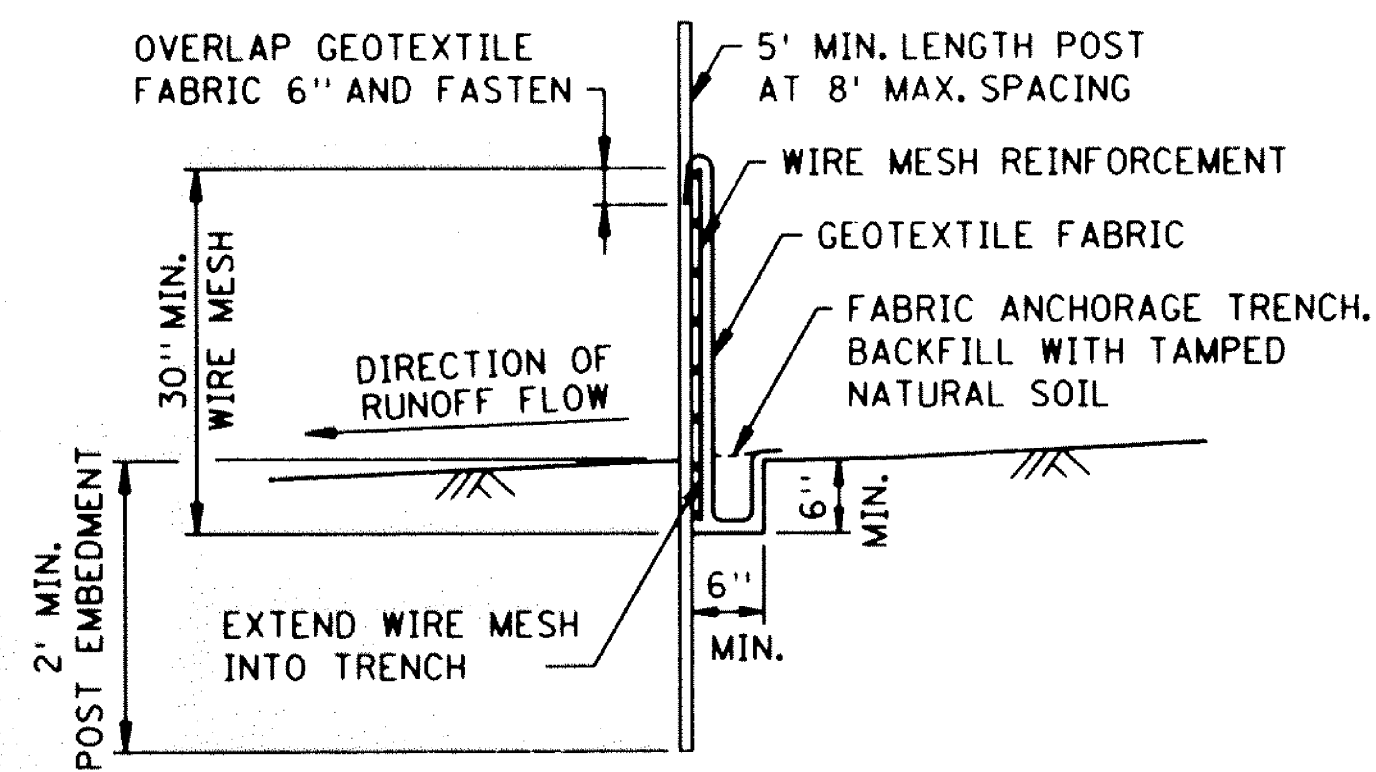
NOTE:
D = 3' MIN., 6' MAX.
W = 10' MIN., 20' MAX.

SECTION A-A

TEMPORARY SEDIMENT TRAP



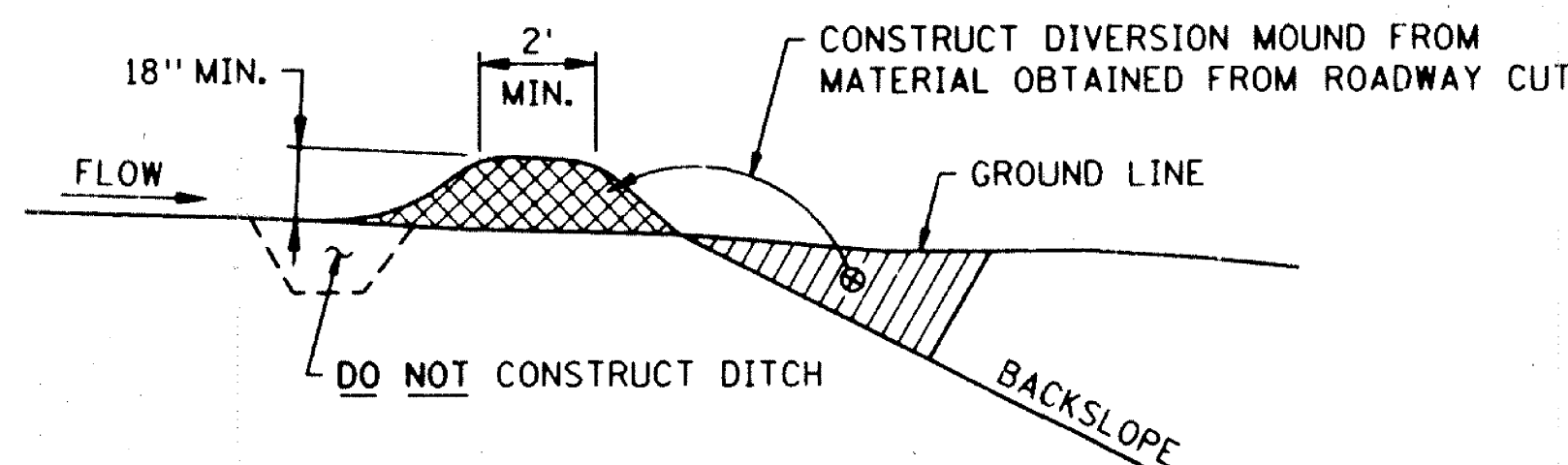
TEMPORARY DRAIN ON FILL SLOPE



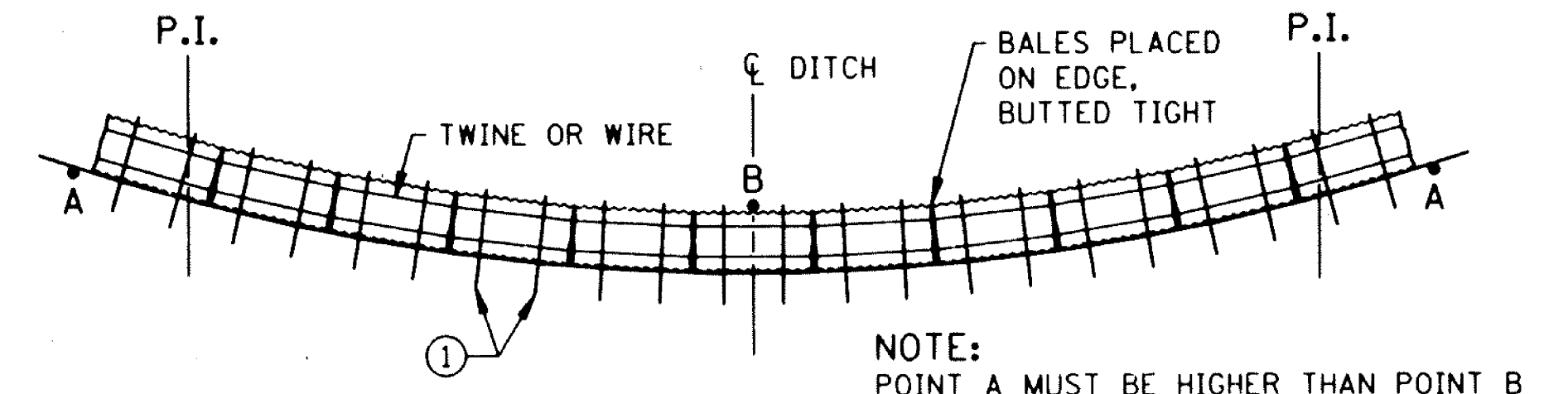
SILT FENCE DETAIL



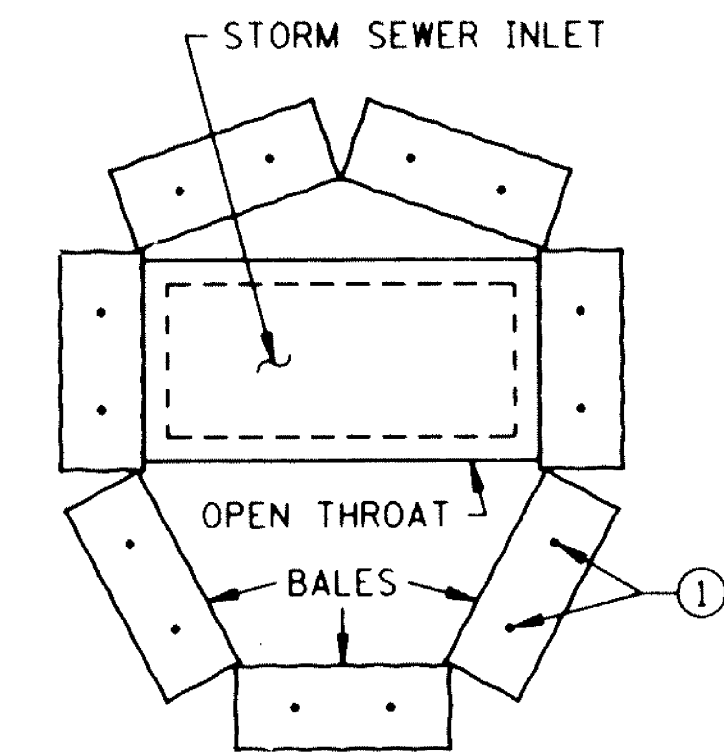
BALE DIVERSION



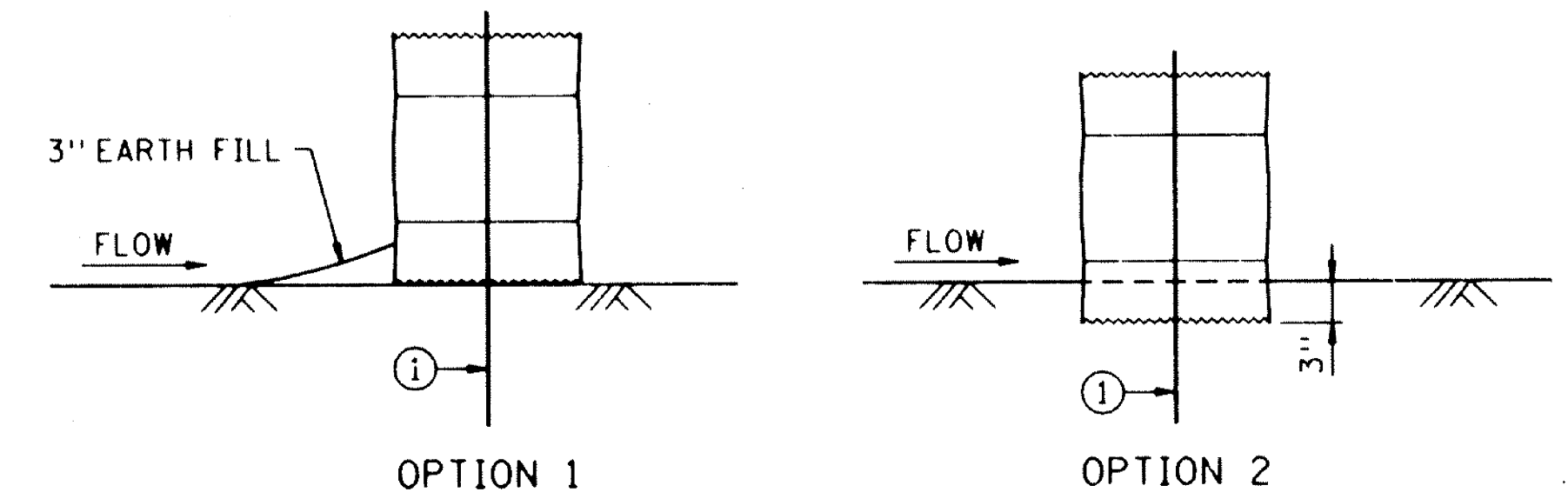
DIVERSION MOUND



BALE DITCH CHECK



BALE CHECK TO PROTECT STORM SEWER INLETS

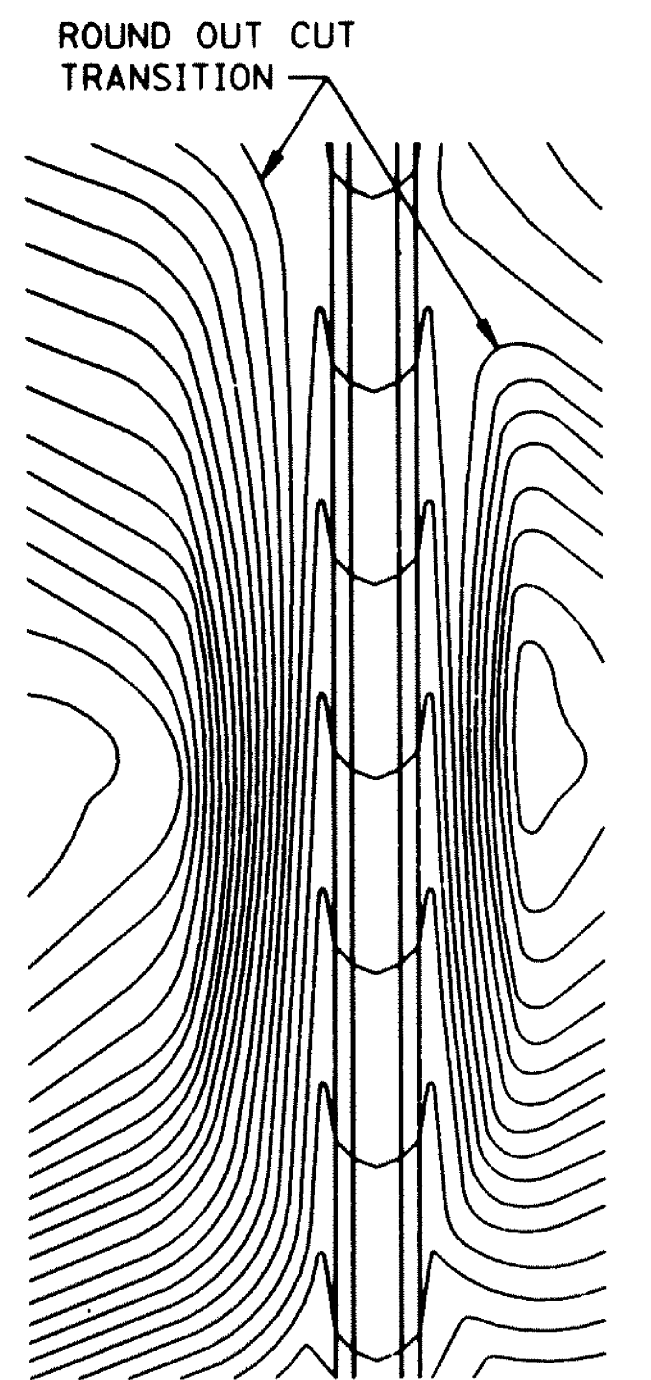


BALE CHECK DETAILS

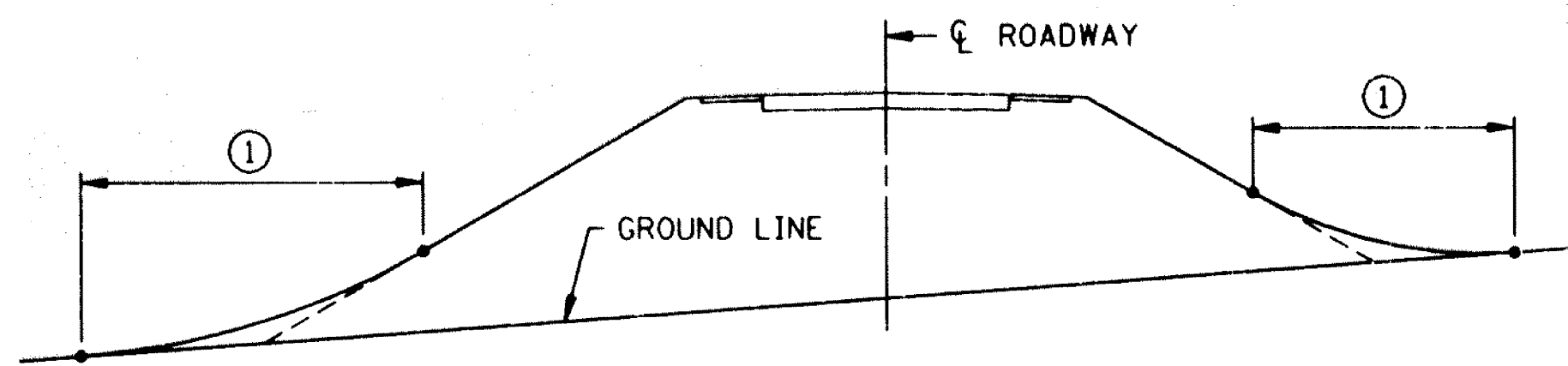
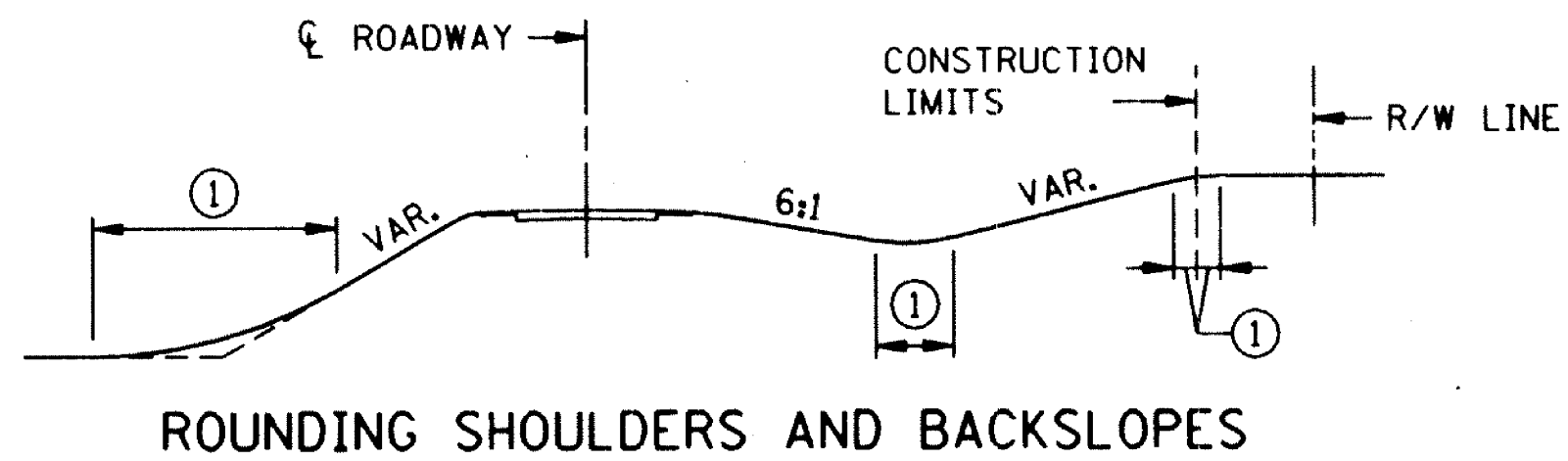
NOTE:
① TWO 2" X 2" WOOD STAKES OR REINFORCING BARS IN EACH BALE AND EMBEDDED IN THE GROUND 10" MINIMUM.

