MINNESOTA DEPARTMENT OF TRANSPORTATION

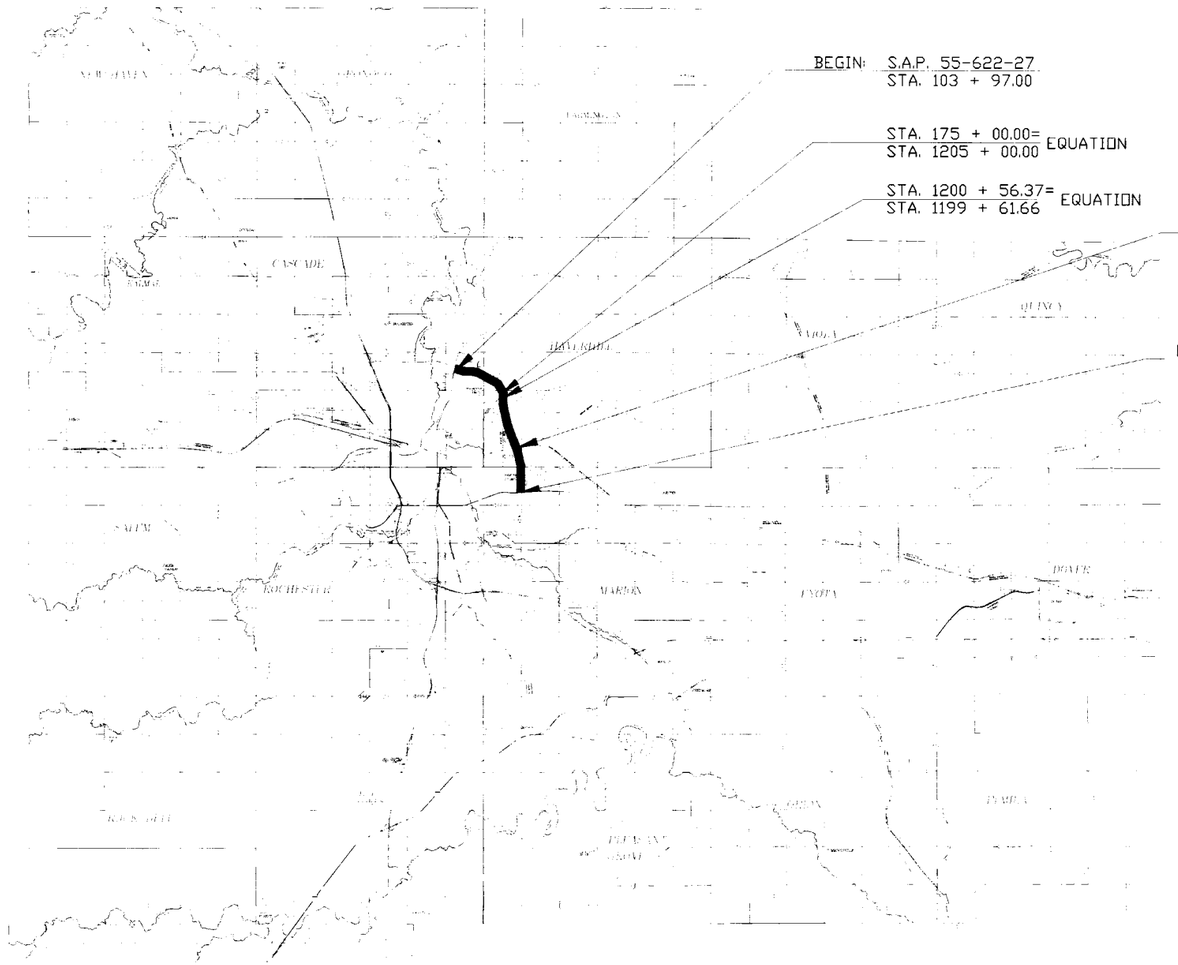
THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR GRADING, AGGREGATE BASE & CONCRETE PAVING

LOCATED ON C.S.A.H. 22 BETWEEN T.H. 63 AND T.H. 14 (GEOGRAPHIC DESCRIPTION)

FROM APPROX. 1/4 MILE N'LY OF CENTER OF SEC. 9 T107N R14W TO APPROX. 0.2257 S AND 0.4 E OF THE 1/4 COR OF SEC 5 & 8 T106N R13W (LEGAL DESCRIPTION)

S.A.P. NO. 55-622-27			S.A.P. NO.		
CROSS LENGTH	20,928.69 FEET	3.964 MILES	CROSS LENGTH	FEET	MILES
BRIDGE LENGTH	144.50 FEET	0.027 MILES	BRIDGE LENGTH	FEET	MILES
CYCLE TRANS LENGTH	0.00 FEET	0.00 MILES	CYCLE TRANS LENGTH	FEET	MILES
NET LENGTH	21,073.19 FEET	3.991 MILES	NET LENGTH	FEET	MILES



AS BUILT PLANS

PLAN SYMBOLS

PROPERTY LINE
TOWNSHIP RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
PRESENT RIGHT-OF-WAY LINE
CENTER OF TRAFFIC LANE
PROPERTY LINE (EXCEPT WHERE NOTED)
VA ACTIVITY BOUNDARY
CONTRACT LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY
RIVER OR CREEK
WET VEG.
DRAINAGE DITCH
DRAIN TILE
CREEK INLET
FLARE END
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
STONE WALL OR FENCE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
TELEPHONE AERIAL SIGN
TELEPHONE BOX
METER OR CORNER
SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH
NURSERY
CATCH BASIN
FIRE HYDRANT
CATTLE GUARD
OVERPASS (HIGHWAY OVER)
UNDERPASS (HIGHWAY UNDER)
BRIDGE
BUILDING (W=WOOD FRAME, C=CONCRETE, S=STONE, T=TILE, B=BRICK, CT=CEMENT)
IRON PIPE OR ROD
MONUMENT (STONE CONCRETE OR METAL)
WOODEN HUB
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY
SLOPE EASEMENT

UTILITIES SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER ON POWER POLE
UNDERGROUND CABLE
ANCHOR
GUY WIRE
STREET LIGHT
PEDESTAL TELEPHONE CABLE TERMINAL
GAS MAIN
WATER MAIN
CONDUIT
TELEPHONE CABLE IN CONDUIT
ELECTRICAL CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRICAL MANHOLE
BURIED TELEPHONE CABLE
BURIED ELECTRICAL CABLE
AERIAL TELEPHONE CABLE
SEWER (SANITARY OR STORM)
SEWER MANHOLE
EROSION CONTROL SYMBOLS
TEMPORARY SILT FENCE
RIP RAP (STATE SUPPLY)

PLAN
PROFILE
INDEX MAP

MINN. PROJ. NO.

GOVERNING SPECIFICATIONS

THIS PROJECT SHALL CONFORM TO THE MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AS AMENDED BY THE MAY 1994 SUPPLEMENTAL SPECIFICATION AND ALL NOTES.

INDEX

SHEET NO. 1	TITLE SHEET
SHEET NO. 2	ESTIMATE OF QUANTITIES
SHEET NO. 3	DETAIL SHEET
SHEET NO. 4-6	GUARDRAIL SHEETS
SHEET NO. 7-9	PAVEMENT & JOINT SHEETS
SHEET NO. 10	TYPICAL SECTIONS
SHEET NO. 11-16	GRADING PLAN & PROFILE (C.S.A.H. 22)
SHEET NO. 17	GRADING PLAN & PROFILE (C.S.A.H. 9)
SHEET NO. 18-31	CROSS SECTIONS (C.S.A.H. 22)
SHEET NO. 32-34	CROSS SECTIONS (C.S.A.H. 9)
SHEET NO. 35-50	PAVEMENT PLAN & PROFILES
SHEET NO. 51-53	SIGNAL SYSTEM LAYOUT
SHEET NO. 54	SIGNAL WIRE DIAGRAM
SHEET NO. 55	SIGNAL FLASHER SYSTEM LAYOUT
SHEET NO. 56-57	TRAFFIC CONTROL PLANS
SHEET NO. 58	PAVEMENT MARKINGS
SHEET NO. 59	**DROP-OFF** TREATMENTS

THIS PLAN CONTAINS 59 SHEETS.

Recommended for Approval: David M. Rossman 4/18/1995
CITY TRAFFIC ENGINEER
CITY OF ROCHESTER

Approved APRIL 18 1995 Ruth W. Grimm
DIRECTOR OF PUBLIC WORKS (DPW)
CITY OF ROCHESTER

DESIGN DESIGNATION

R ΣN18(20)
ADT (Current Year) = 13,700 (1994) Design Speed 55 MPH
ADT (Future Year) = 18,190 (2014) Based on STOPPING Sight Distance
DHV (Design Hr. Vol.) = Height of eye 3.5 Height of object 0.5
D (Directional Distr.) = Design Speed not achieved at:
T (Heavy Commercial) = 5% - 10% STA. 1072+25 TO STA. 1077+75 MPH 50
SOIL FACTOR = 1.5 STA. 1096+50 TO STA. 1099+50 MPH 50
TON DESIGN 10
SHOULDER WIDTH 8 STOPPING CONDITIONS
NO. OF TRAFFIC LANES 4 C.S.A.H. 22 AT T.H. 14
NO. OF PARKING LANES NONE
FUNCTIONAL CLASSIFICATION: HIGH DENSITY ARTERIAL

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

DATE 4/18/95 REG. NO. 19917 SIGNED Kaye M. Biernick

COUNTY OLMSTED

DATE 4-18-95 Michael J. Sheehan
COUNTY ENGINEER

RECOMMENDED FOR APPROVAL M. P. Emmett 4-18-95
DISTRICT STATE AID ENGINEER

RECOMMENDED FOR APPROVAL SHEETS 51-55 [illegible] FOR MLCR 5/4/95
TRAFFIC ENGINEER

RECOMMENDED FOR APPROVAL ~~STATE AID PLANS AND SPECS ENGINEER~~

APPROVED 5-4- 1995 FOR STATE AID ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR DATE

STATE AID PROJ. NO. 55-622-27
~~STATE PROJ. NO.~~

ESTIMATED QUANTITIES

	SPECIFICATION NO.	ITEM	UNIT	PARTICIPATING	NON PARTICIPATING	TOTAL ESTIMATED QUANTITIES
(1)	2101.511	CLEARING AND GRUBBING	LUMP SUM	1		1
(2)	2102.502	PAVEMENT MARKING REMOVAL	LIN. FT.	68,064		68,064
	2104.501	REMOVE CURB AND GUTTER	LIN. FT.	580		580
	2104.501	REMOVE PIPE CULVERT	LIN. FT.	587		587
	2104.501	REMOVE GUARDRAIL-PLATE BEAM	LIN. FT.	300		300
	2104.505	REMOVE CONCRETE PAVEMENT	SQ. YD.	2,675		2,675
(3)	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ. YD.	9,661		9,661
~~(4)~~	~~2104.509~~	~~REMOVE CONCRETE STRUCTURE~~	~~EACH~~	~~1~~		~~1~~
(5)	2104.509	REMOVE LIGHT STANDARD	EACH	4		4
	2104.511	SAW CONCRETE PAVEMENT FULL DEPTH	LIN. FT.	975		975
	2104.513	SAW BITUMINOUS PAVEMENT FULL DEPTH	LIN. FT.	2,423		2,423
(6)	2104.523	SALVAGE LIGHT POLE	EACH	1		1
(7)	2105.515	UNCLASSIFIED EXCAVATION	CU. YD.	(P) 61,142		61,142
(8)	2105.525	TOPSOIL BORROW (CV)	CU. YD.	(P) 1,149		1,149
(9)	2123.503	MOTOR GRADER	HOUR	8		8
(9)	2123.509	DOZER	HOUR	8		8
(10)	2130.501	WATER	1000 (M) GAL.	183		183
(11)	2211.501	AGGREGATE BASE CLASS 5	TON	47,952		47,952
(12)	2221.501	AGGREGATE SHOULDER CLASS 2	TON	8,926		8,926
	2301.502	CONCRETE PAVEMENT STANDARD WIDTH 9"	SQ. YD	(P) 73,847		73,847
	2301.503	CONCRETE PAVEMENT IRREGULAR WIDTH 9"	SQ. YD.	(P) 4,703		4,703
	2301.511	STRUCTURAL CONCRETE	CU. YD.	(P) 19,638		19,638
(13)	2301.531	EXPANSION JOINT DESIGN E8S	LIN. FT.	54		54
	2301.531	EXPANSION JOINT DESIGN E4D-1	LIN. FT.	81		81
	2301.538	DOWEL BARS	EACH	42,101		42,101
	0301.604	PERMANENT TERMINAL HEADERS	LIN. FT.	81		81
	0301.610	DRILL AND GROUT REINFORCEMENT BAR	EACH	333		333
	2331.516	TYPE 41B SHOULDER MIXTURE	TON	2,212		2,212
(14)	2340.508	TYPE 41B WEARING COURSE MIXTURE	TON	3,834		3,834
(15)	2340.514	TYPE 41B BASE COURSE MIXTURE	TON	7,728		7,728
	2501.511	18" C.S. PIPE CULVERT	LIN. FT.	56		56
	2501.511	24" C.S. PIPE CULVERT	LIN. FT.	84		84
	2501.515	18" G.S. PIPE APRON	EACH	2		2
	2501.515	24" G.S. PIPE APRON	EACH	2		2
	2501.515	18" R.C. PIPE APRON	EACH	1		1
	2501.521	28" SPAN R.C. PIPE-ARCH CULVERT CLASS IIA	LIN. FT.	397		397
	2501.521	44" SPAN R.C. PIPE-ARCH CULVERT CLASS IIA	LIN. FT.	118		118
	2501.525	28" SPAN R.C. PIPE-ARCH APRON	EACH	11		11
	2501.525	44" SPAN R.C. PIPE-ARCH APRON	EACH	2		2
(16)	2501.569	LT. DUTY SAFETY GRATE FOR 18" R.C. APRON (HEAVY DESIGN)	EACH	4		4
	2502.521	4" NON-PERFORATED (TP) PIPE DRAIN	LIN. FT.	766		766
	2502.541	4" PERFORATED P.E. PIPE DRAIN/GEOTEXTILE KNIT SOCK	LIN. FT.	46,052		46,052
	0502.601	4" PRECAST CONCRETE HEADWALL	EACH	80		80
(17)	0504.602	ADJUST VALVE BOX - WATER	EACH	3		3
	0504.602	INSTALL PLUG	EACH		1	1
	0504.603	12" WATERMAIN DUCT IRON CL. 52	LIN. FT.		305	305
	0504.620	DUCTILE IRON FITTINGS	POUND		215	215
	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN PC-18	LIN. FT.	8		8
	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN-C	EACH	1		1
	2506.503	RECONSTRUCT SANITARY MANHOLE	LIN. FT.	4.3		4.3
	0506.602	CONNECT INTO EXISTING CATCH BASIN	EACH	1		1
	2531.501	CONCRETE CURB AND GUTTER DESIGN B-624	LIN. FT.	24		24
	2531.502	CONCRETE CURB DESIGN B-6	LIN. FT.	10		10
	2554.501	TRAFFIC BARRIER DESIGN B8307	LIN. FT.	348.5		348.5
	0554.602	T-BARRIER BRIDGE CONN. DES. 8318	EACH	6		6
	0554.602	ECCENTRIC LOADER BCT	EACH	2		2
	0563.601	TRAFFIC CONTROL	LUMP SUM	1		1
(18)	0563.603	TWO-WAY RAISED PAVEMENT MARKER TEMPORARY	EACH	600		600
(19)	0563.603	ONE-WAY RAISED PAVEMENT MARKER TEMPORARY	EACH	720		720
	0564.602	PAVEMENT MESSAGE (R.R. CROSSING) EPOXY	EACH	3		3
	0564.602	PAVEMENT MESSAGE (LEFT ARROW) EPOXY	EACH	50		50
	0564.602	PAVEMENT MESSAGE (RIGHT ARROW) EPOXY	EACH	40		40
	0564.603	24" STOPLINE WHITE-EPOXY	LIN. FT.	108		108
	0564.603	4" SOLID LINE WHITE-EPOXY	LIN. FT.	50,284		50,284
	0564.603	4" BROKEN LINE WHITE-EPOXY	LIN. FT.	8,410		8,410
	0564.603	4" SOLID LINE YELLOW-EPOXY	LIN. FT.	42,040		42,040
	0565.601	SALVAGE FLASHING SIGNAL SYSTEM	LUMP SUM	1		1
	0565.602	P.V.C. HANDHOLE (METAL FRAME AND COVER)	EACH	5		5
	0565.602	LOOP DETECTOR 6' X 6'	EACH	10		10
	0565.603	1.25" RIGID STEEL CONDUIT	LIN. FT.	53		53
	0565.603	3" RIGID STEEL CONDUIT	LIN. FT.	145		145
	0565.604	REVISE TRAFFIC CONTROL SIGNAL SYSTEM	SIG. SYS.	1		1
(20)	2573.501	BALE CHECK	EACH	24		24
(20)	2573.502	SILT FENCE, PREFASSEMBLED	LIN. FT.	2,800		2,800
	2575.501	SEEDING	ACRE	(P) 4.6		4.6
	2575.502	SEEDING MIXTURE 500	POUND	230		230
	2575.502	SEEDING MIXTURE 1100	POUND	276		276

ESTIMATED QUANTITIES

	SPECIFICATION NO.	ITEM	UNIT	PARTICIPATING	NON PARTICIPATING	TOTAL ESTIMATED QUANTITIES
	2575.505	SODDING TYPE I EROSION	SQ. YD.	20,841		20,841
	2575.511	MULCH MATERIAL TYPE 1	TON	9.2		9.2
	2575.519	DISC ANCHORING	ACRE	(P) 4.6		4.6
	2575.532	COMMERCIAL FERTILIZER ANALYSIS 17-17-17	POUND	920		920
(21)	2581.501	REMOVABLE PREFORMED PLASTIC MARKING	LIN. FT	6,650		6,650

(1) TREES FOR REMOVAL WILL BE DESIGNATED BY THE ENGINEER (APPROXIMATELY 20 ACRES + 45 TREES.)

(2) THIS INCLUDES ALL LINES SOLID AND BROKEN ON EAST BOUND LANES, SOUTH BOUND LANES AND LOOPS OF INPLACE PAVEMENT FROM APPROXIMATELY STA. 104+00 TO STA. 175+00, STA. 1100+40 TO STA. 1205+00, AND AS NOTED ON TRAFFIC CONTROL PLAN SHEET NO. 57.

(3) INCLUDES SHAPING FOR TURN LANES ON EAST BOUND AND SOUTH BOUND ROADWAY.

~~(4) REMOVE AND DISPOSE OF CONCRETE STRUCTURE LT. STA. 1075+49 ENTRANCE TO UNIVERSITY CENTER, PLAN SHEET NO. 13.~~

(5) THIS ITEM INCLUDES ANY FLAGGING PERSONNEL OR SIGNING NEEDED TO COMPLETE REMOVAL AND DISPOSAL OF LIGHT STANDARDS AND OTHER WORK DESCRIBED IN THE NOTE ON SHEET 12 OF THIS PLAN

(6) INCLUDES ALL TIME, MATERIAL, AND EQUIPMENT TO SALVAGE AND REINSTALL LIGHT POLE FIXTURE LT. OF STA. 1075+49 AS INDICATED ON PLAN SHEET NO. 13

(7) UNCLASSIFIED EXCAVATION INCLUDES SUBGRADE TREATMENT AS SHOWN IN TYPICAL SECTIONS AND CROSS SECTIONS. 2,342 CU. YDS. UNCLASSIFIED EXCAVATION TO BE USED AS SALVAGE TOPSOIL AND PLACED AS SHOWN IN THE PLANS ON SLOPES AND MEDIANS FROM APPROXIMATELY STA. 1065+80 TO APPROXIMATELY STA. 1099+83

(8) TOPSOIL BORROW (CV) TO BE USED ON MEDIANS AND SLOPES FROM STA 104+00 TO STA. 111+25, SLOPES FROM STA. 111+25 TO STA. 175+00 AND STA 1099+83 TO STA. 1205+00.

(9) EQUIPMENT HOURS ARE FOR SHAPING THE 4 FOOT SHOULDER WIDENING FROM STA. 103+97 TO STA. 115+00 AS INDICATED IN TRAFFIC CONTROL PLAN SHEET NO 57 AS DIRECTED BY THE ENGINEER. SPECIFICATION 1903 DOES NOT APPLY TO THIS ITEM.

(10) WATER TO BE USED AS A DUST PREVENTATIVE AS DIRECTED BY THE ENGINEER.

(11) INCLUDES 36,464 TONS FOR MAINLINE, 7,678 TONS FOR TURN LANES, X-INGS, & APPROACHES, 3,810 TONS FOR 5 LOOPS.

(12) INCLUDES 6,437 TONS FOR MAINLINE AND TURN LANES, 2,489 TONS FOR 5 LOOPS.

(13) INCLUDES PREFORMED JOINT FILLER MATERIAL SPECIFICATION 3702 AND JOINT SEALER SPECIFICATION 3723 AS PER SHEET NO. 8. SILL TO BE COMPLETED UNDER SEPARATE BRIDGE CONTRACT BY OTHERS.

(14) INCLUDES 3,109 TONS FOR TURN LANES, 400 TONS FOR APPROACHES, AND 325 TONS FOR X-INGS.

(15) INCLUDES 6,218 TONS FOR TURN LANES, 800 TONS FOR APPROACHES, 650 TONS FOR X-INGS, AND 60 TONS FOR TEMPORARY SHOULDER FOR TRAFFIC CONTROL SHEET NO. 57.

(16) THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT, LABOR, AND MATERIALS REQUIRED TO INSTALL GRATES.

(17) INCLUDES FURNISHING AND INSTALLING VALVE EXTENSION STEM AS PER CITY OF ROCHESTER MN. RPU - WATER DIVISION STANDARD PLATE NO. 8-01.

(18) 300 TO BE USED WITH TRAFFIC CONTROL IN THE STA. 95+50 TO STA. 116+00 AREA AS NOTED ON TRAFFIC CONTROL PLAN SHEET NO. 57, AND 300 FOR REPLACEMENT USE. SPECIFICATION 1903 DOES NOT APPLY TO THIS ITEM.

(19) 360 TO BE USED WITH TRAFFIC CONTROL IN THE STA. 95+50 TO STA. 116+00 AREA AS NOTED ON TRAFFIC CONTROL PLAN SHEET NO. 57, AND 360 FOR REPLACEMENT USE. SPECIFICATION 1903 DOES NOT APPLY TO THIS ITEM.

(20) BALE CHECKS AND SILT FENCE TO BE INSTALLED IN LOCATIONS AS DIRECTED BY THE ENGINEER.

(21) INCLUDES 3,000 FEET OF YELLOW MARKER AND 3,650 FEET OF WHITE MARKER AS REQUIRED IN NOTES ON SHEET NO. 57 FOR TRAFFIC CONTROL.

BASIS OF PLANNED QUANTITIES

AGGREGATE BASE CLASS 5 -	140 LBS. / CU. FT. COMPACTED
AGGREGATE SHOULDER CLASS 2 -	140 LBS. / CU. FT. COMPACTED
BITUMINOUS MIXTURE -	110 LBS. / SQ. YD. / 1 INCH DEPTH
SEED MIXTURE 500 -	50 LBS. / ACRE
SEED MIXTURE 1100 -	60 LBS. / ACRE
MULCH MATERIAL -	2 TONS / ACRE
DISC ANCHOR -	ALL SEEDING AREA'S EXCEPT 2:1 SLOPES
COMMERCIAL FERTILIZER -	200 LBS. / ACRE

STANDARD PLATES

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

PLATE NO.	DESCRIPTION
	SPECIFICATION REFERENCE TO STANDARD PLATES
1070 K	REINFORCED PANEL OVER CULVERTS
1103 J	TYPICAL DOWEL BAR ASSEMBLY
1141 D	PAVEMENT KEYWAY FOR KEYED JOINT CONSTRUCTION
1150 P	CONSTRUCTION OF HEADER JOINTS
1210 E	CONCRETE PAVEMENT ADJACENT TO RAILWAY CROSSING
3000 L	REINFORCED CONCRETE PIPE
3014 J	REINFORCED CONCRETE PIPE ARCH
3040 F	CORRUGATED METAL PIPE CULVERT
3100 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE ARCH
3131 B	PRECAST CONCRETE HEADWALL SUBSURFACE DRAINS
3145 E	CONCRETE PIPE TIES
3221 C	CORRUGATED STEEL PIPE COUPLING BAND
4002 F	DRAINAGE STRUCTURE OR CATCH BASIN
4006 K	DRAINAGE STRUCTURE OR CATCH BASIN
4010 G	CONCRETE SHORT CONE & ADJUSTING RING
4011 E	PRECAST CONCRETE BASE
4014 A	PRECAST CONCRETE MEDIAN DRAIN
4017 C	CATCH BASIN DESIGN PC
7020 J	CONCRETE CURB
7100 G	CONCRETE CURB & GUTTER
8000 I	STANDARD BARRICADES
8318 C	GUARDRAIL ANCHORAGE PLATE FOR BRIDGES AND BCT'S
8329 F	ECCENTRIC LOADER BREAKAWAY CABLE TERMINAL (ELT)

CERTIFIED BY Kay M Bierneh REG. NO. 19917 DATE 9/6/1995
(PROFESSIONAL ENGINEER)

ESTIMATE QUANTITIES AND STANDARD PLATES

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED COUNTY Sheet 2 of 59 Sheets

SODDING LOCATIONS

LOCATION		SQ.YD.
MEDIAN	STA. 105+50 TO STA. 111+05	1,816
MEDIAN	STA. 1065+80 TO STA. 1111+50	16,067
MEDIAN	LOOPS "A", "B", & "C" INTERSECTION CSAH 9 & CSAH 22	2,753
APRON	STA. 1074+75 RT. OUTLET	16
APRON	STA. 1075+50 LT. INLET & OUTLET	31
APRON	STA. 1083+00 LT. OUTLET	16
APRON	STA. 1084+15 LT. INLET & OUTLET	23
APRON	STA. 1085+36 INLET & OUTLET	58
APRON	STA. 1090+00 RT. OUTLET	16
APRON	LOOP "A" STA. 2049+95 OUTLET	16
APRON	LOOP "B" STA. 1098+80 OUTLET	16
APRON	LOOP "C" STA. 2150+75 INLET	13
	TOTAL SQ. YDS.	20,841

SEED MIXTURE 500-SEED MIXTURE 1100-MULCH-DISC.ANCHOR-FERTILIZER

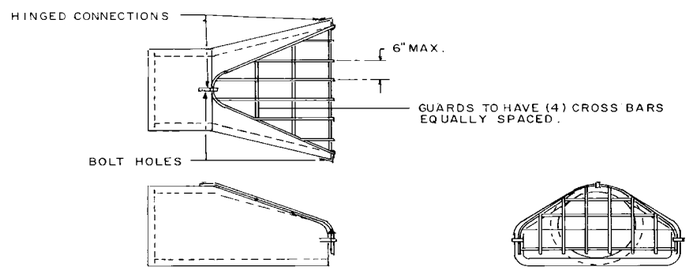
LOCATION	ACRE
SLOPES LT. & RT. OF W.B. LANES STA. 104+00 TO STA. 175+00	0.5
SLOPES & DITCHES LT. OF S.B.L. AND RT. OF N.B.L. STA. 1065+80 TO 1097+15	1.7
SLOPES LT. & RT. OF N.B. LANES STA. 1100+00 TO 1205+00	2.4
TOTAL ACRES	4.6

REINFORCED PANELS OVER CULVERTS

REINFORCED CONCRETE PANELS TO LENGTHS INDICATED AT LOCATIONS LISTED BELOW SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD DETAIL PLATE 1070-K. REINFORCED PANELS WILL BE INCIDENTAL TO PAVING ITEMS AND NO DIRECT COMPENSATION WILL BE MADE THEREFOR.

STATIONING	105+65	E.B.L.	30'	STATIONING 1162+75	N.B.L.	12'
	112+06	E.B.L.	16'	1171+00	N.B.L.	12'
	126+00	W.B.L.	20'	1174+14	N.B.L.	92'
	135+65	W.B.L.	44'	1180+80	N.B.L.	12'
	150+00	W.B.L.	60'			
				1199+00	LOOP "D"	18'
	1074+75	N.B.L.	8'	1201+75	LOOP "E"	8'
	1083+00	S.B.L.	8'			
	1085+36	S.B.L.	12'	1201+50	N.B.L.	8'
	1085+36	N.B.L.	12'			
	1090+00	N.B.L.	8'			
	2049+95	LOOP "A"	14'			
	1098+80	LOOP "B"	16'			
	2051+75	LOOP "C"	14'			
	1115+06	N.B.L.	16'			
	1134+35	N.B.L.	16'			
	1142+32	N.B.L.	15'			
	1142+41	N.B.L.	15'			
	1151+75	N.B.L.	12'			
	1158+96	N.B.L.	16'			

LIGHT DUTY SAFETY GRATE FOR R.C. PIPE APRON

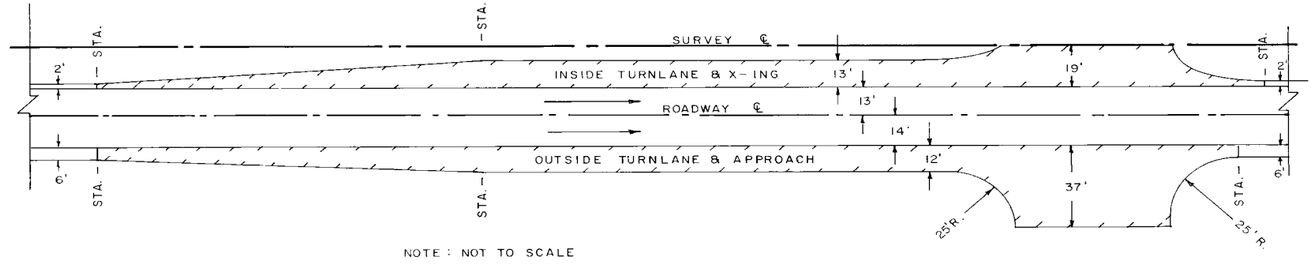


NOTE : HOT DIP GALVANIZED PER MN/DOT 3392 OR ASTM-A153

BAR SIZES								
	STANDARD DESIGN				HEAVY DESIGN			
	PIPE SIZE	HOLE DIA. REQ'D.	BOLT DIA.	BAR SIZE	PIPE SIZE	HOLE DIA. REQ'D.	BOLT DIA.	BAR SIZE
ROUND	12"-24"	3/4"	5/8"	5/8"	12"-18"	3/4"	5/8"	3/4"
ROUND	27"-48"	7/8"	3/4"	3/4"	21"-48"	7/8"	3/4"	1"
ROUND	54"-90"	1 1/8"	1"	1"	54"-90"	1 1/8"	1"	1 1/4"
ARCH	22"-29"	3/4"	5/8"	5/8"	22"	3/4"	5/8"	3/4"
ARCH	36"-59"	7/8"	3/4"	3/4"	36"-59"	7/8"	3/4"	1"
ARCH	65"-88"	1 1/8"	1"	1"	65"-88"	1 1/8"	1"	1 1/4"
BOLT LG. = PIPE WALL THK. + 2 1/2"								

(USE THIS DESIGN)

TYPICAL BITUMINOUS TURN LANES

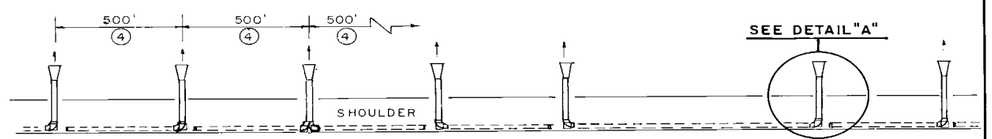


NOTE : NOT TO SCALE

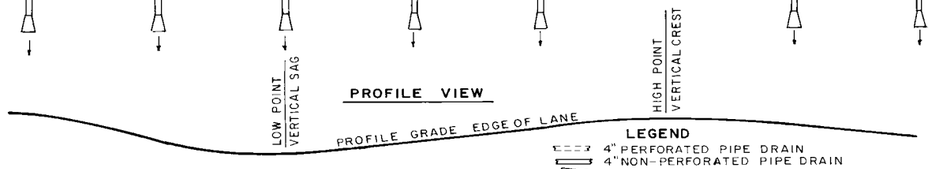
AS PLANS

EDGE DRAIN DETAILS AND CONSTRUCTION NOTES

PLAN VIEW



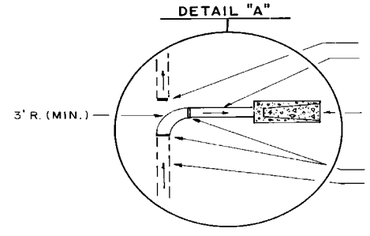
PROFILE VIEW



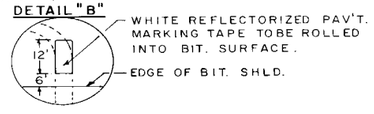
LEGEND

- 4" PERFORATED PIPE DRAIN
- 4" NON-PERFORATED PIPE DRAIN
- PRECAST CONCRETE HEADWALL
- MARKING TAPE (SPEC. 3353)

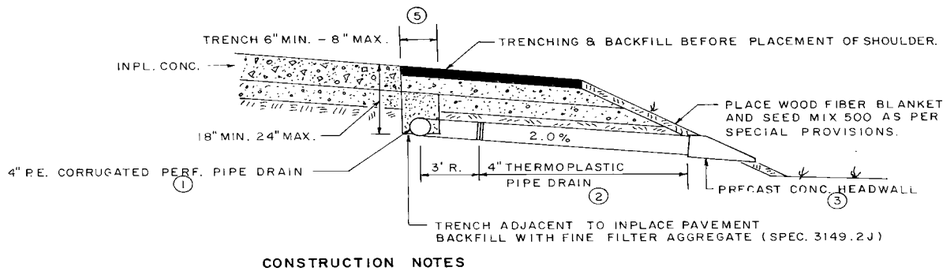
DETAIL "A"



DETAIL "B"



X-SECTION VIEW



CONSTRUCTION NOTES

(1) PAYMENT FOR 4" PERFORATED PIPE DRAIN SHALL BE FULL COMPENSATION FOR TRENCHING, FABRIC WRAPPED P.E. PIPE AND INSTALLATION, FILTER AGGREGATE BACKFILL AND COMPACTION, AND ALL OTHER ASSOCIATED WORK.

