STATEMENT OF ESTIMATED QUANITITIES 62-668-14

				ENG'S ESTIMATE	
ITEM NO	ITEM	UNIT	ESTIMATED QUANITITIES	UNIT PRICE	AMOUNT
2021.501	MOBILIZATION	LUMP SUM	1	$13,750 00	$13,750 00
2101.502	CLEARING	TREE	34	150 00	5,100 00
2101.507	GRUBBING	TREE	34	100 00	3,400 00
2104.501	REMOVE PIPE SEWERS	L.F.	178	4 00	712 00
2104.501	REMOVE BITUMINOUS CURB	L.F.	1,174	0 50	587 00
2104.501	REMOVE CONCRETE CURB & GUTTER	L.F.	145	1 25	181 25
2104.503	REMOVE CONCRETE SIDEWALK	S.F.	135	1 00	135 00
2104.505	REMOVE CONCRETE DRIVEWAY	S.Y.	27	1 50	40 50
2104.509	REMOVE CATCH BASINS	EACH	13	75 00	975 00
2104.521	SALVAGE WOODEN FENCE	L.F.	40	1 50	60 00
2104.523	SALVAGE CASTINGS	EACH	13	20 00	260 00
2104.523	SALVAGE HYDRANT	EACH	6	300 00	1,800 00
2105.501	COMMON EXCAVATION	C.Y.	16,335	0 85	13,884 75
2130.501	WATER	M. GAL.	50	6 50	325 00
2211.501	AGGREGATE BASE, CLASS 6	TON	145	3 25	471 25
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	505	79 00	39,895 00
2331.514	BASE COURSE MIXTURE	TON	11,210	6 25	70,062 50
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	135	79 00	10,665 00
2341.510	BINDER COURSE MIXTURE	TON	2,425	6 50	15,762 50
2341.508	WEARING COURSE MIXTURE	TON	35	7 50	262 50
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL.	255	0 65	165 75
2361.504	ASPHALT CEMENT	TON	75	79 00	5,925 00
2361.508	WEARING COURSE MIXTURE	TON	1,215	7 80	9,477 00
2503.511	12" R.C. PIPE	L.F.	17	10 00	170 00
2503.511	15" R.C. PIPE	L.F.	753	10 50	7,906 50
2501.515	15" R.C. PIPE APRON	EACH	1	100 00	100 00
2506.508	CONSTRUCT MANHOLES, DESIGN A OR F	EACH	2	700 00	1,400 00
2506.509	CONSTRUCT CATCH BASINS, DESIGN LP4	EACH	19	600 00	11,400 00
2506.511	RECONSTRUCT MANHOLES	L.F.	43.9	65 00	2,853 50
2506.521	INSTALL CASTING ASSEMBLIES	EACH	7	70 00	490 00
2506.522	ADJUST FRAME & RING CASTINGS	EACH	26	85 00	2,210 00
* 2521.501	CONSTRUCT 4" CONCRETE SIDEWALK	S.F.	3,865	1 25	4,831 25
2531.501	CONSTRUCT CURB & GUTTER, DESIGN B 624	L.F.	5,846	3 50	20,461 00
2531.507	6" CONCRETE DRIVEWAY PAVEMENT	S.Y.	225	13 00	2,925 00
2535.501	BITUMINOUS CURB	L.F.	471	1 50	706 50
2571.541	TRANSPLANT TREES	TREE	13	250 00	3,250 00
2575.505	SODDING	S.Y.	8,656	0 80	6,924 80
2575.531	COMMERCIAL FERTILIZER, ANALYSIS 12-12-12	TON	.55	325 00	178 75
2575.551	TOPSOIL BORROW	C.Y.	725	4 50	3,262 50
411.609	FLAGSTONE RETAINING WALL	S.F.	1,235	9 00	11,115 00
504.666	INSTALL HYDRANT	EACH	6	300 00	1,800 00
504.679	ADJUST VALVE BOX	EACH	10	70 00	700 00
					276,581.80

MICROFILMED
RAMSEY CO. ENGR.

MICROFILMED
RAMSEY CO. ENGR.

* NON-PARTICIPATING STATE AID

15-151

McKNIGHT ROAD 62-668-14

BID TABULATIONS TAKEN OCT. 20, 1976

ITEM NO.	ITEM	UNIT	ESTIMATED QUANITITIES	FINAL ESTIMATED QUANITITIES	AVERAGE 3 LOW BIDDERS	C.S. McCROSSON UNIT PRICE	C.S. McCROSSON AMOUNT	TOWER ASPHALT, INC UNIT PRICE	TOWER ASPHALT, INC AMOUNT	ASHBACH CONST. Co. UNIT PRICE	ASHBACH CONST. Co. AMOUNT	McNAMARA-VIVANT CONTRACTING CO. INC. UNIT PRICE	McNAMARA-VIVANT CONTRACTING CO. INC. AMOUNT	T.A. SCHIFSKY & SONS INC. UNIT PRICE	T.A. SCHIFSKY & SONS INC. AMOUNT	TOTAL ASPHALT CONST. CO. UNIT PRICE	TOTAL ASPHALT CONST. CO. AMOUNT
2021.501	MOBILIZATION	LUMP SUM	1	1	3,416.67	5,000.00	5,000.00	3,000.00	3,000.00	2,250.00	2,250.00	8,500.00	8,500.00	5,500.00	5,500.00	6,000.00	6,000.00
2101.502	CLEARING	TREE	34		44.17	50.00	1,700.00	60.00	2,040.00	22.50	765.00	45.00	1,530.00	65.00	2,210.00	100.00	3,400.00
2101.507	GRUBBING	TREE	34		24.00	40.00	1,360.00	20.00	680.00	12.00	408.00	30.00	1,020.00	35.00	1,190.00	50.00	1,700.00
2104.501	REMOVE PIPE SEWERS	L.F.	178		4.38	4.00	952.00	5.00	1,190.00	4.15	987.70	3.00	714.00	6.25	1,487.50	3.60	856.80
2104.501	REMOVE BITUMINOUS CURB	L.F.	1,174		0.24	0.20	234.80	0.12	140.88	0.40	469.60	0.20	234.80	0.20	234.80	0.55	645.70
2104.501	REMOVE CONCRETE CURB & GUTTER	L.F.	145		0.93	1.00	145.00	1.00	145.00	0.80	116.00	1.50	217.50	1.00	145.00	1.00	145.00
2104.503	REMOVE CONCRETE SIDEWALK	S.F.	135		0.32	0.40	54.00	0.30	40.50	0.25	33.75	0.50	67.50	0.30	40.50	0.55	74.25
2104.505	REMOVE CONCRETE DRIVEWAY	S.Y.	27		2.08	2.50	67.50	2.50	67.50	1.25	33.75	3.50	94.50	5.00	135.00	3.15	85.05
2104.509	REMOVE CATCH BASINS	EACH	13		126.67	200.00	2,600.00	120.00	1,560.00	60.00	780.00	85.00	1,105.00	51.00	663.00	78.00	1,014.00
2104.521	SALVAGE WOODEN FENCE	L.F.	40		2.53	4.00	160.00	3.00	120.00	0.60	24.00	3.00	120.00	5.00	200.00	3.10	124.00
2104.523	SALVAGE CASTINGS	EACH	13		40.00	50.00	650.00	50.00	650.00	20.00	260.00	30.00	390.00	40.00	520.00	80.00	1,040.00
2104.523	SALVAGE HYDRANT	EACH	6		218.33	300.00	1,800.00	200.00	1,200.00	155.00	930.00	150.00	900.00	160.00	960.00	320.00	1,920.00
2105.501	COMMON EXCAVATION	C.Y.	16,335		1.89	1.70	27,769.50	1.63	26,622.05	2.35	38,387.25	2.17	35,446.95	1.83	29,893.05	2.35	38,387.25
2130.501	WATER	M. GAL.	50		12.33	10.00	500.00	7.00	350.00	20.00	1,000.00	8.00	400.00	6.00	300.00	8.00	400.00
2211.501	AGGREGATE BASE, CLASS 6	TON	145		6.00	3.60	522.00	8.00	1,160.00	6.40	928.00	6.00	870.00	4.00	580.00	8.50	1,232.50
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	505		68.33	70.00	35,350.00	67.00	33,835.00	68.00	34,340.00	68.50	34,592.50	70.00	35,350.00	70.00	35,350.00
2331.514	BASE COURSE MIXTURE	TON	11,210		6.86	6.40	71,744.00	7.29	81,720.90	6.88	77,124.80	6.42	71,968.20	7.10	79,591.00	6.74	75,555.40
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	135		68.33	70.00	9,450.00	67.00	9,045.00	68.00	9,180.00	68.50	9,247.50	70.00	9,450.00	70.00	9,450.00
2341.510	BINDER COURSE MIXTURE	TON	2,425		7.08	6.45	15,641.25	7.65	18,551.25	7.15	17,338.75	6.80	16,490.00	7.30	17,702.50	7.25	17,581.25
2341.508	WEARING COURSE MIXTURE	TON	35		16.00	20.00	700.00	12.00	420.00	16.00	560.00	35.00	1,225.00	12.50	437.50	25.00	875.00
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL.	255		0.77	1.00	255.00	0.75	191.25	0.57	145.35	0.75	191.25	0.65	165.75	0.60	153.00
2361.504	ASPHALT CEMENT	TON	75		69.33	70.00	5,250.00	70.00	5,250.00	68.00	5,100.00	68.50	5,137.50	70.00	5,250.00	70.00	5,250.00
2361.508	WEARING COURSE MIXTURE	TON	1,215		12.43	12.75	15,491.25	12.70	15,430.50	11.85	14,397.75	13.65	16,584.75	13.25	16,098.75	11.99	14,567.85
2503.511	12" R.C. PIPE	L.F.	17		14.00	10.00	170.00	16.00	272.50	16.00	272.00	13.50	229.50	21.00	357.00	13.50	229.50
2503.511	15" R.C. PIPE	L.F.	753		15.78	12.00	9,036.00	19.00	14,307.00	16.35	12,311.55	13.50	10,165.50	16.00	12,048.00	14.25	10,730.25
2501.515	15" R.C. PIPE APRON	EACH	1		123.33	125.00	125.00	120.00	120.00	125.00	125.00	135.00	135.00	265.00	265.00	160.00	160.00
2506.508	CONSTRUCT MANHOLES, DESIGN A OR F	EACH	2		883.33	650.00	1,300.00	900.00	1,800.00	1,100.00	2,200.00	875.00	1,750.00	750.00	1,500.00	795.00	1,590.00
2506.509	CONSTRUCT CATCH BASINS, DESIGN LP4	EACH	19		833.38	850.00	16,150.00	850.00	16,150.00	800.00	15,200.00	825.00	15,675.00	875.00	16,625.00	1,250.00	23,750.00
2506.511	RECONSTRUCT MANHOLES	L.F.	43.9		82.50	65.00	2,853.50	90.00	3,951.00	92.50	4,060.75	95.00	4,170.50	70.00	3,073.00	75.00	3,292.50
2506.521	INSTALL CASTING ASSEMBLIES	EACH	7		56.67	60.00	420.00	55.00	385.00	55.00	385.00	80.00	560.00	110.00	770.00	78.00	546.00
2506.522	ADJUST FRAME & RING CASTINGS	EACH	26		81.67	90.00	2,340.00	100.00	2,600.00	55.00	1,430.00	80.00	2,080.00	100.00	2,600.00	85.00	2,210.00
* 2521.501	CONSTRUCT 4" CONCRETE SIDEWALK	S.F.	3,865		1.13	1.20	4,638.00	1.00	3,865.00	1.19	4,599.35	0.95	3,671.75	1.05	4,058.25	1.10	4,251.50
2531.501	CONSTRUCT CURB & GUTTER, DESIGN B 624	L.F.	5,846		3.99	4.10	23,968.60	3.60	21,045.60	4.28	25,020.88	4.65	27,183.90	3.70	21,630.20	3.80	22,214.80
2531.507	6" CONCRETE DRIVEWAY PAVEMENT	S.Y.	225		12.67	14.00	3,150.00	11.00	2,475.00	13.00	2,925.00	15.20	3,420.00	11.50	2,587.50	12.25	2,756.25
2535.501	BITUMINOUS CURB	L.F.	471		1.78	2.00	942.00	2.00	942.00	1.35	635.85	1.25	588.75	1.75	824.25	1.85	871.35
2571.541	TRANSPLANT TREES	TREE	13		39.00	45.00	585.00	42.00	546.00	30.00	390.00	45.00	585.00	45.00	585.00	50.00	650.00
2575.505	SODDING	S.Y.	8,656		0.81	0.80	6,924.80	0.73	6,318.88	0.89	7,703.84	0.80	6,924.80	0.80	6,924.80	0.80	6,924.80
2575.531	COMMERCIAL FERTILIZER, ANALYSIS 12-12-12	TON	.55		258.33	300.00	165.00	250.00	137.50	225.00	123.75	216.00	118.80	300.00	165.00	265.00	145.75
2575.551	TOPSOIL BORROW	C.Y.	725		5.28	5.50	3,987.50	5.00	3,625.00	5.35	3,878.75	4.90	3,552.50	4.50	3,262.50	5.20	3,770.00
411.609	FLAGSTONE RETAINING WALL	S.F.	1,235		4.52	5.75	7,101.25	4.30	5,310.50	3.50	4,322.50	3.25	4,013.75	6.20	7,657.00	5.50	6,792.50
504.666	INSTALL HYDRANT	EACH	6		371.67	600.00	3,600.00	300.00	1,800.00	215.00	1,290.00	300.00	1,800.00	325.00	1,950.00	425.00	2,550.00
~~504.679~~	~~ADJUST VALVE BOX~~	EACH	10														
	TOTALS						284,852.95		289,069.81		292,433.92		293,671.70		294,986.85		309,242.25

* NON-PARTICIPATING STATE AID

DESIGNED BY
DRAWN BY
CHECKED BY

15-151

PLANS SYMBOLS

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

SPRINGS
MARSH
TIMBER / ORCHARD / BRUSH / NURSERY (TIMBER)
CATCH BASIN C.B.
FIRE HYDRANT
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame) 1-S-F
F-FRAME C-CONCRETE
S-STONE T-TILE
B-BRICK ST-STUCCO
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE, OR METAL)
WOODEN HUB
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY

UTILITIES SYMBOLS

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

CONDUIT
TELEPHONE CABLE IN CONDUIT
ELECTRIC CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE T-BUR
BURIED ELECTRIC CABLE P-BUR
AERIAL TELEPHONE CABLE T-AE
SEWER, (SANITARY OR STORM)
SEWER MANHOLE

NOTE SECTION NUMBERS READ FROM THE SOUTH

PIT DATA

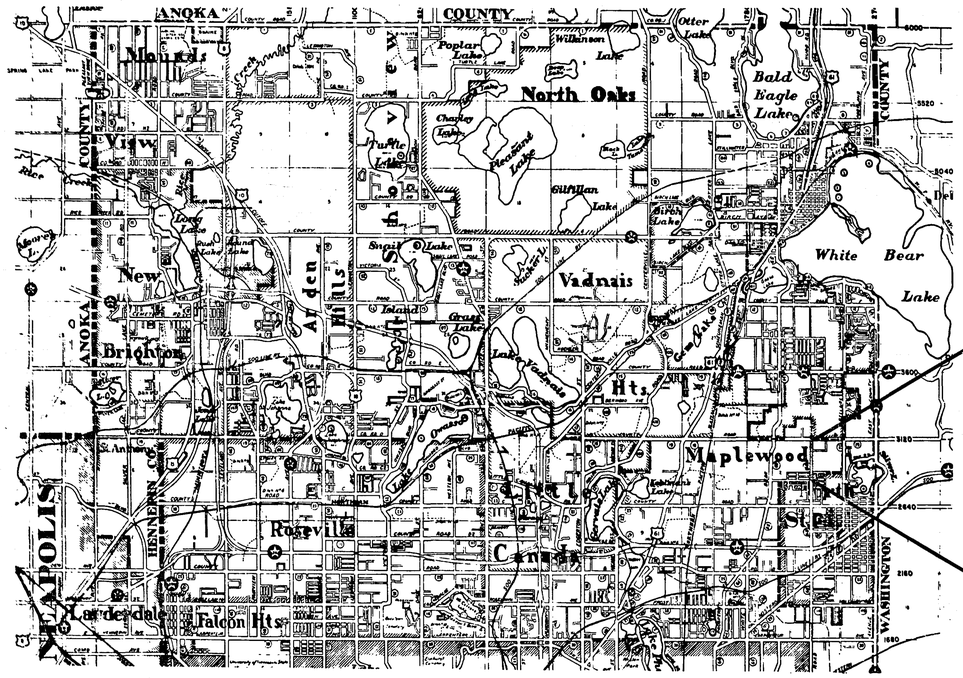
PIT NO. ____ Located in .....
Dead Haul .....
PIT NO. ____ Located in .....
Dead Haul .....

THE "MINNESOTA HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION "DATED JANUARY 1, 1972 AS AMENDED BY "SUPPLEMENTAL SPECIFICATIONS "DATED APRIL 1, 1976 SHALL GOVERN.

McKNIGHT RD.

GROSS LENGTH	3,209 FEET = 0.6077	MILES
BRIDGES - LENGTH	FEET =	MILES
EXCEPTIONS-LENGTH	FEET =	MILES
NET LENGTH	3,209 FEET = 0.6077	MILES

PLAN, 0 10 20 30 40 50
PROFILE, HORZ., 0 10 20 30 40 50
PROFILE, VERT., 0 5 10
CROSS SECTIONS, 0 5 10
LAYOUT, 5,280'



CITY OF ST. PAUL

DESIGN DESIGNATION

S.A.P. NO. 62-668-09 C.T.B.

ADT. (CURRENT YEAR) 1975	=	3595
HC ADT	=	300-600
ADT. (FUTURE YEAR) 1995	=	9000
SOIL FACTOR %	=	100%
DESIGN LOAD	=	9 TON
STABILOMETER "R" VALUE	=	
DESIGN SPEED	=	45 M.P.H.