VAXT80 QSA3:[45,100] FILE NAME S405L90.SFN

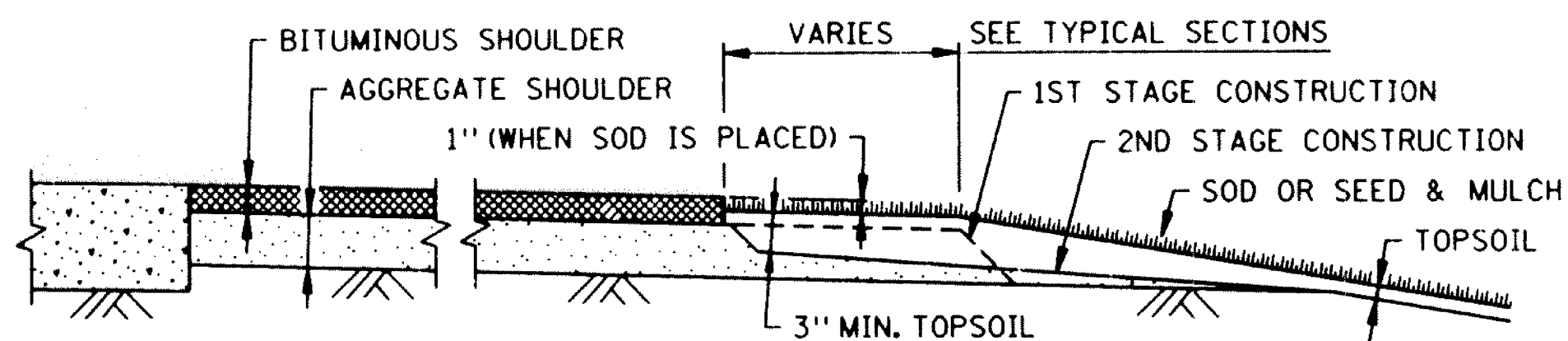
STANDARD SHEET NO. 5-297.405	TITLE: TEMPORARY EROSION CONTROL
STANDARD APPROVED: DECEMBER 19, 1990	
STATE PROJ. NO. S.A.P. 02-623-09 SHEET NO. 6 OF 25 SHEETS	



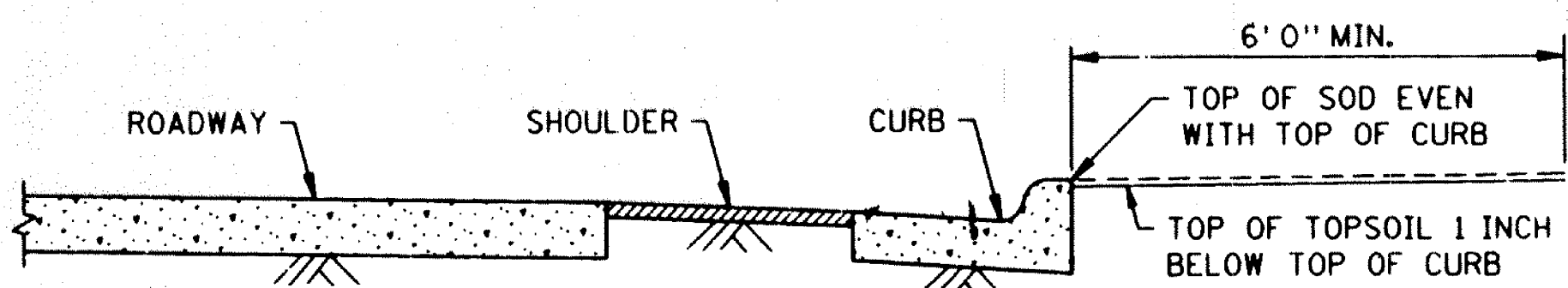
CONTOURING ROAD CUTS



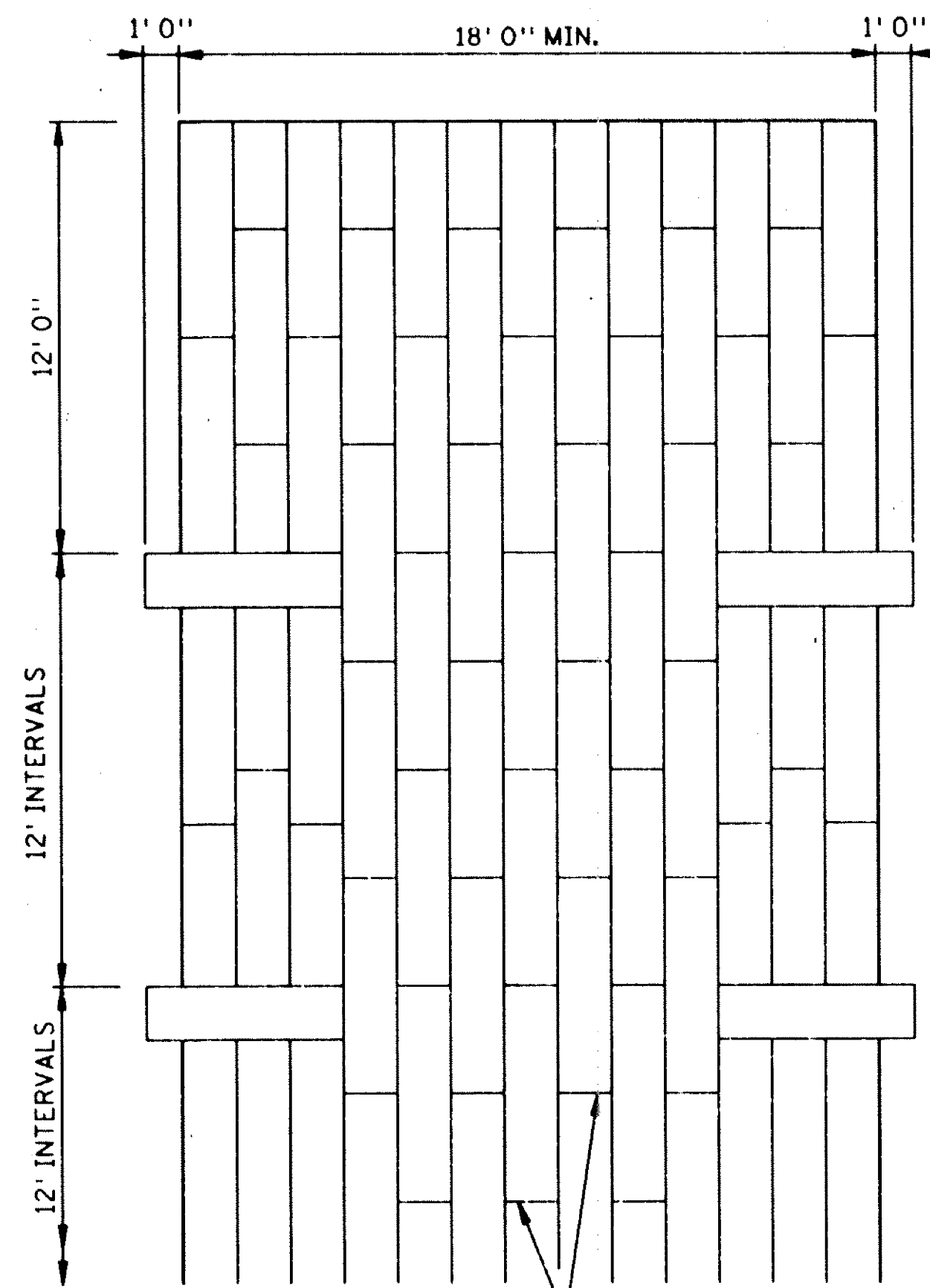
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



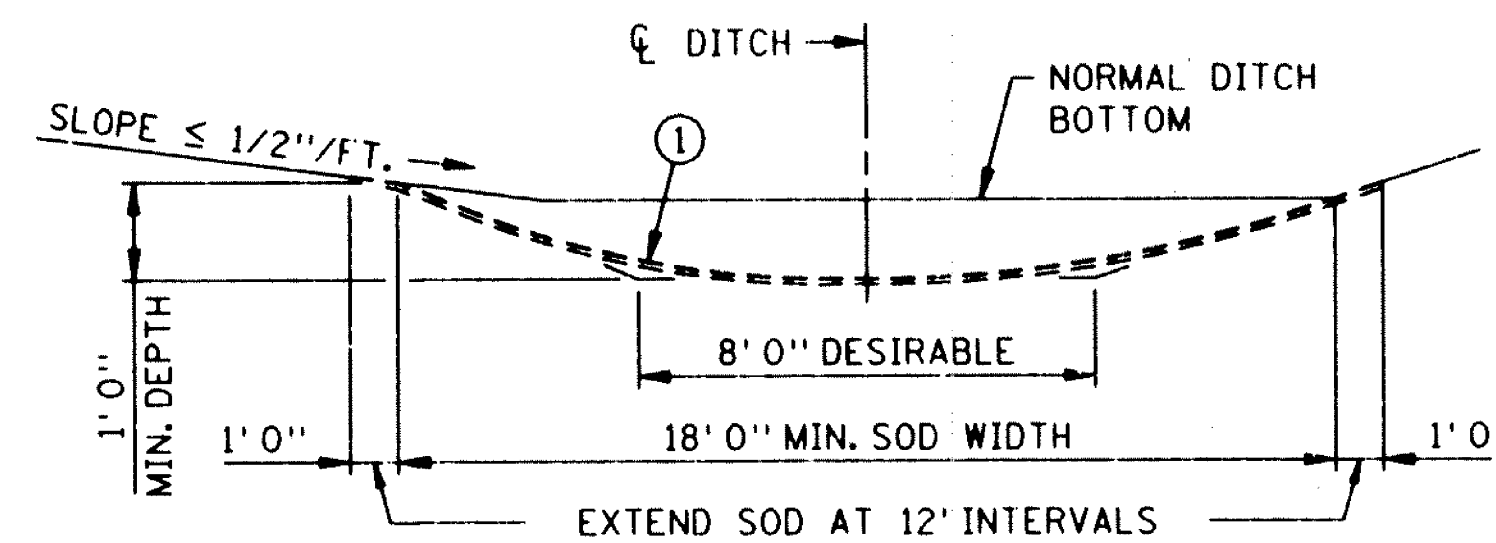
SHAPING AND TOPSOILING INSLOPES



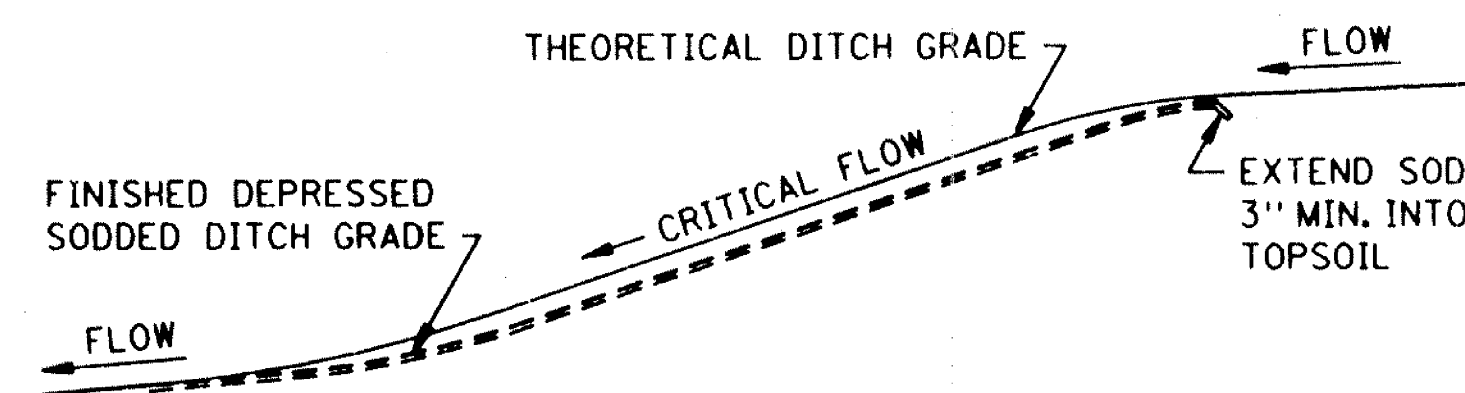
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



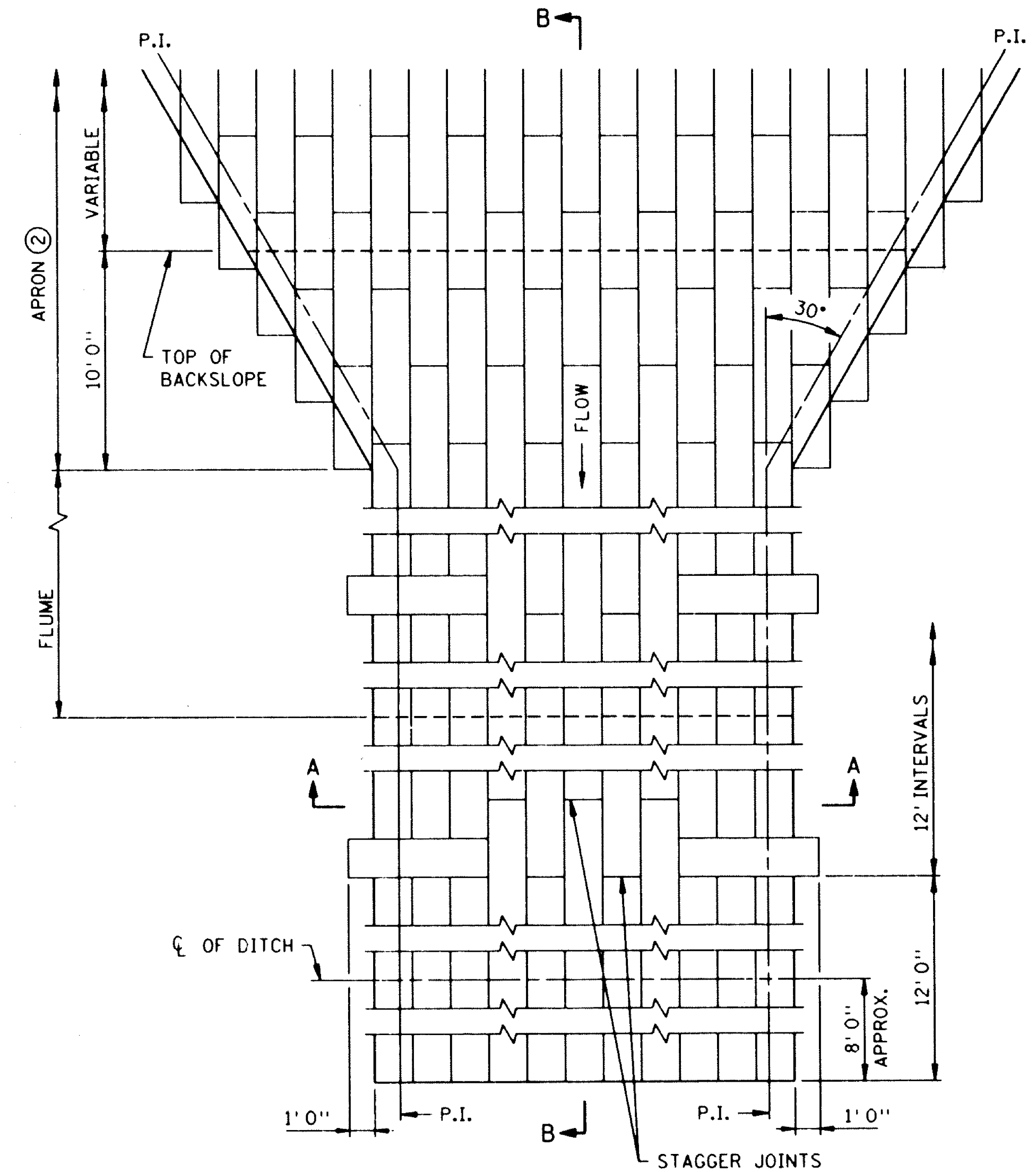
STAGGER JOINTS
PLAN -VIEW



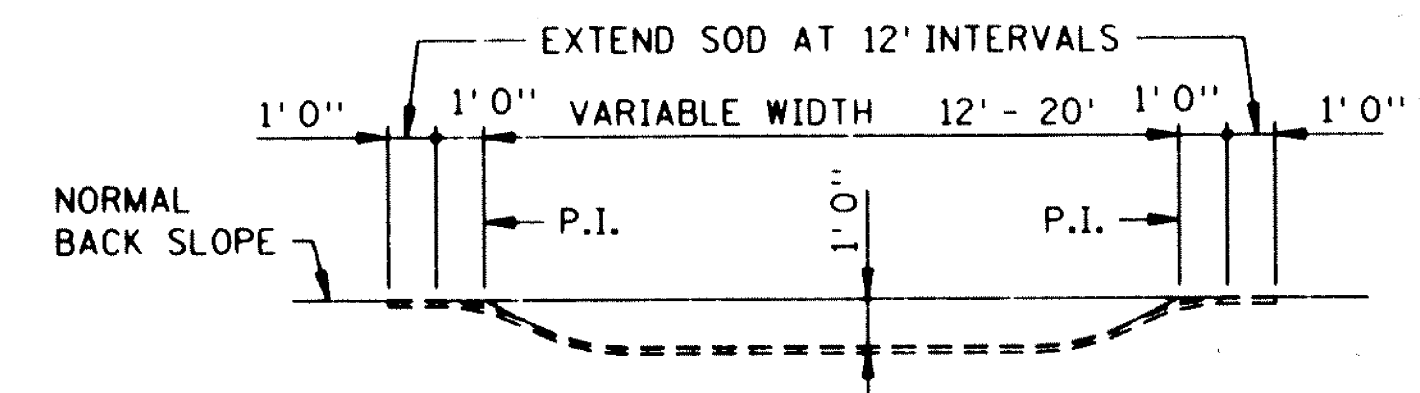
SODDED DITCH CROSS SECTION
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



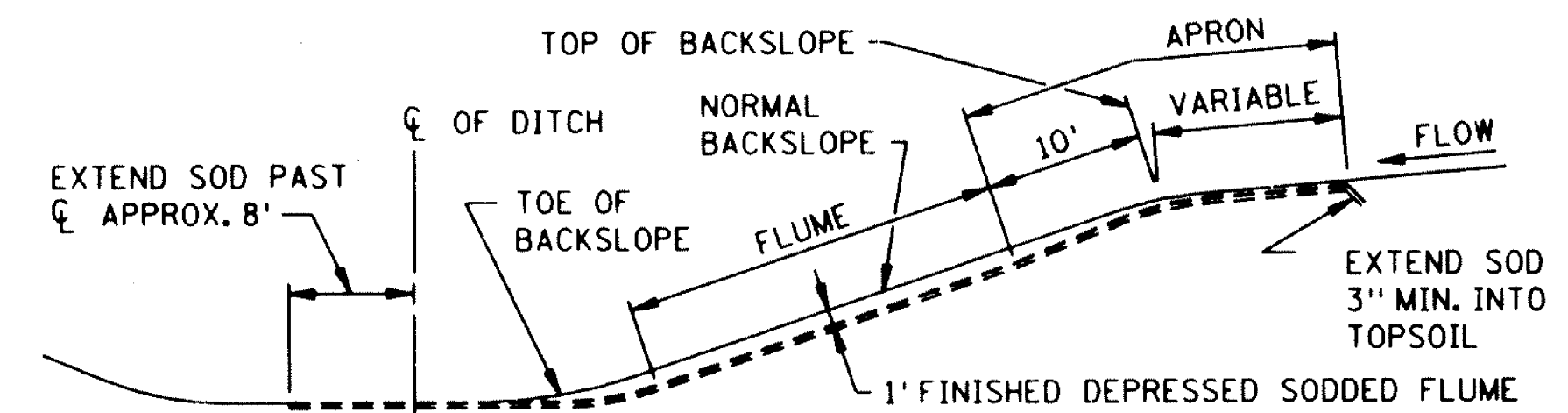
DITCH PROFILE
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



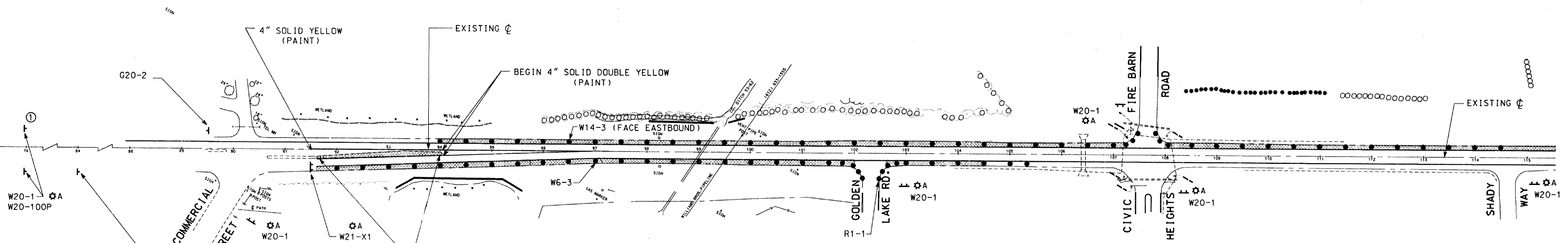
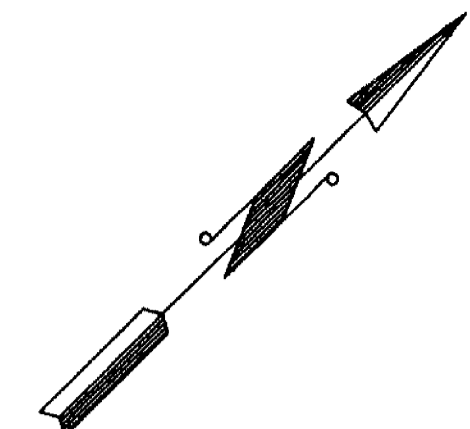
SECTION B-B

SODDED FLUME DETAILS

- NOTES:
SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.
① FOR ROUNDING, SEE TYPICAL SECTIONS.
② CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

STANDARD SHEET NO. 5-297.404	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES
STANDARD APPROVED: DECEMBER 19, 1990	
STATE PROJ. NO. S.A.P. 02-623-09 SHEET NO. 7 OF 25 SHEETS	

CSAH NO.23 (LAKE DR.)



NOTE:
 BARRELS TO BE SPACED AT 50' INTERVALS ALONG EDGE OF DRIVING LANE. ALTERNATE W14-X7 DOWN ARROW AND TYPE C STEADY BURN LIGHTS ON EACH BARREL. CONES WILL REPLACE BARRELS DURING DAYTIME CONST. OPERATION IN THE CONTRACTORS WORK AREA. COVER OR REMOVE ALL CONFLICTING SIGNS AS DIRECTED BY THE ENGINEER.

- ① ADVANCE SIGNS TO BE PLACED ON MEDIAN ALSO - 4 BAGS MINIMUM AND NO CONCRETE BLOCKS ALLOWED
- ② ALL TYPE III BARRICADES WILL HAVE REFLECTIVE SHEETING ON THE BACK SIDE.