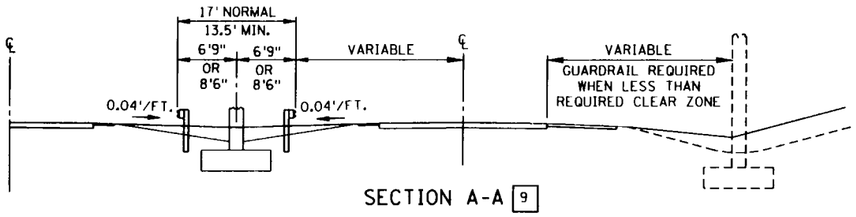
(2) PAYMENT FOR 4" NON-PERFORATED PIPE DRAIN SHALL BE FULL COMPENSATION FOR TRENCHING, FURNISHING AND PLACING PIPE AND CONNECTIONS, BACKFILL AND COMPACTION, AND ALL OTHER ASSOCIATED WORK.

(3) PAYMENT FOR PRECAST CONCRETE HEADWALLS SHALL BE FULL COMPENSATION FOR PLACING HEADWALL, WOOD FIBER BLANKET AND SEED, AND ALL OTHER ASSOCIATED WORK.

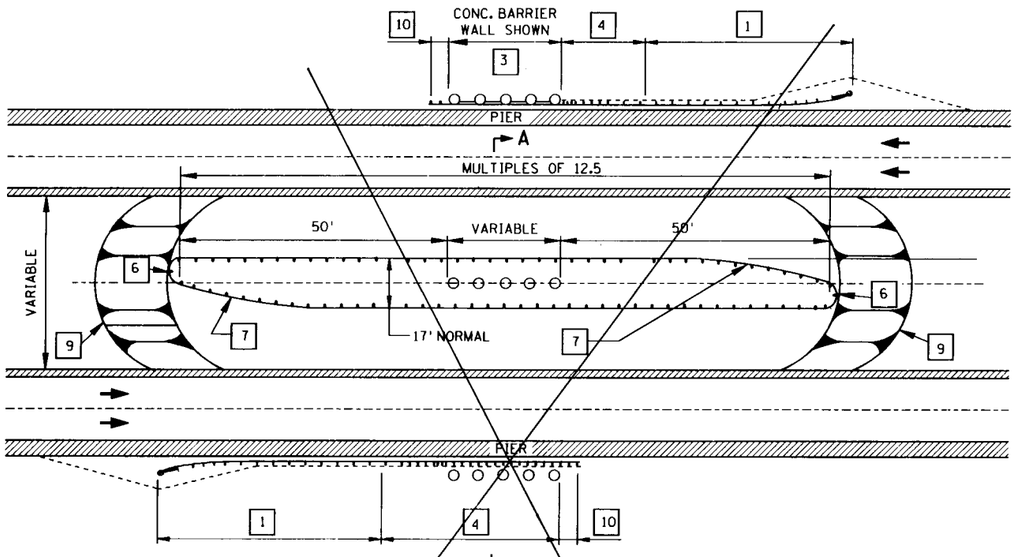
(4) IF AN OUTLET HAPPENS TO FALL WITHIN A CROSS-OVER OR DITCH-BLOCK INCREASE THE LENGTH OF THE PERFORATED PIPE TO A POINT WHERE AN OUTLET CAN BE SATISFACTORALLY CONSTRUCTED AS DIRECTED BY THE ENGINEER.

(5) EXCESS EXCAVATED MATERIAL SHALL BE DISPOSED OF IN ACCORDANCE WITH MN/DOT SPEC. 2104.303.

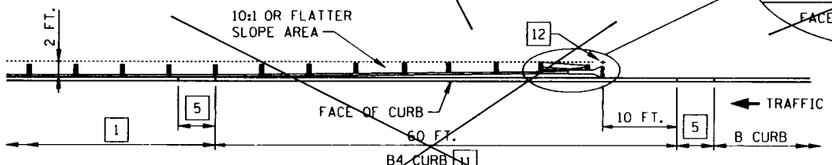
CERTIFIED BY Gary M Brierick PROFESSIONAL ENGR. REG. NO. 19917 DATE 9-25



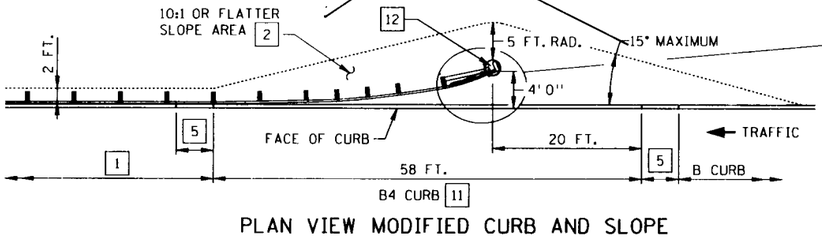
SECTION A-A [9]



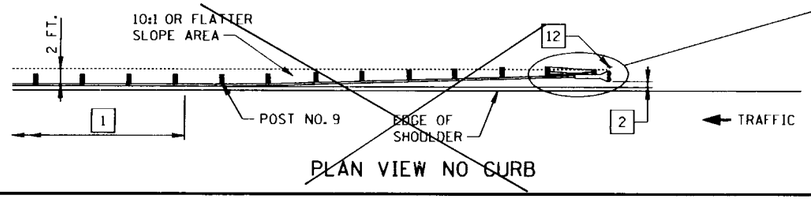
UNDERPASS-DEPRESSED MEDIAN
(DESIGN SPECIAL SHOWN)



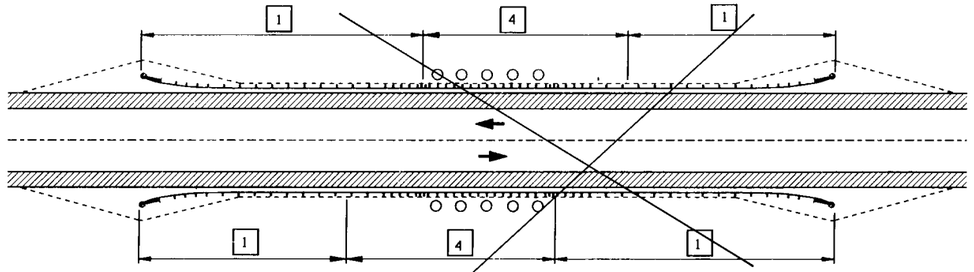
PLAN VIEW MODIFIED CURB



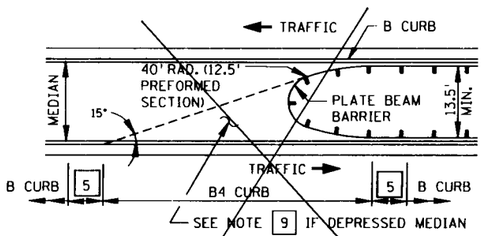
PLAN VIEW MODIFIED CURB AND SLOPE



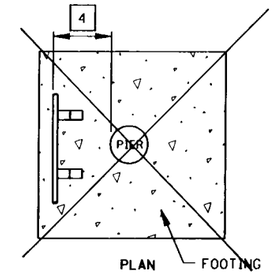
PLAN VIEW NO CURB

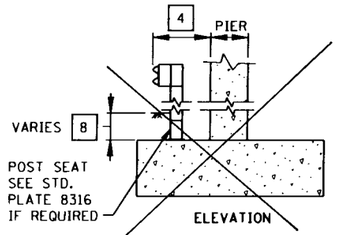


TWO-WAY UNDERPASS
(DESIGN SPECIAL SHOWN)

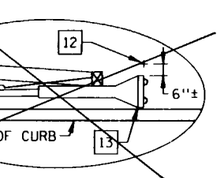


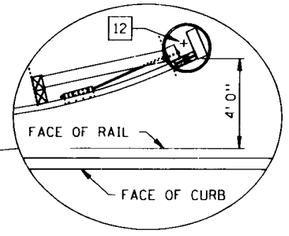
MODIFIED CURB AT MEDIAN
(OPTIONAL GUARDRAIL PLACEMENT SHOWN)

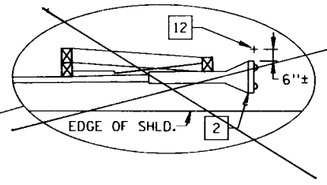




POST REQUIREMENTS







NOTES:

ALL GUARDRAIL POSTS SHALL BE 6' 3" CTR. TO CTR., EXCEPT WHERE NOTED.

THE LATEST APPROVED VERSION OF STANDARD PLATES SHOWN OR AS INDICATED IN THE PLANS SHALL APPLY.

WHEN THE APPROACHING PLATE BEAM FLARE CAN BE BURIED IN THE BACKSLOPE ELIMINATE THE END TREATMENT AND ADD REQUIRED RAIL LENGTH TO REACH BACKSLOPE.

[1] FOR REQUIRED L LENGTH SEE DESIGN MANUAL 10-7.03 FOR DESIGN PARAMETERS SEE STD. PLATE 8329 FOR END TREATMENT SHOWN.

[2] SET EDGE OF EXTRUDER BOX 9" FROM FACE OF RAIL EXTENDED FROM POST NO. 9.

[3] CONCRETE BARRIER WALL BETWEEN PIER COLUMNS MAY BE USED . SEE SHEET NO. __ OF __ FOR WALL DETAILS. CONNECT GUARDRAIL TO BARRIER WALL ANCHORAGE PLATE SEE SHEET NO. __ OF __ FOR DETAILS.

[4]

DISTANCE FROM FACE OF RAIL TO HAZARD	GUARDRAIL POST SPACING
OVER 4 FT.	6' 3"
4 FT. TO 2 FT.	3' 1-1/2"
LESS THAN 2 FT.	DESIGN SPECIAL & [3]

[5] 5 FT. CURB TRANSITION, USE IF ADJACENT CURB IS A DIFFERENT TYPE OR HEIGHT.

[6] 5 FOOT RADIUS NOSE SECTION (12.5' PREFORMED CURVED RAIL SECTION, SEE DETAIL, ON SHEET 1 OF 2).

[7] 25 FT. OF PREFORMED (40' RADIUS) RAIL SECTIONS.

[8] IF EMBEDMENT IS GREATER THAN 3' 0" OR IF EMBEDMENT IS 2' 6" TO 3' 0" AND ADJACENT POSTS ARE EMBEDDED 3' 0" OR MORE, POST SEAT IS NOT REQUIRED.

[9] THE MEDIAN DITCH SHALL BE FILLED TO PROVIDE AN ELEVATION OF GUARDRAIL APPROXIMATELY (WITHIN 6"±) THE SAME AS IF INSTALLED ON THE SHOULDER. EXTEND FILL TO GUARDRAIL NOSE AND TAPER TO MEDIAN DITCH ON 10:1 SLOPE.

[10] 12' 6" MINIMUM, IF ONE WAY TRAFFIC.

[11] IF 6"+ HIGH CURB, MILL TO 3" HEIGHT. NEW: CONSTRUCT 4" HIGH CURB.

[12] SNOW PLOW MARKER (X4-5) WITH A 2 LB. / FT. DELINEATOR POST 8 FT. LG. (SPEC. 3401) DRIVEN INTO GROUND. EXTEND 3 FT. ABOVE TERMINAL.

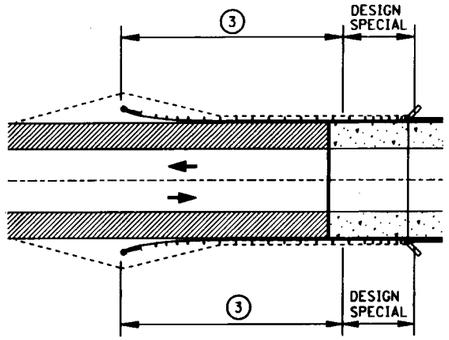
[13] SET EDGE OF EXTRUDER BOX 9" FROM FACE OF CURB.

AS BUILT

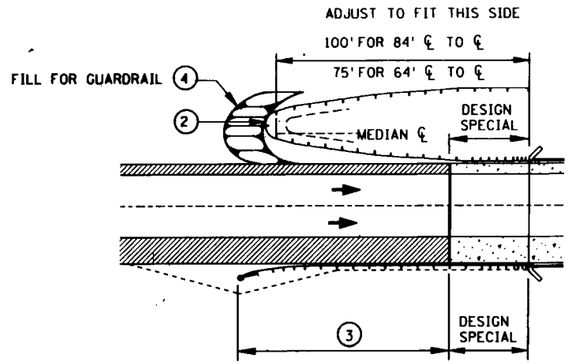
STANDARD SHEET NO.	TITLE:
5-297.601 (1 OF 2)	GUARDRAIL INSTALLATIONS AT MEDIANS AND END TREATMENTS
STANDARD APPROVED: MARCH 17, 1994	

~~STATE PROJ. NO.~~ S.A.P. 55-622-27 OLMSTED CO. SHEET NO. 4 OF 59 SHEETS

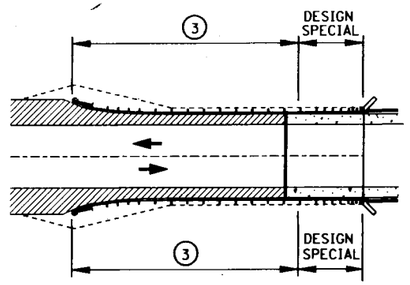
SERVER CA64S1:/USR/STANDARDS FILE NAME S6011C94.SPN



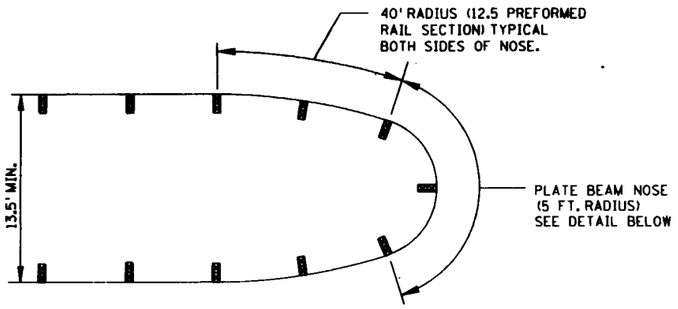
TWO - WAY BRIDGE
WITH FULL SHOULDERS



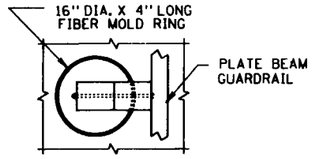
ONE - WAY BRIDGE
WITH FULL RIGHT SHOULDER



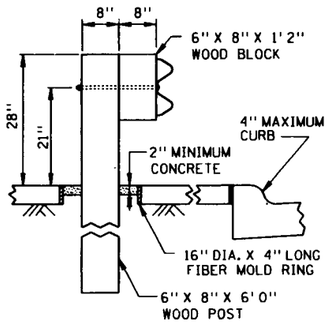
TWO - WAY BRIDGE
WITHOUT FULL SHOULDERS



OPTIONAL GUARDRAIL INSTALLATION (1)



PLAN VIEW



ELEVATION

TYPICAL SECTION AT POST
SET IN CONCRETE

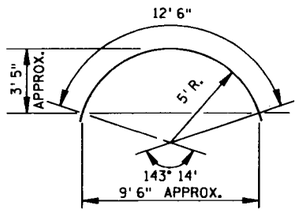


PLATE BEAM NOSE (5)
(5 FOOT RADIUS)

NOTES:

ALL GUARDRAIL POSTS SHALL BE 6'3" CTR. TO CTR., EXCEPT WHERE NOTED.

WHEN THE APPROACHING PLATE BEAM FLARE CAN BE BURIED IN THE BACKSLOPE ELIMINATE THE END TREATMENT AND ADD REQUIRED RAIL LENGTH TO REACH BACKSLOPE.

THE LATEST APPROVED VERSION OF STANDARD PLATES SHOWN OR AS INDICATED IN THE PLANS SHALL APPLY.

(1) OPTIONAL GUARDRAIL AS DETERMINED BY THE DESIGNER AND SPECIFIED ON SHEET NO. 45 OF 59 ,

(2) 5 FOOT RADIUS NOSE SECTION (12.5' PREFORMED CURVED RAIL SECTION, SEE DETAIL).

(3) FOR THE REQUIRED L LENGTH SEE ROAD DESIGN MANUAL 10-7.03 FOR DESIGN PARAMETERS. SEE STANDARD PLATE 8329 FOR END TREATMENT SHOWN.

(4) THE MEDIAN DITCH SHALL BE FILLED TO PROVIDE AN ELEVATION OF GUARDRAIL APPROXIMATELY (WITHIN 6" ±) THE SAME AS IF INSTALLED ON THE SHOULDER. EXTEND FILL TO GUARDRAIL NOSE AND TAPER TO MEDIAN DITCH ON 10:1 SLOPE.

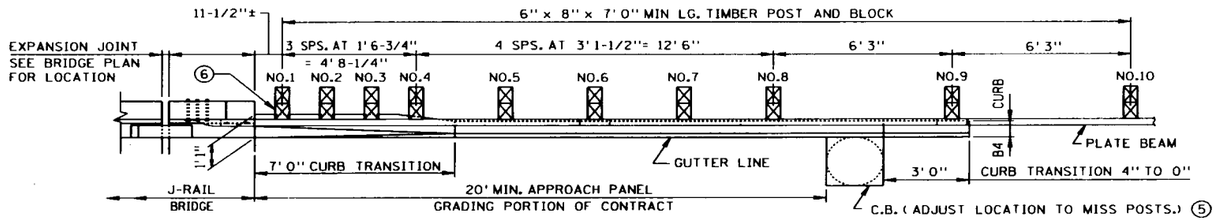
(5) STANDARD PLATE BEAM GUARDRAIL SECTION HAVING STANDARD PUNCHING AT BOTH ENDS WITH INTERMEDIATE 3/4" X 2-1/2" SLOT. SEE STANDARD PLATE 8307.

AS BUILT PLANS

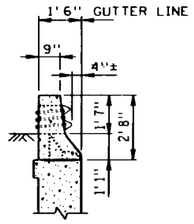
STANDARD SHEET NO. 5-297.601 (2 OF 2)	TITLE: GUARDRAIL INSTALLATIONS AT MEDIANS AND END TREATMENTS
STANDARD APPROVED: MARCH 17, 1994	

~~STATE PROJ. NO.~~ S.A.P. 55-622-27 OLMSTED CO. SHEET NO. 5 OF 59 SHEETS

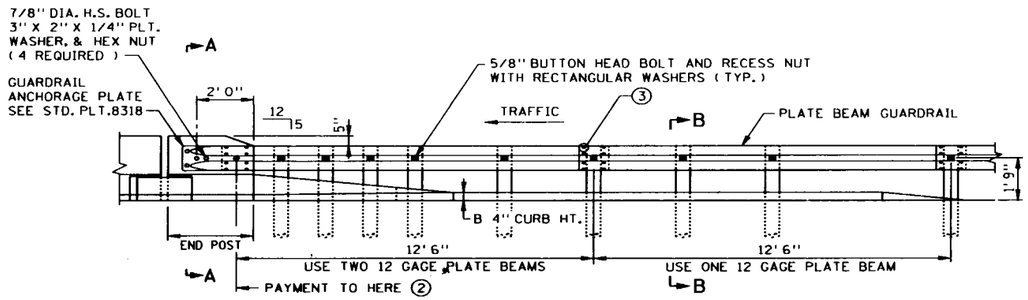
SERVER CA64S11/USR/STANDARDS FILE NAME S6012C94.SPN



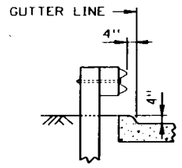
PLAN



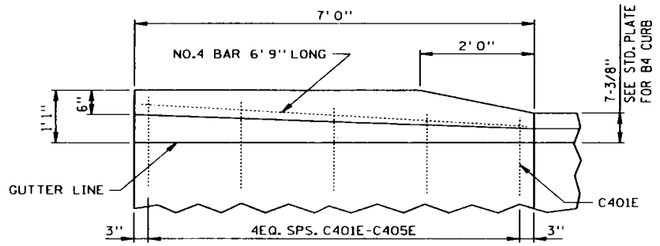
SECTION
A-A
(PARALLEL WINGWALL SHOWN)



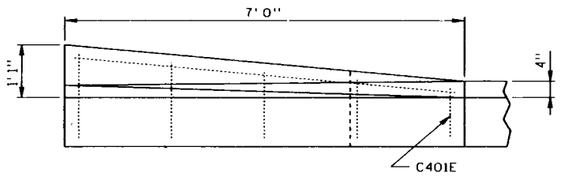
ELEVATION



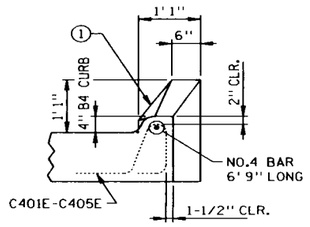
SECTION B-B



PLAN VIEW

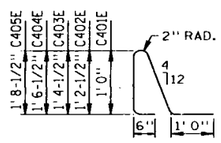


INSIDE ELEVATION



END VIEW

CURB TRANSITION DETAILS



C401E-C405E ④

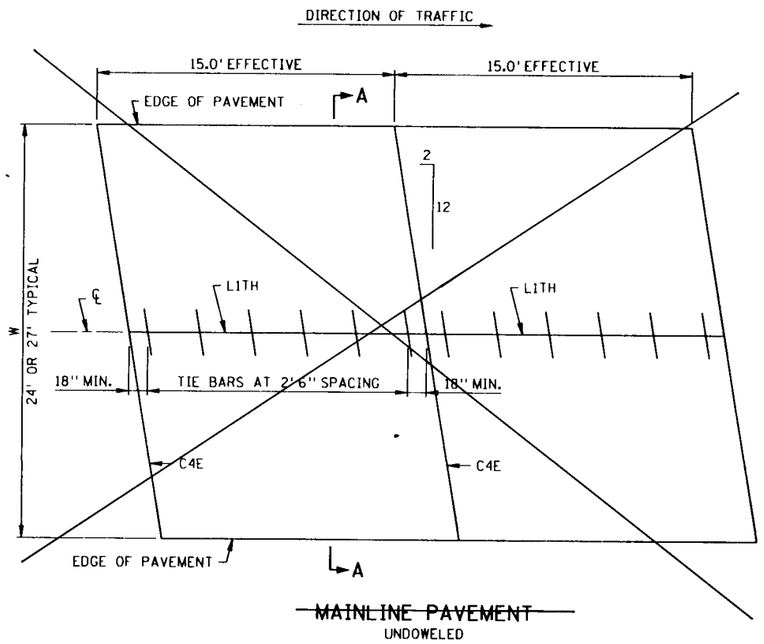
NOTES:

① END OF TRANSITION TO MATCH BRIDGE RAIL SURFACE.
② PAY LENGTH IS 25 FEET.
③ 5/8" DIA. X 1-1/4" LG. BUTTON HEAD BOLTS AND NUTS TYPICAL AT SPLICES.
④ REINFORCEMENT TO BE EPOXY COATED AS PER SPEC. 3301.
⑤ SEE ROAD PLANS TO VERIFY ACTUAL DIMENSION AND LOCATION.
⑥ ADDITIONAL BLOCKING MAY BE REQUIRED TO CLEAR BRIDGE STRUCTURE. VERIFY IN FIELD.

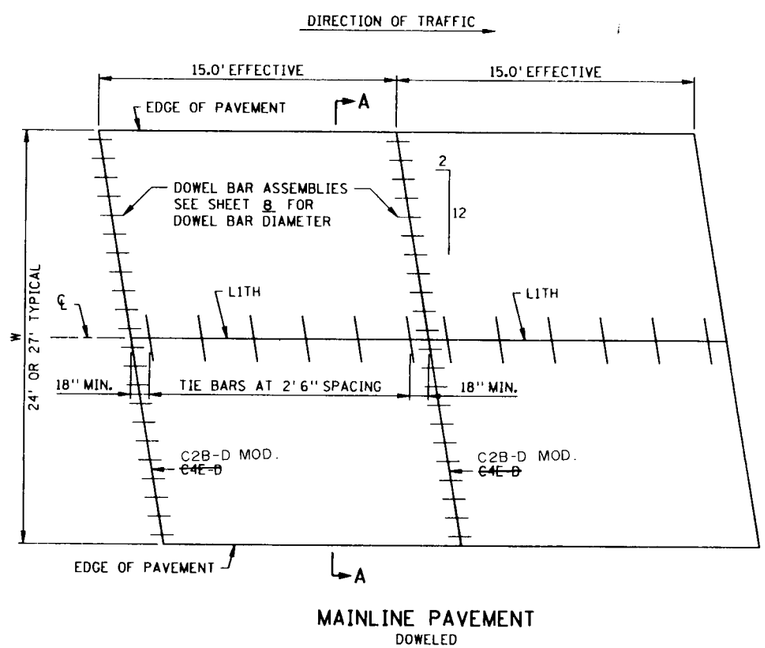
AS BUILT PLANS

STANDARD SHEET NO. 5-297.605	TITLE: GUARDRAIL TRANSITION FOR NEW TYPE J RAILING WITH APPROACH CURB
STANDARD APPROVED: JANUARY 23, 1992	
~~STATE PROJ. NO.~~ S.A.P. 55-622-27 OLMSTED CO.	SHEET NO. 6 OF 59 SHEETS

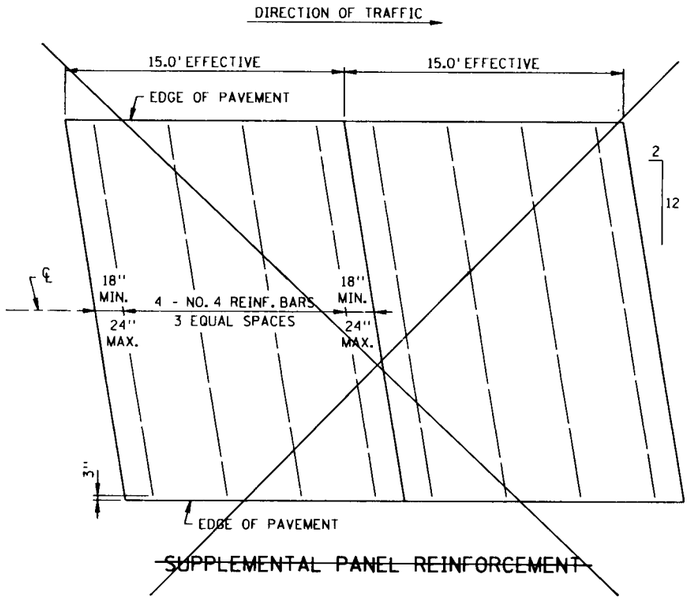
VAX780 QSA3:[45,100] FILE NAME S605A92.SPN



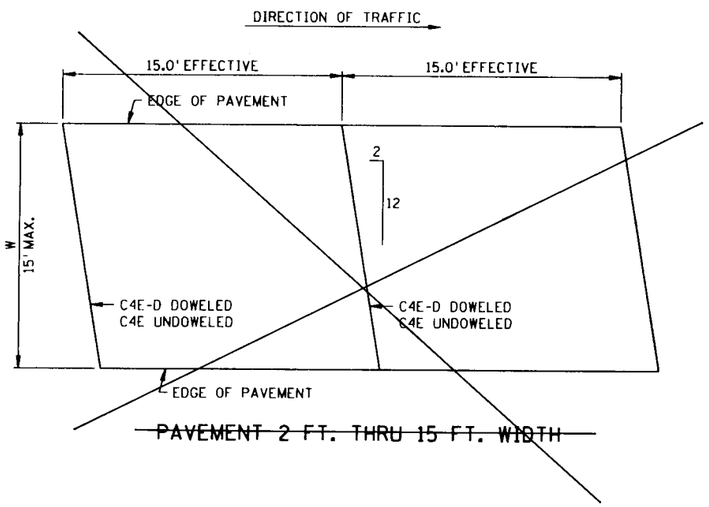
~~MAINLINE PAVEMENT~~
UNDOWELED



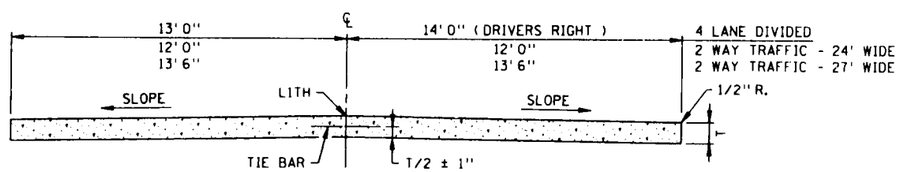
MAINLINE PAVEMENT
DOWELED



~~SUPPLEMENTAL PANEL REINFORCEMENT~~



~~PAVEMENT 2 FT. THRU 15 FT. WIDTH~~



SECTION A-A

GENERAL NOTES:

WHEN THE PAVEMENT WIDTH EXCEEDS 27 FT., THE LONGITUDINAL JOINT SHALL BE L1TH OR L2KTH AS DESIGNATED.

SEE TYPICAL SECTIONS AND PLAN SHEETS FOR CROSS SLOPES AND PAVEMENT THICKNESS T.

WHEN RIGID PAVEMENT ADJOINS FLEXIBLE PAVEMENT, BRIDGE APPROACHES, R.R. CROSSINGS OR OTHER TYPES OF FREE ENDS, THE FOLLOWING MODIFICATIONS SHALL BE MADE: THE FIRST OR LAST 10 JOINTS SHALL BE DOWELED CONTRACTION JOINTS, C2B-D MOD. (SKEWED) TIE BARS SHALL BE SPACED AS SHOWN, EXCEPT THE FIRST AND LAST TIE BAR OF EACH PANEL SHALL BE 18 IN. FROM AND PARALLEL TOTHE CONTRACTION JOINT.

15.0 FT. EFFECTIVE JOINT SPACING IS ACTUAL 13 FT., 16 FT., 14 FT., 17 FT. AND REPEAT JOINT SPACING.

DOWEL BAR ASSEMBLIES, WHEN REQUIRED, SHALL BE SIMILAR TO THOSE SHOWN ON STANDARD PLATE 1103.

ALL REINFORCING BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301 AND SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M-31 OR M-53. FOR ADDITIONAL REINFORCEMENT OVER CULVERTS, SEE STANDARD PLATE 1070.

TIE BARS:
USE NO. 4 BARS 2'6" LONG, AT 2'6" SPACING.

~~SUPPLEMENTAL PANEL REINFORCEMENT:~~
~~PLACE NO. 4 BARS IN PANELS WHERE PAVEMENT WIDTHS EXCEED 16 FT. WITHOUT A LONGITUDINAL JOINT, AND IN THE MIDDLE LANE WHERE TIED PAVEMENT WIDTHS EXCEED 30 FT. PLACEMENT DEPTH SHALL BE PLANNED T/2 ± 1 IN.~~

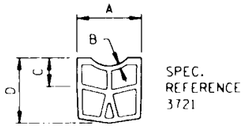
AS BUILT PLANS

STANDARD SHEET NO. 5-297.217 ~~(1 OF 2)~~	TITLE: NON-REINFORCED CONCRETE MAINLINE PAVEMENT WITH SKEWED JOINTS (MODIFIED)
STANDARD APPROVED: JANUARY 25, 1993	15.0 FT. EFFECTIVE PANELS (T = 10 IN. OR LESS)
~~STATE PROJ. NO.~~ S.A.P. 55-622-27 OLMSTED CO.	SHEET NO. 7 OF 59 SHEETS

SERVER CA645i:/USR/STANDARDS FILE NAME S217A93.SPN

REQUIRED DIMENSIONS

JOINT TYPE	TRANSVERSE
NOMINAL SEALER SIZE	13/16" USE IN ALL 3/8" JOINTS
A	0.80" +0.14" -0.05"
B	0.08" ± 0.02"
C	0.60" MIN.
D	0.80" MIN.
WEB AND WALL THICKNESS, UNLESS NOTED	0.03" MIN.



SPEC. REFERENCE 3721

TYPICAL SHAPE FOR SATISFACTORY INSTALLATION IN JOINT (5 CELL MIN.)