RECOMMENDED FOR APPROVAL JAP DATE 6-8-76
RECOMMENDED FOR APPROVAL MDK DATE 6-8-76 (MAINTENANCE ENGINEER)
RECOMMENDED FOR APPROVAL KEW DATE 6/7/76 (CONSTRUCTION ENGINEER)
RECOMMENDED FOR APPROVAL DDJ DATE 6/11/76 (ENVIRONMENTAL ENGR.)
RECOMMENDED FOR APPROVAL PLK DATE 6-7-76
APPROVED DRH. DATE 6/7/76 (COUNTY ENGINEER)

OFFICE OF COUNTY ENGINEER
RAMSEY COUNTY

McKNIGHT ROAD

S.A.P. NO. 62-668-14

CONSTRUCTION PLAN FOR: BITUMINOUS SURFACING AND WIDENING

BETWEEN: BEAM AVENUE AND: COUNTY ROAD "D"

FROM: A POINT 302 FEET SOUTH OF THE EAST 1/4 CORNER OF SECTION 2, T. 29, R. 22 W.

TO: A POINT 111 FEET NORTH OF THE NORTHEAST 1/4 CORNER OF SECTION 2, T. 29, R. 22 W.

ACCOUNT NO. 50134

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET AND LAYOUT MAP
2	ESTIMATED QUANTITIES
3	TYPICAL SECTION
4 & 5	DRAINAGE CHARTS
6	DETAIL SHEETS
7 TO 11	PLAN & PROFILE SHEETS
12 TO 28	CROSS - SECTIONS

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

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.

Wesley Gonsalves REG. NO. 5782 DATE June 14, 1976

RECOMMENDED FOR APPROVAL Dean L. Gribble (COUNTY ENGINEER) DATE 6/7/76
APPROVED John T. Finley (CHAIRMAN OF THE RAMSEY COUNTY BOARD) DATE 9/27/76
APPROVED Robert V. Burton (MAYOR, CITY OF MAPLEWOOD) DATE 5-27-76
APPROVED _____ DATE _____

MINNESOTA STATE HIGHWAY DEPARTMENT

RECOMMENDED FOR APPROVAL Delbert O. Olfelt DATE 8-25-76
RECOMMENDED FOR APPROVAL D.R. Mielke (DISTRICT STATE AID ENGINEER) DATE 8-5-76
APPROVAL (STATE AID ENGINEER) DATE 8/26/76

MICROFILMED RAMSEY CO. ENGR.

REVISED	DATE		
		DESIGNED BY	
		DRAWN BY	
		CHECKED BY	

S.A.P. NO. 62-668-14 **Sheet No. 1 of 28 Sheets**

15-151

STATEMENT OF ESTIMATED QUANITITIES

	ITEM NO.	ITEM	UNIT	ESTIMATED QUANTITIES	FINAL ESTIMATED QUANTITIES
	2021.501	MOBILIZATION	LUMP SUM	1	1
	2101.502	CLEARING	TREE	34	
	2101.507	GRUBBING	TREE	34	
	2104.501	REMOVE PIPE SEWERS	L.F.	178	
	2104.501	REMOVE BITUMINOUS CURB	L.F.	1,174	
	2104.501	REMOVE CONCRETE CURB & GUTTER	L.F.	145	
	2104.503	REMOVE CONCRETE SIDEWALK	S.F.	135	
	2104.505	REMOVE CONCRETE DRIVEWAY	S.Y.	27	
	2104.509	REMOVE CATCH BASINS	EACH	13	
	2104.521	SALVAGE WOODEN FENCE	L.F	40	
	2104.523	SALVAGE CASTINGS	EACH	13	
	2104.523	SALVAGE HYDRANT	EACH	6	
	2105.501	COMMON EXCAVATION	C.Y.	16,335	
	2130.501	WATER	M. GAL.	50	
	2211.501	AGGREGATE BASE, CLASS 6	TON	145	
	2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	505	
	2331.514	BASE COURSE MIXTURE	TON	11,210	
	2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	135	
	2341.510	BINDER COURSE MIXTURE	TON	2,425	
	2341.508	WEARING COURSE MIXTURE	TON	35	
	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL.	255	
	2361.504	ASPHALT CEMENT	TON	75	
	2361.508	WEARING COURSE MIXTURE	TON	1,215	
	2503.511	12" R.C. PIPE	L.F.	17	
	2503.511	15" R.C. PIPE	L.F.	753	
	2501.515	15" R.C. PIPE APRON	EACH	1	
	2506.508	CONSTRUCT MANHOLES, DESIGN A OR F	EACH	2	
	2506.509	CONSTRUCT CATCH BASINS, DESIGN LP4	EACH	19	
	2506.511	RECONSTRUCT MANHOLES	L.F	43.9	
	2506.521	INSTALL CASTING ASSEMBLIES	EACH	7	
	2506.522	ADJUST FRAME & RING CASTINGS	EACH	26	
*	2521.501	CONSTRUCT 4" CONCRETE SIDEWALK	S.F.	3,865	
	2531.501	CONSTRUCT CURB & GUTTER, DESIGN B 624	L.F.	5,846	
	2531.507	6" CONCRETE DRIVEWAY PAVEMENT	S.Y.	225	
	2535.501	BITUMINOUS CURB	L.F.	471	
	2571.541	TRANSPLANT TREES	TREE	13	
	2575.505	SODDING	S.Y.	8,656	
	2575.531	COMMERCIAL FERTILIZER, ANALYSIS 12-12-12	TON	.55	
	2575.551	TOPSOIL BORROW	C.Y.	725	
	411.609	FLAGSTONE RETAINING WALL	S.F.	1,235	
	504.666	INSTALL HYDRANT	EACH	6	
	504.679	ADJUST VALVE BOX	EACH	10	

* NON-PARTICIPATING STATE AID

504.679

STANDARD DETAIL PLATES

0002 A	SPECIFICATION. REFERENCE TO STANDARD PLATES
3000 G	REINFORCED CONCRETE PIPE
3006 B	GASKET JOINT FOR R.C. PIPE
3100 F	CONCRETE APRON FOR R.C. PIPE
4000 G	MANHOLE OR CATCH BASIN
4005 J	MANHOLE OR CATCH BASIN
4010 E	CONCRETE SHORT CONE & ADJUSTING RING
4011 C	PRECAST CONCRETE BASE
4021 C	CURB OPENING CATCH BASIN
4101 B	RING CASTING FOR MANHOLE OR CATCH BASIN
4110 D	COVER CASTING FOR MANHOLE
4180 F	MANHOLE STEP CASTING
7035 I	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
7036 A	PEDESTRIAN CURB RAMP
7065 C	BITUMINOUS CURB
7100 D	CONCRETE CURB AND GUTTER
8000 F	STANDARD BARRICADES

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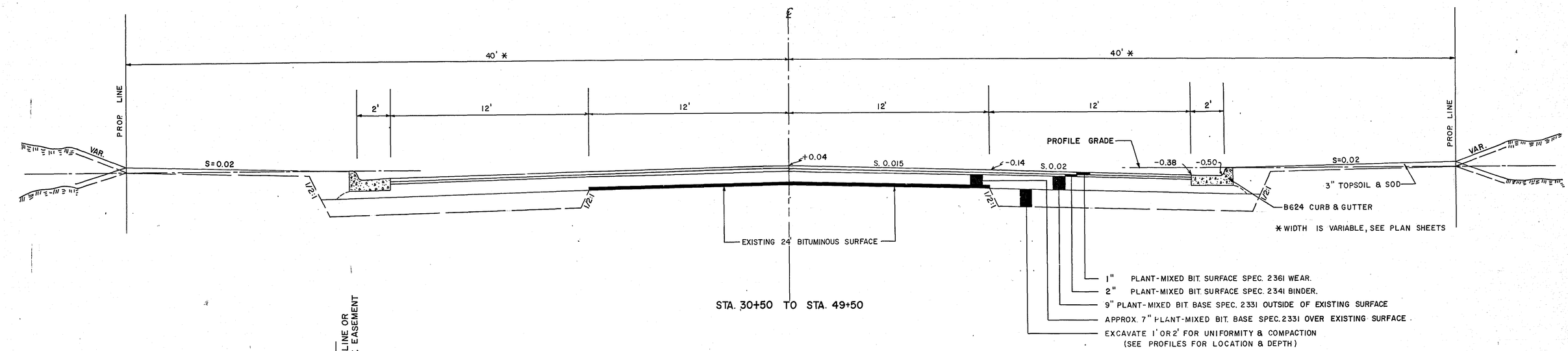
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Date Aug 3, '96 Reg. No. 5782

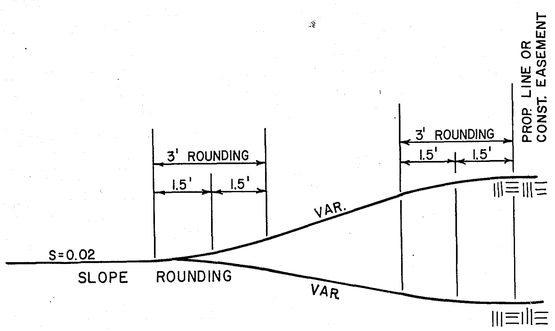
S.A.P. NO. 62-668-14

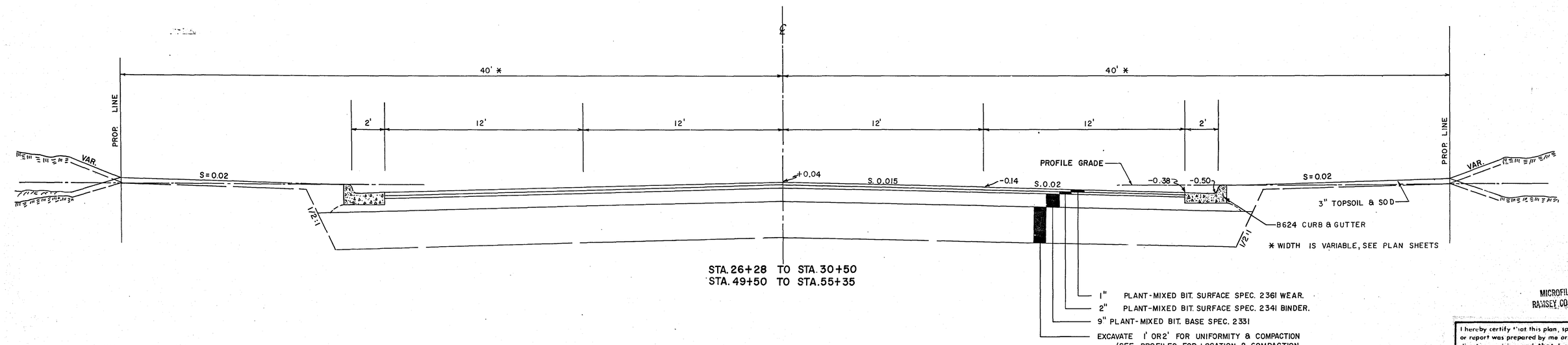
15-151

TYPICAL SECTION



STA. 30+50 TO STA. 49+50





STA. 26+28 TO STA. 30+50
STA. 49+50 TO STA. 55+35

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Wendell P. Monarch

Date Aug. 3, 76 Reg. No. 5782

S.A.P NO. 62-668-14

Sheet No. 3 of 28 Sheets

15-151

DRAINAGE CHART (EXISTING)

STATION	LOCATION	NO.	TYPE	DESIGN	CONST. HEIGHT LIN. FT.	CASTING ASSEMBLY	ELEVATION				ADJUST CASTING ASSEMBLY	RECONSTRUCT CATCH BASIN OR MAN HOLE LIN. FT.	INSTALL CASTING ASSEMBLY	FURNISH AND INSTALL PIPE SEWER												DRAINS TO		REMARKS
							PROFILE	ORIGNAL GRATE OR RING	NEW GRATE OR RING	C.B. or M.H. INVERT				REINFORCED CONCRETE PIPE						CORRUGATED STEEL PIPE					APRON	CLASS	STRUCTURE NO.	INVERT EL.	
														12"	15"	18"	21"	24"		12"	15"	18"							
25+87	RT. 11'	1	M.H.				994.07	993.79	993.90	986.79	1																	WATER
26+12	RT. 33'	2	M.H.				994.13	994.08	993.38	987.58		3.8	1															WATER
26+12	RT. 7'	3	M.H.				994.13	994.17	994.02	986.47	1																	WATER
26+22	RT. 1'	4	M.H.				994.14	994.28	994.12	984.48	1																	SANITARY
26+28	LT. 71'	5	M.H.				993.38	993.52	993.38		1																	
26+56	LT. 13'	6	M.H.				994.05	993.89	993.85	986.59	1																	WATER
29+05	RT. 35'	7	M.H				990.85	991.8 ±																				SANITARY, O.K. LEAVE
29+56	RT. 2'	8	M.H				989.95	989.40	989.94	978.48	1																	SANITARY
31+73	RT. 21'	9	C.B.				985.59	985.2 ±																			11	REMOVE C.B. & 37' of 12" R.C.P., SALVAGE CASTING
32+06	RT. 54'	10	C.B.				984.87	983.14	983.50	978.04	1																11	
32+08	RT. 30'	11	M.H.				984.82	983.45	984.20	974.95	1																18	STORM
32+23	RT. 2'	12	M.H.				984.49	983.38	984.46	972.5	1																	SANITARY
32+33	RT. 40'	13	M.H.				984.27	983.09	983.50	975.49	1																	WATER
32+38	RT. 54'	14	C.B.				984.16	983.34	983.20	978.04	1																11	
32+95	RT. 2'	15	M.H.				982.91	981.8 ±	982.88	970.56		7.1	1															SANITARY
34+12	LT. 23'	16	C.B.				979.89	978.10		974.2																	18	REMOVE C.B., SALVAGE CASTING
34+13	RT. 24'	17	C.B.				979.86	977.81		973.31																	18	REMOVE C.B., SALVAGE CASTING
34+25	RT. 31'	18	M.H.				979.56																				22	STORM O.K. LEAVE
36+47	RT. 2'	19	M.H.				972.72	971.54	972.69	960.54		6.4	1														25	SANITARY
39+07	LT. 26'	20	C.B.				965.24	964.97		960.63																	22	REMOVE C.B., SALVAGE CASTING
39+28	RT. 40'	21	C.B.				964.91	963.25		957.85																	22	REMOVE C.B., SALVAGE CASTING
39+35	RT. 31'	22	M.H.				964.82	963.53	964.17	952.33	1																WEST	
39+40	RT. 103'	23	M.H.				964.76																				22	STORM, O.K. LEAVE
39+30	RT. 101'	23A	C.B.				964.89				1																23	
39+49	RT. 39'	24	M.H.				964.66	963.64		951.64	1																25	
39+49	RT. 2'	25	M.H.				964.66	963.64	964.60	949.64	1																WEST	SANITARY
39+57	RT. 33'	26	M.H.				964.58	963.53		953.93	1																	WATER
39+60	LT. 34'	27	M.H.				964.55	963.60		956.70	1																	WATER
39+70	RT. 101'	28	C.B.				964.47				1																23	
39+83	LT. 11'	29	M.H.				964.31	963.30	964.18	956.30		6.9	1															WATER
40+12	LT. 26'	30	C.B.				964.33	964.01		962.8																	22	REMOVE C.B., SALVAGE CASTING
40+12	RT. 26'	31	C.B.				964.33	963.80		961.50																	22	REMOVE C.B., SALVAGE CASTING
43+35	RT. 2'	32	M.H.				966.47	965.27	966.44	951.57		6.8	1															SANITARY
45+40	RT. 31'	33	M.H.				967.70	966.44	967.80	957.69		6.9	1														22	STORM
45+84	℄	34	M.H.				968.07	967.01	968.07	952.91	1																	SANITARY
46+05	LT. 32'	35	C.B.				968.27	967.68		963.83																	33	REMOVE C.B. & 92' of R.C.P.
46+05	RT. 32'	36	C.B.				968.27	967.45		963.75																	33	REMOVE C.B. & 65' of 12" R.C.P., SALVAGE CASTING
46+83	℄	37	M.H.				969.17	967.54	969.17	953.44		5.7	1															SANITARY
48+72	RT. 31'	38	M.H.				971.77	970.62	971.87	961.97	1																33	
50+68	RT. 38'	39	C.B				974.66	973.75		972.45																	40	REMOVE C.B. & 7' of 12" R.C.P., SALVAGE CASTING
50+69	RT. 30'	40	MH				974.68	973.96	974.7 ±	967.01	1																38	
50+79	LT. 24'	41	C.B.				974.84	973.54		970.14																	40	REMOVE C.B., SALVAGE CASTING
50+88	LT. 10'	42	M.H.				974.99	974.30			1																	WATER
50+88	LT. 1'	43	M.H.				974.99	974.49	974.98	966.26	1																	SANITARY
51+06	RT. 23'	44	C.B.				975.33	974.34		969.36																	40	REMOVE C.B., SALVAGE CASTING
51+69	RT. 20'	45	M.H.				976.40	975.79		968.81	1																40	
53+88	RT. 20'	46	M.H.					979.36		973.26	1																45	
54+02	RT. 45'	47	S.D.					979.35																			48	REMOVE S.D. & 7' of 15" R.C.P., SALVAGE CASTING
54+09	RT. 44'	48	C.B.					980.36																			46	REMOVE C.B. & 30' of 15" R.C.P., SALVAGE CASTING
54+07	LT. 1'	49	M.H.					980.33		966.1	1																	SANITARY
TOTALS											26	43.9	4															

DESIGNED BY
DRAWN BY
CHECKED BY
REVISED DATE

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RAMSEY CO. ENGR.