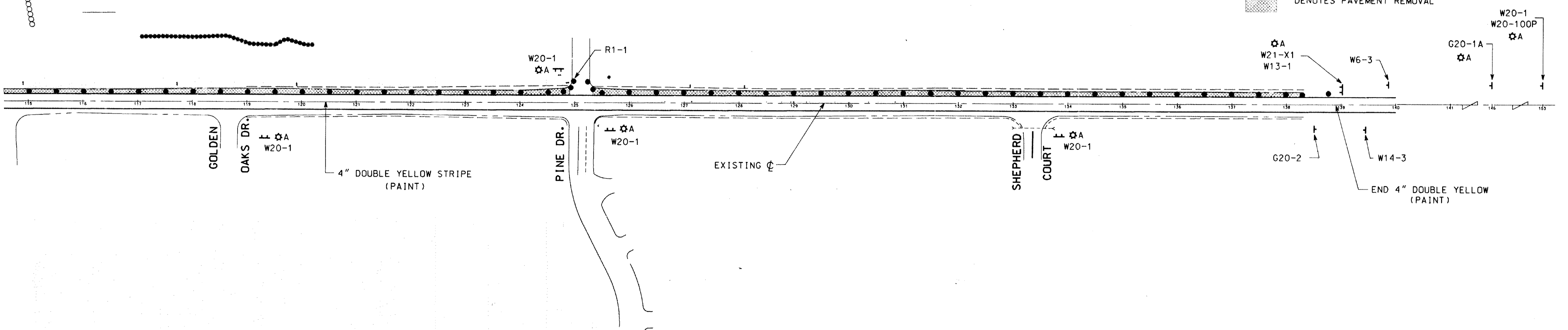
SIGNS	
SIZE	NO. POST
0" - 30"	1
31" - 48"	2
49" →	3

SIGN	SIGN NO.	SIZE	NO. USED	SIGN	SIGN NO.	SIZE	NO. USED	SIGN	SIGN NO.	SIZE	NO. USED		
STOP	R1-1	30"x30" 48"x48"	2	30 M.P.H.	W13-1	BLACK ON ORANGE	24"x24"	2	ROAD CONSTRUCTION NEXT 1/2 MILE	G20-1A	BLACK ON ORANGE	60"x36"	2
NO PASSING ZONE	R4-7	36"x48"	-	NO PASSING ZONE	W14-3	BLACK ON ORANGE	36"x48" X48"	2	END CONSTRUCTION	G20-2		60"x24"	2
ONEWAY	R6-1	36"x12"	-	ONEWAY	W14-X7	BLACK ON ORANGE	16"x16"	63	DRUM	PLASTIC		133	
				ROAD CONSTRUCTION AHEAD	W20-1	BLACK ON ORANGE	36"x36"	11	TYPE III BARR.	②	8'	10	
				1500 FEET	W20-100P	BLACK ON ORANGE	24"x18"	2	SUN	WARNING LIGHTS	TYPE A LOW INT. FLASHER	16	
				NO SHOULDER	W21-X1	BLACK ON ORANGE	48"x48"	2	SUN	WARNING LIGHTS	TYPE B HIGH INT. FLASHER	-	
				4" DOUBLE YELLOW PAINT STRIPE			4685 L.I.N. FEET		SUN	WARNING LIGHTS	TYPE C STEADY BURN	66	

LEGEND

- ↑ SIGN TO BE PLACED
- ↑ TYPE III BARRICADE
- PLASTIC BARRELS
- ☆A WARNING LIGHTS
- ▲ CONES

■ DENOTES PAVEMENT REMOVAL



REVISION NO. DATE

SCALE: PLAN BY: DESIGN BY: P.S.H. CHECKED BY: R.B.B. RECORD COPY BY: DATE

COM.M.N.O.: 4673

DATE: 3-4-97

RECORD NO.: 18327

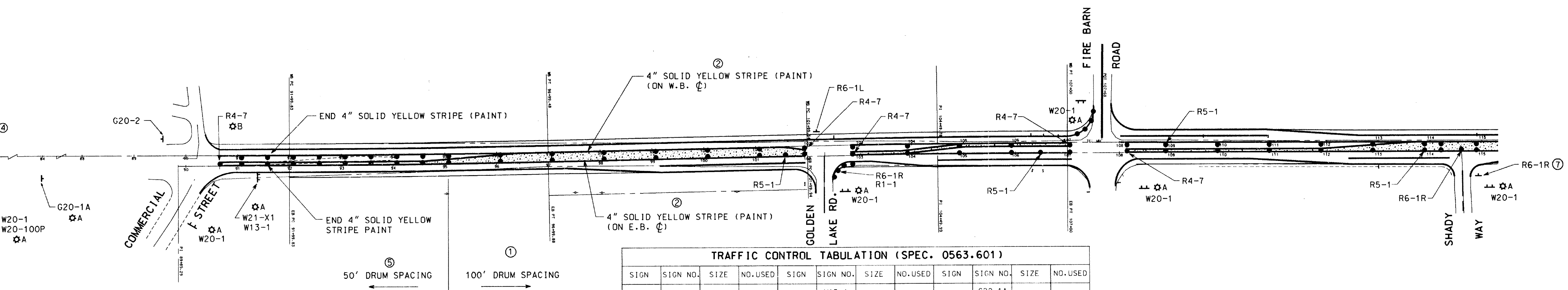
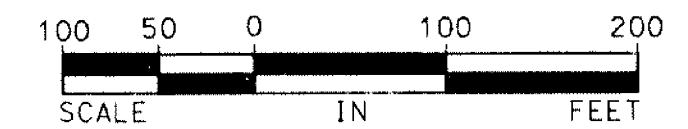
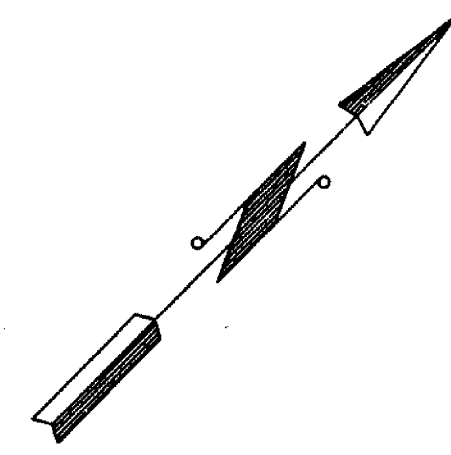
REMOVED & TRAFFIC CONTROL STAGE-1
 S.A.P. 02-623-09
 CITY IMP. NO. 1991-01
 CIRCLE PINES, MINNESOTA

Ort Schelen
 Mayeron & Associates, Inc.
 Engineers & Surveyors & Planners
 2021 East Hennepin Avenue Minneapolis, MN 55413 612-331-8880

PLAN NO. 8

STAGE 1.DGN

CSAH NO.23 (LAKE DR.)



TRAFFIC CONTROL TABULATION (SPEC. 0563.601)

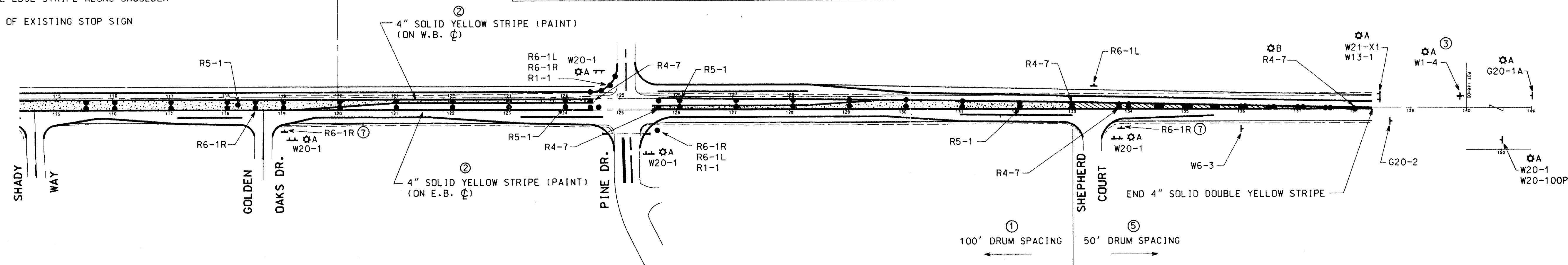
SIGN	SIGN NO.	SIZE	NO. USED	SIGN	SIGN NO.	SIZE	NO. USED	SIGN	SIGN NO.	SIZE	NO. USED
	R1-1	30"x30" 48"x48"	3		W13-1	24"x24" BLACK ON ORANGE	2		G20-1A	60"x36" BLACK ON ORANGE	2
	R4-7	36"x48"	10		W14-3	36"x48" BLACK ON ORANGE	-		G20-2	60"x24"	2
	R6-1L	36"x12"	4		W14-X7	16"x16" BLACK ON ORANGE	60		DRUM	PLASTIC	139
	R6-1R	36"x12"	7		W20-1	36"x36" BLACK ON ORANGE	12		TYPE III BARR.	8'	11
	R5-1	30"x30"	8		W20-100P	24"x18" BLACK ON ORANGE	2		WARNING LIGHTS	TYPE A LOW INT. FLASHER	17
	W1-4	48"x48" BLACK ON ORANGE	1		W21-X1	48"x48" BLACK ON ORANGE	2		WARNING LIGHTS	TYPE B HIGH INT. FLASHER	2
	W6-3	36"x36" BLACK ON ORANGE	1		4" SOLID YELLOW STRIPE (PAINT)	9370 LIN. FEET			WARNING LIGHTS	TYPE C STEADY BURN	60

SIGNS	
SIZE	NO. POST
0" - 30"	1
31" - 48"	2
49" ->	3

- NOTES:
- ALTERNATE DRUMS AT 100' SPACING WITH W14-X7 ARROW AND TYPE C WARNING LIGHT
 - LEAVE GAPS FOR INTERSECTING STREETS AS DIRECTED BY THE ENGINEER
 - CHANGE SIGN FROM STAGE 1
 - ADVANCE SIGNS TO BE PLACED ON MEDIAN ALSO - 4 BAGS MINIMUM AND NO CONCRETE BLOCKS ALLOWED
 - ALTERNATE DRUMS AT 50' SPACING WITH W14-X7 ARROW AND TYPE C WARNING LIGHT
 - PROVIDE WHITE EDGE STRIPE ALONG SHOULDER
 - PLACE ON TOP OF EXISTING STOP SIGN

LEGEND

- SIGN TO BE PLACED
- TYPE III BARRICADE
- PLASTIC BARRELS
- WARNING LIGHTS
- CONES
- DENOTES PAVEMENT REMOVAL

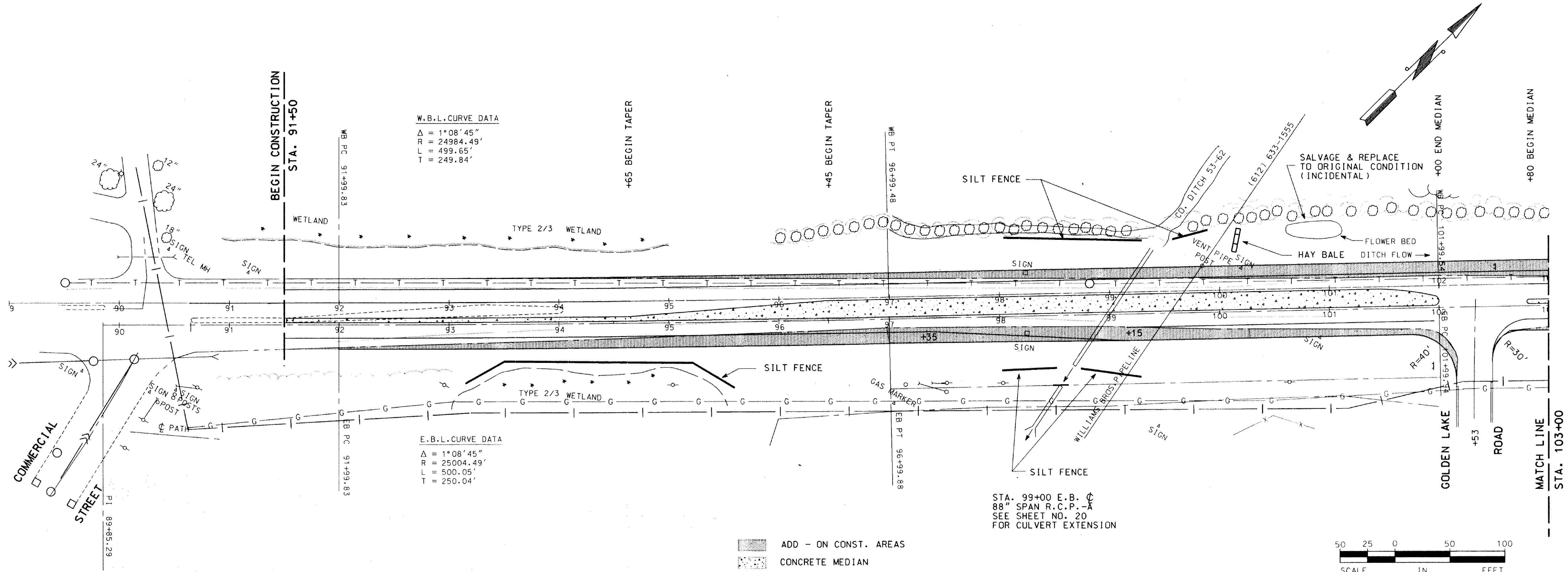


REVISION NO.	DATE	EXPLANATION

TRAFFIC CONTROL - STAGE 2
 S.A.P. 02-623-09
 CITY IMP. NO. 1991-01
 CIRCLE PINES, MINNESOTA

Orri Schelen Mayeron & Associates, Inc.
 Engineers - Surveyors - Planners
 2021 East Hennepin Avenue - Minneapolis, MN 55413 - 612-331-8660

CSAH NO.23 (LAKE DR.)



REVISION NO.	DATE	EXPLANATION

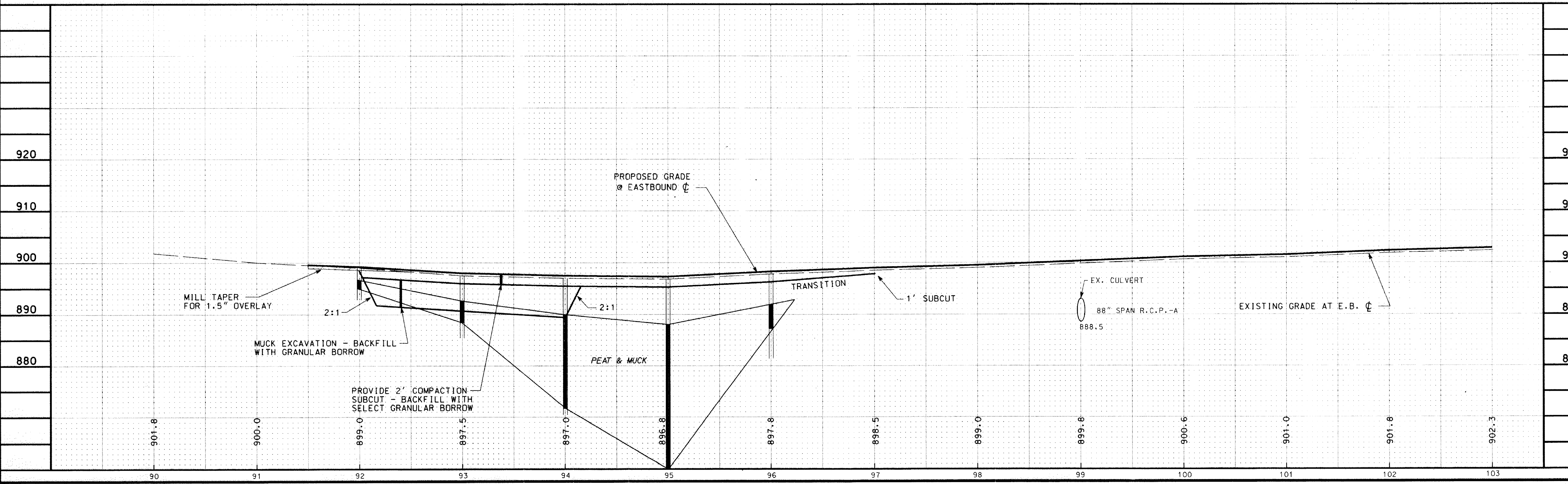
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE: 2-22-91
 RES. NO.: 18327

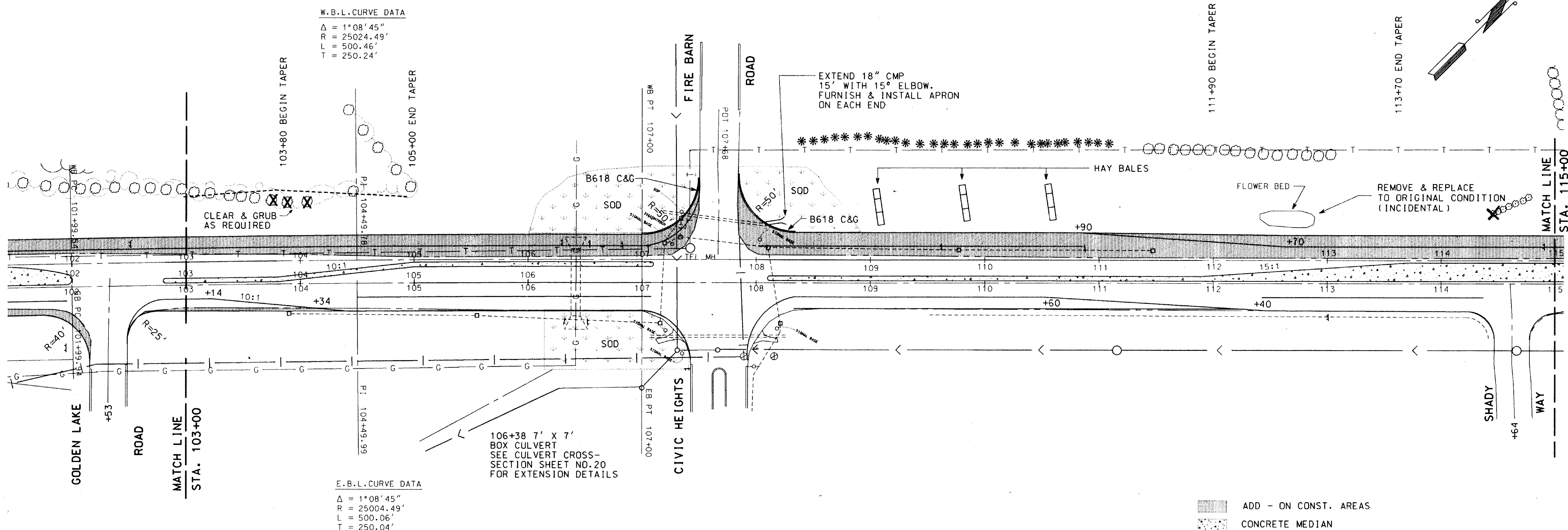
C.S.A.H. 23 (LAKE DRIVE) PLAN SHEET
 STA. 90+00 TO 103+00
 IMPROVEMENT NO. 1991-1
 S.A.P. 02-623-09
 CITY OF CIRCLE PINES, ANOKA COUNTY

OSM
 Orr Schelen
 Mayeron &
 Associates, Inc.
 Engineers & Surveyors & Planners
 2021 East Hennepin Avenue • Minneapolis, MN 55413 • 612-331-8660

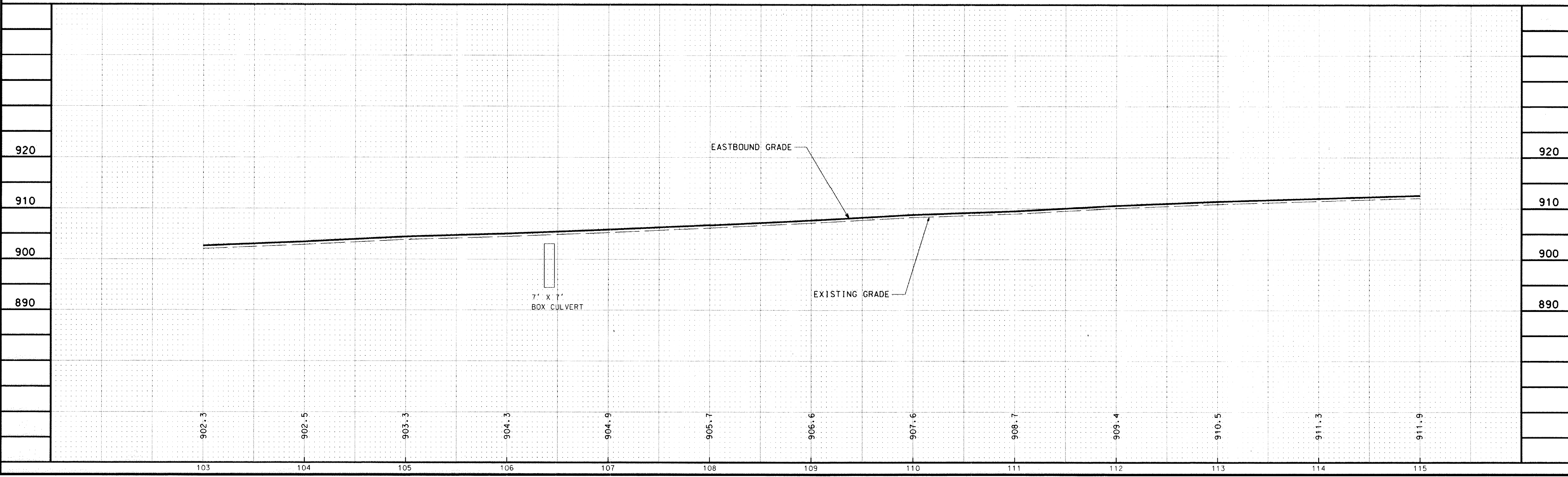
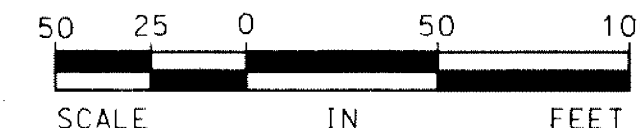
PLAN NO. 10
 SHT4.DGN



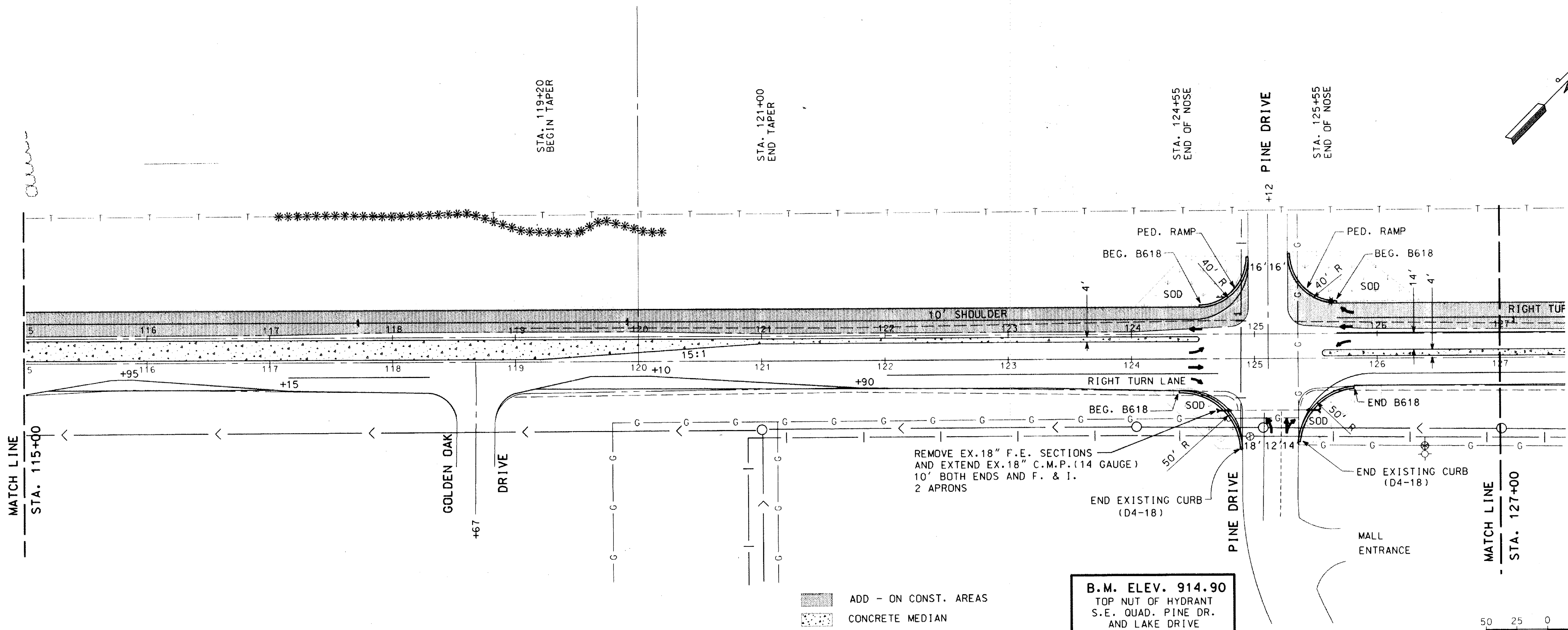
CSAH NO.23 (LAKE DR.)