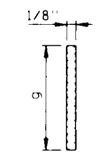
NOTES:

"A" DIMENSION SHALL APPLY AT ANY POINT THROUGHOUT "C" DEPTH. IN ITS FINAL POSITION, THE TOP CORNERS OF THE PREFORMED JOINT SEALER SHALL BE PLACED NOT LESS THAN 1/8 IN., NOR MORE THAN 5/16 IN. BELOW THE PAVEMENT SURFACE.

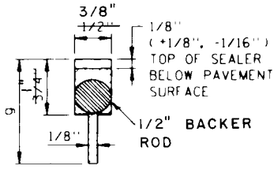
SHARP INTERNAL CORNERS WILL NOT BE PERMITTED. ALL CORNERS SHALL BE PROVIDED WITH SUITABLE FILLET. CURRENTLY APPROVED CONFIGURATIONS ARE ON FILE IN THE MATERIALS ENGINEERING SECTION, MINNESOTA DEPARTMENT OF TRANSPORTATION.

CONTRACTION JOINT SEALER

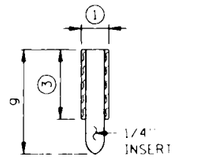
PREFORMED ELASTIC TYPE



DETAIL A
FORMED & SAWED



DETAIL B
SAWED
(MODIFIED)



DETAIL C
FORMED
(INSERT TO BE REMOVED)

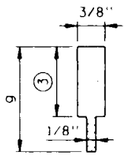
CONTRACTION JOINT CLASS DESIGNATION, DETAIL & SEALER SPEC. TABLE

CLASS DESIGNATION		JOINT DETAIL	JOINT SEALER SPEC.
WITHOUT DOWELS	WITH DOWELS		
C1A	C1A-D	A	UNSEALED
C2B	C2B-D	B	3723
C2X	C2X-D	B OR C	3723
C3D	C3D-D	D	3721
C3X	C3X-D	C OR D	3721
C4E	C4E-D	E	SILICONE

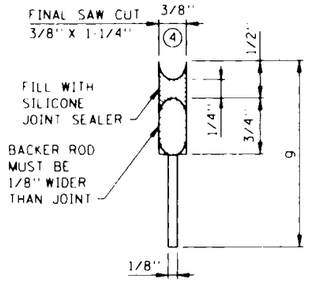
MOD.

CONTRACTION JOINT DEPTH & DOWEL BAR TABLE

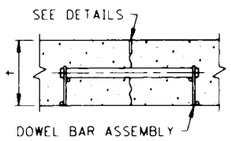
PAVEMENT THICKNESS †	CONCRETE PAVEMENT JOINT DEPTH g (5)	CONCRETE BASE JOINT DEPTH g	DOWEL BAR DIAMETER
6"	1-1/2"	1-1/4"	3/4"
6-1/2"	1-5/8"	1-1/4"	3/4"
7"	1-3/4"	1-1/2"	1"
7-1/2"	1-7/8"	1-1/2"	1"
8"	2"	1-1/2"	1"
8-1/2"	2-1/8"	1-1/2"	1"
9"	2-1/4"	1-1/2"	1-1/4"
9-1/2"	2-3/8"	2"	1-1/4"
10"	2-1/2"	2"	1-1/4"
10-1/2"	2-5/8"	—	1-1/4"
11"	2-3/4"	—	1-1/2"
11-1/2"	2-7/8"	—	1-1/2"
12"	3"	—	1-1/2"
12-1/2"	3-1/8"	—	1-1/2"
13"	3-1/4"	—	1-3/4"
13-1/2"	3-3/8"	—	1-3/4"
14"	3-1/2"	—	1-3/4"



DETAIL D
SAWED



DETAIL E
SAWED



SECTION AT JOINT

LEGEND

C = CONTRACTION JOINT
NO. = SEALANT TYPE
1 = UNSEALED
2 = 3723
3 = 3721
4 = SILICONE
LETTER = DETAIL
X = MORE THAN 1 DETAIL
-D = DOWEL BARS

EXAMPLE: C2B-D

NOTES:

(1) DESIGN C3X OR C3X-D - PRIOR TO INSTALLING PREFORMED JOINT SEALER IN THE FORMED JOINT (DETAIL C), THE JOINT SHALL BE WIDENED TO A NOMINAL WIDTH OF 3/8" BY SAWING ALONG THE FULL LENGTH OF THE FORMED JOINT.

DESIGN C2X OR C2X-D - PRIOR TO SEALING FORMED JOINT (DETAIL C), WITH HOT POUR SEALER, THE JOINT SHALL BE WIDENED TO A NOMINAL WIDTH WIDTH OF 1/2" FOR A DEPTH OF 3/4", + 1/8", - 1/16", BY SAWING ALONG THE FULL LENGTH OF THE FORMED JOINT. THE SEALER SHALL BE FILLED TO THE SAME DEPTH AS SHOWN IN DETAIL B.

~~(2)~~ DESIGN C2B OR C2B-D - PRIOR TO SEALING JOINT (DETAIL B) WITH HOT POUR JOINT SEALER, A STRIP OF PAPER 1/2" WIDE SHALL BE PLACED ON THE BOTTOM OF THE 1/2" WIDE JOINT.

(3) WHEN USING PREFORMED JOINT SEALER, THE DEPTH SHALL BE 1/4" MORE THAN THE PREFORMED SEALER, WHEN COMPRESSED, TO FIT THE JOINT DESIGN WIDTH.

(4) THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A 1/2" DIA. CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 1/2" BELOW THE SURFACE OF THE PAVEMENT. SILICONE SHALL BE TOOLED INTO THE JOINT MAINTAINING A SEALANT BEAD THICKNESS OF 1/4".

(5) FOR UNBONDED OVERLAYS, THE JOINT DEPTH "G" SHALL BE T/3.

CONTRACTION JOINT NOTES:

IN CONCRETE BASE CONSTRUCTION THE CONTRACTION JOINTS SHALL BE SPACED AT 30 FT. INTERVALS AND AT RIGHT ANGLES TO THE LONGITUDINAL JOINTS, EXCEPT AS NOTED BELOW. WHERE THE CONCRETE BASE IS CONSTRUCTED ADJACENT TO EXISTING PAVEMENT OR BASE, THE CONTRACTION JOINTS IN THE NEW BASE SHALL MATCH THOSE IN THE EXISTING PAVEMENT OR BASE, EXCEPT THAT THE SPACING SHALL NOT BE LESS THAN 15 FT., NOR MORE THAN 30 FT.

JOINT WIDTH TOLERANCES: + 1/16 IN. AND - 1/32 IN.

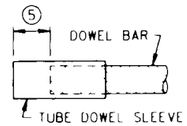
GENERAL NOTES:

SEE THE FOLLOWING STANDARD PLATES AND STANDARD PLAN SHEET FOR ADDITIONAL DETAILS: DOWEL BAR ASSEMBLY, 1103; CONSTRUCTION OF HEADER JOINTS, 1150; AND CONCRETE PAVEMENT WITH SKEWED JOINTS, 5-297.215 - .219.

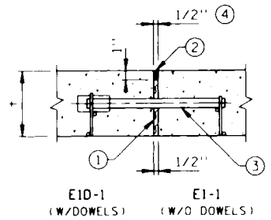
SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATION TO BE USED AND SPECIAL REINFORCEMENT REQUIRED.

CONTRACTION JOINTS

DESIGN C

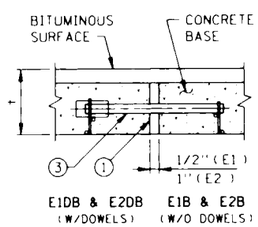


DOWEL BAR SLEEVE DETAIL



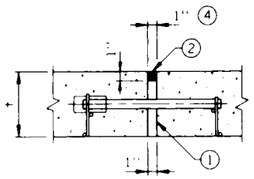
E1D-1 (W/DOWELS) E1-1 (W/O DOWELS)

DETAIL A



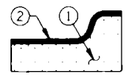
E1DB & E2DB (W/DOWELS) E1B & E2B (W/O DOWELS)

DETAIL B

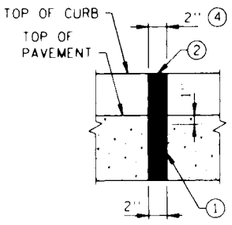


E2D-1 (W/DOWELS) E2-1 (W/O DOWELS)

DETAIL C



SECTION THRU CURB E2-1

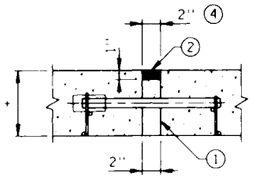


E4-1 (W/O DOWELS)

DETAIL D



SECTION THRU CURB E4-1



E4D-1 (W/DOWELS)

DETAIL E

EXPANSION JOINTS

CLASS DESIGNATION		JOINT DETAIL	JOINT SEALER SPEC.
WITH DOWELS	WITHOUT DOWELS		
E1D-1	E1-1	A	(2)
E1DB	E1B	B	UNSEALED
E2D-1	E2-1	C	(2)
E2DB	E2B	B	UNSEALED
	E4-1	D	(2)
E4D-1		E	(2)

LEGEND

E = EXPANSION JOINT
NO. = JOINT REFERENCE
-1 = HOT POURED SEAL (2)
D = DOWEL BARS
B = CONCRETE BASE
S = CONCRETE SILL

EXAMPLE: E1D-1

- 1 = HOT POURED SEAL (2)
- D = DOWEL BARS
- 1 = JOINT REFERENCE
- E = EXPANSION JOINT

NOTES:

(1) PREFORMED JOINT FILLER MATERIAL, SPEC. 3702.

(2) JOINT SEALER SPEC. 3723. TOP OF SEALER, FLUSH TO 1/8 IN. BELOW TOP OF PAVEMENT SURFACE. MAKE TOP OF SEALER FOR CURB SECTION E JOINTS FLUSH WITH SURFACE (0 IN.) + 1/8 IN.

(3) DOWEL BAR ASSEMBLY, SEE STANDARD PLATE 1103.

(4) JOINT WIDTH IS EQUAL TO HALF OF THE JOINT NUMBER IN 1/2 IN. INTERVALS (i.e. E1 = 1/2 IN., E2 = 1 IN., E3 = 1-1/2 IN., E4 = 2 IN., E8 = 4 IN.).

(5) SPACE FROM END OF DOWEL BAR TO END OF SLEEVE TO BE EQUAL TO EXPANSION JOINT WIDTH.

EXPANSION JOINTS

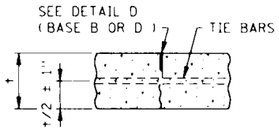
DESIGN E

AS BUILT PLANS

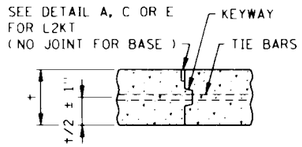
STANDARD SHEET NO. 5-297.221 (1 OF 2)	TITLE: PAVEMENT JOINTS (MODIFIED)
STANDARD APPROVED: JANUARY 25, 1993	CONTRACTION (DESIGN C) AND EXPANSION (DESIGN E)

~~STATE PROJ. NO.~~ S.A.P. 55-622-27 OLMSTED CO. SHEET NO. 8 OF 59 SHEETS

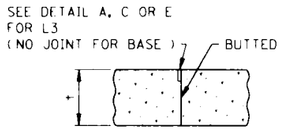
SERVER CA64S1:/USR/STANDARDS FILE NAME S2211A93.SPN



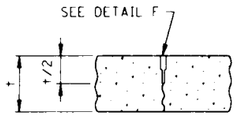
L1, L1T, L1B & L1TB



L2KT & L2KTB



L3 & L3B



L4

LONGITUDINAL JOINT CLASS DESIGNATION, DETAIL & SEALER SPECIFICATION TABLE

CLASS DESIGNATION				JOINT DETAIL	JOINT SEALER SPECIFICATION
WITHOUT TIE BARS	WITH TIE BARS	WITH KEYWAY & TIE BARS	BUTTED		
L1H	L1TH			B	3723
L1BU	L1TBU			A OR B	UNSEALED
		L2KTH		D OR E	3723
		L2KTS		C	SILICONE
			L3H	D OR E	3723
			L3S	C	SILICONE
L4S				F	SILICONE

LEGEND

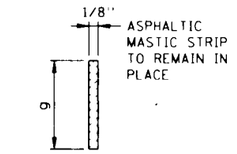
L = LONGITUDINAL JOINT
NO. = JOINT REFERENCE
K = KEYWAY
T = TIE BARS
B = CONCRETE BASE
U = UNSEALED
H = HOT POUR
S = SILICONE

JOINT REFERENCE NUMBERS

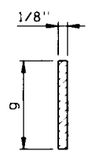
1 = SAWED TO A DEPTH OF t/3
2 = KEYED CONSTRUCTION JOINT
3 = BUTTED CONSTRUCTION JOINT
4 = SAWED TO A DEPTH OF t/2

LONGITUDINAL JOINT DEPTH TABLE

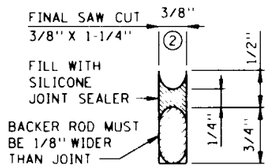
PAVEMENT THICKNESS t	CONCRETE PAVEMENT JOINT DEPTH g	CONCRETE BASE JOINT DEPTH g
6"	2"	2"
6-1/2"	2-1/8"	2"
7"	2-1/4"	2-1/4"
7-1/2"	2-1/2"	2-1/4"
8"	2-5/8"	2-1/2"
8-1/2"	2-7/8"	2-1/2"
9"	3"	2-3/4"
9-1/2"	3-1/4"	3"
10"	3-3/8"	
10-1/2"	3-1/2"	
11"	3-5/8"	
11-1/2"	3-7/8"	
12"	4"	
12-1/2"	4-1/8"	
13"	4-3/8"	
13-1/2"	4-1/2"	
14"	4-5/8"	



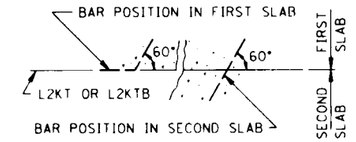
DETAIL A
(FORMED & UNSEALED)



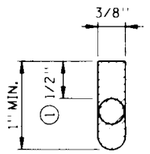
DETAIL B
(SAWED & SEALER, SPEC. 3723)
(BASE JOINTS UNSEALED)



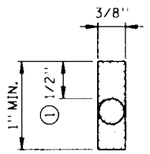
DETAIL C
(SAWED)



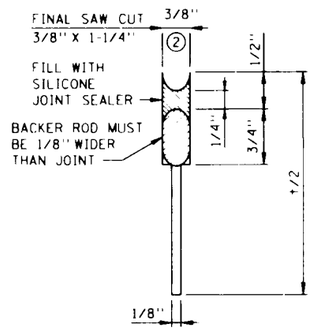
TIE BAR BENDING DETAIL



DETAIL D
(FORMED & SEALED
SPEC. 3723)



DETAIL E
(SAWED & SEALER
SPEC. 3723)



DETAIL F
(SAWED)

LONGITUDINAL JOINT NOTES:

TIE BARS FOR L1TB JOINTS SHALL BE THE SAME SIZE AND SPACING AS SHOWN ON STANDARD PLAN SHEETS 5-297.216 - .219.

EXCEPT WHEN NOTED OTHERWISE IN THE PLANS, THE TIE BAR SPACING FOR ALL L2KT AND L2KTB JOINTS SHALL BE 2'6" C. TO C. AND BENT 60° AS SHOWN.

TIE BARS IN THE L2KT AND L2KTB JOINTS SHALL BE THE SAME SIZE AND LENGTH AS USED FOR THE L1T OR L1TB JOINTS, WHEN TYING PAVEMENT TO PAVEMENT OR BASE TO BASE. TIE BARS IN THE L2KT OR L2KTB JOINTS SHALL BE NO. 4 X 2'6", WHEN TYING CURB & GUTTER TO PAVEMENT OR BASE.

ALL TIE BARS SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M-31 OR M-53.

NORMALLY, TIED PAVEMENT WIDTHS SHALL NOT EXCEED 30 FEET, EXCEPT BRIDGE APPROACH PANELS AND PAVEMENT TAPERS.

JOINT WIDTH TOLERANCE IS + 1/16 IN. TO - 1/32 IN.

SPEC. 3723 SEALER - TOP OF SEALER FLUSH TO - 3/16 IN. BELOW TOP OF PAVEMENT SURFACE.

① THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A CLOSED CELL BACKER ROD CAPABLE OF WITHSTANDING SEALANT TEMPERATURES OF 400 DEGREES F, WITH A DIAMETER 1/8 IN. LARGER THAN THE JOINT OPENING, MAY BE PLACED 1/2 IN. BELOW THE TOP OF THE PAVEMENT.

② THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A 1/2 IN. DIAMETER CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 1/2 IN. BELOW THE SURFACE OF THE PAVEMENT. SILICONE SHALL BE TOOLED INTO THE JOINT MAINTAINING A SEALANT BEAD THICKNESS OF 1/4 IN.

GENERAL NOTES:

SEE THE FOLLOWING STANDARD PLATES AND STANDARD PLAN SHEETS FOR ADDITIONAL DETAILS: DOWEL BAR ASSEMBLY 1103, PAVEMENT KEYWAY 1141 AND CONCRETE PAVEMENT WITH SKEWED JOINTS 5-297.216 - .219.

SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATIONS TO BE USED & SPECIAL REINFORCEMENT REQUIRED.

AS BUILT PLANS

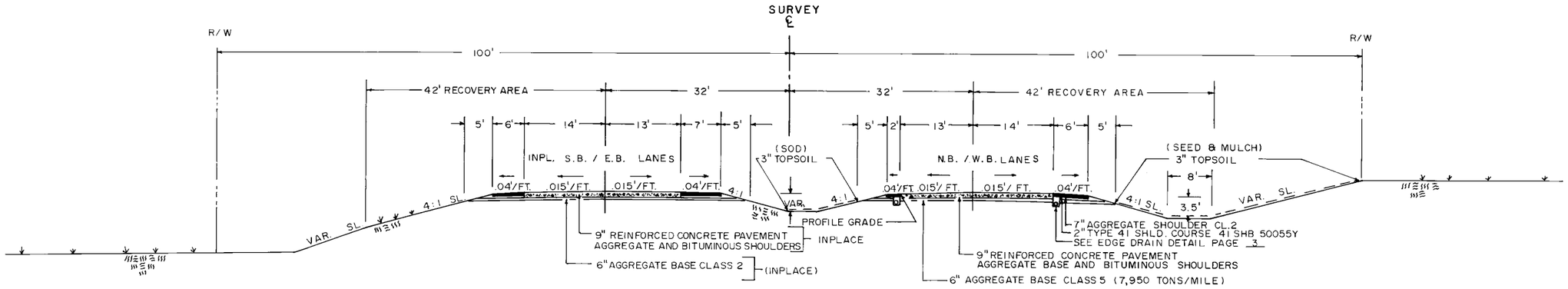
STANDARD SHEET NO.	TITLE:
5-297.221 (2 OF 2)	PAVEMENT JOINTS
STANDARD APPROVED: JANUARY 25, 1993	LONGITUDINAL (DESIGN L)

~~STATE PROJ. NO.~~ S.A.P. 55-622-27 OLMSTED CO. SHEET NO. 9 OF 59 SHEETS

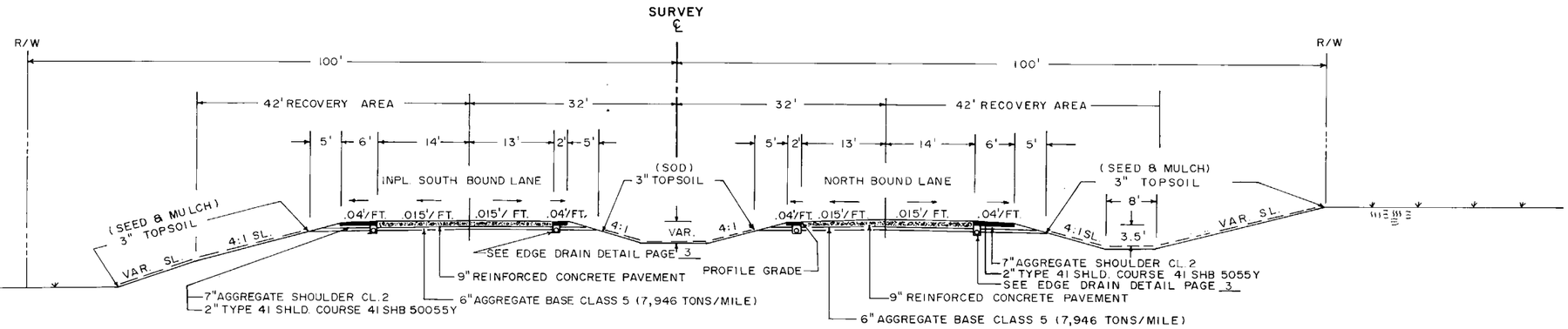
SERVER CA64S1:/USR/STANDARDS FILE NAME S2212A93.SPN

TYPICAL SECTIONS

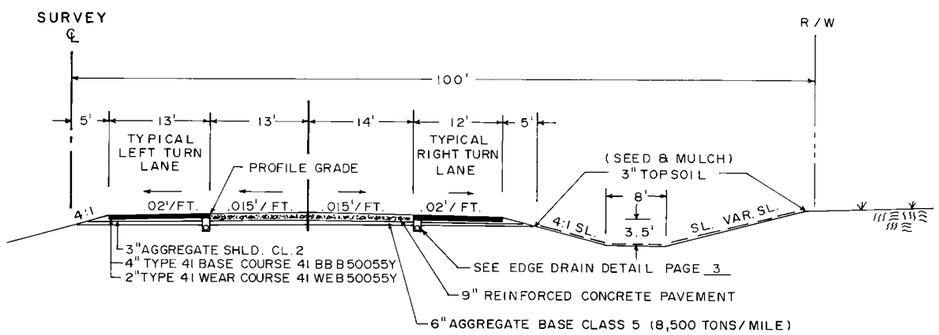
ALL UTILITY POLES AND UNYIELDING OBJECTS SHALL BE REMOVED AND RELOCATED OUTSIDE THE 42' RECOVERY AREA.



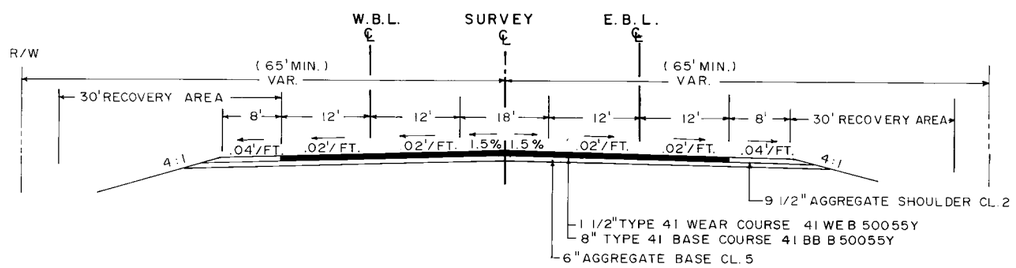
STA.1100+40 TO STA. 111+50



STA1065+80 TO STA.1100+40



TYPICAL BITUMINOUS TURN LANE DETAIL



C.S.A.H. 9 LT. & RT. STA. 1100+06.33

AS BUILT PLANS

CERTIFIED BY Kay M Brinich REG. NO. 19917 4/10/19 95
(PROFESSIONAL ENGINEER)

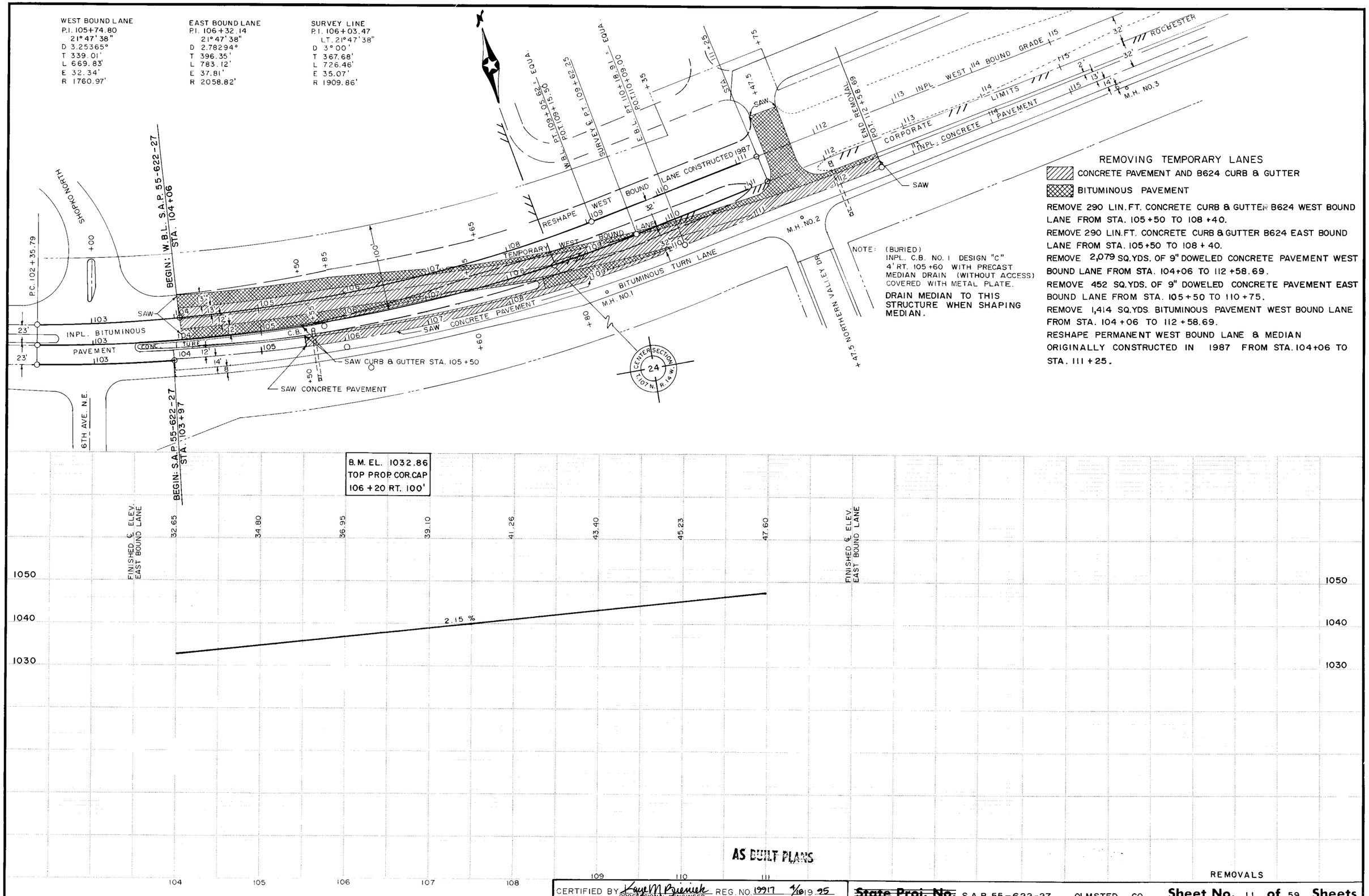
TYPICAL SECTIONS

S. A. P. 55-622-27 OLMSTED CO. **Sheet No.** 10 **of** 59 **Sheets**

WEST BOUND LANE
P.I. 105+74.80
21° 47' 38"
D 3.25365°
T 339.01'
L 669.83'
E 32.34'
R 1760.97'

EAST BOUND LANE
P.I. 106+32.14
21° 47' 38"
D 2.78294°
T 396.35'
L 783.12'
E 37.81'
R 2058.82'

SURVEY LINE
P.I. 106+03.47
LT. 21° 47' 38"
D 3° 00'
T 367.68'
L 726.46'
E 35.07'
R 1909.86'



NOTE: (BURIED)
INPL. C.B. NO. 1 DESIGN "C"
4' RT. 105+60 WITH PRECAST
MEDIAN DRAIN (WITHOUT ACCESS)
COVERED WITH METAL PLATE.

DRAIN MEDIAN TO THIS STRUCTURE WHEN SHAPING MEDIAN.

REMOVING TEMPORARY LANES

CONCRETE PAVEMENT AND B624 CURB & GUTTER

BITUMINOUS PAVEMENT

REMOVE 290 LIN. FT. CONCRETE CURB & GUTTER B624 WEST BOUND LANE FROM STA. 105+50 TO 108+40.

REMOVE 290 LIN. FT. CONCRETE CURB & GUTTER B624 EAST BOUND LANE FROM STA. 105+50 TO 108+40.

REMOVE 2,079 SQ. YDS. OF 9" DOWELED CONCRETE PAVEMENT WEST BOUND LANE FROM STA. 104+06 TO 112+58.69.

REMOVE 452 SQ. YDS. OF 9" DOWELED CONCRETE PAVEMENT EAST BOUND LANE FROM STA. 105+50 TO 110+75.

REMOVE 1,414 SQ. YDS. BITUMINOUS PAVEMENT WEST BOUND LANE FROM STA. 104+06 TO 112+58.69.

RESHAPE PERMANENT WEST BOUND LANE & MEDIAN ORIGINALLY CONSTRUCTED IN 1987 FROM STA. 104+06 TO STA. 111+25.

AS BUILT PLANS

CERTIFIED BY Kaye M Prewich PROFESSIONAL ENGINEER REG. NO. 19917 9/6/19 95

REMOVALS

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED CO. **Sheet No.** 11 **of** 59 **Sheets**

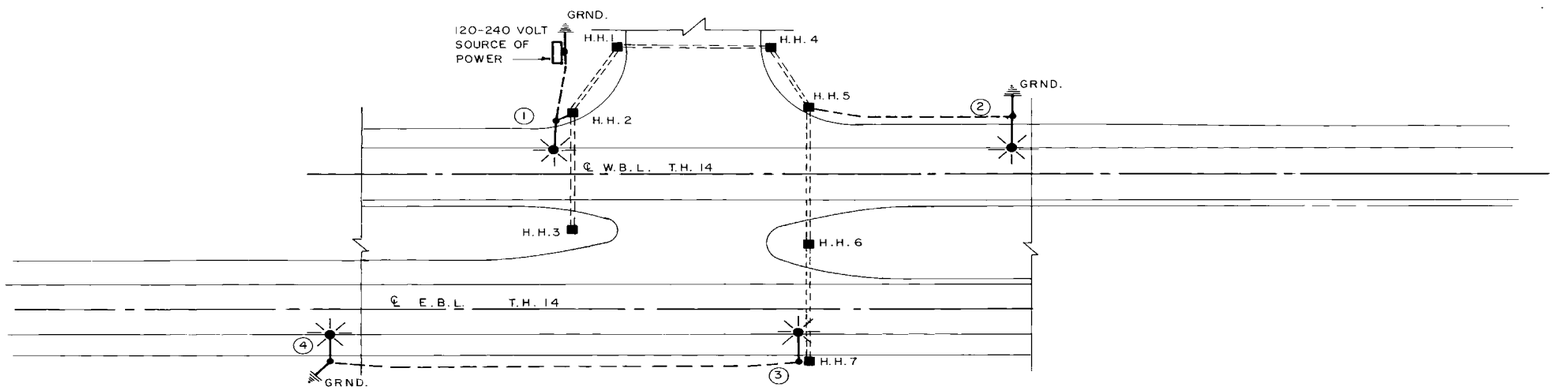
(INPL.)

HANDHOLES			
H.H. NO.	STATION	LOCATION	
		LT.	RT.
1	W.B.L. 62+82.8	60'	
2	W.B.L. 62+65.0	25'	
3	W.B.L. 62+65.0		26'
4	W.B.L. 63+42.8	60'	
5	W.B.L. 63+ 60.0	31'	
6	E.B.L. 63+ 60.0	32'	
7	E.B.L. 63+ 60.0		23.5'

OVERHEAD LIGHTING AT INTERSECTION OF CSAH 22 & T.H. 14

(INPL.)

LIGHTING STANDARDS & BASES			
NO.	STATION	LT.	RT.
1	W.B.L. 62+60	27'	
2	W.B.L. 64+40	28'	
3	E.B.L. 63+55		26'
4	E.B.L. 61+70		26'



NOTE: ALL ITEMS A THRU D ARE INCIDENTAL TO PAY ITEM. 2104.509 REMOVE LIGHT STANDARD.

Ⓐ REMOVE 4 LIGHT STANDARDS, LIGHT STANDARDS WILL BECOME PROPERTY OF THE CONTRACTOR.

Ⓑ EXCAVATE 4 LIGHT STANDARD BASES AND BACKFILL WITH GRANULAR MATERIAL APPROVED BY THE ENGINEER.

Ⓒ FILL 7 HANDHOLES WITH GRANULAR MATERIAL APPROVED BY THE ENGINEER.

Ⓓ ABANDON ALL CONDUIT AND ELEC. CABLE.

LEGEND

- INPL. HANDHOLES
- INPL. LIGHT STANDARDS & BASES
- INPL. CONDUIT
- INPL. ELECTRIC CABLE

AS BUILT PLANS

OVERHEAD LIGHTING REMOVAL

CERTIFIED BY Kay M Bierniek (PROFESSIONAL ENGINEER) REG. NO. 19917 4/18 19 95

S.A.P. 55-622-27 OLMSTED CO. CSAH 22 SHEET 12 OF 59 SHEETS

INPL. GATE VALVE W-2 LT. 53' STA. 1077 + 58
NO. 420616

ADJUST VALVE BOX- WATER TO FINISH GRADE
F. & I. VALVE NUT EXTENSION SYSTEM
SEE PLATE NO. 8-01(R.P.U. WATER DIV.)