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Date Sep. 3, 76 Reg. No. 5782

S.A.P. NO. 62-668-14 Sheet No. 4 of 28 Sheets

15-151

DRAINAGE CHART (NEW CONSTRUCTION)

STATION	LOCATION	NO.	TYPE	DESIGN	CONST. HEIGHT LIN. FT.	CASTING ASSEMBLY	ELEVATION: PROFILE	ELEVATION: ORIGNAL GRATE OR RING	ELEVATION: NEW GRATE OR RING	ELEVATION: C.B. or M.H. INVERT	ADJUST CASTING ASSEMBLY	RECONSTRUCT CATCH BASIN OR MAN HOLE LIN. FT.	INSTALL CASTING ASSEMBLY	FURNISH AND INSTALL PIPE SEWER: REINFORCED CONCRETE PIPE 12"	15"	18"	21"	24"			CORRUGATED STEEL PIPE 12"	15"	18"			APRON	CLASS	DRAINS TO: STRUCTURE NO.	INVERT EL.	REMARKS
29+18	LT. 30'	101	C.B.	LP-4	4.7	B	990.62		990.62	986.39					60'													102	985.80	
29+18	RT. 30'	102	C.B	LP-4	5.3	B	990.62		990.62	985.80					247'													103	980.86	
31+65	RT. 30'	103	C.B.	LP-4	5.4	B	985.77		985.77	980.86					43'													11	980.00	
34+12	LT. 30'	104	C.B.	LP-4	6.2	B	979.89		979.89	974.2 ±				7'														18		CONNECT TO EXISTING LINE
34+13	RT. 30'	105	C.B.	LP-4	7.1	B	979.86		979.86	973.3 ±					7'													18		CONNECT USING EXISTING LINE
37+12	LT. 30'	106	C.B.	LP-4	5.0	B	970.71		970.71	966.18					60'													107	965.60	
37+12	RT. 30'	107	C.B.	LP-4	5.6	B	970.71		970.71	965.60					10'													107A	965.50	
39+04	LT. 31'	108	C.B.	LP-4	6.8	B	965.21		965.31	959.0 ±																		22		
39+21	RT. 43'	109	C.B.	LP-4	7.7	B	965.01		965.2 ±	958.0 ±				5'														22		CONNECT TO EXISTING LINE
40+11	LT. 30'	110	C.B.	LP-4	7.2	B	964.33		964.30	957.6 ±																		22		CONNECT TO EXISTING LINE
40+11	RT. 30'	111	C.B.	LP-4	6.3	B	964.33		964.30	958.5 ±																		22		CONNECT TO EXISTING LINE
43+12	LT. 30'	112	C.B	LP-4	5.1	B	966.34		966.34	961.70					60'													113	961.12	
43+12	RT. 30'	113	C.B.	LP-4	5.7	B	966.34		966.34	961.12					12'													113A	961.00	
46+24	LT. 30'	114	C.B.	LP-4	4.9	B	964.46		968.46	964.04					60'													115	963.46	
46+06	RT. 30'	115	C.B.	LP-4	5.3	B	968.27		968.27	963.46					66'													33	962.80	
50+76	RT. 35'	116	C.B.	LP-4	4.5	B	974.51		974.51	970.5					8'													40	970.42	
50+80	LT. 30'	117	C.B.	LP-4	5.2	B	974.86		974.86	970.2 ±				5'														40		CONNECT TO EXISTING LINE
51+24	RT. 35'	118	C.B.	LP-4	5.1	B	975.61		975.61	971.0					49'													116	970.50	
53+94	RT. 50'	119	C.B.	LP-4	5.7	B	980.42		981.00	975.81					31'													46	975.50	
53+98±	RT. 92'±			APRON											40'±													119		EXACT LOCATION & ELEVATION TO BE DETERMINE IN FIELD
37+22	RT. 31'	107A	M.H.	A OR F	8.4	A	970.22		970.26	962.0 ±																		22		CONST. OVER EXIST. 15" R.C.P.
43+00	RT. 31'	113 A	M.H.	A OR F	10.4	A	966.27		966.31	956.0 ±																		22		CONST. OVER EXIST. 36" R.C.P.
TOTALS														17'	753'															

CASTINGS — [A = RING CASTING M.H.D. NO. 700-7, COVER CASTING NO. 712 (INCLUDE WITH STRUCTURE, NOT SEPARATE PAY ITEM).
RING CASTING M.H.D. NO. 790-2, COVER CASTING NO. 712 (INCLUDE WITH STRUCTURE, NOT SEPARTE PAY ITEM).]

MANHOLES & CATCH BASINS — [L.P-4 M.H.D. STD. PLATE NO. 4021C
A. OR F, M.H.D. STD. PLATE NO. 4000G OR 4005I]

REVISED | DATE | DESIGNED BY | DRAWN BY | CHECKED BY

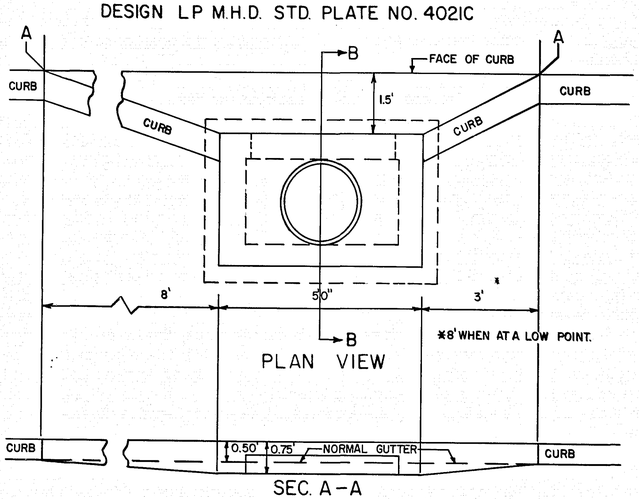
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Warren Lunard
Date Aug. 3, '76 Reg. No. 5782

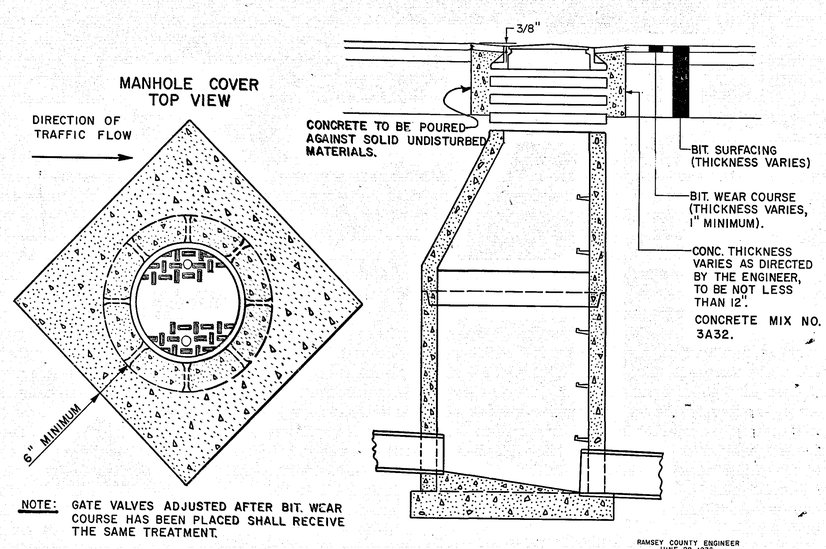
S.A.P. NO. 62-668-14

15-151

CURB OPENING CATCH BASIN INSTALLATION DETAIL
DESIGN L.P M.H.D. STD. PLATE NO. 4021C



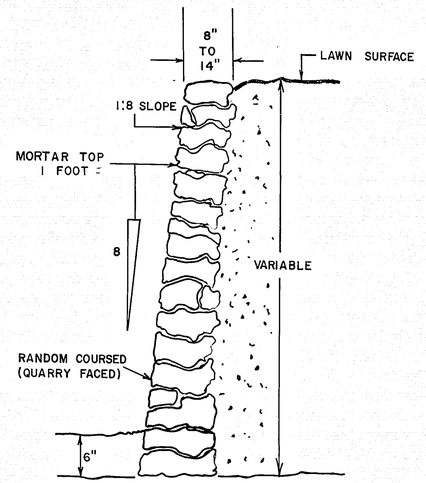
MANHOLE FRAME & RING CASTING INSTALLATION



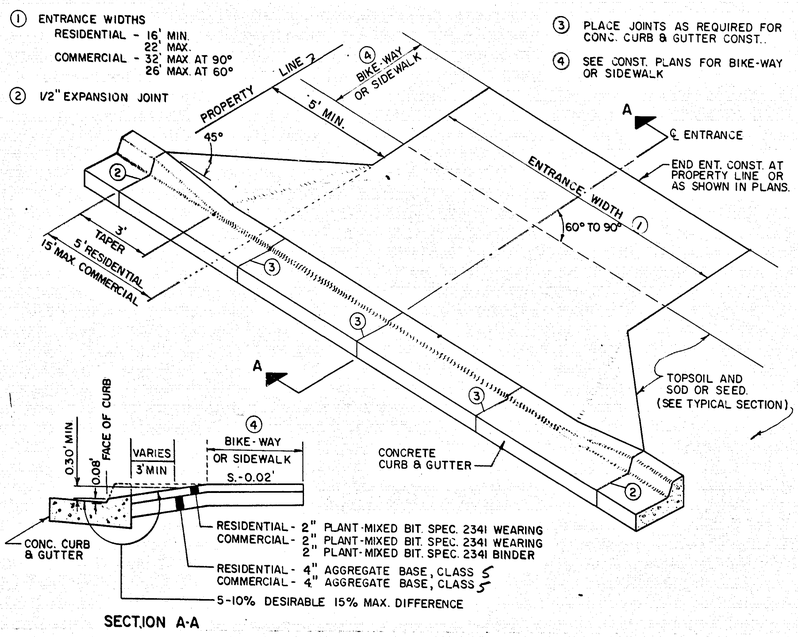
NOTE: GATE VALVES ADJUSTED AFTER BIT. WEAR COURSE HAS BEEN PLACED SHALL RECEIVE THE SAME TREATMENT.

RAMSEY COUNTY ENGINEER
JUNE 28, 1976

DRY RUBBLE MASONRY RETAINING WALLS



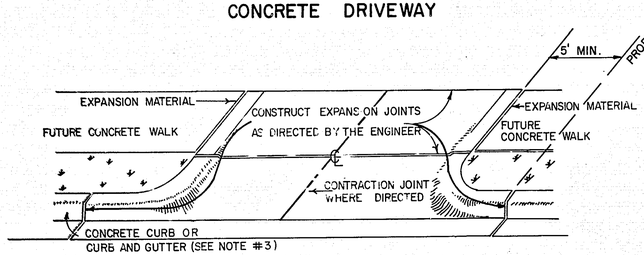
BITUMINOUS ENTRANCE DETAIL

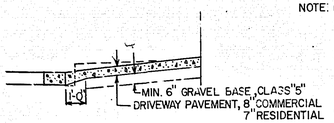


SECTION A-A

NOTE: DRIVEWAY TYPE TO BE DETERMINED IN THE FIELD BY THE ENGINEER AND THE PROPERTY OWNER.

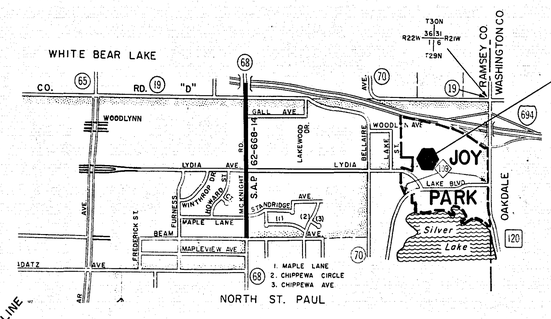
CONCRETE DRIVEWAY





SECTION ON ℄ DRIVEWAY

NOTE: 1. CONTRACTION JOINT REQUIRED IF WIDTH EXCEEDS 16'.
2. THE EXACT LOCATION AND WIDTH OF ENTRANCES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3. GUTTER TO BE PAVED INTEGRAL WITH DRIVEWAY PAVEMENT WHERE CURB AND GUTTER IS USED.
4. DRIVEWAY WIDTH, RESIDENTIAL MIN. 12', MAX. 22', COMMERCIAL 90° 32', 60° 26'
5. RADIUS, RESIDENTIAL IS 5', COMMERCIAL IS MIN. 5', MAX. 15' ALL TO BE VARIFIED BY THE ENGINEER.



STOCKPILE LOCATION MAP

STOCKPILE SITE FOR 3,322 C.Y. EXCESS COMMON EXCAVATION

SCALE: 1"= 1600'

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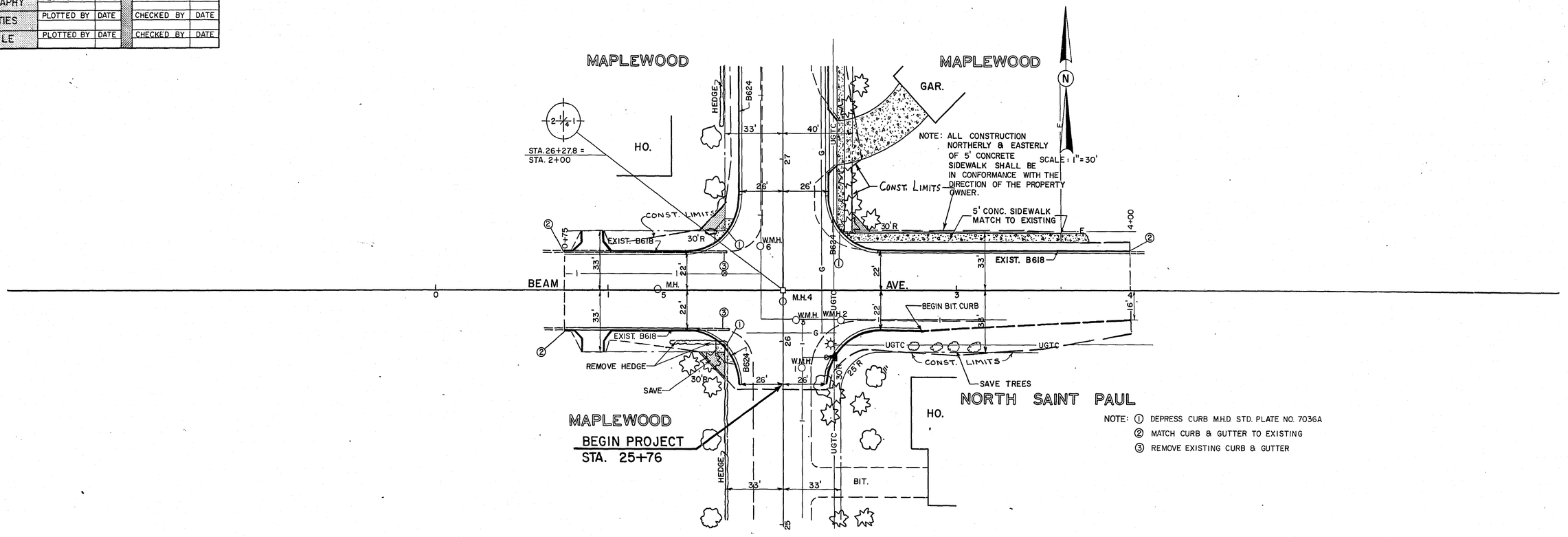
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Walter W. Jonas
Date Aug. 3, 77 Reg. No. 5782

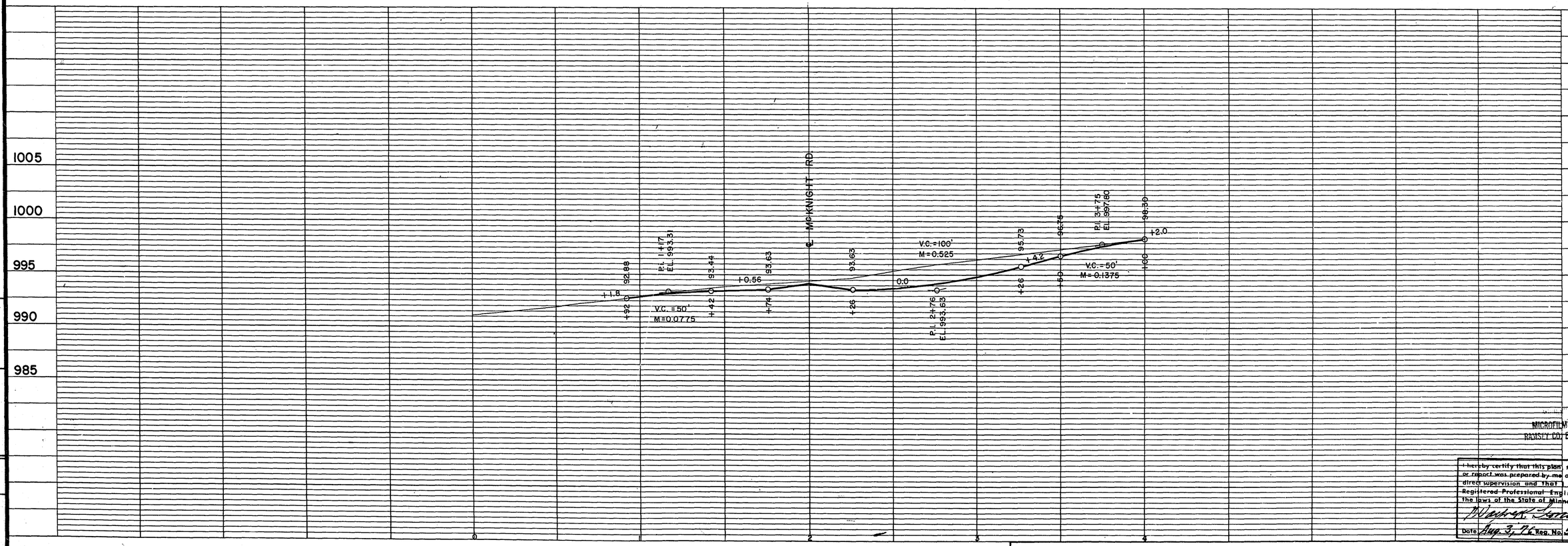
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15-151

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





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S.A.P. No. 62-668-14

Sheet No. 7 of 28 Sheets

15-151

NOTE: SEE SHEET 7 FOR BEAM AVE. PROFILE

STA. 26+27.8

ROBERT TILSENS MAPLEWOOD HEIGHTS

BEGIN PROJECT 3
STA. 25+76

MAPLEWOOD

ACQUIRE 15'X15' TRIANGLE

30'R

CONST. LIMITS

EXIST. B618

M.H. 5

BEAM AVE.

33'

NOTE: TO BE CONSTRUCTED BY RAMSEY COUNTY UNDER S.A.P. 62-668-16

SAN. M.H. 4

WATER M.H. 6

WATER MH.

W.M.H. 1

W.M.H. 2

UGTC

BIT.

30'R RELOCATE HYDRANT

NORTH SAINT PAUL

GAR. 2874 HO.

BEGIN BIT CURB

SARATOGA HILLS PLAT 2

22'

5' CONC. SIDEWALK MATCH TO EXIST.