SEE SHEET 12



REVISION NO. _____ DATE _____		EXPLANATION _____ _____
SCALE: 1" = 50' HOR. 1" = 10' VERT.		PLAN BY: _____ DESIGN BY: _____ P.S.H. _____ R.B.B. _____
CHECKED BY: _____ R.B.B. _____ DATE: 2-22-91		COMM. NO.: 4673 RECORD COPY BY: _____ DATE: 18327
I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. Ronald B. Gray RONALD B. GRAY REG. NO. 18327		
C.S.A.H. 23 (LAKE DRIVE) PLAN SHEET STA. 103+00 TO 115+00 IMPROVEMENT NO. 1991-1 S.A.P. 02-623-09 CITY OF CIRCLE PINES, ANOKA COUNTY		
Orr Schelen & Mayeron Associates, Inc. Engineers Surveyors Planners 2021 East Hennepin Avenue Minneapolis, MN 55413 612-331-9660		
PLAN NO. 11		SHTS.DGN

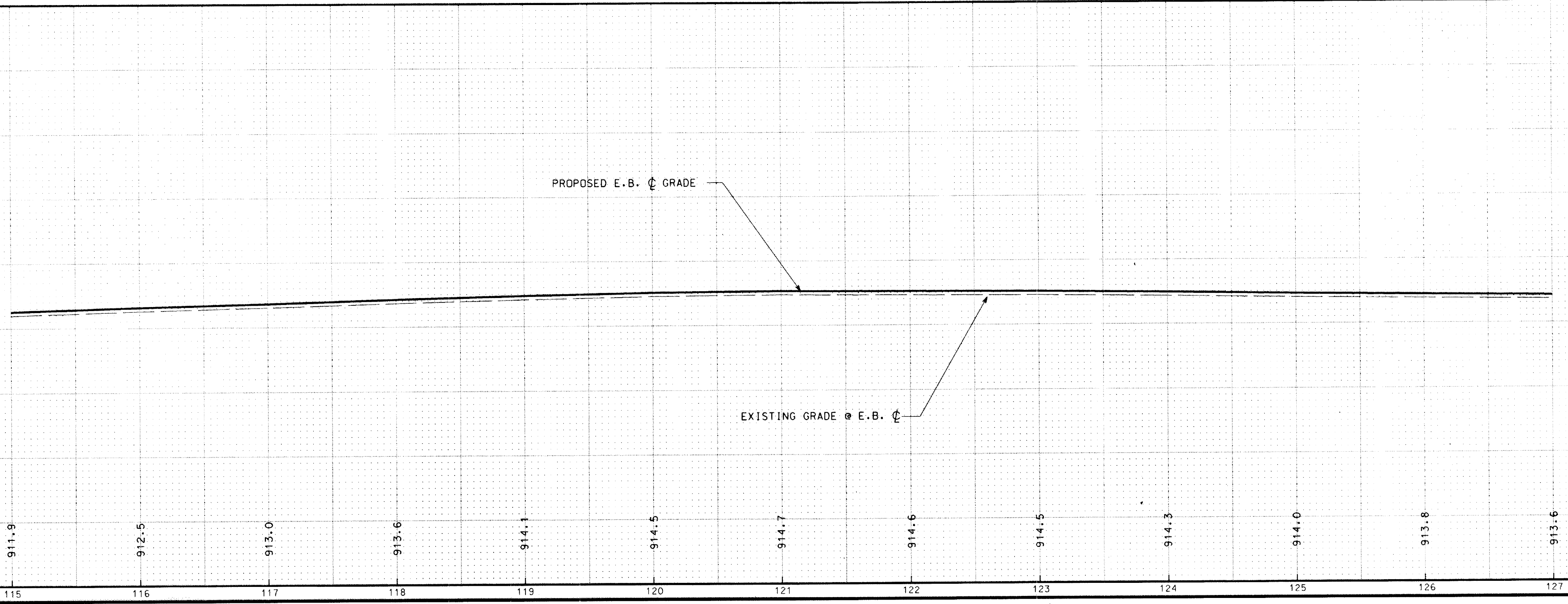


SEE SHEET 13

REMOVE EX. 18" F.E. SECTIONS AND EXTEND EX. 18" C.M.P. (14 GAUGE) 10' BOTH ENDS AND F. & I. 2 APRONS

B.M. ELEV. 914.90
TOP NUT OF HYDRANT
S.E. QUAD. PINE DR.
AND LAKE DRIVE

ADD - ON CONST. AREAS
CONCRETE MEDIAN



REVISION NO.	DATE	EXPLANATION

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

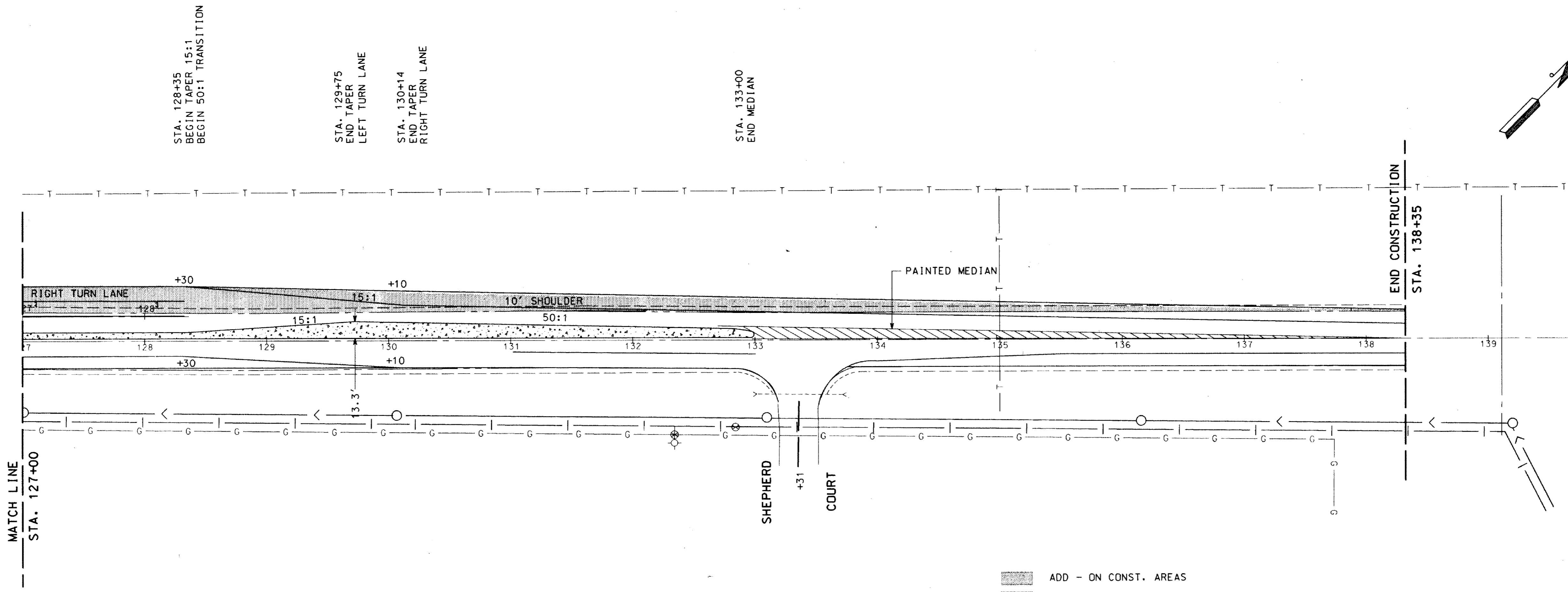
Ronald B. Bray
RONALD B. BRAY
DATE: 2-22-99 REG. NO. 18327

C.S.A.H. 23 (LAKE DRIVE) PLAN SHEET
STA. 115+00 TO 127+00
IMPROVEMENT NO. 1991-1
S.A.P. 02-623-09
CITY OF CIRCLE PINES, ANOKA COUNTY

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PLAN NO. **12**
SHT6.DGN

CSAH NO. 23 (LAKE DR)

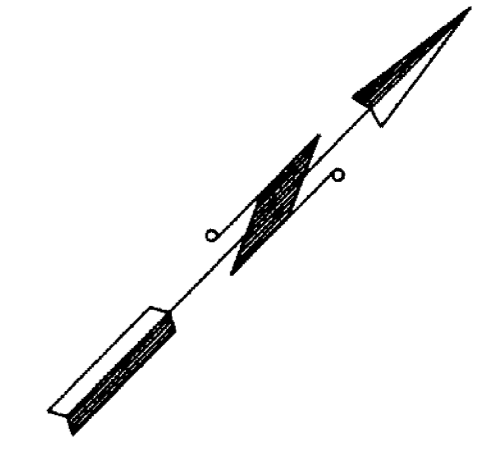


STA. 128+35
BEGIN TAPER 15:1
BEGIN 50:1 TRANSITION

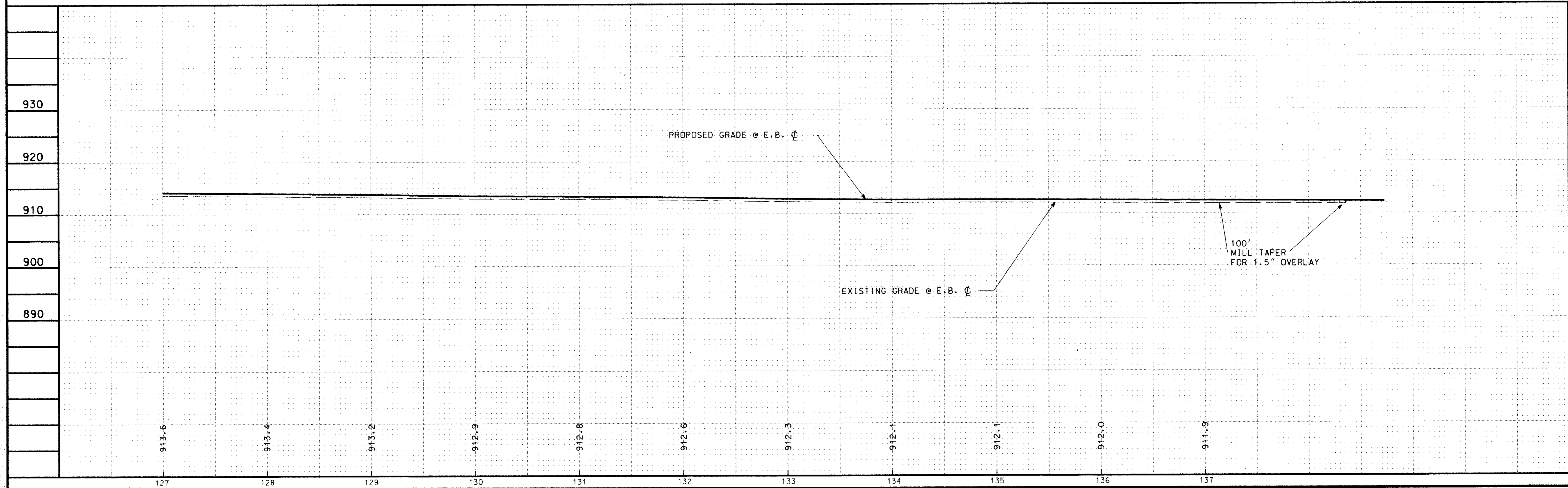
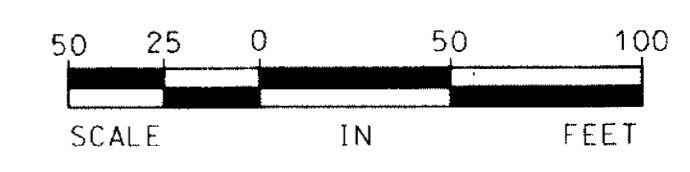
STA. 129+75
END TAPER
LEFT TURN LANE

STA. 130+14
END TAPER
RIGHT TURN LANE

STA. 133+00
END MEDIAN



ADD - ON CONST. AREAS
CONCRETE MEDIAN



REVISION NO.	EXPLANATION
DATE	
SCALE: 1" = 50' HOR. 1" = 10' VERT.	
PLAN BY: P.S.H.	DESIGN BY: P.S.H.
CHECKED BY: R.B.S.	COMING: 4613
DATE: 2-22-91	REG. NO.: 18327

C.S.A.H. 23 (LAKE DRIVE) PLAN SHEET
STA. 127+00 TO 138+35
IMPROVEMENT NO. 1991-1
S.A.P. 02-623-09
CITY OF CIRCLE PINES, ANOKA COUNTY

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Ort Schelen Mayeron & Associates, Inc.
Engineers ■ Surveyors ■ Planners
2021 East Hennepin Avenue ■ Minneapolis, MN 55413 ■ 612-331-9690

LOOP DETECTORS			
NUMBER	SIZE	FUNCTION	LOCATION
*D1-1	MULTIPLE	1	5'
*D2-1	6' X 6'	1	400'
*D4-1	6' X 6'	3 & 8	INPLACE
*D4-2	6' X 6'	1	5'
*D4-3	6' X 6'	7	5'
*D5-1	MULTIPLE	1	5'
*D6-1	6' X 6'	1	400'
D8-1	6' X 6'	3 & 8	INPLACE
D8-2	6' X 6'	1	INPLACE
D8-3	6' X 6'	7	INPLACE

LOCATION-DISTANCE FROM STOP LINE TO DETECTOR

LOOP DETECTOR FUNCTION
 1- CALL AND EXTEND
 2- CALL ONLY
 3- EXTEND ONLY
 4- CALL ONLY DENS
 5- DLY CALL ONLY
 6- DLY CALL ONLY DENSITY
 7- DLY CALL IMMEDIATE EXTEND
 8- CARRY OVER
 9- ADVISORY
 10- SAMPLING

*NOTES:

- * 1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE USED INPLACE UNLESS OTHERWISE NOTED WITH AN *. (**WORK TO BE DONE)
- * 2) SEE SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY FOR LOCATION OF UTILITIES.
- * 3) ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS.
- * 4) EACH LUMINAIRE SHALL HAVE A PEC AND CHECK SWITCH.
- * 5) SEE SPECIAL PROVISIONS FOR ANOKA COUNTY SERVICE CABINET DETAILS.
- * 6) DIRECTIONAL SIGNS SHALL BE REINSTALLED ON MAST ARMS AT POLES 1, 2, AND 3. SEE SPECIAL PROVISIONS.
- * 7) ALL NEW HANDHOLES SHALL BE CONCRETE WITH CONCRETE COVERS.
- * 8) LOOP DETECTOR WIRES SHALL BE CROSS LINKED POLYETHYLENE (XLP) IN 1" N.M.C. SEE SPECIAL PROVISIONS.
- * 9) ALL PEDESTRIAN INDICATIONS SHALL BE 12" X 12".
- * 10) HUBS FOR POLE MOUNTED SIGNAL INDICATIONS SHALL BE PROVIDED ON 4 SIDES OF MAST ARM POLES.
- * 11) SALVAGE ALL ITEMS OF THIS SIGNAL SYSTEM NOT USED AS PART OF THE FUTURE SIGNAL SYSTEM. FOR EXISTING SIGNAL SYSTEM SEE SHEETS 18 AND 19.
- * 12) A 3/4" COUPLING AND 3/4" PIPE NIPPLE AND CAPPED CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED APPROX. 4' FROM THE END OF THE MAST ARM AT POLES 1,2,3,4 FOR FUTURE EMERGENCY VEHICLE PRE-EMPTION.
- * 13) A MID MAST ARM MOUNT SHALL BE FURNISHED AND INSTALLED APPROX. 12' FROM THE END OF THE MAST ARM AT POLES 1 AND 3.

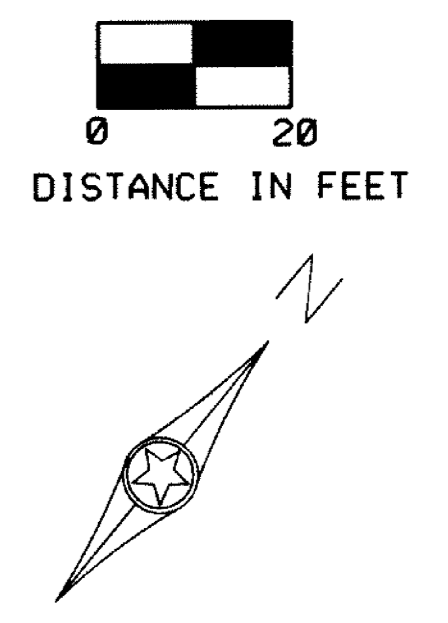
*1/4" R.S.C. EXTEND ON TO INPLACE 1/4" R.S.C.
 *1-2/C *14

2" R.S.C. FOR SERVICE BY OTHERS

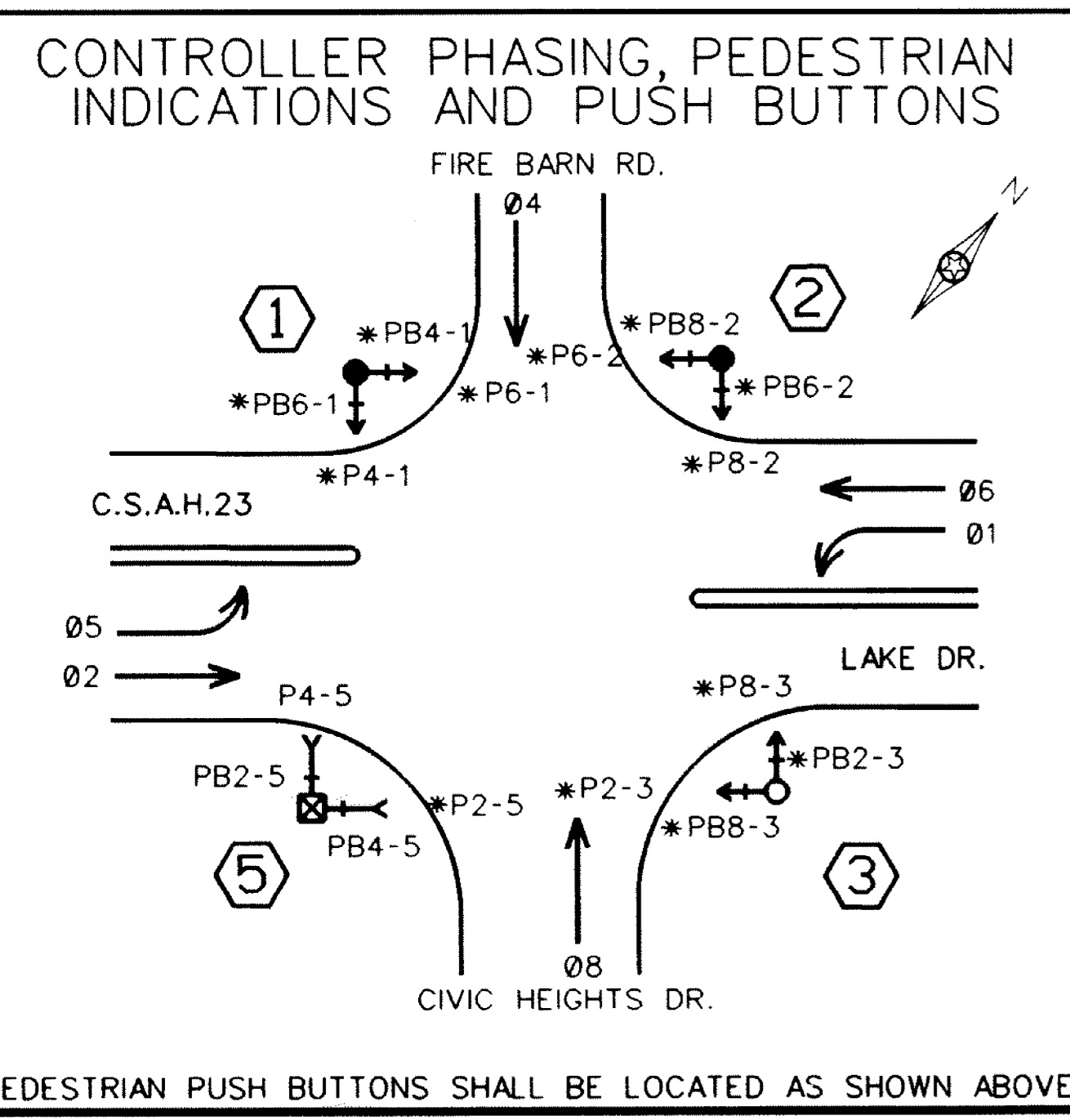
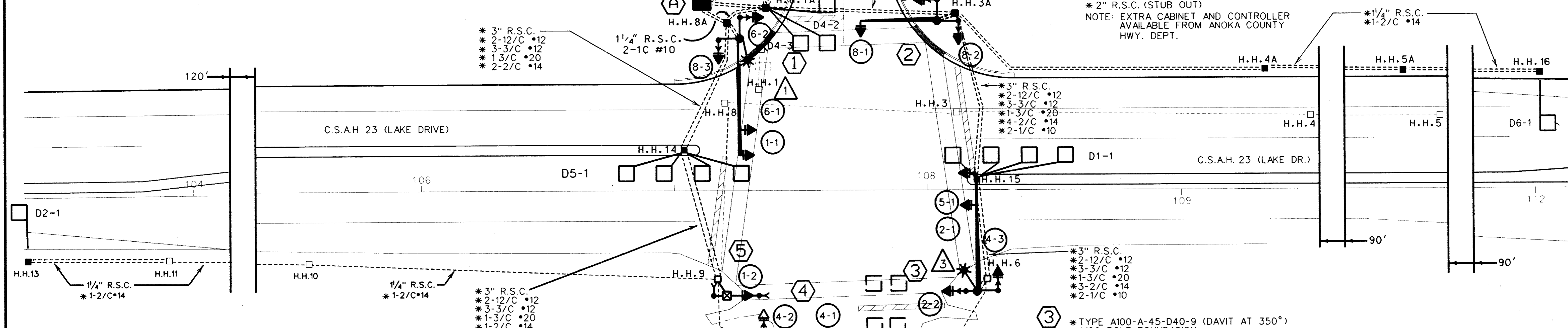
- ① *TYPE A100-A-45-D40-9 (DAVIT AT 350°)
 *A100 POLE FOUNDATION
 *INSTALL SALVAGED ONE WAY SIGNAL OVERHEAD
 *ONE WAY SIGNAL OVERHEAD
 *INSTALL SALVAGED TYPE 10B POLE MOUNTED 90°
 *INSTALL SALVAGE TYPE 10B POLE MOUNTED 180°
 *INSTALL SALVAGED LUMINAIRE (200 WATT H.P.S.)
 *2-PEDESTRIAN PUSH BUTTONS
 EXTEND INTO H.H. 1A:
 *3" R.S.C.
 *2-12/C *20
 *3-3/C *12
 *1-3/C *20
 *2-1/C *10

NOTE: ANOKA CO. HWY DEPT WILL PROVIDE A100 POLE, EXISTING P90 POLE TO BE USED AT SYSTEM "B".