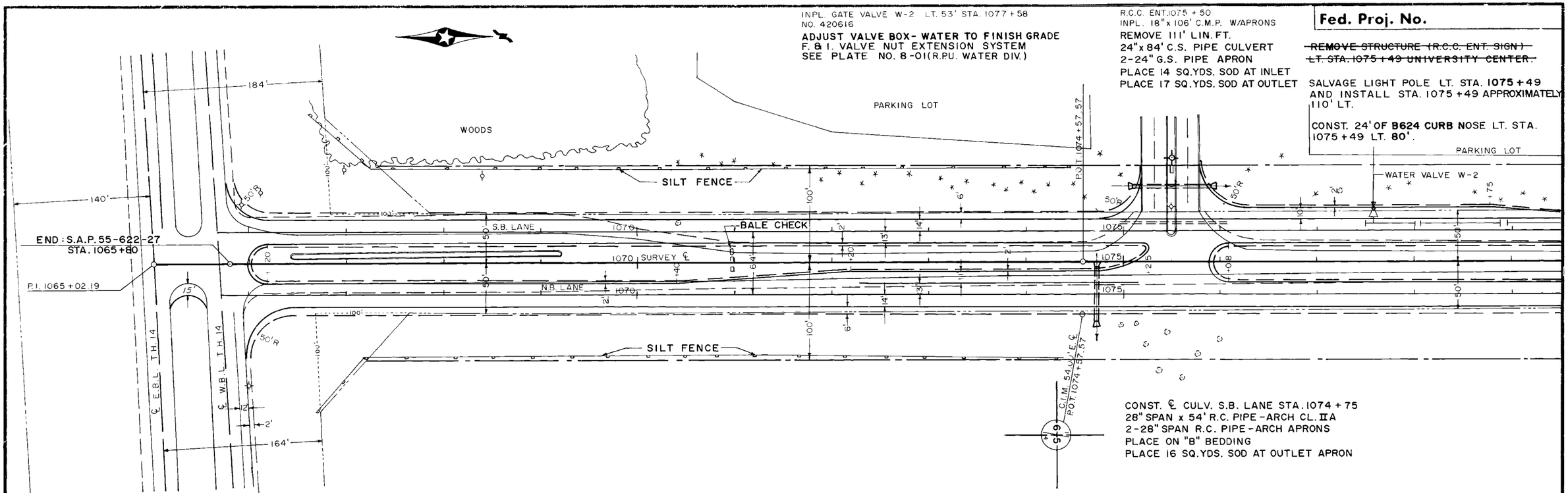
R.C.C. ENT. 1075 + 50
INPL. 18"x 106' C.M.P. W/APRONS
REMOVE 111' LIN. FT.
24"x 84' C.S. PIPE CULVERT
2-24" G.S. PIPE APRON
PLACE 14 SQ.YDS. SOD AT INLET
PLACE 17 SQ.YDS. SOD AT OUTLET

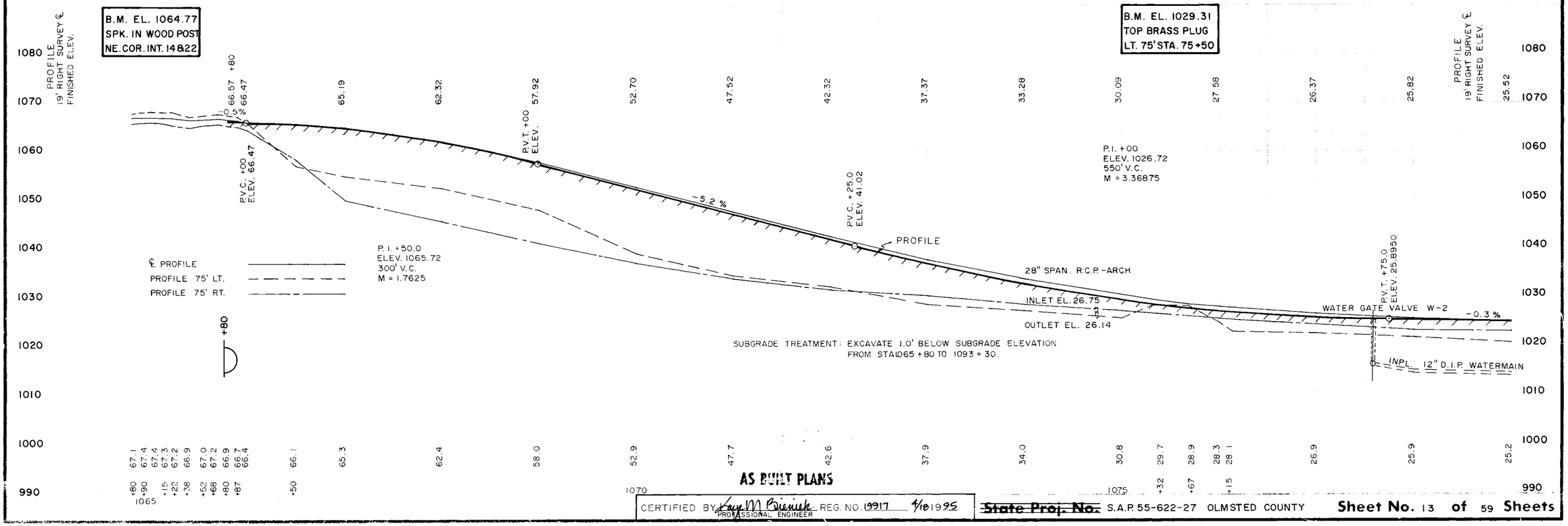
Fed. Proj. No.

~~REMOVE STRUCTURE (R.C.C. ENT. SIGN) LT. STA. 1075 + 49 UNIVERSITY CENTER.~~

SALVAGE LIGHT POLE LT. STA. **1075 + 49** AND INSTALL STA. 1075 + 49 APPROXIMATELY 110' LT.

CONST. 24' OF **B624 CURB** NOSE LT. STA. 1075 + 49 LT. **80'**.





AS BUILT PLANS

CERTIFIED BY Gary M Brienik REG. NO. 19317 4/10/1995
PROFESSIONAL ENGINEER

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED COUNTY **Sheet No.** 13 **of** 59 **Sheets**

Fed. Proj. No.

℄ CULV. 1081+38
INPL. 48"x56' R.C.P. SPAN
W/APRONS
REMOVE 72' LIN. FT.

℄ CULV. 1081+48
INPL. 48"x56' R.C.P. SPAN
W/APRONS
REMOVE 72 LIN. FT.

℄ CULV. 1081+58
INPL. 48"x56' R.C.P. SPAN
W/APRONS
REMOVE 72 LIN. FT.

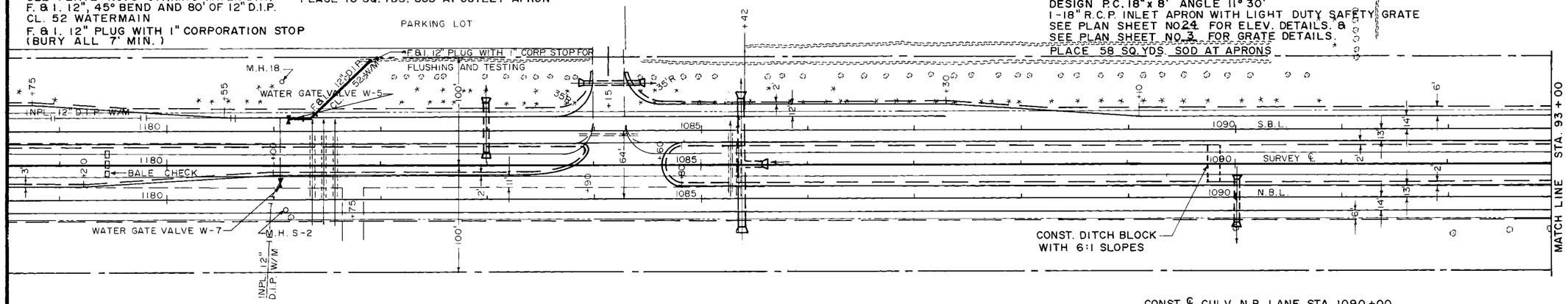
CONST. ℄ CULV. S.B. LANE STA. 1083+00
28"SPAN x 44' R.C. PIPE-ARCH CL. IIA
2-28"SPAN R.C. PIPE-ARCH APRONS
PLACE ON "B" BEDDING
PLACE 16 SQ. YDS. SOD AT OUTLET APRON

R.C.C. PARKING LOT ENT. 1084+15
INPL. 24"x 57' C.M.P.
W/APRONS
REMOVE 64' LIN. FT.
18"x 56' C.S. PIPE CULVERT
2-18" G.S. PIPE APRONS
PLACE 11 SQ.YDS. SOD AT INLET APRON
PLACE 12 SQ.YDS SOD AT OUTL. APRON

℄ CULV. 1085+26
INPL. 51"x 66' R.C.P. SPAN
W/APRONS
REMOVE 82 LIN. FT.

℄ CULV. 1085+36
INPL. 51"x 66' R.C.P. SPAN
W/APRONS
REMOVE 82 LIN. FT.
44"SPAN x 118' R.C.P.-ARCH CL. IIA
2-44" SPAN R.C.P.-ARCH APRONS
PLACE CULV. ON "B" BEDDING
F. & I. CONC. JOINT TIES
CONST. DRAINAGE STRUCTURE
DESIGN P.C. 18"x 8' ANGLE 11° 30'
1-18" R.C.P. INLET APRON WITH LIGHT DUTY SAFETY GRATE
SEE PLAN SHEET NO 24 FOR ELEV. DETAILS. &
SEE PLAN SHEET NO 3 FOR GRATE DETAILS.
PLACE 58 SQ.YDS. SOD AT APRONS

INPL. WATER GATE VALVE W-5 LT. 41' STA. 1081+15
ADJUST VALVE BOX-WATER FINISH GRADE
F. & I. VALVE NUT EXTENSION STEM
SEE PLATE NO. 8-01. (R.P.U. WATER DIV.)
F. & I. 12", 45° BEND AND 80' OF 12" D.I.P.
CL. 52 WATERMAIN
F. & I. 12" PLUG WITH 1" CORPORATION STOP
(BURY ALL 7' MIN.)



INPL. M.H. 18 LT. 78' STA. 1081+09
NO CHANGE

F.E. RT. 1081+75
NO CULV.

NO ENT. REQ'D.

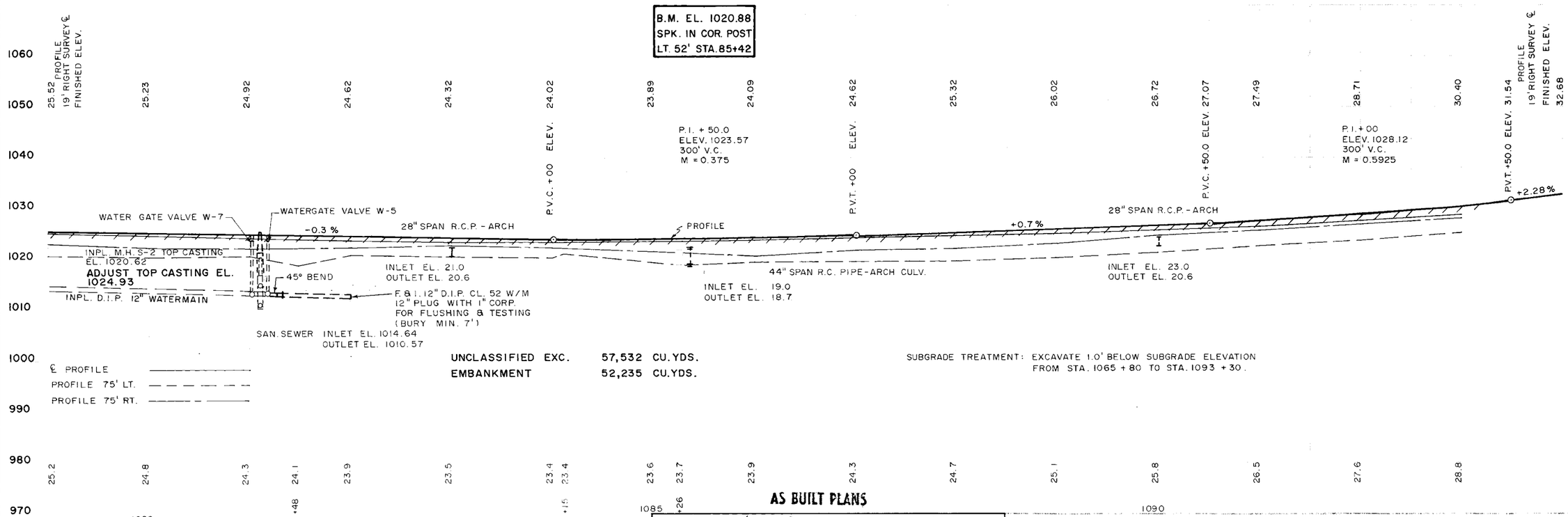
INPL. M.H. S-2 RT. 43' STA. 1081+09
INPL. CASTING EL. 1020.62

RECONSTRUCT M.H. ~~4.31'~~ 9.7' TO CASTING
NEW EL. 1024.93

INPL. WATER GATE VALVE W-7 RT. 18' STA. 1081+06

ADJUST VALVE BOX-WATER TO FINISHED GRADE
F. & I. VALVE NUT EXTENSION STEM
SEE PLATE NO. 8-01. (R.P.U. WATER DIV.)

CONST. ℄ CULV. N.B. LANE STA. 1090+00
28" SPAN x 46' R.C. PIPE-ARCH CL. IIA
2-28" SPAN R.C. PIPE-ARCH APRONS
PLACE ON "B" BEDDING
PLACE 16 SQ.YDS. SOD AT OUTLET APRON



℄ PROFILE
PROFILE 75' LT.
PROFILE 75' RT.

UNCLASSIFIED EXC. 57,532 CU.YDS.
EMBANKMENT 52,235 CU.YDS.

SUBGRADE TREATMENT: EXCAVATE 1.0' BELOW SUBGRADE ELEVATION FROM STA. 1065+80 TO STA. 1093+30.

AS BUILT PLANS

CERTIFIED BY Lawrence M Brinich REG. NO. 19917 4/10 19 95
PROFESSIONAL ENGINEER

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED COUNTY **Sheet No.** 14 **of** 59 **Sheets**

CONST. ℄ CULV. EXIT LOOP "A" STA. 2049+95
28" SPAN x ~~44~~ 58 R.C. PIPE-ARCH CULV. CL. IIA
2-28" SPAN R.C. PIPE-ARCH APRONS
PLACE CULV. ON "B" BEDDING
F.&I. CONC. PIPE JOINT TIES
INLET EL. 34.6 OUTLET EL. 27.0
PLACE 16 SQ. YDS. SOD AT OUTLET APRON

220'
F.&I. ~~225'~~ x 12" WATERMAIN DUCTILE IRON CL. 52 STA. 1097+00
(BURY 7' MIN.)

SURVEY ℄
P.I. 1107+76.45
ΔLT. 21° 27' 55"
D-0° 45' 00"
L-2862.04'
T-1447.99'
E-136.01'

S.B. LANE
P.I. 1107+70.39
ΔLT. 21° 27' 55"
D-0° 45' 11.4"
L-2850.05'
T-1441.93

N.B. LANE
P.I. 1107+82.52
ΔLT. 21° 27' 55"
D-0° 44' 48.7"
L-2874.03'
T-1454.06'

(CSAH 9) P.C. 48+32.86
P.I. 2050+31.56
Δ-79° 14' 38"
T-198.70'
L-331.94'
E-71.58'
D-23° 52' 24"
EXIT RAMP "A"
(CSAH 9) P.T. 2051+64.80 = (CSAH 22) P.C. 1097+47.40
P.C. 1093+28.46
SILT FENCE
D.I.P. W/M
LOOP "A" EXIT
SIGNAL
SAW BIT.
PAVT.
CONC. CURB
HANDHOLE
SAW BITUMINOUS PAVT.
INPL. LOOP
(CSAH 22) P.O.C. 1100+06.33 =
P.O.T. 2050+94.38 (CSAH 9)
END GRADING S.B.L.
C.S.A.H. 22 S.B. LANE
INPL. CONC. PAVEMENT
INPL. C.B. 22-1
C.S.A.H. 22 N.B. LANE
℄ S.B.L.
SURVEY ℄
BALE CHECK
℄ N.B.L.
CSAH 22
CSAH 9
MATCH LINE STA. 1093+00
MATCH LINE STA. 1108+00
1107, ℄ S.B.L.
1107, SURVE ℄
1107, ℄ N.B.L.
INPL. C.B. 22-1 DESIGN "C" 2.5' RT. STA. 100+90
PRECAST CONC. MEDIAN DRAIN STD. PLATE 4014A
EL. 38.9 OUTLET EL. 34.9
CONNECT INTO EXISTING CATCH BASIN
INLET EL. 35.0

CONST. C.B. 22-2A DESIGN "C" 65.5' RT. STA. 1100+90
OUTLET EL. 35.3, INLET EL. 35.4, PRECAST MEDIAN
DRAIN (STD. PLATE 4014A) EL. 39.3
63 LIN. FT. 28" SPAN R.C. PIPE-ARCH CULV. CL. IIA
PLACE CULV. ON "B" BEDDING F.&I. CONC. PIPE JOINT TIES
CONST. ℄ CULV. EXIT LOOP "C" STA. 2051+75
28" SPAN x 74' R.C. PIPE-ARCH CULV. CL. IIA
1-28" SPAN R.C. PIPE-ARCH APRON
PLACE CULV. ON "B" BEDDING, F.&I. CONC. PIPE JOINT TIES
INLET EL. 38.6
PLACE 13 SQ. YDS. SOD AT INLET APRON

CONST. ℄ CULV. EXIT LOOP "B" STA. 1098+80
28" SPAN x ~~72~~ 74 R.C. PIPE-ARCH CULV. CL. IIA
2-28" SPAN R.C. PIPE-ARCH APRONS
PLACE CULV. ON "B" BEDDING
F.&I. CONC. PIPE JOINT TIES
INLET EL. 38.0 OUTLET EL. 34.2
PLACE 16 SQ. YDS. SOD AT OUTLET APRON

64'
SILT FENCE
F.E. RT. 96+37
INPL. 18"x 27' CMP W/APRONS
REMOVE 32 LIN. FT.
NO F.E. REQ'D.
F.&I. 12" CL. 52
P.C. 1097+15.54
P.I. 1099+19.60
Δ-80° 44' 06.47"
T-238.23'
L-240.03'
E-71.58'
D-23° 52' 24"
EXIT LOOP "B"
CSAH 9 EB. LANE
CSAH 9 WB. LANE
SAW BIT. PAVT.
P.I. 2052+17.65
Δ-75° 03' 36"
T-177.78'
L-306.03'
E-58.68'
R-240'
D-23° 52' 24"
EXIT LOOP "C"
(CSAH 9) P.C. 2050+39.87 = (CSAH 22) P.O.C. 1102+37.04
(CSAH 9) P.T. 2053+45.90
(CSAH 22) P.O.C. 1100+53.77 = P.O.T. 2053+83.80 (CSAH 9)
P.I. 5+78.11
Δ-53° 35'
C.B. 22-2A
"C"
"B"
25'R
23.10'

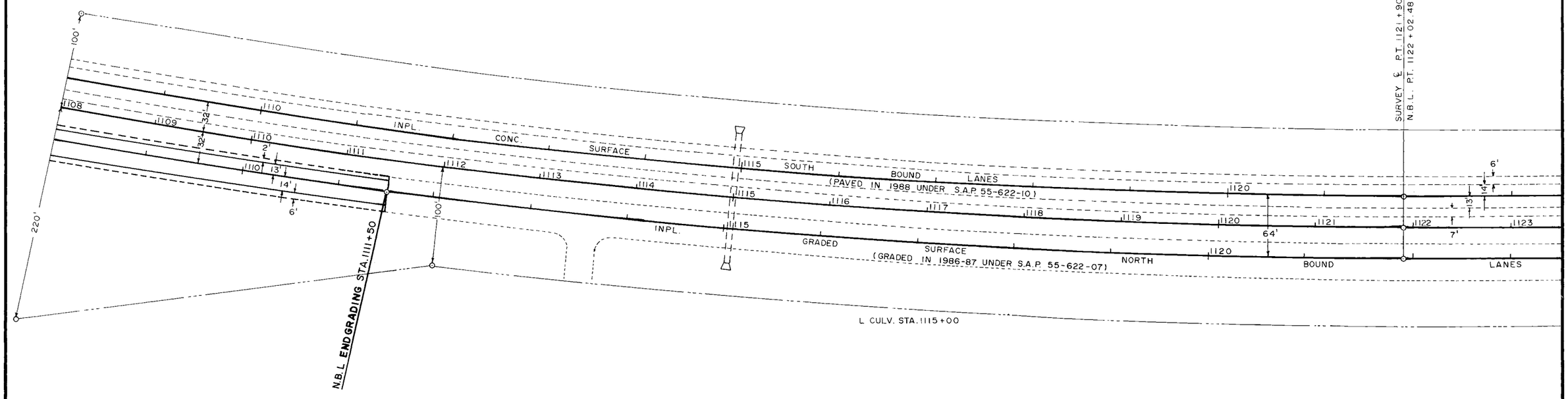
PROFILE
FINISHED ELEV. 19' RT. OF SURVE ℄
SURVEY ℄ PROFILE
PROFILE 75' LT.
PROFILE 75' RT.
P.V.T. +50 ELEV. 31.54
P.V.C. +50 ELEV. 38.38
P.V.T. +50 ELEV. 42.70
C.B. 22-2A 65.5' RT. STA. 1100+90
P.V.C. +00 ELEV. 42.79
P.V.T. +00 ELEV. 44.41
(50 MPH) P.I. +00 ELEV. 1041.80 300' V.C. M = 0.63
(55 MPH) P.I. +00 ELEV. 1043.41 200' V.C. M = 0.095
+2.28%
+0.6%
+0.62%
+1.0%
APRON INLET 38.6
CB 22-2A INLET 35.4
CB 22-2A OUTLET 35.3
SUBGRADE TREATMENT: EXCAVATE 1.0' BELOW SUBGRADE ELEVATION FROM STA. 1101+60 TO STA. 111+00

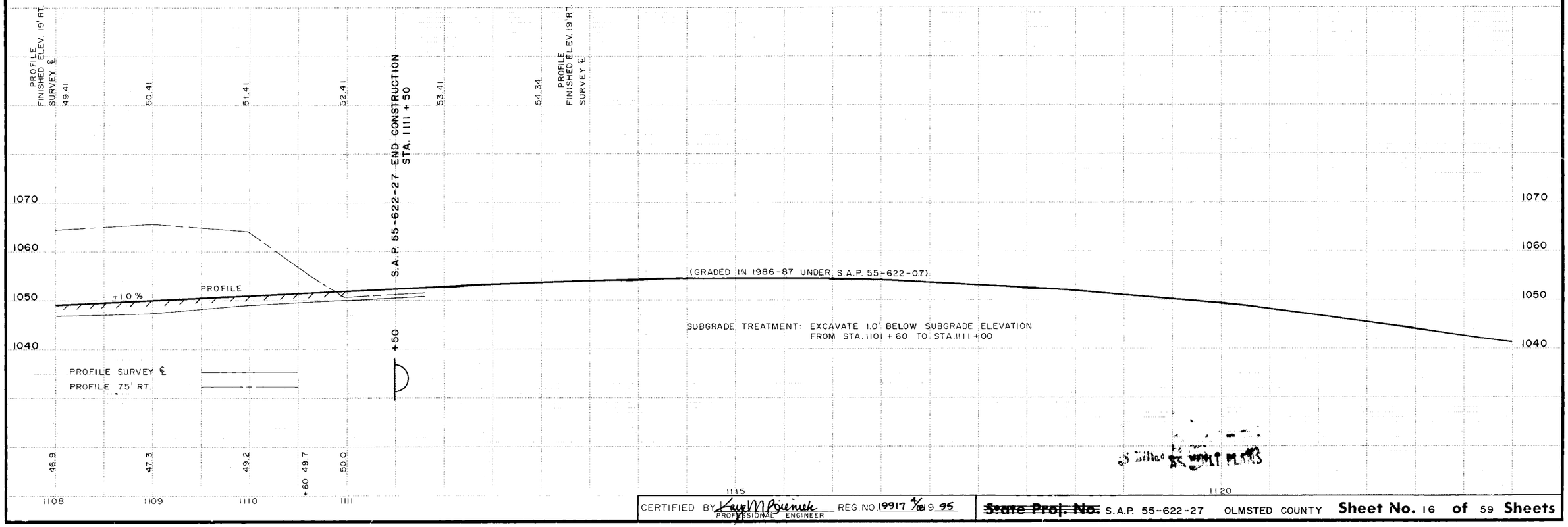
CERTIFIED BY Lary M Brinick REG. NO. 19917 DATE 9/19/95
PROFESSIONAL ENGINEER

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED COUNTY **Sheet No. 15 of 59 Sheets**

SURVEY ℄
P.I. 1107 + 76.45
Δ 21° 27' 55"
D - 0° 45' 00"
L - 2862.04'
T - 1447.99'
R - 7639.44'

N.B.L.
P.I. 1107 + 82.52
Δ 21° 27' 55"
D - 0° 44' 48.7"
L - 2874.02'
T - 1454.06'
R - 7671.44'





CERTIFIED BY Kay M Pieruch PROFESSIONAL ENGINEER REG. NO. 19917 DATE 9-95

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED COUNTY **Sheet No.** 16 **of** 59 **Sheets**

NOTE: SEE PLAN SHEET NO. 28 FOR EXIT LOOP, ℄ CULV. & C.B. 22-2A ELEVATIONS AND SIZES.

NOTE: CONST. 10' OF CONCRETE CURB NOSE DESIGN B-6 AT STA. 2051 + 50.

NOTE: SAW BITUMINOUS PAVEMENT IN VARIOUS LOCATIONS AS SHOWN, AND AS DIRECTED BY THE ENGINEER. APPROX. 1855 LIN. FT.

NOTE: BITUMINOUS REMOVED FROM CSAH 9 AND INTERSECTION OF CSAH 22 IS INCLUDED IN THE EXCAVATION AND EMBANKMENT OF THIS PROJECT.

END GRADING S.B.L.

PROFILE ℄
PROFILE 75' RT.
PROFILE 75' LT.

SUBGRADE TREATMENT: EXCAVATE 1.0' BELOW SUBGRADE ELEVATION FROM STA 2045+65 TO CSAH 22 EXCAVATED EDGE S.B.L. & FROM CSAH 22 EXCAVATED EDGE OF N.B.L. TO STA 2056+46 SEE X-SECTIONS PAGE 32 TO PAGE 34

UNCLASSIFIED EXC.	2,937 CU.YDS.
EMBANKMENT	4,189 CU.YDS.

AS BUILT PLANS

CERTIFIED BY Lee M Brienen PROFESSIONAL ENGINEER REG. NO 19917 9/19/95

~~State Proj. No.~~ S.A.P. 55-622-27 CSAH 9 **Sheet No.** 17 **of** 59 **Sheets**

WEST BOUND LANE	EAST BOUND LANE	SURVEY LINE
P.I. 105+74.80	P.I. 106+32.14	P.I. 106+03.47
Δ LT 21°47'38"	Δ LT. 21°47'38"	Δ LT. 21°47'38"
D 3.25365°	D 2.78294°	D 3°00'
T 339.01'	T 396.35'	T 367.68'
L 669.83'	L 783.12'	L 726.46'
E 32.34'	E 37.81'	E 35.07'
R 1760.97'	R 2058.82'	R 1909.86'

NOTE: C2B-D MOD. CONTRACTION JOINTS SHOWN ARE THE JOINTS LOCATED BETWEEN THE 17'& 13' PANELS. ROTATION OF JOINTS TO BE AT 13', 16', 14' AND 17'.

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS TURN LANE STA. 104+06 TO STA. 107+65 LT. SIDE OF W.B.L.

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS TURN LANE STA. 104+06 TO STA. 107+35 RT. SIDE OF W.B.L.

△ DENOTES TILE OUTLETS

BEGIN PAVEMENT OF W.B. LANES
STA. 104+06

CONSTRUCT 27' OF PERMANENT TERMINAL HEADER AT STA. 104+06

BEGIN PAVEMENT OF E.B. LANE
STA. 105+50
SEE NOTE *

C.B. 1 AND ℄ CULV. RT. STA. 105+64
CONST. 30' OF REINF. PANELS FROM STA. 105+50 TO STA. 105+80 (13' LANE)

NOTE: DRILL & GROUT TIE BARS FROM STA. 105+50 TO STA. 112+58.69 TIEING LT. E.B. LANE TO RT. E.B. LANE. USE NO. 4 EPOXY COATEDBARS 2'6" LONG AT 2'6" SPACING. HOLES SHALL BE 1'3" DEPTH AND GROUTED WITH APPROVED NON SHRINK GROUT.

* NOTE: DRILL & GROUT DOWEL BARS AT STA. 105+50 & STA. 112+58.69 CONTRACTION JOINTS. USE NO. 8 EPOXY COATED REINF. BAR 18" LONG AT 12" C-C SKEWED 20°. PLACE WITH APPROVED NON SHRINK GROUT.

NOTE: ALL NORMAL SHOULDER WILL BE CONSTRUCTED OF 7" AGGREGATE BASE AND 2" BITUMINOUS UNLESS OTHERWISE NOTED.

NOTE: CONST. CORRUGATED P.E. PERFORATED PIPE LEFT & RIGHT W.B. LANE. SEE PLAN SHEET NO. 3 FOR EDGE DRAIN DETAIL. BEGIN LT. SIDE AT STA. 104+06. BEGIN RT. SIDE AT STA. 106+00.

END PAVEMENT OF E.B. LANE
STA. 112+58.69
SEE NOTE *

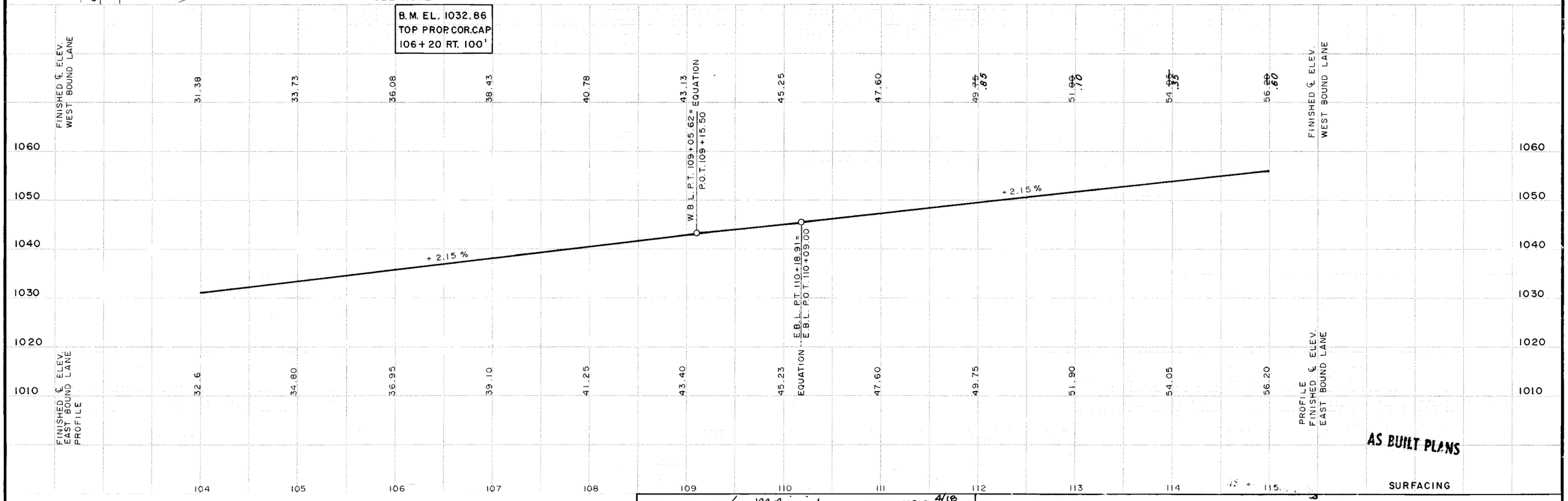
℄ CULV. 112+06
CONST. 16' REINF. PANEL STA. 111+98 TO STA. 112+14 (13' LANE) E.B.L.

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS TURN LANE & MEDIAN X-ING STA. 105+50 TO 112+58.69 LT. SIDE E.B. LANE.

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS TURN LANE & APPROACH STA. 110+50 TO 115+90 LT. SIDE W.B. LANE.

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS TURN LANE & MEDIAN X-ING STA. 110+80 TO 115+70 RT. SIDE W.B. LANE.

B.M. EL. 1032.86
TOP PROP COR. CAP
106+20 RT. 100'



AS BUILT PLANS

SURFACING

CERTIFIED BY Gaye M Brienich (PROFESSIONAL ENGINEER) REG. NO. 19917 4/18 1995

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED CO.