ROBERT TILSENS MAPLEWOOD HEIGHTS No. 2

HO. 7

HO. 14

MAPLEWOOD

McKNIGHT ROAD

HEDGE

WOODEN FENCE

1" ASH SAVE 2" ASH

B624 C. & G.

TEL.

SCALE: 1"=30'

8

ACQUIRE 15'X15' TRIANGLE

30'R

ACQUIRE 7' ADD. R/W

4" SPRUCE TRANSPLANT

1" MU. PINES

30R 1" PINES TRANSPLANT

ACQUIRE 10'X10' TRIANGLE

TRANSPLANT 1" PINE

TRANSPLANT 1 1/2" MUGO PINE

GAR.

NOTE: ALL CONSTRUCTION NORTHERLY & EASTERLY OF 5' CONCRETE SIDEWALK SHALL BE IN CONFORMANCE WITH THE DIRECTION OF THE PROPERTY OWNER.

MAPLE LANE

EXIST. B618

C.B.101

SAN. MH8

SAN. M.H.7

C.B.102

TRANSPLANT 1" M.A.

CONST. LIMITS

TRANSPLANT 2" ASH

CONC.

ROBERT TILSENS MAPLEWOOD HEIGHTS No. 3

II

P.O.T. STA. 29+56.3

GAR.

RELOCATE HYDRANT

ACQUIRE 15'X15' TRIANGLE

30'R

CONST. LIMITS

2902 HO. 13

2912 HO. 14

2922 HO. 15

NOTE: TRANSPLANT LOCATION SHALL BE WITHIN 50' OF THE PRESENT LOCATION

THURMAN 4 CONCERNED ABOUT TREE & SEWER

ROBERT TILSENS MAPLEWOOD HEIGHTS No. 4

1

HO. GAR. 2929

HO. 2935

HO. 2943

BIT.

CONST. LIMITS

B624 C. & G.

C.B.9

C.B.103

TRANSPLANT 1" MAPLE

TRANSPLANT 1/2" MAPLE

EXIST. 5' SIDEWALK

30'R

C.B. 10

C.B. 14

SAN. MH 12

SAN. MH 15

WMH 13

MH 11

STANDRIDGE AVE.

EXIST. B618

GAR.

HO.

P.O.T. STA. 32+20.81

ROBERT TILSENS MAPLEWOOD HTS. 7

① DEPRESS CURB MHD STD. PLATE NO. 7036A

② MATCH CURB & GUTTER TO EXISTING.

③ REMOVE EXISTING CURB & GUTTER.

995
990
985
980

93.32 +1.46 P.I. 25+82 EL.=944.42 -0.50 94.05 93.96 P.I. 27+50 EL.=993.58 92.26 C.B.101 90.63 -1.76 C.B.102 90.54 90.06 P.I. 30+50 EL.=988.30 86.10 C.B.103 85.63 -2.20 M.H.11 84.08 82.87

+07 +57 +75 +25 +50 +50

V.C.=150' M=0.3675

V.C.=150' M=0.23625

V.C.=200' M=0.11

3'

8" C.I.P. WATERMAIN

60" X 15" R.C.P. @ 1%

INV. 986.58

INV. 985.64

SUBCUT FOR UNIFORMITY & COMPACTION

980.20

979.0

978.00

27" X 15" R.C.P. @ 2.0%

INV. 980.85

43" X 15" R.C.P. @ 2.0%

INV. 979.82

975.72

975.55

971.90

970.56

2'

1.9'+

25 26 27 28 29 30 31 32 33

REVISED DATE | DESIGNED BY | DRAWN BY | CHECKED BY

MICROFILMED MICROFILMED BY ENGR.

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

Walter R. Leonard

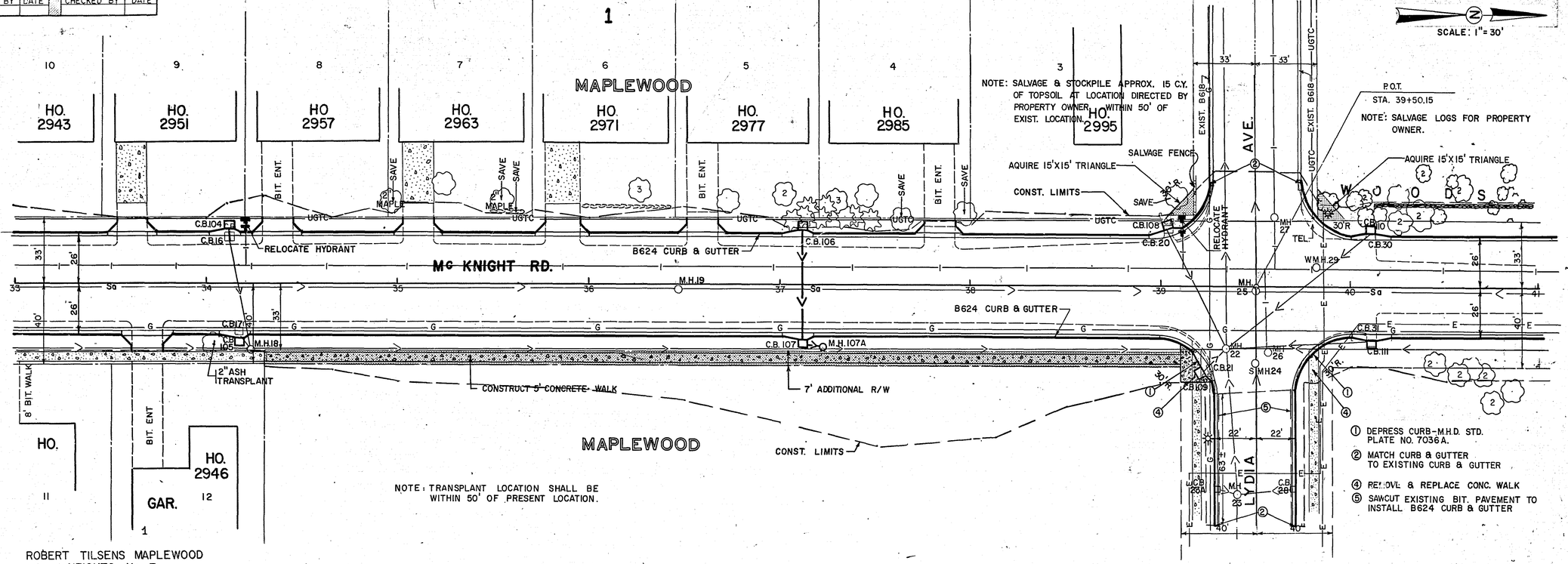
Date Aug. 3, 76 Reg. No. 5782

S.A.P. No. 62-668-14 Sheet No. 8 of 28 Sheets

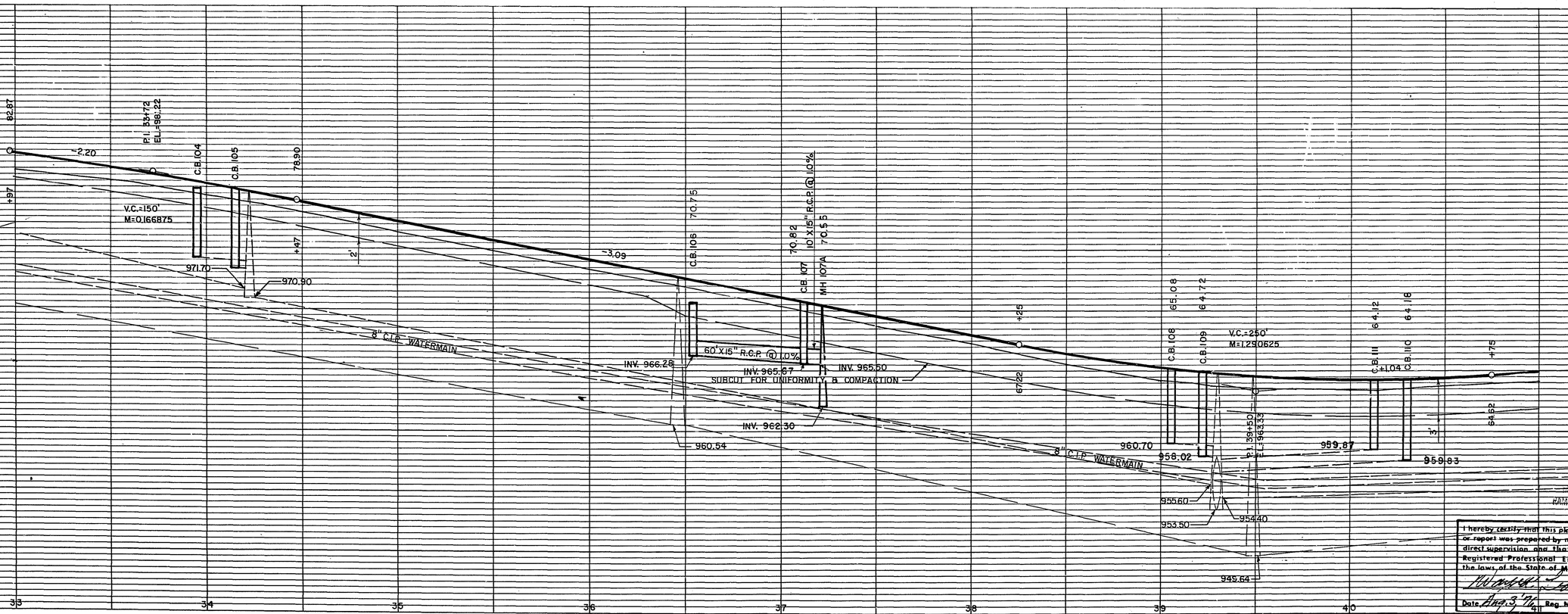
15-151

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

ROBERT TILSENS MAPLEWOOD HEIGHTS No. 4



ROBERT TILSENS MAPLEWOOD HEIGHTS No. 7



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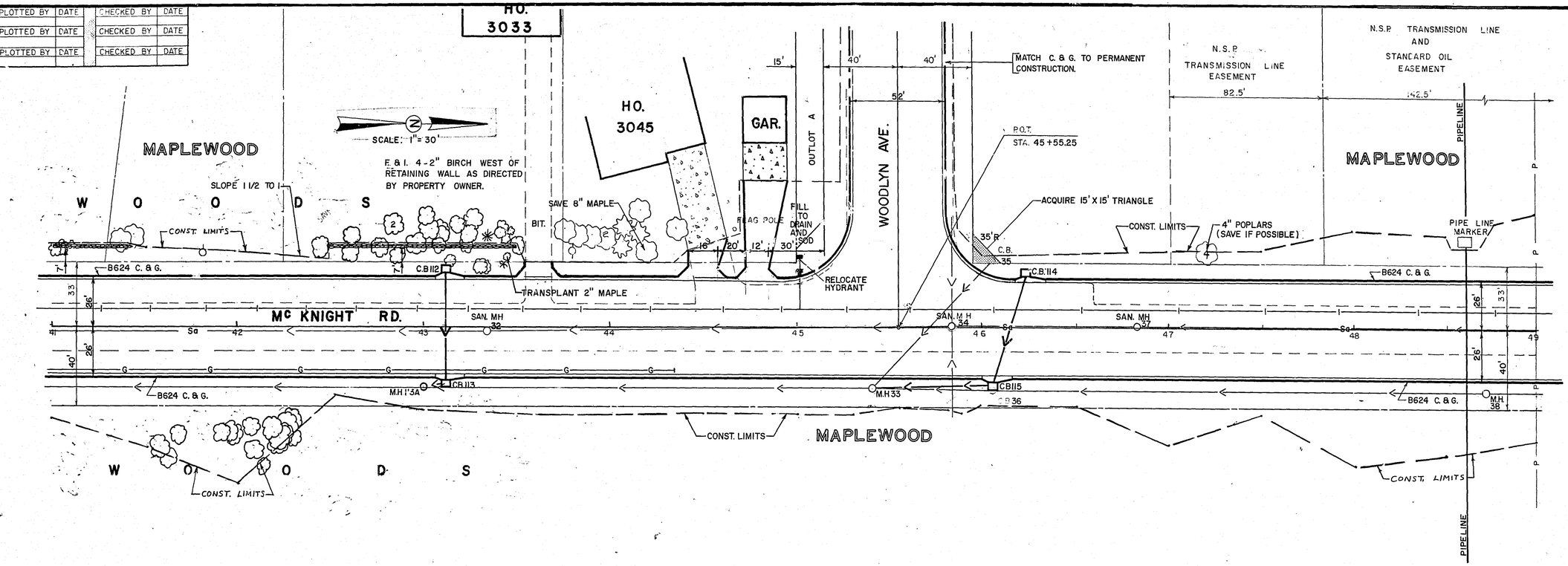
Date Aug. 3, 71 Reg. No. 5782

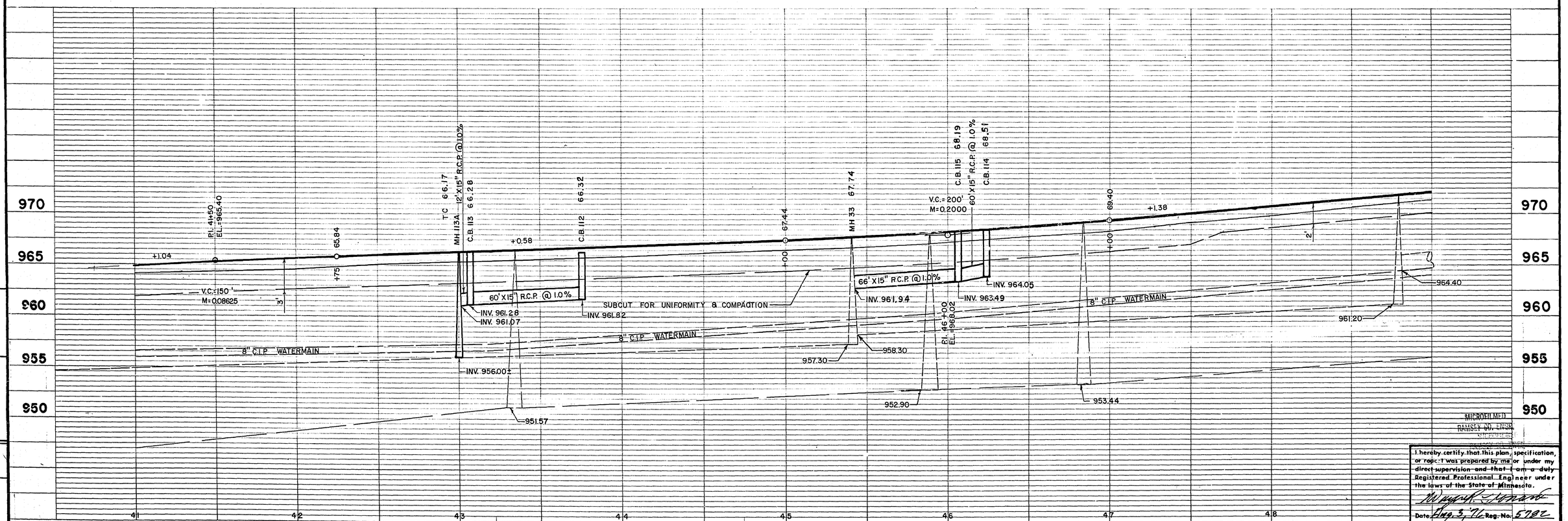
REVISED	DATE	DESIGNED BY	DRAWN BY	CHECKED BY

S.A.P. No. 62-668-14 Sheet No. 9 of 28 Sheets

15-151

	PLOTTED BY	DATE	CHECKED BY	DATE
TOPOGRAPHY				
UTILITIES				
PROFILE				





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Date Aug. 3, 71 Reg. No. 5782

S.A.P. No. 62-668-14

Sheet No. 10 of 28 Sheets

15-151

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

SCALE: 1"= 30'

MAPLEWOOD

CONST. LIMITS

RELOCATE HYDRANT

C.B. 117

CB 41

W.M.H. 42

M.H. 43

MC KNIGHT RD.

P.O.T. STA. 50+99.24

4" COTTON SAVE IF POSSIBLE

HO. 2252

BIT ENT.

4' GRAVEL SHOULDER

15:1 TAPER TO EXISTING

AQUIRE 15'X15' TRIANGLE

RELOCATE HYDRANT

30'R

24'

CO. RD. D

STA. 54+23.69

CONST. LIMITS

B624 CURB & GUTTER

694

M.H. 49

M.H. 45

M.H. 46

M.H. 40

C.B. 44

C.B. 118

C.B. 39

C.B. 116

EXISTING DRAIN PIPE

DEPRESS CURB - MH.D. STD. PLATE NO. 7036A

GALL AVE.

MAPLEWOOD

4" TO 6" PINES SAVE

6" PINE SAVE

AQUIRE 15'X15' TRIANGLE

*TRANSPLANT 6" PINE

SAVE 6" PINE

S.D.

CB 48

CB 119

END B624 CURB AT DRIVEWAY

GRAVEL

GAR

REMOVE 20'X12' C.M.P.

GUARD RAIL

H.H.

END B624 CURB 5' PAST RADIUS

END PROJECT STA. 55+35

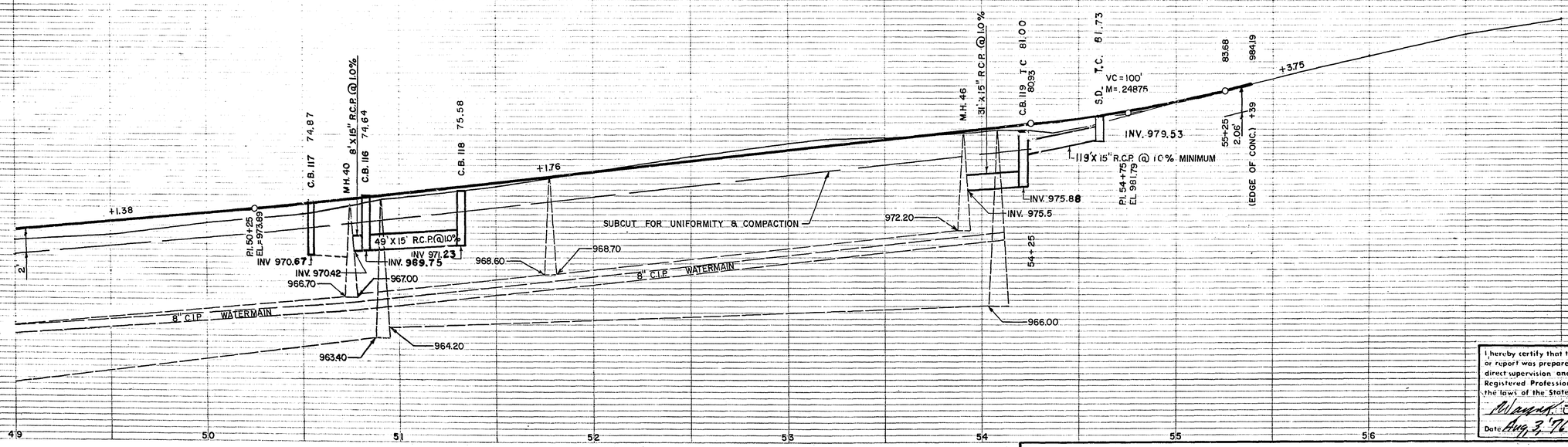
89°50'

NOTE: TRANSPLANT LOCATION SHALL BE WITHIN 50' OF PRESENT LOCATION.