- ② *RELOCATE TYPE P90-A-25 ASSEMBLY
 *P90 POLE FOUNDATION
 EXTEND INTO H.H. 3A:
 *3" R.S.C.
 *1-12/C *12
 *5-3/C *12
 *1-3/C *20
 *2-1/C *10



- A *RELOCATE CONTROLLER AND CABINET ASSEMBLY
 *CABINET FOUNDATION
 *EXTEND INTO H.H.12A:
 *METERED SIGNAL SERVICE
 *1/4" R.S.C.
 *3-1/C *6
 *4" R.S.C.
 *3-12/C *12
 *8-3/C *12
 *2-3/C *20
 *8-2/C *14
 EXTEND INTO H.H.8A
 *4" R.S.C.
 *4-12/C *12
 *6-3/C *12
 *2-3/C *20
 *2-2/C *14
 *2" R.S.C. (STUB OUT)
 NOTE: EXTRA CABINET AND CONTROLLER AVAILABLE FROM ANOKA COUNTY HWY. DEPT.
- B *RELOCATE SERVICE CABINET ASSY.
 *CABINET FOUNDATION
 *STUB OUT 2" R.S.C. (FOR SERVICE BY OTHERS)
 *EXTEND INTO H.H.12A:
 *METERED SIGNAL SERVICE
 *1/4" R.S.C.
 *3-1/C *6
 *EXTEND INTO H.H.1A:
 *UNMETERED STREET LIGHT SERVICE
 *1/4" R.S.C.
 *4-1/C *10



- ④ TYPE P90-A-25
 P90 POLE FOUNDATION
 ONE WAY SIGNAL OVERHEAD
 TYPE 10A POLE MOUNTED 270°
 EXTEND INTO H.H. 9:
 *3" R.S.C.
 *1-12/C *12
 *1-3/C *12
 *1-3/C *20

- ⑤ TYPE 1D (REVISE FACE NO. 1-2)
 10' SIGNAL PEDESTAL
 PEDESTAL FOUNDATION
 2-PEDESTRIAN PUSH BUTTONS
 EXTEND INTO H.H. 9:
 *2" R.S.C.
 *1-12/C *12
 *2-3/C *12

- ③ *TYPE A100-A-45-D40-9 (DAVIT AT 350°)
 *A100 POLE FOUNDATION
 *INSTALL SALVAGED ONE WAY SIGNAL OVERHEAD
 *ONE WAY SIGNAL OVERHEAD
 *INSTALL TYPE 10B POLE MOUNTED 90°
 *INSTALL TYPE 10B POLE MOUNTED 270°
 *INSTALL LUMINAIRE (200 WATT H.P.S.)
 *2-PEDESTRIAN PUSH BUTTONS
 EXTEND INTO H.H. 6:
 *3" R.S.C.
 *2-12/C *12
 *3-3/C *12
 *1-3/C *20
 *3-2/C *14
 *2-1/C *10

NOTE: ANOKA CO. HWY DEPT WILL PROVIDE A100 POLE, EXISTING P90 POLE TO BE USED AT SYSTEM "B".

SIGNAL INDICATIONS
 DIMENSIONS ARE SHOWN IN INCHES

FACE	PHASE	FLASH	R	Y	G	RLTA	YLTA	GLTA
*1-1	1	R				12"	12"	12"
*1-2	1	R				12"	12"	12"
*2-1	2	R	12"	12"	12"			
2-2	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"			
*5-1	5	R				12"	12"	12"
*5-2	5	R				12"	12"	12"
*6-1	6	R	12"	12"	12"			
*6-2	6	R	12"	12"	12"			
*8-1	8	R	12"	12"	12"			
*8-2	8	R	12"	12"	12"			
*8-3	8	R	12"	12"	12"			

ELECTRICAL ENG. CERT.
 I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Paul J. Blodgett
 DATE: 2-22-71 REG. NO. 13719

EXPLANATION
 REVISION NO. DATE
 SCALE: 1" = 20'
 PLAN BY: DESIGN BY: J.M./J.B.
 CHECKED BY: COMING BY: J.M./J.B.
 RBB
 RECORD COPY BY: DATE: 4/7/00
 18327
 2-22-71
 INTERSECTION LAYOUT "SYSTEM A"
 C.S.A.H. 23 (LAKE DR.) AT FIREBARN RD.
 Orr Schelen Mayeron & Associates, Inc.
 Engineers ■ Surveyors ■ Planners
 2021 East Hennepin Avenue ■ Minneapolis, MN 55413 ■ 612-331-8660
 PLAN NO. 14

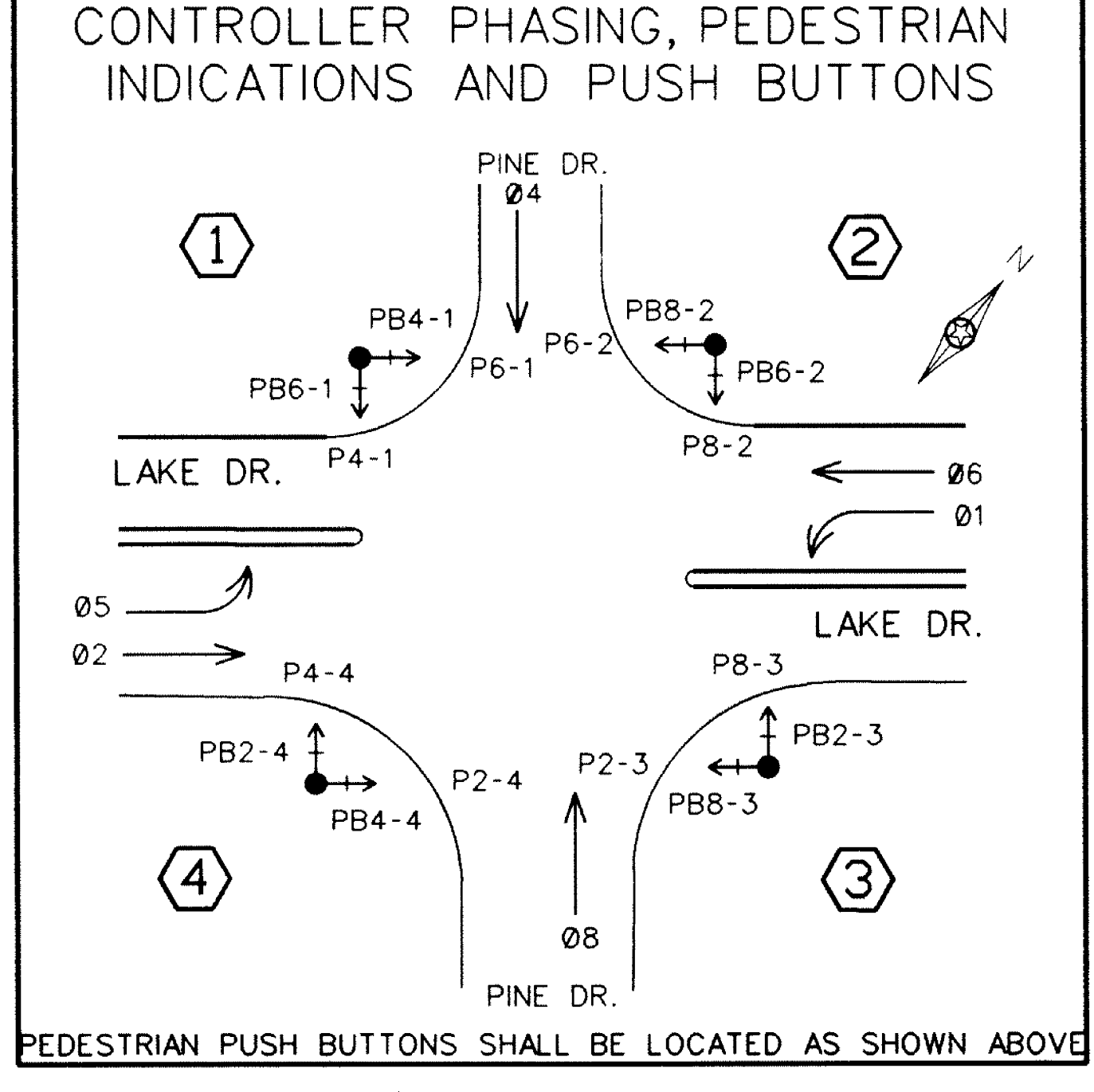
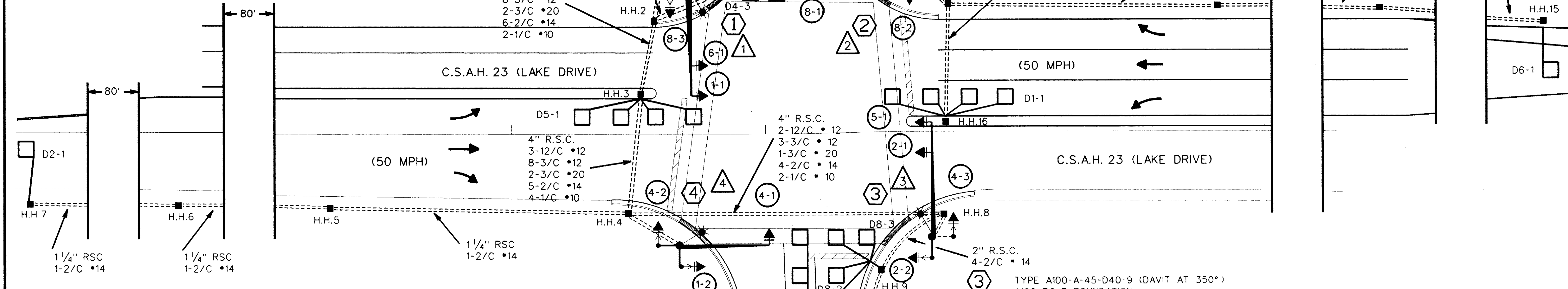
LOOP DETECTORS			
NUMBER	SIZE	FUNCTION	LOCATION
D1-1	MULTIPLE	1	5'
D2-1	6' X 6'	1	400'
D4-1	6' X 6'	3 / 8	125'
D4-2	(2)-6' X 6'	7	5'
D4-3	6' X 6'	7	5'
D5-1	MULTIPLE	1	5'
D6-1	6' X 6'	1	400'
D8-1	6' X 6'	3 / 8	125'
D8-2	(2)-6' X 6'	1	5'
D8-3	6' X 6'	7	5'
D8-4	MULTIPLE	7	5'

LOCATION-DISTANCE FROM STOP LINE TO DETECTOR

FUNCTIONS:

1-CALL AND EXTEND 9-ADVISORY
 2-CALL ONLY 10-SAMPLING
 3-EXTEND ONLY 11-SPECIAL-SEE NOTE-
 4-CALL ONLY DENS
 5-DLY CALL ONLY
 6-DLY CALL ONLY DENSITY
 7-DLY CALL IMMEDIATE EXTEND
 8-CARRY OVER

- *NOTES:
- SEE SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY FOR LOCATION OF UTILITIES.
 - ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS.
 - EACH LUMINAIRE SHALL HAVE A PEC AND CHECK SWITCH.
 - SEE SPECIAL PROVISIONS FOR ANOKA COUNTY SERVICE CABINET DETAILS.
 - DIRECTIONAL SIGNS TO BE FURNISHED AND INSTALLED ON MAST ARMS AT POLES 1, 2, 3, AND 4.
 - ALL HANDHOLES SHALL BE CONCRETE WITH CONCRETE COVERS.
 - LOOP DETECTOR WIRES SHALL BE CROSS LINKED POLYETHYLENE (XLP) IN 1" N.M.C. SEE SPECIAL PROVISIONS.
 - ALL PEDESTRIAN INDICATIONS SHALL BE 12" X 12".
 - HUBS FOR POLE MOUNTED SIGNAL INDICATIONS SHALL BE PROVIDED ON 4 SIDES OF MAST ARMS POLES.
 - ALL SIGNAL FACES SHALL BE 12 INCH 3 SECTION R-Y-G EXCEPT FACE NO'S 1-1, 1-2, 5-1, AND 5-2 WHICH SHALL BE 12 INCH 3 SECTION RLTA-YLTA-GLTA.
 - A 3/4" COUPLING AND 3/4" PIPE NIPPLE AND CAPPED CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED APPROX. 4' FROM THE END OF THE MAST ARM AT POLES 1,2,3,4 FOR FUTURE EMERGENCY VEHICLE PRE-EMPTION.
 - A MID MAST ARM MOUNT SHALL BE FURNISHED AND INSTALLED APPROX. 12 FEET FROM THE END OF THE MAST ARM AT POLES 1 AND 3.



④ TYPE P90-A-35-D40-9 (DAVIT AT 350°)
 P90 POLE FOUNDATION
 ONE WAY SIGNAL OVERHEAD
 LUMINAIRE - 200W HPS
 TYPE 10B - POLE MOUNTED 90°
 TYPE 10B - POLE MOUNTED 180°
 2-PEDESTRIAN PUSH BUTTONS
 EXTEND INTO H.H. 4:
 3" RSC
 1 - 12/C •12
 5 - 3/C •12
 1 - 3/C •20
 2 - 1/C •10
 NOTE: INSTALL SALVAGE P90 POLE FROM SYSTEM "A".

② TYPE P90-A-30-D40-9 (DAVIT AT 350°)
 P90 POLE FOUNDATION
 ONE WAY SIGNAL OVERHEAD
 LUMINAIRE - 200W HPS
 TYPE 10B - POLE MOUNTED 90°
 TYPE 10B - POLE MOUNTED 180°
 2-PEDESTRIAN PUSH BUTTONS
 EXTEND INTO H.H. 11:
 3" RSC
 1 - 12/C •12
 5 - 3/C •12
 1 - 3/C •20
 2 - 1/C •10
 NOTE: INSTALL SALVAGED P90 POLE FROM SYSTEM "A"

Ⓐ CONTROLLER AND CABINET
 CABINET FOUNDATION
 EXTEND INTO H.H. 18:
 METERED SIGNAL SERVICE
 1 1/4" R.S.C.
 3-1/C •6
 EXTEND INTO H.H. 1:
 4" R.S.C.
 3-12/C •12
 8-3/C •12
 2-3/C •20
 5-2/C •14
 EXTEND INTO H.H. 2:
 4" R.S.C.
 3-12/C •12
 8-3/C •12
 2-3/C •20
 6-2/C •14
 2" R.S.C. (STUB OUT)

Ⓑ SERVICE CABINET
 CABINET FOUNDATION
 EXTEND INTO H.H. 18:
 METERED SIGNAL SERVICE
 1 1/4" R.S.C.
 3-1/C •6
 EXTEND INTO H.H. 1:
 UNMETERED STREET LIGHT SERVICE
 1 1/4" R.S.C.
 8-1/C •10

③ TYPE A100-A-45-D40-9 (DAVIT AT 350°)
 A100 POLE FOUNDATION
 2 - ONE WAY SIGNALS OVERHEAD
 LUMINAIRE - 200W HPS
 TYPE 10B - POLE MOUNTED 90°
 TYPE 10B - POLE MOUNTED 180°
 R10-X5L SIGN (36" X 48")
 2 - PEDESTRIAN PUSH BUTTONS
 EXTEND INTO H.H. 8:
 3" RSC
 2 - 12/C •12
 3 - 3/C •12
 1 - 3/C •20
 2 - 1/C •10

① TYPE A100-A-40-D40-9 (DAVIT AT 350°)
 A100 POLE FOUNDATION
 2 - ONE WAY SIGNALS OVERHEAD
 LUMINAIRE - 200W HPS
 TYPE 10B - POLE MOUNTED 90°
 TYPE 10B - POLE MOUNTED 180°
 R10-X5L SIGN (36" X 48")
 2 - PEDESTRIAN PUSH BUTTONS
 EXTEND INTO H.H. 1:
 3" RSC
 2 - 12/C •12
 3 - 3/C •12
 1 - 3/C •20
 2 - 1/C •10

ELECTRICAL ENG. CERT.
 I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Paul J. Blaney
 DATE: 3-1-91 REG. NO.: 13719

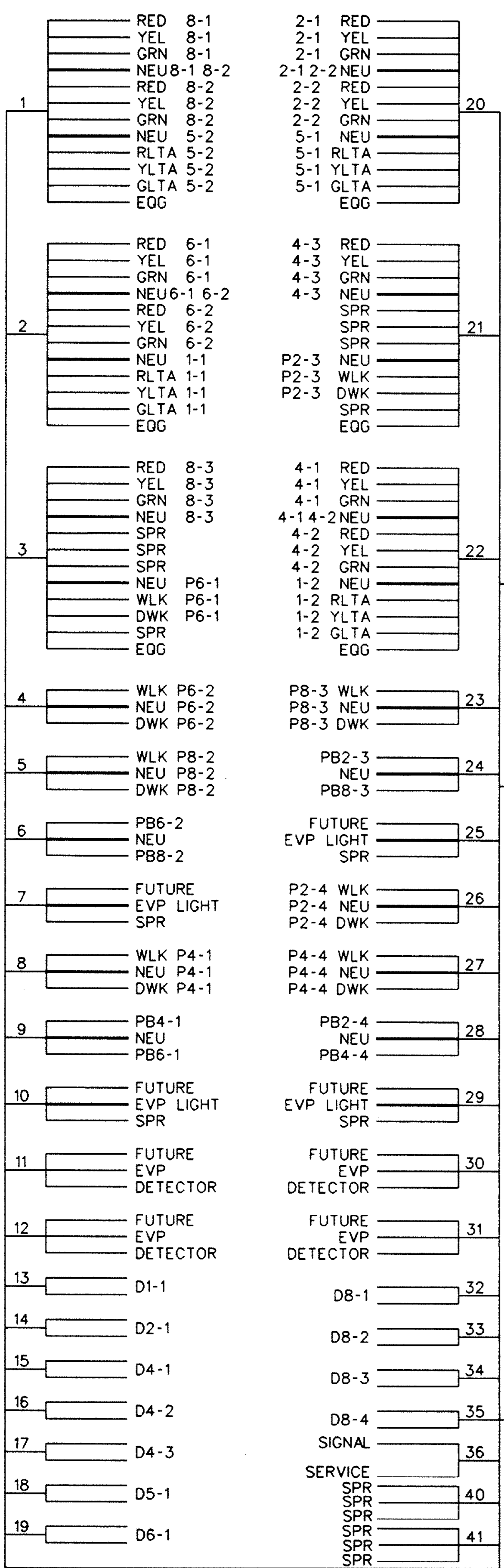
FACE	PHASE	FLASH	R	Y	G	RLTA	YLTA	GLTA
1-1	1	R				12"	12"	12"
1-2	1	R				12"	12"	12"
2-1	2	R	12"	12"	12"			
2-2	2	R	12"	12"	12"			
4-1	4	R	12"	12"	12"			
4-2	4	R	12"	12"	12"			
4-3	4	R	12"	12"	12"			
5-1	5	R				12"	12"	12"
5-2	5	R				12"	12"	12"
6-1	6	R	12"	12"	12"			
6-2	6	R	12"	12"	12"			
8-1	8	R	12"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

OSM Schelen Mayeron & Associates, Inc.
 Engineers - Surveyors - Planners
 2021 East Hennepin Avenue - Minneapolis, MN 55413 - 612-331-8660

INTERSECTION LAYOUT "SYSTEM B" C.S.A.H. 23 (LAKE DR.) AT PINE DR.

PLAN NO. 16

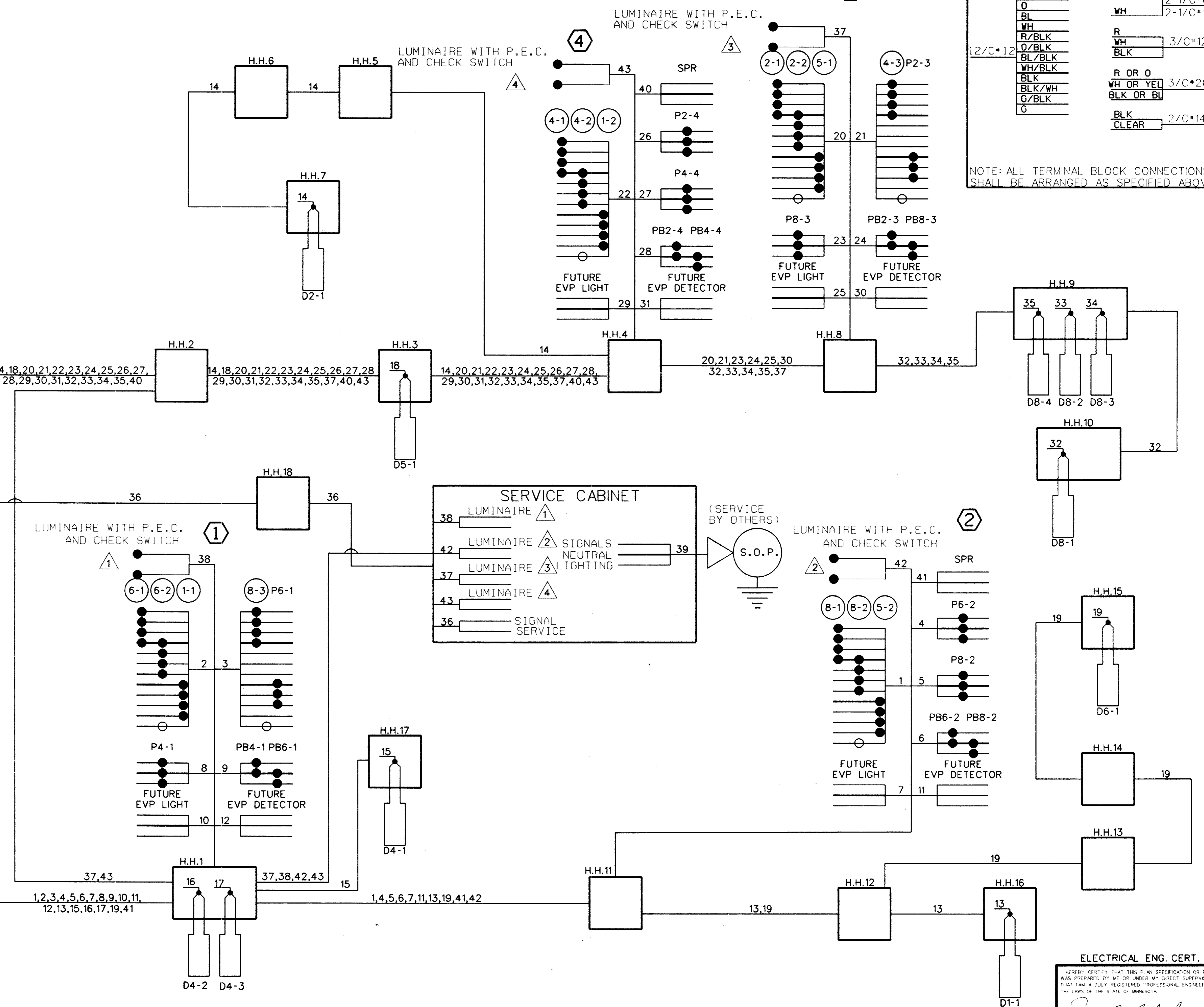
CONTROLLER CABINET



CONDUCTOR COLOR CODING

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

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



FIELD WIRING DIAGRAM
"SYSTEM B"
C.S.A.H. 23 (LAKE DR.) AT PINE DR.