Sheet No. 35 of 59 Sheets

NOTE: C2B-D MOD. CONTRACTION JOINTS SHOWN ARE THE JOINTS LOCATED BETWEEN THE 17' & 13' PANELS. ROTATION OF JOINTS TO BE AT 13', 16', 14', AND 17'.

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS TURN LANE & APPROACH, ALBERTA DR. STA. 120 +80 TO ~~124+50~~ 125+10 LT. OF W.B. LANES

ALBERTA DR. STA. 121 + 24
REMOVE 320 SQ.YDS. OF BITUMINOUS PAVEMENT

CONST. 3" AGGREGATE BASE & 6" BITUMINOUS TURN LANE & X-ING STA. 120+60 TO 124+50 RT. OF W.B. LANES

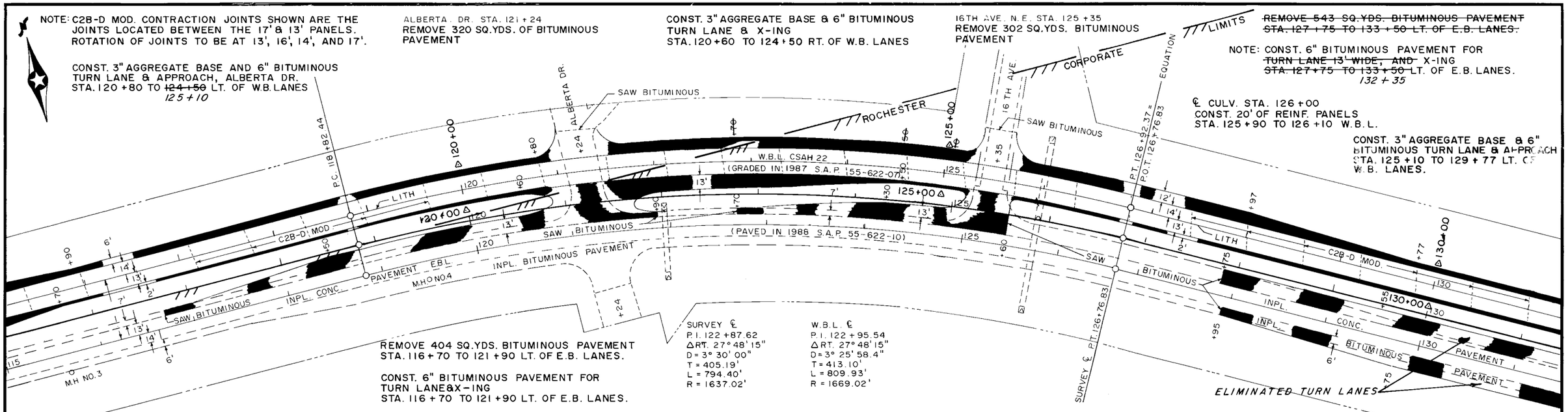
16TH AVE. N.E. STA. 125 +35
REMOVE 302 SQ.YDS. BITUMINOUS PAVEMENT

~~REMOVE 543 SQ.YDS. BITUMINOUS PAVEMENT STA. 127+75 TO 133+50 LT. OF E.B. LANES.~~

NOTE: CONST. 6" BITUMINOUS PAVEMENT FOR ~~TURN LANE 13' WIDE, AND~~ X-ING ~~STA. 127+75 TO 133+50~~ LT. OF E.B. LANES. 132 + 35

℄ CULV. STA. 126 +00
CONST. 20' OF REINF. PANELS STA. 125 +90 TO 126 +10 W.B.L.

CONST. 3" AGGREGATE BASE & 6" BITUMINOUS TURN LANE & APPROACH STA. 125 +10 TO 129 + 77 LT. OF W.B. LANES.



REMOVE 404 SQ.YDS. BITUMINOUS PAVEMENT STA. 116+70 TO 121+90 LT. OF E.B. LANES.

CONST. 6" BITUMINOUS PAVEMENT FOR TURN LANE & X-ING STA. 116+70 TO 121+90 LT. OF E.B. LANES.

SURVEY ℄
P.I. 122 +87.62
△RT. 27°48'15"
D = 3° 30' 00"
T = 405.19'
L = 794.40'
R = 1637.02'

W.B.L. ℄
P.I. 122 + 95.54
△RT. 27°48'15"
D = 3° 25' 58.4"
T = 413.10'
L = 809.93'
R = 1669.02'

REMOVE 226 SQ.YDS. BITUMINOUS PAVEMENT STA. 122+70 TO 125+60 LT. OF E.B. LANES.

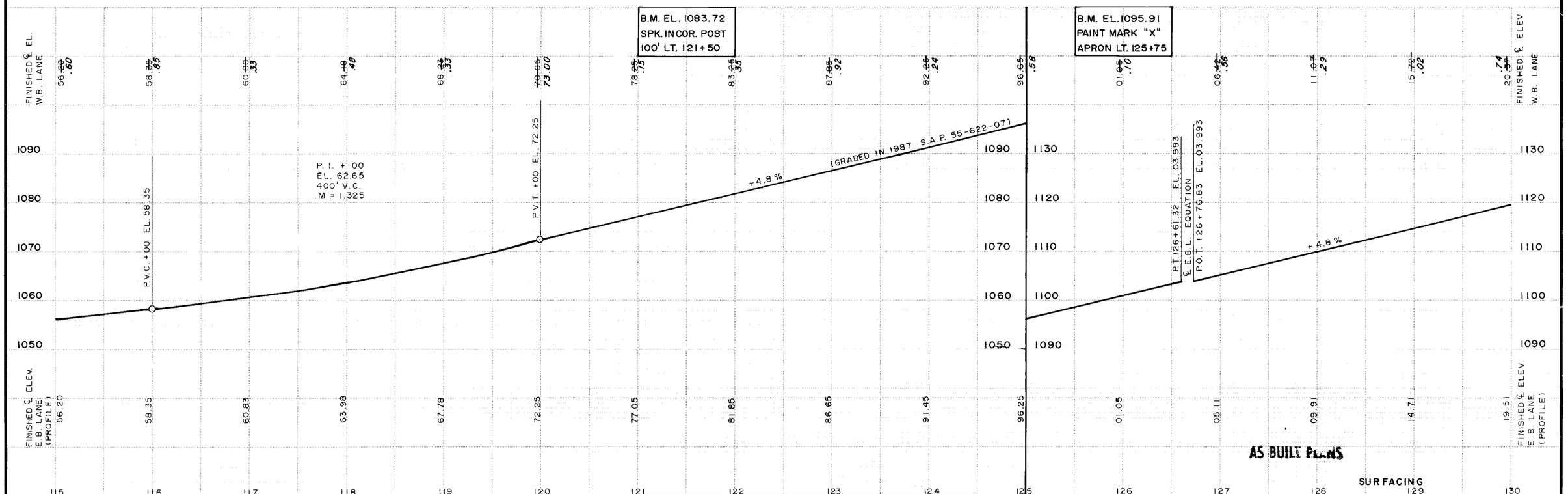
CONST. 6" BITUMINOUS PAVEMENT FOR TURN LANE & X-ING STA. 122+70 TO 125+60 LT. OF E.B. LANES.

~~REMOVE 330 SQ.YDS. BITUMINOUS PAVEMENT STA. 127+95 TO 132+90 RT. OF E.B. LANES.~~

~~CONST. 6" BITUMINOUS PAVEMENT FOR TURN LANE & APPROACH RT. STA. 127+95 TO 132+90 RT. OF E.B. LANES.~~

NOTE: CONST. CORRUGATED P.E. PERFORATED PIPE LEFT & RIGHT OF W.B. LANES. SEE PLAN SHEET NO. 3 FOR EDGE DRAIN DETAIL.

△ DENOTES TILE OUTLETS



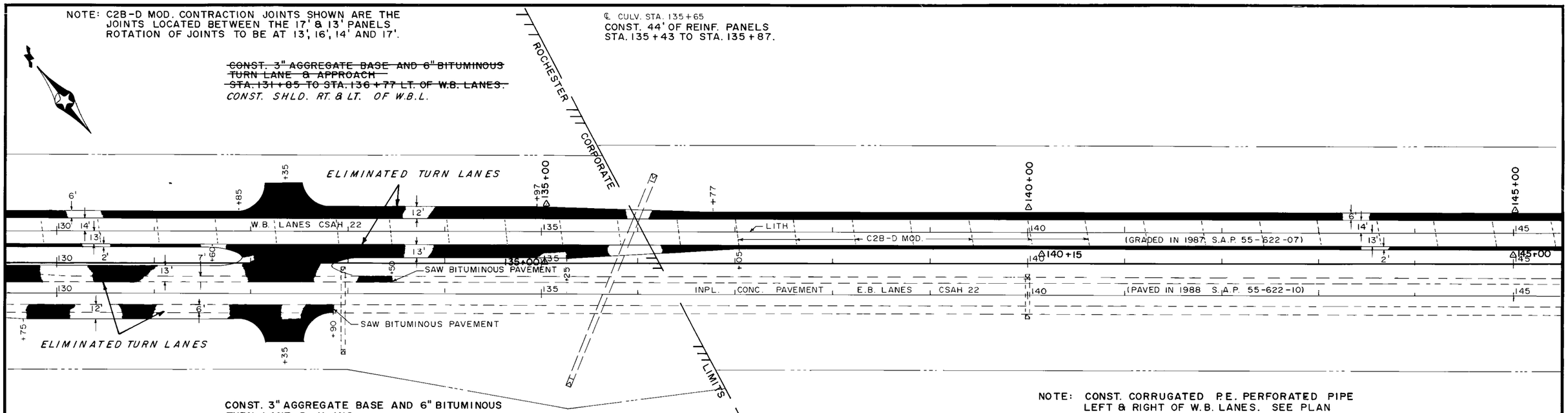
CERTIFIED BY Kaye M Briesick (PROFESSIONAL ENGINEER) REG. NO. 9917 DATE 4/18/95

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED CO. **Sheet No.** 36 **of** 59 **Sheets**

NOTE: C2B-D MOD. CONTRACTION JOINTS SHOWN ARE THE JOINTS LOCATED BETWEEN THE 17' & 13' PANELS ROTATION OF JOINTS TO BE AT 13', 16', 14' AND 17'.

~~CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS TURN LANE & APPROACH STA. 131+85 TO STA. 136+77 LT. OF W.B. LANES.~~
CONST. SHLD. RT. & LT. OF W.B.L.

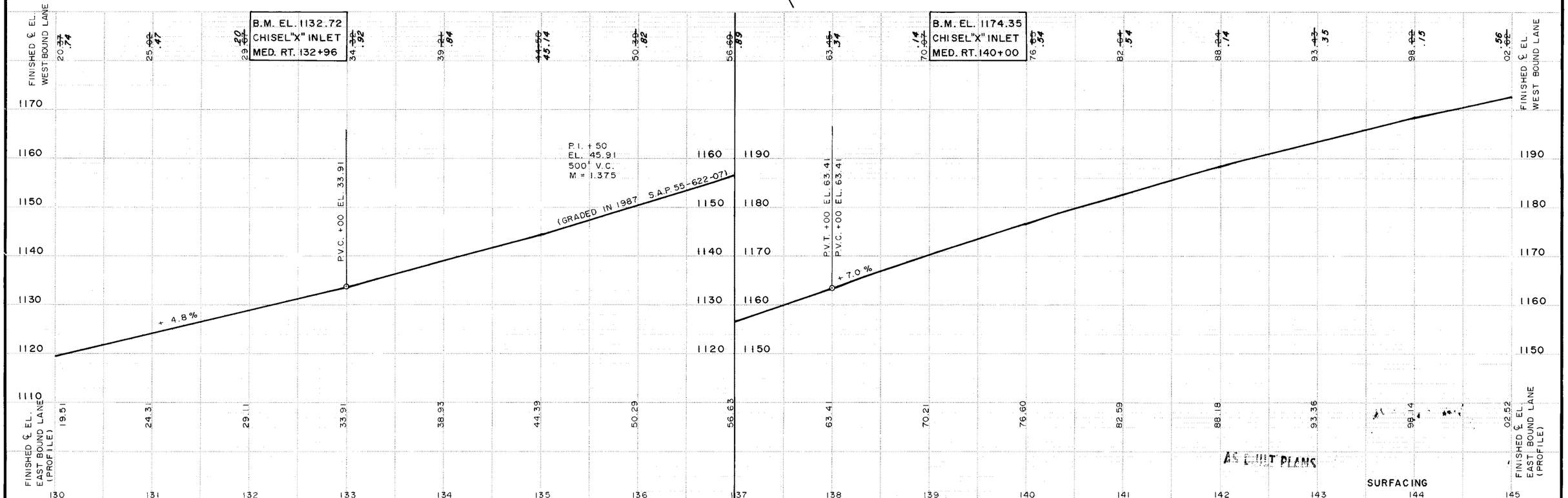
℄ CULV. STA. 135+65
CONST. 44' OF REINF. PANELS
STA. 135+43 TO STA. 135+87.



CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS
~~TURN LANE & X-ING. STA. 131+60 TO STA. 137+05~~ RT. OF W.B. LANES.
132+35

NOTE: CONST. CORRUGATED P.E. PERFORATED PIPE LEFT & RIGHT OF W.B. LANES. SEE PLAN SHEET NO. 3 FOR EDGE DRAIN DETAIL.

△ DENOTES TILE OUTLETS



CERTIFIED BY Gary M Bierwirth (PROFESSIONAL ENGINEER) REG. NO. 19917 DATE 4/10/95

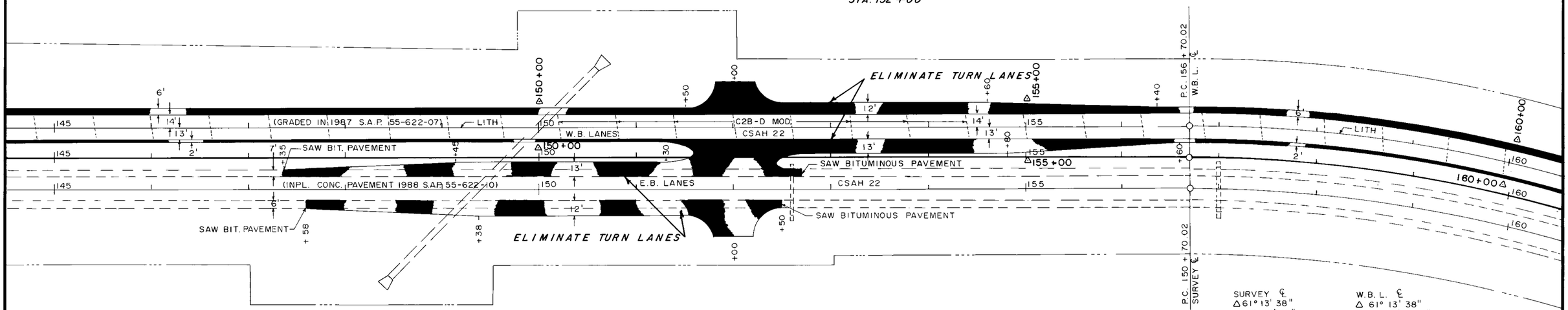
~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED CO. **Sheet No.** 37 **of** 59 **Sheets**

NOTE: C2B-D MOD. CONTRACTION JOINTS SHOWN ARE THE JOINTS LOCATED BETWEEN THE 17' & 13' PANELS. ROTATION OF JOINTS TO BE AT 13', 16', 14' & 17'.

℄ CULV. STA. 150+00
CONST. 60' OF REINF. PANELS
STA. 149 + 70 TO STA. 150 + 30.

~~CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS TURN LANE & APPROACH STA. 151+50 TO 156+40 LT. OF W.B. LANES.~~
CONST. SHLD. RT. & LT. W.B. LANES

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS ~~TURN LANE &~~ X-ING.
~~STA. 151+30 TO 156+60 RT.~~ OF W.B. LANES.
STA. 152+00



~~REMOVE 416 SQ.YDS. BITUMINOUS PAVEMENT STA. 147+35 TO 152+70 LT. OF E.B. LANES.~~

CONST. 6" BITUMINOUS PAVEMENT FOR ~~TURN LANE &~~ X-ING
~~STA. 147+35 TO STA. 152+70~~ LT. OF E.B. LANES.
STA. 152+00

~~REMOVE 328 SQ.YDS. BITUMINOUS PAVEMENT STA. 147+58 TO 152+50 RT. OF E.B. LANES.~~

~~CONST. 6" BITUMINOUS PAVEMENT FOR TURN LANE & APPROACH. STA. 147+58 TO 152+50 RT. OF E.B. LANES.~~

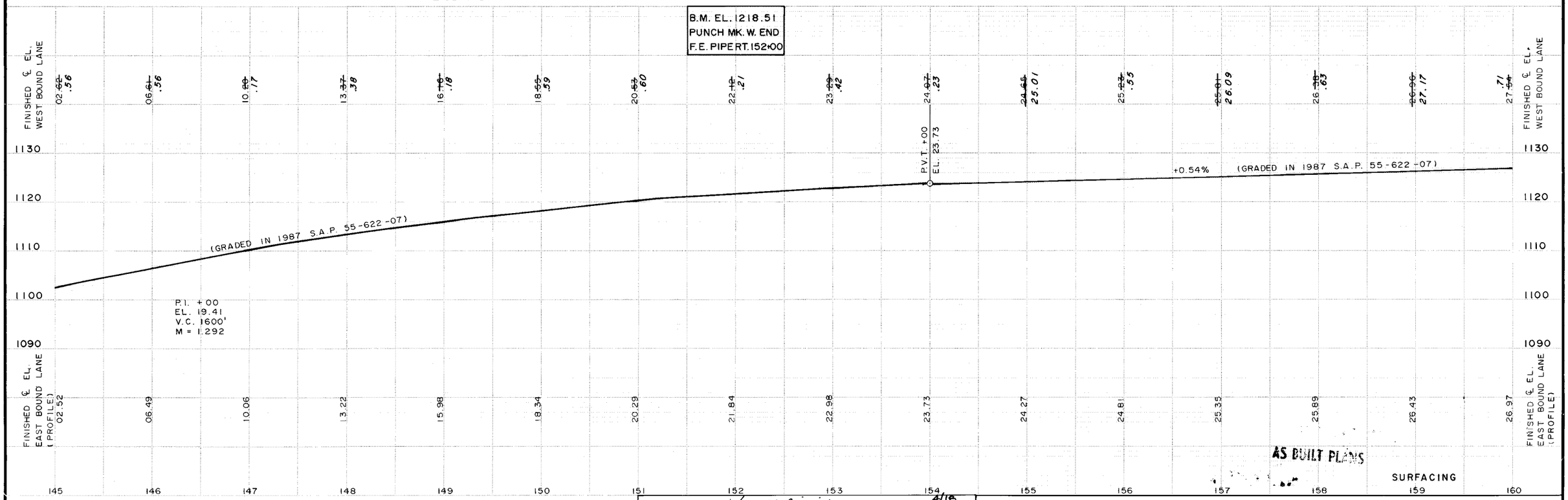
NOTE: CONST. CORRUGATED P.E. PERFORATED PIPE LEFT & RIGHT OF W.B. LANES. SEE PLAN SHEET NO. 3 FOR EDGE DRAIN DETAIL.

SURVEY ℄
Δ 61° 13' 38"
D = 4° 00' 00"
R = 1432.394'
L = 1530.68'
T = 847.575'

W.B.L. ℄
Δ 61° 13' 38"
D = 3° 54' 45.3"
R = 1464.394'
L = 1564.876'
T = 866.51'

△ DENOTES TILE OUTLETS

B.M. EL. 1218.51
PUNCH MK. W. END
F.E. PIPE RT. 152+00



AS BUILT PLANS

SURFACING

CERTIFIED BY Kayne M Bieniek (PROFESSIONAL ENGINEER) REG. NO. 19917 4/18 19 95

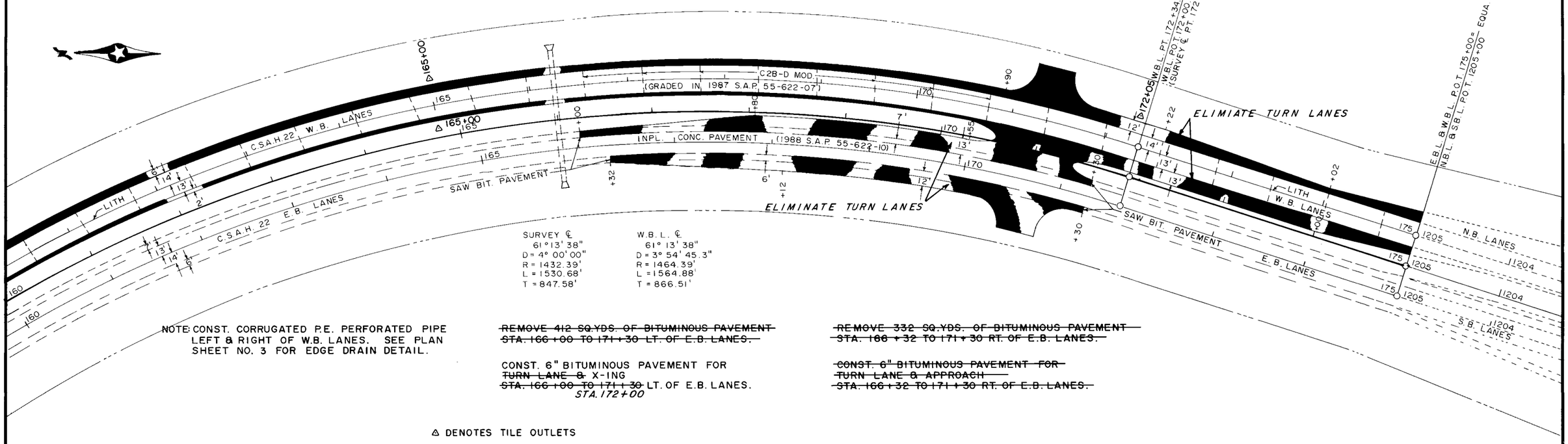
~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED CO. **Sheet No.** 38 **of** 59 **Sheets**

NOTE: C2B-D MOD. CONTRACTION JOINTS SHOWN ARE THE JOINTS LOCATED BETWEEN THE 17' & 13' PANELS. ROTATION OF JOINTS TO BE AT 13', 16', 14' AND 17'.

℄ CULV. STA. 166 +25
CONST. 26' OF REINF. PANELS
FROM STA. 166+12 TO STA. 166+38

~~CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS TURN LANE & APPROACH STA. 170+90 TO 174+02 LT. OF W.B. LANES.~~
CONST. SHLD. LT. & RT. W.B. LANES

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS ~~TURN LANE &~~ X-ING *STA. 172+00* ~~STA. 170+55 RT. OF W.B. LANES TO STA. 1204+20 LT. OF N.B. LANES.~~



NOTE: CONST. CORRUGATED P.E. PERFORATED PIPE LEFT & RIGHT OF W.B. LANES. SEE PLAN SHEET NO. 3 FOR EDGE DRAIN DETAIL.

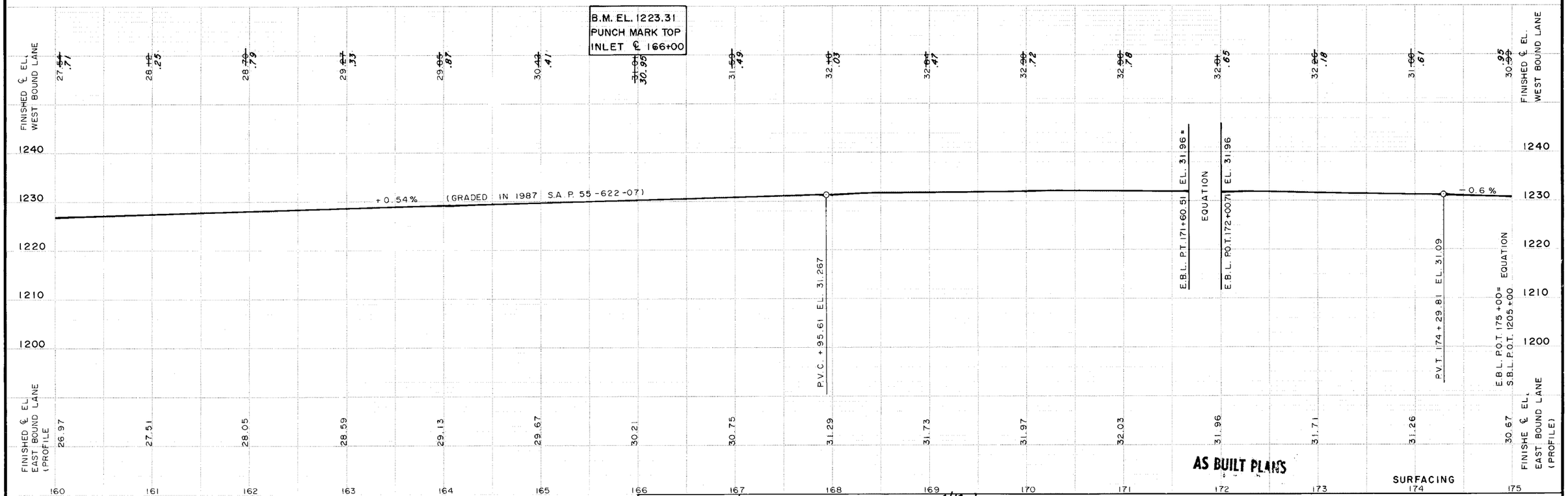
~~REMOVE 412 SQ.YDS. OF BITUMINOUS PAVEMENT STA. 166+00 TO 171+30 LT. OF E.B. LANES.~~

CONST. 6" BITUMINOUS PAVEMENT FOR ~~TURN LANE & X-ING~~ ~~STA. 166+00 TO 171+30~~ LT. OF E.B. LANES.
STA. 172+00

~~REMOVE 332 SQ.YDS. OF BITUMINOUS PAVEMENT STA. 166+32 TO 171+30 RT. OF E.B. LANES.~~

~~CONST. 6" BITUMINOUS PAVEMENT FOR TURN LANE & APPROACH STA. 166+32 TO 171+30 RT. OF E.B. LANES.~~

△ DENOTES TILE OUTLETS



CERTIFIED BY Lane M Bjerneth (PROFESSIONAL ENGINEER) REG. NO. 19917 4/18/95

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED CO. **Sheet No. 39 of 59 Sheets**

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS
RADII LT. & RT. STA. 1065+80 TO 1066 +60 S.B.L.

NOTE: C2B-D MOD. CONTRACTION JOINTS SHOWN ARE THE JOINTS LOCATED BETWEEN THE 17' & 13' PANELS. ROTATION OF JOINTS TO BE AT 13', 16', 14', AND 17'.

℄ CULV. N.B.L. STA. 1074 +75
CONST. 8' REINF. PANEL
STA. 1074 + 71 TO 1074 +79.

UNIVERSITY CENTER ENT. LT. STA. 1075 + 50
CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS
TURN LANE & APPROACH
STA. 1074 +70 TO 1080 + 55 LT. OF S.B. LANES.

NOTE: CONST. 27' OF PERMANENT TERMINAL HEADER AT STA. 1065 +80 S.B.L.

NOTE: CONST. E4D-1 EXPANSION JOINT S.B.L. AT STA. 1066 +50.

E.B.L. T.H. 14

W.B.L. T.H. 14

END : S.A.P. 55-622-27
STA. 1065 +80

P.I. 1065 +02.19

50'R +60 +65 +70 +75 +80 +50

E4D-1

6' 14' 13' 2' 32' 2' 13' 14' 6'

17'R +20 +60 +65

1070 +40 +20 1075

C2B-D MOD.

C.S.A.H. 22 S.B.L.

C.S.A.H. 22 N.B.L.

℄ 1074+00 P.O.T. 1074+57.57

1074+00 △

1074+00 △

1074+00 △

12'

17'R +08

100'

NOTE: CONST. E4D-1 EXPANSION JOINT N.B.L. AT STA. 1066 +50.

NOTE: CONST. 27' OF PERMANENT TERMINAL HEADER AT STA. 1065 +80 N.B.L.

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS
TURN LANE & X-ING
STA. 1070 +40 TO 1076 +08 LT. OF N.B. LANES.

NOTE: CONST. CORRUGATED P.E. PERFORATED PIPE LEFT & RIGHT OF N.B. LANES AND S.B. LANES. SEE PLAN SHEET NO. 3 FOR EDGE DRAIN DETAILS.

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS
RADII LT. & RT. STA. 1065 +80 TO 1066 +65. N.B.L.

FINISHED EL. ℄ S.B.L. 67.15 65.60 62.59 58.12 52.90 47.72 42.52 37.57 33.48 30.29 27.78 26.57 26.02 25.72

FINISHED EL. ℄ N.B.L. 66.67 65.39 62.52 58.12 52.90 47.72 42.52 37.57 33.48 30.29 27.78 26.57 26.02 25.72

FINISHED EL. 19'RT. OF SURVEY ℄ (PROFILE) +80 66.57 66.49 65.19 62.32 57.92 52.70 47.52 42.32 37.37 33.28 30.09 27.53 26.37 25.82 25.52

1060 1050 1040 1030

-0.5%

P.V.C. +00 EL. 66.47

P.I. +50
EL. 1065.12'
300' V.C.
M = 1.7625

P.V.T. +00 EL. 57.92

-5.2%

P.V.C. +25 EL. 41.02

P.I. +00
EL. 1026.72
550' V.C.
M = 3.36875

P.V.T. +75 EL. 25.895

-0.3 %

1065 1066 1067 1068 1069 1070 1071 1072 1073 1074 1075 1076 1077 1078 1079

AS BUILT PLANS

SURFACING

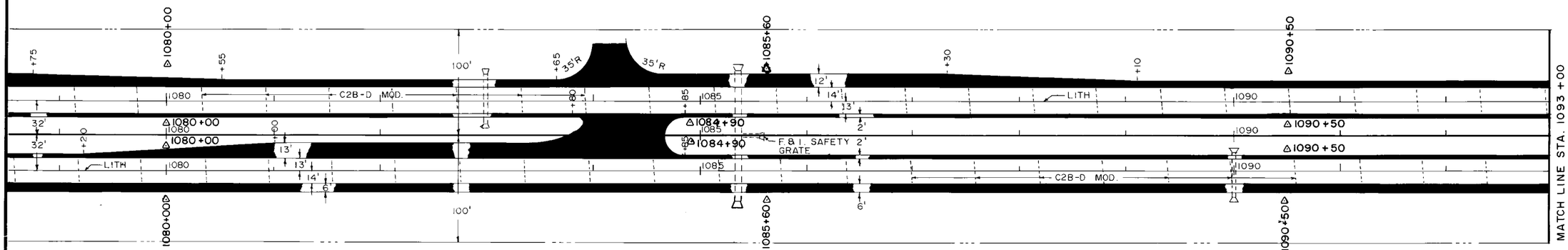
CERTIFIED BY Kaye M Brinick (PROFESSIONAL ENGINEER) REG. NO. 19917 1995 4/18

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED CO. **Sheet No.** 40 **of** 59 **Sheets**

℄ CULV. S.B. LANE STA. 1083+00
CONST. 8' REINF. PANELS
STA. 1082+96 TO 1083+04

℄ CULV. STA. 1085+36
CONST. 12' REINF. PANELS
S.B. LANE
STA. 1085+30 TO 1085+42.

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS
TURN LANE & APPROACH
STA. 1083+65 TO 1089+10 LT. OF S.B. LANES.



NOTE: C2B-D MOD. CONTRACTION JOINTS SHOWN ARE THE JOINTS LOCATED BETWEEN THE 17' & 13' PANELS. ROTATION OF JOINTS TO BE AT 13', 16', 14', AND 17'.

NOTE: CONST. CORRUGATED P.E. PERFORATED PIPE LEFT & RIGHT OF N.B. LANES AND S.B. LANES. SEE PLAN SHEET NO. 3 FOR EDGE DRAIN DETAILS.