* LOCATION SHALL BE WITHIN 50' OF PRESENT LOCATION AND SHALL BE TRANSPLANTED AS LATE IN CONTRACT AS POSSIBLE.

EXACT LOCATION AND ELEVATION OF APRON TO BE DETERMINED IN THE FIELD.

NOTE: THE REALIGNMENT OF GALL AVE. WILL BE CONSTRUCTED BY OTHERS.



REVISED	DATE

DESIGNED BY

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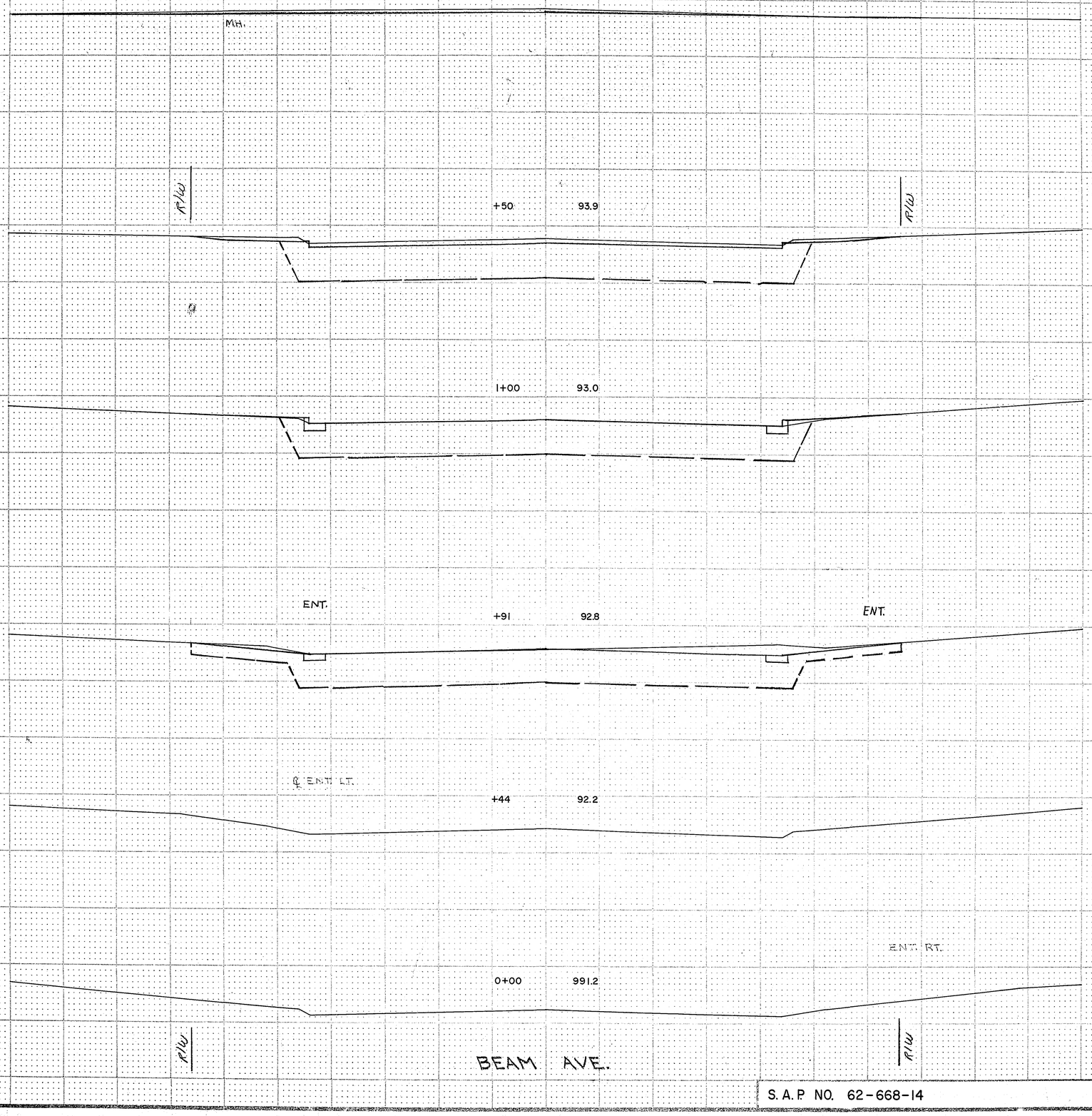
Date Aug. 3, '76 Reg. No. 5782

S.A.P. No. 62-668-14

Sheet No. 11 of 28 Sheets

MICROFILMED RAMSEY CO. ENGR.

15-151



Fed. Proj. No.	
EXC.	EMB.
106	59
291	174
53	31
148	82

REVISED	DATE	DESIGNED BY	DRAWN BY	CHECKED BY

DIRECTIONAL CROSS SECTIONS - OPEN ROAD
RAMSEY CO. HIGHWAY DEPT. - ST. PAUL

MICROFILMED
RAMSEY CO. ENGR.

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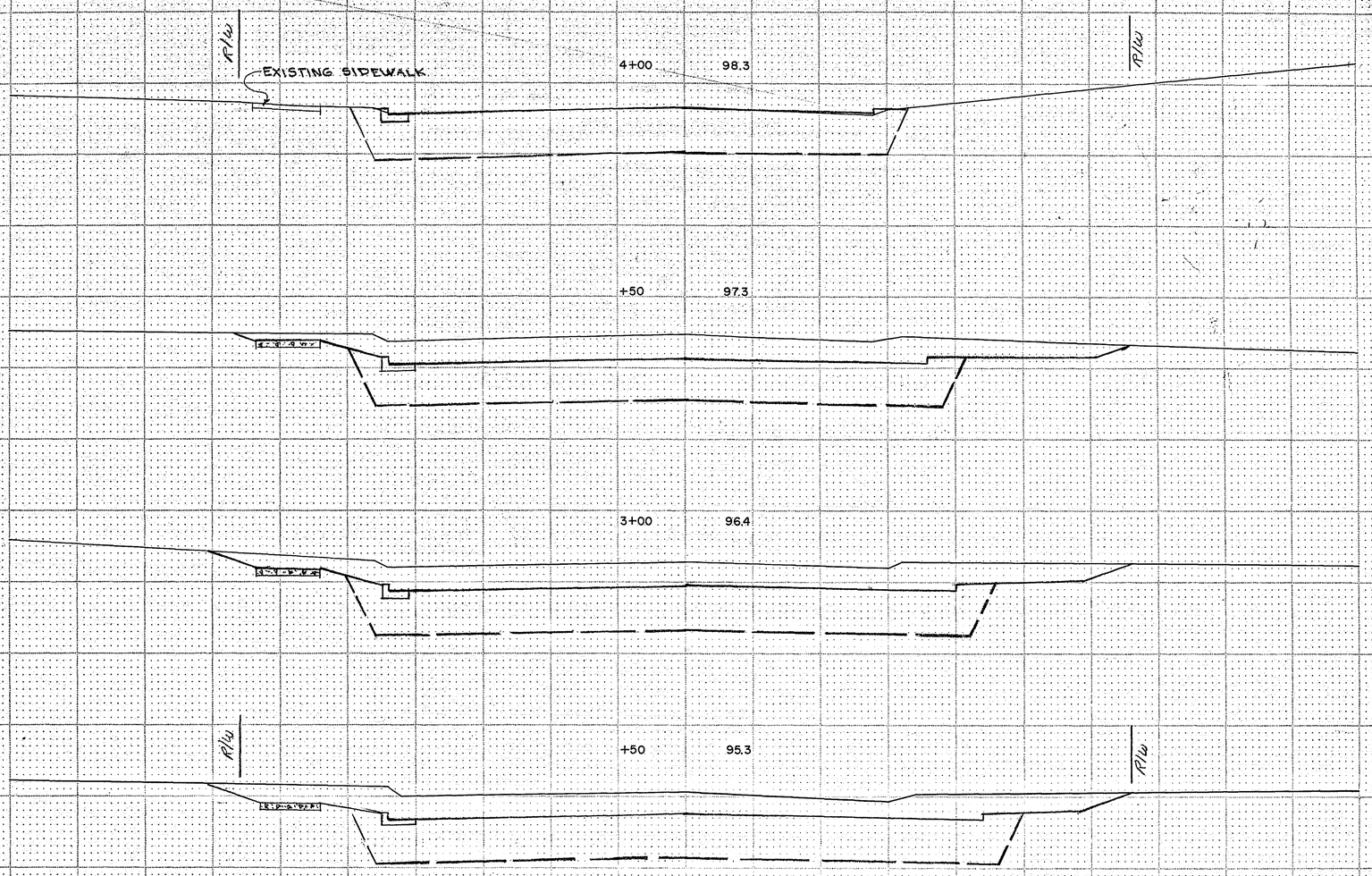
Wesley R. Lorenz

Date May 3, 76 Reg. No. 5792

S. A. P. NO. 62-668-14

Sheet No. 12 of 28 Sheets

15.151



Fed. Proj. No.	
EXC.	EMB.
318	152
427	163
448	170
157	61

REVISED	DATE	
		DESIGNED BY
		DRAWN BY
		CHECKED BY
		FUNCTIONAL CROSS SECTION OPEN DITCH

MICROFILMED
RAMSEY CO. ENGR.

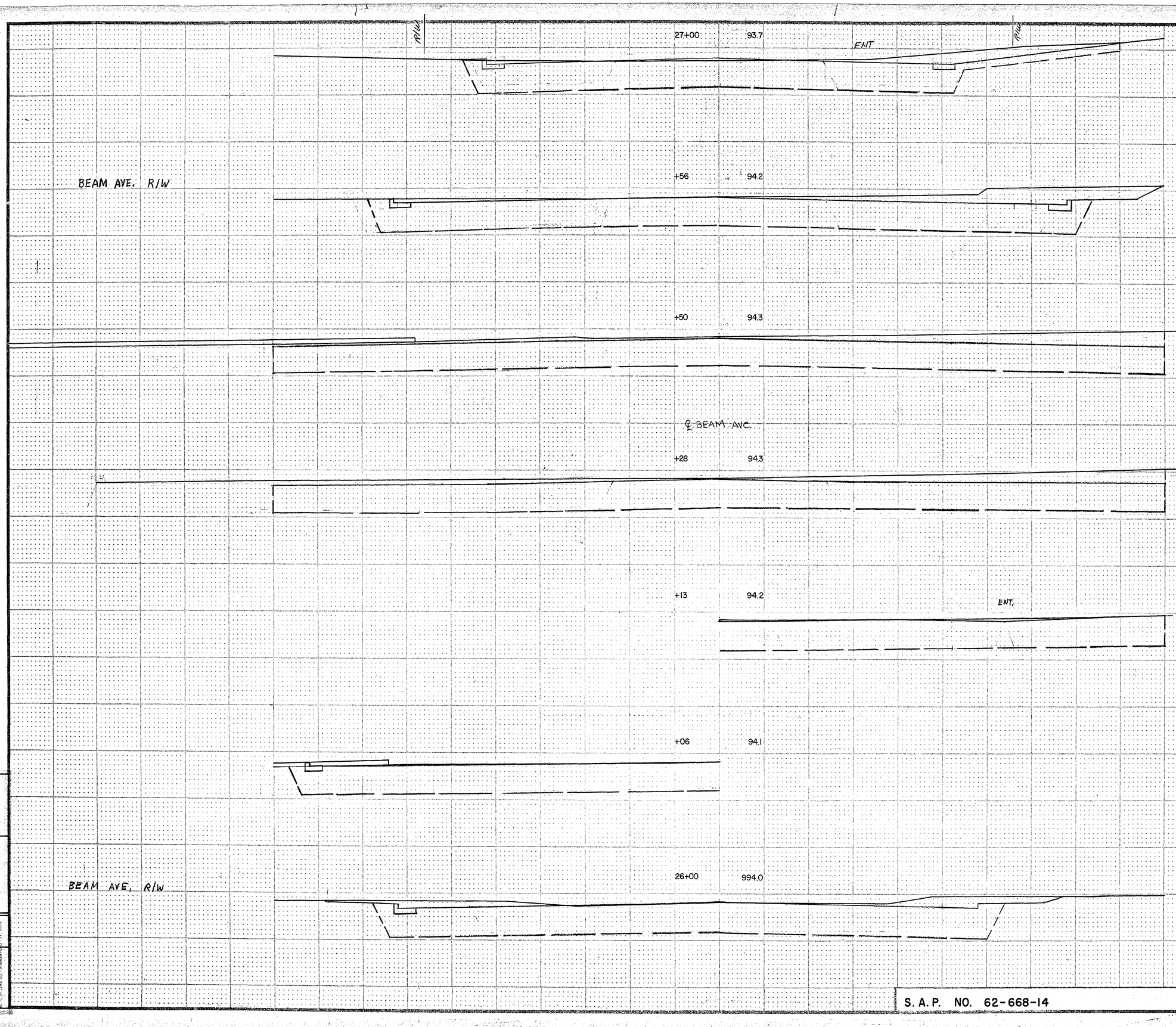
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Date Aug. 3, 76 Reg. No. 5782

S.A.P NO. 62-668-14

Sheet No. 13 of 28 Sheets

15-151



Fed. Proj. No.	
EXC.	EMB.
406	218
71	40
288	163
314	0

DESIGNED BY
DRAWN BY
CHECKED BY
FUNCTIONAL CROSS SECTION OPEN DITCH
REVISED - DATE

MICROFILMED
RAMSEY CO. ENGR.

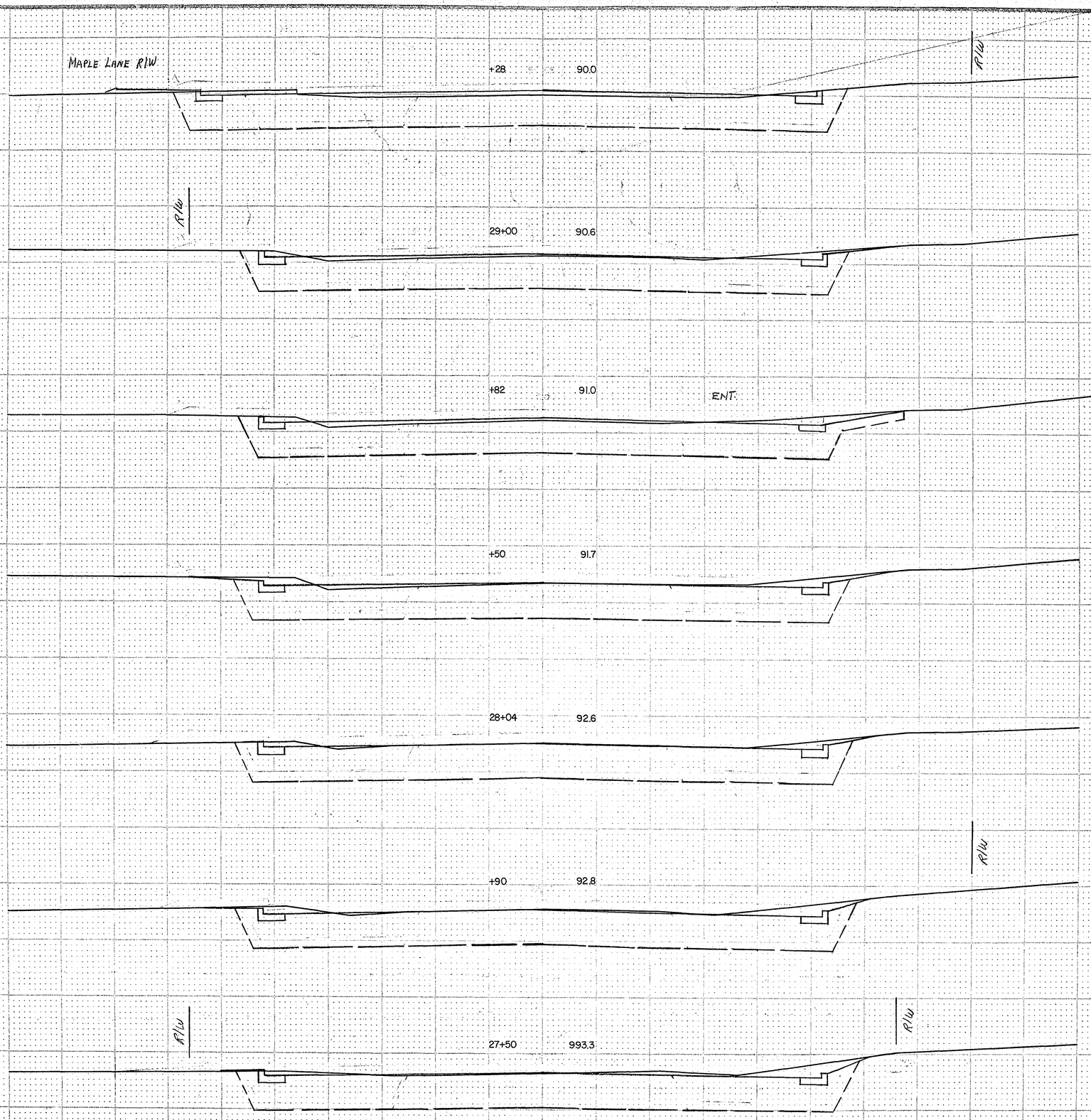
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Date Aug 3, 72 Reg. No. 5782

S. A. P. NO. 62-668-14

Sheet No. 14 of 28 Sheets

15-151



Fed. Proj. No.	
EXC.	EMB
187	120
118	73
209	130
298	187
93	57
274	163
365	204

REVISED — DATE

DESIGNED BY

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CHECKED BY

FUNCTIONAL CROSS SECTION OPEN DITCH

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RAMSEY CO. ENGR.