Orr Schelen Mayron & Associates, Inc.
Engineers - Surveyors - Planners
2021 East Hennepin Avenue - Minneapolis, MN 55413 - 612-351-9680

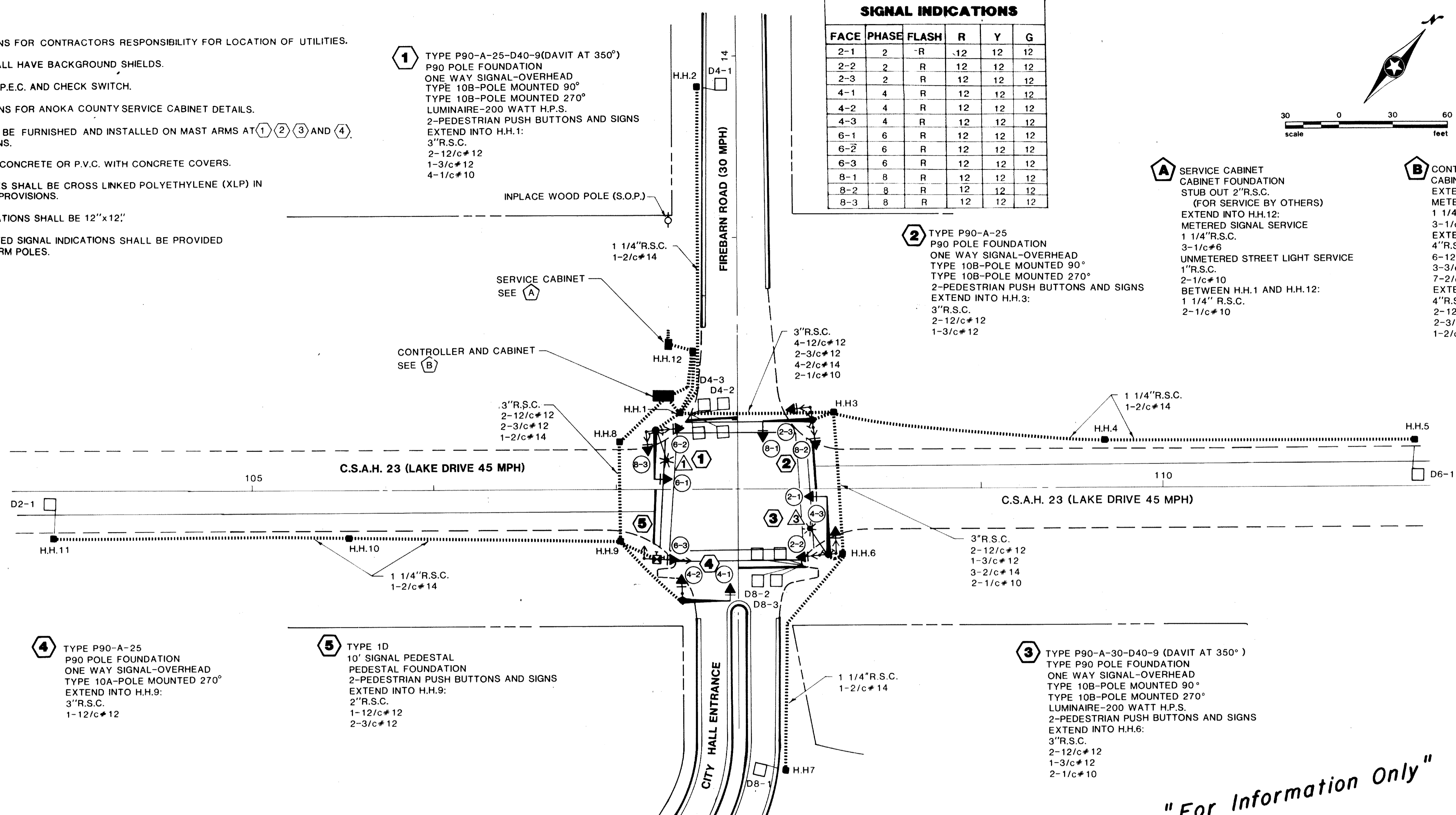
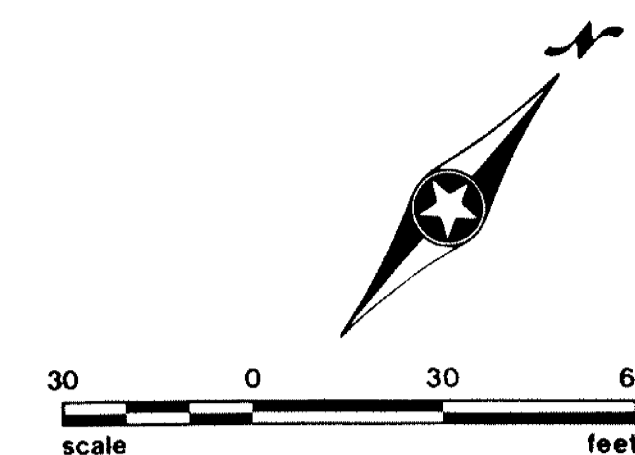
ELECTRICAL ENG. CERT.
I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Paul J. Blady
DATE: 3-1-91 REG. NO. 13719

NOTES:

- 1) SEE SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY FOR LOCATION OF UTILITIES.
- 2) ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS.
- 3) LUMINAIRE \triangle WITH P.E.C. AND CHECK SWITCH.
- 4) SEE SPECIAL PROVISIONS FOR ANOKA COUNTY SERVICE CABINET DETAILS.
- 5) DIRECTIONAL SIGNS TO BE FURNISHED AND INSTALLED ON MAST ARMS AT ① ② ③ AND ④. SEE SPECIAL PROVISIONS.
- 6) HANDHOLES SHALL BE CONCRETE OR P.V.C. WITH CONCRETE COVERS.
- 7) LOOP DETECTOR WIRES SHALL BE CROSS LINKED POLYETHYLENE (XLP) IN 1" N.M.C. SEE SPECIAL PROVISIONS.
- 8) ALL PEDESTRIAN INDICATIONS SHALL BE 12"x12"
- 9) HUBS FOR POLE MOUNTED SIGNAL INDICATIONS SHALL BE PROVIDED ON 4 SIDES OF MAST ARM POLES.

SIGNAL INDICATIONS

FACE	PHASE	FLASH	R	Y	G
2-1	2	-R	12	12	12
2-2	2	R	12	12	12
2-3	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
6-1	6	R	12	12	12
6-2	6	R	12	12	12
6-3	6	R	12	12	12
8-1	8	R	12	12	12
8-2	8	R	12	12	12
8-3	8	R	12	12	12



"For Information Only"

④ TYPE P90-A-25
P90 POLE FOUNDATION
ONE WAY SIGNAL-OVERHEAD
TYPE 10A-POLE MOUNTED 270°
EXTEND INTO H.H.9:
3"R.S.C.
1-12/c#12

⑤ TYPE 1D
10' SIGNAL PEDESTAL
PEDESTAL FOUNDATION
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND INTO H.H.9:
2"R.S.C.
1-12/c#12
2-3/c#12

③ TYPE P90-A-30-D40-9 (DAVIT AT 350°)
TYPE P90 POLE FOUNDATION
ONE WAY SIGNAL-OVERHEAD
TYPE 10B-POLE MOUNTED 90°
TYPE 10B-POLE MOUNTED 270°
LUMINAIRE-200 WATT H.P.S.
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND INTO H.H.6:
3"R.S.C.
2-12/c#12
1-3/c#12
1-3/c#14
2-1/c#10

LOOP DETECTOR FUNCTIONS:

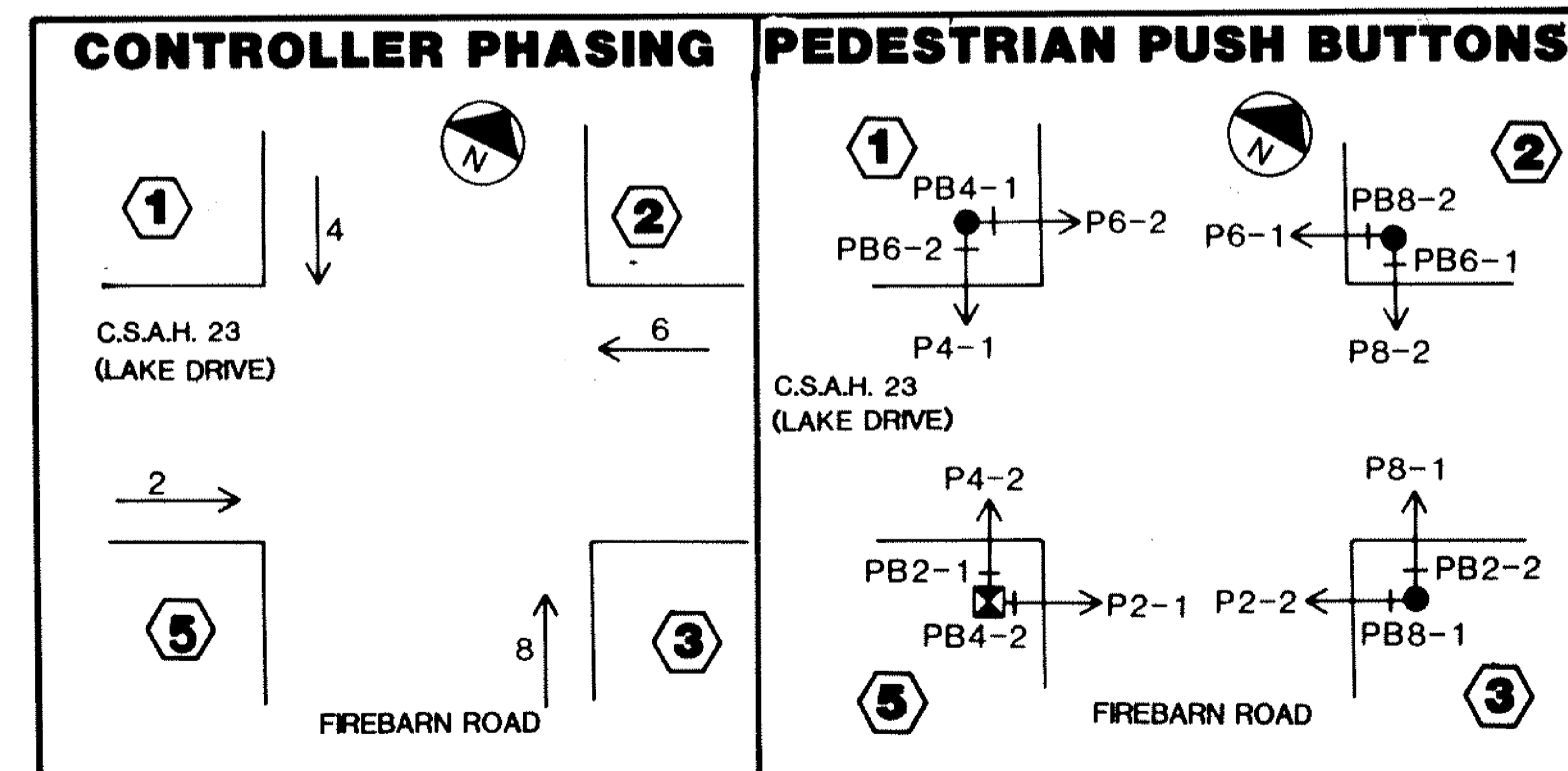
- 1) CALL AND EXTEND
- 2) CALL ONLY
- 3) EXTEND ONLY
- 4) CALL ONLY DENSITY
- 5) DELAYED CALL ONLY
- 6) DELAYED CALL ONLY DENSITY
- 7) DELAYED CALL-IMMEDIATE EXTEND
- 8) CARRY OVER (STRETCH)
- 9) ADVISORY DETECTOR
- 10) SAMPLING DETECTOR
- 11) SPECIAL DETECTOR

LOOP DETECTORS			
NUMBER	SIZE	LOCATION	FUNCTION
D2-1	6'x6'	330'	1
D4-1	6'x6'	180'	3,8
D4-2	2-6'x6'	-	1
D4-3	2-6'x6'	-	7
D6-1	6'x6'	330'	1
D8-1	6'x6'	110'	3,8
D8-2	2-6'x6'	-	1
D8-3	2-6'x6'	-	7

NOTE: LOCATION = DISTANCE FROM STOP LINE TO DETECTOR.

"ELECTRICAL ENGINEER CERTIFICATION"
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. _____
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.
Alan Van Wormer
Date: 7/14/88 Reg.No. 9089



NO.	BY	DATE	REVISIONS	ITEM	DESIGN	CHECKED



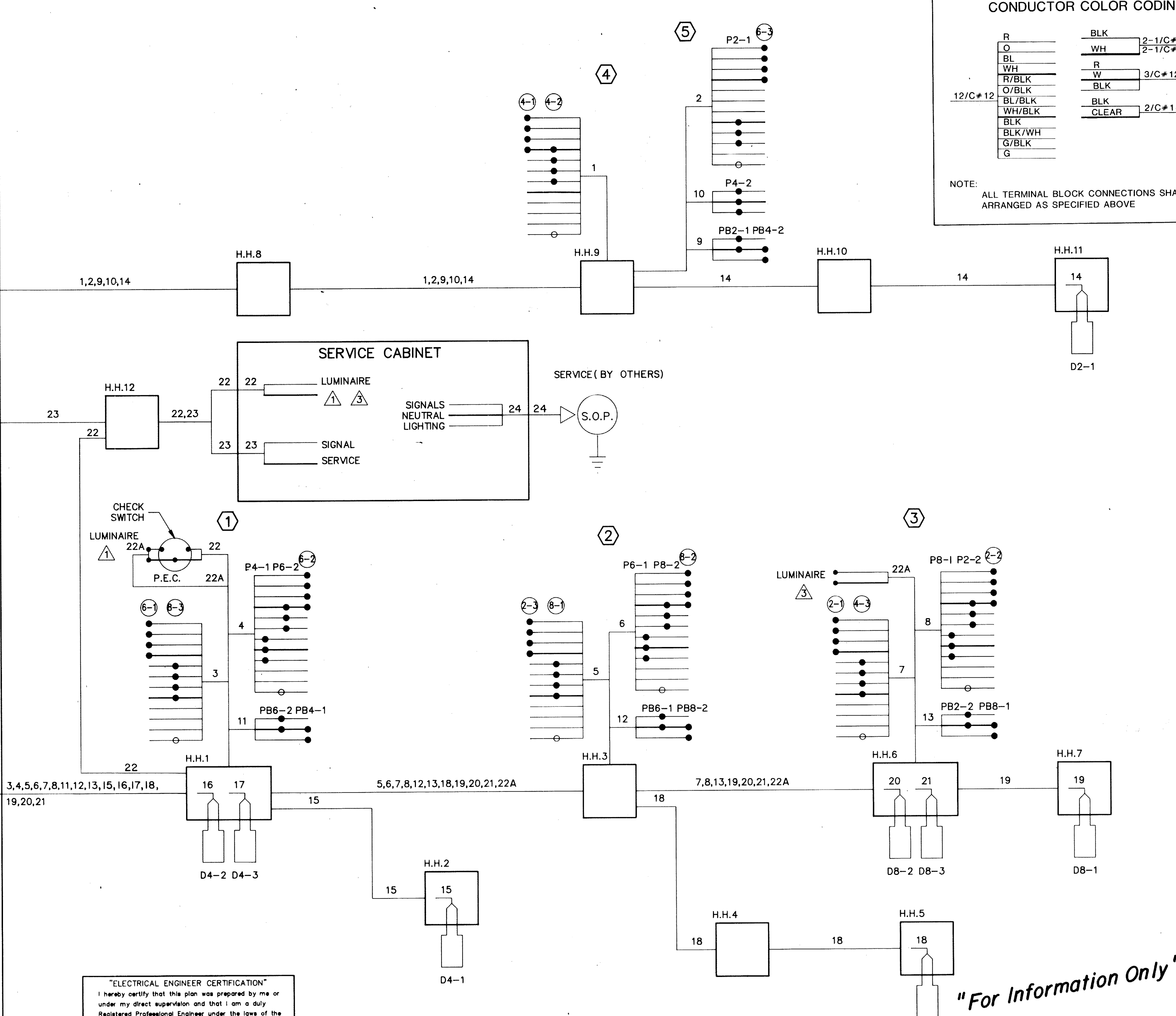
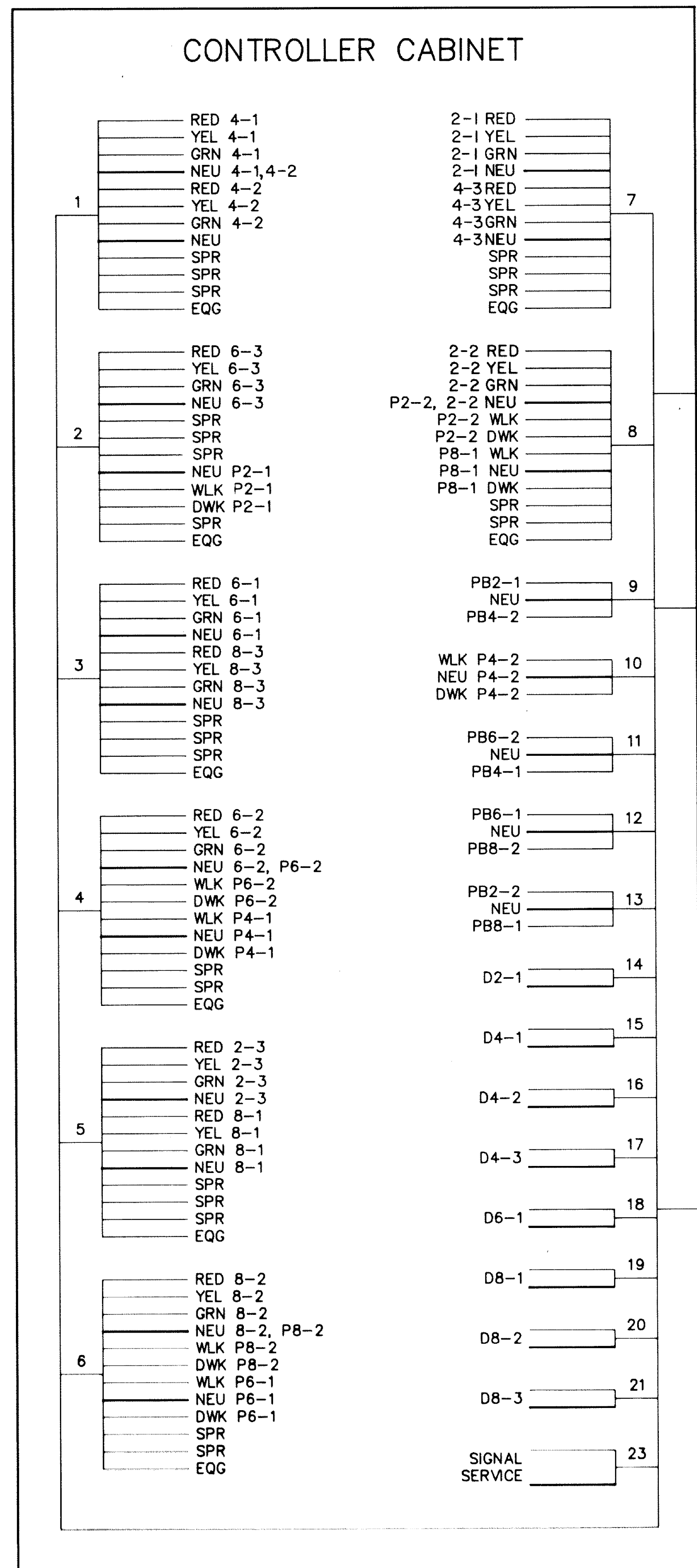
SIGNAL SYSTEM "D"
INTERSECTION LAYOUT
FIREBARN ROAD AT C.S.A.H.23 (LAKE DRIVE)

FILE NO. 88146.00	18
DATE 7/5/88	25
S.A.P. 02-623-06	

CONDUCTOR COLOR CODING

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

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



"ELECTRICAL ENGINEER CERTIFICATION"
 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: 7/14/88 Reg. No. 9089

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: 7/14/88 Reg. No. 9089



SIGNAL SYSTEM "D"
 FIELD WIRING DIAGRAM
 FIREBARN ROAD AT C.S.A.H. 23 (LAKE DRIVE)