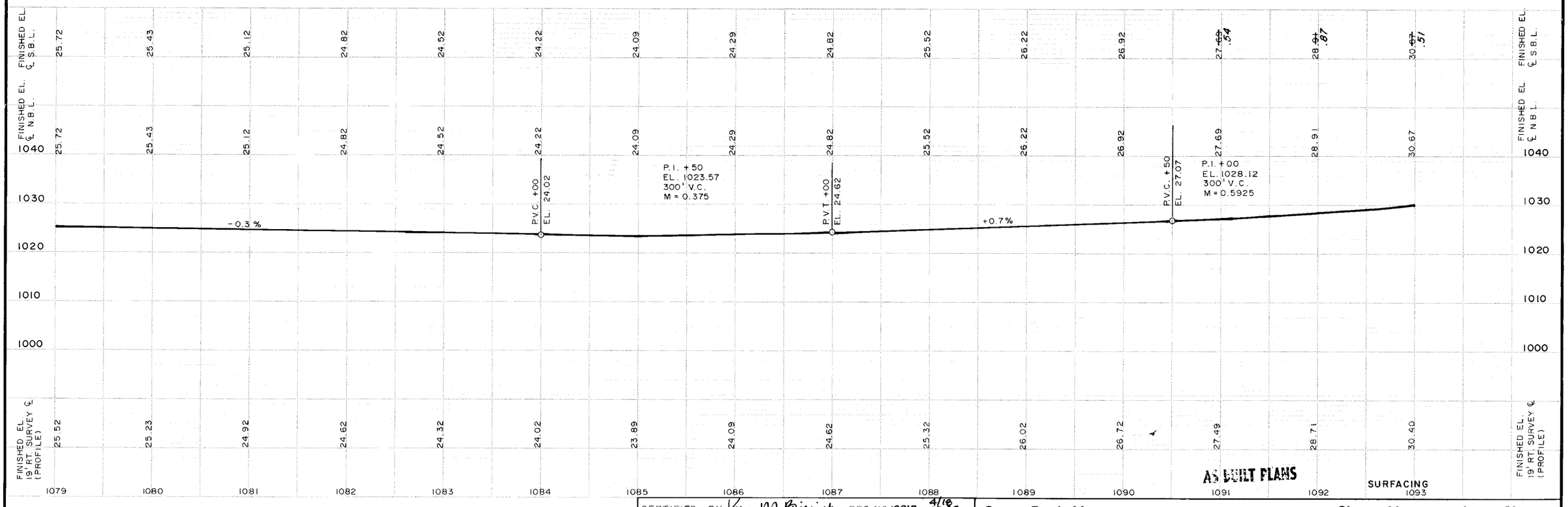
℄ CULV. STA. 1085+36
CONST. 12' REINF. PANEL
N.B. LANE
STA. 1085+30 TO 1085+42

℄ CULV. N.B. LANES STA. 1090+00
CONST. 8' REINF. PANELS
STA. 1089+96 TO 1090+04.

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS
TURN LANE & X-ING
STA. 1079+20 TO 1084+85 LT. N.B. LANES.

F. & I. 1 LIGHT DUTY SAFETY GRATE
FOR 18" R.C. APRON AT MEDIAN
STA. 1085+36 (HEAVY DESIGN, SEE
SHEET 3 FOR DETAIL.)

△ DENOTES TILE OUTLETS



AS BUILT PLANS

CERTIFIED BY Kay M Brienik REG. NO. 19917 4/18 19 95
(PROFESSIONAL ENGINEER)

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED CO. **Sheet No.** 41 **of** 59 **Sheets**

NOTE: C2B-D MOD. CONTRACTION JOINTS SHOWN ARE THE JOINTS LOCATED BETWEEN THE 17' & 13' PANELS. ROTATION OF JOINTS TO BE AT 13', 16', 14', AND 17'.

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS TURN & X-ING
STA. 1094 + 80 TO STA. 1101 +00 LT. N.B. LANES.

℄ CULV. EXIT LOOP "A" STA. 2049 +95
CONST. 14' REINF. PANEL STA. 2049 +88 TO STA. 2050 +02.

℄ CULV. EXIT LOOP "B" 1098 +80
CONST. 16' REINF. PANEL STA. 1098 + 72 TO 1098 +88.

NOTE: REMOVE 366 SQ.YDS. BITUMINOUS PAVEMENT STA. 1100 +50 TO 1105 +20 RT. OF S.B. LANES.

CONST. 6" BITUMINOUS PAVEMENT FOR TURN LANE & X-ING
STA. 1099 + 30 TO 1105 +20 RT. OF S.B. LANES.

S.B. ℄	SURVEY ℄	N.B. ℄
P.I. 1107 + 70.39	P.I. 1107 + 76.45	P.I. 1107 + 82.52
Δ 21° 27' 55"	Δ 21° 27' 55"	Δ 21° 27' 55"
D - 0° 45' 11.4"	D - 0° 45' 00"	D - 0° 44' 48.7"
L - 2850.41'	L - 2862.04'	L - 2874.02'
T - 1441.93'	T - 1447.99'	T - 1454.06'
R - 7607.44'	R - 7639.44'	R - 7671.44'

END PAVEMENT S.B. LANE
STA. 1100 +40
DRILL AND GROUT DOWEL BARS.
USE NO. 8 EPOXY COATED REINF. BARS 18" LONG AT 12" C-C SKEWED 20° PLACED WITH APPROVED NON-SHRINK GROUT.

NOTE: CONST. CORRUGATED P.E. PERFORATED PIPE LEFT & RIGHT OF N.B. LANES AND S.B. LANES. SEE PLAN SHEET NO. 3 FOR EDGE DRAIN DETAIL.

℄ CULV. EXIT LOOP "C" STA. 2051 +75
CONST. 14' REINF. PANEL
STA. 2051 +68 TO STA. 2051 +82.

℄ CULV. N.B. LANE STA. 1100 +90
CONST. 14' REINF. PANEL
STA. 1100 +83 TO STA. 1100 +97.

INSET "A"

L2KTH LENGTH OF TAPER

PLACE NO.4 BARS ALONG EACH EDGE OF PAVEMENT WHERE THE TAPER IS LESS THAN 6 FEET.

INSET "B"

2-NO.4 BAR 2'-6" 6" APART

L2KTH

① PLACE NO.4 BARS ALONG EACH EDGE OF PAVEMENT WHERE TAPER IS LESS THAN 4'.

Δ DENOTES TILE OUTLETS

MATCH LINE STA. 1093 +00

P.C. 1093+28.46

Δ 1095+25

SEE INSET "A"

SEE INSET "B"

LOOP "A"

LOOP "B"

LOOP "C"

LITH

L2KTH

C2B-D MOD.

INPL. CONC. PAVEMENT (1988)

(1988 S.A.P. 55-622-10)

INPL. BIT. PAVEMENT

INPL. LOOP

CSAH 22

CSAH 9

SURVEY ℄

℄ S.B.L.

℄ N.B.L.

P.I. 2050+31.56
Δ 79° 14' 38"
T - 198.70'
L - 331.94'
R - 240'
E - 74.58'
D - 23° 52' 24"
EXIT LOOP "A"

P.O.C. 1097 + 47.40 =
P.T. 2051 + 64.80

(CSAH 22)
P.O.C. 1100+06.33 =
P.O.T. 2050+94.38
Δ (CSAH 9)

P.I. 1099+19.60
Δ 80° 44' 47"
T - 204.06'
L - 338.23'
R - 240.05'
D - 23° 52' 24"
EXIT LOOP "B"

(CSAH 22)
P.T. 1100 + 53.77 =

P.O.T. 2053+83.80
(CSAH 9)

P.I. 2052+17.65
Δ 75° 03' 36"
T - 177.78'
L - 306.03'
E - 58.68'
R - 240'
D - 23° 52' 24"
EXIT LOOP "C"

(CSAH 9)
P.T. 2053 +45.90

(CSAH 9)
P.C. 2050 + 39.87 =
P.O.C. 1102 + 37.04
(CSAH 22)

(CSAH 9)
P.C. 2048 +32.86

P.I. 2051 + 78.11

Δ 1095+25
Δ 1101 +10
Δ 1101 +00
Δ 1105 +00

SEE INSET "A"
SEE INSET "B"

	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108
FINISHED EL. ℄ S.B.L.		30.67 .91	32.68	34.96	37.22	39.41	40.96	41.77	41.32 +71	41.10 +40						
FINISHED EL. ℄ N.B.L.		30.67	32.88	34.96 .59	37.44	39.65	41.37	42.56	43.22 +71	42.81 +40	42.99	43.69	44.61	45.61	46.61 .62 / 47.61 .63 / 48.61 .63	49.62 .64
FINISHED EL. 19' RT. OF SURVEY ℄ (PROFILE)		30.47	32.68	34.96	37.24	39.45	41.17	42.33	42.83 +71	42.42 +40	42.79	43.50	44.41	45.41	46.41 / 47.41 / 48.41	49.41

P.V.T. +50 EL. 31.54
+ 2.29 %
P.V.C. +50 EL. 38.38
P.I. +00 EL. 1041.8 300' V.C. M = 0.63
P.V.T. +50 EL. 42.70
+0.60%
+0.62 %
P.V.C. +00 EL. 42.79
P.I. +00 EL. 1043.41 200' V.C. M = 0.095
P.V.T. +00 EL. 44.41
+ 1.0 %

1050 / 1040 / 1030

AS-BUILT PLANS

SURFACING

CERTIFIED BY Lowell M Bierwirth (PROFESSIONAL ENGINEER) REG. NO. 19917 4/18 19 95

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED CO. **Sheet No. 42 of 59 Sheets**

NOTE: C2B-D MOD. CONTRACTION JOINTS SHOWN ARE THE JOINTS LOCATED BETWEEN THE 17'& 13' PANELS. ROTATION OF JOINTS TO BE AT 13', 16', 14', AND 17'.

(CSAH 22)
P.O.C. 1102+37.04=
P.C. 2050+39.87
(CSAH 9)

C2B-D MOD.

L = 1162

(CSAH 9)
P.O.T. 2050+94.38=
P.O.C. 1100+06.33
(CSAH 22)

INPL. CONC. 1988 SAP 55-622-10

LOOP "C"
P.I. 2051+79.11
Δ LT. 0°53'35"
D-23°52'24"
T-75.03
L-150.02
R-240.00
E-1.17
P.I. 2055+58.11
Δ LT. 1°50'30"
P.T. 2053+45.90
(CSAH 9)

SEE INSET "C"
SEE INSET "D"

CSAH 9 INPL. BITUMINOUS SURFACE

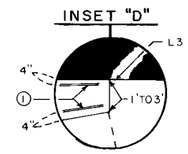
C2B-D MOD

LOOP "A"
P.I. 2050+31.56
Δ 19°41'38"
T-198.70
L-331.94
R-240.00
D-23°52'24"
(CSAH 9)
P.C. 2048+32.86

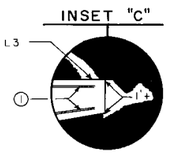
LOOP "B"
P.I. 1099+19.60
Δ 80°44'47"
T-204.06
L-338.23
R-240.00
E-75.03
D-23°52'24"
(CSAH 22)
P.T. 1100+53.77=
P.O.T. 2053+83.80
(CSAH 9)

CSAH 22

INSET "D"



INSET "C"



① PLACE NO.4 BARS ALONG EACH EDGE OF PAVEMENT WHERE TAPER IS LESS THAN 4'.

(CSAH 9)
PT. 2051+64.80=
P.O.C. 1097+47.40
(CSAH 22)

(CSAH 9)
PT. 2053+45.90

(PROFILE)
FINISHED EL.
SOUTH EDGE BIT.
CSAH 9

36.59 39.59 40.30 41.32 43.22 45.31 48.31

+48.38 +62.38 +26.38

℄ S.B.L. ℄ N.B.L.

+3.0% +3.0%

1060 1050 1040 1030 1020

2049 2050 2051 2052 2053

AS BUILT PLANS

SURFACING

CERTIFIED BY Gary M Bienick (PROFESSIONAL ENGINEER) REG. NO. 19917 4/18 1995

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED CO. **Sheet No.** 43 **of** 59 **Sheets**

NOTE: C2B-D MOD. CONTRACTION JOINTS SHOWN ARE THE JOINTS LOCATED BETWEEN THE 17', & 13' PANELS. ROTATION OF JOINTS TO BE AT 13', 16', 14', AND 17'.

NOTE: CONST. CORRUGATED P.E. PERFORATED PIPE LEFT & RIGHT OF N.B. LANES. SEE PLAN SHEET NO. 3 FOR EDGE DRAIN DETAIL.

SURVEY ℄
P.I. 1107 + 76.45
Δ 21° 27' 55"
D - 0° 45' 00"
L - 2862.04'
T - 1447.99'
R - 7639.44'

N.B.L. ℄
P.I. 1107 + 82.52
Δ 21° 27' 55"
D - 0° 44' 48.7"
L - 2874.02'
T - 1454.06'
R - 7671.44'

SURVEY ℄ P.T. 1121 + 90.50
N.B.L. ℄ P.T. 1122 + 02.48 = EQUATION
N.B.L. ℄ P.O.T. 1121 + 90.50

1108 1110 1110 1108 1108 1110 1110 1108

INPL. S.B.L. CSAH 22

Δ 1110 + 00

Δ 1110 + 00

2' 13' 14' 6'

(S.B.L. & N.B.L. WERE GRADED IN 1986-87 UNDER S.A.P. 55-622-07)

N.B.L. CSAH 22

+45

1115 (PAVED IN 1988 UNDER S.A.P. 55-622-10)

1115 1115 1115

LITH C2B-D MOD.

1120 1120 1120

Δ 1120 + 00

Δ 1120 + 00

F.E. RT. STA. 1113 + 45
NO CONSTRUCTION REQ'D.

℄ CULV. STA. 1115 + 06
CONST. 16' OF REINF. PANELS
STA. 1114 + 98 TO 1115 + 14 N.B. LANES.

Δ DENOTES TILE OUTLETS

FINISHED EL. ℄ N.B. LANE

49.~~62~~ .64 | 50.~~62~~ .64 | 51.~~63~~ .64 | 52.~~63~~ .65 | 53.~~66~~ .65 | 54.~~66~~ .59 | 55.~~10~~ .15 | 55.~~23~~ .30 | 54.~~91~~ 55.02 | 54.~~24~~ .33 | 53.~~10~~ .22 | 51.~~61~~ .68 | 49.~~60~~ .73 | 47.~~33~~ .36 | 44.58 | 41.~~57~~ .49

1060
1050
1040

P.V.C. + 24.32
EL. 53.48

+1.09%

(N.B.L. & S.B.L. GRADED IN 1986-87 UNDER S.A.P. 55-622-07)

P.I. + 24.32
EL. 1058.93
1000' V.C.
M = 5.2375

STA. 1121 + 83.0 = EQUATION
STA. 1121 + 90.5

S.B.L.

P.V.T. + 31.82
EL. 43.43

-3.1%

1060
1050
1040

FINISHED EL. 12' RT. ℄ S.B. LANE (PROFILE)

48.86 | 49.95 | 51.04 | 52.13 | 53.22 | 54.19 | 54.75 | 54.90 | 54.62 | 53.93 | 52.82 | 51.28 | 49.33 | 46.96 | 44.40 | 41.32

FINISHED EL. 12' RT. ℄ S.B. LANES (PROFILE)

1108 1109 1110 1111 1112 1113 1114 1115 1116 1117 1118 1119 1120 1121 1122 1123

AS BUILT PLANS

SURFACING

CERTIFIED BY Kaye M Bienick (PROFESSIONAL ENGINEER) REG. NO. 19917 19 4/18/95

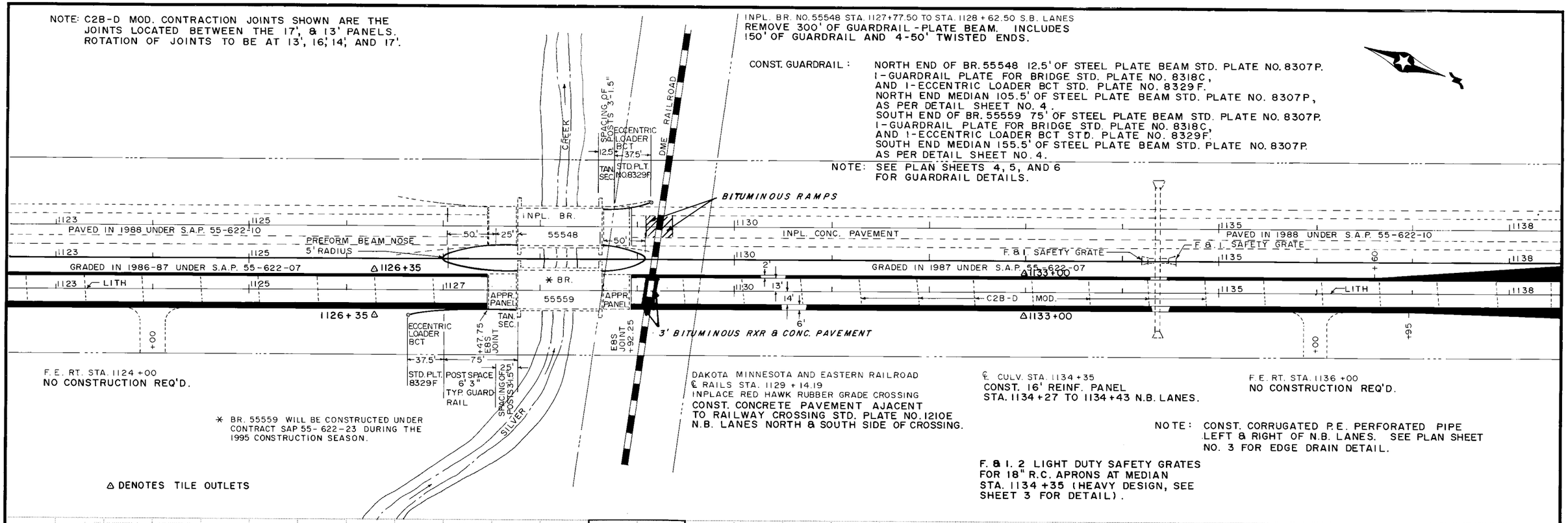
~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED CO. **Sheet No.** 44 **of** 59 **Sheets**

NOTE: C2B-D MOD. CONTRACTION JOINTS SHOWN ARE THE JOINTS LOCATED BETWEEN THE 17', & 13' PANELS. ROTATION OF JOINTS TO BE AT 13', 16', 14', AND 17'.

INPL. BR. NO. 55548 STA. 1127+77.50 TO STA. 1128 + 62.50 S.B. LANES
REMOVE 300' OF GUARDRAIL - PLATE BEAM. INCLUDES 150' OF GUARDRAIL AND 4-50' TWISTED ENDS.

CONST. GUARDRAIL : NORTH END OF BR. 55548 12.5' OF STEEL PLATE BEAM STD. PLATE NO. 8307P.
1-GUARDRAIL PLATE FOR BRIDGE STD. PLATE NO. 8318C,
AND 1-ECCENTRIC LOADER BCT STD. PLATE NO. 8329F.
NORTH END MEDIAN 105.5' OF STEEL PLATE BEAM STD. PLATE NO. 8307P,
AS PER DETAIL SHEET NO. 4
SOUTH END OF BR. 55559 75' OF STEEL PLATE BEAM STD. PLATE NO. 8307P.
1-GUARDRAIL PLATE FOR BRIDGE STD. PLATE NO. 8318C,
AND 1-ECCENTRIC LOADER BCT STD. PLATE NO. 8329F.
SOUTH END MEDIAN 155.5' OF STEEL PLATE BEAM STD. PLATE NO. 8307P.
AS PER DETAIL SHEET NO. 4.

NOTE: SEE PLAN SHEETS 4, 5, AND 6 FOR GUARDRAIL DETAILS.



F. E. RT. STA. 1124 +00
NO CONSTRUCTION REQ'D.

* BR. 55559 WILL BE CONSTRUCTED UNDER CONTRACT SAP 55-622-23 DURING THE 1995 CONSTRUCTION SEASON.

△ DENOTES TILE OUTLETS

DAKOTA MINNESOTA AND EASTERN RAILROAD
℄ RAILS STA. 1129 + 14.19
INPLACE RED HAWK RUBBER GRADE CROSSING
CONST. CONCRETE PAVEMENT AJACENT TO RAILWAY CROSSING STD. PLATE NO. 1210E
N.B. LANES NORTH & SOUTH SIDE OF CROSSING.

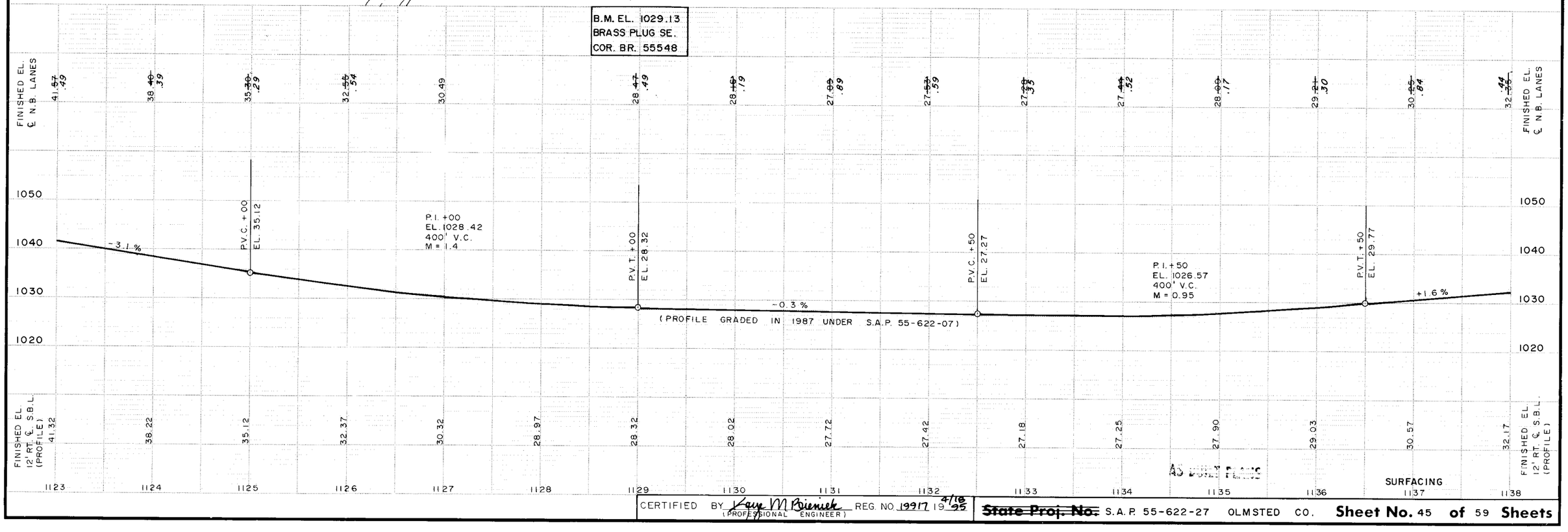
℄ CULV. STA. 1134 + 35
CONST. 16' REINF. PANEL
STA. 1134 +27 TO 1134 +43 N.B. LANES.

F. E. RT. STA. 1136 +00
NO CONSTRUCTION REQ'D.

NOTE: CONST. CORRUGATED P.E. PERFORATED PIPE LEFT & RIGHT OF N.B. LANES. SEE PLAN SHEET NO. 3 FOR EDGE DRAIN DETAIL.

F. & I. 2 LIGHT DUTY SAFETY GRATES FOR 18" R.C. APRONS AT MEDIAN STA. 1134 +35 (HEAVY DESIGN, SEE SHEET 3 FOR DETAIL).

B.M. EL. 1029.13
BRASS PLUG SE.
COR. BR. 55548



AS PER PLANS
SURFACING

CERTIFIED BY Kaye M Bienick (PROFESSIONAL ENGINEER) REG. NO. 19917 19 4/19/95

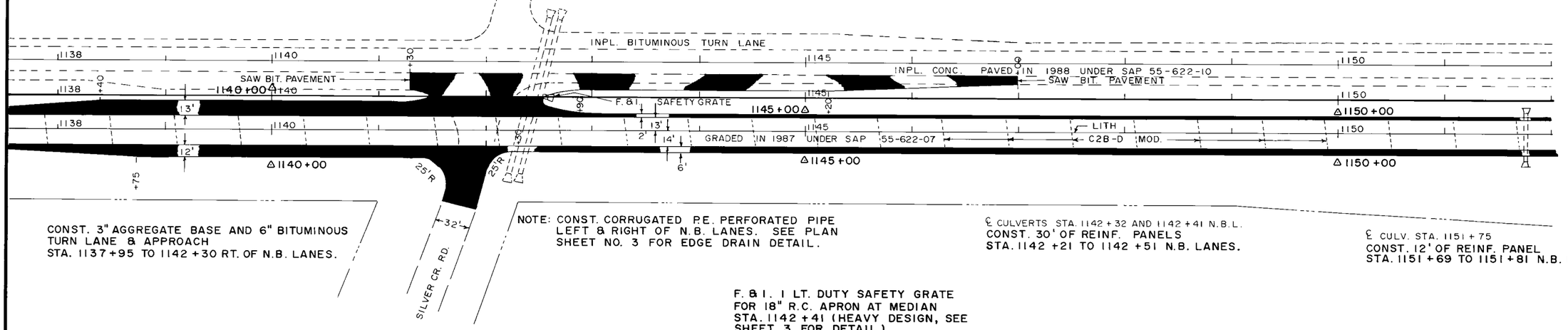
~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED CO. **Sheet No. 45 of 59 Sheets**

REMOVE 986 SQ.YDS. OF BITUMINOUS PAVEMENT
STA. 1141+30 TO STA. 1147+00 RT. OF S.B. LANES TO
INCLUDE APPROACH TO SILVER CR. RD. EAST.

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS
TURN LANE & X-ING
STA. 1137+60 TO 1142+90 LT. OF N.B. LANES

CONST. 6" BITUMINOUS PAVEMENT FOR
TURN LANE & X-ING
STA. 1141+30 TO 1147+00 RT. OF S.B. LANES.

NOTE: C2B-D MOD. CONTRACTION JOINTS SHOWN ARE THE
JOINTS LOCATED BETWEEN THE 17', & 13' PANELS.
ROTATION OF JOINTS TO BE AT 13', 16', 14', & 17'.



NOTE: CONST. CORRUGATED P.E. PERFORATED PIPE
LEFT & RIGHT OF N.B. LANES. SEE PLAN
SHEET NO. 3 FOR EDGE DRAIN DETAIL.

℄ CULVERTS STA. 1142+32 AND 1142+41 N.B.L.
CONST. 30' OF REINF. PANELS
STA. 1142+21 TO 1142+51 N.B. LANES.

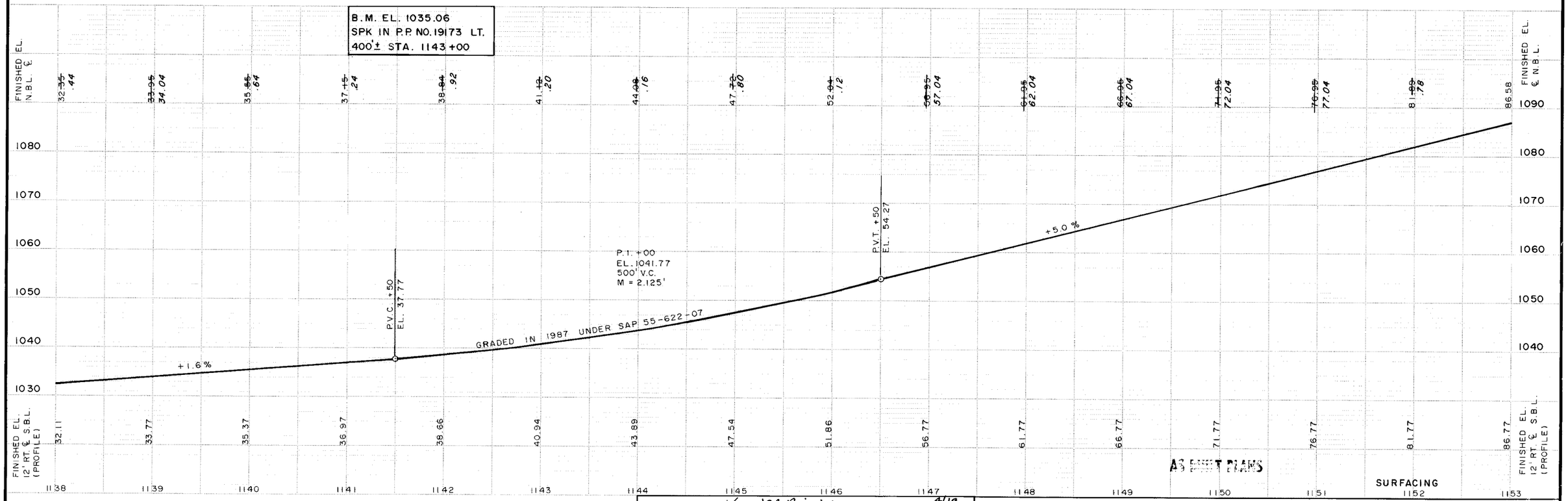
℄ CULV. STA. 1151+75
CONST. 12' OF REINF. PANEL
STA. 1151+69 TO 1151+81 N.B. LANES.

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS
TURN LANE & APPROACH
STA. 1137+95 TO 1142+30 RT. OF N.B. LANES.

F.&I. 1 LT. DUTY SAFETY GRATE
FOR 18" R.C. APRON AT MEDIAN
STA. 1142+41 (HEAVY DESIGN, SEE
SHEET 3 FOR DETAIL).

△ DENOTES TILE OUTLETS

B.M. EL. 1035.06
SPK IN P.P. NO. 19173 LT.
400'± STA. 1143+00



AS BUILT PLANS

SURFACING

CERTIFIED BY Kaye M Bienick REG. NO. 19917 4/19/95
(PROFESSIONAL ENGINEER)

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED CO. **Sheet No. 46 of 59 Sheets**

NOTE: C2B-D MOD. CONTRACTION JOINTS SHOWN ARE THE JOINTS LOCATED BETWEEN THE 17' & 13' PANELS ROTATION OF JOINTS TO BE AT 13', 16', 14', AND 17'.

SURVEY ℄
P.I. 1156 +48.77
Δ 09°00' 11"
D - 1° 15' 00"
L - 720.24'
T - 360.86'
R - 4583.66'

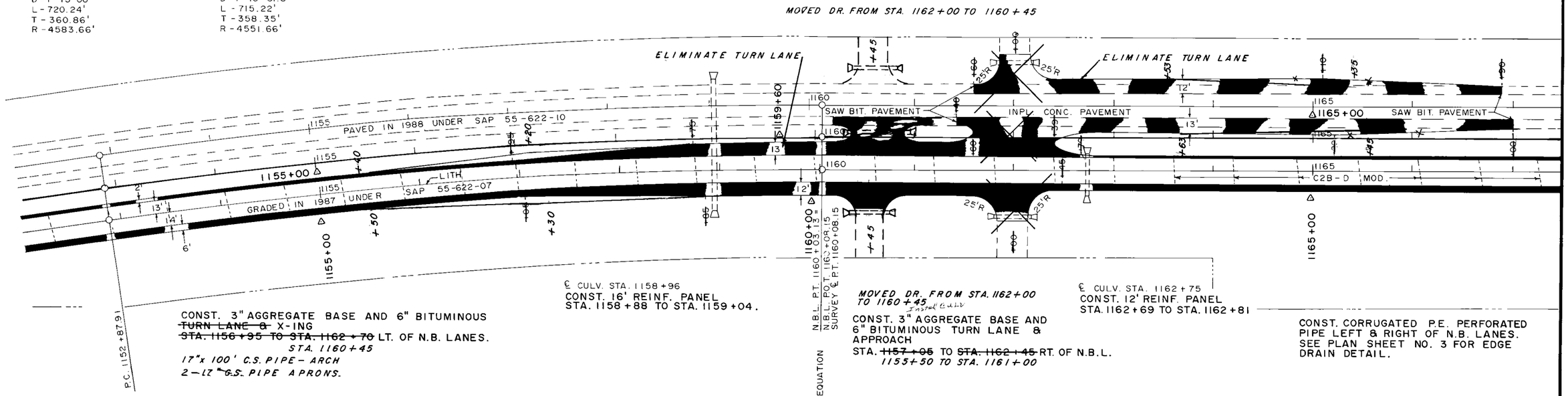
N.B.L. ℄
P.I. 1156+46.26
Δ 09° 00' 11"
D - 1° 15' 31.6"
L - 715.22'
T - 358.35'
R - 4551.66'

~~REMOVE 353 SQ.YDS. OF BITUMINOUS PAVEMENT STA. 1161+60 TO STA. 1166+90 LT. OF S.B. LANES.~~

~~CONST. 6" BITUMINOUS PAVEMENT FOR TURN LANE & APPROACH STA. 1161+60 TO STA. 1166+90 LT. OF S.B. LANES.~~

REMOVE 436 SQ.YDS. OF BITUMINOUS PAVEMENT STA. 1161+40 TO STA. 1167+00 RT. OF S.B. LANES.

CONST. 6" BITUMINOUS PAVEMENT FOR TURN LANE & X-ING
STA. ~~1161+40~~ 1159+85 TO STA. ~~1167+00~~ 1165+45 RT. OF S.B. LANES.



CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS ~~TURN LANE &~~ X-ING
~~STA. 1156+95 TO STA. 1162+70~~ STA. 1160+45 LT. OF N.B. LANES.
17"x 100' C.S. PIPE-ARCH
2-17" ~~C.S.~~ PIPE APRONS.

℄ CULV. STA. 1158+96
CONST. 16' REINF. PANEL
STA. 1158+88 TO STA. 1159+04.