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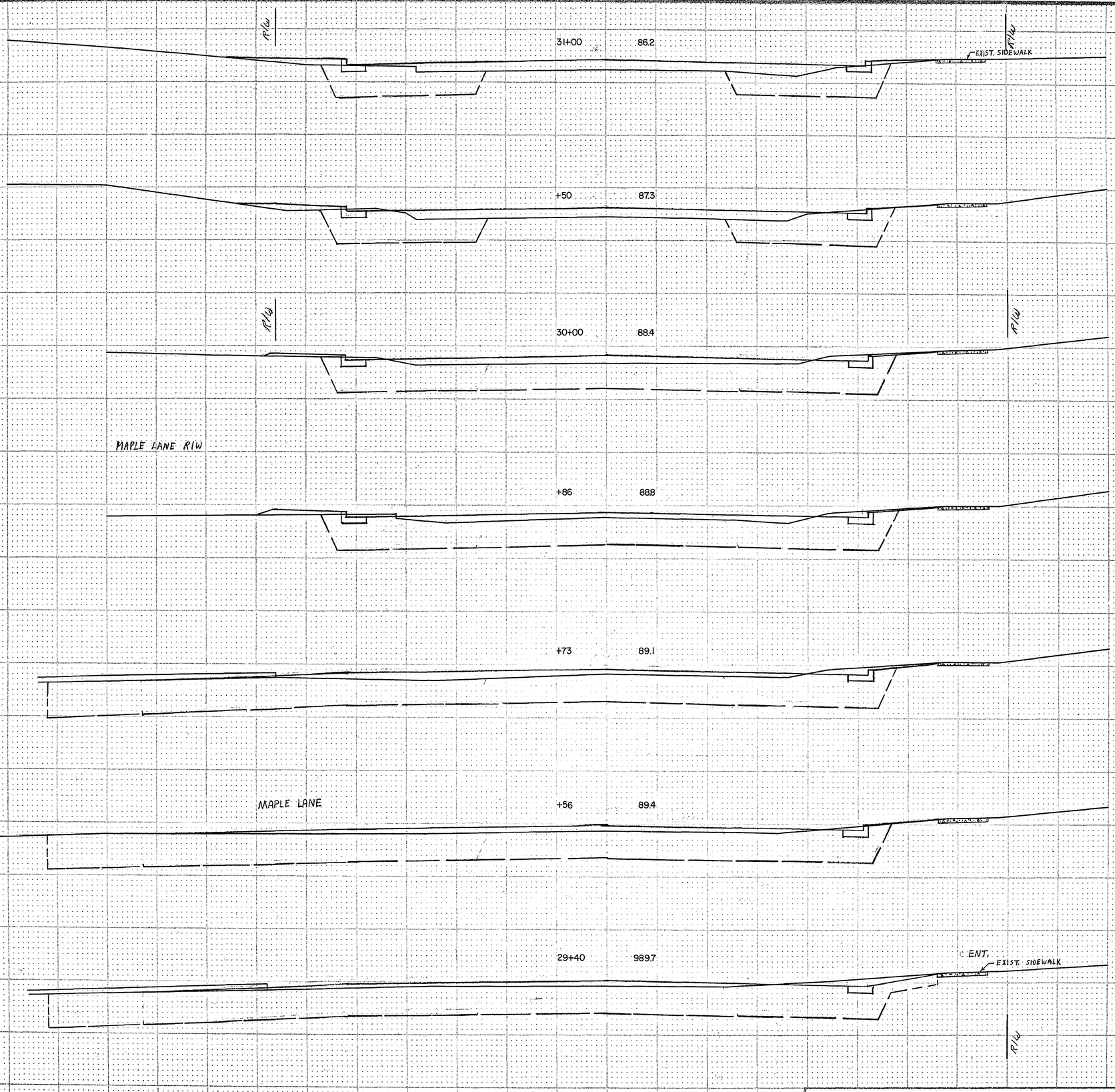
Walter J. Leonard

Date Aug. 3, 1976 Reg. No. 5792

S.A.P. NO. 62-668-14

Sheet No. 15 of 28 Sheets

15-151



Fed. Proj. No.	
EXC.	EMB.
134	111
211	157
81	57
99	65
160	99
151	94
98	280

DESIGNED BY
DRAWN BY
CHECKED BY
QUANTITY CALCULATED BY
CROSS SECTIONED BY
REVISED - DATE

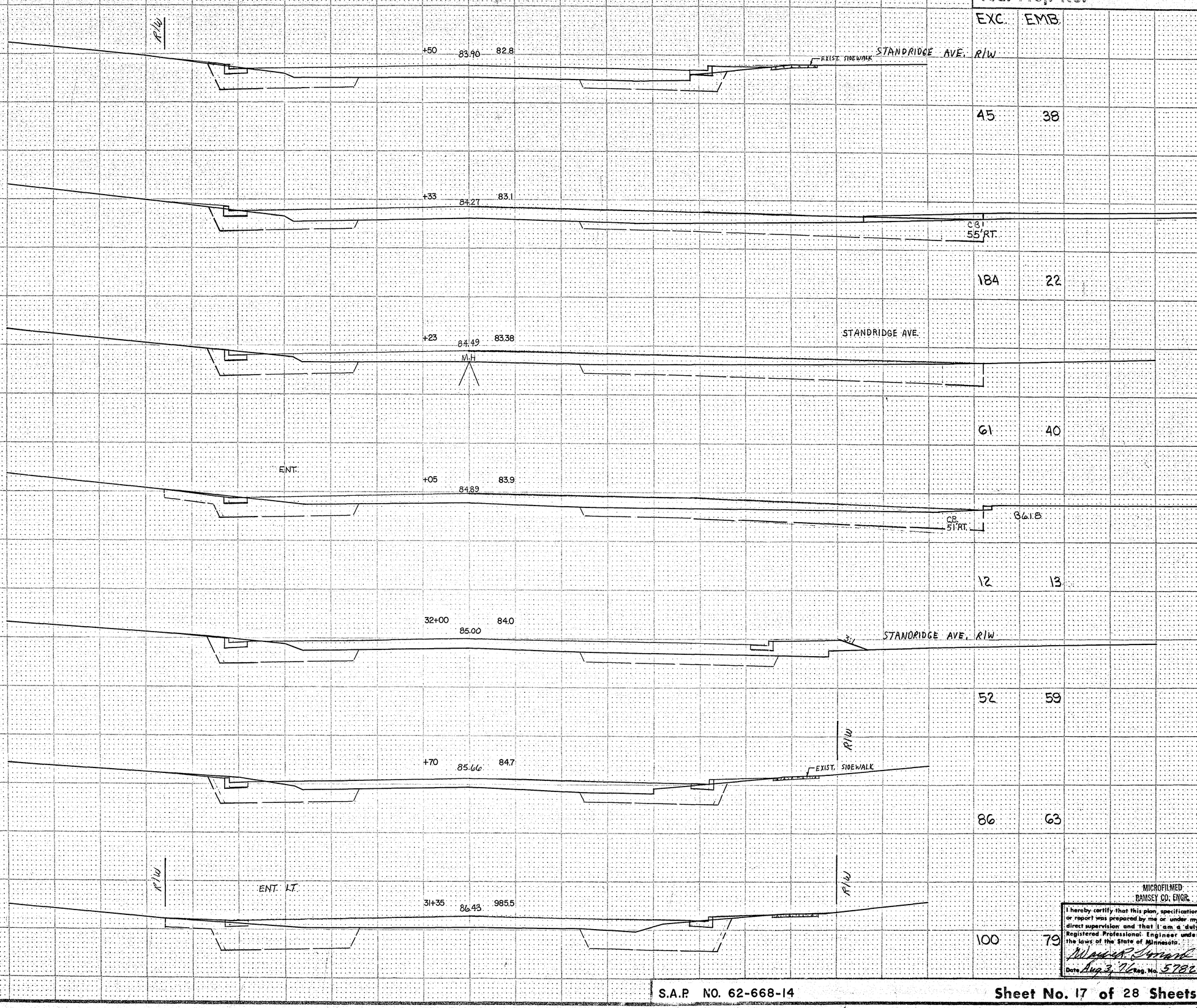
MICROFILMED
RAMSEY CO. ENGR.

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Wayne B. Sinnard
Date Aug. 3, 1976 Reg. No. 5782

S.A.P. NO. 62-668-14

Sheet No. 16 of 28 Sheets

15-151



Fed. Proj. No.	EXC.	EMB.
	45	38
	184	22
	61	40
8618.	12	13
	52	59
	86	63
	100	79

REVISED — DATE
DESIGNED BY
DRAWN BY
CHECKED BY
FUNCTIONAL CROSS SECTION - OPEN DITCH

MICROFILMED
RAMSEY CO. ENGR.

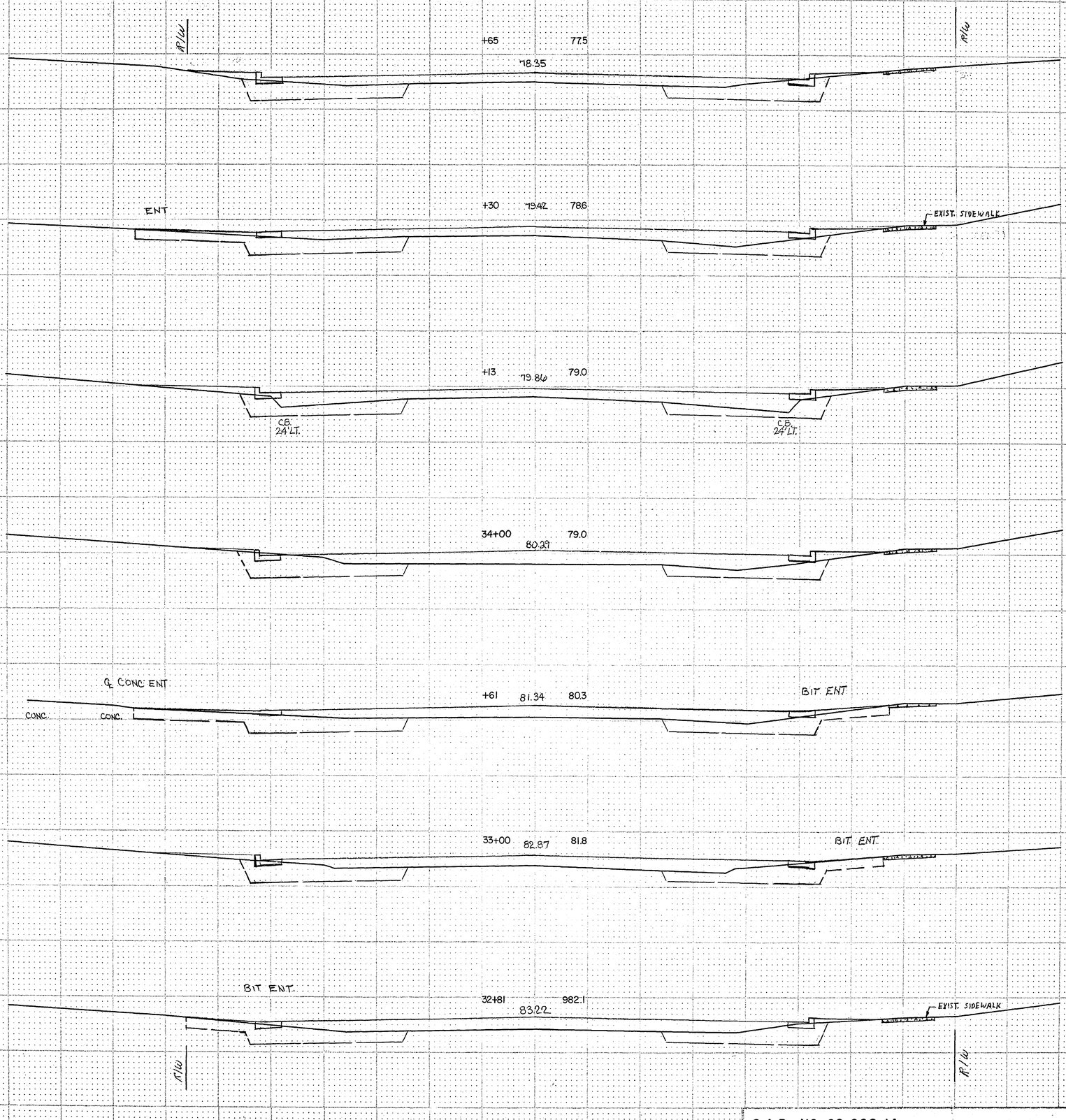
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Marvin Strand
Date Aug 3, 76 Reg. No. 5782

S.A.P. NO. 62-668-14

Sheet No. 17 of 28 Sheets

15-151

Fed. Proj. No.



EXC.	EMB.
58	46
24	23
22	29
77	67
125	102
37	33
55	54

REVISED — DATE

DESIGNED BY

DRAWN BY

CHECKED BY

FUNCTIONAL CROSS SECTION OPEN

MICROFILMED
RAMSEY CO. ENGR.

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Date Aug. 3 '76 Reg. No. 5782

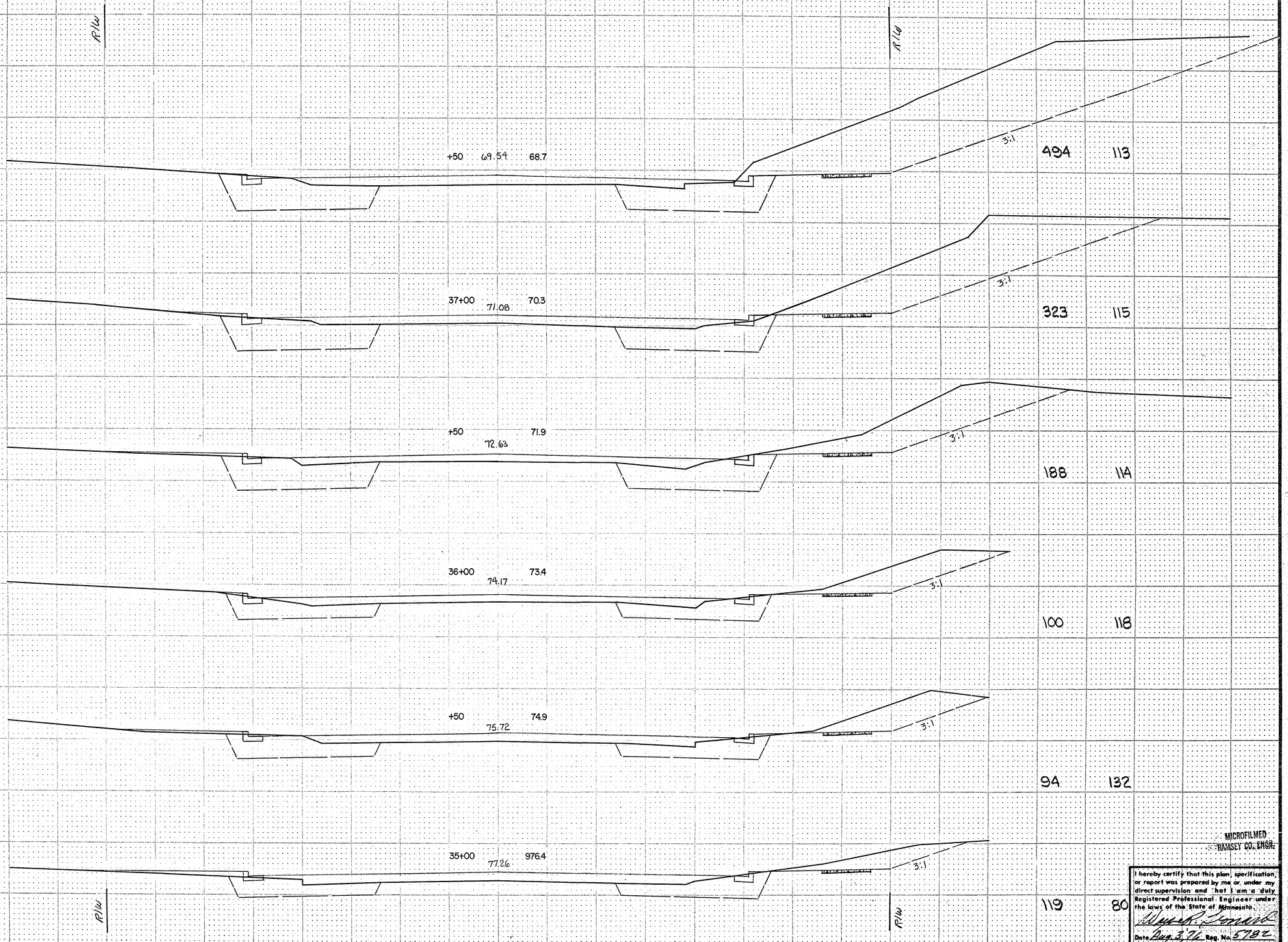
S.A.P. NO. 62-668-14

Sheet No. 18 of 28 Sheets

15-151

Fed. Proj. No.

	EXC.	EMB.
+50 69.54 68.7	494	113
37+00 71.08 70.3	323	115
+50 72.63 71.9	188	114
36+00 74.17 73.4	100	118
+50 75.72 74.9	94	132
35+00 77.26 976.4	119	80



REVISED DATE

DESIGNED BY

DRAWN BY

CHECKED BY

DATE PLOTTED

FUNCTIONAL CROSS SECTION - OPEN

A. ROGERS CO. - MINNE. PROJ. S.P. #2-

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RAMSEY CO., ENGR.