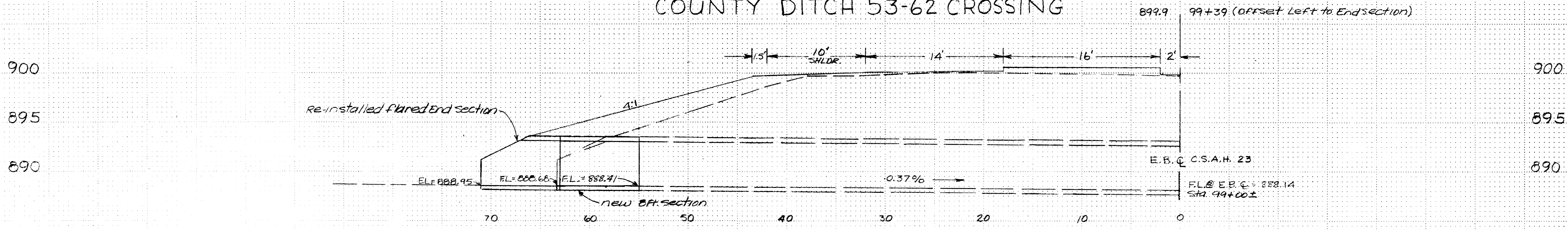
S.A.P. 02-623-06

FILE NO. 88146.00
 DATE 7/5/88

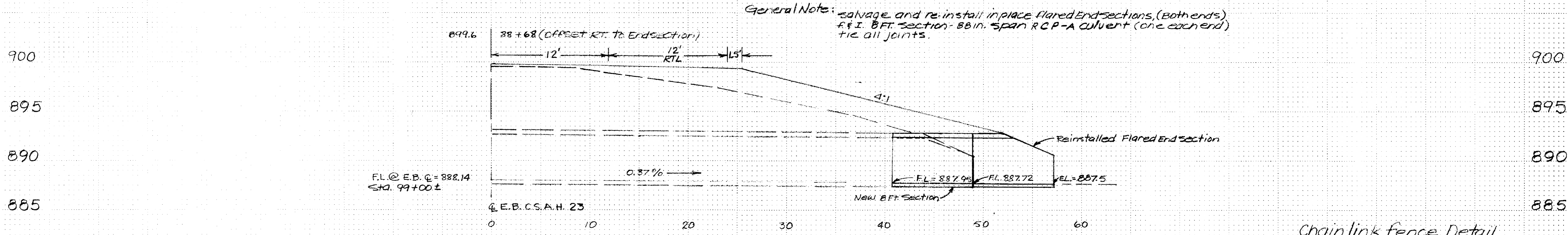
"For Information Only"

NO.	BY	DATE	REVISIONS	ITEM	DESIGN	CHECKED

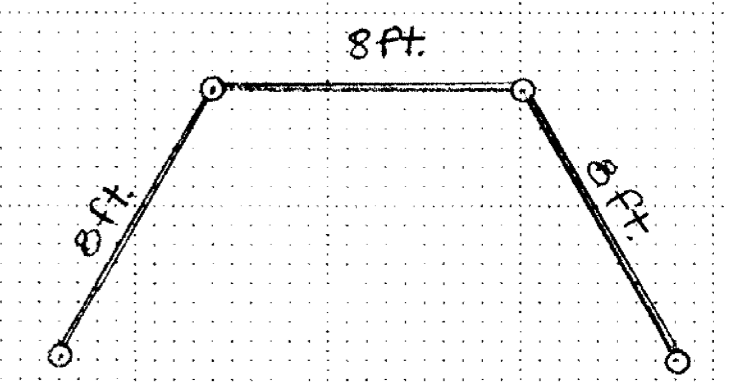
COUNTY DITCH 53-62 CROSSING



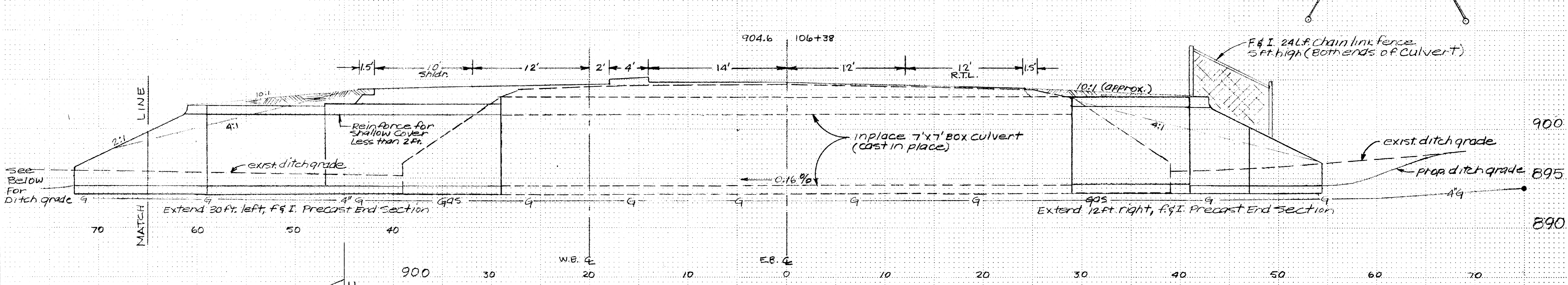
General Note: salvage and re-install in place flared end sections, (both ends) F&I BFT section - 80 in. span RCP-A culvert (one each end) tie all joints.



Chainlink fence Detail



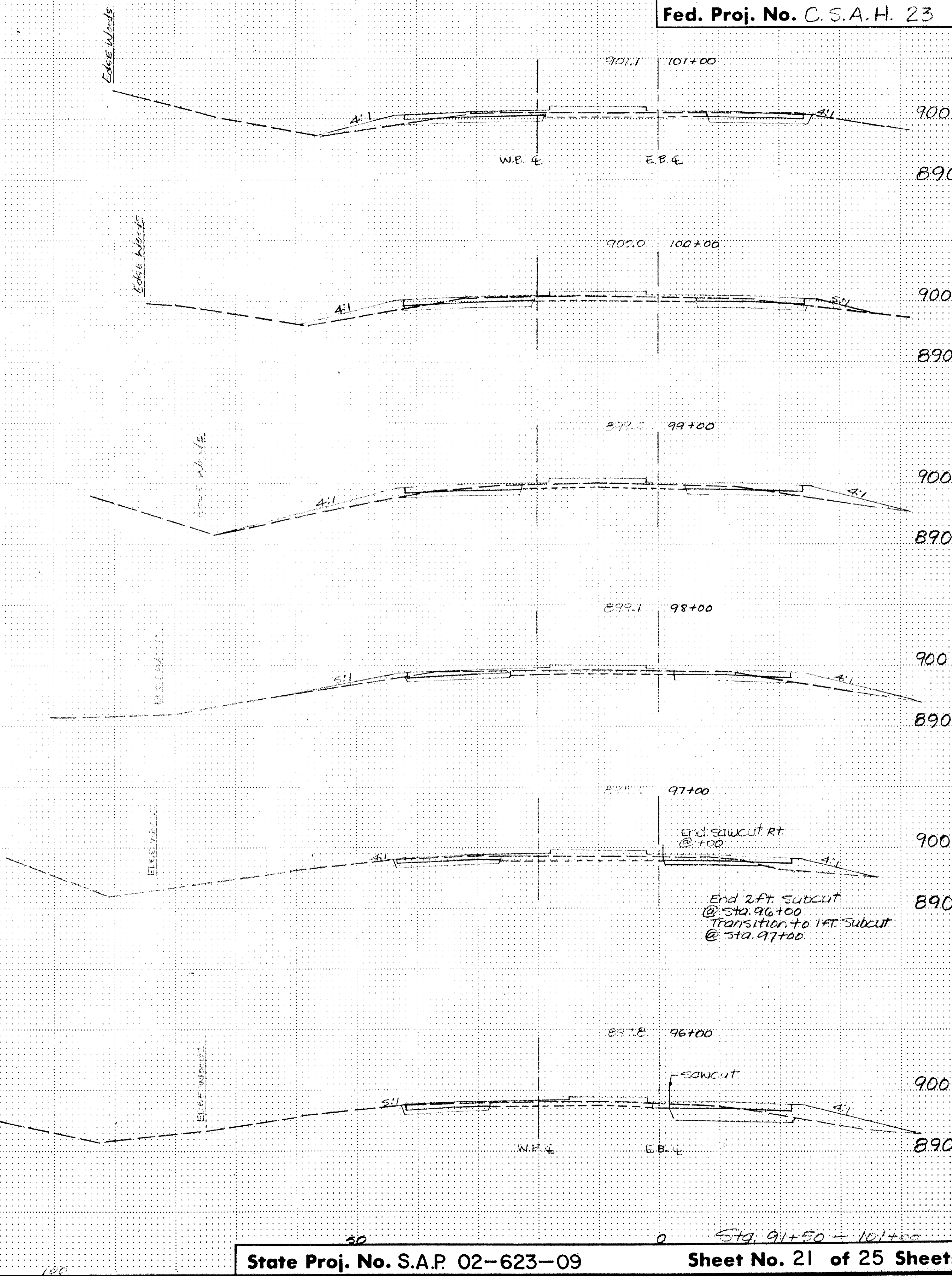
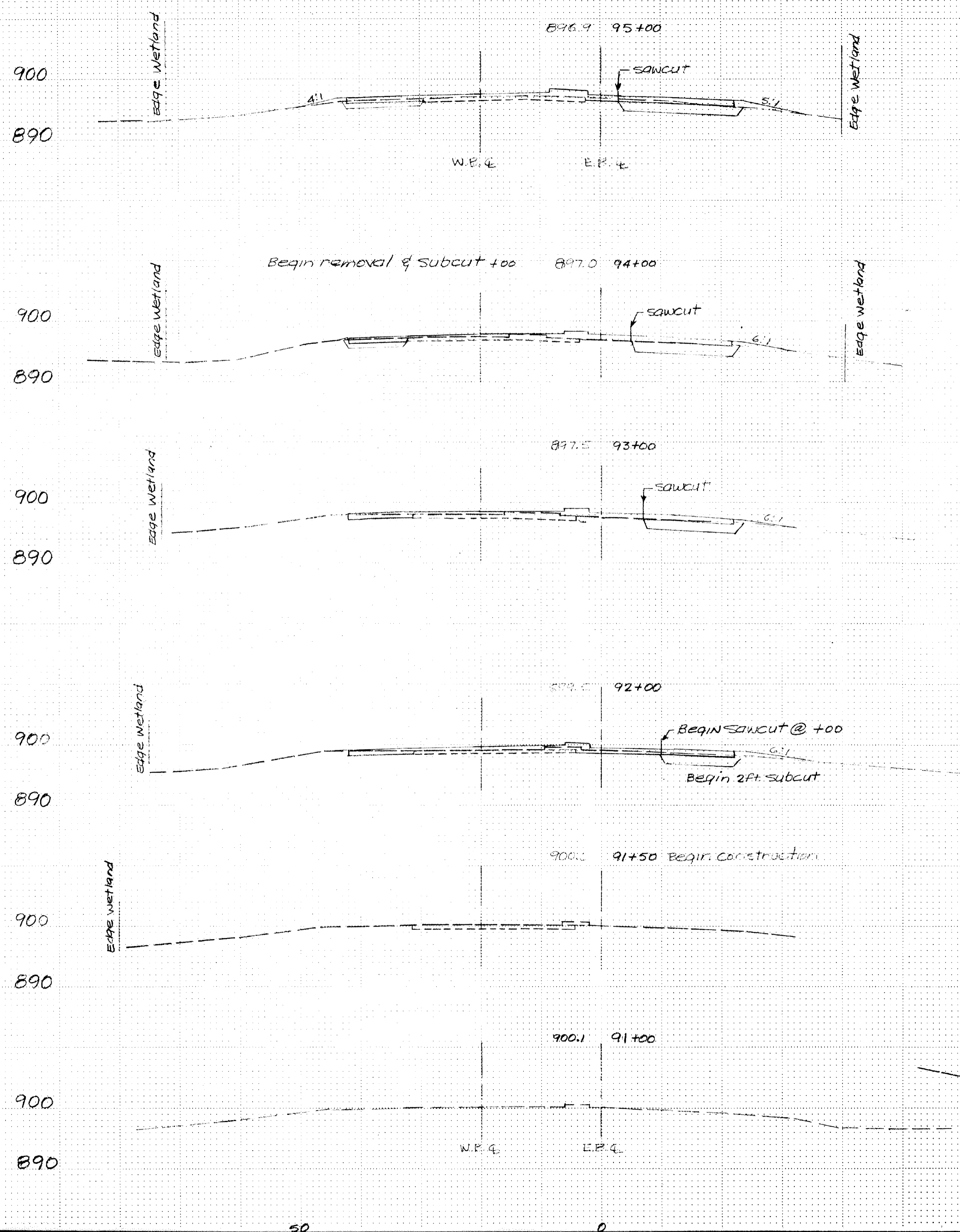
UNDERPASS (BOX CULVERT) STA. 106+38



General Note: Remove existing wingwalls. Tie and grout new 7'x7' box culvert sections to existing cast in place 7'x7' box providing a smooth transition. Tie all additional sections. furnish and install precast end sections. Removal of wingwalls and clean out of existing culvert is incidental.

Note: Gas estimated to be approx. 18" below culvert flowline. (for information only) Contractor should verify exact location prior to construction.

CULVERT CROSS-SECTION SHEET



COPY EQUIPMENT FLOW #1

END. SURCH. & PAVEMENT REMOVAL
RT. 105+25

903.3 105+00

906.6 109+00

902.5 104+00

905.8 108+00
BEG. MED. NOSE = 108+10

902.2 103+00

Q FIRE PUMP RD = 107+68
END MED. NOSE = 107+10

904.9 107+00

BEGIN MED. NOSE
2+80

Q GOLDEN LAKE RD = 102+30
EL = 902.2

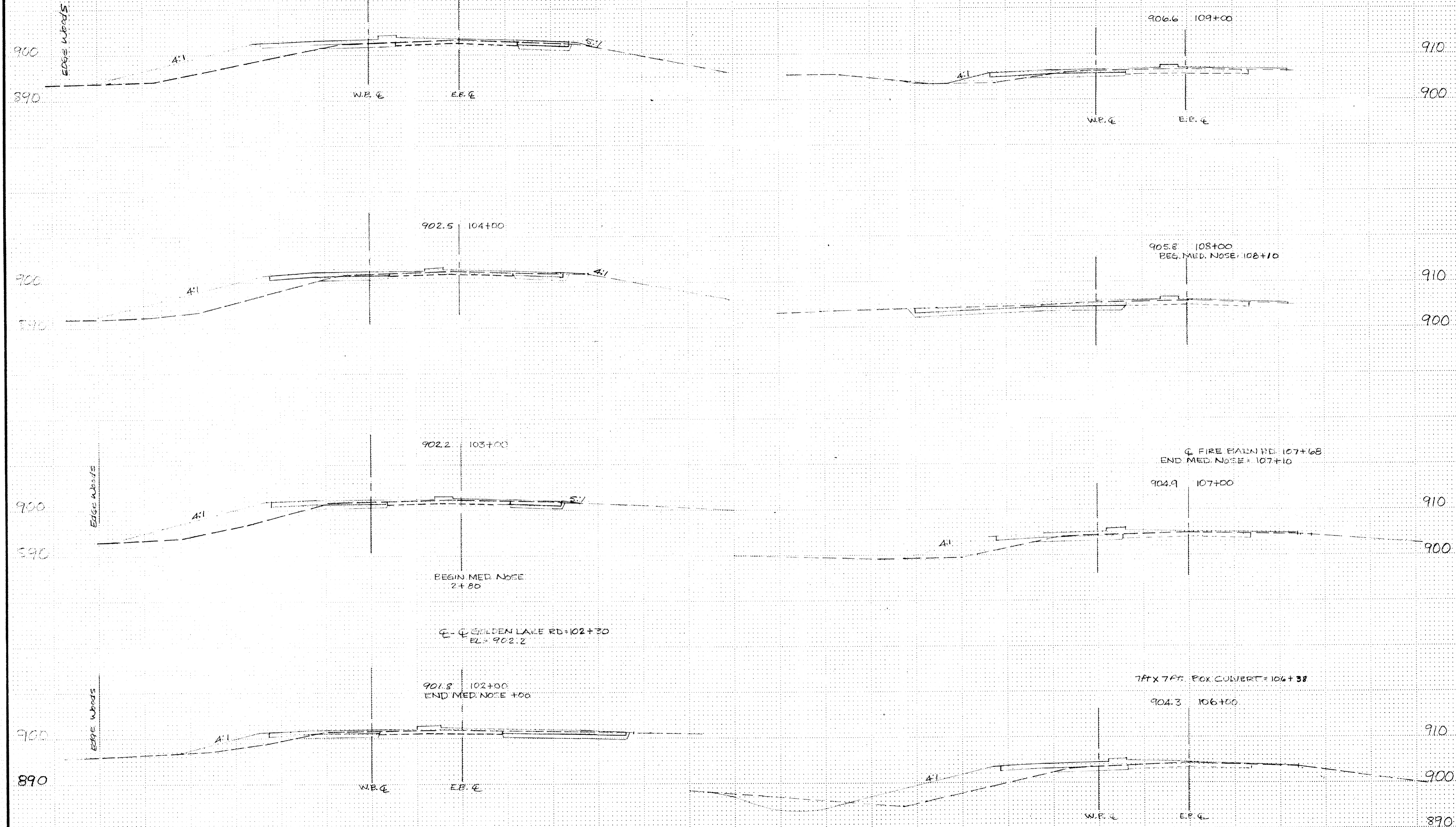
901.8 102+00
END MED. NOSE +00

7FT X 7FT BOX CULVERT = 106+38

904.3 106+00

Sta. 102+00 - 109+00

0 (E.B. (L))