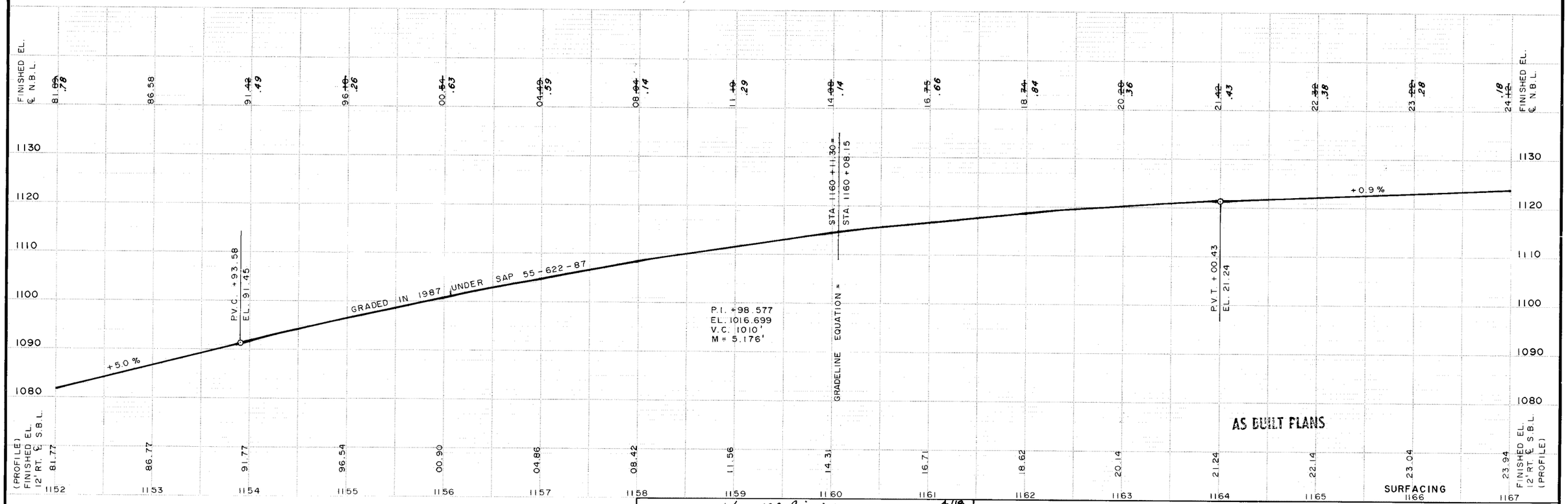
MOVED DR. FROM STA. 1162+00 TO 1160+45 Install Culv

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS TURN LANE & APPROACH
STA. ~~1157+05~~ 1155+50 TO ~~STA. 1162+45~~ STA. 1161+00 RT. OF N.B.L.

℄ CULV. STA. 1162+75
CONST. 12' REINF. PANEL
STA. 1162+69 TO STA. 1162+81

CONST. CORRUGATED P.E. PERFORATED PIPE LEFT & RIGHT OF N.B. LANES. SEE PLAN SHEET NO. 3 FOR EDGE DRAIN DETAIL.

Δ DENOTES TILE OUTLETS



NOTE: C2B-D MOD. CONTRACTION JOINTS SHOWN ARE THE JOINTS LOCATED BETWEEN THE 17' & 13' PANELS. ROTATION OF JOINTS TO BE AT 13', 16', 14', AND 17'.

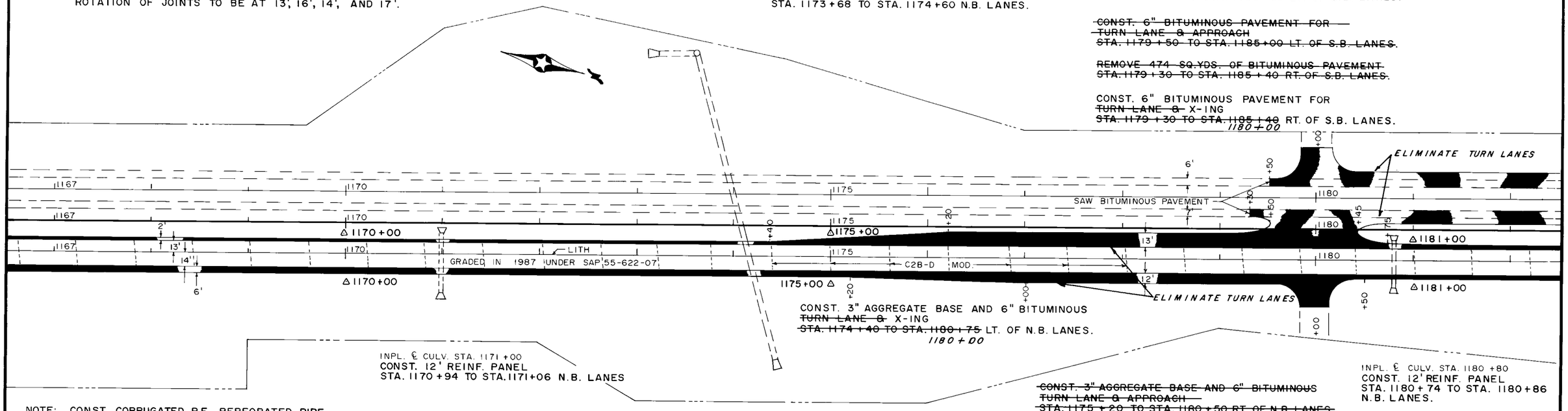
INPL. ℄ CULV. STA. 1174+14 SKEWED 15°
CONST. 92' OF REINF. PANELS
STA. 1173+68 TO STA. 1174+60 N.B. LANES.

~~REMOVE 367 SQ.YDS. BITUMINOUS PAVEMENT~~
~~STA. 1179+50 TO STA. 1185+00 LT. OF S.B. LANES.~~

~~CONST. 6" BITUMINOUS PAVEMENT FOR TURN LANE & APPROACH~~
~~STA. 1179+50 TO STA. 1185+00 LT. OF S.B. LANES.~~

~~REMOVE 474 SQ.YDS. OF BITUMINOUS PAVEMENT.~~
~~STA. 1179+30 TO STA. 1185+40 RT. OF S.B. LANES.~~

CONST. 6" BITUMINOUS PAVEMENT FOR
~~TURN LANE &~~ X-ING
~~STA. 1179+30 TO STA. 1185+40~~ RT. OF S.B. LANES.
1180+00



CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS
~~TURN LANE &~~ X-ING
~~STA. 1174+40 TO STA. 1180+75~~ LT. OF N.B. LANES.
1180+00

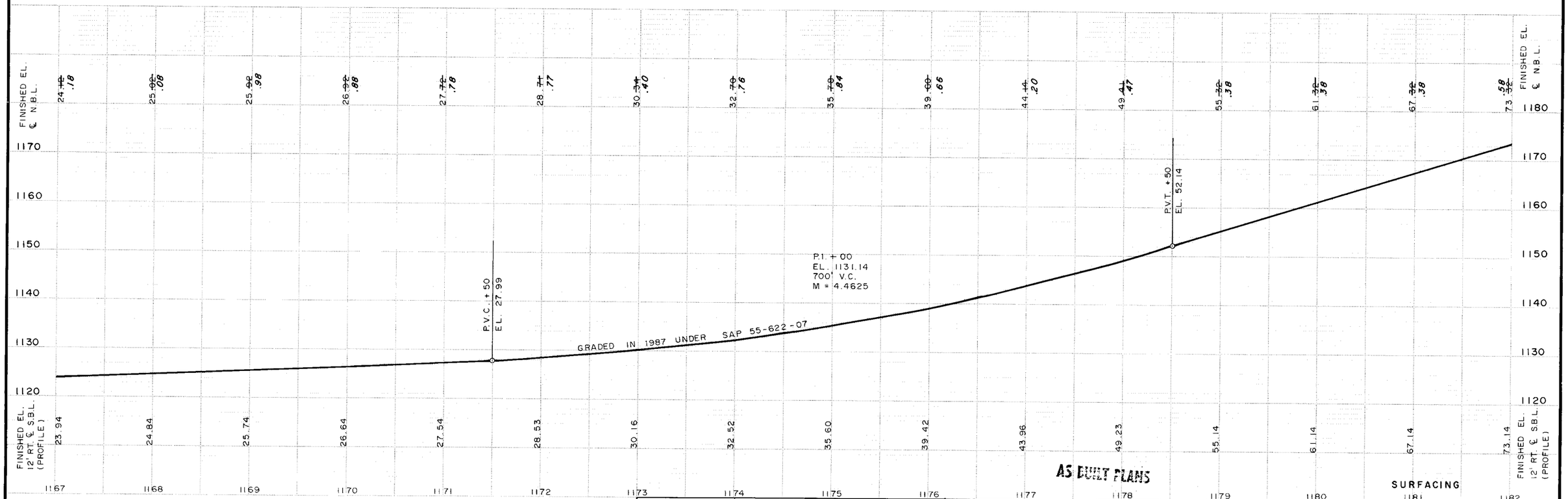
INPL. ℄ CULV. STA. 1171+00
CONST. 12' REINF. PANEL
STA. 1170+94 TO STA. 1171+06 N.B. LANES

~~CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS TURN LANE & APPROACH~~
~~STA. 1175+20 TO STA. 1180+50 RT. OF N.B. LANES.~~

INPL. ℄ CULV. STA. 1180+80
CONST. 12' REINF. PANEL
STA. 1180+74 TO STA. 1180+86
N.B. LANES.

NOTE: CONST. CORRUGATED P.E. PERFORATED PIPE LEFT & RIGHT OF N.B. LANES. SEE PLAN SHEET NO. 3 FOR EDGE DRAIN DETAIL.

△ DENOTES TILE OUTLETS



AS BUILT PLANS

SURFACING

CERTIFIED BY Kaye M Brinich (PROFESSIONAL ENGINEER) REG. NO. 19917 4/18 19 95

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED CO. **Sheet No. 48 of 59 Sheets**

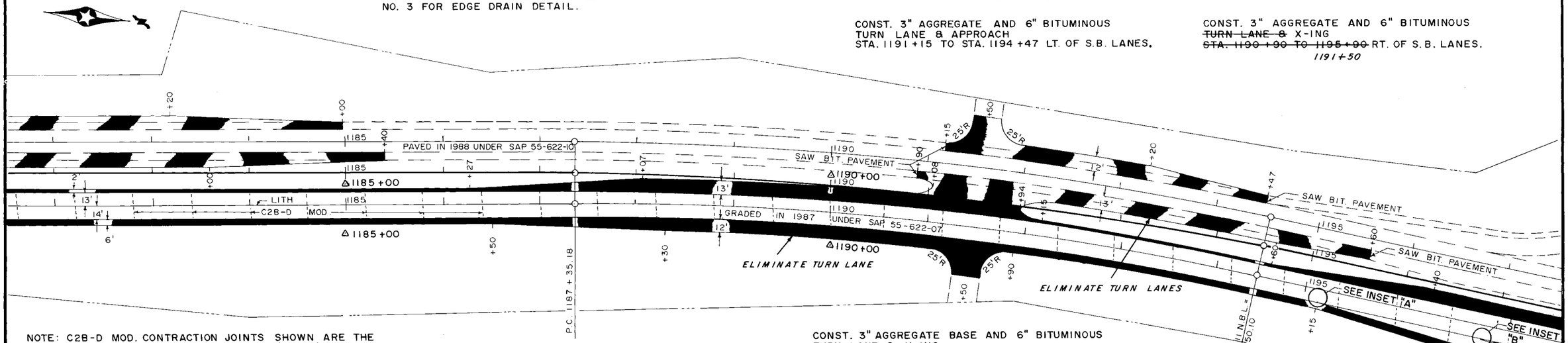
NOTE: CONST. CORRUGATED P.E. PERFORATED PIPE LEFT & RIGHT OF N.B. LANES. SEE PLAN SHEET NO. 3 FOR EDGE DRAIN DETAIL.

REMOVE 221 SQ.YDS. OF BITUMINOUS PAVEMENT STA. 1191+15 TO STA. 1194+47 LT. OF S.B. LANES.

CONST. 3" AGGREGATE AND 6" BITUMINOUS TURN LANE & APPROACH STA. 1191+15 TO STA. 1194+47 LT. OF S.B. LANES.

~~REMOVE 389 SQ.YDS. OF BITUMINOUS PAVEMENT STA. 1190+90 TO 1195+90 RT. OF S.B. LANES.~~

CONST. 3" AGGREGATE AND 6" BITUMINOUS ~~TURN LANE &~~ X-ING ~~STA. 1190+90 TO 1195+90~~ RT. OF S.B. LANES. 1191+50



NOTE: C2B-D MOD. CONTRACTION JOINTS SHOWN ARE THE JOINTS LOCATED BETWEEN THE 17', & 13' PANELS. ROTATION OF JOINTS TO BE AT 13', 16', 14', AND 17'.

CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS TURN LANE & X-ING STA. 1186+27 TO STA. 1192+15 LT. OF N.B. LANES.

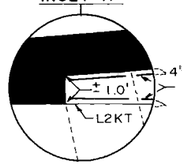
~~CONST. 3" AGGREGATE BASE AND 6" BITUMINOUS TURN LANE & APPROACH STA. 1186+50 TO STA. 1191+90 RT. OF N.B. LANES.~~

Δ DENOTES TILE OUTLETS

SURVEY ℄
P.I. 1190+93.75
Δ 12° 30' 00"
D-1° 45' 00"
T- 358.57'
L- 714.28'
R- 3274.04'

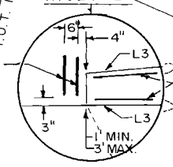
N.B.L. ℄
P.I. 1190+90.24
Δ 12° 30' 00"
D-1° 46' 02.2"
T- 355.06'
L- 707.30'
R- 3242.04'

INSET "A"

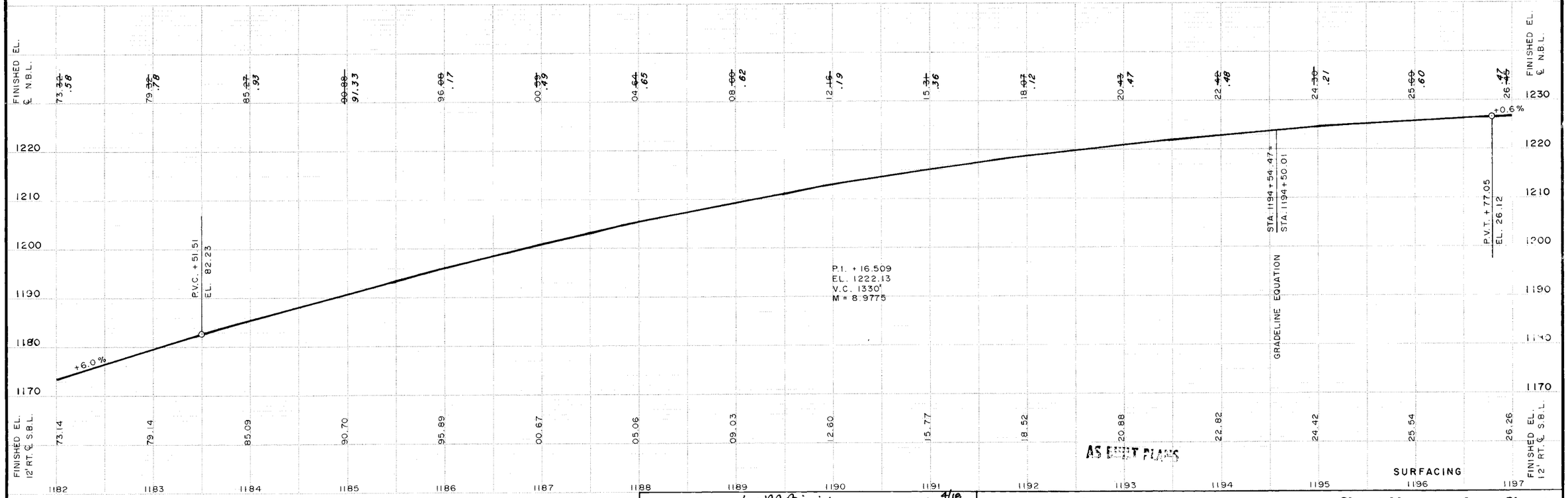


PLACE NO.4 BARS ALONG EACH EDGE OF PAVEMENT WHERE TAPER WIDTH IS LESS THAN 6.0'.

INSET "B"



PLACE NO.4 BARS ALONG EACH EDGE OF PAVEMENT WHERE TAPER WIDTH IS LESS THAN 4.0'.



CERTIFIED BY Kaye M Bienick (PROFESSIONAL ENGINEER) REG. NO. 19917 4/16 1995

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED CO. **Sheet No.** 49 **of** 59 **Sheets**

INSET "A"

INSET "B"

PLACE NO.4 BARS ALONG EACH EDGE OF PAVEMENT WHERE THE TAPER WIDTH IS LESS THAN 6.0'.

PLACE NO.4 BARS ALONG EACH EDGE OF PAVEMENT WHERE THE TAPER WIDTH IS LESS THAN 4.0'.

NO.4 - 2'6" BARS

EQUATION
S.B.L. P.O.T. 1199+57.16 = S.B.L. P.O.T. 1200+51.87
SURVEY P.O.T. 1199 +61.66 = SURVEY P.O.T. 1200 +56.37
N.B.L. P.O.T. 1199 +66.16 = N.B.L. P.O.T. 1200 +60.87

SURVEY ℄ P.O.T. 1205+00 = SURVEY L P.O.T. 175+00 EQUATION

N.B.L. P.O.T. 1205+00 = W.B.L. P.O.T. 175+00 EQUATION

FULL DEPTH CONC. PAVEMENT

INPL. CONC. PAVEMENT PAVED IN 1988 UNDER SAP 55-622-07

DRILL & GROUT TIE BARS

C2B-D MOD.

GRADED IN 1987 UNDER SAP 55-622-10

SEE INSET "A"

SEE INSET "B"

L2KT

LITH

SAW

240.53'

0.99'

P.C. 1197+71.42

LOOP "D" P.I. 1199+35.11 Δ RT. 75°59'02" D - 26°52'36" R - 213.19' T - 163.69' L - 282.46' R - 213.19'

LOOP "E" P.I. 1202+02.37 Δ RT. 88°55'30.3" D - 26°52'36" R - 213.18' T - 209.22' L - 330.86'

P.T. 1203+24.01

P.T. 1202+14.30 = P.O.T. 3111+60.64

P.C. 1199+93.15 = P.O.C. 3112+18.84

P.O.C. 3113+34.59

CSAH 2

REMOVE 398 SQ.YDS. OF BITUMINOUS PAVEMENT
STA. 1198+85 TO 1205+40 RT. OF S.B. LANES.

CONST. 6" BITUMINOUS PAVEMENT FOR TURN LANE & X-ING
STA. 1198+85 TO 1205+40 RT. OF S.B. LANES.

REMOVE 287 SQ.YDS. OF BITUMINOUS PAVEMENT
STA. 3109+05 TO 3112+28 RT. OF E.B. LANES CSAH 2

REMOVE 347 SQ.YDS. OF BITUMINOUS PAVEMENT
STA. 3109+05 TO 3112+95 LT. OF W.B. LANES CSAH 2

227
REMOVE ~~144~~ SQ.YDS. OF 9" DOWELED CONC. PAVEMENT
STA. 1199+41 TO 1200+84 INTERSECTION CSAH 22 & CSAH 2
DRILL & GROUT DOWEL BARS FROM STA. 1199+41 TO 1200+84
LT. & RT. AT 12" C-C, SKEWED 20° AND PLACED WITH APPROVED NON-SHRINK GROUT.

INPL. ℄ CULV. STA. 1201+50 N.B.L.
CONST. 8' REINF. PANELS.
STA. 1201+46 TO 1201+54 N.B. LANES.

INPL. ℄ CULV. STA. 1199+00 ENT. LOOP "D"
CONST. 18' REINF. PANELS
STA. 1198+91 TO STA. 1199+09

INPL. ℄ CULV. STA. 1201+75 ENT. LOOP "E"
CONST. 8' REINF. PANELS
STA. 1201+71 TO STA. 1201+79

NOTE: C2B-D MOD. CONTRACTION JOINTS SHOWN ARE THE JOINTS LOCATED BETWEEN THE 17' AND 13' PANELS. ROTATION OF JOINTS TO BE AT 13', 16', 14' AND 17'.

NOTE: CONST. CORRUGATED P.E. PERFORATED PIPE LEFT & RIGHT OF N.B. LANES. SEE PLAN SHEET NO. 3 FOR EDGE DRAIN DETAILS.

FINISHED EL. ℄ N.B.L.
26.45 .47 | ~~27.05~~ 26.88 | .78 27.66 | ~~28.05~~ ~~28.06~~ | ~~28.09~~ 27.76 | 28.00 .60 | 29.40 .45 | 30.00 .29 | 30.68 .95 | ~~30.00~~ | FINISHED EL. ℄ N.B.L.

FINISHED EL. 12' RT. ℄ S.B.L. (PROFILE)
26.26 | 26.86 | 27.46 | 27.84 | 28.09 | 28.69 | 29.29 | 29.89 | 30.49 | 30.79 | FINISHED EL. 12' RT. ℄ S.B.L. (PROFILE)

1240 1230 1220 1210

0.6 %

GRADED IN 1987 UNDER SAP 55-622-07

1197 1198 1199 1201 1202 1203 1204 174+50 174

AS BUILT PLANS

SURFACING

CERTIFIED BY Dave M Bruniek (PROFESSIONAL ENGINEER) REG. NO. 19917 4/18 1995

~~State Proj. No.~~ S.A.P. 55-622-27 OLMSTED CO. Sheet No. 50 of 59 Sheets

(1) TYPE PA-100 FOUNDATION
TYPE A-100-A45-D35-12(DAVIT AT 350°)
POLE AND LUMINAIRE EXTENSION SALVAGED
F. & I. MAST ARM
ONE WAY SIGNAL OVERHEAD END MOUNTED - F. & I.
2 -ONE WAY SIGNAL OVERHEAD MID MAST ARM
MOUNTED AT 12' AND 26' FROM END OF MAST ARM
1 TYPE 20A (POLE MOUNTED 270°) SALVAGED
LUMINAIRE-250 WATT H.P.S. W/P.E.C. - SALVAGED

EXTEND INTO HH. 5:
3" R.S.C.
2 - 12/C #12
1 - 3/C #12(LUM)

(2) TYPE PA-100 FOUNDATION
TYPE A-100-A50-D35-12(DAVIT AT 350°)-SALVAGED
ONE WAY SIGNAL OVERHEAD END MOUNTED - SALVAGED
2-ONE WAY SIGNAL OVERHEAD-MID-MAST ARM
MOUNTED AT 12' AND 24' FROM END OF MAST ARM - SALVAGED
1 TYPE 20B (POLE MOUNTED 270°) - SALVAGED
1 PEDESTRIAN PUSH BUTTON AND SIGN (R10-4C) - SALVAGED
LUMINAIRE - 250 WATT H.P.S. W/P.E.C. - SALVAGED

EXTEND INTO HH. 12:
3" R.S.C.
2 - 12/C #12
1 - 3/C #12
1 - 3/C #12(LUM)

(3) TYPE PA-100 FOUNDATION
TYPE A-100-A45-D35-12 (DAVIT AT 350°)
POLE AND LUMINAIRE EXTENSION SALVAGED
F. & I. MAST ARM
ONE WAY SIGNAL OVERHEAD END MOUNTED - SALVAGED
2 ONE WAY SIGNAL OVERHEAD MID-MAST ARM
MOUNTED AT 14' AND 26' FROM END OF MAST ARM - F. & I.
1 TYPE 20C (POLE MOUNTED 270°) - SALVAGED
2 PEDESTRIAN PUSH BUTTON AND SIGN(R10-4C) - SALVAGED
LUMINAIRE - 250 WATT H.P.S. W/P.E.C. - SALVAGED

EXTEND INTO HH. 17:
3" R.S.C.
2 - 12/C #12
3 - 3/C #12
2 - 3/C #12(LUM)

(B) S.O.P. WOOD POLE - INPLACE
POLE MOUNTED LOADCENTER - INPLACE

LOAD CENTER TO CABINET:
2 - 2" R.S.C. - INPLACE
2 - 1/C #4 (SIGNAL SERVICE) INPLACE
1 - 1/C #6 BARE - INPLACE
4 - 1/C #4 (FLASHER SERVICE) - INPLACE
4 - 1/C #6 (LUM.) - INPLACE

(4) TYPE PA-100 FOUNDATION - INPLACE
TYPE A-100-A45-D35-12 (DAVIT AT 350°) INPLACE
ONE WAY SIGNAL OVERHEAD END MOUNTED - INPLACE
2 -ONE WAY SIGNAL OVERHEAD-MID-MAST ARM
MOUNTED AT 10' AND 23' FROM END OF MAST ARM - INPLACE
1 TYPE 20B (POLE MOUNTED 270°) INPLACE - REVISE HEAD 7-2 FROM 5 SECTION TO 3 SECTION
1 PEDESTRIAN PUSH BUTTON AND SIGN (R10-4C) INPLACE
LUMINAIRE - 250 WATT H.P.S. W/P.E.C. - INPLACE

3" R.S.C. TO HH. 26: - INPLACE
2 - 12/C #12 - INPLACE
1 - 3/C #12 - INPLACE
2 - 3/C #12 (LUM)

(A) EQUIPMENT PAD - INPLACE
CONTROLLER AND CABINET - INPLACE

CABINET TO HH. 26:
4" R.S.C. - INPLACE
2 - 12/C #12 - INPLACE
1 - 3/C #12 - INPLACE
3 - 2/C #14 - INPLACE
2 - 1/C #4 - INPLACE
F. & I. 4 - 12/C #12
F. & I. 2 - 3/C #12
F. & I. 5 - 2/C #14
F. & I. 1 - 3/C #12(LUM)

CABINET TO HH. 1:
2" R.S.C. - INPLACE
1 - 2/C #14 - INPLACE
F. & I. 1 - 2/C #14

CABINET TO HH. 27:
3" R.S.C. - INPLACE
2 - 12/C #12
1 - 3/C #12
6 - 2/C #14
2 - 1/C #4
1 - 3/C #12(LUM)

HH. 1 TO HH. 2:
1 1/4" R.S.C. - INPLACE
1 - 2/C #14 - INPLACE
F. & I. 1 - 2/C #14

HH. 2 TO HH. 3:
1 1/4" R.S.C. - INPLACE
1 - 2/C #14 - INPLACE
F. & I. 1 - 2/C #14

HH. 27 TO HH. 4:
3" R.S.C. - INPLACE
2 - 12/C #12
6 - 2/C #14
2 - 1/C #4 - INPLACE
1 - 3/C #12(LUM)

HH. 4 TO HH. 5:
3" R.S.C.
2 - 12/C #12
5 - 2/C #14
2 - 1/C #4 - R.&R.
1 - 3/C #12(LUM)

HH. 5 TO HH. 6:
3" R.S.C.
5 - 2/C #14
2 - 1/C #4 - R.&R.

HH. 6 TO HH. 7:
2" R.S.C.
2 - 2/C #14
2 - 1/C #4 - R.&R.

HH. 7 TO HH. 8:
2" R.S.C.
2 - 2/C #14
2 - 1/C #4 - R.&R.

HH. 8 TO HH. 9:
2" R.S.C. - INPLACE
2 - 1/C #4 - INPLACE

HH. 9 TO HH. 10:
2" R.S.C. - INPLACE
2 - 1/C #4 - INPLACE

HH. 10 TO FLASHER:
2" R.S.C. - INPLACE
2 - 1/C #4 - INPLACE

HH. 6 TO HH. 11:
3" R.S.C.
1 2/C #14

HH. 12 TO HH. 13:
1 1/4" R.S.C.
2 - 2/C #14

HH. 13 TO HH. 14:
2" R.S.C.
2 - 2/C #14

HH. 14 TO HH. 15:
1 1/4" R.S.C.
2 - 2/C #14

HH. 12 TO HH. 16:
3" R.S.C.
2 - 12/C #12
1 - 3/C #12
2 - 2/C #14
1 - 3/C #12 (LUM)

HH. 16 TO HH. 17:
3" R.S.C.
2 - 12/C #12
1 - 3/C #12
3 - 2/C #14
1 - 3/C #12 (LUM)

HH. 17 TO HH. 18:
3" R.S.C.
4 - 12/C #12
2 - 3/C #12
3 2/C #14
1 - 3/C #12 (LUM)

HH. 18 TO HH. 19:
2" R.S.C.
2 - 2/C #14 - INPLACE (REROUTE)
2 - 1/C #4 - INPLACE (REROUTE)

HH. 19 TO HH. 20:
2" R.S.C. - INPLACE
2 - 2/C #14 - INPLACE
2 - 1/C #4 - INPLACE

HH. 20 TO HH. 21:
2" R.S.C. - INPLACE
2 - 1/C #4 - INPLACE

HH. 21 TO HH. 22:
2" R.S.C. - INPLACE
2 - 1/C #4 - INPLACE

HH. 22 TO HH. 23:
2" R.S.C. - INPLACE
2 - 1/C #4 - INPLACE

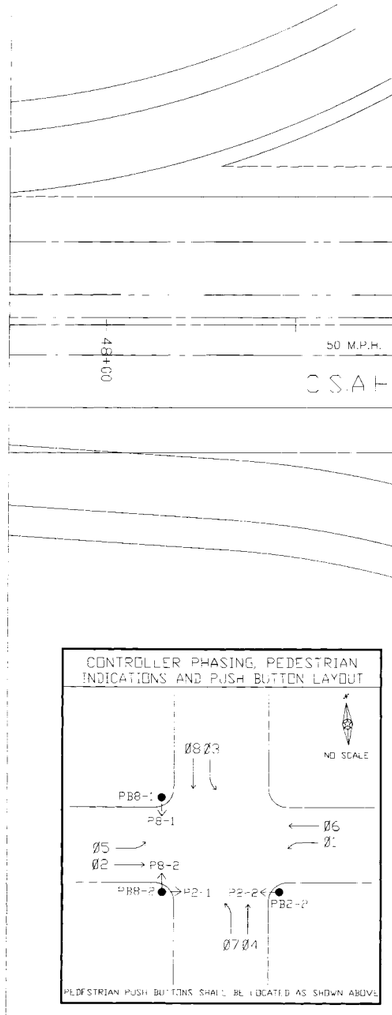
HH. 23 TO FLASHER:
2" R.S.C. - INPLACE
2 - 1/C #4 - INPLACE
1 - 3/C #12 - INPLACE
1 - 1/C #6 BARE - INPLACE

HH. 23 TO HH. 24:
2" R.S.C. - INPLACE
1 - 3/C #12 INPLACE
1 1/C #6 BARE - INPLACE

HH. 24 TO FLASHER:
2" R.S.C. - INPLACE
1 - 3/C #12 INPLACE
1 - 1/C #6 BARE - INPLACE

HH. 18 TO HH. 25:
3" R.S.C. INPLACE
4 - 12/C #12
2 - 3/C #12
7 - 2/C #14
2 - 1/C #4 - INPLACE
1 - 3/C #12 (LUM)

HH. 25 TO HH. 26:
3" R.S.C. - INPLACE
4 - 12/C #12
2 3/C #12
8 - 2/C #14
2 - 1/C #4 - INPLACE
1 - 3/C #12 (LUM)



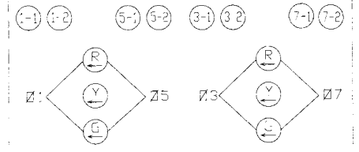
LOOP DETECTORS

LOOP	SIZE(FEET)	FUNCTION	LOCATION
D1-1	MULTIPLE	1	——
D2-1	6 X 6	1	400
D2-2	6 X 6	1	400
D2-3	2-6 X 6	1	——
D2-4	2-6 X 6	1	——
D3-1	MULTIPLE	1	——
D4-1	6 X 6	1	475
D4-2	6 X 6	1	475
D5-1	MULTIPLE	1	——
D6-1	6 X 6	1	400
D6-2	6 X 6	1	400
D6-3	2-6 X 6	1	——
D6-4	2-6 X 6	1	——
D7-1	MULTIPLE	1	——
D8-1	6 X 6	1	475
D8-2	6 X 6	1	475

LOCATION: DISTANCE FROM STOP TO DETECTOR IN FEET

FUNCTION: 1 = CALL AND EXTEND

SIGNAL HEAD PHASING



ALL OTHER VEHICLE SIGNAL FACES SHALL BE R-Y-G

NOTES

1. SEE SPECIAL PROVISIONS FOR AGENCY FURNISHED MATERIALS AND EQUIPMENT.
2. THE SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
3. EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
4. CONTRACTOR FURNISHED VEHICLE SIGNAL INDICATIONS SHALL HAVE GLASS LENSES.
5. ALL NEW HANDHOLES SHALL BE P.V.C. HANDHOLES WITH METAL FRAME AND COVER (SEE SPECIAL PROVISIONS).
6. EXACT LOCATION OF SIGNAL POLES, HANDHOLES, AND DETECTOR LOOPS SHALL BE STAKED BY TRAFFIC PERSONNEL.
7. REMOVAL AND SALVAGE OF PORTIONS OF THE EXISTING SIGNAL SYSTEM SHALL BE DONE INCIDENTAL TO THE SIGNAL SYSTEM. (SEE SPECIAL PROVISIONS)
8. EACH SIGNAL FACE SHALL BE 3 SECTION, 12 INCH R-Y-G EXCEPT 1-1, 1-2, 3-1, 3-2, 5-1, 5-2, 7-1 AND 7-2 SHALL BE 3 SECTION R-LTA, Y-LTA AND G-LTA.
9. THE CONTRACTOR SHALL F. & I. 1 3/C #20 F.V.P. CABLE FROM CONTROL CABINET TO EACH MAST ARM AND SECURE IN A P.E.S. BOX INSTALLED ON 3/4 IN. HALF COUPLING PROVIDED ON TOP OF MAST ARM. (NOT SHOWN ON FIELD WIRING DIAGRAM)