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Date Aug. 3, '76 Reg. No. 5782

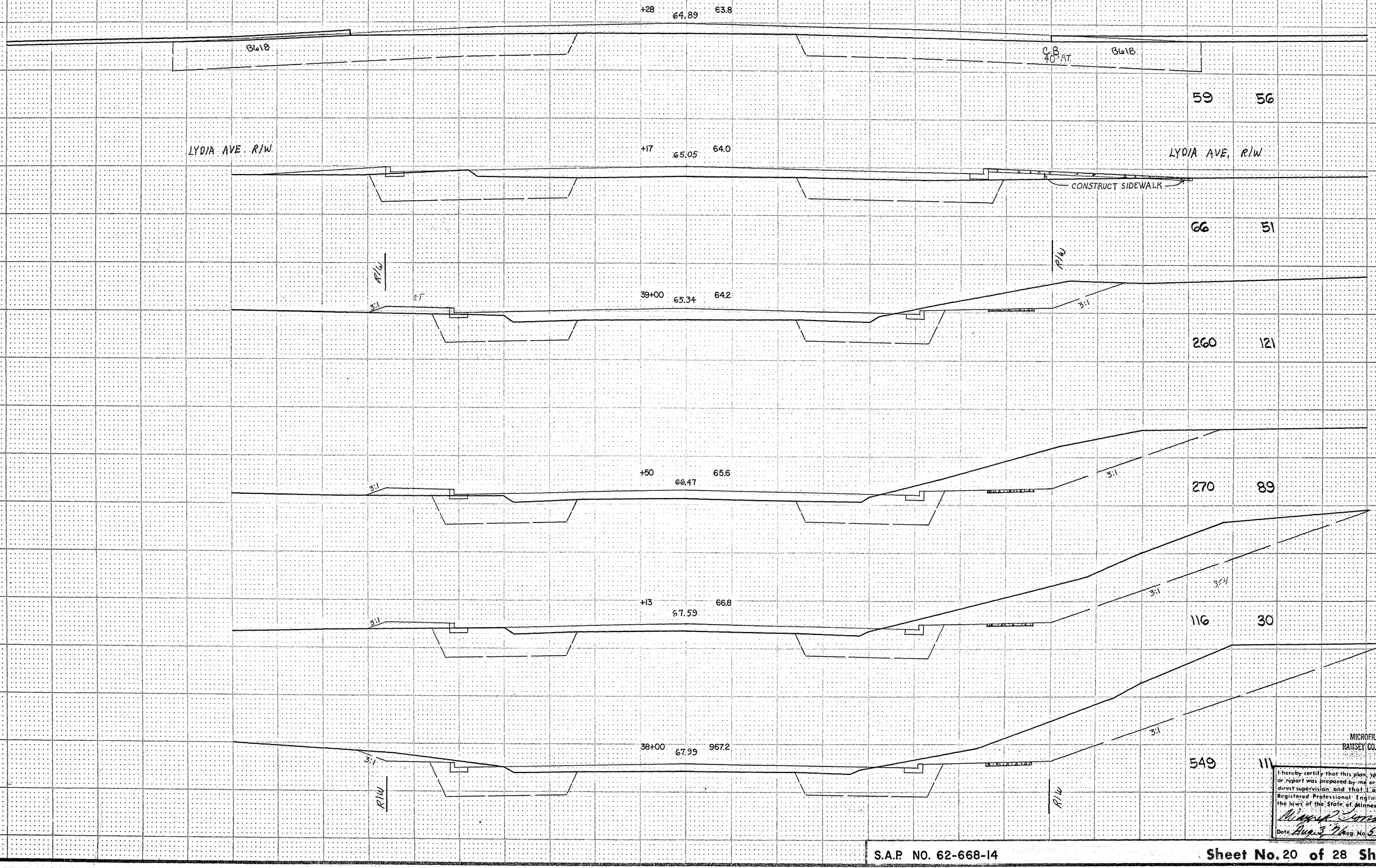
S.A.P. NO. 62-668-14

Sheet No. 19 of 28 Sheets

15-151

Fed. Proj. No.

	EXC.	EMB.
+28 64.89 63.8	59	56
+17 65.05 64.0	66	51
39+00 65.34 64.2	260	121
+50 66.47 65.6	270	89
+13 67.59 66.8	116	30
38+00 67.99 967.2	549	111



REVISED — DATE
DESIGNED BY
DRAWN BY
CHECKED BY
FUNCTIONAL CROSS SECTION OPEN DITCH

MICROFILMED
RAMSEY CO. ENGR.

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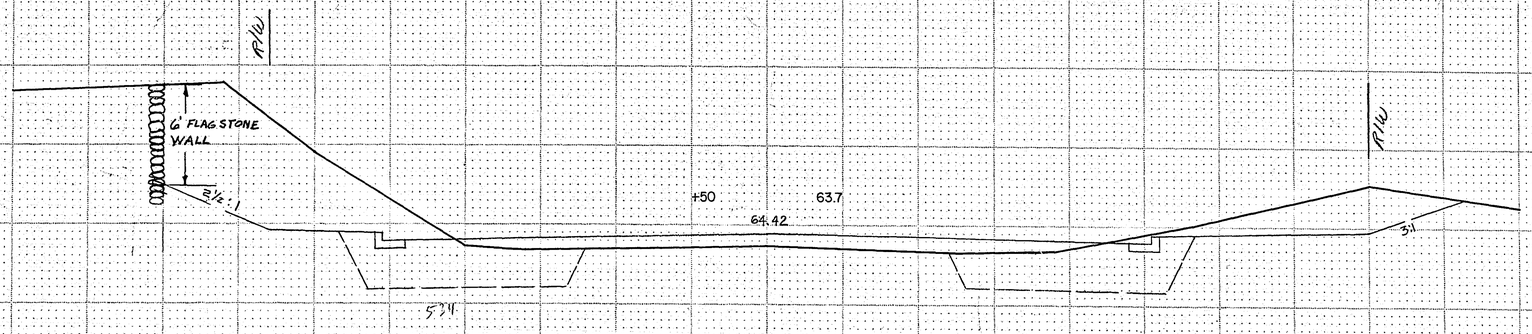
Date Aug. 3 '76 Reg. No. 5702

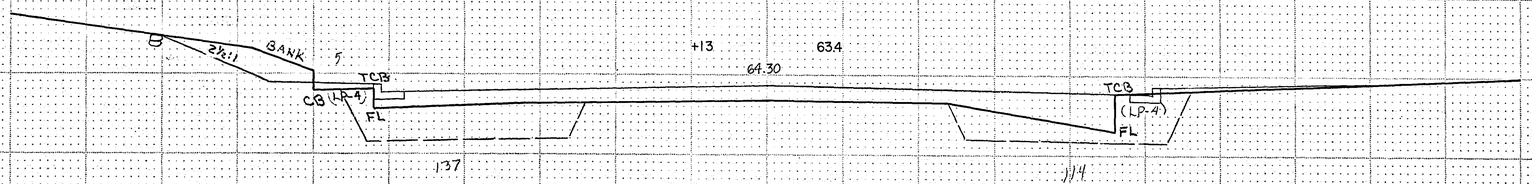
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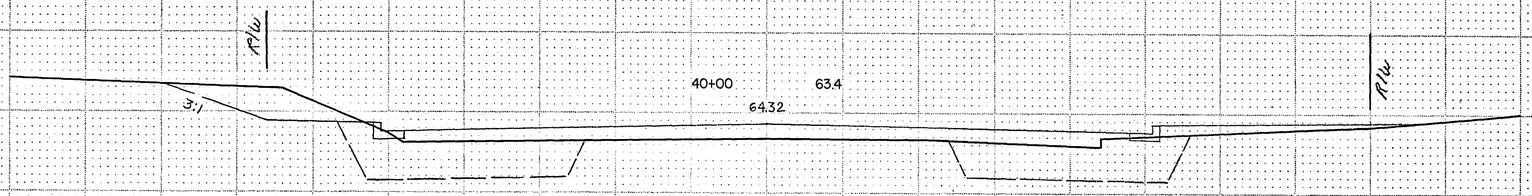
Sheet No. 20 of 28 Sheets

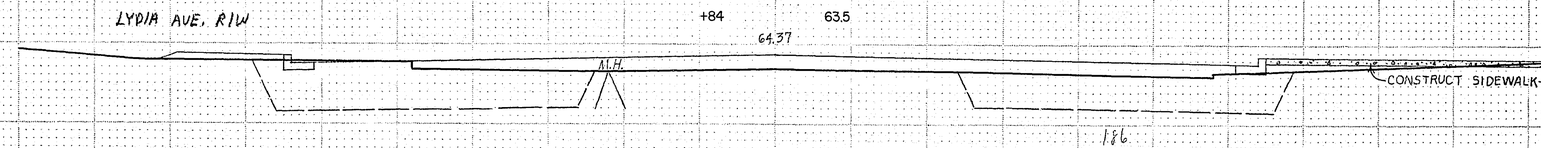
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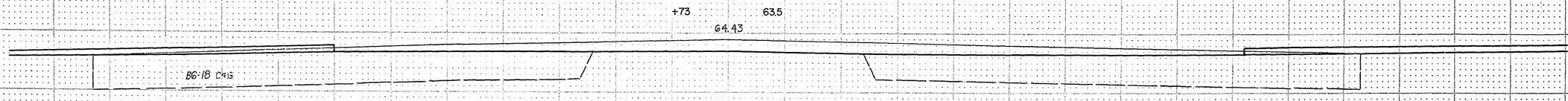
Fed. Proj. No.	
EXC.	EMB.
189	86
41	31
61	40
67	49
198	79
158	69

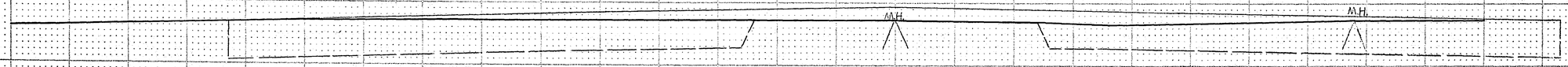












REVISED DATE

DESIGNED BY

DRAWN BY

CHECKED BY

FUNCTIONAL CROSS SECTION - OPEN DITCH

MICROFILMED
RAMSEY CO. ENGR.

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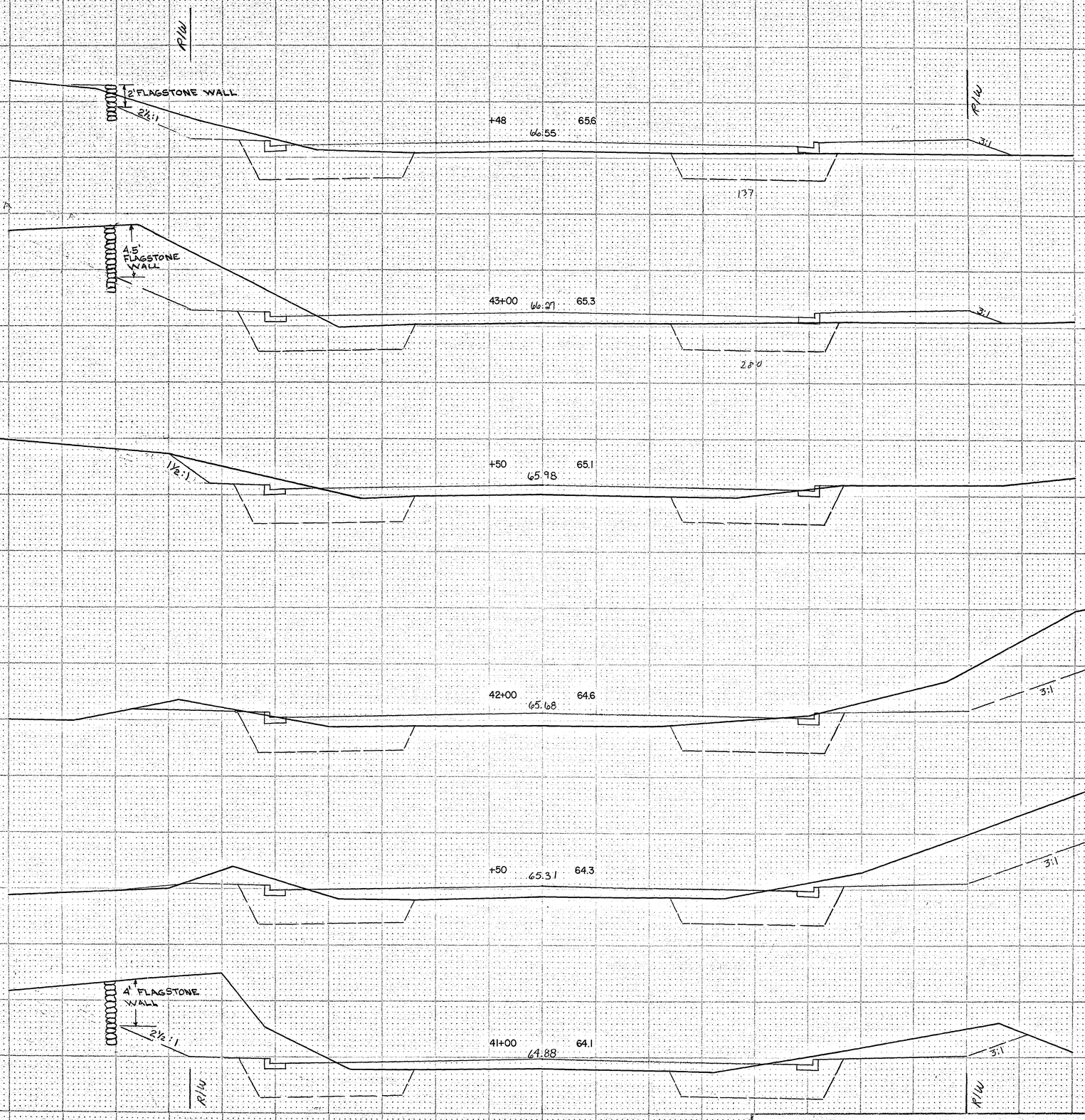
Wayne R. Tomasek

Date Aug. 3, 72 Reg. No. 5782

S.A.P. NO. 62-668-14

Sheet No. 21 of 28 Sheets

15-151



Fed. Proj. No.	
EXC.	EMB.
259	140
267	118
349	111
453	111
379	111
383	111

REVISED — DATE

DESIGNED BY

DRAWN BY

CHECKED BY

FUNCTIONAL CROSS SECTION - OPEN FILLED

MICROFILMED
RAMSEY CO. ENGR.

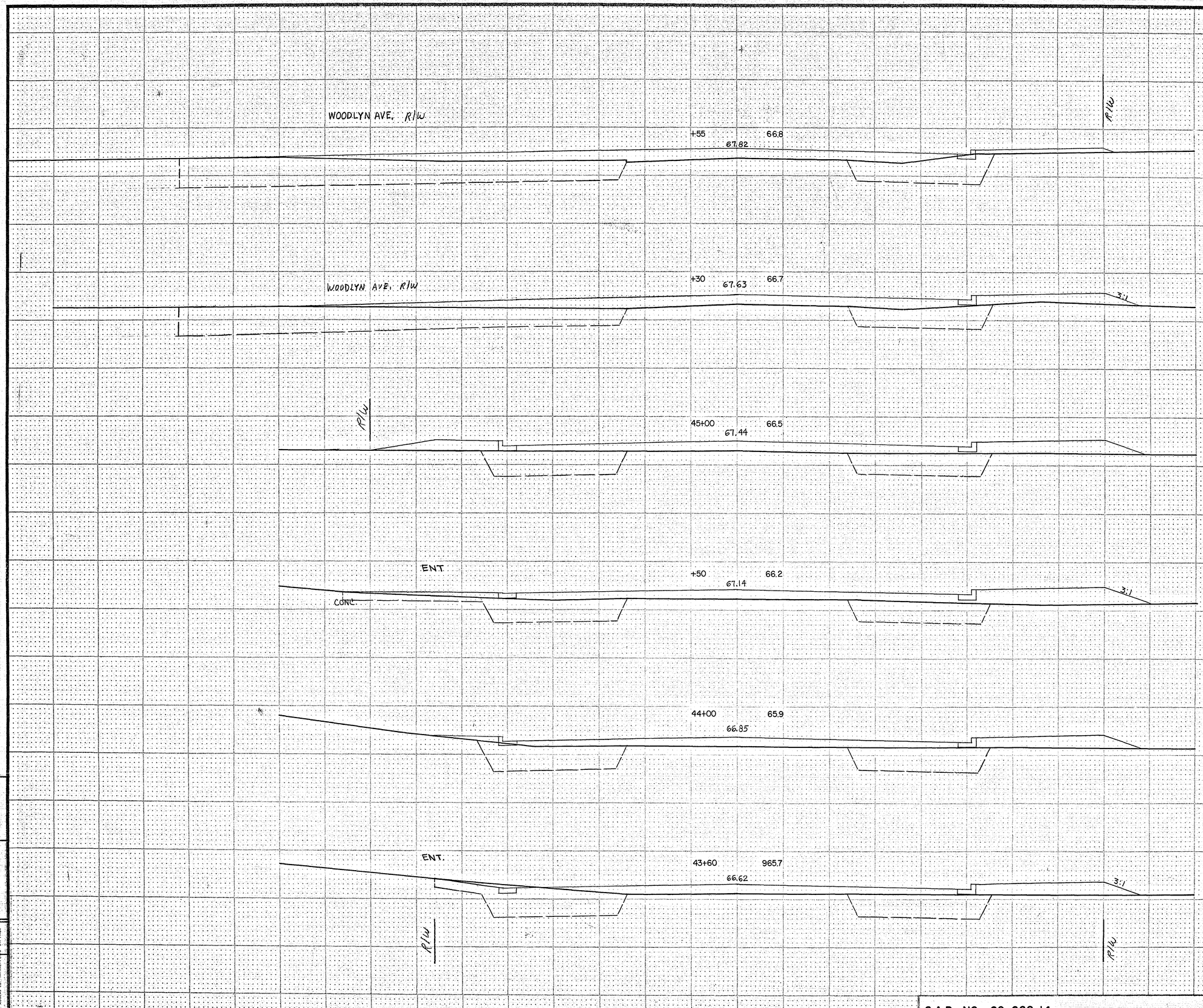
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Date Aug. 3 '76 Reg. No. 5782