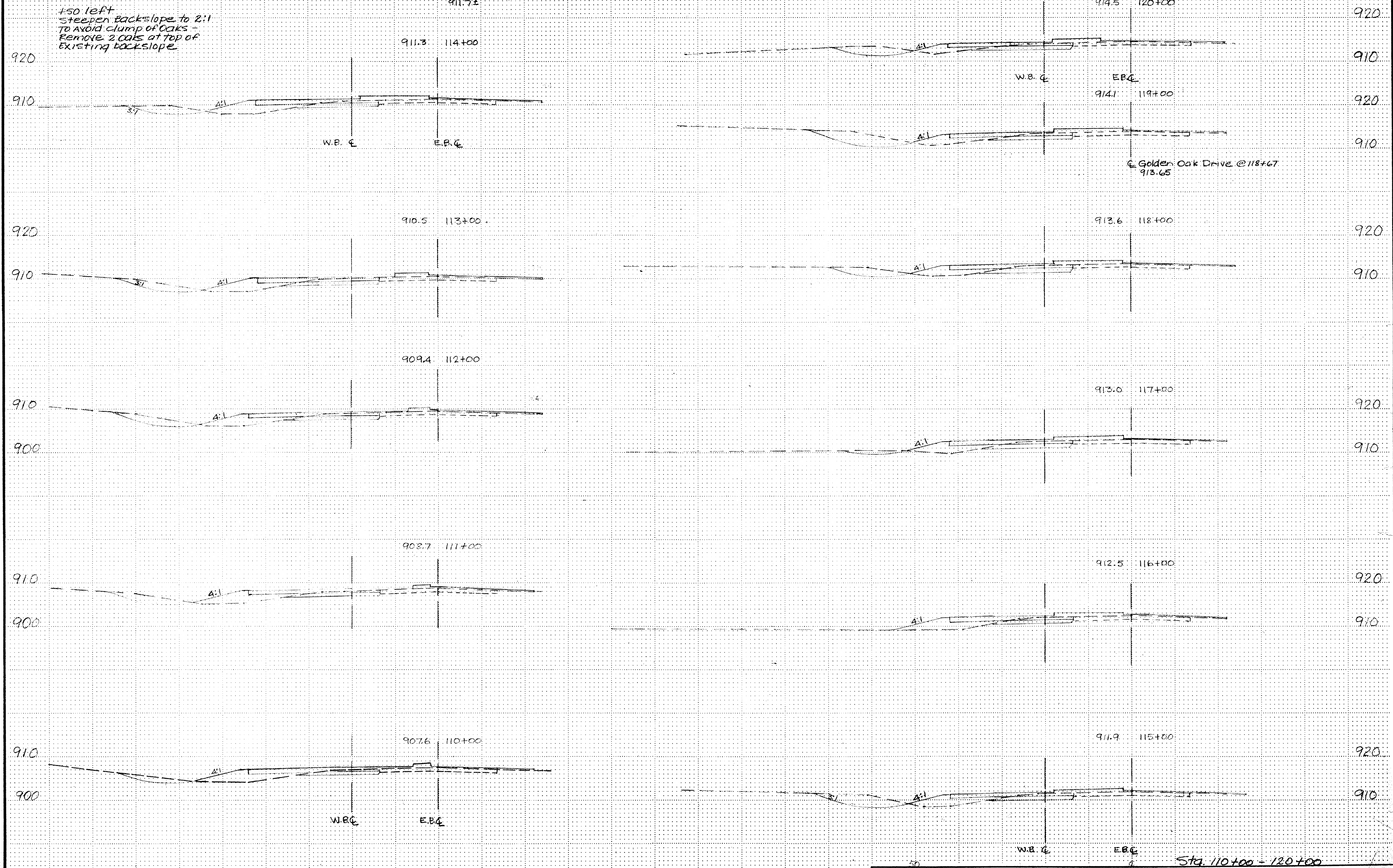


COPY EQUIPMENT COMPANY

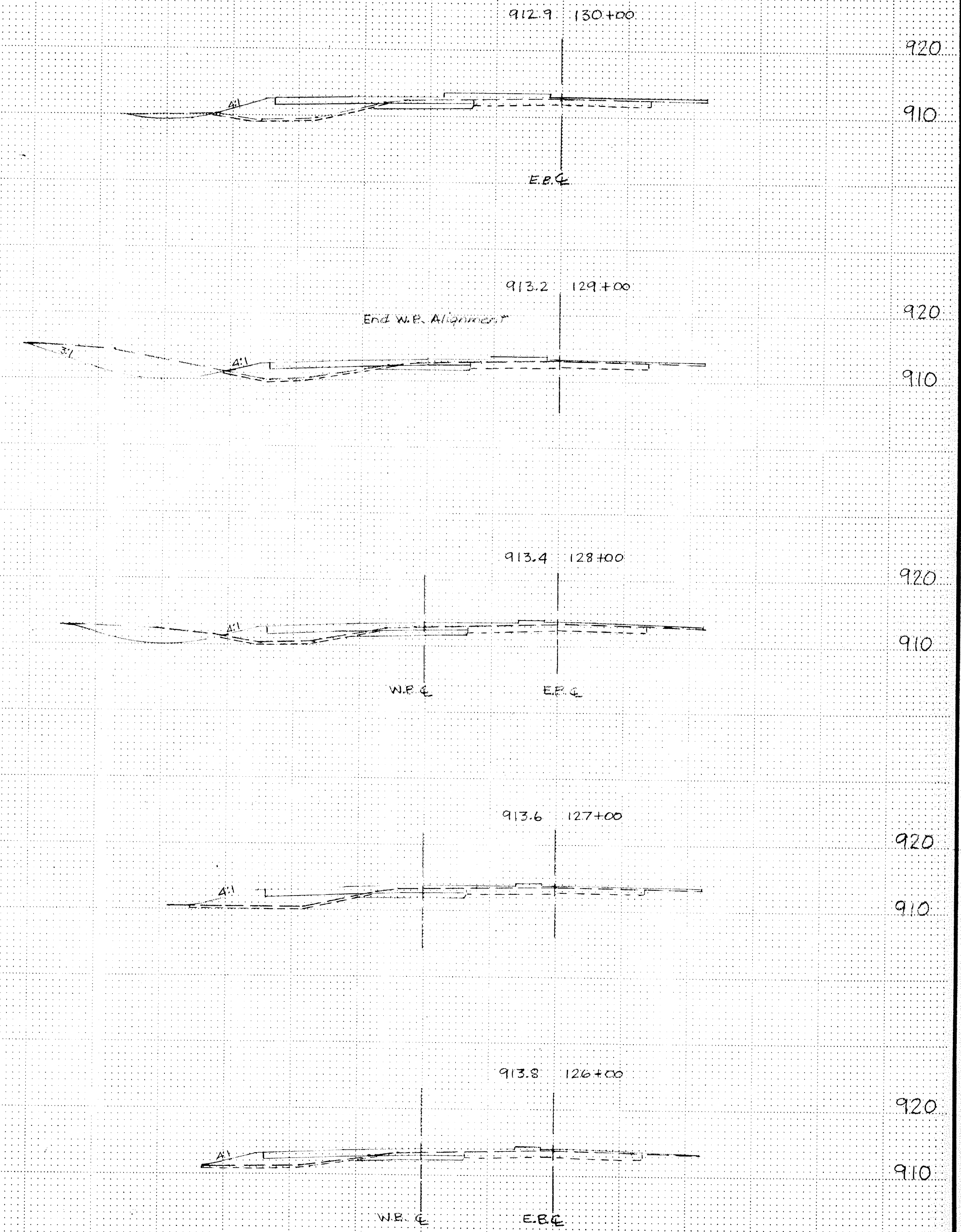
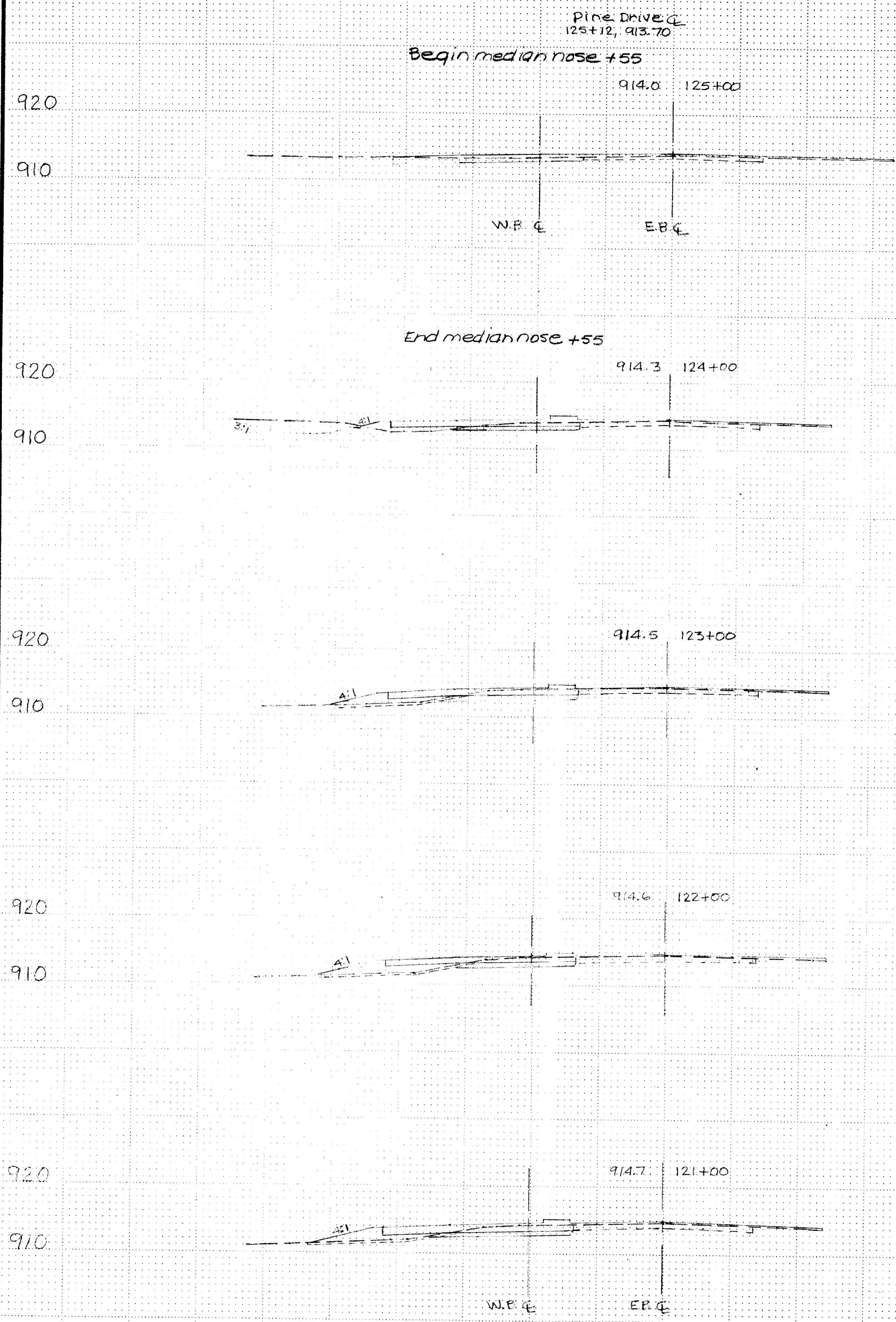
+50 left
steepen backslope to 2:1
to avoid clump of oaks -
Remove 2 oaks at top of
existing backslope

Shady way @ 114+64
911.75

914.5 120+00

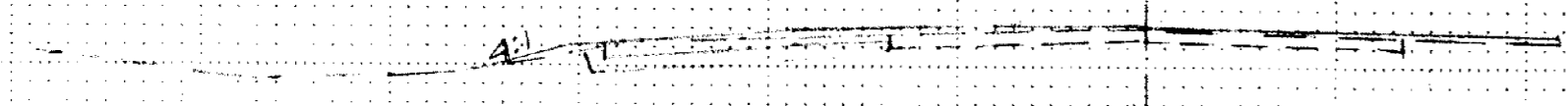


COPY EQUIPMENT FORM #1



920
910

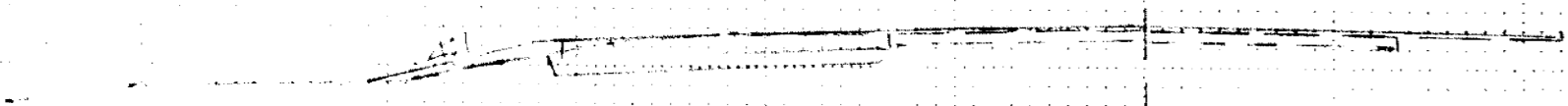
912.1 135+00



E.B. C

920
910

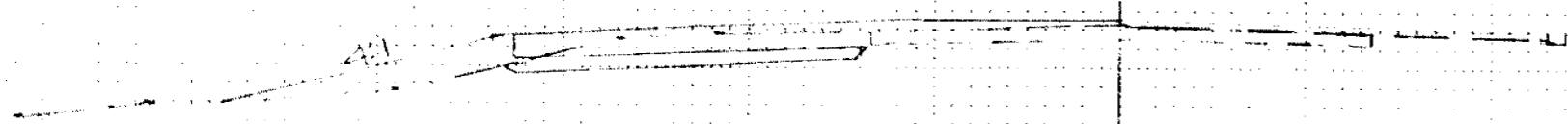
912.1 134+00



Shepherd Court @ 133+31
912.2 E

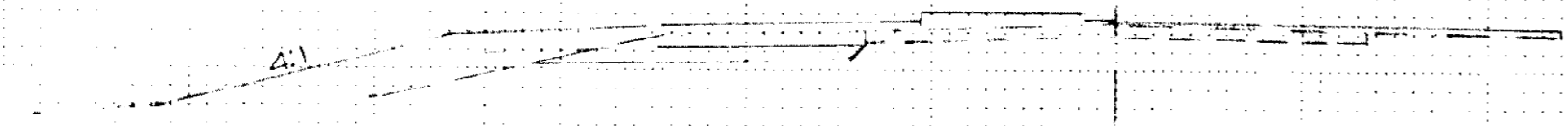
920
910

912.3 133+00 (END ME. W/NOTE 400)



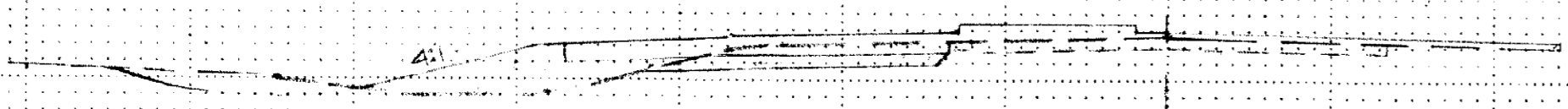
920
910

912.6 132+00



920
910

912.8 131+00



E.B. C

End project @ 138+35

920
910

911.8 138+00



E.B. C

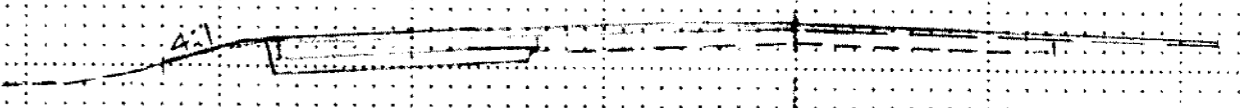
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911.9 137+00



920
910

912.0 136+00

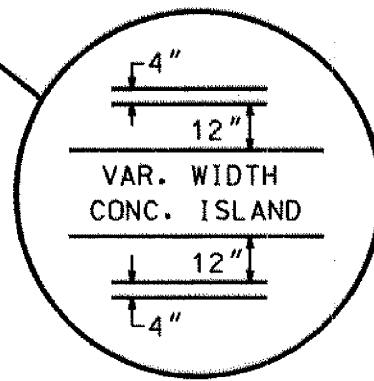
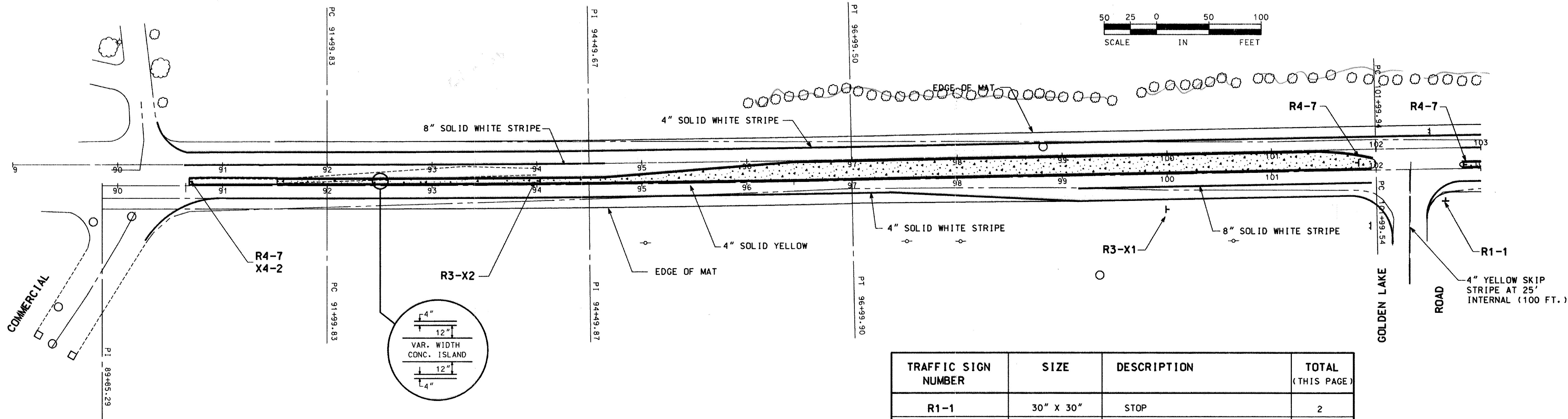
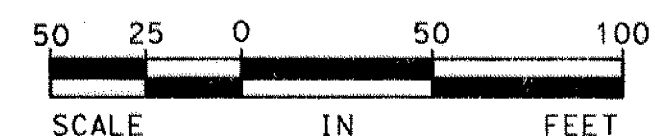
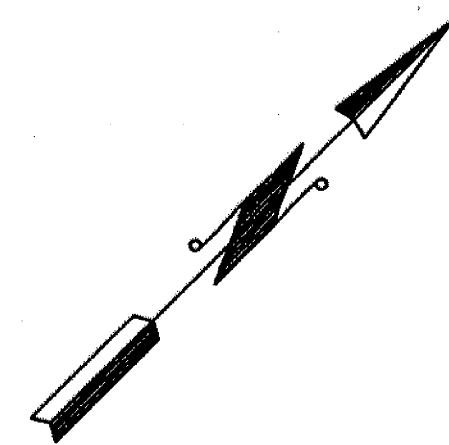


E.B. C

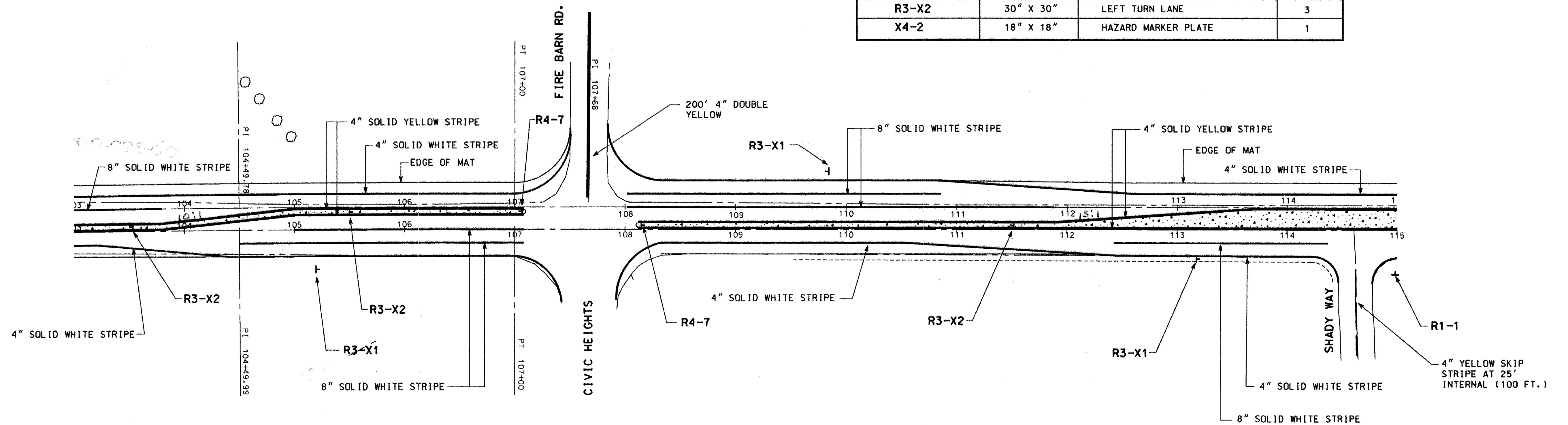
Sta. 131+00 - 138+00

COPY EQUIPMENT FROM #1

CSAH NO.23 (LAKE DR.)



TRAFFIC SIGN NUMBER	SIZE	DESCRIPTION	TOTAL (THIS PAGE)
R1-1	30" X 30"	STOP	2
R4-7	24" X 30"	KEEP RIGHT	5
R3-X1	30" X 30"	RIGHT TURN LANE	4
R3-X2	30" X 30"	LEFT TURN LANE	3
X4-2	18" X 18"	HAZARD MARKER PLATE	1

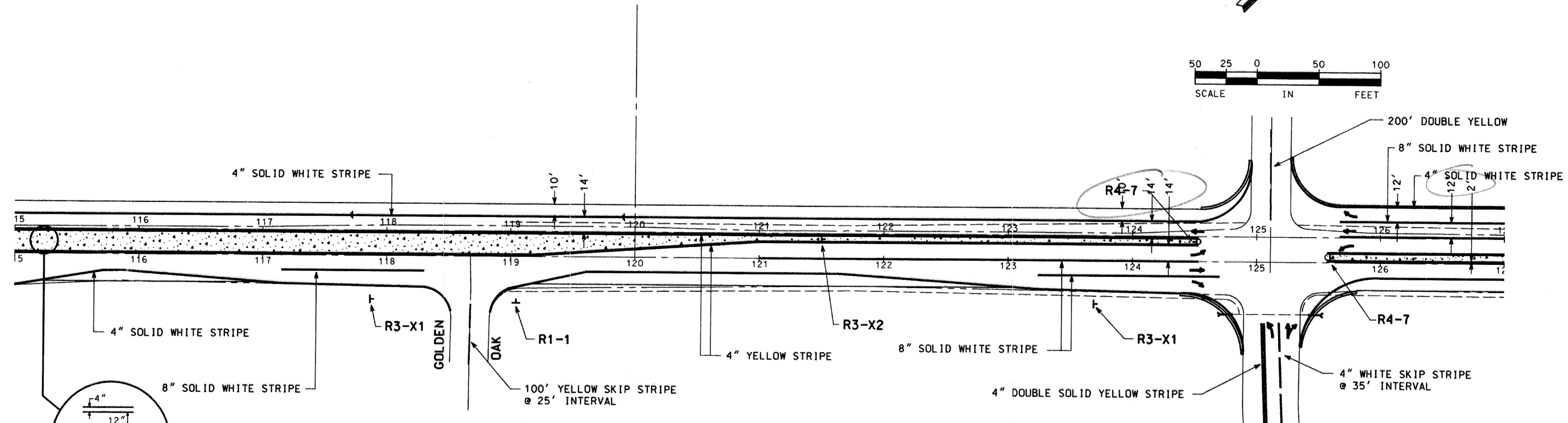
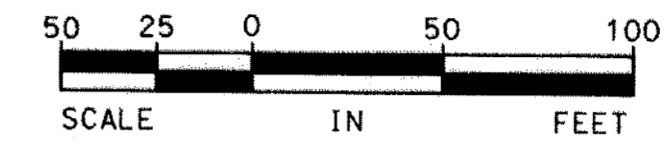
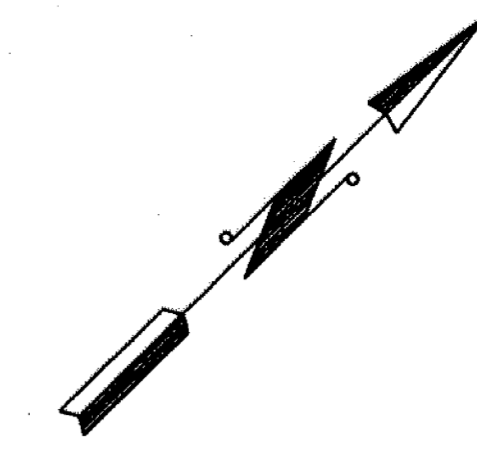


REVISION NO.	DATE	EXPLANATION

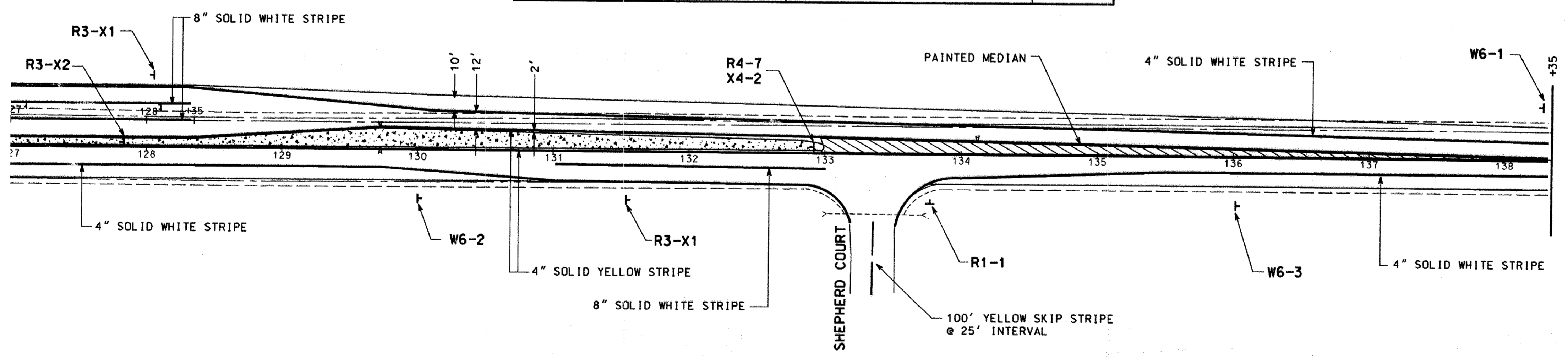
I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 SCALE: PLAN BY: DESIGN BY: R.B.B.
 P.S.H. R.B.B.
 CHECKED BY: COMM. NO. 4673
 R.B.B. R.B.B.
 RECORD COPY BY: DATE
 RONALD B. BRAY REG. NO. 18327
 DATE:

SIGNING & STRIPING SHEET
S.A.P. 02-623-09
CITY IMP. NO.
CIRCLE PINES, MINNESOTA
OSM
Orr Schelen
Mayeron & Associates, Inc.
 Engineers ■ Surveyors ■ Planners
 2021 East Hennepin Avenue ■ Minneapolis, MN 55413 ■ 612-331-8660

CSAH NO.23 (LAKE DR.)



TRAFFIC SIGN NUMBER	SIZE	DESCRIPTION	TOTAL (THIS PAGE)
R1-1	30" X 30"	STOP	2
R4-7	24" X 30"	KEEP RIGHT	3
R3-X1	30" X 30"	RIGHT TURN LANE	4
R3-X2	30" X 30"	LEFT TURN LANE	2
X4-2	18" X 18"	HAZARD MARKER PLATE	1
W6-1	36" X 36"	DIVIDED HIGHWAY SIGN	1
W6-2	36" X 36"	DIVIDED HIGHWAY SIGN	1
W6-3	30" X 30"	TWO-WAY TRAFFIC	1



REVISION NO.	EXPLANATION
SCALE:	
PLAN BY:	DESIGN BY:
P.S.H.	R.B.B.
CHECKED BY:	COMMAND:
R.B.B.	4673
RECORD COPY BY:	DATE
RONALD B. BRAY	18327
REG. NO.	

SIGNING & STRIPING SHEET
 ANOKA CO. S.A.P. 02-623-09
 CITY IMP. NO.
 CIRCLE PINES, MINNESOTA

OSM
 Ori Schelen
 Schelen & Associates, Inc.
 Engineers & Surveyors & Planners
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