INTERSECTION LAYOUT
CSAH 22 & CSAH 9

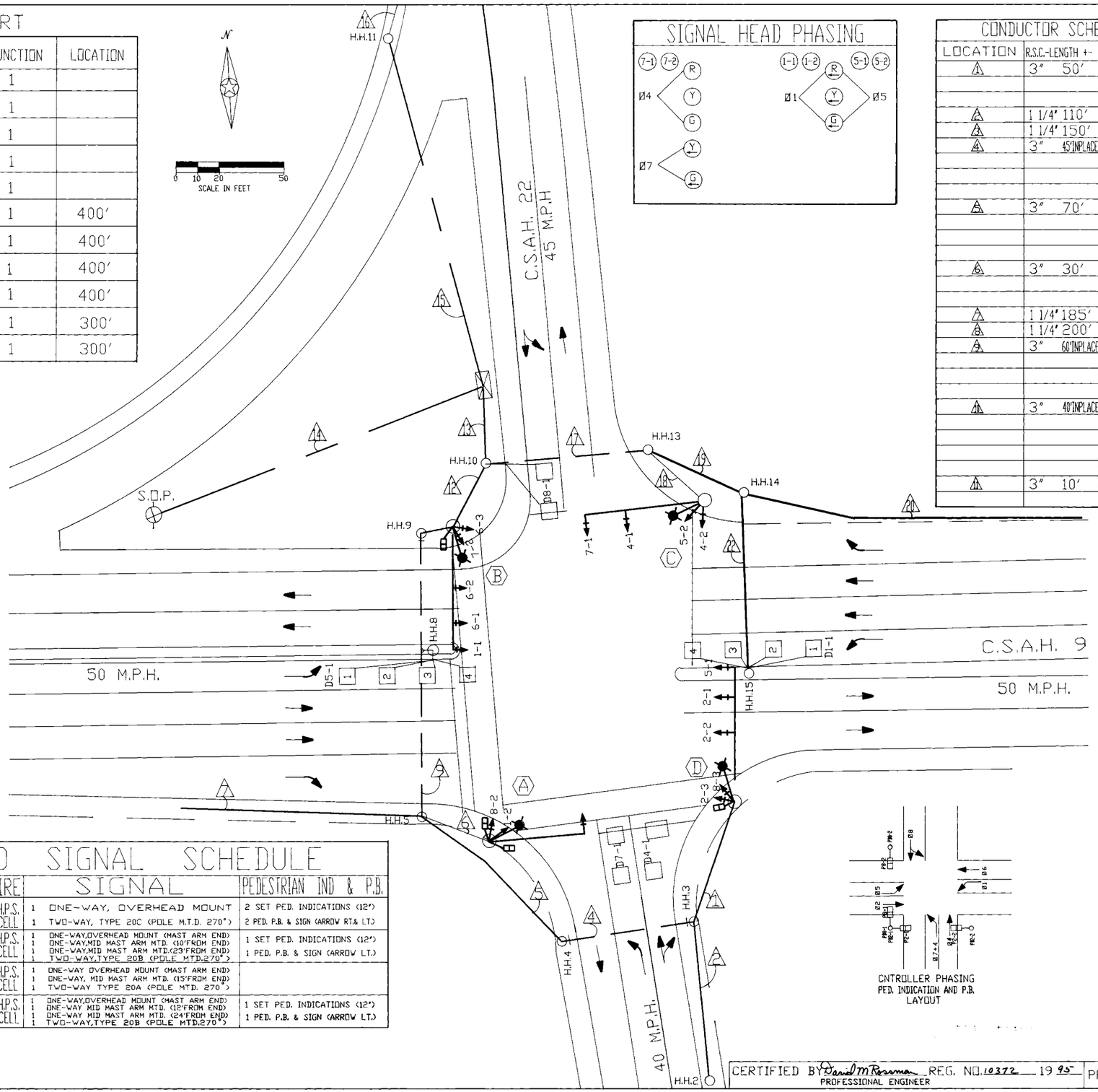
CERTIFIED BY Gary M. Pieniazek PROFESSIONAL ENGINEER REG. NO. 19917 4/10/95

PROJECT NO. SAP 55-622-27

SHEET 51 OF 59 SHEETS

DETECTOR CHART

LOOP	PHASE	SIZE	FUNCTION	LOCATION
D1-1	1	MULTIPLE	1	
D5-1	5	MULTIPLE	1	
D4-1	4	MULTIPLE	1	
D7-1	7	MULTIPLE	1	
D8-1	8	MULTIPLE	1	
D2-1	2	6'X 6'	1	400'
D2-2	2	6'X 6'	1	400'
D6-1	6	6'X 6'	1	400'
D6-2	6	6'X 6'	1	400'
D4-2	4	6'X 6'	1	300'
D8-2	8	6'X 6'	1	300'



SIGNAL HEAD PHASING

CONDUCTOR SCHEDULE

LOCATION	R.S.C.-LENGTH +-	NO.-CABLE-SIZE
1	3" 50'	2 12/C #12
		1 3/C #6
		2 1/C #14 SHLD.
2	1 1/4" 110'	1 2/C #14 SHLD.
3	1 1/4" 150'	1 2/C #12
4	3" 45'INPLACE	2 12/C #12
		1 3/C #14 SHLD.
		3 2/C #6
		2 1/C #12
5	3" 70'	2 12/C #12
		1 3/C #14 SHLD.
		3 2/C #6
		2 1/C #12
6	3" 30'	2 12/C #12
		2 3/C #12
		4 1/C #6
7	1 1/4" 185'	2 2/C #14 SHLD.
8	1 1/4" 200'	2 2/C #14 SHLD.
9	3" 60'INPLACE	4 12/C #12
		1 3/C #12
		5 2/C #14 SHLD.
		2 1/C #6
10	3" 40'INPLACE	4 12/C #12
		1 3/C #12
		6 2/C #14 SHLD.
		2 1/C #6
		2 12/C #12
11	3" 10'	3 3/C #12
		4 1/C #6

CONDUCTOR SCHEDULE

LOCATION	R.S.C.-LENGTH +-	NO.-CABLE-SIZE
12	4" 35'	6 12/C #12
		2 3/C #12
		6 2/C #14 SHLD.
		2 1/C #6
13	2-4"40'EACH	8 12/C #12
		2 3/C #12
		11 2/C #14 SHLD.
		4 1/C#6
14	2-1 1/4"140'EACH	2 1/C 4
		1 1/C #6 BARE
		4 1/C #6
15	2" 185'	1 2/C #14 SHLD.
16	1-1 1/4" 60'	1 2/C #14 SHLD.
17	3" 55'INPLACE	2 12/C #12
		3 2/C #14 SHLD.
		2 1/C #6
18	3" 25'	2 12/C #12
		2 1/C #6
19	2" 40'	3 2/C #14 SHLD.
20	1-1 1/4" 190'	2 2/C #14 SHLD.
21	1-1 1/4" 190'	2 2/C #14 SHLD.
22	3" 60'	1 2/C #14 SHLD.

LEGEND OF SYMBOLS

-⊗-	SOURCE OF POWER
⊠	CONTROLLER
○	HANDHOLE
—·—	RIGID STEEL CONDUIT
○→	SIGNAL FACE WITH BACKPLATE
○B	PEDESTRIAN INDICATION
○↱	MAST ARM SIGNAL WITH BACKPLATE
⊙	MAST ARM LUMINAIRE
⊓	LOOP DETECTOR
— —	INPLACE RIGID STEEL CONDUIT

POLE AND SIGNAL SCHEDULE

LOCATION	STANDARD	LUMINAIRE	SIGNAL		PEDESTRIAN IND & P.B.
Ⓐ	TYPE R100 A35-D40-12	250 WATT H.P.S. WITH PHOTOCELL	1	ONE-WAY, OVERHEAD MOUNT	2 SET PED. INDICATIONS (12")
			1	TWO-WAY, TYPE 20C (POLE M.T.D. 270°)	2 PED. P.B. & SIGN (ARROW RT.& LT.)
Ⓑ	TYPE R100 A45-D40-12	250 WATT H.P.S. WITH PHOTOCELL	1 1 1 1	ONE-WAY,OVERHEAD MOUNT (MAST ARM END) ONE-WAY,MID MAST ARM MTD. (10'FROM END) ONE-WAY,MID MAST ARM MTD.(23'FROM END) TWO-WAY,TYPE 20B (POLE MTD.270°)	1 SET PED. INDICATIONS (12") 1 PED. P.B. & SIGN (ARROW LT.)
Ⓒ	TYPE R100 A45-D40-12	250 WATT H.P.S. WITH PHOTOCELL	1 1 1	ONE-WAY OVERHEAD MOUNT (MAST ARM END) ONE-WAY, MID MAST ARM MTD. (15'FROM END) TWO-WAY TYPE 20A (POLE MTD. 270°)	
Ⓓ	TYPE R100 A50-D40-12	250 WATT H.P.S. WITH PHOTOCELL	1 1 1 1	ONE-WAY,OVERHEAD MOUNT (MAST ARM END) ONE-WAY MID MAST ARM MTD. (12'FROM END) ONE-WAY MID MAST ARM MTD. (24'FROM END) TWO-WAY,TYPE 20B (POLE MTD.270°)	1 SET PED. INDICATIONS (12") 1 PED. P.B. & SIGN (ARROW LT.)

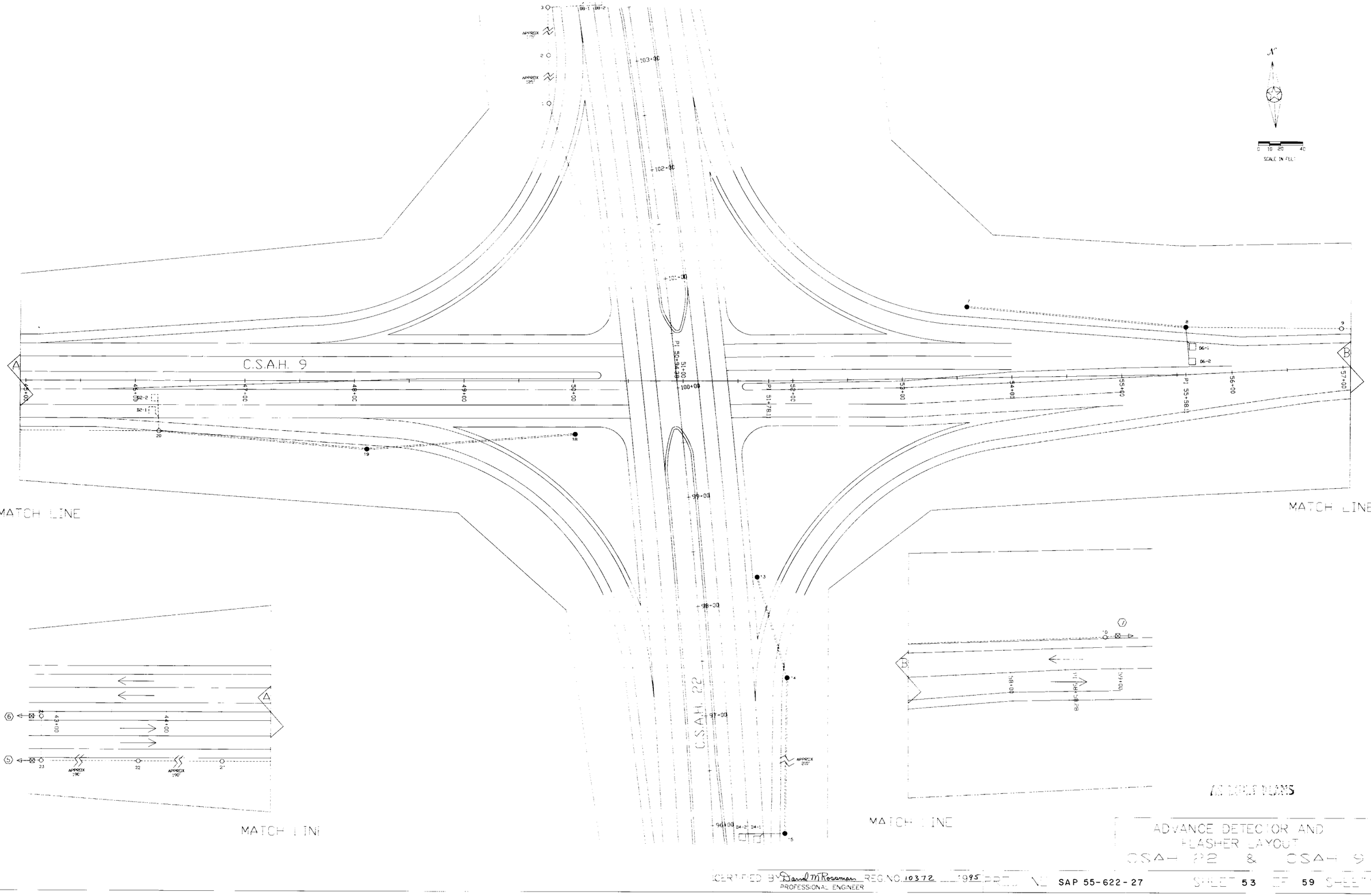
CNTROLLER PHASING
PED. INDICATION AND P.B.
LAYOUT

EXISTING SYSTEM
INFORMATION ONLY

INTERSECTION LAYOUT
C.S.A.H. 22 @ C.S.A.H. 9

CERTIFIED BY Daniel M Rosman REG. NO. 10372 19 95
PROFESSIONAL ENGINEER

PROJ.NO. SAP 55-622-27



ADVANCE DETECTOR AND FLASHER LAYOUT
CSAH 22 & CSAH 9

CERTIFIED BY Darrell M Rossman REG. NO. 10372 1995
PROFESSIONAL ENGINEER

SAP 55-622-27 SHEET 53 OF 59 SHEETS

ABBREVIATIONS

EQUIPMENT AND INDICATIONS

RED-RED
YEL-YELLOW
GRN-GREEN
LTA-LEFT TURN ARROW
THA-THRU ARROW
RTA-RIGHT TURN ARROW
TRA-THRU AND RIGHT ARROW
WLK-WALK
NEU-NEUTRAL
DWK-DON'T WALK
SW-SWITCH
SWD-SWITCHED
LUM-LUMINAIRE
DNL-DOWNLIGHT
SHLD-SHIELDED CABLE

PI-2 PEDESTRIAN INDICATION PHASE 2
PB2 1 PUSH BUTTON PHASE 2
2 1 SIGNAL HEAD-PHASE 2
D1-4 DETECTOR PHASE 1
HH-HANDHOLE
GRR-GROUND ROD
SERV-SERVICE
PEC-PHOTOELECTRIC CELL
STLHT-STREET LIGHT
CH-CHUCK
SUP-SOURCE OF POWER
EQG-EQUIPMENT GROUND
SPR-SPARE CONDUCTOR
● SPLICE
GRND-GROUND

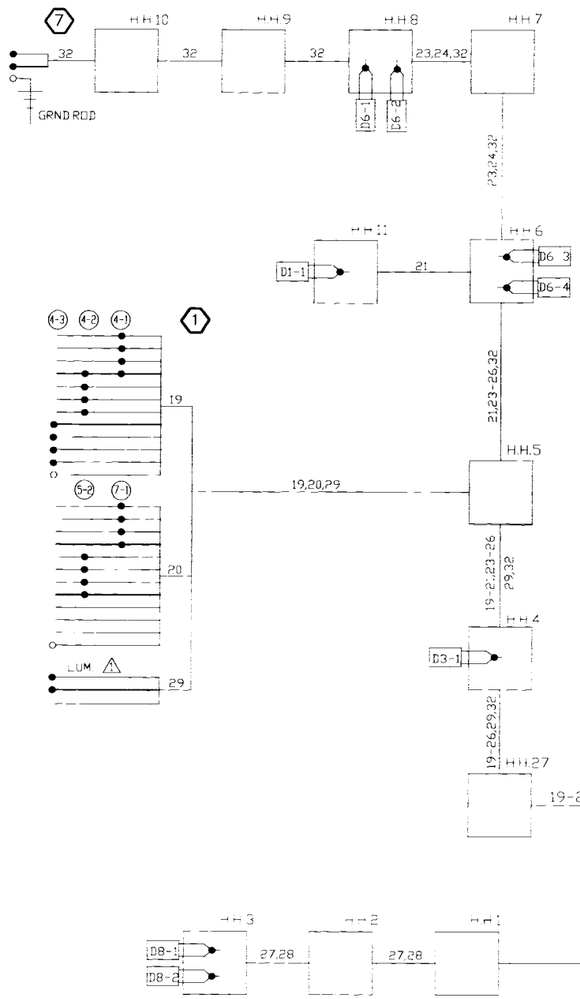
CONDUCTOR COLOR CODE

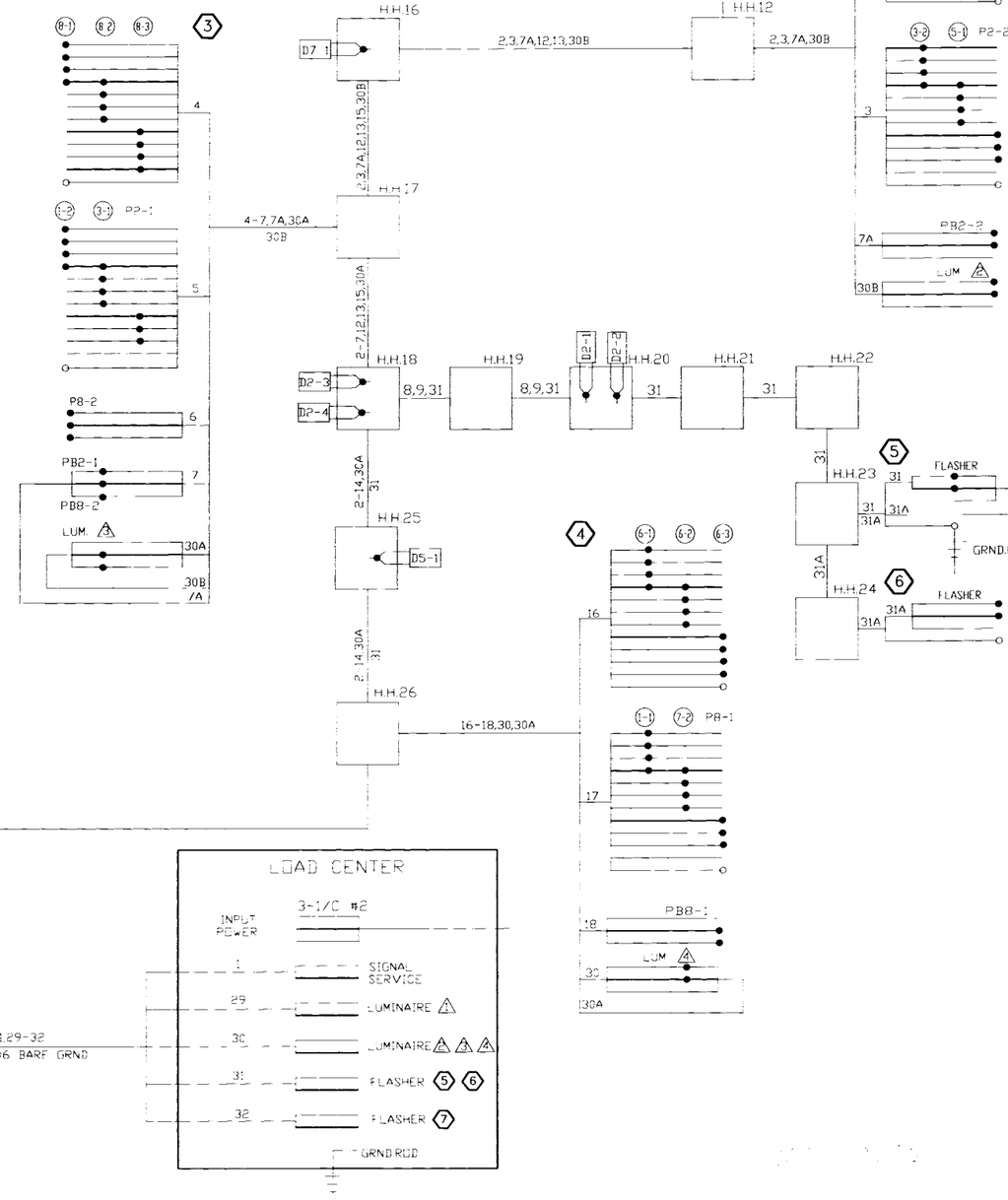
R-RED
O-ORANGE
BL-BLUE
WH-WHITE
R/BK-RED WITH BLACK TRACER
O/BK-ORANGE WITH BLACK TRACER
BL/BK-BLUE WITH BLACK TRACER
WH/BK-WHITE WITH BLACK TRACER
BK-BLACK
BLK/WH-BLACK WITH WHITE TRACER
G/BK-GREEN WITH BLACK TRACER
G-GREEN

CONTROLLER CABINET

			SIGNAL	SERVICE
RED	6-1	1	RED	2-1
YEL	6-1		YEL	2-1
GRN	6-1		GRN	2-1
NEU	6-1&6-2		NEU	2 1&2-2
RED	6-2	16	RED	2-2
YEL	6-2		YEL	2-2
GRN	6-2	2	GRN	2-2
NEU	6-3		NEU	2-3
RED	6-3		RED	2-3
YEL	6-3		YEL	2-3
GRN	6-3		GRN	2-3
EQG			EQG	
RLTA	1-1		RLTA	3-2
YLTA	1-1		YLTA	3-2
GLTA	1-1		GLTA	3-2
NEU	1-1&7-2		NEU	3-2&5-1
RLTA	7-2	17	RLTA	5-1
YLTA	7-2		YLTA	5-1
GLTA	7-2		GLTA	5-1
NEU	P8-1	3	NEU	P2-2
WLK	P8-1		WLK	P2-2
DWK	P8-1		DWK	P2-2
SPR			SPR	
EQG			EQG	
SPR		18	SPR	
NEU			EQG	
PB8-1			RED	8-1
RED	4-1		YEL	8-1
YEL	4-1		GRN	8-1
GRN	4-1		NEU	8-1&8-2
NEU	4-1&4-2		RED	8-2
RED	4-2		YEL	8-2
YEL	4-2	19	GRN	8-2
GRN	4-2	4	NEU	8-3
NEU	4-3		RED	8-3
RED	4-3		YEL	8-3
YEL	4-3		GRN	8-3
GRN	4-3		EQG	
EQG			RLTA	1-2
RLTA	7-1		YLTA	1-2
YLTA	7-1		GLTA	1-2
GLTA	7-1		NEU	1-2&3-1
NEU	7-1		RLTA	3-1
RLTA	5-2		YLTA	3-1
YLTA	5-2	20	GLTA	3-1
GLTA	5-2	5	NEU	P2-1
NEU	5-2		WLK	P2-1
SPR			DWK	P2-1
SPR			SPR	
SPR			EQG	
EQG			WLK	P8-2
D1-1		21 6	NEU	P8-2
			DWK	P8-2
D3-1		22 7	PB2-1 & PB2-2 NEU	
D6-1		23 8	PB8 2 D2-1	
D6 2		24 9	D2-2	
D6-3		25 10	D2-3	
D6-4		26 11	D2-4	
D8-1		27 12	D4-1	
D8-2		28 13	D4-2	
		29 14	D5-1	
		30 15	D7 1	
		31		
		29 32		
		30 32		
		31		

GRND ROD





LOAD CENTER

FIELD WIRING DIAGRAM

CSAH 9 AND CSAH 22

CERTIFIED BY David M Rosemeyer REG NO 10372 1995
PROFESSIONAL ENGINEER

SAP 55-622-27

NOTE:
1. ATTACHMENT HARDWARE FOR MESSENGER CABLE AND ANCHOR GUY CABLES SHALL BE RELOCATED 4' UP THE POLES.
2. MESSENGER AND ANCHOR GUY CABLES SHALL BE 7/16" HIGH STRENGTH CABLE.
3. CONTRACTOR SHALL F.&I. 1-3/C NO. 12 CONTROL CABLE FROM CONTROL CABINET TO EACH FLASHER HEAD.
4. HANDHOLES SHALL BE P.V.C. WITH STEEL COVERS (SEE SPECIAL PROVISIONS)
5. ALL INSTALLATIONS AND REVISIONS SHALL BE LOCATED BY THE ENGINEER.
6. ENDS OF R.S.C. THAT ARE NOT IN A HANDHOLE SHALL BE CAPPED AS DIRECTED BY THE ENGINEER.
7. LOOP DETECTORS SHALL BE N.M.C., EMBEDDED IN THE NEW ROADWAY (SEE SPECIAL PROVISIONS)

0 5 10 20
SCALE IN FEET

P.T. 1194 + 50.10
SURVEY ℄ C.S.A.H. 22

+40
+60
+40
+60
+20
+15

1195 C.S.A.H. 22 (55 MPH) 1196 1197 1198 1199 C.S.A.H. 22 1201

H.H. 1
H.H. 2
H.H. 3
H.H. 4
H.H. 5

F. & I. N.M.C. EMBEDDED 6' x 6' LOOP DETECTORS
F. & I. 40' OF 3" R.S.C.
F. & I. 50' OF 3" R.S.C.
F. & I. N.M.C. EMBEDDED 6 x 6 LOOP DETECTORS
F. & I. 25' OF 1 1/4" R.S.C.
EXTEND 3" R.S.C. INTO H.H. 2
EXTEND 3" R.S.C. INTO H.H. 5
F. & I. 28' OF 1 1/4" R.S.C.
F. & I. 40' OF 3" R.S.C.

INPL. 3" x 60' R.S. CONDUIT
INPL. 3" x 80' R.S. CONDUIT
INPL. 3" x 60' R.S. CONDUIT

6'
14'
13'
11'
2'
11'
13'
14'

12' 12' 12' 12'
8'
8'
8'
8'

2108
C.S.A.H. 2
+50

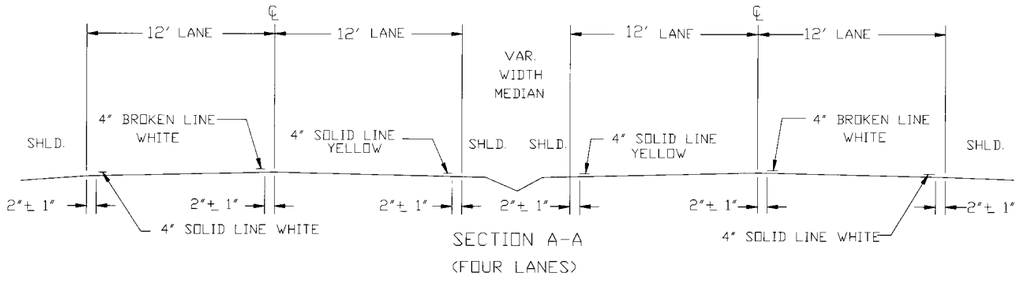
EXISTING FLASHER SYSTEM REMOVE, SALVAGE AND REINSTALL AS PER SPECIAL PROVISIONS
NEW FLASHER SYSTEM
F. & I. N.M.C. EMBEDDED 6' x 6' LOOP DETECTORS
60 (12)
POT 199 + 61.66 SOUTH
POT 200 + 56.37 NORTH

4'
16'
8'
90' OF 4" R.S.C. (EXTRA)
2110
P.V.C. H.H. W/CONC. COVER. (EXTRA)
2111

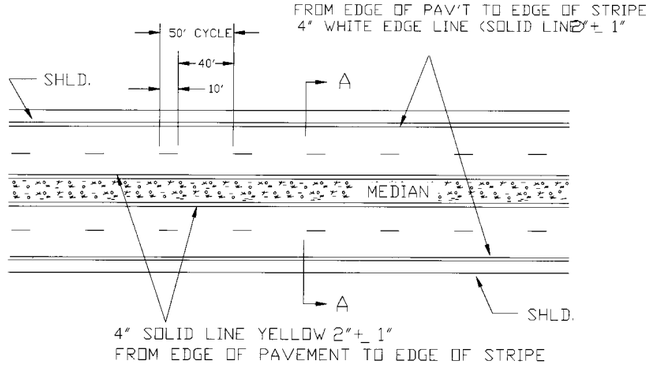
REVISE FLASHING BEACON SYSTEM AND PARTIAL FUTURE SIGNAL SYSTEM LAYOUT AT C.S.A.H. 22 AND C.S.A.H. 2

CERTIFIED BY Daniel M Rasmussen REG. NO. 10372 1995
(PROFESSIONAL ENGINEER)

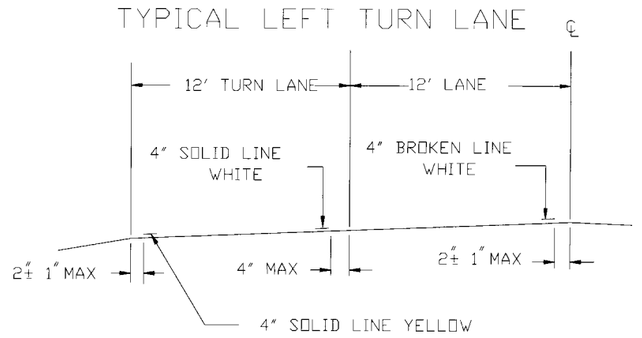
S.A.P. 55-622-27 OLMSTED CO. CSAH 22 SHEET 55 OF 59 SHEETS

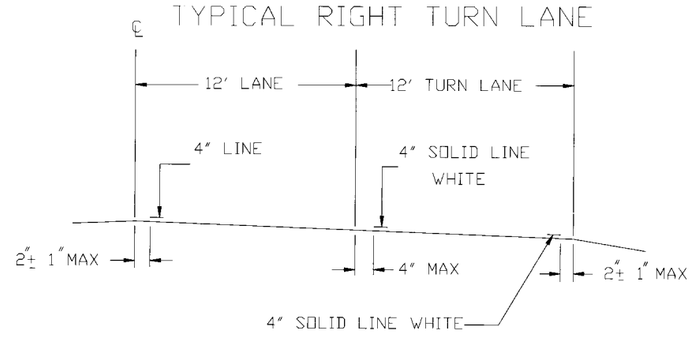


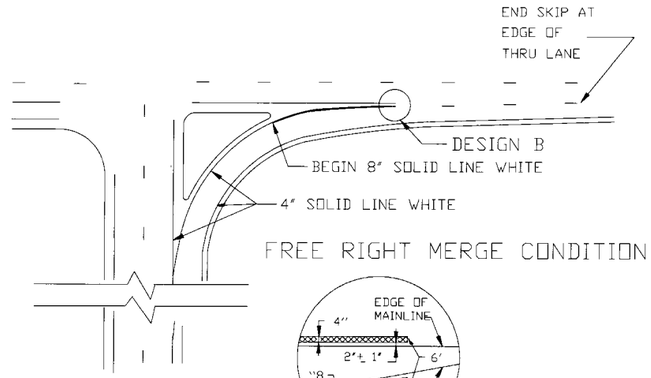
SECTION A-A
(FOUR LANES)



TYPICAL 4-LANE DIVIDED LANE MARKINGS

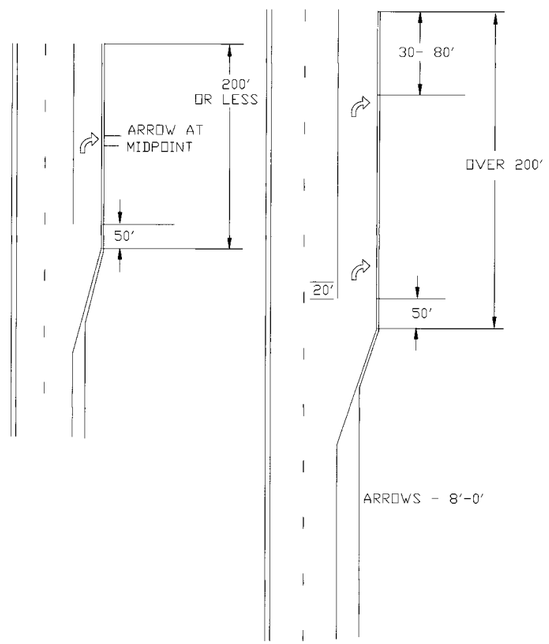






FREE RIGHT MERGE CONDITION

DESIGN B



TYPICAL MESSAGE PLACEMENT

FOR TURN LANES

EPOXY

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC), OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENTS AND/OR LAITANCE. ON LOW SPEED (SPEED LIMIT 35 OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS, SANDBLAST CLEANING SHALL BE USED FOR ALL EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOXY RESIN LINE 4 INCHES WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT **25** POUNDS PER GALLON ~~RATE~~ SUFFICIENT TO ACHIVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES F OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY MARKINGS.

AS BUILT PLANS

GENERAL REQUIREMENTS

THE ENGINEERS INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD SPOTTING, LOCATION AND INSPECTION. THE ENGINEER WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. BROKEN LINE INTERVALS WILL NOT BE MARKED. LONGITUDINAL JOINTS, PAVEMENT EDGES, AND EXISTING MARKINGS SHALL SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN, OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 2 INCHES. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINT. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

AS BUILT PLANS