S.A.P. NO. 62-668-14

Sheet No. 22 of 28 Sheets

15-151



Fed. Proj. No.	
EXC.	EMB.
137	130
119	134
127	169
131	158
121	120
40	30

REVISED - DATE
DESIGNED BY
DRAWN BY
CHECKED BY
FUNCTIONAL CROSS SECTION - OPEN DITCH

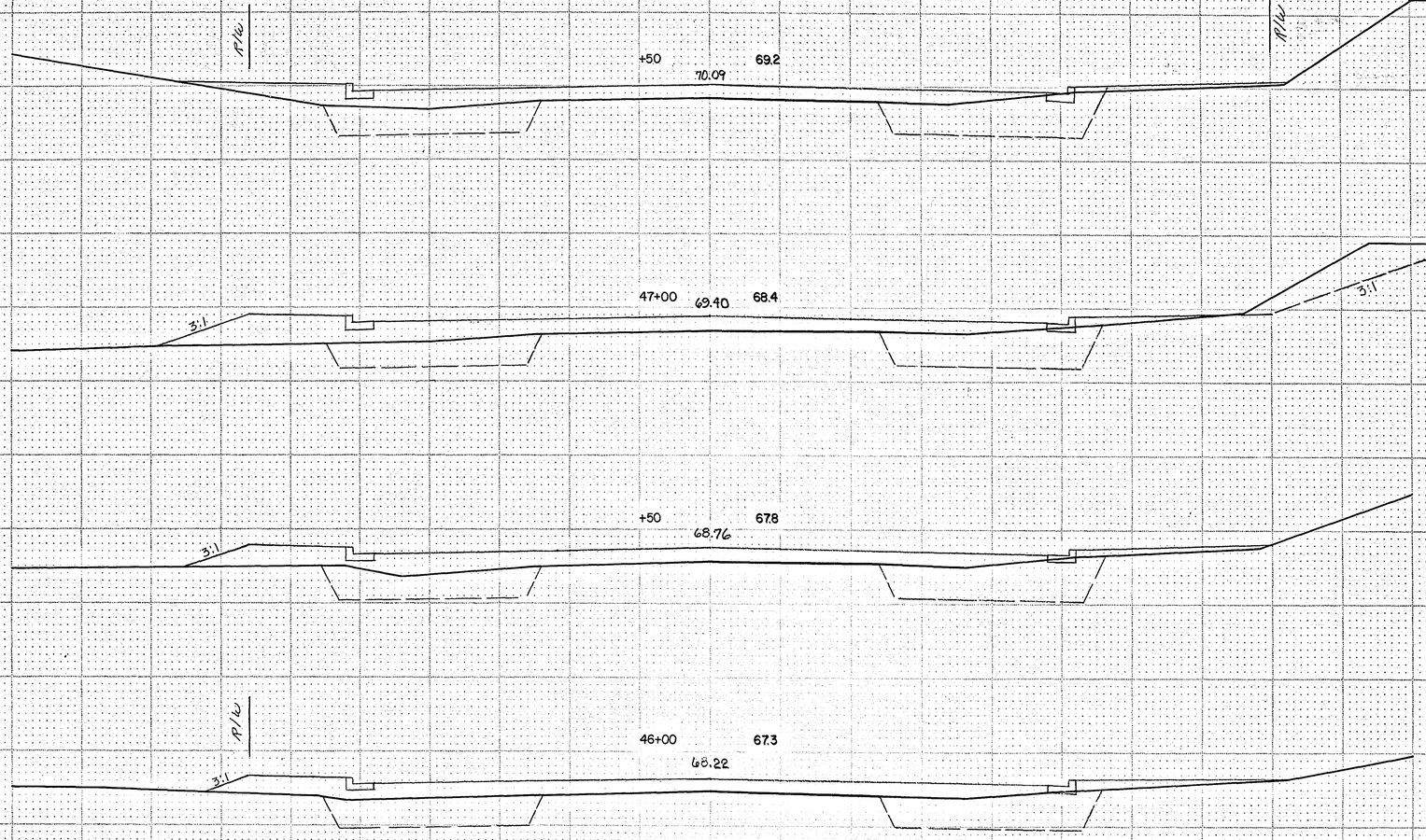
MICROFILMED
RAMSEY CO. ENGR.

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Date Aug. 3, 76 Reg. No. 5702

S.A.P. NO. 62-668-14

Sheet No. 23 of 28 Sheets

15-131



Fed. Proj. No.	
EXC.	EMB.
139	146
134	150
119	143
37	40
29	27
155	139

REVISED — DATE — DESIGNED BY — DRAWN BY — CHECKED BY — FUNCTIONAL CROSS SECTION, OFFH. DITCH

MICROFILMED
RAMSEY CO. ENGR.

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

Walter E. Umark

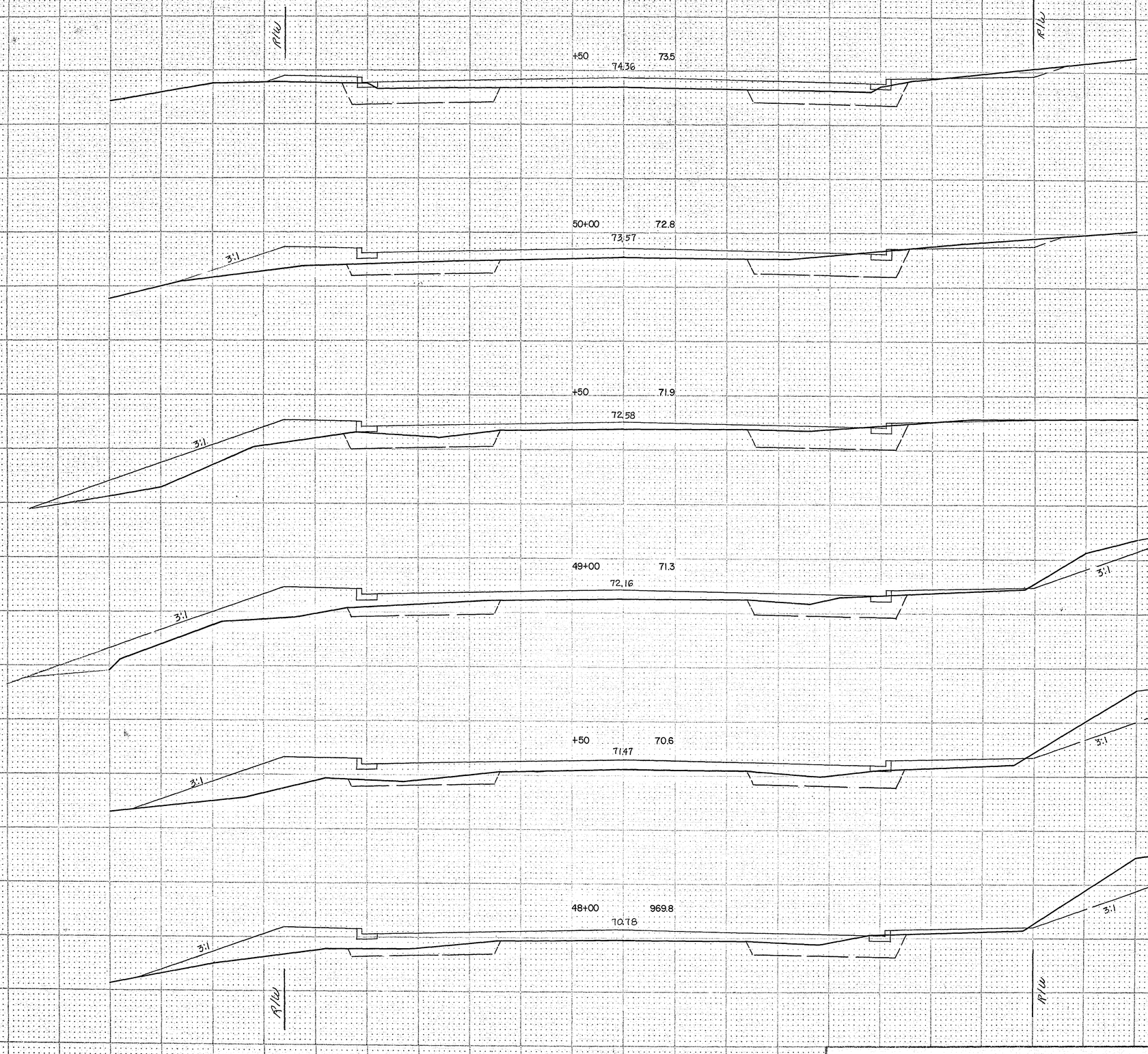
Date Aug. 3, '76 Reg. No. 5782

S.A.P. NO. 62-668-14

Sheet No. 24 of 28 Sheets

15-151

Fed. Proj. No.	
EMB	EXC.
87	84
86	126
90	157
109	158
132	139
131	130



REVISED DATE

DESIGNED BY

DRAWN BY

CHECKED BY

TYPICAL CROSS SECTION - OPEN DITCH

MICROFILMED
RAMSEY CO. ENGR.

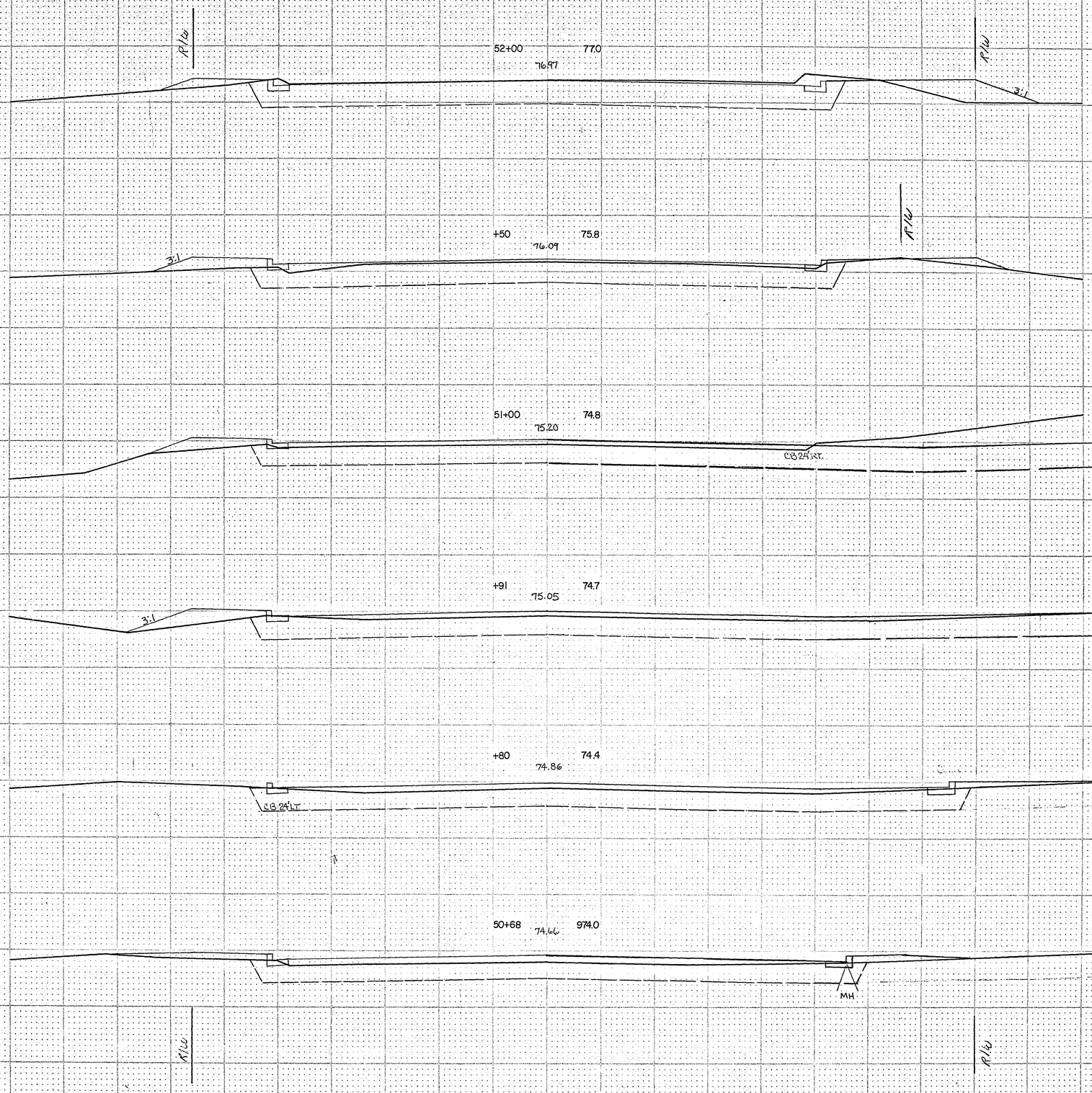
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Date Aug 3, '76 Reg. No. 5782

S.A.P. NO. 62-668-14

Sheet No. 25 of 28 Sheets

15-151



Fed. Proj. No.	
EXC.	EMB.
206	134
205	120
GALL AVE. R/W	
41	26
50	33
GALL AVE. R/W	
52	35
53	39

REVISED DATE
DESIGNED BY
DRAWN BY
CHECKED BY
JUNCTIONAL CROSS SECTION - OPEN DITCH

MICROFILMED
RAMSEY CO. ENGR.

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Wayne R. Tyrrell
Date May 3 '76 Reg. No. 5787

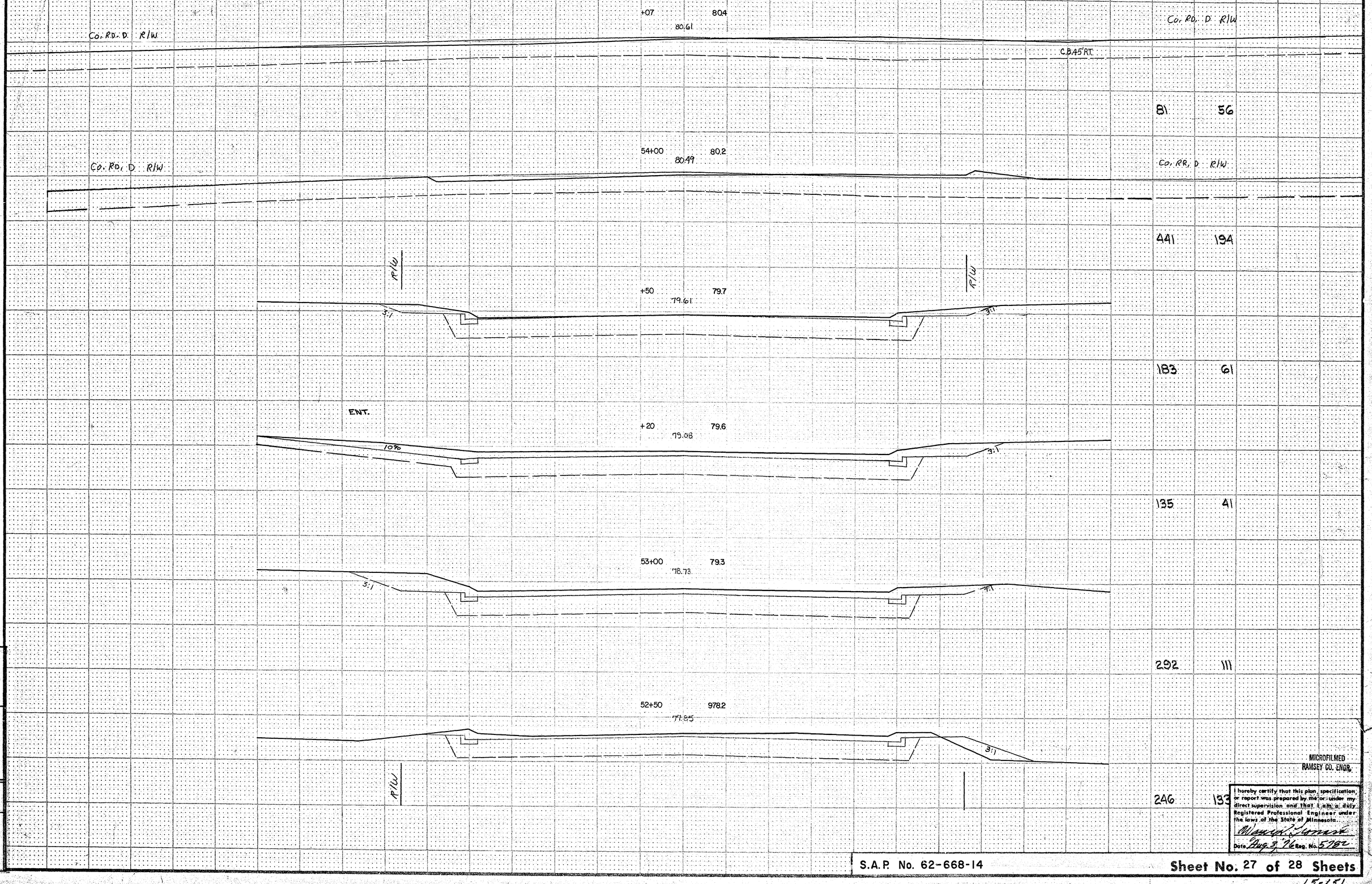
S.A.P. No. 62-668-14

Sheet No. 26 of 28 Sheets

15-151

Fed. Proj. No.

EXC. EMB



Co. Rd. D R/W	
	81 56
Co. RR, D R/W	
	441 194
	183 61
	135 41
	292 111
	246 133

REVISED DATE | DESIGNED BY | DRAWN BY | CHECKED BY | FUNCTIONAL CROSS SECTION - OPEN DITCH

MICROFILMED
RAMSEY CO. ENGR.

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

Date Aug 3 '76 Reg. No. 5782

S.A.P. No. 62-668-14

Sheet No. 27 of 28 Sheets

15-151

Fed. Proj. No.

	EXC.	EMB.
TOTALS	16335	10010 × 130% = 13,013
	16,335 − 13013 = 3322	EXCESS

56+00 86.5

+73 85.5

BRIDGE Approach
BEGIN CONC. PAVEMENT
+39 84.2

55+00 82.7

82.81

3:1 3:1

	82	50

Co. RR. D R/W

+55 80.8

81.55

3:1 3:1 Co. Rd. D R/W

	181	147

	131	181

+36 980.2

81.13

	138	154

℄ CO. RD. D

54+23 980.4

80.89

	175	176

REVISED — DATE
DESIGNED BY
DRAWN BY
CHECKED BY
FUNCTIONAL CROSS SECTION - OPEN DITCH

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Walter P. Lorenz
Date Aug. 3, '71 Reg. No. 5782

S.A.P. No. 62-668-14

Sheet No. 28 of 28 Sheets

15-151